



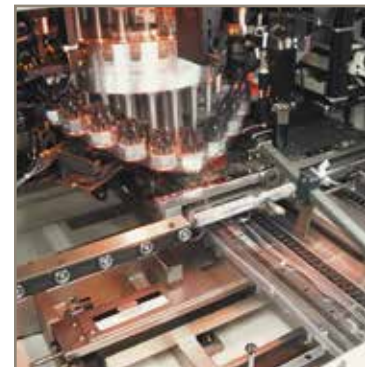
aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
**pneumatics**  
process control  
sealing & shielding



# Parker Pneumatic

A complete range of system components

Catalogue PDE2600PNUK February 2016



ENGINEERING YOUR SUCCESS.

# Parker Hannifin

Parker Hannifin is one of the world's leading suppliers of products and solutions in Motion and Control. Using innovative product development and an acquisition strategy to increase our range of pneumatic products and solutions, we now have one of the broadest product offerings available in the market.

Our range now extends from the compressor to the point at which the air is used. This could be supplying power take off on a vehicle, moving a cylinder or

gripper to milking cows. The design and manufacture of bespoke integrated solutions for air, gas and fluid control is one of our core specialisation.

The Parker network of distributors is the most comprehensive in the world, which means our products are available from specialist pneumatic distributors wherever you are located.

In the following pages are listed the core first choice products from across Parker which are aimed at the pneumatic market. From valves, actuators and air preparation to push in fittings quick connectors and tubing to customized systems. In this catalogue you will find products from Pneumatic Division Europe, Legris, Rectus Tema, Fluidconnectors, and Fluid Controls, presenting an unrivalled choice of products and solutions to suit virtually any application.

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



## WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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## SALE CONDITIONS

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# Linear Actuators

## ISO 15552 Cylinders - P1D-S



p24

- Premier Line
- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

## ISO 15552 Cylinders - P1D-B



p37

- Basic Line
- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

## ISO 15552 Cylinders - P1D-C



p48

- Ultra Clean Line
- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Corrosion resistant design
- Lubricated with food grade grease

## ISO 15552 Cylinders - P1D-C



p51

- Pro Clean Line
- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

## ISO 15552 Cylinders - P1D-T



p54

- Tie Rod Line
- Available in Ø32 to 320 mm bores
- PUR seals for long service life
- Magnetic piston as standard
- Adjustable cushioning as standard
- High and Low temperature versions
- ATEX certified on option

## ISO 15552 Cylinders - P1D-X



p64

- Extreme Line
- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- High and Low temperature versions

## Rod Lock Cylinders - P1D-L / P1D-H



p69

- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

## ISO 6432 Mini Cylinders - P1A-S



p80

- Available in Ø10 to 25 mm bores
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- End stroke buffers for long service life
- Available with adjustable cushioning

# Linear Actuators

## All Round Cylinders R Series



p86

- Available in Ø32 to 63 mm bores
- Double acting without cushioning
- Double acting with adjustable cushioning
- Pivot mounted on the front and rear cylinder covers
- Magnetic piston as standard, non magnetic on option

## ISO 6432 Stainless steel - P1S



p90

- Available in Ø10 to 25 mm bores
- Magnetic piston as standard
- Double and single acting
- End stroke buffers for long service life
- Available with adjustable cushioning

## ISO 6431 Stainless steel - P1S



p95

- Available in Ø32 to 125 mm bores
- Clean, smooth washdown design
- Magnetic piston as standard
- Adjustable cushioning for long service life

## ISO 21287 Compact Cylinders - P1P



p101

- Available in Ø20 to 100 mm bores
- Corrosion resistant design and low weight construction
- PUR seals for long service life
- Drop-in sensors
- Magnetic piston as standard
- High and Low temperature versions

## ISO 15524 Compact Cylinders - P1Q



p115

- Available in Ø12 to 100 mm bores
- Magnetic or non magnetic versions
- Flush fit sensors
- Buffer cushioning as standard
- Piston wear ring on Ø32 to 100 mm
- Tapped both ends

## Cartridge Cylinders - P1G



p119

- Non - lube operation
- Corrosion resistant design
- Integral mounting
- Compact construction
- Single acting as standard

## Short Stroke Cylinders - C05



p120

- Short stroke cylinders providing high clamping forces
- Compact dimensions for confined spaces
- Single and double acting versions
- Simple installation and mounting

# Rodless Cylinders

## Rodless Cylinders - OSP-P



p121

- Completely modular design
- Compact design
- Service intervals up to 8,000km
- Widest capability for speed, load and movement profiles
- High loads and moments
- Wipersystem with automatic re-adjustment

## Rodless Cylinders - OSP-L



p161

- Completely modular design
- Compatible with the comprehensive ORIGA OSP system component range
- High loads and moments
- Space saving
- For a wide range of loads, speeds and motion profiles

## Rodless Magnetic Cylinders - P1Z



p178

- Double acting with guide
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and Slide are pressure tight
- Pressure tight and leak free system



# Handling Products

## Grippers - P5G



p195

- Available with range of bore sizes Ø10 to 32 mm
- Highly accurate air driven device for holding work-piece.
- Magnetic as standard
- Reference points on gripping fingers are standard

## Rotating Tables - P5RS



p203

- Bores Ø16, 20, 25 and 32 mm
- Twin rack and pinion
- Adjustable between 0° to 190°
- Magnetic piston standard
- Stroke adjusters standard
- Available with shock absorbers

## Slide Tables - P5SS



p205

- High precision
- Bores Ø6, 8, 12, 16, 20 and 25mm
- Combination of dual bore cylinder and linear rail
- Magnetic piston standard
- Rubber bumper standard
- Stroke adjusters available
- Shock absorbers available

## Stopper Cylinders - STV / STVR



p214

- Available with hydraulic Industrial shock absorbers
- Vertical and horizontal versions
- Integrated shock absorber for heavy conveyed loads
- Roller for lower conveyed load weights
- Direct stopping piston rod for heavy conveyed loads

## Compact Guided Cylinders - P5T



p222

- Available in Ø16 to 100 mm bores
- Stainless steel guide rods
- Wide range of standard strokes
- Flexible porting as standard
- Buffer cushioning as standard

## Twin Rod Cylinders - RDV / AZ



p226

- RDV Series**
- Available in Ø25 mm bore
- AZ Series**
- Available in Ø32 to 100 mm bores
- Non rotating
- Double acting
- Adjustable cushioning
- Magnetic piston as standard

## Shock Absorbers - SA



p233

- Integral stop collar
- Soft pad
- Rectangular flange
- Foot mounting
- Adjustable without return spring, for use with external air-oil tank

## Shock Absorbers - MC-SC



p237

- Compact and heavy duty versions
- High energy absorption
- Low return force
- Long service life
- Increases productivity
- Reduces maintenance

# Air Motors

## Stainless Steel Air Motors - P1V-S



p240

- Power from 0,02kW to 1,2kW
- All stainless steel design
- ATEX approved
- No-lube intermittent operation as standard
- External seals in fluor rubber (FPM)
- 0,2, 0,3 and 1,2kW Brake option
- Drilling, milling and grinding motors
- Power from 0,08 to 1,0kW
- Drill check and collet versions

## Robust Air Motors - P1V-M



p246

- Power 0,2, 0,4, 0,6, 0,9 and 1,2 kW
- Robust design
- ATEX approved
- Ideal for industrial applications
- Gear less version and integrated gear boxes version
- Patented vane change system
- Free speeds from 32 up to 10500 rpm
- Torque from 0,38 Nm up to 120Nm
- Foot and flanges mountings

## Vane Air Motors - P1V-A & B



p251

- Power 1600, 2600 and 3600 watts
- For heavy duty applications
- Free speed of 9000 rpm
- Torque from 40 Nm to 4000 Nm
- Standard equipped with flange mounting
- Power 5,1 kW, 9 kW and 18 kW
- For the very heavy duty applications
- Free speed of 6000 rpm
- High torque from 16.2 Nm to 57 Nm

## Radial Piston Air Motors - P1V-P



p269

- Power 0,73 kW, 0,125kW and 0,228kW
- Low speed and high torque
- Available as base and brake motors
- Free speed from 2200 down to 7,4 rpm
- High torque from 0,637Nm up to 500Nm

# Rotary Actuators

## Rotary Vane Actuators - PRO / PRN



p278

- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)
- Vane type

## Rotary Vane Actuators - PV



p280

- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.
- Vane type

## Rotary Rack and Pinion Actuators - RA



p281

- 5 unit sizes
- Torque from 20 to 200 Nm
- Turning angles of 90° or 180°
- Keyway output shaft
- Direct Namur valve connection
- Rack and pinion

## Rotary Rack and Pinion Actuators - VRS/VRA



p282

- Bores from Ø32 to 125mm with rotative angles of 96°, 186° and 366°
- Magnetic piston versions can be fitted with P8S sensors and brackets
- Operates with dry, lubricated or non lubricated air

## Thrust Drives

### Air Bellows - 9109 / SP



p288

- 10 sizes, diameters 70 to 660 mm, Strokes from 20 to 410 mm, single, double or triple convolutions (removable type)
- 7 sizes, diameters 82 to 288 mm, Strokes from 55 to 170 mm, single or double convolutions (crimped type)
- High thrust and frictionless movement
- Maintenance free

### Thrust Cylinders - C0D / C0P



p293

- Thrust cylinders provide large forces
- Compact dimensions
- C0D, diaphragm type
- C0P, piston type
- Available in single and double acting versions

### Hydraulic Clamp Cylinders - VB



p296

- Single acting cylinders with built-in hydro-pneumatic intensifier
- Compact size with large clamping forces up to 2700 daN (depending on air pressure)
- Operated using a compressed air supply, no special installation required

### Hydrochecks - B181



p297

- Range of imperial sizes
- Gives smooth control feeds
- Strokes up to 450 mm.

## Electromechanical Drives

### Electric Linear Actuators - OSP-E / BHD



p300

- For particularly high requirements regarding loads and forces
- For high-speed applications and highly dynamic motion profiles
- BHD with toothed belt and integrated heavy duty guide: roller guide or re-circulating ball bearing guide

### Electric Linear Actuators - HMR



p342

- Three alternative drive technologies in one profile
- Unique flexibility and reliability
- High speed and precision
- Two profile versions, four profile sizes
- Optional IP54 snap-in covers

# Valves

## Metal Spool Valves - Viking Lite



p355

- 3 sizes: G1/8, G1/4 and G3/8.
- Large flow capacity with short change-over times.
- Low change over pressure.
- Dynamic bi-directional spool seals.
- Do not require lubrication in operation but can also be installed in systems that are lubricated.

## Metal Spool Valves - Viking Xtreme



p367

- 4 sizes: G1/8, G1/4, G3/8 and G1/2.
- Compact design with good corrosion resistance.
- Wide range of 5/2 and 5/3 versions.
- High and low temperature versions available for transport applications.

## Adex Directional Control Valves



p383

- 2 sizes: M5 and 1/8"
- Compact body with large flow
- Quick response time, faster than 10ms
- Expected life time more than 50,000,000 cycles
- Low power consumption only 0.6W

## Manual & Mechanically Operated Valves



p388

- G1/8, G1/4 body ported
- Rugged die cast body
- 3/2, 5/2 & 5/3 configurations
- Stainless steel spool
- Viton body seals as standard
- Integral mounting holes
- Manual, mechanical and automatic actuators.

## Directional Control Valves - VA



p398

- Rugged valves for heavy duty applications
- Large and robust actuators for easy operation
- Excellent corrosion resistance
- Integral mounting holes
- Panel mounting versions

## Heavy Duty Poppet Valves



p400

- G3/8 & G1/2 body ported
- 2/2 & 3/2 NC spring return as standard
- High flow poppet design
- Manual and mechanical and solenoid actuators
- Light actuation forces
- Integral mounting holes.

## DX ISO Valves - ISOMAX



p405

- ISO sizes 02, 01, 1, 2 & 3 sub base & manifold mounted valves
- ISO 5599-1 & ISO 15470-1
- Excellent reliability, in excess of 100 million cycles
- Ceramic slide technology operates on Lubricated or non-lube air

## H Series ISO Valves



p413

- ISO sizes 02, 01, 1, 2 & 3 sub base mounted valves
- ISO 5599-1, ISO 5599-2, ISO 15470-1 & ISO15470-2
- Stable long lasting performance
- Heavy duty metal bodies
- Wear compensating seal technology

# Valves

## H Series Micro Valves



p440

- Up to 8 pneumatic functions on a 42mm width metal sub base
- 4 valve modules back to back for compact dimensions
- High performance
- Optimized flow for 6mm tubes
- Side or bottom mounted manifolds available.

## Moduflex Valves System - P2M



p457

- High flow, compact size.
- Mixable valve sizes.
- Stand alone valves, modular islands with individual, multi connector or bus connections.
- Integrated selectable internal or external pilot supply and exhaust.

## H Series Industrial Communication



p481

- A complete field bus communication offering for valve islands
- Extremely fast I/O back plane uses change of state connections to maximise performance
- UL, C-UL and CE certifications

## Interface - PS1



p506

- High speed poppet valve
- Push-in connection
- Built-in terminal block
- Pneumatic output indicator
- DIN rail mounting

## Inline Valves - PVL-B2



p509

- High flow – Compact size with a 18 mm width body
- Push-in fitting diameter 6mm, 8mm or threaded G1/8"
- DIN rail or surface mounting
- Economic clip connector (IP40) or DIN Form C connection (IP65)
- Light weight construction

## Compact Valves - PVL



p523

- High flow, compact size
- Push-in or threaded connection
- DIN rail or block mounting
- Light weight construction

## Logic Processing



p527

- Complete range of logic processing modules
- Stand alone or stackable and combinable units
- Ultra fast response times
- Visual indication
- DIN rail mounting.

## Air Saver Unit



p530

- Large reductions in plant air consumption.
- Savings in plant compressor power consumption.
- Reduction in plant CO<sub>2</sub> emissions.
- Big contribution to energy-saving activities.

# Valves

## Control & Process Duty - PXB



p535

- Facia mounted operators
- 3/2 NO or NC versions
- Pneumatic valves combinable with electrical switches
- Modular construction
- Wide choice of actuators.

## Limit Switches - PXC



p537

- 3/2 Nc spring return as standard
- Ø4mm, M5 & G1/8 ported versions
- Miniature and Compact designs
- Wide choice of actuators include levers, rollers & ultra light whisker types.

## Two Hand Control Units - PXP



p538

- Ergonomic design
- Robust polymer or metal enclosure
- Meets requirements for protection against accidental operation and tampering
- Conforms to EN574 and EN954-1 requirements

## Microfix Solenoids - P2D



p539

- 12 mm solenoids sub-base mounting type
- Instant push-in fittings for inlet (Ø 8 mm) and outlets (Ø 4 mm)
- Brass silencer
- Quick response time
- Multi-functional manual override

## Flat Slide Valves - DRS



p567

- Rotary lever
- Rotary switch

## Stop Valves - ARKV



p571

- Pneumatic 2 way valve
- Poppet valve normally closed
- Mounting - Direct piping

## 3/2 Way Valves - K9



p573

- Rotary lever, indexed
- Rotary lever, spring return
- Rotary lever, indexed, secured in two positions
- Pushbutton
- Cam operation
- Toggle cam operation
- Plunger operated
- Cam operated, free cam left or free cam right
- Pivoted lever

## Directional Control Valves - S9



p579

- Hand lever
- Pneumatic
- Electrical pilot operated
- Electrical pilot operated with external pilot air
- Panel mounting actuators for mounting diameter to DIN 43696

# Vacuum Products

## Vacuum Pads



- Flat & Bellow Pads
- Male & Female Connections
- Different Materials
- Range of Diameters

## Vacuum Ejectors



- Basic Ejectors
- Basic Ejectors with electro-mechanical Switch
- In-line Ejectors
- Integrated Ejectors small & large

## Vacuum Sensors



- -1 to +10 bar
- Analog and/or Digital Outputs
- With display

## Vacuum Accessories



- High performance silencers and vacuum filters
- Electronic cables with M8 connector 4 pin



# Air Preparation & Airline Accessories

## Global Air Preparation System



p614

- Space saving integral gauge (P31 size only)
- Manifold style regulators available
- OSHA compliant shut-off valves
- Soft-Start & Quick Dump valves
- Electronic Proportional Regulator

## Lite Series Air Preparation System - P3L



p638

- Compact body ported units
- Port size G1/4
- Unique deflector plate ensuring maximum water and particulate removal
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.

## Lite Series Air Preparation System - P3S



p640

- Port size G<sup>1</sup>/<sub>4</sub> - G<sup>3</sup>/<sub>8</sub>
- Modular air preparation series
- Robust and lightweight zinc body construction
- Rolling diaphragm for extended life
- Soft start valve for slow pressure build up in pneumatic circuits
- Dump valves for quick down stream pressure exhaust

## Lite Air Preparation Series - P3X



p645

- Integral 1/2 or 3/4 ports
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Secondary pressure ranges 8 and 16 bar
- Rolling diaphragm for extended life
- Membrane dryers

## Modular Membrane Dryers - P3X



p651

- Removes water vapour & lowers the PDP
- Compact design
- No electrical connections necessary
- Suitable for hazardous environments
- No moving parts
- Maintenance & wear free
- No change in air consumption
- Low pressure drop less than 0.1 bar

## Air Preparation System - P3Y



p653

- Integral 3/4 or 1" ports (BSPP or NPT)
- High efficiency element as standard
- Excellent water removal efficiency
- Secondary pressure ranges 12 and 16 bar

## Air Preparation System - P3Z



p659

- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Port flanges G1<sup>1</sup>/<sub>2</sub>" & 2" to a 2" body.
- Proportional oil delivery over a wide range of air flows.

## Global Proportional Technology



p661

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65

# Air Preparation & Airline Accessories

## Precision Pressure Regulators



- High repeatability
- High relief capacity on R220 model
- High flow capacity on R230 model

p696

## Prep-Air II® Miniature FRLs



- Compact body ported units.
- Port sizes G<sup>1</sup>/<sub>8</sub> and G<sup>1</sup>/<sub>4</sub>.
- Unique deflector plate ensuring maximum water and particulate removal.
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.

p698

## Stainless Steel FRLs



- Suitable for Marine & Offshore applications
- Chemical / Petroleum and process industries
- Coalescing filters are designed for removing oil and water aerosols down to 0.01µ
- Suitable for food industry applications

p700

## Compressed Air Filters - P3T



- Tested in accordance with ISO 8573.9
- High liquid removal efficiencies at all flow conditions
- Low pressure losses for low operational costs
- Multiple port sizes for a given flow rate provides increased flexibility during installation

p703

## Dry Air System - P3TJ



- Designed in accordance with ASME VIII Div.1, approved to CSA/UL/CRN and fully CE Marked (PED, EMC, LVD) as standard.
- Flexible installation utilising the multiple in-line inlet & outlet connection ports.
- Can be Floor, Bench or Wall/ Canopy mounted.

p711

## Pressure Switches



- Suited for intrinsically safe operation
- Especially compact design
- High switching frequency
- Attractive design
- Shock proof up to 30 g

p714

## AirGuard Protection System



- Maintenance friendly, Repair possible while plant is still operating.
- Reliable and tamperproof, No adjustment necessary.
- Complies with EU current standard
- Complies with the 2009 ISO4414 (5.4.5.11.1)

p720

## Cylinder Controls



- "Push-in" or threaded connection
- Multifunction options
- Fit directly to cylinder ports
- Swivelling pilot banjo
- Pneumatic, Electric or Electronic back pressure sensor

p722

# Air Preparation & Airline Accessories

## Micrometer Flow Control Valves



p724

- Micrometer type adjustment
- Fine control
- Non-return and needle valves

## Heavy Duty Inline Control Valves



p724

- Screw driver adjustment
- Rugged bodies
- High flow rate
- High flow by-pass
- Wide range of sizes

## Shuttle Valve & Quick Exhaust Valves



p725

- Increases piston speeds, super sensitive diaphragm.
- May be used as differential shuttle valve.
- Allows two separate signals to be applied to the air pilot.
- 0,6 bar differential, Viton seals as standard.
- Aluminium or polymer bodies

## Exhaust Silencers



p727

- All plastic ultra light weight versions
- Sintered metal
- All metal versions for heavy duty applications
- Versions with push-in connections
- High noise level reduction
- Low back pressure generation

## Restrictors - Silencers



p728

- Metal, stainless steel or plastic versions
- Screwdriver adjustment
- Simple control of cylinder speeds
- High noise level reduction

## Reclassifier - Silencers



p729

- Removes oil mist from exhaust airs
- Efficiently silences exhaust air
- Improves working conditions

# Fluid Controls

## 2/2 / 3/2 - Way Valves for Air



p543

- 1/8", 1/4" & 2" pipe mount and flange version
- Pressure range up to 40 bar
- Normally open and normally closed
- Direct or servo-acting
- Long life expectancy, highest reliability
- Manual override optional
- Excellent response time
- Can be mounted with Lucifer® coil families

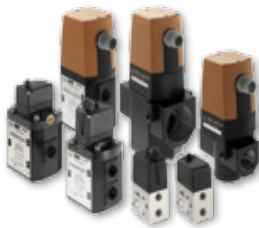
## 3/2 - 5/2 NAMUR Valves



p549

- 1/4" - 1/2" NAMUR interface
- Patented NAMUR conversion plate
- Highflow Qn: 3000 L/min
- Solenoid or pneumatic version
- High resistance aluminium
- ATEX zone 22 certified products
- Fast switching application

## Precision Pressure Regulators



p666

- 1/4" - 2" pipe mount
- Lucifer® Programmable EPP4 all parameters fully adjustable through the PC software calys
- Low power consumption (2.2W), energy savings
- High responsiveness and low hysteresis (0.5%)
- Flexible remote display
- Compact design and light
- Easy to use software

## Standard, ATEX and IECEx Coils



p561

- Modular concept for dedicated valves
- D / B Terminal Standard
- Various AC / DC voltages
- Various IP65-IP67, 100% ED
- Meet latest international & national codes
- ATEX zone 0, 1, 2, 20, 21, 22 protected ia, ib, dm, d, e, m, me, n

## Solenoid Valves for Fluid Control Applications



p543

Fluid control products have been designed to offer customers the ultimate in performance. Every valve is engineered for optimal operation, is constructed with modern machinery that use stringent processes, and provides standard features not necessarily offered in any competitive line. The Fluid Control Series portfolio offers a broad range of 2/2, 3/2 and 5/2 solenoid valves. Sizes range from 1/8" to 3", with Kv as high as 1385 L/min. Pressure capabilities range up to 200 bar; the whole range is available with various seal materials, such as NBR, FKM, EPDM, PTFE, PCTFE, PUR and Ruby. Brass, Aluminium, Stainless steel and Plastic Valves are available to control a wide variety of air, neutral gases and liquids, water, oils, process fluids and steam.

For further information see: [www.parker.com/fcde](http://www.parker.com/fcde)

# CONNECTIC Solutions for Compressed Air

## Legris LF3000 Push-in Fittings



p732

- Brass / polymer fittings for standard applications.
- Instant connection/disconnection.
- Full flow, automatic sealing.
- Vacuum capability.
- Compact & aesthetic, lightweight.
- Very extensive range.
- -20°C to 80°C, maximum 20 bar (depending on fitting type and OD).

## Legris Function Fittings



p739

- Flow control regulators, blocking fittings, mini-ball valves, non-return valves, silencers...
- Used on pneumatic devices in many industrial applications: factory automation, packaging, multi-purpose robots, material handling, textile, printing, auto process, machine tools.
- 0°C to 70°C, from 1 to 10 bars (depending on fitting type).

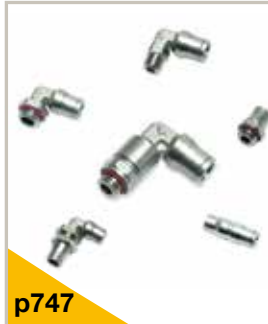
## Legris Universal Compression Fittings



p746

- Brass or stainless steel (316L).
- Withstand high temperatures and pressures (max. 80 bars, 250°C).
- Resistant to aggressive and corrosive environments.
- A large range for many applications.
- Many accessories.

## Legris LF3600 Push-in Fittings



p747

- Nickel-plated brass instant fittings for demanding applications.
- For air and fluid transportation.
- FDA, 1935/2004/CE.
- -20°C to 150°C at 30 bars.
- Wide range.
- Compact & robust design.

## Legris LF3900/3800 Push-in Fittings



p753

- Stainless steel 316L fittings for severe conditions.
- Hygienic design.
- Extreme chemical and mechanical resistance.
- Fittings suitable for permanent food contact (FKM seals in accordance with FDA and 1935/2004/CE directives).
- Wide range: 21 shapes, diameters 4 to 12 mm.

## Legris Tubing



p756

- Standard tubing made of PA, PU, FEP 140, and PE.
- PA and PU hoses in 7 colours.
- Multi, twin and spiral; anti-spark, anti-static.
- 25 or 100 m rolls in Tubepack® box.
- Large pack on drum.
- Hoses made of braided PVC.
- Self-fastening hoses.

## Safety Couplers / Blowguns / Accessories



p764

- Couplers:**
- Comply with ISO 4414 and EN983 safety standards 0 - 16 bar, -20°C to 60°C.
- Blowguns:**
- Two connection points. Comply with OSHA and EU regulation for safe use. Up to 10 bar, -15°C to +60°C.
- Accessories:**
- Full nickel-plated range.

## Legris Ball Valves / Axial Valves



p770

- Nickel-plated brass.
- Optimum sealing & excellent resistance.
- -20°C to 80°C, 20 to 40 bar (depending on the model).

# Quick connect couplings

## Industrial Interchange couplings



p773

- Single handed operation
- Nominal diameter 5 to 11 mm
- Conforms to various profiles (European standard, MIL, etc. )
- Working pressure up to 35 bar
- Low pressure drop
- Temp. range -40°C up to 200°C
- Choice of material: steel/brass/stainless steel/thermoplastics
- Variety of different threads available on request

## Safety couplings



p785

- Operated with two hands
- Conforms to ISO 4414
- Increased safety in the work place
- Working pressure up to 12 bar
- Low pressure drop
- Temp. range -40°C up to 80°C
- The design allows disconnection without rebound

For further information see: [www.rectus.de](http://www.rectus.de)



# Linear Actuators

# P1D Pneumatic Cylinders

According to ISO 15552

The innovative P1D, a **future-proof** generation of **ISO** cylinders.



## P1D ISO Cylinder family

The P1D series is a future-proof generation of ISO cylinders. P1D complies with the current ISO 15552 previous standard ISO 6431, VDMA 24562 installation dimension standards.

The cylinders are double-acting, magnetic as standard for use with sensors and feature a new design of air cushioning. Available in Ø32mm – Ø125mm bore size the full P1D range includes:-

**P1D-S series.** This series is the ultimate in ISO pneumatic cylinders and is suitable for virtually any application. Options include the tie rod design, smooth profile, ultra clean cylinders for use in the food industry and all the variants including through rod and piston rod locking versions.

**P1D-B series.** This series features a profile design and is the basic ISO cylinder for simple applications where no special options are required. This series is suitable for general industrial applications

All mounting and sensor options are common to all P1D cylinders.



## Design Variants

### P1D-S Premier Cylinders

The P1D-S series is the premier in ISO pneumatic cylinders. With various piston rod materials, seal options and supported by a full range of ISO mountings the P1D-S series is suitable for a wide range of applications.



### P1D-B Basic Cylinders

The P1D-B series features a profile design and is the value line ISO cylinder for basic applications where no special options are required. This series is suitable for general industrial applications and is supported by a full range of ISO mountings.



### P1D-C Ultra Clean Cylinders

This series offers an ultra clean external design of cylinders that are suitable for applications that require a clean profile. With particular design features for the food and packaging industries this product can also be used for applications on vehicles, in sawmills and bag-filling industries where a clean design is important.



### P1D-C Pro Clean Cylinders

This series of clean design cylinders offers two T slots within one face of the tube allowing the possibility to add sensors. The position of the T slots can be specified on any single face using the order code key. These cylinders have a clean design but are intended for applications where sensors are required.



### P1D-T Tie Rod Cylinders

The P1D-T range of tie rod cylinders is intended for use in a wide range of applications. Careful design and high quality manufacture throughout ensure long service life and optimum economy. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.



### P1D-X High and Low Temperature Cylinders

For extreme conditions these cylinders for high and low temperatures have materials and sealing systems specially designed for their particular temperature ranges. End covers and pistons are made entirely from metal, to give optimum function at **high** or **low** temperature in combination with seals made from specially tested materials and special grease.



### P1D-L Rod Locking Cylinders

P1D-L is a series of extremely compact rod lock cylinders for demanding applications. This version allows the piston rod to be locked in any position but can also be used as a brake (limits apply) thanks to the rigid design. With helical grooves on the precision clamping sleeves the locking function allows for applications where the piston rod is exposed to liquids and contamination.



## Design Variants

### Through Piston Rod Cylinders

All P1D cylinders in all bores, Ø32-125 mm, are available with a through rod. Cylinders with a through rod can take higher side forces thanks to the double support for the piston rod. In addition, this design makes it easier to install external position sensors.



### P1D-T 3 and 4 Position Cylinders

By installing two cylinders with the same or different stroke, it is possible to build a working unit with three or four positions. This type of unit is available as factory-fitted P1D tie-rod cylinders (P1D-T) in all bores, Ø32-125 mm. Other P1D cylinders can be flange mounted back-to-back with a standard mounting



### P1D-T Tandem Cylinders

The P1D is also available as a tandem cylinder, i.e. two cylinders connected in series. This cylinder unit has almost twice the force, which is a great advantage in restricted spaces. Tandem cylinders are available as tie-rod cylinders, P1D-T, in all bores Ø32-125 mm.



### P1D-V with valve built on

P1D Standard can be ordered with a factory-fitted valve and piping. The valve is the robust and compact Viking series, with product code P2L-A (for cylinder bores 32-63), P2L-B (for cylinder bores 80-100) and P2L-D (for cylinder bore 125).



### Alternative Piston Rod Materials

All P1D cylinders in all bores, Ø32-125 mm, can be ordered with the following piston rod materials:

- Steel, hard chromed
- Stainless steel, roller polished (standard)
- Acid-proof steel, roller polished
- Stainless steel, hard chromed



### Operation with Dry Piston Rod

In many applications, primarily in the food industry, the cylinders are cleaned frequently. This means that the film of grease on the piston rod is washed off, which puts special demands on the materials and the design of the piston rod seal system (scraper ring and piston rod seal). A piston rod seal system specially designed for dry rod operation is available as an option for this type of application, for all bores of P1D cylinders. The system has a specially designed L-shaped seal and the material is self-lubricating, high molecular weight plastics (HDPE).



## P1D-S Standard Cylinders

The P1D-S series is the premier in ISO pneumatic cylinders. With various piston rod materials, seal options and supported by a full range of ISO mountings the P1D-S series is suitable for a wide range of applications.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease



### Operating information

|   |                       |
|---|-----------------------|
| Working pressure:                               | Max 10 bar            |
| Seals / Temperature options                     |                       |
| Standard:                                       | -20°C to +80°C        |
| Cylinders for low pressure hydraulic operation: | Ø32-125mm             |
| ATEX approval:                                  | CE Ex IIGD c T4 120°C |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## P1D Standard

### Ø32mm - (G<sup>1</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S032MS-0025 |
| 40        | P1D-S032MS-0040 |
| 50        | P1D-S032MS-0050 |
| 80        | P1D-S032MS-0080 |
| 100       | P1D-S032MS-0100 |
| 125       | P1D-S032MS-0125 |
| 160       | P1D-S032MS-0160 |
| 200       | P1D-S032MS-0200 |
| 250       | P1D-S032MS-0250 |
| 320       | P1D-S032MS-0320 |
| 400       | P1D-S032MS-0400 |
| 500       | P1D-S032MS-0500 |

### Ø40mm - (G<sup>1</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S040MS-0025 |
| 40        | P1D-S040MS-0040 |
| 50        | P1D-S040MS-0050 |
| 80        | P1D-S040MS-0080 |
| 100       | P1D-S040MS-0100 |
| 125       | P1D-S040MS-0125 |
| 160       | P1D-S040MS-0160 |
| 200       | P1D-S040MS-0200 |
| 250       | P1D-S040MS-0250 |
| 320       | P1D-S040MS-0320 |
| 400       | P1D-S040MS-0400 |
| 500       | P1D-S040MS-0500 |

### Ø50mm - (G<sup>1</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S050MS-0025 |
| 40        | P1D-S050MS-0040 |
| 50        | P1D-S050MS-0050 |
| 80        | P1D-S050MS-0080 |
| 100       | P1D-S050MS-0100 |
| 125       | P1D-S050MS-0125 |
| 160       | P1D-S050MS-0160 |
| 200       | P1D-S050MS-0200 |
| 250       | P1D-S050MS-0250 |
| 320       | P1D-S050MS-0320 |
| 400       | P1D-S050MS-0400 |
| 500       | P1D-S050MS-0500 |

### Ø63mm - (G<sup>3</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S063MS-0025 |
| 40        | P1D-S063MS-0040 |
| 50        | P1D-S063MS-0050 |
| 80        | P1D-S063MS-0080 |
| 100       | P1D-S063MS-0100 |
| 125       | P1D-S063MS-0125 |
| 160       | P1D-S063MS-0160 |
| 200       | P1D-S063MS-0200 |
| 250       | P1D-S063MS-0250 |
| 320       | P1D-S063MS-0320 |
| 400       | P1D-S063MS-0400 |
| 500       | P1D-S063MS-0500 |

### Ø80mm - (G<sup>3</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S080MS-0025 |
| 40        | P1D-S080MS-0040 |
| 50        | P1D-S080MS-0050 |
| 80        | P1D-S080MS-0080 |
| 100       | P1D-S080MS-0100 |
| 125       | P1D-S080MS-0125 |
| 160       | P1D-S080MS-0160 |
| 200       | P1D-S080MS-0200 |
| 250       | P1D-S080MS-0250 |
| 320       | P1D-S080MS-0320 |
| 400       | P1D-S080MS-0400 |
| 500       | P1D-S080MS-0500 |

### Ø100mm - (G<sup>1</sup>/<sub>2</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S100MS-0025 |
| 40        | P1D-S100MS-0040 |
| 50        | P1D-S100MS-0050 |
| 80        | P1D-S100MS-0080 |
| 100       | P1D-S100MS-0100 |
| 125       | P1D-S100MS-0125 |
| 160       | P1D-S100MS-0160 |
| 200       | P1D-S100MS-0200 |
| 250       | P1D-S100MS-0250 |
| 320       | P1D-S100MS-0320 |
| 400       | P1D-S100MS-0400 |
| 500       | P1D-S100MS-0500 |

### Ø125mm - (G<sup>1</sup>/<sub>2</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-S125MS-0025 |
| 40        | P1D-S125MS-0040 |
| 50        | P1D-S125MS-0050 |
| 80        | P1D-S125MS-0080 |
| 100       | P1D-S125MS-0100 |
| 125       | P1D-S125MS-0125 |
| 160       | P1D-S125MS-0160 |
| 200       | P1D-S125MS-0200 |
| 250       | P1D-S125MS-0250 |
| 320       | P1D-S125MS-0320 |
| 400       | P1D-S125MS-0400 |
| 500       | P1D-S125MS-0500 |

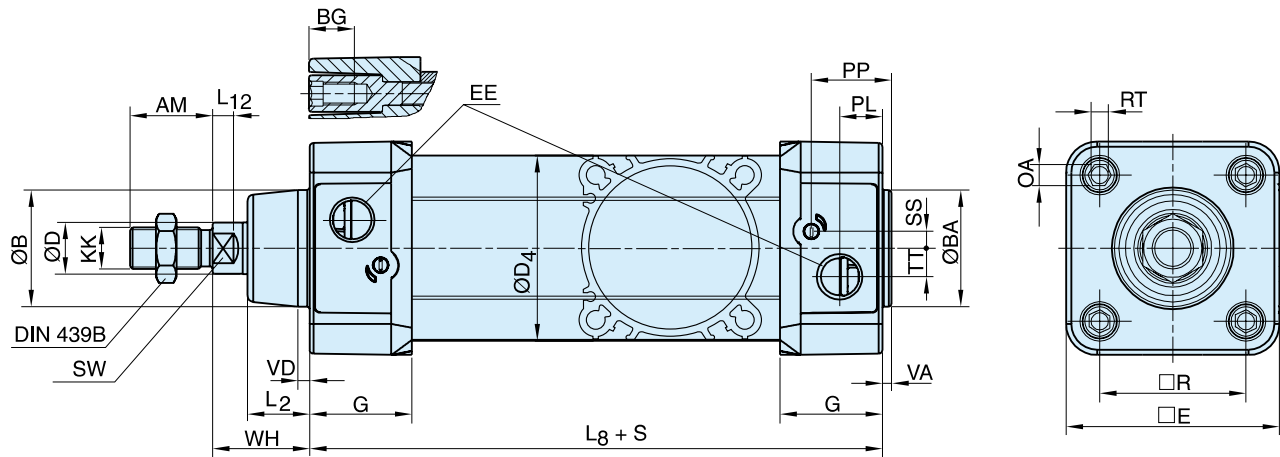
The cylinders are supplied complete with a zinc plated steel piston rod nut.

### Sensors



For sensors see page 77.

## P1D-S Series



## Dimensions

| Cylinder bore<br>mm | AM<br>mm | B<br>mm | BA<br>mm | BG<br>mm | D<br>mm | D4<br>mm | E<br>mm | EE<br>mm | G<br>mm | KK       | L2<br>mm | L8<br>mm | L12<br>mm |
|---------------------|----------|---------|----------|----------|---------|----------|---------|----------|---------|----------|----------|----------|-----------|
| 32                  | 22       | 30      | 30       | 16       | 12      | 45,0     | 50,0    | G1/8     | 28,5    | M10x1,25 | 16,0     | 94       | 6,0       |
| 40                  | 24       | 35      | 35       | 16       | 16      | 52,0     | 57,4    | G1/4     | 33,0    | M12x1,25 | 19,0     | 105      | 6,5       |
| 50                  | 32       | 40      | 40       | 16       | 20      | 60,7     | 69,4    | G1/4     | 33,5    | M16x1,5  | 24,0     | 106      | 8,0       |
| 63                  | 32       | 45      | 45       | 16       | 20      | 71,5     | 82,4    | G3/8     | 39,5    | M16x1,5  | 24,0     | 121      | 8,0       |
| 80                  | 40       | 45      | 45       | 17       | 25      | 86,7     | 99,4    | G3/8     | 39,5    | M20x1,5  | 30,0     | 128      | 10,0      |
| 100                 | 40       | 55      | 55       | 17       | 25      | 106,7    | 116,0   | G1/2     | 44,5    | M20x1,5  | 32,4     | 138      | 14,0      |
| 125                 | 54       | 60      | 60       | 20       | 32      | 134,0    | 139,0   | G1/2     | 51,0    | M27x2    | 45,0     | 160      | 18,0      |

| Cylinder bore<br>mm | OA<br>mm | PL<br>mm | PP<br>mm | R<br>mm | RT<br>mm | SS<br>mm | SW<br>mm | TT<br>mm | VA<br>mm | VD<br>mm | WH<br>mm |
|---------------------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|----------|
| 32                  | 6,0      | 13,0     | 21,8     | 32,5    | M6       | 4,0      | 10       | 4,5      | 3,5      | 4,5      | 26       |
| 40                  | 6,0      | 14,0     | 21,9     | 38,0    | M6       | 8,0      | 13       | 5,5      | 3,5      | 4,5      | 30       |
| 50                  | 8,0      | 14,0     | 23,0     | 46,5    | M8       | 4,0      | 17       | 7,5      | 3,5      | 5,0      | 37       |
| 63                  | 8,0      | 16,4     | 27,4     | 56,5    | M8       | 6,5      | 17       | 11,0     | 3,5      | 5,0      | 37       |
| 80                  | 6,0      | 16,0     | 30,5     | 72,0    | M10      | 0        | 22       | 15,0     | 3,5      | 4,0      | 46       |
| 100                 | 6,0      | 18,0     | 35,8     | 89,0    | M10      | 0        | 22       | 20,0     | 3,5      | 4,0      | 51       |
| 125                 | 8,0      | 28,0     | 40,5     | 110,0   | M12      | 0        | 27       | 17,5     | 5,5      | 6,0      | 65       |

S=Stroke

## Tolerances

| Cylinder bore<br>mm | B   | BA  | L <sub>8</sub><br>mm | L <sub>9</sub><br>mm | R<br>mm | Stroke tolerance<br>up to stroke 500 mm | Stroke tolerance<br>for stroke over 500 mm |
|---------------------|-----|-----|----------------------|----------------------|---------|---|--|
| 32                  | d11 | d11 | ±0,4                 | ±2                   | ±0,5    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 40                  | d11 | d11 | ±0,7                 | ±2                   | ±0,5    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 50                  | d11 | d11 | ±0,7                 | ±2                   | ±0,6    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 63                  | d11 | d11 | ±0,8                 | ±2                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 80                  | d11 | d11 | ±0,8                 | ±3                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 100                 | d11 | d11 | ±1,0                 | ±3                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 125                 | d11 | d11 | ±1,0                 | ±3                   | ±1,1    | +0,3/+2,0                               | +0,3/+3,0                                  |

**Cylinder mountings**

**Flange MF1/MF2**



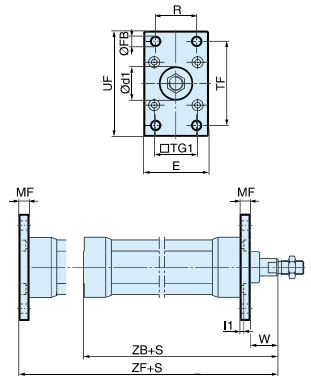
Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

**Materials**

Flange: Surface-treated steel

Mounting screws acc. to DIN 6912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore mm | d1 mm | FB mm | TG1 mm | E mm | R mm | MF mm | TF mm | UF mm | I1 mm | W* mm | ZF* mm | ZB* mm | Weight Kg | Order code      |
|--------------|-------|-------|--------|------|------|-------|-------|-------|-------|-------|--------|--------|-----------|-----------------|
| 32           | 30    | 7     | 32,5   | 45   | 32   | 10    | 64    | 80    | 5,0   | 16    | 130    | 123,5  | 0,23      | <b>P1C-4KMB</b> |
| 40           | 35    | 9     | 38,0   | 52   | 36   | 10    | 72    | 90    | 5,0   | 20    | 145    | 138,5  | 0,28      | <b>P1C-4LMB</b> |
| 50           | 40    | 9     | 46,5   | 65   | 45   | 12    | 90    | 110   | 6,5   | 25    | 155    | 146,5  | 0,53      | <b>P1C-4MMB</b> |
| 63           | 45    | 9     | 56,5   | 75   | 50   | 12    | 100   | 120   | 6,5   | 25    | 170    | 161,5  | 0,71      | <b>P1C-4NMB</b> |
| 80           | 45    | 12    | 72,0   | 95   | 63   | 16    | 126   | 150   | 8,0   | 30    | 190    | 177,5  | 1,59      | <b>P1C-4PMB</b> |
| 100          | 55    | 14    | 89,0   | 115  | 75   | 16    | 150   | 170   | 8,0   | 35    | 205    | 192,5  | 2,19      | <b>P1C-4QMB</b> |
| 125          | 60    | 16    | 110,0  | 140  | 90   | 20    | 180   | 205   | 10,5  | 45    | 245    | 230,5  | 3,78      | <b>P1C-4RMB</b> |

S = Stroke length \* Does not apply to cylinders with lock unit.

**Foot brackets MS1**



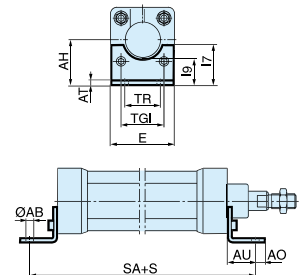
Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

**Material:**

Foot bracket: Surface treated steel

Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.



| Cyl. bore mm | AB mm | TG1 mm | E mm | TR mm | AO mm | AU mm | AH mm | I7 mm | AT mm | I9 mm | SA* mm | Weight Kg | Order code      |
|--------------|-------|--------|------|-------|-------|-------|-------|-------|-------|-------|--------|-----------|-----------------|
| 32           | 7     | 32,5   | 45   | 32    | 10    | 24    | 32    | 30    | 4,5   | 17,0  | 142    | 0,06      | <b>P1C-4KMF</b> |
| 40           | 9     | 38,0   | 52   | 36    | 8     | 28    | 36    | 30    | 4,5   | 18,5  | 161    | 0,08      | <b>P1C-4LMF</b> |
| 50           | 9     | 46,5   | 65   | 45    | 13    | 32    | 45    | 36    | 5,5   | 25,0  | 170    | 0,16      | <b>P1C-4MMF</b> |
| 63           | 9     | 56,5   | 75   | 50    | 13    | 32    | 50    | 35    | 5,5   | 27,5  | 185    | 0,25      | <b>P1C-4NMF</b> |
| 80           | 12    | 72,0   | 95   | 63    | 14    | 41    | 63    | 49    | 6,5   | 40,5  | 210    | 0,50      | <b>P1C-4PMF</b> |
| 100          | 14    | 89,0   | 115  | 75    | 15    | 41    | 71    | 54    | 6,5   | 43,5  | 220    | 0,85      | <b>P1C-4QMF</b> |
| 125          | 16    | 110,0  | 140  | 90    | 22    | 45    | 90    | 71    | 8,0   | 60,0  | 250    | 1,48      | <b>P1C-4RMF</b> |

S = Stroke length \* Does not apply to cylinders with lock unit.

**Pivot bracket with rigid bearing AB7**

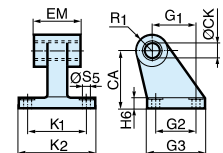


Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

**Materials**

Pivot bracket: Surface-treated aluminium, black

Bearing: Sintered oil-bronze bushing



| Cyl. bore mm | CK mm | S5 mm | K1 mm | K2 mm | G1 mm | G2 mm | EM mm | G3 mm | CA mm | H6 mm | R1 mm | Weight Kg | Order code      |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-----------------|
| 32           | 10    | 6,6   | 38    | 51    | 21    | 18    | 25,5  | 31    | 32    | 8     | 10,0  | 0,06      | <b>P1C-4KMD</b> |
| 40           | 12    | 6,6   | 41    | 54    | 24    | 22    | 27,0  | 35    | 36    | 10    | 11,0  | 0,08      | <b>P1C-4LMD</b> |
| 50           | 12    | 9,0   | 50    | 65    | 33    | 30    | 31,0  | 45    | 45    | 12    | 13,0  | 0,15      | <b>P1C-4MMD</b> |
| 63           | 16    | 9,0   | 52    | 67    | 37    | 35    | 39,0  | 50    | 50    | 12    | 15,0  | 0,20      | <b>P1C-4NMD</b> |
| 80           | 16    | 11,0  | 66    | 86    | 47    | 40    | 49,0  | 60    | 63    | 14    | 15,0  | 0,33      | <b>P1C-4PMD</b> |
| 100          | 20    | 11,0  | 76    | 96    | 55    | 50    | 59,0  | 70    | 71    | 15    | 19,0  | 0,49      | <b>P1C-4QMD</b> |
| 125          | 25    | 14,0  | 94    | 124   | 70    | 60    | 69,0  | 90    | 90    | 20    | 22,5  | 1,02      | <b>P1C-4RMD</b> |

**Cylinder mountings**

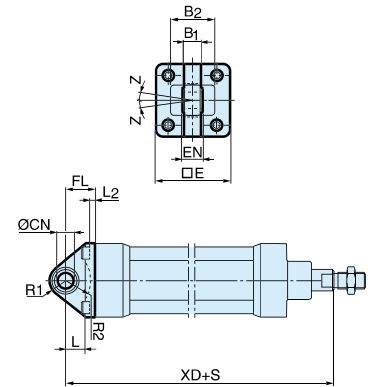
**Swivel eye bracket MP6**

Intended for use together with clevis bracket GA



Material  
 Bracket: Surface-treated aluminium, black  
 Swivel bearing acc. to DIN 648K: Hardened steel

Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore<br>mm | E<br>mm | B1<br>mm | B2<br>mm | EN<br>mm | R1<br>mm | R2<br>mm | FL<br>mm | I2<br>mm | L<br>mm | CN<br>H7<br>mm | XD*<br>mm | Z<br>mm | Weight<br>Kg | Order code       |
|-----------------|---------|----------|----------|----------|----------|----------|----------|----------|---------|----------------|-----------|---------|--------------|------------------|
| 32              | 45      | 10,5     | -        | 14       | 16       | -        | 22       | 5,5      | 12      | 10             | 142       | 4°      | 0,08         | <b>P1C-4KMSA</b> |
| 40              | 52      | 12,0     | -        | 16       | 18       | -        | 25       | 5,5      | 15      | 12             | 160       | 4°      | 0,11         | <b>P1C-4LMSA</b> |
| 50              | 65      | 15,0     | 51       | 21       | 21       | 19       | 27       | 6,5      | 15      | 16             | 170       | 4°      | 0,20         | <b>P1C-4MMSA</b> |
| 63              | 75      | 15,0     | -        | 21       | 23       | -        | 32       | 6,5      | 20      | 16             | 190       | 4°      | 0,27         | <b>P1C-4NMSA</b> |
| 80              | 95      | 18,0     | -        | 25       | 29       | -        | 36       | 10,0     | 20      | 20             | 210       | 4°      | 0,52         | <b>P1C-4PMSA</b> |
| 100             | 115     | 18,0     | -        | 25       | 31       | -        | 41       | 10,0     | 25      | 20             | 230       | 4°      | 0,72         | <b>P1C-4QMSA</b> |
| 125             | 140     | 25,0     | -        | 37       | 40       | -        | 50       | 10,0     | 30      | 30             | 275       | 4°      | 1,53         | <b>P1C-4RMSA</b> |

S = Stroke length \* Does not apply to cylinders with lock unit.

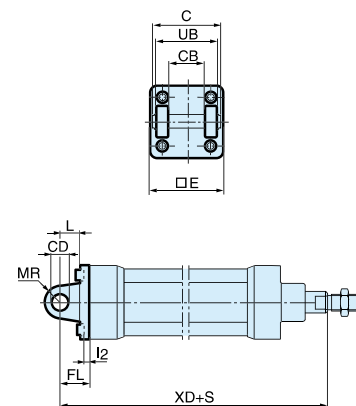
**Clevis bracket MP2**

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.



Materials  
 Clevis bracket: Surface-treated aluminium, black  
 Pin: Surface hardened steel  
 Circlips according to DIN 471: Spring steel  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore<br>mm | C<br>mm | E<br>mm | UB<br>h14<br>mm | CB<br>H14<br>mm | FL<br>±0,2<br>mm | L<br>mm | I2<br>mm | CD<br>H9<br>mm | MR<br>mm | XD*<br>mm | Weight<br>Kg | Order code      |
|-----------------|---------|---------|-----------------|-----------------|------------------|---------|----------|----------------|----------|-----------|--------------|-----------------|
| 32              | 53      | 45      | 45              | 26              | 22               | 13      | 5,5      | 10             | 10       | 142       | 0,08         | <b>P1C-4KMT</b> |
| 40              | 60      | 52      | 52              | 28              | 25               | 16      | 5,5      | 12             | 12       | 160       | 0,11         | <b>P1C-4LMT</b> |
| 50              | 68      | 65      | 60              | 32              | 27               | 16      | 6,5      | 12             | 12       | 170       | 0,14         | <b>P1C-4MMT</b> |
| 63              | 78      | 75      | 70              | 40              | 32               | 21      | 6,5      | 16             | 16       | 190       | 0,29         | <b>P1C-4NMT</b> |
| 80              | 98      | 95      | 90              | 50              | 36               | 22      | 10,0     | 16             | 16       | 210       | 0,36         | <b>P1C-4PMT</b> |
| 100             | 118     | 115     | 110             | 60              | 41               | 27      | 10,0     | 20             | 20       | 230       | 0,64         | <b>P1C-4QMT</b> |
| 125             | 139     | 140     | 130             | 70              | 50               | 30      | 10,0     | 25             | 25       | 275       | 1,17         | <b>P1C-4RMT</b> |

S = Stroke length \* Does not apply to cylinders with lock unit

**Cylinder mountings**

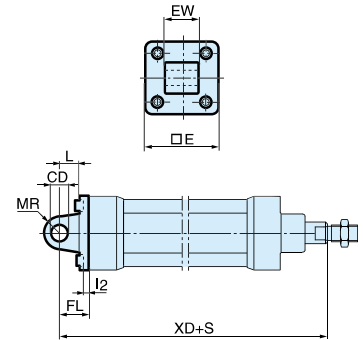
**Clevis bracket MP4**



Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

Materials  
 Clevis bracket: Surface-treated aluminium, black  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore mm | E mm | EW mm | FL mm | L mm    | I2 mm | CD mm | MR mm | XD* mm | Weight Kg | Order code      |
|--------------|------|-------|-------|---------|-------|-------|-------|--------|-----------|-----------------|
| 32           | 45   | 26    | 22    | 13 ±0,2 | 5,5   | 10    | 10    | 142    | 0,09      | <b>P1C-4KME</b> |
| 40           | 52   | 28    | 25    | 16 ±0,2 | 5,5   | 12    | 12    | 160    | 0,13      | <b>P1C-4LME</b> |
| 50           | 65   | 32    | 27    | 16 ±0,2 | 6,5   | 12    | 12    | 170    | 0,17      | <b>P1C-4MME</b> |
| 63           | 75   | 40    | 32    | 21 ±0,2 | 6,5   | 16    | 16    | 190    | 0,36      | <b>P1C-4NME</b> |
| 80           | 95   | 50    | 36    | 22 ±0,2 | 10,0  | 16    | 16    | 210    | 0,46      | <b>P1C-4PME</b> |
| 100          | 115  | 60    | 41    | 27 ±0,2 | 10,0  | 20    | 20    | 230    | 0,83      | <b>P1C-4QME</b> |
| 125          | 140  | 70    | 50    | 30 ±0,2 | 10,0  | 25    | 25    | 275    | 1,53      | <b>P1C-4RME</b> |

S = Stroke length \* Does not apply to cylinders with lock unit.

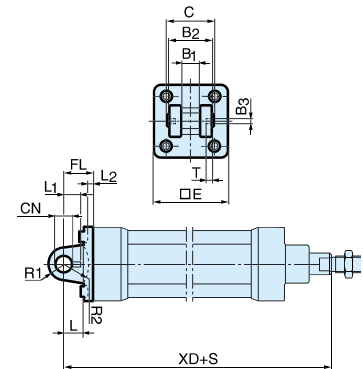
**Clevis bracket AB6**



Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

Materials  
 Clevis bracket: Surface-treated aluminium  
 Pin: Surface hardened steel  
 Locking pin: Spring steel  
 Circlips according to DIN 471: Spring steel  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore mm | C mm | E mm | B2 mm | B1 mm | T mm | B3 mm | R2 mm | L1 mm | FL mm   | I2 mm | L mm | CN mm | R1 mm | XD* mm | Weight Kg | Order code       |
|--------------|------|------|-------|-------|------|-------|-------|-------|---------|-------|------|-------|-------|--------|-----------|------------------|
| 32           | 41   | 45   | 34    | 14    | 3    | 3,3   | 17    | 11,5  | 22 ±0,2 | 5,5   | 12   | 10    | 11    | 142    | 0,09      | <b>P1C-4KMCA</b> |
| 40           | 48   | 52   | 40    | 16    | 4    | 4,3   | 20    | 12,0  | 25 ±0,2 | 5,5   | 15   | 12    | 13    | 160    | 0,13      | <b>P1C-4LMCA</b> |
| 50           | 54   | 65   | 45    | 21    | 4    | 4,3   | 22    | 14,0  | 27 ±0,2 | 6,5   | 17   | 16    | 18    | 170    | 0,17      | <b>P1C-4MMCA</b> |
| 63           | 60   | 75   | 51    | 21    | 4    | 4,3   | 25    | 14,0  | 32 ±0,2 | 6,5   | 20   | 16    | 18    | 190    | 0,36      | <b>P1C-4NMCA</b> |
| 80           | 75   | 95   | 65    | 25    | 4    | 4,3   | 30    | 16,0  | 36 ±0,2 | 10,0  | 20   | 20    | 22    | 210    | 0,58      | <b>P1C-4PMCA</b> |
| 100          | 85   | 115  | 75    | 25    | 4    | 4,3   | 32    | 16,0  | 41 ±0,2 | 10,0  | 25   | 20    | 22    | 230    | 0,89      | <b>P1C-4QMCA</b> |
| 125          | 110  | 140  | 97    | 37    | 6    | 6,3   | 42    | 24,0  | 50 ±0,2 | 10,0  | 30   | 30    | 30    | 275    | 1,75      | <b>P1C-4RMCA</b> |

S = Stroke length \* Does not apply to cylinders with lock unit.

**Stainless steel Pin Set AB6**

| Cyl. bore mm | Weight Kg | Order code        |
|--------------|-----------|-------------------|
| 32           | 0,05      | <b>9301054311</b> |
| 40           | 0,06      | <b>9301054312</b> |
| 50           | 0,07      | <b>9301054313</b> |
| 63           | 0,07      | <b>9301054314</b> |
| 80           | 0,17      | <b>9301054315</b> |
| 100          | 0,31      | <b>9301054316</b> |
| 125          | 0,54      | <b>9301054317</b> |

Materials  
 Pin: Stainless steel  
 Locking pin: Stainless steel  
 Circlips according to DIN 471: Stainless steel

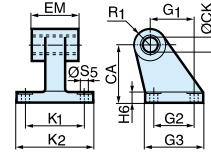
Cylinder mountings

Pivot bracket with swivel bearing CS7



Intended for use together with clevis bracket GA.

Material  
 Pivot bracket: Surface-treated steel, black  
 Swivel bearing acc. to DIN 648K: Hardened steel



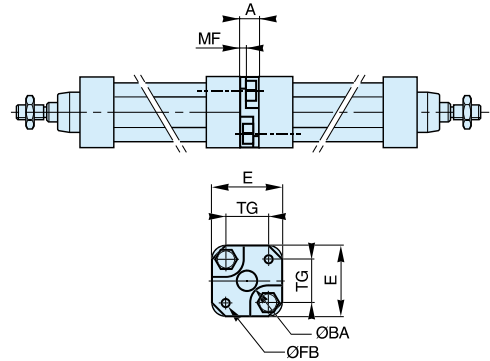
| Cyl. bore mm | CN H7 mm | S5 H13 mm | K1 JS14 mm | K2 mm | EU mm | G1 JS14 mm | G2 JS14 mm | EN mm | G3 mm | CH JS15 mm | H6 mm | ER mm | Z mm | Weight Kg | Order code      |
|--------------|----------|-----------|------------|-------|-------|------------|------------|-------|-------|------------|-------|-------|------|-----------|-----------------|
| 32           | 10       | 6,6       | 38         | 51    | 10,5  | 21         | 18         | 14    | 31    | 32         | 10    | 16    | 4°   | 0,18      | <b>P1C-4KMA</b> |
| 40           | 12       | 6,6       | 41         | 54    | 12,0  | 24         | 22         | 16    | 35    | 36         | 10    | 18    | 4°   | 0,25      | <b>P1C-4LMA</b> |
| 50           | 16       | 9,0       | 50         | 65    | 15,0  | 33         | 30         | 21    | 45    | 45         | 12    | 21    | 4°   | 0,47      | <b>P1C-4MMA</b> |
| 63           | 16       | 9,0       | 52         | 67    | 15,0  | 37         | 35         | 21    | 50    | 50         | 12    | 23    | 4°   | 0,57      | <b>P1C-4NMA</b> |
| 80           | 20       | 11,0      | 66         | 86    | 18,0  | 47         | 40         | 25    | 60    | 63         | 14    | 28    | 4°   | 1,05      | <b>P1C-4PMA</b> |
| 100          | 20       | 11,0      | 76         | 96    | 18,0  | 55         | 50         | 25    | 70    | 71         | 15    | 30    | 4°   | 1,42      | <b>P1C-4QMA</b> |
| 125          | 30       | 14,0      | 94         | 124   | 25,0  | 70         | 60         | 37    | 90    | 90         | 20    | 40    | 4°   | 3,10      | <b>P1C-4RMA</b> |

3 and 4 positions flange JP1



Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.

Material:  
 Mounting: Aluminium  
 Mounting screws: Zinc-plated steel 8.8



| Cyl. bore mm | E mm | TG mm | ØFB mm | MF mm | A mm | ØBA mm | Weight Kg | Order code      |
|--------------|------|-------|--------|-------|------|--------|-----------|-----------------|
| 32           | 50   | 32,5  | 6,5    | 5     | 16   | 30     | 0,060     | <b>P1E-6KB0</b> |
| 40           | 60   | 38,0  | 6,5    | 5     | 16   | 35     | 0,078     | <b>P1E-6LB0</b> |
| 50           | 66   | 46,5  | 8,5    | 6     | 20   | 40     | 0,162     | <b>P1E-6MB0</b> |
| 63           | 80   | 56,5  | 8,5    | 6     | 20   | 45     | 0,194     | <b>P1E-6NB0</b> |
| 80           | 100  | 72,0  | 10,5   | 8     | 25   | 45     | 0,450     | <b>P1E-6PB0</b> |
| 100          | 118  | 89,0  | 10,5   | 8     | 25   | 55     | 0,672     | <b>P1E-6QB0</b> |

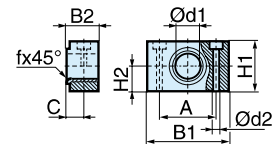
Pivot brackets AT4 for MT\*



Intended for use together with trunnion MT4, MT5 and MT6.

Material  
 Pivot bracket: Surface-treated aluminium  
 Bearing acc. to DIN 1850 C: Sintered oil-bronze bushing

Supplied in pairs.



| Cyl. bore mm | B1 mm | B2 mm | A mm | C mm | d1 mm | d2 H13 mm | H1 mm | H2 mm | fx45° min mm | Weight Kg | Order code        |
|--------------|-------|-------|------|------|-------|-----------|-------|-------|--------------|-----------|-------------------|
| 32           | 46    | 18,0  | 32   | 10,5 | 12    | 6,6       | 30    | 15    | 1,0          | 0,04*     | <b>9301054261</b> |
| 40           | 55    | 21,0  | 36   | 12,0 | 16    | 9,0       | 36    | 18    | 1,6          | 0,07*     | <b>9301054262</b> |
| 50           | 55    | 21,0  | 36   | 12,0 | 16    | 9,0       | 36    | 18    | 1,6          | 0,07*     | <b>9301054262</b> |
| 63           | 65    | 23,0  | 42   | 13,0 | 20    | 11,0      | 40    | 20    | 1,6          | 0,12*     | <b>9301054264</b> |
| 80           | 65    | 23,0  | 42   | 13,0 | 20    | 11,0      | 40    | 20    | 1,6          | 0,12*     | <b>9301054264</b> |
| 100          | 75    | 28,5  | 50   | 16,0 | 25    | 14,0      | 50    | 25    | 2,0          | 0,21*     | <b>9301054266</b> |
| 125          | 75    | 28,5  | 50   | 16,0 | 25    | 14,0      | 50    | 25    | 2,0          | 0,21*     | <b>9301054266</b> |

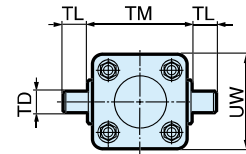


Cylinder mountings

Intermediate trunnion MT4 for P1D-S



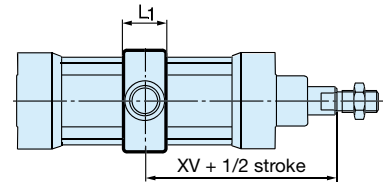
Intended for articulated mounting of cylinder. This mounting is available for P1D-S and P1D-T.  
The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure – Combined with pivot brackets AT4.  
Material:  
Trunnion: zinc plated steel



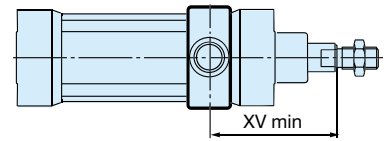
Intermediate trunnion MT4 for P1D-T



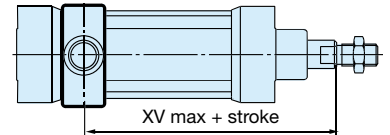
**Trunnion centred**  
The central trunnion for the P1D-S and P1D-T is ordered with letter D in position 17 and NNN in positions 18-20.



**Trunnion with optional location**  
The trunnion for the P1D-S and P1D-T is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20.



**Free trunnion**  
P1D-S can also be ordered with the trunnion loosely fitted to the cylinder (not fixed in position). This allows the position to be established at the time of installation.  
Ordered with letter G in position 17 and 000 in positions 18-20.



| Cyl. bore mm | L1           |          | TL     | TM     | Ø TD  | UW           | XV min   |          |          |          | XV       |          |          |          | XV max   |          |          |          |
|--------------|--------------|----------|--------|--------|-------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|              | P1D-S/L/H mm | P1D-T mm | h14 mm | h14 mm | e9 mm | P1D-S/L/H mm | P1D-S mm | P1D-T mm | P1D-L mm | P1D-H mm | P1D-S mm | P1D-T mm | P1D-L mm | P1D-H mm | P1D-S mm | P1D-T mm | P1D-L mm | P1D-H mm |
| 32           | 18           | 15       | 12     | 50     | 12    | 52           | 63,5     | 62,0     | 119,5    | 111,5    | 73,0     | 73,0     | 129,0    | 121,0    | 82,5     | 84,0     | 138,5    | 130,5    |
| 40           | 20           | 20       | 16     | 63     | 16    | 59           | 73,0     | 73,0     | 133,5    | 128,0    | 82,5     | 82,5     | 143,0    | 137,5    | 92,0     | 92,0     | 152,5    | 147,0    |
| 50           | 20           | 20       | 16     | 75     | 16    | 71           | 80,5     | 80,5     | 143,5    | 150,5    | 90,0     | 90,0     | 153,0    | 160,0    | 99,5     | 99,5     | 162,5    | 169,5    |
| 63           | 26           | 25       | 20     | 90     | 20    | 84           | 89,5     | 89,0     | 168,5    | 159,5    | 97,5     | 97,5     | 176,5    | 167,5    | 106,0    | 105,5    | 184,5    | 175,5    |
| 80           | 26           | 25       | 20     | 110    | 20    | 105          | 98,5     | 98,0     | 188,5    | 188,5    | 110,0    | 110,0    | 200,0    | 200,0    | 122,0    | 121,5    | 211,5    | 211,5    |
| 100          | 32           | 30       | 25     | 132    | 25    | 129          | 111,5    | 110,5    | 223,5    | 203,5    | 120,0    | 120,0    | 232,0    | 212,0    | 129,5    | 128,5    | 240,5    | 220,5    |
| 125          | 33           | 32       | 25     | 180    | 25    | 159          | 132,5    | 132,0    | 250,0    | 254,5    | 145,0    | 145,0    | 262,5    | 267,0    | 158,0    | 157,5    | 275,0    | 279,5    |

**Important:** If the cylinder is ordered with a piston rod protusion (WH dimension), please add this extra length to XVmin, XV and XVmax.

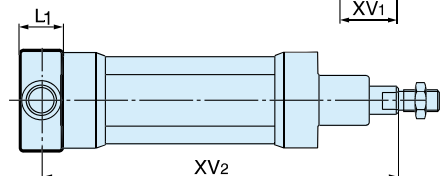
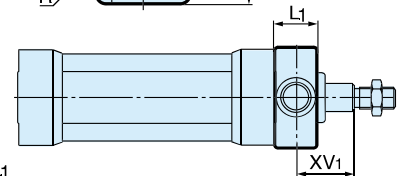
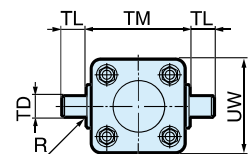
Flange mounted trunnion MT5/MT6



Intended for articulated mounting of cylinder. This trunnion can be flange mounted on the front or rear end cover of all P1D cylinders. At your choice, you can order a complete cylinder with factory-fitted flange mounted trunnion  
Individual trunnions have order code as shown below.

Material:  
Trunnion: zinc plated steel  
Screws: zinc plated steel, 8.8

Delivered complete with mounting screws for attachment to the cylinder



| Cyl. bore mm | TM h14 mm | TL h14 mm | TD e9 mm | R mm | UW mm | L1 mm | XV <sub>1</sub> * mm | X* mm | Y mm | Weight Kg | Order code       |
|--------------|-----------|-----------|----------|------|-------|-------|----------------------|-------|------|-----------|------------------|
| 32           | 50        | 12        | 12       | 1,0  | 46    | 14    | 19,5                 | 126,5 | 11   | 0,17      | <b>P1D-4KMYF</b> |
| 40           | 63        | 16        | 16       | 1,6  | 59    | 19    | 21,0                 | 144,0 | 14   | 0,43      | <b>P1D-4LMYF</b> |
| 50           | 75        | 16        | 16       | 1,6  | 69    | 19    | 28,0                 | 152,0 | 20   | 0,55      | <b>P1D-4MMYF</b> |
| 63           | 90        | 20        | 20       | 1,6  | 84    | 24    | 25,5                 | 169,5 | 20   | 1,10      | <b>P1D-4NMYF</b> |
| 80           | 110       | 20        | 20       | 1,6  | 102   | 24    | 34,5                 | 185,5 | 26   | 1,66      | <b>P1D-4PMYF</b> |
| 100          | 132       | 25        | 25       | 2,0  | 125   | 29    | 37,0                 | 203,0 | 31   | 3,00      | <b>P1D-4QMYF</b> |

XV<sub>2</sub> = X + Stroke length \* Does not apply to cylinders with lock unit.

To fit a flange mounted trunnion at the front end cover of a P1D cylinder with lock unit, the piston rod must be extended. This is to provide the same WH dimensions as for the P1D base cylinder with dimension Y.

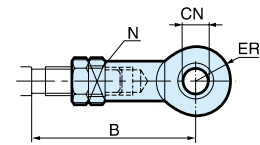
Piston rod mountings

Swivel rod eye AP6

Intended for articulated mounting of the cylinder.



Material:  
Swivel rod eye, nut: galvanized steel.  
Swivel bearing according to DIN 648K: Hardened steel.

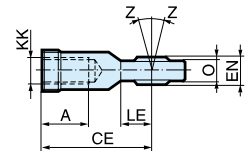


Stainless steel swivel rod eye AP6

Stainless-steel swivel rod eye for articulated mounting of eye cylinder.



Materials  
Swivel rod eye: Stainless steel  
Swivel bearing according to DIN 648K: Stainless steel  
Use stainless steel nut with stainless steel swivel rod eye.



| Cyl.-<br>dia.<br>mm | A<br>mm | B<br>min<br>mm | B<br>max<br>mm | CE<br>mm | CN<br>H9<br>mm | EN<br>h12<br>mm | ER<br>mm | KK<br>mm | LE<br>mm | N*<br>min<br>mm | O<br>mm | Z<br>mm | Weight<br>kg | Order code          | Order code         |
|---------------------|---------|----------------|----------------|----------|----------------|-----------------|----------|----------|----------|-----------------|---------|---------|--------------|---------------------|--------------------|
|                     |         |                |                |          |                |                 |          |          |          |                 |         |         |              | Galvanised<br>Steel | Stainless<br>Steel |
| 32                  | 20      | 48,0           | 55             | 43       | 10             | 14              | 14       | M10x1,25 | 15       | 17              | 10,5    | 12°     | 0,08         | <b>P1C-4KRS</b>     | <b>P1S-4JRT</b>    |
| 40                  | 22      | 56,0           | 62             | 50       | 12             | 16              | 16       | M12x1,25 | 17       | 19              | 12,0    | 12°     | 0,12         | <b>P1C-4LRS</b>     | <b>P1S-4LRT</b>    |
| 50                  | 28      | 72,0           | 80             | 64       | 16             | 21              | 21       | M16x1,5  | 22       | 22              | 15,0    | 15°     | 0,25         | <b>P1C-4MRS</b>     | <b>P1S-4MRT</b>    |
| 63                  | 28      | 72,0           | 80             | 64       | 16             | 21              | 21       | M16x1,5  | 22       | 22              | 15,0    | 15°     | 0,25         | <b>P1C-4MRS</b>     | <b>P1S-4MRT</b>    |
| 80                  | 33      | 87,0           | 97             | 77       | 20             | 25              | 25       | M20x1,5  | 26       | 32              | 18,0    | 15°     | 0,46         | <b>P1C-4PRS</b>     | <b>P1S-4PRT</b>    |
| 100                 | 33      | 87,0           | 97             | 77       | 20             | 25              | 25       | M20x1,5  | 26       | 32              | 18,0    | 15°     | 0,46         | <b>P1C-4PRS</b>     | <b>P1S-4PRT</b>    |
| 125                 | 51      | 123,5          | 137            | 110      | 30             | 37              | 35       | M27x2    | 36       | 41              | 25,0    | 15°     | 1,28         | <b>P1C-4RRS</b>     | <b>P1S-4RRT</b>    |

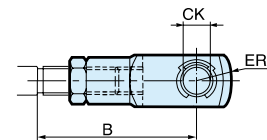
Clevis AP2

Intended for articulated mounting of the cylinder.



Material:  
Clevis and clip galvanized steel.  
Pin: Hardened steel

Supplied complete with axle.

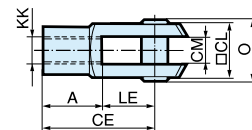


Stainless steel Clevis AP2

Stainless-steel clevis for articulated mounting of cylinder.



Material  
Clevis: Stainless steel  
Pin: Stainless steel  
Circlips according to DIN 471: Stainless steel  
Use stainless steel nut with stainless steel swivel rod eye.



| Cyl.-<br>dia.<br>mm | A<br>mm | B<br>min<br>mm | B<br>max<br>mm | CE<br>mm | CK<br>mm | CL<br>h11/E9<br>mm | CM<br>mm | ER<br>mm | KK<br>mm | LE<br>mm | O<br>mm | Weight<br>kg | Order code          | Order code         |
|---------------------|---------|----------------|----------------|----------|----------|--------------------|----------|----------|----------|----------|---------|--------------|---------------------|--------------------|
|                     |         |                |                |          |          |                    |          |          |          |          |         |              | Galvanised<br>Steel | Stainless<br>Steel |
| 32                  | 20      | 45,0           | 52             | 40       | 10       | 20                 | 10       | 16       | M10x1,25 | 20       | 28,0    | 0,09         | <b>P1C-4KRC</b>     | <b>P1S-4JRD</b>    |
| 40                  | 24      | 54,0           | 60             | 48       | 12       | 24                 | 12       | 19       | M12x1,25 | 24       | 32,0    | 0,15         | <b>P1C-4LRC</b>     | <b>P1S-4LRD</b>    |
| 50                  | 32      | 72,0           | 80             | 64       | 16       | 32                 | 16       | 25       | M16x1,5  | 32       | 41,5    | 0,35         | <b>P1C-4MRC</b>     | <b>P1S-4MRD</b>    |
| 63                  | 32      | 72,0           | 80             | 64       | 16       | 32                 | 16       | 25       | M16x1,5  | 32       | 41,5    | 0,35         | <b>P1C-4MRC</b>     | <b>P1S-4MRD</b>    |
| 80                  | 40      | 90,0           | 100            | 80       | 20       | 40                 | 20       | 32       | M20x1,5  | 40       | 50,0    | 0,75         | <b>P1C-4PRC</b>     | <b>P1S-4PRD</b>    |
| 100                 | 40      | 90,0           | 100            | 80       | 20       | 40                 | 20       | 32       | M20x1,5  | 40       | 50,0    | 0,75         | <b>P1C-4PRC</b>     | <b>P1S-4PRD</b>    |
| 125                 | 56      | 123,5          | 137            | 110      | 30       | 55                 | 30       | 45       | M27x2,0  | 54,0     | 72,0    | 2,10         | <b>P1C-4RRC</b>     | <b>P1S-4RRD</b>    |

Piston rod mountings

Flexo coupling PM5



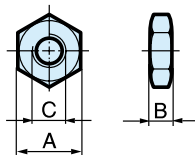
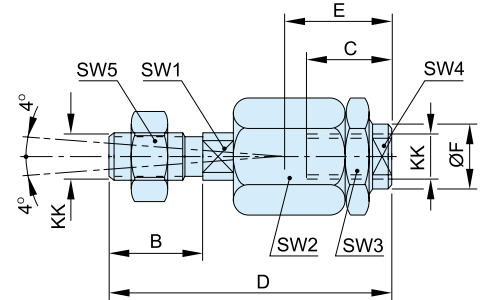
Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of ±4°.

Material  
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,23         | <b>P1C-4KRF</b> |
| 40                | 0,23         | <b>P1C-4LRF</b> |
| 50                | 0,65         | <b>P1C-4MRF</b> |
| 63                | 0,65         | <b>P1C-4MRF</b> |
| 80                | 0,71         | <b>P1C-4PRF</b> |
| 100               | 0,71         | <b>P1C-4PRF</b> |
| 125               | 1,60         | <b>P1C-4RRF</b> |

| Cyl. bore<br>mm | KK<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | ØF<br>mm | SW1<br>mm | SW2<br>mm | SW3<br>mm | SW4<br>mm | SW5<br>mm |
|-----------------|----------|---------|---------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|
| 32              | M10x1.25 | 20      | 23      | 73      | 31      | 21       | 12        | 30        | 30        | 19        | 17        |
| 40              | M12x1.25 | 24      | 23      | 77      | 31      | 21       | 12        | 30        | 30        | 19        | 19        |
| 50              | M16x1.5  | 32      | 32      | 108     | 45      | 33.5     | 19        | 41        | 41        | 30        | 24        |
| 63              | M16x1.5  | 32      | 32      | 108     | 45      | 33.5     | 19        | 41        | 41        | 30        | 24        |
| 80              | M20x1.5  | 40      | 42      | 122     | 56      | 33.5     | 19        | 41        | 41        | 30        | 30        |
| 100             | M20x1.5  | 40      | 42      | 122     | 56      | 33.5     | 19        | 41        | 41        | 30        | 30        |
| 125             | M27x2    | 54      | 48      | 147     | 51      | 39       | 24        | 55        | 55        | 32        | 41        |



Nut MR9



Intended for fixed mounting of accessories to the piston rod.  
Material: Zinc-plated steel

All P1D cylinders are delivered with a zinc-plated steel piston rod nut, except P1D Ultra Clean, which is delivered with a stainless steel piston rod nut instead.

Stainless steel nut MR9



Intended for fixed mounting of accessories to the piston rod.

Material: Stainless steel A2

All P1D cylinders are delivered with a zinc-plated steel piston rod nut, except P1D Ultra Clean, which is delivered with a stainless steel piston rod nut instead.

Acid-proof nut MR9



Intended for fixed mounting of accessories to the piston rod.

Material: Acid-proof steel A4

Cylinders with acid-proof piston rod are supplied with nut of acid-proof steel

| Cyl. bore<br>mm | A<br>mm | B<br>mm | C        | Weight<br>Kg | Order code       |
|-----------------|---------|---------|----------|--------------|------------------|
| 32              | 17      | 5,0     | M10x1,25 | 0,007        | <b>P14-4KRPZ</b> |
| 40              | 19      | 6,0     | M12x1,25 | 0,010        | <b>P14-4LRPZ</b> |
| 50              | 24      | 8,0     | M16x1,5  | 0,021        | <b>P14-4MRPZ</b> |
| 63              | 24      | 8,0     | M16x1,5  | 0,021        | <b>P14-4MRPZ</b> |
| 80              | 30      | 10,0    | M20x1,5  | 0,040        | <b>P14-4PRPZ</b> |
| 100             | 30      | 10,0    | M20x1,5  | 0,040        | <b>P14-4PRPZ</b> |
| 125             | 30      | 10,0    | M27x2    | 0,100        | <b>P14-4RRPZ</b> |
| 32              | 17      | 5,0     | M10x1,25 | 0,007        | <b>P14-4KRPS</b> |
| 40              | 19      | 6,0     | M12x1,25 | 0,010        | <b>P14-4LRPS</b> |
| 50              | 24      | 8,0     | M16x1,5  | 0,021        | <b>P14-4MRPS</b> |
| 63              | 24      | 8,0     | M16x1,5  | 0,021        | <b>P14-4MRPS</b> |
| 80              | 30      | 10,0    | M20x1,5  | 0,040        | <b>P14-4PRPS</b> |
| 100             | 30      | 10,0    | M20x1,5  | 0,040        | <b>P14-4PRPS</b> |
| 125             | 30      | 10,0    | M27x2    | 0,100        | <b>P14-4RRPS</b> |
| 32              | 17      | 5,0     | M10x1,25 | 0,007        | <b>P14-4KRPX</b> |
| 40              | 19      | 6,0     | M12x1,25 | 0,010        | <b>P14-4LRPX</b> |
| 50              | 24      | 8,0     | M16x1,5  | 0,021        | <b>P14-4MRPX</b> |
| 63              | 24      | 8,0     | M16x1,5  | 0,021        | <b>P14-4MRPX</b> |
| 80              | 30      | 10,0    | M20x1,5  | 0,040        | <b>P14-4PRPX</b> |
| 100             | 30      | 10,0    | M20x1,5  | 0,040        | <b>P14-4PRPX</b> |
| 125             | 30      | 10,0    | M27x2    | 0,100        | <b>P14-4RRPX</b> |

Supplied as pack of 10 off, Weight per item

Sealing plugs



Set of 4 threaded plugs to be fitted in unused end cover screws. A rubber gasket is supplied with every plug. The seal off function is equal to IP67. The plugs can be used for all P1D cylinders to avoid collecting dirt and fluids in the end cover screw recesses.

Material:  
Plug Polyamid PA  
Gasket Nitrile rubber

Supplied as pack of 4 off, Weight per item

| Cyl. | Weight Kg | Order code       |
|------|-----------|------------------|
| 32   | 0,01      | <b>460104801</b> |
| 40   | 0,01      | <b>460104801</b> |
| 50   | 0,02      | <b>460104802</b> |
| 63   | 0,02      | <b>460104802</b> |
| 80   | 0,02      | <b>460104803</b> |
| 100  | 0,02      | <b>460104803</b> |
| 125  | 0,03      | <b>460104804</b> |

|       | Flange MF1/MF2 <sup>1</sup> | Foot brackets MS1 <sup>2</sup> | Pivot bracket with rigid bearing AB7 <sup>3</sup> | Swivel eye <sup>4</sup><br>bracket MP6 | Clevis bracket MP2 <sup>5</sup> |
|-------|-----------------------------|--------------------------------|---|--|---------------------------------|
| Ø 32  | P1C-4KMB                    | P1C-4KMF                       | P1C-4KMD  | P1C-4KMSA                              | P1C-4KMT                        |
| Ø 40  | P1C-4LMB                    | P1C-4LMF                       | P1C-4LMD  | P1C-4LMSA                              | P1C-4LMT                        |
| Ø 50  | P1C-4MMB                    | P1C-4MMF                       | P1C-4MMD  | P1C-4MMSA                              | P1C-4MMT                        |
| Ø 63  | P1C-4NMB                    | P1C-4NMF                       | P1C-4NMD  | P1C-4NMSA                              | P1C-4NMT                        |
| Ø 80  | P1C-4PMB                    | P1C-4PMF                       | P1C-4PMD  | P1C-4PMSA                              | P1C-4PMT                        |
| Ø 100 | P1C-4QMB                    | P1C-4QMF                       | P1C-4QMD  | P1C-4QMSA                              | P1C-4QMT                        |
| Ø 125 | P1C-4RMB                    | P1C-4RMF                       | P1C-4RMD  | P1C-4RMSA                              | P1C-4RMT                        |

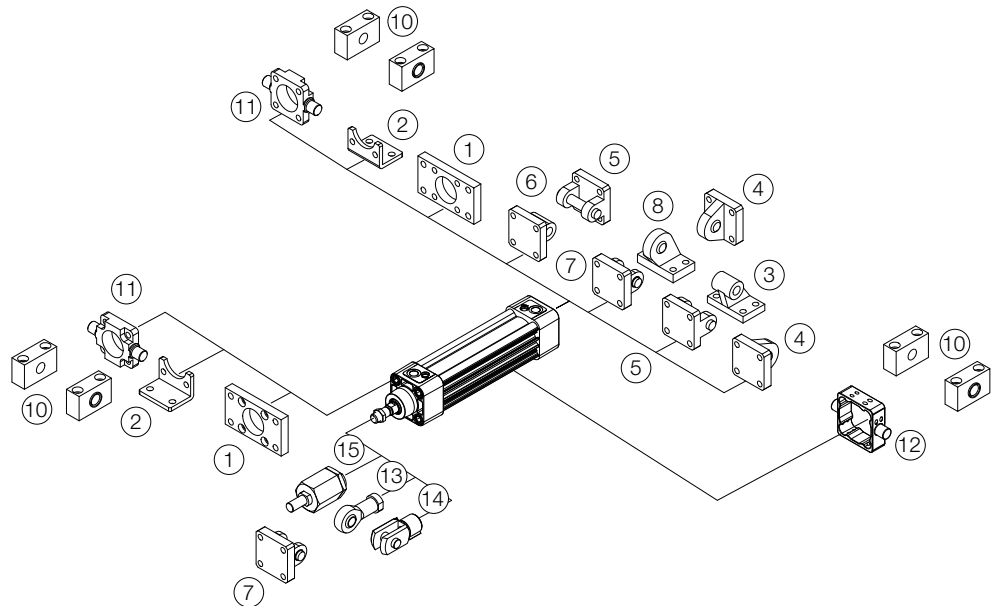
|       | Clevis bracket MP4 <sup>6</sup> | Clevis bracket AB6 <sup>7</sup> | Pivot bracket with swivel bearing CS7 <sup>8</sup> | 3 and 4 positions flange JP1 | Pivot brackets AT4 <sup>10</sup><br>for MT* trunnion |
|-------|---------------------------------|---------------------------------|--|------------------------------|--|
| Ø 32  | P1C-4KME                        | P1C-4KMCA                       | P1C-4KMA   | P1E-6KB0                     | 9301054261   |
| Ø 40  | P1C-4LME                        | P1C-4LMCA                       | P1C-4LMA   | P1E-6LB0                     | 9301054262   |
| Ø 50  | P1C-4MME                        | P1C-4MMCA                       | P1C-4MMA   | P1E-6MB0                     | 9301054262   |
| Ø 63  | P1C-4NME                        | P1C-4NMCA                       | P1C-4NMA   | P1E-6NB0                     | 9301054264   |
| Ø 80  | P1C-4PME                        | P1C-4PMCA                       | P1C-4PMA   | P1E-6PB0                     | 9301054264   |
| Ø 100 | P1C-4QME                        | P1C-4QMCA                       | P1C-4QMA   | P1E-6QB0                     | 9301054266   |
| Ø 125 | P1C-4RME                        | P1C-4RMCA                       | P1C-4RMA   |                              | 9301054266   |

|       | Flange trunnion <sup>11</sup><br>MT5/MT6 | Trunnion MT4 <sup>12</sup> | Swivel rod eye AP6 <sup>13</sup> | Clevis AP2 <sup>14</sup> | Flexo coupling PM5 <sup>15</sup> |
|-------|--|----------------------------|----------------------------------|--------------------------|----------------------------------|
| Ø 32  | P1D-4KMYF                                | Factory fitted             | P1C-4KRS                         | P1C-4KRC                 | P1C-4KRF                         |
| Ø 40  | P1D-4LMYF                                | Factory fitted             | P1C-4LRS                         | P1C-4LRC                 | P1C-4LRF                         |
| Ø 50  | P1D-4MMYF                                | Factory fitted             | P1C-4MRS                         | P1C-4MRC                 | P1C-4MRF                         |
| Ø 63  | P1D-4NMYF                                | Factory fitted             | P1C-4NRS                         | P1C-4NRC                 | P1C-4NRF                         |
| Ø 80  | P1D-4PMYF                                | Factory fitted             | P1C-4PRS                         | P1C-4PRC                 | P1C-4PRF                         |
| Ø 100 | P1D-4QMYF                                | Factory fitted             | P1C-4PRS                         | P1C-4PRC                 | P1C-4PRF                         |
| Ø 125 |  | Factory fitted             | P1C-4RRS                         | P1C-4RRC                 | P1C-4RRF                         |

Zinc-plated steel nut MR9 (pack of 10)



|       |           |
|-------|-----------|
| Ø 32  | P14-4KRPZ |
| Ø 40  | P14-4LRPZ |
| Ø 50  | P14-4MRPZ |
| Ø 63  | P14-4MRPZ |
| Ø 80  | P14-4PRPZ |
| Ø 100 | P14-4PRPZ |
| Ø 125 | P14-4RRPZ |



# P1D-B Pneumatic Cylinders

According to ISO 15552



**P1D-B series.** This series features a profile design and is the basic ISO cylinder for simple applications where no special options are required. This series is suitable for general industrial applications

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

## P1D-B Basic Cylinders

The P1D-B series features a profile design and is the value line ISO cylinder for basic applications where no special options are required. This series is suitable for general industrial applications and is supported by a full range of ISO mountings.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease



### Operating information

Working pressure: Max 10 bar  
Standard Temperature: -20°C to +80°C

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## P1D-B Basic

### Ø32mm - (G<sup>1/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B032MS-0025 |
| 40        | P1D-B032MS-0040 |
| 50        | P1D-B032MS-0050 |
| 80        | P1D-B032MS-0080 |
| 100       | P1D-B032MS-0100 |
| 125       | P1D-B032MS-0125 |
| 160       | P1D-B032MS-0160 |
| 200       | P1D-B032MS-0200 |
| 250       | P1D-B032MS-0250 |
| 320       | P1D-B032MS-0320 |
| 400       | P1D-B032MS-0400 |
| 500       | P1D-B032MS-0500 |

### Ø63mm - (G<sup>3/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B063MS-0025 |
| 40        | P1D-B063MS-0040 |
| 50        | P1D-B063MS-0050 |
| 80        | P1D-B063MS-0080 |
| 100       | P1D-B063MS-0100 |
| 125       | P1D-B063MS-0125 |
| 160       | P1D-B063MS-0160 |
| 200       | P1D-B063MS-0200 |
| 250       | P1D-B063MS-0250 |
| 320       | P1D-B063MS-0320 |
| 400       | P1D-B063MS-0400 |
| 500       | P1D-B063MS-0500 |

### Ø100mm - (G<sup>1/2</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B100MS-0025 |
| 40        | P1D-B100MS-0040 |
| 50        | P1D-B100MS-0050 |
| 80        | P1D-B100MS-0080 |
| 100       | P1D-B100MS-0100 |
| 125       | P1D-B100MS-0125 |
| 160       | P1D-B100MS-0160 |
| 200       | P1D-B100MS-0200 |
| 250       | P1D-B100MS-0250 |
| 320       | P1D-B100MS-0320 |
| 400       | P1D-B100MS-0400 |
| 500       | P1D-B100MS-0500 |

### Ø40mm - (G<sup>1/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B040MS-0025 |
| 40        | P1D-B040MS-0040 |
| 50        | P1D-B040MS-0050 |
| 80        | P1D-B040MS-0080 |
| 100       | P1D-B040MS-0100 |
| 125       | P1D-B040MS-0125 |
| 160       | P1D-B040MS-0160 |
| 200       | P1D-B040MS-0200 |
| 250       | P1D-B040MS-0250 |
| 320       | P1D-B040MS-0320 |
| 400       | P1D-B040MS-0400 |
| 500       | P1D-B040MS-0500 |

### Ø80mm - (G<sup>3/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B080MS-0025 |
| 40        | P1D-B080MS-0040 |
| 50        | P1D-B080MS-0050 |
| 80        | P1D-B080MS-0080 |
| 100       | P1D-B080MS-0100 |
| 125       | P1D-B080MS-0125 |
| 160       | P1D-B080MS-0160 |
| 200       | P1D-B080MS-0200 |
| 250       | P1D-B080MS-0250 |
| 320       | P1D-B080MS-0320 |
| 400       | P1D-B080MS-0400 |
| 500       | P1D-B080MS-0500 |

### Ø125mm - (G<sup>1/2</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B125MS-0025 |
| 40        | P1D-B125MS-0040 |
| 50        | P1D-B125MS-0050 |
| 80        | P1D-B125MS-0080 |
| 100       | P1D-B125MS-0100 |
| 125       | P1D-B125MS-0125 |
| 160       | P1D-B125MS-0160 |
| 200       | P1D-B125MS-0200 |
| 250       | P1D-B125MS-0250 |
| 320       | P1D-B125MS-0320 |
| 400       | P1D-B125MS-0400 |
| 500       | P1D-B125MS-0500 |

### Ø50mm - (G<sup>1/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-B050MS-0025 |
| 40        | P1D-B050MS-0040 |
| 50        | P1D-B050MS-0050 |
| 80        | P1D-B050MS-0080 |
| 100       | P1D-B050MS-0100 |
| 125       | P1D-B050MS-0125 |
| 160       | P1D-B050MS-0160 |
| 200       | P1D-B050MS-0200 |
| 250       | P1D-B050MS-0250 |
| 320       | P1D-B050MS-0320 |
| 400       | P1D-B050MS-0400 |
| 500       | P1D-B050MS-0500 |

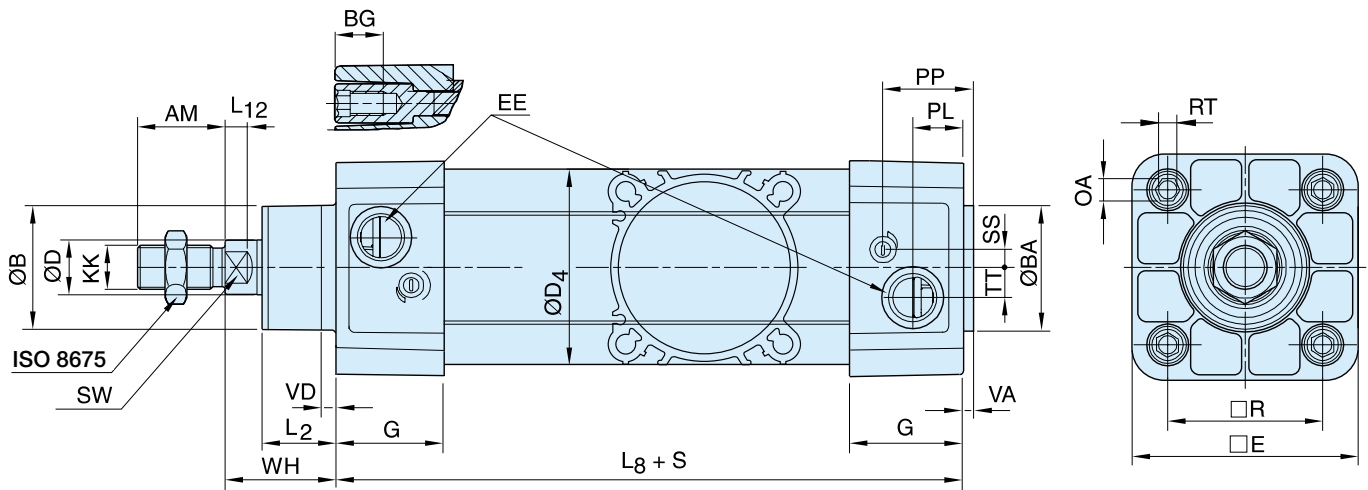
The cylinders are supplied complete with a zinc plated steel piston rod nut.

### Sensors



For sensors see page 77.

**P1D-B Series**



**Dimensions**

| Cylinder bore mm | AM mm | B mm | BA mm | BG mm | D mm | D4 mm | E mm  | EE mm | G mm | KK       | L2 mm | L8 mm | L12 mm |
|------------------|-------|------|-------|-------|------|-------|-------|-------|------|----------|-------|-------|--------|
| 32               | 22    | 30   | 30    | 16    | 12   | 45,0  | 48,0  | G1/8  | 28,5 | M10x1,25 | 16,8  | 94    | 6,0    |
| 40               | 24    | 35   | 35    | 16    | 16   | 52,0  | 53,5  | G1/4  | 33,0 | M12x1,25 | 19,0  | 105   | 6,5    |
| 50               | 32    | 40   | 40    | 16    | 20   | 60,7  | 65,2  | G1/4  | 33,5 | M16x1,5  | 24,0  | 106   | 8,0    |
| 63               | 32    | 45   | 45    | 16    | 20   | 71,5  | 75,5  | G3/8  | 39,5 | M16x1,5  | 24,3  | 121   | 8,0    |
| 80               | 40    | 45   | 45    | 17    | 25   | 86,7  | 95,0  | G3/8  | 39,5 | M20x1,5  | 30,0  | 128   | 10,0   |
| 100              | 40    | 55   | 55    | 17    | 25   | 106,7 | 114,0 | G1/2  | 44,5 | M20x1,5  | 34,0  | 138   | 14,0   |
| 125              | 54    | 60   | 60    | 20    | 32   | 134,0 | 139,0 | G1/2  | 51,0 | M27x2    | 45,0  | 160   | 18,0   |

| Cylinder bore mm | OA mm | PL mm | PP mm | R mm  | RT  | SS mm | SW mm | TT mm | VA mm | VD mm | WH mm |
|------------------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| 32               | 6,0   | 14,0  | 24,2  | 32,5  | M6  | 5,5   | 10    | 4,2   | 3,5   | 4,5   | 26    |
| 40               | 6,0   | 16,0  | 27,5  | 38,0  | M6  | 8,0   | 13    | 5,5   | 3,5   | 4,5   | 30    |
| 50               | 8,0   | 14,0  | 29,3  | 46,5  | M8  | 9,0   | 17    | 7,5   | 3,5   | 4,5   | 37    |
| 63               | 8,0   | 16,6  | 30,8  | 56,5  | M8  | 6,5   | 17    | 10,0  | 3,5   | 4,5   | 37    |
| 80               | 6,0   | 16,8  | 33,5  | 72,0  | M10 | 0     | 22    | 11,5  | 3,5   | 4,5   | 46    |
| 100              | 6,0   | 20,5  | 37,5  | 89,0  | M10 | 0     | 22    | 14,5  | 3,5   | 4,5   | 51    |
| 125              | 8,0   | 23,3  | 45,8  | 110,0 | M12 | 0     | 27    | 15,0  | 5,5   | 6,5   | 65    |

S=Stroke

**Tolerances**

| Cylinder bore mm | B   | BA  | L <sub>8</sub> mm | L <sub>9</sub> mm | R mm | Stroke tolerance up to stroke 500 mm | Stroke tolerance for stroke over 500 mm |
|------------------|-----|-----|-------------------|-------------------|------|--------------------------------------|---|
| 32               | d11 | d11 | ±0,4              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 40               | d11 | d11 | ±0,7              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 50               | d11 | d11 | ±0,7              | ±2                | ±0,6 | +0,3/+2,0                            | +0,3/+3,0                               |
| 63               | d11 | d11 | ±0,8              | ±2                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 80               | d11 | d11 | ±0,8              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 100              | d11 | d11 | ±1,0              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 125              | d11 | d11 | ±1,0              | ±3                | ±1,1 | +0,3/+2,0                            | +0,3/+3,0                               |

**Cylinder mountings**

**Flange MF1/MF2**



Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

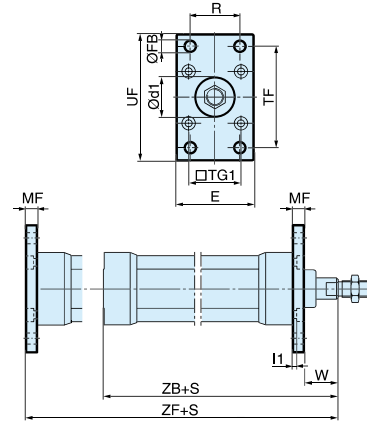
Materials  
Flange: Surface-treated steel  
Mounting screws acc. to DIN 6912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore mm | d1 mm | FB mm | TG1 mm | E mm | R mm | MF mm | TF mm | UF mm | I1 mm | W mm | ZF mm | ZB mm |
|--------------|-------|-------|--------|------|------|-------|-------|-------|-------|------|-------|-------|
|              | H11   | H13   |        |      | JS14 | JS14  | JS14  |       | -0,5  |      |       |       |
| 32           | 30    | 7     | 32,5   | 45   | 32   | 10    | 64    | 80    | 5,0   | 16   | 130   | 123,5 |
| 40           | 35    | 9     | 38,0   | 52   | 36   | 10    | 72    | 90    | 5,0   | 20   | 145   | 138,5 |
| 50           | 40    | 9     | 46,5   | 65   | 45   | 12    | 90    | 110   | 6,5   | 25   | 155   | 146,5 |
| 63           | 45    | 9     | 56,5   | 75   | 50   | 12    | 100   | 120   | 6,5   | 25   | 170   | 161,5 |
| 80           | 45    | 12    | 72,0   | 95   | 63   | 16    | 126   | 150   | 8,0   | 30   | 190   | 177,5 |
| 100          | 55    | 14    | 89,0   | 115  | 75   | 16    | 150   | 170   | 8,0   | 35   | 205   | 192,5 |
| 125          | 60    | 16    | 110,0  | 140  | 90   | 20    | 180   | 205   | 10,5  | 45   | 245   | 230,5 |

S = Stroke length

| Cyl. bore Ø mm | Weight kg | Order code      |
|----------------|-----------|-----------------|
| 32             | 0,23      | <b>P1C-4KMB</b> |
| 40             | 0,28      | <b>P1C-4LMB</b> |
| 50             | 0,53      | <b>P1C-4MMB</b> |
| 63             | 0,71      | <b>P1C-4NMB</b> |
| 80             | 1,59      | <b>P1C-4PMB</b> |
| 100            | 2,19      | <b>P1C-4QMB</b> |
| 125            | 3,78      | <b>P1C-4RMB</b> |



**Foot brackets MS1**



Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

Material:  
Foot bracket: Surface treated steel  
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

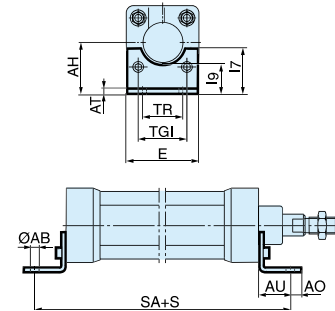
Supplied in pairs with mounting screws for attachment to cylinder.

| Cyl. bore mm | AB mm | TG1 mm | E mm | TR mm | AO mm | AU mm | AH mm | I7 mm | AT mm | I9 mm | SA mm |
|--------------|-------|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | H14   |        |      | JS14  |       |       | JS15  |       |       | JS14  |       |
| 32           | 7     | 32,5   | 47   | 32    | 8     | 24    | 32    | 30    | 4,5   | 17,0  | 142   |
| 40           | 9     | 38,0   | 53   | 36    | 10    | 28    | 36    | 30    | 4,5   | 18,5  | 161   |
| 50           | 9     | 46,5   | 65   | 45    | 10    | 32    | 45    | 36    | 5,5   | 25,0  | 170   |
| 63           | 9     | 56,5   | 75   | 50    | 10    | 32    | 50    | 35    | 5,5   | 27,5  | 185   |
| 80           | 12    | 72,0   | 95   | 63    | 14    | 41    | 63    | 49    | 6,5   | 40,5  | 210   |
| 100          | 14    | 89,0   | 115  | 75    | 15    | 41    | 71    | 54    | 6,5   | 43,5  | 220   |
| 125          | 16    | 110,0  | 140  | 90    | 20    | 45    | 90    | 71    | 8,0   | 60,0  | 250   |

S = Stroke length

| Cyl. bore Ø mm | Weight kg | Order code      |
|----------------|-----------|-----------------|
| 32             | 0,06**    | <b>P1C-4KMF</b> |
| 40             | 0,08**    | <b>P1C-4LMF</b> |
| 50             | 0,16**    | <b>P1C-4MMF</b> |
| 63             | 0,25**    | <b>P1C-4NMF</b> |
| 80             | 0,50**    | <b>P1C-4PMF</b> |
| 100            | 0,85**    | <b>P1C-4QMF</b> |
| 125            | 1,48**    | <b>P1C-4RMF</b> |

\*\* Weight per item



**Pivot bracket with rigid bearing AB7**

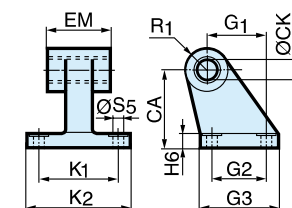


Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Material:  
Pivot bracket: Aluminium  
Bearing: Sintered oil-bronze bushing

| Cyl. bore mm | CK mm | S5 mm | K1 mm | K2 mm | G1 mm | G2 mm | EM mm | G3 mm | CA mm | H6 mm | R1 mm |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | H9    | H13   | JS14  |       | JS14  | JS14  |       |       | JS15  |       |       |
| 32           | 10    | 6,6   | 38    | 51    | 21    | 18    | 25,5  | 31    | 32    | 8     | 10,0  |
| 40           | 12    | 6,6   | 41    | 54    | 24    | 22    | 27,0  | 35    | 36    | 10    | 11,0  |
| 50           | 12    | 9,0   | 50    | 65    | 33    | 30    | 31,0  | 45    | 45    | 12    | 13,0  |
| 63           | 16    | 9,0   | 52    | 67    | 37    | 35    | 39,0  | 50    | 50    | 12    | 15,0  |
| 80           | 16    | 11,0  | 66    | 86    | 47    | 40    | 49,0  | 60    | 63    | 14    | 15,0  |
| 100          | 20    | 11,0  | 76    | 96    | 55    | 50    | 59,0  | 70    | 71    | 15    | 19,0  |
| 125          | 25    | 14,0  | 94    | 124   | 70    | 60    | 69,0  | 90    | 90    | 20    | 22,5  |

| Cyl. bore Ø mm | Weight kg | Order code       |
|----------------|-----------|------------------|
| 32             | 0,06      | <b>P1C-4KMDB</b> |
| 40             | 0,08      | <b>P1C-4LMDB</b> |
| 50             | 0,15      | <b>P1C-4MMDB</b> |
| 63             | 0,20      | <b>P1C-4NMDB</b> |
| 80             | 0,33      | <b>P1C-4PMDB</b> |
| 100            | 0,49      | <b>P1C-4QMDB</b> |
| 125            | 1,02      | <b>P1C-4RMDB</b> |





**Cylinder mountings**

**Swivel eye bracket MP6**

Intended for use together with clevis bracket GA

Material:  
Bracket: Aluminium  
Swivel bearing acc. to DIN 648K: Hardened steel

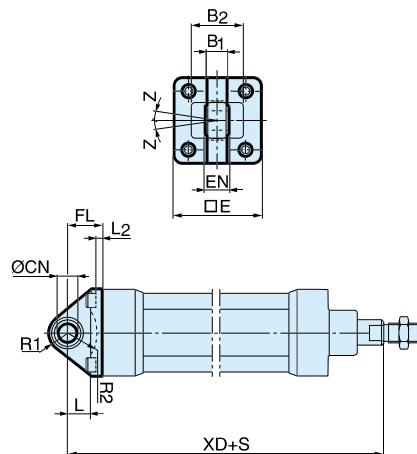
Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore<br>Ø mm | Weight<br>kg | Order code     |
|-------------------|--------------|----------------|
| 32                | 0,08         | <b>PD23843</b> |
| 40                | 0,11         | <b>PD23844</b> |
| 50                | 0,20         | <b>PD23845</b> |
| 63                | 0,27         | <b>PD23846</b> |
| 80                | 0,52         | <b>PD23847</b> |
| 100               | 0,72         | <b>PD23848</b> |
| 125               | 1,53         | <b>PD23849</b> |

| Cyl. bore<br>mm | E   | B1   | B2 | EN | R1 | R2 | FL | I2   | L  | CN<br>H7 | XD  | Z  |
|-----------------|-----|------|----|----|----|----|----|------|----|----------|-----|----|
| 32              | 47  | 10,5 | -  | 14 | 16 | 12 | 22 | 6,0  | 12 | 10       | 142 | 4° |
| 40              | 55  | 12,0 | -  | 16 | 21 | 14 | 25 | 6,0  | 15 | 12       | 160 | 4° |
| 50              | 65  | 12,0 | 51 | 16 | 23 | 16 | 27 | 7,0  | 15 | 12       | 170 | 4° |
| 63              | 78  | 15,0 | -  | 21 | 27 | 19 | 32 | 7,0  | 20 | 16       | 190 | 4° |
| 80              | 95  | 15,0 | -  | 21 | 29 | 21 | 36 | 10,0 | 20 | 16       | 210 | 4° |
| 100             | 115 | 18,0 | -  | 25 | 34 | 24 | 41 | 10,0 | 25 | 20       | 230 | 4° |
| 125             | 140 | 22,0 | -  | 31 | 40 | 30 | 50 | 10,5 | 30 | 25       | 275 | 4° |

S = Stroke length



**Clevis bracket MP2**

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

Material:  
Clevis bracket: Aluminium  
Pin: Surface hardened steel  
Circlips according to DIN 471: Spring steel  
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

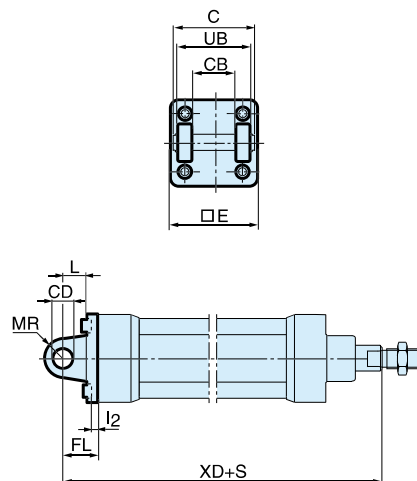
Supplied complete with mounting screws for attachment to cylinder.



| Cyl. bore<br>Ø mm | Weight<br>kg | Order code       |
|-------------------|--------------|------------------|
| 32                | 0,08         | <b>P1C-4KMTB</b> |
| 40                | 0,11         | <b>P1C-4LMTB</b> |
| 50                | 0,14         | <b>P1C-4MMTB</b> |
| 63                | 0,29         | <b>P1C-4NMTB</b> |
| 80                | 0,36         | <b>P1C-4PMTB</b> |
| 100               | 0,64         | <b>P1C-4QMTB</b> |
| 125               | 1,17         | <b>P1C-4RMTB</b> |

| Cyl. bore<br>mm | C   | E   | UB<br>h14 | CB<br>H14 | FL<br>±0,2 | L  | I2   | CD<br>H9 | MR | XD  |
|-----------------|-----|-----|-----------|-----------|------------|----|------|----------|----|-----|
| 32              | 53  | 47  | 45        | 26        | 22         | 13 | 6,0  | 10       | 10 | 142 |
| 40              | 60  | 55  | 52        | 28        | 25         | 16 | 6,0  | 12       | 12 | 160 |
| 50              | 68  | 65  | 60        | 32        | 27         | 16 | 7,0  | 12       | 12 | 170 |
| 63              | 78  | 78  | 70        | 40        | 32         | 21 | 7,0  | 16       | 16 | 190 |
| 80              | 98  | 95  | 90        | 50        | 36         | 22 | 10,0 | 16       | 16 | 210 |
| 100             | 118 | 115 | 110       | 60        | 41         | 27 | 10,5 | 20       | 20 | 230 |
| 125             | 139 | 140 | 130       | 70        | 50         | 30 | 10,5 | 25       | 25 | 275 |

S = Stroke length



Cylinder mountings

Clevis bracket MP4



Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

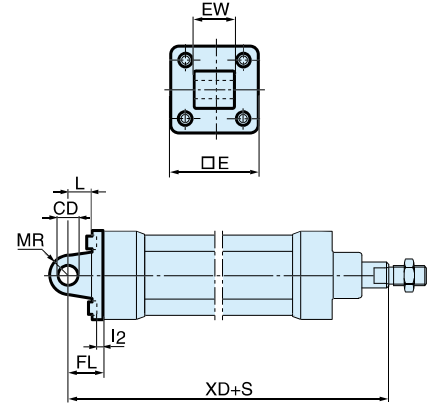
Material:  
 Clevis bracket: Aluminium  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code     |
|-------------------|--------------|----------------|
| 32                | 0,09         | <b>PD23412</b> |
| 40                | 0,13         | <b>PD23413</b> |
| 50                | 0,17         | <b>PD23414</b> |
| 63                | 0,36         | <b>PD23415</b> |
| 80                | 0,46         | <b>PD23416</b> |
| 100               | 0,83         | <b>PD23417</b> |
| 125               | 1,53         | <b>PD23418</b> |

| Cyl. bore<br>mm | E<br>mm | EW<br>mm | FL<br>mm | L<br>±0,2<br>mm | I2<br>mm | CD<br>mm | MR<br>H9<br>mm | XD<br>mm |
|-----------------|---------|----------|----------|-----------------|----------|----------|----------------|----------|
| 32              | 47      | 26       | 22       | 13              | 6,0      | 10       | 10             | 142      |
| 40              | 55      | 28       | 25       | 16              | 6,0      | 12       | 12             | 160      |
| 50              | 65      | 32       | 27       | 16              | 7,0      | 12       | 12             | 170      |
| 63              | 78      | 40       | 32       | 21              | 7,0      | 16       | 16             | 190      |
| 80              | 95      | 50       | 36       | 22              | 10,0     | 16       | 16             | 210      |
| 100             | 115     | 60       | 41       | 27              | 10,5     | 20       | 20             | 230      |
| 125             | 140     | 70       | 50       | 30              | 10,5     | 25       | 25             | 275      |

S = Stroke length



Clevis bracket AB6



Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

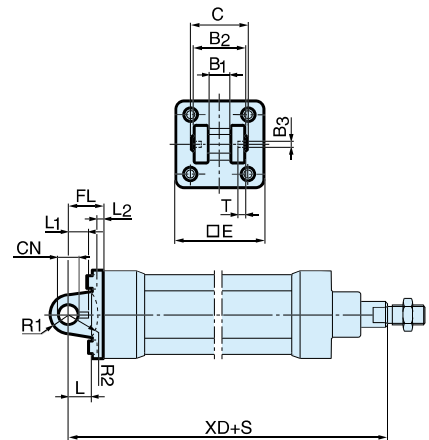
Material:  
 Clevis bracket: Surface-treated aluminium  
 Pin: Surface hardened steel  
 Locking pin: Spring steel  
 Circlips according to DIN 471: Spring steel  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code       |
|-------------------|--------------|------------------|
| 32                | 0,09         | <b>P1C-4KMCB</b> |
| 40                | 0,13         | <b>P1C-4LMCB</b> |
| 50                | 0,17         | <b>P1C-4MMCB</b> |
| 63                | 0,36         | <b>P1C-4NMCB</b> |
| 80                | 0,58         | <b>P1C-4PMCB</b> |
| 100               | 0,89         | <b>P1C-4QMCB</b> |
| 125               | 1,75         | <b>P1C-4RMCB</b> |

| Cyl. bore<br>mm | C<br>mm | E<br>mm | B2<br>d12<br>mm | B1<br>H14<br>mm | T<br>mm | B3<br>mm | R2<br>mm | L1<br>mm | FL<br>±0,2<br>mm | I2<br>mm | L<br>mm | CN<br>F7<br>mm | R1<br>mm | XD<br>mm |
|-----------------|---------|---------|-----------------|-----------------|---------|----------|----------|----------|------------------|----------|---------|----------------|----------|----------|
| 32              | 41      | 45      | 34              | 14              | 3       | 3,3      | 17       | 11,5     | 22               | 5,5      | 12      | 10             | 11       | 142      |
| 40              | 48      | 55      | 40              | 16              | 4       | 4,3      | 20       | 12,0     | 25               | 5,5      | 15      | 12             | 13       | 160      |
| 50              | 54      | 65      | 45              | 21              | 4       | 4,3      | 22       | 14,0     | 27               | 6,5      | 17      | 16             | 18       | 170      |
| 63              | 60      | 75      | 51              | 21              | 4       | 4,3      | 25       | 14,0     | 32               | 6,5      | 20      | 16             | 18       | 190      |
| 80              | 75      | 95      | 65              | 25              | 4       | 4,3      | 30       | 16,0     | 36               | 10,0     | 20      | 20             | 22       | 210      |
| 100             | 85      | 115     | 75              | 25              | 4       | 4,3      | 32       | 16,0     | 41               | 10,0     | 25      | 20             | 22       | 230      |
| 125             | 110     | 140     | 97              | 37              | 6       | 6,3      | 42       | 24,0     | 50               | 10,0     | 30      | 30             | 30       | 275      |

S = Stroke length



**Cylinder mountings**

**Pivot bracket with swivel bearing CS7**

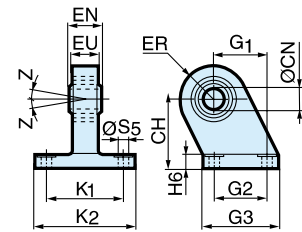


Intended for use together with clevis bracket GA.

Material:  
Pivot bracket: Surface-treated steel  
Swivel bearing acc. to DIN 648K: Hardened steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code    |
|-------------------|--------------|---------------|
| 32                | 0,18         | <b>KC5130</b> |
| 40                | 0,25         | <b>KC5131</b> |
| 50                | 0,47         | <b>KC5132</b> |
| 63                | 0,57         | <b>KC5133</b> |
| 80                | 1,05         | <b>KC5134</b> |
| 100               | 1,42         | <b>KC5135</b> |
| 125               | 3,10         | <b>KC5136</b> |

| Cyl. bore<br>mm | CN<br>H7<br>mm | S5<br>H13<br>mm | K1<br>JS14<br>mm | K2<br>mm | EU<br>mm | G1<br>JS14<br>mm | G2<br>JS14<br>mm | EN<br>mm | G3<br>mm | CH<br>JS15<br>mm | H6<br>mm | ER<br>mm | Z<br>mm |
|-----------------|----------------|-----------------|------------------|----------|----------|------------------|------------------|----------|----------|------------------|----------|----------|---------|
| 32              | 10             | 6,6             | 38               | 51       | 10,5     | 21               | 18               | 14       | 31       | 32               | 10       | 16       | 4°      |
| 40              | 12             | 6,6             | 41               | 54       | 12,0     | 24               | 22               | 16       | 35       | 36               | 10       | 18       | 4°      |
| 50              | 16             | 9,0             | 50               | 65       | 15,0     | 33               | 30               | 21       | 45       | 45               | 12       | 21       | 4°      |
| 63              | 16             | 9,0             | 52               | 67       | 15,0     | 37               | 35               | 21       | 50       | 50               | 12       | 23       | 4°      |
| 80              | 20             | 11,0            | 66               | 86       | 18,0     | 47               | 40               | 25       | 60       | 63               | 14       | 28       | 4°      |
| 100             | 20             | 11,0            | 76               | 96       | 18,0     | 55               | 50               | 25       | 70       | 71               | 15       | 30       | 4°      |
| 125             | 30             | 14,0            | 94               | 124      | 25,0     | 70               | 60               | 37       | 90       | 90               | 20       | 40       | 4°      |



**3 and 4 positions flange JP1**

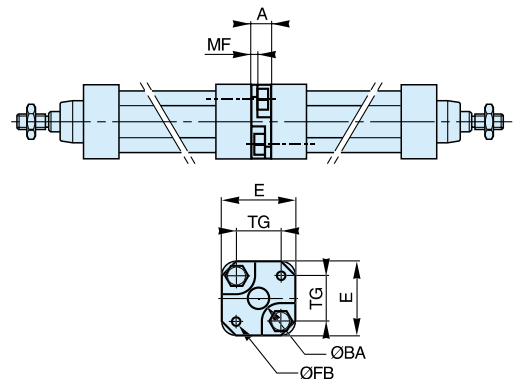
Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.



Material:  
Mounting: Aluminium  
Mounting screws: Zinc-plated steel 8.8

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,09         | <b>P1E-6KB0</b> |
| 40                | 0,13         | <b>P1E-6LB0</b> |
| 50                | 0,17         | <b>P1E-6MB0</b> |
| 63                | 0,36         | <b>P1E-6NB0</b> |
| 80                | 0,46         | <b>P1E-6PB0</b> |
| 100               | 0,83         | <b>P1E-6QB0</b> |

| Cyl. bore<br>mm | E<br>mm | TG<br>mm | ØFB<br>mm | MF<br>mm | A<br>mm | ØBA<br>mm |
|-----------------|---------|----------|-----------|----------|---------|-----------|
| 32              | 50      | 32,5     | 6,5       | 5        | 16      | 30        |
| 40              | 60      | 38,0     | 6,5       | 5        | 16      | 35        |
| 50              | 66      | 46,5     | 8,5       | 6        | 20      | 40        |
| 63              | 80      | 56,5     | 8,5       | 6        | 20      | 45        |
| 80              | 100     | 72,0     | 10,5      | 8        | 25      | 45        |
| 100             | 118     | 89,0     | 10,5      | 8        | 25      | 55        |



**Pivot brackets AT4 for MT\***

Intended for use together with trunnion MT4.

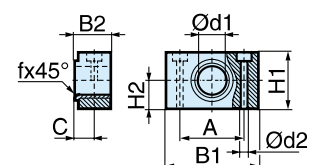


Material:  
Pivot bracket: Aluminium  
Bearing: Composite

Supplied in pairs.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code     |
|-------------------|--------------|----------------|
| 32                | 0,06         | <b>PD23381</b> |
| 40                | 0,06         | <b>PD23382</b> |
| 50                | 0,06         | <b>PD23382</b> |
| 63                | 0,10         | <b>PD23383</b> |
| 80                | 0,10         | <b>PD23383</b> |
| 100               | 0,175        | <b>PD23384</b> |
| 125               | 0,175        | <b>PD23384</b> |

| Cyl. bore<br>mm | B1<br>mm | B2<br>mm | A<br>mm | C<br>mm | d1<br>mm | d2<br>H13<br>mm | H1<br>mm | H2<br>mm | fx45°<br>min |
|-----------------|----------|----------|---------|---------|----------|-----------------|----------|----------|--------------|
| 32              | 55       | 20       | 36      | 10,5    | 12       | 8,4             | 26       | 13       | 1,0          |
| 40              | 55       | 20       | 36      | 12,0    | 16       | 8,4             | 26       | 13       | 1,6          |
| 50              | 55       | 20       | 36      | 12,0    | 16       | 8,4             | 26       | 13       | 1,6          |
| 63              | 65       | 25       | 42      | 13,0    | 20       | 10,5            | 30       | 15       | 1,6          |
| 80              | 65       | 25       | 42      | 13,0    | 20       | 10,5            | 30       | 15       | 1,6          |
| 100             | 75       | 28       | 50      | 16,0    | 25       | 13,0            | 40       | 20       | 2,0          |
| 125             | 75       | 28       | 50      | 16,0    | 25       | 13,0            | 40       | 20       | 2,0          |



Cylinder mountings

Intermediate trunnion MT4



Intended for articulated mounting of cylinder. The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure - Combined with pivot brackets AT4.

Material:  
Trunnion: Zinc plated steel

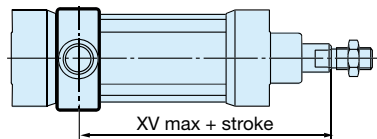
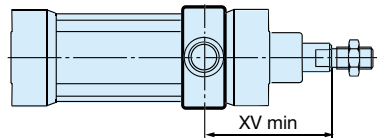
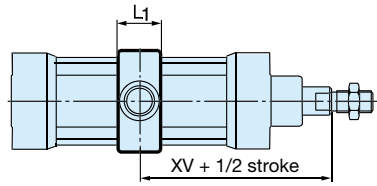
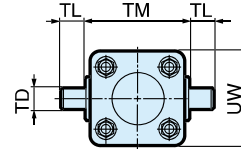
Trunnion centred

The central trunnion for the P1D-B is ordered with letter D in position 17 (no dimension specified in positions 18-20). e.g. P1D-B100MS-0500NDNNN

Trunnion with optional location

The trunnion for the P1D-B is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20. e.g. P1D-B100MS-0500NG300

| Cyl. bore<br>Ø mm | Weight<br>kg |
|-------------------|--------------|
| 32                | 0,13         |
| 40                | 0,31         |
| 50                | 0,37         |
| 63                | 0,69         |
| 80                | 0,89         |
| 100               | 1,58         |
| 125               | 2,60         |



| Cyl. bore<br>mm | L1          | TL        | TM        | Ø TD     | UW          | XV min      | XV          | XV max      |
|-----------------|-------------|-----------|-----------|----------|-------------|-------------|-------------|-------------|
|                 | P1D-B<br>mm | h14<br>mm | h14<br>mm | e9<br>mm | P1D-B<br>mm | P1D-B<br>mm | P1D-B<br>mm | P1D-B<br>mm |
| 32              | 18          | 12        | 50        | 12       | 52          | 63,5        | 73,0        | 82,5        |
| 40              | 20          | 16        | 63        | 16       | 59          | 73,0        | 82,5        | 92,0        |
| 50              | 20          | 16        | 75        | 16       | 71          | 80,5        | 90,0        | 99,5        |
| 63              | 26          | 20        | 90        | 20       | 84          | 89,5        | 97,5        | 105,5       |
| 80              | 26          | 20        | 110       | 20       | 105         | 98,5        | 110,0       | 121,5       |
| 100             | 32          | 25        | 132       | 25       | 129         | 111,5       | 120,0       | 128,5       |
| 125             | 33          | 25        | 180       | 25       | 159         | 132,5       | 145,0       | 157,5       |

**Important:** If the cylinder is ordered with a piston rod protusion (WH dimension), please add this extra length to XVmin, XV and XVmax.

Flange mounted trunnion MT5/MT6

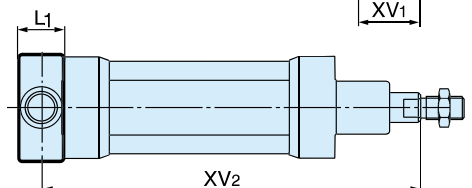
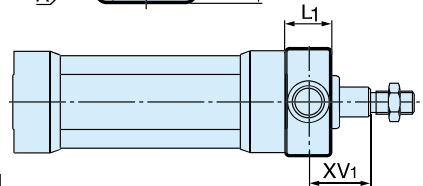
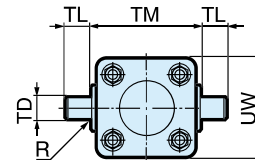


Intended for articulated mounting of cylinder. This trunnion can be flange mounted on the front or rear end cover of all P1D cylinders. Individual trunnions have order code as shown to the right.

Material:  
Trunnion: zinc plated steel  
Screws: zinc plated steel, 8.8

Delivered complete with mounting screws for attachment to the cylinder

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code       |
|-------------------|--------------|------------------|
| 32                | 0,17         | <b>P1D-4KMYF</b> |
| 40                | 0,43         | <b>P1D-4LMYF</b> |
| 50                | 0,55         | <b>P1D-4MMYF</b> |
| 63                | 1,10         | <b>P1D-4NMYF</b> |
| 80                | 1,66         | <b>P1D-4PMYF</b> |
| 100               | 3,00         | <b>P1D-4QMYF</b> |



| Cyl. bore<br>mm | TM<br>h14<br>mm | TL<br>h14<br>mm | TD<br>e9<br>mm | R<br>mm | UW<br>mm | L1<br>mm | XV <sub>1</sub><br>mm | X<br>mm | Y<br>mm |
|-----------------|-----------------|-----------------|----------------|---------|----------|----------|-----------------------|---------|---------|
| 32              | 50              | 12              | 12             | 1,0     | 46       | 14       | 19,5                  | 126,5   | 11      |
| 40              | 63              | 16              | 16             | 1,6     | 59       | 19       | 21,0                  | 144,0   | 14      |
| 50              | 75              | 16              | 16             | 1,6     | 69       | 19       | 28,0                  | 152,0   | 20      |
| 63              | 90              | 20              | 20             | 1,6     | 84       | 24       | 25,5                  | 169,5   | 20      |
| 80              | 110             | 20              | 20             | 1,6     | 102      | 24       | 34,5                  | 185,5   | 26      |
| 100             | 132             | 25              | 25             | 2,0     | 125      | 29       | 37,0                  | 203,0   | 31      |

XV<sub>2</sub> = X + Stroke length

**Piston rod mountings**

**Swivel rod eye AP6**

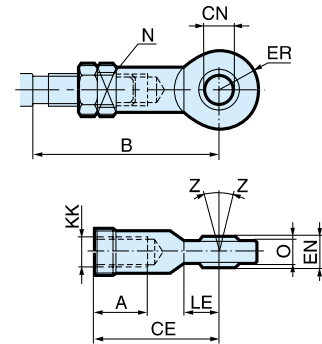


Swivel rod eye for articulated mounting of cylinder.  
Swivel rod eye can be combined with clevis bracket GA.  
Maintenance-free.

Material:  
Swivel rod eye: Zinc-plated steel  
Swivel bearing according to DIN 648K: Hardened steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,08         | <b>P1C-4KRS</b> |
| 40                | 0,12         | <b>P1C-4LRS</b> |
| 50                | 0,25         | <b>P1C-4MRS</b> |
| 63                | 0,25         | <b>P1C-4MRS</b> |
| 80                | 0,46         | <b>P1C-4PRS</b> |
| 100               | 0,46         | <b>P1C-4PRS</b> |
| 125               | 1,28         | <b>P1C-4RRS</b> |

| Cyl. bore<br>mm | A<br>mm | B<br>min<br>mm | B<br>max<br>mm | CE<br>mm | CN<br>H9<br>mm | EN<br>h12<br>mm | ER<br>mm | KK<br>mm | LE<br>min<br>mm | N<br>mm | O<br>mm | Z<br>° |
|-----------------|---------|----------------|----------------|----------|----------------|-----------------|----------|----------|-----------------|---------|---------|--------|
| 32              | 20      | 48,0           | 55             | 43       | 10             | 14              | 14       | M10x1,25 | 15              | 17      | 10,5    | 12°    |
| 40              | 22      | 56,0           | 62             | 50       | 12             | 16              | 16       | M12x1,25 | 17              | 19      | 12,0    | 12°    |
| 50              | 28      | 72,0           | 80             | 64       | 16             | 21              | 21       | M16x1,5  | 22              | 22      | 15,0    | 15°    |
| 63              | 28      | 72,0           | 80             | 64       | 16             | 21              | 21       | M16x1,5  | 22              | 22      | 15,0    | 15°    |
| 80              | 33      | 87,0           | 97             | 77       | 20             | 25              | 25       | M20x1,5  | 26              | 32      | 18,0    | 15°    |
| 100             | 33      | 87,0           | 97             | 77       | 20             | 25              | 25       | M20x1,5  | 26              | 32      | 18,0    | 15°    |
| 125             | 51      | 123,5          | 137            | 110      | 30             | 37              | 35       | M27x2    | 36              | 41      | 25,0    | 15°    |



**Clevis AP2**

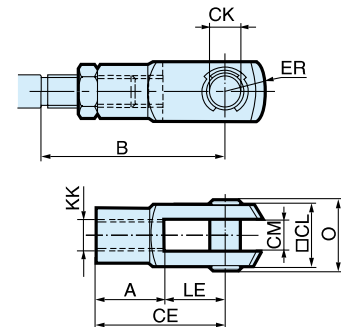


Clevis for articulated mounting of cylinder.

Material:  
Clevis, clip: Galvanized steel  
Pin: Hardened steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,09         | <b>P1C-4KRC</b> |
| 40                | 0,15         | <b>P1C-4LRC</b> |
| 50                | 0,35         | <b>P1C-4MRC</b> |
| 63                | 0,35         | <b>P1C-4MRC</b> |
| 80                | 0,75         | <b>P1C-4PRC</b> |
| 100               | 0,75         | <b>P1C-4PRC</b> |
| 125               | 2,10         | <b>P1C-4RRC</b> |

| Cyl. bore<br>mm | A<br>mm | B<br>min<br>mm | B<br>max<br>mm | CE<br>mm | CK<br>h11/E9<br>mm | CL<br>mm | CM<br>mm | ER<br>mm | KK<br>mm | LE<br>mm | O<br>mm |
|-----------------|---------|----------------|----------------|----------|--------------------|----------|----------|----------|----------|----------|---------|
| 32              | 20      | 45,0           | 52             | 40       | 10                 | 20       | 10       | 16       | M10x1,25 | 20       | 28,0    |
| 40              | 24      | 54,0           | 60             | 48       | 12                 | 24       | 12       | 19       | M12x1,25 | 24       | 32,0    |
| 50              | 32      | 72,0           | 80             | 64       | 16                 | 32       | 16       | 25       | M16x1,5  | 32       | 41,5    |
| 63              | 32      | 72,0           | 80             | 64       | 16                 | 32       | 16       | 25       | M16x1,5  | 32       | 41,5    |
| 80              | 40      | 90,0           | 100            | 80       | 20                 | 40       | 20       | 32       | M20x1,5  | 40       | 50,0    |
| 100             | 40      | 90,0           | 100            | 80       | 20                 | 40       | 20       | 32       | M20x1,5  | 40       | 50,0    |
| 125             | 56      | 123,5          | 137            | 110      | 30                 | 55       | 30       | 45       | M27x2    | 54       | 72,0    |



Piston rod mountings

Flexo coupling PM5



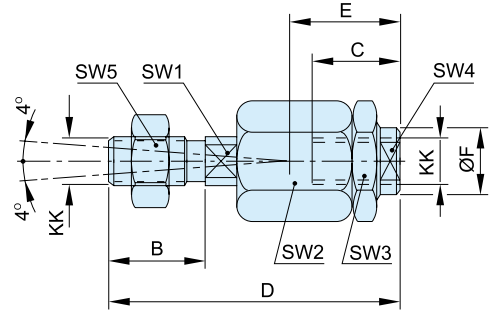
Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of ±4°.

Material  
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,23         | <b>P1C-4KRF</b> |
| 40                | 0,23         | <b>P1C-4LRF</b> |
| 50                | 0,65         | <b>P1C-4MRF</b> |
| 63                | 0,65         | <b>P1C-4MRF</b> |
| 80                | 0,71         | <b>P1C-4PRF</b> |
| 100               | 0,71         | <b>P1C-4PRF</b> |
| 125               | 1,60         | <b>P1C-4RRF</b> |

| Cyl. bore<br>mm | KK<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | ØF<br>mm | SW1<br>mm | SW2<br>mm | SW3<br>mm | SW4<br>mm | SW5<br>mm |
|-----------------|----------|---------|---------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|
| 32              | M10x1.25 | 20      | 23      | 73      | 31      | 21       | 12        | 30        | 30        | 19        | 17        |
| 40              | M12x1.25 | 24      | 23      | 77      | 31      | 21       | 12        | 30        | 30        | 19        | 19        |
| 50              | M16x1.5  | 32      | 32      | 108     | 45      | 33.5     | 19        | 41        | 41        | 30        | 24        |
| 63              | M16x1.5  | 32      | 32      | 108     | 45      | 33.5     | 19        | 41        | 41        | 30        | 24        |
| 80              | M20x1.5  | 40      | 42      | 122     | 56      | 33.5     | 19        | 41        | 41        | 30        | 30        |
| 100             | M20x1.5  | 40      | 42      | 122     | 56      | 33.5     | 19        | 41        | 41        | 30        | 30        |
| 125             | M27x2    | 54      | 48      | 147     | 51      | 39       | 24        | 55        | 55        | 32        | 41        |



Nut MR9 \*



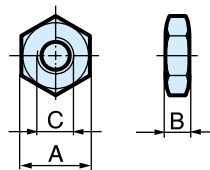
Intended for fixed mounting of accessories to the piston rod.  
Material: Zinc-plated steel  
Supplied as pack of 10 off

All P1D cylinders are delivered with a zinc-plated steel piston rod nut.

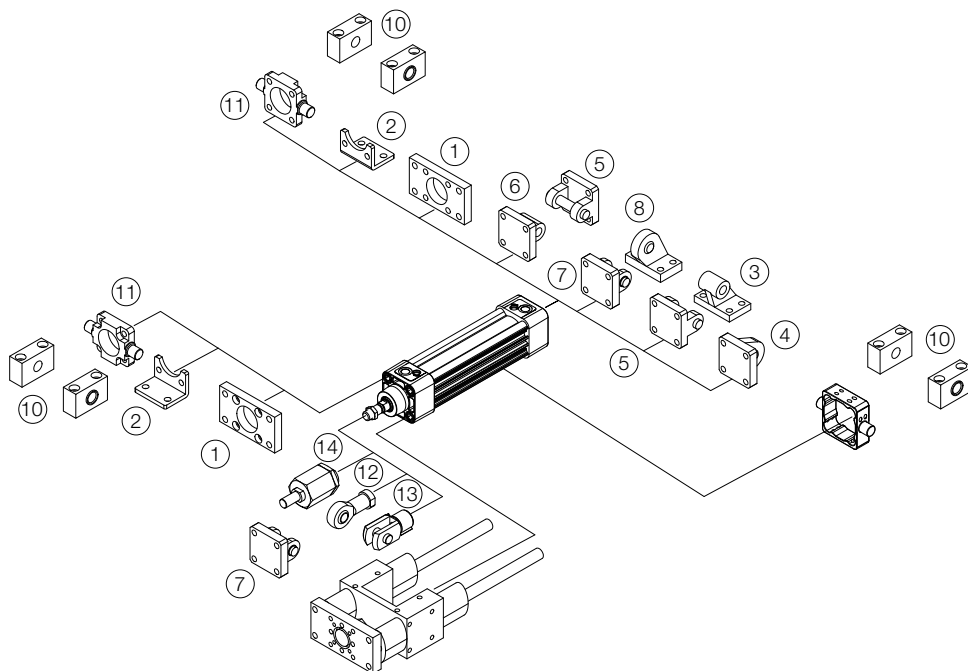
| Cyl. bore<br>Ø mm | Weight**<br>kg | Order code       |
|-------------------|----------------|------------------|
| 32                | 0,007          | <b>P14-4KRPZ</b> |
| 40                | 0,010          | <b>P14-4LRPZ</b> |
| 50                | 0,021          | <b>P14-4MRPZ</b> |
| 63                | 0,021          | <b>P14-4MRPZ</b> |
| 80                | 0,040          | <b>P14-4PRPZ</b> |
| 100               | 0,040          | <b>P14-4PRPZ</b> |
| 125               | 0,100          | <b>P14-4RRPZ</b> |

| Cyl. bore<br>mm | A<br>mm | B<br>mm | C        |
|-----------------|---------|---------|----------|
| 32              | 17      | 5,0     | M10x1,25 |
| 40              | 19      | 6,0     | M12x1,25 |
| 50              | 24      | 8,0     | M16x1,5  |
| 63              | 24      | 8,0     | M16x1,5  |
| 80              | 30      | 10,0    | M20x1,5  |
| 100             | 30      | 10,0    | M20x1,5  |
| 125             | 41      | 13,5    | M27x2    |

\* Supplied as pack of 10 off  
\*\* Weight per item



|       | Flange MF1/MF2 <sup>1</sup>                    | Foot brackets MS1 <sup>2</sup>   | Pivot bracket with rigid bearing AB7 <sup>3</sup>  | Swivel eye bracket <sup>4</sup> MP6 | Clevis bracket MP2 <sup>5</sup>          |
|-------|--|----------------------------------|--|-------------------------------------|--|
| Ø 32  | P1C-4KMB                                       | P1C-4KMF                         | P1C-4KMDB  | PD23843                             | P1C-4KMTB                                |
| Ø 40  | P1C-4LMB                                       | P1C-4LMF                         | P1C-4LMDB  | PD23844                             | P1C-4LMTB                                |
| Ø 50  | P1C-4MMB                                       | P1C-4MMF                         | P1C-4MMDB  | PD23845                             | P1C-4MMTB                                |
| Ø 63  | P1C-4NMB                                       | P1C-4NMF                         | P1C-4NMDB  | PD23846                             | P1C-4NMTB                                |
| Ø 80  | P1C-4PMB                                       | P1C-4PMF                         | P1C-4PMDB  | PD23847                             | P1C-4PMTB                                |
| Ø 100 | P1C-4QMB                                       | P1C-4QMF                         | P1C-4QMDB  | PD23848                             | P1C-4QMTB                                |
| Ø 125 | P1C-4RMB                                       | P1C-4RMF                         | P1C-4RMDB  | PD23849                             | P1C-4RMTB                                |
|       | Clevis bracket MP4 <sup>6</sup>                | Clevis bracket AB6 <sup>7</sup>  | Pivot bracket with swivel bearing CS7 <sup>8</sup> | 3 and 4 positions flange JP1        | Pivot brackets AT4 <sup>10</sup> for MT* |
| Ø 32  | PD23412  | P1C-4KMCB                        | KC5130   | P1E-6KB0                            | PD23381                                  |
| Ø 40  | PD23413  | P1C-4LMCB                        | KC5131   | P1E-6LB0                            | PD23382                                  |
| Ø 50  | PD23414  | P1C-4MMCB                        | KC5132   | P1E-6MB0                            | PD23382                                  |
| Ø 63  | PD23415  | P1C-4NMCB                        | KC5133   | P1E-6NB0                            | PD23383                                  |
| Ø 80  | PD23416  | P1C-4PMC                         | KC5134   | P1E-6PB0                            | PD23383                                  |
| Ø 100 | PD23417  | P1C-4QMCB                        | KC5135   | P1E-6QB0                            | PD23384                                  |
| Ø 125 | PD23418  | P1C-4RMCB                        | KC5136   |                                     | PD23384                                  |
|       | Flange mounting <sup>11</sup> trunnion MT5/MT6 | Swivel rod eye AP6 <sup>12</sup> | Clevis AP2 <sup>13</sup>                           | Flexo coupling PM5 <sup>14</sup>    | Nut MR9                                  |
| Ø 32  | P1D-4KMYF                                      | P1C-4KRS                         | P1C-4KRC   | P1C-4KRF                            | P14-4KRPZ                                |
| Ø 40  | P1D-4LMYF                                      | P1C-4LRS                         | P1C-4LRC   | P1C-4LRF                            | P14-4LRPZ                                |
| Ø 50  | P1D-4MMYF                                      | P1C-4MRS                         | P1C-4MRC   | P1C-4MRF                            | P14-4MRPZ                                |
| Ø 63  | P1D-4NMYF                                      | P1C-4MRS                         | P1C-4MRC   | P1C-4MRF                            | P14-4MRPZ                                |
| Ø 80  | P1D-4PMYF                                      | P1C-4PRS                         | P1C-4PRC   | P1C-4PRF                            | P14-4PRPZ                                |
| Ø 100 | P1D-4QMYF                                      | P1C-4PRS                         | P1C-4PRC   | P1C-4PRF                            | P14-4PRPZ                                |
| Ø 125 |  | P1C-4RRS                         | P1C-4RRC   | P1C-4RRF                            | P14-4RRPZ                                |



### P1D Ultra Clean without sensor function

This version is a permanently sealed P1D Ultra Clean with no facility for installing sensors.

The cylinder has a very clean design and is intended for applications where no sensors are used.

The P1D without the sensor function can of course be combined with other equipment and functions.




|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| P | 1 | D | - | C | 0 | 4 | 0 | H | S  | N  | 0  | 2  | 5  | 0  |

|                  |             |   |
|------------------|-------------|---|
| Cylinder version |             | P1D Ultra Clean without sensor function is defined by the letter C in position 5, N in position 11 and the 15-digit order code. |
| C                | Ultra Clean |   |

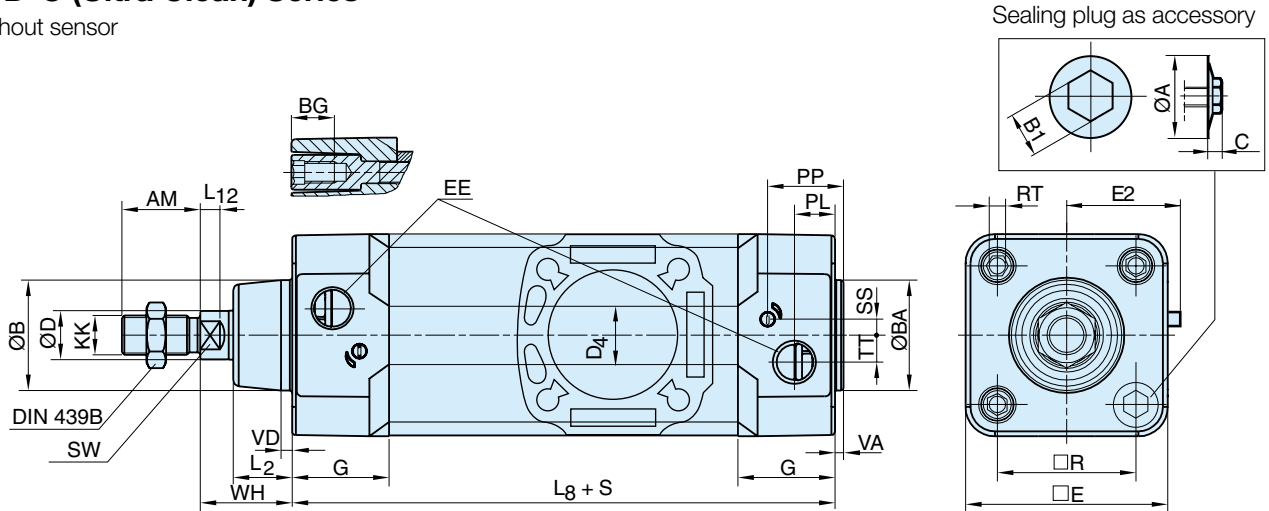
**Without sensor function - HDPE scraper, stainless steel end covers screws**

| Cyl. bore<br>mm         | Stroke<br>mm    | Order code      | Cyl. bore<br>mm          | Stroke<br>mm | Order code      | Cyl. bore<br>mm   | Stroke<br>mm | Order code      |
|-------------------------|-----------------|-----------------|--------------------------|--------------|-----------------|---|--------------|-----------------|
| <b>32</b><br>Conn. G1/8 | 25              | P1D-C032HSN0025 | <b>63</b><br>Conn. G3/8  | 25           | P1D-C063HSN0025 | <b>125</b><br>Conn. G1/2  | 25           | P1D-C125HSN0025 |
|                         | 40              | P1D-C032HSN0040 |                          | 40           | P1D-C063HSN0040 |   | 40           | P1D-C125HSN0040 |
|                         | 50              | P1D-C032HSN0050 |                          | 50           | P1D-C063HSN0050 |   | 50           | P1D-C125HSN0050 |
|                         | 80              | P1D-C032HSN0080 |                          | 80           | P1D-C063HSN0080 |   | 80           | P1D-C125HSN0080 |
|                         | 100             | P1D-C032HSN0100 |                          | 100          | P1D-C063HSN0100 |   | 100          | P1D-C125HSN0100 |
|                         | 125             | P1D-C032HSN0125 |                          | 125          | P1D-C063HSN0125 |   | 125          | P1D-C125HSN0125 |
|                         | 160             | P1D-C032HSN0160 |                          | 160          | P1D-C063HSN0160 |   | 160          | P1D-C125HSN0160 |
|                         | 200             | P1D-C032HSN0200 |                          | 200          | P1D-C063HSN0200 |   | 200          | P1D-C125HSN0200 |
|                         | 250             | P1D-C032HSN0250 |                          | 250          | P1D-C063HSN0250 |   | 250          | P1D-C125HSN0250 |
|                         | 320             | P1D-C032HSN0320 |                          | 320          | P1D-C063HSN0320 |   | 320          | P1D-C125HSN0320 |
| 400                     | P1D-C032HSN0400 | 400             | P1D-C063HSN0400          | 400          | P1D-C125HSN0400 |   |              |                 |
| 500                     | P1D-C032HSN0500 | 500             | P1D-C063HSN0500          | 500          | P1D-C125HSN0500 |   |              |                 |
| <b>40</b><br>Conn. G1/4 | 25              | P1D-C040HSN0025 | <b>80</b><br>Conn. G3/8  | 25           | P1D-C080HSN0025 | The cylinders are supplied complete with one stainless steel piston rod nut as standard.  |              |                 |
|                         | 40              | P1D-C040HSN0040 |                          | 40           | P1D-C080HSN0040 |   |              |                 |
|                         | 50              | P1D-C040HSN0050 |                          | 50           | P1D-C080HSN0050 |   |              |                 |
|                         | 80              | P1D-C040HSN0080 |                          | 80           | P1D-C080HSN0080 |   |              |                 |
|                         | 100             | P1D-C040HSN0100 |                          | 100          | P1D-C080HSN0100 |   |              |                 |
|                         | 125             | P1D-C040HSN0125 |                          | 125          | P1D-C080HSN0125 |   |              |                 |
|                         | 160             | P1D-C040HSN0160 |                          | 160          | P1D-C080HSN0160 |   |              |                 |
|                         | 200             | P1D-C040HSN0200 |                          | 200          | P1D-C080HSN0200 |   |              |                 |
|                         | 250             | P1D-C040HSN0250 |                          | 250          | P1D-C080HSN0250 |   |              |                 |
|                         | 320             | P1D-C040HSN0320 |                          | 320          | P1D-C080HSN0320 |   |              |                 |
| 400                     | P1D-C040HSN0400 | 400             | P1D-C080HSN0400          |              |                 |   |              |                 |
| 500                     | P1D-C040HSN0500 | 500             | P1D-C080HSN0500          |              |                 |   |              |                 |
| <b>50</b><br>Conn. G1/4 | 25              | P1D-C050HSN0025 | <b>100</b><br>Conn. G1/2 | 25           | P1D-C100HSN0025 |  <p>Sealing plugs for end cover screws</p> <p>See page 35.</p> |              |                 |
|                         | 40              | P1D-C050HSN0040 |                          | 40           | P1D-C100HSN0040 |   |              |                 |
|                         | 50              | P1D-C050HSN0050 |                          | 50           | P1D-C100HSN0050 |   |              |                 |
|                         | 80              | P1D-C050HSN0080 |                          | 80           | P1D-C100HSN0080 |   |              |                 |
|                         | 100             | P1D-C050HSN0100 |                          | 100          | P1D-C100HSN0100 |   |              |                 |
|                         | 125             | P1D-C050HSN0125 |                          | 125          | P1D-C100HSN0160 |   |              |                 |
|                         | 160             | P1D-C050HSN0160 |                          | 200          | P1D-C100HSN0200 |   |              |                 |
|                         | 200             | P1D-C050HSN0200 |                          | 250          | P1D-C100HSN0250 |   |              |                 |
|                         | 250             | P1D-C050HSN0250 |                          | 320          | P1D-C100HSN0320 |   |              |                 |
|                         | 320             | P1D-C050HSN0320 |                          | 400          | P1D-C100HSN0400 |   |              |                 |
| 400                     | P1D-C050HSN0400 | 500             | P1D-C100HSN0500          |              |                 |   |              |                 |
| 500                     | P1D-C050HSN0500 |                 |                          |              |                 |   |              |                 |

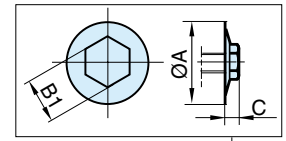


**P1D-C (Ultra Clean) Series**

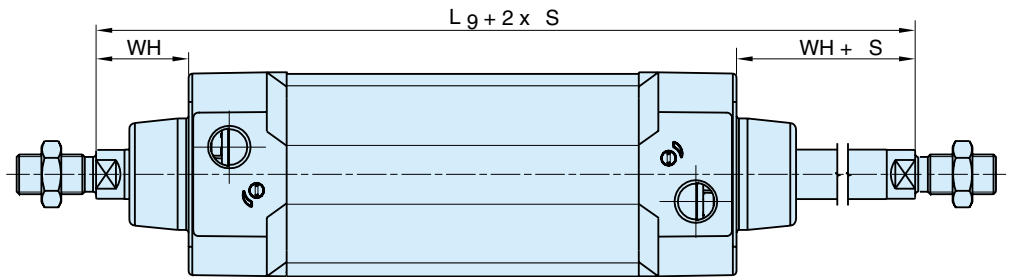
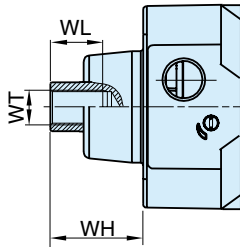
Without sensor



Sealing plug as accessory



**Internal piston rod thread**



**Dimensions**

| Cylinder bore mm | A mm | AM mm | B mm | B1 mm | BA mm | BG mm | C mm | D mm | D4 mm | E mm  | EE mm | G mm | KK       | L2 mm |
|------------------|------|-------|------|-------|-------|-------|------|------|-------|-------|-------|------|----------|-------|
| 32               | 15   | 22    | 30   | 8     | 30    | 16    | 5,2  | 12   | 45,0  | 50,0  | G1/8  | 28,5 | M10x1,25 | 16,0  |
| 40               | 15   | 24    | 35   | 8     | 35    | 16    | 5,2  | 16   | 52,0  | 57,4  | G1/4  | 33,0 | M12x1,25 | 19,0  |
| 50               | 18,5 | 32    | 40   | 10    | 40    | 16    | 6,7  | 20   | 60,7  | 69,4  | G1/4  | 33,5 | M16x1,5  | 24,0  |
| 63               | 18,5 | 32    | 45   | 10    | 45    | 16    | 6,7  | 20   | 71,5  | 82,4  | G3/8  | 39,5 | M16x1,5  | 24,0  |
| 80               | 21,5 | 40    | 45   | 11    | 45    | 17    | 7,8  | 25   | 86,7  | 99,4  | G3/8  | 39,5 | M20x1,5  | 30,0  |
| 100              | 21,5 | 40    | 55   | 11    | 55    | 17    | 7,8  | 25   | 106,7 | 116,0 | G1/2  | 44,5 | M20x1,5  | 32,4  |
| 125              | 24   | 54    | 60   | 13    | 60    | 20    | 9,3  | 32   | 134,0 | 139,0 | G1/2  | 51,0 | M27x2    | 45,0  |

| Cylinder bore mm | L8 mm | L9 mm | L12 mm | PL mm | PP mm | R mm  | RT  | SS mm | SW mm | TT mm | VA mm | VD mm | WH mm | WL mm | WT       |
|------------------|-------|-------|--------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|----------|
| 32               | 94    | 146   | 6,0    | 13,0  | 21,8  | 32,5  | M6  | 4,0   | 10    | 4,5   | 3,5   | 4,5   | 26    | 21    | M8x1     |
| 40               | 105   | 165   | 6,5    | 14,0  | 21,9  | 38,0  | M6  | 8,0   | 13    | 5,5   | 3,5   | 4,5   | 30    | 23    | M10x1,25 |
| 50               | 106   | 180   | 8,0    | 14,0  | 23,0  | 46,5  | M8  | 4,0   | 17    | 7,5   | 3,5   | 5,0   | 37    | 31    | M14x1,5  |
| 63               | 121   | 195   | 8,0    | 16,4  | 27,4  | 56,5  | M8  | 6,5   | 17    | 11,0  | 3,5   | 5,0   | 37    | 31    | M14x1,5  |
| 80               | 128   | 220   | 10,0   | 16,0  | 30,5  | 72,0  | M10 | 0     | 22    | 15,0  | 3,5   | 4,0   | 46    | 39    | M18x1,5  |
| 100              | 138   | 240   | 14,0   | 18,0  | 35,8  | 89,0  | M10 | 0     | 22    | 20,0  | 3,5   | 4,0   | 51    | 39    | M18x1,5  |
| 125              | 160   | 290   | 18,0   | 28,0  | 40,5  | 110,0 | M12 | 0     | 27    | 17,5  | 5,5   | 6,0   | 65    | 53    | M24x2    |

S=Stroke

**Tolerances**

| Cylinder bore mm | B   | BA  | L <sub>g</sub> mm | L <sub>g</sub> mm | R mm | Stroke tolerance up to stroke 500 mm | Stroke tolerance for stroke over 500 mm |
|------------------|-----|-----|-------------------|-------------------|------|--------------------------------------|---|
| 32               | d11 | d11 | ±0,4              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 40               | d11 | d11 | ±0,7              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 50               | d11 | d11 | ±0,7              | ±2                | ±0,6 | +0,3/+2,0                            | +0,3/+3,0                               |
| 63               | d11 | d11 | ±0,8              | ±2                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 80               | d11 | d11 | ±0,8              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 100              | d11 | d11 | ±1,0              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 125              | d11 | d11 | ±1,0              | ±3                | ±1,1 | +0,3/+2,0                            | +0,3/+3,0                               |

Cylinder mountings

Intermediate trunnion MT4 for P1D-C Ultra Clean

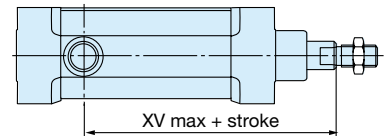
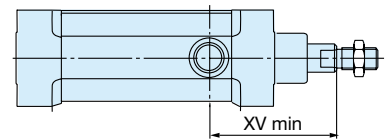
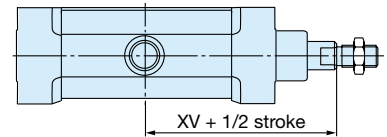
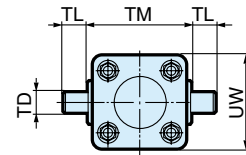
Not for the P1D-C Pro Clean version.  
 P1D-C Ultra Clean in bore sizes 32 to 80 mm and strokes up to 700 mm. Longer stroke length on request. Shaft square to 90° with air ports only.  
 Material: stainless steel

Trunnion centred

The centred trunnion for the P1D-C is ordered with letter D in position 17 (no dimension specified in positions 18-20, letters are NNN).

Trunnion with optional position XV measure

The intermediate trunnion for the P1D-C is ordered with a letter in position 17 and desired XV-measure (3 digit measure in mm in positions 18-20).



| Cyl. bore mm | L1       | TL     | TM     | Ø TD  | UW       | XV min   | XV       | XV max   |
|--------------|----------|--------|--------|-------|----------|----------|----------|----------|
|              | P1D-C mm | h14 mm | h14 mm | e9 mm | P1D-C mm | P1D-C mm | P1D-C mm | P1D-C mm |
| 32           | 12       | 12     | 50     | 12    | 0        | 69,5     | 73,0     | 76,0     |
| 40           | 16       | 16     | 63     | 16    | 0        | 78,0     | 82,5     | 86,5     |
| 50           | 16       | 16     | 75     | 16    | 0        | 85,5     | 90,0     | 94,5     |
| 63           | 20       | 20     | 90     | 20    | 0        | 103,5    | 97,5     | 91,0     |
| 80           | 20       | 20     | 110    | 20    | 0        | 112,5    | 110,0    | 107,0    |

**Important:** If the cylinder is ordered with a piston rod protusion (WH dimension), please add this extra length to XVmin, XV and XVmax.

### P1D Pro Clean with sensor function

This version is a P1D Pro Clean design with 2 T slots on one face of the tube giving then the possibility to add sensors. The cylinder has a clean design and is intended for applications where sensors still need to be used.

The P1D with the sensor function can of course be combined with other equipment and functions.



|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| P | 1 | D | - | C | 0 | 4 | 0 | W | S  | T* | 0  | 2  | 5  | 0  |

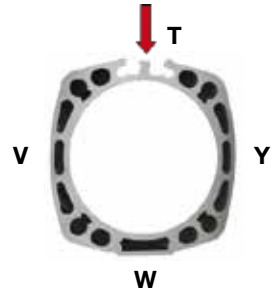
| Cylinder version |           |
|------------------|-----------|
| <b>C</b>         | Pro Clean |

P1D Pro Clean with sensor function is defined by the letter C in position 5, and in position 11 by the position of the 2 T slots.

\* T on the top, - Y on the right, W on the bottom, V on the left side and the 15-digit order code.

Note: cylinder is showed piston rod in the front and air ports on the top to determine face position.

T slots position for ordering



**With 2 T slots on the top - FPM scraper, stainless steel end covers screws**

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>32</b>       | 25           | <b>P1D-C032WST0025</b> |
| Conn. G1/8      | 40           | <b>P1D-C032WST0040</b> |
|                 | 50           | <b>P1D-C032WST0050</b> |
|                 | 80           | <b>P1D-C032WST0080</b> |
|                 | 100          | <b>P1D-C032WST0100</b> |
|                 | 125          | <b>P1D-C032WST0125</b> |
|                 | 160          | <b>P1D-C032WST0160</b> |
|                 | 200          | <b>P1D-C032WST0200</b> |
|                 | 250          | <b>P1D-C032WST0250</b> |
|                 | 320          | <b>P1D-C032WST0320</b> |
|                 | 400          | <b>P1D-C032WST0400</b> |
|                 | 500          | <b>P1D-C032WST0500</b> |

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>63</b>       | 25           | <b>P1D-C063WST0025</b> |
| Conn. G3/8      | 40           | <b>P1D-C063WST0040</b> |
|                 | 50           | <b>P1D-C063WST0050</b> |
|                 | 80           | <b>P1D-C063WST0080</b> |
|                 | 100          | <b>P1D-C063WST0100</b> |
|                 | 125          | <b>P1D-C063WST0125</b> |
|                 | 160          | <b>P1D-C063WST0160</b> |
|                 | 200          | <b>P1D-C063WST0200</b> |
|                 | 250          | <b>P1D-C063WST0250</b> |
|                 | 320          | <b>P1D-C063WST0320</b> |
|                 | 400          | <b>P1D-C063WST0400</b> |
|                 | 500          | <b>P1D-C063WST0500</b> |

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>125</b>      | 25           | <b>P1D-C125WST0025</b> |
| Conn. G1/2      | 40           | <b>P1D-C125WST0040</b> |
|                 | 50           | <b>P1D-C125WST0050</b> |
|                 | 80           | <b>P1D-C125WST0080</b> |
|                 | 100          | <b>P1D-C125WST0100</b> |
|                 | 125          | <b>P1D-C125WST0125</b> |
|                 | 160          | <b>P1D-C125WST0160</b> |
|                 | 200          | <b>P1D-C125WST0200</b> |
|                 | 250          | <b>P1D-C125WST0250</b> |
|                 | 320          | <b>P1D-C125WST0320</b> |
|                 | 400          | <b>P1D-C125WST0400</b> |
|                 | 500          | <b>P1D-C125WST0500</b> |

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>40</b>       | 25           | <b>P1D-C040WST0025</b> |
| Conn. G1/4      | 40           | <b>P1D-C040WST0040</b> |
|                 | 50           | <b>P1D-C040WST0050</b> |
|                 | 80           | <b>P1D-C040WST0080</b> |
|                 | 100          | <b>P1D-C040WST0100</b> |
|                 | 125          | <b>P1D-C040WST0125</b> |
|                 | 160          | <b>P1D-C040WST0160</b> |
|                 | 200          | <b>P1D-C040WST0200</b> |
|                 | 250          | <b>P1D-C040WST0250</b> |
|                 | 320          | <b>P1D-C040WST0320</b> |
|                 | 400          | <b>P1D-C040WST0400</b> |
|                 | 500          | <b>P1D-C040WST0500</b> |

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>80</b>       | 25           | <b>P1D-C080WST0025</b> |
| Conn. G3/8      | 40           | <b>P1D-C080WST0040</b> |
|                 | 50           | <b>P1D-C080WST0050</b> |
|                 | 80           | <b>P1D-C080WST0080</b> |
|                 | 100          | <b>P1D-C080WST0100</b> |
|                 | 125          | <b>P1D-C080WST0125</b> |
|                 | 160          | <b>P1D-C080WST0160</b> |
|                 | 200          | <b>P1D-C080WST0200</b> |
|                 | 250          | <b>P1D-C080WST0250</b> |
|                 | 320          | <b>P1D-C080WST0320</b> |
|                 | 400          | <b>P1D-C080WST0400</b> |
|                 | 500          | <b>P1D-C080WST0500</b> |

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>50</b>       | 25           | <b>P1D-C050WST0025</b> |
| Conn. G1/4      | 40           | <b>P1D-C050WST0040</b> |
|                 | 50           | <b>P1D-C050WST0050</b> |
|                 | 80           | <b>P1D-C050WST0080</b> |
|                 | 100          | <b>P1D-C050WST0100</b> |
|                 | 125          | <b>P1D-C050WST0125</b> |
|                 | 160          | <b>P1D-C050WST0160</b> |
|                 | 200          | <b>P1D-C050WST0200</b> |
|                 | 250          | <b>P1D-C050WST0250</b> |
|                 | 320          | <b>P1D-C050WST0320</b> |
|                 | 400          | <b>P1D-C050WST0400</b> |
|                 | 500          | <b>P1D-C050WST0500</b> |

| Cyl. bore<br>mm | Stroke<br>mm | Order code             |
|-----------------|--------------|------------------------|
| <b>100</b>      | 25           | <b>P1D-C100WST0025</b> |
| Conn. G1/2      | 40           | <b>P1D-C100WST0040</b> |
|                 | 50           | <b>P1D-C100WST0050</b> |
|                 | 80           | <b>P1D-C100WST0080</b> |
|                 | 100          | <b>P1D-C100WST0100</b> |
|                 | 125          | <b>P1D-C100WST0125</b> |
|                 | 160          | <b>P1D-C100WST0160</b> |
|                 | 200          | <b>P1D-C100WST0200</b> |
|                 | 250          | <b>P1D-C100WST0250</b> |
|                 | 320          | <b>P1D-C100WST0320</b> |
|                 | 400          | <b>P1D-C100WST0400</b> |
|                 | 500          | <b>P1D-C100WST0500</b> |

The cylinders are supplied complete with one stainless steel piston rod nut as standard.

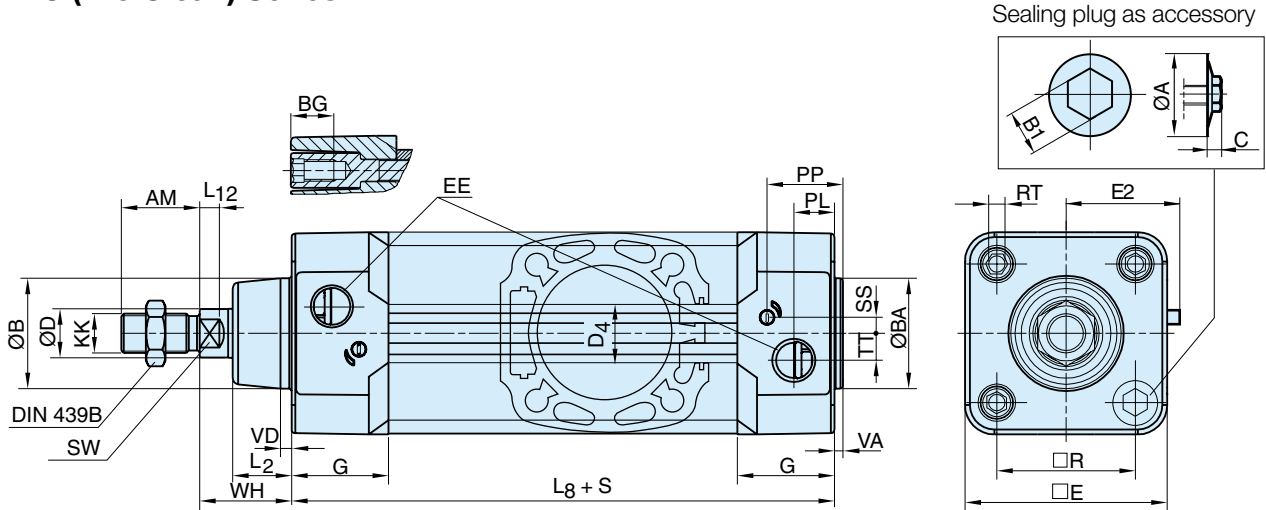
Sealing plugs for end cover screws

See page 35.

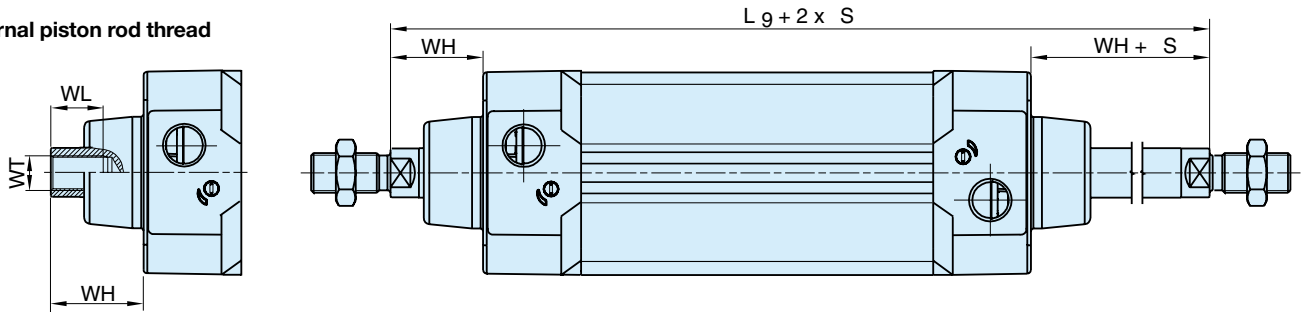
Sensors

For sensors see page 77.

P1D-C (Pro Clean) Series



Internal piston rod thread



Dimensions

| Cylinder bore mm | A mm | AM mm | B mm | B1 mm | BA mm | BG mm | C mm | D mm | D4 mm | E mm  | EE mm | G mm | KK       | L2 mm |
|------------------|------|-------|------|-------|-------|-------|------|------|-------|-------|-------|------|----------|-------|
| 32               | 15   | 22    | 30   | 8     | 30    | 16    | 5,2  | 12   | 45,0  | 50,0  | G1/8  | 28,5 | M10x1,25 | 16,0  |
| 40               | 15   | 24    | 35   | 8     | 35    | 16    | 5,2  | 16   | 52,0  | 57,4  | G1/4  | 33,0 | M12x1,25 | 19,0  |
| 50               | 18,5 | 32    | 40   | 10    | 40    | 16    | 6,7  | 20   | 60,7  | 69,4  | G1/4  | 33,5 | M16x1,5  | 24,0  |
| 63               | 18,5 | 32    | 45   | 10    | 45    | 16    | 6,7  | 20   | 71,5  | 82,4  | G3/8  | 39,5 | M16x1,5  | 24,0  |
| 80               | 21,5 | 40    | 45   | 11    | 45    | 17    | 7,8  | 25   | 86,7  | 99,4  | G3/8  | 39,5 | M20x1,5  | 30,0  |
| 100              | 21,5 | 40    | 55   | 11    | 55    | 17    | 7,8  | 25   | 106,7 | 116,0 | G1/2  | 44,5 | M20x1,5  | 32,4  |
| 125              | 24   | 54    | 60   | 13    | 60    | 20    | 9,3  | 32   | 134,0 | 139,0 | G1/2  | 51,0 | M27x2    | 45,0  |

| Cylinder bore mm | L8 mm | L9 mm | L12 mm | PL mm | PP mm | R mm  | RT  | SS mm | SW mm | TT mm | VA mm | VD mm | WH mm | WL mm | WT       |
|------------------|-------|-------|--------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|----------|
| 32               | 94    | 146   | 6,0    | 13,0  | 21,8  | 32,5  | M6  | 4,0   | 10    | 4,5   | 3,5   | 4,5   | 26    | 21    | M8x1     |
| 40               | 105   | 165   | 6,5    | 14,0  | 21,9  | 38,0  | M6  | 8,0   | 13    | 5,5   | 3,5   | 4,5   | 30    | 23    | M10x1,25 |
| 50               | 106   | 180   | 8,0    | 14,0  | 23,0  | 46,5  | M8  | 4,0   | 17    | 7,5   | 3,5   | 5,0   | 37    | 31    | M14x1,5  |
| 63               | 121   | 195   | 8,0    | 16,4  | 27,4  | 56,5  | M8  | 6,5   | 17    | 11,0  | 3,5   | 5,0   | 37    | 31    | M14x1,5  |
| 80               | 128   | 220   | 10,0   | 16,0  | 30,5  | 72,0  | M10 | 0     | 22    | 15,0  | 3,5   | 4,0   | 46    | 39    | M18x1,5  |
| 100              | 138   | 240   | 14,0   | 18,0  | 35,8  | 89,0  | M10 | 0     | 22    | 20,0  | 3,5   | 4,0   | 51    | 39    | M18x1,5  |
| 125              | 160   | 290   | 18,0   | 28,0  | 40,5  | 110,0 | M12 | 0     | 27    | 17,5  | 5,5   | 6,0   | 65    | 53    | M24x2    |

S=Stroke

Tolerances

| Cylinder bore mm | B   | BA  | L <sub>8</sub> mm | L <sub>9</sub> mm | R mm | Stroke tolerance up to stroke 500 mm | Stroke tolerance for stroke over 500 mm |
|------------------|-----|-----|-------------------|-------------------|------|--------------------------------------|---|
| 32               | d11 | d11 | ±0,4              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 40               | d11 | d11 | ±0,7              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 50               | d11 | d11 | ±0,7              | ±2                | ±0,6 | +0,3/+2,0                            | +0,3/+3,0                               |
| 63               | d11 | d11 | ±0,8              | ±2                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 80               | d11 | d11 | ±0,8              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 100              | d11 | d11 | ±1,0              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 125              | d11 | d11 | ±1,0              | ±3                | ±1,1 | +0,3/+2,0                            | +0,3/+3,0                               |

## Design Variants for all P1D Series

### Alternative piston rod materials

All P1D cylinders in all bores, Ø32-125 mm, can be ordered with the following piston rod materials:

- Steel, chromed-plated
- Stainless steel, roller polished (standard)
- Acid-proof steel, roller polished
- Stainless steel, chromed-plated



### Through piston rod

All P1D cylinders in all bores, Ø32-125 mm, are available with a through rod. Cylinders with a through rod can take higher side forces thanks to the double support for the piston rod.



### Operation with dry piston rod

In many applications, primarily in the foodstuffs industry, the cylinders are cleaned frequently. This means that the film of grease on the piston rod is washed off, which puts special demands on the materials and the design of the piston rod seal system (scraper ring and piston rod seal). Parker Hannifin has developed a piston rod seal system specially designed for dry rod operation. This is available as options for this type of application, for all bores of P1D cylinders. The system has a specially designed L-shaped seal and the material is self-lubricating, high molecular weight plastics (HDPE) – the same system as in our P1S stainless steel cylinders.



### Alternative scraper materials

For use in applications where chemicals may affect the scraper in the front end cover, an option with a scraper in FPM rubber for better chemical resistance is available.

On request there is also a scraper in food approved polyurethane material.



# P1D-T Pneumatic Cylinders

According to  
ISO 15552



The P1D-T range of cylinders is intended for use in a wide range of applications. Careful design and high quality manufacture throughout ensure long service life and optimum economy. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.

- Bore sizes Ø32 - Ø320mm
- Stroke lengths 5 to 2800 mm
- Magnetic piston as standard
- Adjustable cushioning as standard
- High and Low temperature versions
- ATEX version
- Special version on request

## P1D Tie Rod

The P1D is available in a tie-rod version, based on the same high level technology. This future-proof cylinder is the perfect choice wherever a tie-rod cylinder is needed. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.

- Bore sizes Ø32 - Ø125mm
- Stroke lengths 5mm - 2800mm
- Magnetic piston as standard
- Adjustable cushioning as standard
- High and low temperature versions



| Cyl. bore<br>mm         | Stroke<br>mm | Order code      |
|-------------------------|--------------|-----------------|
| <b>32</b><br>Conn. G1/8 | 25           | P1D-T032MS-0025 |
|                         | 40           | P1D-T032MS-0040 |
|                         | 50           | P1D-T032MS-0050 |
|                         | 80           | P1D-T032MS-0080 |
|                         | 100          | P1D-T032MS-0100 |
|                         | 125          | P1D-T032MS-0125 |
|                         | 160          | P1D-T032MS-0160 |
|                         | 200          | P1D-T032MS-0200 |
|                         | 250          | P1D-T032MS-0250 |
|                         | 320          | P1D-T032MS-0320 |
| <b>40</b><br>Conn. G1/4 | 25           | P1D-T040MS-0025 |
|                         | 40           | P1D-T040MS-0040 |
|                         | 50           | P1D-T040MS-0050 |
|                         | 80           | P1D-T040MS-0080 |
|                         | 100          | P1D-T040MS-0100 |
|                         | 125          | P1D-T040MS-0125 |
|                         | 160          | P1D-T040MS-0160 |
|                         | 200          | P1D-T040MS-0200 |
|                         | 250          | P1D-T040MS-0250 |
|                         | 320          | P1D-T040MS-0320 |
| <b>50</b><br>Conn. G1/4 | 25           | P1D-T050MS-0025 |
|                         | 40           | P1D-T050MS-0040 |
|                         | 50           | P1D-T050MS-0050 |
|                         | 80           | P1D-T050MS-0080 |
|                         | 100          | P1D-T050MS-0100 |
|                         | 125          | P1D-T050MS-0125 |
|                         | 160          | P1D-T050MS-0160 |
|                         | 200          | P1D-T050MS-0200 |
|                         | 250          | P1D-T050MS-0250 |
|                         | 320          | P1D-T050MS-0320 |
| <b>63</b><br>Conn. G3/8 | 25           | P1D-T063MS-0025 |
|                         | 40           | P1D-T063MS-0040 |
|                         | 50           | P1D-T063MS-0050 |
|                         | 80           | P1D-T063MS-0080 |
|                         | 100          | P1D-T063MS-0100 |
|                         | 125          | P1D-T063MS-0125 |
|                         | 160          | P1D-T063MS-0160 |
|                         | 200          | P1D-T063MS-0200 |
|                         | 250          | P1D-T063MS-0250 |
|                         | 320          | P1D-T063MS-0320 |

| Cyl. bore<br>mm          | Stroke<br>mm | Order code      |
|--------------------------|--------------|-----------------|
| <b>80</b><br>Conn. G3/8  | 25           | P1D-T080MS-0025 |
|                          | 40           | P1D-T080MS-0040 |
|                          | 50           | P1D-T080MS-0050 |
|                          | 80           | P1D-T080MS-0080 |
|                          | 100          | P1D-T080MS-0100 |
|                          | 125          | P1D-T080MS-0125 |
|                          | 160          | P1D-T080MS-0160 |
|                          | 200          | P1D-T080MS-0200 |
|                          | 250          | P1D-T080MS-0250 |
|                          | 320          | P1D-T080MS-0320 |
| <b>100</b><br>Conn. G1/2 | 25           | P1D-T100MS-0025 |
|                          | 40           | P1D-T100MS-0040 |
|                          | 50           | P1D-T100MS-0050 |
|                          | 80           | P1D-T100MS-0080 |
|                          | 100          | P1D-T100MS-0100 |
|                          | 125          | P1D-T100MS-0125 |
|                          | 160          | P1D-T100MS-0160 |
|                          | 200          | P1D-T100MS-0200 |
|                          | 250          | P1D-T100MS-0250 |
|                          | 320          | P1D-T100MS-0320 |
| <b>125</b><br>Conn. G1/2 | 25           | P1D-T125MS-0025 |
|                          | 40           | P1D-T125MS-0040 |
|                          | 50           | P1D-T125MS-0050 |
|                          | 80           | P1D-T125MS-0080 |
|                          | 100          | P1D-T125MS-0100 |
|                          | 125          | P1D-T125MS-0125 |
|                          | 160          | P1D-T125MS-0160 |
|                          | 200          | P1D-T125MS-0200 |
|                          | 250          | P1D-T125MS-0250 |
|                          | 320          | P1D-T125MS-0320 |

The cylinders are supplied complete with one zinc plated steel piston rod nut.

For mountings see pages 29 to 36.

### Sensors



For sensors see page 77.

## P1D-T Large Bore Cylinders

The P1D-T range of tie rod cylinders is intended for use in a wide range of applications. Careful design and high quality manufacture throughout ensure long service life and optimum economy. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.



- Bore sizes Ø160 - Ø320mm
- Stroke lengths 10mm - 2000mm
- Magnetic piston as standard
- Adjustable cushioning as standard
- High temperature version
- ATEX certified (add -EXNN on order code)

### Operating information

|                             |                       |
|-----------------------------|-----------------------|
| Working pressure:           | Max 10 bar            |
| Seals / Temperature options |                       |
| Standard:                   | -20°C to +80°C        |
| High temperature:           | -10°C to +150°C       |
| ATEX approval:              | CE Ex IIGD c T4 120°C |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## P1D-T - Tie Rod

### Ø160mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 50        | P1D-T160MS-0050 |
| 80        | P1D-T160MS-0080 |
| 100       | P1D-T160MS-0100 |
| 125       | P1D-T160MS-0125 |
| 160       | P1D-T160MS-0160 |
| 200       | P1D-T160MS-0200 |
| 250       | P1D-T160MS-0250 |
| 320       | P1D-T160MS-0320 |
| 400       | P1D-T160MS-0400 |
| 500       | P1D-T160MS-0500 |
| 800       | P1D-T160MS-0800 |
| 1000      | P1D-T160MS-1000 |

### Ø200mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 50        | P1D-T200MS-0050 |
| 80        | P1D-T200MS-0080 |
| 100       | P1D-T200MS-0100 |
| 125       | P1D-T200MS-0125 |
| 160       | P1D-T200MS-0160 |
| 200       | P1D-T200MS-0200 |
| 250       | P1D-T200MS-0250 |
| 320       | P1D-T200MS-0320 |
| 400       | P1D-T200MS-0400 |
| 500       | P1D-T200MS-0500 |
| 800       | P1D-T200MS-0800 |
| 1000      | P1D-T200MS-1000 |

### Ø250mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 50        | P1D-T250MS-0050 |
| 80        | P1D-T250MS-0080 |
| 100       | P1D-T250MS-0100 |
| 125       | P1D-T250MS-0125 |
| 160       | P1D-T250MS-0160 |
| 200       | P1D-T250MS-0200 |
| 250       | P1D-T250MS-0250 |
| 320       | P1D-T250MS-0320 |
| 400       | P1D-T250MS-0400 |
| 500       | P1D-T250MS-0500 |
| 800       | P1D-T250MS-0800 |
| 1000      | P1D-T250MS-1000 |

### Ø320mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 50        | P1D-T320MS-0050 |
| 80        | P1D-T320MS-0080 |
| 100       | P1D-T320MS-0100 |
| 125       | P1D-T320MS-0125 |
| 160       | P1D-T320MS-0160 |
| 200       | P1D-T320MS-0200 |
| 250       | P1D-T320MS-0250 |
| 320       | P1D-T320MS-0320 |
| 400       | P1D-T320MS-0400 |
| 500       | P1D-T320MS-0500 |
| 800       | P1D-T320MS-0800 |
| 1000      | P1D-T320MS-1000 |

The cylinders are supplied complete with a zinc plated steel piston rod nut.

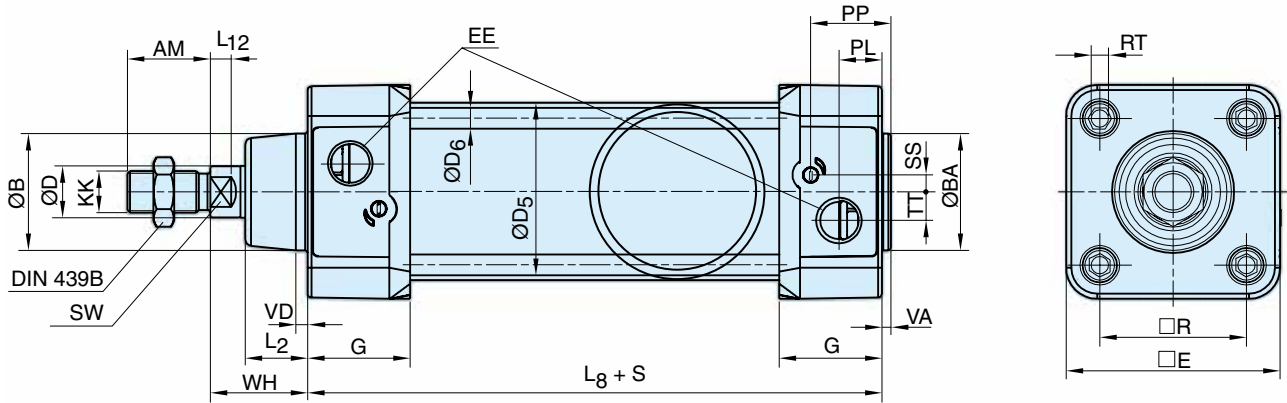
### Sensors



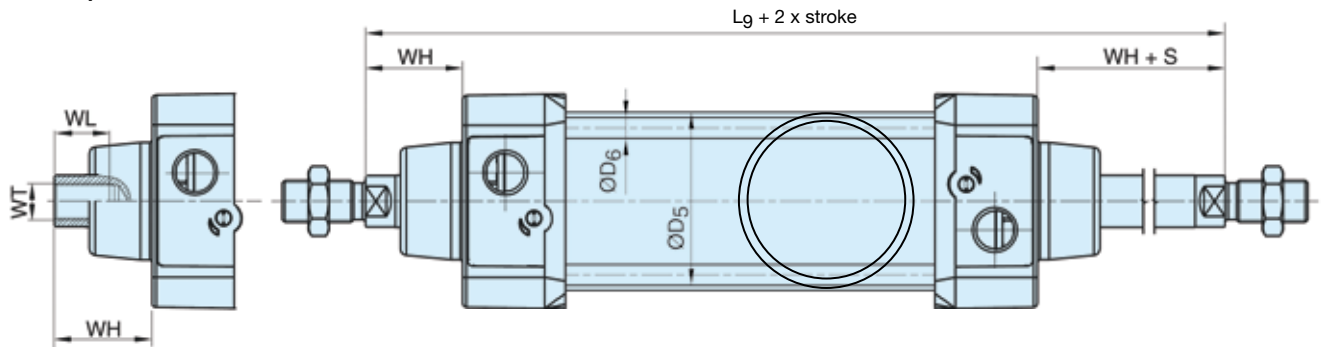
For sensors see page 77.



P1D-T Tie rod Standard temperature



Internal piston rod thread



Dimensions

| Cylinder bore mm | AM mm | B mm | BA mm | BG mm | D mm | D4 mm | E mm  | EE mm | G mm | KK       | L2 mm | L8 mm | L9 mm | L12 mm |
|------------------|-------|------|-------|-------|------|-------|-------|-------|------|----------|-------|-------|-------|--------|
| 32               | 22    | 30   | 30    | 16    | 12   | 45,0  | 50,0  | G1/8  | 28,5 | M10x1,25 | 16,0  | 94    | 146   | 6,0    |
| 40               | 24    | 35   | 35    | 16    | 16   | 52,0  | 57,4  | G1/4  | 33,0 | M12x1,25 | 19,0  | 105   | 165   | 6,5    |
| 50               | 32    | 40   | 40    | 16    | 20   | 60,7  | 69,4  | G1/4  | 33,5 | M16x1,5  | 24,0  | 106   | 180   | 8,0    |
| 63               | 32    | 45   | 45    | 16    | 20   | 71,5  | 82,4  | G3/8  | 39,5 | M16x1,5  | 24,0  | 121   | 195   | 8,0    |
| 80               | 40    | 45   | 45    | 17    | 25   | 86,7  | 99,4  | G3/8  | 39,5 | M20x1,5  | 30,0  | 128   | 220   | 10,0   |
| 100              | 40    | 55   | 55    | 17    | 25   | 106,7 | 116,0 | G1/2  | 44,5 | M20x1,5  | 32,4  | 138   | 240   | 14,0   |
| 125              | 54    | 60   | 60    | 20    | 32   | 134,0 | 139,0 | G1/2  | 51,0 | M27x2    | 45,0  | 160   | 290   | 18,0   |

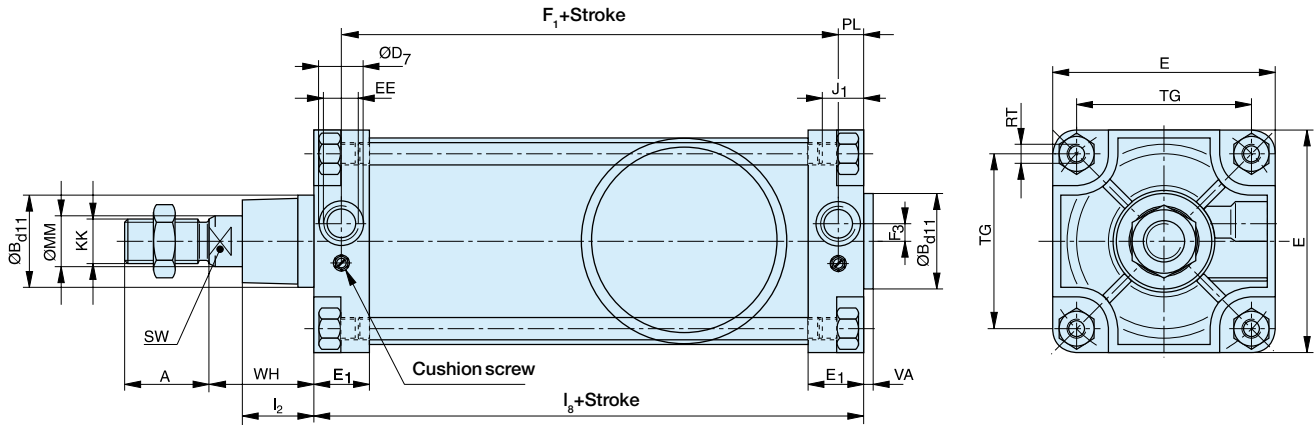
| Cylinder bore mm | OA mm | PL mm | PP mm | R mm  | RT  | SS mm | SW mm | TT mm | VA mm | VD mm | WH mm | WL mm | WT mm    |
|------------------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|----------|
| 32               | 6,0   | 13,0  | 21,8  | 32,5  | M6  | 4,0   | 10    | 4,5   | 3,5   | 4,5   | 26    | 21    | M8x1     |
| 40               | 6,0   | 14,0  | 21,9  | 38,0  | M6  | 8,0   | 13    | 5,5   | 3,5   | 4,5   | 30    | 23    | M10x1,25 |
| 50               | 8,0   | 14,0  | 23,0  | 46,5  | M8  | 4,0   | 17    | 7,5   | 3,5   | 5,0   | 37    | 31    | M14x1,5  |
| 63               | 8,0   | 16,4  | 27,4  | 56,5  | M8  | 6,5   | 17    | 11,0  | 3,5   | 5,0   | 37    | 31    | M14x1,5  |
| 80               | 6,0   | 16,0  | 30,5  | 72,0  | M10 | 0     | 22    | 15,0  | 3,5   | 4,0   | 46    | 39    | M18x1,5  |
| 100              | 6,0   | 18,0  | 35,8  | 89,0  | M10 | 0     | 22    | 20,0  | 3,5   | 4,0   | 51    | 39    | M18x1,5  |
| 125              | 8,0   | 28,0  | 40,5  | 110,0 | M12 | 0     | 27    | 17,5  | 5,5   | 6,0   | 65    | 53    | M24x2    |

S=Stroke

Tolerances

| Cylinder bore mm | B   | BA  | L <sub>3</sub> mm | L <sub>9</sub> mm | R mm | Stroke tolerance up to stroke 500 mm | Stroke tolerance for stroke over 500 mm |
|------------------|-----|-----|-------------------|-------------------|------|--------------------------------------|---|
| 32               | d11 | d11 | ±0,4              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 40               | d11 | d11 | ±0,7              | ±2                | ±0,5 | +0,3/+2,0                            | +0,3/+3,0                               |
| 50               | d11 | d11 | ±0,7              | ±2                | ±0,6 | +0,3/+2,0                            | +0,3/+3,0                               |
| 63               | d11 | d11 | ±0,8              | ±2                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 80               | d11 | d11 | ±0,8              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 100              | d11 | d11 | ±1,0              | ±3                | ±0,7 | +0,3/+2,0                            | +0,3/+3,0                               |
| 125              | d11 | d11 | ±1,0              | ±3                | ±1,1 | +0,3/+2,0                            | +0,3/+3,0                               |

P1D-T Series



**Note:** for bore size 320mm, front air port in on the bottom of the axis of the cylinder and the cushioning screw on the top

Dimension Table (mm)

| Cyl. Ø | A  | ØB <sub>d11</sub> | ØD <sub>7</sub> | E   | E <sub>1</sub> | F <sub>1</sub><br>+ Stroke | F <sub>3</sub> | J <sub>1</sub><br>max. | I <sub>2</sub> | I <sub>8</sub><br>+ Stroke | EE   | KK    | MM | PL | RT  | SW | TG  | VA | WH  |
|--------|----|-------------------|-----------------|-----|----------------|----------------------------|----------------|------------------------|----------------|----------------------------|------|-------|----|----|-----|----|-----|----|-----|
| 160    | 72 | 65                | 33              | 180 | 45             | 130                        | 11             | 23                     | 50             | 180                        | G3/4 | M36x2 | 40 | 25 | M16 | 36 | 140 | 6  | 80  |
| 200    | 72 | 75                | 33              | 220 | 45             | 130                        | 15             | 23                     | 60             | 180                        | G3/4 | M36x2 | 40 | 25 | M16 | 36 | 175 | 6  | 95  |
| 250    | 84 | 90                | 40              | 280 | 64             | 136                        | 21             | 27                     | 70             | 200                        | G1   | M42x2 | 50 | 32 | M20 | 46 | 280 | 10 | 105 |
| 320    | 96 | 110               | -               | 340 | 56             | 164                        | -20*/20        | 28                     | 89,5           | 220                        | G1   | M48x2 | 63 | 28 | M24 | 55 | 340 | 10 | 120 |

Weight (mass) kg

| Cylinder version    | Cylinder Diameter |       |        |       |        |       |        |       |
|---------------------|-------------------|-------|--------|-------|--------|-------|--------|-------|
|                     | Ø160              |       | Ø200   |       | Ø250   |       | Ø320   |       |
|                     | 1*                | 2*    | 1*     | 2*    | 1*     | 2*    | 1*     | 2*    |
| Standard Type P1D-T | 12.500            | 2.050 | 20.000 | 2.200 | 35.000 | 4.000 | 66.000 | 6.000 |

\* 1 = Weight for cylinder with 100 mm stroke  
 2 = Weight for further 100 mm stroke length

Tolerances

| Cylinder bore mm | L <sub>8</sub> mm | TG mm | Stroke tolerance up to stroke 500 mm | Stroke tolerance for stroke over 500 mm |
|------------------|-------------------|-------|--------------------------------------|---|
| 160              | ±1,1              | ±1,1  | +0,3/+2,0                            | +0,3/+3,0                               |
| 200              | ±1,6              | ±1,1  | +0,3/+2,0                            | +0,3/+3,0                               |
| 250              | ±1,6              | ±1,5  | +0,3/+2,0                            | +0,3/+3,0                               |
| 320              | ±2,2              | ±1,5  | +0,3/+2,0                            | +0,3/+3,0                               |

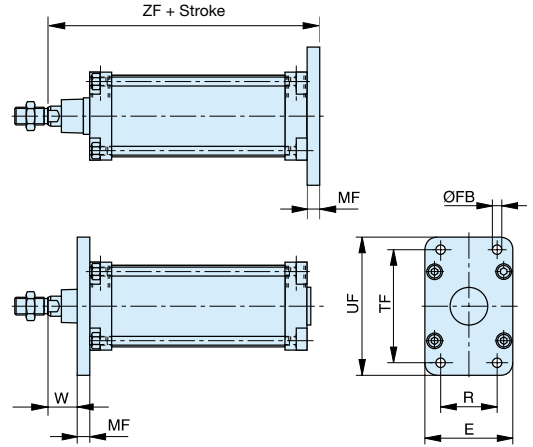
**Cylinder mountings**

**Flange MF1/MF2**



Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

Materials  
 Flange: Passivated steel  
 Mounting screws acc. to DIN 6912:  
 Zinc-plated steel 8.8  
 Supplied complete with mounting screws for attachment to cylinder.



| Bore mm | ZF mm | MF mm | W mm | UF mm | E mm  | TF mm | R mm  | ØFB mm | Weight kg | Order code      |
|---------|-------|-------|------|-------|-------|-------|-------|--------|-----------|-----------------|
| 32      | 130,0 | 10,0  | 16,0 | 80,0  | 45,0  | 64,0  | 32,0  | 7,0    | 0,23      | <b>P1C-4KMB</b> |
| 40      | 145,0 | 10,0  | 20,0 | 80,0  | 52,0  | 72,0  | 36,0  | 9,0    | 0,28      | <b>P1C-4LMB</b> |
| 50      | 155,0 | 12,0  | 25,0 | 80,0  | 65,0  | 90,0  | 45,0  | 9,0    | 0,53      | <b>P1C-4MMB</b> |
| 63      | 170,0 | 12,0  | 25,0 | 80,0  | 75,0  | 100,0 | 50,0  | 9,0    | 0,71      | <b>P1C-4NMB</b> |
| 80      | 190,0 | 16,0  | 30,0 | 80,0  | 95,0  | 126,0 | 63,0  | 12,0   | 1,59      | <b>P1C-4PMB</b> |
| 100     | 205,0 | 16,0  | 35,0 | 80,0  | 115,0 | 150,0 | 75,0  | 14,0   | 2,19      | <b>P1C-4QMB</b> |
| 125     | 245,0 | 20,0  | 45,0 | 80,0  | 140,0 | 180,0 | 90,0  | 16,0   | 3,78      | <b>P1C-4RMB</b> |
| 160     | 180,0 | 20,0  | 60,0 | 80,0  | 180,0 | 230,0 | 115,0 | 18,0   | 7,20      | <b>PD23410</b>  |
| 200     | 300,0 | 25,0  | 70,0 | 80,0  | 220,0 | 270,0 | 135,0 | 22,0   | 12,20     | <b>PD24924</b>  |
| 250     | 330,0 | 25,0  | 80,0 | 80,0  | 280,0 | 330,0 | 165,0 | 26,0   | 19,20     | <b>PD25761</b>  |
| 320     | 370,0 | 30,0  | 90,0 | 80,0  | 340,0 | 400,0 | 200,0 | 33,0   | 38,00     | <b>KL9140</b>   |

Dimensions for cylinders without piston rod protusion or with rod lock unit

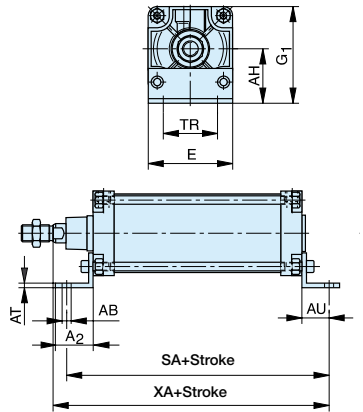
**Foot brackets MS1**



Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

Materials  
 Foot bracket: Passivated steel  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.



| Bore mm | E mm  | TR mm | AH mm | G1 mm | AT mm | A2 mm | ØAB mm | SA mm | XA mm | AU mm | Weight kg | Order code      |
|---------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-----------|-----------------|
| 32      | 45,0  | 32,0  | 32,0  | 56,0  | 4,5   | 34,0  | 7,0    | 142,0 | 144,0 | 24,0  | 0,06      | <b>P1C-4KMF</b> |
| 40      | 52,0  | 36,0  | 36,0  | 62,8  | 4,5   | 36,0  | 9,0    | 161,0 | 163,0 | 28,0  | 0,08      | <b>P1C-4LMF</b> |
| 50      | 65,0  | 45,0  | 45,0  | 77,6  | 5,5   | 45,0  | 9,0    | 170,0 | 175,0 | 32,0  | 0,16      | <b>P1C-4MMF</b> |
| 63      | 75,0  | 50,0  | 50,0  | 87,8  | 5,5   | 45,0  | 9,0    | 185,0 | 190,0 | 32,0  | 0,25      | <b>P1C-4NMF</b> |
| 80      | 95,0  | 63,0  | 63,0  | 110,5 | 6,5   | 55,0  | 12,0   | 210,0 | 215,0 | 41,0  | 0,50      | <b>P1C-4PMF</b> |
| 100     | 115,0 | 75,0  | 71,0  | 128,0 | 6,5   | 56,0  | 14,0   | 220,0 | 230,0 | 41,0  | 0,85      | <b>P1C-4QMF</b> |
| 125     | 140,0 | 90,0  | 90,0  | 159,5 | 8,0   | 67,0  | 16,0   | 250,0 | 270,0 | 45,0  | 1,48      | <b>P1C-4RMF</b> |
| 160     | 180,0 | 115,0 | 115,0 | 205,0 | 8,0   | 80,0  | 18,0   | 300,0 | 320,0 | 60,0  | 3,80      | <b>PD70512</b>  |
| 200     | 220,0 | 135,0 | 135,0 | 245,0 | 9,0   | 100,0 | 22,0   | 320,0 | 345,0 | 70,0  | 5,00      | <b>PD24792</b>  |
| 250     | 280,0 | 165,0 | 165,0 | 305,0 | 10,0  | 110,0 | 26,0   | 350,0 | 380,0 | 75,0  | 9,70      | <b>PD25758</b>  |
| 320     | 340,0 | 200,0 | 200,0 | 370,0 | 23,0  | 125,0 | 33,0   | 390,0 | 470,0 | 85,0  | 17,00     | <b>KL9139</b>   |

Weight per item

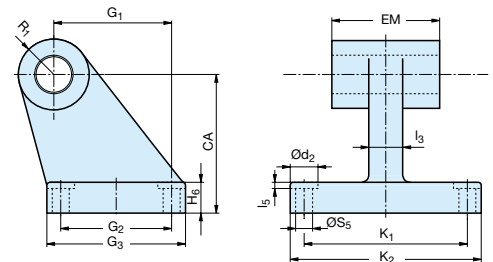
Dimensions for cylinders without piston rod protusion or with rod lock unit

**Pivot bracket with rigid bearing AB7**



Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Materials  
 Pivot bracket: Ø 160-200: cast aluminium  
 Ø 250-320: cast steel



| Bore mm | R1 mm | ØCX H7 mm | G1 mm | CA mm | H6 mm | G2 mm | G3 mm | EM mm | I3 mm | Ød2 mm | I5 mm | ØS5 mm | K1 mm | K2 mm | Weight kg | Order code Not anodised | Order code Black anodised |
|---------|-------|-----------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-----------|-------------------------|---------------------------|
| 32      | 10,0  | 10,0      | 21,0  | 32,0  | 8,0   | 18,0  | 31,0  | 25,5  | 10,0  | -      | -     | 6,6    | 38,0  | 51,0  | 0,06      | <b>P1C-4KMDB</b>        | <b>P1C-4KMD</b>           |
| 40      | 11,0  | 12,0      | 24,0  | 36,0  | 10,0  | 22,0  | 35,0  | 27,0  | 15,0  | -      | -     | 6,6    | 41,0  | 54,0  | 0,08      | <b>P1C-4LMDB</b>        | <b>P1C-4LMD</b>           |
| 50      | 13,0  | 12,0      | 33,0  | 45,0  | 12,0  | 30,0  | 45,0  | 31,0  | 16,0  | -      | -     | 9,0    | 50,0  | 65,0  | 0,15      | <b>P1C-4MMDB</b>        | <b>P1C-4MMD</b>           |
| 63      | 15,0  | 16,0      | 37,0  | 50,0  | 12,0  | 35,0  | 50,0  | 39,0  | 16,0  | -      | -     | 9,0    | 52,0  | 67,0  | 0,20      | <b>P1C-4NMDB</b>        | <b>P1C-4NMD</b>           |
| 80      | 15,0  | 16,0      | 47,0  | 63,0  | 14,0  | 40,0  | 60,0  | 49,0  | 20,0  | -      | -     | 11,0   | 66,0  | 86,0  | 0,33      | <b>P1C-4PMDB</b>        | <b>P1C-4PMD</b>           |
| 100     | 19,0  | 20,0      | 55,0  | 71,0  | 15,0  | 50,0  | 70,0  | 59,0  | 20,0  | -      | -     | 11,0   | 76,0  | 96,0  | 0,49      | <b>P1C-4QMDB</b>        | <b>P1C-4QMD</b>           |
| 125     | 22,5  | 25,0      | 70,0  | 90,0  | 20,0  | 60,0  | 90,0  | 69,0  | 30,0  | -      | -     | 14,0   | 94,0  | 124,0 | 1,02      | <b>P1C-4RMDB</b>        | <b>P1C-4RMD</b>           |
| 160     | 31,5  | 30,0      | 97,0  | 115,0 | 25,0  | 88,0  | 126,0 | 90,0  | 36,0  | 20,0   | 4,0   | 14,0   | 118,0 | 156,0 | 6,50      | <b>P1C-4SMDB</b>        | -                         |
| 200     | 31,5  | 30,0      | 105,0 | 135,0 | 30,0  | 90,0  | 130,0 | 90,0  | 40,0  | 26,0   | 4,0   | 18,0   | 122,0 | 162,0 | 8,00      | <b>P1C-4TMDB</b>        | -                         |
| 250     | 40,0  | 40,0      | 128,0 | 165,0 | 35,0  | 110,0 | 160,0 | 110,0 | 45,0  | 33,0   | 4,5   | 22,0   | 150,0 | 200,0 | 13,50     | <b>P1C-4UMDB</b>        | -                         |
| 320     | 45,0  | 45,0      | 150,0 | 200,0 | 40,0  | 122,0 | 186,0 | 120,0 | 55,0  | -      | -     | 26,0   | 170,0 | 234,0 | 21,90     | <b>P1C-4VMDC</b>        | -                         |

Cylinder mountings

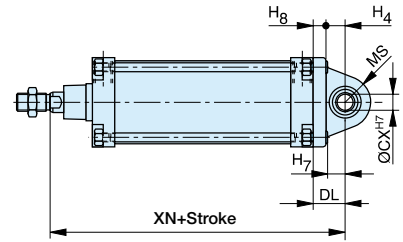
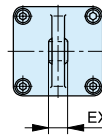
Swivel eye bracket MP6

Intended for use together with clevis bracket GA



Material  
Bracket: Cast aluminium  
Swivel bearing acc. to DIN 648K: Hardened steel

Supplied complete with mounting screws for attachment to cylinder.



| Bore mm | EX mm | XN mm | H8 mm | H4 mm | MS mm | ØCX H7 mm | Weight kg | Order code Not anodised | Order code Black anodised |
|---------|-------|-------|-------|-------|-------|-----------|-----------|-------------------------|---------------------------|
| 32      | 14,0  | 142,0 | 10,0  | 12,0  | 16,0  | 10,0      | 0,10      | PD23843                 | P1C-4KMSA                 |
| 40      | 16,0  | 160,0 | 10,0  | 15,0  | 21,0  | 12,0      | 0,11      | PD23844                 | P1C-4LMSA                 |
| 50      | 16,0  | 170,0 | 11,0  | 16,0  | 23,0  | 12,0      | 0,20      | PD23845                 | P1C-4MMSA                 |
| 63      | 21,0  | 190,0 | 11,0  | 21,0  | 27,0  | 16,0      | 0,27      | PD23846                 | P1C-4NMSA                 |
| 80      | 21,0  | 210,0 | 15,0  | 21,0  | 29,0  | 16,0      | 0,52      | PD23847                 | P1C-4PMSA                 |
| 100     | 25,0  | 230,0 | 16,0  | 25,0  | 34,0  | 20,0      | 0,72      | PD23848                 | P1C-4QMSA                 |
| 125     | 31,0  | 275,0 | 20,0  | 30,0  | 40,0  | 25,0      | 1,53      | PD23849                 | P1C-4RMSA                 |
| 160     | 37,0  | 315,0 | 20,0  | 35,0  | 48,0  | 30,0      | 2,60      | PD23850                 | -                         |
| 200     | 43,0  | 335,0 | 24,0  | 36,0  | 47,0  | 30,0      | 11,30     | PD25766                 | -                         |
| 250     | 49,0  | 375,0 | 28,0  | 42,0  | 53,0  | 40,0      | 19,00     | PD25760                 | -                         |
| 320     | 60,0  | 420,0 | 30,0  | 50,0  | 63,0  | 45,0      | 30,30     | KL9136                  | -                         |

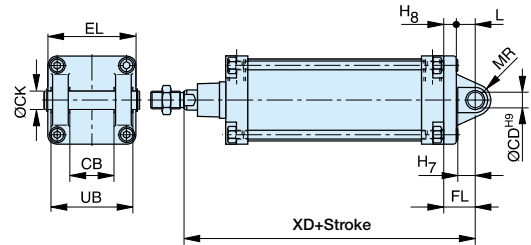
Dimensions for cylinders without piston rod protusion or with rod lock unit

Clevis bracket MP2

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.



Materials  
Clevis bracket: Cast aluminium  
Pin: Hardened steel  
Circlips according to DIN 471: Spring steel  
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8  
Supplied complete with mounting screws for attachment to cylinder



| Bore mm | EL mm | XD mm | ØCD H9 mm | CB H14 mm | UB mm | H8 mm | L mm | MR mm | Weight kg | Order code Not anodised | Order code Black anodised |
|---------|-------|-------|-----------|-----------|-------|-------|------|-------|-----------|-------------------------|---------------------------|
| 32      | 53,0  | 142,0 | 10,0      | 26,0      | 45,0  | 10,0  | 12,0 | 11,0  | 0,08      | P1C-4KMTB               | P1C-4KMT                  |
| 40      | 60,0  | 160,0 | 12,0      | 28,0      | 52,0  | 10,0  | 15,0 | 13,0  | 0,11      | P1C-4LMTB               | P1C-4LMT                  |
| 50      | 68,0  | 170,0 | 12,0      | 32,0      | 60,0  | 11,0  | 16,0 | 18,0  | 0,14      | P1C-4MMTB               | P1C-4MMT                  |
| 63      | 78,0  | 190,0 | 16,0      | 40,0      | 70,0  | 11,0  | 21,0 | 18,0  | 0,29      | P1C-4NMTB               | P1C-4NMT                  |
| 80      | 98,0  | 210,0 | 16,0      | 50,0      | 90,0  | 15,0  | 21,0 | 22,0  | 0,36      | P1C-4PMTB               | P1C-4PMT                  |
| 100     | 118,0 | 230,0 | 20,0      | 60,0      | 110,0 | 16,0  | 25,0 | 22,0  | 0,64      | P1C-4QMTB               | P1C-4QMT                  |
| 125     | 139,0 | 275,0 | 25,0      | 70,0      | 130,0 | 20,0  | 30,0 | 30,0  | 1,17      | P1C-4RMTB               | P1C-4RMT                  |
| 160     | 172,0 | 315,0 | 30,0      | 90,0      | 170,0 | 20,0  | 35,0 | 30,0  | 2,60      | P1C-4SMTB               | -                         |
| 200     | 172,0 | 335,0 | 30,0      | 90,0      | 170,0 | 25,0  | 35,0 | 31,0  | 4,10      | P1C-4TMTB               | -                         |
| 250     | 280,0 | 375,0 | 40,0      | 110,0     | 200,0 | 25,0  | 45,0 | 41,0  | 7,10      | P1C-4UMTB               | -                         |
| 320     | 340,0 | 420,0 | 45,0      | 120,0     | 220,0 | 30,0  | 50,0 | 54,0  | 31,0      | P1C-4VMTB               | -                         |

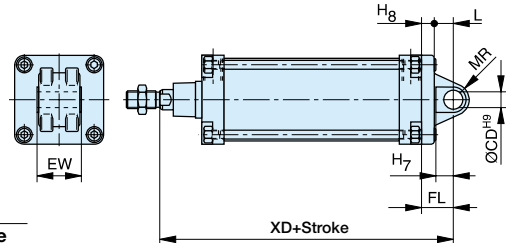
Dimensions for cylinders without piston rod protusion or with rod lock unit

Clevis bracket MP4

Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.



Materials  
Clevis bracket: Cast aluminium  
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8  
Supplied complete with mounting screws for attachment to cylinder.



| Bore mm | EW mm | XD mm | H8 mm | L mm | MR mm | ØCD mm | Weight kg | Order code Not anodised | Order code Black anodised |
|---------|-------|-------|-------|------|-------|--------|-----------|-------------------------|---------------------------|
| 32      | 26,0  | 142,0 | 10,0  | 12,0 | 11,0  | 10,0   | 0,09      | PD23412                 | PD23412                   |
| 40      | 28,0  | 160,0 | 10,0  | 15,0 | 13,0  | 12,0   | 0,13      | PD23413                 | PD23413                   |
| 50      | 32,0  | 170,0 | 11,0  | 16,0 | 18,0  | 12,0   | 0,17      | PD23414                 | PD23414                   |
| 63      | 40,0  | 190,0 | 11,0  | 21,0 | 18,0  | 16,0   | 0,36      | PD23415                 | PD23415                   |
| 80      | 50,0  | 210,0 | 15,0  | 21,0 | 22,0  | 16,0   | 0,58      | PD23416                 | PD23416                   |
| 100     | 60,0  | 230,0 | 16,0  | 25,0 | 22,0  | 20,0   | 0,89      | PD23417                 | PD23417                   |
| 125     | 70,0  | 275,0 | 20,0  | 30,0 | 30,0  | 25,0   | 1,75      | PD23418                 | PD23418                   |
| 160     | 90,0  | 315,0 | 20,0  | 35,0 | 30,0  | 30,0   | 2,70      | PD22628                 | PD22628                   |
| 200     | 90,0  | 335,0 | 25,0  | 35,0 | 31,0  | 30,0   | 4,20      | PD24999                 | PD24999                   |
| 250     | 110,0 | 375,0 | 25,0  | 45,0 | 41,0  | 40,0   | 15,70     | PD25759                 | PD25759                   |
| 320     | 120,0 | 420,0 | 30,0  | 50,0 | 46,0  | 45,0   | 33,00     | KL9135                  | KL9135                    |

Dimensions for cylinders without piston rod protusion or with rod lock unit

**Cylinder mountings**

**Pivot brackets AT4 for MT\* mounting trunnion**

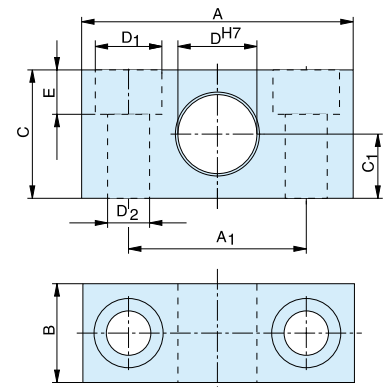


Intended for use together with intermediate trunnion MT4 or MT5 / MT6.

Material:  
 Pivot bracket:  
 Ø32-125 mm – Aluminium  
 Ø160-250 mm – Anodised aluminium  
 Ø 320 mm – steel

Bearing acc. to DIN 1850 C

Supplied in pairs.



| Bore mm | A mm | A1 mm | B mm | C mm | C1 mm | ØD H7 mm | ØD1 mm | ØD2 mm | E mm | Weight kg | Order code Not anodised |
|---------|------|-------|------|------|-------|----------|--------|--------|------|-----------|-------------------------|
| 32      | 55   | 36    | 20   | 26   | 13    | 12       | 13,5   | 8,4    | 9,0  | 0,06      | <b>PD23381</b>          |
| 40      | 55   | 36    | 20   | 26   | 13    | 16       | 13,5   | 8,4    | 9,0  | 0,06      | <b>PD23382</b>          |
| 50      | 55   | 36    | 20   | 26   | 13    | 16       | 13,5   | 8,4    | 9,0  | 0,06      | <b>PD23382</b>          |
| 63      | 65   | 42    | 25   | 30   | 15    | 20       | 16,5   | 10,5   | 11,0 | 0,10      | <b>PD23383</b>          |
| 80      | 65   | 42    | 25   | 30   | 15    | 20       | 16,5   | 10,5   | 11,0 | 0,10      | <b>PD23383</b>          |
| 100     | 75   | 50    | 28   | 40   | 20    | 25       | 19,0   | 13,0   | 13,0 | 0,18      | <b>PD23384</b>          |
| 125     | 75   | 50    | 28   | 40   | 20    | 25       | 19,0   | 13,0   | 13,0 | 0,18      | <b>PD23384</b>          |
| 160     | 92   | 60    | 35   | 60   | 30    | 32       | 26,0   | 18,0   | 17,0 | 0,35      | <b>PD24425</b>          |
| 200     | 92   | 60    | 35   | 60   | 30    | 32       | 26,0   | 18,0   | 17,0 | 0,35      | <b>PD24425</b>          |
| 250     | 140  | 90    | 40   | 70   | 35    | 40       | 33,0   | 22,0   | 21,5 | 0,50      | <b>PD25763</b>          |
| 320     | 150  | 100   | 60   | 80   | 40    | 50       | 40,0   | 26,0   | 25,5 | 6,70      | <b>KL9130</b>           |

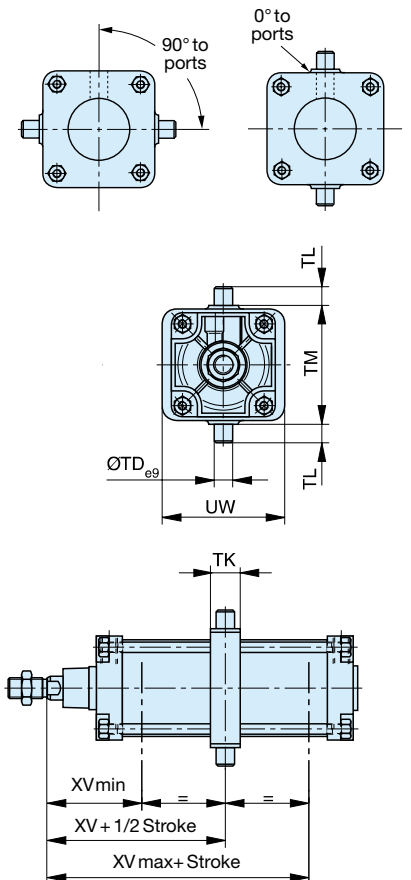
**Intermediate trunnion MT4**



The trunnion is MT4 for P1D-T factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure - Combined with pivot brackets AT4.

Material:  
 Trunnion: Zinc plated steel  
 Trunnion centred  
 The central trunnion for the P1D-T is ordered with letter D in position 17 (no dimension specified in positions 18-20). e.g. P1D-T160MS-0500NDNNN  
 Trunnion with optional location

The trunnion for the P1D-T is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20. e.g. P1D-T160MS-0500NG300



| Bore mm | TK mm | TL h14 mm | TM h14 mm | ØTD e9 mm | XV min mm | XV mm | XV max mm | Weight kg |
|---------|-------|-----------|-----------|-----------|-----------|-------|-----------|-----------|
| 32      | 15    | 12        | 50        | 12        | 62,0      | 73,0  | 84,0      | 0,13      |
| 40      | 20    | 16        | 63        | 16        | 73,0      | 82,5  | 92,0      | 0,31      |
| 50      | 20    | 16        | 75        | 16        | 80,5      | 90,0  | 99,5      | 0,37      |
| 63      | 25    | 20        | 90        | 20        | 89,0      | 97,5  | 106,0     | 0,69      |
| 80      | 25    | 20        | 110       | 20        | 98,0      | 110,0 | 122,0     | 0,89      |
| 100     | 30    | 25        | 132       | 25        | 110,5     | 120,0 | 129,5     | 1,58      |
| 125     | 32    | 25        | 180       | 25        | 132,0     | 145,0 | 158,0     | 2,60      |
| 160     | 45    | 32        | 200       | 32        | 150,0     | 170,0 | 190,0     | 6,10      |
| 200     | 50    | 32        | 250       | 32        | 165,0     | 185,0 | 205,0     | 8,10      |
| 250     | 55    | 40        | 320       | 40        | 195,0     | 205,0 | 210,0     | 14,8      |
| 320     | 65    | 50        | 400       | 50        | 210,0     | 230,0 | 250,0     | 16,0      |

**Important:** If the cylinder is ordered with a piston rod protusion (WH dimension), please add this extra length to XVmin, XV and XVmax.

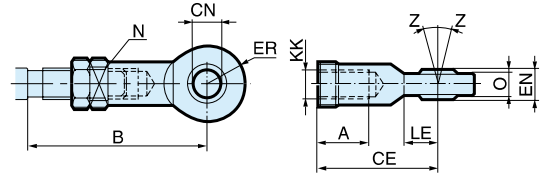
**Piston rod mountings**

**Swivel rod eye AP6**



Swivel rod eye for articulated mounting of cylinder.  
Swivel rod eye can be combined with clevis bracket GA.  
Maintenance-free.

Material:  
Swivel rod eye: Zinc-plated steel  
Swivel bearing according to DIN 648K: Hardened steel  
  
Swivel rod eye: Stainless steel  
Swivel bearing according to DIN 648K: Hardened steel



According to ISO 8139

| Bore mm | A mm | B min mm | B max mm | CE mm | ØCN H9 mm | h12 mm | ER mm | KK mm    | LE min mm | N mm | O mm | Z mm | Weight kg | Order code      | Order code Stainless steel |
|---------|------|----------|----------|-------|-----------|--------|-------|----------|-----------|------|------|------|-----------|-----------------|----------------------------|
| 32      | 20   | 48,0     | 55       | 43    | 10        | 14     | 14    | M10x1,25 | 15        | 17   | 10,5 | 12°  | 0,08      | <b>P1C-4KRS</b> | <b>P1S-4JRT</b>            |
| 40      | 22   | 56,0     | 62       | 50    | 12        | 16     | 16    | M12x1,25 | 17        | 19   | 12,0 | 12°  | 0,12      | <b>P1C-4LRS</b> | <b>P1S-4LRT</b>            |
| 50      | 28   | 72,0     | 80       | 64    | 16        | 21     | 21    | M16x1,5  | 22        | 22   | 15,0 | 15°  | 0,25      | <b>P1C-4MRS</b> | <b>P1S-4MRT</b>            |
| 63      | 28   | 72,0     | 80       | 64    | 16        | 21     | 21    | M16x1,5  | 22        | 22   | 15,0 | 15°  | 0,25      | <b>P1C-4MRS</b> | <b>P1S-4MRT</b>            |
| 80      | 33   | 87,0     | 97       | 77    | 20        | 25     | 25    | M20x1,5  | 26        | 32   | 18,0 | 15°  | 0,46      | <b>P1C-4PRS</b> | <b>P1S-4PRT</b>            |
| 100     | 33   | 87,0     | 97       | 77    | 20        | 25     | 25    | M20x1,5  | 26        | 32   | 18,0 | 15°  | 0,46      | <b>P1C-4PRS</b> | <b>P1S-4PRT</b>            |
| 125     | 51   | 123,5    | 137      | 110   | 30        | 37     | 35    | M27x2    | 36        | 41   | 25,0 | 15°  | 1,28      | <b>P1C-4RRS</b> | <b>P1S-4RRT</b>            |
| 160     | 56   |          |          | 125   | 35        | 43     | 40    | M36x2    | 41        | 50   | 28,0 |      | 1,60      | <b>KY6863</b>   | -                          |
| 200     | 56   |          |          | 125   | 35        | 43     | 40    | M36x2    | 41        | 50   | 28,0 |      | 1,60      | <b>KY6863</b>   | -                          |
| 250     | 60   |          |          | 142   | 40        | 49     | 45    | M42x2    | 46        | 55   | 33,0 |      | 3,50      | <b>KY6864</b>   | -                          |
| 320     | 65   |          |          | 160   | 50        | 60     | 58    | M48x2    | 59        | 65   | 45,0 |      | 5,20      | <b>KY9132</b>   | -                          |

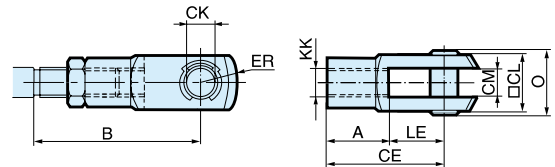
**Clevis AP2**



Clevis for articulated mounting of cylinder.

Material:  
Clevis, clip: Galvanized steel  
Pin: Hardened steel

Clevis, clip: Stainless steel  
Pin: Stainless steel



According to ISO 8140

| Bore mm | A mm | B min mm | B max mm | CE mm | CK h11/e9 mm | CL mm | CM mm | ER mm | KK mm    | LE mm | O mm | Weight kg | Order code      | Order code Stainless steel |
|---------|------|----------|----------|-------|--------------|-------|-------|-------|----------|-------|------|-----------|-----------------|----------------------------|
| 32      | 20   | 45,0     | 52       | 40    | 10           | 20    | 10    | 16    | M10x1,25 | 20    | 28,0 | 0,09      | <b>P1C-4KRC</b> | <b>P1S-4JRD</b>            |
| 40      | 24   | 54,0     | 60       | 48    | 12           | 24    | 12    | 19    | M12x1,25 | 24    | 32,0 | 0,15      | <b>P1C-4LRC</b> | <b>P1S-4LRD</b>            |
| 50      | 32   | 72,0     | 80       | 64    | 16           | 32    | 16    | 25    | M16x1,5  | 32    | 41,5 | 0,35      | <b>P1C-4MRC</b> | <b>P1S-4MRD</b>            |
| 63      | 32   | 72,0     | 80       | 64    | 16           | 32    | 16    | 25    | M16x1,5  | 32    | 41,5 | 0,35      | <b>P1C-4MRC</b> | <b>P1S-4MRD</b>            |
| 80      | 40   | 90,0     | 100      | 80    | 20           | 40    | 20    | 32    | M20x1,5  | 40    | 50,0 | 0,75      | <b>P1C-4PRC</b> | <b>P1S-4PRD</b>            |
| 100     | 40   | 90,0     | 100      | 80    | 20           | 40    | 20    | 32    | M20x1,5  | 40    | 50,0 | 0,75      | <b>P1C-4PRC</b> | <b>P1S-4PRD</b>            |
| 125     | 56   | 123,5    | 137      | 110   | 30           | 55    | 30    | 45    | M27x2    | 54    | 72,0 | 2,10      | <b>P1C-4RRC</b> | <b>P1S-4RRD</b>            |
| 160     | 72   |          |          | 144   | 35           | 70    | 36    |       | M36x2    | 72    |      | 2,90      | <b>KY6867</b>   | -                          |
| 200     | 72   |          |          | 144   | 35           | 70    | 36    |       | M36x2    | 72    |      | 2,90      | <b>KY6867</b>   | -                          |
| 250     | 84   |          |          | 168   | 40           | 85    | 40    |       | M42x2    | 84    |      | 6,00      | <b>KY6868</b>   | -                          |
| 320     | 96   |          |          | 192   | 50           | 90    | 50    |       | M48x2    | 96    |      | 7,90      | <b>KY9131</b>   | -                          |

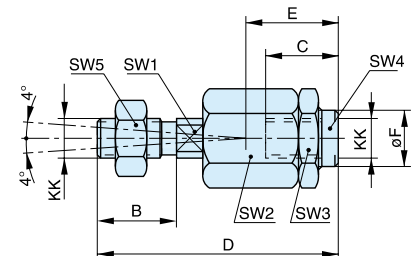
**Flexo coupling PM5**



Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of  $\pm 4^\circ$ .

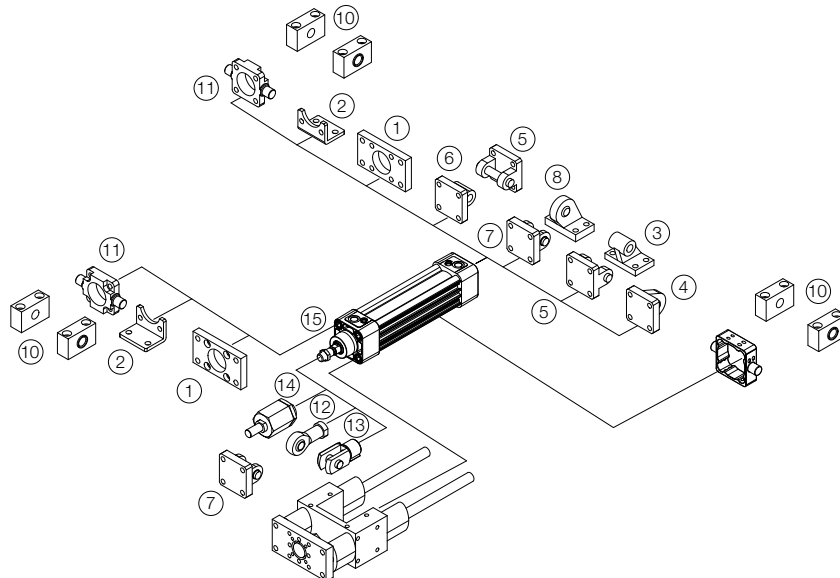
Material:  
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.



| Bore mm | KK mm    | B mm | C mm | D mm | E mm | ØF mm | SW1 mm | SW2 mm | SW3 mm | SW4 mm | SW5 mm | Weight kg | Order code      |
|---------|----------|------|------|------|------|-------|--------|--------|--------|--------|--------|-----------|-----------------|
| 32      | M10x1,25 | 20   | 23   | 73   | 31   | 21,0  | 12     | 30     | 30     | 19     | 17     | 0,21      | <b>P1C-4KRF</b> |
| 40      | M12x1,25 | 24   | 23   | 77   | 31   | 21,0  | 12     | 30     | 30     | 19     | 19     | 0,22      | <b>P1C-4LRF</b> |
| 50      | M16x1,5  | 32   | 32   | 108  | 45   | 33,5  | 19     | 41     | 41     | 30     | 24     | 0,67      | <b>P1C-4MRF</b> |
| 63      | M16x1,5  | 32   | 32   | 108  | 45   | 33,5  | 19     | 41     | 41     | 30     | 24     | 0,67      | <b>P1C-4MRF</b> |
| 80      | M20x1,5  | 40   | 42   | 122  | 56   | 33,5  | 19     | 41     | 41     | 30     | 30     | 0,72      | <b>P1C-4PRF</b> |
| 100     | M20x1,5  | 40   | 42   | 122  | 56   | 33,5  | 19     | 41     | 41     | 30     | 30     | 0,72      | <b>P1C-4PRF</b> |
| 125     | M27x2    | 54   | 48   | 147  | 51   | 39,0  | 24     | 55     | 55     | 32     | 41     | 1,80      | <b>P1C-4RRF</b> |
| 160     | M36x2    | 72   | 50   | 241  | 110  | 56,0  | 36     | 75     | 75     | 50     | 55     | 5,10      | <b>KY1139</b>   |
| 200     | M36x2    | 72   | 50   | 241  | 110  | 56,0  | 36     | 75     | 75     | 50     | 55     | 5,10      | <b>KY1139</b>   |
| 250     | M42x2    | 82   | 88   | 271  | 120  | -     | 36     | 80     | 80     | 60     | 65     | 7,90      | <b>KY1140</b>   |
| 320     | M48x2    | 82   | 88   | 271  | 120  | -     | 42     | 80     | 80     | 60     | 75     | 7,90      | <b>KY9133</b>   |

|       | Flange MF1/MF2 <sup>1</sup>           | Foot brackets MS1 <sup>2</sup>   | Pivot bracket with rigid bearing AB7 <sup>3</sup>  | Swivel eye bracket MP6 <sup>4</sup> | Clevis bracket MP2 <sup>5</sup>                   |
|-------|---------------------------------------|----------------------------------|--|-------------------------------------|---|
| Ø 32  | P1C-4KMB                              | P1C-4KMF                         | P1C-4KMDB  | PD23843                             | P1C-4KMTB   |
| Ø 40  | P1C-4LMB                              | P1C-4LMF                         | P1C-4LMDB  | PD23844                             | P1C-4LMTB   |
| Ø 50  | P1C-4MMB                              | P1C-4MMF                         | P1C-4MMDB  | PD23845                             | P1C-4MMTB   |
| Ø 63  | P1C-4NMB                              | P1C-4NMF                         | P1C-4NMDB  | PD23846                             | P1C-4NMTB   |
| Ø 80  | P1C-4PMB                              | P1C-4PMF                         | P1C-4PMDB  | PD23847                             | P1C-4PMTB   |
| Ø 100 | P1C-4QMB                              | P1C-4QMF                         | P1C-4QMDB  | PD23848                             | P1C-4QMTB   |
| Ø 125 | P1C-4RMB                              | P1C-4RMF                         | P1C-4RMDB  | PD23849                             | P1C-4RMTB   |
| Ø 160 | PD23410                               | PD70512                          | P1C-4SMDB  | PD23850                             | P1C-4SMTB   |
| Ø 200 | PD24924                               | PD24792                          | P1C-4TMDB  | PD25766                             | P1C-4TMTB   |
| Ø 250 | PD25761                               | PD25758                          | P1C-4UMDC  | PD25760                             | P1C-4UMTB   |
| Ø 320 | KL9140                                | KL9139                           | P1C-4VMDC  | KL9136                              | P1C-4VMTB   |
|       | Clevis bracket MP4 <sup>6</sup>       | Clevis bracket AB6 <sup>7</sup>  | Pivot bracket with swivel bearing CS7 <sup>8</sup> | 3 and 4 positions flange JP1        | Pivot brackets AT4 <sup>10</sup> for MT* trunnion |
| Ø 32  | PD23412                               | P1C-4KMCB                        | KC5130   | P1E-6KB0                            | PD23381   |
| Ø 40  | PD23413                               | P1C-4LMCB                        | KC5131   | P1E-6LB0                            | PD23382   |
| Ø 50  | PD23414                               | P1C-4MMCB                        | KC5132   | P1E-6MB0                            | PD23382   |
| Ø 63  | PD23415                               | P1C-4NMCB                        | KC5133   | P1E-6NB0                            | PD23383   |
| Ø 80  | PD23416                               | P1C-4PMCB                        | KC5134   | P1E-6PB0                            | PD23383   |
| Ø 100 | PD23417                               | P1C-4QMCB                        | KC5135   | P1E-6QB0                            | PD23384   |
| Ø 125 | PD23418                               | P1C-4RMCB                        | KC5136   |                                     | PD23384   |
| Ø 160 | PD22628                               |                                  |  |                                     | PD24425   |
| Ø 200 | PD24999                               |                                  |  |                                     | PD24425   |
| Ø 250 | PD25759                               |                                  |  |                                     | PD25763   |
| Ø 320 | KL9135                                |                                  |  |                                     | KL9130  |
|       | Flange trunnion MT5/MT6 <sup>11</sup> | Swivel rod eye AP6 <sup>12</sup> | Clevis AP2 <sup>13</sup>                           | Flexo coupling PM5 <sup>14</sup>    | Zinc-plated nut MR9 <sup>15</sup>                 |
| Ø 32  | P1D-4KMYF                             | P1C-4KRS                         | P1C-4KRC   | P1C-4KRF                            | P14-4KRPZ   |
| Ø 40  | P1D-4LMYF                             | P1C-4LRS                         | P1C-4LRC   | P1C-4LRF                            | P14-4LRPZ   |
| Ø 50  | P1D-4MMYF                             | P1C-4MRS                         | P1C-4MRC   | P1C-4MRF                            | P14-4MRPZ   |
| Ø 63  | P1D-4NMYF                             | P1C-4MRS                         | P1C-4MRC   | P1C-4MRF                            | P14-4MRPZ   |
| Ø 80  | P1D-4PMYF                             | P1C-4PRS                         | P1C-4PRC   | P1C-4PRF                            | P14-4PRPZ   |
| Ø 100 | P1D-4QMYF                             | P1C-4PRS                         | P1C-4PRC   | P1C-4PRF                            | P14-4PRPZ   |
| Ø 125 |                                       | P1C-4RRS                         | P1C-4RRC   | P1C-4RRF                            | P14-4RRPZ   |
| Ø 160 |                                       | KY6863                           | KY6867   | KY1139                              |   |
| Ø 200 |                                       | KY6863                           | KY6867   | KY1139                              |   |
| Ø 250 |                                       | KY6864                           | KY6868   | KY1140                              |   |
| Ø 320 |                                       | KL9132                           | KL9131   | KL9133                              |   |





# P1D-X Pneumatic Cylinders

According to  
ISO 15552



## High and Low Temperature Cylinders

**P1D-X series** contains cylinder versions for high and low temperature. These versions have material and sealing systems specially designed for their particular temperature ranges. End covers and pistons are made entirely from metal, to give optimum function at **high** or **low** temperature in combination with seals made from specially tested materials and special grease.

- Bore sizes 32-125 mm.
- Double acting.
- Stainless steel piston rod.
- Robust and corrosion resistant.
- Adjustable air cushioning.
- Retained stainless steel cushioning screws.
- Wide range of mountings and drop-in sensors



## P1D-X High Temperature Cylinders

All seals in the high temperature version of P1D-X are developed and validated for continuous operation up to +150° C. The combination of the seal geometry and the FKM (DIN ISO 16299) material ensures reliable and long service life. Certain restrictions apply when choosing sensors due to the temperature range. High temperature cylinders have no magnetic piston and cannot be fitted with sensors (the magnetic field strength in high temperatures is too low to ensure correct reliable sensor function).

- Conforms to ISO 15552.
- Bore 32-125 mm.
- Double acting.
- Stainless steel piston rod.
- Adjustable air cushioning.
- Wide range of mountings.



### Operating information

|                      |                        |
|----------------------|------------------------|
| Working pressure:    | Max 10 bar             |
| Working temperature: |                        |
| High temp. version   | <b>-10°C to +150°C</b> |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## P1D-X - High temperature (no magnetic)

### Ø32mm - (G<sup>1</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X032MF-0025 |
| 50        | P1D-X032MF-0050 |
| 80        | P1D-X032MF-0080 |
| 100       | P1D-X032MF-0100 |
| 125       | P1D-X032MF-0125 |
| 160       | P1D-X032MF-0160 |
| 200       | P1D-X032MF-0200 |
| 250       | P1D-X032MF-0250 |
| 320       | P1D-X032MF-0320 |
| 400       | P1D-X032MF-0400 |
| 500       | P1D-X032MF-0500 |

### Ø63mm - (G<sup>3</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X063MF-0025 |
| 50        | P1D-X063MF-0050 |
| 80        | P1D-X063MF-0080 |
| 100       | P1D-X063MF-0100 |
| 125       | P1D-X063MF-0125 |
| 160       | P1D-X063MF-0160 |
| 200       | P1D-X063MF-0200 |
| 250       | P1D-X063MF-0250 |
| 320       | P1D-X063MF-0320 |
| 400       | P1D-X063MF-0400 |
| 500       | P1D-X063MF-0500 |

### Ø100mm - (G<sup>1</sup>/<sub>2</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X100MF-0025 |
| 50        | P1D-X100MF-0050 |
| 80        | P1D-X100MF-0080 |
| 100       | P1D-X100MF-0100 |
| 125       | P1D-X100MF-0125 |
| 160       | P1D-X100MF-0160 |
| 200       | P1D-X100MF-0200 |
| 250       | P1D-X100MF-0250 |
| 320       | P1D-X100MF-0320 |
| 400       | P1D-X100MF-0400 |
| 500       | P1D-X100MF-0500 |

### Ø40mm - (G<sup>1</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X040MF-0025 |
| 50        | P1D-X040MF-0050 |
| 80        | P1D-X040MF-0080 |
| 100       | P1D-X040MF-0100 |
| 125       | P1D-X040MF-0125 |
| 160       | P1D-X040MF-0160 |
| 200       | P1D-X040MF-0200 |
| 250       | P1D-X040MF-0250 |
| 320       | P1D-X040MF-0320 |
| 400       | P1D-X040MF-0400 |
| 500       | P1D-X040MF-0500 |

### Ø80mm - (G<sup>3</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X080MF-0025 |
| 50        | P1D-X080MF-0050 |
| 80        | P1D-X080MF-0080 |
| 100       | P1D-X080MF-0100 |
| 125       | P1D-X080MF-0125 |
| 160       | P1D-X080MF-0160 |
| 200       | P1D-X080MF-0200 |
| 250       | P1D-X080MF-0250 |
| 320       | P1D-X080MF-0320 |
| 400       | P1D-X080MF-0400 |
| 500       | P1D-X080MF-0500 |

### Ø125mm - (G<sup>1</sup>/<sub>2</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X125MF-0025 |
| 50        | P1D-X125MF-0050 |
| 80        | P1D-X125MF-0080 |
| 100       | P1D-X125MF-0100 |
| 125       | P1D-X125MF-0125 |
| 160       | P1D-X125MF-0160 |
| 200       | P1D-X125MF-0200 |
| 250       | P1D-X125MF-0250 |
| 320       | P1D-X125MF-0320 |
| 400       | P1D-X125MF-0400 |
| 500       | P1D-X125MF-0500 |

### Ø50mm - (G<sup>1</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X050MF-0025 |
| 50        | P1D-X050MF-0050 |
| 80        | P1D-X050MF-0080 |
| 100       | P1D-X050MF-0100 |
| 125       | P1D-X050MF-0125 |
| 160       | P1D-X050MF-0160 |
| 200       | P1D-X050MF-0200 |
| 250       | P1D-X050MF-0250 |
| 320       | P1D-X050MF-0320 |
| 400       | P1D-X050MF-0400 |
| 500       | P1D-X050MF-0500 |

The cylinders are supplied complete with a zinc plated steel piston rod nut.

### P1D-X Low Temperature Cylinders

All seals in the low temperature version of P1D-X are developed and validated for continuous operation down to -40° C. Polyurethane PUR seal technology and specifically formulated grease support performance and reliability for low temperature applications. As standard supplied with a magnetic ring in the piston for proximity sensing but please note that the sensors are normally specified for full performance to -25° C only.



- Conforms to ISO 15552.
- Bore 32-125 mm.
- Double acting.
- Stainless steel piston rod.
- Adjustable air cushioning.
- Wide range of mountings and drop-in sensors.

#### Operating information

Working pressure: Max 10 bar  
 Working temperature: -40°C to +80°C  
 Low temp. version

### P1D-X - Low temperature

#### Ø32mm - (G<sup>1</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X032ML-0025 |
| 50        | P1D-X032ML-0050 |
| 80        | P1D-X032ML-0080 |
| 100       | P1D-X032ML-0100 |
| 125       | P1D-X032ML-0125 |
| 160       | P1D-X032ML-0160 |
| 200       | P1D-X032ML-0200 |
| 250       | P1D-X032ML-0250 |
| 320       | P1D-X032ML-0320 |
| 400       | P1D-X032ML-0400 |
| 500       | P1D-X032ML-0500 |

#### Ø63mm - (G<sup>3</sup>/<sub>8</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X063ML-0025 |
| 50        | P1D-X063ML-0050 |
| 80        | P1D-X063ML-0080 |
| 100       | P1D-X063ML-0100 |
| 125       | P1D-X063ML-0125 |
| 160       | P1D-X063ML-0160 |
| 200       | P1D-X063ML-0200 |
| 250       | P1D-X063ML-0250 |
| 320       | P1D-X063ML-0320 |
| 400       | P1D-X063ML-0400 |
| 500       | P1D-X063ML-0500 |

#### Ø100mm - (G<sup>1</sup>/<sub>2</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X100ML-0025 |
| 50        | P1D-X100ML-0050 |
| 80        | P1D-X100ML-0080 |
| 100       | P1D-X100ML-0100 |
| 125       | P1D-X100ML-0125 |
| 160       | P1D-X100ML-0160 |
| 200       | P1D-X100ML-0200 |
| 250       | P1D-X100ML-0250 |
| 320       | P1D-X100ML-0320 |
| 400       | P1D-X100ML-0400 |
| 500       | P1D-X100ML-0500 |

#### Ø40mm - (G<sup>1</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X040ML-0025 |
| 50        | P1D-X040ML-0050 |
| 80        | P1D-X040ML-0080 |
| 100       | P1D-X040ML-0100 |
| 125       | P1D-X040ML-0125 |
| 160       | P1D-X040ML-0160 |
| 200       | P1D-X040ML-0200 |
| 250       | P1D-X040ML-0250 |
| 320       | P1D-X040ML-0320 |
| 400       | P1D-X040ML-0400 |
| 500       | P1D-X040ML-0500 |

#### Ø80mm - (G<sup>3</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X080ML-0025 |
| 50        | P1D-X080ML-0050 |
| 80        | P1D-X080ML-0080 |
| 100       | P1D-X080ML-0100 |
| 125       | P1D-X080ML-0125 |
| 160       | P1D-X080ML-0160 |
| 200       | P1D-X080ML-0200 |
| 250       | P1D-X080ML-0250 |
| 320       | P1D-X080ML-0320 |
| 400       | P1D-X080ML-0400 |
| 500       | P1D-X080ML-0500 |

#### Ø125mm - (G<sup>1</sup>/<sub>2</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X125ML-0025 |
| 50        | P1D-X125ML-0050 |
| 80        | P1D-X125ML-0080 |
| 100       | P1D-X125ML-0100 |
| 125       | P1D-X125ML-0125 |
| 160       | P1D-X125ML-0160 |
| 200       | P1D-X125ML-0200 |
| 250       | P1D-X125ML-0250 |
| 320       | P1D-X125ML-0320 |
| 400       | P1D-X125ML-0400 |
| 500       | P1D-X125ML-0500 |

#### Ø50mm - (G<sup>1</sup>/<sub>4</sub>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X050ML-0025 |
| 50        | P1D-X050ML-0050 |
| 80        | P1D-X050ML-0080 |
| 100       | P1D-X050ML-0100 |
| 125       | P1D-X050ML-0125 |
| 160       | P1D-X050ML-0160 |
| 200       | P1D-X050ML-0200 |
| 250       | P1D-X050ML-0250 |
| 320       | P1D-X050ML-0320 |
| 400       | P1D-X050ML-0400 |
| 500       | P1D-X050ML-0500 |

The cylinders are supplied complete with a zinc plated steel piston rod nut.

## P1D-X Metallic Scraper Cylinders

All seals in the metallic version of P1D-X are developed and validated for continuous operation down to  $-30^{\circ}\text{C}$ . Polyurethane PUR seal technology and specifically formulated grease support performance and reliability for external applications. As standard supplied with a magnetic ring in the piston for proximity sensing but please note that the sensors are normally specified for full performance to  $-25^{\circ}\text{C}$  only.



- Conforms to ISO 15552.
- Bore 32-125 mm.
- Double acting.
- Chromed plated steel piston rod.
- Adjustable air cushioning.
- Wide range of mountings and drop-in sensors.

### Operating information

|                      |   |
|----------------------|---|
| Working pressure:    | Max 10 bar  |
| Working temperature: |   |
| Low temp. version    | <b><math>-30^{\circ}\text{C}</math> to <math>+80^{\circ}\text{C}</math></b> |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## P1D-X - Low temperature, Metallic scraper

### Ø32mm - (G<sup>1/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X032QK-0025 |
| 50        | P1D-X032QK-0050 |
| 80        | P1D-X032QK-0080 |
| 100       | P1D-X032QK-0100 |
| 125       | P1D-X032QK-0125 |
| 160       | P1D-X032QK-0160 |
| 200       | P1D-X032QK-0200 |
| 250       | P1D-X032QK-0250 |
| 320       | P1D-X032QK-0320 |
| 400       | P1D-X032QK-0400 |
| 500       | P1D-X032QK-0500 |

### Ø63mm - (G<sup>3/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X063QK-0025 |
| 50        | P1D-X063QK-0050 |
| 80        | P1D-X063QK-0080 |
| 100       | P1D-X063QK-0100 |
| 125       | P1D-X063QK-0125 |
| 160       | P1D-X063QK-0160 |
| 200       | P1D-X063QK-0200 |
| 250       | P1D-X063QK-0250 |
| 320       | P1D-X063QK-0320 |
| 400       | P1D-X063QK-0400 |
| 500       | P1D-X063QK-0500 |

### Ø100mm - (G<sup>1/2</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X100QK-0025 |
| 50        | P1D-X100QK-0050 |
| 80        | P1D-X100QK-0080 |
| 100       | P1D-X100QK-0100 |
| 125       | P1D-X100QK-0125 |
| 160       | P1D-X100QK-0160 |
| 200       | P1D-X100QK-0200 |
| 250       | P1D-X100QK-0250 |
| 320       | P1D-X100QK-0320 |
| 400       | P1D-X100QK-0400 |
| 500       | P1D-X100QK-0500 |

### Ø40mm - (G<sup>1/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X040QK-0025 |
| 50        | P1D-X040QK-0050 |
| 80        | P1D-X040QK-0080 |
| 100       | P1D-X040QK-0100 |
| 125       | P1D-X040QK-0125 |
| 160       | P1D-X040QK-0160 |
| 200       | P1D-X040QK-0200 |
| 250       | P1D-X040QK-0250 |
| 320       | P1D-X040QK-0320 |
| 400       | P1D-X040QK-0400 |
| 500       | P1D-X040QK-0500 |

### Ø80mm - (G<sup>3/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X080QK-0025 |
| 50        | P1D-X080QK-0050 |
| 80        | P1D-X080QK-0080 |
| 100       | P1D-X080QK-0100 |
| 125       | P1D-X080QK-0125 |
| 160       | P1D-X080QK-0160 |
| 200       | P1D-X080QK-0200 |
| 250       | P1D-X080QK-0250 |
| 320       | P1D-X080QK-0320 |
| 400       | P1D-X080QK-0400 |
| 500       | P1D-X080QK-0500 |

### Ø125mm - (G<sup>1/2</sup>)

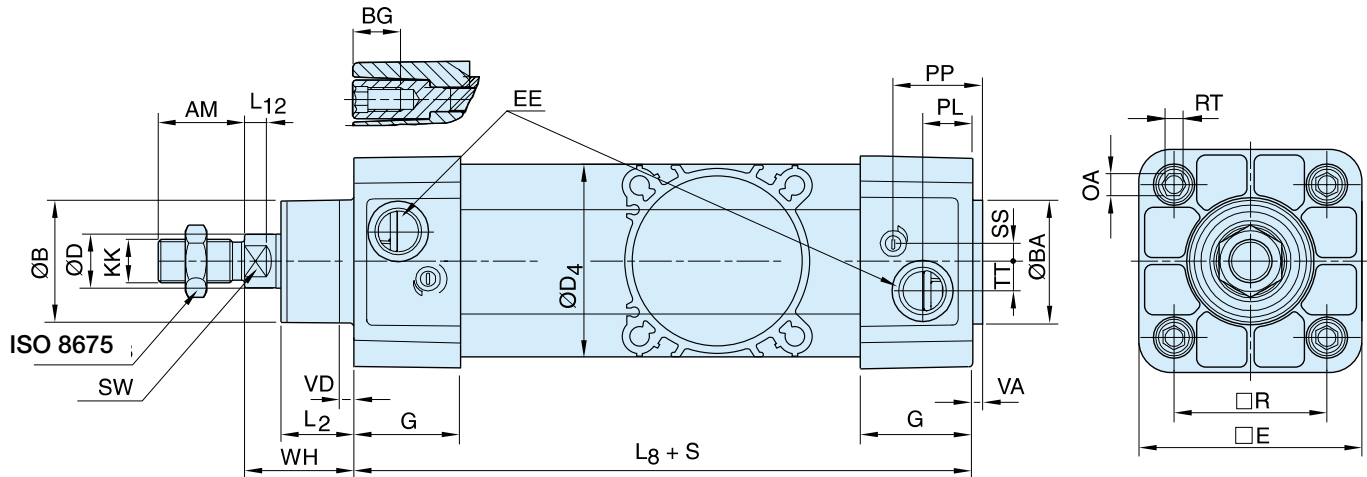
| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X125QK-0025 |
| 50        | P1D-X125QK-0050 |
| 80        | P1D-X125QK-0080 |
| 100       | P1D-X125QK-0100 |
| 125       | P1D-X125QK-0125 |
| 160       | P1D-X125QK-0160 |
| 200       | P1D-X125QK-0200 |
| 250       | P1D-X125QK-0250 |
| 320       | P1D-X125QK-0320 |
| 400       | P1D-X125QK-0400 |
| 500       | P1D-X125QK-0500 |

### Ø50mm - (G<sup>1/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-X050QK-0025 |
| 50        | P1D-X050QK-0050 |
| 80        | P1D-X050QK-0080 |
| 100       | P1D-X050QK-0100 |
| 125       | P1D-X050QK-0125 |
| 160       | P1D-X050QK-0160 |
| 200       | P1D-X050QK-0200 |
| 250       | P1D-X050QK-0250 |
| 320       | P1D-X050QK-0320 |
| 400       | P1D-X050QK-0400 |
| 500       | P1D-X050QK-0500 |

The cylinders are supplied complete with a zinc plated steel piston rod nut.

P1D-X Series



Dimensions

| Cylinder bore<br>mm | AM<br>mm | B<br>mm | BA<br>mm | BG<br>mm | D<br>mm | D4<br>mm | E<br>mm | EE<br>mm | G<br>mm | KK       | L2<br>mm | L8<br>mm | L12<br>mm |
|---------------------|----------|---------|----------|----------|---------|----------|---------|----------|---------|----------|----------|----------|-----------|
| 32                  | 22       | 30      | 30       | 16       | 12      | 45,0     | 48,0    | G1/8     | 28,5    | M10x1,25 | 16,8     | 94       | 6,0       |
| 40                  | 24       | 35      | 35       | 16       | 16      | 52,0     | 53,5    | G1/4     | 33,0    | M12x1,25 | 19,0     | 105      | 6,5       |
| 50                  | 32       | 40      | 40       | 16       | 20      | 60,7     | 65,2    | G1/4     | 33,5    | M16x1,5  | 24,0     | 106      | 8,0       |
| 63                  | 32       | 45      | 45       | 16       | 20      | 71,5     | 75,5    | G3/8     | 39,5    | M16x1,5  | 24,3     | 121      | 8,0       |
| 80                  | 40       | 45      | 45       | 17       | 25      | 86,7     | 95,0    | G3/8     | 39,5    | M20x1,5  | 30,0     | 128      | 10,0      |
| 100                 | 40       | 55      | 55       | 17       | 25      | 106,7    | 114,0   | G1/2     | 44,5    | M20x1,5  | 34,0     | 138      | 14,0      |
| 125                 | 54       | 60      | 60       | 20       | 32      | 134,0    | 139,0   | G1/2     | 51,0    | M27x2    | 45,0     | 160      | 18,0      |

| Cylinder bore<br>mm | OA<br>mm | PL<br>mm | PP<br>mm | R<br>mm | RT<br>mm | SS<br>mm | SW<br>mm | TT<br>mm | VA<br>mm | VD<br>mm | WH<br>mm |
|---------------------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|----------|
| 32                  | 6,0      | 14,0     | 24,2     | 32,5    | M6       | 5,5      | 10       | 4,2      | 3,5      | 4,5      | 26       |
| 40                  | 6,0      | 16,0     | 27,5     | 38,0    | M6       | 8,0      | 13       | 5,5      | 3,5      | 4,5      | 30       |
| 50                  | 8,0      | 14,0     | 29,3     | 46,5    | M8       | 9,0      | 17       | 7,5      | 3,5      | 4,5      | 37       |
| 63                  | 8,0      | 16,6     | 30,8     | 56,5    | M8       | 6,5      | 17       | 10,0     | 3,5      | 4,5      | 37       |
| 80                  | 6,0      | 16,8     | 33,5     | 72,0    | M10      | 0        | 22       | 11,5     | 3,5      | 4,5      | 46       |
| 100                 | 6,0      | 20,5     | 37,5     | 89,0    | M10      | 0        | 22       | 14,5     | 3,5      | 4,5      | 51       |
| 125                 | 8,0      | 23,3     | 45,8     | 110,0   | M12      | 0        | 27       | 15,0     | 5,5      | 6,5      | 65       |

S=Stroke

Tolerances

| Cylinder bore<br>mm | B   | BA  | L <sub>8</sub><br>mm | L <sub>9</sub><br>mm | R<br>mm | Stroke tolerance<br>up to stroke 500 mm | Stroke tolerance<br>for stroke over 500 mm |
|---------------------|-----|-----|----------------------|----------------------|---------|---|--|
| 32                  | d11 | d11 | ±0,4                 | ±2                   | ±0,5    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 40                  | d11 | d11 | ±0,7                 | ±2                   | ±0,5    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 50                  | d11 | d11 | ±0,7                 | ±2                   | ±0,6    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 63                  | d11 | d11 | ±0,8                 | ±2                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 80                  | d11 | d11 | ±0,8                 | ±3                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 100                 | d11 | d11 | ±1,0                 | ±3                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 125                 | d11 | d11 | ±1,0                 | ±3                   | ±1,1    | +0,3/+2,0                               | +0,3/+3,0                                  |

For mountings refer to page 29.

## P1D-L Rod Locking Cylinders

P1D-L is a series of extremely compact rod lock cylinders for demanding applications. This version allows the piston rod to be locked in any position but can also be used as a brake (limits apply) thanks to the rigid design. With helical grooves on the precision clamping sleeves the locking function allows for applications where the piston rod is exposed to liquids and contamination.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Full range of ISO mountings
- Lubricated with food grade grease



### Operating information - P1D-L

|                                |                |
|--------------------------------|----------------|
| Working pressure:              | Max 10 bar     |
| Working temperature:           | -20°C to +80°C |
| Release pressure <sup>1)</sup> | Min 4 bar      |

<sup>1)</sup> Signal pressure to inlet port of lock unit

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## P1D-L - Dynamic Rod Lock

### Ø32mm - (G<sup>1/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L032MC-0025 |
| 40        | P1D-L032MC-0040 |
| 50        | P1D-L032MC-0050 |
| 80        | P1D-L032MC-0080 |
| 100       | P1D-L032MC-0100 |
| 125       | P1D-L032MC-0125 |
| 160       | P1D-L032MC-0160 |
| 200       | P1D-L032MC-0200 |
| 250       | P1D-L032MC-0250 |
| 320       | P1D-L032MC-0320 |
| 400       | P1D-L032MC-0400 |
| 500       | P1D-L032MC-0500 |

### Ø40mm - (G<sup>1/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L040MC-0025 |
| 40        | P1D-L040MC-0040 |
| 50        | P1D-L040MC-0050 |
| 80        | P1D-L040MC-0080 |
| 100       | P1D-L040MC-0100 |
| 125       | P1D-L040MC-0125 |
| 160       | P1D-L040MC-0160 |
| 200       | P1D-L040MC-0200 |
| 250       | P1D-L040MC-0250 |
| 320       | P1D-L040MC-0320 |
| 400       | P1D-L040MC-0400 |
| 500       | P1D-L040MC-0500 |

### Ø50mm - (G<sup>1/4</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L050MC-0025 |
| 40        | P1D-L050MC-0040 |
| 50        | P1D-L050MC-0050 |
| 80        | P1D-L050MC-0080 |
| 100       | P1D-L050MC-0100 |
| 125       | P1D-L050MC-0125 |
| 160       | P1D-L050MC-0160 |
| 200       | P1D-L050MC-0200 |
| 250       | P1D-L050MC-0250 |
| 320       | P1D-L050MC-0320 |
| 400       | P1D-L050MC-0400 |
| 500       | P1D-L050MC-0500 |

### Ø63mm - (G<sup>3/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L063MC-0025 |
| 40        | P1D-L063MC-0040 |
| 50        | P1D-L063MC-0050 |
| 80        | P1D-L063MC-0080 |
| 100       | P1D-L063MC-0100 |
| 125       | P1D-L063MC-0125 |
| 160       | P1D-L063MC-0160 |
| 200       | P1D-L063MC-0200 |
| 250       | P1D-L063MC-0250 |
| 320       | P1D-L063MC-0320 |
| 400       | P1D-L063MC-0400 |
| 500       | P1D-L063MC-0500 |

### Ø80mm - (G<sup>3/8</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L080MS-0025 |
| 40        | P1D-L080MC-0040 |
| 50        | P1D-L080MC-0050 |
| 80        | P1D-L080MC-0080 |
| 100       | P1D-L080MC-0100 |
| 125       | P1D-L080MC-0125 |
| 160       | P1D-L080MC-0160 |
| 200       | P1D-L080MC-0200 |
| 250       | P1D-L080MC-0250 |
| 320       | P1D-L080MC-0320 |
| 400       | P1D-L080MC-0400 |
| 500       | P1D-L080MC-0500 |

### Ø100mm - (G<sup>1/2</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L100MC-0025 |
| 40        | P1D-L100MC-0040 |
| 50        | P1D-L100MC-0050 |
| 80        | P1D-L100MC-0080 |
| 100       | P1D-L100MC-0100 |
| 125       | P1D-L100MC-0125 |
| 160       | P1D-L100MC-0160 |
| 200       | P1D-L100MC-0200 |
| 250       | P1D-L100MC-0250 |
| 320       | P1D-L100MC-0320 |
| 400       | P1D-L100MC-0400 |
| 500       | P1D-L100MC-0500 |

### Ø125mm - (G<sup>1/2</sup>)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1D-L125MC-0025 |
| 40        | P1D-L125MC-0040 |
| 50        | P1D-L125MC-0050 |
| 80        | P1D-L125MC-0080 |
| 100       | P1D-L125MC-0100 |
| 125       | P1D-L125MC-0125 |
| 160       | P1D-L125MC-0160 |
| 200       | P1D-L125MC-0200 |
| 250       | P1D-L125MC-0250 |
| 320       | P1D-L125MC-0320 |
| 400       | P1D-L125MC-0400 |
| 500       | P1D-L125MC-0500 |

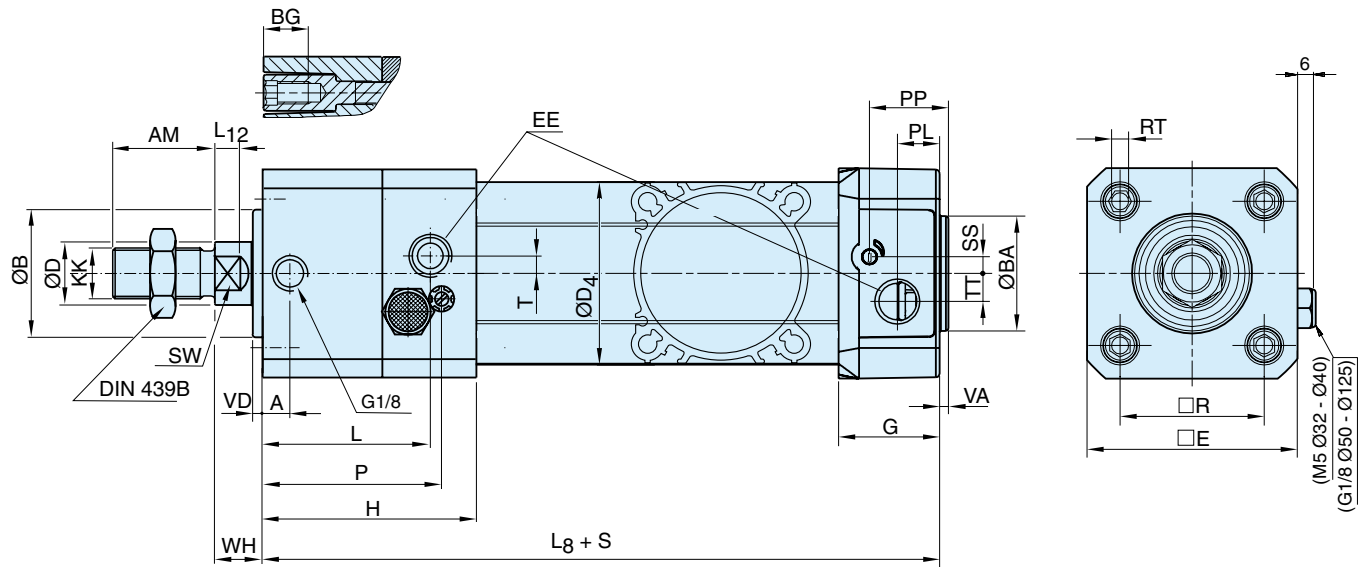
The cylinders are supplied complete with a zinc plated steel piston rod nut.

### Sensors



For sensors see page 77.

## P1D-L Series



## Dimensions

| Cylinder bore<br>mm | A<br>mm | AM<br>mm | B<br>mm | BA<br>mm | BG<br>mm | D<br>mm | D4<br>mm | E<br>mm | EE<br>mm | G<br>mm | H<br>mm | KK<br>mm | L<br>mm |
|---------------------|---------|----------|---------|----------|----------|---------|----------|---------|----------|---------|---------|----------|---------|
| 32                  | 18,5    | 22       | 30      | 30       | 16       | 12      | 45,0     | 50,0    | G1/8     | 28,5    | 71,0    | M10x1,25 | 53,0    |
| 40                  | 20,0    | 24       | 35      | 35       | 16       | 16      | 52,0     | 57,4    | G1/4     | 33,0    | 76,5    | M12x1,25 | 56,0    |
| 50                  | 21,0    | 32       | 40      | 40       | 16       | 20      | 60,7     | 69,4    | G1/4     | 33,5    | 80,0    | M16x1,5  | 65,0    |
| 63                  | 30,0    | 32       | 45      | 45       | 16       | 20      | 71,5     | 82,4    | G3/8     | 39,5    | 96,0    | M16x1,5  | 76,5    |
| 80                  | 35,0    | 40       | 45      | 45       | 17       | 25      | 86,7     | 99,4    | G3/8     | 39,5    | 110,0   | M20x1,5  | 89,0    |
| 100                 | 54,0    | 40       | 55      | 55       | 17       | 25      | 106,7    | 116,0   | G1/2     | 44,5    | 132,0   | M20x1,5  | 112,0   |
| 125                 | 65,5    | 54       | 60      | 60       | 20       | 32      | 134,0    | 139,0   | G1/2     | 51,0    | 144,5   | M27x2    | 124,5   |

| Cylinder bore<br>mm | L8<br>mm | L12<br>mm | P<br>mm | PL<br>mm | PP<br>mm | R<br>mm | RT<br>mm | SS<br>mm | SW<br>mm | T<br>mm | TT<br>mm | VA<br>mm | VD<br>mm | WH<br>mm |
|---------------------|----------|-----------|---------|----------|----------|---------|----------|----------|----------|---------|----------|----------|----------|----------|
| 32                  | 137      | 6,0       | 63,0    | 13,0     | 21,8     | 32,5    | M6       | 4,0      | 10       | 4,5     | 4,5      | 3,5      | 4,5      | 15       |
| 40                  | 149      | 6,5       | 67,5    | 14,0     | 21,9     | 38,0    | M6       | 8,0      | 13       | 3,0     | 5,5      | 3,5      | 4,5      | 16       |
| 50                  | 153      | 8,0       | 71,0    | 14,0     | 23,0     | 46,5    | M8       | 4,0      | 17       | 5,5     | 7,5      | 3,5      | 5,0      | 17       |
| 63                  | 178      | 8,0       | 87,0    | 16,4     | 27,4     | 56,5    | M8       | 6,5      | 17       | 3,0     | 11,0     | 3,5      | 5,0      | 17       |
| 80                  | 199      | 10,0      | 101,0   | 16,0     | 30,5     | 72,0    | M10      | 0        | 22       | 6,0     | 15,0     | 3,5      | 4,0      | 20       |
| 100                 | 226      | 14,0      | 122,0   | 18,0     | 35,8     | 89,0    | M10      | 0        | 22       | 6,0     | 20,0     | 3,5      | 4,0      | 20       |
| 125                 | 254      | 18,0      | 134,5   | 28,0     | 40,5     | 110,0   | M12      | 0        | 27       | 6,0     | 17,5     | 5,5      | 6,0      | 27       |

S=Stroke

## Tolerances

| Cylinder bore<br>mm | B   | BA<br>mm | L <sub>8</sub><br>mm | L <sub>9</sub><br>mm | R<br>mm | Stroke tolerance<br>up to stroke 500 mm | Stroke tolerance<br>for stroke over 500 mm |
|---------------------|-----|----------|----------------------|----------------------|---------|---|--|
| 32                  | d11 | d11      | ±0,4                 | ±2                   | ±0,5    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 40                  | d11 | d11      | ±0,7                 | ±2                   | ±0,5    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 50                  | d11 | d11      | ±0,7                 | ±2                   | ±0,6    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 63                  | d11 | d11      | ±0,8                 | ±2                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 80                  | d11 | d11      | ±0,8                 | ±3                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 100                 | d11 | d11      | ±1,0                 | ±3                   | ±0,7    | +0,3/+2,0                               | +0,3/+3,0                                  |
| 125                 | d11 | d11      | ±1,0                 | ±3                   | ±1,1    | +0,3/+2,0                               | +0,3/+3,0                                  |

For mountings refer to page 29.

## P1D cylinder with static piston rod locking

The P1D cylinder is available in a version with piston rod locking, allowing the piston rod to be locked in any position. The lock unit, of the air/spring actuated type. With no signal pressure, the full force of the lock is applied to the piston rod. Lock units are available for P1D Standard, in bores 32-125 mm. Of course, the entire range of P1D accessories can also be used for the locking cylinder, which can be ordered with factory fitted accessories, sensors. However, the lock unit increases the overall length of the cylinder. Not certified for used in safety systems.



### Operating information - P1D-H

|                                |                |
|--------------------------------|----------------|
| Working pressure:              | Max 10 bar     |
| Working temperature:           | -20°C to +80°C |
| Release pressure <sup>1)</sup> | Min 4 bar      |

<sup>1)</sup> Signal pressure to inlet port of lock unit

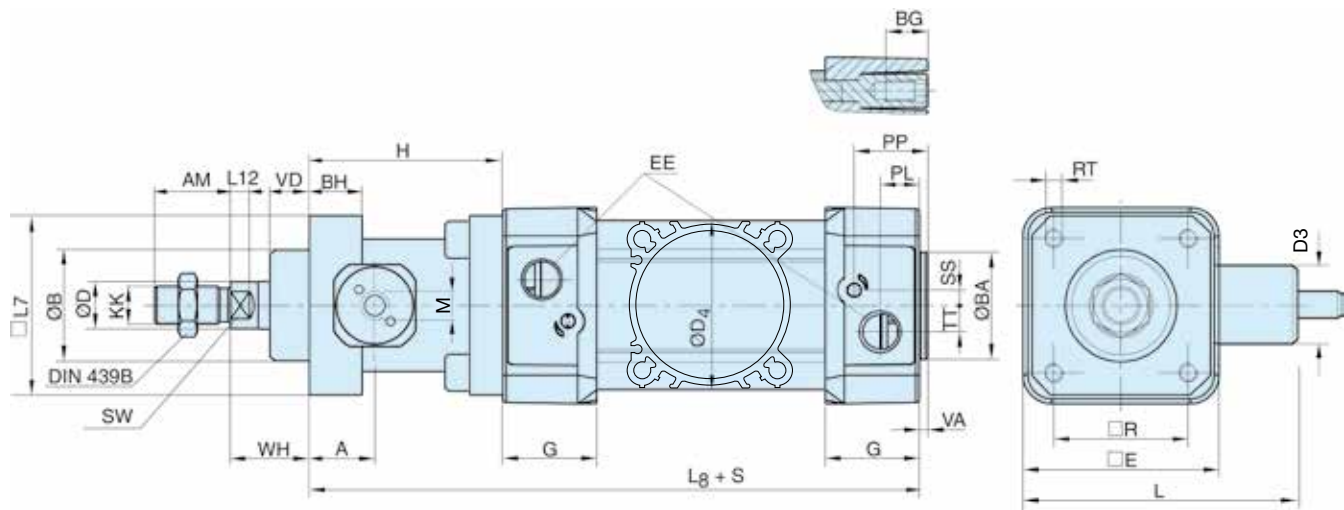
For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

| Cyl. bore<br>mm         | Stroke<br>mm    | Order code      |
|-------------------------|-----------------|-----------------|
| <b>32</b><br>Conn. G1/8 | 25              | P1D-H032MC-0025 |
|                         | 40              | P1D-H032MC-0040 |
|                         | 50              | P1D-H032MC-0050 |
|                         | 80              | P1D-H032MC-0080 |
|                         | 100             | P1D-H032MC-0100 |
|                         | 125             | P1D-H032MC-0125 |
|                         | 160             | P1D-H032MC-0160 |
|                         | 200             | P1D-H032MC-0200 |
|                         | 250             | P1D-H032MC-0250 |
|                         | 320             | P1D-H032MC-0320 |
|                         | 400             | P1D-H032MC-0400 |
| 500                     | P1D-H032MC-0500 |                 |
| <b>40</b><br>Conn. G1/4 | 25              | P1D-H040MC-0025 |
|                         | 40              | P1D-H040MC-0040 |
|                         | 50              | P1D-H040MC-0050 |
|                         | 80              | P1D-H040MC-0080 |
|                         | 100             | P1D-H040MC-0100 |
|                         | 125             | P1D-H040MC-0125 |
|                         | 160             | P1D-H040MC-0160 |
|                         | 200             | P1D-H040MC-0200 |
|                         | 250             | P1D-H040MC-0250 |
|                         | 320             | P1D-H040MC-0320 |
|                         | 400             | P1D-H040MC-0400 |
| 500                     | P1D-H040MC-0500 |                 |
| <b>50</b><br>Conn. G1/4 | 25              | P1D-H050MC-0025 |
|                         | 40              | P1D-H050MC-0040 |
|                         | 50              | P1D-H050MC-0050 |
|                         | 80              | P1D-H050MC-0080 |
|                         | 100             | P1D-H050MC-0100 |
|                         | 125             | P1D-H050MC-0125 |
|                         | 160             | P1D-H050MC-0160 |
|                         | 200             | P1D-H050MC-0200 |
|                         | 250             | P1D-H050MC-0250 |
|                         | 320             | P1D-H050MC-0320 |
|                         | 400             | P1D-H050MC-0400 |
| 500                     | P1D-H050MC-0500 |                 |
| <b>63</b><br>Conn. G3/8 | 25              | P1D-H063MC-0025 |
|                         | 40              | P1D-H063MC-0040 |
|                         | 50              | P1D-H063MC-0050 |
|                         | 80              | P1D-H063MC-0080 |
|                         | 100             | P1D-H063MC-0100 |
|                         | 125             | P1D-H063MC-0125 |
|                         | 160             | P1D-H063MC-0160 |
|                         | 200             | P1D-H063MC-0200 |
|                         | 250             | P1D-H063MC-0250 |
|                         | 320             | P1D-H063MC-0320 |
|                         | 400             | P1D-H063MC-0400 |
| 500                     | P1D-H063MC-0500 |                 |

| Cyl. bore<br>mm          | Stroke<br>mm    | Order code      |
|--------------------------|-----------------|-----------------|
| <b>80</b><br>Conn. G3/8  | 25              | P1D-H080MC-0025 |
|                          | 40              | P1D-H080MC-0040 |
|                          | 50              | P1D-H080MC-0050 |
|                          | 80              | P1D-H080MC-0080 |
|                          | 100             | P1D-H080MC-0100 |
|                          | 125             | P1D-H080MC-0125 |
|                          | 160             | P1D-H080MC-0160 |
|                          | 200             | P1D-H080MC-0200 |
|                          | 250             | P1D-H080MC-0250 |
|                          | 320             | P1D-H080MC-0320 |
|                          | 400             | P1D-H080MC-0400 |
| 500                      | P1D-H080MC-0500 |                 |
| <b>100</b><br>Conn. G1/2 | 25              | P1D-H100MC-0025 |
|                          | 40              | P1D-H100MC-0040 |
|                          | 50              | P1D-H100MC-0050 |
|                          | 80              | P1D-H100MC-0080 |
|                          | 100             | P1D-H100MC-0100 |
|                          | 125             | P1D-H100MC-0125 |
|                          | 160             | P1D-H100MC-0160 |
|                          | 200             | P1D-H100MC-0200 |
|                          | 250             | P1D-H100MC-0250 |
|                          | 320             | P1D-H100MC-0320 |
|                          | 400             | P1D-H100MC-0400 |
| 500                      | P1D-H100MC-0500 |                 |
| <b>125</b><br>Conn. G1/2 | 25              | P1D-H125MC-0025 |
|                          | 40              | P1D-H125MC-0040 |
|                          | 50              | P1D-H125MC-0050 |
|                          | 80              | P1D-H125MC-0080 |
|                          | 100             | P1D-H125MC-0100 |
|                          | 125             | P1D-H125MC-0125 |
|                          | 160             | P1D-H125MC-0160 |
|                          | 200             | P1D-H125MC-0200 |
|                          | 250             | P1D-H125MC-0250 |
|                          | 320             | P1D-H125MC-0320 |
|                          | 400             | P1D-H125MC-0400 |
| 500                      | P1D-H125MC-0500 |                 |

The cylinders are supplied complete with one zinc plated steel piston rod nut.

## P1D-H Series



## Dimensions (mm)

| Cylinder bore<br>mm | A    | AM | B  | BA | BG | BH | D  | D3   | D4    | E     | EE   | G    | H     | KK       |
|---------------------|------|----|----|----|----|----|----|------|-------|-------|------|------|-------|----------|
| 32                  | 16,0 | 22 | 30 | 30 | 16 | 12 | 12 | 22,5 | 45,0  | 50,0  | G1/8 | 28,5 | 48,0  | M10x1,25 |
| 40                  | 19,5 | 24 | 35 | 35 | 16 | 12 | 16 | 27,5 | 52,0  | 57,4  | G1/4 | 33,0 | 55,0  | M12x1,25 |
| 50                  | 21,0 | 32 | 40 | 40 | 16 | 16 | 20 | 32,5 | 60,7  | 69,4  | G1/4 | 33,5 | 70,0  | M16x1,5  |
| 63                  | 21,0 | 32 | 45 | 45 | 16 | 15 | 20 | 41,0 | 71,5  | 82,4  | G3/8 | 39,5 | 70,0  | M16x1,5  |
| 80                  | 28,0 | 40 | 45 | 45 | 17 | 16 | 25 | 49,0 | 86,7  | 99,4  | G3/8 | 39,5 | 90,0  | M20x1,5  |
| 100                 | 27,0 | 40 | 55 | 55 | 17 | 18 | 25 | 53,0 | 106,7 | 116,0 | G1/2 | 44,5 | 92,0  | M20x1,5  |
| 125                 | 37,0 | 54 | 60 | 60 | 20 | 27 | 32 | 65,0 | 134,0 | 139,0 | G1/2 | 51,0 | 122,0 | M27x2    |

| Cylinder bore<br>mm | L     | L7  | L8  | L12  | M    | PL   | PP   | R     | RT  | SS  | SW | TT   | VA  | VD | WH |
|---------------------|-------|-----|-----|------|------|------|------|-------|-----|-----|----|------|-----|----|----|
| 32                  | 94,0  | 48  | 142 | 6,0  | M5   | 13,0 | 21,8 | 32,5  | M6  | 4,0 | 10 | 4,5  | 3,5 | 10 | 26 |
| 40                  | 102,5 | 56  | 160 | 6,5  | G1/8 | 14,0 | 21,9 | 38,0  | M6  | 8,0 | 13 | 5,5  | 3,5 | 10 | 30 |
| 50                  | 119,5 | 68  | 176 | 8,0  | G1/8 | 14,0 | 23,0 | 46,5  | M8  | 4,0 | 17 | 7,5  | 3,5 | 12 | 37 |
| 63                  | 138,0 | 82  | 203 | 8,0  | G1/8 | 16,4 | 27,4 | 56,5  | M8  | 6,5 | 17 | 11,0 | 3,5 | 12 | 37 |
| 80                  | 152,0 | 100 | 218 | 10,0 | G1/8 | 16,0 | 30,5 | 72,0  | M10 | 0   | 22 | 15,0 | 3,5 | 20 | 46 |
| 100                 | 193,5 | 120 | 230 | 14,0 | G1/8 | 18,0 | 35,8 | 89,0  | M10 | 0   | 22 | 20,0 | 3,5 | 23 | 51 |
| 125                 | 223,5 | 140 | 282 | 18,0 | G1/8 | 28,0 | 40,5 | 110,0 | M12 | 0   | 27 | 17,5 | 5,5 | 32 | 65 |

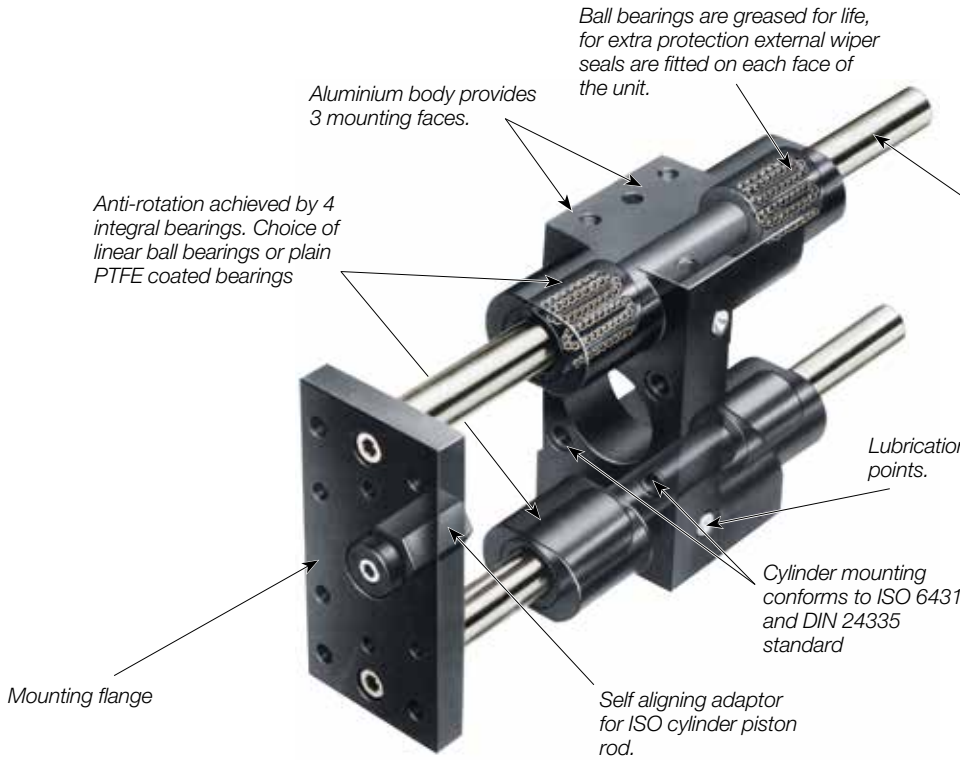
S=Stroke

## Tolerances (mm)

| Cylinder bore<br>mm | B   | BA  | L <sub>8</sub> | L <sub>9</sub> | R    | Stroke tolerance<br>up to stroke 500 mm | Stroke tolerance<br>for stroke over 500 mm |
|---------------------|-----|-----|----------------|----------------|------|---|--|
| 32                  | d11 | d11 | ±0,4           | ±2             | ±0,5 | +0,3/+2,0                               | +0,3/+3,0                                  |
| 40                  | d11 | d11 | ±0,7           | ±2             | ±0,5 | +0,3/+2,0                               | +0,3/+3,0                                  |
| 50                  | d11 | d11 | ±0,7           | ±2             | ±0,6 | +0,3/+2,0                               | +0,3/+3,0                                  |
| 63                  | d11 | d11 | ±0,8           | ±2             | ±0,7 | +0,3/+2,0                               | +0,3/+3,0                                  |
| 80                  | d11 | d11 | ±0,8           | ±3             | ±0,7 | +0,3/+2,0                               | +0,3/+3,0                                  |
| 100                 | d11 | d11 | ±1,0           | ±3             | ±0,7 | +0,3/+2,0                               | +0,3/+3,0                                  |
| 125                 | d11 | d11 | ±1,0           | ±3             | ±1,1 | +0,3/+2,0                               | +0,3/+3,0                                  |



**P1E Rod Guidance Module**



Guide bars:  
Ball bearing versions  
stainless steel.  
Plain bearing version  
hard chrome plated.

**Installation on P1D-L with lock unit**

If rotary control is to be retrofitted to a P1D-L with lock unit, the piston rod must be extended to provide the same WH dimensions as for the P1D base cylinder, as shown in the table below.

| Cyl. dim<br>mm | Piston rod extension<br>on P1D-L with lock unit<br>mm |
|----------------|---|
| 32             | 11  |
| 40             | 14  |
| 50             | 20  |
| 63             | 20  |
| 80             | 26  |
| 100            | 31  |

**P1E with rod guidance modules**

The P1D series cylinders can be equipped with an external guiding device to prevent the piston rod from turning. The factory fitted guide gives a guided piston movement and enables the cylinder to take up turning moments on the piston rod, as well as greater transverse forces. The rod guidance is available with plain bearings or linear ball bearings and with H or U style. The bracket, which has pre-drilled mounting holes, is connected to the piston rod by means of a flexo coupling, which prevents the build-up of stresses in the cylinder. P1D cylinders with guiding devices are available with bores from 32 to 100 mm, and standard stroke lengths from 25 to 250 mm. Special stroke lengths up to 500 mm can also be obtained. Separate guiding device kits can be supplied on request according to the order key below.

**Technical data**

Working temperature -20 °C to +80 °C

**Material specifications, guidance modules**

|                     |   |
|---------------------|---|
| Body                | Anodised aluminium  |
| Guide bars, H style | Stainless steel for ball bearing<br>chrome plated for plain bearing |
| Front plate         | Anodised aluminium  |
| Guide bars, U style | Stainless steel   |
| Front plate         | Zinc-plated steel   |
| Bearings            | Plain bearings<br>Linear ball bearings                              |

**Order key for separate guidance module**

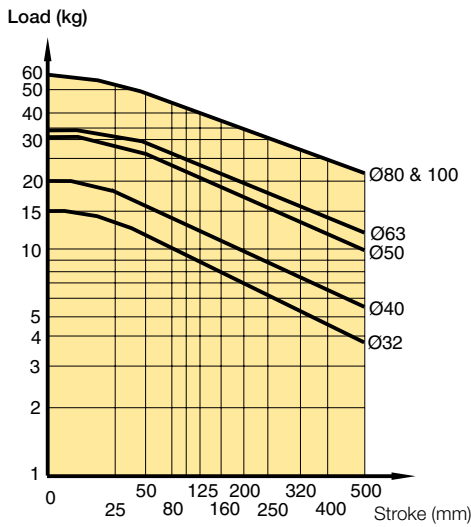
**P1E - 4KRH - 0100**

| Bore size mm | Guide module type                | Stroke length (mm)                                     |
|--------------|----------------------------------|--|
| <b>K</b> 32  | <b>H</b> H style, ball bearings  | Same as for the cylinder<br>e.g. <b>0100</b> = 100 mm. |
| <b>L</b> 40  | <b>J</b> H style, plain bearings |  |
| <b>M</b> 50  | <b>K</b> U style, plain bearings |  |
| <b>N</b> 63  |                                  |  |
| <b>P</b> 80  |                                  |  |
| <b>Q</b> 100 |                                  |  |

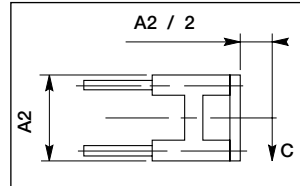
Technical information 'H style'

Rod guide with ball bearings

Maximum load carried

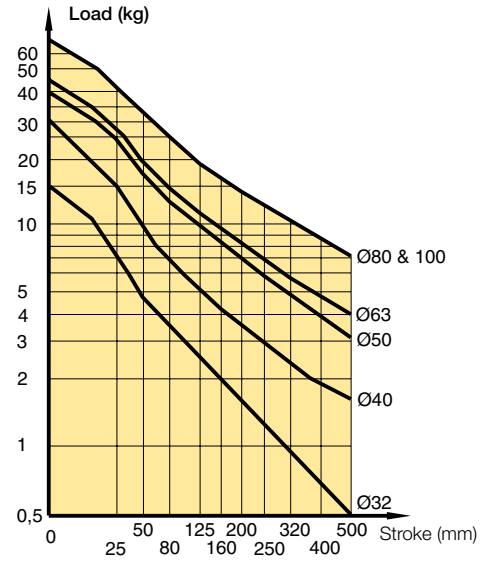


Graphs established at mid point of stroke

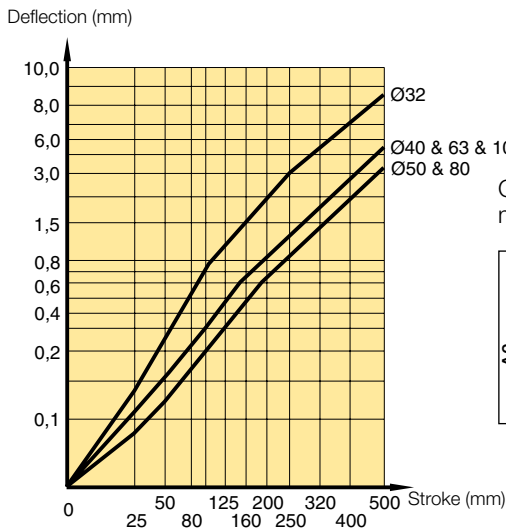


Rod guide with plain bearings

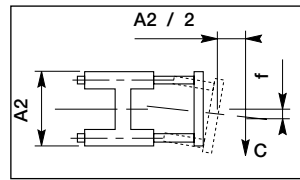
Maximum load carried



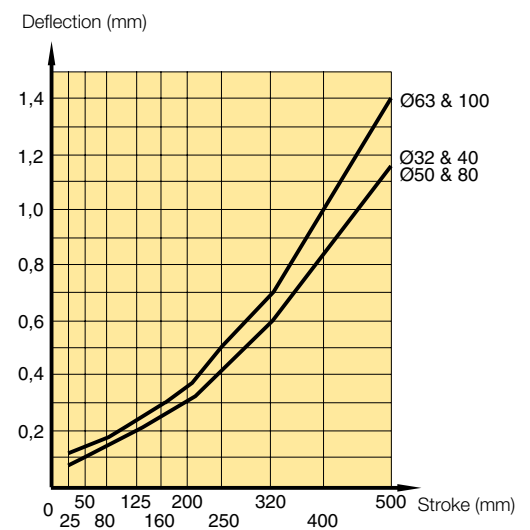
Maximum deflection/max load



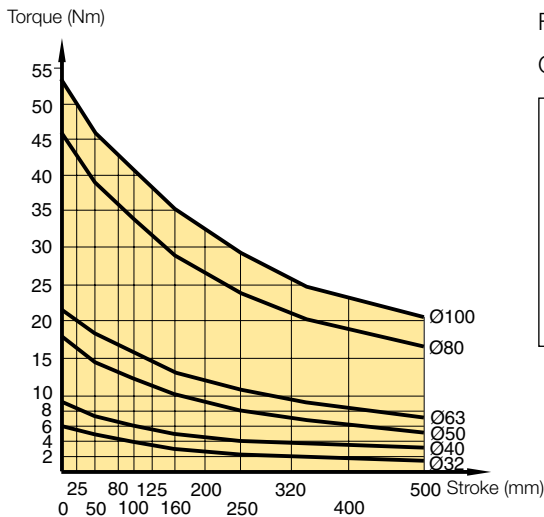
Graphs established at mid point of stroke



Maximum deflection/max load

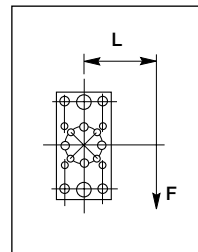


Maximum permissible torque (Nm)

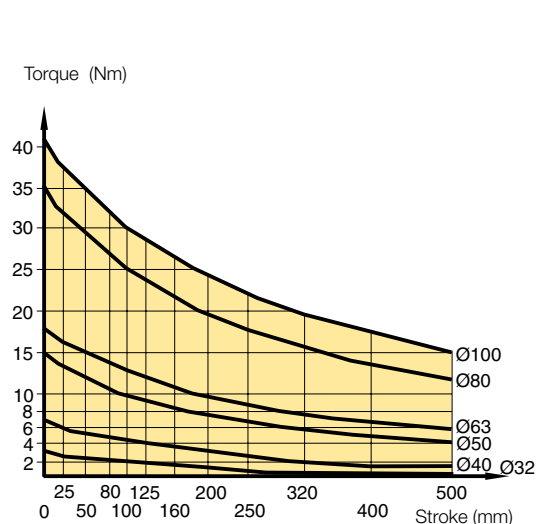


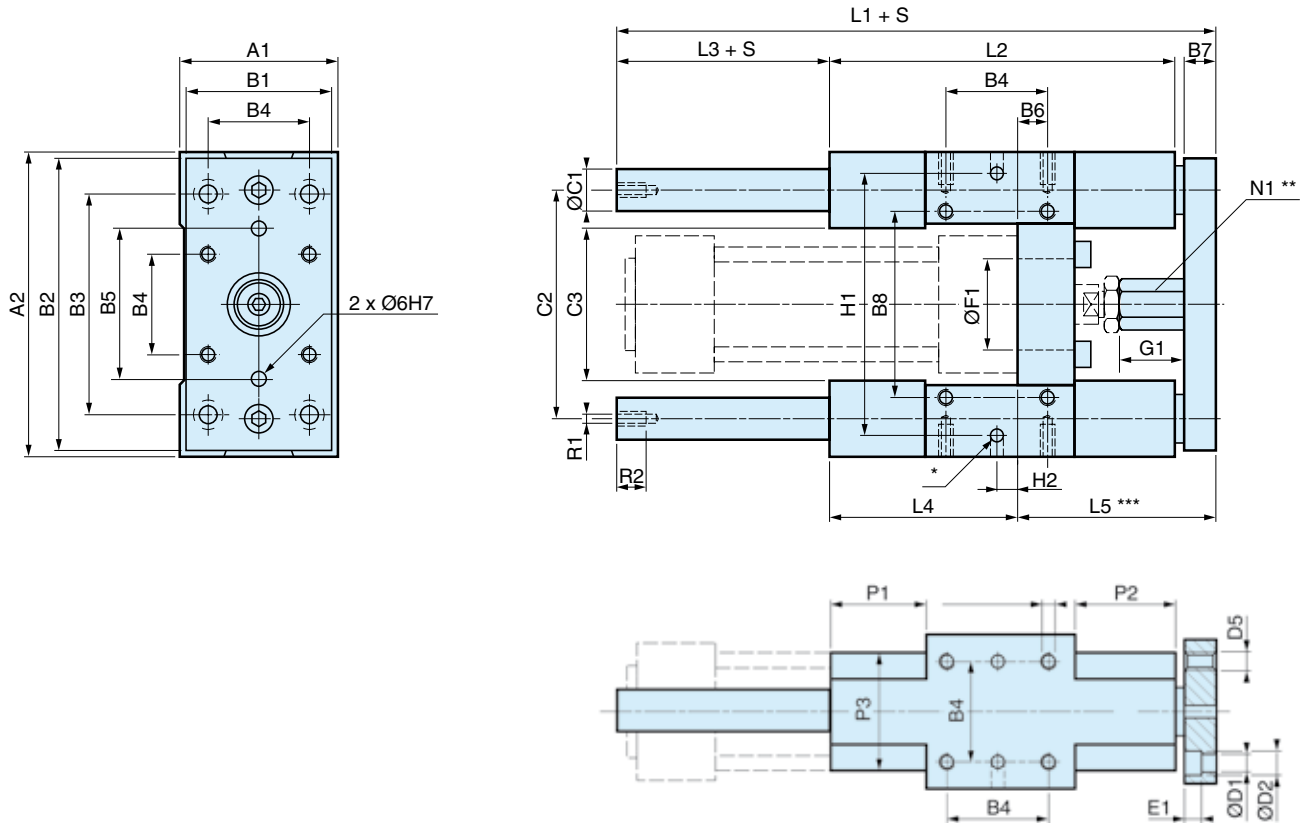
Formula:

$$C(Nm) = F(N) \times L(m)$$



Maximum permissible torque (Nm)





**Dimensions, H style guidance modules**

| Cyl. bore<br>mm | A <sub>1</sub><br>mm | A <sub>2</sub><br>mm | B <sub>1</sub><br>mm | B <sub>2</sub><br>mm | B <sub>3</sub><br>mm | B <sub>4</sub><br>mm | B <sub>5</sub><br>mm | B <sub>6</sub><br>mm | B <sub>7</sub><br>mm | B <sub>8</sub><br>mm | ØC <sub>1</sub><br>mm | C <sub>2</sub><br>mm | C <sub>3</sub><br>mm | ØD <sub>1</sub><br>mm | ØD <sub>2</sub><br>mm | D <sub>5</sub> |
|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|----------------|
| 32              | 50                   | 97                   | 45                   | 90                   | 78                   | 32,5                 | 50                   | 4,2                  | 12                   | 61                   | 12                    | 73,5                 | 50                   | 6,6                   | 11                    | M6             |
| 40              | 58                   | 115                  | 54                   | 110                  | 84                   | 38,0                 | 54                   | 11,0                 | 12                   | 69                   | 16                    | 86,5                 | 58                   | 6,6                   | 11                    | M6             |
| 50              | 70                   | 137                  | 63                   | 130                  | 100                  | 46,5                 | 72                   | 18,8                 | 15                   | 85                   | 20                    | 103,5                | 70                   | 8,4                   | 15                    | M8             |
| 63              | 85                   | 152                  | 80                   | 145                  | 105                  | 56,5                 | 82                   | 15,0                 | 15                   | 100                  | 20                    | 118,5                | 83                   | 8,4                   | 15                    | M8             |
| 80              | 105                  | 189                  | 100                  | 180                  | 130                  | 72,0                 | 106                  | 21,0                 | 20                   | 130                  | 25                    | 147,0                | 102                  | 10,5                  | 18                    | M10            |
| 100             | 130                  | 213                  | 120                  | 200                  | 150                  | 89,0                 | 131                  | 24,5                 | 20                   | 150                  | 25                    | 171,5                | 125                  | 10,5                  | 18                    | M10            |

| Cyl. bore<br>mm | E <sub>1</sub><br>mm | Ø F <sub>1</sub> <sup>+0,1/0</sup> G <sub>1</sub><br>mm | L <sub>1</sub><br>mm | L <sub>2</sub><br>mm | L <sub>3</sub><br>mm | L <sub>4</sub><br>mm | L <sub>5</sub><br>mm | N <sub>1</sub><br>mm | P <sub>1</sub> ±1<br>mm | P <sub>2</sub> ±1<br>mm | P <sub>3</sub><br>mm | R <sub>1</sub><br>mm | R <sub>2</sub><br>mm | W<br>mm | mm |
|-----------------|----------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------------------|-------------------------|----------------------|----------------------|----------------------|---------|----|
| 32              | 7                    | 30  | 17                   | 150                  | 120                  | 15                   | 71                   | 64                   | 17                      | 36                      | 31                   | 40                   | M6                   | 11      | 5  |
| 40              | 7                    | 35  | 24                   | 170                  | 130                  | 25                   | 71                   | 74                   | 17                      | 36                      | 36                   | 44                   | M6                   | 11      | 6  |
| 50              | 9                    | 40  | 27                   | 197                  | 150                  | 24                   | 79                   | 89                   | 24                      | 42                      | 44                   | 50                   | M8                   | 16      | 8  |
| 63              | 9                    | 45  | 27                   | 222                  | 180                  | 24                   | 109                  | 89                   | 24                      | 58                      | 44                   | 60                   | M8                   | 16      | 8  |
| 80              | 11                   | 45  | 32                   | 247                  | 200                  | 24                   | 113                  | 110                  | 30                      | 50                      | 52                   | 70                   | M10                  | 16      | 10 |
| 100             | 11                   | 55  | 32                   | 267                  | 220                  | 24                   | 128                  | 115                  | 30                      | 49                      | 51                   | 70                   | M10                  | 16      | 10 |

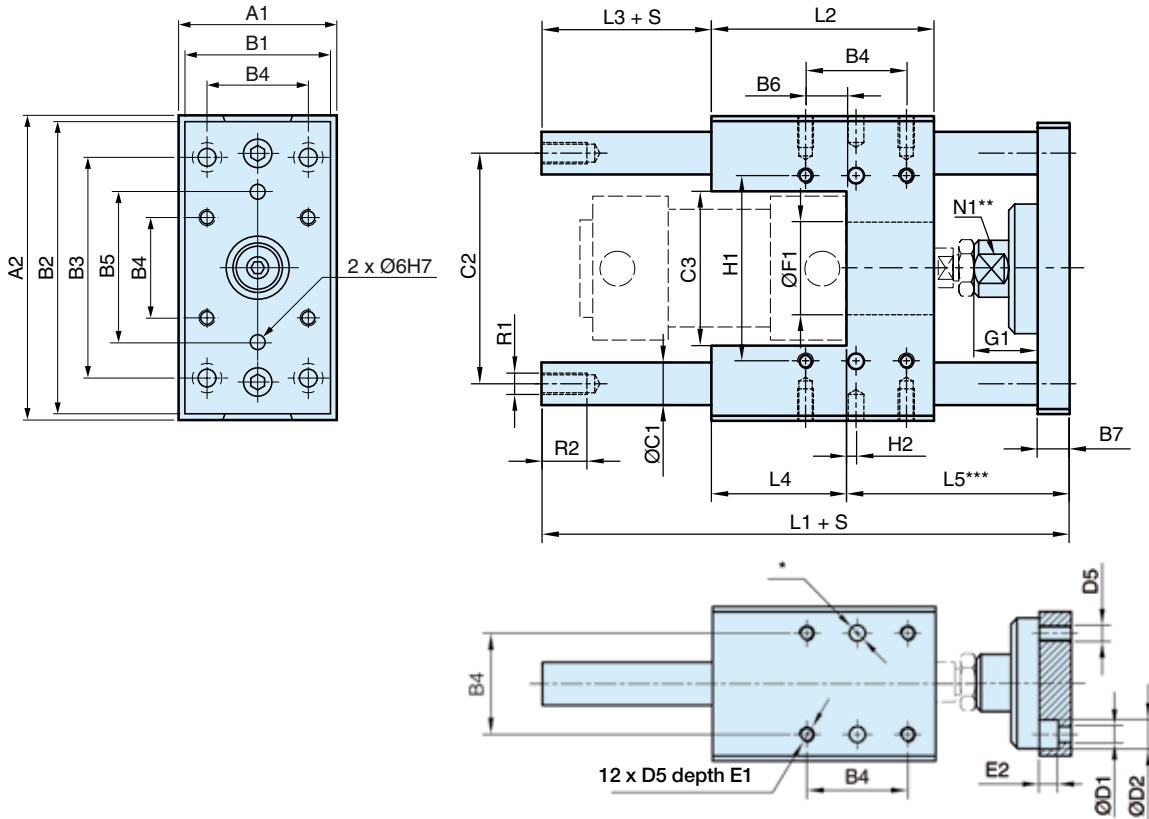
| Cyl. bore<br>mm | H <sub>1</sub> <sup>+0,05</sup><br>mm | H <sub>2</sub><br>mm | T<br>mm | Weight at 0 mm stroke<br>kg | Supplement weight per 10 mm stroke<br>kg |
|-----------------|---------------------------------------|----------------------|---------|-----------------------------|--|
| 32              | 81                                    | 11,7                 | 12      | 0,970                       | 0,018                                    |
| 40              | 99                                    | 8,0                  | 12      | 1,550                       | 0,032                                    |
| 50              | 119                                   | 4,2                  | 16      | 2,560                       | 0,050                                    |
| 63              | 132                                   | 13,0                 | 16      | 3,570                       | 0,050                                    |
| 80              | 166                                   | 15,0                 | 20      | 6,530                       | 0,078                                    |
| 100             | 190                                   | 20,5                 | 20      | 8,760                       | 0,078                                    |

S = Stroke length

\* 6 hole Ø6<sup>H7</sup>, depth 10<sup>+1/0</sup>

\*\* Hexagon profile

\*\*\* Min adjustment=0, max.=W



**Dimensions, U style guidance modules**

| Cyl. bore.<br>mm | A <sub>1</sub><br>mm | A <sub>2</sub><br>mm | B <sub>1</sub><br>mm | B <sub>2</sub><br>mm | B <sub>3</sub><br>mm | B <sub>4</sub><br>mm | B <sub>5</sub><br>mm | B <sub>6</sub><br>mm | B <sub>7</sub><br>mm | C <sub>1</sub><br>mm | C <sub>2</sub><br>mm | C <sub>3</sub><br>mm | D <sub>1</sub><br>mm | D <sub>2</sub><br>mm | D <sub>5</sub> |
|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------|
| 32               | 50                   | 97                   | 45                   | 90                   | 78                   | 32,5                 | 50                   | 18,0                 | 12                   | 12                   | 74                   | 50                   | 6,6                  | 11                   | M6             |
| 40               | 58                   | 115                  | 54                   | 110                  | 84                   | 38,0                 | 54                   | 15,5                 | 12                   | 16                   | 87                   | 58                   | 6,6                  | 11                   | M6             |
| 50               | 70                   | 137                  | 63                   | 130                  | 100                  | 46,5                 | 72                   | 19,5                 | 15                   | 20                   | 104                  | 70                   | 9,0                  | 15                   | M8             |
| 63               | 85                   | 152                  | 80                   | 145                  | 105                  | 56,5                 | 82                   | 29,5                 | 15                   | 20                   | 119                  | 85                   | 9,0                  | 15                   | M8             |
| 80               | 105                  | 189                  | 100                  | 180                  | 130                  | 72,0                 | 106                  | 39,0                 | 20                   | 25                   | 148                  | 105                  | 11,0                 | 18                   | M10            |
| 100              | 130                  | 213                  | 120                  | 200                  | 150                  | 89,0                 | 131                  | 53,5                 | 20                   | 25                   | 172                  | 130                  | 11,0                 | 18                   | M10            |

| Cyl. bore.<br>mm | E <sub>1</sub><br>mm | E <sub>2</sub><br>mm | Ø F <sub>1</sub> <sup>+0,1/0</sup><br>mm | G <sub>1</sub> | L <sub>1</sub><br>mm | L <sub>2</sub><br>mm | L <sub>3</sub><br>mm | L <sub>4</sub><br>mm | L <sub>5</sub><br>mm | N <sub>1</sub><br>mm | R <sub>1</sub><br>mm | R <sub>2</sub> | H <sub>1</sub> <sup>±0,05</sup><br>mm | H <sub>2</sub><br>mm | W <sup>***</sup><br>mm |
|------------------|----------------------|----------------------|--|----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------|---------------------------------------|----------------------|------------------------|
| 32               | 10                   | 6,5                  | 30                                       | 30             | 133                  | 72                   | 14                   | 44                   | 75                   | 13                   | M6                   | 11             | 61                                    | 1,75                 | 5                      |
| 40               | 10                   | 6,5                  | 35                                       | 36             | 149                  | 84                   | 12                   | 51                   | 86                   | 15                   | M8                   | 12             | 69                                    | 3,50                 | 5                      |
| 50               | 13                   | 9,0                  | 40                                       | 42             | 175                  | 100                  | 12                   | 60                   | 103                  | 22                   | M8                   | 12             | 85                                    | 3,75                 | 5                      |
| 63               | 13                   | 9,0                  | 45                                       | 42             | 190                  | 115                  | 12                   | 75                   | 103                  | 22                   | M8                   | 12             | 100                                   | 1,25                 | 5                      |
| 80               | 16                   | 11,0                 | 45                                       | 49             | 238                  | 162                  | 0                    | 112                  | 126                  | 27                   | M10                  | 16             | 130                                   | 3,00                 | 6                      |
| 100              | 16                   | 11,0                 | 55                                       | 49             | 249                  | 167                  | 6                    | 112                  | 131                  | 27                   | M10                  | 16             | 150                                   | 8,50                 | 6                      |

| Cyl. bore<br>mm | Weight at 0 mm stroke<br>kg | Supplement weight per 10 mm stroke<br>kg |
|-----------------|-----------------------------|--|
| 32              | 0,970                       | 0,018                                    |
| 40              | 1,550                       | 0,315                                    |
| 50              | 2,560                       | 0,493                                    |
| 63              | 3,570                       | 0,493                                    |
| 80              | 6,530                       | 0,770                                    |
| 100             | 8,760                       | 0,770                                    |

S = Stroke length

\* 6 hole Ø6<sup>H7</sup>, depth 10<sup>+1/0</sup>

\*\* Width of jaw

\*\*\* Min adjustment=0, max.=W

# P8S-G sensors



The P1D sensors can easily be installed from the side in the sensor groove, at any position along the piston stroke. The sensors are completely recessed and thus mechanically protected. Choose between electronic or reed sensors and several cable lengths and 8 mm and M12 connectors. The same standard sensors are used for all P1D versions.

## Electronic sensors

The electronic sensors are "Solid State", i.e. they have no moving parts at all. They are provided with short-circuit protection and transient protection as standard. The built-in electronics make the sensors suitable for applications with high on and off switching frequency, and where very long service life is required.

## Reed sensors

The sensors are based on proven reed switches, which offer reliable function in many applications. Simple installation, a protected position on the cylinder and clear LED indication are important advantages of this range of sensors.

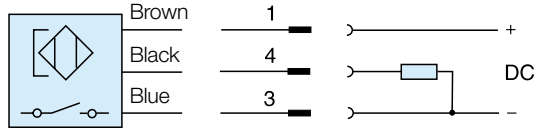
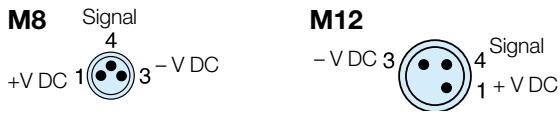
### Technical data

|                            |  |
|----------------------------|--|
| Design                     | GMR (Giant Magnetic Resistance) magneto-resistive function                     |
| Installation               | From side, down into the sensor groove, so-called drop-in                      |
| Outputs                    | PNP, normally open (also available in NPN design, normally closed, on request) |
| Voltage range              | 10-30 VDC<br>10-18 V DC, ATEX sensor   |
| Ripple                     | max 10%  |
| Voltage drop               | max 2,5 V  |
| Load current               | max 100 mA   |
| Internal consumption       | max 10 mA  |
| Actuating distance         | min 9 mm   |
| Hysteresis                 | max 1,5 mm   |
| Repeatability accuracy     | max 0,2 mm   |
| On/off switching frequency | max 5 kHz  |
| On switching time          | max 2 ms   |
| Off switching time         | max 2 ms   |
| Encapsulation              | IP 67 (EN 60529)   |
| Temperature range          | -25 °C to +75 °C<br>-20 °C to +45 °C, ATEX sensor                              |
| Indication                 | LED, yellow  |
| Material housing           | PA 12  |
| Material screw             | Stainless steel  |
| Cable                      | PVC or PUR 3x0.25 mm <sup>2</sup><br>see order code respectively               |

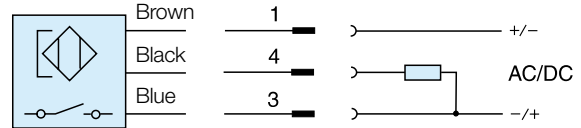
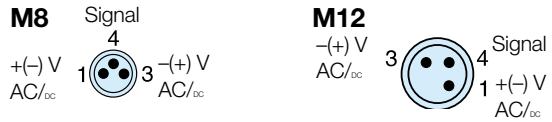
### Technical data

|                            |  |
|----------------------------|--|
| Design                     | Reed element   |
| Mounting                   | From side, down into the sensor groove, so-called drop-in                      |
| Output                     | Normally open , or normally closed   |
| Voltage range              | 10-30 V AC/DC or<br>10-120 V AC/DC<br>24-230 V AC/DC                           |
| Load current               | max 500 mA for 10-30 V or<br>max 100 mA for 10-120 V<br>max 30 mA for 24-230 V |
| Breaking power (resistive) | max 6 W/VA   |
| Actuating distance         | min 9 mm   |
| Hysteresis                 | max 1,5 mm   |
| Repeatability accuracy     | 0,2 mm   |
| On/off switching frequency | max 400 Hz   |
| On switching time          | max 1,5 ms   |
| Off switching time         | max 0,5 ms   |
| Encapsulation              | IP 67 (EN 60529)   |
| Temperature range          | -25 °C to +75 °C   |
| Indication                 | LED, yellow  |
| Material housing           | PA12   |
| Material screw             | Stainless steel  |
| Cable                      | PVC or PUR 3x0.14 mm <sup>2</sup><br>see order code respectively               |

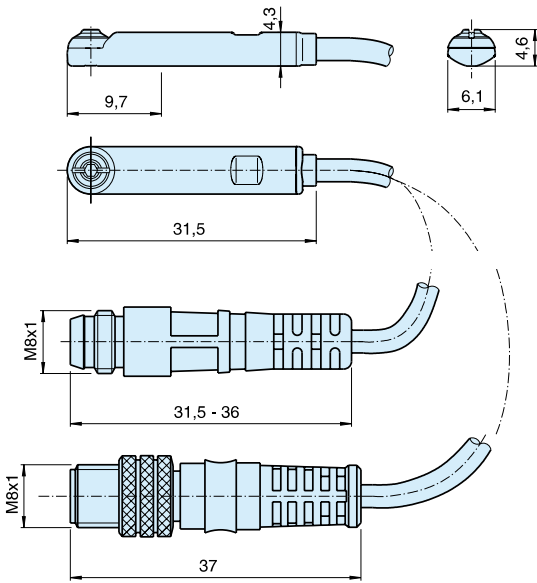
Electronic sensors



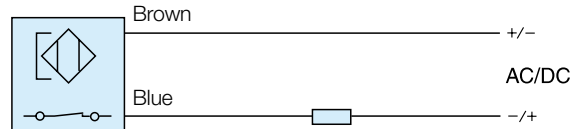
Reed sensors



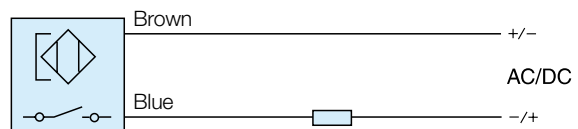
Sensor Dimensions



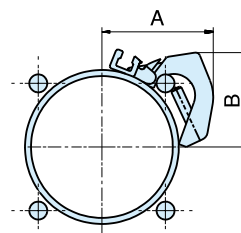
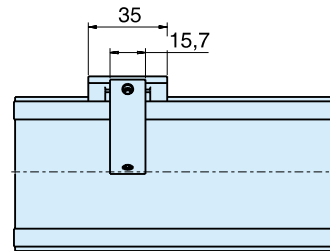
P8S-GCFPX



P8S-GRFLX / P8S-GRFLX2

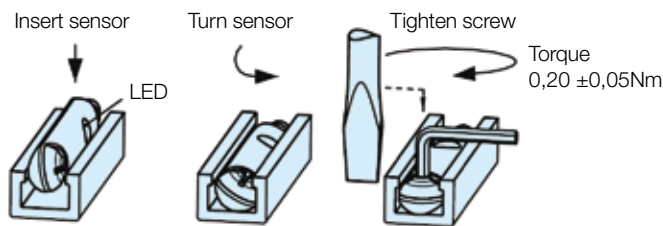


Sensor mounting - P1D-T 32 - 125mm  
 P8S-TMA0X

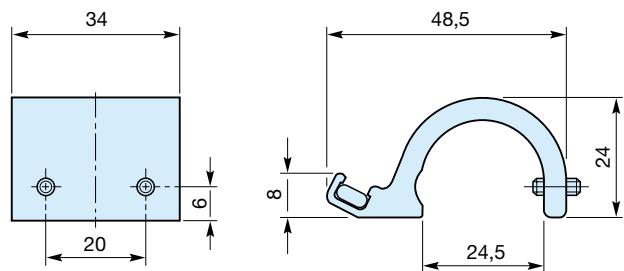


| Cyl. bore mm | A mm | B mm |
|--------------|------|------|
| 32           | 35   | 26   |
| 40           | 39   | 30   |
| 50           | 44   | 30   |
| 63           | 50   | 42   |
| 80           | 54   | 52   |
| 100          | 62   | 60   |
| 125          | 74   | 69   |

Sensor Installation - P1D-S / B / C / X  
 P1Q / P1P



Sensor mounting - P1D-T 160 - 320mm  
 PD48956



Order code

**PD48956**

## Ordering data

| Output/function                        | Cable/connector                                  | Weight<br>kg | Order code        |
|--|--|--------------|-------------------|
| <b>Electronic sensors , 10-30 V DC</b> |  |              |                   |
| PNP type, normally open                | 0,27 m PUR-cable and 8 mm snap-in male connector | 0,007        | <b>P8S-GPSHX</b>  |
| PNP type, normally open                | 0,27 m PUR-cable and M12 screw male connector    | 0,015        | <b>P8S-GPMHX</b>  |
| PNP type, normally open                | 3 m PVC-cable without connector                  | 0,030        | <b>P8S-GPFLX</b>  |
| PNP type, normally open                | 10 m PVC-cable without connector                 | 0,110        | <b>P8S-GPFTX</b>  |
| <b>Reed sensors , 10-30 V AC/DC</b>    |  |              |                   |
| Normally open                          | 0,27 m PUR-cable and 8 mm snap-in male connector | 0,007        | <b>P8S-GSSHX</b>  |
| Normally open                          | 0,27 m PUR-cable and M12 screw male connector    | 0,015        | <b>P8S-GSMHX</b>  |
| Normally open                          | 3 m PVC-cable without connector                  | 0,030        | <b>P8S-GSFLX</b>  |
| Normally open                          | 10 m PVC-cable without connector                 | 0,110        | <b>P8S-GSFTX</b>  |
| Normally closed                        | 5m PVC-cable without connector <sup>(1)</sup>    | 0,050        | <b>P8S-GCFPX</b>  |
| <b>Reed sensors, 10-120 V AC/DC</b>    |  |              |                   |
| Normally open                          | 3 m PVC-cable without connector                  | 0,030        | <b>P8S-GRFLX</b>  |
| <b>Reed sensorer, 24-230 V AC/DC</b>   |  |              |                   |
| Normally open                          | 3 m PVC-cable without connector                  | 0,030        | <b>P8S-GRFLX2</b> |

1) Without LED

## Sensor mounting

| Description  | Weight<br>kg | Order code       |
|--|--------------|------------------|
| Sensor mounting for cylinder P1A cylinder bore Ø10 to Ø25 mm           | 0,07         | <b>P8S-TMC01</b> |
| Double jointed adapter for cylinder P1D-T cylinder bore Ø32 to Ø125 mm | 0,07         | <b>P8S-TMA0X</b> |
| Sensor mounting for P1D-T 160 - 320mm                                  | 0,040        | <b>PD48956</b>   |

## Connecting cables with one connector

The cables have an integral snap-in female connector.



| Type of cable   | Cable/connector              | Weight<br>kg | Order code        |
|---|------------------------------|--------------|-------------------|
| <b>Cables for sensors, complete with one female connector</b> |                              |              |                   |
| Cable, Flex PVC   | 3 m, 8 mm Snap-in connector  | 0,07         | <b>9126344341</b> |
| Cable, Flex PVC   | 10 m, 8 mm Snap-in connector | 0,21         | <b>9126344342</b> |
| Cable, Polyurethane   | 3 m, 8 mm Snap-in connector  | 0,01         | <b>9126344345</b> |
| Cable, Polyurethane   | 10 m, 8 mm Snap-in connector | 0,20         | <b>9126344346</b> |
| Cable, Polyurethane   | 5 m, M12 screw connector     | 0,07         | <b>9126344348</b> |
| Cable, Polyurethane   | 10 m, M12 screw connector    | 0,20         | <b>9126344349</b> |

## Male connectors for connecting cables

Cable connectors for producing your own connecting cables. The connectors can be quickly attached to the cable without special tools. Only the outer sheath of the cable is removed. The connectors are available for M8 and M12 screw connectors and meet protection class IP 65.



| Connector           | Weight<br>kg | Order code       |
|---------------------|--------------|------------------|
| M8 screw connector  | 0,017        | <b>P8CS0803J</b> |
| M12 screw connector | 0,022        | <b>P8CS1204J</b> |



**For ATEX specific products  
contact Sales Office**

# P1A Pneumatic Mini ISO Cylinders

According to ISO 6432



The P1A range of cylinders is intended for use in a wide range of applications. The cylinders are particularly suitable for lighter duties in the packaging, food and textile industries.

Hygienic design, the use of corrosion-resistant materials and initial lubrication with our food-grade grease makes the cylinders suitable for food industry applications.

- **Mini cylinder according to ISO 6432**
- **Available in 10 to 25 mm bores**
- **Corrosion resistant design and low weight construction**
- **Magnetic piston as standard**
- **End stroke buffers for long service life**



Careful design and high quality manufacture throughout ensure long service life and optimum economy.

Mounting dimensions fully in accordance with ISO 6432 and CETOP RP52P greatly simplifies installation and world-wide interchangeability.



- Mini cylinder according to ISO 6432
- Available in 10 to 25 mm bores
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- End stroke buffers for long service life

### Operating information

Working pressure: Max 10 bar  
Temperature range: -20°C to +80°C Ø10-25mm

### Design variants

#### High temperature

Ø12 and 16mm -10°C to +120°C Non-magnetic piston  
Ø20 and 25mm -10°C to +150°C Non-magnetic piston

#### External seals

fluorinated rubber -20°C to +80°C Magnetic piston

Prelubricated, further lubrication is not normally necessary.  
If additional lubrication is introduced it must be continued.

## Double acting buffer cushioning

### Ø10mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S010DS-0010 |
| 15        | P1A-S010DS-0015 |
| 25        | P1A-S010DS-0025 |
| 30        | P1A-S010DS-0030 |
| 40        | P1A-S010DS-0040 |
| 50        | P1A-S010DS-0050 |
| 80        | P1A-S010DS-0080 |
| 100       | P1A-S010DS-0100 |
| 125       | P1A-S010DS-0125 |

### Ø12mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S012DS-0010 |
| 15        | P1A-S012DS-0015 |
| 25        | P1A-S012DS-0025 |
| 30        | P1A-S012DS-0030 |
| 40        | P1A-S012DS-0040 |
| 50        | P1A-S012DS-0050 |
| 80        | P1A-S012DS-0080 |
| 100       | P1A-S012DS-0100 |
| 125       | P1A-S012DS-0125 |
| 160       | P1A-S012DS-0160 |
| 200       | P1A-S012DS-0200 |

### Ø16mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S016DS-0010 |
| 15        | P1A-S016DS-0015 |
| 25        | P1A-S016DS-0025 |
| 30        | P1A-S016DS-0030 |
| 40        | P1A-S016DS-0040 |
| 50        | P1A-S016DS-0050 |
| 80        | P1A-S016DS-0080 |
| 100       | P1A-S016DS-0100 |
| 125       | P1A-S016DS-0125 |
| 160       | P1A-S016DS-0160 |
| 200       | P1A-S016DS-0200 |

### Ø20mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S020DS-0010 |
| 15        | P1A-S020DS-0015 |
| 25        | P1A-S020DS-0025 |
| 30        | P1A-S020DS-0030 |
| 40        | P1A-S020DS-0040 |
| 50        | P1A-S020DS-0050 |
| 80        | P1A-S020DS-0080 |
| 100       | P1A-S020DS-0100 |
| 125       | P1A-S020DS-0125 |
| 160       | P1A-S020DS-0160 |
| 200       | P1A-S020DS-0200 |
| 250       | P1A-S020DS-0250 |
| 320       | P1A-S020DS-0320 |

### Ø25mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S025DS-0010 |
| 15        | P1A-S025DS-0015 |
| 25        | P1A-S025DS-0025 |
| 30        | P1A-S025DS-0030 |
| 40        | P1A-S025DS-0040 |
| 50        | P1A-S025DS-0050 |
| 80        | P1A-S025DS-0080 |
| 100       | P1A-S025DS-0100 |
| 125       | P1A-S025DS-0125 |
| 160       | P1A-S025DS-0160 |
| 200       | P1A-S025DS-0200 |
| 250       | P1A-S025DS-0250 |
| 320       | P1A-S025DS-0320 |

Cylinders are supplied complete with neck mounting and piston rod nuts.

Cylinders with Through piston rods are supplied with two piston rod nuts and one neck mounting nut.

### Sensors



For sensors see page 77.

## Double acting adjustable cushioning

### Ø16mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 20        | P1A-S016MS-0020 |
| 25        | P1A-S016MS-0025 |
| 30        | P1A-S016MS-0030 |
| 40        | P1A-S016MS-0040 |
| 50        | P1A-S016MS-0050 |
| 80        | P1A-S016MS-0080 |
| 100       | P1A-S016MS-0100 |
| 125       | P1A-S016MS-0125 |
| 160       | P1A-S016MS-0160 |
| 200       | P1A-S016MS-0200 |

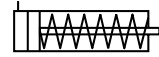
### Ø20mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 20        | P1A-S020MS-0020 |
| 25        | P1A-S020MS-0025 |
| 30        | P1A-S020MS-0030 |
| 50        | P1A-S020MS-0050 |
| 80        | P1A-S020MS-0080 |
| 100       | P1A-S020MS-0100 |
| 125       | P1A-S020MS-0125 |
| 160       | P1A-S020MS-0160 |
| 200       | P1A-S020MS-0200 |
| 250       | P1A-S020MS-0250 |
| 320       | P1A-S020MS-0320 |

### Ø25mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 20        | P1A-S025MS-0020 |
| 25        | P1A-S025MS-0025 |
| 30        | P1A-S025MS-0030 |
| 40        | P1A-S025MS-0040 |
| 50        | P1A-S025MS-0050 |
| 80        | P1A-S025MS-0080 |
| 100       | P1A-S025MS-0100 |
| 125       | P1A-S025MS-0125 |
| 160       | P1A-S025MS-0160 |
| 200       | P1A-S025MS-0200 |
| 250       | P1A-S025MS-0250 |
| 320       | P1A-S025MS-0320 |

Single acting push type (Spring return for retracted stroke)



Ø10mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S010SS-0010 |
| 15        | P1A-S010SS-0015 |
| 25        | P1A-S010SS-0025 |
| 40        | P1A-S010SS-0040 |
| 50        | P1A-S010SS-0050 |
| 80        | P1A-S010SS-0080 |

Ø16mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S016SS-0010 |
| 15        | P1A-S016SS-0015 |
| 25        | P1A-S016SS-0025 |
| 40        | P1A-S016SS-0040 |
| 50        | P1A-S016SS-0050 |
| 80        | P1A-S016SS-0080 |

Ø25mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S025SS-0010 |
| 15        | P1A-S025SS-0015 |
| 25        | P1A-S025SS-0025 |
| 40        | P1A-S025SS-0040 |
| 50        | P1A-S025SS-0050 |
| 80        | P1A-S025SS-0080 |

Ø12mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S012SS-0010 |
| 15        | P1A-S012SS-0015 |
| 25        | P1A-S012SS-0025 |
| 40        | P1A-S012SS-0040 |
| 50        | P1A-S012SS-0050 |
| 80        | P1A-S012SS-0080 |

Ø20mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S020SS-0010 |
| 15        | P1A-S020SS-0015 |
| 25        | P1A-S020SS-0025 |
| 50        | P1A-S020SS-0050 |
| 80        | P1A-S020SS-0080 |

Single acting pull type (Spring extended for advanced stroke)



Ø16mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S016TS-0010 |
| 15        | P1A-S016TS-0015 |
| 25        | P1A-S016TS-0025 |
| 40        | P1A-S016TS-0040 |
| 50        | P1A-S016TS-0050 |

Ø20mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S020TS-0010 |
| 15        | P1A-S020TS-0015 |
| 25        | P1A-S020TS-0025 |
| 50        | P1A-S020TS-0050 |
| 80        | P1A-S020TS-0080 |

Ø25mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1A-S025TS-0010 |
| 15        | P1A-S025TS-0015 |
| 25        | P1A-S025TS-0025 |
| 40        | P1A-S025TS-0040 |
| 50        | P1A-S025TS-0050 |
| 80        | P1A-S025TS-0080 |

Design Variants

Double acting options



Double-acting adjustable cushioning Ø16 - Ø25 (not for seal material type F)

Double-acting non-adjustable cushioning Ø10 - Ø25



Double-acting, adjustable cushioning through rod Ø16 - Ø25 (not for seal material type F)

Double-acting, non-adjustable cushioning through rod Ø10 - Ø25

Single acting options



Single-acting, Spring return for retracted stroke. Non-adjustable cushioning Ø10 - Ø25

Single-acting, Spring extended for advanced stroke. Non-adjustable cushioning Ø16 - Ø25

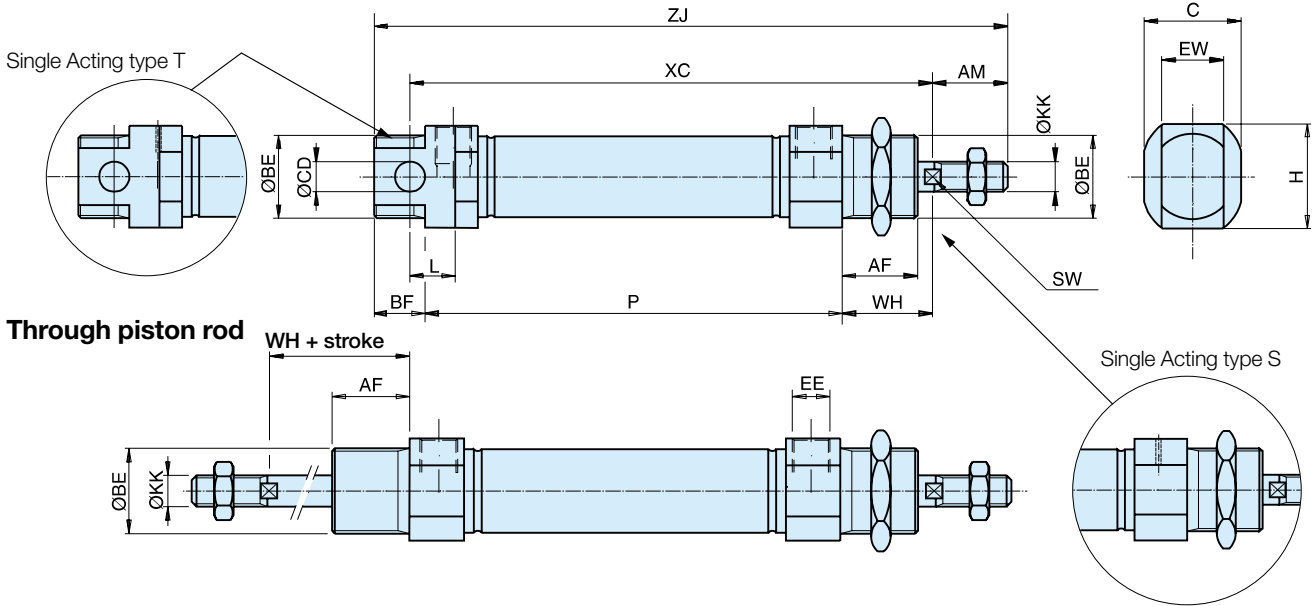
"U" style rod guidance modules, plain bearings

The P1A series cylinders can be equipped with an external guiding device to prevent the piston rod from turning. When fitted the guide provides a guided piston movement enabling the cylinder to resist turning moments on the piston rod, as well as greater transverse forces.



**Dimensions**

**Double and single acting cylinders**



| Cylinder bore<br>mm | AM 0/-2<br>mm | BE       | AF<br>mm | BF<br>mm | C<br>mm | CDH9<br>mm | EE   | EW<br>mm | H<br>mm | KK       | L<br>mm | SW<br>mm | WH±1,2<br>mm |
|---------------------|---------------|----------|----------|----------|---------|------------|------|----------|---------|----------|---------|----------|--------------|
| 10                  | 12            | M12x1,25 | 12       | 10       | 13,0    | 4          | M5   | 8        | 13,0    | M4       | 6       | -        | 16           |
| 12                  | 16            | M16x1,5  | 18       | 13       | 17,8    | 6          | M5   | 12       | 17,8    | M6       | 9       | 5        | 22           |
| 16 <sup>1)</sup>    | 16            | M16x1,5  | 18       | 13       | 17,8    | 6          | M5   | 12       | 17,8    | M6       | 9       | 5        | 22           |
| 16 <sup>2)</sup>    | 16            | M16x1,5  | 18       | 13       | 23,8    | 6          | M5   | 12       | 23,8    | M6       | 9       | 5        | 22           |
| 20                  | 20            | M22x1,5  | 20       | 14       | 23,8    | 8          | G1/8 | 16       | 23,8    | M8       | 12      | 7        | 24           |
| 25                  | 22            | M22x1,5  | 22       | 14       | 26,8    | 8          | G1/8 | 16       | 26,8    | M10x1,25 | 12      | 9        | 28           |

1) P1A-S016DS/SS/TS

2) P1A-S016MS

**Double acting cylinders**

| Cylinder bore<br>mm | XC<br>mm     | ZJ<br>mm     | P<br>mm     |
|---------------------|--------------|--------------|-------------|
| 10                  | 64 + stroke  | 84 + stroke  | 46 + stroke |
| 12                  | 75 + stroke  | 99 + stroke  | 48 + stroke |
| 16                  | 82 + stroke  | 104 + stroke | 53 + stroke |
| 20                  | 95 + stroke  | 125 + stroke | 67 + stroke |
| 25                  | 104 + stroke | 132 + stroke | 68 + stroke |

**Single-acting, spring return, type SS**

| Stroke/<br>Cylinder bore<br>mm | 10<br>XC<br>mm | 15<br>XC<br>mm | 25<br>XC<br>mm | 40<br>XC<br>mm | 50<br>XC<br>mm | 80<br>XC<br>mm | 10<br>ZJ<br>mm | 15<br>ZJ<br>mm | 25<br>ZJ<br>mm | 40<br>ZJ<br>mm | 50<br>ZJ<br>mm | 80<br>ZJ<br>mm | 10<br>P<br>mm | 15<br>P<br>mm | 25<br>P<br>mm | 40<br>P<br>mm | 50<br>P<br>mm | 80<br>P<br>mm |
|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 10                             | 74             | 79             | 89             | 126            | 136            | 174            | 94             | 99             | 109            | 146            | 156            | 194            | 56            | 61            | 71            | 108           | 118           | 156           |
| 12                             | 85             | 90             | 100            | 132            | 142            | 185            | 109            | 114            | 124            | 156            | 166            | 209            | 58            | 63            | 73            | 105           | 115           | 158           |
| 16                             | 92             | 97             | 107            | 122            | 132            | 184            | 114            | 119            | 129            | 144            | 154            | 206            | 63            | 68            | 78            | 93            | 103           | 155           |
| 20                             | 105            | 110            | 120            | 135            | 145            | 191            | 135            | 140            | 150            | 165            | 175            | 221            | 77            | 82            | 92            | 107           | 117           | 163           |
| 25                             | 114            | 119            | 129            | 144            | 154            | 201            | 142            | 147            | 157            | 172            | 182            | 229            | 78            | 83            | 93            | 108           | 118           | 165           |

**Single-acting, spring-extended, type TS**

| Stroke/<br>Cylinder bore<br>mm | 10<br>XC <sup>3)</sup><br>mm | 15<br>XC <sup>3)</sup><br>mm | 25<br>XC <sup>3)</sup><br>mm | 40<br>XC <sup>3)</sup><br>mm | 50<br>XC <sup>3)</sup><br>mm | 80<br>XC <sup>3)</sup><br>mm | 10<br>ZJ <sup>3)</sup><br>mm | 15<br>ZJ <sup>3)</sup><br>mm | 25<br>ZJ <sup>3)</sup><br>mm | 40<br>ZJ <sup>3)</sup><br>mm | 50<br>ZJ <sup>3)</sup><br>mm | 80<br>ZJ <sup>3)</sup><br>mm | 10<br>P<br>mm | 15<br>P<br>mm | 25<br>P<br>mm | 40<br>P<br>mm | 50<br>P<br>mm | 80<br>P<br>mm |
|--------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 16                             | 107                          | 112                          | 122                          | 137                          | 147                          | -                            | 129                          | 134                          | 144                          | 159                          | 169                          | -                            | 78            | 83            | 93            | 108           | 118           | -             |
| 20                             | 120                          | 125                          | 135                          | 150                          | 160                          | 195                          | 150                          | 155                          | 165                          | 180                          | 190                          | 225                          | 92            | 97            | 107           | 122           | 132           | 167           |
| 25                             | 129                          | 134                          | 144                          | 159                          | 169                          | 205                          | 157                          | 162                          | 172                          | 187                          | 197                          | 233                          | 93            | 98            | 108           | 123           | 133           | 169           |

3) With piston rod retracted, as shown in the dimension drawing

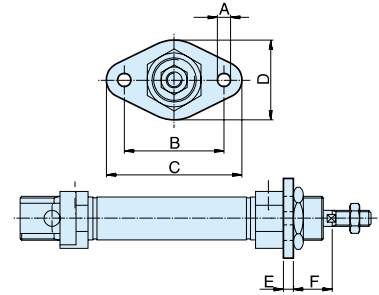
Length tolerances ±1 mm

Stroke length tolerances +1,5/0 mm

Cylinder Mountings

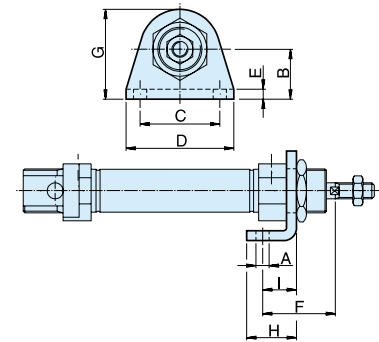
Flange-MF8

| Cylinder<br>Ø mm | A<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | F<br>mm | Order code      |
|------------------|---------|---------|---------|---------|---------|---------|-----------------|
| 10               | 4,5     | 30      | 40      | 22      | 3       | 13      | <b>P1A-4CMB</b> |
| 12               | 5,5     | 40      | 52      | 30      | 4       | 18      | <b>P1A-4DMB</b> |
| 16               | 5,5     | 40      | 52      | 30      | 4       | 18      | <b>P1A-4DMB</b> |
| 20               | 6,6     | 50      | 66      | 40      | 5       | 19      | <b>P1A-4HMB</b> |
| 25               | 6,6     | 50      | 66      | 40      | 5       | 23      | <b>P1A-4HMB</b> |



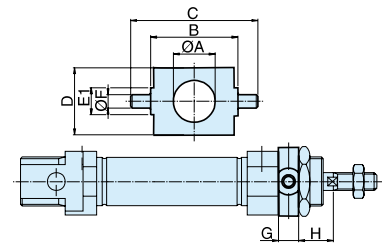
Foot-MS3

| Cylinder<br>Ø mm | A<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | F<br>mm | G<br>mm | H<br>mm | I<br>mm | Order code      |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------|
| 10               | 4,5     | 16      | 25      | 35      | 3       | 24      | 26,0    | 16      | 11      | <b>P1A-4CMF</b> |
| 12               | 5,5     | 20      | 32      | 42      | 4       | 32      | 32,5    | 20      | 14      | <b>P1A-4DMF</b> |
| 16               | 5,5     | 20      | 32      | 42      | 4       | 32      | 32,5    | 20      | 14      | <b>P1A-4DMF</b> |
| 20               | 6,5     | 25      | 40      | 54      | 5       | 36      | 45,0    | 25      | 17      | <b>P1A-4HMF</b> |
| 25               | 6,5     | 25      | 40      | 54      | 5       | 40      | 45,0    | 25      | 17      | <b>P1A-4HMF</b> |



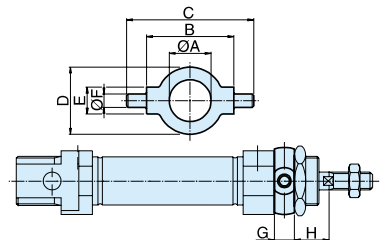
Cover trunnion

| Cylinder<br>Ø mm | A<br>mm | B h14<br>mm | C<br>mm | D<br>mm | E1<br>mm | F e9<br>mm | G<br>mm | H<br>mm | Order code       |
|------------------|---------|-------------|---------|---------|----------|------------|---------|---------|------------------|
| 10               | 12,5    | 26          | 38      | 20      | 9        | 4          | 6       | 10      | <b>P1A-4CMJZ</b> |
| 12               | 16,5    | 38          | 58      | 25      | 13       | 6          | 8       | 14      | <b>P1A-4DMJZ</b> |
| 16               | 16,5    | 38          | 58      | 25      | 13       | 6          | 8       | 14      | <b>P1A-4DMJZ</b> |
| 20               | 22,5    | 46          | 66      | 30      | 13       | 6          | 8       | 16      | <b>P1A-4HMJZ</b> |
| 25               | 22,5    | 46          | 66      | 30      | 13       | 6          | 8       | 20      | <b>P1A-4HMJZ</b> |



Cover trunnion  
Stainless steel

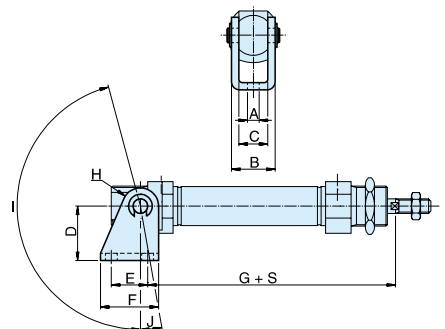
| Cylinder<br>Ø mm | A<br>mm | B h14<br>mm | C<br>mm | D<br>mm | E<br>mm | F e9<br>mm | G<br>mm | H<br>mm | Order code      |
|------------------|---------|-------------|---------|---------|---------|------------|---------|---------|-----------------|
| 10               | 12,5    | 26          | 38      | 20      | 8       | 4          | 6       | 10      | <b>P1A-4CMJ</b> |
| 12               | 16,5    | 38          | 58      | 25      | 10      | 6          | 8       | 14      | <b>P1A-4DMJ</b> |
| 16               | 16,5    | 38          | 58      | 25      | 10      | 6          | 8       | 14      | <b>P1A-4DMJ</b> |
| 20               | 22,5    | 46          | 66      | 30      | 10      | 6          | 8       | 16      | <b>P1A-4HMJ</b> |
| 25               | 22,5    | 46          | 66      | 30      | 10      | 6          | 8       | 20      | <b>P1A-4HMJ</b> |



Clevis bracket AB3

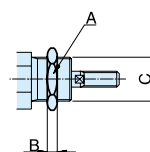
| Cylinder<br>Ø mm | A<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | F<br>mm | G<br>mm | H<br>mm | I<br>° | J<br>° | Order code      |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|-----------------|
| 10               | 4,5     | 13      | 8       | 24      | 12,5    | 20      | 65,3    | 5       | 160    | 17     | <b>P1A-4CMT</b> |
| 12               | 5,5     | 18      | 12      | 27      | 15,0    | 25      | 73,0    | 7       | 170    | 15     | <b>P1A-4DMT</b> |
| 16               | 5,5     | 18      | 12      | 27      | 15,0    | 25      | 80,0    | 7       | 170    | 15     | <b>P1A-4DMT</b> |
| 20               | 6,5     | 24      | 16      | 30      | 20,0    | 32      | 91,0    | 10      | 165    | 10     | <b>P1A-4HMT</b> |
| 25               | 6,5     | 24      | 16      | 30      | 20,0    | 32      | 100,0   | 10      | 165    | 10     | <b>P1A-4HMT</b> |

S=stroke



Stainless Mounting nut

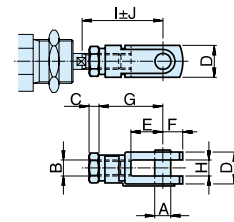
| Cylinder<br>Ø mm | A<br>mm | B<br>mm | C        | Order code        |
|------------------|---------|---------|----------|-------------------|
| 10               | 17      | 5       | M12x1,25 | <b>9126725405</b> |
| 12               | 24      | 8       | M16x1,50 | <b>9126725406</b> |
| 16               | 24      | 8       | M16x1,50 | <b>9126725406</b> |
| 20               | 27      | 5       | M22x1,50 | <b>9126725407</b> |
| 25               | 27      | 5       | M22x1,50 | <b>9126725407</b> |



**Cylinder Mountings**

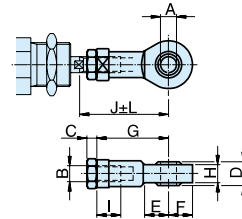
**Clevis AP2**

| Cylinder<br>Ø mm | A<br>mm | B        | C<br>mm | D<br>mm | E<br>mm | F<br>mm | G<br>mm | H<br>mm | I<br>mm | J<br>mm | Order code      |
|------------------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------|
| 10               | 4       | M4       | 2,2     | 8       | 8       | 5       | 16      | 4       | 22,0    | 2,0     | <b>P1A-4CRC</b> |
| 12               | 6       | M6       | 3,2     | 12      | 12      | 7       | 24      | 6       | 31,0    | 3,0     | <b>P1A-4DRC</b> |
| 16               | 6       | M6       | 3,2     | 12      | 12      | 7       | 24      | 6       | 31,0    | 3,0     | <b>P1A-4DRC</b> |
| 20               | 8       | M8       | 4,0     | 16      | 16      | 10      | 32      | 8       | 40,5    | 3,5     | <b>P1A-4HRC</b> |
| 25               | 10      | M10x1,25 | 5,0     | 20      | 20      | 12      | 40      | 10      | 49,0    | 3,0     | <b>P1A-4JRC</b> |



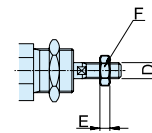
**Swivel rod eye AP6**

| Cylinder<br>Ø mm | A<br>mm | B        | C<br>mm | D<br>mm | E<br>mm | F<br>mm | G<br>mm | H<br>mm | I<br>mm | J<br>mm | K<br>mm | L<br>mm | Order code      |
|------------------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------|
| 10               | 5       | M4       | 2,2     | 8       | 10      | 9       | 27      | 6,0     | 8       | 33,0    | 9       | 2,0     | <b>P1A-4CRS</b> |
| 12               | 6       | M6       | 3,2     | 9       | 10      | 10      | 30      | 6,8     | 9       | 38,5    | 11      | 1,5     | <b>P1A-4DRS</b> |
| 16               | 6       | M6       | 3,2     | 9       | 10      | 10      | 30      | 6,8     | 9       | 38,5    | 11      | 1,5     | <b>P1A-4DRS</b> |
| 20               | 8       | M8       | 4,0     | 12      | 12      | 12      | 36      | 9,0     | 12      | 46,0    | 14      | 2,0     | <b>P1A-4HRS</b> |
| 25               | 10      | M10x1,25 | 5,0     | 14      | 14      | 14      | 43      | 10,5    | 15      | 52,5    | 17      | 2,5     | <b>P1A-4JRS</b> |



**Stainless Rod nut**

| Cylinder<br>Ø mm | D        | F<br>mm | E<br>mm | Order code        |
|------------------|----------|---------|---------|-------------------|
| 10               | M4       | 7       | 2,2     | <b>9127385121</b> |
| 12               | M6       | 10      | 3,2     | <b>9127385122</b> |
| 16               | M6       | 10      | 3,2     | <b>9127385122</b> |
| 20               | M8       | 13      | 4,0     | <b>9127385123</b> |
| 25               | M10x1,25 | 17      | 5,0     | <b>9126725404</b> |



**Flange MF8**



**Foot bracket MS3**



**Cover trunnion**



**Cover trunnion  
Stainless steel**



**Stainless steel  
mounting nut**



|      |                 |                 |                  |                 |                   |
|------|-----------------|-----------------|------------------|-----------------|-------------------|
| Ø 10 | <b>P1A-4CMB</b> | <b>P1A-4CMF</b> | <b>P1A-4CMJZ</b> | <b>P1A-4CMJ</b> | <b>9126725405</b> |
| Ø 12 | <b>P1A-4DMB</b> | <b>P1A-4DMF</b> | <b>P1A-4DMJZ</b> | <b>P1A-4DMJ</b> | <b>9126725406</b> |
| Ø 16 | <b>P1A-4DMB</b> | <b>P1A-4DMF</b> | <b>P1A-4DMJZ</b> | <b>P1A-4DMJ</b> | <b>9126725406</b> |
| Ø 20 | <b>P1A-4HMB</b> | <b>P1A-4HMF</b> | <b>P1A-4HMJZ</b> | <b>P1A-4HMJ</b> | <b>9126725407</b> |
| Ø 25 | <b>P1A-4HMB</b> | <b>P1A-4HMF</b> | <b>P1A-4HMJZ</b> | <b>P1A-4HMJ</b> | <b>9126725407</b> |

**Clevis bracket AB3**



**Clevis AP2**



**Swivel rod eye AP6**



**Stainless steel  
Rod nut**



|      |                 |                 |                 |                   |
|------|-----------------|-----------------|-----------------|-------------------|
| Ø 10 | <b>P1A-4CMT</b> | <b>P1A-4CRC</b> | <b>P1A-4CRS</b> | <b>9127385121</b> |
| Ø 12 | <b>P1A-4DMT</b> | <b>P1A-4DRC</b> | <b>P1A-4DRS</b> | <b>9127385122</b> |
| Ø 16 | <b>P1A-4DMT</b> | <b>P1A-4DRC</b> | <b>P1A-4DRS</b> | <b>9127385122</b> |
| Ø 20 | <b>P1A-4HMT</b> | <b>P1A-4HRC</b> | <b>P1A-4HRS</b> | <b>9127385123</b> |
| Ø 25 | <b>P1A-4HMT</b> | <b>P1A-4JRC</b> | <b>P1A-4JRS</b> | <b>9126725404</b> |

# All Round Cylinders 32 to 63 R Series



With its aluminium body construction and integral pivot mounting points the R32 - 63mm round cylinder series offers a lightweight versatile cylinder for a variety of applications. Designed and manufactured for quality and long service life while giving an economical package of options to compete in the competitive market environment.

- Available in bores Ø32, Ø40, Ø50 and Ø63
- Double acting
- Adjustable cushioning
- Magnetic piston as standard
- Range of mounting options
- Other options available

With its aluminium body construction and integral pivot mounting points the R32 - 63mm round cylinder series offers a lightweight versatile cylinder for a variety of applications. Designed and manufactured for quality and long service life while giving an economical package of options to compete in the competitive market environment.



- Available in bores Ø32, Ø40, Ø50 and Ø63
- Double acting
- Adjustable cushioning
- Magnetic piston as standard
- Range of mounting options
- Other options available

#### Operating information

Working pressure: Max 10 bar  
 Temperature range: -10°C to +70°C

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### R32 - 63mm

#### Ø32mm - (G1/8)

| Stroke mm | Order code   |
|-----------|--------------|
| 25        | PD46443-0025 |
| 50        | PD46443-0050 |
| 80        | PD46443-0080 |
| 100       | PD46443-0100 |
| 125       | PD46443-0125 |
| 160       | PD46443-0160 |
| 200       | PD46443-0200 |
| 250       | PD46443-0250 |
| 320       | PD46443-0320 |
| 400       | PD46443-0400 |
| 500       | PD46443-0500 |

#### Ø50mm - (G1/4)

| Stroke mm | Order code   |
|-----------|--------------|
| 25        | PD46447-0025 |
| 50        | PD46447-0050 |
| 80        | PD46447-0080 |
| 100       | PD46447-0100 |
| 125       | PD46447-0125 |
| 160       | PD46447-0160 |
| 200       | PD46447-0200 |
| 250       | PD46447-0250 |
| 320       | PD46447-0320 |
| 400       | PD46447-0400 |
| 500       | PD46447-0500 |

#### Ø40mm - (G1/4)

| Stroke mm | Order code   |
|-----------|--------------|
| 25        | PD46445-0025 |
| 50        | PD46445-0050 |
| 80        | PD46445-0080 |
| 100       | PD46445-0100 |
| 125       | PD46445-0125 |
| 160       | PD46445-0160 |
| 200       | PD46445-0200 |
| 250       | PD46445-0250 |
| 320       | PD46445-0320 |
| 400       | PD46445-0400 |
| 500       | PD46445-0500 |

#### Ø63mm - (G3/8)

| Stroke mm | Order code   |
|-----------|--------------|
| 25        | PD46449-0025 |
| 50        | PD46449-0050 |
| 80        | PD46449-0080 |
| 100       | PD46449-0100 |
| 125       | PD46449-0125 |
| 160       | PD46449-0160 |
| 200       | PD46449-0200 |
| 250       | PD46449-0250 |
| 320       | PD46449-0320 |
| 400       | PD46449-0400 |
| 500       | PD46449-0500 |

## Characteristics

| General features          |                  | Description   |
|---------------------------|------------------|---|
| Type                      |                  | Round cylinder  |
| Series                    |                  | R.... , RK....  |
| System                    |                  | Piston rod cylinder   |
| R6..., RK6....            |                  | Double acting without cushioning                                    |
| R5....                    |                  | Double acting with cushioning                                       |
| RDU6...                   |                  | With through piston rod Double acting without cushioning            |
| Ambient temperature range | T <sub>min</sub> | -10 °C  |
|                           | T <sub>max</sub> | +70 °C  |
| Medium temperature range  | T <sub>max</sub> | +70 °C  |
| Medium                    |                  | Filtered and lubricated or filtered and unlubricated compressed air |
| Lubrication               |                  | Oil mist lubrication compatible with NBR and PU                     |

Note:  
When using below freezing point (°C)  
please contact as for advice

## Material

|                     |                     |
|---------------------|---------------------|
| Cylinder barrel     | Aluminium, anodised |
| Front/rear end caps | Aluminium           |
| Piston rod          | Steel, high-alloy   |

## Pneumatic Characteristics

|                          |                  |   |      |      |      |
|--------------------------|------------------|---|------|------|------|
| Nominal pressure         | P <sub>n</sub>   | 6 bar   |      |      |      |
| Piston diameter          |                  | 32  | 40   | 50   | 63   |
| Operating pressure range | P <sub>min</sub> | 1 bar   |      |      |      |
|                          | P <sub>max</sub> | 10 bar  |      |      |      |
| Port size                |                  | G1/8  | G1/4 | G1/4 | G3/8 |
| Piston rod diameter      |                  | 12mm  | 16mm | 20mm | 20mm |
| Stroke length (mm)       |                  | For standard stroke lengths see order instructions, max. 500, longer strokes on request |      |      |      |
| Cushioned stroke         |                  | At both ends progressively adjustable   |      |      |      |
| Cushioned stroke         |                  | 22mm  | 27mm | 28mm | 28mm |

## Weight (mass) kg

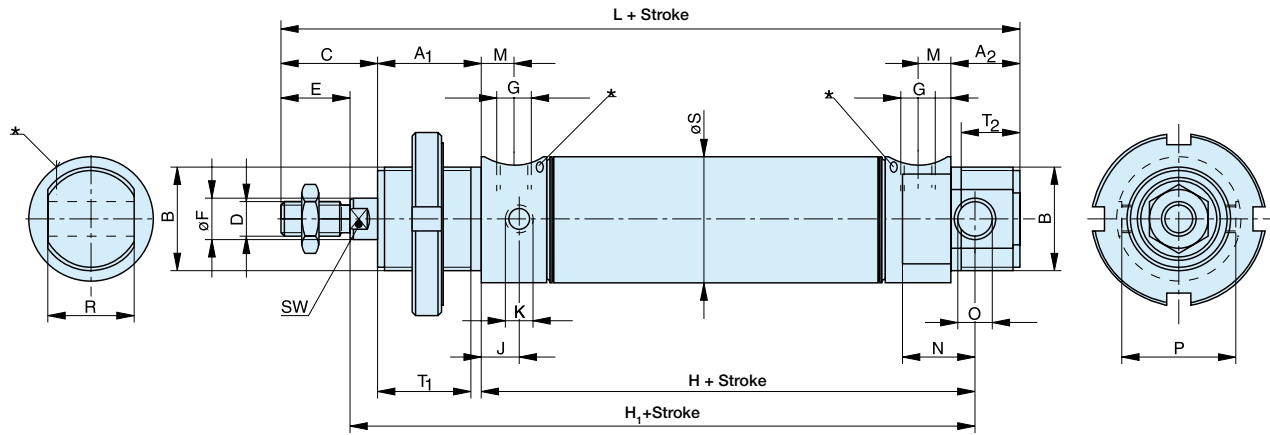
| Cylinder version                    | Cylinder diameter |       |       |       |       |       |       |       |
|-------------------------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|
|                                     | Ø32               |       | Ø40   |       | Ø50   |       | Ø63   |       |
|                                     | 1*                | 2*    | 1*    | 2*    | 1*    | 2*    | 1*    | 2*    |
| Basic cylinder<br>Typ R....         | 0.550             | 0.150 | 0.940 | 0.250 | 1.400 | 0.300 | 1.900 | 0.400 |
| With through piston rod Typ RDU.... | 1.100             | 0.340 | 1.480 | 0.560 | 2.560 | 0.850 | 3.260 | 0.950 |

\* 1 = Weight for cylinder with 100 mm stroke

2 = Weight for every additional 100 mm stroke length

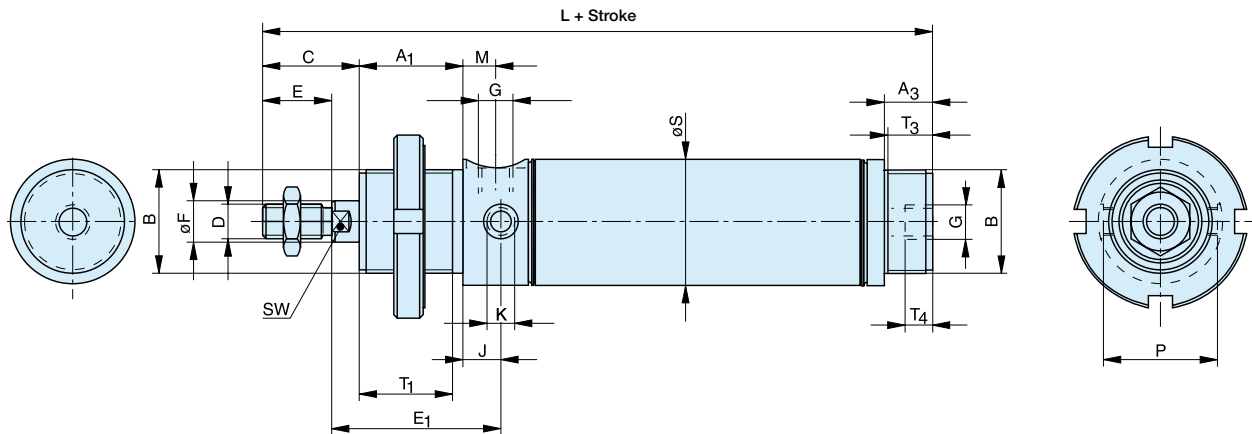


Dimensions – Basic Cylinder, Series R..., Ø 32 – 63 mm



\* adjustable end cushioning only for series R 5000

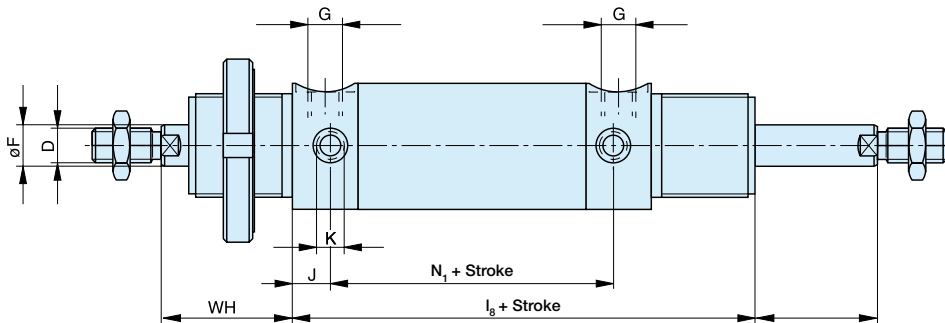
Dimensions – Basic Cylinder, Series RK..., Ø 32 – 63 mm



Dimension Table (mm) – Basic Cylinder, Series R..., RK..., RDU...

| Cyl. Ø | A <sub>1</sub> | A <sub>2</sub> | A <sub>3</sub> | B       | C  | D   | E  | E <sub>1</sub> | ØF | G    | H     | H <sub>1</sub> +Stroke | J    | K       | l <sub>3</sub> +Stroke |
|--------|----------------|----------------|----------------|---------|----|-----|----|----------------|----|------|-------|------------------------|------|---------|------------------------|
| 32     | 30             | 19.5           | 14             | M30x1.5 | 28 | M10 | 20 | 49             | 12 | G1/8 | 90.5  | 128.5                  | 11   | M8x1    | 83.5                   |
| 40     | 35             | 21.5           | 16             | M38x1.5 | 34 | M12 | 24 | 57             | 16 | G1/4 | 99.5  | 144.5                  | 12   | M10x1   | 89                     |
| 50     | 38             | 25             | 18             | M45x1.5 | 44 | M16 | 32 | 63             | 20 | G1/4 | 109.5 | 159.5                  | 13   | M12x1.5 | 93.5                   |
| 63     | 38             | 24.5           | 18             | M45x1.5 | 45 | M16 | 32 | 64.5           | 20 | G3/8 | 116.5 | 167.5                  | 13.5 | M14x1.5 | 101                    |

Dimensions – Basic Cylinder with Through Piston Rod, Series RDU..., Ø 32 – 63 mm



| Cyl. Ø | L+Stroke R... | L+Stroke RK... | M    | N  | N <sub>1</sub> +Stroke | O  | P  | R <sub>h12</sub> | ØS | T <sub>1</sub> | T <sub>2</sub> | T <sub>3</sub> | T <sub>4</sub> | SW | WH | WH+Stroke |
|--------|---------------|----------------|------|----|------------------------|----|----|------------------|----|----------------|----------------|----------------|----------------|----|----|-----------|
| 32     | 160.5         | 138.5          | 9.5  | 21 | 61.5                   | 10 | 33 | 25               | 35 | 27             | 16.5           | 12             | 8              | 10 | 38 | 38        |
| 40     | 181.5         | 156.5          | 11   | 24 | 65                     | 12 | 42 | 30               | 43 | 32             | 17.5           | 14             | 12             | 14 | 45 | 45        |
| 50     | 205.5         | 179.5          | 11   | 27 | 67.5                   | 14 | 52 | 35               | 54 | 35             | 21             | 16             | 12             | 17 | 50 | 50        |
| 63     | 215.5         | 186.5          | 12.5 | 28 | 74                     | 16 | 62 | 35               | 67 | 35             | 20.5           | 16             | 12             | 17 | 51 | 51        |

This range of stainless steel cylinders has been specially designed for use in difficult environments. Hygienic design, external seals of flouriated rubber and prelubrication with our food-industry-approved grease according to USDA-H1 make the cylinders particularly suitable for food industry use. All cylinders have magnetic pistons for proximity position sensing. Fixing dimensions to ISO 6432 simplify installation and make the cylinders physically interchangeable throughout the world.



- Mini - cylinders according to ISO 6432
- All stainless in 10 to 25 mm bores
- Magnetic piston as standard
- Double and single acting
- End stroke buffers for long service life
- Available with adjustable cushioning

### Operating information

Working pressure: Max 10 bar  
 Temperature range: -20°C to +80°C Ø10-25mm

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Double acting buffer cushioning

#### Ø10mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1S-S010DS-0010 |
| 15        | P1S-S010DS-0015 |
| 25        | P1S-S010DS-0025 |
| 40        | P1S-S010DS-0040 |
| 50        | P1S-S010DS-0050 |
| 80        | P1S-S010DS-0080 |
| 100       | P1S-S010DS-0100 |
| 125       | P1S-S010DS-0125 |

#### Ø12mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1S-S012DS-0010 |
| 15        | P1S-S012DS-0015 |
| 25        | P1S-S012DS-0025 |
| 40        | P1S-S012DS-0040 |
| 50        | P1S-S012DS-0050 |
| 80        | P1S-S012DS-0080 |
| 100       | P1S-S012DS-0100 |
| 125       | P1S-S012DS-0125 |
| 160       | P1S-S012DS-0160 |
| 200       | P1S-S012DS-0200 |

#### Ø16mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1S-S016DS-0010 |
| 15        | P1S-S016DS-0015 |
| 25        | P1S-S016DS-0025 |
| 40        | P1S-S016DS-0040 |
| 50        | P1S-S016DS-0050 |
| 80        | P1S-S016DS-0080 |
| 100       | P1S-S016DS-0100 |
| 125       | P1S-S016DS-0125 |
| 160       | P1S-S016DS-0160 |
| 200       | P1S-S016DS-0200 |

#### Ø20mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1S-S020DS-0010 |
| 15        | P1S-S020DS-0015 |
| 25        | P1S-S020DS-0025 |
| 40        | P1S-S020DS-0040 |
| 50        | P1S-S020DS-0050 |
| 80        | P1S-S020DS-0080 |
| 100       | P1S-S020DS-0100 |
| 125       | P1S-S020DS-0125 |
| 160       | P1S-S020DS-0160 |
| 200       | P1S-S020DS-0200 |
| 250       | P1S-S020DS-0250 |
| 320       | P1S-S020DS-0320 |

#### Ø25mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1S-S025DS-0010 |
| 15        | P1S-S025DS-0015 |
| 25        | P1S-S025DS-0025 |
| 40        | P1S-S025DS-0040 |
| 50        | P1S-S025DS-0050 |
| 80        | P1S-S025DS-0080 |
| 100       | P1S-S025DS-0100 |
| 125       | P1S-S025DS-0125 |
| 160       | P1S-S025DS-0160 |
| 200       | P1S-S025DS-0200 |
| 250       | P1S-S025DS-0250 |
| 320       | P1S-S025DS-0320 |

### Double acting adjustable cushioning

#### Ø20mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1S-S020MS-0015 |
| 25        | P1S-S020MS-0025 |
| 40        | P1S-S020MS-0040 |
| 50        | P1S-S020MS-0050 |
| 80        | P1S-S020MS-0080 |
| 100       | P1S-S020MS-0100 |
| 125       | P1S-S020MS-0125 |
| 160       | P1S-S020MS-0160 |
| 200       | P1S-S020MS-0200 |
| 250       | P1S-S020MS-0250 |
| 320       | P1S-S020MS-0320 |

#### Ø25mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1S-S025MS-0015 |
| 25        | P1S-S025MS-0025 |
| 40        | P1S-S025MS-0040 |
| 50        | P1S-S025MS-0050 |
| 80        | P1S-S025MS-0080 |
| 100       | P1S-S025MS-0100 |
| 125       | P1S-S025MS-0125 |
| 160       | P1S-S025MS-0160 |
| 200       | P1S-S025MS-0200 |
| 250       | P1S-S025MS-0250 |
| 320       | P1S-S025MS-0320 |

## Design Variants

**Working temperatures**

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**High temperature**

Ø10 and Ø16mm      -10°C to +120°C Non-magnetic piston

Ø20 and Ø25mm      -10°C to +150°C Non-magnetic piston

**Low temperature**

Ø10, 12 and 16mm      -40°C to +60°C Non-magnetic piston



### Double acting options

**Effective end-cushioning**

A version of ISO 6432 Ø10-Ø25 incorporates fixed end-cushioning, while the cylinders Ø20-Ø125 have pneumatic end-cushioning with adjusting screws for exact setting, permitting heavier loads and higher speeds for short cycle times.

|   |   |
|---|---|
| Double-acting adjustable cushioning     | Ø20 - Ø25<br>(not for seal material type F and L) |
| Double-acting non-adjustable cushioning | Ø10 - Ø25   |



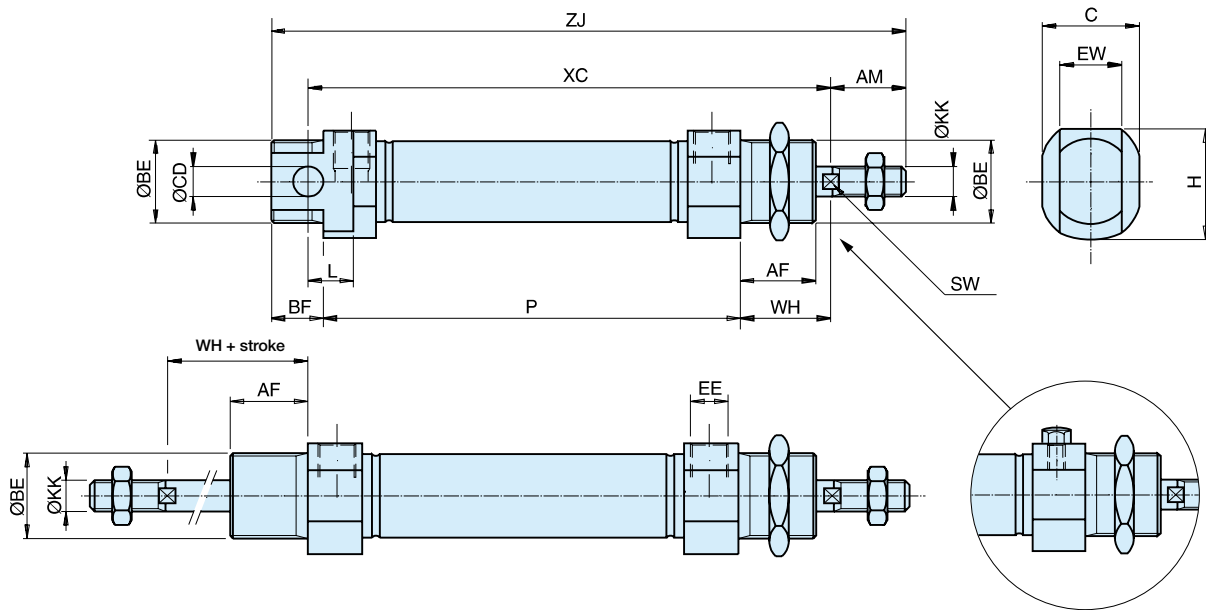
|  |   |
|--|---|
| Double-acting, adjustable cushioning through rod             | Ø20 - Ø25<br>(not for seal material type F and L) |
| Double-acting, non-adjustable cushioning through rod         | Ø10 - Ø25   |
| Double-acting, adjustable cushioning through rod, hollow     | Ø20 - Ø25<br>(not for seal material type F and L) |
| Double-acting, non-adjustable cushioning through rod, hollow | Ø20 - Ø25 max stroke 125mm                        |



### Single acting options

|   |           |
|---|-----------|
| Single-acting, Spring return for retracted stroke. Non-adjustable cushioning  | Ø10 - Ø25 |
| Single-acting, Spring extended for advanced stroke. Non-adjustable cushioning | Ø20 - Ø25 |





**Dimensions**

| Cyl. bore<br>mm | AM 0/-2<br>mm | BE       | AF<br>mm | BF<br>mm | C<br>mm | CDH9<br>mm | EE   | EW<br>mm | H<br>mm | KK       | L<br>mm | SW<br>mm | WH±1,2<br>mm |
|-----------------|---------------|----------|----------|----------|---------|------------|------|----------|---------|----------|---------|----------|--------------|
| 10              | 12            | M12x1,25 | 12       | 10       | 14      | 4          | M5   | 8        | 19      | M4       | 6       | -        | 16           |
| 12              | 16            | M16x1,5  | 18       | 13       | 18      | 6          | M5   | 12       | 19      | M6       | 9       | 5        | 22           |
| 16              | 16            | M16x1,5  | 18       | 13       | 18      | 6          | M5   | 12       | 19      | M6       | 9       | 5        | 22           |
| 20              | 20            | M22x1,5  | 20       | 14       | 24      | 8          | G1/8 | 16       | 29      | M8       | 12      | 7        | 24           |
| 25              | 22            | M22x1,5  | 22       | 14       | 28      | 8          | G1/8 | 16       | 32      | M10x1,25 | 12      | 9        | 28           |

**Double acting cylinders**

| Cyl. bore<br>mm | XC<br>mm     | ZJ<br>mm     | P<br>mm     |
|-----------------|--------------|--------------|-------------|
| 10              | 64 + stroke  | 84 + stroke  | 46 + stroke |
| 12              | 75 + stroke  | 99 + stroke  | 48 + stroke |
| 16              | 82 + stroke  | 104 + stroke | 53 + stroke |
| 20              | 95 + stroke  | 125 + stroke | 67 + stroke |
| 25              | 104 + stroke | 132 + stroke | 68 + stroke |

**Single acting with spring return, type SS**

| Stroke/<br>Cyl. bore<br>mm | 10<br>mm | 15<br>mm | 25<br>mm | 40<br>mm | 50<br>mm | 80<br>mm | 10<br>mm | 15<br>mm | 25<br>mm | 40<br>mm | 50<br>mm | 80<br>mm | 10<br>mm | 15<br>mm | 25<br>mm | 40<br>mm | 50<br>mm | 80<br>mm |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                            | XC       | XC       | XC       | XC       | XC       | XC       | ZJ       | ZJ       | ZJ       | ZJ       | ZJ       | ZJ       | P        | P        | P        | P        | P        | P        |
| 10                         | 74       | 79       | 89       | 126      | 136      | 174      | 94       | 99       | 109      | 146      | 156      | 194      | 56       | 61       | 71       | 108      | 118      | 156      |
| 12                         | 85       | 90       | 100      | 132      | 142      | 185      | 109      | 114      | 124      | 156      | 166      | 209      | 58       | 63       | 73       | 105      | 115      | 158      |
| 16                         | 92       | 97       | 107      | 122      | 132      | 184      | 114      | 119      | 129      | 144      | 154      | 206      | 63       | 68       | 78       | 93       | 103      | 155      |
| 20                         | 105      | 110      | 120      | 135      | 145      | 191      | 135      | 140      | 150      | 165      | 175      | 221      | 77       | 82       | 92       | 107      | 117      | 163      |
| 25                         | 114      | 119      | 129      | 144      | 154      | 201      | 142      | 147      | 157      | 172      | 182      | 229      | 78       | 83       | 93       | 108      | 118      | 165      |

Length tolerances ±1 mm  
 Stroke length tolerances +1,5/0 mm

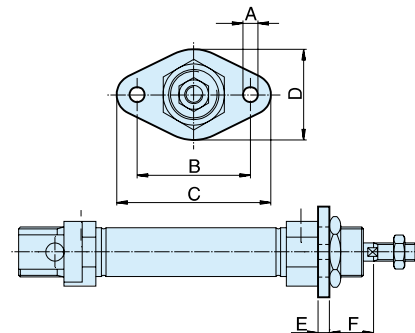
Cylinders are supplied complete with mounting and adjusting nuts.  
 Cylinders with through piston rod are supplied complete with two adjusting nuts and one mounting nut.

### Cylinder mountings

#### Flange-MF8

Intended for fixed attachment of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:  
Stainless steel, DIN X 10 CrNiS 18 9

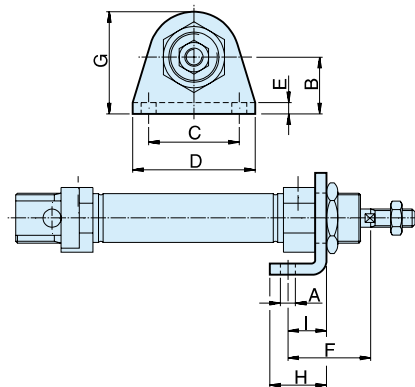


| Cylinder Ø mm | A mm | B mm | C mm | D mm | E mm | F mm | Weight Kg | Order code      |
|---------------|------|------|------|------|------|------|-----------|-----------------|
| 10            | 4,5  | 30   | 40   | 22   | 3    | 13   | 0,012     | <b>P1S-4CMB</b> |
| 12-16         | 5,5  | 40   | 52   | 30   | 4    | 18   | 0,025     | <b>P1S-4DMB</b> |
| 20            | 6,6  | 50   | 66   | 40   | 5    | 19   | 0,045     | <b>P1S-4HMB</b> |
| 25            | 6,6  | 50   | 66   | 40   | 5    | 23   | 0,045     | <b>P1S-4HMB</b> |

#### Foot-MS3

Intended for fixed attachment of the cylinder. The bracket is designed for mounting on the front or rear end-covers.

Material:  
Stainless steel, DIN X 10 CrNiS 18 9

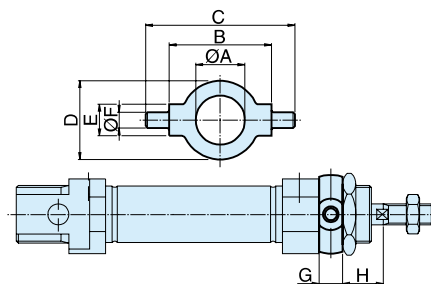


| Cylinder Ø mm | A mm | B mm | C mm | D mm | E mm | F mm | G mm | H mm | I mm | Weight Kg | Order code      |
|---------------|------|------|------|------|------|------|------|------|------|-----------|-----------------|
| 10            | 4,5  | 16   | 25   | 35   | 3    | 24   | 26   | 16   | 11   | 0,020     | <b>P1S-4CMF</b> |
| 12-16         | 5,5  | 20   | 32   | 42   | 4    | 32   | 32,5 | 20   | 14   | 0,040     | <b>P1S-4DMF</b> |
| 20            | 6,5  | 25   | 40   | 54   | 5    | 36   | 45   | 25   | 17   | 0,080     | <b>P1S-4HMF</b> |
| 25            | 6,5  | 25   | 40   | 54   | 5    | 40   | 45   | 25   | 17   | 0,080     | <b>P1S-4HMF</b> |

#### Cover trunnion

Intended for articulated mounting of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:  
Stainless steel, DIN X 10 CrNiS 18 9

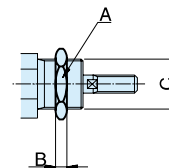


| Cylinder Ø | A mm | B h14 mm | C mm | D mm | E e9 mm | F mm | G mm | H mm | Weight Kg | Order code      |
|------------|------|----------|------|------|---------|------|------|------|-----------|-----------------|
| 10         | 12,5 | 26       | 38   | 20   | 8       | 4    | 6    | 10   | 0,014     | <b>P1A-4CMJ</b> |
| 12-16      | 16,5 | 38       | 58   | 25   | 10      | 6    | 8    | 14   | 0,033     | <b>P1A-4DMJ</b> |
| 20         | 22,5 | 46       | 66   | 30   | 10      | 6    | 8    | 16   | 0,037     | <b>P1A-4HMJ</b> |
| 25         | 22,5 | 46       | 66   | 30   | 10      | 6    | 8    | 20   | 0,037     | <b>P1A-4HMJ</b> |

#### Mounting nut

Intended for fixed mounting of the cylinder. Cylinders are supplied complete with one mounting nut.

Material:  
Stainless steel, DIN X 5 CrNi 18 10



| Cylinder Ø mm | A mm | B mm | C        | Weight Kg | Order code        |
|---------------|------|------|----------|-----------|-------------------|
| 10            | 19   | 6    | M12x1,25 | 0,009     | <b>9126725405</b> |
| 12-16         | 24   | 8    | M16x1,50 | 0,018     | <b>9126725406</b> |
| 20-25         | 27   | 5    | M22x1,50 | 0,042     | <b>9126725407</b> |

Cylinder mountings

Clevis bracket AB3

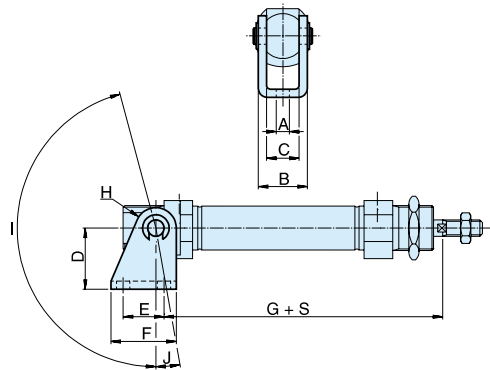


Intended for articulated mounting of the cylinder.  
Supplied with shaft for mounting on the rear end cover.

Material:  
Bracket: stainless steel, DIN X 5 CrNi 18 10  
Pin: tempered stainless steel, DIN X 20 Cr 13  
Locking rings: stainless steel, DIN X 5 CrNi 18 10

| Cylinder Ø mm | A mm | B mm | C mm | D mm | E mm | F mm | G mm | H mm | I ° | J ° | Weight Kg | Order code      |
|---------------|------|------|------|------|------|------|------|------|-----|-----|-----------|-----------------|
| 10            | 4,5  | 13   | 8    | 24   | 12,5 | 20   | 65,3 | 5    | 160 | 17  | 0,020     | <b>P1S-4CMT</b> |
| 12            | 5,5  | 18   | 12   | 27   | 15   | 25   | 73   | 7    | 170 | 15  | 0,040     | <b>P1S-4DMT</b> |
| 16            | 5,5  | 18   | 12   | 27   | 15   | 25   | 80   | 7    | 170 | 15  | 0,040     | <b>P1S-4DMT</b> |
| 20            | 6,5  | 24   | 16   | 30   | 20   | 32   | 91   | 10   | 165 | 10  | 0,080     | <b>P1S-4HMT</b> |
| 25            | 6,5  | 24   | 16   | 30   | 20   | 32   | 100  | 10   | 165 | 10  | 0,080     | <b>P1S-4HMT</b> |

S=stroke



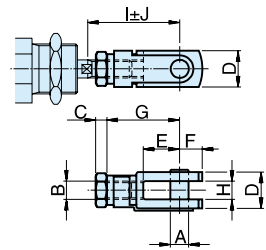
Clevis AP2



According to ISO 8140  
Intended for articulated mounting of the cylinder.  
This mounting is adjustable in the axial direction.  
Supplied complete with pin.

Material:  
Stainless steel, DIN X 5 CrNi 18 10

| Cylinder Ø mm | A mm | B        | C mm | D mm | E mm | F mm | G mm | H mm | I mm | J mm | Weight | Order code      |
|---------------|------|----------|------|------|------|------|------|------|------|------|--------|-----------------|
| 10            | 4    | M4       | 2,2  | 8    | 8    | 5    | 16   | 4    | 22   | 2    | 0,007  | <b>P1S-4CRD</b> |
| 12-16         | 6    | M6       | 3,2  | 12   | 12   | 7    | 24   | 6    | 31   | 3    | 0,022  | <b>P1S-4DRD</b> |
| 20            | 8    | M8       | 4    | 16   | 16   | 10   | 32   | 8    | 40,5 | 3,5  | 0,045  | <b>P1S-4HRD</b> |
| 25            | 10   | M10x1,25 | 5    | 20   | 20   | 12   | 40   | 10   | 49   | 3    | 0,095  | <b>P1S-4JRD</b> |



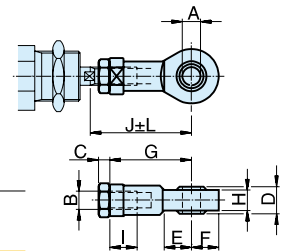
Swivel rod eye AP6



According to ISO 8139  
Intended for articulated mounting of the cylinder.  
This mounting is adjustable in the axial direction.

Material:  
Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10  
Ball: hardened stainless steel, DIN X 5 CrNi 18 10

| Cylinder Ø mm | A mm | B mm     | C mm | D mm | E mm | F mm | G mm | H mm | I mm | J mm | K mm | L mm | Weight | Order code      |
|---------------|------|----------|------|------|------|------|------|------|------|------|------|------|--------|-----------------|
| 10            | 5    | M4       | 2,2  | 8    | 10   | 9    | 27   | 6    | 8    | 33   | 9    | 2    | 0,017  | <b>P1S-4CRT</b> |
| 12-16         | 6    | M6       | 3,2  | 9    | 10   | 10   | 30   | 6,8  | 9    | 38,5 | 11   | 1,5  | 0,025  | <b>P1S-4DRT</b> |
| 20            | 8    | M8       | 4    | 12   | 12   | 12   | 36   | 9    | 12   | 46   | 14   | 2    | 0,045  | <b>P1S-4HRT</b> |
| 25            | 10   | M10x1,25 | 5    | 14   | 14   | 14   | 43   | 10,5 | 15   | 52,5 | 17   | 2,5  | 0,085  | <b>P1S-4JRT</b> |



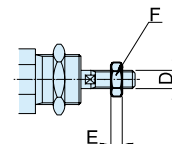
Rod nut



Intended for fixed mounting on the piston rod. Cylinders are supplied complete with one rod nut. (cylinders with through piston rod are supplied with two rod nuts.)

Material:  
Stainless steel, DIN X 5 CrNi 18 10

| Cylinder Ø mm | D        | F mm | E mm | Weight | Order code        |
|---------------|----------|------|------|--------|-------------------|
| 10            | M4       | 7    | 2,2  | 0,001  | <b>9127385121</b> |
| 12-16         | M6       | 10   | 3,2  | 0,002  | <b>9127385122</b> |
| 20            | M8       | 13   | 4    | 0,005  | <b>9127385123</b> |
| 25            | M10x1,25 | 17   | 5    | 0,007  | <b>9126725404</b> |



This range of stainless steel cylinders has been specially designed for use in difficult environments. Hygienic design, external seals of flouriated rubber and prelubrication with our food-industry-approved grease according to USDA-H1 make the cylinders particularly suitable for food industry use. All cylinders have magnetic pistons for proximity position sensing. Fixing dimensions to ISO 6431 simplify installation and make the cylinders physically interchangeable throughout the world.



- Round cylinder to ISO 6431
- All stainless steel
- Clean, smooth washdown design
- Magnetic piston as standard
- Adjustable cushioning for long service life
- Complete range of mountings and sensors

 **ATEX certified**  
(add -EXNN end of order code)

### Operating information

Working pressure: Max 10 bar  
 Temperature range: -20°C to +70°C  
 ATEX approval: CE Ex IIGD c T4 120°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Standard stroke lengths

#### Ø32mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-D032MS-0025 |
| 50        | P1S-D032MS-0050 |
| 80        | P1S-D032MS-0080 |
| 100       | P1S-D032MS-0100 |
| 125       | P1S-D032MS-0125 |
| 160       | P1S-D032MS-0160 |
| 200       | P1S-D032MS-0200 |
| 250       | P1S-D032MS-0250 |
| 320       | P1S-D032MS-0320 |
| 400       | P1S-D032MS-0400 |
| 500       | P1S-D032MS-0500 |

#### Ø63mm - (G3/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-D063MS-0025 |
| 50        | P1S-D063MS-0050 |
| 80        | P1S-D063MS-0080 |
| 100       | P1S-D063MS-0100 |
| 125       | P1S-D063MS-0125 |
| 160       | P1S-D063MS-0160 |
| 200       | P1S-D063MS-0200 |
| 250       | P1S-D063MS-0250 |
| 320       | P1S-D063MS-0320 |
| 400       | P1S-D063MS-0400 |
| 500       | P1S-D063MS-0500 |

#### Ø100mm - (G1/2)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-L100MS-0025 |
| 50        | P1S-L100MS-0050 |
| 80        | P1S-L100MS-0080 |
| 100       | P1S-L100MS-0100 |
| 125       | P1S-L100MS-0125 |
| 160       | P1S-L100MS-0160 |
| 200       | P1S-L100MS-0200 |
| 250       | P1S-L100MS-0250 |
| 320       | P1S-L100MS-0320 |
| 400       | P1S-L100MS-0400 |
| 500       | P1S-L100MS-0500 |

#### Ø40mm - (G1/4)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-D040MS-0025 |
| 50        | P1S-D040MS-0050 |
| 80        | P1S-D040MS-0080 |
| 100       | P1S-D040MS-0100 |
| 125       | P1S-D040MS-0125 |
| 160       | P1S-D040MS-0160 |
| 200       | P1S-D040MS-0200 |
| 250       | P1S-D040MS-0250 |
| 320       | P1S-D040MS-0320 |
| 400       | P1S-D040MS-0400 |
| 500       | P1S-D040MS-0500 |

#### Ø80mm - (G3/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-L080MS-0025 |
| 50        | P1S-L080MS-0050 |
| 80        | P1S-L080MS-0080 |
| 100       | P1S-L080MS-0100 |
| 125       | P1S-L080MS-0125 |
| 160       | P1S-L080MS-0160 |
| 200       | P1S-L080MS-0200 |
| 250       | P1S-L080MS-0250 |
| 320       | P1S-L080MS-0320 |
| 400       | P1S-L080MS-0400 |
| 500       | P1S-L080MS-0500 |

#### Ø125mm - (G1/2)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-L125MS-0025 |
| 50        | P1S-L125MS-0050 |
| 80        | P1S-L125MS-0080 |
| 100       | P1S-L125MS-0100 |
| 125       | P1S-L125MS-0125 |
| 160       | P1S-L125MS-0160 |
| 200       | P1S-L125MS-0200 |
| 250       | P1S-L125MS-0250 |
| 320       | P1S-L125MS-0320 |
| 400       | P1S-L125MS-0400 |
| 500       | P1S-L125MS-0500 |

#### Ø50mm - (G1/4)

| Stroke mm | Order code      |
|-----------|-----------------|
| 25        | P1S-D050MS-0025 |
| 50        | P1S-D050MS-0050 |
| 80        | P1S-D050MS-0080 |
| 100       | P1S-D050MS-0100 |
| 125       | P1S-D050MS-0125 |
| 160       | P1S-D050MS-0160 |
| 200       | P1S-D050MS-0200 |
| 250       | P1S-D050MS-0250 |
| 320       | P1S-D050MS-0320 |
| 400       | P1S-D050MS-0400 |
| 500       | P1S-D050MS-0500 |

Design Variants

**Working temperatures**

**High temperature** -10°C to +150°C Non-magnetic piston

**Low temperature**

Ø10 and Ø125mm -40°C to +40°C Non-magnetic piston

**Stainless steel scraper for piston rod**

-20°C to +80°C Magnetic piston

Mounting options

ISO 6431 Stainless Steel Cylinders are available with a variety of integral threaded mounting holes or trunnion pegs.

Double acting options

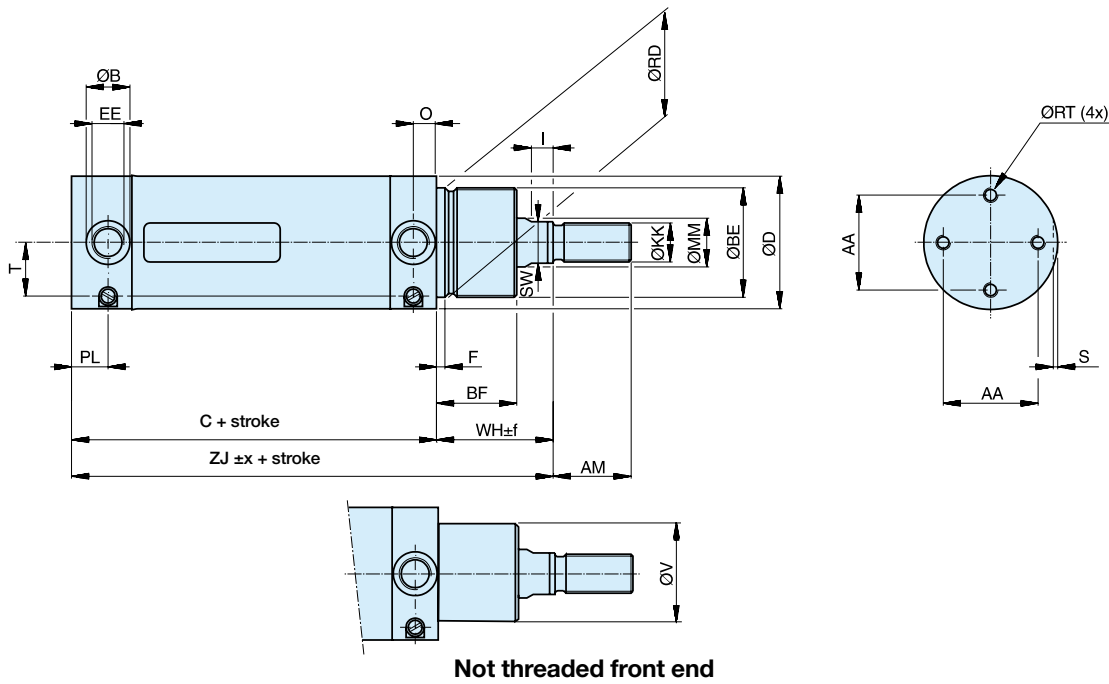
Double-acting adjustable cushioning Ø80 - Ø125



Double-acting adjustable cushioning through rod only Ø80 - Ø125



Dimensions Ø32-Ø63

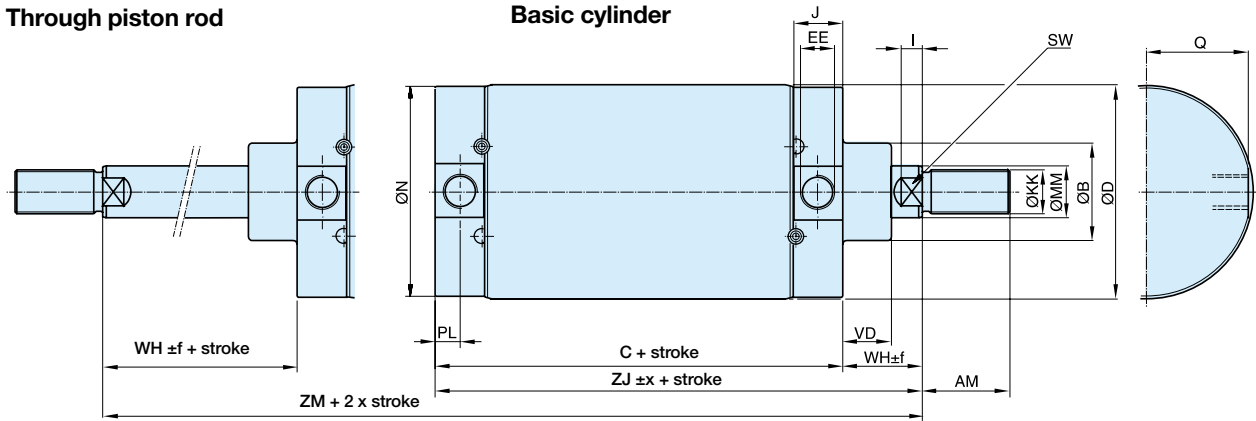


| Cylinder designation | AA mm | AM mm | B mm | BF mm | BE      | C mm  | D mm                          | EE mm | F mm                      | I mm | KK       | MM mm | O mm | PL mm | RD mm | RT mm |
|----------------------|-------|-------|------|-------|---------|-------|-------------------------------|-------|---------------------------|------|----------|-------|------|-------|-------|-------|
| P1S-D032M            | 24,5  | 22    | 15   | 25    | M30x1,5 | 88    | 36                            | G1/8  | 4,2                       | 6    | M10x1,25 | 12    | 8    | 13    | 30    | M5    |
| P1S-D040M            | 30    | 24    | 18   | 30    | M38x1,5 | 97    | 44                            | G1/4  | 4,5                       | 9    | M12x1,25 | 16    | 9,5  | 15    | 38    | M6    |
| P1S-D050M            | 39    | 32    | 18   | 33    | M45x1,5 | 101   | 55                            | G1/4  | 4,5                       | 9    | M16x1,5  | 20    | 9,5  | 15    | 45    | M6    |
| P1S-D063M            | 49    | 32    | 25   | 33    | M45x1,5 | 117   | 68                            | G3/8  | 4,5                       | 9    | M16x1,5  | 20    | 13,3 | 20,5  | 45    | M8    |
| Cylinder designation | S mm  | SW mm | T mm | V mm  | WH mm   | ZJ mm | Mounting tolerances x f mm mm |       | Stroke length 0-500 mm mm |      |          |       |      |       |       |       |
| P1S-D032M            | 1,5   | 10    | 12,2 | 26    | 35,5    | 123,5 | 1,2                           | 2,5   | +2,0                      |      |          |       |      |       |       |       |
| P1S-D040M            | 1,5   | 14    | 16,5 | 35    | 44      | 141   | 1,0                           | 2,2   | +2,0                      |      |          |       |      |       |       |       |
| P1S-D050M            | 1,5   | 17    | 22   | 41    | 47      | 148   | 0,9                           | 2,3   | +2,0                      |      |          |       |      |       |       |       |
| P1S-D063M            | 1,5   | 17    | 26   | 41    | 47      | 164   | 1,4                           | 2,3   | +2,5                      |      |          |       |      |       |       |       |

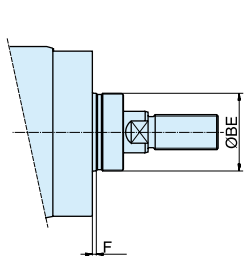


Dimensions Ø32-Ø63

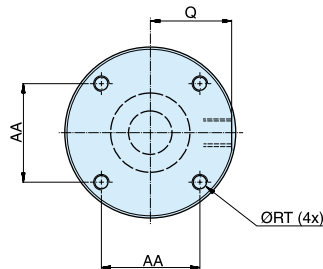
Through piston rod



Threaded front end



Mounting holes in the end covers



| Cylinder designation | AA mm | AM mm | B mm | BE      | C mm | D mm | EE   | F mm | KK      | I mm | J mm | MM mm | N mm | PL mm | Q mm |
|----------------------|-------|-------|------|---------|------|------|------|------|---------|------|------|-------|------|-------|------|
| P1S-•Ø80M            | 46    | 40    | 50   | M50x1,5 | 141  | 86   | G3/8 | 4    | M20x1,5 | 10   | 24,5 | 25    | 84   | 12,5  | 40   |
| P1S-•100M            | 60    | 40    | 50   | M50x1,5 | 158  | 106  | G1/2 | 4    | M20x1,5 | 8    | 30   | 25    | 104  | 15,5  | 49,5 |
| P1S-•125M            | 76    | 54    | 60   | M60x2   | 183  | 133  | G1/2 | 4    | M27x2   | 13   | 30   | 32    | 129  | 15,5  | 62,5 |

| Cylinder designation | RT mm | SW mm | VD mm | WH mm | ZJ mm | ZM mm | Mounting tol. x mm | Stroke length f mm | Stroke length 0-500 mm |
|----------------------|-------|-------|-------|-------|-------|-------|--------------------|--------------------|------------------------|
| P1S-•Ø80M            | M8    | 21    | 19    | 37    | 178   | 215   | 1,5                | 2,5                | +2,5                   |
| P1S-•100M            | M10   | 21    | 19    | 35    | 193   | 228   | 1,5                | 2,5                | +2,5                   |
| P1S-•125M            | M12   | 27    | 24    | 47    | 230   | 277   | 2,0                | 2,5                | +4,0                   |

Cylinder mountings Ø32 - Ø63

Mounting nut

Intended for fixed mounting of the cylinder via the neck.

Material: stainless steel, DIN X 5 CrNi 18 10



| Cylinder Ø mm | A mm | B mm | C       | Weight Kg | Order code        |
|---------------|------|------|---------|-----------|-------------------|
| 32            | 36   | 8    | M30x1,5 | 0,03      | <b>9127294401</b> |
| 40            | 46   | 10   | M38x1,5 | 0,06      | <b>9127294402</b> |
| 50            | 55   | 10   | M45x1,5 | 0,08      | <b>9127294403</b> |
| 63            | 55   | 10   | M45x1,5 | 0,08      | <b>9127294403</b> |

Cylinder mountings Ø32 - Ø125

Rod nut

Intended for fixed mounting on the piston rod. Cylinders are supplied complete with one rod nut. (cylinders with through piston rods are supplied with two rod nuts.)

Material: Stainless steel, DIN X 5 CrNi 18 10



| Cylinder Ø | A mm | B mm | C mm     | Weight Kg | Order code        |
|------------|------|------|----------|-----------|-------------------|
| 32         | 17   | 5    | M10x1,25 | 0,01      | <b>9126725404</b> |
| 40         | 19   | 6    | M12x1,25 | 0,01      | <b>9126725405</b> |
| 50         | 24   | 8    | M16x1,5  | 0,02      | <b>9126725406</b> |
| 63         | 24   | 8    | M16x1,5  | 0,02      | <b>9126725406</b> |
| 80         | 30   | 10   | M20x1,5  | 0,04      | <b>0261109921</b> |
| 100        | 30   | 10   | M20x1,5  | 0,04      | <b>0261109921</b> |
| 125        | 41   | 13,5 | M27x2    | 0,10      | <b>0261109922</b> |

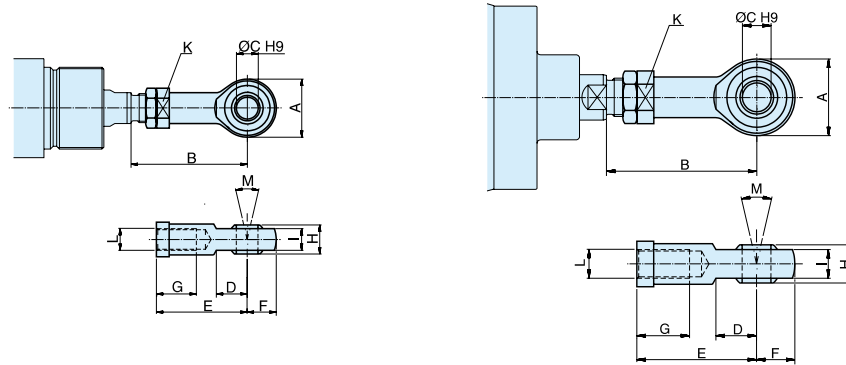
Cylinder mountings Ø32 - Ø125

Swivel rod eye AP6



According to ISO 8139  
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction.

Material:  
Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10  
Ball: hardened stainless steel, DIN X 5 CrNi 18 10



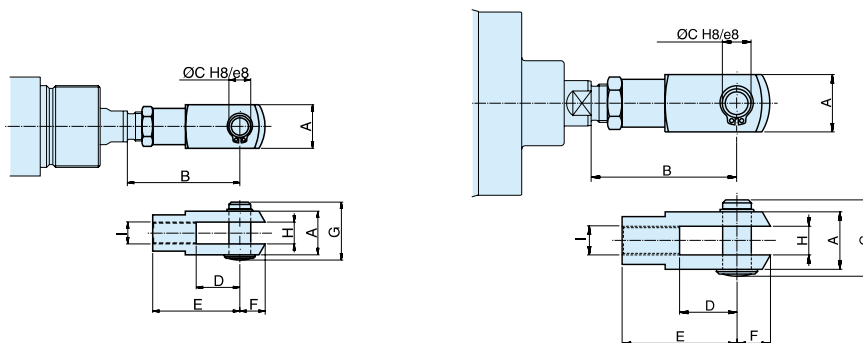
| Cyl. Ø mm | A mm | B <sub>min</sub> mm | B <sub>max</sub> mm | C mm | D mm | E mm | F mm | G mm | H mm | I mm | K mm | L        | M   | Weight Kg | Order code      |
|-----------|------|---------------------|---------------------|------|------|------|------|------|------|------|------|----------|-----|-----------|-----------------|
| 32        | 28   | 50                  | 55                  | 10   | 15   | 43   | 14   | 15   | 14   | 10,5 | 17   | M10x1,25 | 24° | 0,08      | <b>P1S-4JRT</b> |
| 40        | 32   | 56                  | 62                  | 12   | 17   | 50   | 16   | 22   | 16   | 12   | 19   | M12x1,25 | 24° | 0,12      | <b>P1S-4LRT</b> |
| 50        | 42   | 72                  | 80                  | 16   | 22   | 64   | 21   | 28   | 21   | 15   | 22   | M16x1,5  | 30° | 0,25      | <b>P1S-4MRT</b> |
| 63        | 42   | 72                  | 80                  | 16   | 22   | 64   | 21   | 28   | 21   | 15   | 22   | M16x1,5  | 30° | 0,25      | <b>P1S-4MRT</b> |
| 80        | 50   | 87                  | 97                  | 20   | 26   | 77   | 25   | 33   | 25   | 18   | 32   | M20x1,5  | 30° | 0,46      | <b>P1S-4PRT</b> |
| 100       | 50   | 87                  | 97                  | 20   | 26   | 77   | 25   | 33   | 25   | 18   | 32   | M20x1,5  | 30° | 0,46      | <b>P1S-4PRT</b> |
| 125       | 70   | 123,5               | 137                 | 30   | 36   | 110  | 35   | 51   | 37   | 25   | 41   | M27x2    | 30° | 1,28      | <b>P1S-4RRT</b> |

Clevis Clevis AP2



According to ISO 8140  
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction. Supplied complete with pin.

Material:  
Clevis: stainless steel, DIN X 10 CrNiS 18 9  
Pin: stainless steel, DIN X 5 CrNi 18 10  
Locking rings according to DIN 471



| Cyl. Ø mm | A mm | B <sub>min</sub> mm | B <sub>max</sub> mm | C mm | D mm | E mm | F mm | G mm | H mm | I mm     | Weight Kg | Order code      |
|-----------|------|---------------------|---------------------|------|------|------|------|------|------|----------|-----------|-----------------|
| 32        | 20   | 46                  | 52                  | 10   | 20   | 40   | 12   | 28   | 10   | M10x1,25 | 0,09      | <b>P1S-4JRD</b> |
| 40        | 24   | 54                  | 60                  | 12   | 24   | 48   | 19   | 32   | 12   | M12x1,25 | 0,15      | <b>P1S-4LRD</b> |
| 50        | 32   | 72                  | 80                  | 16   | 32   | 64   | 25   | 42   | 16   | M16x1,5  | 0,35      | <b>P1S-4MRD</b> |
| 63        | 32   | 72                  | 80                  | 16   | 32   | 64   | 25   | 42   | 16   | M16x1,5  | 0,35      | <b>P1S-4MRD</b> |
| 80        | 40   | 90                  | 100                 | 20   | 40   | 80   | 32   | 50   | 20   | M20x1,5  | 0,75      | <b>P1S-4PRD</b> |
| 100       | 40   | 90                  | 100                 | 20   | 40   | 80   | 32   | 50   | 20   | M20x1,5  | 0,75      | <b>P1S-4PRD</b> |
| 125       | 55   | 123,5               | 137                 | 30   | 54   | 110  | 45   | 72   | 30   | M27x2    | 2,10      | <b>P1S-4RRD</b> |

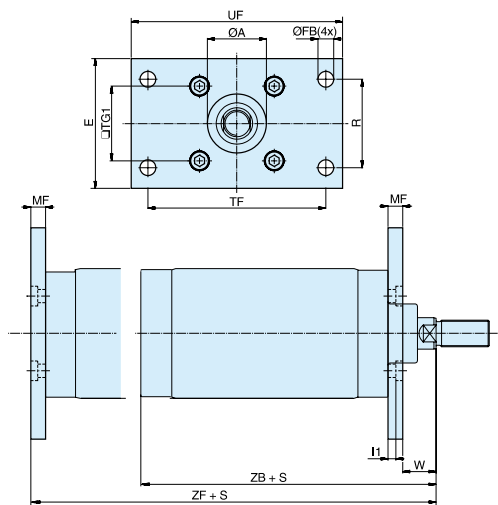
Cylinder mountings

Flange MF1/MF2



Intended for fixed attachment of cylinder version D, E, F or L. The flange is designed for mounting on the front or rear end covers.

Material:  
Stainless steel, DIN X 5 CrNiMo 17 13 3



| Cylinder Ø mm | A mm | FB mm | E mm | R mm | TF mm | TG1 mm | UF mm | MF mm | I1 mm | W mm | ZB mm | ZF mm | Weight Kg | Order code      |
|---------------|------|-------|------|------|-------|--------|-------|-------|-------|------|-------|-------|-----------|-----------------|
| 80            | 50,2 | 12    | 86   | 63   | 126   | 46     | 150   | 12    | 6     | 25   | 178   | 190   | 0,97      | <b>P1S-4PMB</b> |
| 100           | 51   | 14    | 106  | 75   | 150   | 60     | 170   | 12    | 6     | 23   | 193   | 205   | 1,42      | <b>P1S-4QMB</b> |
| 125           | 61   | 16    | 132  | 90   | 180   | 76     | 205   | 15    | 8     | 32   | 230   | 245   | 1,55      | <b>P1S-4RMB</b> |

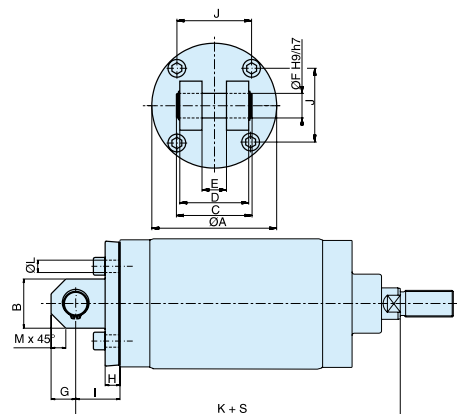
S = Stroke

Clevis bracket MP4



Intended for articulated mounting of cylinder versions D, F, or L. The bracket is mounted on the rear end cover and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket.

Material:  
Bracket: stainless steel, DIN X 5 CrNi 18 10  
Pin: stainless steel, DIN X 5 CrNiMo 17 13 3



| Cylinder Ø mm | A mm | B mm | C mm | D mm | E mm | F mm | G mm | H mm | I mm | J mm | K mm | L mm | M mm | Weight Kg | Order code      |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|-----------------|
| 80            | 80   | 30   | 57   | 50   | 16   | 16   | 15   | 12   | 32   | 46   | 210  | 8,6  | 9    | 0,78      | <b>P1S-4PME</b> |
| 100           | 103  | 42   | 67   | 60   | 20   | 20   | 21   | 12   | 37   | 60   | 230  | 10,6 | 12   | 1,42      | <b>P1S-4QME</b> |
| 125           | 127  | 50   | 77   | 70   | 25   | 25   | 25   | 15   | 45   | 76   | 275  | 12,6 | 15   | 2,06      | <b>P1S-4RME</b> |

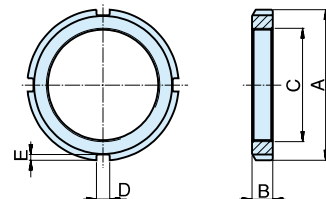
S = Stroke

Mounting nut



Intended for fixed mounting on the front end cover of cylinders according to cylinder version C or D.

Material:  
Stainless steel, DIN X 5 CrNi 18 10



| Cylinder Ø mm | A mm | B mm | C mm    | D mm | E mm | Weight Kg | Order code        |
|---------------|------|------|---------|------|------|-----------|-------------------|
| 80            | 70   | 11   | M50x1,5 | 6    | 2,5  | 0,16      | <b>9126461304</b> |
| 100           | 70   | 11   | M50x1,5 | 6    | 2,5  | 0,16      | <b>9126461304</b> |
| 125           | 80   | 11   | M60x2   | 7    | 3    | 0,19      | <b>9126461305</b> |

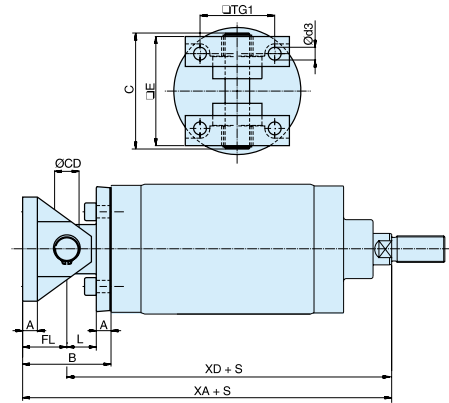
Cylinder mountings

Cylinder mountings

| Type                                   | Description   | Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|--|---|-------------------|--------------|-----------------|
| <b>Combinated mounting<br/>MP2/MP4</b> | Intended for articulated mounting of cylinder versions D, F or L. The unit is mounted on the rear end cover and is combined with bearing brackets MP2 and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket. | 80                | 1,29         | <b>P1S-4PML</b> |
|  |   | 100               | 2,33         | <b>P1S-4QML</b> |
|  |   | 125               | 3,30         | <b>P1S-4RML</b> |



Material:  
 Bearing brackets: stainless steel, DIN X 5 CrNi 18 10  
 Journal bearing: stainless steel,  
 Journal bearing: DIN X 5 CrNiMo 17 13 3/PTFE  
 Bracket: stainless steel, DIN X 5 CrNi 18 10  
 Pin: stainless steel, DIN X 5 CrNiMo 17 13 3



| Cylinder<br>Ø mm | A<br>mm | B<br>mm | C<br>mm | CD<br>mm | d3<br>mm | E<br>mm | FL<br>mm | L<br>mm | TG1<br>mm | XA<br>mm | XD<br>mm |
|------------------|---------|---------|---------|----------|----------|---------|----------|---------|-----------|----------|----------|
| 80               | 12      | 64      | 82      | 16       | 9        | 74      | 32       | 20      | 46        | 242      | 210      |
| 100              | 12      | 74      | 98      | 20       | 11       | 90      | 37       | 25      | 60        | 267      | 230      |
| 125              | 15      | 90      | 118     | 25       | 13       | 110     | 45       | 30      | 76        | 320      | 275      |

S = Stroke



# P1P Short Build Compact Cylinders

According to ISO 21287



The P1P Series is a complete range of ISO 21287 compact cylinders developed to meet the highest requirements for quality and performance. The careful design in every detail provides first class function and service life properties.

Reliability and long service life are key qualities of any pneumatic cylinder. Therefore we have given P1P highest possible quality in every detail based on our 40 years of experience and extensive testing. The design is based on the following important principles.

- **Proven seal design and materials throughout the cylinder. The expertise for seal technology within Parker Hannifin is the basis for leading and proven tribology solutions for all our pneumatic actuators.**
- **Body extrusion in anodised aluminium with extra fine and hard internal surface for optimum operational conditions.**
- **End covers and body extrusion with external anodisation for excellent corrosion resistance.**
- **Stainless steel piston rod for versatile use in corrosive environment.**

## Double acting

The versatile high quality ISO compact cylinder range, P1P cylinders are up to 50% shorter than ISO15552 cylinders for the same stroke. Suitable for a wide range of applications.

## Double acting - Guided

This cylinder version feature twin guide rods connected to the piston rod by a large flange plate. These cylinders are ideal for clamping an moving applications where turning of the piston rod must be avoided.

- Bore 20 - 100 mm
- ISO 21287 conformity
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- Elastic cushioning
- Flexible direct mounting
- ISO 15552 mountings and global sensor range common with P1D



### Operating information

|   |                                  |
|---|----------------------------------|
| Working pressure:   | Max 10 bar                       |
| Permissible fluid:  | Air, with or without lubrication |
| Seals / Temperature options   |                                  |
| Standard:   | -20°C to +80°C                   |
| High temperature:   | -10°C to +120°C                  |
| Low temperature:  | -40°C to +80°C                   |
| Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued. |                                  |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a>                   |                                  |

### \* Double acting - Guided order code.

Place **G** in position **4** of the order code

Example: P1P**G**020DS7G0025

## Double acting - Female threaded piston rod

### Ø20mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS020DS7G0005 |
| 10        | P1PS020DS7G0010 |
| 15        | P1PS020DS7G0015 |
| 20        | P1PS020DS7G0020 |
| 25        | P1PS020DS7G0025 |
| 30        | P1PS020DS7G0030 |
| 40        | P1PS020DS7G0040 |
| 50        | P1PS020DS7G0050 |
| 60        | P1PS020DS7G0060 |

### Ø25mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS025DS7G0005 |
| 10        | P1PS025DS7G0010 |
| 15        | P1PS025DS7G0015 |
| 20        | P1PS025DS7G0020 |
| 25        | P1PS025DS7G0025 |
| 30        | P1PS025DS7G0030 |
| 40        | P1PS025DS7G0040 |
| 50        | P1PS025DS7G0050 |
| 60        | P1PS025DS7G0060 |

### Ø32mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS032DS7G0005 |
| 10        | P1PS032DS7G0010 |
| 15        | P1PS032DS7G0015 |
| 20        | P1PS032DS7G0020 |
| 25        | P1PS032DS7G0025 |
| 30        | P1PS032DS7G0030 |
| 40        | P1PS032DS7G0040 |
| 50        | P1PS032DS7G0050 |
| 60        | P1PS032DS7G0060 |
| 80        | P1PS032DS7G0080 |

### Ø40mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS040DS7G0005 |
| 10        | P1PS040DS7G0010 |
| 15        | P1PS040DS7G0015 |
| 20        | P1PS040DS7G0020 |
| 25        | P1PS040DS7G0025 |
| 30        | P1PS040DS7G0030 |
| 40        | P1PS040DS7G0040 |
| 50        | P1PS040DS7G0050 |
| 60        | P1PS040DS7G0060 |
| 80        | P1PS040DS7G0080 |

### Ø50mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS050DS7G0005 |
| 10        | P1PS050DS7G0010 |
| 15        | P1PS050DS7G0015 |
| 20        | P1PS050DS7G0020 |
| 25        | P1PS050DS7G0025 |
| 30        | P1PS050DS7G0030 |
| 40        | P1PS050DS7G0040 |
| 50        | P1PS050DS7G0050 |
| 60        | P1PS050DS7G0060 |
| 80        | P1PS050DS7G0080 |

### Ø63mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS063DS7G0005 |
| 10        | P1PS063DS7G0010 |
| 15        | P1PS063DS7G0015 |
| 20        | P1PS063DS7G0020 |
| 25        | P1PS063DS7G0025 |
| 30        | P1PS063DS7G0030 |
| 40        | P1PS063DS7G0040 |
| 50        | P1PS063DS7G0050 |
| 60        | P1PS063DS7G0060 |
| 80        | P1PS063DS7G0080 |

### Ø80mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS080DS7G0005 |
| 10        | P1PS080DS7G0010 |
| 15        | P1PS080DS7G0015 |
| 20        | P1PS080DS7G0020 |
| 25        | P1PS080DS7G0025 |
| 30        | P1PS080DS7G0030 |
| 40        | P1PS080DS7G0040 |
| 50        | P1PS080DS7G0050 |
| 60        | P1PS080DS7G0060 |
| 80        | P1PS080DS7G0080 |
| 100       | P1PS080DS7G0100 |

### Ø100mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1PS100DS7G0010 |
| 15        | P1PS100DS7G0015 |
| 20        | P1PS100DS7G0020 |
| 25        | P1PS100DS7G0025 |
| 30        | P1PS100DS7G0030 |
| 40        | P1PS100DS7G0040 |
| 50        | P1PS100DS7G0050 |
| 60        | P1PS100DS7G0060 |
| 80        | P1PS100DS7G0080 |
| 100       | P1PS100DS7G0100 |

### Sensors



For sensors see page 77.

## Double acting

The versatile high quality ISO compact cylinder range, P1P cylinders are up to 50% shorter than ISO15552 cylinders for the same stroke. Suitable for a wide range of applications.

- Bore 20 - 100 mm
- ISO 21287 conformity
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- Elastic cushioning
- Flexible direct mounting
- ISO 15552 mountings and global sensor range common with P1D



## Double acting - Male threaded piston rod

### Ø20mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS020DS8G0005 |
| 10        | P1PS020DS8G0010 |
| 15        | P1PS020DS8G0015 |
| 20        | P1PS020DS8G0020 |
| 25        | P1PS020DS8G0025 |
| 30        | P1PS020DS8G0030 |
| 40        | P1PS020DS8G0040 |
| 50        | P1PS020DS8G0050 |
| 60        | P1PS020DS8G0060 |

### Ø25mm - (M5)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS025DS8G0005 |
| 10        | P1PS025DS8G0010 |
| 15        | P1PS025DS8G0015 |
| 20        | P1PS025DS8G0020 |
| 25        | P1PS025DS8G0025 |
| 30        | P1PS025DS8G0030 |
| 40        | P1PS025DS8G0040 |
| 50        | P1PS025DS8G0050 |
| 60        | P1PS025DS8G0060 |

### Ø32mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS032DS8G0005 |
| 10        | P1PS032DS8G0010 |
| 15        | P1PS032DS8G0015 |
| 20        | P1PS032DS8G0020 |
| 25        | P1PS032DS8G0025 |
| 30        | P1PS032DS8G0030 |
| 40        | P1PS032DS8G0040 |
| 50        | P1PS032DS8G0050 |
| 60        | P1PS032DS8G0060 |
| 80        | P1PS032DS8G0080 |

### Ø40mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS040DS8G0005 |
| 10        | P1PS040DS8G0010 |
| 15        | P1PS040DS8G0015 |
| 20        | P1PS040DS8G0020 |
| 25        | P1PS040DS8G0025 |
| 30        | P1PS040DS8G0030 |
| 40        | P1PS040DS8G0040 |
| 50        | P1PS040DS8G0050 |
| 60        | P1PS040DS8G0060 |
| 80        | P1PS040DS8G0080 |

### Ø50mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS050DS8G0005 |
| 10        | P1PS050DS8G0010 |
| 15        | P1PS050DS8G0015 |
| 20        | P1PS050DS8G0020 |
| 25        | P1PS050DS8G0025 |
| 30        | P1PS050DS8G0030 |
| 40        | P1PS050DS8G0040 |
| 50        | P1PS050DS8G0050 |
| 60        | P1PS050DS8G0060 |
| 80        | P1PS050DS8G0080 |

### Ø63mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS063DS8G0005 |
| 10        | P1PS063DS8G0010 |
| 15        | P1PS063DS8G0015 |
| 20        | P1PS063DS8G0020 |
| 25        | P1PS063DS8G0025 |
| 30        | P1PS063DS8G0030 |
| 40        | P1PS063DS8G0040 |
| 50        | P1PS063DS8G0050 |
| 60        | P1PS063DS8G0060 |
| 80        | P1PS063DS8G0080 |

### Ø80mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS080DS8G0005 |
| 10        | P1PS080DS8G0010 |
| 15        | P1PS080DS8G0015 |
| 20        | P1PS080DS8G0020 |
| 25        | P1PS080DS8G0025 |
| 30        | P1PS080DS8G0030 |
| 40        | P1PS080DS8G0040 |
| 50        | P1PS080DS8G0050 |
| 60        | P1PS080DS8G0060 |
| 80        | P1PS080DS8G0080 |
| 100       | P1PS080DS8G0100 |

### Ø100mm - (G1/8)

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1PS100DS8G0010 |
| 15        | P1PS100DS8G0015 |
| 20        | P1PS100DS8G0020 |
| 25        | P1PS100DS8G0025 |
| 30        | P1PS100DS8G0030 |
| 40        | P1PS100DS8G0040 |
| 50        | P1PS100DS8G0050 |
| 60        | P1PS100DS8G0060 |
| 80        | P1PS100DS8G0080 |
| 100       | P1PS100DS8G0100 |

### Sensors



For sensors see page 77.

**Single acting**

Single acting P1P cylinders are available in bore sizes 20 - 63 mm and in two versions to suit a wide range of applications. Choose between the spring return (SS) and the spring extended (TS) versions.



**\* Spring return order code.**

Place **S** in position **8** of the order code

Example: P1PS020**S**S7G0025

**\* Spring extended order code.**

Place **T** in position **8** of the order code

Example: P1PS020**T**S7G0025

**Single acting - Female threaded piston rod**

**Ø20mm - (M5)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 25        | P1PS020 * S7G0025 |

**Ø40mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 25        | P1PS040 * S7G0025 |

**Ø25mm - (M5)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 25        | P1PS025 * S7G0025 |

**Ø50mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 25        | P1PS050 * S7G0025 |

**Ø32mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 25        | P1PS032 * S7G0025 |

**Ø63mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 25        | P1PS063 * S7G0025 |

**Double acting - Through piston rod**

The P1P through rod cylinder version is available in bore sizes 20 - 100 mm. This cylinder type is used in many ways e.g. in applications with higher lateral forces or when performing a movement on both sides of the cylinder.



**Double acting - Through piston rod - Female threaded piston rod**

**Ø20mm - (M5)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS020KS7G0005 |
| 10        | P1PS020KS7G0010 |
| 15        | P1PS020KS7G0015 |
| 20        | P1PS020KS7G0020 |
| 25        | P1PS020KS7G0025 |
| 30        | P1PS020KS7G0030 |
| 40        | P1PS020KS7G0040 |
| 50        | P1PS020KS7G0050 |
| 60        | P1PS020KS7G0060 |

**Ø40mm - (G1/8)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS040KS7G0005 |
| 10        | P1PS040KS7G0010 |
| 15        | P1PS040KS7G0015 |
| 20        | P1PS040KS7G0020 |
| 25        | P1PS040KS7G0025 |
| 30        | P1PS040KS7G0030 |
| 40        | P1PS040KS7G0040 |
| 50        | P1PS040KS7G0050 |
| 60        | P1PS040KS7G0060 |
| 80        | P1PS040KS7G0080 |

**Ø80mm - (G1/8)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS080KS7G0005 |
| 10        | P1PS080KS7G0010 |
| 15        | P1PS080KS7G0015 |
| 20        | P1PS080KS7G0020 |
| 25        | P1PS080KS7G0025 |
| 30        | P1PS080KS7G0030 |
| 40        | P1PS080KS7G0040 |
| 50        | P1PS080KS7G0050 |
| 60        | P1PS080KS7G0060 |
| 80        | P1PS080KS7G0080 |
| 100       | P1PS080KS7G0100 |

**Ø25mm - (M5)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS025KS7G0005 |
| 10        | P1PS025KS7G0010 |
| 15        | P1PS025KS7G0015 |
| 20        | P1PS025KS7G0020 |
| 25        | P1PS025KS7G0025 |
| 30        | P1PS025KS7G0030 |
| 40        | P1PS025KS7G0040 |
| 50        | P1PS025KS7G0050 |
| 60        | P1PS025KS7G0060 |

**Ø50mm - (G1/8)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS050KS7G0005 |
| 10        | P1PS050KS7G0010 |
| 15        | P1PS050KS7G0015 |
| 20        | P1PS050KS7G0020 |
| 25        | P1PS050KS7G0025 |
| 30        | P1PS050KS7G0030 |
| 40        | P1PS050KS7G0040 |
| 50        | P1PS050KS7G0050 |
| 60        | P1PS050KS7G0060 |
| 80        | P1PS050KS7G0080 |

**Ø100mm - (G1/8)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1PS100KS7G0010 |
| 15        | P1PS100KS7G0015 |
| 20        | P1PS100KS7G0020 |
| 25        | P1PS100KS7G0025 |
| 30        | P1PS100KS7G0030 |
| 40        | P1PS100KS7G0040 |
| 50        | P1PS100KS7G0050 |
| 60        | P1PS100KS7G0060 |
| 80        | P1PS100KS7G0080 |
| 100       | P1PS100KS7G0100 |

**Ø32mm - (G1/8)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS032KS7G0005 |
| 10        | P1PS032KS7G0010 |
| 15        | P1PS032KS7G0015 |
| 20        | P1PS032KS7G0020 |
| 25        | P1PS032KS7G0025 |
| 30        | P1PS032KS7G0030 |
| 40        | P1PS032KS7G0040 |
| 50        | P1PS032KS7G0050 |
| 60        | P1PS032KS7G0060 |
| 80        | P1PS032KS7G0080 |

**Ø63mm - (G1/8)**

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1PS063KS7G0005 |
| 10        | P1PS063KS7G0010 |
| 15        | P1PS063KS7G0015 |
| 20        | P1PS063KS7G0020 |
| 25        | P1PS063KS7G0025 |
| 30        | P1PS063KS7G0030 |
| 40        | P1PS063KS7G0040 |
| 50        | P1PS063KS7G0050 |
| 60        | P1PS063KS7G0060 |
| 80        | P1PS063KS7G0080 |

**Sensors**



For sensors see page 77.



**Double acting - Low temperature**

This P1P cylinder version is developed for use in temperatures down to -40°C. It is available in bore sizes 20 - 100 mm. With the combination of compactness and corrosion resistance the P1P low temperature version can be used in many industries e.g. Bus, Truck and Rail applications.

**\* Low temperature order code.**

Place **L** in position **9** of the order code  
**Example:** P1PS020D**L**7G0005



**Double acting - High temperature**

Use this P1P cylinder version, available in bore sizes 20 - 100 mm, for high temperature applications with temperatures up to +120°C. The chemical resistance thanks to the design in anodised aluminium is an advantage in many high temperature applications.

**\* High temperature order code.**

Place **F** in position **9** of the order code  
**Example:** P1PS020D**F**7G0005



**Double acting - Female threaded piston rod**

**Ø20mm - (M5)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS020D * 7G0005 |
| 10        | P1PS020D * 7G0010 |
| 15        | P1PS020D * 7G0015 |
| 20        | P1PS020D * 7G0020 |
| 25        | P1PS020D * 7G0025 |
| 30        | P1PS020D * 7G0030 |
| 40        | P1PS020D * 7G0040 |
| 50        | P1PS020D * 7G0050 |
| 60        | P1PS020D * 7G0060 |

**Ø25mm - (M5)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS025D * 7G0005 |
| 10        | P1PS025D * 7G0010 |
| 15        | P1PS025D * 7G0015 |
| 20        | P1PS025D * 7G0020 |
| 25        | P1PS025D * 7G0025 |
| 30        | P1PS025D * 7G0030 |
| 40        | P1PS025D * 7G0040 |
| 50        | P1PS025D * 7G0050 |
| 60        | P1PS025D * 7G0060 |

**Ø32mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS032D * 7G0005 |
| 10        | P1PS032D * 7G0010 |
| 15        | P1PS032D * 7G0015 |
| 20        | P1PS032D * 7G0020 |
| 25        | P1PS032D * 7G0025 |
| 30        | P1PS032D * 7G0030 |
| 40        | P1PS032D * 7G0040 |
| 50        | P1PS032D * 7G0050 |
| 60        | P1PS032D * 7G0060 |
| 80        | P1PS032D * 7G0080 |

**Ø40mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS040D * 7G0005 |
| 10        | P1PS040D * 7G0010 |
| 15        | P1PS040D * 7G0015 |
| 20        | P1PS040D * 7G0020 |
| 25        | P1PS040D * 7G0025 |
| 30        | P1PS040D * 7G0030 |
| 40        | P1PS040D * 7G0040 |
| 50        | P1PS040D * 7G0050 |
| 60        | P1PS040D * 7G0040 |
| 80        | P1PS040D * 7G0050 |

**Ø50mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS050D * 7G0005 |
| 10        | P1PS050D * 7G0010 |
| 15        | P1PS050D * 7G0015 |
| 20        | P1PS050D * 7G0020 |
| 25        | P1PS050D * 7G0025 |
| 30        | P1PS050D * 7G0030 |
| 40        | P1PS050D * 7G0040 |
| 50        | P1PS050D * 7G0050 |
| 60        | P1PS050D * 7G0060 |
| 80        | P1PS050D * 7G0080 |

**Ø63mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS063D * 7G0005 |
| 10        | P1PS063D * 7G0010 |
| 15        | P1PS063D * 7G0015 |
| 20        | P1PS063D * 7G0020 |
| 25        | P1PS063D * 7G0025 |
| 30        | P1PS063D * 7G0030 |
| 40        | P1PS063D * 7G0040 |
| 50        | P1PS063D * 7G0050 |
| 60        | P1PS063D * 7G0060 |
| 80        | P1PS063D * 7G0080 |

**Ø80mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 5         | P1PS080D * 7G0005 |
| 10        | P1PS080D * 7G0010 |
| 15        | P1PS080D * 7G0015 |
| 20        | P1PS080D * 7G0020 |
| 25        | P1PS080D * 7G0025 |
| 30        | P1PS080D * 7G0030 |
| 40        | P1PS080D * 7G0040 |
| 50        | P1PS080D * 7G0050 |
| 60        | P1PS080D * 7G0060 |
| 80        | P1PS080D * 7G0080 |
| 100       | P1PS080D * 7G0100 |

**Ø100mm - (G1/8)**

| Stroke mm | Order code        |
|-----------|-------------------|
| 10        | P1PS100D * 7G0010 |
| 15        | P1PS100D * 7G0015 |
| 20        | P1PS100D * 7G0020 |
| 25        | P1PS100D * 7G0025 |
| 30        | P1PS100D * 7G0030 |
| 40        | P1PS100D * 7G0040 |
| 50        | P1PS100D * 7G0050 |
| 60        | P1PS100D * 7G0060 |
| 80        | P1PS100D * 7G0080 |
| 100       | P1PS100D * 7G0100 |

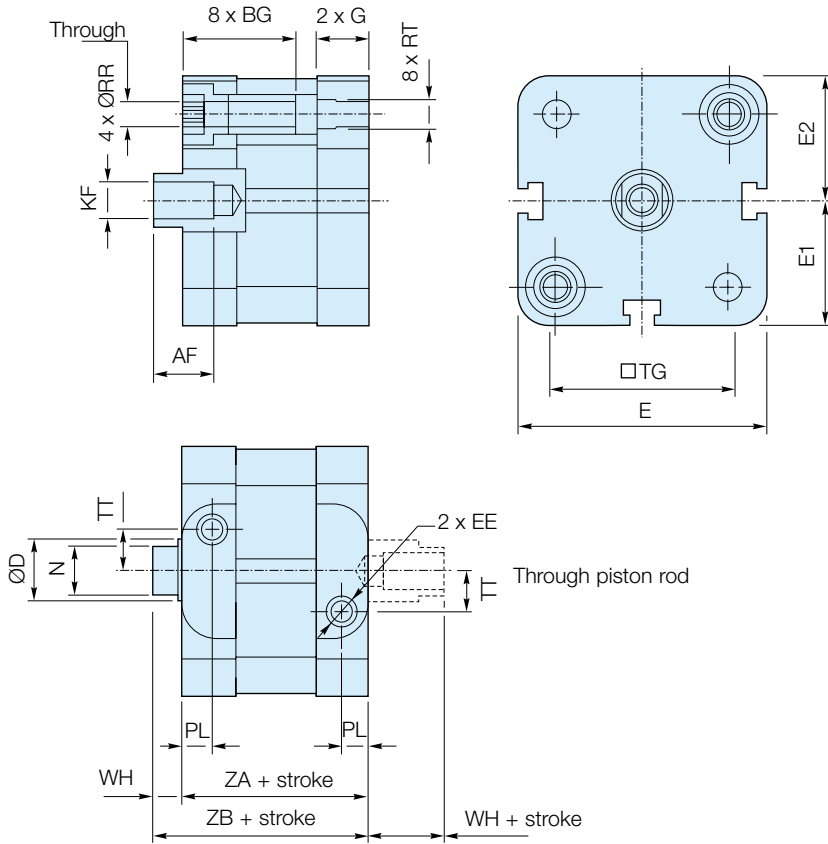
**Sensors**  
 Low temperature only



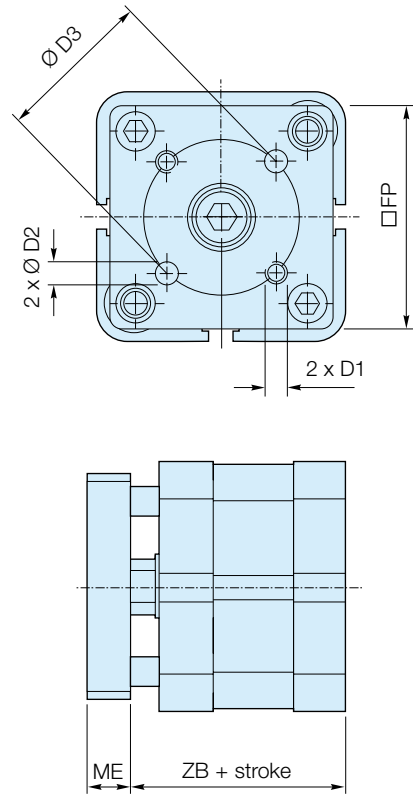
For sensors see page 77.

Dimensions - Bore 20 - 63mm

P1PS...DS7G Double acting with female piston rod thread

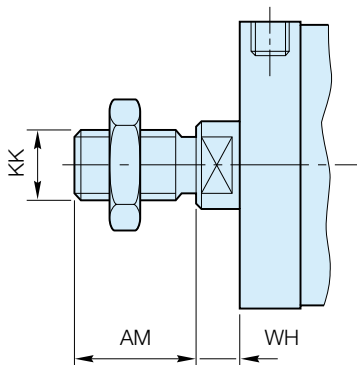


P1PG...DS Double acting with guided piston rod



| Bore size | AF min | BG min | ØD | D1 | ØD2 H8 | ØD3 | EE   | E    | E1   | E2   | FP | G     | KF  | ME | N h14 | PL  | ØRR min | RT | TG   | TT   | WH | ZA ± 0,3 | ZB ± 0,6 |
|-----------|--------|--------|----|----|--------|-----|------|------|------|------|----|-------|-----|----|-------|-----|---------|----|------|------|----|----------|----------|
| Ø20       | 10     | 15     | 10 | M4 | 4      | 17  | M5   | 38,0 | 19,0 | 19,1 | 35 | 11,60 | M6  | 8  | 8     | 7,6 | 4,1     | M5 | 22,0 | 4,0  | 6  | 37       | 43       |
| Ø25       | 10     | 15     | 10 | M5 | 5      | 22  | M5   | 41,0 | 20,5 | 20,6 | 38 | 11,90 | M6  | 8  | 8     | 7,5 | 4,1     | M5 | 26,0 | 5,5  | 6  | 39       | 45       |
| Ø32       | 12     | 16     | 12 | M5 | 5      | 28  | G1/8 | 49,4 | 24,7 | 24,9 | 45 | 15,25 | M8  | 10 | 10    | 7,8 | 5,1     | M6 | 32,5 | 6,5  | 7  | 44       | 51       |
| Ø40       | 12     | 16     | 12 | M5 | 5      | 33  | G1/8 | 56,0 | 28,0 | 28,5 | 50 | 15,25 | M8  | 10 | 10    | 8,0 | 5,1     | M6 | 38,0 | 8,0  | 7  | 45       | 52       |
| Ø50       | 16     | 16     | 16 | M6 | 6      | 42  | G1/8 | 67,0 | 33,5 | 33,7 | 60 | 14,30 | M10 | 12 | 13    | 7,7 | 6,4     | M8 | 46,5 | 11,0 | 8  | 45       | 53       |
| Ø63       | 16     | 16     | 16 | M6 | 6      | 50  | G1/8 | 79,0 | 39,5 | 39,8 | 70 | 16,30 | M10 | 12 | 13    | 8,0 | 6,4     | M8 | 56,5 | 16,0 | 8  | 49       | 57       |

P1PS...DS8G Double acting with male piston rod thread

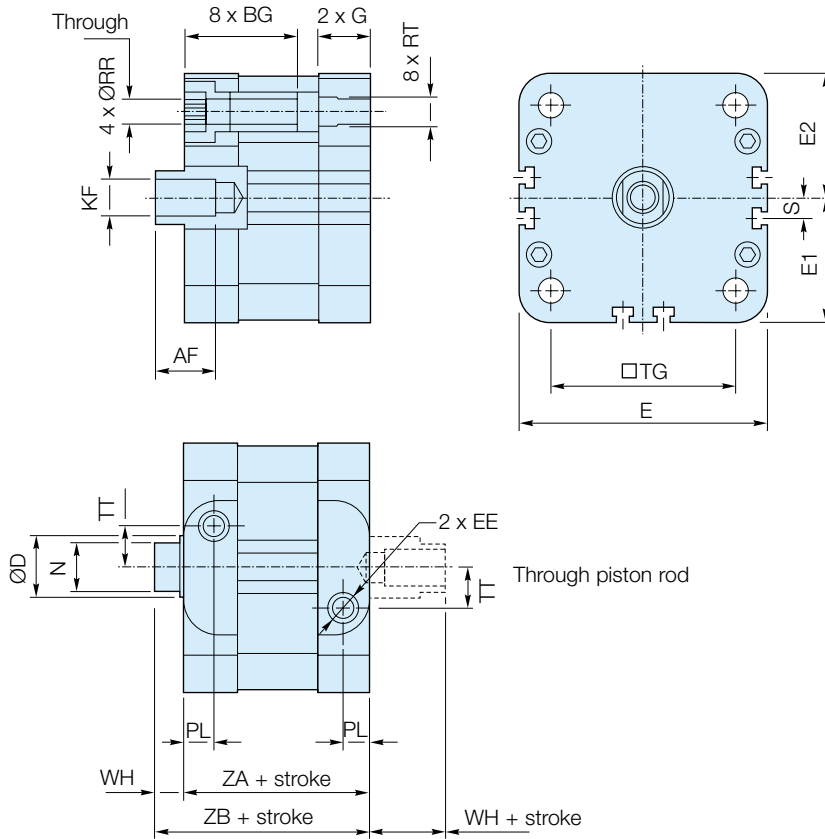


| Bore size | AM +0 -0.5 | WH   |       | KK         |
|-----------|------------|------|-------|------------|
|           |            | nom. | tol.  |            |
| Ø20       | 16         | 6    | ± 1,6 | M8 x 1,25  |
| Ø25       | 16         | 6    | ± 1,6 | M8 x 1,25  |
| Ø32       | 19         | 7    | ± 1,6 | M10 x 1,25 |
| Ø40       | 19         | 7    | ± 1,6 | M10 x 1,25 |
| Ø50       | 22         | 8    | ± 1,6 | M12 x 1,25 |
| Ø63       | 22         | 8    | ± 1,6 | M12 x 1,25 |

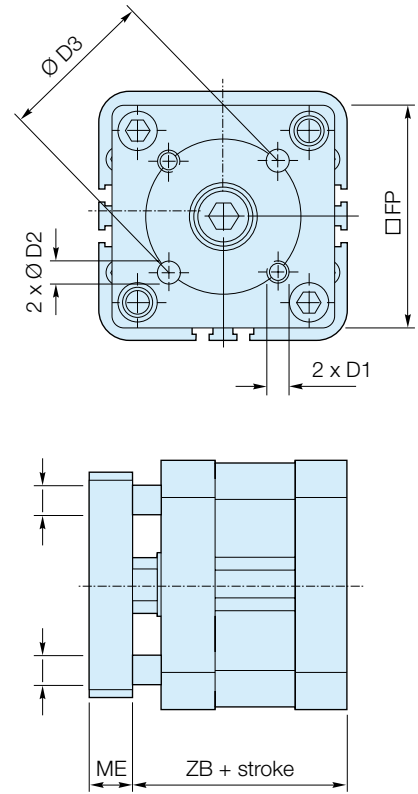
**Note:** Cylinders with male piston rod thread are delivered with one piston rod nut in zinc plated steel

Dimensions - Bore 80 - 100mm

P1PS...DS7G Double acting with female piston rod thread

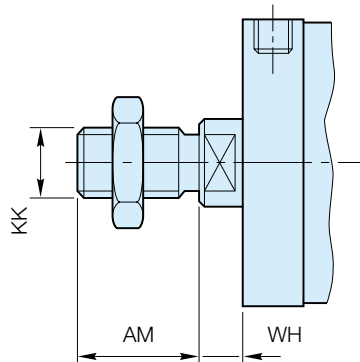


P1PG...DS Double acting with guided piston rod



| Bore size | AF  | BG  | ØD | D1  | ØD2 | ØD3 | EE   | E   | E1   | E2   | FP  | G    | KF  | ME | N   | PL   | ØRR | RT  | S    | TG | TT | WH    | ZA    | ZB |
|-----------|-----|-----|----|-----|-----|-----|------|-----|------|------|-----|------|-----|----|-----|------|-----|-----|------|----|----|-------|-------|----|
|           | min | min |    |     |     | H8  |      |     |      |      |     |      |     |    | h14 |      | min |     |      |    |    | ± 0,3 | ± 0,6 |    |
| Ø80       | 20  | 17  | 20 | M8  | 8   | 65  | G1/8 | 96  | 48,0 | 48,2 | 90  | 17,7 | M12 | 14 | 17  | 10,5 | 8,4 | M10 | 8    | 72 | 20 | 10    | 54    | 64 |
| Ø100      | 20  | 17  | 25 | M10 | 10  | 80  | G1/8 | 115 | 57,5 | 57,7 | 110 | 23,0 | M12 | 14 | 21  | 12,0 | 8,4 | M10 | 18,5 | 89 | 24 | 10    | 67    | 77 |

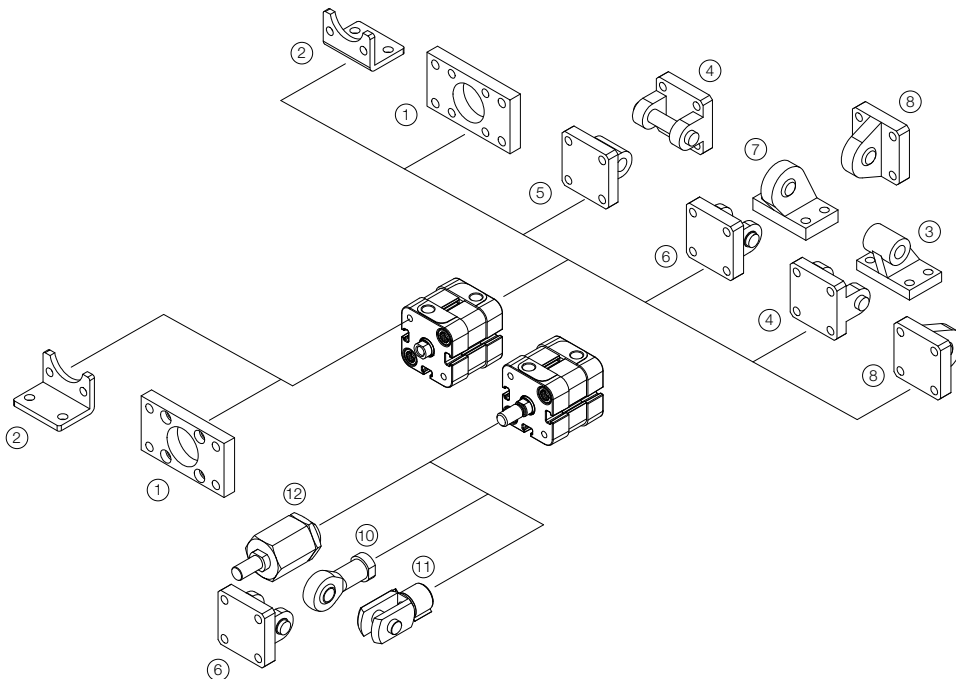
P1PS...DS8G Double acting with male piston rod thread



| Bore size | AM | WH   |       | KK        |
|-----------|----|------|-------|-----------|
|           |    | nom. | tol.  |           |
| Ø80       | 28 | 10   | ± 1,6 | M16 x 1,5 |
| Ø100      | 28 | 10   | ± 1,6 | M16 x 1,5 |

**Note:** Cylinders with male piston rod thread are delivered with one piston rod nut in zinc plated steel

|       | Flange MF1 / MF2 <sup>1</sup>   | Foot brackets MS1 <sup>2</sup>                     | Pivot bracket with rigid bearing AB7 <sup>3</sup> | Clevis bracket MP2 <sup>4</sup> | Clevis bracket MP4 <sup>5</sup>  |
|-------|---------------------------------|--|---|---------------------------------|----------------------------------|
| Ø 20  | <b>P1P-4HMB</b>                 | <b>P1P-4HMF</b>                                    |   |                                 | <b>P1P-4HME</b>                  |
| Ø 25  | <b>P1P-4JMB</b>                 | <b>P1P-4JMF</b>                                    |   |                                 | <b>P1P-4JME</b>                  |
| Ø 32  | <b>P1C-4KMB</b>                 | <b>P1C-4KMF</b>                                    | <b>P1C-4KMD</b>                                   | <b>P1C-4KMT</b>                 | <b>P1C-4KME</b>                  |
| Ø 40  | <b>P1C-4LMB</b>                 | <b>P1C-4LMF</b>                                    | <b>P1C-4LMD</b>                                   | <b>P1C-4LMT</b>                 | <b>P1C-4LME</b>                  |
| Ø 50  | <b>P1C-4MMB</b>                 | <b>P1C-4MMF</b>                                    | <b>P1C-4MMD</b>                                   | <b>P1C-4MMT</b>                 | <b>P1C-4MME</b>                  |
| Ø 63  | <b>P1C-4NMB</b>                 | <b>P1C-4NMF</b>                                    | <b>P1C-4NMD</b>                                   | <b>P1C-4NMT</b>                 | <b>P1C-4NME</b>                  |
| Ø 80  | <b>P1C-4PMB</b>                 | <b>P1C-4PMF</b>                                    | <b>P1C-4PMD</b>                                   | <b>P1C-4PMT</b>                 | <b>P1C-4PME</b>                  |
| Ø 100 | <b>P1C-4QMB</b>                 | <b>P1C-4QMF</b>                                    | <b>P1C-4QMD</b>                                   | <b>P1C-4QMT</b>                 | <b>P1C-4QME</b>                  |
|       | Clevis bracket AB6 <sup>6</sup> | Pivot bracket with swivel bearing CS7 <sup>7</sup> | Swivel eye bracket MP6 <sup>8</sup>               | 3 and 4 positions flange JP1    | Swivel rod eye AP6 <sup>10</sup> |
| Ø 20  |                                 |  |   |                                 | <b>P1A-4HRS</b>                  |
| Ø 25  |                                 |  |   |                                 | <b>P1A-4HRS</b>                  |
| Ø 32  | <b>P1C-4KMCA</b>                | <b>P1C-4KMA</b>                                    | <b>P1C-4KMSA</b>                                  | <b>P1E-6KB0</b>                 | <b>P1C-4KRS</b>                  |
| Ø 40  | <b>P1C-4LMCA</b>                | <b>P1C-4LMA</b>                                    | <b>P1C-4LMSA</b>                                  | <b>P1E-6LB0</b>                 | <b>P1C-4KRS</b>                  |
| Ø 50  | <b>P1C-4MMCA</b>                | <b>P1C-4MMA</b>                                    | <b>P1C-4MMSA</b>                                  | <b>P1E-6MB0</b>                 | <b>P1C-4LRS</b>                  |
| Ø 63  | <b>P1C-4NMCA</b>                | <b>P1C-4NMA</b>                                    | <b>P1C-4NMSA</b>                                  | <b>P1E-6NB0</b>                 | <b>P1C-4LRS</b>                  |
| Ø 80  | <b>P1C-4PMCA</b>                | <b>P1C-4PMA</b>                                    | <b>P1C-4PMSA</b>                                  | <b>P1E-6PB0</b>                 | <b>P1C-4MRS</b>                  |
| Ø 100 | <b>P1C-4QMCA</b>                | <b>P1C-4QMA</b>                                    | <b>P1C-4QMSA</b>                                  | <b>P1E-6QB0</b>                 | <b>P1C-4MRS</b>                  |
|       | Clevis AP2 <sup>11</sup>        | Flexo coupling PM5 <sup>12</sup>                   | Zinc-plated nut MR9<br>(Pack of 10 off)           |                                 |                                  |
| Ø 20  | <b>P1A-4HRC</b>                 | <b>P1C-4HRF</b>                                    | <b>P14-4HRPZ</b>                                  |                                 |                                  |
| Ø 25  | <b>P1A-4HRC</b>                 | <b>P1C-4HRF</b>                                    | <b>P14-4HRPZ</b>                                  |                                 |                                  |
| Ø 32  | <b>P1C-4KRC</b>                 | <b>P1C-4KRF</b>                                    | <b>P14-4KRPZ</b>                                  |                                 |                                  |
| Ø 40  | <b>P1C-4KRC</b>                 | <b>P1C-4KRF</b>                                    | <b>P14-4KRPZ</b>                                  |                                 |                                  |
| Ø 50  | <b>P1C-4LRC</b>                 | <b>P1C-4LRF</b>                                    | <b>P14-4LRPZ</b>                                  |                                 |                                  |
| Ø 63  | <b>P1C-4LRC</b>                 | <b>P1C-4LRF</b>                                    | <b>P14-4LRPZ</b>                                  |                                 |                                  |
| Ø 80  | <b>P1C-4MRC</b>                 | <b>P1C-4MRF</b>                                    | <b>P14-4MRPZ</b>                                  |                                 |                                  |
| Ø 100 | <b>P1C-4MRC</b>                 | <b>P1C-4MRF</b>                                    | <b>P14-4MRPZ</b>                                  |                                 |                                  |



**Cylinder mountings**

**Flange MF1/MF2**



Intended for fixed mounting of cylinder. Flange can be fitted to front- or rear end-plates of cylinder.

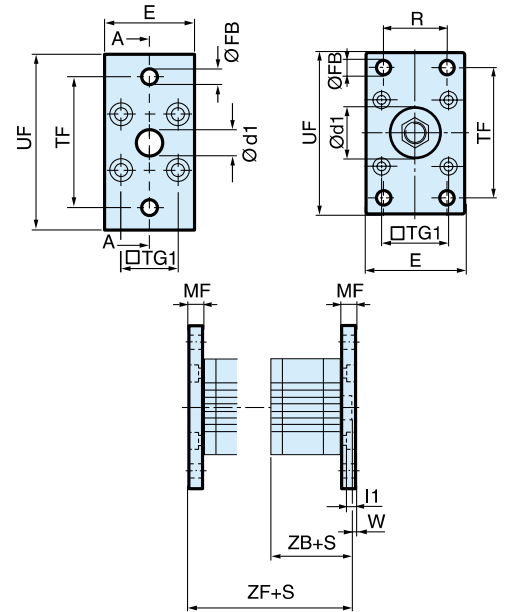
Materials  
 Flange: Surface-treated steel  
 Mounting screws according to DIN 6912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20                | 0,17         | <b>P1P-4HMB</b> |
| 25                | 0,20         | <b>P1P-4JMB</b> |
| 32                | 0,23         | <b>P1C-4KMB</b> |
| 40                | 0,28         | <b>P1C-4LMB</b> |
| 50                | 0,53         | <b>P1C-4MMB</b> |
| 63                | 0,71         | <b>P1C-4NMB</b> |
| 80                | 1,59         | <b>P1C-4PMB</b> |
| 100               | 2,19         | <b>P1C-4QMB</b> |

| Cyl. bore<br>mm | d1<br>mm | FB<br>mm | TG1<br>mm | E<br>mm | R<br>mm | MF<br>mm | TF<br>mm | UF<br>mm | I1<br>mm | W<br>mm | ZF*<br>mm | ZB*<br>mm |
|-----------------|----------|----------|-----------|---------|---------|----------|----------|----------|----------|---------|-----------|-----------|
|                 | H11      | H13      |           |         |         | JS14     | JS14     |          |          |         | -0,5      |           |
| 20              | 12,0     | 6,6      | 22,0      | 36      | -       | 10,0     | 55,0     | 70       | 5,4      | 4,0     | 53,0      | 43,0      |
| 25              | 12,0     | 6,6      | 26,0      | 40      | -       | 10,0     | 60,0     | 76       | 5,4      | 4,0     | 55,0      | 45,0      |
| 32              | 30,0     | 7,0      | 32,5      | 45      | 32      | 10,0     | 64,0     | 80       | 5,0      | 3,0     | 61,0      | 41,0      |
| 40              | 35,0     | 9,0      | 38,0      | 52      | 36      | 10,0     | 72,0     | 90       | 5,0      | 3,0     | 52,0      | 52,0      |
| 50              | 40,0     | 9,0      | 46,5      | 65      | 45      | 12,0     | 90,0     | 110      | 6,5      | 4,0     | 65,0      | 53,0      |
| 63              | 45,0     | 9,0      | 56,5      | 75      | 50      | 12,0     | 100,0    | 120      | 6,5      | 4,0     | 69,0      | 57,0      |
| 80              | 45,0     | 12,0     | 72,0      | 95      | 63      | 16,0     | 126,0    | 150      | 8,0      | 6,0     | 80,0      | 64,0      |
| 100             | 55,0     | 14,0     | 89,0      | 115     | 75      | 16,0     | 150,0    | 170      | 8,0      | 6,0     | 93,0      | 77,0      |

S = Stroke length



**Foot brackets MS1**



Intended for fixed mounting of cylinder. Angle bracket can be fitted to front- and rear end-plates of cylinder.

Materials  
 Foot bracket: Surface-treated steel, black  
 Mounting screws according to DIN 912: Zinc-plated steel 8.8

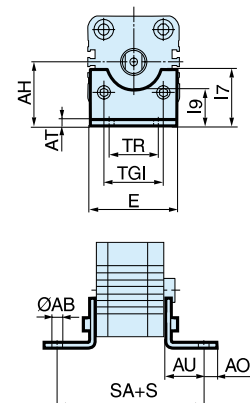
Supplied in pairs with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code       |
|-------------------|--------------|------------------|
| 20                | 0,04**       | <b>P1P-4HMF</b>  |
| 25                | 0,05**       | <b>P1P-4JMF</b>  |
| 32                | 0,06**       | <b>P1C-4KMF</b>  |
| 40                | 0,08**       | <b>P1C-4LMF</b>  |
| 50                | 0,16**       | <b>P1C-4MMF</b>  |
| 63                | 0,25**       | <b>P1C-4NMF*</b> |
| 80                | 0,50**       | <b>P1C-4PMF</b>  |
| 100               | 0,85**       | <b>P1C-4QMF*</b> |

\*\* Weight per item

| Cyl. bore<br>mm | AB<br>mm | TG1<br>mm | E<br>mm | TR<br>mm | AO<br>mm | AU<br>mm | AH<br>mm | I7<br>mm | AT<br>mm | I9<br>mm | SA**<br>mm |
|-----------------|----------|-----------|---------|----------|----------|----------|----------|----------|----------|----------|------------|
|                 | H14      |           |         | JS14     |          |          | JS15     |          |          | JS14     |            |
| 20              | 6,6      | 22,0      | 36      | 26       | 6,0      | 16,0     | 27       | 22,0     | 4,0      | 17,0     | 69,0       |
| 25              | 6,6      | 26,0      | 40      | 26       | 6,0      | 16,0     | 30       | 23,0     | 4,0      | 19,0     | 71,0       |
| 32              | 7,0      | 32,5      | 45      | 32       | 10,0     | 24,0     | 32       | 30,0     | 4,5      | 17,5     | 92,0       |
| 40              | 9,0      | 38,0      | 52      | 36       | 8,0      | 28,0     | 36       | 30,0     | 4,5      | 18,5     | 101,0      |
| 50              | 9,0      | 46,5      | 65      | 45       | 13,0     | 32,0     | 45       | 36,0     | 5,5      | 25,0     | 109,0      |
| 63              | 9,0      | 56,5      | 75      | 50       | 13,0     | 32,0     | 50       | 35,0     | 5,5      | 27,5     | 113,0      |
| 80              | 12,0     | 72,0      | 95      | 63       | 14,0     | 41,0     | 63       | 49,0     | 6,5      | 40,5     | 136,0      |
| 100             | 14,0     | 89,0      | 115     | 75       | 15,0     | 41,0     | 71       | 54,0     | 6,5      | 43,5     | 149,0      |

S = Stroke length



**Cylinder mountings**

**Pivot bracket with rigid bearing AB7**

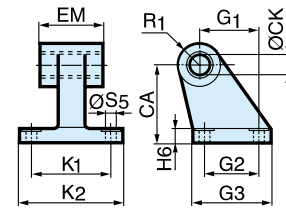
Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Materials  
 Pivot bracket: Surface-treated aluminium, black  
 Bearing: Sintered oil-bronze bushing



| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,06         | <b>P1C-4KMD</b> |
| 40                | 0,08         | <b>P1C-4LMD</b> |
| 50                | 0,15         | <b>P1C-4MMD</b> |
| 63                | 0,20         | <b>P1C-4NMD</b> |
| 80                | 0,33         | <b>P1C-4PMD</b> |
| 100               | 0,49         | <b>P1C-4QMD</b> |

| Cyl. bore<br>mm | CK | S5   | K1   | K2 | G1   | G2   | EM   | G3 | CA   | H6 | R1 |
|-----------------|----|------|------|----|------|------|------|----|------|----|----|
|                 | H9 | H13  | JS14 |    | JS14 | JS14 |      |    | JS15 |    |    |
| 32              | 10 | 6,6  | 38   | 51 | 21   | 18   | 25,5 | 31 | 32   | 8  | 10 |
| 40              | 12 | 6,6  | 41   | 54 | 24   | 22   | 27,0 | 35 | 36   | 10 | 11 |
| 50              | 12 | 9,0  | 50   | 65 | 33   | 30   | 31,0 | 45 | 45   | 12 | 13 |
| 63              | 16 | 9,0  | 52   | 67 | 37   | 35   | 39,0 | 50 | 50   | 12 | 15 |
| 80              | 16 | 11,0 | 66   | 86 | 47   | 40   | 49,0 | 60 | 63   | 14 | 15 |
| 100             | 20 | 11,0 | 76   | 96 | 55   | 50   | 59,0 | 70 | 71   | 15 | 19 |



**Clevis bracket MP2**

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

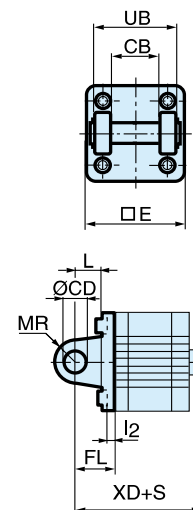
Materials  
 Clevis bracket: Surface-treated aluminium, black  
 Mounting screws according to DIN 912:  
 Zinc-plated steel 8.8  
 Pin: surface treated steel



| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,08         | <b>P1C-4KMT</b> |
| 40                | 0,11         | <b>P1C-4LMT</b> |
| 50                | 0,14         | <b>P1C-4MMT</b> |
| 63                | 0,29         | <b>P1C-4NMT</b> |
| 80                | 0,36         | <b>P1C-4PMT</b> |
| 100               | 0,64         | <b>P1C-4QMT</b> |

| Cyl. bore<br>mm | E     | UB  | CB   | FL   | L  | l2   | CD | MR | XD*   |
|-----------------|-------|-----|------|------|----|------|----|----|-------|
|                 |       | h14 | H14  | ±0,2 |    |      | H9 |    |       |
| 32              | 45,0  | 45  | 26,0 | 22   | 13 | 5,5  | 10 | 10 | 73,0  |
| 40              | 52,0  | 52  | 28,0 | 25   | 16 | 5,5  | 12 | 12 | 77,0  |
| 50              | 65,0  | 60  | 32,0 | 27   | 16 | 6,5  | 12 | 12 | 80,0  |
| 63              | 75,0  | 70  | 40,0 | 32   | 21 | 6,5  | 16 | 16 | 89,0  |
| 80              | 95,0  | 90  | 50,0 | 36   | 22 | 10,0 | 16 | 16 | 100,0 |
| 100             | 115,0 | 110 | 60,0 | 41   | 27 | 10,0 | 20 | 20 | 118,0 |

S = Stroke length



**Cylinder mountings**

**Clevis bracket MP4**



Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

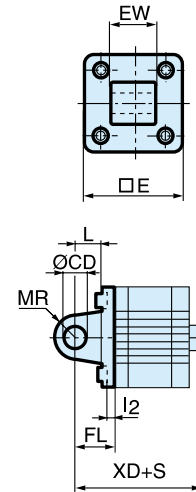
**Materials**  
 Clevis bracket: Surface-treated aluminium, black  
 Mounting screws according to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20                | 0,04         | <b>P1P-4HME</b> |
| 25                | 0,05         | <b>P1P-4JME</b> |
| 32                | 0,09         | <b>P1C-4KME</b> |
| 40                | 0,13         | <b>P1C-4LME</b> |
| 50                | 0,17         | <b>P1C-4MME</b> |
| 63                | 0,36         | <b>P1C-4NME</b> |
| 80                | 0,46         | <b>P1C-4PME</b> |
| 100               | 0,83         | <b>P1C-4QME</b> |

| Cyl. bore<br>mm | E<br>mm | EW<br>mm | FL<br>±0,2<br>mm | L<br>mm | I2<br>mm | CD<br>H9<br>mm | MR<br>mm | XD*   |
|-----------------|---------|----------|------------------|---------|----------|----------------|----------|-------|
| 20              | 34,0    | 16,0     | 20               | 14      | 2,6      | 8              | 8        | 63,0  |
| 25              | 38,0    | 16,0     | 20               | 14      | 2,6      | 8              | 8        | 65,0  |
| 32              | 45,0    | 26,0     | 22               | 13      | 5,5      | 10             | 10       | 73,0  |
| 40              | 52,0    | 28,0     | 25               | 16      | 5,5      | 12             | 12       | 77,0  |
| 50              | 65,0    | 32,0     | 27               | 16      | 6,5      | 12             | 12       | 80,0  |
| 63              | 75,0    | 40,0     | 32               | 21      | 6,5      | 16             | 16       | 89,0  |
| 80              | 95,0    | 50,0     | 36               | 22      | 10,0     | 16             | 16       | 100,0 |
| 100             | 115,0   | 60,0     | 41               | 27      | 10,0     | 20             | 20       | 118,0 |

S = Stroke length



**Clevis bracket AB6**



Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

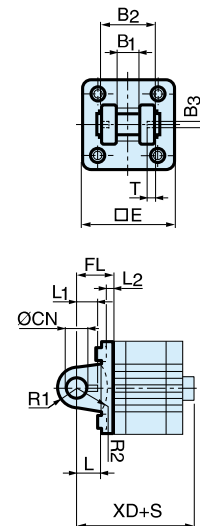
**Materials**  
 Clevis bracket: Surface-treated aluminium, black  
 Pin: Surface hardened steel  
 Locking pin: Spring steel  
 Circlips according to DIN 471: Spring steel  
 Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code       |
|-------------------|--------------|------------------|
| 32                | 0,09         | <b>P1C-4KMCA</b> |
| 40                | 0,13         | <b>P1C-4LMCA</b> |
| 50                | 0,17         | <b>P1C-4MMCA</b> |
| 63                | 0,36         | <b>P1C-4NMCA</b> |
| 80                | 0,58         | <b>P1C-4PMCA</b> |
| 100               | 0,89         | <b>P1C-4QMCA</b> |

| Cyl. bore<br>mm | E<br>mm | B2<br>d12<br>mm | B1<br>H14<br>mm | T<br>mm | B3<br>mm | R2<br>mm | L1<br>mm | FL<br>±0,2<br>mm | I2<br>mm | L<br>mm | CN<br>F7<br>mm | R1<br>mm | XD*   |
|-----------------|---------|-----------------|-----------------|---------|----------|----------|----------|------------------|----------|---------|----------------|----------|-------|
| 32              | 45      | 34              | 14              | 3       | 3,3      | 17       | 11,5     | 22               | 5,5      | 12      | 10             | 11       | 73,0  |
| 40              | 52      | 40              | 16              | 4       | 4,3      | 20       | 12,0     | 25               | 5,5      | 15      | 12             | 13       | 77,0  |
| 50              | 65      | 45              | 21              | 4       | 4,3      | 22       | 14,0     | 27               | 6,5      | 17      | 16             | 18       | 80,0  |
| 63              | 75      | 51              | 21              | 4       | 4,3      | 25       | 14,0     | 32               | 6,5      | 20      | 16             | 18       | 89,0  |
| 80              | 95      | 65              | 25              | 4       | 4,3      | 30       | 16,0     | 36               | 10,0     | 20      | 20             | 22       | 100,0 |
| 100             | 115     | 75              | 25              | 4       | 4,3      | 32       | 16,0     | 41               | 10,0     | 25      | 20             | 22       | 118,0 |

S = Stroke length



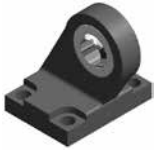
**Stainless steel Pin Set AB6**

**Materials**  
 Pin: Stainless steel  
 Locking pin: Stainless steel  
 Circlips according to DIN 471: Stainless steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code        |
|-------------------|--------------|-------------------|
| 32                | 0,05         | <b>9301054311</b> |
| 40                | 0,06         | <b>9301054312</b> |
| 50                | 0,07         | <b>9301054313</b> |
| 63                | 0,07         | <b>9301054314</b> |
| 80                | 0,17         | <b>9301054315</b> |
| 100               | 0,31         | <b>9301054316</b> |

Cylinder mountings

Pivot bracket with swivel bearing CS7

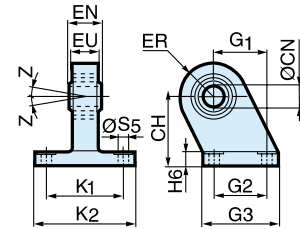


Intended for use together with clevis bracket GA.

Material  
 Pivot bracket: Surface-treated steel, black  
 Swivel bearing according to DIN 648K: Hardened steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,18         | <b>P1C-4KMA</b> |
| 40                | 0,25         | <b>P1C-4LMA</b> |
| 50                | 0,47         | <b>P1C-4MMA</b> |
| 63                | 0,57         | <b>P1C-4NMA</b> |
| 80                | 1,05         | <b>P1C-4PMA</b> |
| 100               | 1,42         | <b>P1C-4QMA</b> |

| Cyl. bore<br>mm | CN<br>H7 | S5<br>H13 | K1<br>JS14 | K2 | EU   | G1<br>JS14 | G2<br>JS14 | EN | G3 | CH<br>JS15 | H6 | ER | Z  |
|-----------------|----------|-----------|------------|----|------|------------|------------|----|----|------------|----|----|----|
| 32              | 10       | 6,6       | 38         | 51 | 10,5 | 21         | 18         | 14 | 31 | 32         | 10 | 16 | 4° |
| 40              | 12       | 6,6       | 41         | 54 | 12,0 | 24         | 22         | 16 | 35 | 36         | 10 | 18 | 4° |
| 50              | 16       | 9,0       | 50         | 65 | 15,0 | 33         | 30         | 21 | 45 | 45         | 12 | 21 | 4° |
| 63              | 16       | 9,0       | 52         | 67 | 15,0 | 37         | 35         | 21 | 50 | 50         | 12 | 23 | 4° |
| 80              | 20       | 11,0      | 66         | 86 | 18,0 | 47         | 40         | 25 | 60 | 63         | 14 | 28 | 4° |
| 100             | 20       | 11,0      | 76         | 96 | 18,0 | 55         | 50         | 25 | 70 | 71         | 15 | 30 | 4° |



Swivel eye bracket MP6



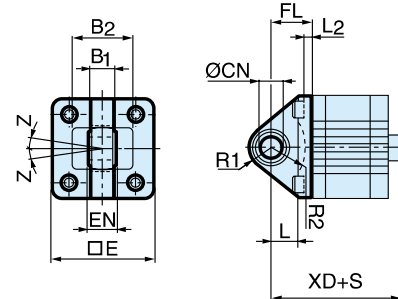
Intended for use together with clevis bracket GA

Material  
 Bracket: Surface-treated aluminium, black  
 Swivel bearing acc. to DIN 648K: Hardened steel

Supplied complete with mounting screws for attachment to cylinder.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code       |
|-------------------|--------------|------------------|
| 32                | 0,08         | <b>P1C-4KMSA</b> |
| 40                | 0,11         | <b>P1C-4LMSA</b> |
| 50                | 0,20         | <b>P1C-4MMSA</b> |
| 63                | 0,27         | <b>P1C-4NMSA</b> |
| 80                | 0,52         | <b>P1C-4PMSA</b> |
| 100               | 0,72         | <b>P1C-4QMSA</b> |

| Cyl. bore<br>mm | E   | B1   | B2 | EN | R1 | R2 | FL | I2   | L  | CN<br>H7 | XD*   | XD2* | Z  |
|-----------------|-----|------|----|----|----|----|----|------|----|----------|-------|------|----|
| 32              | 45  | 10,5 | 38 | 14 | 16 | 14 | 22 | 5,5  | 12 | 10       | 70,5  | 79,0 | 4° |
| 40              | 52  | 12,0 | 44 | 16 | 18 | 16 | 25 | 5,5  | 15 | 12       | 75,5  | 83,5 | 4° |
| 50              | 65  | 15,0 | 51 | 21 | 21 | 19 | 27 | 6,5  | 15 | 16       | 79,5  | 86,0 | 4° |
| 63              | 75  | 15,0 | 56 | 21 | 23 | 22 | 32 | 6,5  | 20 | 16       | 90,0  | 95,5 | 4° |
| 80              | 95  | 18,0 | -  | 25 | 29 | -  | 36 | 10,0 | 20 | 20       | 210,0 | -    | 4° |
| 100             | 115 | 18,0 | -  | 25 | 31 | -  | 41 | 10,0 | 25 | 20       | 230,0 | -    | 4° |



S=Stroke length

3 and 4 positions flange JP1

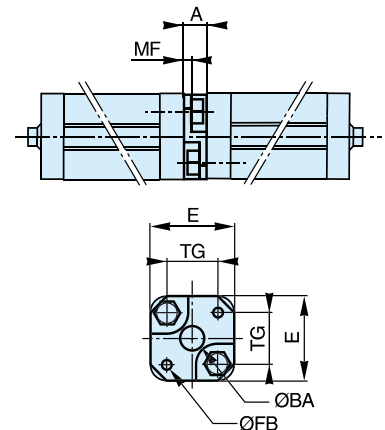


Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.

Material:  
 Mounting: Aluminium  
 Mounting screws: Zinc-plated steel 8.8

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 32                | 0,060        | <b>P1E-6KB0</b> |
| 40                | 0,078        | <b>P1E-6LB0</b> |
| 50                | 0,162        | <b>P1E-6MB0</b> |
| 63                | 0,194        | <b>P1E-6NB0</b> |
| 80                | 0,450        | <b>P1E-6PB0</b> |
| 100               | 0,672        | <b>P1E-6QB0</b> |

| Cyl. bore<br>mm | E   | TG   | ØFB  | MF | A  | ØBA |
|-----------------|-----|------|------|----|----|-----|
| 32              | 50  | 32,5 | 6,5  | 5  | 16 | 30  |
| 40              | 60  | 38,0 | 6,5  | 5  | 16 | 35  |
| 50              | 66  | 46,5 | 8,5  | 6  | 20 | 40  |
| 63              | 80  | 56,5 | 8,5  | 6  | 20 | 45  |
| 80              | 100 | 72,0 | 10,5 | 8  | 25 | 45  |
| 100             | 118 | 89,0 | 10,5 | 8  | 25 | 55  |





**Piston rod mountings**

**Swivel rod eye AP6**



Swivel rod eye for articulated mounting of cylinder. Swivel rod eye can be combined with clevis bracket GA. Maintenance-free.

Materials  
Swivel rod eye: Zinc-plated steel  
Swivel bearing according to DIN 648K: Hardened steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20 / 25           | 0,045        | <b>P1A-4HRS</b> |
| 32 / 40           | 0,08         | <b>P1C-4KRS</b> |
| 50 / 63           | 0,12         | <b>P1C-4LRS</b> |
| 80 / 100          | 0,25         | <b>P1C-4MRS</b> |

**Stainless steel swivel rod eye AP6**

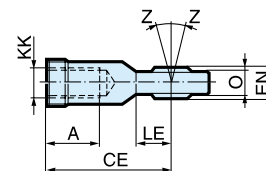
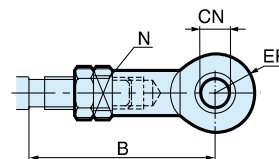


Stainless-steel swivel rod eye for articulated mounting of cylinder. Swivel rod eye can be combined with clevis bracket GA. Maintenance-free.

Materials  
Swivel rod eye: Stainless steel  
Swivel bearing according to DIN 648K: Stainless steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20 / 25           | 0,045        | <b>P1S-4HRT</b> |
| 32 / 40           | 0,08         | <b>P1S-4JRT</b> |
| 50 / 63           | 0,12         | <b>P1S-4LRT</b> |
| 80 / 100          | 0,25         | <b>P1S-4MRT</b> |

Use stainless steel nut with stainless steel swivel rod eye.



| Cyl. bore<br>mm | A<br>mm | B<br>min<br>mm | B<br>max<br>mm | CE<br>mm | CN<br>H9<br>mm | EN<br>h12<br>mm | ER<br>mm | KK       | LE<br>mm | N<br>min<br>mm | O<br>mm | Z   |
|-----------------|---------|----------------|----------------|----------|----------------|-----------------|----------|----------|----------|----------------|---------|-----|
| 20 / 25         | 12      | 40,0           | 45             | 36       | 8              | 12              | 12       | M8x1,25  | 12       | 13             | 9,0     | 12° |
| 32 / 40         | 20      | 48,0           | 55             | 43       | 10             | 14              | 14       | M10x1,25 | 15       | 17             | 10,5    | 12° |
| 50 / 63         | 22      | 56,0           | 62             | 50       | 12             | 16              | 16       | M12x1,25 | 17       | 19             | 12,0    | 12° |
| 80 / 100        | 28      | 72,0           | 80             | 64       | 16             | 21              | 21       | M16x1,5  | 22       | 22             | 15,0    | 15° |

**Clevis AP2**



Clevis for articulated mounting of cylinder.

Material  
Clevis, clip: Galvanized steel  
Pin: Hardened steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20 / 25           | 0,045        | <b>P1A-4HRC</b> |
| 32 / 40           | 0,09         | <b>P1C-4KRC</b> |
| 50 / 63           | 0,15         | <b>P1C-4LRC</b> |
| 80 / 100          | 0,35         | <b>P1C-4MRC</b> |

**Stainless steel clevis AP2**

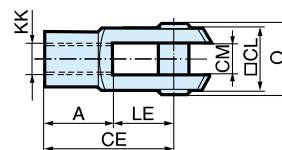
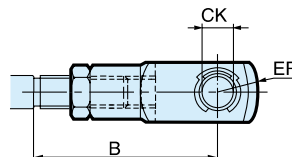


Stainless-steel clevis for articulated mounting of cylinder.

Material  
Clevis: Stainless steel  
Pin: Stainless steel  
Circlips according to DIN 471: Stainless steel

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20 / 25           | 0,045        | <b>P1S-4HRD</b> |
| 32 / 40           | 0,09         | <b>P1S-4JRD</b> |
| 50 / 63           | 0,15         | <b>P1S-4LRD</b> |
| 80 / 100          | 0,35         | <b>P1S-4MRD</b> |

Use stainless steel nut with stainless steel swivel rod eye.



| Cyl. bore<br>mm | A<br>mm | B<br>min<br>mm | B<br>max<br>mm | CE<br>mm | CK<br>h11/E9<br>mm | CL<br>mm | CM<br>mm | ER<br>mm | KK       | LE<br>mm | O<br>mm |
|-----------------|---------|----------------|----------------|----------|--------------------|----------|----------|----------|----------|----------|---------|
| 20 / 25         | 16      | 36,0           | 41             | 32       | 8                  | 16       | 8        | -        | M8x1,25  | 16       | 24,0    |
| 32 / 40         | 20      | 45,0           | 52             | 40       | 10                 | 20       | 10       | 16       | M10x1,25 | 20       | 28,0    |
| 50 / 63         | 24      | 54,0           | 60             | 48       | 12                 | 24       | 12       | 19       | M12x1,25 | 24       | 32,0    |
| 80 / 100        | 32      | 72,0           | 80             | 64       | 16                 | 32       | 16       | 25       | M16x1,5  | 32       | 41,5    |

**Piston rod mountings**

**Flexo coupling PM5**



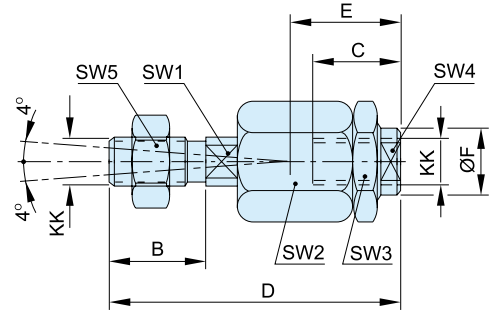
Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of ±4°.

Material  
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.

| Cyl. bore<br>Ø mm | Weight<br>kg | Order code      |
|-------------------|--------------|-----------------|
| 20 / 25           | 0,06         | <b>P1C-4HRF</b> |
| 32 / 40           | 0,23         | <b>P1C-4KRF</b> |
| 50 / 63           | 0,23         | <b>P1C-4LRF</b> |
| 80 / 100          | 0,65         | <b>P1C-4MRF</b> |

| Cyl. bore<br>mm | KK<br>mm | B<br>mm | C<br>mm | D<br>mm | E<br>mm | ØF<br>mm | SW1<br>mm | SW2<br>mm | SW3<br>mm | SW4<br>mm | SW5<br>mm |
|-----------------|----------|---------|---------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|
| 20 / 25         | M8x1.25  | 16      | 14      | 55      | 20      | 12.4     | 7         | 17        | 17        | 10        | 13        |
| 32 / 40         | M10x1.25 | 20      | 23      | 73      | 31      | 21       | 12        | 30        | 30        | 19        | 17        |
| 50 / 63         | M12x1.5  | 24      | 23      | 77      | 31      | 21       | 12        | 30        | 30        | 19        | 19        |
| 80 / 100        | M16x1.5  | 32      | 32      | 108     | 45      | 33.5     | 19        | 41        | 41        | 30        | 24        |



**Nut MR9**



Intended for fixed mounting of accessories to the piston rod. Material: Zinc-plated steel

All P1D cylinders are delivered with a zinc-plated steel piston rod nut.

Supplied as pack of 10 off

| Cyl. bore<br>Ø mm | Weight *<br>kg | Order code       |
|-------------------|----------------|------------------|
| 20 / 25           | 0,005          | <b>P14-4HRPZ</b> |
| 32 / 40           | 0,007          | <b>P14-4KRPZ</b> |
| 50 / 63           | 0,021          | <b>P14-4LRPZ</b> |
| 80 / 100          | 0,040          | <b>P14-4MRPZ</b> |

\* Weight per item

**Stainless steel nut MR9**



Intended for fixed mounting of accessories to the piston rod.

Material: Stainless steel A2

All P1D cylinders are delivered with a zinc-plated steel piston rod nut.

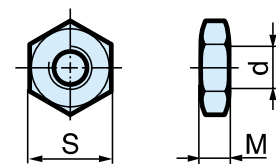
Supplied as pack of 10 off

| Cyl. bore<br>Ø mm | Weight *<br>kg | Order code       |
|-------------------|----------------|------------------|
| 20 / 25           | 0,005          | <b>P14-4HRPS</b> |
| 32 / 40           | 0,007          | <b>P14-4KRPS</b> |
| 50 / 63           | 0,021          | <b>P14-4LRPS</b> |
| 80 / 100          | 0,040          | <b>P14-4MRPS</b> |

\* Weight per item

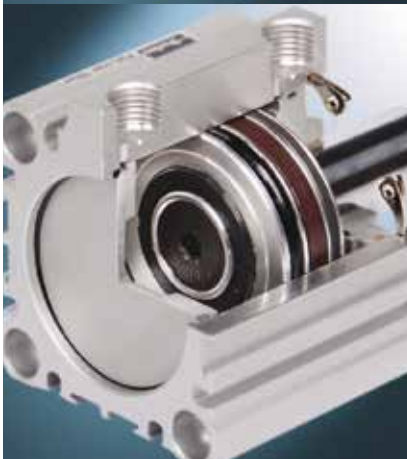
According to DIN 439 B

| Cyl. bore<br>mm | d        | M    | S  |
|-----------------|----------|------|----|
|                 |          | mm   | mm |
| 20 / 25         | M8x1,25  |      |    |
| 32 / 40         | M10x1,25 | 5,0  | 17 |
| 50 / 63         | M12x1,25 | 6,0  | 19 |
| 80 / 100        | M16x1,5  | 10,0 | 30 |



# P1Q Series Compact Cylinders

According to ISO 15524



Parker's P1Q series cylinders provide an economical, compact design suited for a variety of applications. With its modular flexibility, the P1Q will provide the ideal solution machine builders need today. The P1Q series is available in 10 bore sizes from 12 mm to 100 mm and standard strokes from 5 mm to 100 mm. The cylinder is supplied in a choice of magnetic or non-magnetic function, the non-magnetic version offers very short axial dimensions. For optimum compactness the P1Q range is supplied with female piston rod thread.

The P1Q provides quieter operation due to its built in buffer cushioning, which is standard on all bore sizes. Included in bore sizes 40 mm – 100 mm is a piston wear ring providing superior life.

The P1Q compact cylinder is ideal for applications where you need compact dimensions and high over-all performance. The versatile P1Q cylinder range provides a long trouble-free operation in a variety of applications.

- ISO 15524 conformity
- Compact and versatile
- Magnetic or non magnetic options
- Flush fit sensor range
- Buffer cushioning as standard
- Piston wear ring on Ø32 - Ø100mm
- Tapped both ends as standard

**\* Non-magnetic cylinder order code.**

Place **B** in position **11** of the order code

**Example:** P1QS012DC7**B**0005



### Operating information

Working pressure: Max 10 bar  
Permissible fluid: Air, with or without lubrication

Standard working temperature: -5°C to +60°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## Double acting - Magnetic - Female threaded piston rod

### Ø12mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1QS012DC7G0005 |
| 10        | P1QS012DC7G0010 |
| 15        | P1QS012DC7G0015 |
| 20        | P1QS012DC7G0020 |
| 25        | P1QS012DC7G0025 |
| 30        | P1QS012DC7G0030 |

### Ø16mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 5         | P1QS016DC7G0005 |
| 10        | P1QS016DC7G0010 |
| 15        | P1QS016DC7G0015 |
| 20        | P1QS016DC7G0020 |
| 25        | P1QS016DC7G0025 |
| 30        | P1QS016DC7G0030 |

### Ø20mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1QS020DC7G0010 |
| 15        | P1QS020DC7G0015 |
| 20        | P1QS020DC7G0020 |
| 25        | P1QS020DC7G0025 |
| 30        | P1QS020DC7G0030 |
| 40        | P1QS020DC7G0040 |
| 50        | P1QS020DC7G0050 |

### Ø25mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1QS025DC7G0010 |
| 15        | P1QS025DC7G0015 |
| 20        | P1QS025DC7G0020 |
| 25        | P1QS025DC7G0025 |
| 30        | P1QS025DC7G0030 |
| 40        | P1QS025DC7G0040 |
| 50        | P1QS025DC7G0050 |

### Ø32mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 10        | P1QS032DC7G0010 |
| 15        | P1QS032DC7G0015 |
| 20        | P1QS032DC7G0020 |
| 25        | P1QS032DC7G0025 |
| 30        | P1QS032DC7G0030 |
| 40        | P1QS032DC7G0040 |
| 50        | P1QS032DC7G0050 |
| 75        | P1QS032DC7G0075 |
| 100       | P1QS032DC7G0100 |

### Ø40mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1QS040DC7G0015 |
| 20        | P1QS040DC7G0020 |
| 25        | P1QS040DC7G0025 |
| 30        | P1QS040DC7G0030 |
| 40        | P1QS040DC7G0040 |
| 50        | P1QS040DC7G0050 |
| 75        | P1QS040DC7G0075 |
| 100       | P1QS040DC7G0100 |

### Ø50mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1QS050DC7G0015 |
| 20        | P1QS050DC7G0020 |
| 25        | P1QS050DC7G0025 |
| 30        | P1QS050DC7G0030 |
| 40        | P1QS050DC7G0040 |
| 50        | P1QS050DC7G0050 |
| 75        | P1QS050DC7G0075 |
| 100       | P1QS050DC7G0100 |

### Ø63mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1QS063DC7G0015 |
| 20        | P1QS063DC7G0020 |
| 25        | P1QS063DC7G0025 |
| 30        | P1QS063DC7G0030 |
| 40        | P1QS063DC7G0040 |
| 50        | P1QS063DC7G0050 |
| 75        | P1QS063DC7G0075 |

### Ø80mm

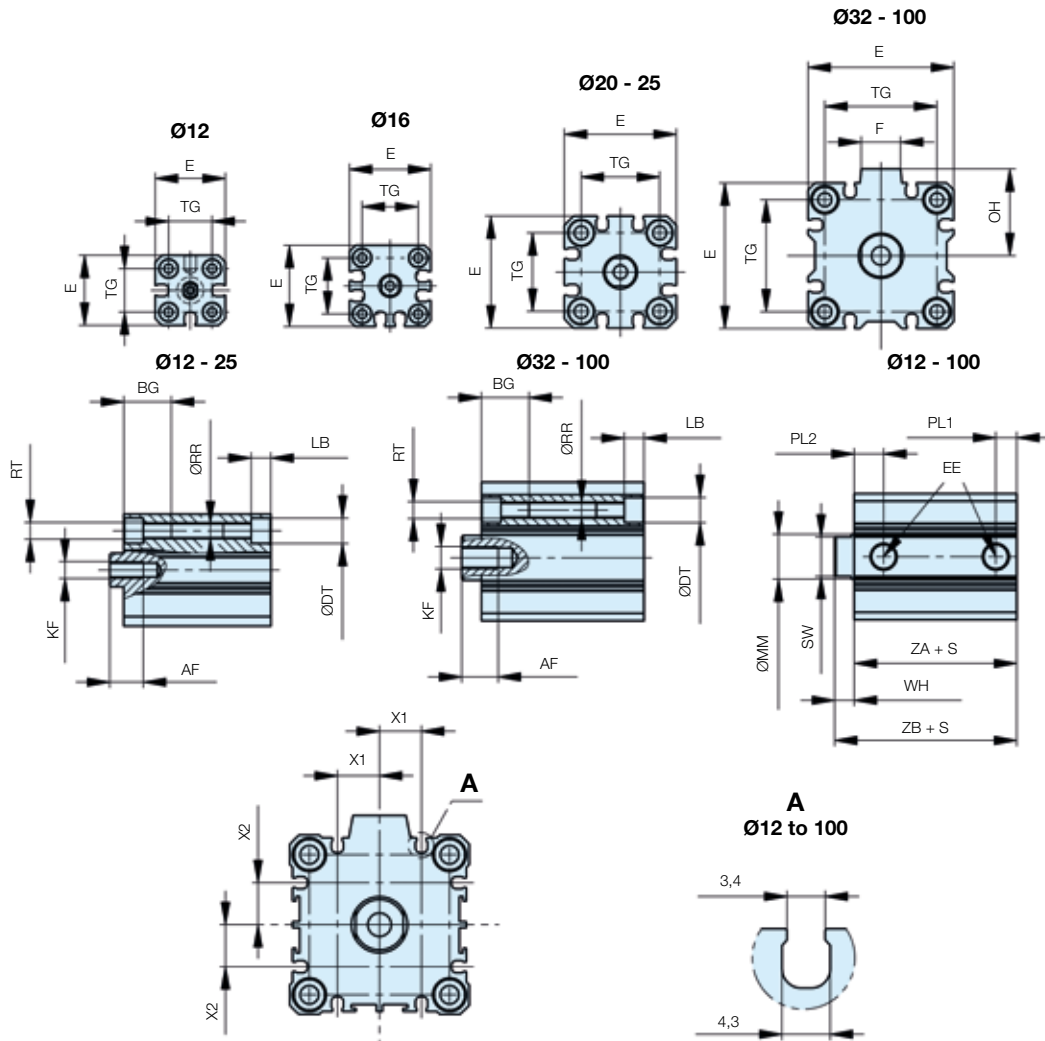
| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1QS080DC7G0015 |
| 20        | P1QS080DC7G0020 |
| 25        | P1QS080DC7G0025 |
| 30        | P1QS080DC7G0030 |
| 40        | P1QS080DC7G0040 |
| 50        | P1QS080DC7G0050 |
| 75        | P1QS080DC7G0075 |

### Ø100mm

| Stroke mm | Order code      |
|-----------|-----------------|
| 15        | P1QS100DC7G0015 |
| 20        | P1QS100DC7G0020 |
| 25        | P1QS100DC7G0025 |
| 30        | P1QS100DC7G0030 |
| 40        | P1QS100DC7G0040 |
| 50        | P1QS100DC7G0050 |
| 75        | P1QS100DC7G0075 |

Dimensions (mm)

Double acting, magnetic and non magnetic piston, elastic cushioning, piston rod with internal thread



Dimensions - Non-magnetic

The non magnetic version is not in the ISO standard, ZA and ZB could be different depending on the cylinder's manufacturer WH and ZB are without pressure in the cylinder, deformation of elastic bumpers under pressure gives different dimensions

| Bore size Ø (mm) | E   | TG        | F    | OH   | RT 6H | BG   | KF  | AF | ØRR  | LB   | ØDT  | ØMM f8 | SW | PL1  | PL2  | EE   | X1   | X2   | WH       | ZA        |             | ZB        |             |
|------------------|-----|-----------|------|------|-------|------|-----|----|------|------|------|--------|----|------|------|------|------|------|----------|-----------|-------------|-----------|-------------|
|                  |     |           |      |      |       |      |     |    |      |      |      |        |    |      |      |      |      |      |          | 5 to 50mm | 75 to 100mm | 5 to 50mm | 75 to 100mm |
| 12               | 25  | 15,5 ±0,3 | -    | 12,5 | M4    | 11,0 | M3  | 6  | 3,5  | 4,0  | 6,5  | 6      | 5  | 5,0  | 7,5  | M5   | 0    | 0    | 3,5 ±1,5 | 17,0      | -           | 20,5      | -           |
| 16               | 29  | 20 ±0,3   | -    | 14,5 | M4    | 11,0 | M4  | 8  | 3,5  | 4,0  | 6,5  | 8      | 6  | 5,0  | 7,5  | M5   | 3,5  | 3,5  | 3,5 ±1,5 | 17,0      | -           | 20,5      | -           |
| 20               | 36  | 25,5 ±0,3 | 7,6  | 18,0 | M6    | 17,0 | M5  | 7  | 5,4  | 7,0  | 9,0  | 10     | 8  | 5,5  | 9,0  | M5   | 5,5  | 5,5  | 4,5 ±1,5 | 19,5      | -           | 24,0      | -           |
| 25               | 40  | 28 ±0,3   | 16,4 | 20,0 | M6    | 17,0 | M6  | 12 | 5,4  | 7,0  | 9,0  | 12     | 10 | 5,5  | 11,0 | M5   | 6,5  | 6,5  | 5 ±1,5   | 22,5      | -           | 27,5      | -           |
| 32               | 45  | 34 ±0,3   | 14,0 | 27,0 | M6    | 17,0 | M8  | 13 | 5,5  | 7,0  | 9,0  | 16     | 14 | 7,5  | 10,5 | G1/8 | 10,0 | 10,0 | 7 ±2     | 23,0      | 33,0        | 30,0      | 40,0        |
| 40               | 52  | 40 ±0,3   | 14,0 | 31,0 | M6    | 17,0 | M8  | 13 | 5,5  | 7,0  | 9,0  | 16     | 14 | 8,0  | 11,0 | G1/8 | 11,0 | 11,0 | 7 ±2     | 29,5      | 39,5        | 36,5      | 46,5        |
| 50               | 64  | 50 ±0,5   | 26,0 | 39,0 | M8    | 22,0 | M10 | 15 | 6,6  | 8,0  | 11,0 | 20     | 17 | 10,5 | 10,5 | G1/4 | 15,0 | 15,0 | 8 ±2     | 30,5      | 40,5        | 38,5      | 48,5        |
| 63               | 77  | 60 ±0,5   | 19,0 | 44,5 | M10   | 28,5 | M10 | 15 | 9,0  | 10,5 | 14,0 | 20     | 17 | 10,5 | 15,0 | G1/4 | 18,0 | 18,0 | 8 ±2     | 36,0      | 46,0        | 44,0      | 54,0        |
| 80               | 98  | 77 ±0,5   | 26,0 | 55,0 | M12   | 35,5 | M16 | 21 | 11,0 | 13,5 | 17,5 | 25     | 22 | 12,5 | 16,0 | G3/8 | 22,0 | 22,0 | 10 ±2    | 43,5      | 53,5        | 53,5      | 63,5        |
| 100              | 117 | 94 ±0,5   | 26,0 | 65,0 | M12   | 35,5 | M20 | 27 | 11,0 | 13,5 | 17,5 | 30     | 27 | 13,0 | 23,0 | G3/8 | 22,0 | 22,0 | 12 ±2,5  | 53,0      | 63,0        | 65,0      | 75,0        |

Dimensions - Magnetic

WH and ZB are without pressure in the cylinder, deformation of elastic bumpers under pressure gives different dimensions

| Bore size Ø (mm) | E   | TG        | F    | OH   | RT 6H | BG   | KF  | AF | ØRR  | LB   | ØDT  | ØMM f8 | SW | PL1  | PL2  | EE   | X1   | X2   | WH       | ZA   | ZB   |
|------------------|-----|-----------|------|------|-------|------|-----|----|------|------|------|--------|----|------|------|------|------|------|----------|------|------|
|                  |     |           |      |      |       |      |     |    |      |      |      |        |    |      |      |      |      |      |          |      |      |
| 16               | 29  | 20 ±0,3   | -    | 14,5 | M4    | 11,0 | M4  | 8  | 3,5  | 4,0  | 6,5  | 8      | 6  | 5,0  | 7,5  | M5   | 3,5  | 3,5  | 3,5 ±1,5 | 22,0 | 25,5 |
| 20               | 36  | 25,5 ±0,3 | 7,6  | 18,0 | M6    | 17,0 | M5  | 7  | 5,4  | 7,0  | 9,0  | 10     | 8  | 5,5  | 9,0  | M5   | 5,5  | 5,5  | 4,5 ±1,5 | 29,5 | 34,0 |
| 25               | 40  | 28 ±0,3   | 16,4 | 20,0 | M6    | 17,0 | M6  | 12 | 5,4  | 7,0  | 9,0  | 12     | 10 | 5,5  | 11,0 | M5   | 6,5  | 6,5  | 5 ±1,5   | 32,5 | 37,5 |
| 32               | 45  | 34 ±0,3   | 14,0 | 27,0 | M6    | 17,0 | M8  | 13 | 5,5  | 7,0  | 9,0  | 16     | 14 | 7,5  | 10,5 | G1/8 | 10,0 | 10,0 | 7 ±2     | 33,0 | 40,0 |
| 40               | 52  | 40 ±0,3   | 14,0 | 31,0 | M6    | 17,0 | M8  | 13 | 5,5  | 7,0  | 9,0  | 16     | 14 | 8,0  | 11,0 | G1/8 | 11,0 | 11,0 | 7 ±2     | 39,5 | 46,5 |
| 50               | 64  | 50 ±0,5   | 26,0 | 39,0 | M8    | 22,0 | M10 | 15 | 6,6  | 8,0  | 11,0 | 20     | 17 | 10,5 | 10,5 | G1/4 | 15,0 | 15,0 | 8 ±2     | 40,5 | 48,5 |
| 63               | 77  | 60 ±0,5   | 19,0 | 44,5 | M10   | 28,5 | M10 | 15 | 9,0  | 10,5 | 14,0 | 20     | 17 | 10,5 | 15,0 | G1/4 | 18,0 | 18,0 | 8 ±2     | 46,0 | 54,0 |
| 80               | 98  | 77 ±0,5   | 26,0 | 55,0 | M12   | 35,5 | M16 | 21 | 11,0 | 13,5 | 17,5 | 25     | 22 | 12,5 | 16,0 | G3/8 | 22,0 | 22,0 | 10 ±2    | 53,5 | 63,5 |
| 100              | 117 | 94 ±0,5   | 26,0 | 65,0 | M12   | 35,5 | M20 | 27 | 11,0 | 13,5 | 17,5 | 30     | 27 | 13,0 | 23,0 | G3/8 | 22,0 | 22,0 | 12 ±2,5  | 63,0 | 75,0 |

S = stroke, following ISO tolerance on ZB is ±2, bore sizes 12 and 16 mm are not in the ISO standard

## Cylinder mountings

### Flange MF1

Surface treated steel

| Cyl. dia. | Order code      |
|-----------|-----------------|
| 12        | <b>P1Q-4DMB</b> |
| 16        | <b>P1Q-4FMB</b> |
| 20        | <b>P1Q-4HMB</b> |
| 25        | <b>P1Q-4JMB</b> |
| 32        | <b>P1Q-4KMB</b> |
| 40        | <b>P1Q-4LMB</b> |
| 50        | <b>P1Q-4MMB</b> |
| 63        | <b>P1Q-4NMB</b> |
| 80        | <b>P1Q-4PMB</b> |
| 100       | <b>P1Q-4QMB</b> |



### Foot brackets MS9

Surface treated steel

| Cyl. dia. | Order code      |
|-----------|-----------------|
| 12        | <b>P1Q-4DMF</b> |
| 16        | <b>P1Q-4FMF</b> |
| 20        | <b>P1Q-4HMF</b> |
| 25        | <b>P1Q-4JMF</b> |
| 32        | <b>P1Q-4KMF</b> |
| 40        | <b>P1Q-4LMF</b> |
| 50        | <b>P1Q-4MMF</b> |
| 63        | <b>P1Q-4NMF</b> |
| 80        | <b>P1Q-4PMF</b> |
| 100       | <b>P1Q-4QMF</b> |



### Clevis mounting

Surface treated steel, black

| Cyl. dia. | Order code      |
|-----------|-----------------|
| 12        | <b>P1Q-4DMT</b> |
| 16        | <b>P1Q-4FMT</b> |
| 20        | <b>P1Q-4HMT</b> |
| 25        | <b>P1Q-4JMT</b> |
| 32        | <b>P1Q-4KMT</b> |
| 40        | <b>P1Q-4LMT</b> |
| 50        | <b>P1Q-4MMT</b> |
| 63        | <b>P1Q-4NMT</b> |
| 80        | <b>P1Q-4PMT</b> |
| 100       | <b>P1Q-4QMT</b> |



## Electronic and Reed Sensors

| Size                     | Description                               | Order code       |
|--------------------------|---|------------------|
| <b>Flush mount style</b> |   |                  |
| PNP Type, normally open  | 0.165 m cable and M8 screw male connector | <b>P8S-EPSUS</b> |
| PNP Type, normally open  | 2 m PUR cable without connector           | <b>P8S-EPFSX</b> |
| NPN Type, normally open  | 0.165 m cable and M8 screw male connector | <b>P8S-ENSUS</b> |
| NPN Type, normally open  | 2 m PUR cable without connector           | <b>P8S-ENFSX</b> |
| Reed Type, normally open | 0.15 m cable and M8 screw male connector  | <b>P8S-ERSUS</b> |
| Reed Type, normally open | 2 m PUR cable without connector           | <b>P8S-ERFSX</b> |

Single acting, spring return cylinders ideal for applications where space is at a premium. The threaded body makes installation simple.

- Non - lube operation
- Corrosion resistant design
- Integral mounting
- Compact construction
- Single acting as standard



**Operating information**

Working pressure 2 - 7 bar  
 working temperature -20 °C to +80 °C  
 Supplied complete with 1 rod nut and 2 fixing nuts

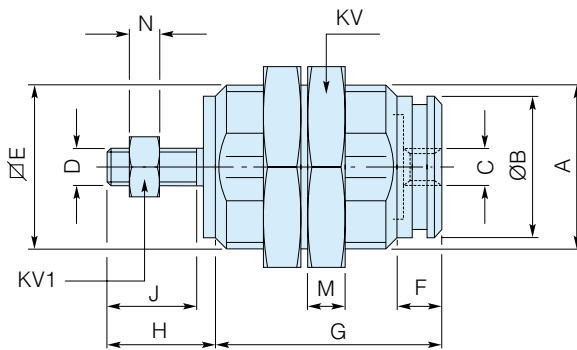
For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Single acting push type**

| Symbol | Cyl. bore mm | Rod thread mm | Body thread mm | Spring force |       | Port size | Stroke mm              | Order code             |
|--------|--------------|---------------|----------------|--------------|-------|-----------|------------------------|------------------------|
|        |              |               |                | Max N        | Min N |           |                        |                        |
|        | 6            | M3            | M10x1,0        | 3,8          | 1,2   | M5        | 5                      | <b>P1G-S006SS-0005</b> |
|        |              |               |                |              |       |           | 10                     | <b>P1G-S006SS-0010</b> |
|        |              |               |                |              |       |           | 15                     | <b>P1G-S006SS-0015</b> |
|        | 10           | M4            | M15x1,5        | 7,3          | 2,7   | M5        | 5                      | <b>P1G-S010SS-0005</b> |
|        |              |               |                |              |       |           | 10                     | <b>P1G-S010SS-0010</b> |
|        |              |               |                |              |       |           | 15                     | <b>P1G-S010SS-0015</b> |
| 16     | M5           | M22x1,5       | 6,6            | 3,3          | M5    | 5         | <b>P1G-S016SS-0005</b> |                        |
|        |              |               |                |              |       | 10        | <b>P1G-S016SS-0010</b> |                        |
|        |              |               |                |              |       | 15        | <b>P1G-S016SS-0015</b> |                        |

The spring forces in single acting cylinders are sufficient to return the piston without load.

**Dimensions (mm)**



**Caution**  
 Avoid side loads on the piston rod  
 Avoid loading the piston rod during retraction  
 Do not operate the cylinders with excessive inertia.

| Cylinder bore | A       | ØB  | C  | D      | E  | F  | G                  |                     |                     | H    | J    | KV | KV1 | M  | N   |
|---------------|---------|-----|----|--------|----|----|--------------------|---------------------|---------------------|------|------|----|-----|----|-----|
|               | mm      | mm  | mm | mm     | mm | mm | 5 <sup>1)</sup> mm | 10 <sup>1)</sup> mm | 15 <sup>1)</sup> mm | mm   | mm   | mm | mm  | mm | mm  |
| 6             | M10x1   | 8,5 | M5 | M3x0,5 | 9  | 5  | 19,5               | 26,5                | 33,5                | 8    | 8    | 14 | 5,5 | 3  | 2,4 |
| 10            | M15x1,5 | 12  | M5 | M4x0,7 | 14 | 7  | 23                 | 29,5                | 36,5                | 10,5 | 10,5 | 19 | 7   | 4  | 3,2 |
| 16            | M22x1,5 | 19  | M5 | M5x0,8 | 20 | 6  | 27                 | 32                  | 37                  | 13   | 12   | 27 | 8   | 5  | 4   |

1) Stroke length in mm

Compact short stroke cylinders available in single as well as double acting versions. Ideally suited for clamping and locking operations. The compact design with mounting holes through the cylinder body makes the unit easy to install in confined spaces. The main body is machined from one piece thus providing an easy to clean unit. Fitted with stainless steel piston rod as standard for corrosion resistance.



- Short stroke cylinders providing high clamping forces
- Compact dimensions for confined spaces
- Single and double acting versions
- Simple installation and mounting

**Operating information**

Working pressure: Max 10 bar  
 Working temperature: -20°C to +70°C  
 Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.  
 For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**C05 Double acting cylinders**

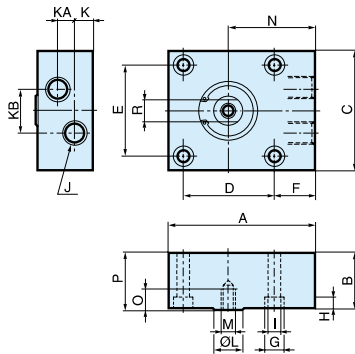
| Cyl. bore mm | Stroke mm | Port | Order code          |
|--------------|-----------|------|---------------------|
| 12           | 10        | M5   | <b>C05-12-5-10</b>  |
| 20           | 10        | M5   | <b>C05-20-10-10</b> |
| 32           | 10        | G1/8 | <b>C05-32-12-10</b> |
| 32           | 25        | G1/8 | <b>C05-32-12-25</b> |
| 50           | 25        | G1/4 | <b>C05-50-16-25</b> |
| 63           | 25        | G1/4 | <b>C05-63-16-25</b> |

**C05S Single acting cylinders**

| Cyl. bore mm | Stroke mm | Port | Order code           |
|--------------|-----------|------|----------------------|
| 8            | 4         | M5   | <b>C05S-8-4-4</b>    |
| 12           | 4         | M5   | <b>C05S-12-5-4</b>   |
| 20           | 4         | G1/8 | <b>C05S-20-10-4</b>  |
| 32           | 5         | G1/8 | <b>C05S-32-12-5</b>  |
| 50           | 10        | G1/4 | <b>C05S-50-16-10</b> |
| 63           | 10        | G1/4 | <b>C05S-63-16-10</b> |

The spring forces in single acting cylinders are sufficient to return the piston without load.

**Double acting dimensions (mm)**



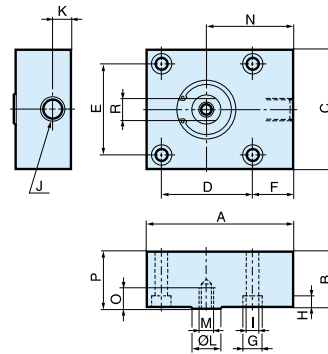
| Type                | A  | B  | C  | D  | E    | F    | G   | H   | I    | J    |
|---------------------|----|----|----|----|------|------|-----|-----|------|------|
| <b>C05-12-5-10</b>  | 25 | 27 | 20 | 0* | 13   | 7,0  | 6   | 3,4 | 3,4  | M5   |
| <b>C05-20-10-10</b> | 40 | 30 | 32 | 0* | 20   | 9,0  | 10  | 5,0 | 5,5  | M5   |
| <b>C05-32-12-10</b> | 55 | 36 | 45 | 0* | 32   | 14,0 | 10  | 5,0 | 5,5  | G1/8 |
| <b>C05-32-12-25</b> | 55 | 51 | 45 | 0* | 32   | 14,0 | 10  | 5,0 | 5,5  | G1/8 |
| <b>C05-50-16-25</b> | 80 | 50 | 65 | 50 | 22,5 | 11   | 6,5 | 6,5 | G1/4 | G1/4 |
| <b>C05-63-16-25</b> | 90 | 55 | 80 | 62 | 62   | 19,0 | 15  | 9,0 | 9,0  | G1/4 |

| Type                | K    | KA   | KB  | L  | M  | N    | O  | P  | R  |
|---------------------|------|------|-----|----|----|------|----|----|----|
| <b>C05-12-5-10</b>  | 6,0  | 13,0 | 3   | 5  | -  | 16,0 | -  | 28 | -  |
| <b>C05-20-10-10</b> | 6,0  | 16,0 | 6   | 10 | M5 | 24,0 | 8  | 31 | -  |
| <b>C05-32-12-10</b> | 9,5  | 16,5 | 14  | 12 | M6 | 32,0 | 12 | 37 | 9  |
| <b>C05-32-12-25</b> | 9,5  | 31,5 | 0** | 12 | M6 | 32,0 | 12 | 52 | 9  |
| <b>C05-50-16-25</b> | 11,0 | 28,0 | 0** | 16 | M8 | 47,5 | 12 | 51 | 14 |
| <b>C05-63-16-25</b> | 11,0 | 33,0 | 0** | 16 | M8 | 50,0 | 14 | 56 | 14 |

\* Only two mounting holes (F).  
 \*\* Connections in-line.

**Single acting dimensions (mm)**



| Type                 | A  | B  | C  | D  | E    | F    | G   | H   | I    | J    |
|----------------------|----|----|----|----|------|------|-----|-----|------|------|
| <b>C05S-8-4-4</b>    | 20 | 16 | 18 | 0* | 11   | 5,5  | 6   | 3,4 | 3,4  | M5   |
| <b>C05S-12-5-4</b>   | 25 | 16 | 20 | 0* | 13   | 7,0  | 6   | 3,4 | 3,4  | M5   |
| <b>C05S-20-10-4</b>  | 40 | 20 | 32 | 0* | 20   | 9,0  | 10  | 5,0 | 5,5  | G1/8 |
| <b>C05S-32-12-5</b>  | 55 | 26 | 45 | 0* | 32   | 14,0 | 10  | 5,0 | 5,5  | G1/8 |
| <b>C05S-50-16-10</b> | 80 | 30 | 65 | 50 | 22,5 | 11   | 6,5 | 6,5 | G1/4 | G1/4 |
| <b>C05S-63-16-10</b> | 90 | 35 | 80 | 62 | 62   | 19,0 | 15  | 9,0 | 9,0  | G1/4 |

| Type                 | K    | KA | KB | L  | M  | N    | O  | P  | R  |
|----------------------|------|----|----|----|----|------|----|----|----|
| <b>C05S-8-4-4</b>    | 5,0  | -  | -  | 4  | -  | 13,5 | -  | 17 | -  |
| <b>C05S-12-5-4</b>   | 6,0  | -  | -  | 5  | -  | 15,0 | -  | 17 | -  |
| <b>C05S-20-10-4</b>  | 9,5  | -  | -  | 10 | M5 | 24,0 | 8  | 21 | -  |
| <b>C05S-32-12-5</b>  | 9,5  | -  | -  | 12 | M6 | 32,0 | 12 | 27 | 9  |
| <b>C05S-50-16-10</b> | 11,0 | -  | -  | 16 | M8 | 47,5 | 12 | 31 | 14 |
| <b>C05S-63-16-10</b> | 11,0 | -  | -  | 16 | M8 | 50,0 | 14 | 36 | 14 |

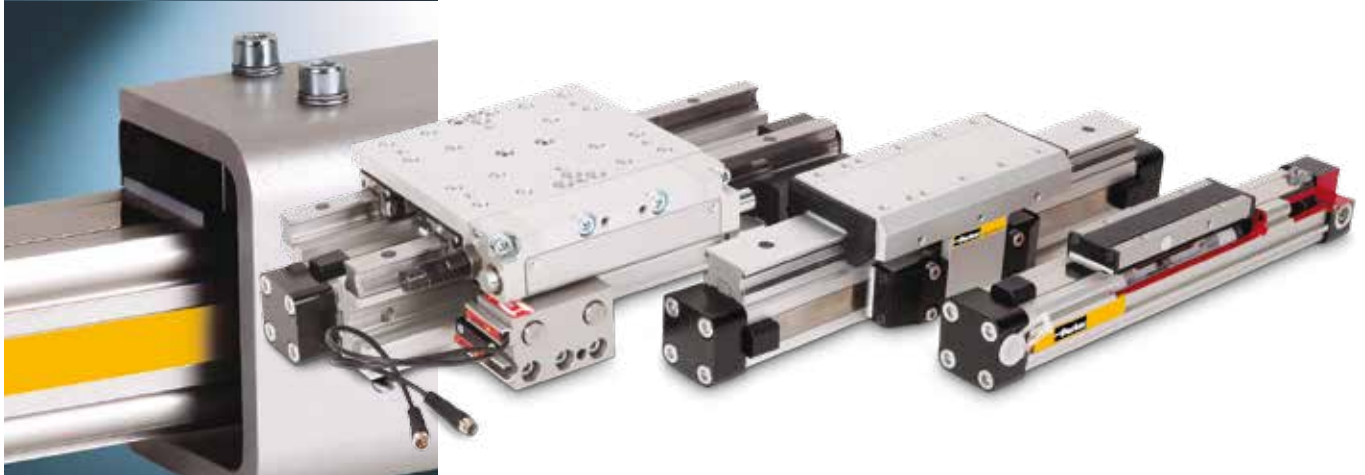






# ORIGA SYSTEM PLUS OSP-P

The “**ORIGINAL**” rodless pneumatic cylinders



## A **NEW** Modular Linear Drive System

With this second generation linear drive Parker Origa offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.



- Completely modular design
- Compact design
- Widest capability for speed, load and movement profiles
- End caps can be rotated 4 x 90°
- High loads and moments
- High service life up to 8,000km
- Low friction forces  $\geq$  high action forces
- Wide speed range ( 0.005 – 30m/s )
- Modular System – easy to mount guides, brakes and displacement measuring system

Parker Origa rodless pneumatic cylinders are the first rodless cylinders that have been approved for use in potentially explosive atmospheres in Equipment Group II, Category 2 GD.

The Cylinders are to the ATEX Certification 94/9/EG (ATEX 95) for Pneumatic Components.

For full details and information on OSP-P range of rodless cylinders please see catalogue no.: P-A4P011GB



## Special Versions



for use in Ex-Areas



Low Temperature Version  
for temperatures down to  
-40°C



for Clean Room Applications  
certified to  
DIN EN ISO 14644-1



Slow Speed Version  
 $v = 0.005 - 0.2 \text{ m/s}$



Stainless steel version  
for special applications



High Speed Version  
 $v_{max.} = 30 \text{ m/s}$



with special pneumatic  
cushioning system for cycle  
time optimization,  
for  $\varnothing 16$  to  $50 \text{ mm}$   
- on request



Cylinders with extreme long  
strokes  
Stroke length up to  $41 \text{ m}$



High Temperature Version  
for temperatures up to  
+120°C

\* Information on electrical linear drives series OSP-E, please refer to catalogue P-A4P017GB

|  |   |   |   |
|--|---|---|---|
| <p>Basic Linear Drive<br/>Standard Version</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E*<br/>Belt drive<br/>Belt drive with integrated Guides<br/>Vertical belt drive with recirculating ball bearing guide</li> <li>• Series OSP-E*<br/>Screw drive (Ball Screw, Trapezoidal Screw)</li> </ul> |    | <p><b>BASIC GUIDE</b></p> <ul style="list-style-type: none"> <li>• Series OSPP-BG</li> </ul>  |    |
| <p>Air Connection on the End-face or both at One End</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>  |    | <p>Duplex Connection</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>   |    |
| <p>Long-Stroke Cylinders for strokes up to 41 m</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>   |    | <p>Multiplex Connection</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>  |    |
| <p>Clean Room Cylinder certified to DIN EN ISO 14644-1</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E..SB</li> </ul>  |    | <p>Linear Guides – SLIDELINE</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Screw drive*</li> </ul>  |    |
| <p>Products for ATEX Areas</p> <ul style="list-style-type: none"> <li>• Series OSP-P<br/>Rodless Cylinders</li> </ul>    |   | <p>Linear Guides – POWERSLIDE</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>   |    |
| <p>Products for ATEX Areas</p> <ul style="list-style-type: none"> <li>• Series OSP-P<br/>Rodless Cylinders with Linear Guide BASIC GUIDE</li> </ul>   |  | <p>Linear Guides – PROLINE</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>  |    |
| <p>Products for ATEX Areas</p> <ul style="list-style-type: none"> <li>• Series OSP-P<br/>Rodless Cylinders with Linear Guide SLIDELINE</li> </ul>   |  | <p>Linear Guides – STARLINE</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>  |   |
| <p>Bi-parting Version</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>   |  | <p>Linear Guides – KF</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>  |  |
| <p>Integrated 3/2 Way Valves</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>  |  | <p>Heavy Duty Linear Guides – HD</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Screw drive*</li> </ul>  |  |
| <p>Clevis Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>   |  | <p>Intermediate stop module – ZSM</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> </ul>  |  |
| <p>End Cap Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>  |  | <p>Brakes</p> <ul style="list-style-type: none"> <li>• Active Brakes</li> <li>• Passive Brakes</li> </ul>   |  |
| <p>Mid-Section Support</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>   |  | <p>Magnetic Switches</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> <li>• ATEX-Versions</li> </ul>  |  |
| <p>Inversion Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>  |  | <p>SENSOFLEX-Measuring system</p> <ul style="list-style-type: none"> <li>• Series SFI-plus</li> </ul>   |  |
| <p>Inversion Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-P</li> <li>• Series OSP-E Belt drive*</li> <li>• Series OSP-E Screw drive*</li> </ul>  |  | <p>Variable Stop VS</p> <ul style="list-style-type: none"> <li>• Series OSP-P with Linear Guide STL, KF, HD</li> </ul>  |  |

# Origa System Plus

## - Innovation from a proven design

A completely new generation of linear drives which can be simply and neatly integrated into any machine layout.

### A NEW MODULAR LINEAR DRIVE SYSTEM

With this second generation linear drive Parker Origa offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.

### MOUNTING RAILS ON 3 SIDES

Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, brakes, valves, magnetic switches etc. to be fitted to the cylinder itself. This solves many installation problems, especially where space is limited.

The modular system concept forms an ideal basis for additional customer-specific functions.

**Magnetic piston as standard - for contactless position sensing on three sides of the cylinder.**

**Corrosion resistant steel outer sealing band and robust wiper system on the carrier for use in aggressive environments.**

**Proven corrosion resistant steel inner sealing band for optimum sealing and extremely low friction.**

**Combined clamping for inner and outer sealing band with dust cover.**

**Stainless steel screws optional.**

**Low friction piston seals for optimized running characteristics**

**Optimized cylinder profile for maximum stiffness and minimum weight. Integral air passages enable both air connections to be positioned at one end, if desired.**

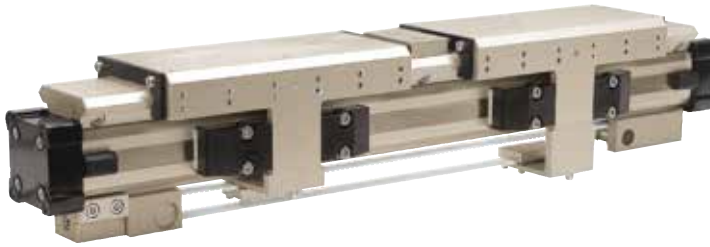
**Install the OSP-P System to simplify design work! The files are compatible with all popular CAD systems and package hardware.**

**End cap can be rotated to any one of the four positions (before or after delivery) so that the air connection can be in any desired position.**

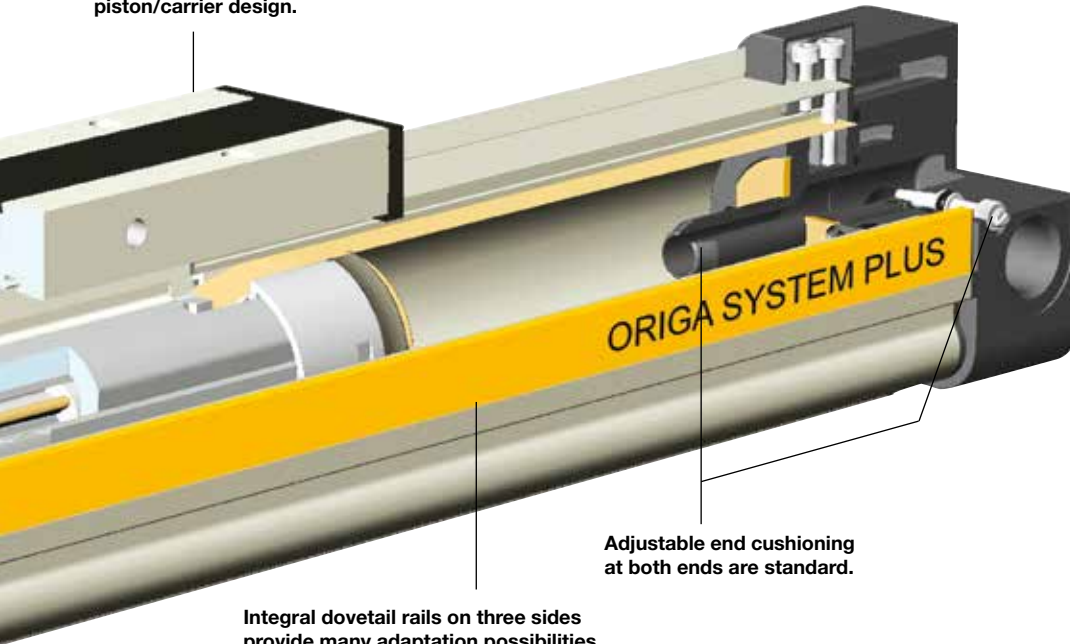
**Clean Room Version**  
certified to DIN EN ISO 14644-1



**Rodless Cylinder**  
for synchronized bi-parting movements



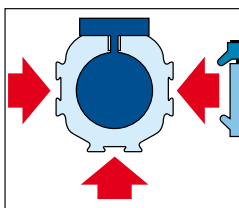
New low profile piston/carrier design.



Adjustable end cushioning at both ends are standard.

Integral dovetail rails on three sides provide many adaptation possibilities (linear guides, magnetic switches, etc.).

Modular system components are simply clamped on.



**INTEGRATED VOV VALVES**  
The complete compact solution for optimal cylinder control.



**SENSOFLEX SFI-plus**  
incremental measuring system with 0.1 (1.0) mm resolution.



**BASIC GUIDE**  
Compact, robust plain bearing guide for medium loads.



**SLIDELINE**  
Guide system for moderate loads. Optional with Active- / Passive-Brake.



**POWERSLIDE**  
Roller guide for high loads and rough conditions.



**PROLINE**  
The compact aluminium roller guide for high loads and velocities. Optional with Active- / Passive-Brake.



**STARLINE**  
Recirculating ball bearing guide for very high loads and precision.



**KF GUIDE**  
Recirculating ball bearing guide – the mounting dimensions correspond to FESTO Type: DGPL-KF



**HEAVY DUTY GUIDE HD**  
for heavy duty applications.



**VARIABLE STOP VS**  
The variable stop provides simple stroke limitation.



**PASSIVE BRAKE**  
reacts automatically to pressure failure.



**ACTIVE BRAKE**  
pneumatic brake for secure, positive stopping at any position.



## Options and Accessories for system versatility

### Series OSP-P

#### STANDARD VERSIONS OSP-P10 to P80

Standard carrier with integral guidance. End cap can be rotated 4 x 90° to position air connection on any side.  
Magnetic piston as standard.  
Dovetail profile for mounting of accessories and the cylinder itself.



#### LONG-STROKE VERSION

For extremely long strokes up to max. 41m



#### BASIC CYLINDER OPTIONS

##### CLEAN ROOM CYLINDERS

For use in clean room applications, certified with the IPA-Certificate (to DIN EN ISO 14644-1).  
The special design of the linear drive enables all emissions to be led away.



##### ATEX-Version

For use in Ex-Areas



##### BOTH AIR CONNECTIONS AT ONE END

For simplified tubing connections and space saving.



##### STAINLESS VERSION

For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no.1.4301 / 1.4303)



##### INTEGRATED VOE VALVES

The complete compact solution for optimal cylinder control.



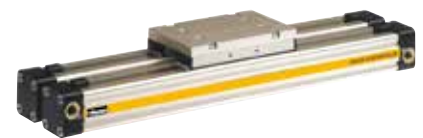
##### SLOW SPEED OPTIONS

Specially formulated grease lubrication facilitates slow, smooth and uniform piston travel in the speed range from 0.005 to 0.2 m/s. Minimum achievable speeds are dependent on several factors. Please consult our technical department.  
Slow speed lubrication in combination with Viton® on demand. Oil free operation preferred.



##### DUPLEX CONNECTION

The duplex connection combines two OSP-P cylinders of the same size into a compact unit with high performance.



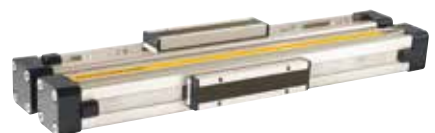
##### VITON® VERSION

For use in an environment with high temperatures or in chemically aggressive areas.  
All seals are made of Viton®.  
Corrosion resistant steel sealing bands.



##### MULTIPLEX CONNECTION

The multiplex connection combines two or more OSP-P cylinders of the same size into one unit.  
The orientation of the carriers can be freely selected.



##### END-FACE AIR CONNECTION

To solve special installation problems.



## ACCESSORIES

### MAGNETIC SWITCHES TYPE RS, ES, RST, EST

For electrical sensing of end and intermediate piston positions, also in EX-Areas.



## MOUNTING FOR OSP-P10 UP TO P80

### CLEVIS MOUNTING

Carrier with tolerance and parallelism compensation for driving loads supported by external linear guides.



### MID-SECTION SUPPORT

For supporting long cylinders or mounting the cylinder by its dovetail rails.



### END CAP MOUNTING

For end-mounting of the cylinder.



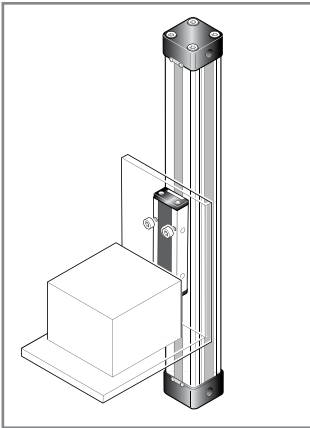
### INVERSION MOUNTING

The inversion mounting transfers the driving force to the opposite side, e.g. for dirty environments.

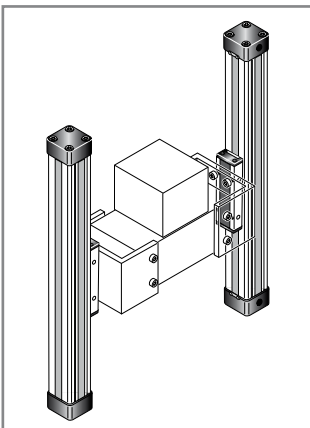
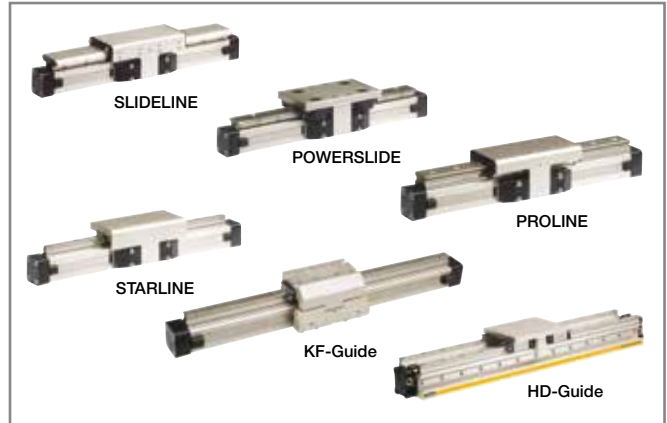


# OSP-P Application examples

ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



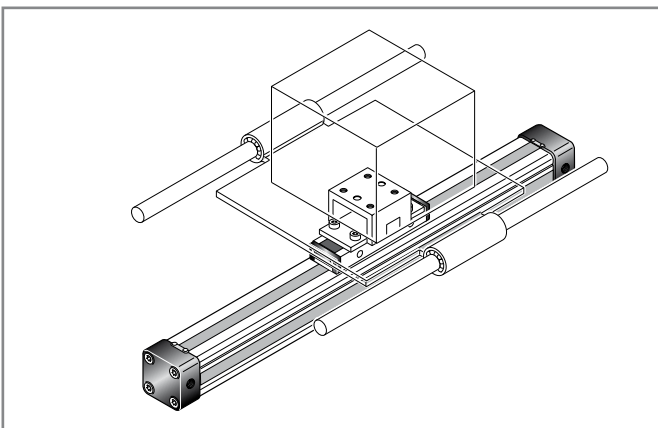
The high load capacity of the piston can cope with high bending moments without additional guides.



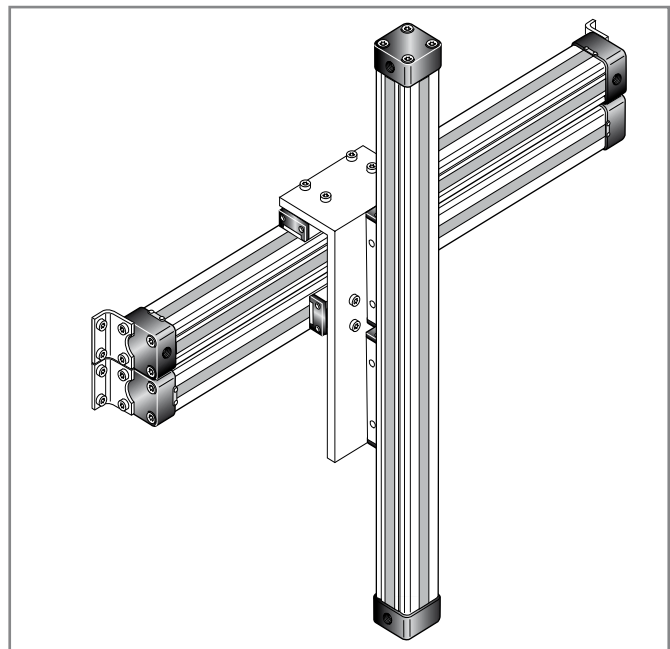
The mechanical design of the OSP-P allows synchronised movement of two cylinders.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.



When using external guides, the clevis mounting is used to compensate for deviations in parallelism.

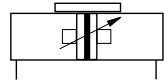


For further information and assembly instructions, please contact your local Parker Origa dealer.



## Rodless Pneumatic Cylinder

### Ø 10-80 mm




#### Standard Versions:

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

Long-Stroke Cylinders for stroke lengths up to 41 m  
See page 133

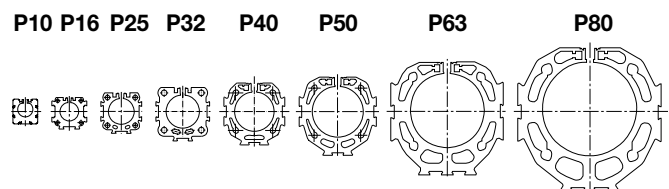


#### Special Versions:

- Cushioning system for cycle time optimization (on request)
- Clean room cylinders
- ATEX-Version 
- Stainless steel screws
- Slow speed lubrication
- Viton® seals
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves

- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm, Long-Stroke version (Ø50-80mm) for stroke lengths up to 41 m

#### Size Comparison

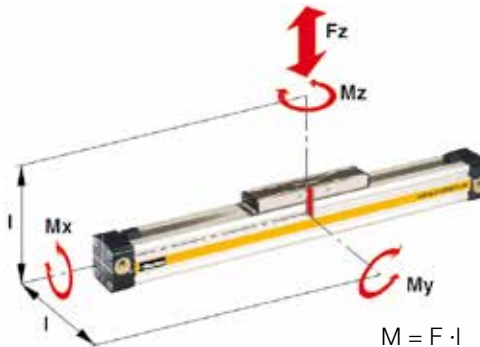


| Characteristics                                  | Description  |
|--|--|
| <b>General Features</b>                          |  |
| Type   | Rodless cylinder   |
| Series   | OSP-P  |
| System   | Double-acting, with cushioning, position sensing capability  |
| Mounting   | See drawings   |
| Air Connection                                   | Threaded   |
| Ambient temperature range $T_{min}$ to $T_{max}$ | -10 °C Other temperature ranges<br>+80 °C on request   |
| Installation                                     | In any position  |
| Medium   | Filtered, unlubricated compressed air (other media on request)   |
| Lubrication                                      | Permanent grease lubrication (additional oil mist lubrication not required)<br>Option: special slow speed grease |
| <b>Material</b>                                  |  |
| Cylinder Profile                                 | Anodized aluminium   |
| Carrier (piston)                                 | Anodized aluminium   |
| End caps   | Aluminium, lacquered / Plastic (P10)   |
| Sealing bands                                    | Corrosion resistant steel  |
| Seals  | NBR (Option: Viton®)   |
| Screws   | Galvanized steel<br>Option: stainless steel  |
| Dust covers, wipers                              | Plastic  |
| Max. operating pressure $p_{max}$                | 8 bar  |

## Loads, Forces and Moments

### Choice of cylinder is decided by:

- Permissible loads, forces and moments
- Performance of the pneumatic end cushions.



$M = F \cdot l$   
Bending moments are calculated from the centre of the linear actuator

The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e. g. hydraulic shock absorbers).

The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. **Load and moment data are based on speeds  $v \leq 0.5$  m/s.**

When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.

| Cylinder-Series Ø [mm] | Theoretical Action Force at 6 bar [N] | effektive Action Force $F_A$ at 6 bar [N] | max. Moments |         |         | max. Load F [N] | Cushion Length [mm] |
|------------------------|---------------------------------------|---|--------------|---------|---------|-----------------|---------------------|
|                        |                                       |   | Mx [Nm]      | My [Nm] | Mz [Nm] |                 |                     |
| OSP-P10                | 47                                    | 32  | 0.2          | 1       | 0.3     | 20              | 2.5 *               |
| OSP-P16                | 120                                   | 78  | 0.45         | 4       | 0.5     | 120             | 11                  |
| OSP-P25                | 295                                   | 250                                       | 1.5          | 15      | 3       | 300             | 17                  |
| OSP-P32                | 483                                   | 420                                       | 3            | 30      | 5       | 450             | 20                  |
| OSP-P40                | 754                                   | 640                                       | 6            | 60      | 8       | 750             | 27                  |
| OSP-P50                | 1178                                  | 1000                                      | 10           | 115     | 15      | 1200            | 30                  |
| OSP-P63                | 1870                                  | 1550                                      | 12           | 200     | 24      | 1650            | 32                  |
| OSP-P80                | 3016                                  | 2600                                      | 24           | 360     | 48      | 2400            | 39                  |

\* A rubber element (non-adjustable) is used for end cushioning. To deform the rubber element enough to reach the absolute end position would require a  $\Delta p$  of 4 bar!

## Cushioning Diagram

Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required. Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed, and that it is this higher speed which determines the choice of cylinder.



## Weight (mass) [kg]

| Cylinder series (Basic cylinder) | Weight (Mass) [kg] |                   |
|----------------------------------|--------------------|-------------------|
|                                  | At 0 mm stroke     | per 100 mm stroke |
| OSP-P10                          | 0.087              | 0.052             |
| OSP-P16                          | 0.22               | 0.1               |
| OSP-P25                          | 0.65               | 0.197             |
| OSP-P32                          | 1.44               | 0.354             |
| OSP-P40                          | 1.95               | 0.415             |
| OSP-P50                          | 3.53               | 0.566             |
| OSP-P63                          | 6.41               | 0.925             |
| OSP-P80                          | 12.46              | 1.262             |

\* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

If the permitted limit values are exceeded, either additional shock absorbers should be fitted in the area of the centre of gravity or you can consult us about our special cushioning system – we shall be happy to advise you on your specific application.

## Integrated 3/2 Way Valves

### VOE

#### Series OSP-P25, P32, P40 and P50

For optimal control of the OSP-P cylinder, 3/2 way valves integrated into the cylinder's end caps can be used as a compact and complete solution. They allow for easy positioning of the cylinder, smooth operation at the lowest speeds and fast response, making them ideally suited for the direct control of production and automation processes.

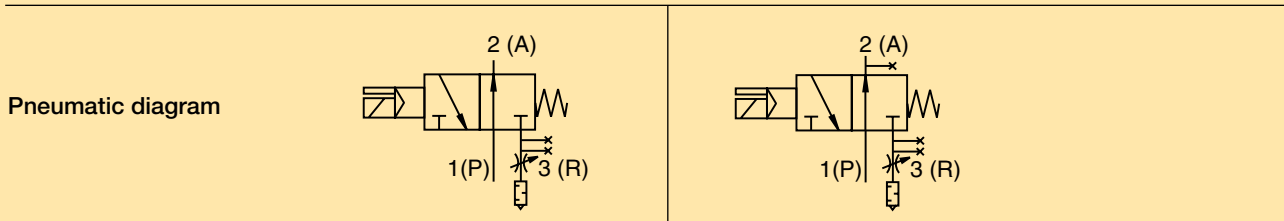


#### Features:

- Complete compact solution
- Various connection possibilities:  
Free choice of air connection with rotating end caps with VOE valves, Air connection can be rotated 4 x 90°
- Solenoid can be rotated 4 x 90°
- Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust ports
- Minimal installation requirements
- Requires just one air connection per valve
- Optimal control of the OSP-P cylinder
- Excellent positioning characteristics
- Integrated operation indicator
- Integrated exhaust throttle valve
- Manual override - indexed
- Adjustable end cushioning
- Easily retrofitted – please note the increase in the overall length of the cylinder!

#### Characteristics 3/2 Way Valves VOE

##### Characteristics 3/2 Way Valves with spring return



| Type                  | VOE-25                        | VOE-32 | VOE-40 | VOE-50          |
|-----------------------|-------------------------------|--------|--------|-----------------|
| Actuation             | electrical                    |        |        |                 |
| Basic position        | P → A open, R closed          |        |        |                 |
| Type                  | Poppet valve, non overlapping |        |        |                 |
| Mounting              | integrated in end cap         |        |        |                 |
| Installation          | in any position               |        |        |                 |
| Port size             | G 1/8                         | G 1/4  | G 3/8  | G 3/8           |
| Temperature           | -10°C to +50°C *              |        |        |                 |
| Operating pressure    | 2-8 bar                       |        |        |                 |
| Nominal voltage       | 24 V DC                       |        | /      | 230 V AC, 50 Hz |
| Power consumption     | 2.5 W                         |        | /      | 6 VA            |
| Duty cycle            | 100%                          |        |        |                 |
| Electrical Protection | IP 65 DIN 40050               |        |        |                 |

\* other temperature ranges on request

For further technical information see catalogue P-A4P011GB

Order Instructions - Basic Cylinder

|      |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4  | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| OSPP | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø |  |
|----------|--|
| 10       |  |
| 16       |  |
| 25       |  |
| 32       |  |
| 40       |  |
| 50       |  |
| 63       |  |
| 80       |  |

| Stroke Length    |  |
|------------------|--|
| In mm (5 digits) |  |

| Piston Mounting |                 |
|-----------------|-----------------|
| 0               | without         |
| 1               | clevis mounting |

| add. Guide Carriage |         |
|---------------------|---------|
| 0                   | without |

| Measuring system |            |
|------------------|------------|
| 0                | without    |
| X                | SFI 0.1 mm |
| Y                | SFI 1 mm   |

| Screws |           |
|--------|-----------|
| 0      | standard  |
| 1      | Stainless |

| Cushioning |                           |
|------------|---------------------------|
| 0          | standard                  |
| 1          | max. length <sup>3)</sup> |

| Version / Piston |          |
|------------------|----------|
| 0                | standard |
| 1                | Tandem   |

| Lubrication |                            |
|-------------|----------------------------|
| 0           | standard                   |
| 1           | slow speed <sup>2)3)</sup> |

| End cap position |   |
|------------------|---|
| 0                | l+r0° = in front                                    |
| 1                | l+r90° = underneath                                 |
| 2                | l+r180° = at the back                               |
| 3                | l+r270° = same side as outerband                    |
| 4                | l90° = underneath; r0° = in front                   |
| 5                | l180° = at the back; r0° = in front                 |
| 6                | l270° = same side as outerband; r0° = in front      |
| 7                | l0° = in front; r90° = underneath                   |
| 8                | l180° = at the back; r90° = underneath              |
| 9                | l270° = same side as outerband; r90° = underneath   |
| A                | l0° = in front; r180° = at the back                 |
| B                | l90° = underneath; r180° = at the back              |
| C                | l270° = same side as outerband; r180° = at the back |
| D                | l0° = in front; r270° = same side as outerband      |
| E                | l90° = underneath; r270° = same side as outerband   |
| F                | l180° = at the back; r270° = same side as outerband |

| Guides/ Brakes/ Inversion |                       |
|---------------------------|-----------------------|
| 0                         | without               |
| A                         | Activebrake AB Ø25-80 |
| M                         | Inversion Ø16-80      |
| N                         | Duplex Ø25,32,40,50   |

| Cover/ Cable Channel |                         |
|----------------------|-------------------------|
| 0                    | standard                |
| 1                    | Cable channel           |
| 2                    | Cable channel two-sided |
| X                    | without cover rail      |

| Air Connection |  |
|----------------|--|
| 0              | standard                                       |
| 1              | end face                                       |
| 2              | both at one end                                |
| 3              | left stand. right end face                     |
| 4              | right stand. left end face                     |
| A              | 3/2 Way valve VOE 24 V = Ø25,32,40,50          |
| B              | 3/2 Way valve VOE 230 V- / 110 V= Ø25,32,40,50 |
| C              | 3/2 Way valve VOE 48 V = Ø25,32,40,50          |
| E              | 3/2 Way valve VOE 110 V- Ø25,32,40,50          |

| Seals |                      |
|-------|----------------------|
| 0     | standard (NBR)       |
| 1     | Viton <sup>®1)</sup> |

**End cap position (air connection)**

270° same side as outerband

180° at the back

end-face

0° in front

90° underneath

Cylinder R (right end side)

Cylinder L (left end side)

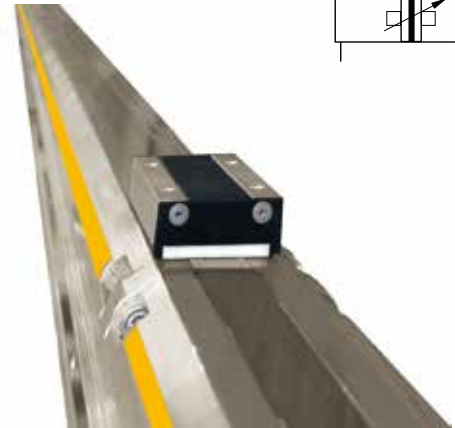
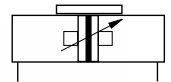
  

<sup>1)</sup> Viton with VOE not available.

<sup>2)</sup> Slow speed lubrication in combination with Viton<sup>®</sup> seals on demand

<sup>3)</sup> „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

**Long Stroke Cylinder Ø 50-80 mm  
 for strokes up to 41 m**



**Standard Versions:**

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

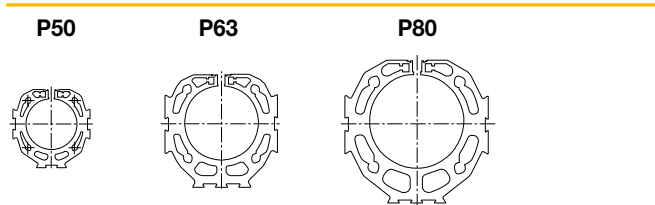
**Special Versions:**

- Stainless steel screws
- Slow speed lubrication
- Viton® seals

**Options:**

- Displacement measuring system SFI-plus
- Active brake AB..

**Size Comparison**



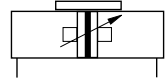
**Weight (mass) [kg]**

| Cylinder series<br>(Basic cylinder) | Weight (Mass) [kg] |                   |
|-------------------------------------|--------------------|-------------------|
|                                     | At 0 mm stroke     | per 100 mm stroke |
| <b>OSP-P50LS</b>                    | 3.53               | 0.566             |
| <b>OSP-P63LS</b>                    | 6.41               | 0.925             |
| <b>OSP-P80LS</b>                    | 12.46              | 1.262             |

| Characteristics                                  | Description  |
|--|--|
| <b>General Features</b>                          |  |
| Type   | Rodless cylinder   |
| Series   | OSP-P  |
| System   | Double-acting, with cushioning, position sensing capability  |
| Mounting   | See drawings   |
| Air Connection                                   | Threaded   |
| Ambient temperature range $T_{min}$ to $T_{max}$ | 10 °C Other temperature ranges<br>+40 °C on request  |
| Installation                                     | Vertical, horizontal (piston at top or at bottom)  |
| Medium   | Filtered, unlubricated compressed air (other media on request)   |
| Lubrication                                      | Permanent grease lubrication (additional oil mist lubrication not required)<br>Option: special slow speed grease |
| <b>Material</b>                                  |  |
| Cylinder Profile                                 | Anodized aluminium   |
| Carrier (piston)                                 | Anodized aluminium   |
| End caps   | Anodized aluminium   |
| Sealing bands                                    | Corrosion resistant steel  |
| Seals  | NBR (Option: Viton®)   |
| Screws   | Galvanized steel<br>Option: stainless steel  |
| Dust covers, wipers                              | Plastic  |
| Max. operating pressure $p_{max}$                | 8 bar  |
| Max. speed $v$                                   | 2 m/s  |

For further technical information see catalogue P-A4P011GB

**Clean Room Cylinder Ø 16-32 mm  
Certified to DIN EN ISO 14644-1**



**Standard Versions:**

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing
- Stainless steel screws

**Special Versions:**

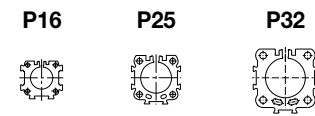
- Slow speed lubrication
- Viton® seals

**Features:**

- Clean room classification  
ISO Class 4 at  $v_m = 0.14$  m/s  
ISO Class 5 at  $v_m = 0.5$  m/s
- Suitable for smooth slow speed operation down to  $v_{min} = 0.005$  m/s
- Optional stroke length up to 1200 mm (longer strokes on request)
- Low maintenance
- Compact design with equal force and velocity in both directions
- Aluminium piston with bearing rings to support high direct and cantilever loads



**Size Comparison**



**Weight (mass) [kg]**

| Cylinder series<br>(Basic cylinder) | Weight (Mass) [kg] |                   |
|-------------------------------------|--------------------|-------------------|
|                                     | At 0 mm stroke     | per 100 mm stroke |
| <b>OSP-P16</b>                      | 0.22               | 0.1               |
| <b>OSP-P25</b>                      | 0.65               | 0.197             |
| <b>OSP-P32</b>                      | 1.44               | 0.354             |

For further technical information see catalogue P-A4P011GB

| Characteristics                                  | Description  |
|--|--|
| <b>General Features</b>                          |  |
| Type   | Rodless cylinder   |
| Series   | OSP-P  |
| System   | Double-acting, with cushioning, position sensing capability  |
| Mounting   | See drawings   |
| Air Connection                                   | Threaded   |
| Ambient temperature range $T_{min}$ to $T_{max}$ | -10 °C Other temperature ranges<br>+80 °C on request   |
| Installation                                     | In any position  |
| Medium   | Filtered, unlubricated compressed air (other media on request)   |
| Lubrication                                      | Permanent grease lubrication (additional oil mist lubrication not required)<br>Option: special slow speed grease |
| <b>Material</b>                                  |  |
| Cylinder Profile                                 | Anodized aluminium   |
| Carrier (piston)                                 | Anodized aluminium   |
| End caps   | Aluminium, lacquered   |
| Sealing bands                                    | Corrosion resistant steel  |
| Seals  | NBR (Option: Viton®)   |
| Screws   | Stainless steel  |
| Covers   | Anodised aluminium   |
| Guide plate                                      | Plastic  |
| Max. operating pressure $p_{max}$                | 8 bar  |

Order Instructions - Clean Room Cylinder

|      |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4  | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| OSPP | 25  | 4 | 7 | 0 | 0  | 1  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø |  |
|----------|--|
| 16       |  |
| 25       |  |
| 32       |  |

| Stroke Length                     |  |
|-----------------------------------|--|
| in mm<br>(5 digits) <sup>2)</sup> |  |

| Piston Mounting |         |
|-----------------|---------|
| 0               | without |

| add. Guide Carriage |         |
|---------------------|---------|
| 0                   | without |

| Measuring system |         |
|------------------|---------|
| 0                | without |

| Screws |           |
|--------|-----------|
| 1      | Stainless |

| Cushioning |          |
|------------|----------|
| 0          | Standard |

| Version / Piston |            |
|------------------|------------|
| 4                | Clean room |

| Lubrication |                          |
|-------------|--------------------------|
| 0           | Standard                 |
| 1           | Slow speed <sup>1)</sup> |

| End cap position |                   |
|------------------|-------------------|
| 0                | L+R 0° = in front |

| Guides/ Brakes/ Inversion |         |
|---------------------------|---------|
| 0                         | without |

| Cover / Cable Channel |                         |
|-----------------------|-------------------------|
| 0                     | Standard                |
| 1                     | Cable channel           |
| 2                     | Cable channel two-sided |
| X                     | without Cover rail      |

| Air Connection |                       |
|----------------|-----------------------|
| 7              | End cap<br>Clean room |

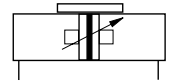
| Seals |                |
|-------|----------------|
| 0     | Standard (NBR) |
| 1     | Viton®         |

<sup>1)</sup> The combination „Slow speed lubrication“ and „Viton® sealings“ are available on request.

<sup>2)</sup> max. stroke lengths 1200 mm, longer strokes on request.

## Components for EX-Areas



### Information for ATEX-Directives

The rodless pneumatic cylinders of Parker Origa are the first linear drive unit, for that Ex range in the group of equipment II, Category 2 GD are certified.

Detail informations for use pneumatic components in Ex-Areas see leaflet PDE2584TCUK „EU Directive 94/9/EG (ATEX 95) for Pneumatic Components“.

### Rodless Cylinder Ø 10-80 mm Basic Cylinder - Series: OSP-P .. ATEX



### Plain Bearing Guide Ø 16-80 mm SLIDELINE - Series: SL .. ATEX



### BASIC GUIDE Ø 25-50 mm Basic Guide - Series: BG .. ATEX



### Technical Data (deviant to the Standard Cylinder)

| Characteristics                                 | Description  |
|---|--|
| <b>General Features</b>                         |  |
| Ambient temperature range $T_{min}$ / $T_{max}$ | -10 °C / +60 °C  |
| Max. switching frequency                        | 1 (double stroke/s) Basic cylinder 0.5 (1stroke/s) Cylinder with guide   |
| Operating pressure range $p_{max}$              | Max. 8 bar   |
| Max. speed $v_{max}$                            | 3 (Basic cylinder) 2 (Cylinder with guide SLIDELINE and cylinder with guide BASIC GUIDE)   |
| Medium  | Filtered, unlubricated compressed air – free from water and dirt to ISO 8573-1<br>Solids: Class 7 particle size < 40 µm for Gas<br>Water content: pressure dew point +3 °C, class 4, but at least 5 °C below minimum operating temperature |
| Noise level                                     | 70 dB (A)  |
| <b>Information for materials</b>                |  |
| Aluminium                                       | See data sheet "Material"  |
| Lubrication                                     | See security data sheet "Grease for use in Cylinder with guides"   |
| Sealing bands                                   | Corrosion resistant steel  |

### Equipment Group II Categorie 2GD

Rodless cylinder: II 2GD c T4 T135°C -10°C ≤ Ta ≤ +60°C

| Series      | Size       | Stroke range | Accessories         |
|-------------|------------|--------------|---------------------|
| OSP-P       | Ø 10 to 80 | 1– 6000 mm   | Mountings programme |
| BASIC GUIDE | Ø 25 to 50 | 1– 6000 mm   | Mountings programme |
| SLIDELINE   | Ø 16 to 80 | 1– 5500 mm   | Mountings programme |

For further technical information see catalogue P-A4P011GB



## Synchronised Rodless Cylinder

Ø 40 mm

For synchronised bi-parting movements

Type OSP-P40-SL-BP

### Applications:

- Opening and closing operations
- Gripping of workpieces – outside
- Gripping of hollow workpieces – inside
- Gripping underneath larger objects
- Clamping force adjustable via pressure regulator

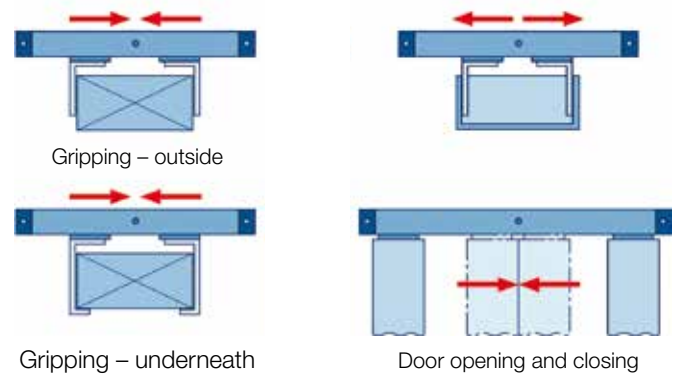
### Features:

- Accurate bi-parting movement through toothed belt synchronization
- Optimum slow speed performance
- Increased action force
- Anodized aluminium guide rail with prism-form slideway arrangement
- Adjustable polymer slide units
- Combined sealing system with polymer and felt elements to remove dirt and lubricate the slideway
- Integrated grease nipples for guide lubrication

**OSP**  
ORIGA  
SYSTEM  
PLUS



### Applications:



| Characteristics                      | Description  |
|--------------------------------------|--|
| <b>General Features</b>              |  |
| Type                                 | Rodless cylinder for synchronised bi-parting movements                   |
| Series                               | OSP-P  |
| System                               | Double-acting with end cushioning for contactless position sensing       |
| Guide                                | Slideline SL40   |
| Synchronisation                      | Toothed belt   |
| Mounting                             | See drawings   |
| Ambient temperature range            | -10 °C to +60 °C   |
| Installation                         | In any position  |
| Medium                               | Filtered, unlubricated compressed air (other media on request)           |
| Lubrication                          | Special slow speed grease - additional oil mist lubrication not required |
| Operating pressure $p_{max}$         | 6 bar  |
| Cushioning middle position           | Elastic buffer   |
| Max. speed $v_{max}$                 | 0.2 m/s  |
| Max. stroke of each stroke           | 500 mm   |
| Max. mass per guide carrier          | 25 kg  |
| <b>Max. moments on guide carrier</b> |  |
| Lateral moment $Mx_{max}$            | 25 Nm  |
| Axial moment $My_{max}$              | 46 Nm  |
| Rotating moment $Mz_{max}$           | 46 Nm  |
| <b>Material</b>                      |  |
| Toothed belt                         | Steel-corded polyurethane  |
| Belt wheel                           | Aluminium  |

For further technical information see catalogue P-A4P011GB

# OSP

ORIGA  
SYSTEM  
PLUS

## Adaptive modular system

The Origa system plus – OSP – provides a comprehensive range of linear guides for the pneumatic and electric linear drives.

### Advantages:

- Takes high loads and forces
- High precision
- Smooth operation
- Can be retrofitted
- Can be installed in any position

### Rodless Pneumatic Cylinder Series OSP - P

Piston diameters 10 – 80 mm

See page 129 (Standard)

See page 136 (ATEX-Version)



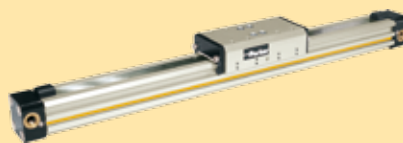
### BASIC GUIDE

Compact, robust plain bearing guide for medium loads.

Piston diameters 25 – 50 mm

See page 139 (Standard)

See page 136 (ATEX-Version)



## Linear Guides

### SLIDELINE

The cost-effective plain bearing guide for medium loads. Active/ Passive Brake optional.

Piston diameters 16 – 80 mm

See page 141 (Standard)

See page 136 (ATEX-Version)



### POWERSLIDE

The roller guide for heavy loads and hard application conditions

Piston diameters 16 – 50 mm

See page 143



### PROLINE

The compact aluminium roller guide for high loads and velocities.

Active/ Passive Brake optional.

Piston diameters 16 – 50 mm

See page 145



### STARLINE

Recirculating ball bearing guide for very high loads and precision

Piston diameters 16 – 50 mm

See page 147



### KF GUIDE

Recirculating ball bearing guide. Correspond to FESTO dimensions (Type DGPL-KF)

Piston diameters 16 – 50 mm

See page 151



### HD HEAVY DUTY GUIDE

Recirculating ball bearing guide for highest loads and greatest accuracy.

Piston diameters 25 – 50 mm

See page 153



**Plain Bearing Guide**  
**BASIC GUIDE**  
**Series BG 25 to 50 for Linear Drive**  
**Compact, robust plain bearing guide**  
**for medium loads**



**Features:**

- Compact: guide rail integrated in cylinder profile tube
- Robust: wiper system and grease nipples for long service life
- smooth operation
- simple to (re-) adjust
- Integrated grease nipples
- Any length of stroke up to 6000 mm (longer strokes on request)

**Options:**

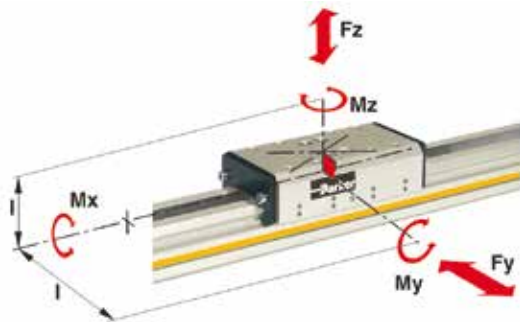
- Corrosion resistant version available on request
- VOE-Valves

**Accessories:**

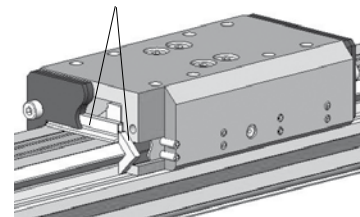
- Mid-Section Support
- End Cap Mountings
- Magnetic Switches

**Loads, Forces and Moments**

**Loads, Forces and Moments**



Composite sealing system with high-tech polymer and felt wiper elements to remove dirt and lubricate the slideways.



**Technical Data**

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

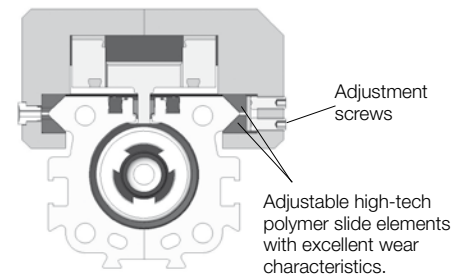
The load and moment figures apply to speeds  $v < 0.2$  m/s.

For further technical information see catalogue P-A4P011GB

**\* Please note:**

In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$



The sum of the loads should not exceed >1.

| Series      | Max. Moments [Nm] |     |     | Max. Load [Nm] | Mass of Basic Guide [kg] |                | Mass* of guide carriage [kg] | Cushion Length [mm] |
|-------------|-------------------|-----|-----|----------------|--------------------------|----------------|------------------------------|---------------------|
|             | Mx                | My  | Mz  |                | Fy, Fz                   | at 0 mm stroke |                              |                     |
| <b>BG25</b> | 10                | 28  | 28  | 590            | 1.09                     | 0.22           | 0.29                         | 17                  |
| <b>BG32</b> | 17                | 43  | 43  | 850            | 2.26                     | 0.38           | 0.69                         | 20                  |
| <b>BG40</b> | 39                | 110 | 110 | 1600           | 3.52                     | 0.41           | 1.37                         | 27                  |
| <b>BG50</b> | 67                | 165 | 165 | 2000           | 5.30                     | 0.58           | 1.91                         | 30                  |

Order Instructions- BASIC GUIDE

|        |     |   |    |    |    |    |       |    |    |    |    |    |    |    |
|--------|-----|---|----|----|----|----|-------|----|----|----|----|----|----|----|
| 1-6    | 7+8 | 9 | 10 | 11 | 12 | 13 | 14-18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| OSPPBG | 25  | 0 | 0  | 0  | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø |
|----------|
| 25       |
| 32       |
| 40       |
| 50       |

| Stroke                    |
|---------------------------|
| Input in mm<br>(5 digits) |

| Piston Mounting |
|-----------------|
| 0 without       |

| Cover / Cable Channel                              |
|--|
| 0 standard   |
| 1 cable channel dove tail<br>Ø32, 40, 50           |
| 2 cable channel dove tail two-sided<br>Ø32, 40, 50 |

| Version / Piston                |
|---------------------------------|
| 0 Standard                      |
| 1 Tandem                        |
| * 6 ATEX Standard <sup>3)</sup> |

| Screws      |
|-------------|
| 0 standard  |
| 1 stainless |

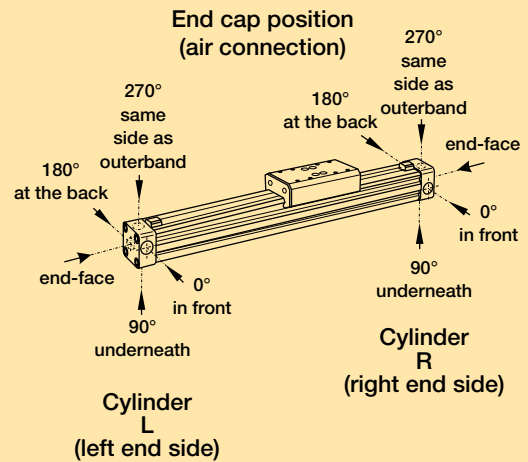
| Cushioning |
|------------|
| 0 standard |

| Lubrication                |
|----------------------------|
| 0 standard                 |
| 1 slow speed <sup>2)</sup> |

| End cap position  |
|---|
| 0 l+r 0° = in front                                     |
| 1 l+r 90° = underneath                                  |
| 2 l+r 180° = at the back                                |
| 3 l+r 270° = same side as outerband                     |
| 4 l 90° = underneath; r 0° = in front                   |
| 5 l 180° = at the back; r 0° = in front                 |
| 6 l 270° = same side as outerband; r 0° = in front      |
| 7 l 0° = in front; r 90° = underneath                   |
| 8 l 180° = at the back; r 90° = underneath              |
| 9 l 270° = same side as outerband; r 90° = underneath   |
| A l 0° = in front; r 180° = at the back                 |
| B l 90° = underneath; r 180° = at the back              |
| C l 270° = same side as outerband; r 180° = at the back |
| D l 0° = in front; r 270° = same side as outerband      |
| E l 90° = underneath; r 270° = same side as outerband   |
| F l 180° = at the back; r 270° = same side as outerband |

| Air Connection                                     |
|--|
| 0 standard   |
| 1 on the end face                                  |
| 2 both at one end (not turnable)                   |
| 3 left standard right end face                     |
| 4 right standard left end face                     |
| A 3/2 way valve VOE 24 V = Ø25, 32, 40, 50         |
| B 3/2 way valve VOE 230 V~/110 V = Ø25, 32, 40, 50 |
| C 3/2 way valve VOE 48 V = Ø25, 32, 40, 50         |
| E 3/2 way valve VOE 110 V~/Ø25, 32, 40, 50         |

| Seals                   |
|-------------------------|
| 0 standard (NBR)        |
| 1 Viton <sup>® 1)</sup> |



<sup>1)</sup> Viton with VOE not possible.

<sup>2)</sup> "Slow speed lubrication" in combination with „Viton<sup>®</sup>“ seals on demand.

<sup>3)</sup> ATEX with VOE not possible.

## Plain Bearing Guide

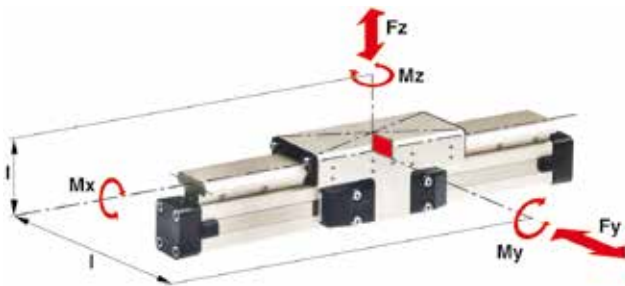
### SLIDELINE

#### Series SL 16 to 80 for Linear Drive

##### Features:

- ATEX-version (without brake) is also available  
See page 136
- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements – optional with integral brake
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways
- Corrosion resistant version available on request
- Any length of stroke up to 5500 mm  
(longer strokes on request)

##### Loads, Forces and Moments



##### Technical Data

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds  $v < 0.2$  m/s.

For further technical information see catalogue P-A4P011GB

##### \* Please note:

In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

- 1) Only with integrated brake: Braking force on dry oil-free surface. Values are decreased for lubricated slideways
- 2) Corrosion resistant fixtures available on request

| Series      | For linear drive | Max. moments [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Maximum braking force at 6 bar [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                            | Mass* of guide carriage [kg] | Order-No.** SLIDELINE <sup>2)</sup><br>Guide without cylinder |              |
|-------------|------------------|-------------------|-----|-----|--------------------------|--|--------------------------------------|----------------------------|------------------------------|---|--------------|
|             |                  | Mx                | My  | Mz  |                          |  | with 0 mm stroke                     | increase per 100 mm stroke |                              | without brake   | with brake   |
| <b>SL16</b> | OSP-P16          | 6                 | 11  | 11  | 325                      | -  | 0.57                                 | 0.22                       | 0.23                         | <b>20341</b>  | -            |
| <b>SL25</b> | OSP-P25          | 14                | 34  | 34  | 675                      | 325  | 1.55                                 | 0.39                       | 0.61                         | <b>20342</b>  | <b>20409</b> |
| <b>SL32</b> | OSP-P32          | 29                | 60  | 60  | 925                      | 545  | 2.98                                 | 0.65                       | 0.95                         | <b>20196</b>  | <b>20410</b> |
| <b>SL40</b> | OSP-P40          | 50                | 110 | 110 | 1600                     | 835  | 4.05                                 | 0.78                       | 1.22                         | <b>20343</b>  | <b>20411</b> |
| <b>SL50</b> | OSP-P50          | 77                | 180 | 180 | 2000                     | 1200   | 6.72                                 | 0.97                       | 2.06                         | <b>20195</b>  | <b>20412</b> |
| <b>SL63</b> | OSP-P63          | 120               | 260 | 260 | 2500                     | -  | 11.66                                | 1.47                       | 3.32                         | <b>20853</b>  | -            |
| <b>SL80</b> | OSP-P80          | 120               | 260 | 260 | 2500                     | -  | 15.71                                | 1.81                       | 3.32                         | <b>21000</b>  | -            |

\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)

Example: SLIDELINE guide without brake D25 mm, stroke 1000 mm: 20342-01000

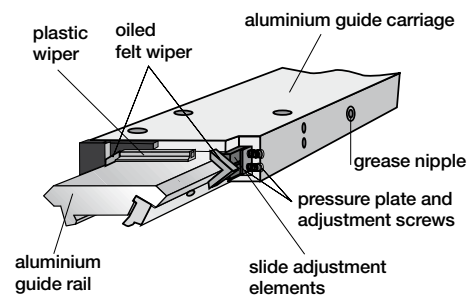


##### Integrated Brake (optional) for series OSP-P25 to OSP-P50:

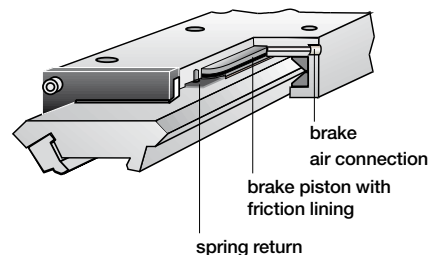
- Actuated by pressure
- Released by exhausting and spring return

For further technical information see catalogue P-A4P011GB

##### Carriage Without Brake



##### Option - Integrated Brake



Order Instructions- SLIDELINE

|      |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4  | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| OSPP | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø |  |
|----------|--|
| 16       |  |
| 25       |  |
| 32       |  |
| 40       |  |
| 50       |  |
| 63       |  |
| 80       |  |

| Stroke                 |  |
|------------------------|--|
| Input in mm (5 digits) |  |

| Piston Mounting |         |
|-----------------|---------|
| 0               | without |

| Measuring system |            |
|------------------|------------|
| 0                | without    |
| X                | SFI 0.1 mm |
| Y                | SFI 1 mm   |

| Screws |           |
|--------|-----------|
| 0      | standard  |
| 1      | stainless |

| Cushioning |          |
|------------|----------|
| 0          | standard |

| Version / Piston |          |
|------------------|----------|
| 0                | standard |
| 1                | Tandem   |

| Lubrication |                          |
|-------------|--------------------------|
| 0           | standard                 |
| 1           | slow speed <sup>2)</sup> |

| End cap position |   |
|------------------|---|
| 0                | l+r 0° = in front                                     |
| 1                | l+r 90° = underneath                                  |
| 2                | l+r 180° = at the back                                |
| 3                | l+r 270° = same side as outerband                     |
| 4                | l 90° = underneath; r 0° = in front                   |
| 5                | l 180° = at the back; r 0° = in front                 |
| 6                | l 270° = same side as outerband; r 0° = in front      |
| 7                | l 0° = in front; r 90° = underneath                   |
| 8                | l 180° = at the back; r 90° = underneath              |
| 9                | l 270° = same side as outerband; r 90° = underneath   |
| A                | l 0° = in front; r 180° = at the back                 |
| B                | l 90° = underneath; r 180° = at the back              |
| C                | l 270° = same side as outerband; r 180° = at the back |
| D                | l 0° = in front; r 270° = same side as outerband      |
| E                | l 90° = underneath; r 270° = same side as outerband   |
| F                | l 180° = at the back; r 270° = same side as outerband |

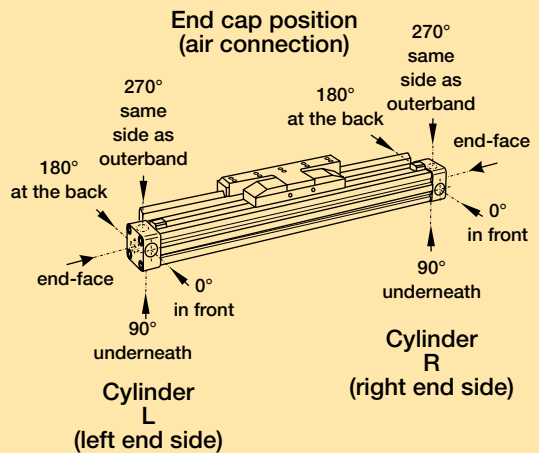
| Guides/ Brakes/ Inversion |   |
|---------------------------|---|
| 0                         | without                                     |
| 2                         | Slideline SL<br>Ø 16-80                     |
| 3                         | Slideline with Activebrake SL-AB<br>Ø 25-50 |
| 4                         | Slideline with Multibrake SL-MB<br>Ø 25-80  |

| Cover / Cable Channel |                         |
|-----------------------|-------------------------|
| 0                     | standard                |
| 1                     | cable channel           |
| 2                     | cable channel two-sided |
| X                     | without Cover rail      |

| Air Connection |  |
|----------------|--|
| 0              | standard   |
| 1              | on the end face                                  |
| 2              | both at one end (not turnable)                   |
| 3              | left standard right end face                     |
| 4              | right standard left end face                     |
| A              | 3/2 way valve VOE 24 V=<br>Ø 25,32,40,50         |
| B              | 3/2 way valve VOE 230 V~/110 V=<br>Ø 25,32,40,50 |
| C              | 3/2 way valve VOE 48 V=<br>Ø 25,32,40,50         |
| E              | 3/2 way valve VOE 110 V~<br>Ø 25,32,40,50        |

| Seals |                     |
|-------|---------------------|
| 0     | standard (NBR)      |
| 1     | Viton <sup>1)</sup> |

| add. Guide Carriage |  |
|---------------------|--|
| 0                   | without  |
| 2                   | Guide Carriage Slideline SL<br>Ø 16-80                                     |
| 3                   | Guide Carriage Slideline Activebrake SL-AB<br>Ø 26-50                      |
| 4                   | Guide Carriage Slideline Multibrake SL-MB<br>Ø 25-80                       |
| M                   | Guide Carriage Slideline Multibrake SL-MB without brakefunction<br>Ø 25-80 |



<sup>1)</sup> Viton with VOE not possible.

<sup>2)</sup> "Slow speed lubrication" in combination with „Viton®“ seals on demand.

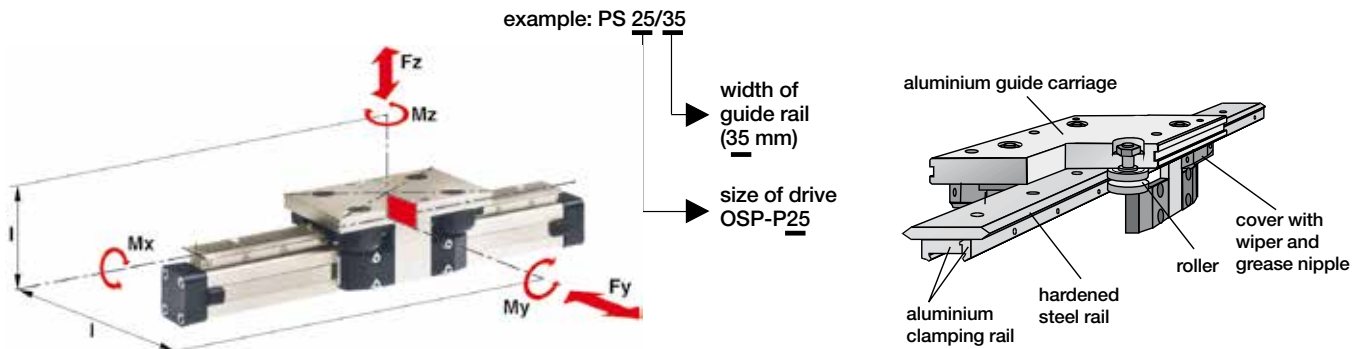
**Roller Guide  
 POWERSLIDE  
 Series PS 16 to 50 for Linear Drive**



**Features:**

- Anodised aluminium guide carriage with vee rollers having 2 rows of ball bearings
- Hardened steel guide rail
- Several guide sizes can be used on the same drive
- Corrosion resistance version available on request
- Max. speed  $v = 3 \text{ m/s}$ ,
- Tough roller cover with wiper and grease nipple
- Any length of stroke up to 3500 mm, (longer strokes on request)

**Loads, Forces and Moments**



**Technical Data**

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

**\* Please note:**  
 In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

For further technical information see catalogue P-A4P011GB

| Series   | For linear drive | Max. Moment [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Mass of linear drive with guide [kg] |                            | Mass* guide carriage [kg] | Order-No**<br>POWERSLIDE<br>Guide without cylinder <sup>1)</sup> |
|----------|------------------|------------------|-----|-----|--------------------------|--------------------------------------|----------------------------|---------------------------|--|
|          |                  | Mx               | My  | Mz  |                          | with 0 mm stroke                     | increase per 100 mm stroke |                           |  |
| PS 16/25 | OSP-P16          | 14               | 45  | 45  | 1400                     | 0.93                                 | 0.24                       | 0.7                       | 20285  |
| PS 25/25 | OSP-P25          | 14               | 63  | 63  | 1400                     | 1.5                                  | 0.4                        | 0.7                       | 20015  |
| PS 25/35 | OSP-P25          | 20               | 70  | 70  | 1400                     | 1.7                                  | 0.4                        | 0.8                       | 20016  |
| PS 25/44 | OSP-P25          | 65               | 175 | 175 | 3000                     | 2.6                                  | 0.5                        | 1.5                       | 20017  |
| PS 32/35 | OSP-P32          | 20               | 70  | 70  | 1400                     | 2.6                                  | 0.6                        | 0.8                       | 20286  |
| PS 32/44 | OSP-P32          | 65               | 175 | 175 | 3000                     | 3.4                                  | 0.7                        | 1.5                       | 20287  |
| PS 40/44 | OSP-P40          | 65               | 175 | 175 | 3000                     | 4.6                                  | 1.1                        | 1.5                       | 20033  |
| PS 40/60 | OSP-P40          | 90               | 250 | 250 | 3000                     | 6                                    | 1.3                        | 2.2                       | 20034  |
| PS 50/60 | OSP-P50          | 90               | 250 | 250 | 3000                     | 7.6                                  | 1.4                        | 2.3                       | 20288  |
| PS 50/76 | OSP-P50          | 140              | 350 | 350 | 4000                     | 11.5                                 | 1.8                        | 4.9                       | 20289  |

<sup>1)</sup> corrosion resistance version available on request (max. loads and moments are 25% lower)

\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
 Example: PS25/25 Guide D25 mm, stroke 1000 mm: 20015-01000

Order Instructions- POWERSLIDE

|      |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4  | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| OSPP | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

**Piston-Ø**  

|    |
|----|
| 16 |
| 25 |
| 32 |
| 40 |
| 50 |

**Stroke**  
 Input in mm  
 (5 digits)

**Piston Mounting**  

|   |         |
|---|---------|
| 0 | without |
|---|---------|

**Measuring system**  

|   |            |
|---|------------|
| 0 | without    |
| X | SFI 0.1 mm |
| Y | SFI 1 mm   |

**Screws**  

|   |           |
|---|-----------|
| 0 | standard  |
| 1 | stainless |

**Cushioning**  

|   |                           |
|---|---------------------------|
| 0 | standard                  |
| 1 | max. length <sup>3)</sup> |

**Version / Piston**  

|   |          |
|---|----------|
| 0 | standard |
| 1 | Tandem   |

**Lubrication**  

|   |                            |
|---|----------------------------|
| 0 | standard                   |
| 1 | Slow speed <sup>2)3)</sup> |

**End cap position**  

|   |   |
|---|---|
| 0 | l+r0° = in front                                    |
| 1 | l+r90° = underneath                                 |
| 2 | l+r180° = at the back                               |
| 3 | l+r270° = same side as outerband                    |
| 4 | l90° = underneath; r0° = in front                   |
| 5 | l180° = at the back; r0° = in front                 |
| 6 | l270° = same side as outerband; r0° = in front      |
| 7 | l0° = in front; r90° = underneath                   |
| 8 | l180° = at the back; r90° = underneath              |
| 9 | l270° = same side as outerband; r90° = underneath   |
| A | l0° = in front; r180° = at the back                 |
| B | l90° = underneath; r180° = at the back              |
| C | l270° = same side as outerband; r180° = at the back |
| D | l0° = in front; r270° = same side as outerband      |
| E | l90° = underneath; r270° = same side as outerband   |
| F | l180° = at the back; r270° = same side as outerband |

**Guides/ Brakes/ Inversion**  

|   |                                 |
|---|---------------------------------|
| 0 | without                         |
| E | PSXX/25 Powerslide Ø 16, 25     |
| F | PSXX/35 Powerslide Ø 25, 32     |
| G | PSXX/44 Powerslide Ø 25, 32, 40 |
| H | PSXX/60 Powerslide Ø 40, 50     |
| I | PSXX/76 Powerslide Ø 50         |

**Cover / Cable Channel**  

|   |                    |
|---|--------------------|
| 0 | standard           |
| 1 | channel            |
| 2 | channel two-sided  |
| X | without Cover rail |

**Air Connection**  

|   |   |
|---|---|
| 0 | standard                                    |
| 1 | on the end face                             |
| 2 | both at one end (not turnable)              |
| 3 | left standard right end face                |
| 4 | right standard left end face                |
| A | 3/2 way valve VOE 24V= Ø 25,32,40,50        |
| B | 3/2 way valve VOE 230V~/110V= Ø 25,32,40,50 |
| C | 3/2 way valve VOE 48V= Ø 25,32,40,50        |
| E | 3/2 way valve VOE 110V~ Ø 25,32,40,50       |

**Seals**  

|   |                       |
|---|-----------------------|
| 0 | standard (NBR)        |
| 1 | Viton <sup>® 1)</sup> |

**add. Guide Carriage**  

|   |  |
|---|--|
| 0 | without  |
| E | Guide Carriage Powerslide PSXX/25 Ø 16, 25     |
| F | Guide Carriage Powerslide PSXX/35 Ø 25, 32     |
| G | Guide Carriage Powerslide PSXX/44 Ø 25, 32, 40 |
| H | Guide Carriage Powerslide PSXX/60 Ø 40, 50     |
| I | Guide Carriage Powerslide PSXX/76 Ø 50         |

**Cylinder L**  
(left end side)

**Cylinder R**  
(right end side)

<sup>1)</sup> Viton with VOE not possible.

<sup>2)</sup> "Slow speed lubrication" in combination with „Viton<sup>®</sup>“ seals on demand.

<sup>3)</sup> „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

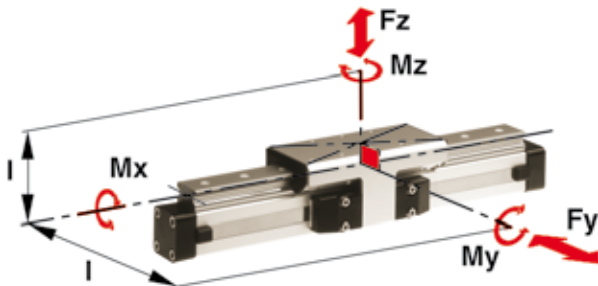


**Aluminium Roller Guide  
 PROLINE  
 Series PL 16 to 50 for Linear Drive**

**Features:**

- High precision
- High velocities (10 m/s)
- Smooth operation - low noise
- Integrated wiper system
- Long life lubrication
- Compact dimensions - compatible to Slideline plain bearing guide
- Any length of stroke up to 3750 mm

**Loads, Forces and Moments**



**Technical Data**

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1. With a load factor of less than 1, service life is 8000 km

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

For further technical information see catalogue P-A4P011GB

**\* Please note:**

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

| Series | For linear drive | Max. Moment [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Maximum braking force at 6 bar [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                           | Mass * guide carriage [kg] | Order-No**<br>PROLINE<br>Guide without cylinder |            |
|--------|------------------|------------------|-----|-----|--------------------------|--|--------------------------------------|---------------------------|----------------------------|---|------------|
|        |                  | Mx               | My  | Mz  |                          |  | with 0mm stroke                      | increase per 100mm stroke |                            | without Brake                                   | with Brake |
| PL 16  | OSP-P16          | 8                | 12  | 12  | 542                      | -  | 0.55                                 | 0.19                      | 0.24                       | 20855   | -          |
| PL 25  | OSP-P25          | 16               | 39  | 39  | 857                      | on request                                       | 1.65                                 | 0.40                      | 0.75                       | 20856   | 20860      |
| PL 32  | OSP-P32          | 29               | 73  | 73  | 1171                     | on request                                       | 3.24                                 | 0.62                      | 1.18                       | 20857   | 20861      |
| PL 40  | OSP-P40          | 57               | 158 | 158 | 2074                     | on request                                       | 4.35                                 | 0.70                      | 1.70                       | 20858   | 20862      |
| PL 50  | OSP-P50          | 111              | 249 | 249 | 3111                     | on request                                       | 7.03                                 | 0.95                      | 2.50                       | 20859   | 20863      |

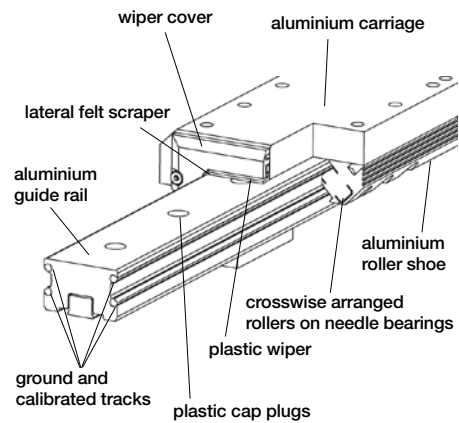
\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
 Example: PROLINE guide without brake D16 mm, stroke 1000 mm: 20855-01000



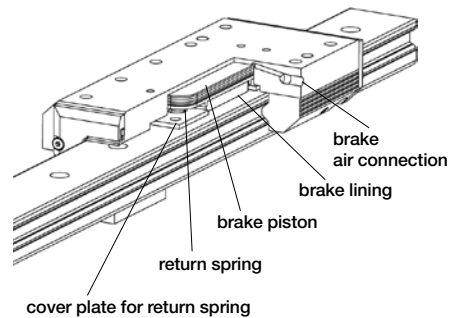
**Integrated Brake (optional)  
 for series OSP-P25 to OSP-P50:**

- Actuated by pressurisation
- Released by depressurisation and spring actuation

**Carriage Without Brake**



**Option - Integrated Brake**



Order Instructions- PROLINE

|      |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4  | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| OSPP | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø |
|----------|
| 16       |
| 25       |
| 32       |
| 40       |
| 50       |

| Stroke                 |
|------------------------|
| Input in mm (5 digits) |

| Piston Mounting |
|-----------------|
| 0 without       |

| Measuring system |
|------------------|
| 0 without        |
| X SFI 0.1 mm     |
| Y SFI 1 mm       |

| Screws     |
|------------|
| 0 standard |

| Cushioning                  |
|-----------------------------|
| 0 standard                  |
| 1 max. length <sup>3)</sup> |

| Version / Piston |
|------------------|
| 0 standard       |
| 1 Tandem         |

| Lubrication                  |
|------------------------------|
| 0 standard                   |
| 1 Slow speed <sup>2)3)</sup> |

| End cap position  |
|---|
| 0 l+r 0° = in front                                     |
| 1 l+r 90° = underneath                                  |
| 2 l+r 180° = at the back                                |
| 3 l+r 270° = same side as outerband                     |
| 4 l 90° = underneath; r 0° = in front                   |
| 5 l 180° = at the back; r 0° = in front                 |
| 6 l 270° = same side as outerband; r 0° = in front      |
| 7 l 0° = in front; r 90° = underneath                   |
| 8 l 180° = at the back; r 90° = underneath              |
| 9 l 270° = same side as outerband; r 90° = underneath   |
| A l 0° = in front; r 180° = at the back                 |
| B l 90° = underneath; r 180° = at the back              |
| C l 270° = same side as outerband; r 180° = at the back |
| D l 0° = in front; r 270° = same side as outerband      |
| E l 90° = underneath; r 270° = same side as outerband   |
| F l 180° = at the back; r 270° = same side as outerband |

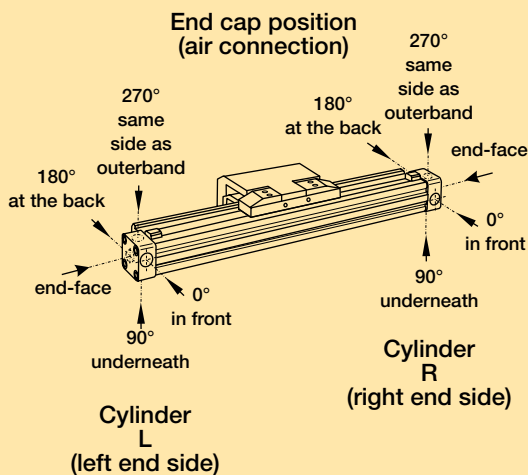
| Guides/ Brakes/ Inversion                |
|--|
| 0 without                                |
| 6 Proline PL Ø 16-50                     |
| 7 Proline with Activebrake PL-AB Ø 25-50 |
| 8 Proline with Multibrake PL-MB Ø 25-50  |

| Cover / Cable Channel     |
|---------------------------|
| 0 standard                |
| 1 cable channel           |
| 2 cable channel two-sided |
| X without Cover rail      |

| Air Connection                                     |
|--|
| 0 standard   |
| 1 on the end face                                  |
| 2 both at one end (not turnable)                   |
| 3 left standard right end face                     |
| 4 right standard left end face                     |
| A 3/2 way valve VOE 24 V = Ø 25, 32, 40, 50        |
| B 3/2 way valve VOE 230 V~/110 V= Ø 25, 32, 40, 50 |
| C 3/2 way valve VOE 48 V= Ø 25, 32, 40, 50         |
| E 3/2 way valve VOE 110 V~ Ø 25, 32, 40, 50        |

| Seals                   |
|-------------------------|
| 0 standard (NBR)        |
| 1 Viton <sup>® 1)</sup> |

| add. Guide Carriage  |
|--|
| 0 without  |
| 6 Guide Carriage Proline PL Ø 16-50                                      |
| 7 Guide Carriage Proline Activebrake PL-AB Ø 25-50                       |
| 8 Guide Carriage Proline Multibrake PL-MB Ø 25-50                        |
| N Guide Carriage Proline Multibrake PL-MB without brake function Ø 25-50 |



<sup>1)</sup> Viton with VOE not possible.

<sup>2)</sup> "Slow speed lubrication" in combination with „Viton<sup>®</sup>“ seals on demand.

<sup>3)</sup> „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

**Recirculating Ball Bearing Guide  
 STARLINE  
 Series STL 16 to 50 for Linear Drive**

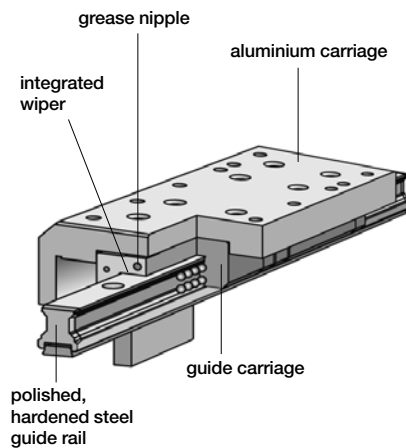
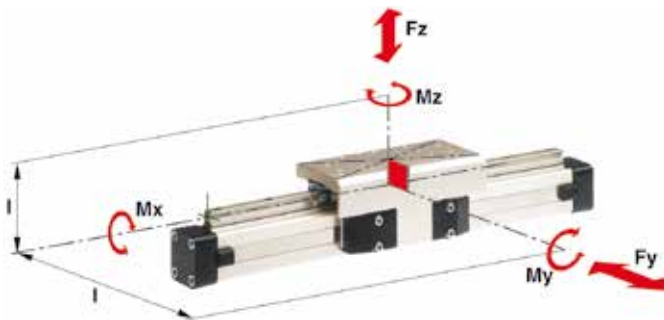


**Features:**

- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage – dimensions compatible with OSP guides SLIDELINE and PROLINE
- Installation height (STL16 - 32) compatible with OSP guides SLIDELINE and PROLINE

- Maximum speed  
 STL16: v = 3 m/s  
 STL25 to 50: v = 5 m/s

**Loads, Forces and Moments**



**Technical Data**

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

For further technical information see catalogue P-A4P011GB

**\* Please note:**

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

| Series        | For linear drive | Max. Moment [Nm] |     |     | Max. loads [N] |      | Mass of linear drive with guide [kg] |                           | Mass * guide carriage [kg] | Order-No** STARLINE Guide without cylinder |
|---------------|------------------|------------------|-----|-----|----------------|------|--------------------------------------|---------------------------|----------------------------|--|
|               |                  | Mx               | My  | Mz  | Fy             | Fz   | with 0mm stroke                      | increase per 100mm stroke |                            |  |
| <b>STL 16</b> | OSP-P16          | 15               | 30  | 30  | 1000           | 1000 | 0.598                                | 0.210                     | 0.268                      | <b>21111</b>                               |
| <b>STL 25</b> | OSP-P25          | 50               | 110 | 110 | 3100           | 3100 | 1.733                                | 0.369                     | 0.835                      | <b>21112</b>                               |
| <b>STL 32</b> | OSP-P32          | 62               | 160 | 160 | 3100           | 3100 | 2.934                                | 0.526                     | 1.181                      | <b>21113</b>                               |
| <b>STL 40</b> | OSP-P40          | 150              | 400 | 400 | 4000           | 7500 | 4.452                                | 0.701                     | 1.901                      | <b>21114</b>                               |
| <b>STL 50</b> | OSP-P50          | 210              | 580 | 580 | 4000           | 7500 | 7.361                                | 0.936                     | 2.880                      | <b>21115</b>                               |

\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
 Example: STARLINE guide D16mm, stroke 1000mm: 21111-01000

## Variable Stop

### Type VS16 to VS50

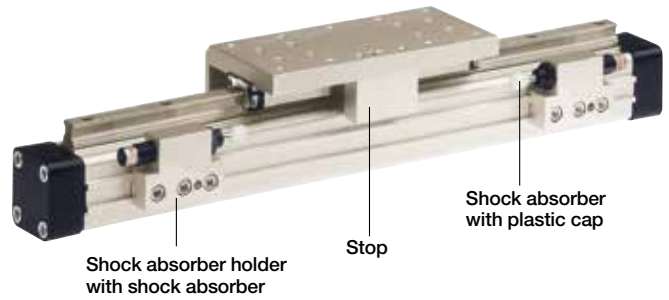
Arrangement with two variable stops

The variable stop Type VS provides simple stroke limitation. It can be retrofitted and positioned anywhere along the stroke length.

For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“.

Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

Depending on the application, two variable stops can be fitted if required.

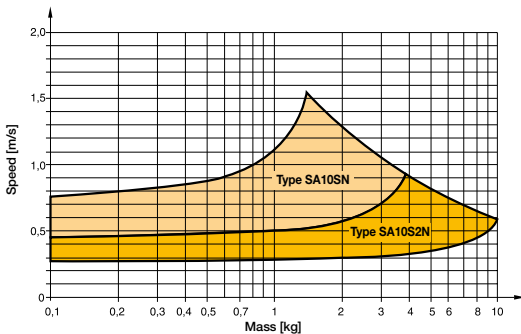


## Shock Absorber Selection

The shock absorber is selected in dependence on the mass and speed.

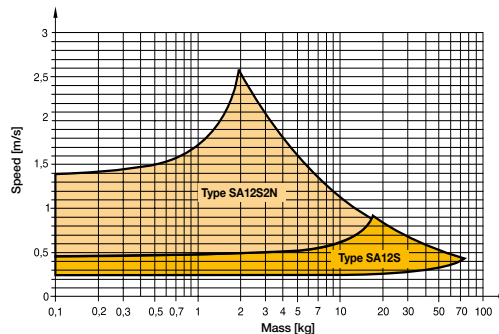
The mass of the carrier itself must be taken into account.

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL16



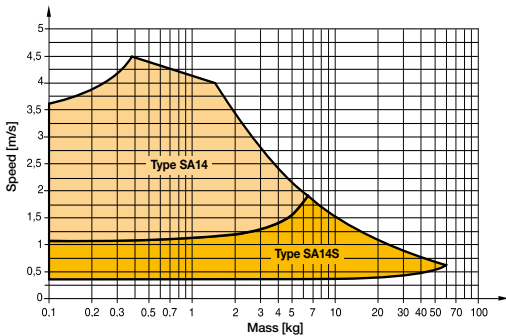
The values relate to an effective driving force of 78 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL25



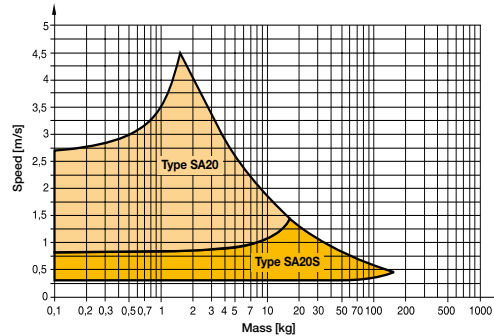
The values relate to an effective driving force of 250 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL32



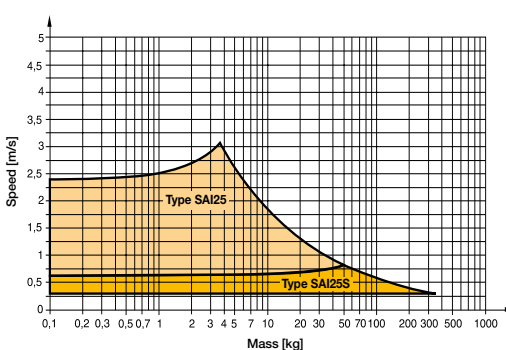
The values relate to an effective driving force of 420 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL40



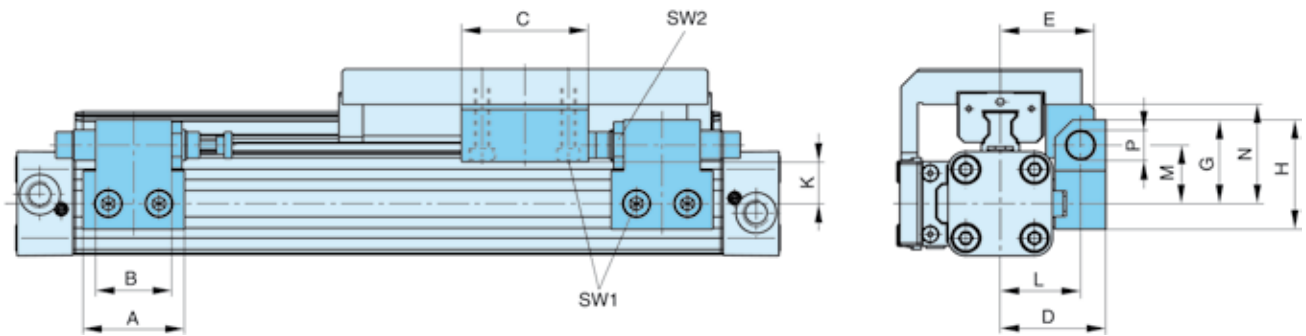
The values relate to an effective driving force of 640 N (6 bar)

### Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-STL50



The values relate to an effective driving force of 1000 N (6 bar)

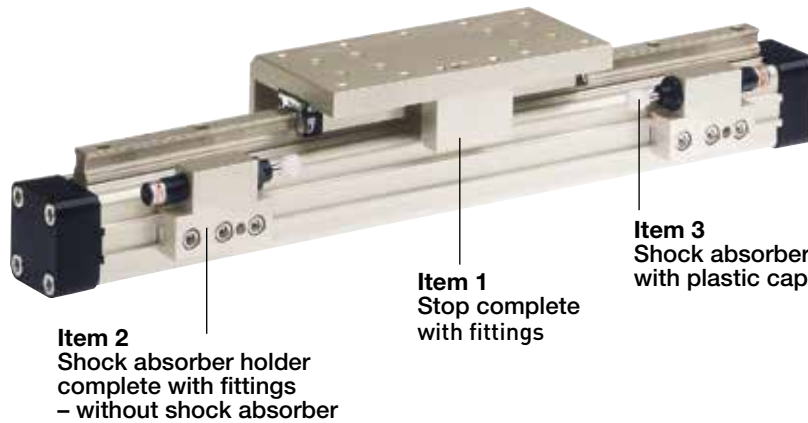
**Dimensions - Variable Stop Type VS16 to VS50**



**Dimension Table [mm] – Variable Stop Type VS16 to VS50**

| Series    | Type | A  | B  | C  | D    | E  | G  | H  | K    | L    | M    | N    | P       | SW1 | SW2  |
|-----------|------|----|----|----|------|----|----|----|------|------|------|------|---------|-----|------|
| OSP-STL16 | VS16 | 30 | 14 | 25 | 33   | 30 | 28 | 38 | 16.2 | 25.5 | 20.5 | 30   | M10x1   | 4   | 12.5 |
| OSP-STL25 | VS25 | 40 | 30 | 50 | 41.5 | 37 | 33 | 43 | 18   | 31.5 | 23   | 39   | M12x1   | 5   | 16   |
| OSP-STL32 | VS32 | 60 | 40 | 50 | 45.5 | 42 | 35 | 45 | 19   | 35.5 | 25   | 48   | M14x1.5 | 5   | 17   |
| OSP-STL40 | VS40 | 84 | 52 | 60 | 64   | 59 | 48 | 63 | 25.6 | 50   | 34   | 58.6 | M20x1.5 | 5   | 24   |
| OSP-STL50 | VS50 | 84 | -  | 60 | 75   | 69 | 55 | 70 | 26.9 | 57   | 38   | 66.9 | M25x1.5 | 5   | 30   |

**Order information - Variable Stop Type VS16 to VS50 - without cylinder and without guide**



| Item | Description                    | Size    |           |         |           |       |           |       |           |        |           |        |           |
|------|--------------------------------|---------|-----------|---------|-----------|-------|-----------|-------|-----------|--------|-----------|--------|-----------|
|      |                                | VS16    |           | VS25    |           | VS32  |           | VS40  |           | VS50   |           |        |           |
|      |                                | Type    | Order No. | Type    | Order No. | Type  | Order No. | Type  | Order No. | Type   | Order No. | Type   | Order No. |
| 1    | Stop, complete                 | -       | 21196FIL  | -       | 21197FIL  | -     | 21198FIL  | -     | 21199FIL  | -      | 21200FIL  | -      | 21201FIL  |
| 2    | Shock absorber holder complete | -       | 21201FIL  | -       | 21202FIL  | -     | 21203FIL  | -     | 21204FIL  | -      | 21205FIL  | -      | 21206FIL  |
| 3*   | Shock absorber, soft           | SA10SN  | 7718FIL   | SA12S2N | 7723FIL   | SA14  | 7708FIL   | SA20  | 7710FIL   | SAI25  | 7712FIL   | SAI25  | 7712FIL   |
|      | Shock absorber, hard           | SA10S2N | 7721FIL   | SA12S   | 7707FIL   | SA14S | 7709FIL   | SA20S | 7711FIL   | SAI25S | 7713FIL   | SAI25S | 7713FIL   |

\* Shock absorber with plastic cap

**Note: Order instructions for VS in combination with the cylinder and guide see page 150, pos.18**

Order Instructions- STARLINE

|             |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|-------------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4         | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| <b>OSPP</b> | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø |  |
|----------|--|
| 16       |  |
| 25       |  |
| 32       |  |
| 40       |  |
| 50       |  |

| Stroke                 |  |
|------------------------|--|
| Input in mm (5 digits) |  |

| Piston Mounting |         |
|-----------------|---------|
| 0               | without |

| Measuring system |            |
|------------------|------------|
| 0                | without    |
| X                | SFI 0.1 mm |
| Y                | SFI 1 mm   |

| Screws |          |
|--------|----------|
| 0      | standard |

| Cushioning |   |
|------------|---|
| 0          | standard  |
| 1          | max. length <sup>3)</sup>                       |
| 2          | VS variable stop, soft left for Starline        |
| 3          | VS variable stop, hard, left for Starline       |
| 4          | VS variable stop, soft, right for Starline      |
| 5          | VS variable stop, hard, right for Starline      |
| 6          | VS variable stop, soft, both sides for Starline |
| 7          | VS variable stop, hard, both sides for Starline |

| Cover / Cable Channel |                         |
|-----------------------|-------------------------|
| 0                     | standard                |
| 1                     | cable channel           |
| 2                     | cable channel two-sided |
| X                     | without Cover rail      |

| Version / Piston |          |
|------------------|----------|
| 0                | standard |
| 1                | Tandem   |

| Lubrication |                            |
|-------------|----------------------------|
| 0           | standard                   |
| 1           | Slow speed <sup>2)3)</sup> |

| Air Connection |   |
|----------------|---|
| 0              | standard  |
| 1              | on the end face                                 |
| 2              | both at one end (not turnable)                  |
| 3              | left standard right end face                    |
| 4              | right standard left end face                    |
| A              | 3/2 way valve VOE 24 V = Ø25, 32, 40, 50        |
| B              | 3/2 way valve VOE 230 V~/110 V= Ø25, 32, 40, 50 |
| C              | 3/2 way valve VOE 48 V= Ø25, 32, 40, 50         |
| E              | 3/2 way valve VOE 110 V~ Ø25, 32, 40, 50        |

| Seals |                       |
|-------|-----------------------|
| 0     | standard (NBR)        |
| 1     | Viton <sup>® 1)</sup> |

| End cap position |   |
|------------------|---|
| 0                | l+r 0° = in front                                     |
| 1                | l+r 90° = underneath                                  |
| 2                | l+r 180° = at the back                                |
| 3                | l+r 270° = same side as outerband                     |
| 4                | l 90° = underneath; r 0° = in front                   |
| 5                | l 180° = at the back; r 0° = in front                 |
| 6                | l 270° = same side as outerband; r 0° = in front      |
| 7                | l 0° = in front; r 90° = underneath                   |
| 8                | l 180° = at the back; r 90° = underneath              |
| 9                | l 270° = same side as outerband; r 90° = underneath   |
| A                | l 0° = in front; r 180° = at the back                 |
| B                | l 90° = underneath; r 180° = at the back              |
| C                | l 270° = same side as outerband; r 180° = at the back |
| D                | l 0° = in front; r 270° = same side as outerband      |
| E                | l 90° = underneath; r 270° = same side as outerband   |
| F                | l 180° = at the back; r 270° = same side as outerband |

| Guides/ Brakes/ Inversion |              |
|---------------------------|--------------|
| 0                         | without      |
| B                         | Starline STL |

| add. Guide Carriage |                             |
|---------------------|-----------------------------|
| 0                   | without                     |
| B                   | Guide Carriage Starline STL |

**End cap position (air connection)**

Cylinder L (left end side)

Cylinder R (right end side)

<sup>1)</sup> Viton with VOE not possible.

<sup>2)</sup> "Slow speed lubrication" in combination with „Viton<sup>®</sup>“ seals on demand.

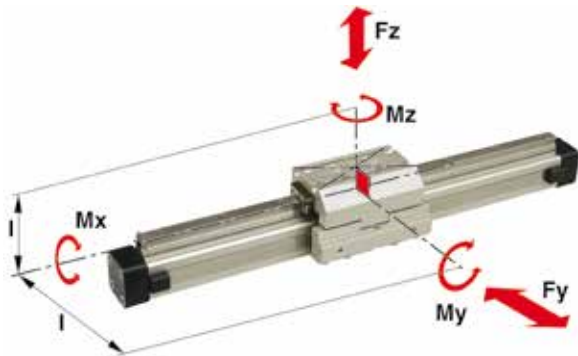
<sup>3)</sup> „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

## Recirculating Ball Bearing Guide Series KF 16 to 50 for Linear Drive

### Features:

- Anodized aluminium guide carriage, the mounting dimensions correspond to FESTO Type: DGPL-KF
- Polished and hardened steel guide rail
- For high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm

### Loads, Forces and Moments



### Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

For further technical information see catalogue P-A4P011GB

| Series      | For linear drive | Max. moment [Nm] |     |     | Max. loads [N] |      | Mass of linear drive with guide [kg] |                           | Mass* guide carriage [kg] | Groove stone<br>Thread size | Order-No.       |                             |
|-------------|------------------|------------------|-----|-----|----------------|------|--------------------------------------|---------------------------|---------------------------|-----------------------------|-----------------|-----------------------------|
|             |                  | Mx               | My  | Mz  | Fy             | Fz   | with 0mm stroke                      | increase per 100mm stroke |                           |                             | Groove Stone    | Guide KF without cylinder** |
| <b>KF16</b> | OSP-P16          | 12               | 25  | 25  | 1000           | 1000 | 0.558                                | 0.21                      | 0.228                     | -                           | -               | <b>21101</b>                |
| <b>KF25</b> | OSP-P25          | 35               | 90  | 90  | 3100           | 3100 | 1.522                                | 0.369                     | 0.607                     | M5                          | <b>13508FIL</b> | <b>21102</b>                |
| <b>KF32</b> | OSP-P32          | 44               | 133 | 133 | 3100           | 3100 | 2.673                                | 0.526                     | 0.896                     | M5                          | <b>13508FIL</b> | <b>21103</b>                |
| <b>KF40</b> | OSP-P40          | 119              | 346 | 346 | 4000           | 7100 | 4.167                                | 0.701                     | 1.531                     | M6                          | <b>13509FIL</b> | <b>21104</b>                |
| <b>KF50</b> | OSP-P50          | 170              | 480 | 480 | 4000           | 7500 | 7.328                                | 0.936                     | 2.760                     | M8                          | <b>13510FIL</b> | <b>21105</b>                |

\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
 Example: KF guide D16 mm, stroke 1000 mm: 21101-01000



- Maximum speed  
 KF16, KF40: v = 3 m/s  
 KF25, KF32, KF50: v = 5 m/s

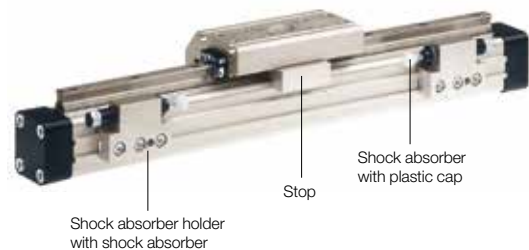
### Variable Stop

The variable stop Type VS provides simple stroke limitation. It can be retrofitted and positioned anywhere along the stroke length. For every cylinder diameter two types of shock absorber are available. Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

Depending on the application, two variable stops can be fitted if required.

#### Variable Stop Type VS16 to VS50

Arrangement with two variable stops



For shock absorber selection in dependence on mass and speed see page 148.

\* **Please note:**

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

**Note: Order instructions for VS in combination with the cylinder and guide see page 152, pos.18**

Order Instructions- KF

|             |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|-------------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4         | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| <b>OSPP</b> | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

**Piston-Ø**

|    |
|----|
| 16 |
| 25 |
| 32 |
| 40 |
| 50 |

**Stroke**

Input in mm  
(5 digits)

**Piston Mounting**

|   |         |
|---|---------|
| 0 | without |
|---|---------|

**Measuring system**

|   |            |
|---|------------|
| 0 | without    |
| X | SFI 0.1 mm |
| Y | SFI 1 mm   |

**Screws**

|   |          |
|---|----------|
| 0 | standard |
|---|----------|

**Cushioning**

|   |   |
|---|---|
| 0 | standard                                  |
| 1 | max. length <sup>3)</sup>                 |
| 2 | VS variable stop, soft left for KF        |
| 3 | VS variable stop, hard, left for KF       |
| 4 | VS variable stop, soft, right for KF      |
| 5 | VS variable stop, hard, right for KF      |
| 6 | VS variable stop, soft, both sides for KF |
| 7 | VS variable stop, hard, both sides for KF |

**Cover / Cable Channel**

|   |                         |
|---|-------------------------|
| 0 | standard                |
| 1 | cable channel           |
| 2 | cable channel two-sided |
| X | without Cover rail      |

**Version / Piston**

|   |                |
|---|----------------|
| C | Classic        |
| T | Classic Tandem |

**Lubrication**

|   |                            |
|---|----------------------------|
| 0 | standard                   |
| 1 | Slow speed <sup>2)3)</sup> |

**Air Connection**

|   |   |
|---|---|
| 0 | standard  |
| 1 | on the end face                                 |
| 2 | both at one end (not turnable)                  |
| 3 | left standard right end face                    |
| 4 | right standard left end face                    |
| A | 3/2 way valve VOE 24 V = Ø 25, 32, 40, 50       |
| B | 3/2 way valve VOE 230 V~/110V= Ø 25, 32, 40, 50 |
| C | 3/2 way valve VOE 48 V = Ø 25, 32, 40, 50       |
| E | 3/2 way valve VOE 110V~ Ø 25, 32, 40, 50        |

**Seals**

|   |                       |
|---|-----------------------|
| 0 | standard (NBR)        |
| 1 | Viton <sup>® 1)</sup> |

**End cap position**

|   |   |
|---|---|
| 0 | l+r 0° = in front                                     |
| 1 | l+r 90° = underneath                                  |
| 2 | l+r 180° = at the back                                |
| 3 | l+r 270° = same side as outerband                     |
| 4 | l 90° = underneath; r 0° = in front                   |
| 5 | l 180° = at the back; r 0° = in front                 |
| 6 | l 270° = same side as outerband; r 0° = in front      |
| 7 | l 0° = in front; r 90° = underneath                   |
| 8 | l 180° = at the back; r 90° = underneath              |
| 9 | l 270° = same side as outerband; r 90° = underneath   |
| A | l 0° = in front; r 180° = at the back                 |
| B | l 90° = underneath; r 180° = at the back              |
| C | l 270° = same side as outerband; r 180° = at the back |
| D | l 0° = in front; r 270° = same side as outerband      |
| E | l 90° = underneath; r 270° = same side as outerband   |
| F | l 180° = at the back; r 270° = same side as outerband |

**Guides/ Brakes/ Inversion**

|   |         |
|---|---------|
| 0 | without |
| C | KF      |

**add. Guide Carriage**

|   |                   |
|---|-------------------|
| 0 | without           |
| C | Guide Carriage KF |

**End cap position (air connection)**

270° same side as outerband  
180° at the back  
end-face  
0° in front  
90° underneath

**Cylinder R (right end side)**

270° same side as outerband  
180° at the back  
end-face  
0° in front  
90° underneath

**Cylinder L (left end side)**

270° same side as outerband  
180° at the back  
end-face  
0° in front  
90° underneath

<sup>1)</sup> Viton with VOE not possible.

<sup>2)</sup> "Slow speed lubrication" in combination with „Viton<sup>®</sup>“ seals on demand.

<sup>3)</sup> „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

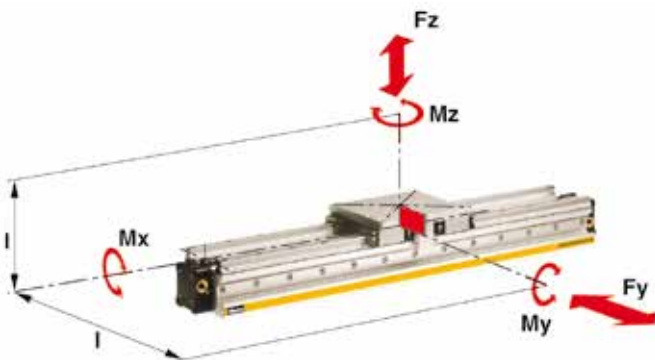


**Heavy Duty Guide  
 HD  
 Series HD 25 to 50 for Linear Drive**

**Features:**

- Guide system: 4-row recirculating ball bearing guide
- Polished and hardened steel guide rail
- For highest loads in all directions
- Highest precision
- Integrated wiper system
- Integrated grease nipples
- Any lengths of stroke up to 3700 mm (longer strokes on request)
- Anodized aluminium guide carriage - dimensions compatible with OSP guide GUIDELINE
- Maximum speed  $v = 5 \text{ m/s}$

**Loads, Forces and Moments**



**Technical Data**

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

For further technical information see catalogue P-A4P011GB

| Series      | For linear drive | Max. moment [Nm] |      |      | Max. loads [N] |       | Mass of linear drive with guide carriage [kg] |                            | Mass* guide [kg] | Order-No.** HD Guide without cylinder |
|-------------|------------------|------------------|------|------|----------------|-------|---|----------------------------|------------------|---------------------------------------|
|             |                  | Mx               | My   | Mz   | Fy             | Fz    | with 0 mm stroke                              | increase per 100 mm stroke |                  |                                       |
| <b>HD25</b> | OSP-P25          | 260              | 320  | 320  | 6000           | 6000  | 3.065   | 0.924                      | 1.289            | <b>21246</b>                          |
| <b>HD32</b> | OSP-P32          | 285              | 475  | 475  | 6000           | 6000  | 4.308   | 1.112                      | 1.367            | <b>21247</b>                          |
| <b>HD40</b> | OSP-P40          | 800              | 1100 | 1100 | 15000          | 15000 | 7.901   | 1.748                      | 2.712            | <b>21248</b>                          |
| <b>HD50</b> | OSP-P50          | 1100             | 1400 | 1400 | 18000          | 18000 | 11.648  | 2.180                      | 3.551            | <b>21249</b>                          |

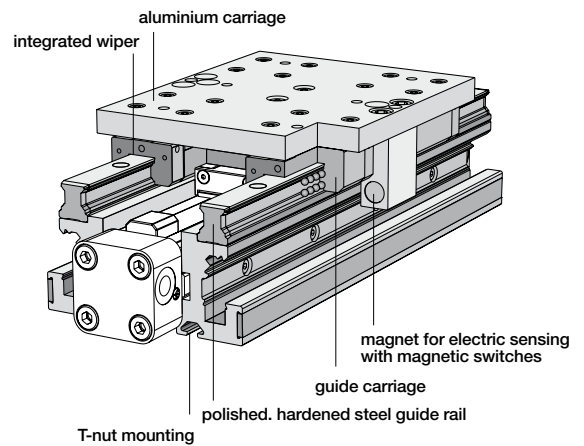
\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
 Example: HD Guide D25 mm, stroke 1000 mm: 21246-01000



**Options:**

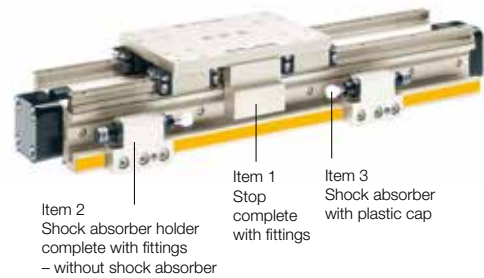
- With variable stop
- With intermediate stop module

**Version with pneumatic linear drive series OSP-P**



**Variable Stop**

**Variable Stop Type VS25 to VS50**



For shock absorber selection in dependence on mass and speed see page 148.

**\* Please note:**

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

**Note: Order instructions for VS in combination with HD guide see page 154, pos. 18**

Order Instructions- HEAVY DUTY - HD

|             |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|-------------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4         | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| <b>OSPP</b> | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

|                 |    |    |    |    |
|-----------------|----|----|----|----|
| <b>Piston-Ø</b> | 25 | 32 | 40 | 50 |
|-----------------|----|----|----|----|

|               |                           |
|---------------|---------------------------|
| <b>Stroke</b> | Input in mm<br>(5 digits) |
|---------------|---------------------------|

|                        |           |
|------------------------|-----------|
| <b>Piston Mounting</b> | 0 without |
|------------------------|-----------|

|                         |           |              |            |
|-------------------------|-----------|--------------|------------|
| <b>Measuring system</b> | 0 without | X SFI 0.1 mm | Y SFI 1 mm |
|-------------------------|-----------|--------------|------------|

|               |            |
|---------------|------------|
| <b>Screws</b> | 0 standard |
|---------------|------------|

|                   |            |                             |                                      |                                       |  |  |   |   |
|-------------------|------------|-----------------------------|--------------------------------------|---------------------------------------|--|--|---|---|
| <b>Cushioning</b> | 0 standard | 1 max. length <sup>3)</sup> | 2 VS variable stop, soft left for HD | 3 VS variable stop, hard, left for HD | 4 VS variable stop, soft, right for HD | 5 VS variable stop, hard, right for HD | 6 VS variable stop, soft, both sides for HD | 7 VS variable stop, hard, both sides for HD |
|-------------------|------------|-----------------------------|--------------------------------------|---------------------------------------|--|--|---|---|

|                         |            |          |
|-------------------------|------------|----------|
| <b>Version / Piston</b> | 0 standard | 1 Tandem |
|-------------------------|------------|----------|

|                    |            |                              |
|--------------------|------------|------------------------------|
| <b>Lubrication</b> | 0 standard | 1 Slow speed <sup>2,3)</sup> |
|--------------------|------------|------------------------------|

|                              |            |                 |                           |                      |
|------------------------------|------------|-----------------|---------------------------|----------------------|
| <b>Cover / Cable Channel</b> | 0 standard | 1 cable channel | 2 cable channel two-sided | X without Cover rail |
|------------------------------|------------|-----------------|---------------------------|----------------------|

|                       |            |                   |                                  |                                |                                |  |  |  |  |
|-----------------------|------------|-------------------|----------------------------------|--------------------------------|--------------------------------|--|--|--|--|
| <b>Air Connection</b> | 0 standard | 1 on the end face | 2 both at one end (not turnable) | 3 left standard right end face | 4 right standard left end face | A 3/2 way valve VOE 24 V = Ø25, 32, 40, 50 | B 3/2 way valve VOE 230 V~/110 V = Ø25, 32, 40, 50 | C 3/2 way valve VOE 48 V = Ø25, 32, 40, 50 | E 3/2 way valve VOE 110 V~/Ø25, 32, 40, 50 |
|-----------------------|------------|-------------------|----------------------------------|--------------------------------|--------------------------------|--|--|--|--|

|              |                  |                         |
|--------------|------------------|-------------------------|
| <b>Seals</b> | 0 standard (NBR) | 1 Viton <sup>® 1)</sup> |
|--------------|------------------|-------------------------|

|                         |                     |                        |                          |                                     |                                       |   |  |                                       |  |   |   |  |   |  |   |   |
|-------------------------|---------------------|------------------------|--------------------------|-------------------------------------|---------------------------------------|---|--|---------------------------------------|--|---|---|--|---|--|---|---|
| <b>End cap position</b> | 0 l+r 0° = in front | 1 l+r 90° = underneath | 2 l+r 180° = at the back | 3 l+r 270° = same side as outerband | 4 l 90° = underneath; r 0° = in front | 5 l 180° = at the back; r 0° = in front | 6 l 270° = same side as outerband; r 0° = in front | 7 l 0° = in front; r 90° = underneath | 8 l 180° = at the back; r 90° = underneath | 9 l 270° = same side as outerband; r 90° = underneath | A l 0° = in front; r 180° = at the back | B l 90° = underneath; r 180° = at the back | C l 270° = same side as outerband; r 180° = at the back | D l 0° = in front; r 270° = same side as outerband | E l 90° = underneath; r 270° = same side as outerband | F l 180° = at the back; r 270° = same side as outerband |
|-------------------------|---------------------|------------------------|--------------------------|-------------------------------------|---------------------------------------|---|--|---------------------------------------|--|---|---|--|---|--|---|---|

|                                  |           |      |
|----------------------------------|-----------|------|
| <b>Guides/ Brakes/ Inversion</b> | 0 without | D HD |
|----------------------------------|-----------|------|

|                            |           |                     |
|----------------------------|-----------|---------------------|
| <b>add. Guide Carriage</b> | 0 without | D Guide Carriage HD |
|----------------------------|-----------|---------------------|

**End cap position (air connection)**

270° same side as outerband  
180° at the back  
end-face  
0° in front  
90° underneath  
Cylinder R (right end side)

180° at the back  
270° same side as outerband  
end-face  
0° in front  
90° underneath  
Cylinder L (left end side)

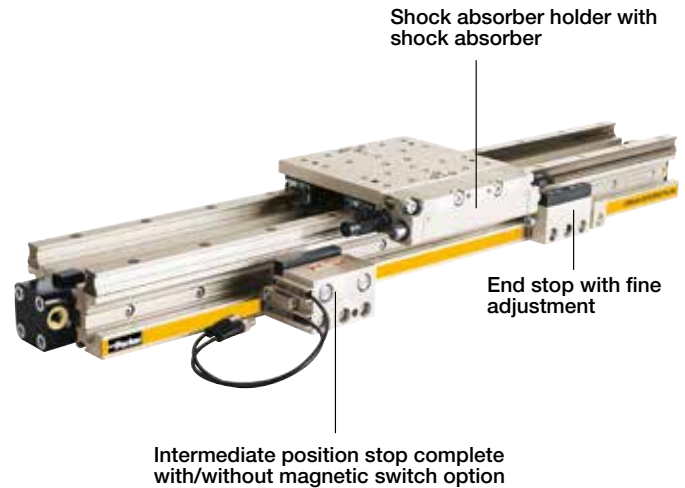
<sup>1)</sup> Viton with VOE not possible.  
<sup>2)</sup> "Slow speed lubrication" in combination with „Viton<sup>®</sup>“ seals on demand.  
<sup>3)</sup> „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

## Intermediate Stop Module

### Type ZSM .. HD

The intermediate stop module ZSM allows the guide carriage to stop at any desired intermediate positions with high accuracy. It can be retrofitted. Depending on the application, i.e. the number of intermediate stops, one or more intermediate position stops can be used. The intermediate position stops can be retracted and extended without the need for the guide carriage to be moved back out of position.

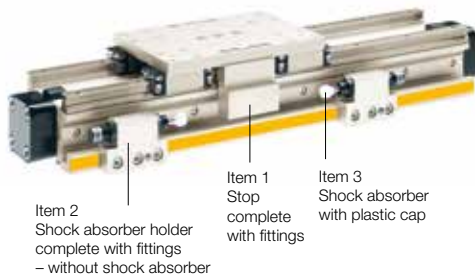
Therefore the guide carriage can be made to stop at the defined intermediate positions in any order.



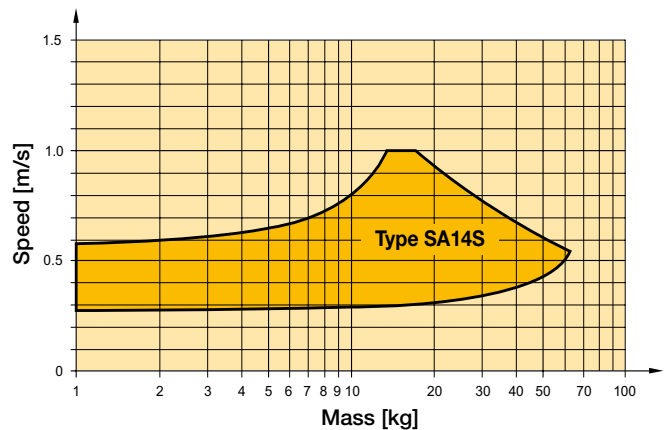
### ORIGA intermediate stop module ZSM:

- Allows stopping at any intermediate positions
- Intermediate position stops can be located steplessly anywhere along the whole stroke length
- Movement to the next position without reverse stroke
- Compact unit
- Cost-effective positioning module without electrical or electronic components
- Option: end stop with fine adjustment

| Operating information      |                |
|----------------------------|----------------|
| Operating pressure range:  | 4 - 8 bar      |
| Temperature range:         | -10°C to +70°C |
| Intermediate position grid | 85 mm          |



### Shock Adsorbers Type SA14S



The values relate to an effective driving force of 250 N (6 bar)

### Order Instructions - Intermediate Stop Module - Type ZSM..HD

| Item | Description   | For intermediate stop module | Order-No. |
|------|---|------------------------------|-----------|
| 1*   | Shock absorber holder with shock absorber SA14S, both sides         | ZSM25HD                      | 21342BFIL |
| 2*   | Shock absorber holder with shock absorber SA14S, left               | ZSM25HD                      | 21342LFIL |
| 3*   | Shock absorber holder with shock absorber SA14S, right              | ZSM25HD                      | 21342RFIL |
| 4    | Intermediate position stop complete, without magnetic switch option | ZSM25HD                      | 21343FIL  |
| 5    | Intermediate position stop complete, with magnetic switch option    | ZSM25HD                      | 21344FIL  |
| 6    | End stop with fine adjustment                                       | ZSM25HD                      | 21346FIL  |

\* The shock absorbers are installed in the shock absorber holder and adjusted in our workshop.

#### Note:

**For movement onwards from the intermediate position, the intermediate position stop must advance.**

**The intermediate position stop can only advance if both cylinder chambers of the OSP-P cylinder are pressurized.**

**For further technical information see catalogue P-A4P011GB**

# OSP

— ORIGA  
— SYSTEM  
— PLUS

## Active Brakes and Passive Brakes

**Active Brake**  
for pneumatic linear drive  
Series OSP-P  
Piston diameters 25 - 80 mm.

See page 157



### Versions:

- ACTIVE Brake
- Plain bearing guide with integrated ACTIVE Brake
- Aluminium roller guide with integrated ACTIVE Brake
- Plain bearing guide with PASSIVE Brake
- Aluminium roller guide with PASSIVE Brake

**Slideline with Active Brake**  
Plain bearing guide SLIDELINE - SL  
with integrated ACTIVE Brake  
Piston diameters 25 - 50 mm.

See page 141



**Proline with Active Brake**  
Aluminium roller guide  
PROLINE - PL with  
integrated ACTIVE Brake  
Piston diameters 25 - 50 mm.

See page 145



**Multibrake with Slideline**  
MULTI BRAKE – PASSIVE Brake  
with plainbearing guide  
SLIDELINE - SL  
Piston diameter 25 - 80 mm.

See page 158



**Multibrake with Proline**  
MULTI BRAKE – PASSIVE Brake  
with aluminium roller guide  
PROLINE - PL  
Piston diameters 25 - 50 mm.

See page 159



**Active Brake**  
**Series AB 25 to 80 for Linear Drive**

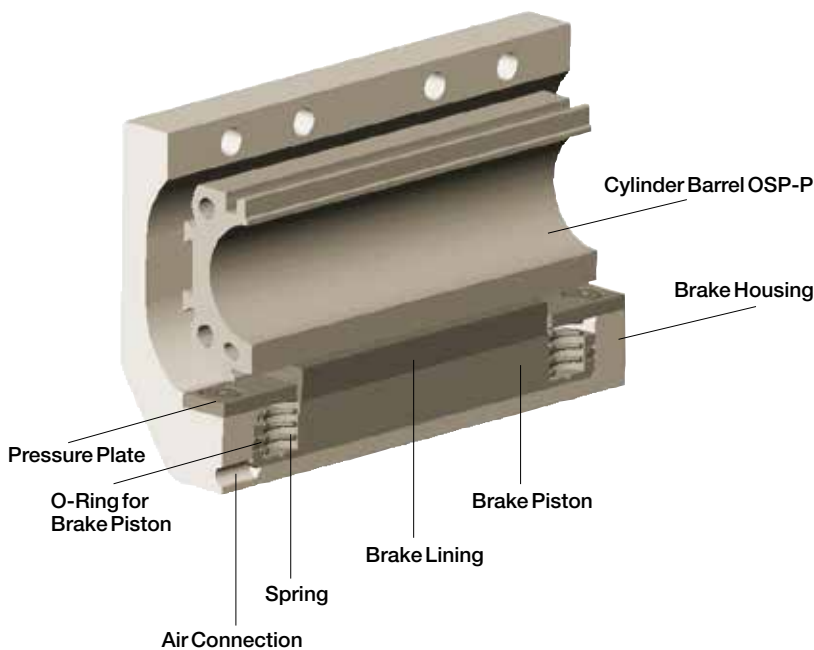


**Features:**

- Actuated by pressurisation
- Released by spring actuation
- Completely stainless version
- Holds position, even under changing load conditions



**Function**



**Forces and Weights**

| Series       | For linear drive | Max. braking force [N] <sup>(1)</sup> | Brake pad way [mm] | Mass [kg]                             |                            |         |
|--------------|------------------|---------------------------------------|--------------------|---------------------------------------|----------------------------|---------|
|              |                  |                                       |                    | Linear drive with brake<br>0mm stroke | increase per 100 mm stroke | Brake * |
| <b>AB 25</b> | OSP-P25          | 350                                   | 2.5                | 1.0                                   | 0.197                      | 0.35    |
| <b>AB 32</b> | OSP-P32          | 590                                   | 2.5                | 2.02                                  | 0.354                      | 0.58    |
| <b>AB 40</b> | OSP-P40          | 900                                   | 2.5                | 2.83                                  | 0.415                      | 0.88    |
| <b>AB 50</b> | OSP-P50          | 1400                                  | 2.5                | 5.03                                  | 0.566                      | 1.50    |
| <b>AB 63</b> | OSP-P63          | 2170                                  | 3.0                | 9.45                                  | 0.925                      | 3.04    |
| <b>AB 80</b> | OSP-P80          | 4000                                  | 3.0                | 18.28                                 | 1.262                      | 5.82    |

For further technical information see catalogue P-A4P011GB

**Note:**  
 For combinations Active Brake AB + SFI-plus + Magnetic Switch contact our technical department please.

**Active brake in combination with Basic Cylinder see page 132, pos.20**

<sup>(1)</sup> – at 6 bar  
 both chambers pressurised with 6 bar  
 Braking surface dry  
 – oil on the braking surface will reduce the braking force

**\* Please Note:**  
 The mass of the brake has to be added to the total moving mass when using the cushioning diagram.

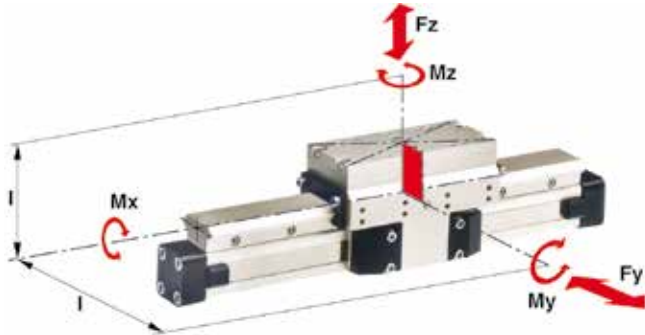
## Multi-Brake Passive Brake

with plain bearing guide Slideline SL  
Series MB-SL 25 to 80 for Linear Drive

### Features:

- Brake operated by spring actuation
- Brake release by pressurisation
- Anodised aluminium rail, with prism shaped slide elements
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Replenishable guide lubrication by integrated grease nipples
- Blocking function in case of pressure loss
- Intermediate stops possible

### Loads, Forces and Moments



### Technical Data

The table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation.

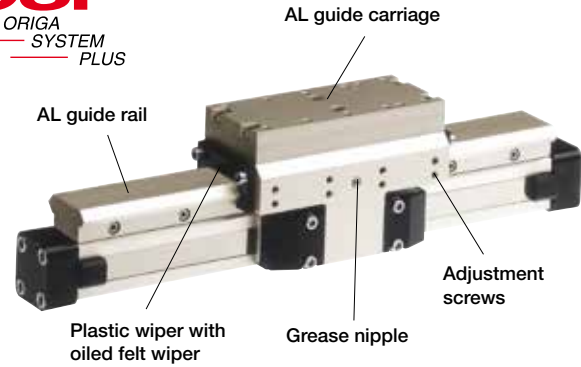
Load and moment data are based on speeds  $v < 0.2$  m/s.  
Operating pressure 4.5 - 8 bar  
A pressure of 4.5 bar is required to release the brake.

For further technical information see catalogue P-A4P011GB

| Series          | For linear drive | Max. moments [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Max. brake force [N] <sup>1)</sup> | Mass of linear drive with guide [kg] |                            | Mass <sup>2)</sup> guide carriage [kg] | Order-No. **<br>MB-SL Guide with passive brake without cylinder* |
|-----------------|------------------|-------------------|-----|-----|--------------------------|------------------------------------|--------------------------------------|----------------------------|--|--|
|                 |                  | Mx                | My  | Mz  |                          |                                    | with 0 mm stroke                     | increase per 100 mm stroke |  |  |
| <b>MB-SL 25</b> | OSP-P25          | 14                | 34  | 34  | 675                      | 470                                | 2.04                                 | 0.39                       | 1.10                                   | <b>20796</b>   |
| <b>MB-SL 32</b> | OSP-P32          | 29                | 60  | 60  | 925                      | 790                                | 3.82                                 | 0.65                       | 1.79                                   | <b>20797</b>   |
| <b>MB-SL 40</b> | OSP-P40          | 50                | 110 | 110 | 1600                     | 1200                               | 5.16                                 | 0.78                       | 2.34                                   | <b>20798</b>   |
| <b>MB-SL 50</b> | OSP-P50          | 77                | 180 | 180 | 2000                     | 1870                               | 8.29                                 | 0.97                       | 3.63                                   | <b>20799</b>   |
| <b>MB-SL 63</b> | OSP-P63          | 120               | 260 | 260 | 2500                     | 2900                               | 13.31                                | 1.47                       | 4.97                                   | <b>20800</b>   |
| <b>MB-SL 80</b> | OSP-P80          | 120               | 260 | 260 | 2500                     | 2900                               | 17.36                                | 1.81                       | 4.97                                   | <b>20846</b>   |

\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
Example: MB-SL guide with passive brake D 25 mm, stroke 1000 mm: 20796-01000

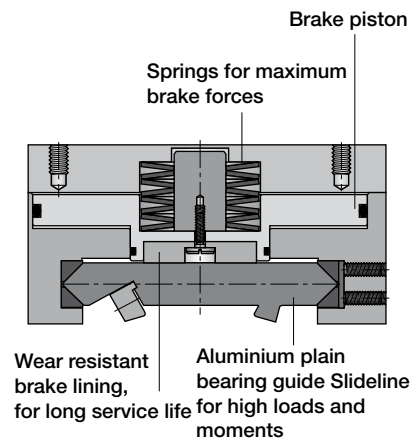
**OSP**  
ORIGA  
SYSTEM  
PLUS



### Function:

The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurisation. The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

### Function



### \* Please note:

in the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

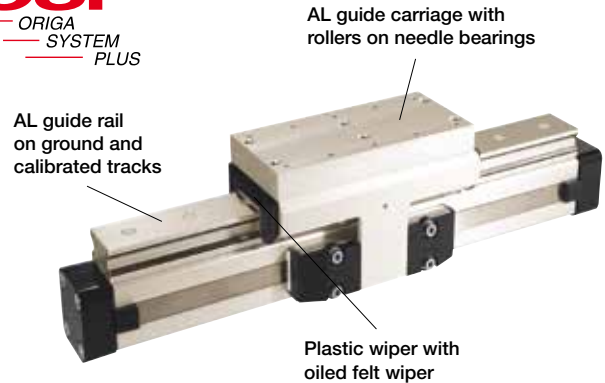
<sup>1)</sup> Braking surface dry – oil on the braking surface will reduce the braking force

**MB-SL in combination with cylinder  
see page 142, pos. 20**

**Multi-Brake  
 Passive Brake**  
 with Aluminium Roller Guide Proline PL  
 Series MB-PL 25 to 50 for Linear Drive

**Features:**

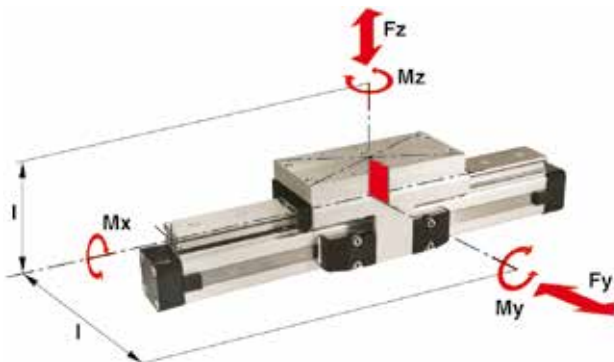
- Brake operated by spring actuation
- Brake release by pressurisation
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Blocking function in case of pressure loss
- Intermediate stops possible



**Function:**

The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurisation. The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

**Loads, Forces and Moments**



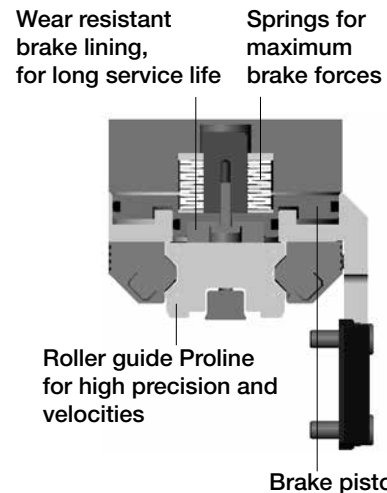
**Technical Data**

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1.  
 With a load factor of less than 1, service life is 8000 km

**Function**



The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

Operating Pressure 4.5 - 8 bar. A pressure of min. 4.5 bar release the brake.

**For further technical information see catalogue P-A4P011GB**

| Series         | For linear drive | Max. moments [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Max. brake force [N] <sup>(1)</sup> | Mass of linear drive with guide [kg] |                            | Mass <sup>(2)</sup> guide carriage [kg] | Order-No. **<br>MB-PL Guide with passive brake without cylinder* |
|----------------|------------------|-------------------|-----|-----|--------------------------|-------------------------------------|--------------------------------------|----------------------------|---|--|
|                |                  | Mx                | My  | Mz  |                          |                                     | with 0 mm stroke                     | increase per 100 mm stroke |   |  |
| <b>MB-PL25</b> | OSP-P25          | 16                | 39  | 39  | 857                      | 315                                 | 2.14                                 | 0.40                       | 1.24                                    | <b>20864</b>   |
| <b>MB-PL32</b> | OSP-P32          | 29                | 73  | 73  | 1171                     | 490                                 | 4.08                                 | 0.62                       | 2.02                                    | <b>20865</b>   |
| <b>MB-PL40</b> | OSP-P40          | 57                | 158 | 158 | 2074                     | 715                                 | 5.46                                 | 0.70                       | 2.82                                    | <b>20866</b>   |
| <b>MB-PL50</b> | OSP-P50          | 111               | 249 | 249 | 3111                     | 1100                                | 8.60                                 | 0.95                       | 4.07                                    | <b>20867</b>   |

\*\* Please use this order pattern: Order-No. + „stroke in mm“ (5 digits)  
 Example: MB-PL guide with passive brake, D25 mm, stroke 1000 mm: 20864-01000

**MB-PL in combination with cylinder see page 146, pos. 20**

## Linear Drive Accessories (Mountings and Magnetic Switches) Series OSP-P

### Description

Overview

Clevis Mounting

End Cap Mountings

End Cap Mountings (for Linear Drives with guides)

Mid-Section Support

Mid-Section Support (for Linear Drives with guides)

Inversion Mounting

Adaptor Profile

T-Slot Profile


Connection Profile

Duplex Connection

Multiplex Connection

Magnetic Switch, standard version

Magnetic Switch for T-Nut mounting

Magnetic Switch ATEX-version 

Cable Cover



See  
Catalogue  
P-A4P011GB

## Origa - Sensoflex

Displacement measuring system for  
automated movement

Series SFI-plus  
(Incremental measuring system)



### Characteristics:

- Contactless magnetic displacement measurement system
- Displacement length up to 32 m
- Resolution 0.1 mm (option: 1 mm)
- Displacement speed up to 10m/s
- For linear and non-linear rotary motion
- Suitable for almost any control or display unit with a counter input

The SFI-plus magnetic displacement measuring system consists of 2 main components.

- Measuring Scale  
Self-adhesive magnetic measuring scale
- Sensing Head  
Converts the magnetic poles into electrical signals which are then processed by counter inputs down stream  
(e.g. PLC, PC, digital counter)

For further technical information see catalogue P-A4P011GB

**Note: Order instructions in combination with basic cylinder see page 132, pos.25**





# ORIGA Pneumatic Linear Drives OSP-L

Very long lifetime and lowest leakage



## A NEW Modular Linear Drive System

With this second generation linear drive Parker Origa offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.

- Completely modular design
- Compatible with the comprehensive ORIGA OSP system component range
- High loads and moments
- Space saving
- For a wide range of loads, speeds and motion profiles

## Introduction – OSP Concept

|  |   |
|--|---|
| <p>Basic Linear Drive<br/> Standard Version</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>               |    |
| <p>Air Connection on the<br/> End-face or both at One End</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul> |    |
| <p>Integrated 3/2 Way Valves</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                              |    |
| <p>Clevis Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>  |    |
| <p>End Cap Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                                       |    |
| <p>Mid-Section Support</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                                    |   |
| <p>Inversion Mounting</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                                     |  |

|   |   |
|---|---|
| <p>Duplex Connection</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                           |    |
| <p>Multiplex Connection</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                        |    |
| <p>Linear Guides<br/> – SLIDELINE</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>              |    |
| <p>Linear Guides<br/> – STARLINE</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>               |    |
| <p>Magnetic Switches</p> <ul style="list-style-type: none"> <li>• Series OSP-L</li> </ul>                           |    |
| <p>Variable Stop VS</p> <ul style="list-style-type: none"> <li>• Series OSP-L<br/> with Linear Guide STL</li> </ul> |  |

# Options and Accessories for system versatility

## Series OSP-L

### STANDARD VERSIONS OSP-L25 to L63

Standard carrier with integral guidance. End cap can be rotated 4 x 90° to position air connection on any side.  
 Magnetic piston as standard.  
 Dovetail profile for mounting of accessories and the cylinder itself.



### BASIC CYLINDER OPTIONS

The special design of the linear drive enables all emissions to be led away.

### STAINLESS VERSION

For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no.1.4301 / 1.4303)



### END-FACE AIR CONNECTION

To solve special installation problems.



### BOTH AIR CONNECTIONS AT ONE END

For simplified tubing connections and space saving.



### INTEGRATED VOE VALVES

The complete compact solution for optimal cylinder control.



### DUPLEX CONNECTION

The duplex connection combines two OSP-L cylinders of the same size into a compact unit with high performance.



### MULTIPLEX CONNECTION

The multiplex connection combines two or more OSP-L cylinders of the same size into one unit. The orientation of the carriers can be freely selected.



## ACCESSORIES

### MAGNETIC SWITCHES TYPE RS, ES, RST, EST

For electrical sensing of end and intermediate piston positions.



### MOUNTINGS FOR OSP-L25 TO L63

#### CLEVIS MOUNTING

Carrier with tolerance and parallelism compensation for driving loads supported by external linear guides.



#### END CAP MOUNTING

For end-mounting of the cylinder.



#### MID-SECTION SUPPORT

For supporting long cylinders or mounting the cylinder by its dovetail rails.



#### INVERSION MOUNTING

The inversion mounting transfers the driving force to the opposite side, e.g. for dirty environments.



# Origa System Plus

## - Innovation from a proven design

The newly developed product line OSP-L can be simply and neatly integrated into any machine layout.

### MOUNTING RAILS ON 3 SIDES

Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, brakes, valves, magnetic switches etc. to be fitted to the cylinder itself. This solves many installation problems, especially where space is limited.

The modular system concept forms an ideal basis for additional customer-specific functions.

Magnetic piston as standard - for contactless position sensing on three sides of the cylinder.

Corrosion resistant steel outer sealing band and robust wiper system on the carrier for use in aggressive environments.

Inner sealing band made of polyurethane for best sealing features and extreme slight friction.

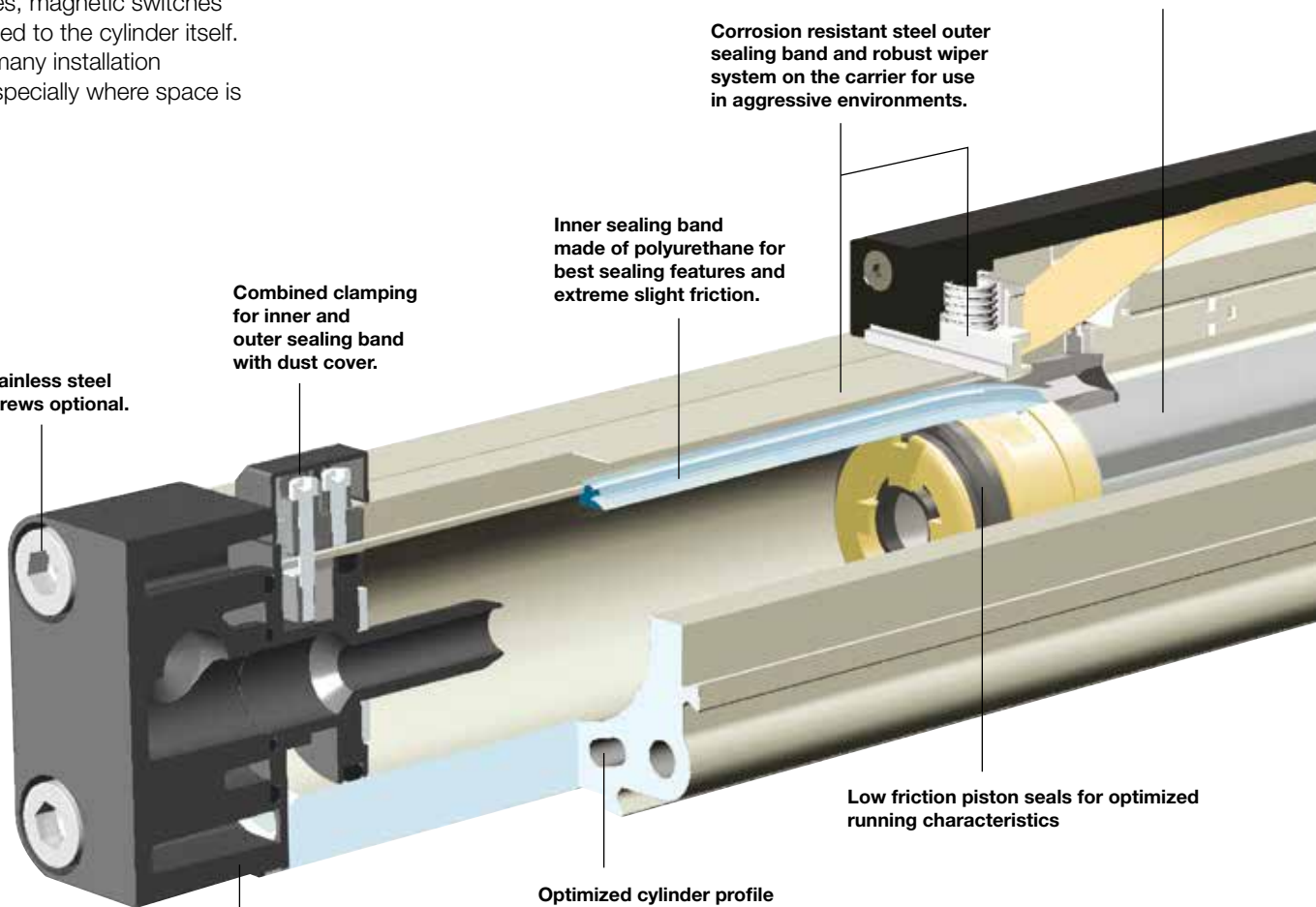
Combined clamping for inner and outer sealing band with dust cover.

Stainless steel screws optional.

Low friction piston seals for optimized running characteristics

End cap can be rotated to any one of the four positions (before or after delivery) so that the air connection can be in any desired position.

Optimized cylinder profile for maximum stiffness and minimum weight. Integral air passages enable both air connections to be positioned at one end, if desired.



**SLIDELINE**  
 Cost-effective  
 plain bearing  
 guide for medium  
 loads.



**STARLINE**  
 Recirculating ball  
 bearing guide for  
 very high loads  
 and precision.



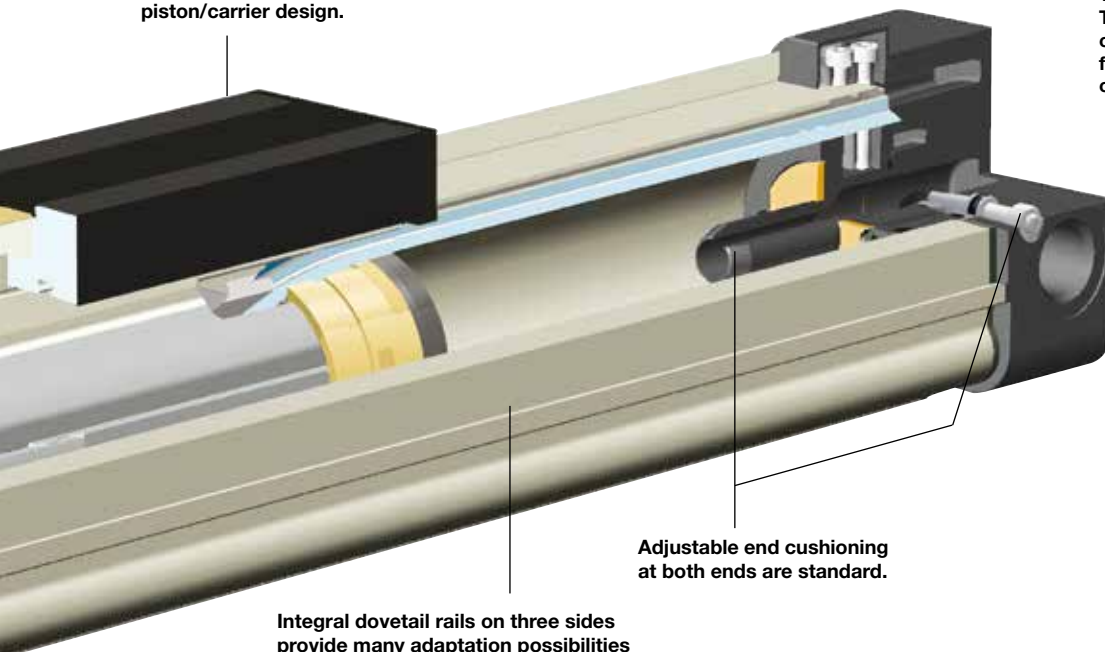
**VARIABLE STOP  
 VS**  
 The variable stop  
 provides simple  
 stroke limitation.



**INTEGRATED  
 VOE VALVES**  
 The complete  
 compact solution  
 for optimal cylinder  
 control.



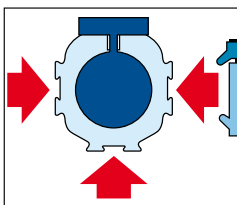
New low profile  
 piston/carrier design.



Adjustable end cushioning  
 at both ends are standard.

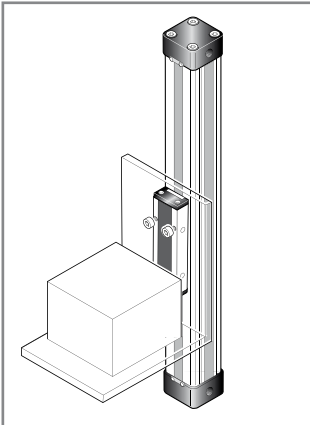
Integral dovetail rails on three sides  
 provide many adaptation possibilities  
 (linear guides, magnetic switches, etc.)

Modular system components  
 are simply clamped on.

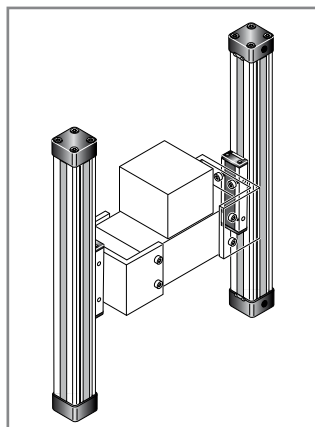


# OSP-L Application examples

ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



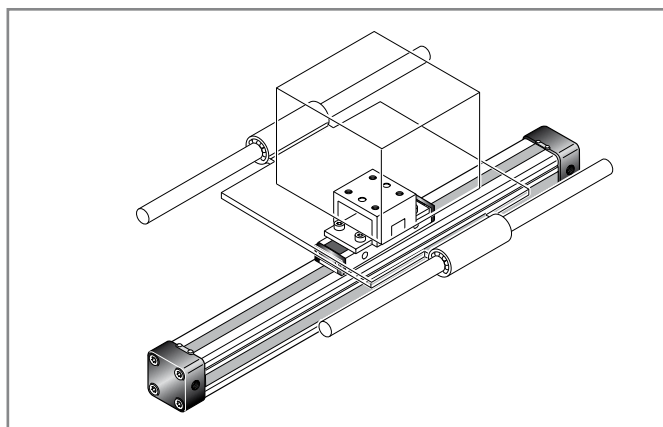
The high load capacity of the piston can cope with high bending moments without additional guides.



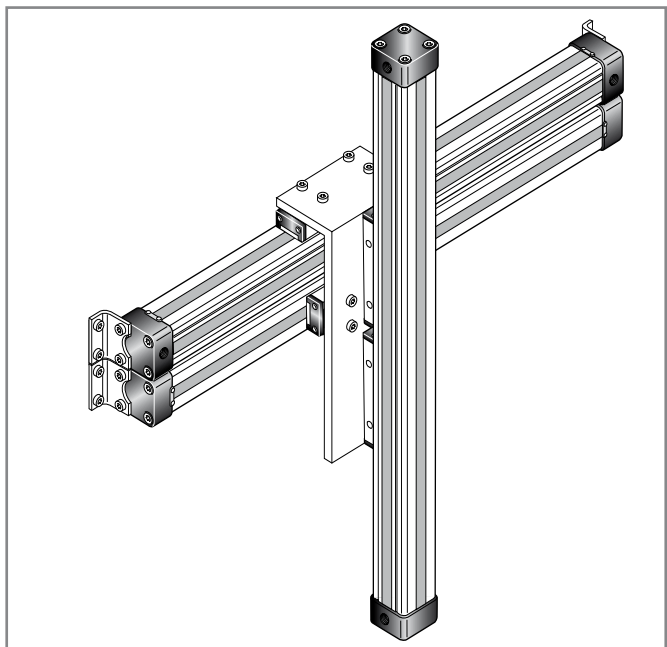
The mechanical design of the OSP-L allows synchronised movement of two cylinders.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.

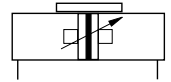


When using external guides, the clevis mounting is used to compensate for deviations in parallelism.



For further information and assembly instructions, please contact your local Parker Origa dealer.

**Rodless Pneumatic Cylinder**  
**Ø 25-63 mm**



**Standard Versions:**

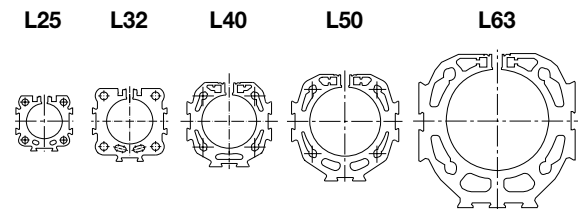
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing



**Special Versions:**

- Stainless steel screws
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves VOE
- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm

**Size Comparison**

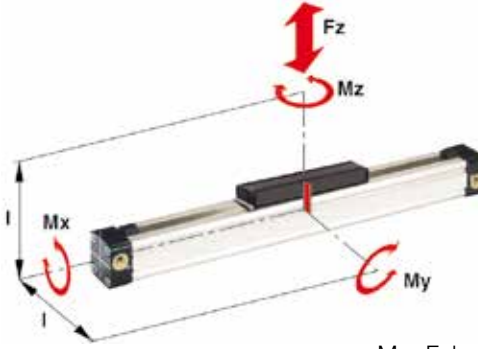


| Characteristics                                  | Description   |
|--|---|
| <b>General Features</b>                          |   |
| Type   | Rodless cylinder  |
| Series   | OSP-L   |
| System   | Double-acting, with cushioning, position sensing capability                 |
| Mounting   | See drawings  |
| Air Connection                                   | Threaded  |
| Ambient temperature range $T_{min}$ to $T_{max}$ | -20 °C Other temperature ranges<br>+80 °C on request                        |
| Installation                                     | In any position   |
| Medium   | Filtered, unlubricated compressed air (other media on request)              |
| Lubrication                                      | Permanent grease lubrication (additional oil mist lubrication not required) |
| <b>Material</b>                                  |   |
| Cylinder Profile                                 | Anodized aluminium  |
| Carrier (piston)                                 | Anodized aluminium  |
| End caps   | Aluminium, lacquered  |
| Sealing bands                                    | Corrosion resistant steel (outer band)<br>Polyurethane (inner band)         |
| Seals  | Polyurethane, NBR   |
| Screws   | Galvanized steel<br>Option: stainless steel                                 |
| Dust covers, wipers                              | Plastic   |
| Max. operating pressure $p_{max}$                | 8 bar   |

## Loads, Forces and Moments

### Choice of cylinder is decided by:

- Permissible loads, forces and moments
- Performance of the pneumatic end cushions.



$M = F \cdot l$   
Bending moments are calculated from the centre of the linear actuator

The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e. g. hydraulic shock absorbers).

The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. Load and moment data are based on speeds  $v \leq 0.5$  m/s.

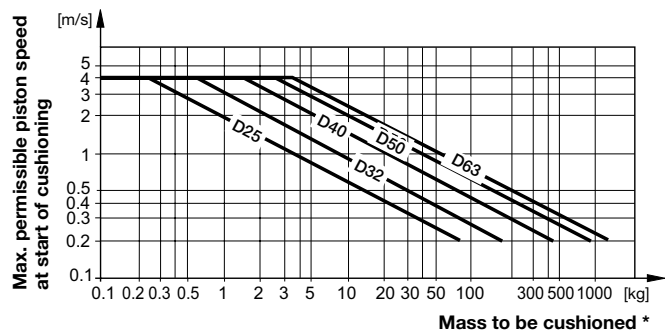
When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.

| Cylinder-Series Ø [mm] | Theoretical Action Force at 6 bar [N] | effektive Action Force $F_A$ at 6 bar [N] | max. Moments |         |         | max. Load F [N] | Cushion Length [mm] |
|------------------------|---------------------------------------|---|--------------|---------|---------|-----------------|---------------------|
|                        |                                       |   | Mx [Nm]      | My [Nm] | Mz [Nm] |                 |                     |
| OSP-L25                | 295                                   | 250                                       | 1.5          | 15      | 3       | 300             | 17                  |
| OSP-L32                | 483                                   | 420                                       | 3            | 30      | 5       | 450             | 20                  |
| OSP-L40                | 754                                   | 640                                       | 6            | 60      | 8       | 750             | 27                  |
| OSP-L50                |                                       |   | in progress  |         |         |                 |                     |
| OSP-L63                |                                       |   | in progress  |         |         |                 |                     |

### Cushioning Diagram

Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required. Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed, and that it is this higher speed which determines the choice of cylinder.

If the permitted values are exceeded, either additional shock absorbers should be fitted in the area of the centre of the gravity or you can consult us about our special cushioning system- we shall be happy to advise you on your specific application.



\* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

### Weight (mass) [kg]

| Cylinder series (Basic cylinder) | Weight (Mass) [kg] |                   |
|----------------------------------|--------------------|-------------------|
|                                  | At 0 mm stroke     | per 100 mm stroke |
| OSP-L25                          | 0.65               | 0.197             |
| OSP-L32                          | 1.44               | 0.354             |
| OSP-L40                          | 1.95               | 0.415             |
| OSP-L50                          | in progress        |                   |
| OSP-L63                          | in progress        |                   |

For further technical information see catalogue P-A4P012GB



## Integrated 3/2 Way Valves

### VOE

#### Series OSP-L25, L32, L40 and L50

For optimal control of the OSP-L cylinder, 3/2 way valves integrated into the cylinder's end caps can be used as a compact and complete solution. They allow for easy positioning of the cylinder, smooth operation at the lowest speeds and fast response, making them ideally suited for the direct control of production and automation processes.

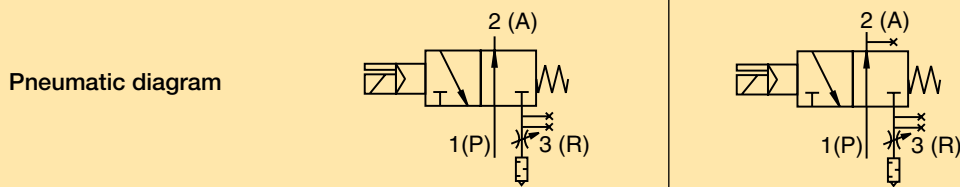


#### Features:

- Complete compact solution
- Various connection possibilities:  
Free choice of air connection with rotating end caps with VOE valves, Air connection can be rotated 4 x 90°
- Solenoid can be rotated 4 x 90°
- Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust ports
- Minimal installation requirements
- Requires just one air connection per valve
- Optimal control of the OSP-L cylinder
- Excellent positioning characteristics
- Integrated operation indicator
- Integrated exhaust throttle valve
- Manual override - indexed
- Adjustable end cushioning
- Easily retrofitted – please note the increase in the overall length of the cylinder!

#### Characteristics 3/2 Way Valves VOE

##### Characteristics 3/2 Way Valves with spring return



| Type                  | VOE-25                        | VOE-32 | VOE-40 | VOE-50 |
|-----------------------|-------------------------------|--------|--------|--------|
| Actuation             | electrical                    |        |        |        |
| Basic position        | P → A open, R closed          |        |        |        |
| Type                  | Poppet valve, non overlapping |        |        |        |
| Mounting              | integrated in end cap         |        |        |        |
| Installation          | in any position               |        |        |        |
| Port size             | G 1/8                         | G 1/4  | G 3/8  | G 3/8  |
| Temperature           | -10°C to +50°C *              |        |        |        |
| Operating pressure    | 2-8 bar                       |        |        |        |
| Nominal voltage       | 24 V DC / 230 V AC, 50 Hz     |        |        |        |
| Power consumption     | 2.5 W / 6 VA                  |        |        |        |
| Duty cycle            | 100%                          |        |        |        |
| Electrical Protection | IP 65 DIN 40050               |        |        |        |

\* other temperature ranges on request

For further technical information see catalogue P-A4P012GB

Order Instructions- Basic Cylinder

|             |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|-------------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4         | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| <b>OSPL</b> | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

|                 |    |    |    |             |             |
|-----------------|----|----|----|-------------|-------------|
| <b>Piston-Ø</b> | 25 | 32 | 40 | in progress | in progress |
|-----------------|----|----|----|-------------|-------------|

|               |                     |
|---------------|---------------------|
| <b>Stroke</b> | in mm<br>(5 digits) |
|---------------|---------------------|

|                        |           |                   |
|------------------------|-----------|-------------------|
| <b>Piston Mounting</b> | 0 without | 1 clevis mounting |
|------------------------|-----------|-------------------|

|                            |           |
|----------------------------|-----------|
| <b>add. Guide Carriage</b> | 0 without |
|----------------------------|-----------|

|                         |           |
|-------------------------|-----------|
| <b>Measuring system</b> | 0 without |
|-------------------------|-----------|

|               |            |             |
|---------------|------------|-------------|
| <b>Screws</b> | 0 standard | 1 Stainless |
|---------------|------------|-------------|

|                   |            |               |
|-------------------|------------|---------------|
| <b>Cushioning</b> | 0 standard | 1 max. length |
|-------------------|------------|---------------|

|                         |            |          |
|-------------------------|------------|----------|
| <b>Version / Piston</b> | 0 standard | 1 Tandem |
|-------------------------|------------|----------|

|                    |            |
|--------------------|------------|
| <b>Lubrication</b> | 0 standard |
|--------------------|------------|

|                         |                     |                         |                          |                                     |                                       |   |  |                                       |  |   |   |  |   |  |   |   |
|-------------------------|---------------------|-------------------------|--------------------------|-------------------------------------|---------------------------------------|---|--|---------------------------------------|--|---|---|--|---|--|---|---|
| <b>End cap position</b> | 0 l+r 0° = in front | 1 l+r 90° = under-neath | 2 l+r 180° = at the back | 3 l+r 270° = same side as outerband | 4 l 90° = underneath; r 0° = in front | 5 l 180° = at the back; r 0° = in front | 6 l 270° = same side as outerband; r 0° = in front | 7 l 0° = in front; r 90° = underneath | 8 l 180° = at the back; r 90° = underneath | 9 l 270° = same side as outerband; r 90° = underneath | A l 0° = in front; r 180° = at the back | B l 90° = underneath; r 180° = at the back | C l 270° = same side as outerband; r 180° = at the back | D l 0° = in front; r 270° = same side as outerband | E l 90° = underneath; r 270° = same side as outerband | F l 180° = at the back; r 270° = same side as outerband |
|-------------------------|---------------------|-------------------------|--------------------------|-------------------------------------|---------------------------------------|---|--|---------------------------------------|--|---|---|--|---|--|---|---|

|                                    |           |                        |                           |
|------------------------------------|-----------|------------------------|---------------------------|
| <b>Guides / Brakes / Inversion</b> | 0 without | M Inversion<br>Ø 16-80 | N Duplex<br>Ø 25,32,40,50 |
|------------------------------------|-----------|------------------------|---------------------------|

|                              |            |                 |                           |
|------------------------------|------------|-----------------|---------------------------|
| <b>Cover / Cable Channel</b> | 0 standard | 1 Cable channel | 2 Cable channel two-sided |
|------------------------------|------------|-----------------|---------------------------|

|                       |            |            |                   |                                |                                |  |   |  |  |
|-----------------------|------------|------------|-------------------|--------------------------------|--------------------------------|--|---|--|--|
| <b>Air Connection</b> | 0 standard | 1 end face | 2 both at one end | 3 left standard right end face | 4 right standard left end face | A 3/2 Way valve<br>VOE 24 V =<br>Ø 25,32,40,50 | B 3/2 Way valve<br>VOE 230 V~/110 V=<br>Ø 25,32,40,50 | C 3/2 Way valve<br>VOE 48 V =<br>Ø 25,32,40,50 | E 3/2 Way valve<br>VOE 110 V~<br>Ø 25,32,40,50 |
|-----------------------|------------|------------|-------------------|--------------------------------|--------------------------------|--|---|--|--|

|              |            |
|--------------|------------|
| <b>Seals</b> | 0 standard |
|--------------|------------|

**End cap position (air connection)**

270° same side as outerband  
180° at the back  
end-face  
0° in front  
90° underneath

**Cylinder R (right end side)**

270° same side as outerband  
180° at the back  
end-face  
0° in front  
90° underneath

**Cylinder L (left end side)**

180° at the back  
end-face  
0° in front  
90° underneath

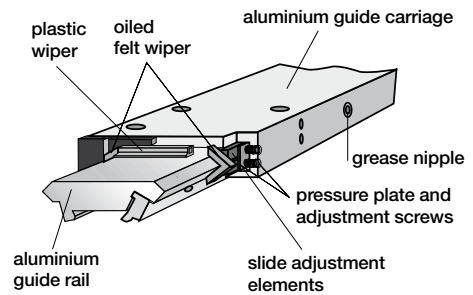
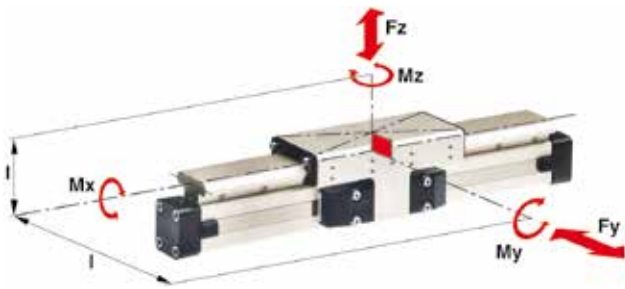
**Plain Bearing Guide**  
**SLIDELINE**  
**Series SL 25 to 63 for Linear Drive**



**Features:**

- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways
- Corrosion resistant version available on request
- Any length of stroke up to 5500 mm (longer strokes on request)

**Loads, Forces and Moments**



**Technical Data**

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds  $v < 0.2$  m/s.

**\* Please note:**

In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

For further technical information see catalogue P-A4P012GB

| Series SL | For linear drive | Max. moments [Nm] |     |     | Max. loads [N]<br>Fy, Fz | Mass of linear drive with guide [kg] |                            | Mass * of guide carriage [kg] | Order No. **<br>SLIDELINE <sup>1)</sup><br>Guide without cylinder |
|-----------|------------------|-------------------|-----|-----|--------------------------|--------------------------------------|----------------------------|-------------------------------|---|
|           |                  | Mx                | My  | Mz  |                          | with 0 mm stroke                     | increase per 100 mm stroke |                               |   |
| SL25      | OSP-L25          | 14                | 34  | 34  | 675                      | 1.55                                 | 0.39                       | 0.61                          | <b>20342FIL</b>   |
| SL32      | OSP-L32          | 29                | 60  | 60  | 925                      | 2.98                                 | 0.65                       | 0.95                          | <b>20196FIL</b>   |
| SL40      | OSP-L40          | 50                | 110 | 110 | 1600                     | 4.05                                 | 0.78                       | 1.22                          | <b>20343FIL</b>   |
| SL50      | OSP-L50          | in progress       |     |     |                          |                                      |                            |                               |   |
| SL63      | OSP-L63          |                   |     |     |                          |                                      |                            |                               |   |

\*\* Please use this order pattern: Order-No. + "stroke in mm" (5 digits)  
 Example: SLIDELINE guide D25mm, stroke 1000mm: 20342-01000

<sup>1)</sup> Corrosion resistant fixtures available on request

Order Instructions SLIDELINE

|             |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|-------------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4         | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| <b>OSPL</b> | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

| Piston-Ø    |  |
|-------------|--|
| 25          |  |
| 32          |  |
| 40          |  |
| in progress |  |
| in progress |  |

| Stroke           |  |
|------------------|--|
| in mm (5 digits) |  |

| Piston Mounting |         |
|-----------------|---------|
| 0               | without |

| Measuring system |         |
|------------------|---------|
| 0                | without |

| Screws |           |
|--------|-----------|
| 0      | standard  |
| 1      | Stainless |

| Cushioning |          |
|------------|----------|
| 0          | standard |

| Version / Piston |          |
|------------------|----------|
| 0                | standard |
| 1                | Tandem   |

| Lubrication |          |
|-------------|----------|
| 0           | standard |

| End cap position |   |
|------------------|---|
| 0                | l+r 0° = in front                                     |
| 1                | l+r 90° = underneath                                  |
| 2                | l+r 180° = at the back                                |
| 3                | l+r 270° = same side as outerband                     |
| 4                | l 90° = underneath; r 0° = in front                   |
| 5                | l 180° = at the back; r 0° = in front                 |
| 6                | l 270° = same side as outerband; r 0° = in front      |
| 7                | l 0° = in front; r 90° = underneath                   |
| 8                | l 180° = at the back; r 90° = underneath              |
| 9                | l 270° = same side as outerband; r 90° = underneath   |
| A                | l 0° = in front; r 180° = at the back                 |
| B                | l 90° = underneath; r 180° = at the back              |
| C                | l 270° = same side as outerband; r 180° = at the back |
| D                | l 0° = in front; r 270° = same side as outerband      |
| E                | l 90° = underneath; r 270° = same side as outerband   |
| F                | l 180° = at the back; r 270° = same side as outerband |

| Guides/ Brakes/ Inversion |                      |
|---------------------------|----------------------|
| 0                         | without              |
| 2                         | Slideline SL Ø 25-63 |

| Cover / Cable Channel |                         |
|-----------------------|-------------------------|
| 0                     | standard                |
| 1                     | Cable channel           |
| 2                     | Cable channel two-sided |

| Air Connection |   |
|----------------|---|
| 0              | standard                                      |
| 1              | end face                                      |
| 2              | both at one end                               |
| 3              | left standard right end face                  |
| 4              | right standard left end face                  |
| A              | 3/2 Way valve VOE 24 V = Ø 25,32,40,50        |
| B              | 3/2 Way valve VOE 230 V~/110 V= Ø 25,32,40,50 |
| C              | 3/2 Way valve VOE 48 V = Ø 25,32,40,50        |
| E              | 3/2 Way valve VOE 110 V~ Ø 25,32,40,50        |

| Seals |          |
|-------|----------|
| 0     | standard |

| add. Guide Carriage |                                     |
|---------------------|-------------------------------------|
| 0                   | without                             |
| 2                   | Guide Carriage Slideline SL Ø 25-63 |

**End cap position (air connection)**

**Cylinder L (left end side)**

**Cylinder R (right end side)**

**Recirculating Ball Bearing Guide  
 STARLINE  
 Series STL 16 to 50 for Linear Drive**

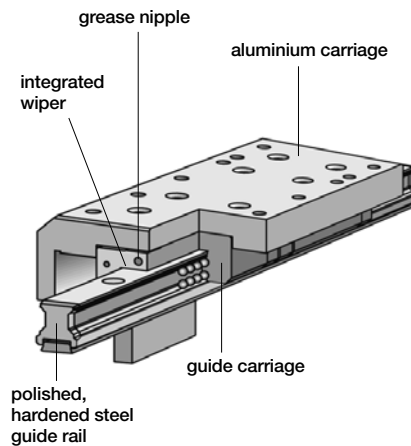
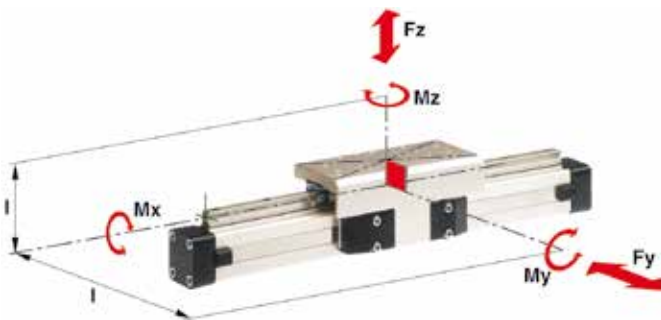


**Features:**

- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage – dimensions compatible with OSP guides SLIDELINE
- Installation height (STL25 - 32) compatible with OSP-L guides SLIDELINE

- Maximum speed  
 STL25 to 50: v = 5 m/s

**Loads, Forces and Moments**



**Technical Data**

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

For further technical information see catalogue P-A4P012GB

**\* Please note:**

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

| Series STL | For linear drive | Max. moments [Nm] |     |     | Max. loads [N] |      | Mass of linear drive with guide [kg] |                            | Mass* of guide carriage [kg] | Order No. **<br>STARLINE<br>Guide without cylinder |
|------------|------------------|-------------------|-----|-----|----------------|------|--------------------------------------|----------------------------|------------------------------|--|
|            |                  | Mx                | My  | Mz  | Fy             | Fz   | with 0mm stroke                      | increase per 100 mm stroke |                              |  |
| STL25      | OSP-L25          | 50                | 110 | 110 | 3100           | 3100 | 1.733                                | 0.369                      | 0.835                        | 21112  |
| STL32      | OSP-L32          | 62                | 160 | 160 | 3100           | 3100 | 2.934                                | 0.526                      | 1.181                        | 21113  |
| STL40      | OSP-L40          | 150               | 400 | 400 | 4000           | 7500 | 4.452                                | 0.701                      | 1.901                        | 21114  |
| STL50      | OSP-L50          |                   |     |     |                |      | in progress                          |                            |                              |  |

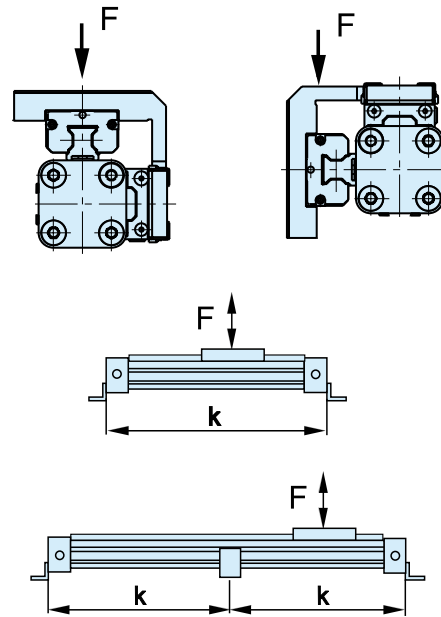
\*\* Please use this order pattern: Order-No. + "stroke in mm" (5 digits)  
 Example: STARLINE guide D25mm, stroke 1000mm: 21112-01000

## Mid-Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.

Loading 1  
Top carrier

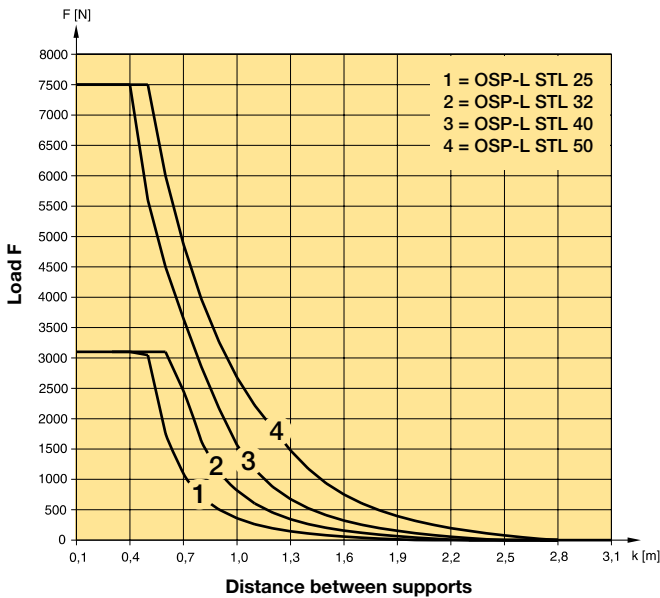
Loading 2  
Side carrier



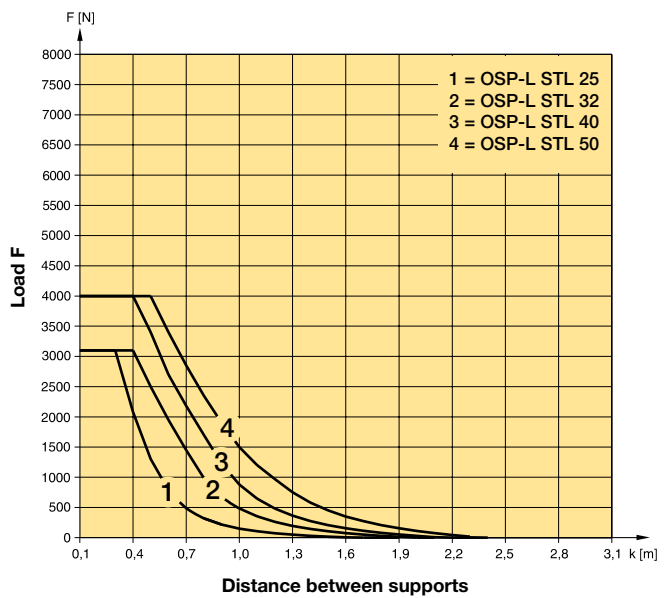
Permissible Unsupported Length STL25 to STL50

Permissible Unsupported Length STL25 to STL50

Loading 1 – Top carrier



Loading 2 – Side carrier



**Note:**

For speeds  $v > 0.5$  m/s the distance between supports should not exceed 1 m.

**Variable Stop**

**Type VS25 to VS50**

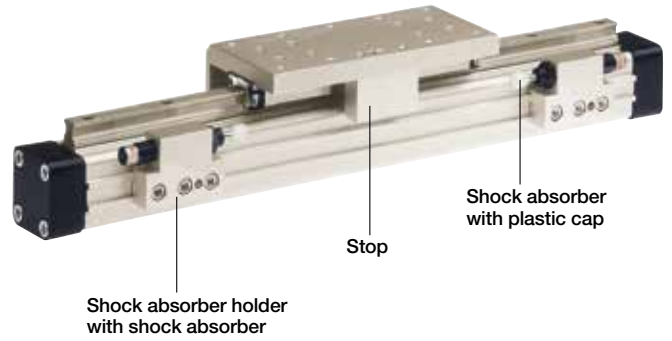
Arrangement with two variable stops

The variable stop Type VS provides simple stroke limitation. It can be retrofitted and positioned anywhere along the stroke length.

For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

Depending on the application, two variable stops can be fitted if required.

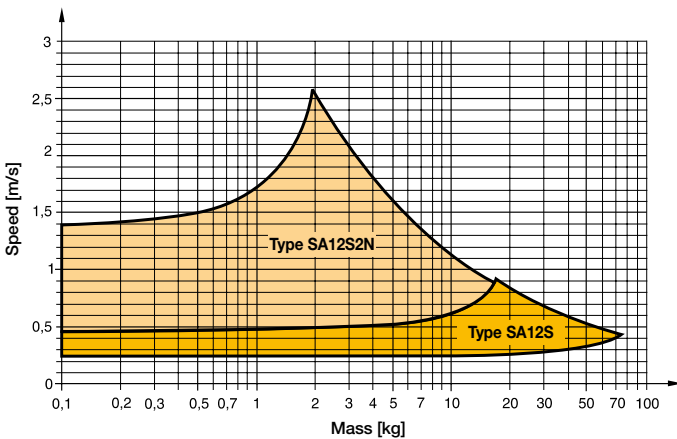


**Shock Absorber Selection**

The shock absorber is selected in dependence on the mass and speed.

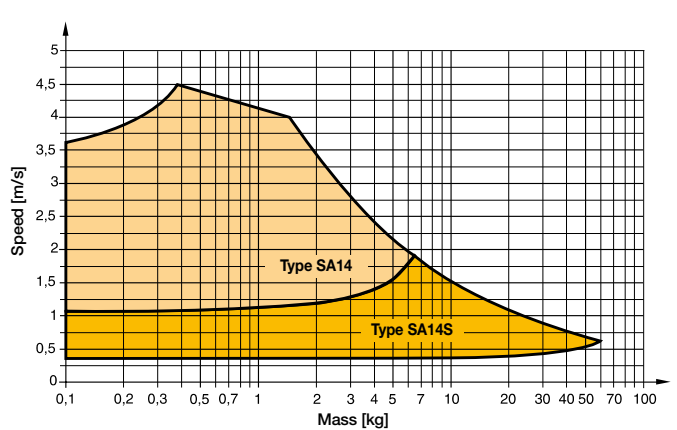
The mass of the carrier itself must be taken into account.

**Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL25**



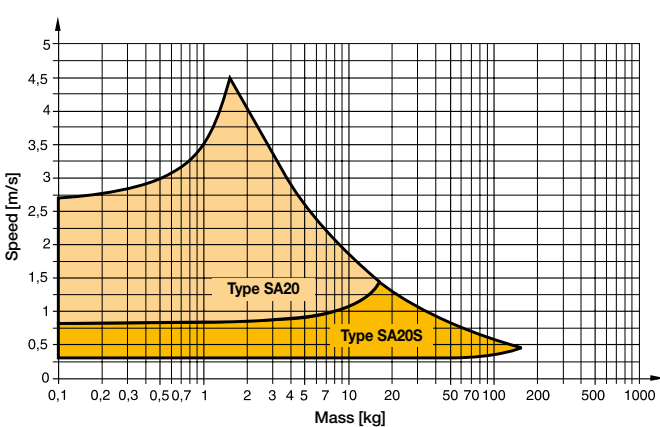
The values relate to an effective driving force of 250 N (6 bar)

**Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL32**



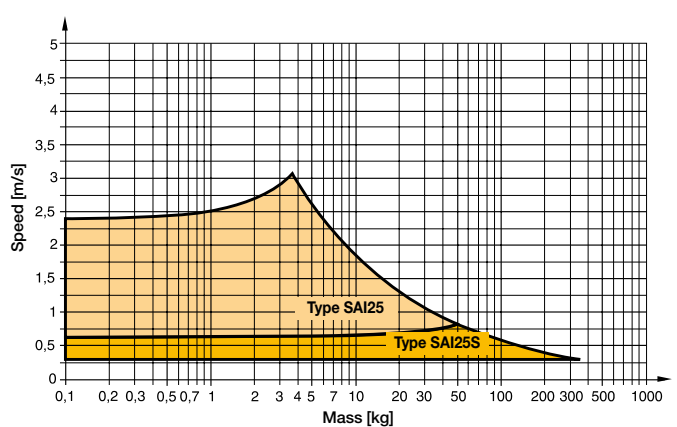
The values relate to an effective driving force of 420 N (6 bar)

**Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL40**



The values relate to an effective driving force of 640 N (6 bar)

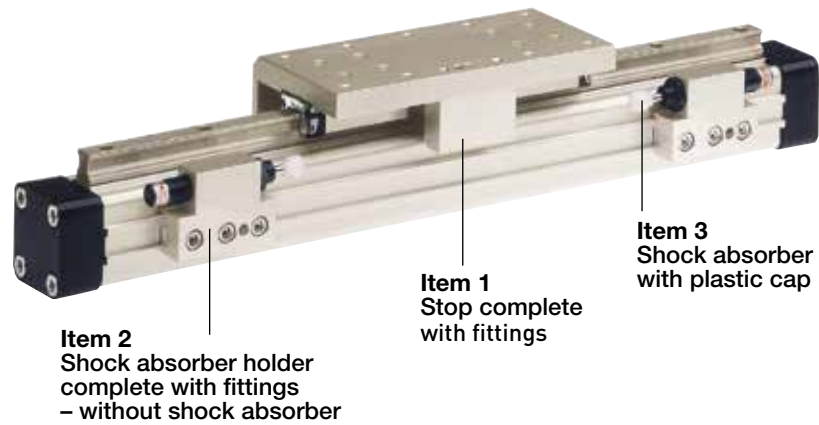
**Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL50**



The values relate to an effective driving force of 1000 N (6 bar)

## Variable Stop

Type VS25 to VS50



### Order Instructions – Variable Stop Type VS25 to VS50

without cylinder and  
without guide

| Item | Description                    | Size    |           |       |           |       |           |             |           |
|------|--------------------------------|---------|-----------|-------|-----------|-------|-----------|-------------|-----------|
|      |                                | VS25    |           | VS32  |           | VS40  |           | VS50        |           |
|      |                                | Type    | Order-No. | Type  | Order-No. | Type  | Order-No. | Type        | Order-No. |
| 1    | Stop, complete                 | -       | 21197FIL  | -     | 21198FIL  | -     | 21199FIL  | in progress |           |
| 2    | Shock absorber holder complete | -       | 21202FIL  | -     | 21203FIL  | -     | 21204FIL  |             |           |
| 3 *  | Shock absorber, soft           | SA12S2N | 7723FIL   | SA14  | 7708FIL   | SA20  | 7710FIL   |             |           |
|      | Shock absorber, hard           | SA12S   | 7707FIL   | SA14S | 7709FIL   | SA20S | 7711FIL   |             |           |

\* Shock absorber with plastic cap

**Note:** Order instructions for VS in combination with the Starline see page 177 pos.18

For further technical information see catalogue P-A4P012GB



**Order Instructions - STARLINE**

|             |     |   |   |   |    |    |       |    |    |    |    |    |    |    |    |    |
|-------------|-----|---|---|---|----|----|-------|----|----|----|----|----|----|----|----|----|
| 1-4         | 5+6 | 7 | 8 | 9 | 10 | 11 | 12-16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| <b>OSPL</b> | 25  | 0 | 0 | 0 | 0  | 0  | 01100 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

|                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Piston-Ø</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| in progress     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Stroke</b>       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| in mm<br>(5 digits) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                        |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Piston Mounting</b> |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                      | without |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                         |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Measuring system</b> |         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                       | without |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|               |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Screws</b> |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0             | standard |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Cushioning</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                 | standard   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                 | max. length  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2                 | variable stop complete<br>VS soft left for Starline          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3                 | variable stop complete<br>VS hard left for Starline,         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4                 | variable stop complete<br>VS soft right for Starline         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5                 | variable stop complete<br>VS hard right for Starline         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6                 | variable stop complete<br>VS soft both sides for<br>Starline |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7                 | variable stop complete<br>VS hard both sides for<br>Starline |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                              |                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Cover / Cable Channel</b> |                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                            | standard                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                            | Cable channel           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2                            | Cable channel two-sided |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                         |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Version / Piston</b> |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                       | standard |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                       | Tandem   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                    |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Lubrication</b> |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                  | standard |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|              |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Seals</b> |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0            | standard |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                       |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Air Connection</b> |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                     | standard  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                     | end face  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2                     | both at one end                                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3                     | left standard<br>right end face                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4                     | right standard<br>left end face                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A                     | 3/2 Way valve<br>VOE 24 V =<br>Ø 25,32,40,50          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B                     | 3/2 Way valve<br>VOE 230 V- / 110 V=<br>Ø 25,32,40,50 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C                     | 3/2 Way valve<br>VOE 48 V =<br>Ø 25,32,40,50          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| E                     | 3/2 Way valve<br>VOE 110 V-<br>Ø 25,32,40,50          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>End cap position</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                       | l+r0° = in front   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                       | l+r90° = underneath  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2                       | l+r180° = at the back                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3                       | l+r270° = same side<br>as outerband                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4                       | l90° = underneath;<br>r0° = in front                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5                       | l180° = at the back;<br>r0° = in front                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6                       | l270° = same side as<br>outerband;<br>r0° = in front       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7                       | l0° = in front;<br>r90° = underneath                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8                       | l180° = at the back;<br>r90° = underneath                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9                       | l270° = same side as<br>outerband;<br>r90° = underneath    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A                       | l0° = in front;<br>r180° = at the back                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B                       | l90° = underneath;<br>r180° = at the back                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C                       | l270° = same side as<br>outerband;<br>r180° = at the back  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D                       | l0° = in front;<br>r270° = same side as<br>outerband       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| E                       | l90° = underneath;<br>r270° = same side as<br>outerband    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F                       | l180° = at the back; r<br>270° = same side as<br>outerband |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                                  |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------|--------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Guides/ Brakes/ Inversion</b> |              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                                | without      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B                                | Starline STL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                            |                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>add. Guide Carriage</b> |                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0                          | without                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B                          | Guide Carriage<br>Starline STL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**End cap position (air connection)**

**Cylinder R (right end side)**

**Cylinder L (left end side)**



# Magnetically coupled pneumatic cylinder P1Z ...

**No leakage**, with high magnetic coupling force



The P1Z is a rodless pneumatic cylinder with piston and carriage equipped with ring magnets.

Motion is transmitted via the magnetic force locking between the piston and the carriage.

The guided version consists of a carriage fitted with 4 plain bearings, guided on 2 guide rods the design provides high rigidity, accurate guidance and a non rotating movement.

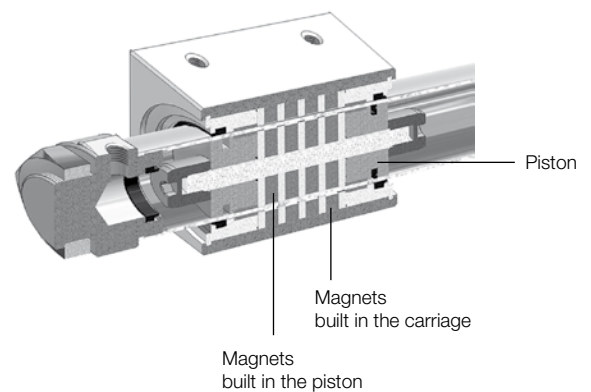
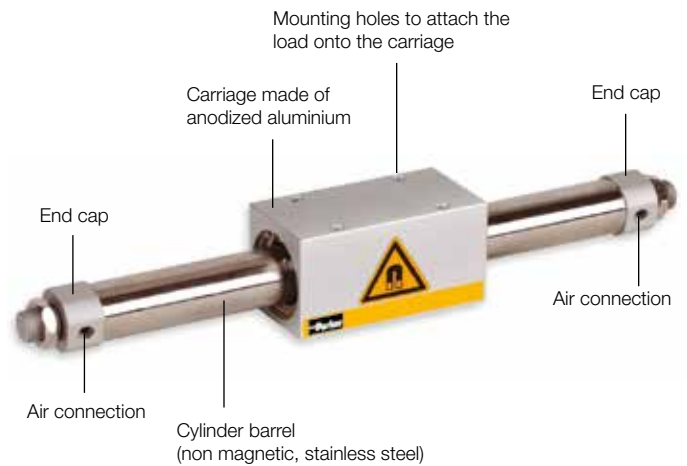
- Double acting with guide
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and Slide are pressure tight
- Pressure tight and leak free system
- With adjustable pneumatic end cushioning on both sides
- Carriage is free to rotate 360° around the cylinder axis
- Air connection at one end (option)
- Position sensing: Al-profile rail for magnetic switches (option). Magnetic switches available as reed switches or as electronic sensors (option).
- Various mounting arrangements

## P1Z Series - Basic Version Ø 16-40 mm

The P1Z is a rodless pneumatic cylinder. The piston and the carriage are equipped with ring magnets. The motion is transmitted via the magnetic force locking between the piston and the carriage.

### Features:

- Double acting
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and carriage are pressure tight
- Pressure tight and leak free system
- Dirt and dust cannot enter
- With adjustable pneumatic end cushioning on both sides
- Carriage is free to rotate 360° around the cylinder axis
- Various mounting arrangements



## Mounting and Technical Data Basic Version

- The loads can be fitted onto the carriage by 4 tapped holes.
- The cylinder is mounted at the end caps with hexagonal nuts, flange or foot mountings.

### Materials

|                 |                 |
|-----------------|-----------------|
| Cylinder barrel | Stainless steel |
| Carriage        | Al, anodised    |
| End cap         | Al, anodised    |
| Seals           | NBR             |



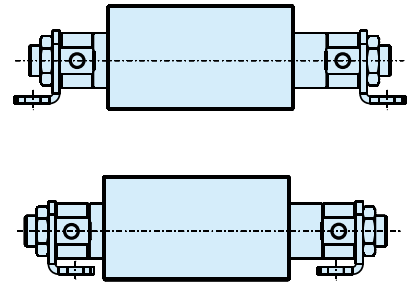
With 2 hexagonal nuts to fix the cylinder (included in scope of delivery)



Flange mounting (pair) option



Foot mounting (pair) option



### Technical Data

| Piston diameter Ø [mm]              | 16  | 20    | 25    | 32   | 40   |
|-------------------------------------|---|-------|-------|------|------|
| Max. stroke length [mm]             | 1000  | 1500  | 2000  | 2000 | 2000 |
| Stroke tolerance [mm] up to 1000 mm | 0/+1.5  |       |       |      |      |
| Stroke tolerance [mm] > 1000 mm     | 0/+2  |       |       |      |      |
| Temperature range [°C]              | 0 to 60   |       |       |      |      |
| Operating medium                    | Filtered compressed air, dry, lubricated or unlubricated * (other media on request) |       |       |      |      |
| Air supply port size                | M5  | G1/8  | G1/8  | G1/8 | G1/4 |
| Max. magnetic coupling force [N]    | 157   | 236   | 383   | 703  | 942  |
| Velocity range [m/s]                | 0.1 to 1.3  |       |       |      |      |
| Min. operating pressure [bar]       | 1.8   |       |       |      |      |
| Max. operating pressure [bar]       | 6.5   | 7     |       |      |      |
| Cushion length [mm]                 | 9   | 15    | 15    | 12   | 19   |
| Weight [kg]                         |   |       |       |      |      |
| at 0 mm stroke                      | 0.28  | 0.46  | 0.83  | 1.35 | 2.01 |
| per 100 mm stroke                   | 0.043   | 0.082 | 0.088 | 0.14 | 0.16 |

\* if external lubrication is added, this must always be continued.

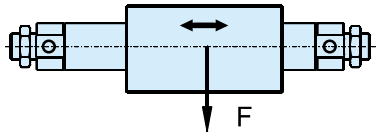
## Loads, forces and moments Basic Version

If the operating conditions are outside of the permissible values, either the P1Z guided version or the P1Z in combination with an external guide should be used !

### Forces [N]

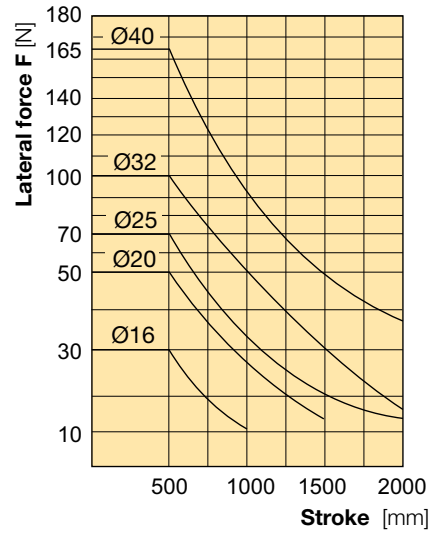
|                                  |     |     |     |     |     |
|----------------------------------|-----|-----|-----|-----|-----|
| Piston [mm]                      | 16  | 20  | 25  | 32  | 40  |
| Theoretical force at 6 bar [N]   | 120 | 188 | 295 | 483 | 754 |
| Max. magnetic coupling force [N] | 157 | 236 | 383 | 703 | 942 |

### Permissible lateral force, depending on the stroke length

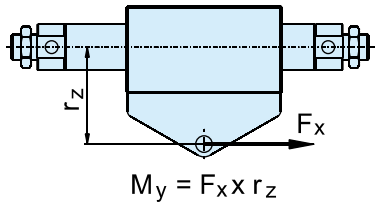


| Ø [mm] | Permissible lateral force F [N] |
|--------|---------------------------------|
| 16     | 30.0                            |
| 20     | 50.0                            |
| 25     | 70.0                            |
| 32     | 100.0                           |
| 40     | 165.0                           |

The values are based on velocities  $v \leq 0.4\text{m/s}$

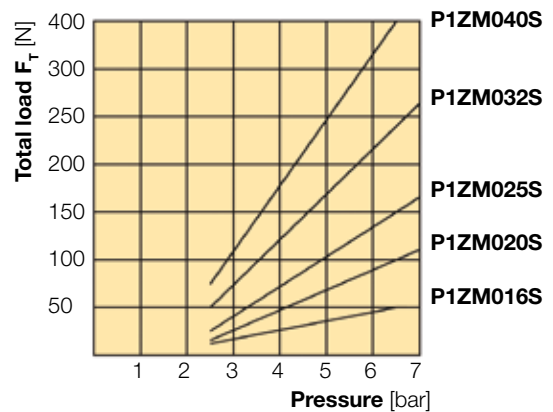
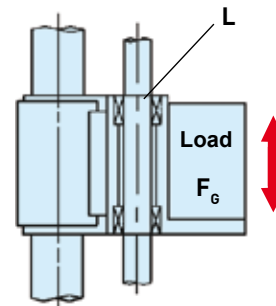


### Permissible axial load, horizontal mounting



| Ø [mm] | Max. Moment My [Nm] |
|--------|---------------------|
| 16     | 1.2                 |
| 20     | 2.5                 |
| 25     | 3.8                 |
| 32     | 8.5                 |
| 40     | 13.0                |

### Permissible axial load, vertical mounting



L = Weight of the external carriage

$F_G$  = Load

$F_T$  = Total load = Load  $F_G$  + Weight of the external carriage

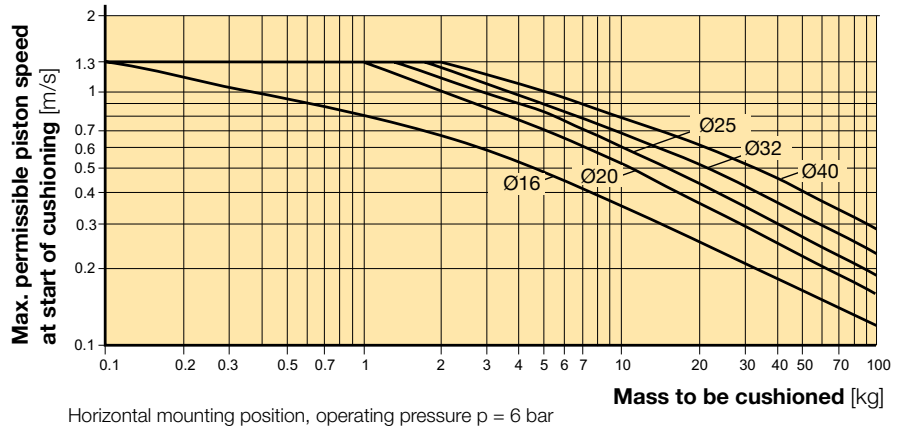
L + Force due to friction



**Dynamic forces must not exceed the maximum magnetic coupling force!**

### Cushioning diagram

If the permitted limit values are exceeded, additional shock absorbers should be fitted in the area of the centre of gravity.

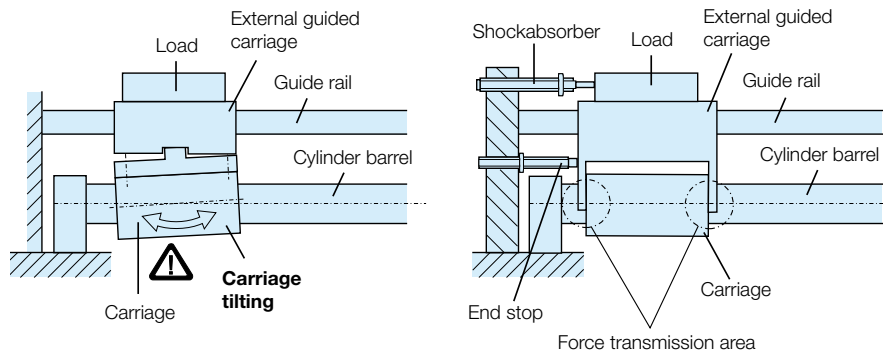


### Installation tips for use with external guides

When stopping a load having a large inertia force at the stroke end, tilting of the carriage and damage to the bearings and cylinder barrel may occur (fig. left).

To prevent this, the force transmission should be realized at the middle axis of the cylinder.

The combination of the shock absorber with an end stop, can help to prevent the tilting of the carriage (fig. right).



Order Instructions - Basic Cylinder - Series P1Z

| Basic cylinder (15 digits) |          |          |          |          |          |          |          |          |          |          |          |          | With option (18 digits) |          |          |          |          |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------------|----------|----------|----------|----------|
| <b>P</b>                   | <b>1</b> | <b>Z</b> | <b>M</b> | <b>0</b> | <b>1</b> | <b>6</b> | <b>S</b> | <b>A</b> | <b>N</b> | <b>0</b> | <b>8</b> | <b>5</b> | <b>0</b>                | <b>W</b> | <b>F</b> | <b>M</b> | <b>N</b> |

| Piston diameter |         |
|-----------------|---------|
| <b>016</b>      | Ø 16 mm |
| <b>020</b>      | Ø 20 mm |
| <b>025</b>      | Ø 25 mm |
| <b>032</b>      | Ø 32 mm |
| <b>040</b>      | Ø 40 mm |

| End of stroke cushioning |  |
|--------------------------|--|
| <b>A</b>                 | Pneumatically adjustable<br>(Ø 16, 20, 25, 32 and 40 mm) |

| Stroke length    |               |
|------------------|---------------|
| max. stroke [mm] | Piston Ø [mm] |
| <b>1000</b>      | Ø 16          |
| <b>1500</b>      | Ø 20          |
| <b>2000</b>      | Ø 25          |
| <b>2000</b>      | Ø 32          |
| <b>2000</b>      | Ø 40          |

| Options  |         |
|----------|---------|
| <b>B</b> | without |
| <b>W</b> | with    |

| Mountings |                 |
|-----------|-----------------|
| <b>N</b>  | without         |
| <b>F</b>  | Foot mounting   |
| <b>L</b>  | Flange mounting |

| Air supply port type     |                         |
|--------------------------|-------------------------|
| <b>M</b>                 | Metric thread (Ø 16 mm) |
| <b>B</b>                 | G-thread (Ø 20 - 40 mm) |
| (Other types on request) |                         |

**Order code examples:**

- **P1ZM016SAN0100B**      Ø 16 mm, stroke 100 mm, supplied with hexagonal nuts on each end cap.
- **P1ZM020SAN1000WFBN**      Ø 20 mm, stroke 1000 mm, with foot mounting at both end caps.

For further technical information see catalogue P-A4P019GB

## P1Z Series - Guided Version

### Ø 16-40 mm

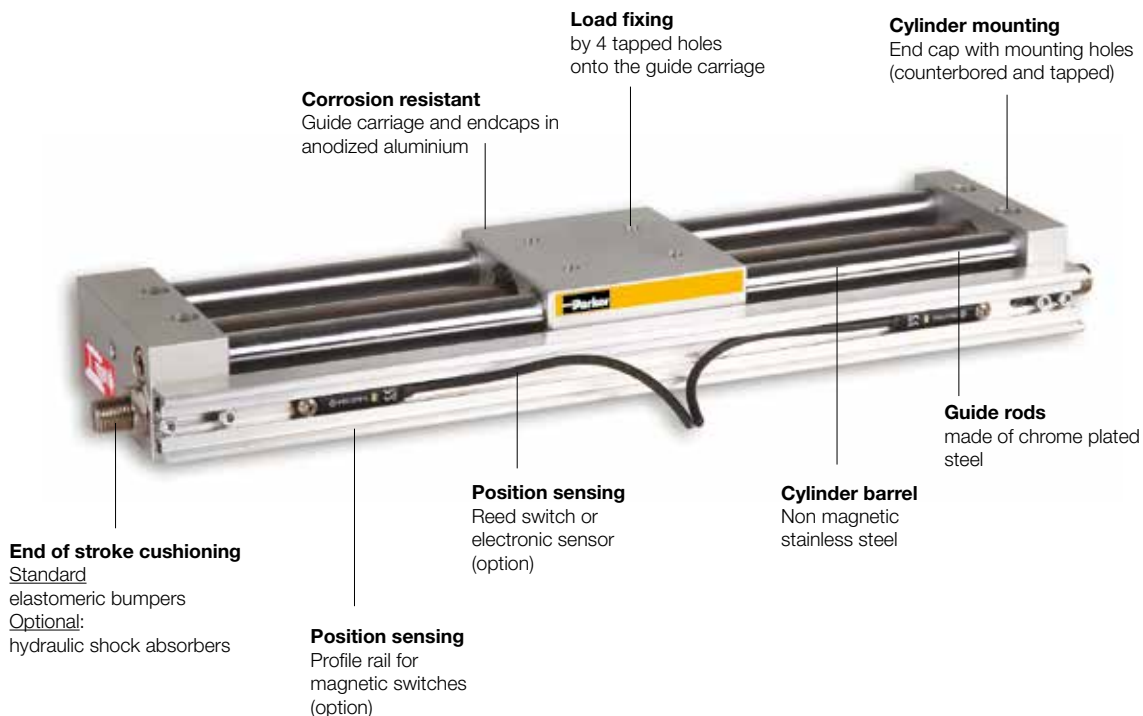
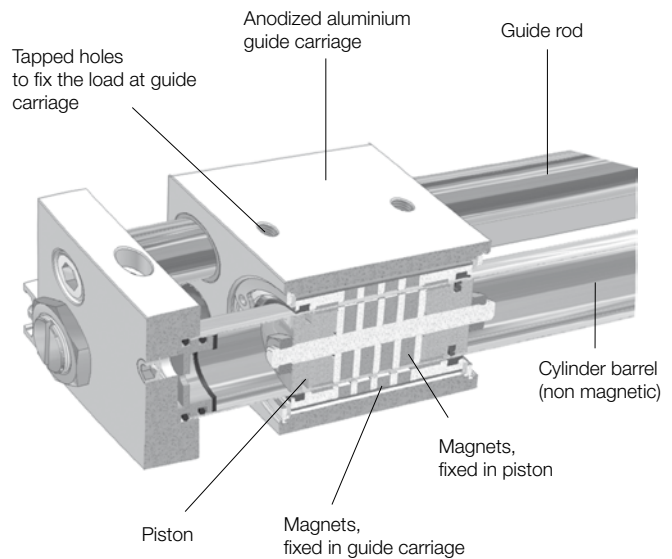
The P1Z is a rodless pneumatic cylinder with guide. The piston and the guide carriage are equipped with ring magnets.

The motion is transmitted via the magnetic force between the piston and the guide carriage.

The guided version consists of a carriage fitted with 4 plain bearings, guided on 2 guide rods. The design provides high rigidity, accurate guidance and a non rotating movement.

#### Features:

- Double acting with guide
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and Slide are pressure tight
- Pressure tight and leak free system
- Air connection at one end (option)
- End of stroke cushioning: with elastomeric bumpers (standard), with hydraulic shock absorbers (option)
- Position sensing: AI-profile rail for magnetic switches (option). Magnetic switches available as reed switches or as electronic sensors (option).





**Guided Version  
 Ø 16 - 40 mm**

**Air connection**



Guided version P1Z and air connection on both sides (standard)



Guided version P1Z and air connection at one end (option)

**End of stroke cushioning**

The end of stroke cushioning for light loads is provided by elastomeric bumpers (standard).

For medium and heavy loads hydraulic shock absorbers should be used (option).



Guided version P1Z and elastomeric bumpers (standard)



Guided version P1Z and hydraulic shock absorbers (option)

**Position sensing**

The guide carriage is fitted with a magnet for position sensing (standard)

An Al-profile rail for magnetic switches is available as an option. The rail is located on the same side as the elastomeric bumpers or the shock absorbers.

Reed switches or electronic sensors in several versions can be moved in the profile rail along the entire stroke length.



Guided version P1Z with magnet in the guide carriage for position sensing (standard).



Guided version P1Z and Al-profile rail for magnetic switches (option).



Guided version P1Z and Al-profile rail with 2 magnetic switches (option).

## Mounting and Technical Data

### Guided Version

The loads can be fixed onto the guide carriage by 4 tapped holes.

Cylinder mounting provided with 4 tapped and counterbored holes. Additional mountings are not required.

#### Materials

|                 |                      |
|-----------------|----------------------|
| Cylinder barrel | Stainless steel      |
| Carriage        | Al, anodised         |
| End cap         | Al, anodised         |
| Seals           | NBR                  |
| Guide rods      | Steel, chrome plated |

#### Technical Data

| Piston diameter Ø [mm]              | 16  | 20   | 25   | 32   | 40   |
|-------------------------------------|---|------|------|------|------|
| Max. stroke length [mm]             | 750   | 1000 | 1500 | 1500 | 1500 |
| Stroke tolerance [mm] up to 1000 mm | 0/+1.5  |      |      |      |      |
| Stroke tolerance [mm] > 1000 mm     | 0/+2  |      |      |      |      |
| Temperature range [°C]              | 0 to 60   |      |      |      |      |
| Operating medium                    | Filtered compressed air, dry, lubricated or unlubricated * (other media on request) |      |      |      |      |
| Air supply port size                | M5  | G1/8 | G1/8 | G1/8 | G1/4 |
| Max. magnetic coupling force [N]    | 157   | 236  | 383  | 703  | 942  |
| Velocity range [m/s]                | 0.5 to 0.4  |      |      |      |      |
| Min. operating pressure [bar]       | 2.3   | 2    |      |      |      |
| Max. operating pressure [bar]       | 6.5   | 7    |      |      |      |
| Weight [kg]                         |   |      |      |      |      |
| at 0 mm stroke                      | 0.9   | 1.52 | 1.70 | 3.63 | 5.44 |
| per 100 mm stroke                   | 0.2   | 0.33 | 0.42 | 0.53 | 0.86 |

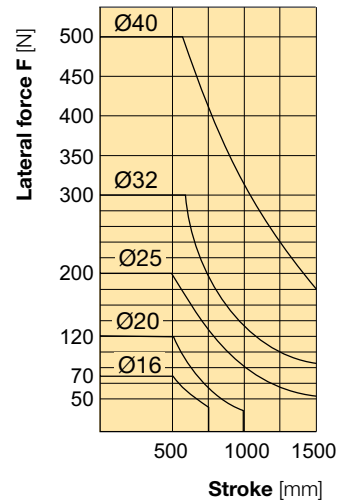
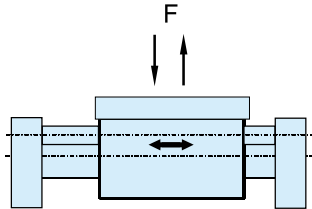
\* if external lubrication is added, this must always be continued.

**Loads, forces and moments  
 Guided Version**

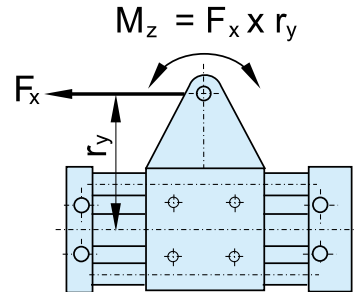
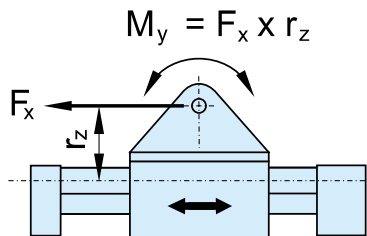
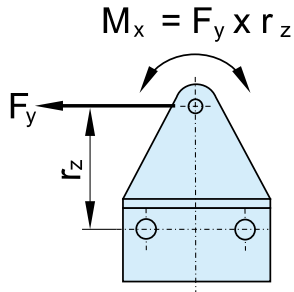
**Forces [N]**

|                                  |     |     |     |     |     |
|----------------------------------|-----|-----|-----|-----|-----|
| Piston [mm]                      | 16  | 20  | 25  | 32  | 40  |
| Theoretical force at 6 bar [N]   | 120 | 188 | 295 | 483 | 754 |
| Max. magnetic coupling force [N] | 157 | 236 | 383 | 703 | 942 |

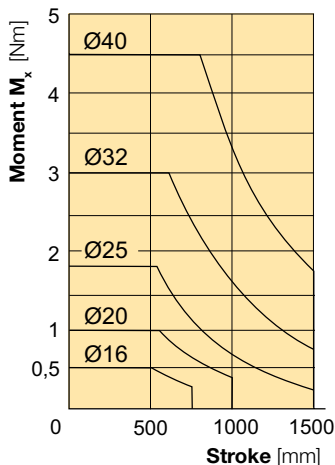
**Permissible lateral force, depending on the stroke length**



| Ø [mm] | Max. Moment $M_x$ [Nm] | Max. Moment $M_y$ [Nm] | Max. Moment $M_z$ [Nm] |
|--------|------------------------|------------------------|------------------------|
| 16     | 0.5                    | 2.4                    | 2.4                    |
| 20     | 1.0                    | 5.0                    | 5.0                    |
| 25     | 1.8                    | 9.5                    | 9.5                    |
| 32     | 3.0                    | 15.0                   | 15.0                   |
| 40     | 4.5                    | 24.0                   | 24.0                   |



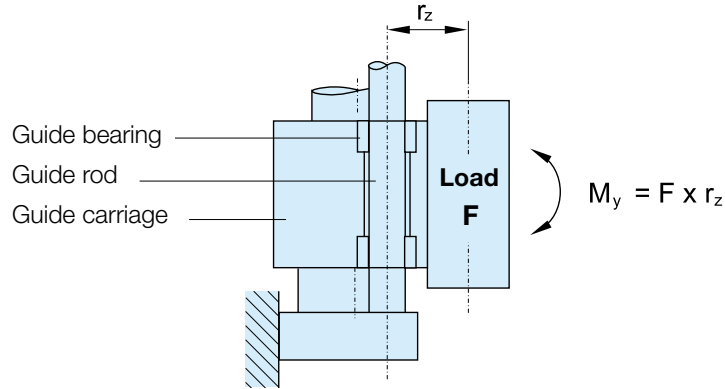
**Permissible moment  $M_x$  depending on the stroke length**



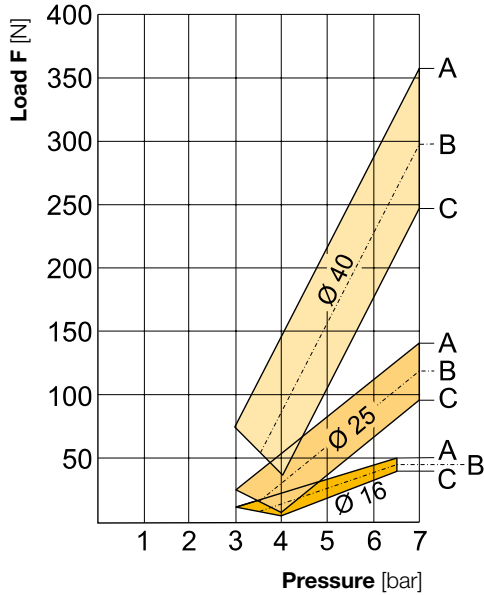
**Dynamic forces must not exceed the maximum magnetic coupling force!**

Permissible axial load, vertical mounting

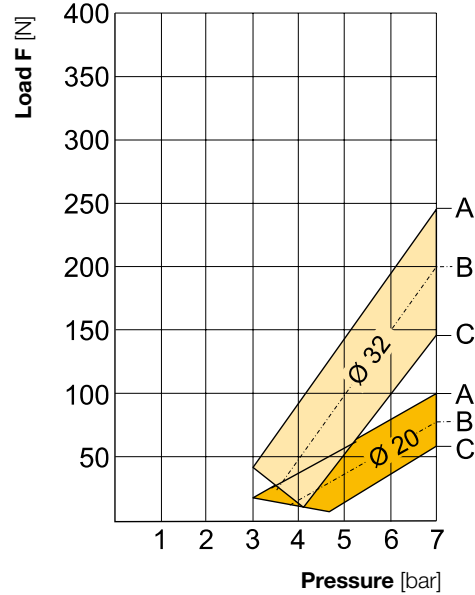
For vertical applications please refer to the values in the diagrams !



Cylinder Ø 16, 25, 40



Cylinder Ø 20, 32



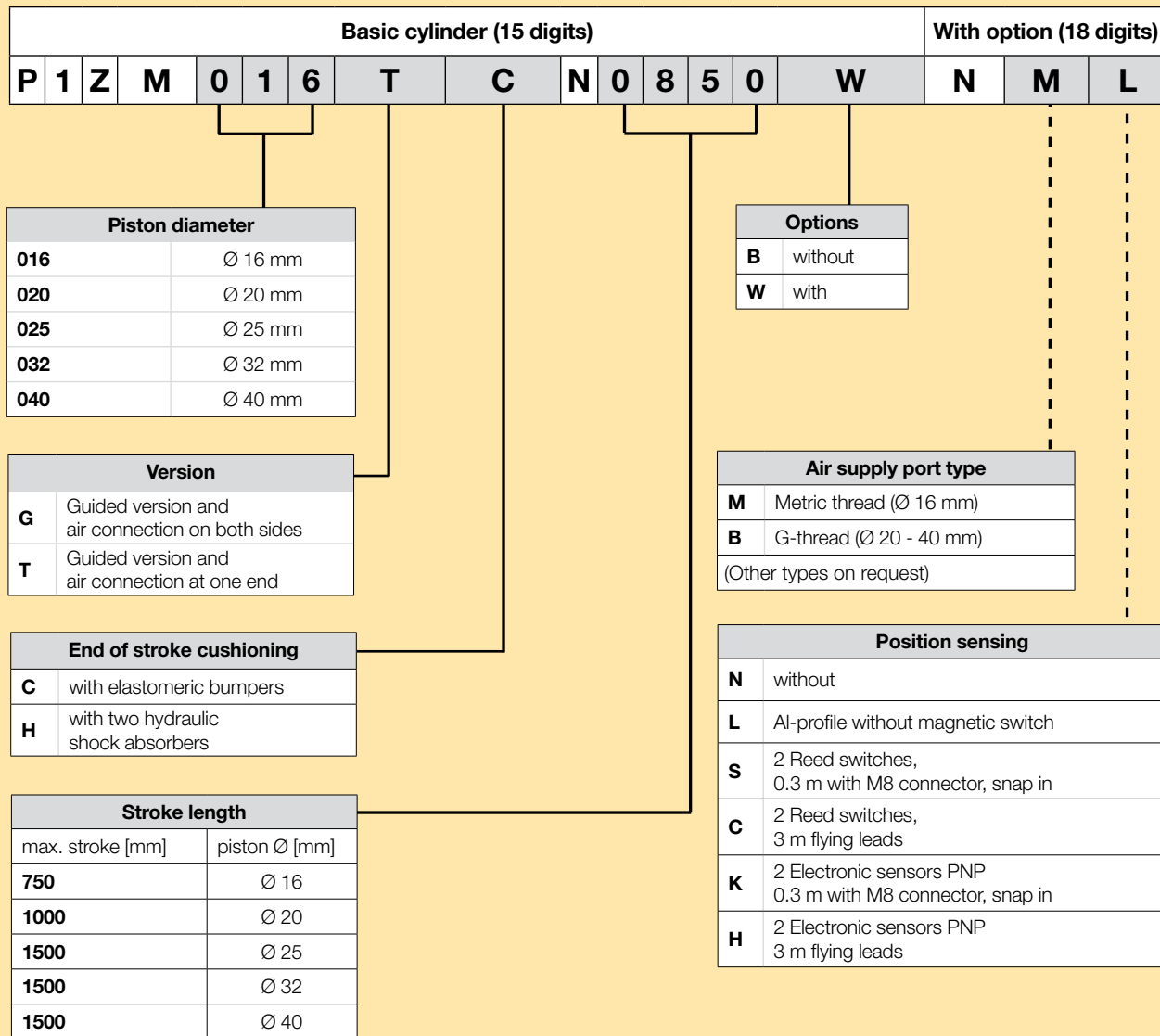
| Ø [mm] | Max. Load F [N] | B<br>Max. Moment $M_y / 2$ [Nm] | C<br>Max. Moment $M_y$ [Nm] |
|--------|-----------------|---------------------------------|-----------------------------|
| 16     | 50.0            | 1.2                             | 2.4                         |
| 20     | 100.0           | 2.5                             | 5.0                         |
| 25     | 140.0           | 4.75                            | 9.5                         |
| 32     | 240.0           | 7.5                             | 15.0                        |
| 40     | 360.0           | 12.0                            | 24.0                        |

A = curve at moment  $M_y = 0$

B = curve at moment  $M_y/2 =$  see column B

C = curve at moment  $M_{y,max.} =$  see column C

Order Instructions - Guided version



Order code examples:

- **P1ZM016TCN0100B**      Cylinder guided version -Ø 16 mm, stroke 100 mm, with air connection at one end and elastomeric bumpers.
  
- **P1ZM020GHN1000WNBL**      Cylinder guided version -Ø 20 mm, stroke 1000 mm, with air connection on both sides, with two hydraulic shock absorbers and profile rail for magnetic switches.

For further technical information see catalogue P-A4P019GB

| Cylinder<br>bore<br>mm | Series   |               | Stroke | Bore<br>mm | Piston<br>rod mm | Area<br>cm <sup>2</sup> | Max theoretical force in N |            |            |            |            |             |            |            |            |             |
|------------------------|--|---------------|--------|------------|------------------|-------------------------|----------------------------|------------|------------|------------|------------|-------------|------------|------------|------------|-------------|
|                        |  |               |        |            |                  |                         | 1.0<br>bar                 | 2.0<br>bar | 3.0<br>bar | 4.0<br>bar | 5.0<br>bar | 6.0<br>bar  | 7.0<br>bar | 8.0<br>bar | 9.0<br>bar | 10.0<br>bar |
| 10/4                   | P1A<br>P1S   | Double acting | +      | 10         | 4                | 0.8                     | 8                          | 15         | 23         | 31         | 39         | <b>46</b>   | 54         | 62         | 69         | 77          |
|                        |  |               | -      | 10         | 4                | 0.7                     | 6                          | 13         | 19         | 26         | 32         | <b>39</b>   | 45         | 52         | 58         | 65          |
| 12/5                   | C05  | Double acting | +      | 12         | 5                | 1.1                     | 11                         | 22         | 33         | 44         | 55         | <b>67</b>   | 78         | 89         | 100        | 111         |
|                        |  |               | -      | 12         | 5                | 0.9                     | 9                          | 18         | 28         | 37         | 46         | <b>55</b>   | 64         | 73         | 83         | 92          |
| 12/6                   | P1A<br>P1Q<br>P1S  | Double acting | +      | 12         | 6                | 1.1                     | 11                         | 22         | 33         | 44         | 55         | <b>67</b>   | 78         | 89         | 100        | 111         |
|                        |  |               | -      | 12         | 6                | 0.8                     | 8                          | 17         | 25         | 33         | 42         | <b>50</b>   | 58         | 67         | 75         | 83          |
| 16/6                   | P1A<br>P1S   | Double acting | +      | 16         | 6                | 2.0                     | 20                         | 39         | 59         | 79         | 99         | <b>118</b>  | 138        | 158        | 178        | 197         |
|                        |  |               | -      | 16         | 6                | 1.7                     | 17                         | 34         | 51         | 68         | 85         | <b>102</b>  | 119        | 136        | 153        | 170         |
| 16/8                   | P1Q  | Double acting | +      | 16         | 8                | 2.0                     | 20                         | 39         | 59         | 79         | 99         | <b>118</b>  | 138        | 158        | 178        | 197         |
|                        |  |               | -      | 16         | 8                | 1.5                     | 15                         | 30         | 44         | 59         | 74         | <b>89</b>   | 104        | 118        | 133        | 148         |
| 20/8                   | P1A<br>P1S   | Double acting | +      | 20         | 8                | 3.1                     | 31                         | 62         | 92         | 123        | 154        | <b>185</b>  | 216        | 247        | 277        | 308         |
|                        |  |               | -      | 20         | 8                | 2.6                     | 26                         | 52         | 78         | 104        | 129        | <b>155</b>  | 181        | 207        | 233        | 259         |
| 20/10                  | C05<br>P1Q<br>P5T  | Double acting | +      | 20         | 10               | 3.1                     | 31                         | 62         | 92         | 123        | 154        | <b>185</b>  | 216        | 247        | 277        | 308         |
|                        |  |               | -      | 20         | 10               | 2.4                     | 23                         | 46         | 69         | 92         | 116        | <b>139</b>  | 162        | 185        | 208        | 231         |
| 25/10                  | P1A<br>P1Q<br>P1S<br>P5T                                   | Double acting | +      | 25         | 10               | 4.9                     | 48                         | 96         | 144        | 193        | 241        | <b>289</b>  | 337        | 385        | 433        | 482         |
|                        |  |               | -      | 25         | 10               | 4.1                     | 40                         | 81         | 121        | 162        | 202        | <b>243</b>  | 283        | 324        | 364        | 405         |
| 32/12                  | C05<br>P1D<br>P1P<br>P1Q<br>P1S<br>P1D-B<br>P1D-C<br>P1D-X | Double acting | +      | 32         | 12               | 8.0                     | 79                         | 158        | 237        | 316        | 394        | <b>473</b>  | 552        | 631        | 710        | 789         |
|                        |  |               | -      | 32         | 12               | 6.9                     | 68                         | 136        | 203        | 271        | 339        | <b>407</b>  | 475        | 542        | 610        | 678         |
|                        |  |               | +      | 32         | 12               | 8.0                     | 80                         | 161        | 241        | 322        | 402        | <b>483</b>  | 563        | 643        | 724        | 804         |
|                        |  |               | -      | 32         | 12               | 6.9                     | 69                         | 138        | 207        | 276        | 346        | <b>415</b>  | 484        | 553        | 622        | 691         |
|                        |  |               | +      | 32         | 12               | 8.0                     | 80                         | 161        | 241        | 322        | 402        | <b>483</b>  | 563        | 643        | 724        | 804         |
|                        |  |               | -      | 32         | 12               | 6.9                     | 69                         | 138        | 207        | 276        | 346        | <b>415</b>  | 484        | 553        | 622        | 691         |
| 32/16                  | P5T  | Double acting | +      | 32         | 16               | 8.0                     | 79                         | 158        | 237        | 316        | 394        | <b>473</b>  | 552        | 631        | 710        | 789         |
|                        |  |               | -      | 32         | 16               | 6.0                     | 59                         | 118        | 178        | 237        | 296        | <b>355</b>  | 414        | 473        | 533        | 592         |
| 40/16                  | P1D<br>P1D-C   | Double acting | +      | 40         | 16               | 12,6                    | 126                        | 251        | 377        | 503        | 628        | <b>754</b>  | 880        | 1005       | 1131       | 1257        |
|                        |  |               | -      | 40         | 16               | 10,6                    | 106                        | 212        | 318        | 424        | 530        | <b>636</b>  | 742        | 848        | 954        | 1060        |
| 40/12                  | P1P  | Double acting | +      | 40         | 12               | 12,6                    | 123                        | 247        | 370        | 493        | 616        | <b>740</b>  | 863        | 986        | 1109       | 1233        |
|                        |  |               | -      | 40         | 12               | 11,4                    | 112                        | 224        | 337        | 449        | 561        | <b>673</b>  | 785        | 897        | 1010       | 1122        |
| 40/16                  | P1Q<br>P1D-B<br>P1D-C<br>P1D-X                             | Double acting | +      | 40         | 16               | 12,6                    | 123                        | 247        | 370        | 493        | 616        | <b>740</b>  | 863        | 986        | 1109       | 1233        |
|                        |  |               | -      | 40         | 16               | 10,6                    | 104                        | 207        | 311        | 414        | 518        | <b>621</b>  | 725        | 828        | 932        | 1036        |
|                        |  |               | +      | 40         | 16               | 12,6                    | 126                        | 251        | 377        | 503        | 628        | <b>754</b>  | 880        | 1005       | 1131       | 1257        |
|                        |  |               | -      | 40         | 16               | 10,6                    | 106                        | 212        | 318        | 424        | 530        | <b>636</b>  | 742        | 848        | 954        | 1060        |
| 50/16                  | C05<br>P1P   | Double acting | +      | 50         | 16               | 19,6                    | 193                        | 385        | 578        | 770        | 963        | <b>1156</b> | 1348       | 1541       | 1734       | 1926        |
|                        |  |               | -      | 50         | 16               | 17,6                    | 173                        | 346        | 519        | 692        | 865        | <b>1037</b> | 1210       | 1383       | 1556       | 1729        |
| 50/20                  | P1D<br>P1Q<br>P1S<br>P5T<br>P1D-B<br>P1D-C<br>P1D-X        | Double acting | +      | 50         | 20               | 19,6                    | 193                        | 385        | 578        | 770        | 963        | <b>1156</b> | 1348       | 1541       | 1734       | 1926        |
|                        |  |               | -      | 50         | 20               | 16,5                    | 162                        | 324        | 485        | 647        | 809        | <b>971</b>  | 1133       | 1295       | 1456       | 1618        |
|                        |  |               | +      | 50         | 20               | 19,6                    | 196                        | 393        | 589        | 785        | 982        | <b>1178</b> | 1374       | 1571       | 1767       | 1963        |
|                        |  |               | -      | 50         | 20               | 16,5                    | 165                        | 330        | 495        | 660        | 825        | <b>990</b>  | 1155       | 1319       | 1484       | 1649        |

| Cylinder bore mm | Series                            | Stroke        | Bore mm | Piston rod mm | Area cm <sup>2</sup> | Max theoretical force in N |         |         |         |         |         |         |         |         |          |       |
|------------------|-----------------------------------|---------------|---------|---------------|----------------------|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-------|
|                  |                                   |               |         |               |                      | 1.0 bar                    | 2.0 bar | 3.0 bar | 4.0 bar | 5.0 bar | 6.0 bar | 7.0 bar | 8.0 bar | 9.0 bar | 10.0 bar |       |
| 63/16            | C05 P1P                           | Double acting | +       | 63            | 16                   | 31.2                       | 306     | 612     | 917     | 1223    | 1529    | 1835    | 2141    | 2446    | 2752     | 3058  |
|                  |                                   |               | -       | 63            | 16                   | 29.2                       | 286     | 572     | 858     | 1144    | 1430    | 1717    | 2003    | 2289    | 2575     | 2861  |
| 63/20            | P1D P1Q P1S P5T P1D-B P1D-C P1D-X | Double acting | +       | 63            | 20                   | 31.2                       | 306     | 612     | 917     | 1223    | 1529    | 1835    | 2141    | 2446    | 2752     | 3058  |
|                  |                                   |               | -       | 63            | 20                   | 28.0                       | 275     | 550     | 825     | 1100    | 1375    | 1650    | 1925    | 2200    | 2475     | 2750  |
|                  |                                   |               | +       | 63            | 20                   | 31,2                       | 312     | 623     | 935     | 1247    | 1559    | 1870    | 2182    | 2494    | 2806     | 3117  |
|                  |                                   |               | -       | 63            | 20                   | 28,0                       | 280     | 561     | 841     | 1121    | 1402    | 1682    | 1962    | 2242    | 2523     | 2803  |
|                  |                                   |               | +       | 63            | 20                   | 50,3                       | 503     | 1005    | 1508    | 2011    | 2513    | 3016    | 3519    | 4021    | 4524     | 5027  |
|                  |                                   |               | -       | 63            | 20                   | 45,4                       | 454     | 907     | 1361    | 1814    | 2268    | 2721    | 3175    | 3629    | 4082     | 4536  |
| 80/25            | P1D P1Q P1S P5T P1D-B P1D-C P1D-X | Double acting | +       | 80            | 25                   | 50.3                       | 493     | 986     | 1479    | 1972    | 2466    | 2959    | 3452    | 3945    | 4438     | 4931  |
|                  |                                   |               | -       | 80            | 25                   | 45.4                       | 445     | 890     | 1335    | 1780    | 2225    | 2670    | 3115    | 3560    | 4005     | 4450  |
|                  |                                   |               | +       | 80            | 25                   | 50,3                       | 503     | 1005    | 1508    | 2011    | 2513    | 3016    | 3519    | 4021    | 4524     | 5027  |
|                  |                                   |               | -       | 80            | 25                   | 45,4                       | 454     | 907     | 1361    | 1814    | 2268    | 2721    | 3175    | 3629    | 4082     | 4536  |
| 84/20            | C0D300                            | Double acting | +       | 84            | 20                   | 55.4                       | 544     | 1087    | 1631    | 2175    | 2718    | 3262    | 3806    | 4349    | 4893     | 5436  |
|                  |                                   |               | -       | 84            | 20                   | 52.3                       | 513     | 1026    | 1539    | 2051    | 2564    | 3077    | 3590    | 4103    | 4616     | 5128  |
| 100/25           | P1D P1Q P1S P5T P1D-B P1D-C P1D-X | Double acting | +       | 100           | 25                   | 78.5                       | 770     | 1541    | 2311    | 3082    | 3852    | 4623    | 5393    | 6164    | 6934     | 7705  |
|                  |                                   |               | -       | 100           | 25                   | 73.6                       | 722     | 1445    | 2167    | 2889    | 3612    | 4334    | 5056    | 5779    | 6501     | 7223  |
|                  |                                   |               | +       | 100           | 25                   | 78,5                       | 785     | 1571    | 2356    | 3142    | 3927    | 4712    | 5498    | 6283    | 7069     | 7854  |
|                  |                                   |               | -       | 100           | 25                   | 73,6                       | 736     | 1473    | 2209    | 2945    | 3682    | 4418    | 5154    | 5890    | 6627     | 7363  |
|                  |                                   |               | +       | 100           | 25                   | 101,9                      | 1000    | 2000    | 3000    | 4000    | 5000    | 6000    | 7001    | 8001    | 9001     | 10001 |
|                  |                                   |               | -       | 100           | 25                   | 98,8                       | 969     | 1939    | 2908    | 3877    | 4846    | 5816    | 6785    | 7754    | 8724     | 9693  |
| 125/32           | P1D P1S P1D-B P1D-C P1D-X         | Double acting | +       | 125           | 32                   | 122.7                      | 1204    | 2408    | 3612    | 4815    | 6019    | 7223    | 8427    | 9631    | 10835    | 12039 |
|                  |                                   |               | -       | 125           | 32                   | 114.7                      | 1125    | 2250    | 3375    | 4500    | 5625    | 6750    | 7875    | 9000    | 10125    | 11250 |
|                  |                                   |               | +       | 125           | 32                   | 122,7                      | 1227    | 2454    | 3682    | 4909    | 6136    | 7363    | 8590    | 9817    | 11045    | 12272 |
|                  |                                   |               | -       | 125           | 32                   | 114,7                      | 1147    | 2294    | 3440    | 4587    | 5734    | 6881    | 8027    | 9174    | 10321    | 11468 |
| 161/25           | C0D1200                           | Double acting | +       | 161           | 25                   | 203.9                      | 2000    | 4000    | 6000    | 8000    | 10000   | 12000   | 14000   | 16000   | 18000    | 20000 |
|                  |                                   |               | -       | 161           | 25                   | 199.0                      | 1952    | 3904    | 5856    | 7808    | 9759    | 11711   | 13663   | 15615   | 17567    | 19519 |
| 160/40           | P1E P1D-T                         | Double acting | +       | 160           | 40                   | 201.1                      | 1972    | 3945    | 5917    | 7890    | 9862    | 11835   | 13807   | 15779   | 17752    | 19724 |
|                  |                                   |               | +       | 160           | 40                   | 201,0                      | 2010    | 4019    | 6029    | 8038    | 10048   | 12058   | 14067   | 16077   | 18086    | 20096 |
|                  |                                   |               | -       | 160           | 40                   | 188,4                      | 1884    | 3768    | 5652    | 7536    | 9420    | 11304   | 13188   | 15072   | 16956    | 18840 |
| 200/40           | P1E                               | Double acting | +       | 200           | 40                   | 314.2                      | 3082    | 6164    | 9246    | 12328   | 15410   | 18491   | 21573   | 24655   | 27737    | 30819 |
|                  |                                   |               | +       | 200           | 50                   | 314,2                      | 3142    | 6283    | 9425    | 12566   | 15708   | 18850   | 21991   | 25133   | 28274    | 31416 |
| 200/50           | P1D-T                             | Double acting | -       | 200           | 50                   | 294,5                      | 2945    | 5891    | 8836    | 11781   | 14727   | 17672   | 20617   | 23562   | 26508    | 29453 |
|                  |                                   |               | +       | 250           | 28                   | 490.9                      | 4815    | 9631    | 14446   | 19262   | 24077   | 28893   | 33708   | 38524   | 43339    | 48155 |
| 250/28           | C0P2500                           | Double acting | -       | 250           | 28                   | 484.7                      | 4755    | 9510    | 14265   | 19020   | 23776   | 28531   | 33286   | 38041   | 42796    | 47551 |
|                  |                                   |               | +       | 250           | 50                   | 490,9                      | 4909    | 9818    | 14726   | 19635   | 24544   | 29453   | 34362   | 39270   | 44179    | 49088 |
| 250/50           | P1D-T                             | Double acting | -       | 250           | 50                   | 471,3                      | 4713    | 9425    | 14138   | 18850   | 23563   | 28275   | 32988   | 37700   | 42413    | 47125 |
|                  |                                   |               | +       | 320           | 63                   | 804,25                     | 8043    | 16085   | 24128   | 32170   | 40213   | 48255   | 56298   | 64340   | 72383    | 80425 |
| 320/63           | P1D-T                             | Double acting | -       | 320           | 63                   | 773,1                      | 7731    | 15462   | 23192   | 30923   | 38654   | 46385   | 54116   | 61846   | 69577    | 77308 |

+ = Outward stroke  
 - = Return stroke

**Note!**  
 Select a theoretical force 50-100% larger than the force required

The Force Guide is only for double acting cylinders, please look into the technical catalogue for every individual sigle acting cylinder to see the forces.

**Note!** For all single acting cylinders you have to reduce the force in the table with the spring force to get the theoretical force.  
 The spring force is not calculated to create any work, it is only to take the piston rod into the cylinder.







# Handling Products

# Handling Products

Comprising an innovative range of Universal Grippers, Rotary Actuators and Precision Slide Tables



Parker is about motion control engineering, manufacturing, application expertise and unparalleled customer service.

Parker automation products are found just about everywhere – from laboratories, cleanrooms and factory floors, to mines, foundries and satellites in space – our products are used anywhere machines, processes and people depend on reliable high-performance motion control.

Today's industrial automation applications demand the best in quality and productivity. Likewise, high-technology automation applications demand performance in quality throughput and precision.

**P5GA - Angular double acting, square jaw carriers**

The P5GA is a compact angular gripper with a closed angle of -10° and an open angle of +30°. With double acting mechanism the gripper is suitable for internal or external gripping applications. For flexible installation mounting is available on three sides and the anodised body has recessed sensor grooves.

- Bore sizes Ø12, 16, 20, 25 and 32mm
- Double acting
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors



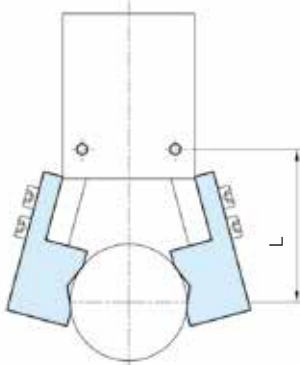
**Technical Information**

|   |                           |              |          |       |       |       |
|---|---------------------------|--------------|----------|-------|-------|-------|
| Acting type   | Double acting             |              |          |       |       |       |
| Bore (mm)   | 12                        | 16           | 20       | 25    | 32    |       |
| Port size   | M3 x 0.5                  |              | M5 x 0.8 |       |       |       |
| Medium  | Air                       |              |          |       |       |       |
| Operating pressure range  | 1.5 - 7 bar               |              |          |       |       |       |
| Temperature range   | -5 to +60°C (no freezing) |              |          |       |       |       |
| Max frequency   | 180 Cycles/min            |              |          |       |       |       |
| Lubrication   | Cylinder                  | Not required |          |       |       |       |
| Lever   | Grease                    |              |          |       |       |       |
| Max. arm length mm (L)  | 30                        | 40           | 60       | 70    | 85    |       |
| Theoretical holding force kgf-cm  |                           |              |          |       |       |       |
|   | Closed side               | 0.4xP        | 0.9xP    | 1.7xP | 3.4xP | 6.1xP |
|   | Opened side               | 0.5xP        | 1.2xP    | 2.3xP | 4.4xP | 8.1xP |
| Clamp / Release angle   | -10 to +30°               |              |          |       |       |       |
| Clamping force (F)  | $F = M / L \times 0.85$   |              |          |       |       |       |
| Weight (g)  | 53                        | 103          | 193      | 327   | 525   |       |
| L : Arm length (mm), M : Theoretical moment (kgf-cm)  |                           |              |          |       |       |       |
| F : Clamping force (kgf), P : Operating pressure (kgf/cm²)  |                           |              |          |       |       |       |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a> |                           |              |          |       |       |       |

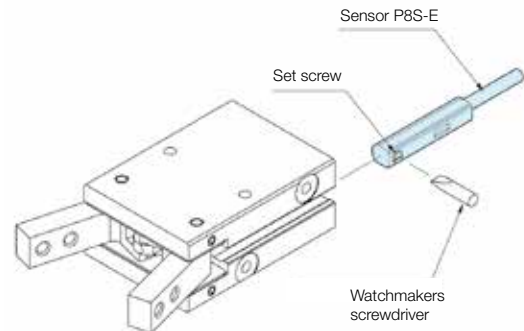
**P5GA - Angular Grippers**

| Bore mm | Order code             |
|---------|------------------------|
| 12      | <b>P5GA-012MSG030B</b> |
| 16      | <b>P5GA-016MSG030B</b> |
| 20      | <b>P5GA-020MSG030B</b> |
| 25      | <b>P5GA-025MSG030B</b> |
| 32      | <b>P5GA-032MSG030B</b> |

**Length of gripping point**



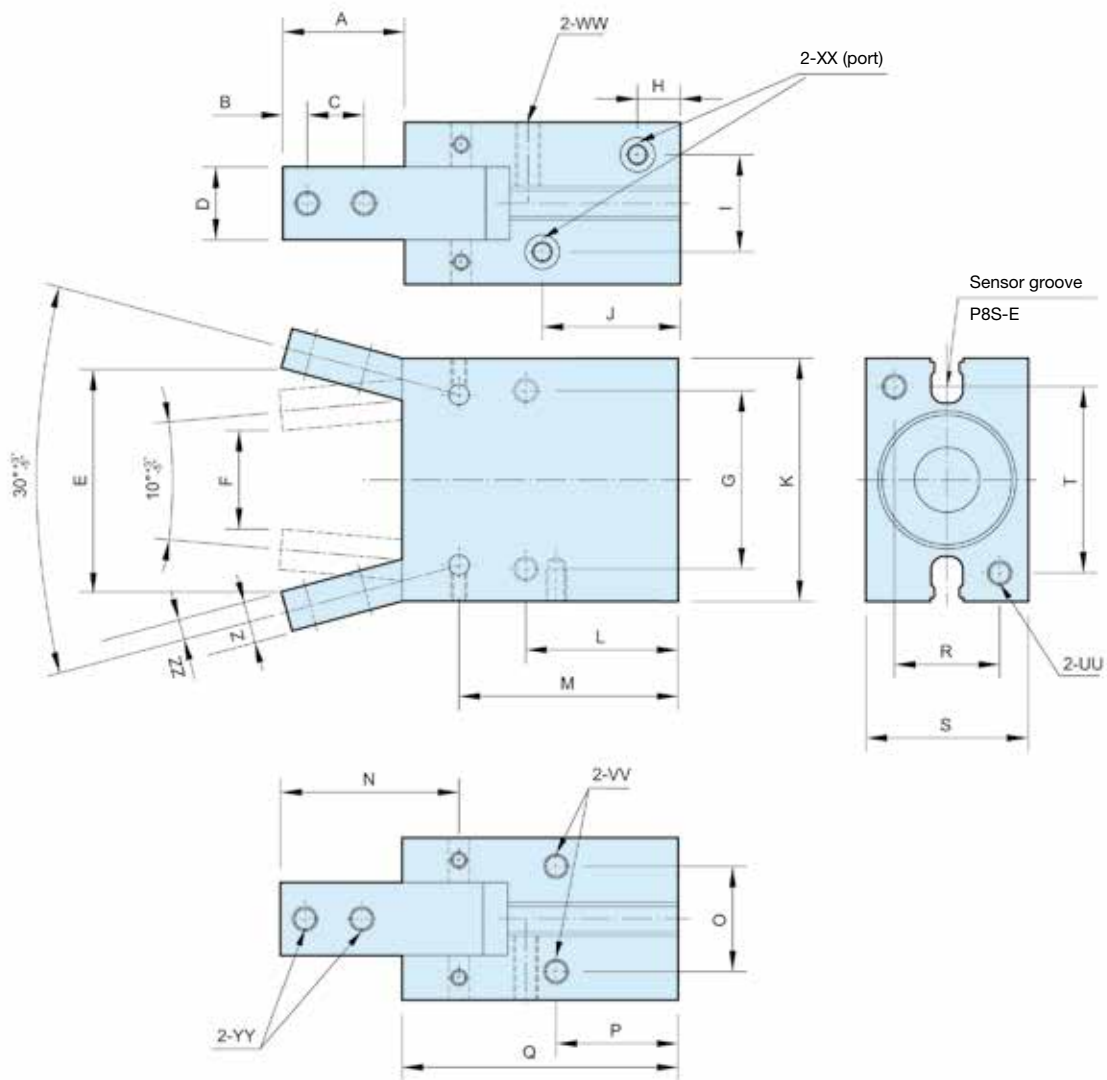
**Installation of sensor**



**Sensors - Series P8S-E**

| Magnetic Sensor | M8 - Snap in                        | Flying lead      |
|-----------------|-------------------------------------|------------------|
|                 |                                     |                  |
|                 | 0.165 m PUR cable with M8 connector | 2 m PUR cable    |
| PNP             | <b>P8S-EPSUS</b>                    | <b>P8S-EPFXS</b> |
| NPN             | <b>P8S-ENSUS</b>                    | <b>P8S-ENFXS</b> |
| Reed            | <b>P8S-ERSUS</b>                    | <b>P8S-ERFXS</b> |

Dimensions (mm)



| Bore mm | A    | B | C  | D 0/-0.03 | E    | F  | G  | H    | I    | J    | K  | L    | M    | N    | O    | P    | Q    | R  | S  | T  |
|---------|------|---|----|-----------|------|----|----|------|------|------|----|------|------|------|------|------|------|----|----|----|
| 12      | 15,4 | 3 | 6  | 7         | 26,3 | 9  | 20 | 7,5  | 10,2 | 23,5 | 28 | 20   | 32,9 | 21,5 | 10,2 | 16   | 39   | 10 | 16 | 22 |
| 16      | 17,5 | 3 | 8  | 9         | 31,1 | 14 | 24 | 7,5  | 12   | 22   | 34 | 22,5 | 35   | 25   | 14   | 18   | 42,5 | 14 | 22 | 26 |
| 20      | 22   | 4 | 10 | 12        | 40,1 | 18 | 30 | 8    | 13   | 25   | 45 | 25   | 39,5 | 32,5 | 16   | 19   | 50   | 16 | 26 | 35 |
| 25      | 26   | 5 | 12 | 14        | 47,9 | 21 | 36 | 8,5  | 18   | 28   | 52 | 28,5 | 45,5 | 38,5 | 20   | 21,5 | 58   | 20 | 32 | 40 |
| 32      | 30   | 6 | 14 | 18        | 55,1 | 24 | 44 | 10,5 | 24   | 34   | 60 | 37,5 | 54   | 44   | 26   | 30   | 68   | 26 | 40 | 46 |

| Bore mm | UU            | VV            | WW            | XX           | YY | Z  | ZZ  |
|---------|---------------|---------------|---------------|--------------|----|----|-----|
| 12      | M3 x 5 depth  | M3 x 5 depth  | M3 x 5 depth  | M3 x 5 depth | M3 | 5  | 2,5 |
| 16      | M4 x 7 depth  | M4 x 7 depth  | M4 x 7 depth  | M5 x 5 depth | M3 | 6  | 3   |
| 20      | M5 x 8 depth  | M5 x 8 depth  | M5 x 8 depth  | M5 x 5 depth | M4 | 7  | 3,5 |
| 25      | M6 x 10 depth | M6 x 10 depth | M6 x 10 depth | M5 x 5 depth | M5 | 9  | 4   |
| 32      | M6 x 10 depth | M6 x 10 depth | M6 x 10 depth | M5 x 5 depth | M6 | 10 | 5   |

**P5GB - Parallel double acting, square jaw carriers**

Available with a comprehensive range of bore sizes Ø12 - 32 mm the P5GB double acting parallel gripper is an accurate workpiece holding device. The anodised aluminium body has flexible installation mountings on three sides and recessed sensor grooves.

- Bore sizes Ø12, 16, 20, 25 and 32mm
- Double acting
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors



**Technical Information**

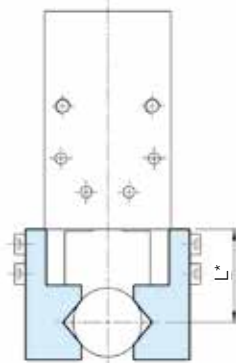
|                                  |                           |     |          |     |     |     |
|----------------------------------|---------------------------|-----|----------|-----|-----|-----|
| Acting type                      | Double acting             |     |          |     |     |     |
| Bore (mm)                        | 12                        | 16  | 20       | 25  | 32  |     |
| Port size                        | M3x0.5                    |     | M5 x 0.8 |     |     |     |
| Medium                           | Air                       |     |          |     |     |     |
| Operating pressure range         | 1.5 - 7 bar               |     |          |     |     |     |
| Temperature range                | -5 to +60°C (no freezing) |     |          |     |     |     |
| Max frequency                    | 180 Cycles/min            |     |          |     |     |     |
| Lubrication                      | Cylinder Grease           |     |          |     |     |     |
| Lever                            | Not required              |     |          |     |     |     |
| Max. arm length mm (L)           | 30                        | 40  | 60       | 70  | 85  |     |
| Theoretical holding force kgf-cm |                           |     |          |     |     |     |
|                                  | Closed side               | 0.8 | 2.4      | 4.7 | 7.5 | 10  |
|                                  | Opened side               | 0.5 | 1.8      | 3.5 | 6.0 | 8.5 |
| Lever open / closed stroke       | 6                         | 8   | 12       | 14  | 16  |     |
| Weight (g)                       | 66                        | 144 | 255      | 419 | 719 |     |

**P5GB - Parallel Grippers**

| Bore mm | Order code             |
|---------|------------------------|
| 12      | <b>P5GB-012MSG006B</b> |
| 16      | <b>P5GB-016MSG008B</b> |
| 20      | <b>P5GB-020MSG012B</b> |
| 25      | <b>P5GB-025MSG014B</b> |
| 32      | <b>P5GB-032MSG016B</b> |

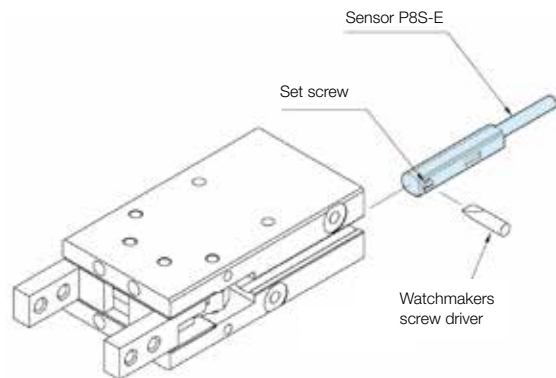
For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Length of gripping point**



\* L = gripping joint length 30mm, pressure 5kgf/cm<sup>2</sup>

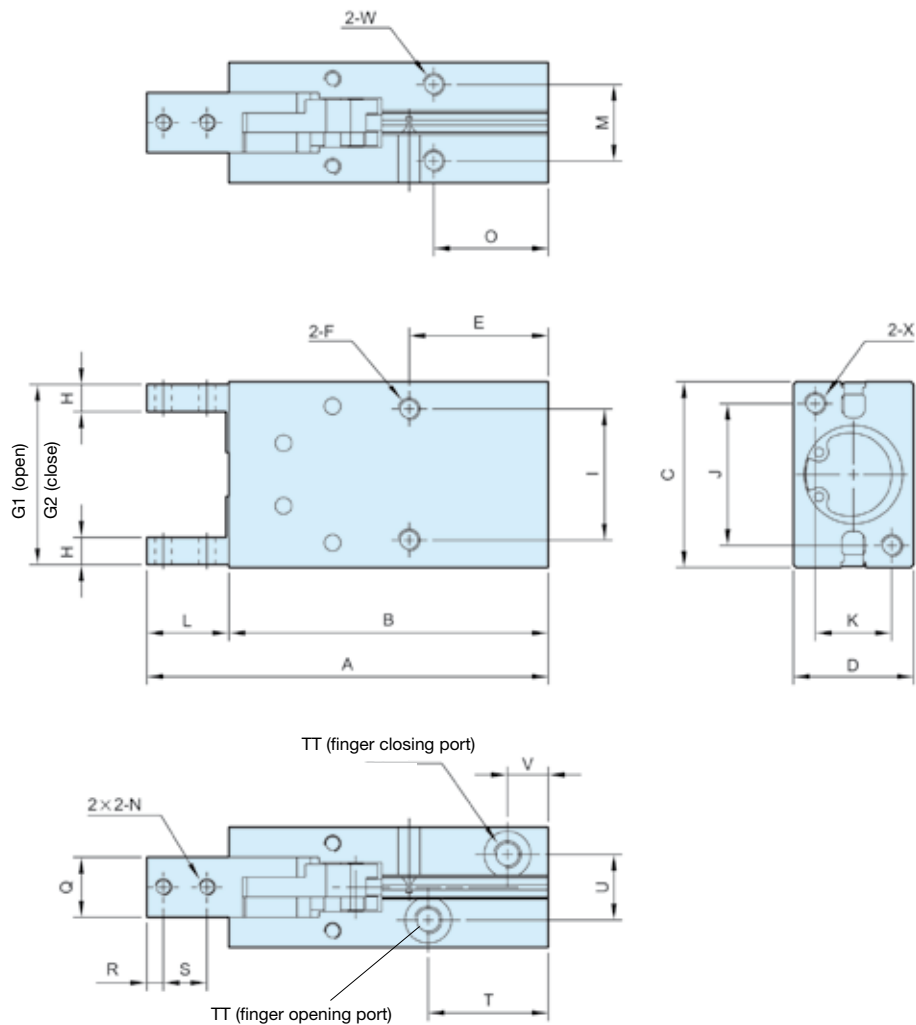
**Installation of sensor**



**Sensors - Series P8S-E**

| Magnetic Sensor | M8 - Snap in                        | Flying lead      |
|-----------------|-------------------------------------|------------------|
|                 |                                     |                  |
|                 | 0.165 m PUR cable with M8 connector | 2 m PUR cable    |
| PNP             | <b>P8S-EPSUS</b>                    | <b>P8S-EPFXS</b> |
| NPN             | <b>P8S-ENSUS</b>                    | <b>P8S-ENFXS</b> |
| Reed            | <b>P8S-ERSUS</b>                    | <b>P8S-ERFXS</b> |

Dimensions (mm)



| Bore mm | A     | B    | C  | D  | E    | F                   | G1 | G2 | H  | I  | J  | K  | L  | M  | N        | O  | Q 0/-0.03 | R |
|---------|-------|------|----|----|------|---------------------|----|----|----|----|----|----|----|----|----------|----|-----------|---|
| 12      | 63,5  | 50,5 | 28 | 16 | 20   | M3 x 0.5 x 5 depth  | 27 | 21 | 4  | 18 | 17 | 10 | 13 | 10 | M3 x 0.5 | 16 | 7         | 3 |
| 16      | 73,5  | 58,5 | 34 | 22 | 25,5 | M4 x 0.7 x 11 depth | 33 | 25 | 5  | 24 | 26 | 14 | 15 | 14 | M3 x 0.5 | 21 | 11        | 3 |
| 20      | 88,5  | 69,5 | 45 | 26 | 25   | M5 x 0.8 x 8 depth  | 44 | 32 | 6  | 30 | 35 | 16 | 19 | 16 | M4 x 0.7 | 19 | 12        | 4 |
| 25      | 102,5 | 78,5 | 52 | 32 | 28   | M6 x 1.0 x 10 depth | 51 | 37 | 8  | 36 | 40 | 20 | 24 | 20 | M5 x 0.8 | 22 | 14        | 5 |
| 32      | 120,5 | 90,5 | 60 | 40 | 34   | M6 x 1.0 x 10 depth | 59 | 43 | 10 | 44 | 46 | 24 | 30 | 26 | M6 x 1.0 | 26 | 20        | 7 |

| Bore mm | S  | T  | TT                 | U    | V    | W                   | X                   |
|---------|----|----|--------------------|------|------|---------------------|---------------------|
| 12      | 6  | 23 | M5 x 0,8 x 5 depth | 10,2 | 7,5  | M3 x 0.5 x 5 depth  | M3 x 0.5 x 5 depth  |
| 16      | 8  | 22 | M5 x 0,8 x 5 depth | 12   | 7,5  | M4 x 0.7 x 7 depth  | M4 x 0.7 x 7 depth  |
| 20      | 10 | 26 | M5 x 0,8 x 5 depth | 13   | 8    | M5 x 0.8 x 8 depth  | M5 x 0.8 x 8 depth  |
| 25      | 12 | 29 | M5 x 0,8 x 5 depth | 18   | 8,5  | M6 x 1.0 x 10 depth | M6 x 1.0 x 10 depth |
| 32      | 15 | 35 | M5 x 0,8 x 5 depth | 24   | 10,5 | M6 x 1.0 x 10 depth | M6 x 1.0 x 10 depth |

## P5GD - Parallel precision guided double acting, square jaw carriers

The P5GD is a parallel double acting gripper with integral linear guides that provide rigidity and high precision for the stainless steel jaw carriers. The anodised aluminium body has mounting points on four sides and integral sensors grooves.



- Bore sizes Ø10, 16, 20 and 25mm
- Double acting
- Stainless steel jaw carriers
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors

### Technical Information

|                          |                            |          |            |     |
|--------------------------|----------------------------|----------|------------|-----|
| Acting type              | Double acting              |          |            |     |
| Bore (mm)                | 10                         | 16       | 20         | 25  |
| Port size                | M3 x 0.5                   | M5 x 0.8 |            |     |
| Medium                   | Air                        |          |            |     |
| Operating pressure range | 2 to 7 bar                 |          | 1 to 7 bar |     |
| Temperature range        | -10 to +60°C (no freezing) |          |            |     |
| Repeatability            | ± 0.01 mm                  |          |            |     |
| Max operating frequency  | 180 Cycles/min             |          |            |     |
| Lubrication              | Not required               |          |            |     |
| Weight (g)               | 55                         | 125      | 250        | 460 |

### P5GD - Parallel Grippers

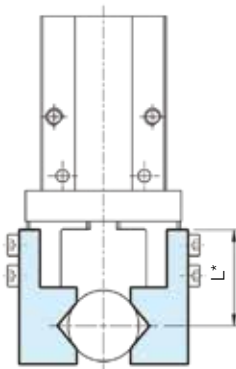
| Bore mm | Order code             |
|---------|------------------------|
| 10      | <b>P5GD-010MSG004B</b> |
| 16      | <b>P5GD-016MSG006B</b> |
| 20      | <b>P5GD-020MSG010B</b> |
| 25      | <b>P5GD-025MSG014B</b> |

| Bore | Gripping force <sup>(1)</sup>                     |                      | Opening closing stroke (both sides) (mm) |
|------|---|----------------------|--|
|      | Gripping force per finger effective value N (kgf) |                      |  |
| 10   | External<br>9.8 (1)                               | Internal<br>17 (1.7) | 4  |
| 16   | 30 (3.1)  | 40 (4.1)             | 6  |
| 20   | 42 (4.3)  | 66 (6.7)             | 10                                       |
| 25   | 65 (6.6)  | 104 (10.6)           | 14                                       |

<sup>1)</sup> Values based on pressure of 0.5 MPa (5.1 kgf/cm<sup>2</sup>)

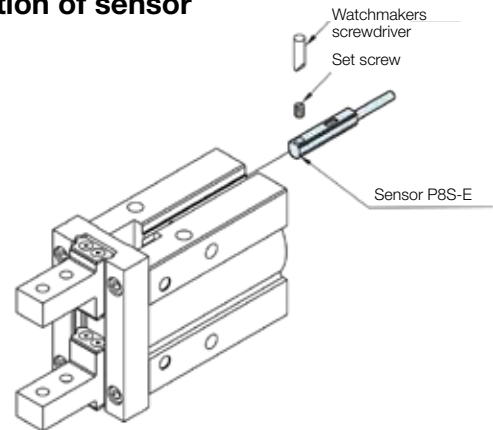
For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Length of gripping point



\* L = Gripping point L = 20mm at center of stroke

### Installation of sensor



### Sensors - Series P8S-E

#### Magnetic Sensor

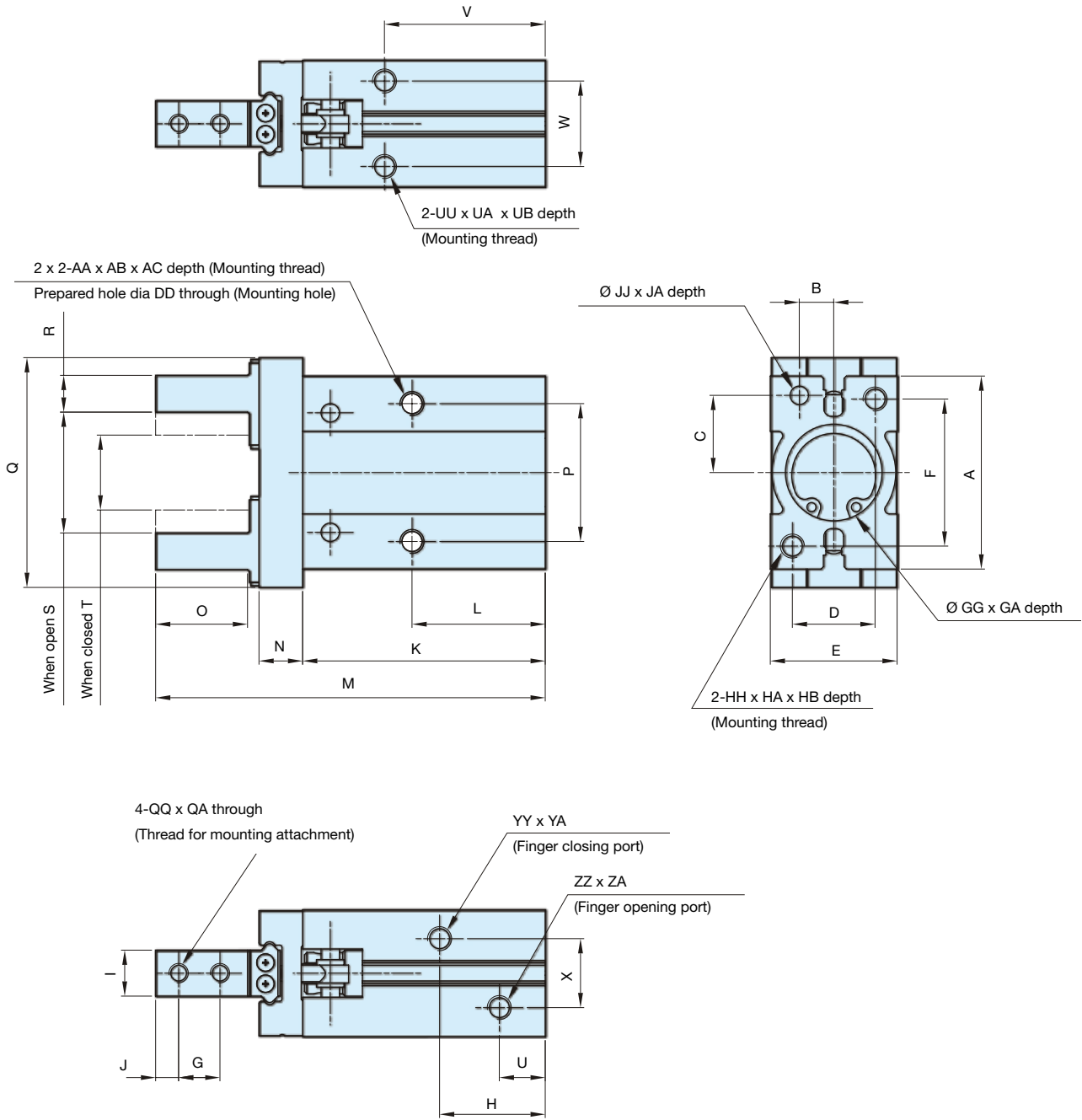
#### M8 - Snap in

#### Flying lead



|      |                                     |                  |
|------|-------------------------------------|------------------|
|      | 0.165 m PUR cable with M8 connector | 2 m PUR cable    |
| PNP  | <b>P8S-EPSUS</b>                    | <b>P8S-EPFXS</b> |
| NPN  | <b>P8S-ENSUS</b>                    | <b>P8S-ENFXS</b> |
| Reed | <b>P8S-ERSUS</b>                    | <b>P8S-ERFXS</b> |

Dimensions (mm)



| Bore mm | A    | AA | AB  | AC  | B                                    | C                                      | D                               | DD                                  | E                                      | F   | G   | GG                                  | GA  | H    | HH   | HA  | HB | I                                | J  | JJ                                    | JA | K    | L    | M     |
|---------|------|----|-----|-----|--------------------------------------|--|---------------------------------|-------------------------------------|--|-----|-----|-------------------------------------|-----|------|------|-----|----|----------------------------------|----|---------------------------------------|----|------|------|-------|
| 10      | 23   | M3 | 0.5 | 5.5 | 5.2 <sup>+0.025</sup> <sub>0</sub>   | 7.6 <sup>+0.02</sup> <sub>-0.02</sub>  | 12                              | 2.6                                 | 16.4 <sup>+0.05</sup> <sub>-0.05</sub> | 18  | 5.7 | 11H9 <sup>+0.043</sup> <sub>0</sub> | 2   | 19   | M3   | 0.5 | 6  | 5 <sup>0</sup> <sub>-0.05</sub>  | 3  | 2H9 <sup>+0.025</sup> <sub>0</sub>    | 3  | 37.8 | 23   | 57    |
| 16      | 30.6 | M4 | 0.7 | 8   | 6.5 <sup>+0.25</sup> <sub>0</sub>    | 11 <sup>+0.02</sup> <sub>-0.02</sub>   | 15                              | 3.4                                 | 23.6 <sup>+0.05</sup> <sub>-0.05</sub> | 22  | 7   | 17H9 <sup>+0.043</sup> <sub>0</sub> | 2   | 19   | M4   | 0.7 | 8  | 8 <sup>0</sup> <sub>-0.05</sub>  | 4  | 3H9 <sup>+0.025</sup> <sub>0</sub>    | 3  | 42.5 | 24.5 | 67.3  |
| 20      | 42   | M5 | 0.8 | 10  | 7.5 <sup>+0.030</sup> <sub>0</sub>   | 16.8 <sup>+0.02</sup> <sub>-0.02</sub> | 18                              | 3.4                                 | 27.6 <sup>+0.05</sup> <sub>-0.05</sub> | 32  | 9   | 21H9 <sup>+0.052</sup> <sub>0</sub> | 3   | 23   | M5   | 0.8 | 10 | 10 <sup>0</sup> <sub>-0.05</sub> | 5  | 4H9 <sup>+0.030</sup> <sub>0</sub>    | 4  | 52.8 | 29   | 84.8  |
| 25      | 52   | M6 | 1   | 12  | 10 <sup>+0.02</sup> <sub>-0.02</sub> | 21.8 <sup>+0.02</sup> <sub>-0.02</sub> | 22                              | 5.1                                 | 33.6 <sup>+0.05</sup> <sub>-0.05</sub> | 40  | 12  | 21H9 <sup>+0.052</sup> <sub>0</sub> | 3.5 | 23.5 | M6   | 1   | 12 | 12 <sup>0</sup> <sub>-0.05</sub> | 6  | 4H9 <sup>+0.02</sup> <sub>-0.02</sub> | 4  | 63.6 | 30   | 102.7 |
| Bore mm | N    | O  | P   | Q   | QQ                                   | QA                                     | R                               | S                                   | T                                      | U   | UU  | UA                                  | UB  | V    | W    | X   | YY | YA                               | ZZ | ZA                                    |    |      |      |       |
| 10      | 6    | 12 | 16  | 29  | M2.5                                 | 0.45                                   | 4 <sup>0</sup> <sub>-0.1</sub>  | 15.2 <sup>+2.2</sup> <sub>0</sub>   | 11.2 <sup>0</sup> <sub>-0.7</sub>      | 9   | M3  | 0.5                                 | 6   | 27   | 11.4 | 10  | M3 | 0.5                              | M3 | 0.5                                   |    |      |      |       |
| 16      | 7.5  | 15 | 24  | 38  | M3                                   | 0.5                                    | 5 <sup>0</sup> <sub>-0.1</sub>  | 20.9 <sup>+2.2</sup> <sub>0.2</sub> | 14.9 <sup>0</sup> <sub>-0.7</sub>      | 8.5 | M4  | 0.7                                 | 4.5 | 30   | 16   | 13  | M5 | 0.8                              | M5 | 0.8                                   |    |      |      |       |
| 20      | 9.5  | 20 | 30  | 50  | M4                                   | 0.7                                    | 8 <sup>0</sup> <sub>-0.1</sub>  | 26.3 <sup>+2.2</sup> <sub>0.2</sub> | 16.3 <sup>0</sup> <sub>-0.7</sub>      | 10  | M5  | 0.8                                 | 8   | 35   | 18.6 | 15  | M5 | 0.8                              | M5 | 0.8                                   |    |      |      |       |
| 25      | 11   | 25 | 36  | 63  | M5                                   | 0.8                                    | 10 <sup>0</sup> <sub>-0.1</sub> | 33.3 <sup>+2.2</sup> <sub>0.2</sub> | 19.3 <sup>0</sup> <sub>-0.8</sub>      | 9.7 | M6  | 1                                   | 10  | 36.5 | 22   | 20  | M5 | 0.8                              | M5 | 0.8                                   |    |      |      |       |



**P5GL - 180° Angular double acting, cam style, square jaw carriers**

The P5GL is a 180° angular gripper of compact size and lightweight construction. With double acting movement high gripping forces are achieved via internal cams. The anodised body has mounting points on four sides and sensors can be fitted in any of the four integral grooves.



- Bore sizes Ø10, 16, 20 and 25mm
- Double acting
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors

**P5GL - 180° Angular Grippers - Cam Style**




| Bore mm | Order code             |
|---------|------------------------|
| 10      | <b>P5GL-010MSG180B</b> |
| 16      | <b>P5GL-016MSG180B</b> |
| 20      | <b>P5GL-020MSG180B</b> |
| 25      | <b>P5GL-025MSG180B</b> |

**Technical Information**

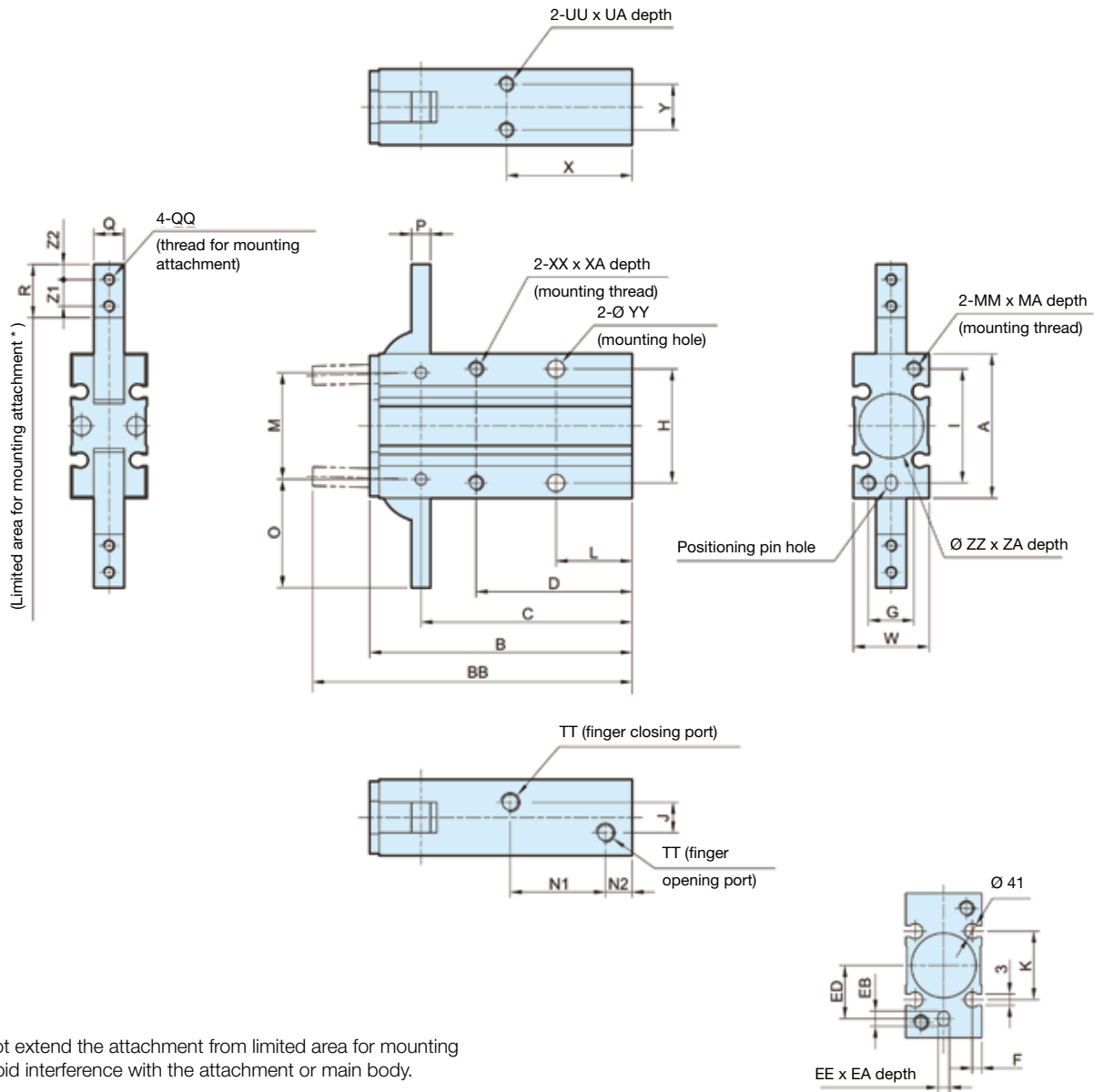
|   |                            |             |      |      |
|---|----------------------------|-------------|------|------|
| Acting type                                     | Double acting              |             |      |      |
| Bore (mm)                                       | 10                         | 16          | 20   | 25   |
| Medium  | Air                        |             |      |      |
| Operating pressure range                        | 1 to 6 bar                 |             |      |      |
| Temperature range                               | -10 to +60°C (no freezing) |             |      |      |
| Repeatability                                   | ± 0.2 mm                   |             |      |      |
| Max operating frequency                         | 60 Cycles/min              |             |      |      |
| Lubrication                                     | Not required               |             |      |      |
| Effective force (Nm) at (5kgf/cm <sup>2</sup> ) | 0.16                       | 0.54        | 1.10 | 2.28 |
| Operating angle (both sides)                    | Opened side                | 180° - 182° |      |      |
|   | Closed side                | -3°         |      |      |
| Weight (g)                                      | 80                         | 150         | 320  | 600  |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Sensors - Series P8S-H**

| Magnetic Sensor   | M8 - Snap in  | Flying lead   |
|---|---|---|
|  |  |  |
| Reed NO   | 0.165 m PUR cable with M8 connector<br><b>P8S-HRSUS</b>                             | 1 m PUR cable<br><b>P8S-HRFCS</b>   |

Dimensions (mm)



\* Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

| Bore mm | A  | B   | BB  | C    | D  | EE                                  | EA | EB | ED | F   | G  | H  | I  | J  | K  | L  | M  | MA | MM       | N1 | N2 | O    | P  | Q                                      |
|---------|----|-----|-----|------|----|-------------------------------------|----|----|----|-----|----|----|----|----|----|----|----|----|----------|----|----|------|----|--|
| 12      | 30 | 58  | 71  | 47,5 | 35 | 3H9 <sup>+0.025</sup> <sub>-0</sub> | 3  | 4  | 9  | 2   | 9  | 24 | 24 | 3  | 13 | 18 | 22 | 6  | M3 x 0.5 | 23 | 7  | 23,5 | 4  | 6 <sup>+0.005</sup> <sub>-0.025</sub>  |
| 16      | 38 | 69  | 84  | 55,5 | 41 | 3H9 <sup>+0.025</sup> <sub>-0</sub> | 3  | 4  | 15 | 2,5 | 12 | 30 | 30 | 8  | 18 | 20 | 28 | 8  | M4 x 0.7 | 25 | 7  | 28,5 | 5  | 8 <sup>+0.005</sup> <sub>-0.025</sub>  |
| 20      | 48 | 86  | 106 | 69   | 50 | 4H9 <sup>+0.030</sup> <sub>-0</sub> | 4  | 5  | 19 | 3   | 16 | 36 | 38 | 12 | 20 | 25 | 36 | 10 | M5 x 0.8 | 32 | 8  | 37   | 8  | 10 <sup>+0.005</sup> <sub>-0.025</sub> |
| 25      | 58 | 107 | 131 | 86   | 60 | 4H9 <sup>+0.030</sup> <sub>-0</sub> | 4  | 5  | 23 | 3   | 18 | 42 | 46 | 14 | 24 | 30 | 45 | 12 | M6 x 1   | 42 | 8  | 45   | 10 | 12 <sup>+0.005</sup> <sub>-0.025</sub> |

| Bore mm | QH  | QQ       | R    | TT                 | UA | UU       | W  | X  | XA | XX       | Y  | YY  | ZA  | ZZ                                   | Z1 | Z2 |
|---------|-----|----------|------|--------------------|----|----------|----|----|----|----------|----|-----|-----|--------------------------------------|----|----|
| 12      | 3,4 | M3 x 0.5 | 12   | M5 x 0.8 x 5 depth | 4  | M3 x 0.5 | 15 | 30 | 6  | M3 x 0.5 | 9  | 3,4 | 1,5 | 11H9 <sup>+0.043</sup> <sub>-0</sub> | 6  | 3  |
| 16      | 3,4 | M3 x 0.5 | 14   | M5 x 0.8 x 5 depth | 5  | M4 x 0.7 | 20 | 33 | 8  | M4 x 0.7 | 12 | 4,5 | 1,5 | 17H9 <sup>+0.043</sup> <sub>-0</sub> | 7  | 4  |
| 20      | 4,5 | M4 x 0.7 | 18   | M5 x 0.8 x 5 depth | 8  | M5 x 0.8 | 26 | 42 | 10 | M5 x 0.8 | 14 | 5,5 | 1,5 | 21H9 <sup>+0.052</sup> <sub>-0</sub> | 9  | 5  |
| 25      | 5,5 | M5 x 0.8 | 22,5 | M5 x 0.8 x 5 depth | 10 | M6 x 1   | 30 | 50 | 12 | M6 x 1   | 16 | 6,6 | 1,5 | 26H9 <sup>+0.052</sup> <sub>-0</sub> | 12 | 6  |

## P5RS - Rotary Actuators

The P5RS rotary table units provide precise control even under heavy loads, with specially designed load fixing and centring capabilities. End stroke cushioning using supplied adjusting bolts or optional shock absorbers offers dependable linear cushioning enabling objects to be carried and positioned safely and securely.



- Bores Ø16, 20, 25 and 32mm
- Twin rack and pinion
- Adjustable between 0° and 190°
- Magnetic piston standard
- Stroke adjusters standard
- Optional shock absorbers bore Ø20 and 25mm
- Easy mounting of work piece

### Operating Information

|                          |                            |
|--------------------------|----------------------------|
| Pressure range:          | 1 to 9 bar                 |
| Temperature range:       | -5° to 60° C               |
| Filtration requirements: |                            |
| Air filtration           | 40 micron or better        |
| Air lubrication          | Not necessary*             |
| Air humidity             | Low moisture content (dry) |

\* Addition of lubrication will greatly increase service life

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Ordering Information: P5RS




| Bore mm | Description                    | Ports (BSPP) | Rotation    | Torque (N-m at 5 bar) | Weight (kg) | Order code             |
|---------|--------------------------------|--------------|-------------|-----------------------|-------------|------------------------|
| 16      | Rotary table, stroke adjusters | 1/8          | 190 degrees | 1.21                  | 0.7         | <b>P5RS-016DSG190B</b> |
| 20      | Rotary table, stroke adjusters | 1/8          | 190 degrees | 2.51                  | 1.16        | <b>P5RS-020DSG190B</b> |
| 25      | Rotary table, stroke adjusters | 1/8          | 190 degrees | 4.91                  | 1.57        | <b>P5RS-025DSG190B</b> |
| 32      | Rotary table, stroke adjusters | 1/8          | 190 degrees | 9.86                  | 3.07        | <b>P5RS-032DSG190B</b> |

**Note:** Above units are supplied with rubber buffer stroke adjusters.

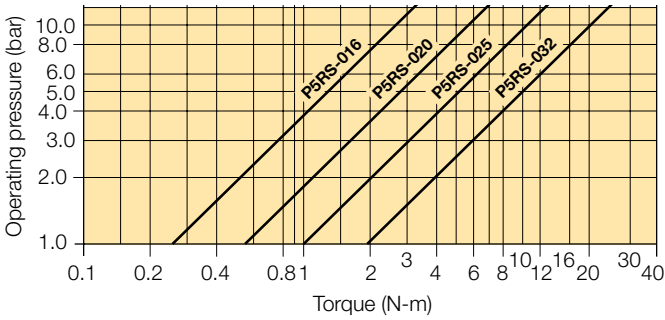
### Optional Shock Absorbers

| Bore mm | Rotary Actuator | Order code    |
|---------|-----------------|---------------|
| 16      | P5RS-016DSG190B | <b>N/A</b>    |
| 20      | P5RS-020DSG190B | <b>N/A</b>    |
| 25      | P5RS-025DSG190B | <b>MC150M</b> |
| 32      | P5RS-032DSG190B | <b>MC225M</b> |

### Sensors - Series P8S-F

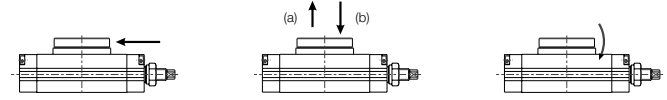
| Magnetic Sensor   | M8 - Snap in  | Flying lead   |
|---|---|---|
|  |  |  |
| Reed, NO  | 0.15 m PUR cable with M8 connector  | 2 m PUR cable   |
|   | <b>P8S-FRSUS</b>  | <b>P8S-FRFXS</b>  |

Load capacity P5RS Rotary Table



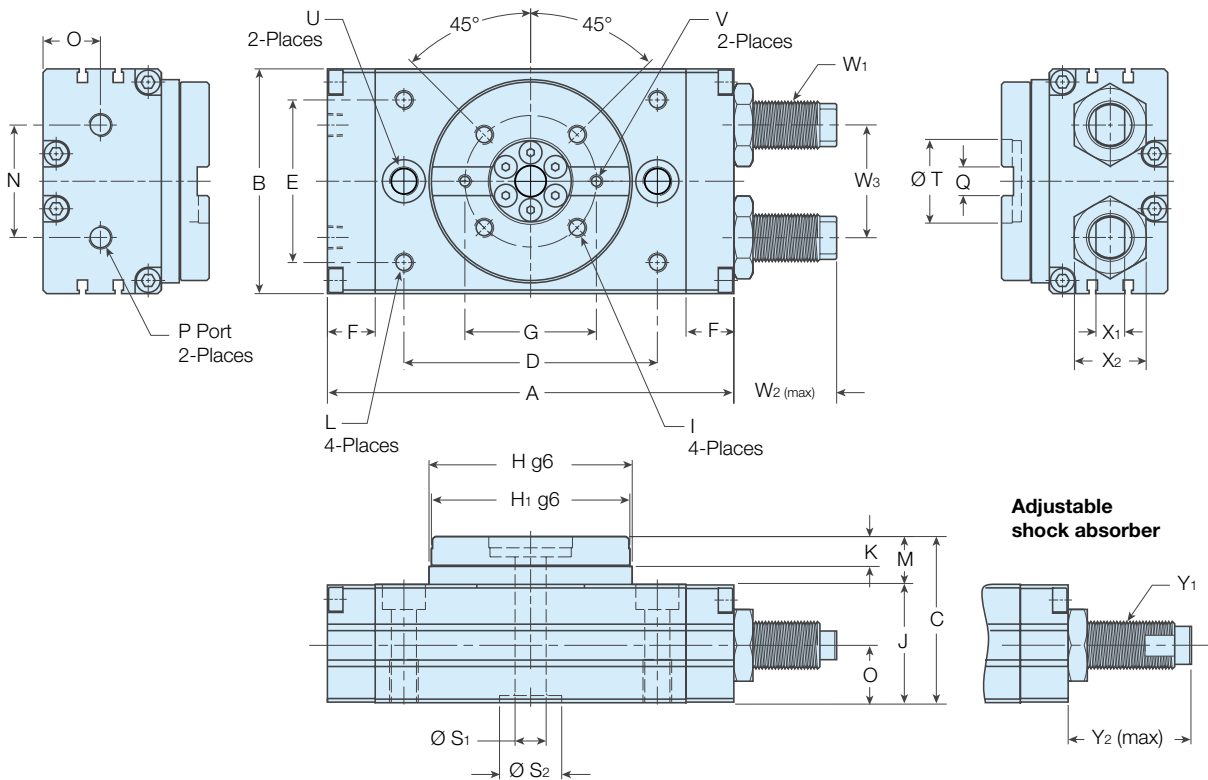
Allowable load

Set the load and moment to be applied to the table within the allowable values shown in the table below. (Values outside of limitations will cause excessive play, deteriorate accuracy, and shorten service life).



| Bore | Allowable radial load (N) | Allowable thrust load (N) |     | Allowable moment (Nm) |
|------|---------------------------|---------------------------|-----|-----------------------|
|      |                           | (a)                       | (b) |                       |
| 16   | 78                        | 74                        | 78  | 2.4                   |
| 20   | 147                       | 137                       | 137 | 4.0                   |
| 25   | 196                       | 197                       | 363 | 5.3                   |
| 32   | 314                       | 296                       | 451 | 9.7                   |

Dimensions P5RS Rotary Table



| Bore mm | A     | B  | C    | D   | E  | F    | G  | H    | H <sub>1</sub> | I                   | J    | K    | L           | M  | N  | O    | P      | Q  |
|---------|-------|----|------|-----|----|------|----|------|----------------|---------------------|------|------|-------------|----|----|------|--------|--|
| 16      | 108   | 58 | 47   | 62  | 38 | 15   | 38 | 50   | 48             | M5 x 7 Dp, P.C.D38  | 33   | 8    | M5 x 8 Dp   | 14 | 26 | 15.5 | PT 1/8 | 8 <sup>+0.03</sup> <sub>-0</sub> x 3.3 Dp  |
| 20      | 128   | 68 | 55   | 78  | 47 | 15   | 46 | 62.5 | 60             | M6 x 7 Dp, P.C.D46  | 38   | 10   | M6 x 8 Dp   | 17 | 27 | 18.5 | PT 1/8 | 10 <sup>+0.03</sup> <sub>-0</sub> x 3.5 Dp |
| 25      | 135.5 | 77 | 58.5 | 84  | 55 | 15.5 | 48 | 67   | 65             | M6 x 9 Dp, P.C.D48  | 41.5 | 10   | M6 x 8 Dp   | 17 | 37 | 20   | PT 1/8 | 12 <sup>+0.03</sup> <sub>-0</sub> x 4 Dp   |
| 32      | 170   | 94 | 69.5 | 106 | 68 | 20   | 55 | 85   | 83             | M8 x 10 Dp, P.C.D55 | 49.5 | 12.5 | M8 x 8.5 Dp | 20 | 47 | 24   | PT 1/8 | 12 <sup>+0.03</sup> <sub>-0</sub> x 5 Dp   |

| Bore mm | S <sub>1</sub> | S <sub>2</sub>   | T                | U  | V         | W <sub>1</sub> | W <sub>2</sub> | W <sub>3</sub> | X <sub>1</sub> | X <sub>2</sub> | Y <sub>1</sub> | Y <sub>2</sub> |
|---------|----------------|------------------|------------------|--|-----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 16      | 6              | 17 (H7) x 2.5 Dp | 24 (H7) x 3 Dp   | 2-Ø 6.8 thru, Ø11 x 6.5 Dp, M8 x 12 Dp (Sink)    | M3 x 4 Dp | M10 x 1,0      | 27             | 26             | 7              | 17             | N/A            | N/A            |
| 20      | 10             | 22 (H7) x 2.5 Dp | 32 (H7) x 3 Dp   | 2-Ø 8.6 thru, Ø14 x 8.5 Dp, M10 x 15 Dp (Sink)   | M4 x 6 Dp | M12 x 1,0      | 23             | 32             | 8              | 19             | N/A            | N/A            |
| 25      | 13             | 22 (H7) x 3 Dp   | 32 (H7) x 3.7 Dp | 2-Ø 8.6 thru, Ø14 x 8.5 Dp, M10 x 15 Dp (Sink)   | M4 x 5 Dp | M14 x 1,5      | 36             | 37             | 8              | 22             | MC150M         | 52             |
| 32      | 13             | 26 (H7) x 3 Dp   | 35 (H7) x 4.7 Dp | 2-Ø 10.5 thru, Ø18 x 10.5 Dp, M12 x 18 Dp (Sink) | M5 x 5 Dp | M20 x 1.5      | 43             | 47             | 12             | 30             | MC225M         | 62             |

Dimensions in (mm)



## P5SS - Precision Slide Tables

The Precision Slide Table P5SS is a pneumatic actuator, operated by two cylinders mounted in parallel for moving loads fitted on its mobile carriage or on its front plate quickly and accurately. Optional end of stroke adjusters offer precise adjustment even when the slide table is pressurised.



- High precision
- Bores Ø6, 8, 12, 16, 20 and 25mm
- Combination of dual bore cylinder and linear rail
- Magnetic piston standard
- Rubber bumper standard
- Optional stroke adjusters
- Optional shock absorbers bores Ø8 - 25mm

### Operating Information

|                          |                            |
|--------------------------|----------------------------|
| Pressure range:          | 1.5 to 7 bar               |
| Temperature range:       | -5° to 60° C               |
| Filtration requirements: |                            |
| Air filtration           | 40 micron or better        |
| Air lubrication          | Not necessary*             |
| Air humidity             | Low moisture content (dry) |

\* Addition of lubrication will greatly increase service life

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Ordering Information: P5SS

#### Ø6mm bore

| Stroke (mm) | Order code             |
|-------------|------------------------|
| 10          | <b>P5SS-006DSG010B</b> |
| 20          | <b>P5SS-006DSG020B</b> |
| 30          | <b>P5SS-006DSG030B</b> |
| 40          | <b>P5SS-006DSG040B</b> |
| 50          | <b>P5SS-006DSG050B</b> |

#### Ø12mm bore

| Stroke (mm) | Order code             |
|-------------|------------------------|
| 10          | <b>P5SS-012DSG010B</b> |
| 20          | <b>P5SS-012DSG020B</b> |
| 30          | <b>P5SS-012DSG030B</b> |
| 40          | <b>P5SS-012DSG040B</b> |
| 50          | <b>P5SS-012DSG050B</b> |
| 75          | <b>P5SS-012DSG075B</b> |
| 100         | <b>P5SS-012DSG100B</b> |

#### Ø20mm bore

| Stroke (mm) | Order code             |
|-------------|------------------------|
| 10          | <b>P5SS-020DSG010B</b> |
| 20          | <b>P5SS-020DSG020B</b> |
| 30          | <b>P5SS-020DSG030B</b> |
| 40          | <b>P5SS-020DSG040B</b> |
| 50          | <b>P5SS-020DSG050B</b> |
| 75          | <b>P5SS-020DSG075B</b> |
| 100         | <b>P5SS-020DSG100B</b> |
| 125         | <b>P5SS-020DSG125B</b> |

#### Ø8mm bore

| Stroke (mm) | Order code             |
|-------------|------------------------|
| 10          | <b>P5SS-008DSG010B</b> |
| 20          | <b>P5SS-008DSG020B</b> |
| 30          | <b>P5SS-008DSG030B</b> |
| 40          | <b>P5SS-008DSG040B</b> |
| 50          | <b>P5SS-008DSG050B</b> |
| 75          | <b>P5SS-008DSG075B</b> |

#### Ø16mm bore

| Stroke (mm) | Order code             |
|-------------|------------------------|
| 10          | <b>P5SS-016DSG010B</b> |
| 20          | <b>P5SS-016DSG020B</b> |
| 30          | <b>P5SS-016DSG030B</b> |
| 40          | <b>P5SS-016DSG040B</b> |
| 50          | <b>P5SS-016DSG050B</b> |
| 75          | <b>P5SS-016DSG075B</b> |
| 100         | <b>P5SS-016DSG100B</b> |
| 125         | <b>P5SS-016DSG125B</b> |

#### Ø25mm bore

| Stroke (mm) | Order code             |
|-------------|------------------------|
| 10          | <b>P5SS-025DSG010B</b> |
| 20          | <b>P5SS-025DSG020B</b> |
| 30          | <b>P5SS-025DSG030B</b> |
| 40          | <b>P5SS-025DSG040B</b> |
| 50          | <b>P5SS-025DSG050B</b> |
| 75          | <b>P5SS-025DSG075B</b> |
| 100         | <b>P5SS-025DSG100B</b> |
| 125         | <b>P5SS-025DSG125B</b> |
| 150         | <b>P5SS-025DSG150B</b> |

### Sensors - Series P8S-E

#### Magnetic Sensor



PNP  
NPN  
Reed

#### M8 - Snap in



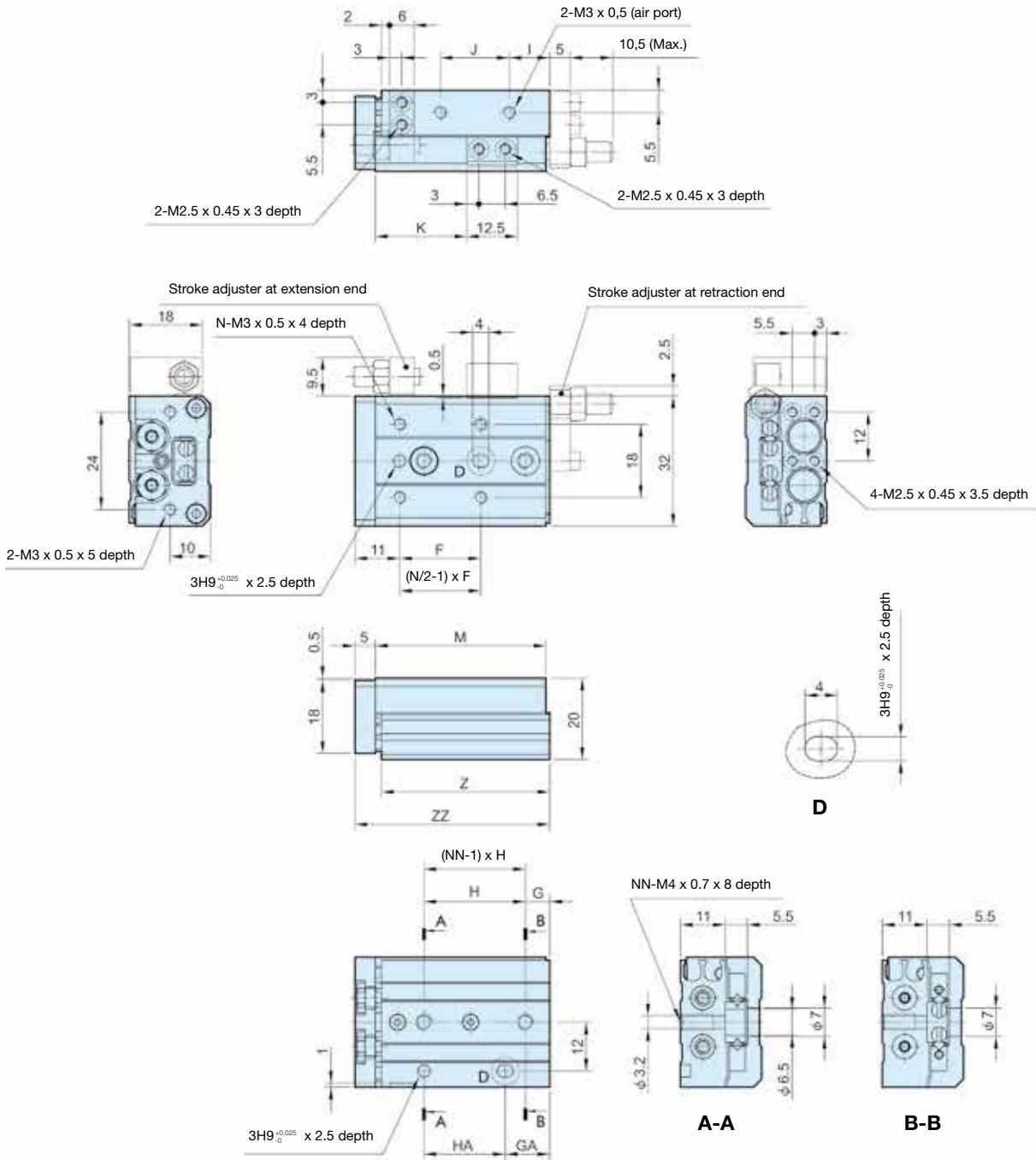
0.165 m PUR cable with M8 connector  
**P8S-EPSUS**  
**P8S-ENSUS**  
**P8S-ERSUS**

#### Flying lead



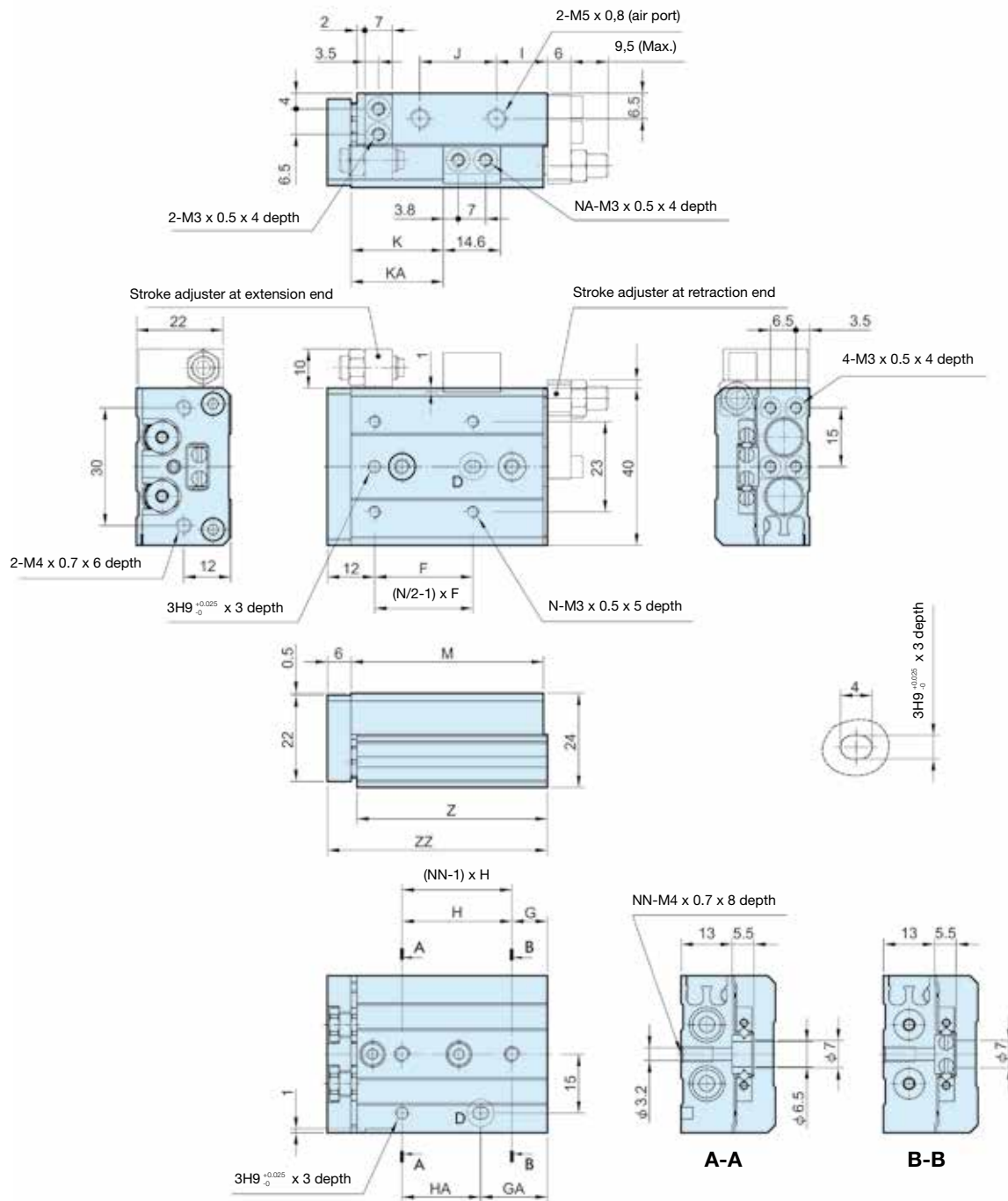
2 m PUR cable  
**P8S-EPFXS**  
**P8S-ENFXS**  
**P8S-ERFXS**

**Precision Slide Table Ø6 - Dimensions (mm)**



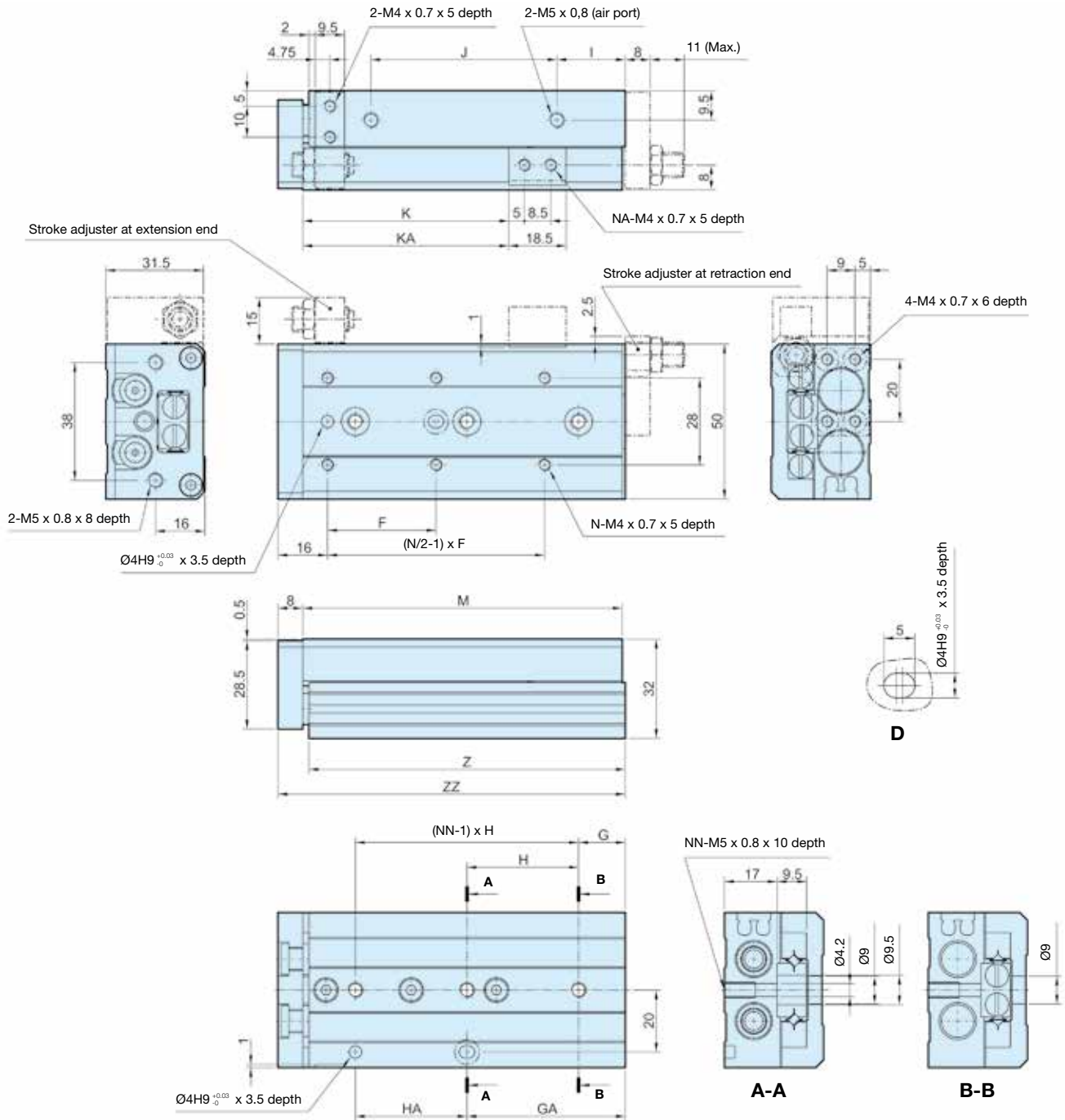
| Stroke | F  | G  | GA | H  | HA | I  | J  | K    | M   | N | NN | Z    | ZZ  |
|--------|----|----|----|----|----|----|----|------|-----|---|----|------|-----|
| 10     | 20 | 6  | 11 | 25 | 20 | 10 | 17 | 22,5 | 42  | 4 | 2  | 41,5 | 48  |
| 20     | 30 | 6  | 21 | 35 | 20 | 10 | 27 | 32,5 | 52  | 4 | 2  | 51,5 | 58  |
| 30     | 20 | 11 | 31 | 20 | 20 | 7  | 40 | 42,5 | 62  | 6 | 3  | 61,5 | 68  |
| 40     | 28 | 13 | 43 | 30 | 30 | 19 | 50 | 52,5 | 84  | 6 | 3  | 83,5 | 90  |
| 50     | 38 | 17 | 41 | 24 | 48 | 25 | 60 | 62,5 | 100 | 6 | 4  | 99,5 | 106 |

**Precision Slide Table Ø8 - Dimensions (mm)**



| Stroke | F  | G  | GA | H  | HA | I    | J    | K    | KA    | M   | N | NA | NN | Z     | ZZ  |
|--------|----|----|----|----|----|------|------|------|-------|-----|---|----|----|-------|-----|
| 10     | 25 | 9  | 17 | 28 | 20 | 13   | 19,5 | 23,5 | -     | 49  | 4 | 2  | 2  | 48,5  | 56  |
| 20     | 25 | 12 | 12 | 30 | 30 | 8,5  | 29   | 33,5 | -     | 54  | 4 | 2  | 2  | 53,5  | 61  |
| 30     | 40 | 13 | 33 | 20 | 20 | 9,5  | 39   | 43,5 | -     | 65  | 4 | 2  | 3  | 64,5  | 72  |
| 40     | 50 | 15 | 43 | 28 | 28 | 10,5 | 56   | 53,5 | -     | 83  | 4 | 2  | 3  | 82,5  | 90  |
| 50     | 38 | 20 | 43 | 23 | 46 | 24,5 | 60   | 63,5 | 82,5  | 101 | 6 | 4  | 4  | 100,5 | 108 |
| 75     | 50 | 27 | 83 | 28 | 56 | 38,5 | 96   | 88,5 | 132,5 | 151 | 6 | 4  | 5  | 105,5 | 158 |

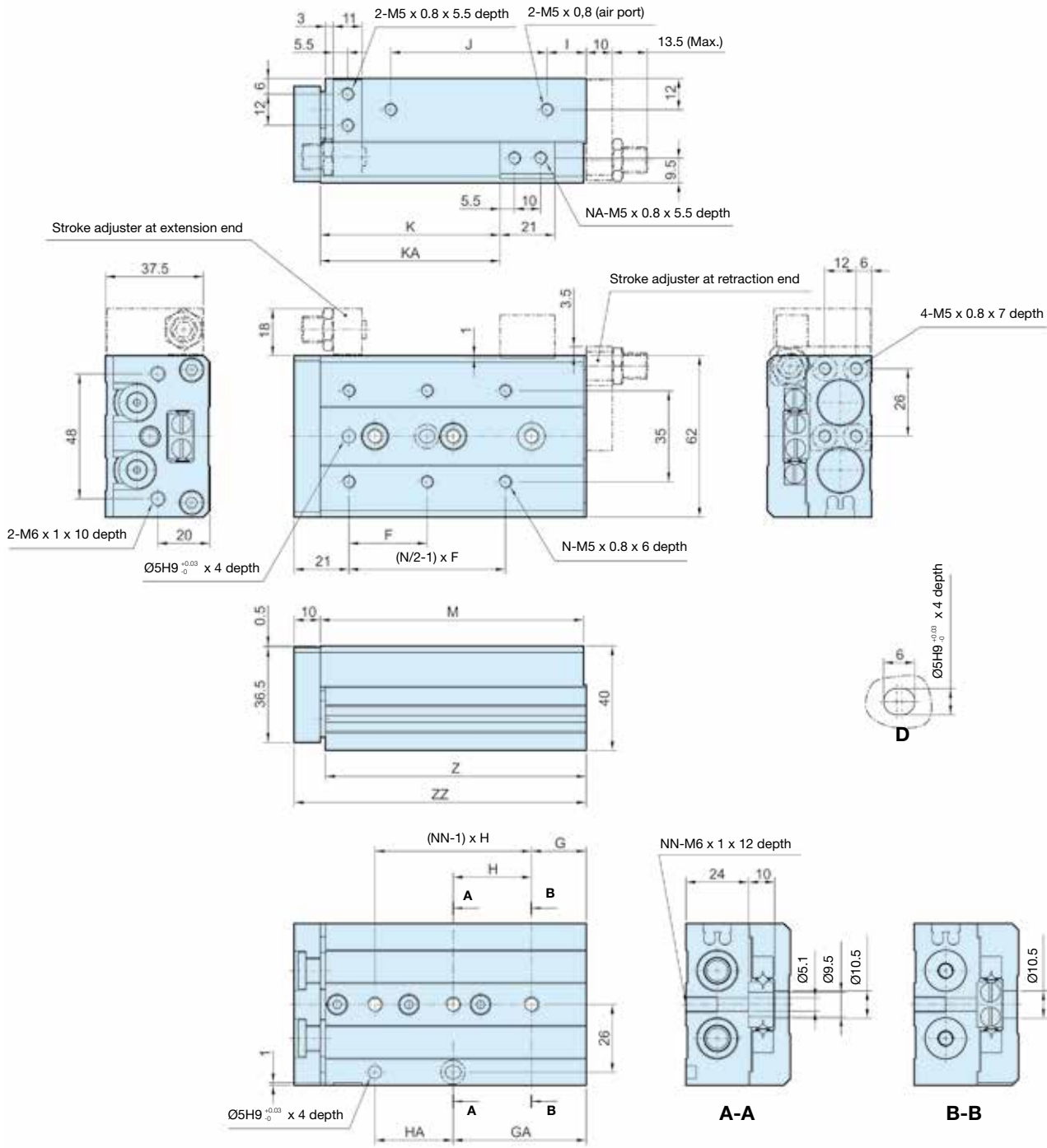
**Precision Slide Table Ø12 - Dimensions (mm)**



| Stroke | F  | G  | GA  | H  | HA | I  | J   | K     | KA    | M   | N | NA | NN | Z   | ZZ  |
|--------|----|----|-----|----|----|----|-----|-------|-------|-----|---|----|----|-----|-----|
| 10     | 35 | 15 | 15  | 40 | 40 | 10 | 40  | 26,5  | -     | 71  | 4 | 2  | 2  | 70  | 80  |
| 20     | 35 | 15 | 15  | 40 | 40 | 10 | 40  | 36,5  | -     | 71  | 4 | 2  | 2  | 70  | 80  |
| 30     | 35 | 15 | 15  | 40 | 40 | 10 | 40  | 46,5  | -     | 71  | 4 | 2  | 2  | 70  | 80  |
| 40     | 50 | 17 | 42  | 25 | 25 | 10 | 52  | 56,5  | -     | 83  | 4 | 2  | 3  | 82  | 92  |
| 50     | 35 | 15 | 51  | 36 | 36 | 22 | 60  | 66,5  | -     | 103 | 6 | 2  | 3  | 102 | 112 |
| 75     | 55 | 25 | 61  | 36 | 72 | 43 | 85  | 91,5  | 125,5 | 149 | 6 | 4  | 4  | 148 | 158 |
| 100    | 65 | 35 | 111 | 38 | 76 | 52 | 130 | 116,5 | 179,5 | 203 | 6 | 4  | 5  | 202 | 212 |

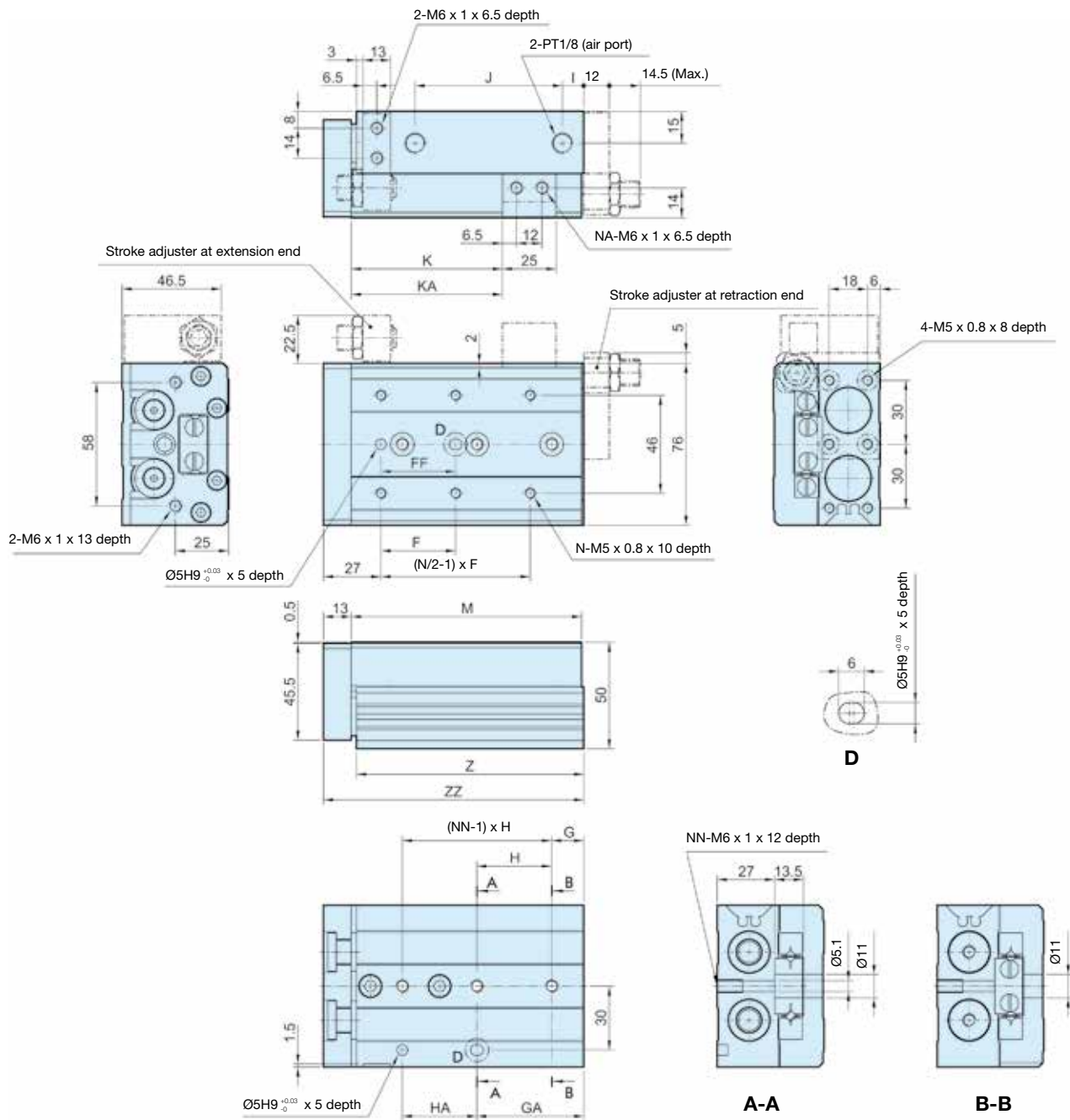


**Precision Slide Table Ø16 - Dimensions (mm)**



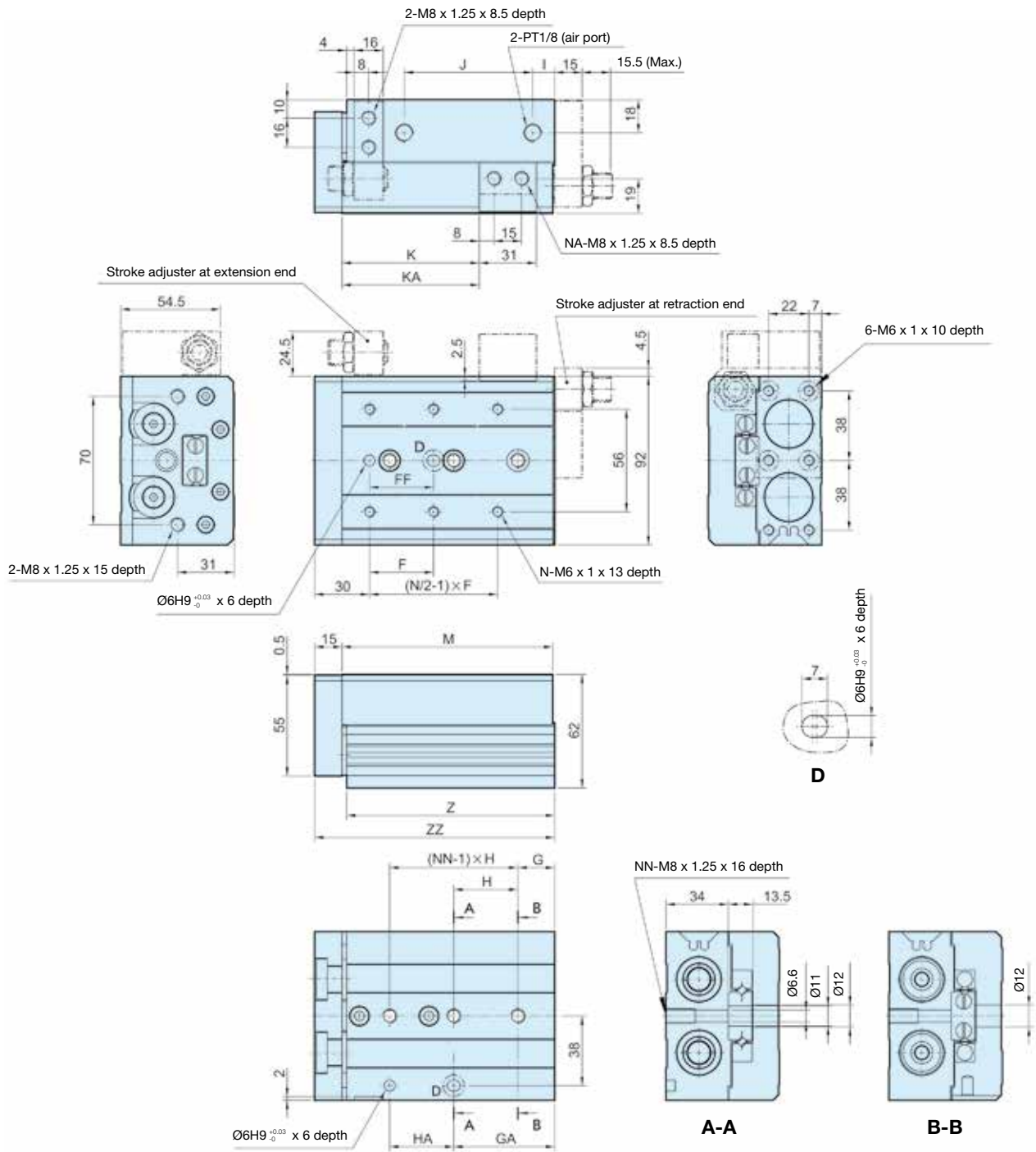
| Stroke | F  | G  | GA  | H  | HA | I  | J   | K   | KA  | M   | N | NA | NN | Z   | ZZ  |
|--------|----|----|-----|----|----|----|-----|-----|-----|-----|---|----|----|-----|-----|
| 10     | 35 | 16 | 16  | 40 | 40 | 10 | 40  | 29  | -   | 76  | 4 | 2  | 2  | 75  | 87  |
| 20     | 35 | 16 | 16  | 40 | 40 | 10 | 40  | 39  | -   | 76  | 4 | 2  | 2  | 75  | 87  |
| 30     | 35 | 16 | 16  | 40 | 40 | 10 | 40  | 49  | -   | 76  | 4 | 2  | 2  | 75  | 87  |
| 40     | 40 | 16 | 16  | 50 | 50 | 10 | 50  | 59  | -   | 86  | 4 | 2  | 2  | 85  | 97  |
| 50     | 30 | 21 | 51  | 30 | 30 | 15 | 60  | 69  | -   | 101 | 6 | 2  | 3  | 100 | 112 |
| 75     | 55 | 26 | 61  | 35 | 70 | 40 | 85  | 94  | 125 | 151 | 6 | 4  | 4  | 150 | 162 |
| 100    | 65 | 39 | 109 | 35 | 70 | 55 | 118 | 119 | 173 | 199 | 6 | 4  | 5  | 198 | 210 |
| 125    | 70 | 19 | 159 | 35 | 70 | 68 | 155 | 144 | 223 | 249 | 8 | 4  | 7  | 248 | 260 |

**Precision Slide Table Ø20 - Dimensions (mm)**



| Stroke | F  | FF | G  | GA  | H  | HA | I  | J   | K   | KA  | M   | N | NA | NN | Z     | ZZ  |
|--------|----|----|----|-----|----|----|----|-----|-----|-----|-----|---|----|----|-------|-----|
| 10     | 50 | 40 | 15 | 25  | 45 | 35 | 10 | 44  | 31  | -   | 83  | 4 | 2  | 2  | 81,5  | 97  |
| 20     | 50 | 40 | 15 | 25  | 45 | 35 | 10 | 44  | 41  | -   | 83  | 4 | 2  | 2  | 81,5  | 97  |
| 30     | 50 | 40 | 15 | 25  | 45 | 35 | 10 | 44  | 51  | -   | 83  | 4 | 2  | 2  | 81,5  | 97  |
| 40     | 60 | 50 | 15 | 35  | 55 | 35 | 10 | 54  | 61  | -   | 93  | 4 | 2  | 2  | 91,5  | 107 |
| 50     | 35 | 35 | 15 | 50  | 35 | 35 | 10 | 69  | 71  | -   | 108 | 6 | 2  | 3  | 106,5 | 122 |
| 75     | 60 | 60 | 19 | 54  | 35 | 70 | 10 | 108 | 96  | -   | 147 | 6 | 2  | 4  | 145,5 | 161 |
| 100    | 70 | 70 | 37 | 107 | 35 | 70 | 58 | 113 | 121 | 169 | 200 | 6 | 4  | 5  | 198,5 | 214 |
| 125    | 70 | 70 | 41 | 155 | 38 | 76 | 70 | 155 | 146 | 223 | 254 | 8 | 4  | 6  | 252,5 | 268 |
| 150    | 80 | 80 | 19 | 195 | 44 | 88 | 87 | 190 | 171 | 275 | 306 | 8 | 4  | 7  | 304,5 | 320 |

**Precision Slide Table Ø25 - Dimensions (mm)**

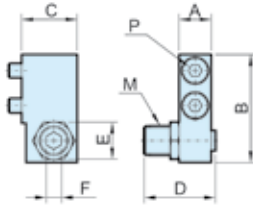


| Stroke | F  | FF | G  | GA  | H  | HA | I  | J   | K   | KA  | M   | N | NA | NN | Z     | ZZ  |
|--------|----|----|----|-----|----|----|----|-----|-----|-----|-----|---|----|----|-------|-----|
| 10     | 50 | 40 | 22 | 22  | 45 | 45 | 12 | 47  | 35  | -   | 92  | 4 | 2  | 2  | 90,5  | 108 |
| 20     | 50 | 40 | 22 | 22  | 45 | 45 | 12 | 47  | 45  | -   | 92  | 4 | 2  | 2  | 90,5  | 108 |
| 30     | 50 | 40 | 22 | 22  | 45 | 45 | 12 | 47  | 55  | -   | 92  | 4 | 2  | 2  | 90,5  | 108 |
| 40     | 60 | 50 | 22 | 22  | 55 | 55 | 12 | 57  | 65  | -   | 102 | 4 | 2  | 2  | 100,5 | 118 |
| 50     | 35 | 35 | 20 | 55  | 35 | 35 | 12 | 70  | 75  | -   | 115 | 6 | 2  | 3  | 113,5 | 131 |
| 75     | 60 | 60 | 26 | 61  | 35 | 70 | 33 | 90  | 100 | -   | 156 | 6 | 2  | 4  | 154,5 | 172 |
| 100    | 70 | 70 | 32 | 102 | 35 | 70 | 50 | 114 | 125 | 162 | 197 | 6 | 4  | 5  | 195,5 | 213 |
| 125    | 75 | 75 | 40 | 154 | 38 | 76 | 67 | 155 | 150 | 218 | 255 | 8 | 4  | 6  | 253,5 | 271 |
| 150    | 80 | 80 | 30 | 190 | 40 | 80 | 82 | 180 | 175 | 258 | 295 | 8 | 4  | 7  | 293,5 | 311 |

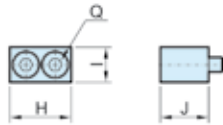
Accessories Ø6 - Ø25

Stroke adjuster at extension end:

Mounted to body



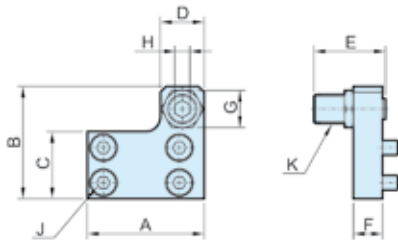
Mounted to table



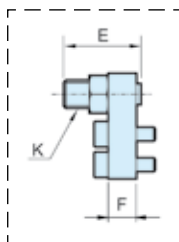
| Bore mm | Order code     | Adjustable stroke range (mm) | Mounted to body |      |      |      |    |     |            | Mounted to table |      |    |      |          |
|---------|----------------|------------------------------|-----------------|------|------|------|----|-----|------------|------------------|------|----|------|----------|
|         |                |                              | A               | B    | C    | D    | E  | F   | M          | P*               | H    | I  | J    | Q*       |
| 6       | P5SS-006-EA-05 | 5                            | 6               | 17,8 | 10,5 | 16,5 | 7  | 2,5 | M5 x 0.8   | M2.5x10          | 12,5 | 6  | 8,5  | M2.5 x 8 |
|         | P5SS-006-EA-15 | 15                           |                 |      |      |      |    |     |            |                  |      |    |      |          |
| 8       | P5SS-008-EA-05 | 5                            | 7               | 21,5 | 11   | 16,5 | 8  | 3   | M6 x 1     | M3 x 10          | 14,6 | 7  | 10   | M3 x 10  |
|         | P5SS-008-EA-15 | 15                           |                 |      |      | 26,5 |    |     |            |                  |      |    |      |          |
|         | P5SS-008-EA-25 | 25                           |                 |      |      | 36,5 |    |     |            |                  |      |    |      |          |
| 12      | P5SS-012-EA-05 | 5                            | 9,5             | 31   | 16   | 20   | 11 | 4   | M8 x 1     | M4 x 16          | 18,5 | 10 | 13   | M4 x 12  |
|         | P5SS-012-EA-15 | 15                           |                 |      |      | 30   |    |     |            |                  |      |    |      |          |
|         | P5SS-012-EA-25 | 25                           |                 |      |      | 40   |    |     |            |                  |      |    |      |          |
| 16      | P5SS-016-EA-05 | 5                            | 11              | 37   | 19   | 24,5 | 14 | 5   | M10 x 1    | M5 x 16          | 21   | 12 | 16,5 | M5 x 16  |
|         | P5SS-016-EA-15 | 15                           |                 |      |      | 34,5 |    |     |            |                  |      |    |      |          |
|         | P5SS-016-EA-25 | 25                           |                 |      |      | 44,5 |    |     |            |                  |      |    |      |          |
| 20      | P5SS-020-EA-05 | 5                            | 13              | 45,5 | 24   | 27,5 | 17 | 6   | M12 x 1.25 | M6 x 20          | 25   | 13 | 21   | M6 x 20  |
|         | P5SS-020-EA-15 | 15                           |                 |      |      | 37,5 |    |     |            |                  |      |    |      |          |
|         | P5SS-020-EA-25 | 25                           |                 |      |      | 47,5 |    |     |            |                  |      |    |      |          |
| 25      | P5SS-025-EA-05 | 5                            | 16              | 53,5 | 26,5 | 32,5 | 19 | 6   | M14 x 1.5  | M8 x 25          | 31   | 17 | 25,5 | M8 x 25  |
|         | P5SS-025-EA-15 | 15                           |                 |      |      | 42,5 |    |     |            |                  |      |    |      |          |
|         | P5SS-025-EA-25 | 25                           |                 |      |      | 52,5 |    |     |            |                  |      |    |      |          |

\* Size of hexagon socket head cap screws

Stroke adjuster at retraction end:



P5SS-006  
P5SS-008

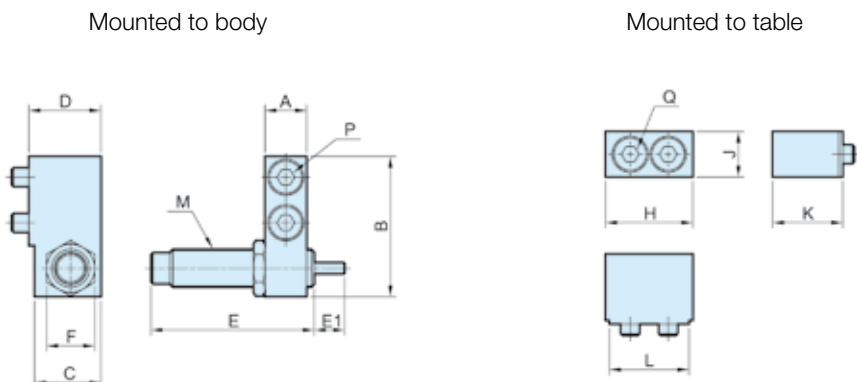


| Bore mm        | Order code     | Adjustable stroke range (mm) | A  | B              | C    | D  | E    | F    | G  | H    | J*      | K          |
|----------------|----------------|------------------------------|----|----------------|------|----|------|------|----|------|---------|------------|
|                |                |                              | 6  | P5SS-006-RA-05 | 5    | 21 | 19   | 10,5 | 8  | 16,5 | 5       | 7          |
| P5SS-006-RA-15 | 15             | 26,5                         |    |                |      |    |      |      |    |      |         |            |
| 8              | P5SS-008-RA-05 | 5                            | 25 | 22,5           | 12,5 | 9  | 16,5 | 6    | 8  | 3    | M3 x 10 | M6 x 1     |
|                | P5SS-008-RA-15 | 15                           |    |                |      |    | 26,5 |      |    |      |         |            |
|                | P5SS-008-RA-25 | 25                           |    |                |      |    | 36,5 |      |    |      |         |            |
| 12             | P5SS-012-RA-05 | 5                            | 32 | 31             | 18,5 | 13 | 20   | 8    | 12 | 4    | M4 x 8  | M8 x 1     |
|                | P5SS-012-RA-15 | 15                           |    |                |      |    | 30   |      |    |      |         |            |
|                | P5SS-012-RA-25 | 25                           |    |                |      |    | 40   |      |    |      |         |            |
| 16             | P5SS-016-RA-05 | 5                            | 40 | 38,5           | 23   | 15 | 24,5 | 10   | 14 | 5    | M5 x 10 | M10 x 1    |
|                | P5SS-016-RA-15 | 15                           |    |                |      |    | 34,5 |      |    |      |         |            |
|                | P5SS-016-RA-25 | 25                           |    |                |      |    | 44,5 |      |    |      |         |            |
| 20             | P5SS-020-RA-05 | 5                            | 50 | 48             | 29   | 21 | 27,5 | 12   | 17 | 6    | M5 x 12 | M12 x 1.25 |
|                | P5SS-020-RA-15 | 15                           |    |                |      |    | 37,5 |      |    |      |         |            |
|                | P5SS-020-RA-25 | 25                           |    |                |      |    | 47,5 |      |    |      |         |            |
| 25             | P5SS-025-RA-05 | 5                            | 60 | 58             | 35   | 23 | 32,5 | 15   | 19 | 6    | M6 x 16 | M14 x 1.5  |
|                | P5SS-025-RA-15 | 15                           |    |                |      |    | 42,5 |      |    |      |         |            |
|                | P5SS-025-RA-25 | 25                           |    |                |      |    | 52,5 |      |    |      |         |            |

\* Size of hexagon socket head cap screws

Accessories Ø8 - Ø25

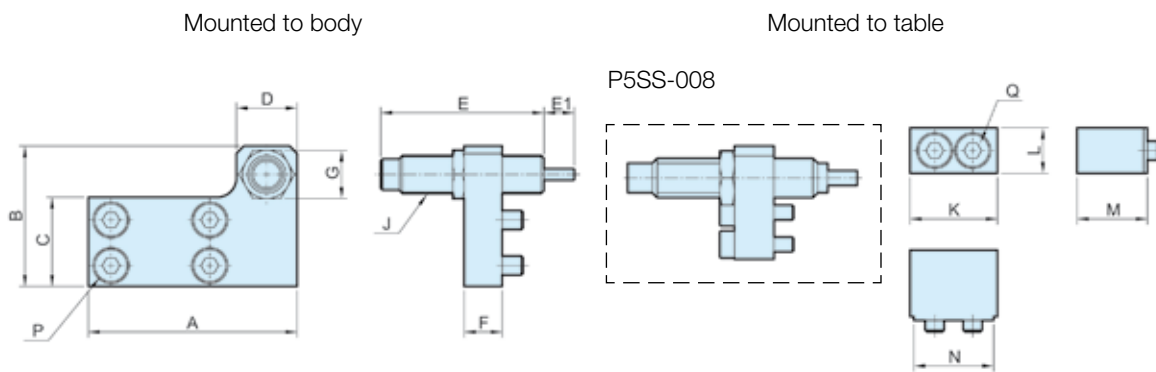
Shock absorber at extension end:



| Bore mm | Order code   | Mounted to body |      |      |      |      |    |      |           |         | Mounted to table |    |      |      |         |
|---------|--------------|-----------------|------|------|------|------|----|------|-----------|---------|------------------|----|------|------|---------|
|         |              | A               | B    | C    | D    | E    | E1 | F    | M         | P*      | H                | J  | K    | L    | Q*      |
| 8       | P5SS-008-ESK | 7               | 23   | 14   | 15,5 | 40,6 | 6  | 11   | M8 x 1    | M3 x 16 | 16,6             | 7  | 15,5 | 14,6 | M3 x 16 |
| 12      | P5SS-012-ESK | 9,5             | 31   | 14,5 | 16   | 40,6 | 6  | 11   | M8 x 1    | M4 x 16 | 20,5             | 10 | 15   | 18,5 | M4 x 12 |
| 16      | P5SS-016-ESK | 11              | 37   | 17,5 | 19   | 47   | 7  | 12,7 | M10 x 1   | M5 x 16 | 23               | 12 | 18,5 | 21   | M5 x 16 |
| 20      | P5SS-020-ESK | 13              | 45,5 | 23,5 | 26   | 67   | 12 | 19   | M14 x 1.5 | M6 x 25 | 27               | 13 | 25,5 | 25   | M6 x 25 |
| 25      | P5SS-025-ESK | 16              | 53,5 | 23,5 | 26,5 | 67   | 12 | 19   | M14 x 1.5 | M8 x 25 | 33               | 17 | 25,5 | 31   | M8 x 25 |

\* Size of hexagon socket head cap screws

Shock absorber at retraction end:



| Bore mm | Order code   | Mounted to body |    |      |    |      |    |    |      |           | Mounted to table |      |    |      |      |         |
|---------|--------------|-----------------|----|------|----|------|----|----|------|-----------|------------------|------|----|------|------|---------|
|         |              | A               | B  | C    | D  | E    | E1 | F  | G    | J         | P*               | K    | L  | M    | N    | Q*      |
| 8       | P5SS-008-RSK | 38              | 23 | 12,5 | 14 | 40,6 | 6  | 8  | 12   | M8 x 1    | M3 x 12          | 16,6 | 7  | 15,5 | 14,6 | M3 x 16 |
| 12      | P5SS-012-RSK | 45              | 31 | 18   | 14 | 40,6 | 6  | 8  | 11   | M8 x 1    | M4 x 8           | 20,5 | 10 | 15   | 18,5 | M4 x 12 |
| 16      | P5SS-016-RSK | 55              | 37 | 23,5 | 16 | 47   | 7  | 10 | 12,7 | M10 x 1   | M5 x 10          | 23   | 12 | 18,5 | 21   | M5 x 16 |
| 20      | P5SS-020-RSK | 70              | 47 | 29   | 23 | 67   | 12 | 12 | 19   | M14 x 1.5 | M5 x 12          | 27   | 13 | 25,5 | 25   | M6 x 25 |
| 25      | P5SS-025-RSK | 80              | 54 | 35   | 23 | 67   | 12 | 12 | 19   | M14 x 1.5 | M6 x 16          | 33   | 17 | 25,5 | 31   | M8 x 25 |

\* Size of hexagon socket head cap screws

# Pneumatic Stop Cylinders

Pneumatic stop cylinders with hydraulic industrial shock absorbers for soft, rebound-free stopping of a conveyed load.

## Pneumatic Stop Cylinders

- Soft, rebound-free stopping of a conveyed load.
- Flexible: for vertical or horizontal installation
- Types with shock absorber/roller lever combination, lone roller or roller with a piston rod that ensures direct stoppage
- Shock absorbers are easy to replace, even when fitted
- Rotating stop head for adjustment in line with the direction of travel of the conveyed load
- Rocker can be deactivated for alternate travel function
- Single and double acting cylinder variants
- Operating pressure up to 10 bar
- Different shock absorbers for conveyed load weights of up to 1700 kg and speeds of up to 45 m/min
- Optional: position switch for piston rod and proximity switch for rocker

### Rocker locking

After the conveyed load is stopped, the rocker is lowered and unlocked by applying compressed air. After the conveyed load has been moved, the return spring brings the rocker into its upper end position so that it is back in its start position for the next stopping procedure.

### Integrated shock absorbers

The shock absorbers, aligned to the weight and speed of the load, ensure gentle and precise stopping of the conveyed load

### Guide rod

Thanks to the easy-to-replace guide rod, the rocker can be quickly rotated so that the conveyor can move in a different direction.

### Diecast Aluminum

The design of the robust, lightweight diecast aluminum and its compact size enables it to be installed in many different conveyor systems.



### Unrestricted conveyor movement

The rocker is held in the OFF position (deactivated) by simply clipping a spring steel sheet onto it. The conveyed load can pass through the stop cylinder unobstructed while the rocker is in this position.



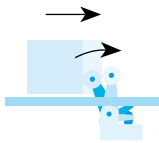
**Stop Cylinder – Vertical Version**

**STVSR series**



**Integrated shock absorber for heavy conveyed loads**

The built-in shock absorber stops the conveyed load in a gentle and precise manner without disturbing the load. Various shock absorbers are available depending on the weight of the conveyed load and the desired transport speed.

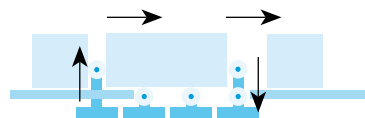


**STVDR series**



**Roller for lower conveyed load weights**

The piston rod with upward facing roller is lowered by applying compressed air once the conveyed load is on the ground. Afterwards, it is brought back into the upper end position by a return spring.

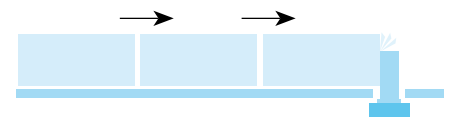


**STVD series**



**Direct stopping piston rod for heavy conveyed loads**

Reliably stops heavy conveyed loads at low transport speeds. Can also be used as a locking cylinder due to its solid piston rod.

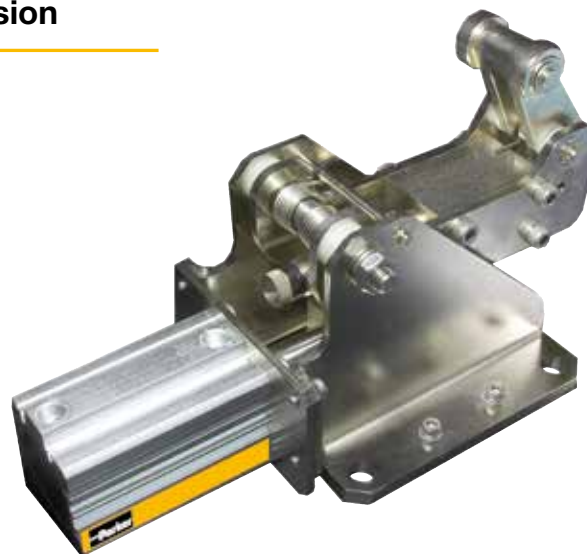


**Stop Cylinder – Horizontal Version**

**STHSR series**

**Horizontal stop cylinder with shock absorber**

Reliably stops heavy conveyed loads at high transport speeds. Well-suited for buffer areas.



## Pneumatic Stop Cylinders

### Ø 50-80 mm

Available with hydraulic Industrial shock absorbers

#### Vertical Version:

- STVSR series
- STVDR series
- STVD series

#### Horizontal Version:

- STHSR series



#### Vertical versions

##### Vertical stop cylinder with shock absorber and roller lever



| Cylinder Ø mm | Stroke (mm) | Order code               |
|---------------|-------------|--------------------------|
| 50            | 30          | <b>STVSR-50-30-.-...</b> |
| 80            | 40          | <b>STVSR-80-40-.-...</b> |

##### Vertical stop cylinder with roller



| Cylinder Ø mm | Stroke (mm) | Order code               |
|---------------|-------------|--------------------------|
| 50            | 30          | <b>STVDR-50-30-.-...</b> |

##### Vertical stop cylinder with direct stopping piston rod



| Cylinder Ø mm | Stroke (mm) | Order code              |
|---------------|-------------|-------------------------|
| 50            | 30          | <b>STVD-50-30-.-...</b> |

#### Horizontal versions

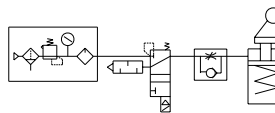
##### Horizontal stop cylinder with shock absorber and roller lever



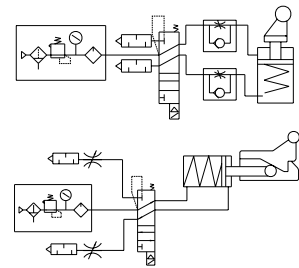
| Cylinder Ø mm | Stroke (mm) | Order code               |
|---------------|-------------|--------------------------|
| 50            | 50          | <b>STHSR-50-50-.-...</b> |

#### Pneumatic Circuit Diagrams

##### Single acting



##### Double acting



#### Specifications

| Specifications            | Description  |
|---------------------------|--|
| Medium                    | Filtered, unlubricated compressed air (if oil is used then it must be continued) |
| Operating pressure range  | 2 to 10 bar  |
| Test pressure             | 15 bar   |
| Ambient temperature range | 0 °C to +65 °C (If intended for use below 0 °C consult Technical Sales)          |
| Lubrication               | Unlubricated   |
| Cushioning                | Cushioning mat made from oil-resistant rubber                                    |

#### Weight

|                  |          |
|------------------|----------|
| Type STVSR-50-30 | 1.800 kg |
| Type STVSR-80-40 | 6.820 kg |
| Type STVDR-50-30 | 1.800 kg |
| Type STVD-50-30  | 1.800 kg |
| Type STHSR-50-50 | 8.750 kg |

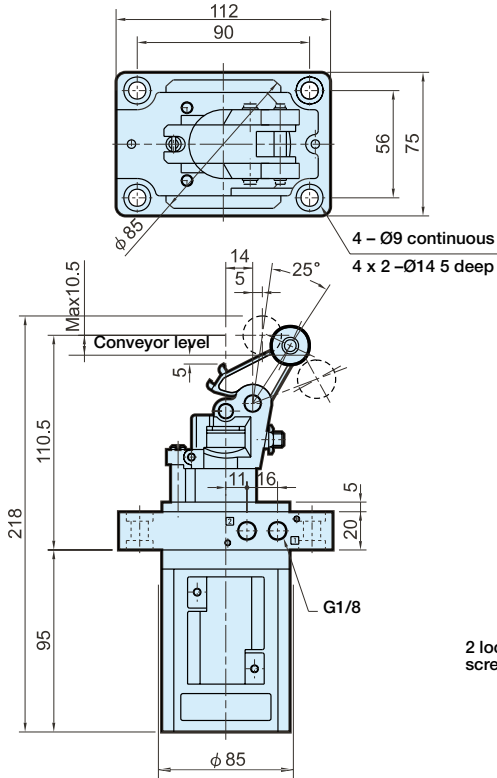


**STVSR Series - Stop cylinder Ø 50mm - Vertical version**

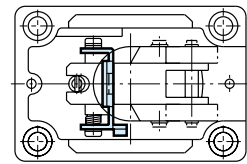
**Order Key**

|       |   |    |   |    |   |   |   |     |
|-------|---|----|---|----|---|---|---|-----|
| STVSR | - | 50 | - | 30 | - | L | - | STD |
|-------|---|----|---|----|---|---|---|-----|

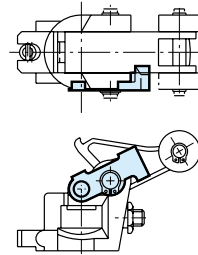
|          | Shock absorber strength |            | Connecting thread         |
|----------|-------------------------|------------|---------------------------|
| <b>L</b> | Light 50 - 150 kg       | <b>STD</b> | Standard G1/8             |
| <b>H</b> | High 150 - 300 kg       | <b>NPT</b> | National Pipe Thread 1/8" |



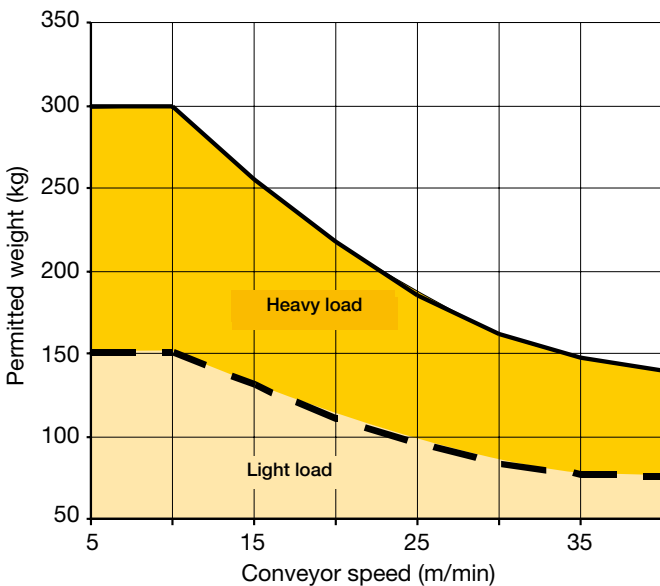
**Option - Rocker locking**



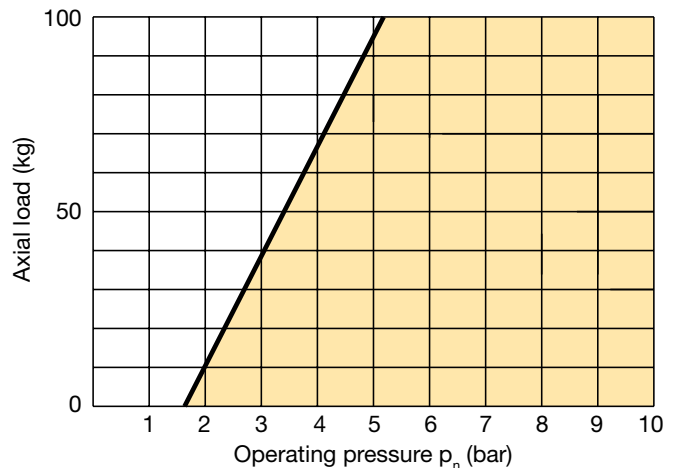
**- Free travel of conveyed load**



**Loads - Moving mass subject to speed – Type STVSR-50-30**



**Axial load subject to operating pressure – Type STVSR-50-30**



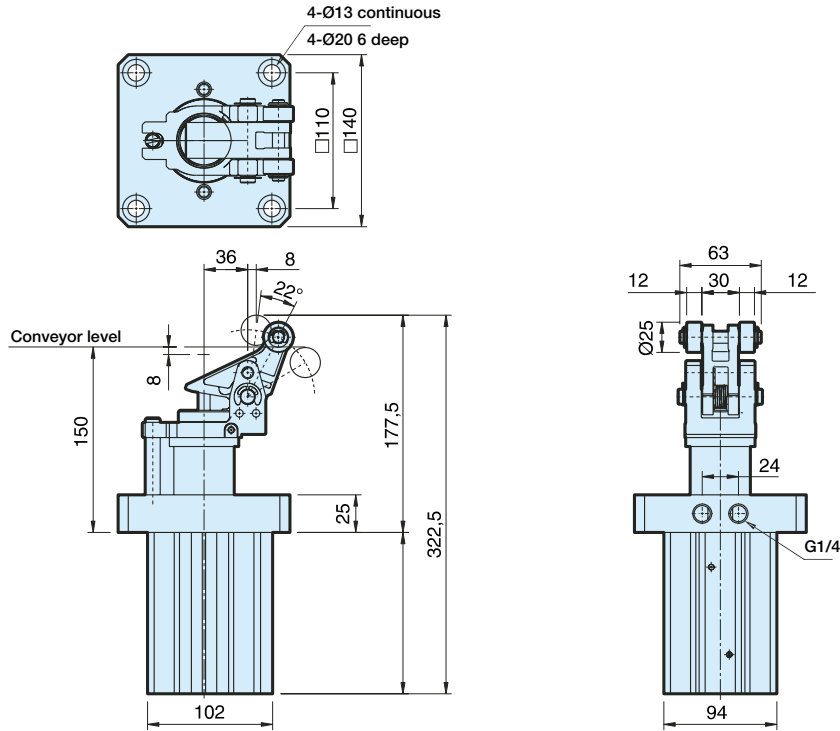
**STVSR Series - Stop cylinder Ø 80mm - Vertical version**

**Order Key**

**STVSR - 80 - 40 - STD**

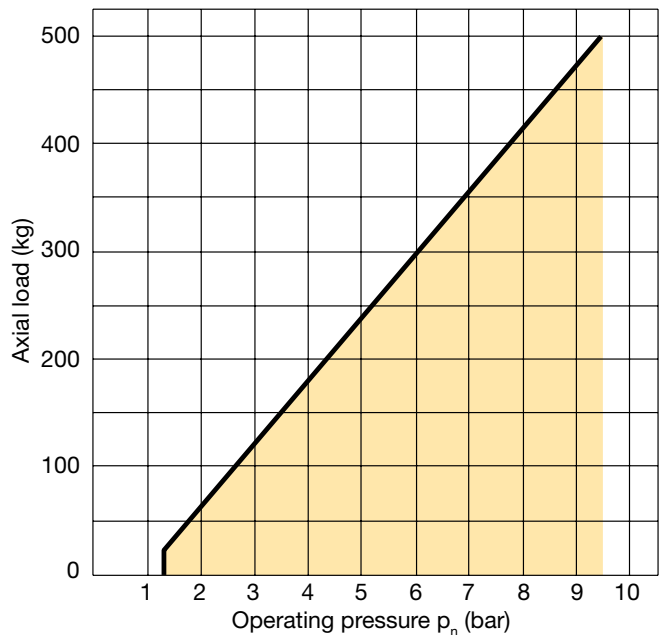
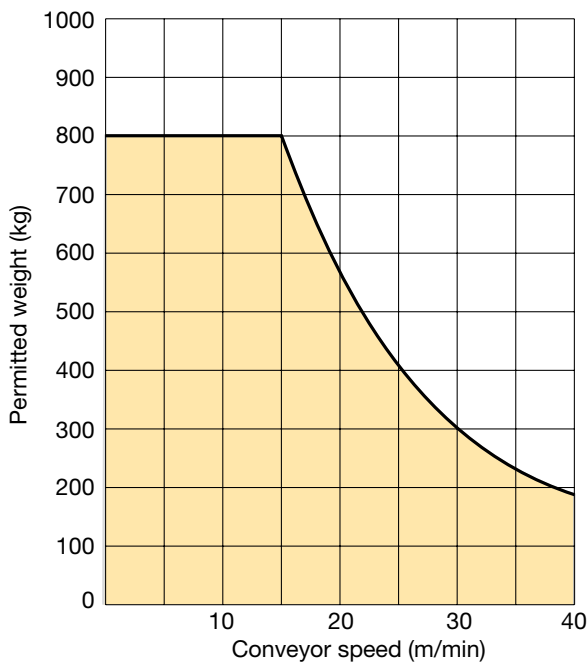
**Note:** Shock absorbers can set at 50 - 800kg

| Connecting thread |                           |
|-------------------|---------------------------|
| <b>STD</b>        | Standard G1/4             |
| <b>NPT</b>        | National Pipe Thread 1/4" |



**Loads - Moving mass subject to speed – Type STVSR-80-40**

**Axial load subject to operating pressure – Type STVSR-80-40**

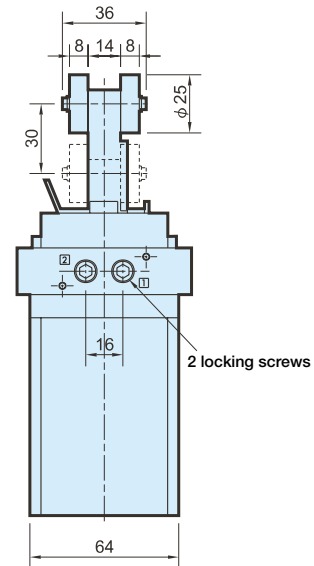
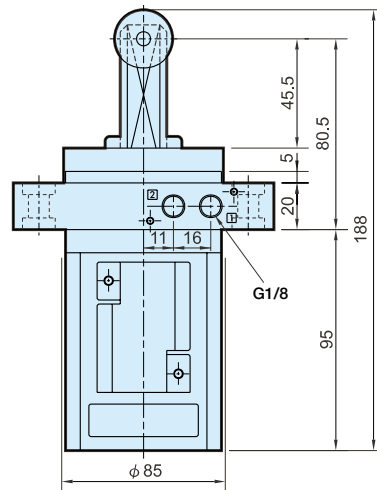
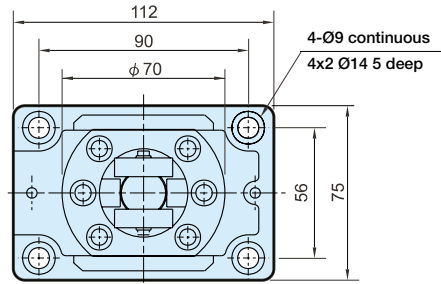


**STVDR Series - Stop cylinder Ø 50mm - Vertical version**

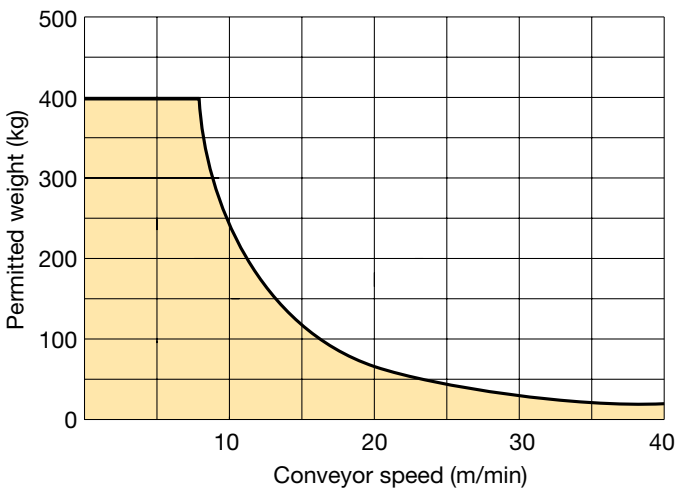
**Order Key**

**STVDR - 50 - 30 - STD**

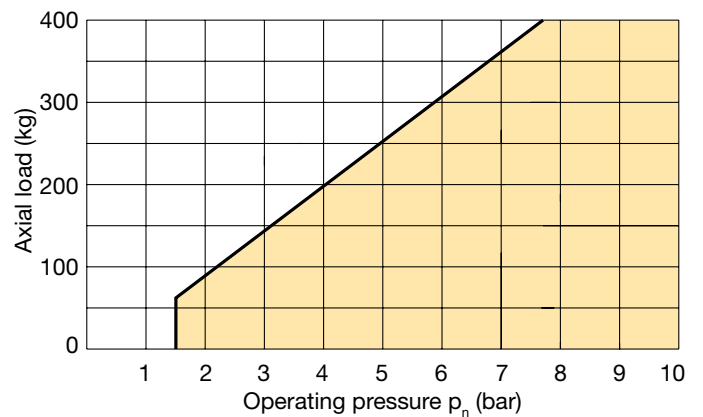
| Connecting thread |                           |
|-------------------|---------------------------|
| <b>STD</b>        | Standard G1/8             |
| <b>NPT</b>        | National Pipe Thread 1/8" |



**Loads - Moving mass subject to speed – Type STVDR-50-30**



**Axial load subject to operating pressure – Type STVDR-50-30**

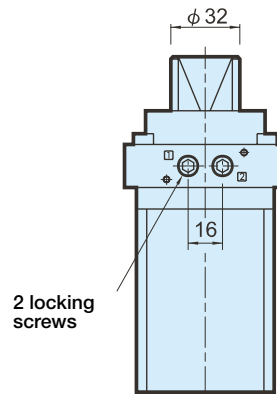
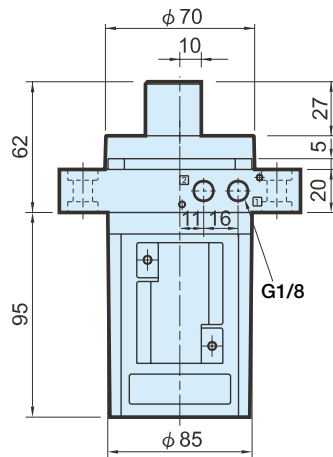
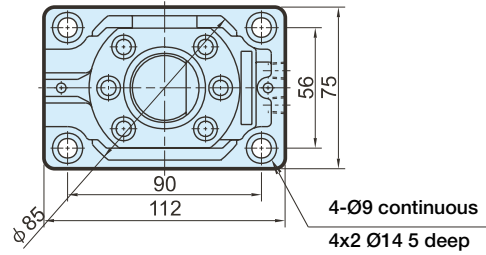


**STVSR Series - Stop cylinder Ø 80mm - Vertical version**

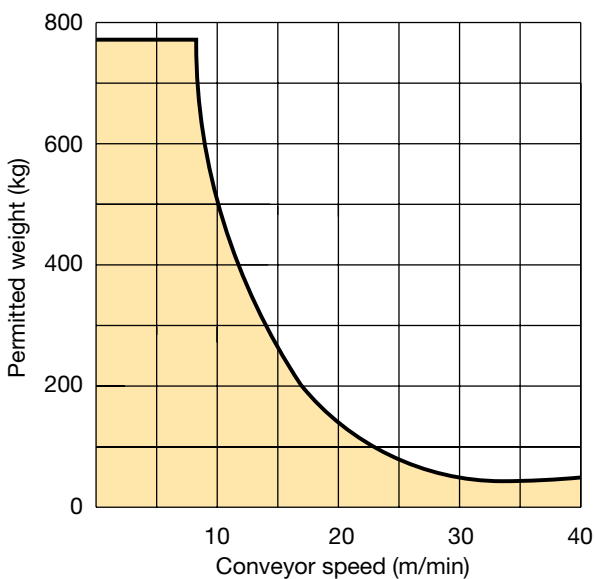
**Order Key**

**STVD - 50 - 30 - STD**

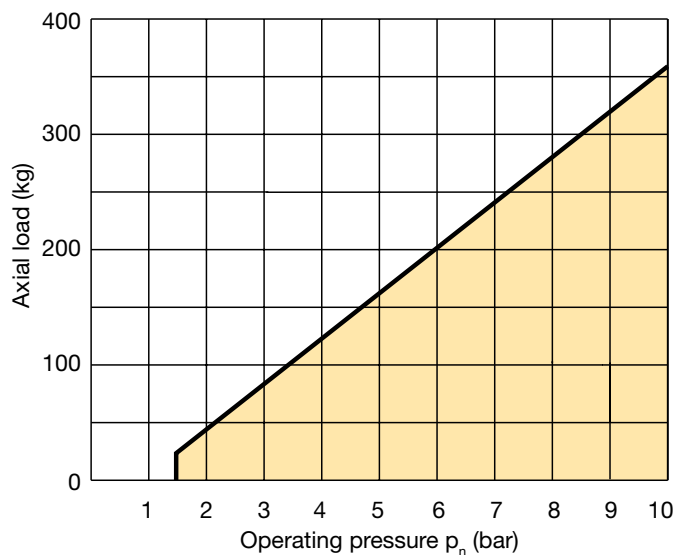
| Connecting thread |                           |
|-------------------|---------------------------|
| <b>STD</b>        | Standard G1/8             |
| <b>NPT</b>        | National Pipe Thread 1/8" |



**Loads - Moving mass subject to speed – Type STVD-50-30**



**Axial load subject to operating pressure – Type STVD-50-30**

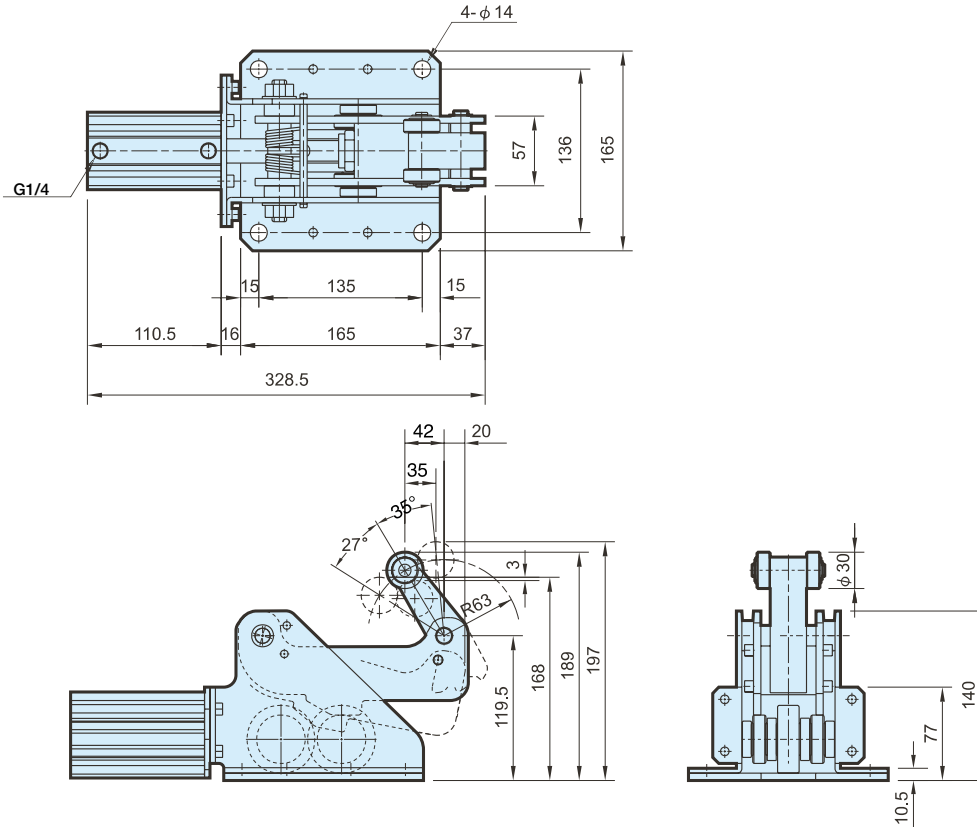


**STHSR Series - Stop cylinder Ø 50mm - Horizontal version**

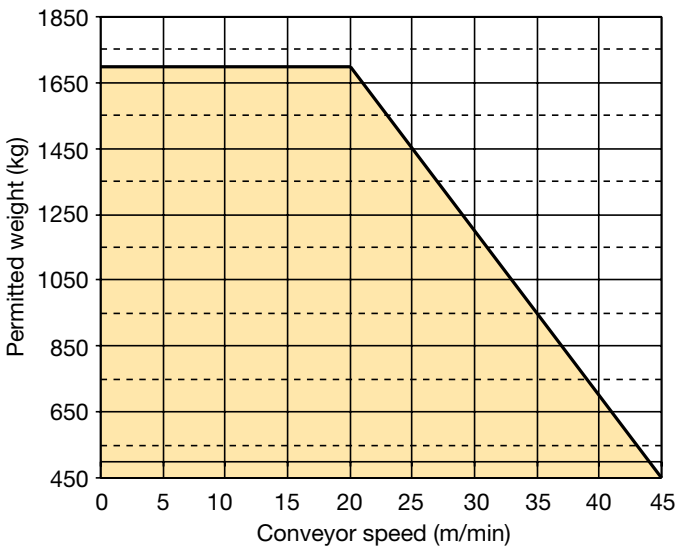
**Order Key**

**STHSR - 50 - 50 - STD**

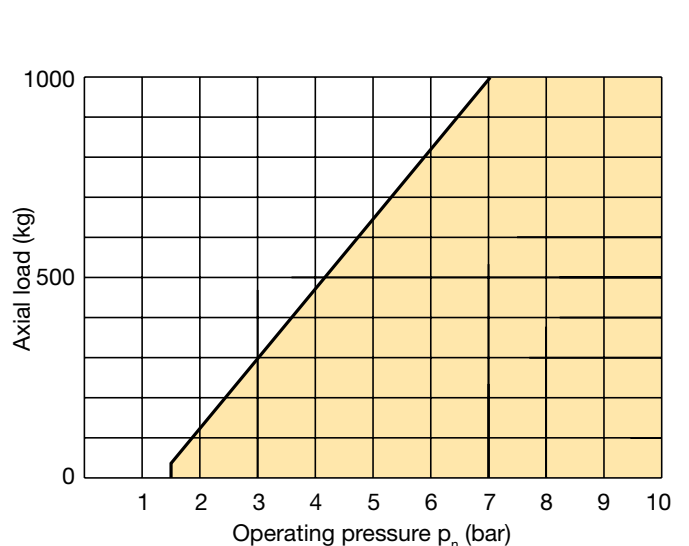
| Connecting thread |                           |
|-------------------|---------------------------|
| <b>STD</b>        | Standard G1/4             |
| <b>NPT</b>        | National Pipe Thread 1/4" |



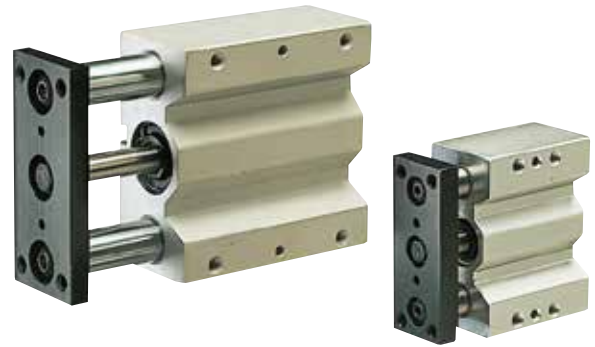
**Loads - Moving mass subject to speed – Type STHSR-50-50**



**Axial load subject to operating pressure – Type STHSR-50-50**



P5T cylinders are a modern and versatile range of cylinders with integral guides. The cylinders are double-acting, with end stop cushioning for quiet and vibration free operation. The strong guide shafts make it possible to adsorb considerable thrust forces and torque.



- Complete cylinder function with integral guidance
- Stainless steel guide rods
- Wide range of standard strokes, diameter 16-100 mm
- Flexible porting as standard
- Magnetic piston as standard with drop-in sensor technology
- End stop cushions as standard

### Operating information

Working pressure Max 10 bar  
Working temperature -20 °C to +80 °C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Double acting - Plain bearing and top air connections

#### Ø16mm - (M5)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 10        | P5T-C016DGSN010 |
| 25        | P5T-C016DGSN025 |
| 40        | P5T-C016DGSN040 |
| 50        | P5T-C016DGSN050 |
| 75        | P5T-C016DGSN075 |
| 100       | P5T-C016DGSN100 |

#### Ø20mm - (G1/8)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C020DGSN025 |
| 40        | P5T-C020DGSN040 |
| 50        | P5T-C020DGSN050 |
| 75        | P5T-C020DGSN075 |
| 100       | P5T-C020DGSN100 |
| 125       | P5T-C020DGSN125 |

#### Ø25mm - (G1/8)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C025DGSN025 |
| 50        | P5T-C025DGSN050 |
| 75        | P5T-C025DGSN075 |
| 100       | P5T-C025DGSN100 |
| 125       | P5T-C025DGSN125 |
| 150       | P5T-C025DGSN150 |

#### Ø32mm - (G1/8)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C032DGSN025 |
| 50        | P5T-C032DGSN050 |
| 75        | P5T-C032DGSN075 |
| 100       | P5T-C032DGSN100 |
| 125       | P5T-C032DGSN125 |
| 150       | P5T-C032DGSN150 |
| 175       | P5T-C032DGSN175 |
| 200       | P5T-C032DGSN200 |

#### Ø40mm - (G1/8)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C040DGSN025 |
| 50        | P5T-C040DGSN050 |
| 75        | P5T-C040DGSN075 |
| 100       | P5T-C040DGSN100 |
| 125       | P5T-C040DGSN125 |
| 150       | P5T-C040DGSN150 |
| 175       | P5T-C040DGSN175 |
| 200       | P5T-C040DGSN200 |

#### Ø50mm - (G1/4)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C050DGSN025 |
| 50        | P5T-C050DGSN050 |
| 75        | P5T-C050DGSN075 |
| 100       | P5T-C050DGSN100 |
| 125       | P5T-C050DGSN125 |
| 150       | P5T-C050DGSN150 |
| 175       | P5T-C050DGSN175 |
| 200       | P5T-C050DGSN200 |

#### Ø63mm - (G1/4)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C063DGSN025 |
| 50        | P5T-C063DGSN050 |
| 75        | P5T-C063DGSN075 |
| 100       | P5T-C063DGSN100 |
| 125       | P5T-C063DGSN125 |
| 150       | P5T-C063DGSN150 |
| 175       | P5T-C063DGSN175 |
| 200       | P5T-C063DGSN200 |

#### Ø80mm - (G3/8)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C080DGSN025 |
| 50        | P5T-C080DGSN050 |
| 75        | P5T-C080DGSN075 |
| 100       | P5T-C080DGSN100 |
| 125       | P5T-C080DGSN125 |
| 150       | P5T-C080DGSN150 |
| 175       | P5T-C080DGSN175 |
| 200       | P5T-C080DGSN200 |

#### Ø100mm - (G3/8)

| Stroke.mm | Order code      |
|-----------|-----------------|
| 25        | P5T-C100DGSN025 |
| 50        | P5T-C100DGSN050 |
| 75        | P5T-C100DGSN075 |
| 100       | P5T-C100DGSN100 |
| 125       | P5T-C100DGSN125 |
| 150       | P5T-C100DGSN150 |
| 175       | P5T-C100DGSN175 |
| 200       | P5T-C100DGSN200 |

## Design Variants

In addition to the standard designs, a number of variants of the P5T range are available to special order, to provide effective solutions in a large number of applications.

- Cylinders with special strokes
- Cylinders with two fixing plates
- Cylinders with adjustable stops, with cushioning
- High-temperature cylinders for the temperature range of -10°C to +150°C (not magnetic piston).

### Special design for food industry applications

There is a special version of the P5T for food industry applications and other installation cases where high corrosion resistance and hygiene are required. This version has steel parts and other components in either stainless steel or special treated aluminium. Please contact Customer Service for more information.

### Plain bearing or recirculating ball bearings

The P5T is supplied with plain bearings as standard. This type of bearing has guide rods of greater diameter, providing excellent support for heavy loads, especially static loads. Plain bearings are highly tolerant of vibration and dirt, and are suitable for regular cleaning.

Recirculating ball bearings are used for applications which require high precision and low friction.

The choice should be based on the following factors:

| Application requirements      | Plain bearing                  | Recirculating ball bearings |
|-------------------------------|--------------------------------|-----------------------------|
| Precision                     | Good                           | Excellent                   |
| Friction                      | Higher                         | Low                         |
| Coefficient of friction       | Variable                       | Constant                    |
| Precision during service life | Variable                       | Constant                    |
| Static load capacity          | Excellent                      | Good                        |
| Dynamic load capacity         | Good, but with friction losses | Good                        |
| Vibration tolerance           | Excellent                      | Average                     |
| Dirt tolerance                | Excellent                      | Poor                        |
| Washing tolerance             | Excellent                      | Poor                        |

Double acting, connections on top.



Double acting with two fixing plates, side connections are recommended.



Double acting, connections at rear.



Double acting with two fixing plates and adjustable end stops with cushioning, side connections are recommended.



Double acting, connections on side.



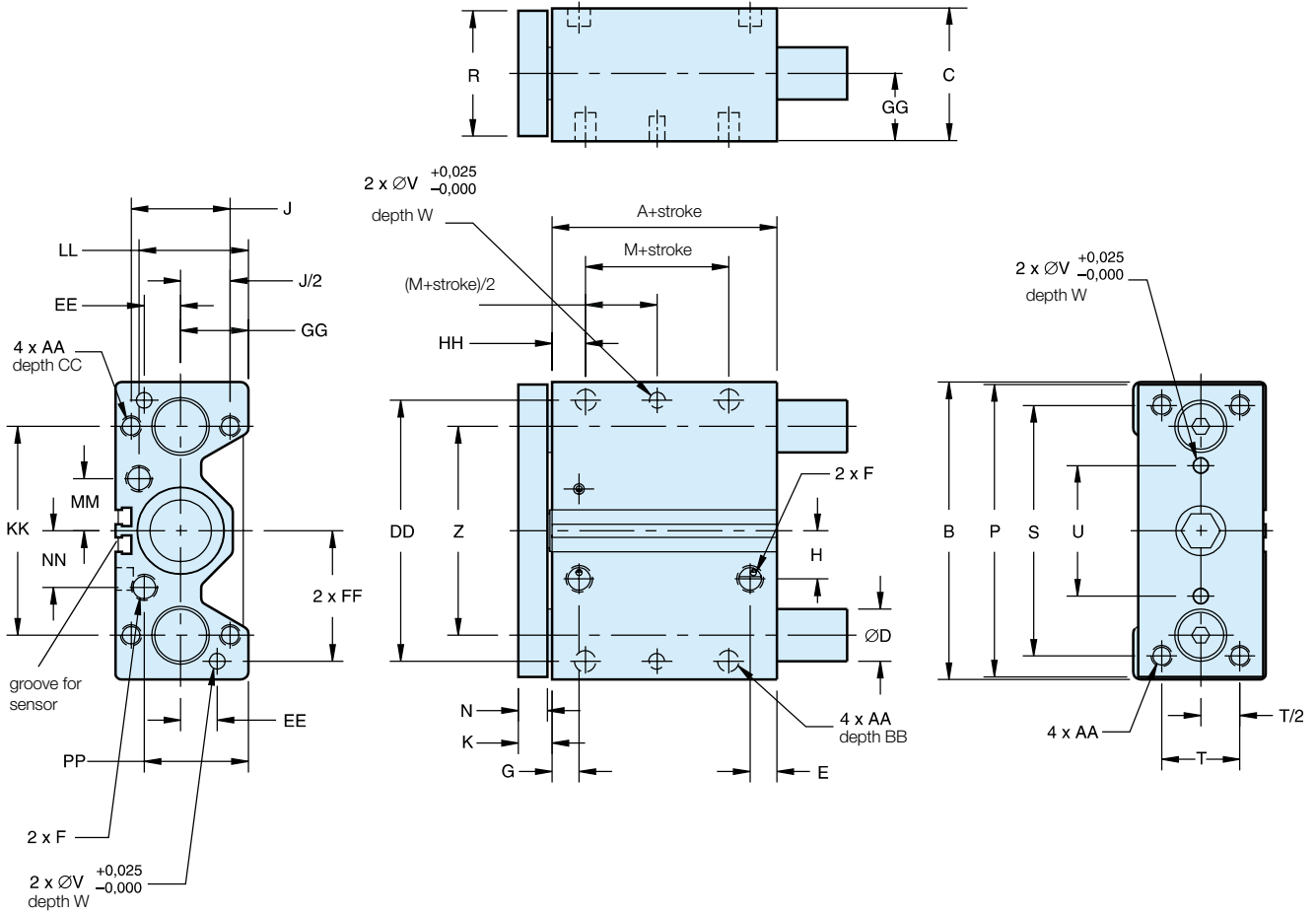
Double acting with one fixing plate adjustable end stops with cushioning, connections on side, on top or at rear.



Dimensions, P5T basic cylinder

Connection option D

(connection from the top)



| Cylinder diam. mm | A mm  | B mm | C mm | D1*) mm | D2*) mm | E mm    | F    | G mm | H mm | J mm | K mm | M mm | N mm | P mm | R mm | S mm | T mm | U mm | V mm |
|-------------------|-------|------|------|---------|---------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16                | 37,8  | 64   | 31   | 8       | 10      | 10,1    | M5   | 10,1 | 7    | 22   | 9,9  | 7    | 7,9  | 62   | 25,4 | 52   | 16   | 20   | 3    |
| 20                | 35    | 74   | 36   | 10      | 12      | 19      | G1/8 | 10   | 15,8 | 26   | 9,9  | 10   | 7,9  | 72   | 31,8 | 60   | 18   | 30   | 4    |
| 25                | 38    | 88   | 42   | 12      | 16      | 21      | G1/8 | 11,4 | 15,5 | 32   | 9,9  | 10   | 7,9  | 86   | 38   | 70   | 26   | 34   | 4    |
| 32                | 36    | 114  | 51   | 16      | 20      | 10,3    | G1/8 | 10,4 | 18,4 | 38   | 13,1 | 5    | 11,1 | 112  | 44,5 | 96   | 30   | 50   | 6    |
| 40                | 44    | 124  | 51   | 16      | 20      | 12,1    | G1/8 | 14,9 | 22,5 | 38   | 13,1 | 10   | 11,1 | 122  | 44   | 106  | 30   | 60   | 6    |
| 50                | 44,9  | 140  | 62   | 20      | 25      | 14,5    | G1/4 | 16,1 | 27   | 44   | 14,7 | 10   | 12,7 | 138  | 57   | 120  | 40   | 60   | 8    |
| 63                | 50,1  | 150  | 75   | 20      | 25      | 16,4    | G1/4 | 14,5 | 33   | 44   | 14,7 | 10   | 12,7 | 148  | 70   | 130  | 50   | 72   | 8    |
| 80                | 59,5  | 188  | 95   | 25      | 30      | 17,5    | G3/8 | 19   | 37   | 56   | 18   | 15   | 16   | 185  | 88,9 | 160  | 60   | 92   | 10   |
| 100               | 66**) | 224  | 115  | 30      | 35      | 21,9**) | G3/8 | 23   | 40   | 62   | 18   | 15   | 16   | 221  | 108  | 190  | 80   | 114  | 10   |

| Cylinder diam. mm | W mm | Z mm | AA       | BB  | CC | DD  | EE | FF  | GG   | HH   | KK  | LL   | MM   | NN   | PP   | Piston rod Ø mm |
|-------------------|------|------|----------|-----|----|-----|----|-----|------|------|-----|------|------|------|------|-----------------|
| 16                | 6    | 42   | M5x0,8   | 7,5 | 10 | 54  | 8  | 27  | 15   | 13,1 | 42  | 22,5 | 11,3 | 9,7  | 23   | 8               |
| 20                | 6    | 52   | M5x0,8   | 7,5 | 10 | 64  | 10 | 32  | 17   | 13,1 | 52  | 26   | 15,4 | 15,4 | 26   | 10              |
| 25                | 6    | 62   | M6x1,0   | 10  | 12 | 76  | 11 | 38  | 21   | 14,1 | 62  | 33,4 | 17   | 17   | 33,4 | 10              |
| 32                | 6    | 80   | M8x1,25  | 11  | 16 | 100 | 14 | 50  | 26   | 12,9 | 80  | 42   | 20   | 21,7 | 38   | 16              |
| 40                | 6    | 90   | M8x1,25  | 11  | 16 | 110 | 14 | 55  | 26   | 13,9 | 90  | 41   | 24   | 26,4 | 37,9 | 16              |
| 50                | 8    | 100  | M10x1,5  | 12  | 20 | 124 | 16 | 62  | 30   | 14,3 | 100 | 51   | 29   | 33   | 44   | 20              |
| 63                | 8    | 110  | M10x1,5  | 15  | 20 | 132 | 18 | 66  | 36,5 | 16,3 | 110 | 62   | 36   | 37,8 | 57,8 | 20              |
| 80                | 10   | 140  | M12x1,75 | 18  | 24 | 166 | 22 | 83  | 46,5 | 21   | 140 | 78   | 45   | 48   | 75,5 | 25              |
| 100               | 10   | 170  | M14x2,0  | 21  | 28 | 200 | 24 | 100 | 56,5 | 25   | 170 | 91,5 | 53   | 51   | 95,5 | 25              |

Length tolerance  $\pm 1$  mm

Stroke tolerance  $+ 1,5/0$  mm

\*\*) Stroke 25 mm, A=75 mm, E=28 mm

\*) D1 = bearing rod diameter for recirculating ball bearing

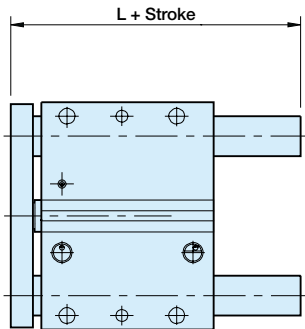
\*) D2 = bearing rod diameter for plain bearing



**Dimensions, P5T basic cylinder**

Standard lengths

| Cylinder diam mm | Stroke mm          | L mm  |
|------------------|--------------------|-------|
| <b>16</b>        | 10                 | 36,2  |
|                  | 25, 40, 50, 75     | 60,2  |
|                  | 100                | 75,2  |
| <b>20</b>        | 25, 40, 50, 75     | 66,9  |
|                  | 100, 125           | 91,9  |
| <b>25</b>        | 25, 50, 75, 100    | 69,9  |
|                  | 125, 150           | 91,9  |
| <b>32</b>        | 25, 50, 75, 100    | 77,9  |
|                  | 125, 150, 175, 200 | 116,0 |
| <b>40</b>        | 25, 50, 75, 100    | 77,9  |
|                  | 125, 150, 175, 200 | 116,0 |
| <b>50</b>        | 25, 50, 75, 100    | 84,0  |
|                  | 125, 150, 175, 200 | 124,1 |
| <b>63</b>        | 25, 50, 75, 100    | 84,0  |
|                  | 125, 150, 175, 200 | 124,1 |
| <b>80</b>        | 25, 50, 75, 100    | 101,8 |
|                  | 125, 150, 175, 200 | 140,0 |
| <b>100</b>       | 25                 | 122,8 |
|                  | 50, 75, 100        | 120,3 |
|                  | 125, 150, 175, 200 | 158,4 |

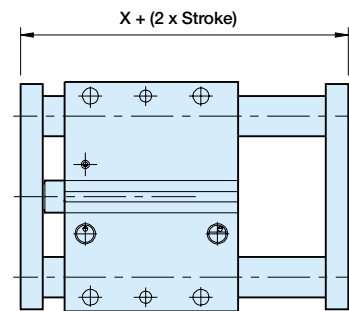


Please note that load capacity increases with two fixing plates, due to greater bearing distance.

| Cylinder diam. mm | Guide rod dia. mm | X for option |       |       | QQ mm | RR mm | XX mm |
|-------------------|-------------------|--------------|-------|-------|-------|-------|-------|
|                   |                   | D mm         | A mm  | E mm  |       |       |       |
| <b>16</b>         | 8                 | 57,6         | 70,6  | 62,7  | 18,0  | 13,0  | 0     |
|                   | 10                | 57,6         | 70,6  | 62,7  | 24,0  | 13,0  | 1     |
| <b>20</b>         | 10                | 54,9         | 67,9  | 59,9  | 24,0  | 13,0  | 1     |
|                   | 12                | 54,9         | 72,6  | 64,6  | 28,0  | 17,7  | 3     |
| <b>25</b>         | 12                | 57,8         | 75,5  | 67,6  | 28,0  | 17,7  | 1     |
|                   | 16                | 57,8         | 77,5  | 69,6  | 34,0  | 19,7  | 4     |
| <b>32</b>         | 16                | 62,2         | 81,9  | 70,8  | 34,0  | 19,7  | 0     |
|                   | 20                | 62,2         | 83,9  | 72,8  | 41,4  | 21,7  | 3,7   |
| <b>40</b>         | 16                | 70,2         | 89,9  | 78,8  | 34,0  | 19,7  | 0     |
|                   | 20                | 70,2         | 91,9  | 80,8  | 41,4  | 21,7  | 3,7   |
| <b>50</b>         | 20                | 74,3         | 96,0  | 83,3  | 41,4  | 21,7  | 0,7   |
|                   | 25                | 74,3         | 96,0  | 83,3  | 50,8  | 21,7  | 5,4   |
| <b>63</b>         | 20                | 79,5         | 101,2 | 88,5  | 41,4  | 21,7  | 0,7   |
|                   | 25                | 79,5         | 101,2 | 88,5  | 50,8  | 21,7  | 5,4   |
| <b>80</b>         | 25                | 95,5         | 117,2 | 101,2 | 50,8  | 21,7  | 1,4   |
|                   | 30                | 95,5         | 117,2 | 101,2 | 60,5  | 21,7  | 6,3   |
| <b>100</b>        | 30                | 102,0        | 123,7 | 107,7 | 60,5  | 21,7  | 3,3   |
|                   | 35                | 102,0        | 123,7 | 107,7 | 65,0  | 21,7  | 5,5   |

**Dimensions, P5T basic cylinder**

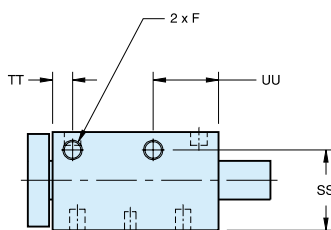
Option D



**Dimensions, P5T basic cylinder**

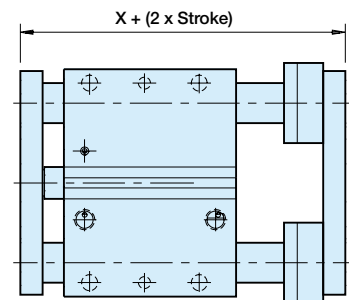
Connection option S (side connections)

| Cylinder diam. mm | SS mm | TT mm | UU mm | F mm |
|-------------------|-------|-------|-------|------|
| <b>16</b>         | 24,1  | 10    | 20    | M5   |
| <b>20</b>         | 29,2  | 10    | 20    | M5   |
| <b>25</b>         | 35,2  | 11,4  | 25    | M5   |
| <b>32</b>         | 41,7  | 10,4  | 34    | G1/8 |
| <b>40</b>         | 41,7  | 14,9  | 34    | G1/8 |
| <b>50</b>         | 51,3  | 16,1  | 38    | G1/4 |
| <b>63</b>         | 60,7  | 15,6  | 41,8  | G1/4 |
| <b>80</b>         | 75,5  | 19    | 47    | G3/8 |
| <b>100</b>        | 83,7  | 23    | 53,3  | G3/8 |



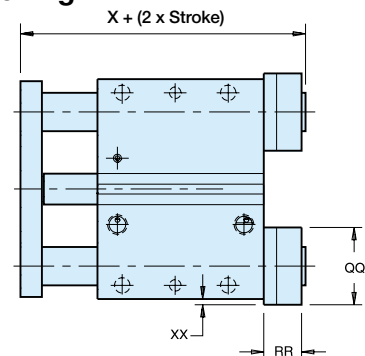
**Dimensions, P5T with two fixing plates and adjustable end stop with cushioning**

Option A



**Dimensions, P5T with adjustable end stop with cushioning**

Option E



## Twin Rod Non Rotate Cylinders RDV and AZ

A range of twin rod cylinders designed for use in non rotate applications specially suited to the handling and packaging environments. Offering a range of double acting cylinders with adjustable cushioning and magnetic variants.



### RDV Series:



- Available as bore  $\varnothing$  25mm
- Non rotating
- Double acting
- Adjustable cushioning
- Magnetic piston as standard

### Operating information

Working pressure: Max 10 bar  
Working temperature:  $-10^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

### AZ Series:



- Available as bore  $\varnothing$  32mm -  $\varnothing$  100mm
- Non rotating
- Double acting
- Adjustable cushioning
- Magnetic piston as standard
- Drop in sensors

### Operating information

Working pressure: Max 10 bar  
Working temperature:  $-20^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

**Order key - RDV**

|   |   |                 |   |          |   |  |            |  |  |                |  |
|---|---|-----------------|---|----------|---|--|------------|--|--|----------------|--|
| <b>R D V</b>  | <b>5</b>  | <b>0 2 5</b>    | <b>0 1 0 0</b>  |          |   |  |            |  |  |                |  |
| <b>Version</b>  | <b>Function</b>   | <b>Bore mm</b>  | <b>Stroke (mm) e.g. 0100 = 100mm</b>  |          |   |  |            |  |  |                |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>RDV</b></td> <td>Ø25mm bore only</td> </tr> </table> | <b>RDV</b>  | Ø25mm bore only | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>5</b></td> <td>Double acting with magnetic function, Adjustable cushioning</td> </tr> </table> | <b>5</b> | Double acting with magnetic function, Adjustable cushioning | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>025</b></td> <td></td> </tr> </table> | <b>025</b> |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>0 1 0 0</b></td> <td>Stroke lengths up to 500mm. Other sizes on request</td> </tr> </table> | <b>0 1 0 0</b> | Stroke lengths up to 500mm. Other sizes on request |
| <b>RDV</b>  | Ø25mm bore only   |                 |   |          |   |  |            |  |  |                |  |
| <b>5</b>  | Double acting with magnetic function, Adjustable cushioning |                 |   |          |   |  |            |  |  |                |  |
| <b>025</b>  |   |                 |   |          |   |  |            |  |  |                |  |
| <b>0 1 0 0</b>  | Stroke lengths up to 500mm. Other sizes on request          |                 |   |          |   |  |            |  |  |                |  |
| <p><b>Note:</b><br/>         Standard option specified. Other options available<br/>         Maximum 500mm</p>  |   |                 |   |          |   |  |            |  |  |                |  |

**Order key - AZV, AZ3, AZ4**

|  |   |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
|--|---|--------------------------------------|--|----------|------------|----------------------|----------|------------|--------------------------------------|---|----------|--|----------|---|----------|--|----------|---|---|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|--|--|--|
| <b>A 5 5 K</b>   | <b>0 1 0 0</b>  | <b>/</b>                             | <b>0 0 0 A A A A 0 0 0 0 A 0 0 0 0</b> |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>Version</b>   | <b>Function</b>   | <b>Bore mm</b>                       | <b>Stroke (mm) e.g. 0100 = 100mm</b>   |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>5</b></td> <td><b>AZV</b></td> <td>Single set twin rods</td> </tr> <tr> <td style="text-align: center;"><b>6</b></td> <td><b>AZ4</b></td> <td>Double set twin rods</td> </tr> <tr> <td style="text-align: center;"><b>7</b></td> <td><b>AZ3</b></td> <td>Single set twin rods with single rod</td> </tr> </table> | <b>5</b>  | <b>AZV</b>                           | Single set twin rods                   | <b>6</b> | <b>AZ4</b> | Double set twin rods | <b>7</b> | <b>AZ3</b> | Single set twin rods with single rod | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>1</b></td> <td>Double acting, No magnetic function, Adjustable cushioning</td> </tr> <tr> <td style="text-align: center;"><b>2</b></td> <td>Double acting, No magnetic function, No adjustable cushioning</td> </tr> <tr> <td style="text-align: center;"><b>5</b></td> <td>Double acting, With magnetic function, Adjustable cushioning</td> </tr> <tr> <td style="text-align: center;"><b>6</b></td> <td>Double acting, With magnetic function, No adjustable cushioning</td> </tr> </table> | <b>1</b> | Double acting, No magnetic function, Adjustable cushioning | <b>2</b> | Double acting, No magnetic function, No adjustable cushioning | <b>5</b> | Double acting, With magnetic function, Adjustable cushioning | <b>6</b> | Double acting, With magnetic function, No adjustable cushioning | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>K</b></td> <td><b>032</b></td> </tr> <tr> <td style="text-align: center;"><b>L</b></td> <td><b>040</b></td> </tr> <tr> <td style="text-align: center;"><b>M</b></td> <td><b>050</b></td> </tr> <tr> <td style="text-align: center;"><b>N</b></td> <td><b>063</b></td> </tr> <tr> <td style="text-align: center;"><b>P</b></td> <td><b>080</b></td> </tr> <tr> <td style="text-align: center;"><b>Q</b></td> <td><b>100</b></td> </tr> </table> | <b>K</b> | <b>032</b> | <b>L</b> | <b>040</b> | <b>M</b> | <b>050</b> | <b>N</b> | <b>063</b> | <b>P</b> | <b>080</b> | <b>Q</b> | <b>100</b> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>0 0 0 A A A A 0 0 0 0 A 0 0 0 0</b></td> <td>Stroke lengths up to 500mm. Other sizes on request</td> </tr> </table> | <b>0 0 0 A A A A 0 0 0 0 A 0 0 0 0</b> | Stroke lengths up to 500mm. Other sizes on request |
| <b>5</b>   | <b>AZV</b>  | Single set twin rods                 |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>6</b>   | <b>AZ4</b>  | Double set twin rods                 |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>7</b>   | <b>AZ3</b>  | Single set twin rods with single rod |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>1</b>   | Double acting, No magnetic function, Adjustable cushioning      |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>2</b>   | Double acting, No magnetic function, No adjustable cushioning   |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>5</b>   | Double acting, With magnetic function, Adjustable cushioning    |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>6</b>   | Double acting, With magnetic function, No adjustable cushioning |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>K</b>   | <b>032</b>  |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>L</b>   | <b>040</b>  |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>M</b>   | <b>050</b>  |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>N</b>   | <b>063</b>  |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>P</b>   | <b>080</b>  |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>Q</b>   | <b>100</b>  |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <b>0 0 0 A A A A 0 0 0 0 A 0 0 0 0</b>   | Stroke lengths up to 500mm. Other sizes on request              |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |
| <p><b>Note:</b><br/>         Standard option specified. Other options available<br/>         Maximum 2000mm</p>  |   |                                      |  |          |            |                      |          |            |                                      |   |          |  |          |   |          |  |          |   |   |          |            |          |            |          |            |          |            |          |            |          |            |  |  |  |

## Twin Rod Cylinder Cylinder Mounts

| Body Mounts                                    | RDV             | AZV / AZ3 / AZ4 |                |                |                |                |                |
|--|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|
|  | 25mm            | 32mm            | 40mm           | 50mm           | Bore Ø<br>63mm |                | 80mm           |
| Foot mounting - MS3 / MS1                      | <b>KK28.302</b> | <b>PD27917</b>  | <b>PD27918</b> | <b>PD28072</b> | <b>PD28073</b> | <b>PD28074</b> | <b>PD28075</b> |
| Rear Double Clevis - AB3 / MP2                 | <b>KZ1420</b>   | <b>PD22704</b>  | <b>PD22705</b> | <b>PD22706</b> | <b>PD22707</b> | <b>PD22708</b> | <b>PD22709</b> |
| Rear Single Clevis - MP4                       | -               | <b>PD23412</b>  | <b>PD23413</b> | <b>PD23414</b> | <b>PD23415</b> | <b>PD23416</b> | <b>PD23417</b> |
| Front Flange - Type MF1<br>for AZV / AZ3 / AZ4 | -               | <b>PD57042</b>  | <b>PD57043</b> | <b>PD57044</b> | <b>PD57045</b> | <b>PD57046</b> | <b>PD57047</b> |
| Rear Flange - MF2                              | -               | <b>PD23403</b>  | <b>PD23404</b> | <b>PD23405</b> | <b>PD23406</b> | <b>PD23407</b> | <b>PD23408</b> |
| Trunnion - MT4                                 | -               | <b>PD39195</b>  | <b>PD39196</b> | <b>PD39197</b> | <b>PD39198</b> | <b>PD39199</b> | <b>PD39200</b> |
| Trunnion Blocks - MT4                          | -               | <b>PD23381</b>  | <b>PD23382</b> | <b>PD23382</b> | <b>PD23383</b> | <b>PD23383</b> | <b>PD23384</b> |
| Pivot Mount - (w / o Bolts)                    | -               | <b>PD25621</b>  | <b>PD25622</b> | <b>PD25623</b> | <b>PD25624</b> | <b>PD25625</b> | <b>PD25626</b> |
| Groove Nut - for RDV5                          | <b>ZP2125</b>   |                 |                |                |                |                |                |

**Delivery information:** All mounts are sold separately and are not mounted for shipment, except for the trunnion mount which requires factory installation.

| Rod Accessories | AZ3            |                |                |                |                |                |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                 | 32mm           | 40mm           | 50mm           | Bore Ø<br>63mm |                | 80mm           |
| Rod Nut         | <b>ZP 1810</b> | <b>ZP 2189</b> | <b>ZP 0178</b> | <b>ZP 0178</b> | <b>ZP 0185</b> | <b>ZP 0185</b> |
| Rod Clevis AP2  | <b>KY 6135</b> | <b>KY 6136</b> | <b>KY 6139</b> | <b>KY 6139</b> | <b>KY 6141</b> | <b>KY 6141</b> |
| Rod Eye AP6     | <b>KY 6147</b> | <b>KY 6148</b> | <b>KY 6150</b> | <b>KY 6150</b> | <b>KY 6151</b> | <b>KY 6151</b> |
| Clevis Pin      | <b>KY 6153</b> | <b>KY 6154</b> | <b>KY 6157</b> | <b>KY 6156</b> | <b>KY 6158</b> | <b>KY 6159</b> |
| Flexo coupling  | <b>KY 1129</b> | <b>KY 1131</b> | <b>KY 1133</b> | <b>KY 1133</b> | <b>KY 1134</b> | <b>KY 1134</b> |

## Weights (kg)

|                       | RDV  |      | AZV  |      |      |      |      |     |                |     |      |     |       |     |
|-----------------------|------|------|------|------|------|------|------|-----|----------------|-----|------|-----|-------|-----|
|                       | 25mm |      | 32mm |      | 40mm |      | 50mm |     | Bore Ø<br>63mm |     | 80mm |     | 100mm |     |
|                       | *1   | *2   | *1   | *2   | *1   | *2   | *1   | *2  | *1             | *2  | *1   | *2  | *1    | *2  |
| <b>Basic Cylinder</b> | 0.46 | 0.11 | 0.80 | 0.25 | 1.00 | 0.35 | 1.70 | 0.5 | 2.60           | 0.6 | 4.20 | 0.9 | 6.20  | 1.0 |
| <b>Type MS3 / MS1</b> | 0.10 |      | 0.95 |      | 1.19 |      | 2.04 |     | 2.99           |     | 4.99 |     | 7.20  |     |
| <b>Type AB3 / MP2</b> | 0.08 |      | 0.87 |      | 1.09 |      | 1.87 |     | 2.82           |     | 4.69 |     | 6.94  |     |
| <b>Type MP4</b>       |      |      | 0.90 |      | 1.13 |      | 1.91 |     | 2.90           |     | 4.77 |     | 7.11  |     |
| <b>Type MP6</b>       |      |      | 0.90 |      | 1.15 |      | 1.92 |     | 2.92           |     | 4.76 |     | 7.06  |     |
| <b>Type MF1 / MF2</b> |      |      | 0.90 |      | 1.15 |      | 1.92 |     | 2.92           |     | 4.76 |     | 7.06  |     |
| <b>Type MT4</b>       |      |      | 0.91 |      | 1.18 |      | 1.93 |     | 3.25           |     | 5.03 |     | 7.76  |     |

## AZ3

|                       |      |      |      |      |      |     |      |      |      |     |      |     |
|-----------------------|------|------|------|------|------|-----|------|------|------|-----|------|-----|
| <b>Basic Cylinder</b> | 1.0  | 0.30 | 1.5  | 0.45 | 2.5  | 0.7 | 3.2  | 0.85 | 5.3  | 1.3 | 7.5  | 1.5 |
| <b>Type MS1</b>       | 0.95 |      | 1.19 |      | 2.04 |     | 2.99 |      | 4.99 |     | 7.20 |     |
| <b>Type MF1 / MF2</b> | 0.90 |      | 1.15 |      | 1.92 |     | 2.92 |      | 4.76 |     | 7.06 |     |
| <b>Type MT4</b>       | 0.91 |      | 1.18 |      | 1.93 |     | 3.25 |      | 5.03 |     | 7.76 |     |

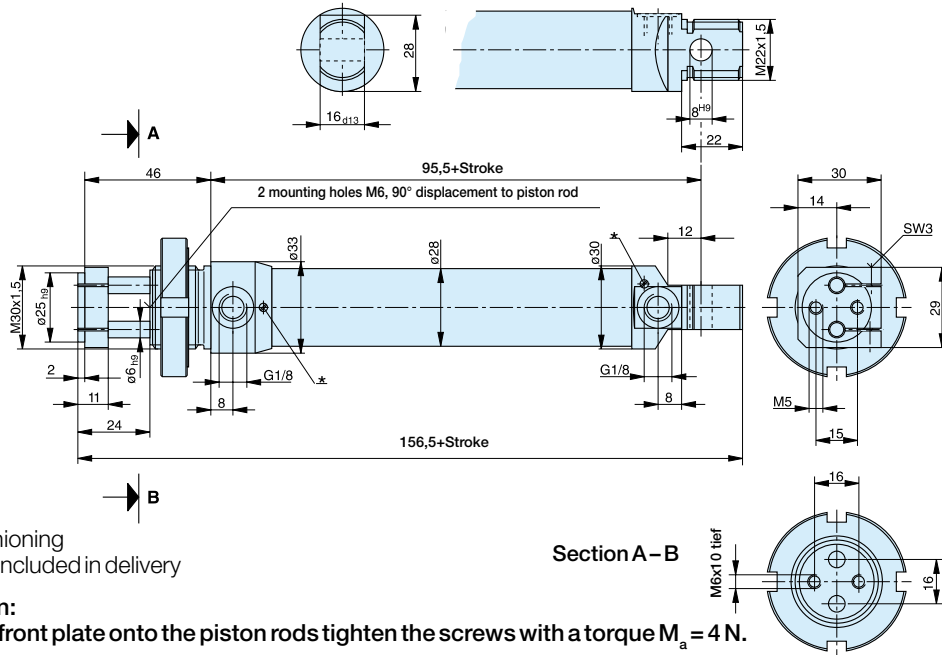
## AZ4

|                       |      |      |      |      |      |     |      |     |      |     |      |      |
|-----------------------|------|------|------|------|------|-----|------|-----|------|-----|------|------|
| <b>Basic Cylinder</b> | 1.0  | 0.30 | 1.4  | 0.40 | 2.3  | 0.6 | 3.2  | 0.9 | 5.6  | 1.4 | 7.4  | 1.50 |
| <b>Type MS1</b>       | 1.15 |      | 1.59 |      | 2.64 |     | 3.59 |     | 6.39 |     | 8.40 |      |
| <b>Type MT4</b>       | 1.11 |      | 1.58 |      | 2.53 |     | 3.59 |     | 6.13 |     | 8.16 |      |

\*1 = Weight for cylinder with 100mm stroke

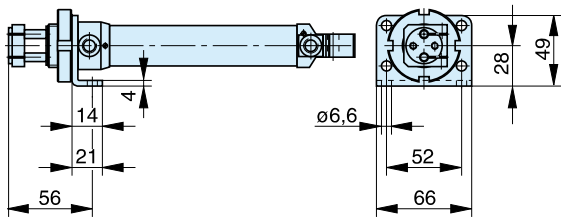
\*2 = Weight for every additional 100mm stroke length

**Dimensions – Double acting, non-rotating, Ø 25 mm**  
**Series RDV5...**



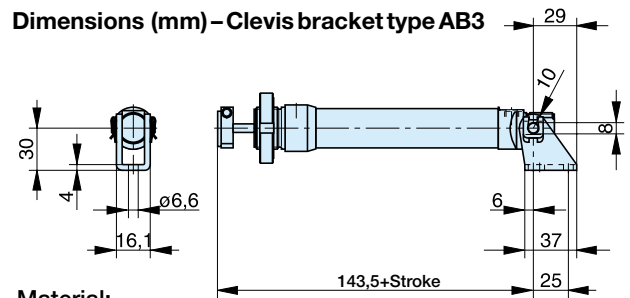
**Mountings – Series RDV..., Ø 25 mm**

**Dimensions (mm) – Foot mounting type MS3**



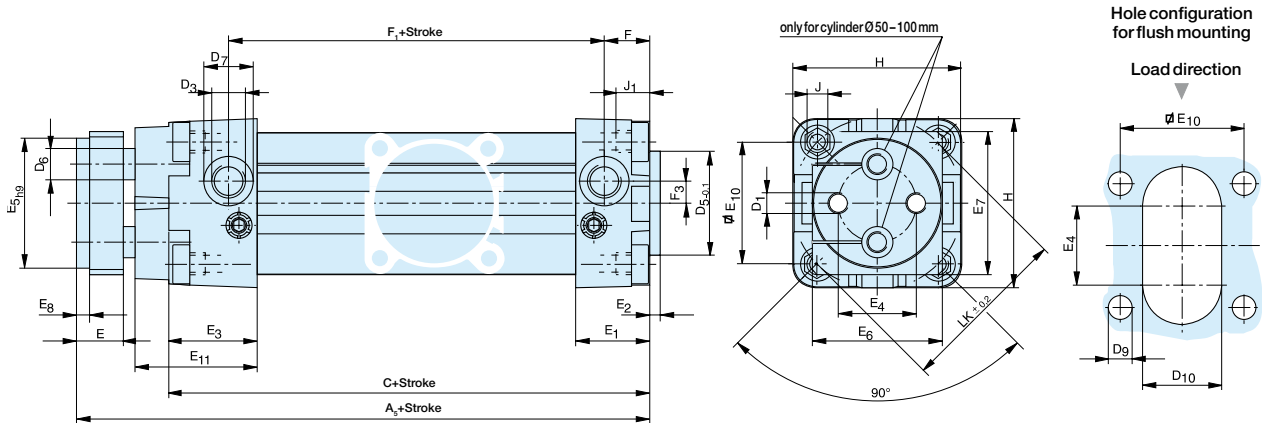
**Material:**  
steel, passivated

**Dimensions (mm) – Clevis bracket type AB3**



**Material:**  
steel, passivated

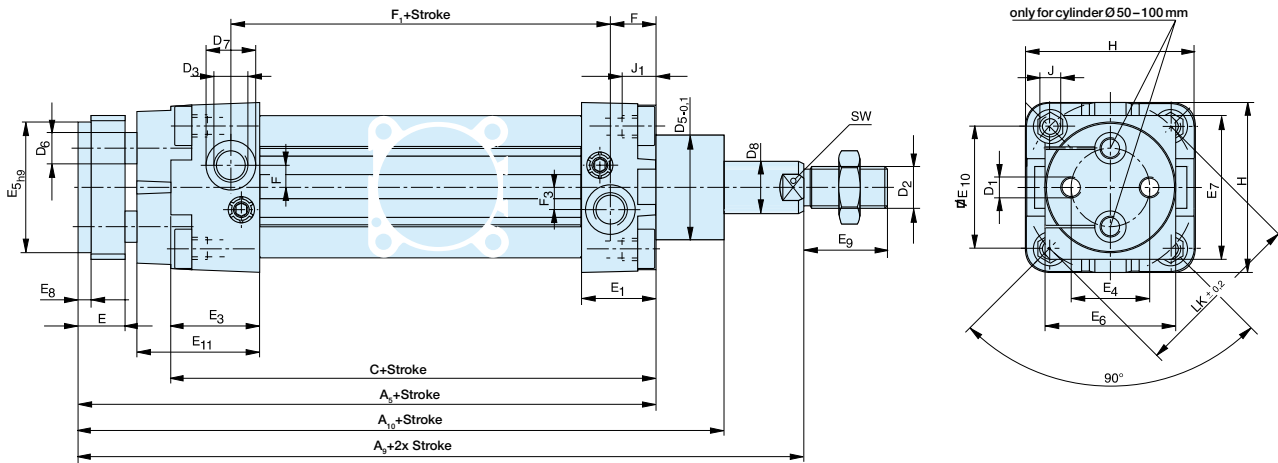
**Dimensions – Basic Cylinder, non-rotating, Series AZV..., Ø 32 – 100 mm**



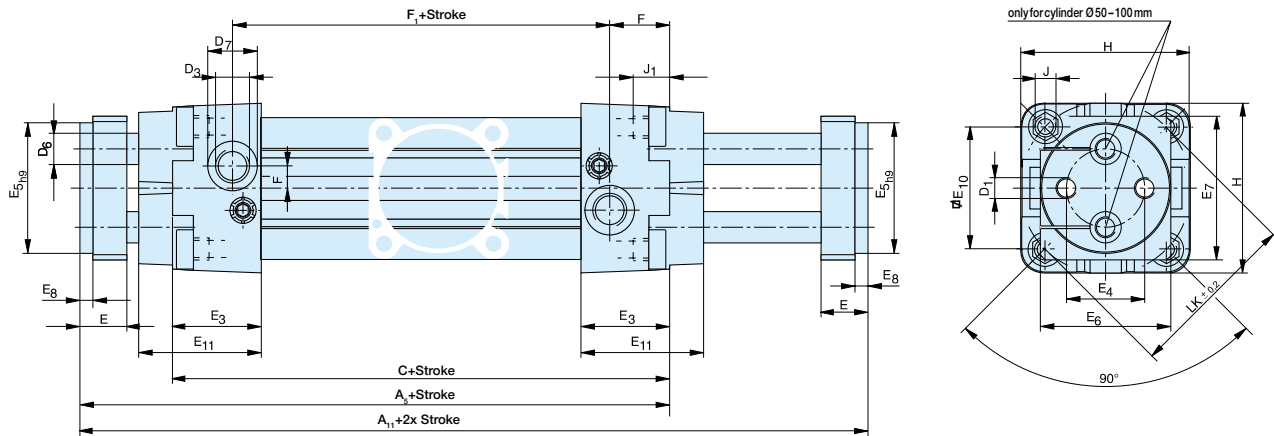
**Dimension Table (mm) – Basic Cylinder AZV..., AZ3..., AZ4...**

| Cyl. Ø | A <sub>5</sub><br>+ Stroke | A <sub>9</sub><br>+ 2X Stroke | A <sub>10</sub><br>+ Stroke | A <sub>11</sub><br>+ 2X Stroke | C<br>+ Stroke | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | ØD <sub>5</sub> | ØD <sub>6</sub> | ØD <sub>7</sub> | ØD <sub>8</sub> | ØD <sub>9</sub> | D <sub>10</sub> | E  | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> |
|--------|----------------------------|-------------------------------|-----------------------------|--------------------------------|---------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----|----------------|----------------|----------------|
| 32     | 128                        | 154                           | 146                         | 154                            | 102           | M6             | M10x1.25       | G1/8           | 30              | 8               | 15              | 12              | 7               | 23              | 15 | 29             | 4              | 26             |
| 40     | 142                        | 172                           | 163                         | 172                            | 112           | M8             | M12x1.25       | G1/4           | 35              | 10              | 19              | 16              | 7               | 25              | 15 | 27             | 4              | 30             |
| 50     | 151                        | 188                           | 177                         | 185                            | 117           | M8             | M16x1.5        | G1/4           | 40              | 12              | 19              | 20              | 9               | 30              | 18 | 29             | 4              | 34             |
| 63     | 161                        | 198                           | 187                         | 197                            | 125           | M10            | M16x1.5        | G3/8           | 45              | 16              | 23              | 20              | 9               | 34              | 22 | 30             | 4              | 34             |
| 80     | 174                        | 220                           | 206                         | 212                            | 136           | M12            | M20x1.5        | G3/8           | 45              | 20              | 23              | 25              | 10              | 38              | 22 | 34             | 4              | 39             |
| 100    | 181                        | 232                           | 218                         | 219                            | 143           | M12            | M20x1.5        | G1/2           | 55              | 20              | 28              | 25              | 10              | 38              | 22 | 35             | 4              | 40             |

Dimensions – Basic Cylinder, non-rotating, with through piston rod, series AZ3...., Ø 32 – 100 mm



Dimensions – Basic Cylinder, non-rotating, with through piston rods, series AZ4...., Ø 32 – 100 mm



Dimension Table (mm) – Basic Cylinder AZV...., AZ3...., AZ4....

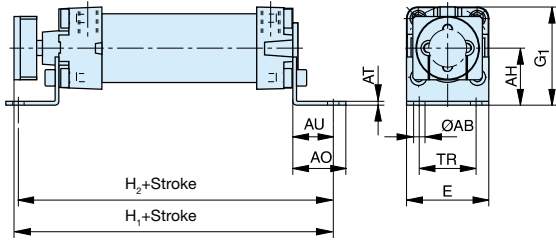
| Cyl. Ø | A <sub>5</sub><br>+ Stroke | A <sub>9</sub><br>+ 2X Stroke | A <sub>10</sub><br>+ Stroke | A <sub>11</sub><br>+ 2X Stroke | C<br>+ Stroke | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> | ØD <sub>5</sub> | ØD <sub>6</sub> | ØD <sub>7</sub> | ØD <sub>8</sub> | ØD <sub>9</sub> | D <sub>10</sub> | E  | E <sub>1</sub> | E <sub>2</sub> | E <sub>3</sub> |
|--------|----------------------------|-------------------------------|-----------------------------|--------------------------------|---------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----|----------------|----------------|----------------|
| 32     | 128                        | 154                           | 146                         | 154                            | 102           | M6             | M10x1.25       | G1/8           | 30              | 8               | 15              | 12              | 7               | 23              | 15 | 29             | 4              | 26             |
| 40     | 142                        | 172                           | 163                         | 172                            | 112           | M8             | M12x1.25       | G1/4           | 35              | 10              | 19              | 16              | 7               | 25              | 15 | 27             | 4              | 30             |
| 50     | 151                        | 188                           | 177                         | 185                            | 117           | M8             | M16x1.5        | G1/4           | 40              | 12              | 19              | 20              | 9               | 30              | 18 | 29             | 4              | 34             |
| 63     | 161                        | 198                           | 187                         | 197                            | 125           | M10            | M16x1.5        | G3/8           | 45              | 16              | 23              | 20              | 9               | 34              | 22 | 30             | 4              | 34             |
| 80     | 174                        | 220                           | 206                         | 212                            | 136           | M12            | M20x1.5        | G3/8           | 45              | 20              | 23              | 25              | 10              | 38              | 22 | 34             | 4              | 39             |
| 100    | 181                        | 232                           | 218                         | 219                            | 143           | M12            | M20x1.5        | G1/2           | 55              | 20              | 28              | 25              | 10              | 38              | 22 | 35             | 4              | 40             |

| Cyl. Ø | ØE <sub>4</sub> | E <sub>5h9</sub> | E <sub>6</sub> | E <sub>7</sub> | E <sub>8</sub> | E <sub>9</sub> | E <sub>10</sub> | E <sub>11</sub> | F<br>AZV,<br>AZ3 | F<br>AZ4 | F <sub>1</sub> +Stroke<br>AZV,<br>AZ3 | F <sub>1</sub> +Stroke<br>AZ4 | F <sub>3</sub><br>AZV,<br>AZ4 | F <sub>3</sub><br>AZ3 | F <sub>4</sub> | J   | J <sub>1max</sub> | H   | ØLK | SW |
|--------|-----------------|------------------|----------------|----------------|----------------|----------------|-----------------|-----------------|------------------|----------|---------------------------------------|-------------------------------|-------------------------------|-----------------------|----------------|-----|-------------------|-----|-----|----|
| 32     | 19              | 32               | 32             | 40             | 4              | 20             | 32.5            | 34              | 14.5             | 17.5     | 74                                    | 75                            | 6                             | 6                     | 6              | M6  | 16                | 47  | 46  | 10 |
| 40     | 22.5            | 40               | 40             | 45             | 4              | 24             | 38              | 42              | 16               | 19       | 77.5                                  | 75                            | 7                             | 7                     | 7              | M6  | 16                | 53  | 54  | 14 |
| 50     | 30              | 50               | 50             | 55             | 5              | 32             | 46.5            | 47              | 17.5             | 23       | 77                                    | 72                            | 9.5                           | 9.5                   | 9.5            | M8  | 16                | 65  | 66  | 17 |
| 63     | 38              | 63               | 63             | 70             | 5              | 32             | 56.5            | 45              | 17.5             | 21.5     | 87                                    | 83                            | 10                            | 10                    | 10             | M8  | 16                | 75  | 80  | 17 |
| 80     | 50              | 80               | 80             | 95             | 5              | 40             | 72              | 52              | 20.5             | 26       | 90                                    | 85                            | 9                             | 9                     | 9              | M10 | 16                | 95  | 102 | 22 |
| 100    | 70              | 100              | 100            | 115            | 5              | 40             | 89              | 53              | 19               | 24.5     | 100                                   | 95                            | 13                            | 13                    | 13             | M10 | 16                | 115 | 126 | 22 |

Mountings – Series AZV..., AZ3..., AZ4..., Ø32 – 100 mm

Dimensions for foot mounting MS1



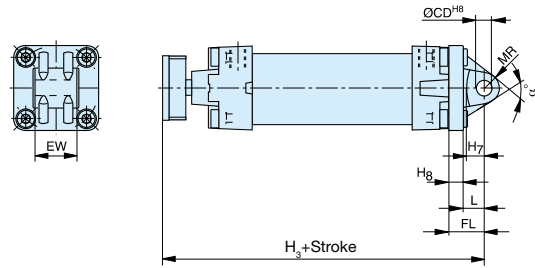
Material: steel, passivated

Dimension Table (mm)

| Cyl. Ø | E   | G <sub>1</sub> | H <sub>1</sub><br>+ Stroke | H <sub>2</sub><br>+ Stroke | AH | ØAB | AO | AT | AU | TR |
|--------|-----|----------------|----------------------------|----------------------------|----|-----|----|----|----|----|
| 32     | 47  | 55.5           | 152                        | 150                        | 32 | 7   | 32 | 4  | 24 | 32 |
| 40     | 53  | 62.5           | 170                        | 168                        | 36 | 9   | 38 | 4  | 28 | 36 |
| 50     | 65  | 77.5           | 183                        | 181                        | 45 | 9   | 42 | 5  | 32 | 45 |
| 63     | 75  | 87.5           | 193                        | 189                        | 50 | 9   | 42 | 5  | 32 | 50 |
| 80     | 95  | 110.5          | 215                        | 218                        | 63 | 12  | 55 | 6  | 41 | 63 |
| 100    | 115 | 128.5          | 222                        | 225                        | 71 | 14  | 56 | 6  | 41 | 75 |

Included in delivery: 2 foot brackets, 4 screws

Dimensions for clevis bracket MP4



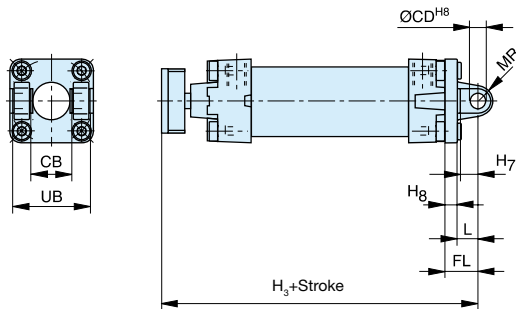
Material: cast aluminium

Dimension Table (mm)

| Cyl. Ø | H <sub>3</sub><br>+ Stroke | H <sub>7</sub> | H <sub>8</sub> | L  | ØCD <sup>H8</sup> | FL | MR   | EW | a° |
|--------|----------------------------|----------------|----------------|----|-------------------|----|------|----|----|
| 32     | 150                        | 10             | 10             | 12 | 10                | 22 | 10.5 | 26 | 60 |
| 40     | 167                        | 13             | 10             | 15 | 12                | 25 | 13   | 28 | 60 |
| 50     | 178                        | 12             | 11             | 16 | 12                | 27 | 13   | 32 | 70 |
| 63     | 193                        | 17             | 11             | 21 | 16                | 32 | 17   | 40 | 60 |
| 80     | 210                        | 16             | 15             | 21 | 16                | 36 | 17   | 50 | 70 |
| 100    | 222                        | 20.5           | 16             | 25 | 20                | 41 | 21   | 60 | 70 |

Included in delivery: 1 clevis bracket, 4 screws

Dimensions for clevis bracket MP2



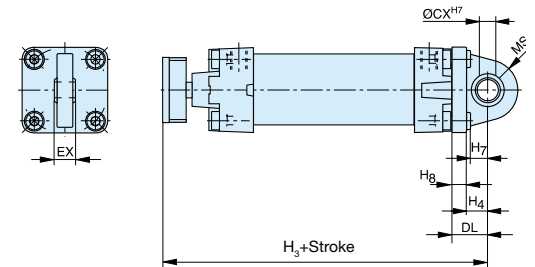
Material: cast aluminium

Dimension Table (mm)

| Cyl. Ø | H <sub>3</sub><br>+ Stroke | H <sub>7</sub> | H <sub>8</sub> | L  | CB | ØCD <sup>H8</sup> | FL | MR | UB  |
|--------|----------------------------|----------------|----------------|----|----|-------------------|----|----|-----|
| 32     | 150                        | 10             | 10             | 12 | 26 | 10                | 22 | 9  | 45  |
| 40     | 167                        | 13             | 10             | 15 | 28 | 12                | 25 | 11 | 52  |
| 50     | 178                        | 12             | 11             | 16 | 32 | 12                | 27 | 12 | 60  |
| 63     | 193                        | 17             | 11             | 21 | 40 | 16                | 32 | 15 | 70  |
| 80     | 210                        | 16             | 15             | 22 | 50 | 16                | 36 | 16 | 90  |
| 100    | 222                        | 20.5           | 16             | 25 | 60 | 20                | 41 | 20 | 110 |

Included in delivery: 1 rear trunnion mounting, 4 screws

Dimensions for Swivel eye bracket MP6  
(Rear mounting with spherical bearing)



Material: cast aluminium

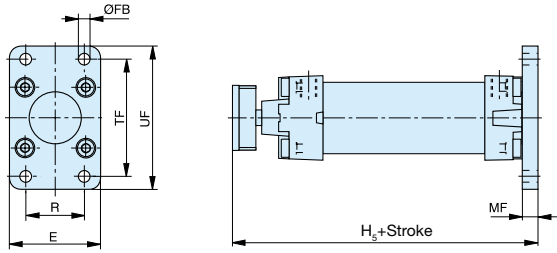
Dimension Table (mm)

| Cyl. Ø | H <sub>3</sub><br>+ Stroke | H <sub>4</sub> | H <sub>7</sub> | H <sub>8</sub> | ØCX <sup>H7</sup> | DL | EX | MS |
|--------|----------------------------|----------------|----------------|----------------|-------------------|----|----|----|
| 32     | 150                        | 12             | 10             | 10             | 10                | 22 | 14 | 18 |
| 40     | 167                        | 15             | 13             | 10             | 12                | 25 | 16 | 21 |
| 50     | 178                        | 16             | 12             | 11             | 12                | 27 | 16 | 23 |
| 63     | 193                        | 21             | 17             | 11             | 16                | 32 | 21 | 27 |
| 80     | 210                        | 21             | 16             | 15             | 16                | 36 | 21 | 29 |
| 100    | 222                        | 25             | 20.5           | 16             | 20                | 41 | 25 | 34 |

Included in delivery: 1 rear trunnion mounting with spherical bearing, 4 screws

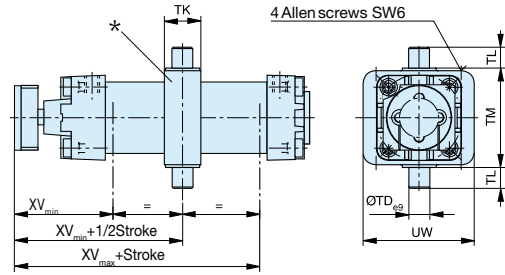
Mountings – Series AZV ....., AZ3....., AZ4....., Ø 32 – 100 mm

Dimensions for flange mouting MF2



Material: cast aluminium

Dimensions for trunnion mounting MT4 (profile cylinder barrel version)



Material: cast aluminium

\* Position trunnion mounting  
 Standard position: Type EN1 – The taps of the EN attachment are horizontally aligned to the air supply  
 Option: Type EN2 – The taps of the EN attachment are vertically aligned to the air supply

Dimension Table (mm)

| Cyl. Ø | E   | H <sub>5</sub><br>+ Stroke | R  | ØFB | MF | TF  | UF  |
|--------|-----|----------------------------|----|-----|----|-----|-----|
| 32     | 50  | 138                        | 32 | 7   | 10 | 64  | 79  |
| 40     | 56  | 152                        | 36 | 9   | 10 | 72  | 90  |
| 50     | 70  | 163                        | 45 | 9   | 12 | 90  | 110 |
| 63     | 77  | 173                        | 50 | 9   | 12 | 100 | 120 |
| 80     | 100 | 190                        | 63 | 12  | 16 | 126 | 153 |
| 100    | 120 | 197                        | 75 | 14  | 16 | 150 | 178 |

Included in delivery: 1 flange, 4 screws

Dimension Table (mm)

| Cyl. Ø | ØTD <sub>eg</sub> | TK | TL | TM  | UW  | XV <sub>min</sub> | XV  | XV <sub>max</sub> |
|--------|-------------------|----|----|-----|-----|-------------------|-----|-------------------|
| 32     | 12                | 25 | 12 | 50  | 65  | 64                | 76  | 87                |
| 40     | 16                | 28 | 16 | 63  | 75  | 75                | 87  | 99                |
| 50     | 16                | 28 | 16 | 75  | 85  | 84                | 95  | 106               |
| 63     | 20                | 36 | 20 | 90  | 100 | 89                | 101 | 112               |
| 80     | 20                | 36 | 20 | 110 | 120 | 96                | 109 | 121               |
| 100    | 25                | 48 | 25 | 132 | 135 | 99                | 112 | 125               |

Included in delivery: 1 rear trunnion mounting

After loosening the locking screws, the trunnion mounting is infinitely variable between XV<sub>min</sub> and XV<sub>max</sub>.

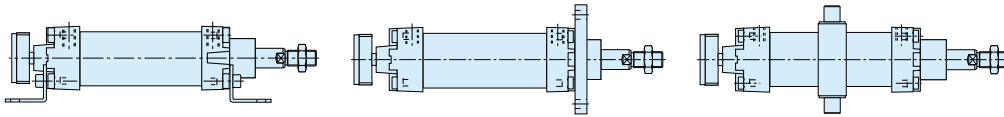
As standard, the position of the T-slots and dovetail slots is on the same side as the air connections. Exception: Ø 32 has only T-slots on the same side as the air connections, with a dovetail slot on the underside.

Mountings – Basic Cylinder, with through piston rod, series AZ3....., Ø 32 – 100 mm

Foot mounting MS1

Rear flange mounting MF2

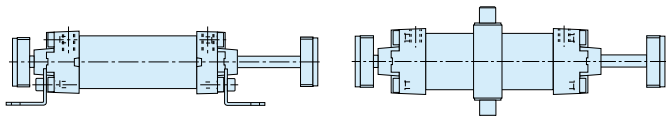
Trunnion mounting MT4



Mountings – Basic Cylinder, with through piston rods, series AZ4....., Ø 32 – 100 mm

Foot mounting MS1

Trunnion mounting MT4





# Industrial Shock Absorbers

Adjustable / Non-adjustable



Shock absorbers are hydraulic units that assist in bringing a moving load to rest, quickly and safely, without rebound or backward movement.

They provide a constant linear deceleration with the lowest possible reaction force in the shortest possible stopping time.

- Compact and heavy duty versions
- High energy absorption
- Low return force
- Long service life
- Increases productivity
- Reduces maintenance

**Smooth, Controlled Stopping of Moving Loads**

**Parker shock absorbers prevent damage to moving parts and to machines and plant, destructive impact forces are absorbed by controlled linear deceleration.**

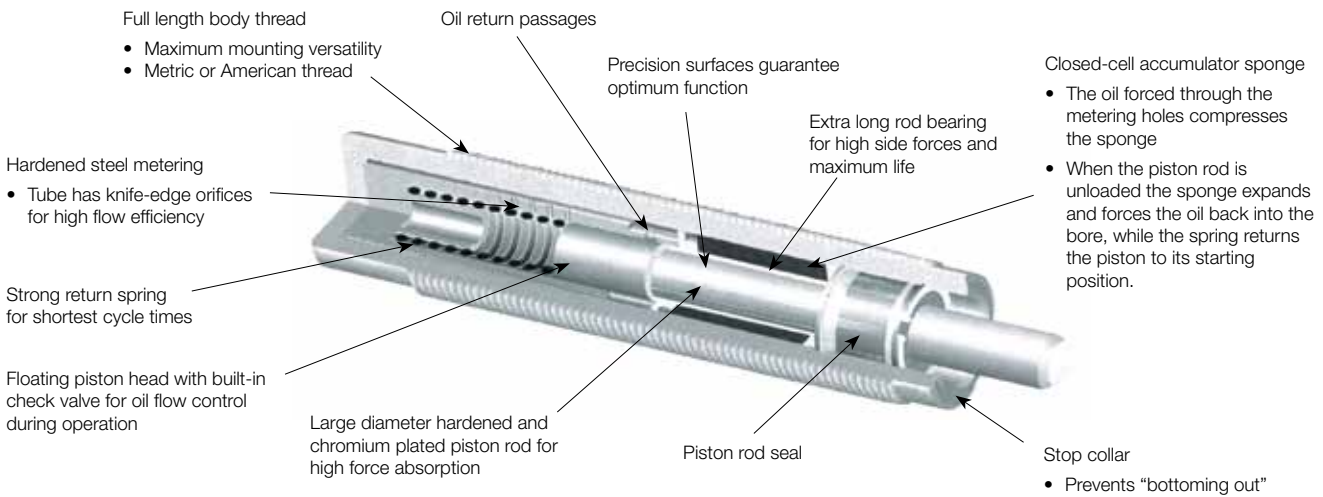
**Parker shock absorbers let you**

- Increase operating speeds
- Increase operating loads
- Increase system performance
- Increase operating reliability
- Reduce stresses on equipment
- Reduce production costs
- Reduce noise levels

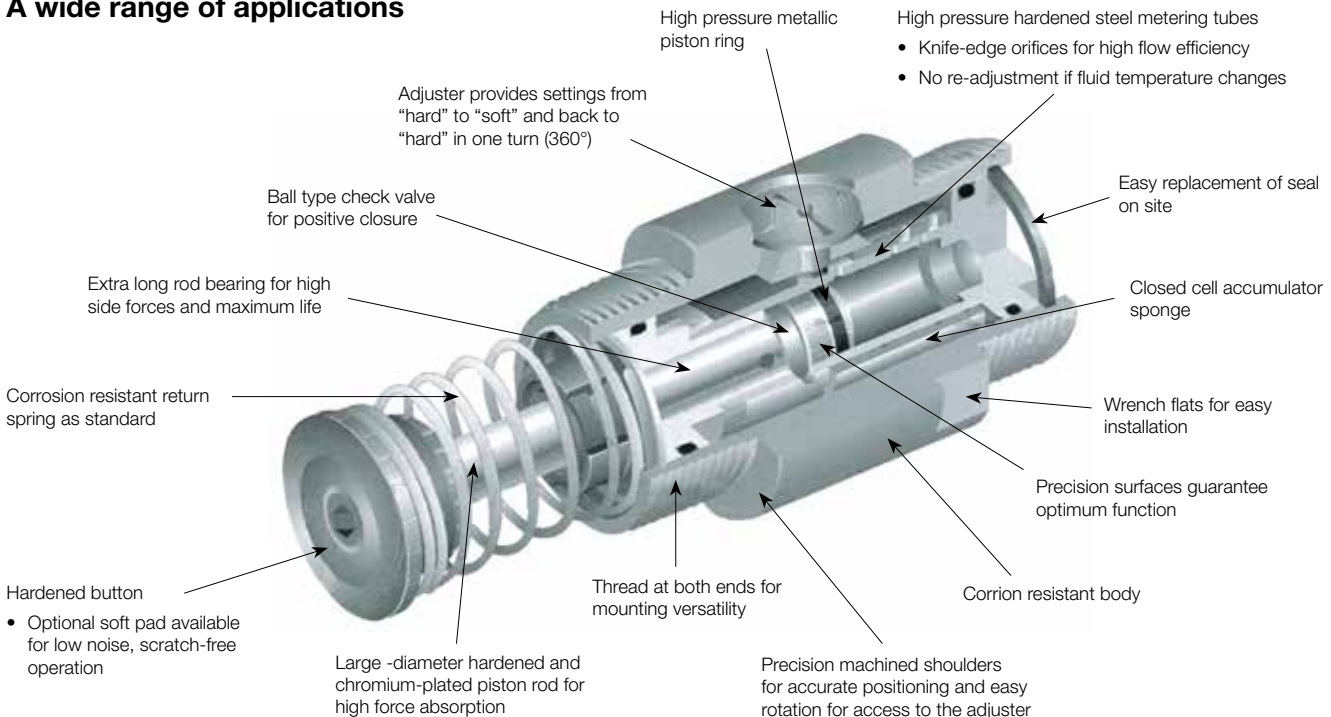
All moving parts in a production process have to be stopped without damage to themselves or to the stopping devices of the machines and plant.

The high impact forces have to be reduced in a controlled manner: to bring a moving load to a standstill, the kinetic energy generated by the movement has to be dissipated. The heavier the moving load and the faster it moves, the higher the kinetic energy. In automation especially, shorter and shorter cycle times are demanded, so that stopping times are greatly reduced while kinetic energy levels are dramatically increased. These again have to be dissipated in a controlled manner. Some commonly used stopping devices such as springs, rubber buffers or dashpots actually increase shock loading instead of reducing it - they do not dissipate energy at a uniform rate.

For smooth dissipation of the kinetic energy we recommend the use of hydraulic shock absorbers. Parker shock absorbers convert the kinetic energy generated by the deceleration of the load into thermal energy. Optimum operating conditions are achieved if the energy is dissipated almost uniformly, i.e. if the moving mass is brought to a halt in the shortest distance, in the shortest time and without sudden peak loads during the stroke.



**A wide range of applications**

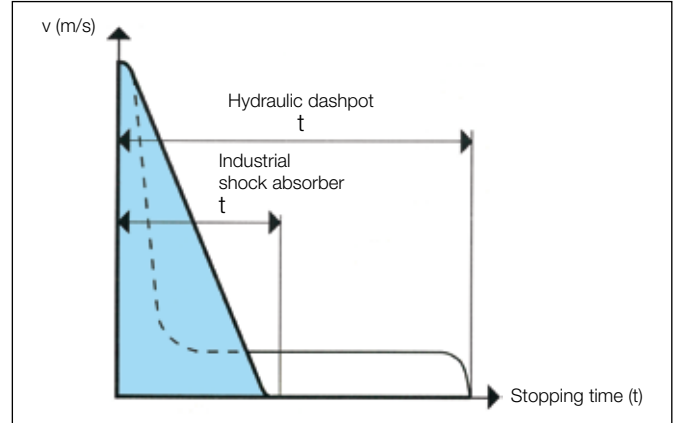
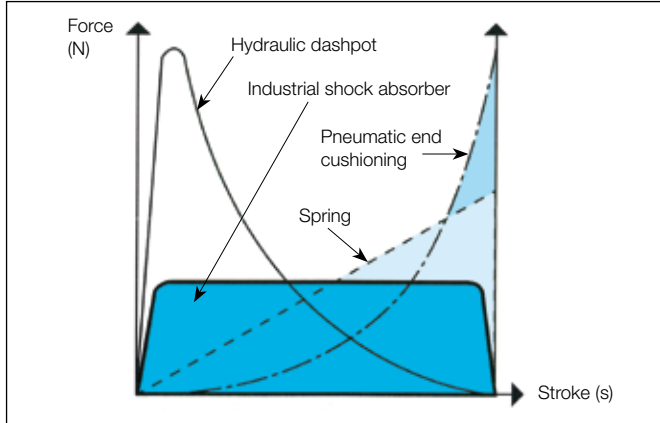


**Shock absorption**

Ordinary shock absorbers, springs, buffers and pneumatic cushioning cannot match the performance of Parker shock absorbers. These shock absorbers match the speed and mass of the moving object and bring it smoothly and uniformly to rest. Springs and buffers, on the other hand, store energy rather than dissipate it. Although the moving object is

stopped, it bounces back and this leads to fatigue in materials and components which can cause premature breakdown of the machine. Pneumatic cushioning provides a better solution because the energy is actually converted, but because of the compressibility of air the maximum braking force is generated

at the end of the stroke, which can lead to excessive loads on components. Hydraulic dashpots also cause excessive loads because peak resistance comes at the beginning of the stroke and then quickly falls away. This generates unnecessarily high braking forces.



**The Force/Stroke Diagram**

clearly shows these effects. The shock absorber curve is ideal because all the energy is dissipated by linear deceleration without initial impact or final rebound.

**Stopping time**

Both damping units stop the same mass from the same speed with the same stroke. Therefore they do the same work but the industrial shock absorber reduces the stopping time by 60 to 70%.

**Selection of Shock Absorber Type**

**Parker shock absorbers are available in two main types, to suit different applications and installation requirements. After selection of the appropriate type, sizing is determined by calculation.**

**Compact series with full-length body thread**

This compact, space-saving series is available in adjustable and non-adjustable versions and can be installed in many different ways, e.g. in a tapped blind hole, in a tapped through hole, in a clearance hole in a flange or bracket, etc.



**Universal series**

This versatile, adjustable series with various mounting accessories is designed to stop heavier loads. It is especially suited to applications which require several of the same shock absorbers with the same stroke length.



**Mounting methods**

Parker shock absorbers are designed for a variety of mountings, which can be either built into machines or supplied as accessories.

**Accumulators**

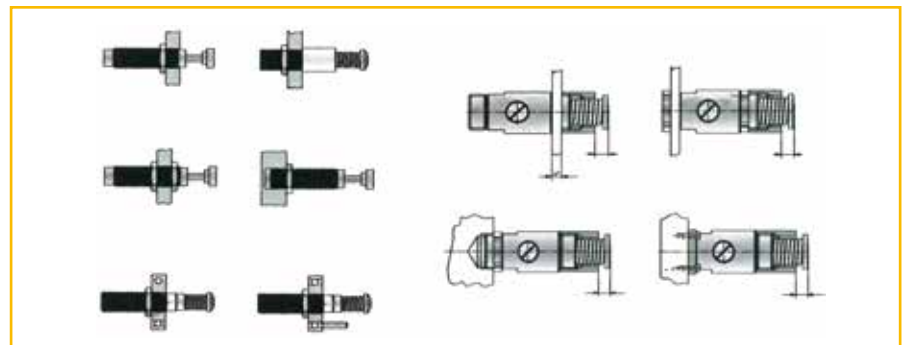
Normally shock absorbers with internal accumulators are used. This simplifies installation by eliminating external piping and oil storage. However, in applications with short cycle times and high kinetic energy the oil can become overheated. In this case an external accumulator should be used so that the oil can be cooled in the external circuit.

**Shock absorber return stroke**

- Piston rod with return spring combined with internal accumulator
- Return stroke actuated by compressed air or mechanically, combined with external accumulator. With this version a delayed return stroke is also possible.

**Options**

- Stop collars for front or rear mounting - these provide a positive stop to prevent damage caused by the piston "bottoming out". They also allow precise setting of the stroke length.
- Soft pad for the hardened steel button - to avoid surface damage and reduce noise levels.



## Non-Adjustable Shock Absorbers - SA Series

| Type        | Stroke<br>[mm] | Effective Mass<br>$m_e$ [kg] |       | Max Energy Absorption<br>[Nm] |                | Thread Size           | Order code |
|-------------|----------------|------------------------------|-------|-------------------------------|----------------|-----------------------|------------|
|             |                | Min.                         | Max.  | per stroke $W_3$              | per hour $W_4$ |                       |            |
| SA 10N      | 6,5            | 0,7                          | 2,2   | 2,8                           | 22500          | M10x1                 | 7717FIL    |
| SA 10SN     | 6,5            | 1,8                          | 5,4   | 2,8                           | 22500          | M10x1                 | 7718FIL    |
| SA 10S2N    | 6,5            | 4,6                          | 13,6  | 2,8                           | 22500          | M10x1                 | 7721FIL    |
| SA 12N      | 10             | 0,3                          | 1,1   | 9,0                           | 28200          | M12x1                 | 7719FIL    |
| SA 12SN     | 10             | 0,9                          | 4,8   | 9,0                           | 28200          | M12x1                 | 7722FIL    |
| SA 12S2N    | 10             | 2,7                          | 36,2  | 9,0                           | 28200          | M12x1                 | 7723FIL    |
| SA 14       | 12,5           | 0,9                          | 10    | 17                            | 34000          | M14x1,5 <sup>1)</sup> | 7720FIL    |
| SA 14S      | 12,5           | 8,6                          | 86    | 17                            | 34000          | M14x1,5 <sup>1)</sup> | 7927FIL    |
| SA 14S2     | 12,5           | 68                           | 205   | 17                            | 34000          | M14x1,5 <sup>1)</sup> | 7928FIL    |
| SA 20       | 12,5           | 2,3                          | 25    | 25                            | 45000          | M20x1,5               | 7930FIL    |
| SA 20S      | 12,5           | 23                           | 230   | 25                            | 45000          | M20x1,5               | 7937FIL    |
| SA 20S2     | 12,5           | 182                          | 910   | 25                            | 45000          | M20x1,5               | 7938FIL    |
| SAI 25      | 25,4           | 9                            | 136   | 68                            | 68000          | M25x1,5               | 7834FIL    |
| SAI 25S     | 25,4           | 113                          | 1130  | 68                            | 68000          | M25x1,5               | 7835FIL    |
| SAI 25S2    | 25,4           | 400                          | 2273  | 68                            | 68000          | M25x1,5               | 7836FIL    |
| SA 33x25    | 25,4           | 9                            | 40    | 153                           | 75000          | M33x1,5               | 8041FIL    |
| SA 33Sx25   | 25,4           | 30                           | 120   | 153                           | 75000          | M33x1,5               | 8042FIL    |
| SA 33S2x25  | 25,4           | 100                          | 420   | 153                           | 75000          | M33x1,5               | 8043FIL    |
| SA 33S3x25  | 25,4           | 350                          | 1420  | 153                           | 75000          | M33x1,5               | 8044FIL    |
| SA 33x50    | 50,8           | 18                           | 70    | 305                           | 85000          | M33x1,5               | 8045FIL    |
| SA 33Sx50   | 50,8           | 60                           | 250   | 305                           | 85000          | M33x1,5               | 8046FIL    |
| SA 33S2x50  | 50,8           | 210                          | 840   | 305                           | 85000          | M33x1,5               | 8047FIL    |
| SA 33S3x50  | 50,8           | 710                          | 2830  | 305                           | 85000          | M33x1,5               | 8048FIL    |
| SA 45x25    | 25,4           | 20                           | 90    | 339                           | 107000         | M45x1,5               | 8049FIL    |
| SA 45Sx25   | 25,4           | 80                           | 310   | 339                           | 107000         | M45x1,5               | 8050FIL    |
| SA 45S2x25  | 25,4           | 260                          | 1050  | 339                           | 107000         | M45x1,5               | 8051FIL    |
| SA 45S3x25  | 25,4           | 890                          | 3540  | 339                           | 107000         | M45x1,5               | 8052FIL    |
| SA 45x50    | 50,8           | 45                           | 180   | 678                           | 112000         | M45x1,5               | 8053FIL    |
| SA 45Sx50   | 50,8           | 150                          | 620   | 678                           | 112000         | M45x1,5               | 8054FIL    |
| SA 45S2x50  | 50,8           | 520                          | 2090  | 678                           | 112000         | M45x1,5               | 8055FIL    |
| SA 45S3x50  | 50,8           | 1800                         | 7100  | 678                           | 112000         | M45x1,5               | 8056FIL    |
| SA 45x75    | 76,2           | 70                           | 270   | 1017                          | 146000         | M45x1,5               | 8057FIL    |
| SA 45Sx75   | 76,2           | 230                          | 930   | 1017                          | 146000         | M45x1,5               | 8058FIL    |
| SA 45S2x75  | 76,2           | 790                          | 3140  | 1017                          | 146000         | M45x1,5               | 8059FIL    |
| SA 45S3x75  | 76,2           | 2650                         | 10600 | 1017                          | 146000         | M45x1,5               | 8060FIL    |
| SA 64x50    | 50,8           | 140                          | 540   | 1695                          | 146000         | M64x2                 | 8061FIL    |
| SA 64Sx50   | 50,8           | 460                          | 1850  | 1695                          | 146000         | M64x2                 | 8062FIL    |
| SA 64S2x50  | 50,8           | 1600                         | 6300  | 1695                          | 146000         | M64x2                 | 8063FIL    |
| SA 64S3x50  | 50,8           | 5300                         | 21200 | 1695                          | 146000         | M64x2                 | 8064FIL    |
| SA 64x100   | 101,6          | 270                          | 1100  | 3390                          | 192000         | M64x2                 | 8065FIL    |
| SA 64Sx100  | 101,6          | 930                          | 3700  | 3390                          | 192000         | M64x2                 | 8066FIL    |
| SA 64S2x100 | 101,6          | 3150                         | 12600 | 3390                          | 192000         | M64x2                 | 8067FIL    |
| SA 64S3x100 | 101,6          | 10600                        | 42500 | 3390                          | 192000         | M64x2                 | 8068FIL    |
| SA 64x150   | 150,1          | 410                          | 1640  | 5084                          | 248000         | M64x2                 | 8069FIL    |
| SA 64Sx150  | 150,1          | 1390                         | 5600  | 5084                          | 248000         | M64x2                 | 8070FIL    |
| SA 64S2x150 | 150,1          | 4700                         | 18800 | 5084                          | 248000         | M64x2                 | 8071FIL    |
| SA 64S3x150 | 150,1          | 16000                        | 63700 | 5084                          | 248000         | M64x2                 | 8072FIL    |



<sup>1)</sup> Option: M14 x 1 thread

## Non-Adjustable Shock Absorbers - MC Series

| Type       | Stroke [mm] | Effective Mass $m_e$ [kg] |       | Max Energy Absorption [Nm] |                | Thread Size | Order code |
|------------|-------------|---------------------------|-------|----------------------------|----------------|-------------|------------|
|            |             | Min.                      | Max.  | per stroke $W_3$           | per hour $W_4$ |             |            |
| MC9M1-B    | 5           | 0,6                       | 3,2   | 1                          | 2000           | M6 x 0,5    | MC9M1-B    |
| MC9M2-B    | 5           | 0,8                       | 4,1   | 1                          | 2000           | M6 x 0,5    | MC9M2-B    |
| MC10ML-B   | 5           | 0,3                       | 2,7   | 0,5                        | 4000           | M8 x 1      | MC10ML-B   |
| MC10MH-B   | 5           | 0,7                       | 5,0   | 0,5                        | 4000           | M8 x 1      | MC10MH-B   |
| MC25ML     | 6,6         | 0,7                       | 2,2   | 2,8                        | 22500          | M10 x 1     | MC25ML     |
| MC25M      | 6,6         | 1,8                       | 5,4   | 2,8                        | 22500          | M10 x 1     | MC25M      |
| MC25MH     | 6,6         | 4,6                       | 13,6  | 2,8                        | 22500          | M10 x 1     | MC25MH     |
| MC75M-1    | 10          | 0,3                       | 1,1   | 9                          | 28200          | M12 x 1     | MC75M-1    |
| MC75M-2    | 10          | 0,9                       | 4,8   | 9                          | 28200          | M12 x 1     | MC75M-2    |
| MC75M-3    | 10          | 2,7                       | 36,2  | 9                          | 28200          | M12 x 1     | MC75M-3    |
| MC150M     | 12,5        | 0,9                       | 10    | 17                         | 34000          | M14 x 1,5   | MC150M     |
| MC150MH    | 12,5        | 8,6                       | 86    | 17                         | 34000          | M14 x 1,5   | MC150MH    |
| MC150MH2   | 12,5        | 70                        | 200   | 17                         | 34000          | M14 x 1,5   | MC150MH2   |
| MC225M     | 12,5        | 2,3                       | 25    | 25                         | 45000          | M20 x 1,5   | MC225M     |
| MC225MH    | 12,5        | 23                        | 230   | 25                         | 45000          | M20 x 1,5   | MC225MH    |
| MC225MH2   | 12,5        | 180                       | 910   | 25                         | 45000          | M20 x 1,5   | MC225MH2   |
| MC600M     | 25,4        | 9                         | 136   | 68                         | 68000          | M25 x 1,5   | MC600M     |
| MC600MH    | 25,4        | 113                       | 1130  | 68                         | 68000          | M25 x 1,5   | MC600MH    |
| MC600MH2   | 25,4        | 400                       | 2300  | 68                         | 68000          | M25 x 1,5   | MC600MH2   |
| MC3325M-1  | 25          | 9                         | 40    | 155                        | 75000          | M33 x 1,5   | MC3325M-1  |
| MC3325M-2  | 25          | 30                        | 120   | 155                        | 75000          | M33 x 1,5   | MC3325M-2  |
| MC3325M-3  | 25          | 100                       | 420   | 155                        | 75000          | M33 x 1,5   | MC3325M-3  |
| MC3350M-1  | 50          | 18                        | 70    | 310                        | 85000          | M33 x 1,5   | MC3350M-1  |
| MC3350M-2  | 50          | 60                        | 250   | 310                        | 85000          | M33 x 1,5   | MC3350M-2  |
| MC3350M-3  | 50          | 210                       | 840   | 310                        | 85000          | M33 x 1,5   | MC3350M-3  |
| MC4525M-1  | 25          | 20                        | 90    | 340                        | 107000         | M45 x 1,5   | MC4525M-1  |
| MC4525M-2  | 25          | 80                        | 310   | 340                        | 107000         | M45 x 1,5   | MC4525M-2  |
| MC4525M-3  | 25          | 260                       | 1050  | 340                        | 107000         | M45 x 1,5   | MC4525M-3  |
| MC4550M-1  | 50          | 45                        | 180   | 680                        | 112000         | M45 x 1,5   | MC4550M-1  |
| MC4550M-2  | 50          | 150                       | 620   | 680                        | 112000         | M45 x 1,5   | MC4550M-2  |
| MC4550M-3  | 50          | 520                       | 2090  | 680                        | 112000         | M45 x 1,5   | MC4550M-3  |
| MC4575M-1  | 75          | 70                        | 270   | 1020                       | 146000         | M45 x 1,5   | MC4575M-1  |
| MC4575M-2  | 75          | 230                       | 930   | 1020                       | 146000         | M45 x 1,5   | MC4575M-2  |
| MC4575M-3  | 75          | 790                       | 3140  | 1020                       | 146000         | M45 x 1,5   | MC4575M-3  |
| MC6450M-1  | 50          | 140                       | 540   | 1700                       | 146000         | M64 x 2     | MC6450M-1  |
| MC6450M-2  | 50          | 460                       | 1850  | 1700                       | 146000         | M64 x 2     | MC6450M-2  |
| MC6450M-3  | 50          | 1600                      | 6300  | 1700                       | 146000         | M64 x 2     | MC6450M-3  |
| MC64100M-1 | 100         | 270                       | 1100  | 3400                       | 192000         | M64 x 2     | MC64100M-1 |
| MC64100M-2 | 100         | 930                       | 3700  | 3400                       | 192000         | M64 x 2     | MC64100M-2 |
| MC64100M-3 | 100         | 3150                      | 12600 | 3400                       | 192000         | M64 x 2     | MC64100M-3 |
| MC64150M-1 | 150         | 410                       | 1640  | 5100                       | 248000         | M64 x 2     | MC64150M-1 |
| MC64150M-2 | 150         | 1390                      | 5600  | 5100                       | 248000         | M64 x 2     | MC64150M-2 |
| MC64150M-3 | 150         | 4700                      | 18800 | 5100                       | 248000         | M64 x 2     | MC64150M-3 |



## Non Adjustable Shock Absorbers - SC Series

| Type            | Stroke [mm] | Effective Mass $m_e$ [kg] |      |                   |      | Max Energy Absorption [Nm] |                | Thread Size | Order code      |
|-----------------|-------------|---------------------------|------|-------------------|------|----------------------------|----------------|-------------|-----------------|
|                 |             | Soft contact              |      | Self compensating |      | per stroke $W_3$           | per hour $W_4$ |             |                 |
|                 |             | Min.                      | Max. | Min.              | Max. |                            |                |             |                 |
| <b>SC925M-1</b> | 40          | 22                        | 72   | 14                | 90   | 110                        | 90000          | M25 x 1,5   | <b>SC925M-1</b> |
| <b>SC925M-2</b> | 40          | 59                        | 208  | 40                | 272  | 110                        | 90000          | M25 x 1,5   | <b>SC925M-2</b> |
| <b>SC925M-3</b> | 40          | 181                       | 612  | 113               | 726  | 110                        | 90000          | M25 x 1,5   | <b>SC925M-3</b> |



## Adjustable Shock Absorbers - SA Series

| Type                  | Stroke [mm] | Effective Mass $m_e$ [kg] |       | Max Energy Absorption [Nm] |                      | Thread Size           | Order code     |
|-----------------------|-------------|---------------------------|-------|----------------------------|----------------------|-----------------------|----------------|
|                       |             | Min.                      | Max.  | per stroke $W_3$           | per hour $W_4$       |                       |                |
| <b>SA 1/4 x 1/2N</b>  | 12,7        | 1,0                       | 190   | 20                         | 35000                | M20x1,5               | <b>7720FIL</b> |
| <b>SA 3/8 x 1D</b>    | 25,4        | 4,5                       | 546   | 70                         | 68000                | M25x1,5 <sup>2)</sup> | <b>7840FIL</b> |
| <b>SALD 1/2 x 1M</b>  | 25,4        | 4,5                       | 1360  | 170                        | 85000                | M36x1,5               | <b>7841FIL</b> |
| <b>SALD 1/2 x 2M</b>  | 50,8        | 9,5                       | 2720  | 340                        | 98000                | M36x1,5               | <b>7842FIL</b> |
| <b>SA 1/2 x 1</b>     | 25,4        | 4,5                       | 1225  | 153                        | 84700                | M33x1,5               | <b>7970FIL</b> |
| <b>SA 1/2 x 2</b>     | 50,8        | 9,5                       | 2450  | 305                        | 98300                | M33x1,5               | <b>7975FIL</b> |
| <b>SA 3/4 x 1</b>     | 25,4        | 9                         | 8163  | 339                        | 124300               | M42x1,5               | <b>7980FIL</b> |
| <b>SA 3/4 x 2</b>     | 50,8        | 16                        | 14500 | 678                        | 146800               | M42x1,5               | <b>7985FIL</b> |
| <b>SA 3/4 x 3</b>     | 76          | 23                        | 20866 | 1017                       | 180776               | M42x1,5               | <b>7986FIL</b> |
| <b>SA 1 1/8 x 2</b>   | 50,8        | 54                        | 22680 | 1808                       | 169478               | M64x2,0               | <b>7990FIL</b> |
| <b>SA 1 1/8 x 4</b>   | 102         | 73                        | 45360 | 3616                       | 225970               | M64x2,0               | <b>7995FIL</b> |
| <b>SA 1 1/8 x 6</b>   | 152         | 91                        | 68040 | 5423                       | 282463               | M64x2,0               | <b>7996FIL</b> |
| <b>SA-A 3/4 x 1</b>   | 25,4        | 27                        | 3600  | 290                        | 184000 <sup>3)</sup> | M42x1,5               | <b>7887FIL</b> |
| <b>SA-A 3/4 x 2</b>   | 50,8        | 43                        | 6350  | 600                        | 230000 <sup>3)</sup> | M42x1,5               | <b>7888FIL</b> |
| <b>SA-A 3/4 x 3</b>   | 76          | 55                        | 9500  | 890                        | 276000 <sup>3)</sup> | M42x1,5               | <b>7889FIL</b> |
| <b>SA-A 1 1/8 x 2</b> | 50,8        | 72                        | 13000 | 1380                       | 345000 <sup>3)</sup> | M64x2,0               | <b>7880FIL</b> |
| <b>SA-A 1 1/8 x 4</b> | 102         | 118                       | 18200 | 2700                       | 460000 <sup>3)</sup> | M64x2,0               | <b>7885FIL</b> |
| <b>SA-A 1 1/8 x 6</b> | 152         | 200                       | 32000 | 4150                       | 575000 <sup>3)</sup> | M64x2,0               | <b>7886FIL</b> |

<sup>2)</sup> Option: M27 x 3 thread      <sup>3)</sup> Operation with external air-oil tank

Further shock absorbers sizes (1 1/2", 2", 2 1/4", 3", 4") in various stroke lengths are also available on request.



For further technical data and accessories information regarding the SA-series please refer to shock absorber catalogue P-A4P018GB, for MC-SC- series please refer to catalogue PDE2524TCUK or contact your local Parker sales company.



# Air Motors

# Stainless Steel Air Motors P1V-S

*An ideal choice for the food grade applications, and in all other ATEX applications where there is a risk of corrosion.*



Designed for demanding applications and available in a wide variety of speeds and output torques. The all round, dirt-trap free design, stainless steel construction and FKM (DIN ISO 16299) external seals makes them the ideal choice for the Food Industry, where washdown with aggressive cleaning agents is common.

- Power from 0,02 kW to 1,2 kW
- ATEX CE Ex approved from 0,12 kW to 1,2 kW
- Keyed or threaded shaft
- No-lube intermittent operation as standard
- 0,2 kW, 0,3 and 1.2 kW Brakemotors for higher safety
- 0,28, 0,57 and 0.86 kW high torque series



P1V-S is a range of air motors with all external components made of stainless steel, which means that they can be used in food grade applications, and in all other applications where there is a risk of corrosion.

- Power from 0,02 kW to 1,2 kW
- ATEX CE Ex approved from 0,12 kW to 1,2 kW
- Designed for arduous applications
- No-lube intermittent operation as standard



### Operating information

Working pressure : Max 6 bar in Ex area  
 Working temperature : -20° to +40°C in Ex area  
 Fluid: Compressed air with ISO 8573-1 Quality class 3.4.3 (no-lube operation) and 3.-.5 (lube operation)

**Note :** All technical data are based on a working pressure of 6 bar and with oil. For oil-free performances are -10 to 15% lower. Data tolerance accuracy +-10%

For details, see technical catalogue on web site : [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

CE Ex II 2GD c IIC T6 (80 °C) X

CE Ex II 2GD c IIC T5 (95 °C) X

#### Keyed shaft, P1V-S012A series, 120 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

| Max output kW | Free speed rpm | Speed at max output r/min | Torque at max output Nm | Min start torque Nm | Air consumption at max output l/s | Conn. | Min pipe ID | Order code           |
|---------------|----------------|---------------------------|-------------------------|---------------------|-----------------------------------|-------|-------------|----------------------|
| 0,12          | 22000          | 11000                     | 0,10                    | 0,15                | 5,0                               | G1/8  | 6           | <b>P1V-S012A0N00</b> |
| 0,12          | 5500           | 2750                      | 0,40                    | 0,60                | 5,0                               | G1/8  | 6           | <b>P1V-S012A0550</b> |
| 0,12          | 3600           | 1800                      | 0,60                    | 0,90                | 5,0                               | G1/8  | 6           | <b>P1V-S012A0360</b> |
| 0,12          | 1400           | 700                       | 1,60                    | 2,40                | 5,0                               | G1/8  | 6           | <b>P1V-S012A0140</b> |
| 0,12          | 900            | 450                       | 2,50                    | 3,80                | 5,0                               | G1/8  | 6           | <b>P1V-S012A0090</b> |
| 0,12          | 600            | 300                       | 3,80                    | 5,00*               | 5,0                               | G1/8  | 6           | <b>P1V-S012A0060</b> |
| 0,12          | 100            | 50                        | 5,00*                   | 5,00*               | 5,0                               | G1/8  | 6           | <b>P1V-S012A0010</b> |

#### Threaded shaft, P1V-S012D series, 120 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

|      |       |       |       |       |     |      |   |                      |
|------|-------|-------|-------|-------|-----|------|---|----------------------|
| 0,12 | 22000 | 11000 | 0,10  | 0,15  | 5,0 | G1/8 | 6 | <b>P1V-S012D0N00</b> |
| 0,12 | 5500  | 2750  | 0,40  | 0,60  | 5,0 | G1/8 | 6 | <b>P1V-S012D0550</b> |
| 0,12 | 3600  | 1800  | 0,60  | 0,90  | 5,0 | G1/8 | 6 | <b>P1V-S012D0360</b> |
| 0,12 | 1400  | 700   | 1,60  | 2,40  | 5,0 | G1/8 | 6 | <b>P1V-S012D0140</b> |
| 0,12 | 900   | 450   | 2,50  | 3,80  | 5,0 | G1/8 | 6 | <b>P1V-S012D0090</b> |
| 0,12 | 600   | 300   | 3,80  | 5,00* | 5,0 | G1/8 | 6 | <b>P1V-S012D0060</b> |
| 0,12 | 100   | 50    | 5,00* | 5,00* | 5,0 | G1/8 | 6 | <b>P1V-S012D0010</b> |

#### Keyed shaft, P1V-S020A series, 200 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

|      |       |      |        |        |     |      |    |                       |
|------|-------|------|--------|--------|-----|------|----|-----------------------|
| 0,20 | 14500 | 7250 | 0,26   | 0,40   | 6,2 | G1/8 | 10 | <b>P1V-S020A0E50</b>  |
| 0,20 | 4600  | 2300 | 0,80   | 1,20   | 6,2 | G1/8 | 10 | <b>P1V-S020A0460</b>  |
| 0,20 | 2400  | 1200 | 1,60   | 2,40   | 6,2 | G1/8 | 10 | <b>P1V-S020A0240</b>  |
| 0,20 | 1400  | 700  | 2,70   | 4,10   | 6,2 | G1/8 | 10 | <b>P1V-S020A0140</b>  |
| 0,20 | 700   | 350  | 5,40   | 8,20   | 6,2 | G1/8 | 10 | <b>P1V-S020A0070</b>  |
| 0,20 | 320   | 160  | 12,00  | 18,00  | 6,2 | G1/8 | 10 | <b>P1V-S020A0032</b>  |
| 0,10 | 180   | 90   | 10,50  | 15,00  | 4,5 | G1/8 | 10 | <b>P1V-S020A0018</b>  |
| 0,18 | 50    | 25   | 20,00* | 20,00* | 6,2 | G1/8 | 10 | <b>P1V-S020A0005</b>  |
| 0,18 | 20    | -    | 20,00* | 20,00* | 6,2 | G1/8 | 10 | <b>P1V-S020A0002</b>  |
| 0,18 | 10    | -    | 20,00* | 20,00* | 6,2 | G1/8 | 10 | <b>P1V-S020A0001</b>  |
| 0,18 | 5     | -    | 20,00* | 20,00* | 6,2 | G1/8 | 10 | <b>P1V-S020A00005</b> |

\* Max allowed torque

## Reversible air motors

## Threaded shaft, P1V-S020D series, 200 watt - (G1/8)


 II2GD cIIC T6 (80°C) X

| Max output kW | Free speed rpm | Speed at max output r/min | Torque at max output Nm | Min start torque Nm | Air consumption at max output l/s | Conn. | Min pipe ID | Order code    |
|---------------|----------------|---------------------------|-------------------------|---------------------|-----------------------------------|-------|-------------|---------------|
| 0,20          | 14500          | 7250                      | 0,26                    | 0,40                | 6.2                               | G1/8  | 10          | P1V-S020D0E50 |
| 0,20          | 4600           | 2300                      | 0,80                    | 1,20                | 6.2                               | G1/8  | 10          | P1V-S020D0460 |
| 0,20          | 2400           | 1200                      | 1,60                    | 2,40                | 6.2                               | G1/8  | 10          | P1V-S020D0240 |
| 0,20          | 1400           | 700                       | 2,70                    | 4,10                | 6.2                               | G1/8  | 10          | P1V-S020D0140 |
| 0,20          | 700            | 350                       | 5,40                    | 8,20                | 6.2                               | G1/8  | 10          | P1V-S020D0070 |
| 0,20          | 320            | 160                       | 12,00                   | 18,00               | 6.2                               | G1/8  | 10          | P1V-S020D0032 |
| 0,10          | 180            | 90                        | 10,50                   | 15,00               | 4.5                               | G1/8  | 10          | P1V-S020D0018 |
| 0,18          | 50             | 25                        | 20,00*                  | 20,00*              | 6.2                               | G1/8  | 10          | P1V-S020D0005 |

## Keyed shaft, P1V-S030A series, 300 watt - (G1/4)


 II2GD cIIC T6 (80°C) X

|      |       |      |        |        |     |      |    |               |
|------|-------|------|--------|--------|-----|------|----|---------------|
| 0,30 | 14500 | 7250 | 0,40   | 0,60   | 7.8 | G1/4 | 10 | P1V-S030A0E50 |
| 0,30 | 4600  | 2300 | 1,20   | 1,90   | 7.8 | G1/4 | 10 | P1V-S030A0460 |
| 0,30 | 2400  | 1200 | 2,40   | 3,60   | 7.8 | G1/4 | 10 | P1V-S030A0240 |
| 0,30 | 1400  | 700  | 4,10   | 6,10   | 7.8 | G1/4 | 10 | P1V-S030A0140 |
| 0,30 | 600   | 300  | 9,60   | 14,30  | 7.8 | G1/4 | 10 | P1V-S030A0060 |
| 0,30 | 340   | 170  | 16,90  | 25,30  | 7.8 | G1/4 | 10 | P1V-S030A0034 |
| 0,30 | 230   | 115  | 24,00  | 36,00  | 7.8 | G1/4 | 10 | P1V-S030A0023 |
| 0,13 | 180   | 90   | 13,80  | 21,00  | 4.7 | G1/8 | 10 | P1V-S030A0018 |
| 0,30 | 100   | 50   | 57,00  | 85,50  | 7.8 | G1/4 | 10 | P1V-S030A0010 |
| 0,30 | 50    | 25   | 36,00* | 36,00* | 7.8 | G1/4 | 10 | P1V-S030A0005 |

## Threaded shaft, P1V-S030D series, 300 watt - (G1/4)


 II2GD cIIC T6 (80°C) X

|      |       |      |        |        |     |      |    |               |
|------|-------|------|--------|--------|-----|------|----|---------------|
| 0,30 | 14500 | 7250 | 0,40   | 0,60   | 7.8 | G1/4 | 10 | P1V-S030D0E50 |
| 0,30 | 4600  | 2300 | 1,20   | 1,90   | 7.8 | G1/4 | 10 | P1V-S030D0460 |
| 0,30 | 2400  | 1200 | 2,40   | 3,60   | 7.8 | G1/4 | 10 | P1V-S030D0240 |
| 0,30 | 1400  | 700  | 4,10   | 6,10   | 7.8 | G1/4 | 10 | P1V-S030D0140 |
| 0,30 | 600   | 300  | 9,60   | 14,30  | 7.8 | G1/4 | 10 | P1V-S030D0060 |
| 0,30 | 340   | 170  | 16,90  | 25,30  | 7.8 | G1/4 | 10 | P1V-S030D0034 |
| 0,13 | 180   | 90   | 13,80  | 21,00  | 4.7 | G1/8 | 10 | P1V-S030D0018 |
| 0,30 | 50    | 25   | 36,00* | 36,00* | 7.8 | G1/4 | 10 | P1V-S030D0005 |

## Keyed shaft, P1V-S060A series, 600 watt - (G3/8)


 II2GD cIIC T6 (80°C) X

|      |       |      |       |       |      |      |    |               |
|------|-------|------|-------|-------|------|------|----|---------------|
| 0,60 | 14000 | 7000 | 0,82  | 1,23  | 14.2 | G3/8 | 12 | P1V-S060A0E00 |
| 0,60 | 3500  | 1750 | 3,20  | 4,80  | 14.2 | G3/8 | 12 | P1V-S060A0350 |
| 0,60 | 2700  | 1350 | 4,20  | 6,40  | 14.2 | G3/8 | 12 | P1V-S060A0270 |
| 0,60 | 1700  | 850  | 6,70  | 10,10 | 14.2 | G3/8 | 12 | P1V-S060A0170 |
| 0,60 | 630   | 315  | 18,00 | 27,00 | 14.2 | G3/8 | 12 | P1V-S060A0063 |
| 0,60 | 480   | 240  | 23,90 | 36,00 | 14.2 | G3/8 | 12 | P1V-S060A0048 |
| 0,60 | 300   | 150  | 38,20 | 57,00 | 14.2 | G3/8 | 12 | P1V-S060A0030 |
| 0,30 | 150   | 75   | 38,00 | 57,00 | 14.2 | G3/8 | 12 | P1V-S060A0015 |

## Keyed shaft, P1V-S090A series, 900 watt - (G3/8)


 II2GD cIIC T6 (80°C) X

|      |       |      |       |       |      |      |    |               |
|------|-------|------|-------|-------|------|------|----|---------------|
| 0,90 | 12000 | 6000 | 1,40  | 2,10  | 23.3 | G1/2 | 12 | P1V-S090A0C00 |
| 0,90 | 3500  | 1750 | 4,90  | 7,30  | 23.3 | G1/2 | 12 | P1V-S090A0350 |
| 0,90 | 2700  | 1350 | 6,30  | 9,50  | 23.3 | G1/2 | 12 | P1V-S090A0270 |
| 0,90 | 1700  | 850  | 10,10 | 15,20 | 23.3 | G1/2 | 12 | P1V-S090A0170 |
| 0,90 | 630   | 315  | 27,00 | 40,00 | 23.3 | G1/2 | 12 | P1V-S090A0063 |
| 0,90 | 480   | 240  | 35,00 | 53,00 | 23.3 | G1/2 | 12 | P1V-S090A0048 |
| 0,90 | 300   | 150  | 57,00 | 85,00 | 23.3 | G1/2 | 12 | P1V-S090A0030 |

## Keyed shaft, P1V-S120A series, 1200 watt - (G3/4)


 II2GD cIIC T5 (95°C) X

|      |      |      |       |        |      |      |    |               |
|------|------|------|-------|--------|------|------|----|---------------|
| 1,20 | 9000 | 4500 | 2,50  | 3,80   | 26,7 | G3/4 | 19 | P1V-S120A0900 |
| 1,20 | 2500 | 1250 | 8,20  | 13,70  | 26,7 | G3/4 | 19 | P1V-S120A0250 |
| 1,20 | 1100 | 550  | 21,00 | 31,00  | 26,7 | G3/4 | 19 | P1V-S120A0110 |
| 1,20 | 700  | 350  | 33,00 | 49,00  | 26,7 | G3/4 | 19 | P1V-S120A0070 |
| 1,20 | 320  | 160  | 71,00 | 107,00 | 26,7 | G3/4 | 19 | P1V-S120A0032 |
| 1,20 | 200  | 100  | 66,90 | 100,00 | 19,0 | G3/4 | 19 | P1V-S120A0020 |

\* Max permitted torque to not damage the gearbox

## ATEX Robust air motors - P1V-S

The high torque motors of the P1V-S type are small in size but provide extremely high output. Our high torque motors are also less apt to stall. These drive solutions are Particularly suitable for use in industrial agitators and mixers as used in the paint industry, food industry or pharmaceutical industry.



- Power 0.28, 0.57 and 0.86 kW
- Designed for arduous applications
- No-lube intermittent operation as standard

CE Ex II 2 GD c IIC T6 (80°C) X

## Operating information

|                     |   |
|---------------------|---|
| Working pressure    | Max 6 bar in Ex area  |
| Working temperature | -20° to +40°C in Ex area  |
| Fluid               | Compressed air with ISO 8573-1 Quality class 3.4.3 (no-lube operation) and 3.-.5 (lube operation) |

**Note :** All technical data are based on a working pressure of 6 bar and with oil.  
For oil-free performances are -10 to 15% lower.  
Data tolerance accuracy +-10%

For details, see technical catalogue on web site :  
[www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## Keyed shaft, P1V-S028A series, 285 watt - (G3/8)

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,285     | 170         | 85            | 32             | 47               | 7,8                          | G3/8  | 10          | 2,700  | <b>P1V-S028A0017</b> |
| 0,285     | 80          | 40            | 62             | 92               | 7,8                          | G3/8  | 10          | 2,600  | <b>P1V-S028A0008</b> |
| 0,285     | 50          | 25            | 110            | 162              | 7,8                          | G3/8  | 10          | 2,900  | <b>P1V-S028A0005</b> |
| 0,280     | 26          | 13            | 210            | 320              | 7,8                          | G3/8  | 10          | 3,500  | <b>P1V-S028A0003</b> |
| 0,280     | 14          | 7             | 410            | 615              | 7,8                          | G3/8  | 10          | 3,500  | <b>P1V-S028A0002</b> |

## Keyed shaft, P1V-S057A series, 570 watt - (G1/2)

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,570     | 150         | 75            | 72             | 108              | 14,2                         | G1/2  | 10          | 3,600  | <b>P1V-S057A0015</b> |
| 0,570     | 110         | 55            | 98             | 147              | 14,2                         | G1/2  | 10          | 3,600  | <b>P1V-S057A0011</b> |
| 0,570     | 74          | 37            | 150            | 225              | 14,2                         | G1/2  | 10          | 3,600  | <b>P1V-S057A0007</b> |
| 0,565     | 40          | 20            | 265            | 400              | 14,2                         | G1/2  | 10          | 4,400  | <b>P1V-S057A0004</b> |

## Keyed shaft, P1V-S086A series, 860 watt - (G1/2)

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,860     | 150         | 75            | 160            | 110              | 23,3                         | G1/2  | 10          | 3,800  | <b>P1V-S086A0015</b> |
| 0,860     | 110         | 55            | 220            | 150              | 23,3                         | G1/2  | 10          | 3,900  | <b>P1V-S086A0011</b> |
| 0,860     | 70          | 35            | 335            | 225              | 23,3                         | G1/2  | 10          | 3,900  | <b>P1V-S086A0007</b> |
| 0,850     | 40          | 20            | 600            | 400              | 23,3                         | G1/2  | 10          | 4,700  | <b>P1V-S086A0004</b> |

\* maximum admissible speed (idling)

## Brake motors

The integrated brake is a spring-loaded disk brake, which is released at a minimum air pressure of 5 bar. The brake is applied in the absence of pressure.

The technology and the size of air motors with integrated running and stationary brake make them ideal for applications requiring repeated precise positioning.

The motor can also be kept stationary in a specific position, and the stopping time for a rotating weight can be shortened significantly. Another typical application for brake motors is when the output shaft needs to be held in one position when the motor stops delivering torque.

The brake can handle more than 1500 braking operations per hour at maximum braking torque.

### Note!

Brake motors must only ever be supplied with unlubricated air, otherwise there is a risk of oil from the supply air getting into the brake unit, resulting in poor brake performance or no braking effect.

Please check the allowed maximum torque applied on the motor from the load in the technical catalogue

### Data for reversible brake motor with keyed shaft, P1V-S020AD series, 200 watt

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code            |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|-----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                       |
| 0,200     | 14500       | 7250          | 0,26           | 0,40             | 6,2                          | G1/8  | 10          | 1,000  | <b>P1V-S020ADE50</b>  |
| 0,200     | 4600        | 2300          | 0,80           | 1,20             | 6,2                          | G1/8  | 10          | 1,050  | <b>P1V-S020AD460</b>  |
| 0,200     | 2400        | 1200          | 1,60           | 2,40             | 6,2                          | G1/8  | 10          | 1,050  | <b>P1V-S020AD240</b>  |
| 0,200     | 1400        | 700           | 2,70           | 4,10             | 6,2                          | G1/8  | 10          | 1,150  | <b>P1V-S020AD140</b>  |
| 0,200     | 700         | 350           | 5,40           | 8,20             | 6,2                          | G1/8  | 10          | 1,150  | <b>P1V-S020AD070</b>  |
| 0,200     | 320         | 160           | 12,00          | 18,00            | 6,2                          | G1/8  | 10          | 1,150  | <b>P1V-S020AD032</b>  |
| 0,100     | 180         | 90            | 10,50          | 15,00            | 4,5                          | G1/8  | 10          | 1,150  | <b>P1V-S020AD018</b>  |
| 0,180     | 50          | 25            | 20,00**        | 20,00**          | 6,2                          | G1/8  | 10          | 1,250  | <b>P1V-S020AD005</b>  |
| 0,180     | 20          | –             | 20,00**        | 20,00**          | 6,2                          | G1/8  | 10          | 1,250  | <b>P1V-S020AD002</b>  |
| 0,180     | 10          | –             | 20,00**        | 20,00**          | 6,2                          | G1/8  | 10          | 1,350  | <b>P1V-S020AD001</b>  |
| 0,180     | 5           | –             | 20,00**        | 20,00**          | 6,2                          | G1/8  | 10          | 1,350  | <b>P1V-S020AD0005</b> |

### Data for reversible brake motor with keyed shaft, P1V-S030AD series, 300 watt

|       |       |      |       |       |     |      |    |       |                      |
|-------|-------|------|-------|-------|-----|------|----|-------|----------------------|
| 0,300 | 14500 | 7250 | 0,40  | 0,60  | 8,0 | G1/4 | 10 | 1,350 | <b>P1V-S030ADE50</b> |
| 0,300 | 4600  | 2300 | 1,20  | 1,90  | 8,0 | G1/4 | 10 | 1,400 | <b>P1V-S030AD460</b> |
| 0,300 | 2400  | 1200 | 2,40  | 3,60  | 8,0 | G1/4 | 10 | 1,400 | <b>P1V-S030AD240</b> |
| 0,300 | 1400  | 700  | 4,10  | 6,10  | 8,0 | G1/4 | 10 | 1,450 | <b>P1V-S030AD140</b> |
| 0,300 | 600   | 300  | 9,60  | 14,30 | 8,0 | G1/4 | 10 | 1,500 | <b>P1V-S030AD060</b> |
| 0,300 | 340   | 170  | 16,90 | 25,30 | 8,0 | G1/4 | 10 | 1,500 | <b>P1V-S030AD034</b> |
| 0,300 | 230   | 115  | 24,00 | 36**  | 8,0 | G1/4 | 10 | 3,650 | <b>P1V-S030AD023</b> |
| 0,130 | 180   | 90   | 13,80 | 21,00 | 4,7 | G1/4 | 10 | 1,150 | <b>P1V-S030AD018</b> |
| 0,300 | 100   | 50   | 57,00 | 85,50 | 8,0 | G1/4 | 10 | 3,650 | <b>P1V-S030AD010</b> |
| 0,280 | 50    | 25   | 36**  | 36**  | 8,0 | G1/4 | 10 | 1,600 | <b>P1V-S030AD005</b> |


### Data for reversible brake motor with keyed shaft, P1V-S120AD series, 1200 watts

|       |      |      |       |        |      |      |    |       |                      |
|-------|------|------|-------|--------|------|------|----|-------|----------------------|
| 1,200 | 9000 | 4500 | 2,50  | 3,80   | 26,7 | G3/4 | 19 | 9,000 | <b>P1V-S120AD900</b> |
| 1,200 | 2500 | 1250 | 9,20  | 13,70  | 26,7 | G3/4 | 19 | 9,200 | <b>P1V-S120AD250</b> |
| 1,200 | 1100 | 550  | 21,00 | 31,00  | 26,7 | G3/4 | 19 | 9,200 | <b>P1V-S120AD110</b> |
| 1,200 | 700  | 350  | 33,00 | 49,00  | 26,7 | G3/4 | 19 | 9,700 | <b>P1V-S120AD070</b> |
| 1,200 | 320  | 160  | 71,00 | 107,00 | 26,7 | G3/4 | 19 | 9,700 | <b>P1V-S120AD032</b> |


## P1V-S Accessories

\* Max allowed torque

### Flange

|  | For air motor        | For drilling motor | Order code         |
|--|----------------------|--------------------|--------------------|
|  | P1V-S002             |                    | <b>P1V-S4002B</b>  |
|  | P1V-S003             |                    | <b>P1V-S4002B</b>  |
|  | P1V-S008             | P1V-S008           | <b>P1V-S4008B</b>  |
|  | P1V-S012             |                    | <b>P1V-S4012B</b>  |
|  | P1V-S020             | P1V-S025           | <b>P1V-S4020B</b>  |
|  | P1V-S028 high torque |                    | <b>P1V-S4028B1</b> |
|  | P1V-S028 high torque |                    | <b>P1V-S4028B2</b> |
|  | P1V-S030             | P1V-S040           | <b>P1V-S4030B</b>  |
|  | P1V-S057 high torque |                    | <b>P1V-S4028B1</b> |
|  | P1V-S057 high torque |                    | <b>P1V-S4028B2</b> |
|  | P1V-S060             | P1V-S060           | <b>P1V-S4060B</b>  |
|  | P1V-S086 high torque |                    | <b>P1V-S4028B1</b> |
|  | P1V-S086 high torque |                    | <b>P1V-S4028B2</b> |
|  | P1V-S090             |                    | <b>P1V-S4060B</b>  |
|  | P1V-S120             |                    | <b>P1V-S4120B</b>  |

### Foot

|   | For air motor        | For drilling motor | Order code         |
|---|----------------------|--------------------|--------------------|
|  | P1V-S008             | P1V-S008           | <b>P1V-S4008F</b>  |
|   | P1V-S012             |                    | <b>P1V-S4012F</b>  |
|   | P1V-S020             | P1V-S025           | <b>P1V-S4020F</b>  |
|   | P1V-S028 high torque |                    | <b>P1V-S4028F1</b> |
|   | P1V-S028 high torque |                    | <b>P1V-S4028F2</b> |
|   | P1V-S030A0023        |                    | <b>P1V-S4020C</b>  |
|   | P1V-S030A0010        |                    | <b>P1V-S4020C</b>  |
|   | P1V-S030             | P1V-S040           | <b>P1V-S4030F</b>  |
|   | P1V-S057 high torque |                    | <b>P1V-S4028F1</b> |
|   | P1V-S057 high torque |                    | <b>P1V-S4028F2</b> |
|   | P1V-S060             | P1V-S060           | <b>P1V-S4060F</b>  |
|   | P1V-S086 high torque |                    | <b>P1V-S4028F1</b> |
|   | P1V-S086 high torque |                    | <b>P1V-S4028F2</b> |
|   | P1V-S090             |                    | <b>P1V-S4060F</b>  |
|   | P1V-S120             |                    | <b>P1V-S4120F</b>  |

## Design Variants

### Drilling, milling and grinding motors

A large number of drilling motors, milling motors and grinding motors have been developed using the P1V-S as the base motor in order to make it easier to install air motors in machining applications. These motors are all equipped with standard vanes for intermittent lubrication-free operation, although it is recommended to use oil mist if you are planning to operate them for extended periods.

**Note!** These motors are not made of 100% stainless steel.

Drilling motors are available with power ratings of 80, 170, 250 and 400 Watts, and several different speeds for the machining of a range of materials. They can be fitted with collet chucks, drill chucks and quick-release chucks. Many of them also have accessories allowing the exhaust air to be removed.

The milling motor, with a power rating of 400 Watts, runs at a relatively high speed, and is fitted with a collet chuck for a shaft diameter of 8 mm. It is equipped with strong bearings able to handle greater shear forces on the spindle.

The grinding motor, with a power rating of 200 Watts, is fitted with a collet chuck for a shaft diameter of 8 mm and runs at a relatively high speed. It is equipped with strong bearings able to handle greater shear forces on the spindle.

The design principle of the 90 Watt grinding motor is different from the others. The turbine principle means that high speeds are possible without the need for lubrication.



### Feed movement in drilling, milling and grinding motors

A slow and even feed movement is necessary in machining applications. During drilling, the feed must not uncontrollably speed up once the drill breaks through the material. One good way of solving the problem is to use a pneumatic cylinder for the feed, which is able to provide force during drilling and a rapid approach before the actual drilling phase. Feed during the drilling phase is controlled using a hydraulic brake cylinder (HYDROCHECK) fitted in parallel with the pneumatic cylinder. This provides even, slow and safe feed movement, without the risk of the uncontrolled feed described above.

**Note:** All air motors can be operated oil-free without special adaptation with only a 20% reduction of power.

#### Operating information

|                      |   |
|----------------------|---|
| Working pressure:    | Max 7 bar   |
| Working temperature: | -20°C to +110°C   |
| Medium:              | 40 µm filtered oil mist<br>(unlubricated for grinding motor P1V-S009) |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

P1V-M is a series of air motors, with or without planetary gearbox. they are made of casted iron and grey painted. Its robustness makes it suitable for all industrial air motor applications.

P1V-M Air Motors are ATEX certified to be used in critical environments. The range contains five different sizes with power ratings of 200, 400, 600, 900 and 1200 Watts.

The motor and the gearbox are built to be extremely compact, making the motors suitable for applications requiring spaceless. The gearbox is of the planetary type, permanently lubricated with grease. The flange mounting is cast as an integral part of the case, and give, together with the foot bracket, plenty of opportunity for simple and robust installation.



- Power 0,2 kW, 0,4 kW, 0,6 kW, 0,9 kW & 1.2 kW
- ATEX certified
- Patented method for simple change of vanes
- Free speeds from 32 up to 10000 rpm
- Torque from 0,38 Nm up to 120 Nm by max output power
- Standard equipped with flange mounting
- Foot mountings as accesories

### Operating information

|                     |  |
|---------------------|--|
| Working pressure    | Max 7 bar  |
| Working temperature | -20 °C to +110 °C  |
| Medium              | Filtered dry air and oil mist, purity class ISO 8573-1 class 3.-.5 for indoor use and with a dew point lower than ambient temperature for outdoor use. |

### Robust motor reversible with keyed shaft, flange

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,200     | 10 000      | 5 000         | 0,38           | 0,57             | 5                            | G1/8  | 10          | 1,00   | <b>P1V-M020B0A00</b> |
| 0,400     | 10 000      | 5 000         | 0,76           | 1,10             | 10                           | G3/8  | 12          | 1,40   | <b>P1V-M040B0A00</b> |
| 0,600     | 10 000      | 5 000         | 1,10           | 1,70             | 15                           | G3/8  | 13          | 1,60   | <b>P1V-M060B0A00</b> |
| 0,900     | 10 500      | 5 250         | 1,60           | 2,40             | 36,7                         | G1/2  | 13          | 3,10   | <b>P1V-M090B0A00</b> |
| 1,200     | 10 500      | 5 250         | 2,20           | 3,30             | 43,3                         | G1/2  | 13          | 3,80   | <b>P1V-M120B0A00</b> |

\* maximum admissible speed (idling)

### Robust reversible motor with keyed shaft, flange

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,200     | 2 300       | 1 150         | 1,60           | 2,40             | 5                            | G1/8  | 10          | 2,40   | <b>P1V-M020C0230</b> |
| 0,200     | 1 460       | 730           | 2,60           | 3,90             | 5                            | G1/8  | 10          | 2,40   | <b>P1V-M020C0146</b> |
| 0,200     | 540         | 270           | 7,00           | 10,50            | 5                            | G1/8  | 10          | 2,80   | <b>P1V-M020C0054</b> |
| 0,200     | 340         | 170           | 11,20          | 16,80            | 5                            | G1/8  | 10          | 2,80   | <b>P1V-M020C0034</b> |
| 0,200     | 210         | 105           | 18,20          | 27,30            | 5                            | G1/8  | 10          | 2,80   | <b>P1V-M020C0021</b> |
| 0,200     | 120         | 60            | 31,80          | 47,70            | 5                            | G1/8  | 10          | 3,20   | <b>P1V-M020C0012</b> |
| 0,200     | 80          | 40            | 47,80          | 71,70            | 5                            | G1/8  | 10          | 3,20   | <b>P1V-M020C0008</b> |
| 0,200     | 32          | 16            | 80**           | 80**             | 5                            | G1/8  | 10          | 3,20   | <b>P1V-M020C0003</b> |

\* maximum admissible speed (idling) / \*\* gear box restriction

## Robust reversible motor with keyed shaft, flange

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,400     | 2 300       | 1 150         | 3,20           | 4,80             | 10                           | G3/8  | 12          | 2,80   | <b>P1V-M040C0230</b> |
| 0,400     | 1 460       | 730           | 5,20           | 7,80             | 10                           | G3/8  | 12          | 2,80   | <b>P1V-M040C0146</b> |
| 0,400     | 540         | 270           | 14,00          | 21,00            | 10                           | G3/8  | 12          | 3,20   | <b>P1V-M040C0054</b> |
| 0,400     | 340         | 170           | 22,40          | 33,60            | 10                           | G3/8  | 12          | 3,20   | <b>P1V-M040C0034</b> |
| 0,400     | 210         | 105           | 36,40          | 54,60            | 10                           | G3/8  | 12          | 3,20   | <b>P1V-M040C0021</b> |
| 0,400     | 120         | 60            | 63,60          | 80**             | 10                           | G3/8  | 12          | 3,60   | <b>P1V-M040C0012</b> |
| 0,400     | 80          | 40            | 80**           | 80**             | 10                           | G3/8  | 12          | 3,60   | <b>P1V-M040C0008</b> |

\* maximum admissible speed (idling) / \*\* gear box restriction

## Robust reversible motor with keyed shaft, flange

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,600     | 2 300       | 1 150         | 5,00           | 7,50             | 15                           | G3/8  | 13          | 3,00   | <b>P1V-M060C0230</b> |
| 0,600     | 1 460       | 730           | 7,80           | 11,70            | 15                           | G3/8  | 13          | 3,00   | <b>P1V-M060C0146</b> |
| 0,600     | 540         | 270           | 21,00          | 31,50            | 15                           | G3/8  | 13          | 3,40   | <b>P1V-M060C0054</b> |
| 0,600     | 340         | 170           | 33,60          | 50,40            | 15                           | G3/8  | 13          | 3,40   | <b>P1V-M060C0034</b> |
| 0,600     | 210         | 105           | 54,50          | 80**             | 15                           | G3/8  | 13          | 3,40   | <b>P1V-M060C0021</b> |
| 0,600     | 120         | 60            | 80**           | 80**             | 15                           | G3/8  | 13          | 3,80   | <b>P1V-M060C0012</b> |

\* maximum admissible speed (idling) / \*\* gear box restriction

## Robust motor reversible with keyed shaft, flange

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 0,900     | 2 450       | 1 225         | 7,00           | 10,50            | 36,7                         | G1/2  | 13          | 4,90   | <b>P1V-M090C0245</b> |
| 0,900     | 1 560       | 780           | 11,00          | 16,50            | 36,7                         | G1/2  | 13          | 4,90   | <b>P1V-M090C0156</b> |
| 0,900     | 580         | 290           | 30,00          | 45,00            | 36,7                         | G1/2  | 13          | 5,60   | <b>P1V-M090C0058</b> |
| 0,900     | 360         | 180           | 47,00          | 71,00            | 36,7                         | G1/2  | 13          | 5,60   | <b>P1V-M090C0036</b> |
| 0,900     | 230         | 115           | 75,00          | 112,00           | 36,7                         | G1/2  | 13          | 5,60   | <b>P1V-M090C0023</b> |
| 0,900     | 134         | 67            | 120**          | 120**            | 36,7                         | G1/2  | 13          | 6,30   | <b>P1V-M090C0013</b> |
| 0,900     | 90          | 45            | 120**          | 120**            | 36,7                         | G1/2  | 13          | 6,30   | <b>P1V-M090C0009</b> |
| 0,900     | 40          | 20            | 120**          | 120**            | 36,7                         | G1/2  | 13          | 6,30   | <b>P1V-M090C0004</b> |

\* maximum admissible speed (idling) / \*\* gear box restriction

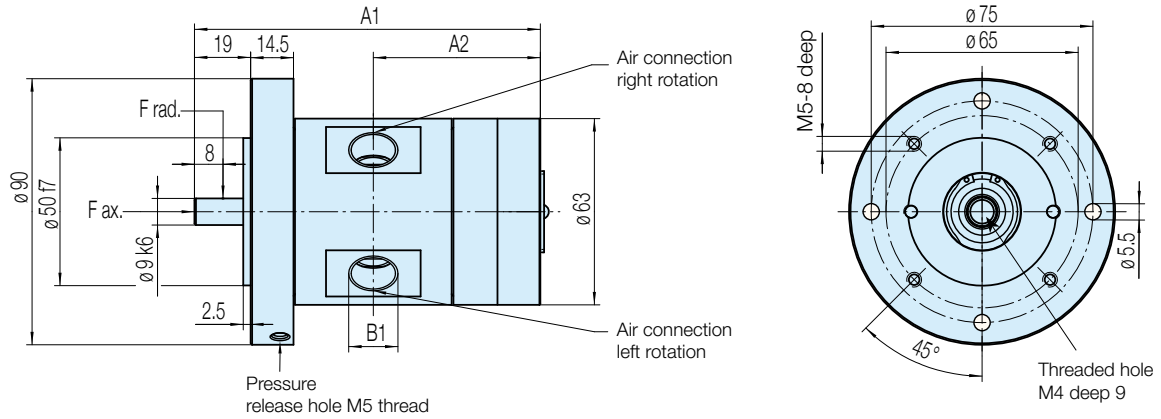
## Robust motor reversible with keyed shaft, flange

| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |       | mm          | Kg     |                      |
| 1,20      | 2 450       | 1 225         | 9,40           | 14,00            | 43,3                         | G1/2  | 13          | 5,60   | <b>P1V-M120C0245</b> |
| 1,20      | 1 560       | 780           | 14,70          | 22,00            | 43,3                         | G1/2  | 13          | 5,60   | <b>P1V-M120C0156</b> |
| 1,20      | 580         | 290           | 40,00          | 60,00            | 43,3                         | G1/2  | 13          | 6,30   | <b>P1V-M120C0058</b> |
| 1,20      | 360         | 180           | 63,00          | 94,00            | 43,3                         | G1/2  | 13          | 6,30   | <b>P1V-M120C0036</b> |
| 1,20      | 230         | 115           | 100,00         | 120**            | 43,3                         | G1/2  | 13          | 6,30   | <b>P1V-M120C0023</b> |

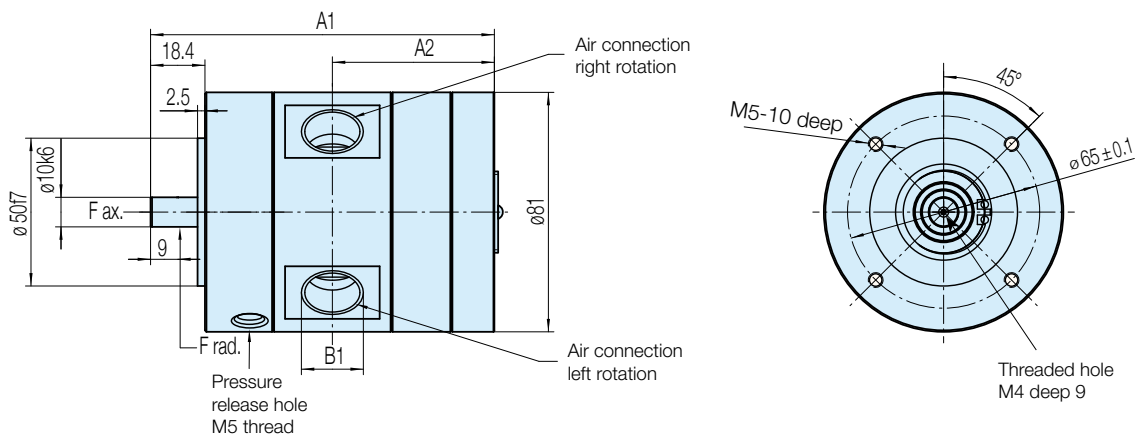
\* maximum admissible speed (idling) / \*\* gear box restriction

Dimensions (mm)

Motor P1V-M020B0A00  
 P1V-M040B0A00  
 P1V-M060B0A00



Motor P1V-M090B0A00  
 P1V-M120B0A00

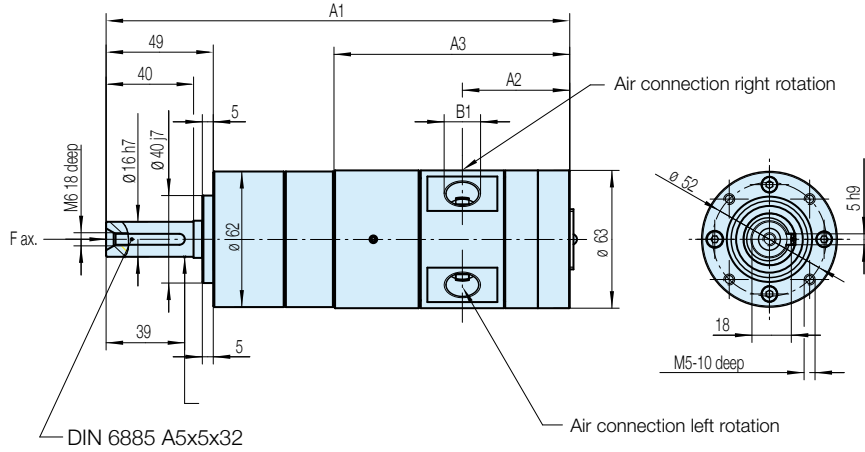


| Motor type    | Dimensions (mm) |      |      |                 |
|---------------|-----------------|------|------|-----------------|
|               | A1              | A2   | B1   | Key on shaft    |
| P1V-M020B0A00 | 82              | 39   | G1/8 | DIN6885 A3x3x10 |
| P1V-M040B0A00 | 102             | 49   | G3/8 | DIN6885 A3x3x10 |
| P1V-M060B0A00 | 117             | 56.5 | G3/8 | DIN6885 A3x3x10 |
| P1V-M090B0A00 | 116.3           | 54.8 | G1/2 | DIN6885 A3x3x18 |
| P1V-M120B0A00 | 136.3           | 64.3 | G1/2 | DIN6885 A3x3x18 |

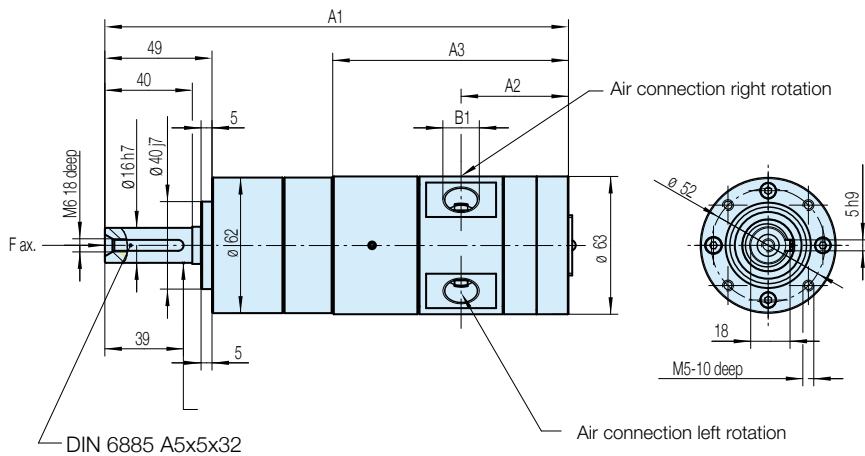


**Dimensions (mm)**

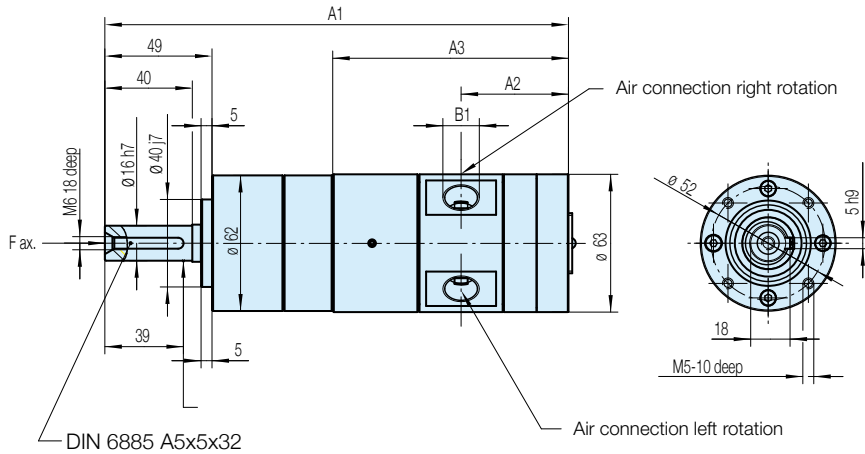
**Motor P1V-M020C**



**Motor P1V-M040C**



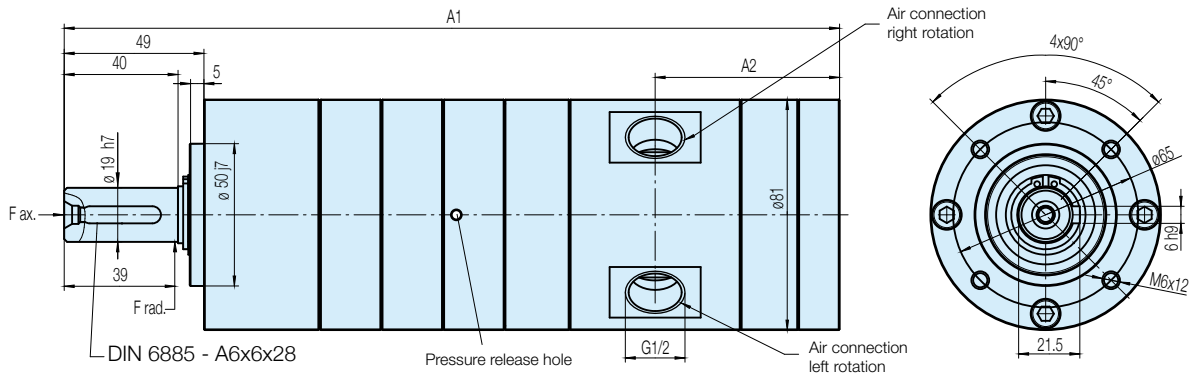
**Motor P1V-M060C**



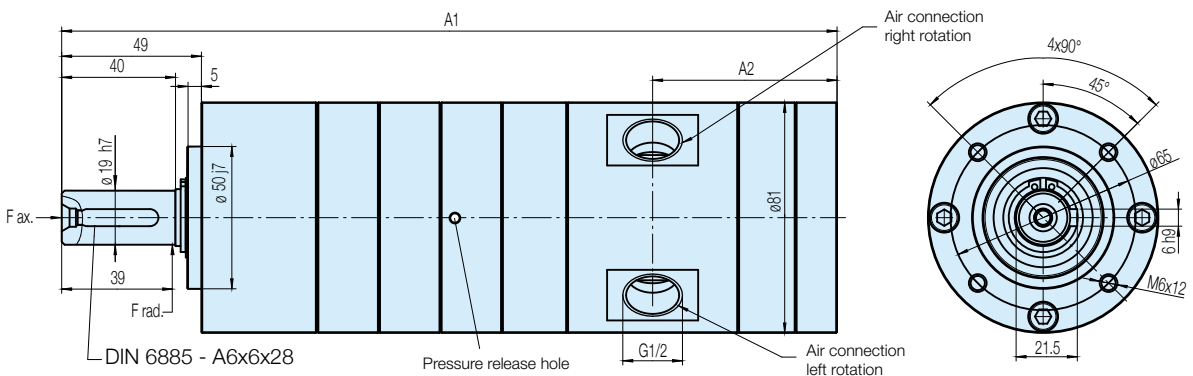
| Motor size |                      |                      |                      | Dimensions (mm) |      |     |      |
|------------|----------------------|----------------------|----------------------|-----------------|------|-----|------|
|            |                      |                      |                      | A1              | A2   | A3  | B1   |
| 200 watts  | <b>P1V-M020C0230</b> | <b>P1V-M020C0034</b> |                      | 192.5           | 39   | 88  | G1/8 |
|            | <b>P1V-M020C0146</b> | <b>P1V-M020C0021</b> | <b>P1V-M020C0008</b> | 208.5           | 39   | 88  | G1/8 |
|            | <b>P1V-M020C0054</b> | <b>P1V-M020C0012</b> | <b>P1V-M020C0003</b> | 224             | 39   | 88  | G1/8 |
| 400 watts  | <b>P1V-M040C0230</b> | <b>P1V-M040C0034</b> |                      | 212.5           | 49   | 108 | G3/8 |
|            | <b>P1V-M040C0146</b> | <b>P1V-M040C0021</b> | <b>P1V-M040C0008</b> | 228.5           | 49   | 108 | G3/8 |
|            | <b>P1V-M040C0054</b> | <b>P1V-M040C0012</b> |                      | 244             | 49   | 108 | G3/8 |
| 600 watts  | <b>P1V-M060C0230</b> | <b>P1V-M060C0034</b> |                      | 227.5           | 56.5 | 123 | G3/8 |
|            | <b>P1V-M060C0146</b> | <b>P1V-M060C0021</b> | <b>P1V-M060C0012</b> | 243.5           | 56.5 | 123 | G3/8 |
|            | <b>P1V-M060C0054</b> |                      |                      | 259             | 56.5 | 123 | G3/8 |

**Dimensions (mm)**

**Motor P1V-M090C**



**Motor P1V-M120C**



| Motor size |                      |                      |                      | Dimensions (mm) |    |
|------------|----------------------|----------------------|----------------------|-----------------|----|
|            |                      |                      |                      | A1              | A2 |
| 900 watts  | <b>P1V-M090C0245</b> | <b>P1V-M090C0156</b> |                      | 209             | 55 |
|            | <b>P1V-M090C0058</b> | <b>P1V-M090C0036</b> | <b>P1V-M090C0023</b> | 231             | 55 |
|            | <b>P1V-M090C0013</b> | <b>P1V-M090C0009</b> | <b>P1V-M090C0004</b> | 252.5           | 55 |
| 1200 watts | <b>P1V-M120C0245</b> | <b>P1V-M120C0156</b> |                      | 229             | 65 |
|            | <b>P1V-M120C0058</b> | <b>P1V-M120C0036</b> | <b>P1V-M120C0023</b> | 251             | 65 |

These large motors are designed for use in the most arduous applications, requiring considerable power, torque, robustness and reliability



### Operating information

Working pressure: Max 7 bar  
 Temperature range: -20°C to +110°C  
 Medium: Filtered dry air and oil mist, purity class ISO 8573-1 class 3.-.5 for indoor use and with a dew point lower than ambient temperature for outdoor use

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Reversible motor without gear box, IEC Flange

| Max power | Free speed | Speed at max power | Torque at max power | Min start torque | Air consumption at max power | Conn. | Min pipe ID | Weight | Order code           |
|-----------|------------|--------------------|---------------------|------------------|------------------------------|-------|-------------|--------|----------------------|
| kW        | rpm        | rpm                | Nm                  | Nm               | m <sup>3</sup> /min          |       | mm          | Kg     |                      |
| 5,1       | 6000       | 3000               | 16.2                | 24.4             | 6.2                          | G1    | 25          | 27     | <b>P1V-B510A0600</b> |
| 9         | 6000       | 3000               | 28.6                | 43               | 10                           | G1    | 25          | 25     | <b>P1V-B900A0600</b> |
| 18        | 6000       | 3000               | 57                  | 85               | 20                           | G2    | 43          | 54     | <b>P1V-BJ00A0600</b> |

### Technical data

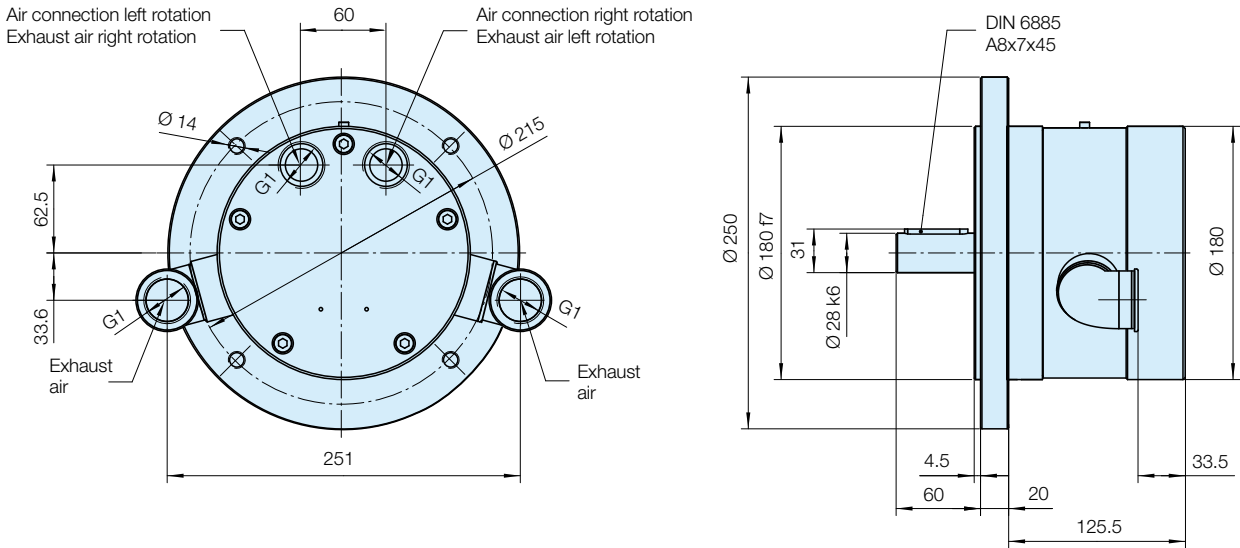
| Air motor size & type   | P1V-B510   | P1V-B900 | P1V-BJ00 |
|---|--|----------|----------|
| Nominal power (watts)   | 5100   | 9000     | 18000    |
| Working pressure (bar)  | 3 to 7   |          |          |
| Working temperature (°C)  | -20 to +110  |          |          |
| Ambient temperature (°C)  | -20 to +110  |          |          |
| Air flow required (NI/min)  | 6200   | 10000    | 20000    |
| Min pipe ID, inlet (mm)   | 25   | 25       | 43       |
| Min pipe ID, outlet (mm)  | 25   | 25       | 43       |
| <b>Choice of treatment unit: recommended min air flow (l/min) at p1 7.5 bar and 0.8 bar pressure drop</b> |  |          |          |
|   | 6400   | 10300    | 20400    |
| <b>Choice of valve: recommended min nominal air flow (l/min) at p1 6 bar and 1 bar pressure drop</b>      |  |          |          |
|   | 6600   | 10600    | 20800    |
| Medium  | 40µm filtered, oil mist or dry unlubricated compressed air |          |          |
| Oil operation   | 1-2 drop per cube meter, ISO8573-1 purity class 3.-.5      |          |          |
| Recommended oil   | Foodstuffs industry Klüber oil 4 UH 1-32 N                 |          |          |
| Shaft radial force (N)  | 7500   | 7500     | 7500     |
| Shaft axial force (N)   | 11000  | 11000    | 11000    |

### Material specification

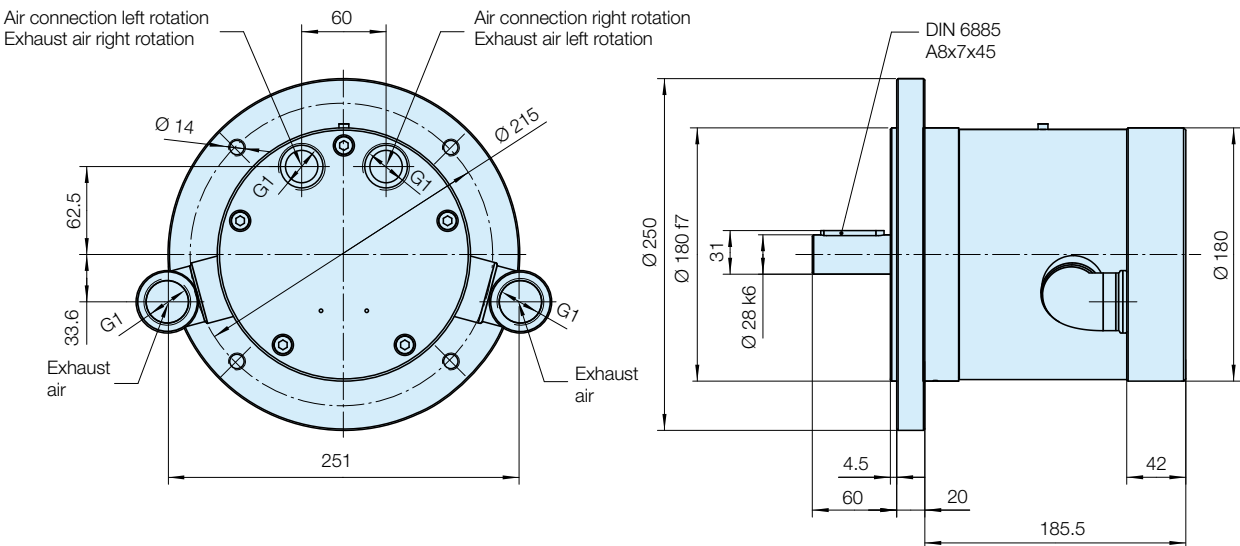
| Air motor size & type | P1V-B510                                | P1V-B900 | P1V-BJ00 |
|-----------------------|---|----------|----------|
| Motor housing         | Cast iron, synthetic paint, black color |          |          |
| Shaft                 | High grade steel                        |          |          |
| Key                   | Hardened steel                          |          |          |
| External seal         | Nitrile rubber, NBR                     |          |          |
| Internal steel parts  | High grade steel                        |          |          |
| Vanes                 | Patented, no data                       |          |          |

**Dimensions (mm)**

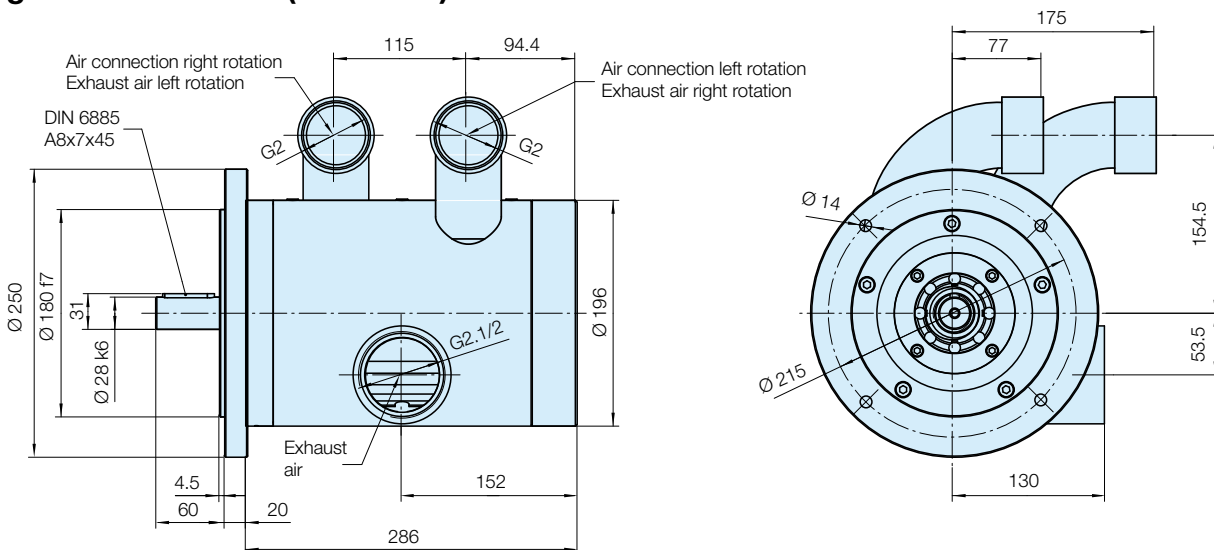
**Flange motor IEC112A (P1V-B510)**



**Flange motor IEC112A (P1V-B900)**



**Flange motor IEC112A (P1V-BJ00)**



## Technical data

**Note:** All technical data are based on a working pressure of 6 bar and with oil. Speed tolerance accuracy in between clock and anti-clockwise directions is  $\pm 10\%$ .

| Air motor size & type      | P1V-A160                          | P1V-A260 | P1V-A360 |
|----------------------------|-----------------------------------|----------|----------|
| Nominal power (watts)      | 1600                              | 2600     | 3600     |
| Working pressure (bar)     | 3 to 7, 6 in explosive atmosphere |          |          |
| Working temperature (°C)   | -20 to +110                       |          |          |
| Ambient temperature (°C)   | -20 to +110                       |          |          |
| Air flow required (NI/min) | 1900                              | 3600     | 5800     |
| Min pipe ID, inlet (mm)    | 15                                | 19       | 25       |
| Min pipe ID, outlet (mm)   | 15                                | 19       | 25       |

**Choice of treatment unit: recommended min air flow (l/min) at p1 7.5 bar and 0.8 bar pressure drop**

|  |      |      |      |
|--|------|------|------|
|  | 2100 | 3900 | 6200 |
|--|------|------|------|

**Choice of valve: recommended min nominal air flow (l/min) at p1 6 bar and 1 bar pressure drop**

|                                 |   |      |      |
|---------------------------------|---|------|------|
|                                 | 2300  | 4200 | 6600 |
| Medium                          | 40µm filtered, oil mist lubricated compressed air     |      |      |
| Oil operation                   | 1-2 drop per cube meter, ISO8573-1 purity class 3.-.5 |      |      |
| Recommended oil                 | Foodstuffs industry Klüber oil 4 UH1- 32 N            |      |      |
| Sound level free outlet (dB(A)) | 120   | 131  | 131  |
| With outlet silencer (dB(A))    | 97.5  | 99   | 101  |

**Note:** sound levels are measured at free speed with the measuring instrument positioned 1 meter away from the air motor at an height of 1 meter.

## Material specification

| Air motor size & type               | P1V-A160   | P1V-A260 | P1V-A360 |
|-------------------------------------|--|----------|----------|
| <b>Without gear box</b>             |  |          |          |
| Motor housing                       | Cast iron, synthetic paint, silver grey color              |          |          |
| Shaft                               | High grade steel   |          |          |
| Key                                 | Hardened steel   |          |          |
| External seal                       | Nitrile rubber, NBR  |          |          |
| Internal steel parts                | High grade steel   |          |          |
| Vanes                               | Patented, no data  |          |          |
| Screws                              | Zinc coated steel  |          |          |
| <b>With gear boxes, common data</b> |  |          |          |
| Housing                             | Alloy steel, synthetic paint, silver grey color            |          |          |
| Shaft                               | Hardened steel   |          |          |
| Key                                 | Hardened steel   |          |          |
| Shaft seal                          | Nitrile rubber, NBR  |          |          |
| Screws                              | Zinc coated steel  |          |          |
| <b>With planetary gear box</b>      |  |          |          |
| Housing                             | Cast iron, synthetic paint, silver grey color              |          |          |
| <b>With helical gear box</b>        |  |          |          |
| Housing                             | Aluminium or cast iron, synthetic paint, silver grey color |          |          |
| <b>With worm gear box</b>           |  |          |          |
| Housing                             | Aluminium or cast iron, synthetic paint, silver grey color |          |          |
| Pinion                              | Chili cast phosphor bronze                                 |          |          |
| Worm                                | Alloyed, hardened steel                                    |          |          |

**P1V-A Air Motor - Without gear box**

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil.  
Speed tolerance accuracy is +-10%.



**A: Basic reversible motor without gear box, IEC Flange**

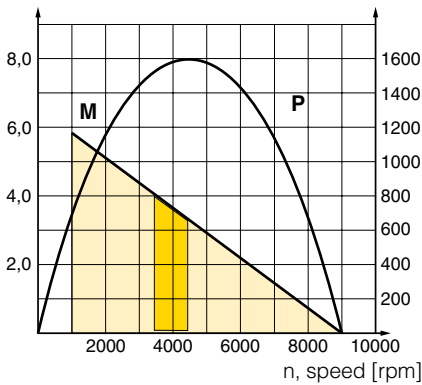
| Max power | Free speed* | Nominal speed | Nominal torque | Min start torque | Air consumption at max power | Con-nection | Min pipe ID inlet/ outlet | Weight | Order code           |
|-----------|-------------|---------------|----------------|------------------|------------------------------|-------------|---------------------------|--------|----------------------|
| kW        | rpm         | rpm           | Nm             | Nm               | l/s                          |             | mm                        | Kg     |                      |
| 1,600     | 9000        | 4500          | 3,3            | 5,0              | 32                           | G1/2        | 15                        | 4,2    | <b>P1V-A160A0900</b> |
| 2,600     | 7000        | 3500          | 7,1            | 11,0             | 60                           | G3/4        | 19                        | 7,9    | <b>P1V-A260A0700</b> |
| 3,600     | 6000        | 3000          | 11,5           | 17,0             | 97                           | G1          | 25                        | 16,5   | <b>P1V-A360A0600</b> |

\* maximum admissible speed (idling)

**P1V-A160A0900**

M, torque [Nm]

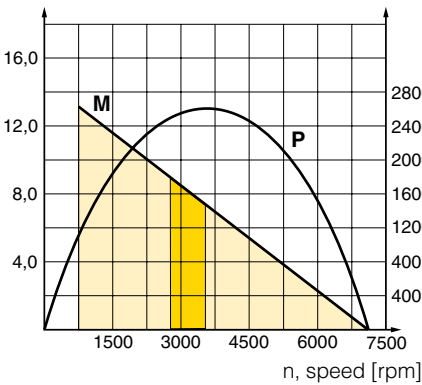
P, power [W]



**P1V-A260A0700**

M, torque [Nm]

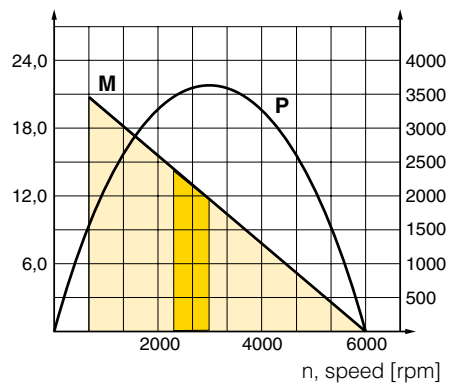
P, power [W]



**P1V-A360A0600**

M, torque [Nm]

P, power [W]



- Possible working range of motor.
- Optimum working range of motor.  
Higher speeds = more vane wear  
Lower speeds with high torque = more gearbox wear

**Permitted shaft loadings**

Max permitted load on output shaft for basic motors (based on 10,000,000 revolutions of the output shaft, with 90% probable service life for ball bearings).

|               | F <sub>ax</sub><br>N | F <sub>rad</sub><br>N | a<br>mm |
|---------------|----------------------|-----------------------|---------|
| P1V-A160A0900 | 600                  | 1000                  | 15      |
| P1V-A260A0700 | 700                  | 1400                  | 20      |
| P1V-A360A0600 | 900                  | 1900                  | 25      |

F<sub>rad</sub> = Radial loading (N)  
F<sub>ax</sub> = Axial loading (N)

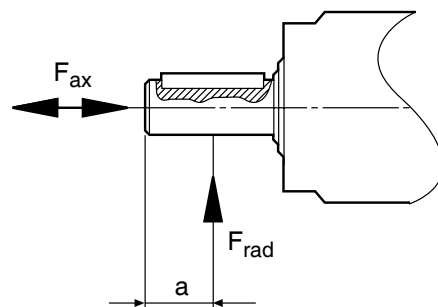
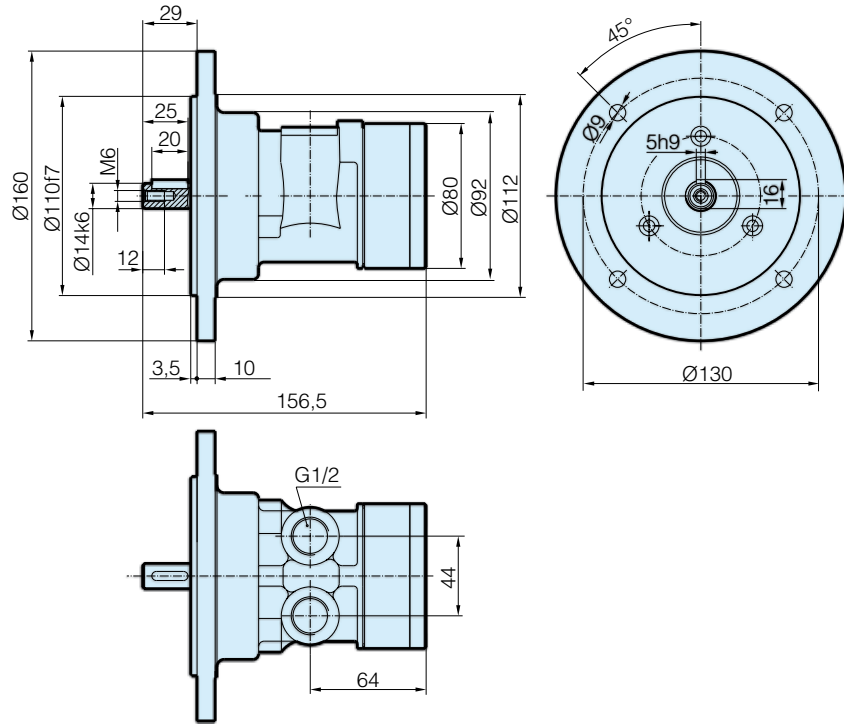


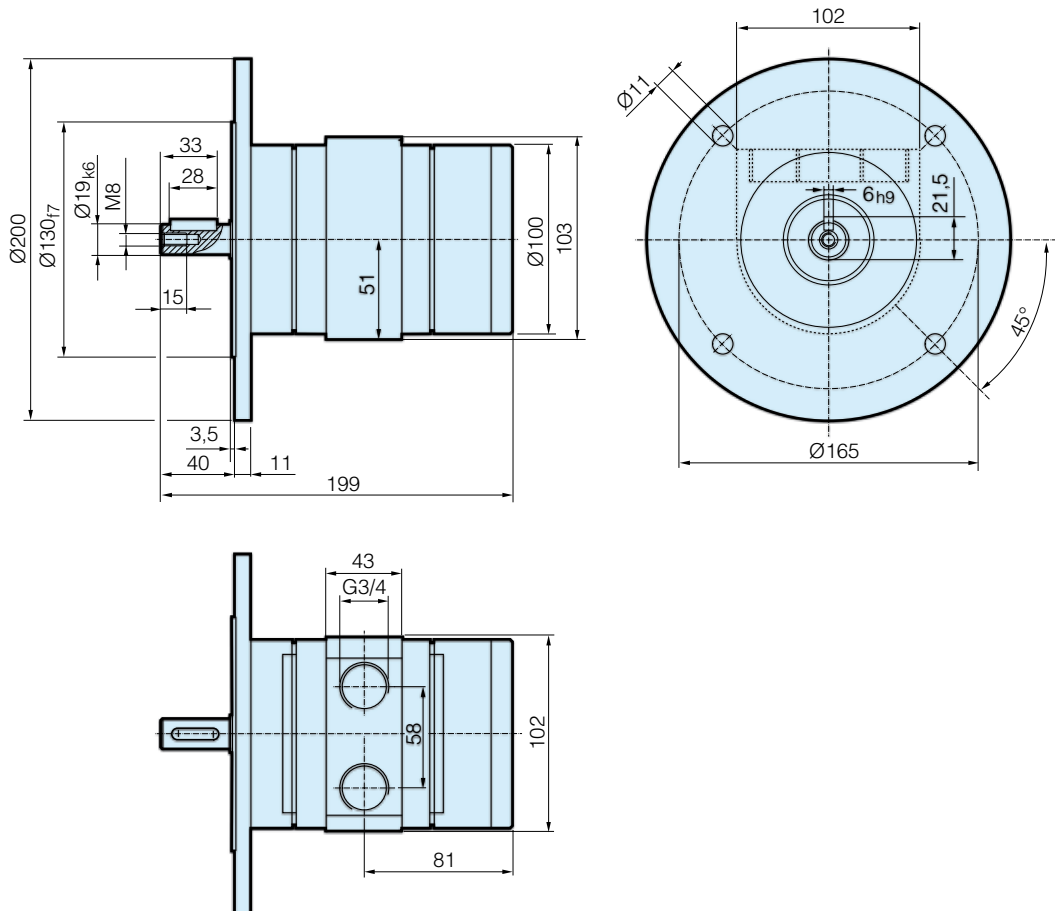
Fig. 1: Loading on output shaft.

**Dimensions (mm)**

**Flange motor IEC71AB5 (P1V-A160)**

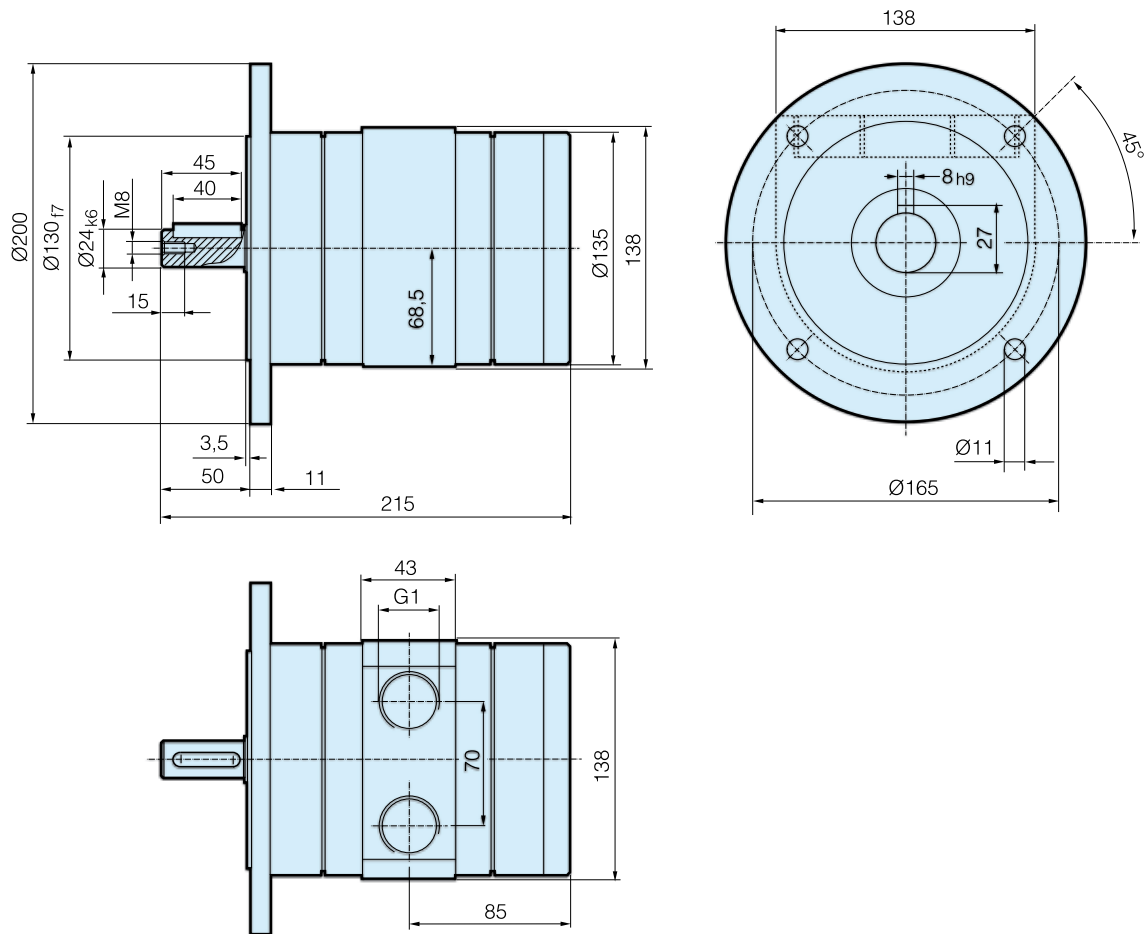


**Flange motor IEC80AB5 (P1V-A260)**



Dimensions (mm)

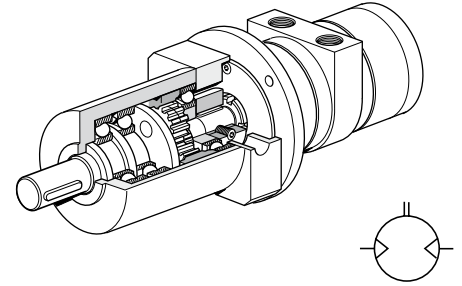
Flange motor IEC90AB5 (P1V-A360)





**P1V-A Air Motor - Planetary Gear**

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil. Speed tolerance accuracy is +-10%.



**B: Reversible motor with planetary gear, flange mounting, free installation position**

| Max power<br>kW        | Max speed*<br>rpm | Nominal speed<br>rpm | Nominal Torque<br>Nm | Min start torque<br>Nm | Max permanent torque**<br>Nm | Air consumption at max power<br>l/s | Connection | Min pipe ID inlet/outlet<br>mm | Weight<br>Kg | Order code           |
|------------------------|-------------------|----------------------|----------------------|------------------------|------------------------------|-------------------------------------|------------|--------------------------------|--------------|----------------------|
| <b>Series P1V-A160</b> |                   |                      |                      |                        |                              |                                     |            |                                |              |                      |
| 1,600                  | 1200              | 900                  | 16                   | 24                     | 40                           | 32                                  | G1/2       | 15                             | 8,3          | <b>P1V-A160B0120</b> |
| 1,600                  | 600               | 450                  | 32                   | 48                     | 35                           | 32                                  | G1/2       | 15                             | 8,3          | <b>P1V-A160B0060</b> |
| 1,600                  | 190               | 180                  | 77                   | 115                    | 100                          | 32                                  | G1/2       | 15                             | 15,4         | <b>P1V-A160B0019</b> |
| <b>Series P1V-A260</b> |                   |                      |                      |                        |                              |                                     |            |                                |              |                      |
| 2,600                  | 1200              | 700                  | 34                   | 51                     | 40                           | 60                                  | G3/4       | 19                             | 12,0         | <b>P1V-A260B0120</b> |
| 2,600                  | 600               | 350                  | 67                   | 100                    | 40                           | 60                                  | G3/4       | 19                             | 12,0         | <b>P1V-A260B0060</b> |
| 2,600                  | 190               | 140                  | 160                  | 240                    | 40                           | 60                                  | G3/4       | 19                             | 13,0         | <b>P1V-A260B0019</b> |
| <b>Series P1V-A360</b> |                   |                      |                      |                        |                              |                                     |            |                                |              |                      |
| 3,600                  | 960               | 600                  | 55                   | 82                     | 100                          | 97                                  | G1         | 25                             | 25,5         | <b>P1V-A360B0096</b> |
| 3,600                  | 480               | 300                  | 110                  | 165                    | 100                          | 97                                  | G1         | 25                             | 25,5         | <b>P1V-A360B0048</b> |

\* maximum admissible speed (idling)

\*\* Max gear box torque for a permanent load

**Permitted shaft loadings**

The following calculations should be used to determine the loading on the output shaft bearing, if a service life of 10,000,000 revolutions of the output shaft is to be obtained with 90% probability.

$$F_{ax} = \max 0,24 \times F_{rad}$$

$$M = \pm F_{ax} \times r \pm F_{rad} \times (X + K)$$

Where M and K are found in the table below

|              | M<br>Nm | K<br>N |
|--------------|---------|--------|
| P1V-A160B120 | 2651    | 0,031  |
| P1V-A160B060 | 2651    | 0,031  |
| P1V-A160B019 | 7385    | 0,040  |
| P1V-A160B010 | 7385    | 0,040  |
| P1V-A260B120 | 2651    | 0,031  |
| P1V-A260B060 | 2651    | 0,031  |
| P1V-A260B019 | 7385    | 0,040  |
| P1V-A360B096 | 7385    | 0,040  |
| P1V-A360B048 | 7385    | 0,040  |

- M Max. torque loading on output shaft (Nm)
- r Distance from centre of output shaft to axial load (m)
- X Distance from collar to radial load (m)
- F<sub>rad</sub> Radial loading (N)
- F<sub>ax</sub> Axial loading (N)

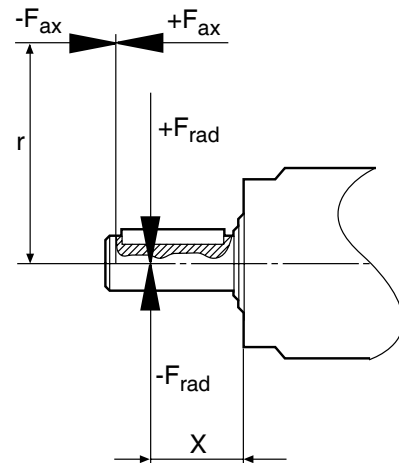
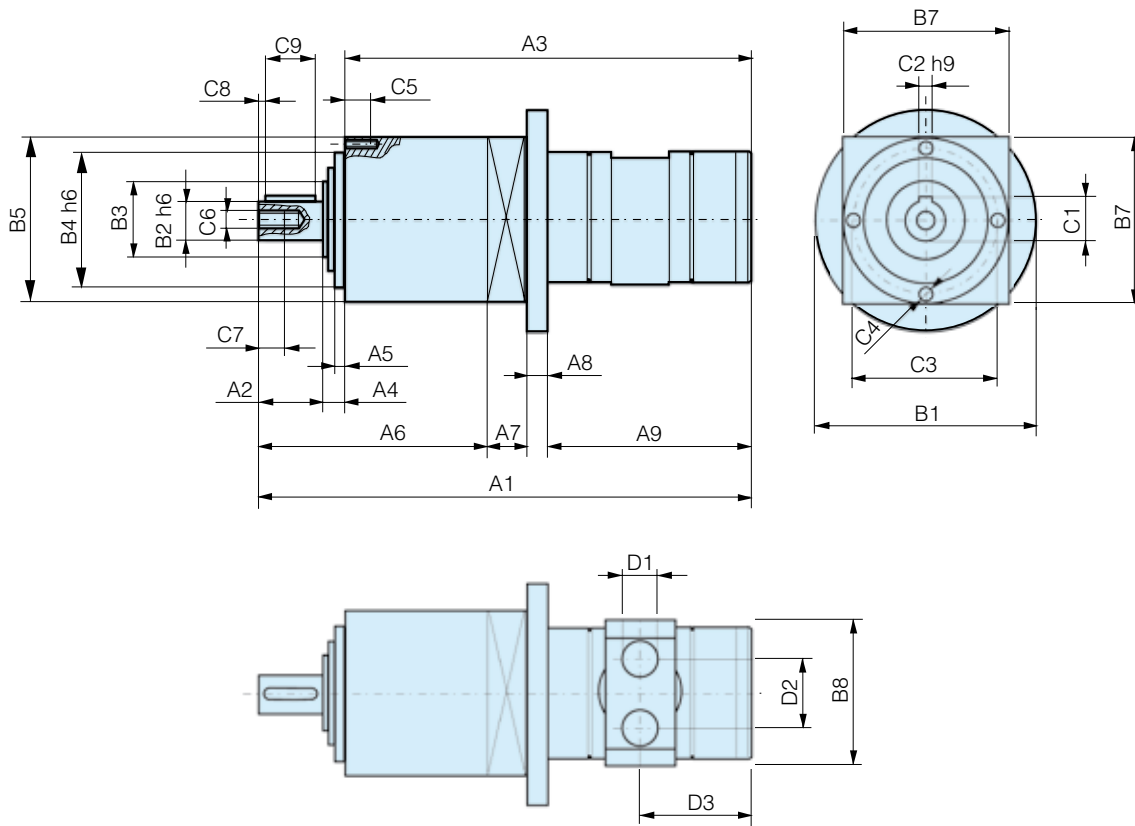


Fig 2: Load and braking torque on output shaft of planetary gear

Dimensions (mm)

B: Motor with planetary gear, flange mounting

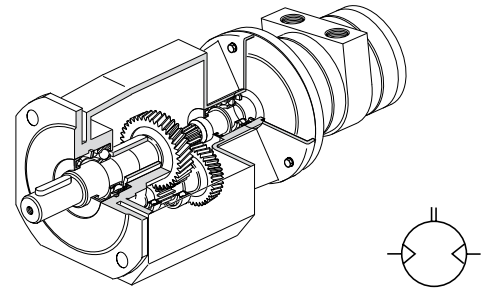


| Order code    | A1    | A2 | A3    | A4 | A5 | A6    | A7 | A8 | A9    | B1  | B2 | B3 | B4 | B5  | B6  |
|---------------|-------|----|-------|----|----|-------|----|----|-------|-----|----|----|----|-----|-----|
| P1V-A160B0120 | 274,5 | 36 | 228,5 | 10 | 5  | 126,0 | 22 | 10 | 116,5 | 160 | 22 | 40 | 68 | 90  | 80  |
| P1V-A160B0060 | 274,5 | 36 | 228,5 | 10 | 5  | 126,0 | 22 | 10 | 116,5 | 160 | 22 | 40 | 68 | 90  | 80  |
| P1V-A160B0019 | 359,0 | 58 | 289,0 | 12 | 5  | 204,5 | 28 | 10 | 116,5 | 160 | 32 | 50 | 90 | 120 | 80  |
| P1V-A260B0120 | 317,0 | 36 | 271,0 | 10 | 6  | 126,0 | 32 | 11 | 148,0 | 200 | 22 | 40 | 68 | 90  | 100 |
| P1V-A260B0060 | 317,0 | 36 | 271,0 | 10 | 6  | 126,0 | 32 | 11 | 148,0 | 200 | 22 | 40 | 68 | 90  | 100 |
| P1V-A260B0019 | 391,5 | 58 | 321,5 | 12 | 6  | 204,5 | 28 | 11 | 148,0 | 200 | 32 | 50 | 90 | 120 | 100 |
| P1V-A360B0096 | 375,0 | 58 | 305,0 | 12 | 6  | 172,0 | 38 | 11 | 154,0 | 200 | 32 | 50 | 90 | 120 | 135 |
| P1V-A360B0048 | 375,0 | 58 | 305,0 | 12 | 6  | 172,0 | 38 | 11 | 154,0 | 200 | 32 | 50 | 90 | 120 | 135 |

| Order code    | B7  | B8  | C1   | C2 | C3  | C4 | C5 | C6  | C7 | C8 | C9 | D1   | D2 | D3 |
|---------------|-----|-----|------|----|-----|----|----|-----|----|----|----|------|----|----|
| P1V-A160B0120 | 120 | 85  | 24,5 | 6  | 80  | M6 | 12 | M8  | 13 | 2  | 32 | G1/2 | 44 | 64 |
| P1V-A160B0060 | 120 | 85  | 24,5 | 6  | 80  | M6 | 12 | M8  | 13 | 2  | 32 | G1/2 | 44 | 64 |
| P1V-A160B0019 | 120 | 85  | 35,0 | 10 | 108 | M8 | 16 | M12 | 22 | 4  | 50 | G1/2 | 44 | 64 |
| P1V-A260B0120 | 140 | 102 | 24,5 | 6  | 80  | M6 | 12 | M8  | 13 | 2  | 32 | G3/4 | 58 | 81 |
| P1V-A260B0060 | 140 | 102 | 24,5 | 6  | 80  | M6 | 12 | M8  | 13 | 2  | 32 | G3/4 | 58 | 81 |
| P1V-A260B0019 | 140 | 102 | 35,0 | 10 | 108 | M8 | 16 | M12 | 22 | 4  | 50 | G3/4 | 58 | 81 |
| P1V-A360B0096 | 140 | 138 | 35,0 | 10 | 108 | M8 | 16 | M12 | 22 | 4  | 50 | G1   | 70 | 85 |
| P1V-A360B0048 | 140 | 138 | 35,0 | 10 | 108 | M8 | 16 | M12 | 22 | 4  | 50 | G1   | 70 | 85 |

P1V-A Air Motor - Helical Gear

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil.  
Speed tolerance accuracy is +-10%.



**D: Reversible motor with helical gear, flange mounting**

| Max power<br>kW        | Max speed*<br>rpm | Nominal speed<br>rpm | Nominal torque<br>Nm | Min start torque<br>Nm | Max permanent torque**<br>Nm | Air consumption at max power<br>l/s | Connection | Min pipe ID inlet/<br>outlet<br>mm | Weight<br>Kg | Order code             |
|------------------------|-------------------|----------------------|----------------------|------------------------|------------------------------|-------------------------------------|------------|------------------------------------|--------------|------------------------|
| <b>Series P1V-A160</b> |                   |                      |                      |                        |                              |                                     |            |                                    |              |                        |
| 1,600                  | 660               | 590                  | 24                   | 36                     | 45                           | 32                                  | G1/2       | 15                                 | 9,8          | <b>P1V-A160D0066••</b> |
| 1,600                  | 320               | 280                  | 50                   | 75                     | 140                          | 32                                  | G1/2       | 15                                 | 11,5         | <b>P1V-A160D0032••</b> |
| 1,600                  | 140               | 120                  | 113                  | 171                    | 280                          | 32                                  | G1/2       | 15                                 | 14,4         | <b>P1V-A160D0014••</b> |
| 1,600                  | 80                | 70                   | 197                  | 299                    | 560                          | 32                                  | G1/2       | 15                                 | 31,7         | <b>P1V-A160D0008••</b> |
| 1,600                  | 37                | 33                   | 413                  | 626                    | 1000                         | 32                                  | G1/2       | 15                                 | 49,2         | <b>P1V-A160D0004••</b> |
| 1,600                  | 21                | 18                   | 716                  | 1084                   | 1600                         | 32                                  | G1/2       | 15                                 | 67,2         | <b>P1V-A160D0003••</b> |
| <b>Series P1V-A260</b> |                   |                      |                      |                        |                              |                                     |            |                                    |              |                        |
| 2,600                  | 800               | 565                  | 42                   | 64                     | 42                           | 60                                  | G3/4       | 19                                 | 14,9         | <b>P1V-A260D0080••</b> |
| 2,600                  | 520               | 365                  | 65                   | 100                    | 115                          | 60                                  | G3/4       | 19                                 | 16,1         | <b>P1V-A260D0052••</b> |
| 2,600                  | 250               | 175                  | 135                  | 210                    | 235                          | 60                                  | G3/4       | 19                                 | 19,0         | <b>P1V-A260D0025••</b> |
| 2,600                  | 110               | 80                   | 302                  | 468                    | 500                          | 60                                  | G3/4       | 19                                 | 36,4         | <b>P1V-A260D0011••</b> |
| 2,600                  | 55                | 40                   | 614                  | 951                    | 1000                         | 60                                  | G3/4       | 19                                 | 54,9         | <b>P1V-A260D0006••</b> |
| 2,600                  | 30                | 20                   | 990                  | 1530                   | 1600                         | 60                                  | G3/4       | 19                                 | 68,9         | <b>P1V-A260D0003••</b> |
| <b>Series P1V-A360</b> |                   |                      |                      |                        |                              |                                     |            |                                    |              |                        |
| 3,600                  | 1050              | 625                  | 52                   | 78                     | 80                           | 97                                  | G1         | 25                                 | 24,6         | <b>P1V-A360D0105••</b> |
| 3,600                  | 520               | 310                  | 105                  | 155                    | 175                          | 97                                  | G1         | 25                                 | 24,6         | <b>P1V-A360D0052••</b> |
| 3,600                  | 250               | 150                  | 216                  | 320                    | 385                          | 97                                  | G1         | 25                                 | 45,0         | <b>P1V-A360D0025••</b> |
| 3,600                  | 125               | 74                   | 441                  | 652                    | 795                          | 97                                  | G1         | 25                                 | 63,5         | <b>P1V-A360D0013••</b> |
| 3,600                  | 60                | 36                   | 888                  | 1312                   | 1600                         | 97                                  | G1         | 25                                 | 77,5         | <b>P1V-A360D0006••</b> |
| 3,600                  | 30                | 18                   | 1800                 | 2670                   | 4000                         | 97                                  | G1         | 25                                 | 151,5        | <b>P1V-A360D0003••</b> |

\* maximum admissible speed (idling)

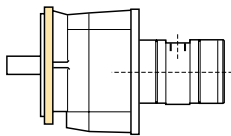
\*\* Max gear box torque for a permanent load

**Note!**  
•• specify installation position in the order code as in the illustrations below.  
**Example: P1V-A160D0066B5**

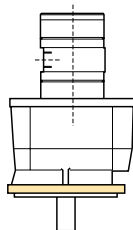
**Note:** Oil-bath gearboxes mean that the installation position must be decided in advance. The installation position determines the volume of oil in the gearbox and location of oil filling and drain plugs.

**D: Installation positions, helical gear, flange mounting**

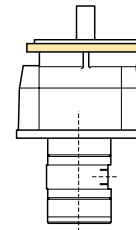
**B5**



**V1**

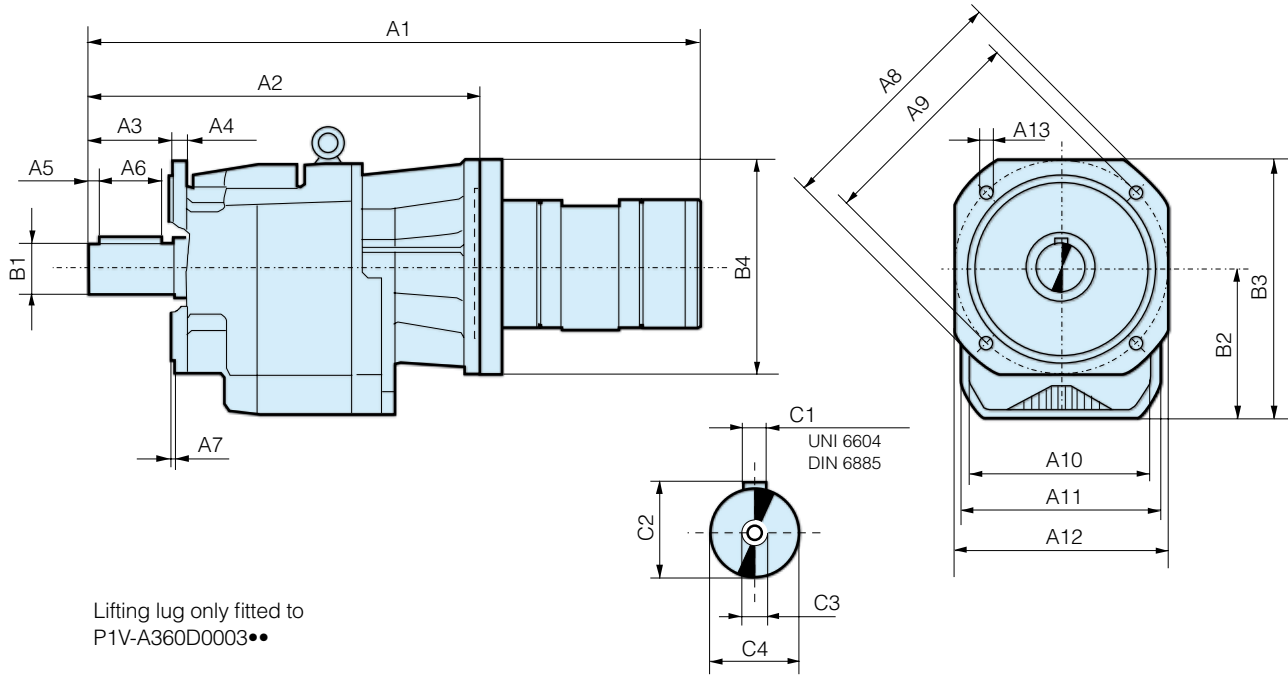


**V3**



Dimensions (mm)

D: Motor with helical gear, flange mounting



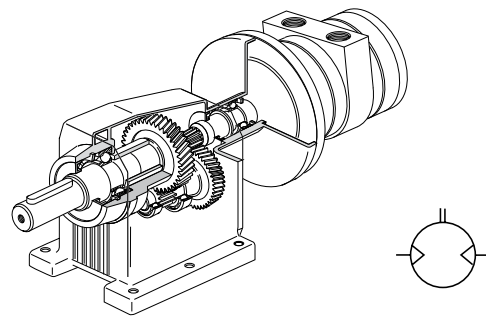
| Order code      | A1    | A2  | A3  | A4 | A5 | A6  | A7  | A8  | A9  | A10    | A11 | A12 | A13  | B1 | B2  | B3    |
|-----------------|-------|-----|-----|----|----|-----|-----|-----|-----|--------|-----|-----|------|----|-----|-------|
| P1V-A160D0066** | 370,5 | 244 | 40  | 8  | 5  | 30  | 3,0 | 140 | 115 | 95f7   | 95  | 105 | 9,5  | 20 | 82  | 138,0 |
| P1V-A160D0032** | 399,5 | 273 | 50  | 10 | 5  | 40  | 3,5 | 160 | 130 | 110f7  | 110 | 135 | 9,5  | 25 | 92  | 159,5 |
| P1V-A160D0014** | 433,5 | 307 | 60  | 12 | 5  | 50  | 3,5 | 200 | 165 | 130f7  | 130 | 150 | 11,5 | 30 | 108 | 183,0 |
| P1V-A160D0008** | 463,5 | 337 | 70  | 13 | 5  | 60  | 4,0 | 250 | 215 | 180 f7 | 155 | 210 | 14,0 | 35 | 128 | 233,0 |
| P1V-A160D0004** | 559,5 | 433 | 80  | 16 | 5  | 70  | 5,0 | 300 | 265 | 230 f7 | 185 | 260 | 14,0 | 40 | 152 | 282,0 |
| P1V-A160D0003** | 601,5 | 475 | 100 | 16 | 5  | 90  | 5,0 | 300 | 265 | 230 f7 | 210 | 260 | 14,0 | 50 | 190 | 320,0 |
| P1V-A260D0080** | 423,0 | 264 | 40  | 8  | 5  | 30  | 3,0 | 140 | 115 | 95f7   | 95  | 105 | 9,5  | 20 | 82  | 138,0 |
| P1V-A260D0052** | 451,0 | 292 | 50  | 10 | 5  | 40  | 3,5 | 160 | 130 | 110f7  | 110 | 135 | 9,5  | 25 | 92  | 159,5 |
| P1V-A260D0025** | 486,0 | 327 | 60  | 12 | 5  | 50  | 3,5 | 200 | 165 | 130f7  | 130 | 150 | 11,5 | 30 | 108 | 183,0 |
| P1V-A260D0011** | 515,0 | 356 | 70  | 13 | 5  | 60  | 4,0 | 250 | 215 | 180 f7 | 155 | 210 | 14,0 | 35 | 128 | 233,0 |
| P1V-A260D0006** | 612,0 | 453 | 80  | 16 | 5  | 70  | 5,0 | 300 | 265 | 230 f7 | 185 | 260 | 14,0 | 40 | 152 | 282,0 |
| P1V-A260D0003** | 634,0 | 475 | 100 | 16 | 5  | 90  | 5,0 | 300 | 265 | 230 f7 | 210 | 260 | 14,0 | 50 | 190 | 320,0 |
| P1V-A360D0105** | 458,0 | 292 | 50  | 10 | 5  | 40  | 3,5 | 160 | 130 | 110f7  | 110 | 135 | 9,5  | 25 | 92  | 159,5 |
| P1V-A360D0052** | 458,0 | 292 | 50  | 10 | 5  | 40  | 3,5 | 160 | 130 | 110f7  | 110 | 135 | 9,5  | 25 | 92  | 159,5 |
| P1V-A360D0025** | 521,0 | 356 | 70  | 13 | 5  | 60  | 4,0 | 250 | 215 | 180 f7 | 155 | 210 | 14,0 | 35 | 128 | 233,0 |
| P1V-A360D0013** | 547,0 | 382 | 80  | 16 | 5  | 70  | 5,0 | 300 | 265 | 230 f7 | 185 | 260 | 14,0 | 40 | 152 | 282,0 |
| P1V-A360D0006** | 640,0 | 475 | 100 | 16 | 5  | 90  | 5,0 | 300 | 265 | 230 f7 | 210 | 260 | 14,0 | 50 | 190 | 320,0 |
| P1V-A360D0003** | 699,0 | 534 | 140 | 20 | 15 | 110 | 5,0 | 400 | 350 | 300 f7 | 320 | 350 | 18,0 | 80 | 247 | 424,0 |

| Order code      | B4  | C1        | C2   | C3     | C4    |
|-----------------|-----|-----------|------|--------|-------|
| P1V-A160D0066** | 160 | 6x6x30    | 22,5 | M8x19  | 20 h6 |
| P1V-A160D0032** | 160 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A160D0014** | 160 | 8x7x50    | 33,0 | M10x22 | 30 h6 |
| P1V-A160D0008** | 160 | 10x8x60   | 38,0 | M10x22 | 35 h6 |
| P1V-A160D0004** | 160 | 12x8x70   | 43,0 | M12x28 | 40 h6 |
| P1V-A160D0003** | 160 | 14x9x90   | 53,5 | M16x36 | 50 h6 |
| P1V-A260D0080** | 200 | 6x6x30    | 22,5 | M8x19  | 20 h6 |
| P1V-A260D0052** | 200 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A260D0025** | 200 | 8x7x50    | 33,0 | M10x22 | 30 h6 |
| P1V-A260D0011** | 200 | 10x8x60   | 38,0 | M10x22 | 35 h6 |
| P1V-A260D0006** | 200 | 12x8x70   | 43,0 | M12x28 | 40 h6 |
| P1V-A260D0003** | 200 | 14x9x90   | 53,5 | M16x36 | 50 h6 |
| P1V-A360D0105** | 200 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A360D0052** | 200 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A360D0025** | 200 | 10x8x60   | 38,0 | M10x22 | 35 h6 |
| P1V-A360D0013** | 200 | 12x8x70   | 43,0 | M12x28 | 40 h6 |
| P1V-A360D0006** | 200 | 14x9x90   | 53,5 | M16x36 | 50 h6 |
| P1V-A360D0003** | 200 | 22x14x110 | 85,0 | M20x42 | 80 h6 |

\*\* see previous page for installation positions

**P1V-A Air Motor - Helical Gear**

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil.  
Speed tolerance accuracy is  $\pm 10\%$ .



**E: Reversible motor with helical gear, foot mounting**

| Max power<br>kW        | Max speed*<br>rpm | Nominal speed<br>rpm | Nominal torque<br>Nm | Min start torque<br>Nm | Max permanent torque**<br>Nm | Air consumption at max power<br>l/s | Connection | Min pipe ID inlet/outlet<br>mm | Weight<br>Kg | Order code             |
|------------------------|-------------------|----------------------|----------------------|------------------------|------------------------------|-------------------------------------|------------|--------------------------------|--------------|------------------------|
| <b>Series P1V-A160</b> |                   |                      |                      |                        |                              |                                     |            |                                |              |                        |
| 1,600                  | 660               | 590                  | 24                   | 36                     | 45                           | 32                                  | G1/2       | 15                             | 9,8          | <b>P1V-A160E0066••</b> |
| 1,600                  | 320               | 280                  | 50                   | 75                     | 140                          | 32                                  | G1/2       | 15                             | 11,5         | <b>P1V-A160E0032••</b> |
| 1,600                  | 140               | 120                  | 113                  | 171                    | 280                          | 32                                  | G1/2       | 15                             | 14,4         | <b>P1V-A160E0014••</b> |
| 1,600                  | 80                | 70                   | 197                  | 299                    | 560                          | 32                                  | G1/2       | 15                             | 31,7         | <b>P1V-A160E0008••</b> |
| 1,600                  | 37                | 33                   | 413                  | 626                    | 1000                         | 32                                  | G1/2       | 15                             | 49,2         | <b>P1V-A160E0004••</b> |
| 1,600                  | 21                | 18                   | 716                  | 1084                   | 1600                         | 32                                  | G1/2       | 15                             | 67,2         | <b>P1V-A160E0003••</b> |
| <b>Series P1V-A260</b> |                   |                      |                      |                        |                              |                                     |            |                                |              |                        |
| 2,600                  | 800               | 565                  | 42                   | 64                     | 42                           | 60                                  | G3/4       | 19                             | 14,9         | <b>P1V-A260E0080••</b> |
| 2,600                  | 520               | 365                  | 65                   | 100                    | 115                          | 60                                  | G3/4       | 19                             | 16,1         | <b>P1V-A260E0052••</b> |
| 2,600                  | 250               | 175                  | 135                  | 210                    | 235                          | 60                                  | G3/4       | 19                             | 19,0         | <b>P1V-A260E0025••</b> |
| 2,600                  | 110               | 80                   | 302                  | 468                    | 500                          | 60                                  | G3/4       | 19                             | 36,4         | <b>P1V-A260E0011••</b> |
| 2,600                  | 55                | 40                   | 614                  | 951                    | 1000                         | 60                                  | G3/4       | 19                             | 54,9         | <b>P1V-A260E0006••</b> |
| 2,600                  | 30                | 20                   | 990                  | 1530                   | 1600                         | 60                                  | G3/4       | 19                             | 68,9         | <b>P1V-A260E0003••</b> |
| <b>Series P1V-A360</b> |                   |                      |                      |                        |                              |                                     |            |                                |              |                        |
| 3,600                  | 1050              | 625                  | 52                   | 78                     | 80                           | 97                                  | G1         | 25                             | 24,6         | <b>P1V-A360E0105••</b> |
| 3,600                  | 520               | 310                  | 105                  | 155                    | 175                          | 97                                  | G1         | 25                             | 24,6         | <b>P1V-A360E0052••</b> |
| 3,600                  | 250               | 150                  | 216                  | 320                    | 385                          | 97                                  | G1         | 25                             | 45,0         | <b>P1V-A360E0025••</b> |
| 3,600                  | 125               | 74                   | 441                  | 652                    | 795                          | 97                                  | G1         | 25                             | 63,5         | <b>P1V-A360E0013••</b> |
| 3,600                  | 62                | 36                   | 868                  | 1312                   | 1600                         | 97                                  | G1         | 25                             | 77,5         | <b>P1V-A360E0006••</b> |
| 3,600                  | 30                | 18                   | 1800                 | 2670                   | 4000                         | 97                                  | G1         | 25                             | 151,5        | <b>P1V-A360E0003••</b> |

\* maximum admissible speed (idling)

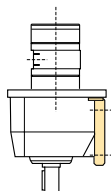
\*\* Max gear box torque for a permanent load

**Note!**  
•• specify installation position in the order code as in the illustrations below.  
**Example: P1V-A160E0066V5**

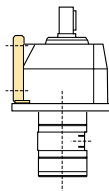
**Note:** Oil-bath gearboxes mean that the installation position must be decided in advance. The installation position determines the volume of oil in the gearbox and location of oil filling and drain plugs.

**E: Installation positions, helical gear, foot mounting**

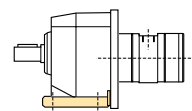
**V5**



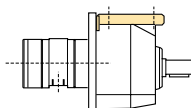
**V6**



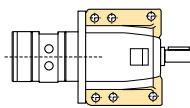
**B3**



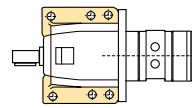
**B8**



**B7**

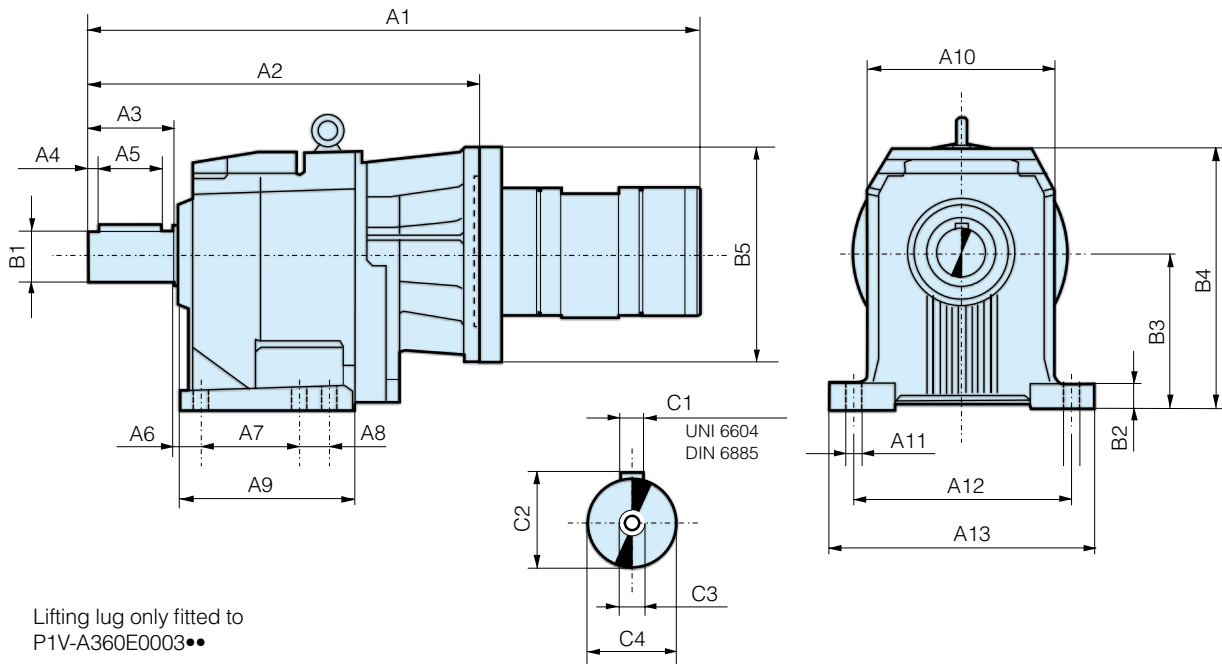


**B6**



Dimensions (mm)

E: Motor with helical gear, foot mounting



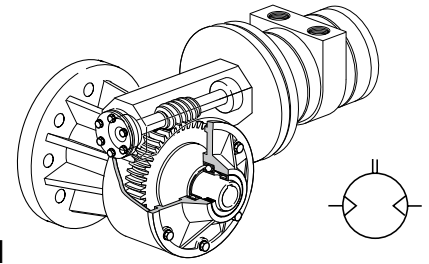
| Order code      | A1    | A2  | A3  | A4 | A5  | A6 | A7  | A8   | A9    | A10 | A11 | A12 | A13 | B1 | B2 | B3  |
|-----------------|-------|-----|-----|----|-----|----|-----|------|-------|-----|-----|-----|-----|----|----|-----|
| P1V-A160E0066•• | 370,5 | 244 | 40  | 5  | 30  | 18 | 50  | 37,0 | 107,0 | 95  | 9   | 110 | 130 | 20 | 15 | 85  |
| P1V-A160E0032•• | 399,5 | 273 | 50  | 5  | 40  | 18 | 60  | 47,5 | 137,0 | 110 | 11  | 130 | 155 | 25 | 17 | 100 |
| P1V-A160E0014•• | 433,5 | 307 | 60  | 5  | 50  | 18 | 70  | 60,0 | 156,0 | 130 | 11  | 160 | 190 | 30 | 20 | 110 |
| P1V-A160E0008•• | 463,5 | 337 | 70  | 5  | 60  | 20 | 105 | 44,5 | 185,5 | 155 | 14  | 180 | 216 | 35 | 18 | 130 |
| P1V-A160E0004•• | 559,5 | 433 | 80  | 5  | 70  | 25 | 110 | 46,0 | 200,0 | 185 | 18  | 225 | 270 | 40 | 22 | 155 |
| P1V-A160E0003•• | 601,5 | 475 | 100 | 5  | 90  | 25 | 145 | 35,0 | 222,0 | 210 | 18  | 250 | 300 | 50 | 25 | 195 |
| P1V-A260E0080•• | 413,0 | 244 | 40  | 5  | 30  | 18 | 50  | 37,0 | 107,0 | 95  | 9   | 110 | 130 | 20 | 15 | 85  |
| P1V-A260E0052•• | 451,0 | 292 | 50  | 5  | 40  | 18 | 60  | 47,5 | 137,0 | 110 | 11  | 130 | 155 | 25 | 17 | 100 |
| P1V-A260E0025•• | 486,0 | 327 | 60  | 5  | 50  | 18 | 70  | 60,0 | 156,0 | 130 | 11  | 160 | 190 | 30 | 20 | 110 |
| P1V-A260E0011•• | 515,0 | 356 | 70  | 5  | 60  | 20 | 105 | 44,5 | 185,5 | 155 | 14  | 180 | 216 | 35 | 18 | 130 |
| P1V-A260E0006•• | 612,0 | 453 | 80  | 5  | 70  | 25 | 110 | 46,0 | 200,0 | 185 | 18  | 225 | 270 | 40 | 22 | 155 |
| P1V-A260E0003•• | 654,0 | 495 | 100 | 5  | 90  | 25 | 145 | 35,0 | 222,0 | 210 | 18  | 250 | 300 | 50 | 25 | 195 |
| P1V-A360E0105•• | 457,0 | 292 | 50  | 5  | 40  | 18 | 60  | 47,5 | 137,0 | 110 | 11  | 130 | 155 | 25 | 17 | 100 |
| P1V-A360E0052•• | 457,0 | 292 | 50  | 5  | 40  | 18 | 60  | 47,5 | 137,0 | 110 | 11  | 130 | 155 | 25 | 17 | 100 |
| P1V-A360E0025•• | 521,0 | 356 | 70  | 5  | 60  | 20 | 105 | 44,5 | 185,5 | 155 | 14  | 180 | 216 | 35 | 18 | 130 |
| P1V-A360E0013•• | 547,0 | 382 | 80  | 5  | 70  | 25 | 110 | 46,0 | 200,0 | 185 | 18  | 225 | 270 | 40 | 22 | 155 |
| P1V-A360E0006•• | 660,0 | 495 | 100 | 5  | 90  | 25 | 145 | 35,0 | 222,0 | 210 | 18  | 250 | 300 | 50 | 25 | 195 |
| P1V-A360E0003•• | 699,0 | 534 | 140 | 15 | 110 | 33 | 210 | —    | 277,0 | 320 | 26  | 370 | 440 | 80 | 35 | 250 |

| Order code      | B4  | B5  | C1        | C2   | C3     | C4    |
|-----------------|-----|-----|-----------|------|--------|-------|
| P1V-A160E0066•• | 141 | 160 | 6x6x30    | 22,5 | M8x19  | 20 h6 |
| P1V-A160E0032•• | 166 | 160 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A160E0014•• | 181 | 160 | 8x7x50    | 33,0 | M10x22 | 30 h6 |
| P1V-A160E0008•• | 223 | 160 | 10x8x60   | 38,0 | M10x22 | 35 h6 |
| P1V-A160E0004•• | 278 | 160 | 12x8x70   | 43,0 | M12x28 | 40 h6 |
| P1V-A160E0003•• | 316 | 160 | 14x9x90   | 53,5 | M16x36 | 50 h6 |
| P1V-A260E0080•• | 141 | 200 | 6x6x30    | 22,5 | M8x19  | 20 h6 |
| P1V-A260E0052•• | 166 | 200 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A260E0025•• | 181 | 200 | 8x7x50    | 33,0 | M10x22 | 30 h6 |
| P1V-A260E0011•• | 223 | 200 | 10x8x60   | 38,0 | M10x22 | 35 h6 |
| P1V-A260E0006•• | 278 | 200 | 12x8x70   | 43,0 | M12x28 | 40 h6 |
| P1V-A260E0003•• | 316 | 200 | 14x9x90   | 53,5 | M16x36 | 50 h6 |
| P1V-A360E0105•• | 166 | 200 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A360E0052•• | 166 | 200 | 8x7x40    | 28,0 | M8x19  | 25 h6 |
| P1V-A360E0025•• | 223 | 200 | 10x8x60   | 38,0 | M10x22 | 35 h6 |
| P1V-A360E0013•• | 278 | 200 | 12x8x70   | 43,0 | M12x28 | 40 h6 |
| P1V-A360E0006•• | 316 | 200 | 14x9x90   | 53,5 | M16x36 | 50 h6 |
| P1V-A360E0003•• | 420 | 200 | 22x14x110 | 85,0 | M20x42 | 80 h6 |

••: see previous page for installation positions

**P1V-A Air Motor - Worm Gear**

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil.  
Speed tolerance accuracy is +-10%.



**F: Reversible motor with worm gear, flange mounting left-hand**

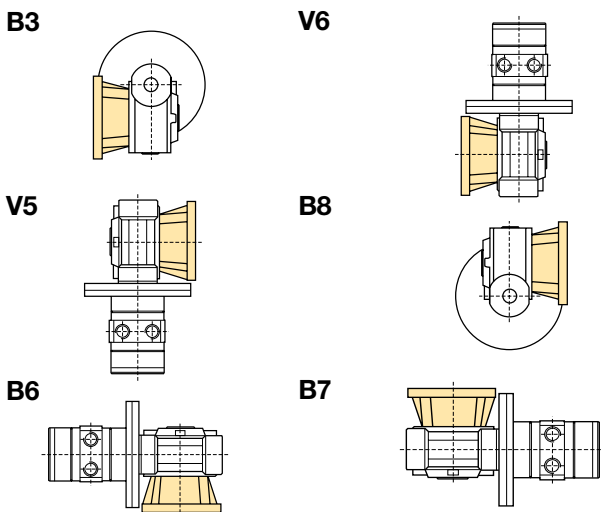
| Max power              | Max speed* | Nominal speed | Nominal torque | Min start torque | Max permanent torque** | Types of self-locking | Air consumption at max power | Connection | Min pipe ID inlet/outlet | Weight | Order code             |
|------------------------|------------|---------------|----------------|------------------|------------------------|-----------------------|------------------------------|------------|--------------------------|--------|------------------------|
| kW                     | rpm        | rpm           | Nm             | Nm               | Nm                     |                       | l/s                          |            | mm                       | Kg     |                        |
| <b>Series P1V-A160</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 1,600                  | 430        | 320           | 38             | 40               | 44                     | 1                     | 32                           | G1/2       | 15                       | 7,2    | <b>P1V-A160F0043••</b> |
| 1,600                  | 200        | 150           | 77             | 65               | 125                    | 2                     | 32                           | G1/2       | 15                       | 10,5   | <b>P1V-A160F0020••</b> |
| 1,600                  | 95         | 70            | 154            | 117              | 250                    | 3                     | 32                           | G1/2       | 15                       | 17,8   | <b>P1V-A160F0010••</b> |
| 1,600                  | 75         | 55            | 180            | 130              | 225                    | 3                     | 32                           | G1/2       | 15                       | 17,8   | <b>P1V-A160F0008••</b> |
| <b>Series P1V-A260</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 2,600                  | 500        | 350           | 62             | 71               | 125                    | 1                     | 60                           | G3/4       | 19                       | 14,5   | <b>P1V-A260F0050••</b> |
| 2,600                  | 220        | 150           | 133            | 133              | 285                    | 1                     | 60                           | G3/4       | 19                       | 21,0   | <b>P1V-A260F0022••</b> |
| 2,600                  | 125        | 85            | 224            | 191              | 430                    | 2                     | 60                           | G3/4       | 19                       | 21,0   | <b>P1V-A260F0013••</b> |
| 2,600                  | 62         | 44            | 415            | 308              | 660                    | 3                     | 60                           | G3/4       | 19                       | 57,0   | <b>P1V-A260F0008••</b> |
| <b>Series P1V-A360</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 3,600                  | 500        | 300           | 98             | 113              | 125                    | 1                     | 97                           | G1         | 25                       | 22,9   | <b>P1V-A360F0050••</b> |
| 3,600                  | 220        | 130           | 224            | 230              | 285                    | 1                     | 97                           | G1         | 25                       | 31,0   | <b>P1V-A360F0022••</b> |
| 3,600                  | 125        | 75            | 368            | 317              | 595                    | 2                     | 97                           | G1         | 25                       | 55,0   | <b>P1V-A360F0013••</b> |
| 3,600                  | 62         | 37            | 670            | 480              | 660                    | 3                     | 97                           | G1         | 25                       | 65,5   | <b>P1V-A360F0006••</b> |

\* maximum admissible speed (idling)

\*\* Max gear box torque for a permanent load

**Note!**  
•• specify installation position in the order code as in the illustrations below.  
**Example: P1V-A160F0043B3**

**F: Installation positions, worm gear, flange mounting left-hand**



**Note:** Oil-bath gearboxes mean that the installation position must be decided in advance. The installation position determines the volume of oil in the gearbox and location of oil filling and drain plugs.

**Self-locking**

Dynamic self-locking means that the force acting on the output shaft of the gear can not turn the gear further when the air motor is stopped. Dynamic self-locking is only possible when the gear ratio is high, and at low speeds. None of our worm drive gears are completely self-locking in dynamic conditions.

Static self-locking means that the force acting on the output shaft of the gear can not begin to turn the shaft.

When loads with considerable momentum are driven, it is necessary to have a braking time sufficient to stop the gearbox from being overloaded. It is extremely important that the maximum permitted torque is not exceeded.

*Tip:* Braking of the air motor can be arranged by either slowly restricting the air supply to the motor until it is completely shut off, or by slowly reducing the supply pressure to zero.

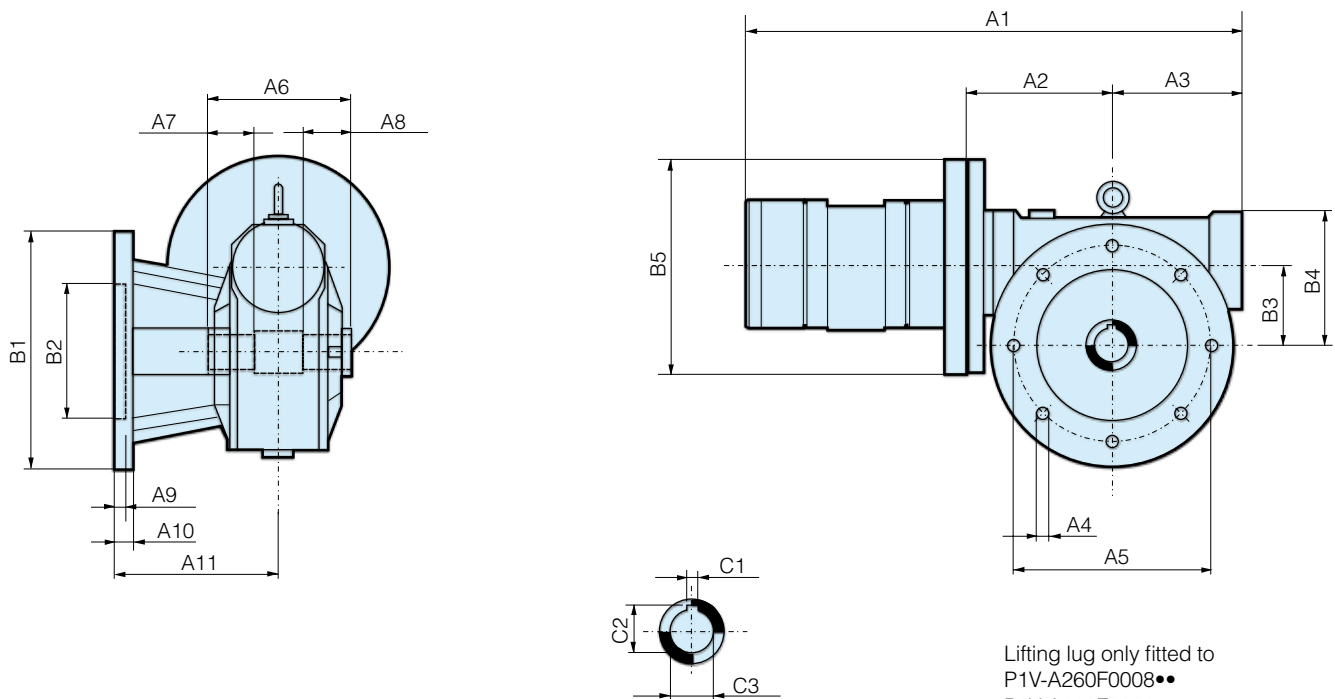
**Types of Self-locking**

1. Static, not self-locking
2. Static, self-locking - quicker return under vibration - not dynamically self-locking
3. Static, self-locking - return only possible under vibration - good dynamic self-locking

**Important!**  
Since it is practically impossible to guarantee total self-locking, an external brake must be used to guarantee that vibration can not cause an output shaft to move.

Dimensions (mm)

F: Motor with worm gear, flange mounting



Lifting lug only fitted to  
 P1V-A260F0008••  
 P1V-A360F0006••

As standard, the motor has a hollow shaft with key slot. Please refer to page 44 for a dimension sketch of the single ended and double ended shafts and for additional flange on the opposite side.

| Order code      | A1    | A2  | A3  | A4   | A5  | A6  | A7   | A8   | A9 | A10 | A11   | B1  | B2     | B3     |
|-----------------|-------|-----|-----|------|-----|-----|------|------|----|-----|-------|-----|--------|--------|
| P1V-A160F0043•• | 259,5 | 70  | 63  | 10,5 | 90  | 82  | 22,5 | 22,5 | 10 | 12  | 85,0  | 125 | 70 H8  | 49,50  |
| P1V-A160F0020•• | 301,5 | 95  | 80  | 10,5 | 130 | 120 | 40,0 | 40,0 | 8  | 11  | 116,0 | 180 | 115 H8 | 62,17  |
| P1V-A160F0010•• | 362,5 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A160F0008•• | 362,5 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A260F0050•• | 292,0 | 70  | 63  | 10,5 | 90  | 82  | 22,5 | 22,5 | 10 | 12  | 85,0  | 125 | 70 H8  | 49,50  |
| P1V-A260F0022•• | 395,0 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A260F0013•• | 395,0 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A260F0008•• | 498,0 | 185 | 154 | 16,0 | 255 | 165 | 52,5 | 52,5 | 18 | 20  | 197,5 | 320 | 180 H8 | 130,00 |
| P1V-A360F0050•• | 340,0 | 95  | 80  | 10,5 | 130 | 120 | 40,0 | 40,0 | 8  | 11  | 116,0 | 180 | 115 H8 | 62,17  |
| P1V-A360F0022•• | 401,0 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A360F0013•• | 456,0 | 153 | 138 | 13,5 | 230 | 155 | 45,0 | 45,0 | 18 | 20  | 179,5 | 280 | 170 H8 | 110,10 |
| P1V-A360F0006•• | 504,0 | 185 | 154 | 16,0 | 255 | 165 | 52,5 | 52,5 | 18 | 20  | 197,5 | 320 | 180 H8 | 130,00 |

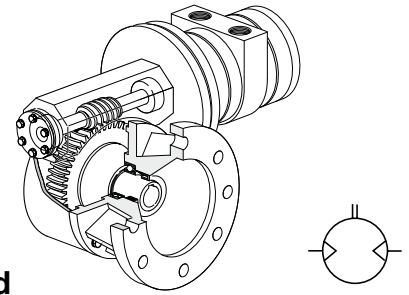
| Order code      | B4    | B5  | C1    | C2   | C3    |
|-----------------|-------|-----|-------|------|-------|
| P1V-A160F0043•• | 80,0  | 160 | 8 H8  | 28,3 | 25 H7 |
| P1V-A160F0020•• | 98,5  | 160 | 8 H8  | 28,3 | 25 H7 |
| P1V-A160F0010•• | 138,0 | 160 | 10 H8 | 38,3 | 35 H7 |
| P1V-A160F0008•• | 138,0 | 160 | 10 H8 | 38,3 | 35 H7 |
| P1V-A260F0050•• | 80,0  | 200 | 8 H8  | 28,3 | 25 H7 |
| P1V-A260F0022•• | 138,0 | 200 | 10 H8 | 38,3 | 35 H7 |
| P1V-A260F0013•• | 138,0 | 200 | 10 H8 | 38,3 | 35 H7 |
| P1V-A260F0008•• | 195,0 | 200 | 14 H8 | 48,8 | 45 H7 |
| P1V-A360F0050•• | 98,5  | 200 | 8 H8  | 28,3 | 25 H7 |
| P1V-A360F0022•• | 138,0 | 200 | 10 H8 | 38,3 | 35 H7 |
| P1V-A360F0013•• | 169,0 | 200 | 12 H8 | 45,3 | 42 H7 |
| P1V-A360F0006•• | 195,0 | 200 | 14 H8 | 48,8 | 45 H7 |

••: see previous page for installation positions



**P1V-A Air Motor - Worm Gear**

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil.  
Speed tolerance accuracy is +-10%.



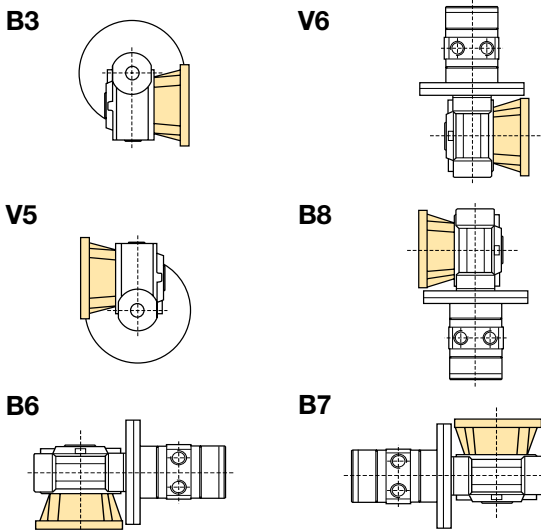
**G: Reversible motor with worm gear, flange mounting right-hand**

| Max power              | Max speed* | Nominal speed | Nominal torque | Min start torque | Max permanent torque** | Types of self-locking | Air consumption at max power | Connection | Min pipe ID inlet/outlet | Weight | Order code             |
|------------------------|------------|---------------|----------------|------------------|------------------------|-----------------------|------------------------------|------------|--------------------------|--------|------------------------|
| kW                     | rpm        | rpm           | Nm             | Nm               | Nm                     |                       | l/s                          |            | mm                       | Kg     |                        |
| <b>Series P1V-A160</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 1,600                  | 430        | 320           | 38             | 40               | 44                     | 1                     | 32                           | G1/2       | 15                       | 7,2    | <b>P1V-A160G0043••</b> |
| 1,600                  | 200        | 150           | 77             | 65               | 125                    | 2                     | 32                           | G1/2       | 15                       | 10,5   | <b>P1V-A160G0020••</b> |
| 1,600                  | 95         | 70            | 154            | 117              | 250                    | 3                     | 32                           | G1/2       | 15                       | 17,8   | <b>P1V-A160G0010••</b> |
| 1,600                  | 75         | 55            | 180            | 130              | 225                    | 3                     | 32                           | G1/2       | 15                       | 17,8   | <b>P1V-A160G0008••</b> |
| <b>Series P1V-A260</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 2,600                  | 500        | 350           | 62             | 71               | 125                    | 1                     | 60                           | G3/4       | 19                       | 14,5   | <b>P1V-A260G0050••</b> |
| 2,600                  | 220        | 150           | 133            | 133              | 285                    | 1                     | 60                           | G3/4       | 19                       | 21,0   | <b>P1V-A260G0022••</b> |
| 2,600                  | 125        | 85            | 224            | 191              | 430                    | 2                     | 60                           | G3/4       | 19                       | 21,0   | <b>P1V-A260G0013••</b> |
| 2,600                  | 62         | 44            | 415            | 308              | 660                    | 3                     | 60                           | G3/4       | 19                       | 57,0   | <b>P1V-A260G0008••</b> |
| <b>Series P1V-A360</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 3,600                  | 500        | 300           | 98             | 113              | 125                    | 1                     | 97                           | G1         | 25                       | 22,9   | <b>P1V-A360G0050••</b> |
| 3,600                  | 220        | 130           | 224            | 230              | 285                    | 1                     | 97                           | G1         | 25                       | 31,0   | <b>P1V-A360G0022••</b> |
| 3,600                  | 125        | 75            | 368            | 317              | 595                    | 2                     | 97                           | G1         | 25                       | 55,0   | <b>P1V-A360G0013••</b> |
| 3,600                  | 62         | 37            | 670            | 480              | 660                    | 3                     | 97                           | G1         | 25                       | 65,5   | <b>P1V-A360G0006••</b> |

\* maximum admissible speed (idling)  
\*\* Max gear box torque for a permanent load

**Note!**  
•• specify installation position in the order code as in the illustrations below.  
**Example: P1V-A160G0043B3**

**G: Installation positions, worm gear gear, flange mounting right-hand**



**Note:** Oil-bath gearboxes mean that the installation position must be decided in advance. The installation position determines the volume of oil in the gearbox and location of oil filling and drain plugs.

**Self-locking shafts and for additional flange on the opposite side.**

Dynamic self-locking means that the force acting on the output shaft of the gear can not turn the gear further when the air motor is stopped. Dynamic self-locking is only possible when the gear ratio is high, and at low speeds. None of our worm drive gears are completely self-locking in dynamic conditions.

Static self-locking means that the force acting on the output shaft of the gear can not begin to turn the shaft.

When loads with considerable momentum are driven, it is necessary to have a braking time sufficient to stop the gearbox from being overloaded. It is extremely important that the maximum permitted torque is not exceeded.

*Tip:* Braking of the air motor can be arranged by either slowly restricting the air supply to the motor until it is completely shut off, or by slowly reducing the supply pressure to zero.

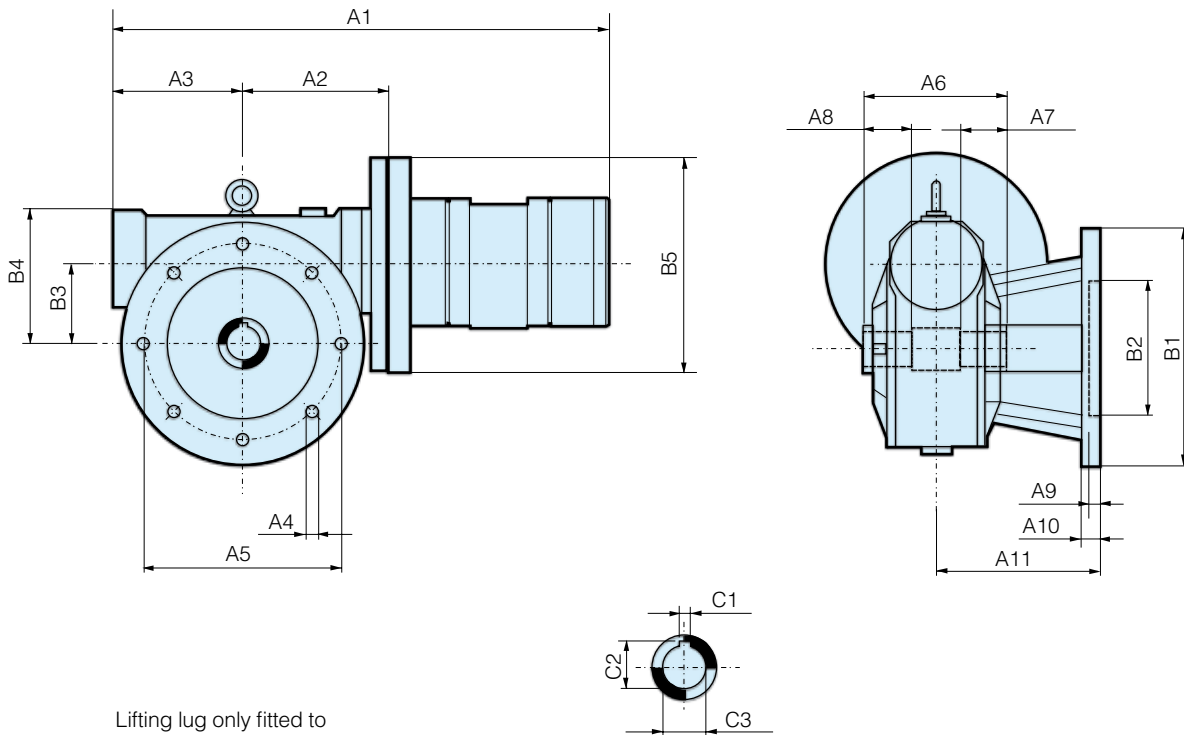
**Types of Self-locking**

1. Static, not self-locking
2. Static, self-locking - quicker return under vibration - not dynamically self-locking
3. Static, self-locking - return only possible under vibration - good dynamic self-locking

**Important!**  
Since it is practically impossible to guarantee total self-locking, an external brake must be used to guarantee that vibration can not cause an output shaft to move.

Dimensions (mm)

G: Motor with worm gear, flange mounting



Lifting lug only fitted to  
P1V-A260G0008••  
P1V-A360G0006••

As standard, the motor has a hollow shaft with key slot. Please refer to page 44 for a dimension sketch of the single ended and double ended shafts and for additional flange on the opposite side.

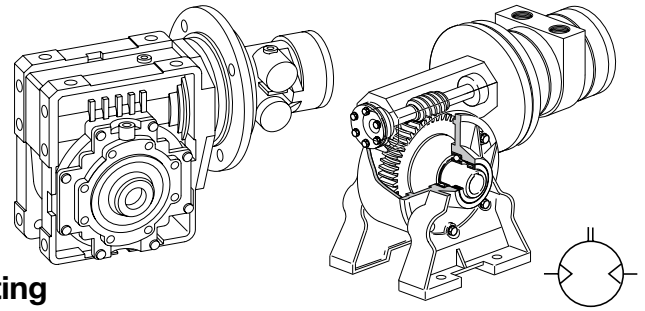
| Order code      | A1    | A2  | A3  | A4   | A5  | A6  | A7   | A8   | A9 | A10 | A11   | B1  | B2     | B3     |
|-----------------|-------|-----|-----|------|-----|-----|------|------|----|-----|-------|-----|--------|--------|
| P1V-A160G0043•• | 259,5 | 70  | 63  | 10,5 | 90  | 82  | 22,5 | 22,5 | 10 | 12  | 85,0  | 125 | 70 H8  | 49,50  |
| P1V-A160G0020•• | 301,5 | 95  | 80  | 10,5 | 130 | 120 | 40,0 | 40,0 | 8  | 11  | 116,0 | 180 | 115 H8 | 62,17  |
| P1V-A160G0010•• | 362,5 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A160G0008•• | 362,5 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A260G0050•• | 292,0 | 70  | 63  | 10,5 | 90  | 82  | 22,5 | 22,5 | 10 | 12  | 85,0  | 125 | 70 H8  | 49,50  |
| P1V-A260G0022•• | 395,0 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A260G0013•• | 395,0 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A260G0008•• | 498,0 | 185 | 154 | 16,0 | 255 | 165 | 52,5 | 52,5 | 18 | 20  | 197,5 | 320 | 180 H8 | 130,00 |
| P1V-A360G0050•• | 340,0 | 95  | 80  | 10,5 | 130 | 120 | 40,0 | 40,0 | 8  | 11  | 116,0 | 180 | 115 H8 | 62,17  |
| P1V-A360G0022•• | 401,0 | 126 | 110 | 12,5 | 176 | 140 | 45,0 | 45,0 | 15 | 15  | 151,0 | 210 | 152 H8 | 86,90  |
| P1V-A360G0013•• | 456,0 | 153 | 138 | 13,5 | 230 | 155 | 45,0 | 45,0 | 18 | 20  | 179,5 | 280 | 170 H8 | 110,10 |
| P1V-A360G0006•• | 504,0 | 185 | 154 | 16,0 | 255 | 165 | 52,5 | 52,5 | 18 | 20  | 197,5 | 320 | 180 H8 | 130,00 |

| Order code      | B4    | B5  | C1    | C2   | C3    |
|-----------------|-------|-----|-------|------|-------|
| P1V-A160G0043•• | 80,0  | 160 | 8 H8  | 28,3 | 25 H7 |
| P1V-A160G0020•• | 98,5  | 160 | 8 H8  | 28,3 | 25 H7 |
| P1V-A160G0010•• | 138,0 | 160 | 10 H8 | 38,3 | 35 H7 |
| P1V-A160G0008•• | 138,0 | 160 | 10 H8 | 38,3 | 35 H7 |
| P1V-A260G0050•• | 80,0  | 200 | 8 H8  | 28,3 | 25 H7 |
| P1V-A260G0022•• | 138,0 | 200 | 10 H8 | 38,3 | 35 H7 |
| P1V-A260G0013•• | 138,0 | 200 | 10 H8 | 38,3 | 35 H7 |
| P1V-A260G0008•• | 195,0 | 200 | 14 H8 | 48,8 | 45 H7 |
| P1V-A360G0050•• | 98,5  | 200 | 8 H8  | 28,3 | 25 H7 |
| P1V-A360G0022•• | 138,0 | 200 | 10 H8 | 38,3 | 35 H7 |
| P1V-A360G0013•• | 169,0 | 200 | 12 H8 | 45,3 | 42 H7 |
| P1V-A360G0006•• | 195,0 | 200 | 14 H8 | 48,8 | 45 H7 |

••: see previous page for installation positions

**P1V-A Air Motor - Worm Gear**

**NOTE!** All technical data are based on a working pressure of 6 bar and with oil. Speed tolerance accuracy is +-10%.



**H: Reversible motor with worm gear, foot mounting**

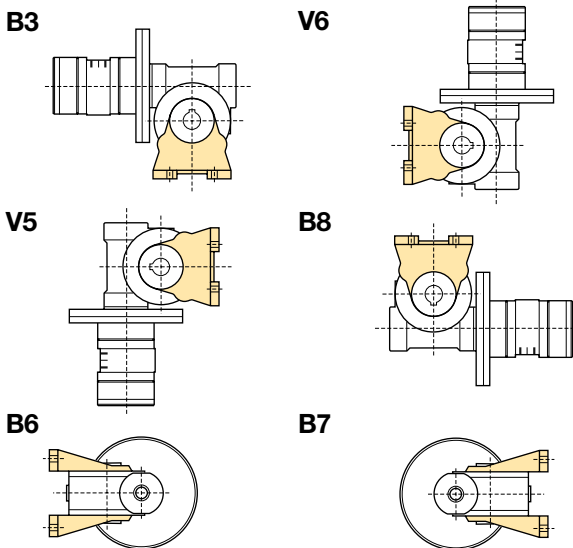
| Max power              | Max speed* | Nominal speed | Nominal torque | Min start torque | Max permanent torque** | Types of self-locking | Air consumption at max power | Connection | Min pipe ID inlet/outlet | Weight | Order code             |
|------------------------|------------|---------------|----------------|------------------|------------------------|-----------------------|------------------------------|------------|--------------------------|--------|------------------------|
| kW                     | rpm        | rpm           | Nm             | Nm               | Nm                     |                       | l/s                          |            | mm                       | Kg     |                        |
| <b>Series P1V-A160</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 1,600                  | 430        | 320           | 38             | 40               | 44                     | 1                     | 32                           | G1/2       | 15                       | 7,2    | <b>P1V-A160H0043••</b> |
| 1,600                  | 200        | 150           | 77             | 65               | 125                    | 2                     | 32                           | G1/2       | 15                       | 10,2   | <b>P1V-A160H0020••</b> |
| 1,600                  | 95         | 70            | 154            | 177              | 250                    | 3                     | 32                           | G1/2       | 15                       | 20,5   | <b>P1V-A160H0010••</b> |
| 1,600                  | 75         | 55            | 180            | 130              | 225                    | 3                     | 32                           | G1/2       | 15                       | 20,5   | <b>P1V-A160H0008••</b> |
| <b>Series P1V-A260</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 2,600                  | 500        | 350           | 62             | 90               | 125                    | 1                     | 60                           | G3/4       | 19                       | 11,0   | <b>P1V-A260H0050••</b> |
| 2,600                  | 220        | 150           | 133            | 206              | 285                    | 1                     | 60                           | G3/4       | 19                       | 21,0   | <b>P1V-A260H0022••</b> |
| 2,600                  | 125        | 85            | 224            | 330              | 430                    | 2                     | 60                           | G3/4       | 19                       | 21,0   | <b>P1V-A260H0013••</b> |
| 2,600                  | 62         | 44            | 415            | 308              | 660                    | 3                     | 60                           | G3/4       | 19                       | 57,0   | <b>P1V-A260H0008••</b> |
| <b>Series P1V-A360</b> |            |               |                |                  |                        |                       |                              |            |                          |        |                        |
| 3,600                  | 500        | 300           | 98             | 113              | 125                    | 1                     | 97                           | G1         | 25                       | 22,5   | <b>P1V-A360H0050••</b> |
| 3,600                  | 220        | 130           | 224            | 230              | 285                    | 1                     | 97                           | G1         | 25                       | 33,0   | <b>P1V-A360H0022••</b> |
| 3,600                  | 125        | 75            | 368            | 317              | 595                    | 2                     | 97                           | G1         | 25                       | 49,0   | <b>P1V-A360H0013••</b> |
| 3,600                  | 62         | 37            | 670            | 480              | 660                    | 3                     | 97                           | G1         | 25                       | 65,5   | <b>P1V-A360H0006••</b> |

\* maximum admissible speed (idling)

\*\* Max gear box torque for a permanent load

**Note!**  
 •• specify installation position in the order code as in the illustrations below.  
**Example: P1V-A160H0043B3**

**H: Installation positions, worm gear, foot mounting**



**Note:** Oil-bath gearboxes mean that the installation position must be decided in advance. The installation position determines the volume of oil in the gearbox and location of oil filling and drain plugs.

**Self-locking**

Dynamic self-locking means that the force acting on the output shaft of the gear can not turn the gear further when the air motor is stopped. Dynamic self-locking is only possible when the gear ratio is high, and at low speeds. None of our worm drive gears are completely self-locking in dynamic conditions.

Static self-locking means that the force acting on the output shaft of the gear can not begin to turn the shaft.

When loads with considerable momentum are driven, it is necessary to have a braking time sufficient to stop the gearbox from being overloaded. It is extremely important that the maximum permitted torque is not exceeded.

*Tip:* Braking of the air motor can be arranged by either slowly restricting the air supply to the motor until it is completely shut off, or by slowly reducing the supply pressure to zero.

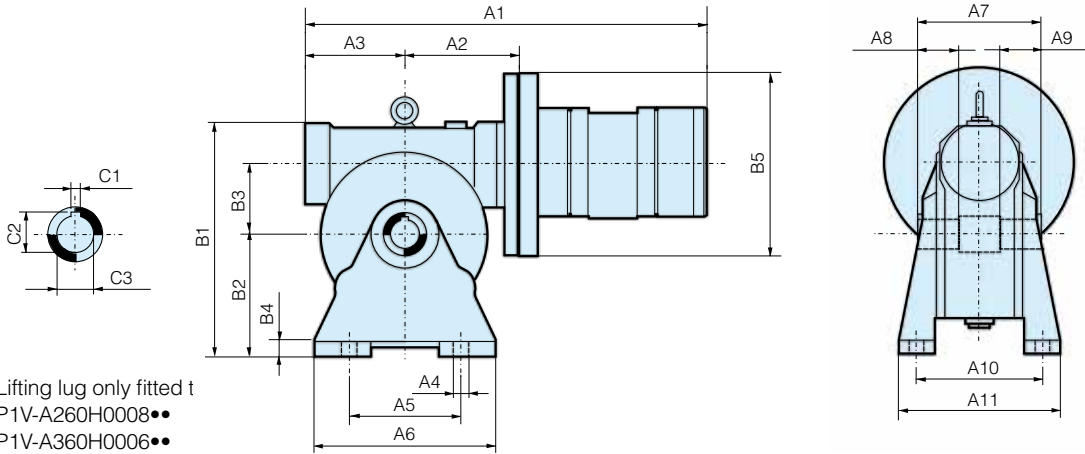
**Types of Self-locking**

1. Static, not self-locking
2. Static, self-locking - quicker return under vibration - not dynamically self-locking
3. Static, self-locking - return only possible under vibration - good dynamic self-locking

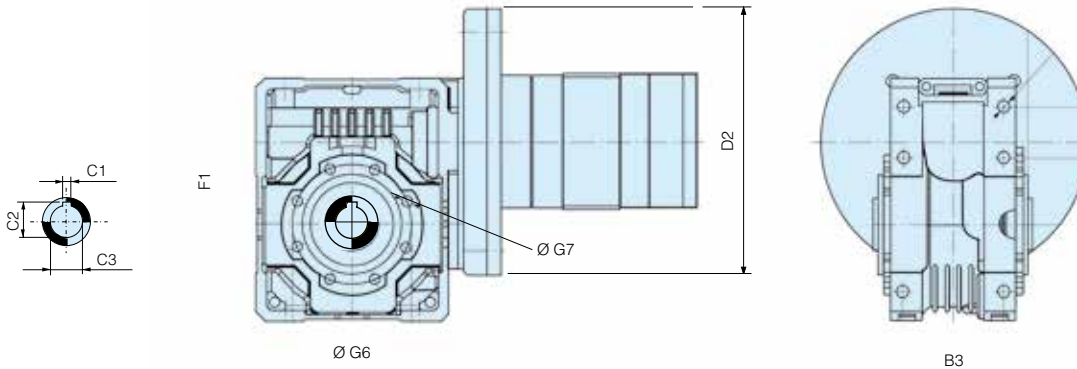
**Important!**  
 Since it is practically impossible to guarantee total self-locking, an external brake must be used to guarantee that vibration can not cause an output shaft to move.

Dimensions (mm)

H: Motor with worm gear, foot mounting



| Order code    | A1    | A2  | A3    | A4   | A5    | A6  | A7  | A8   | A9   | A10   | A11 | B1  | B2  | B3     |
|---------------|-------|-----|-------|------|-------|-----|-----|------|------|-------|-----|-----|-----|--------|
| P1V-A160H0043 | 259,5 | 70  | 63    | 8,5  | 63    | 110 | 82  | 22,5 | 22,5 | 98,5  | 124 | 162 | 82  | 49,50  |
| P1V-A260H0008 | 498,0 | 185 | 154   | 16,0 | 220   | 310 | 165 | 52,5 | 52,5 | 191,0 | 245 | 398 | 195 | 130,00 |
| P1V-A360H0006 | 504,0 | 185 | 154   | 16,0 | 220   | 310 | 165 | 52,5 | 52,5 | 191,0 | 245 | 398 | 195 | 130,00 |
|               | B4    | B5  | C1    | C2   | C3    |     |     |      |      |       |     |     |     |        |
| P1V-A160H0043 | 12    | 160 | 8 H8  | 28,3 | 25 H7 |     |     |      |      |       |     |     |     |        |
| P1V-A260H0008 | 18    | 200 | 14 H8 | 48,8 | 45 H7 |     |     |      |      |       |     |     |     |        |
| P1V-A360H0006 | 18    | 200 | 14 H8 | 48,8 | 45 H7 |     |     |      |      |       |     |     |     |        |



| Order code    | A1    | A2  | A3  | A5    | A6  | B3  | D2  | F1    | F2    | F3    | F4    | F5  | F6   | Ø F7 |
|---------------|-------|-----|-----|-------|-----|-----|-----|-------|-------|-------|-------|-----|------|------|
| P1V-A160H0020 | 294,5 | 95  | 127 | 72,5  | 102 | 120 | 160 | 62,2  | 110,0 | 182,5 | 72,5  | 102 | 37,5 | 9,0  |
| P1V-A160H0010 | 355,0 | 128 | 127 | 100,0 | 144 | 140 | 160 | 86,9  | 145,5 | 245,5 | 100,0 | 144 | 45,5 | 11,5 |
| P1V-A160H0008 | 355,0 | 128 | 127 | 100,0 | 144 | 140 | 160 | 86,9  | 145,5 | 245,5 | 100,0 | 144 | 45,5 | 11,5 |
| P1V-A260H0050 | 333,5 | 102 | 159 | 72,5  | 102 | 120 | 200 | 62,2  | 110,0 | 182,5 | 72,5  | 102 | 37,5 | 9,0  |
| P1V-A260H0022 | 387,0 | 128 | 159 | 100,0 | 144 | 140 | 200 | 86,9  | 145,5 | 245,5 | 100,0 | 144 | 45,5 | 11,5 |
| P1V-A260H0013 | 387,0 | 128 | 159 | 100,0 | 144 | 140 | 200 | 86,9  | 145,5 | 245,5 | 100,0 | 144 | 45,5 | 11,5 |
| P1V-A360H0050 | 334,5 | 102 | 165 | 72,5  | 102 | 120 | 200 | 62,2  | 110,0 | 182,5 | 72,5  | 102 | 37,5 | 9,0  |
| P1V-A360H0022 | 393,0 | 128 | 165 | 100,0 | 144 | 140 | 200 | 86,9  | 145,5 | 245,5 | 100,0 | 144 | 45,5 | 11,5 |
| P1V-A360H0013 | 433,0 | 143 | 165 | 125,0 | 174 | 155 | 200 | 110,1 | 183,0 | 308,0 | 125,0 | 184 | 58,0 | 14,0 |

| Order code    | F8  | G1   | Ø G6 | Ø G7         | C1 (H8) | C2   | C3 (H7) |  |  |  |  |  |  |  |
|---------------|-----|------|------|--------------|---------|------|---------|--|--|--|--|--|--|--|
| P1V-A160H0020 | 76  | 56,0 | 90   | M8 depth 14  | 8       | 28,3 | 25      |  |  |  |  |  |  |  |
| P1V-A160H0010 | 101 | 68,0 | 130  | M10 depth 18 | 10      | 38,3 | 35      |  |  |  |  |  |  |  |
| P1V-A160H0008 | 101 | 68,0 | 130  | M10 depth 18 | 10      | 38,3 | 35      |  |  |  |  |  |  |  |
| P1V-A260H0050 | 76  | 53,0 | 90   | M8 depth 14  | 8       | 28,3 | 25      |  |  |  |  |  |  |  |
| P1V-A260H0022 | 101 | 68,0 | 130  | M10 depth 18 | 10      | 38,3 | 35      |  |  |  |  |  |  |  |
| P1V-A260H0013 | 101 | 68,0 | 130  | M10 depth 18 | 10      | 38,3 | 35      |  |  |  |  |  |  |  |
| P1V-A360H0050 | 76  | 56,0 | 90   | M8 depth 14  | 8       | 28,3 | 25      |  |  |  |  |  |  |  |
| P1V-A360H0022 | 101 | 68,0 | 130  | M10 depth 18 | 10      | 38,3 | 35      |  |  |  |  |  |  |  |
| P1V-A360H0013 | 115 | 76,5 | 135  | M12 depth 19 | 12      | 45,3 | 42      |  |  |  |  |  |  |  |

••: see previous page for installation positions

**Radial piston air motors P1V-P**

P1V-P is a range of air motors using the radial piston principle. Radial piston motors can operate at a low speed while delivering high torque. The low speed keeps the noise level to a minimum, making this type of motor suitable for all applications that are subject to stringent noise level requirements.



- Three basic motors with 73.5, 125 and 228 watt power at 5 bar supply pressure
- Various gearboxes are available for these motors, to provide the right speed and torque for every application
- Equipped with a spring-loaded braking unit
- The medium used by the P1V-P is oil mist. This makes the motors unique in that they require no servicing at all.

**Operating information**

Working pressure: Max 6 bar  
 Temperature range: -10°C to +70°C  
 Medium: Oil mist, dry compressed air purity class 3.4.4 according to ISO8573-1  
 Gearboxes: Grease lubricated

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

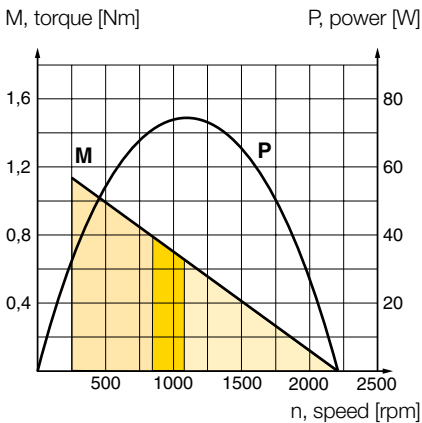
**Order key**

**P1V-P 012 F B 0060**

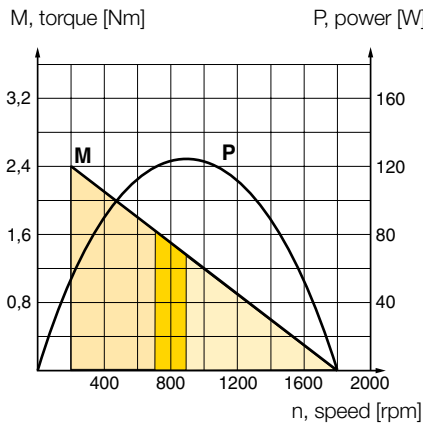
| Motor size |       | Function |                | Function |          | Free speed/min |      |
|------------|-------|----------|----------------|----------|----------|----------------|------|
| 007        | 74 W  | A        | Basic motor    | 0        | Standard | 2200           | 2200 |
| 012        | 125 W | B        | Flange version | B        | Brake    | -              | -    |
| 023        | 228 W | F        | Foot version   |          |          | 0007           | 7    |

| Air motor range |                     |
|-----------------|---------------------|
| P1V-P           | Radial piston motor |

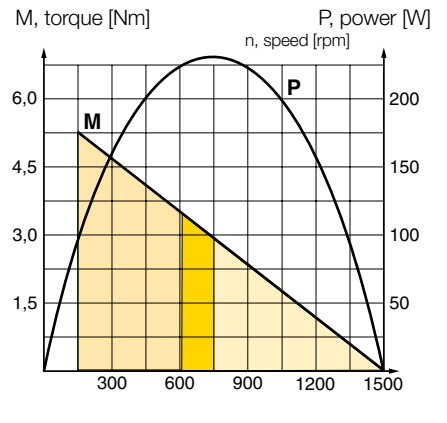
**P1V-P007\*\*2200**



**P1V-P012\*\*1800**

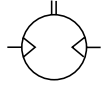


**P1V-P023\*\*1500**



Possible working range of motor.
  Optimum working range of motor.
  Working range with shorter service life.

Note! All technical data is based on a working pressure of 5 bar.



### Data for reversible basic motor

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,0735          | 1100                      | 0,637                     | 0,686                  | 1,18               | -                  | 3,34                                | G1/4  | 6                 | 1,45         | <b>P1V-P007A02200</b> |
| 0,125           | 900                       | 1,37                      | 1,96                   | 2,94               | -                  | 4,34                                | G1/4  | 10                | 2,5          | <b>P1V-P012A01800</b> |
| 0,228           | 750                       | 2,94                      | 4,71                   | 5,88               | -                  | 6,67                                | G3/8  | 10                | 4,6          | <b>P1V-P023A01500</b> |

### Data for reversible basic motor with flange

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,0735          | 1100                      | 0,637                     | 0,686                  | 1,18               | -                  | 3,34                                | G1/4  | 6                 | 1,45         | <b>P1V-P007B02200</b> |
| 0,125           | 900                       | 1,37                      | 1,96                   | 2,94               | -                  | 4,34                                | G1/4  | 10                | 2,5          | <b>P1V-P012B01800</b> |
| 0,228           | 750                       | 2,94                      | 4,71                   | 5,88               | -                  | 6,67                                | G3/8  | 10                | 4,6          | <b>P1V-P023B01500</b> |

### Data for reversible basic motor with foot

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,0735          | 1100                      | 0,637                     | 0,686                  | 1,18               | -                  | 3,34                                | G1/4  | 6                 | 1,45         | <b>P1V-P007F02200</b> |
| 0,125           | 900                       | 1,37                      | 1,96                   | 2,94               | -                  | 4,34                                | G1/4  | 10                | 2,5          | <b>P1V-P012F01800</b> |
| 0,228           | 750                       | 2,94                      | 4,71                   | 5,88               | -                  | 6,67                                | G3/8  | 10                | 4,6          | <b>P1V-P023F01500</b> |

Note! All technical data is based on a working pressure of 5 bar.



**Data for reversible basic motor with brake**

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,125           | 900                       | 1,37                      | 1,96                   | 2,94               | 3,24               | 4,34                                | G1/4  | 10                | 4,4          | <b>P1V-P012AB1800</b> |
| 0,228           | 750                       | 2,94                      | 4,71                   | 5,88               | 6,47               | 6,67                                | G3/8  | 10                | 7,8          | <b>P1V-P023AB1500</b> |

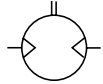
**Data for reversible basic motor with brake and flange**

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,125           | 900                       | 1,37                      | 1,96                   | 2,94               | 3,24               | 4,34                                | G1/4  | 10                | 4,4          | <b>P1V-P012BB1800</b> |
| 0,228           | 750                       | 2,94                      | 4,71                   | 5,88               | 6,47               | 6,67                                | G3/8  | 10                | 7,8          | <b>P1V-P023BB1500</b> |

**Data for reversible basic motor with brake and foot**

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,125           | 900                       | 1,37                      | 1,96                   | 2,94               | 3,24               | 4,34                                | G1/4  | 10                | 5,2          | <b>P1V-P012FB1800</b> |
| 0,228           | 750                       | 2,94                      | 4,71                   | 5,88               | 6,47               | 6,67                                | G3/8  | 10                | 9,4          | <b>P1V-P023FB1500</b> |

Note! All technical data is based  
on a working pressure of 5 bar.

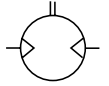


### Data for reversible motor with gearbox and flange

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,0662          | 220                       | 2,84                      | 2,94                   | 4,90               | -                  | 3,34                                | G1/4  | 6                 | 4,0          | <b>P1V-P007B00440</b> |
| 0,0662          | 110                       | 5,69                      | 5,88                   | 9,81               | -                  | 3,34                                | G1/4  | 6                 | 4,0          | <b>P1V-P007B00220</b> |
| 0,0662          | 73,3                      | 8,53                      | 8,83                   | 15,7               | -                  | 3,34                                | G1/4  | 6                 | 4,0          | <b>P1V-P007B00147</b> |
| 0,0662          | 55                        | 11,5                      | 11,8                   | 20,6               | -                  | 3,34                                | G1/4  | 6                 | 4,0          | <b>P1V-P007B00110</b> |
| 0,110           | 180                       | 5,88                      | 8,83                   | 12,7               | -                  | 4,34                                | G1/4  | 10                | 6,7          | <b>P1V-P012B00360</b> |
| 0,110           | 90                        | 11,8                      | 17,7                   | 26,5               | -                  | 4,34                                | G1/4  | 10                | 6,7          | <b>P1V-P012B00180</b> |
| 0,110           | 60                        | 17,7                      | 26,5                   | 39,2               | -                  | 4,34                                | G1/4  | 10                | 6,7          | <b>P1V-P012B00120</b> |
| 0,110           | 45                        | 23,5                      | 35,3                   | 53,0               | -                  | 4,34                                | G1/4  | 10                | 6,7          | <b>P1V-P012B00090</b> |
| 0,110           | 30                        | 35,3                      | 53,0                   | 78,5               | -                  | 4,34                                | G1/4  | 10                | 8,7          | <b>P1V-P012B00060</b> |
| 0,110           | 22,5                      | 47,1                      | 70,6                   | 106                | -                  | 4,34                                | G1/4  | 10                | 8,7          | <b>P1V-P012B00050</b> |
| 0,110           | 18                        | 58,8                      | 79,4                   | 132                | -                  | 4,34                                | G1/4  | 10                | 8,7          | <b>P1V-P012B00040</b> |
| 0,110           | 15                        | 70,6                      | 106                    | 157                | -                  | 4,34                                | G1/4  | 10                | 8,7          | <b>P1V-P012B00030</b> |
| 0,110           | 11,2                      | 93,2                      | 139                    | 206                | -                  | 4,34                                | G1/4  | 10                | 8,7          | <b>P1V-P012B00022</b> |
| 0,103           | 9                         | 118                       | 175                    | 250                | -                  | 4,34                                | G1/4  | 10                | 11,7         | <b>P1V-P012B00018</b> |
| 0,103           | 7,5                       | 137                       | 206                    | 300                | -                  | 4,34                                | G1/4  | 10                | 11,7         | <b>P1V-P012B00015</b> |
| 0,103           | 5,6                       | 176                       | 261                    | 373                | -                  | 4,34                                | G1/4  | 10                | 11,7         | <b>P1V-P012B00012</b> |
| 0,103           | 4,5                       | 233                       | 350                    | 500                | -                  | 4,34                                | G1/4  | 10                | 11,7         | <b>P1V-P012B00009</b> |
| 0,199           | 150                       | 12,7                      | 20,6                   | 26,5               | -                  | 6,67                                | G3/8  | 10                | 10,5         | <b>P1V-P023B00300</b> |
| 0,199           | 75                        | 26,5                      | 41,2                   | 53,0               | -                  | 6,67                                | G3/8  | 10                | 10,5         | <b>P1V-P023B00150</b> |
| 0,199           | 50                        | 39,2                      | 61,8                   | 79,4               | -                  | 6,67                                | G3/8  | 10                | 10,5         | <b>P1V-P023B00100</b> |
| 0,199           | 37,5                      | 53,0                      | 82,4                   | 106                | -                  | 6,67                                | G3/8  | 10                | 10,5         | <b>P1V-P023B00075</b> |
| 0,199           | 25                        | 78,5                      | 124                    | 159                | -                  | 6,67                                | G3/8  | 10                | 14,0         | <b>P1V-P023B00050</b> |
| 0,199           | 18,7                      | 106                       | 165                    | 212                | -                  | 6,67                                | G3/8  | 10                | 14,0         | <b>P1V-P023B00038</b> |
| 0,199           | 15                        | 132                       | 206                    | 265                | -                  | 6,67                                | G3/8  | 10                | 14,0         | <b>P1V-P023B00030</b> |
| 0,199           | 12,5                      | 157                       | 247                    | 318                | -                  | 6,67                                | G3/8  | 10                | 14,0         | <b>P1V-P023B00025</b> |
| 0,199           | 9,3                       | 203                       | 314                    | 402                | -                  | 6,67                                | G3/8  | 10                | 14,0         | <b>P1V-P023B00018</b> |
| 0,191           | 7,5                       | 250                       | 392                    | 490                | -                  | 6,67                                | G3/8  | 10                | 20,5         | <b>P1V-P023B00015</b> |
| 0,191           | 6,2                       | 300                       | 471                    | 598                | -                  | 6,67                                | G3/8  | 10                | 20,5         | <b>P1V-P023B00012</b> |
| 0,191           | 4,6                       | 396                       | 628                    | 785                | -                  | 6,67                                | G3/8  | 10                | 20,5         | <b>P1V-P023B00009</b> |
| 0,191           | 3,7                       | 500                       | 785                    | 981                | -                  | 6,67                                | G3/8  | 10                | 20,5         | <b>P1V-P023B00007</b> |



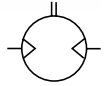
Note! All technical data is based  
on a working pressure of 5 bar.



### Data for reversible motor with gearbox and foot

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,0662          | 220                       | 2,84                      | 2,94                   | 4,90               | -                  | 3,34                                | G1/4  | 6                 | 3,5          | <b>P1V-P007F00440</b> |
| 0,0662          | 110                       | 5,69                      | 5,88                   | 9,81               | -                  | 3,34                                | G1/4  | 6                 | 4,0          | <b>P1V-P007F00220</b> |
| 0,0662          | 73,3                      | 8,53                      | 8,83                   | 15,7               | -                  | 3,34                                | G1/4  | 6                 | 3,5          | <b>P1V-P007F00147</b> |
| 0,0662          | 55                        | 11,5                      | 11,8                   | 20,6               | -                  | 3,34                                | G1/4  | 6                 | 3,5          | <b>P1V-P007F00110</b> |
| 0,110           | 180                       | 5,88                      | 8,83                   | 12,7               | -                  | 4,34                                | G1/4  | 10                | 6,2          | <b>P1V-P012F00360</b> |
| 0,110           | 90                        | 11,8                      | 17,7                   | 26,5               | -                  | 4,34                                | G1/4  | 10                | 6,2          | <b>P1V-P012F00180</b> |
| 0,110           | 60                        | 17,7                      | 26,5                   | 39,2               | -                  | 4,34                                | G1/4  | 10                | 6,2          | <b>P1V-P012F00120</b> |
| 0,110           | 45                        | 23,5                      | 35,3                   | 53,0               | -                  | 4,34                                | G1/4  | 10                | 6,2          | <b>P1V-P012F00090</b> |
| 0,110           | 30                        | 35,3                      | 53,0                   | 78,5               | -                  | 4,34                                | G1/4  | 10                | 8,2          | <b>P1V-P012F00060</b> |
| 0,110           | 22,5                      | 47,1                      | 70,6                   | 106                | -                  | 4,34                                | G1/4  | 10                | 8,2          | <b>P1V-P012F00050</b> |
| 0,110           | 18                        | 58,8                      | 79,4                   | 132                | -                  | 4,34                                | G1/4  | 10                | 8,2          | <b>P1V-P012F00040</b> |
| 0,110           | 15                        | 70,6                      | 106                    | 157                | -                  | 4,34                                | G1/4  | 10                | 8,2          | <b>P1V-P012F00030</b> |
| 0,110           | 11,2                      | 93,2                      | 139                    | 206                | -                  | 4,34                                | G1/4  | 10                | 8,2          | <b>P1V-P012F00022</b> |
| 0,103           | 9                         | 118                       | 175                    | 250                | -                  | 4,34                                | G1/4  | 10                | 11,2         | <b>P1V-P012F00018</b> |
| 0,103           | 7,5                       | 137                       | 206                    | 300                | -                  | 4,34                                | G1/4  | 10                | 11,2         | <b>P1V-P012F00015</b> |
| 0,103           | 5,6                       | 176                       | 261                    | 373                | -                  | 4,34                                | G1/4  | 10                | 11,2         | <b>P1V-P012F00012</b> |
| 0,103           | 4,5                       | 233                       | 350                    | 500                | -                  | 4,34                                | G1/4  | 10                | 11,2         | <b>P1V-P012F00009</b> |
| 0,199           | 150                       | 12,7                      | 20,6                   | 26,5               | -                  | 6,67                                | G3/8  | 10                | 10,0         | <b>P1V-P023F00300</b> |
| 0,199           | 75                        | 26,5                      | 41,2                   | 53,0               | -                  | 6,67                                | G3/8  | 10                | 10,0         | <b>P1V-P023F00150</b> |
| 0,199           | 50                        | 39,2                      | 61,8                   | 79,4               | -                  | 6,67                                | G3/8  | 10                | 10,0         | <b>P1V-P023F00100</b> |
| 0,199           | 37,5                      | 53,0                      | 82,4                   | 106                | -                  | 6,67                                | G3/8  | 10                | 10,0         | <b>P1V-P023F00075</b> |
| 0,199           | 25                        | 78,5                      | 124                    | 159                | -                  | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023F00050</b> |
| 0,199           | 18,7                      | 106                       | 165                    | 212                | -                  | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023F00038</b> |
| 0,199           | 15                        | 132                       | 206                    | 265                | -                  | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023F00030</b> |
| 0,199           | 12,5                      | 157                       | 247                    | 318                | -                  | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023F00025</b> |
| 0,199           | 9,3                       | 203                       | 314                    | 402                | -                  | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023F00018</b> |
| 0,191           | 7,5                       | 250                       | 392                    | 490                | -                  | 6,67                                | G3/8  | 10                | 20,0         | <b>P1V-P023F00015</b> |
| 0,191           | 6,2                       | 300                       | 471                    | 598                | -                  | 6,67                                | G3/8  | 10                | 20,0         | <b>P1V-P023F00012</b> |
| 0,191           | 4,6                       | 396                       | 628                    | 785                | -                  | 6,67                                | G3/8  | 10                | 20,0         | <b>P1V-P023F00009</b> |
| 0,191           | 3,7                       | 500                       | 785                    | 981                | -                  | 6,67                                | G3/8  | 10                | 20,0         | <b>P1V-P023F00007</b> |

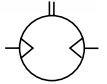
Note! All technical data is based  
on a working pressure of 5 bar.



### Data for reversible motor with gearbox, brake and flange

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,110           | 180                       | 5,88                      | 8,83                   | 12,7               | 14,7               | 4,34                                | G1/4  | 10                | 8,0          | <b>P1V-P012BB0360</b> |
| 0,110           | 90                        | 11,8                      | 17,7                   | 26,5               | 29,4               | 4,34                                | G1/4  | 10                | 8,0          | <b>P1V-P012BB0180</b> |
| 0,110           | 60                        | 17,7                      | 26,5                   | 39,2               | 44,1               | 4,34                                | G1/4  | 10                | 8,0          | <b>P1V-P012BB0120</b> |
| 0,110           | 45                        | 23,5                      | 35,3                   | 53,0               | 58,8               | 4,34                                | G1/4  | 10                | 8,0          | <b>P1V-P012BB0090</b> |
| 0,110           | 30                        | 35,3                      | 53,0                   | 78,5               | 88,3               | 4,34                                | G1/4  | 10                | 10,0         | <b>P1V-P012BB0060</b> |
| 0,110           | 22,5                      | 47,1                      | 70,6                   | 106                | 118                | 4,34                                | G1/4  | 10                | 10,0         | <b>P1V-P012BB0050</b> |
| 0,110           | 18                        | 58,8                      | 79,4                   | 132                | 147                | 4,34                                | G1/4  | 10                | 10,0         | <b>P1V-P012BB0040</b> |
| 0,110           | 15                        | 70,6                      | 106                    | 157                | 177                | 4,34                                | G1/4  | 10                | 10,0         | <b>P1V-P012BB0030</b> |
| 0,110           | 11,2                      | 93,2                      | 139                    | 206                | 235                | 4,34                                | G1/4  | 10                | 10,0         | <b>P1V-P012BB0022</b> |
| 0,103           | 9                         | 118                       | 175                    | 250                | 283                | 4,34                                | G1/4  | 10                | 11,7         | <b>P1V-P012BB0018</b> |
| 0,103           | 7,5                       | 137                       | 206                    | 300                | 339                | 4,34                                | G1/4  | 10                | 13,0         | <b>P1V-P012BB0015</b> |
| 0,103           | 5,6                       | 176                       | 261                    | 373                | 453                | 4,34                                | G1/4  | 10                | 13,0         | <b>P1V-P012BB0012</b> |
| 0,103           | 4,5                       | 233                       | 350                    | 500                | 567                | 4,34                                | G1/4  | 10                | 13,0         | <b>P1V-P012BB0009</b> |
| 0,199           | 150                       | 12,7                      | 20,6                   | 26,5               | 29,4               | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023BB0300</b> |
| 0,199           | 75                        | 26,5                      | 41,2                   | 53,0               | 58,8               | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023BB0150</b> |
| 0,199           | 50                        | 39,2                      | 61,8                   | 79,4               | 88,3               | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023BB0100</b> |
| 0,199           | 37,5                      | 53,0                      | 82,4                   | 106                | 118                | 6,67                                | G3/8  | 10                | 13,5         | <b>P1V-P023BB0075</b> |
| 0,199           | 25                        | 78,5                      | 124                    | 159                | 177                | 6,67                                | G3/8  | 10                | 17,0         | <b>P1V-P023BB0050</b> |
| 0,199           | 18,7                      | 106                       | 165                    | 212                | 235                | 6,67                                | G3/8  | 10                | 17,0         | <b>P1V-P023BB0038</b> |
| 0,199           | 15                        | 132                       | 206                    | 265                | 294                | 6,67                                | G3/8  | 10                | 17,0         | <b>P1V-P023BB0030</b> |
| 0,199           | 12,5                      | 157                       | 247                    | 318                | 353                | 6,67                                | G3/8  | 10                | 17,0         | <b>P1V-P023BB0025</b> |
| 0,199           | 9,3                       | 203                       | 314                    | 402                | 471                | 6,67                                | G3/8  | 10                | 17,0         | <b>P1V-P023BB0018</b> |
| 0,191           | 7,5                       | 250                       | 392                    | 490                | 549                | 6,67                                | G3/8  | 10                | 24,5         | <b>P1V-P023BB0015</b> |
| 0,191           | 6,2                       | 300                       | 471                    | 598                | 657                | 6,67                                | G3/8  | 10                | 24,5         | <b>P1V-P023BB0012</b> |
| 0,191           | 4,6                       | 396                       | 628                    | 785                | 873                | 6,67                                | G3/8  | 10                | 24,5         | <b>P1V-P023BB0009</b> |
| 0,191           | 3,7                       | 500                       | 785                    | 981                | 1100               | 6,67                                | G3/8  | 10                | 24,5         | <b>P1V-P023BB0007</b> |

Note! All technical data is based  
on a working pressure of 5 bar.



### Data for reversible motor with gearbox, brake and foot

| Max power<br>kW | Speed at max power<br>rpm | Torque at max power<br>Nm | Min start torque<br>Nm | Stall torque<br>Nm | Brake torque<br>Nm | Air consumption at max power<br>l/s | Conn. | Min pipe ID<br>mm | Weight<br>Kg | Order code            |
|-----------------|---------------------------|---------------------------|------------------------|--------------------|--------------------|-------------------------------------|-------|-------------------|--------------|-----------------------|
| 0,110           | 180                       | 5,88                      | 8,83                   | 12,7               | 14,7               | 4,34                                | G1/4  | 10                | 8,5          | <b>P1V-P012FB0360</b> |
| 0,110           | 90                        | 11,8                      | 17,7                   | 26,5               | 29,4               | 4,34                                | G1/4  | 10                | 8,5          | <b>P1V-P012FB0180</b> |
| 0,110           | 60                        | 17,7                      | 26,5                   | 39,2               | 44,1               | 4,34                                | G1/4  | 10                | 8,5          | <b>P1V-P012FB0120</b> |
| 0,110           | 45                        | 23,5                      | 35,3                   | 53,0               | 58,8               | 4,34                                | G1/4  | 10                | 8,5          | <b>P1V-P012FB0090</b> |
| 0,110           | 30                        | 35,3                      | 53,0                   | 78,5               | 88,3               | 4,34                                | G1/4  | 10                | 10,5         | <b>P1V-P012FB0060</b> |
| 0,110           | 22,5                      | 47,1                      | 70,6                   | 106                | 118                | 4,34                                | G1/4  | 10                | 10,5         | <b>P1V-P012FB0050</b> |
| 0,110           | 18                        | 58,8                      | 79,4                   | 132                | 147                | 4,34                                | G1/4  | 10                | 10,5         | <b>P1V-P012FB0040</b> |
| 0,110           | 15                        | 70,6                      | 106                    | 157                | 177                | 4,34                                | G1/4  | 10                | 10,5         | <b>P1V-P012FB0030</b> |
| 0,110           | 11,2                      | 93,2                      | 139                    | 206                | 235                | 4,34                                | G1/4  | 10                | 10,5         | <b>P1V-P012FB0022</b> |
| 0,103           | 9                         | 118                       | 175                    | 250                | 283                | 4,34                                | G1/4  | 10                | 13,5         | <b>P1V-P012FB0018</b> |
| 0,103           | 7,5                       | 137                       | 206                    | 300                | 339                | 4,34                                | G1/4  | 10                | 13,5         | <b>P1V-P012FB0015</b> |
| 0,103           | 5,6                       | 176                       | 261                    | 373                | 453                | 4,34                                | G1/4  | 10                | 13,5         | <b>P1V-P012FB0012</b> |
| 0,103           | 4,5                       | 233                       | 350                    | 500                | 567                | 4,34                                | G1/4  | 10                | 13,5         | <b>P1V-P012FB0009</b> |
| 0,199           | 150                       | 12,7                      | 20,6                   | 26,5               | 29,4               | 6,67                                | G3/8  | 10                | 13,0         | <b>P1V-P023FB0300</b> |
| 0,199           | 75                        | 26,5                      | 41,2                   | 53,0               | 58,8               | 6,67                                | G3/8  | 10                | 13,0         | <b>P1V-P023FB0150</b> |
| 0,199           | 50                        | 39,2                      | 61,8                   | 79,4               | 88,3               | 6,67                                | G3/8  | 10                | 13,0         | <b>P1V-P023FB0100</b> |
| 0,199           | 37,5                      | 53,0                      | 82,4                   | 106                | 118                | 6,67                                | G3/8  | 10                | 13,0         | <b>P1V-P023FB0075</b> |
| 0,199           | 25                        | 78,5                      | 124                    | 159                | 177                | 6,67                                | G3/8  | 10                | 16,5         | <b>P1V-P023FB0050</b> |
| 0,199           | 18,7                      | 106                       | 165                    | 212                | 235                | 6,67                                | G3/8  | 10                | 16,5         | <b>P1V-P023FB0038</b> |
| 0,199           | 15                        | 132                       | 206                    | 265                | 294                | 6,67                                | G3/8  | 10                | 16,5         | <b>P1V-P023FB0030</b> |
| 0,199           | 12,5                      | 157                       | 247                    | 318                | 353                | 6,67                                | G3/8  | 10                | 16,5         | <b>P1V-P023FB0025</b> |
| 0,199           | 9,3                       | 203                       | 314                    | 402                | 471                | 6,67                                | G3/8  | 10                | 16,5         | <b>P1V-P023FB0018</b> |
| 0,191           | 7,5                       | 250                       | 392                    | 490                | 549                | 6,67                                | G3/8  | 10                | 24,0         | <b>P1V-P023FB0015</b> |
| 0,191           | 6,2                       | 300                       | 471                    | 598                | 657                | 6,67                                | G3/8  | 10                | 24,0         | <b>P1V-P023FB0012</b> |
| 0,191           | 4,6                       | 396                       | 628                    | 785                | 873                | 6,67                                | G3/8  | 10                | 24,0         | <b>P1V-P023FB0009</b> |
| 0,191           | 3,7                       | 500                       | 785                    | 981                | 1100               | 6,67                                | G3/8  | 10                | 24,0         | <b>P1V-P023FB0007</b> |





# Rotary Actuators

Rotary actuators are an efficient and easy way to generate torque from compressed air, in a very compact size. They are ideal for the compact applications in a wide range of industries such as, packaging, process, electronics etc.



- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)
- Range of mounting option, hydro-cushioning and position sensors

### Operating information

Working pressure: Max 10 bar  
Permissible fluid: Filtered (<math><5\mu</math>) with or without lubrication

Standard working temperature:  
PRN/PRO 3 to 20 -5°C to +80°C  
Other models -5°C to +60°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### PRN miniature (fixed oscillating angle)

| Single vane        | Torque at 6 bar (N.m) | Oscillating reference point |     | Order code           | Oscillating angle     |                       |
|--------------------|-----------------------|-----------------------------|-----|----------------------|-----------------------|-----------------------|
|                    |                       | 45°                         | 90° |                      | 180°                  | 270°                  |
| PRNA1S             | 0,16                  | X                           |     | <b>PRNA1S-90-90</b>  | <b>PRNA1S-180-90</b>  |                       |
| PRNA3S             | 0,38                  | X                           |     | <b>PRNA3S-90-90</b>  | <b>PRNA3S-180-90</b>  |                       |
| PRNA10S            | 1,20                  | X                           |     | <b>PRNA10S-90-90</b> | <b>PRNA10S-180-90</b> |                       |
| PRNA20S            | 2,10                  | X                           |     | <b>PRNA20S-90-90</b> | <b>PRNA20S-180-90</b> |                       |
| PRN30SE            | 4,10                  | X                           |     | <b>PRN30SE-90-45</b> | <b>PRN30SE-180-45</b> | <b>PRN30SE-270-45</b> |
| <b>Double vane</b> |                       |                             |     |                      |                       |                       |
| PRNA3D             | 0,65                  |                             |     | <b>PRNA3D-90-45</b>  |                       |                       |
| PRNA10D            | 2,54                  |                             |     | <b>PRNA10D-90-45</b> |                       |                       |
| PRNA20D            | 4,70                  |                             |     | <b>PRNA20D-90-45</b> |                       |                       |
| PRN30DE            | 9,50                  |                             |     | <b>PRN30DE-90-45</b> |                       |                       |

### PRO (adjustable oscillating angle)

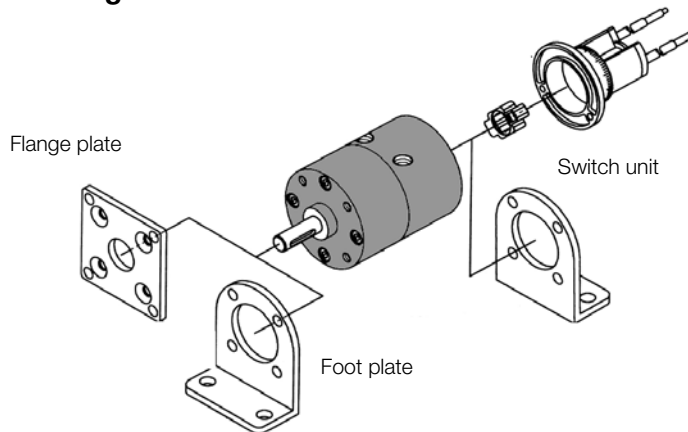
| Single vane | Torque at 6bar (N.m) | Oscillating angle | Order code          | Torque at 6bar (N.m) | Oscillating angle | Order code          |
|-------------|----------------------|-------------------|---------------------|----------------------|-------------------|---------------------|
|             |                      |                   |                     |                      |                   |                     |
|             | 0,38                 | 30 to 180°        | <b>PROA3S-0-90</b>  | 0,65                 | 30 to 90°         | <b>PROA3D-0-45</b>  |
|             | 1,20                 | 30 to 180°        | <b>PROA10S-0-90</b> | 2,54                 | 30 to 90°         | <b>PROA10D-0-45</b> |
|             | 2,10                 | 30 to 180°        | <b>PROA20S-0-90</b> | 4,70                 | 30 to 90°         | <b>PROA20D-0-45</b> |
|             | 4,10                 | 30 to 270°        | <b>PRO30SE-0-45</b> | 9,50                 | 30 to 90°         | <b>PRO30DE-0-45</b> |

### PRN high torque range (fixed oscillating angle)

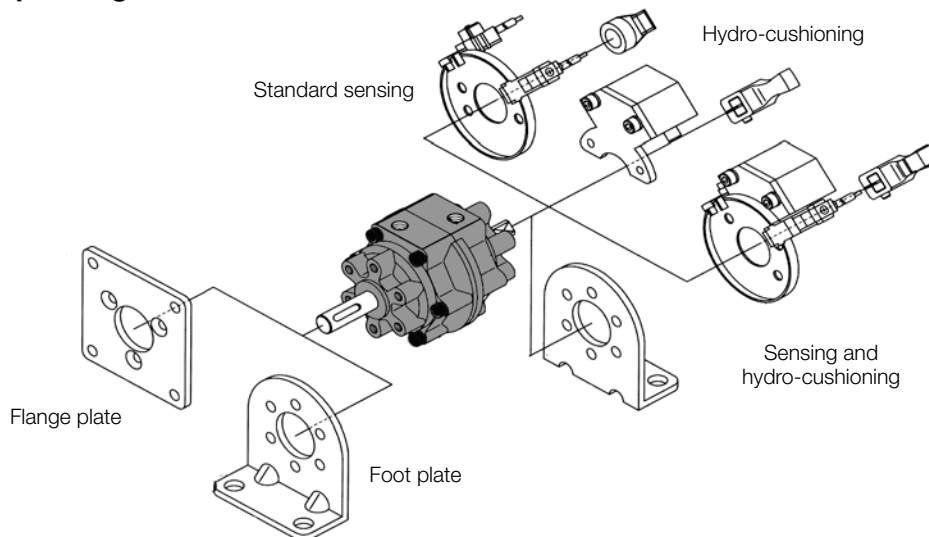
| Single vane                                | Torque at 6 bar (N.m) | Oscillating angle | Order code  |
|--|-----------------------|-------------------|---|
|  |                       |                   |   |
| PRN50SE                                    | 5,9                   |                   | <b>PRN50SE-90-45</b> <b>PRN50SE-180-45</b> <b>PRN50SE-270-45</b>    |
| PRN150SE                                   | 18,0                  |                   | <b>PRN150SE-90-45</b> <b>PRN150SE-180-45</b> <b>PRN150SE-270-45</b> |
| PRN300SE                                   | 34,5                  |                   | <b>PRN300SE-90-45</b> <b>PRN300SE-180-45</b> <b>PRN300SE-270-45</b> |
| PRN800SE                                   | 123,0                 |                   | <b>PRN800SE-90-45</b> <b>PRN800SE-180-45</b> <b>PRN800SE-270-45</b> |
| <b>Double vane (oscillating angle 45°)</b> |                       |                   |   |
| PRN50DE                                    | 12,8                  |                   | <b>PRN50DE-90-45</b>  |
| PRN150DE                                   | 41,5                  |                   | <b>PRN150DE-90-45</b>   |
| PRN300DE                                   | 83,0                  |                   | <b>PRN300DE-90-45</b>   |
| PRN800DE                                   | 247,0                 |                   | <b>PRN800DE-90-45</b>   |

**Design Variants**

**PRO and miniature PRN ranges**



**PRN high torque range**



**Hydro-cushion for PRN050 to PRN800 rotary actuators**

| Rotary actuator | Hydro-cushion | Claw for hydro-cushion - Oscillating angle |                        |                        |
|-----------------|---------------|--|------------------------|------------------------|
|                 |               | 90°  | 180°                   | 270°                   |
| PRN50S          | <b>CRN50</b>  | <b>CRN50-90-45-T</b>                       | <b>CRN50-180-45-T</b>  | <b>CRN50-270-45-T</b>  |
| PRN150S         | <b>CRN150</b> | <b>CRN150-90-45-T</b>                      | <b>CRN150-180-45-T</b> | <b>CRN150-270-45-T</b> |
| PRN300S         | <b>CRN300</b> | <b>CRN300-90-45-T</b>                      | <b>CRN300-180-45-T</b> | <b>CRN300-270-45-T</b> |
| PRN50D          | <b>CRN50</b>  | <b>CRN50-90-45-T</b>                       |                        |                        |
| PRN150D         | <b>CRN150</b> | <b>CRN150-90-45-T</b>                      |                        |                        |
| PRN300D         | <b>CRN300</b> | <b>CRN300-90-45-T</b>                      |                        |                        |

Vane actuators provide the maximum amount of output torque from the smallest possible envelope size. They convert pneumatic pressure into rotary motion for a wide variety of industrial applications.

Two basic styles are available. Single vane models with a maximum rotation of 280°, while the double vane units produce twice the torque output from identical envelope dimensions and have a maximum rotation of 100°.

- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.



### Operating information

| Type   | Double acting actuation      |  |
|--|------------------------------|--|
| Standard rotation (tolerance $\pm 1^\circ$ ) | Single vane                  | 0 to 275°, size 10 to 11<br>0 to 280°, size 22 to 23 |
|  | Double vane                  | 0 to 95°, size 10 to 11<br>0 to 100°, size 22 to 23  |
| Temperature                                  | -10°C to +80°C               |  |
| Air supply                                   | Lubricated or non-lubricated |  |
| Pressure range                               | 2 to 10 bar max              |  |

### Basic Unit

| Size | Max.rotation | Type   | Shaft           | Order code.           |
|------|--------------|--------|-----------------|-----------------------|
| 10   | 275°         | Single | Not through rod | <b>6V5100010F-275</b> |
|      | 95°          | Double |                 | <b>6V5100010F-095</b> |
| 11   | 275°         | Single | Not through rod | <b>6V5200010F-275</b> |
|      | 95°          | Double |                 | <b>6V5200010F-095</b> |
| 22   | 280°         | Single | Through rod     | <b>6V1300030F-280</b> |
|      | 100°         | Double |                 | <b>6V1300030F-100</b> |
| 33   | 280°         | Single | Through rod     | <b>6V2400030F-280</b> |
|      | 100°         | Double |                 | <b>6V2400030F-100</b> |

### Angle adjustment and sensor kits

| Size | Options                               | Order code.    |
|------|---------------------------------------|----------------|
| 22   | Angle adjustment kit                  | <b>6V03570</b> |
|      | Angle adjustment kit with sensors PNP | <b>6V03575</b> |
|      | Angle adjustment kit with sensors NPN | <b>6V03576</b> |
| 33   | Angle adjustment Kit                  | <b>6V04570</b> |
|      | Angle adjustment kit with sensors PNP | <b>6V04575</b> |
|      | Angle adjustment kit with sensors NPN | <b>6V04576</b> |

### Complete with angle adjustment and sensors

| Size | Max.rotation | Type   | Shaft                         | Order code.           |
|------|--------------|--------|-------------------------------|-----------------------|
| 22   | 220°         | Single | Angle adjustment kit          | <b>6V1357630F-220</b> |
|      | 100°         | Double |                               | <b>6V1357730F-100</b> |
|      | 220°         | Single | As above + PNP Sensors + plug | <b>6V1357635F-220</b> |
|      | 100°         | Double |                               | <b>6V1357735F-100</b> |
|      | 220°         | Single | As above + NPN Sensors + plug | <b>6V1357636F-220</b> |
|      | 100°         | Double |                               | <b>6V1357736F-100</b> |
| 33   | 220°         | Single | Angle adjustment kit          | <b>6V2457630F-220</b> |
|      | 100°         | Double |                               | <b>6V2457730F-100</b> |
|      | 220°         | Single | As above + PNP Sensors + plug | <b>6V2457635F-220</b> |
|      | 100°         | Double |                               | <b>6V2457735F-100</b> |
|      | 220°         | Single | As above + NPN Sensors + plug | <b>6V2457636F-220</b> |
|      | 100°         | Double |                               | <b>6V2457736F-100</b> |



The RA is a double-acting rotary actuator of very compact design. It has a high torque and small installation dimensions.

The actuator has double pistons, which transmits the turning moment to the output shaft. The toothed piston rods act on the output shaft in a rack-and-pinion type arrangement. Each piston and toothed rod is of integral construction.

The rack-and-pinion type arrangement gives an even turning moment throughout the rotation movement.



- 5 unit sizes
- Torque from 20 to 200 Nm
- Turning angles of 90° or 180°
- Keyway output shaft
- Direct Namur valve connection

### Operating information

|                      |                              |
|----------------------|------------------------------|
| Working medium:      | dry, filtered compressed air |
| Working pressure:    | Max, 10 bar                  |
| Working temperature: | -20°C to +80°C               |

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it has to be continued.

### Ordering information for RA

| Angle | Order code      |
|-------|-----------------|
| 90°   | <b>RA2-90</b>   |
| 180°  | <b>RA2-180</b>  |
| 90°   | <b>RA4-90</b>   |
| 180°  | <b>RA4-180</b>  |
| 90°   | <b>RA8-90</b>   |
| 180°  | <b>RA8-180</b>  |
| 90°   | <b>RA12-90</b>  |
| 180°  | <b>RA12-180</b> |
| 90°   | <b>RA20-90</b>  |
| 180°  | <b>RA20-180</b> |

### Material specification

|                             |                                   |
|-----------------------------|-----------------------------------|
| Cylinder block / end covers | Anodised aluminium, natural/black |
| Pistons                     | Aluminium                         |
| Relief surface bars         | Stainless steel                   |
| Shaft                       | Zinc-plated steel                 |
| End cover screws            | Zinc-plated steel                 |
| Seals                       | Nitrile rubber, NRB               |
| Piston bearings             | POM                               |
| Shaft bearings              | Polyethene MOS2                   |

Transforms the rectilinear motion of two single acting opposite cylinders into rotary motion via a rack and pinion drive contained within the cylinder body.



- VRA version (Ø32 to Ø80mm)
- VRA standard version (Ø32 to Ø125mm) for corrosive environments
- Rotation angles of 96°, 186° or 366°
- Optional magnetic version
- Several options are available; rotative angle adjustable stop, male shaft or female shaft (through)

### Operating information

Working pressure: Max, 10 bar  
Standard working temperature: -10°C to +60°C

Prelubricated, further lubrication is not normally necessary.  
If additional lubrication is introduced it has to be continued.

### VRA - Magnetic, Female shaft, No end adjustment

| Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            |
|------|--------------------|-----------------------|------|--------------------|-----------------------|------|--------------------|-----------------------|
| 32   | 96                 | <b>VRAM032-96FNN</b>  | 50   | 96                 | <b>VRAM050-96FNN</b>  | 80   | 96                 | <b>VRAM080-96FNN</b>  |
| 32   | 186                | <b>VRAM032-186FNN</b> | 50   | 186                | <b>VRAM050-186FNN</b> | 80   | 186                | <b>VRAM080-186FNN</b> |
| 32   | 366                | <b>VRAM032-366FNN</b> | 50   | 366                | <b>VRAM050-366FNN</b> | 80   | 366                | <b>VRAM080-366FNN</b> |
| Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            |      |                    |                       |
| 40   | 96                 | <b>VRAM040-96FNN</b>  | 63   | 96                 | <b>VRAM063-96FNN</b>  |      |                    |                       |
| 40   | 186                | <b>VRAM040-186FNN</b> | 63   | 186                | <b>VRAM063-186FNN</b> |      |                    |                       |
| 40   | 366                | <b>VRAM040-366FNN</b> | 63   | 366                | <b>VRAM063-366FNN</b> |      |                    |                       |

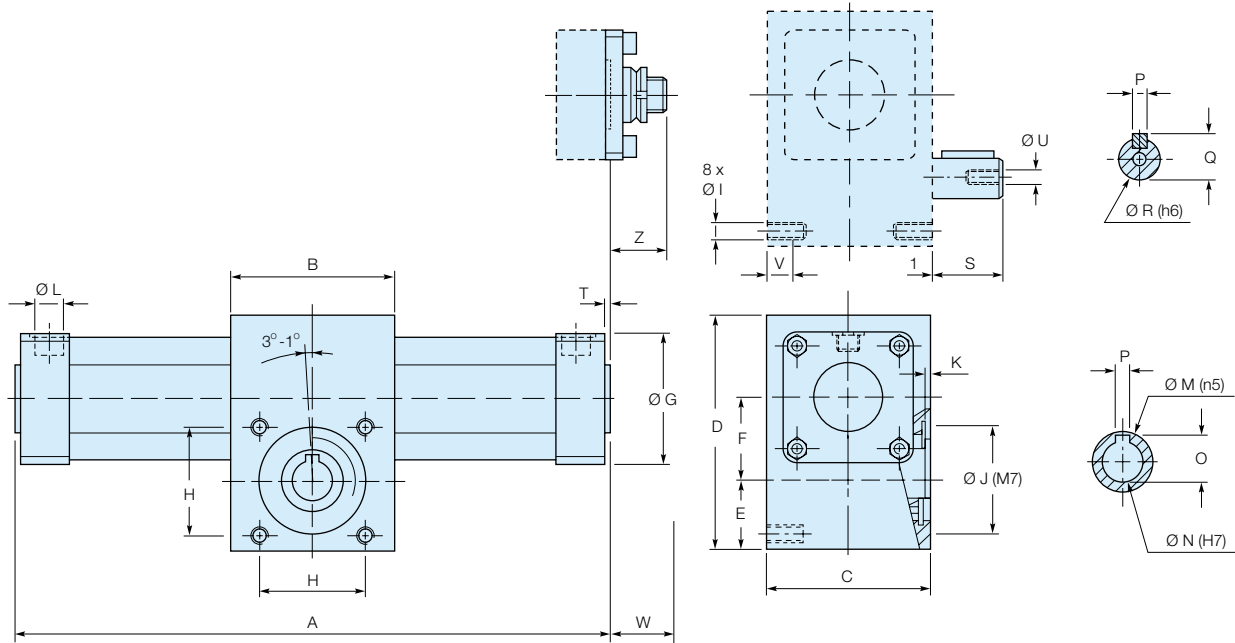
### VRS - Magnetic, Female shaft, No end adjustment

| Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            |
|------|--------------------|-----------------------|------|--------------------|-----------------------|------|--------------------|-----------------------|
| 32   | 96                 | <b>VRSM032-96FNN</b>  | 63   | 96                 | <b>VRSM063-96FNN</b>  | 125  | 96                 | <b>VRSM125-96FNN</b>  |
| 32   | 186                | <b>VRSM032-186FNN</b> | 63   | 186                | <b>VRSM063-186FNN</b> | 125  | 186                | <b>VRSM125-186FNN</b> |
| 32   | 366                | <b>VRSM032-366FNN</b> | 63   | 366                | <b>VRSM063-366FNN</b> | 125  | 366                | <b>VRSM125-366FNN</b> |
| Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            |      |                    |                       |
| 40   | 96                 | <b>VRSM040-96FNN</b>  | 80   | 96                 | <b>VRSM080-96FNN</b>  |      |                    |                       |
| 40   | 186                | <b>VRSM040-186FNN</b> | 80   | 186                | <b>VRSM080-186FNN</b> |      |                    |                       |
| 40   | 366                | <b>VRSM040-366FNN</b> | 80   | 366                | <b>VRSM080-366FNN</b> |      |                    |                       |
| Bore | Rotation Angle (°) | Order code            | Bore | Rotation Angle (°) | Order code            |      |                    |                       |
| 50   | 96                 | <b>VRSM050-96FNN</b>  | 100  | 96                 | <b>VRSM100-96FNN</b>  |      |                    |                       |
| 50   | 186                | <b>VRSM050-186FNN</b> | 100  | 186                | <b>VRSM100-186FNN</b> |      |                    |                       |
| 50   | 366                | <b>VRSM050-366FNN</b> | 100  | 366                | <b>VRSM100-366FNN</b> |      |                    |                       |

For more options consult technical catalogue

Dimensions (mm)

Cylinder bores Ø 32 to 80mm



The location of the shaft key is indicated when the pistons are on the left.  
First rotation as indicated (clockwise).

**Ω : Rotative angle 96°, 186° or 360°**

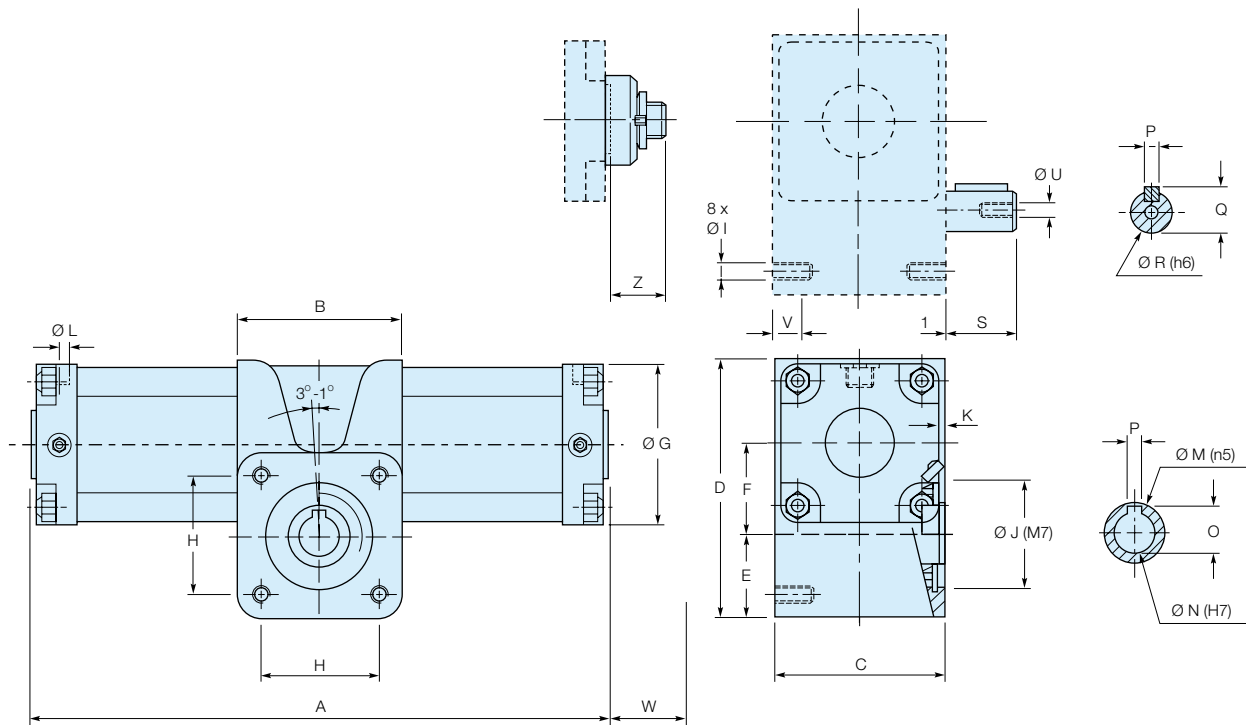
| Ø  | A*             | B  | C  | D   | E    | F    | G  | H  | I   | J  | K   | L     |
|----|----------------|----|----|-----|------|------|----|----|-----|----|-----|-------|
| 32 | 128 + 0.523 Ω  | 50 | 50 | 72  | 25.0 | 24.0 | 45 | 35 | M6  | 35 | 2.0 | G1/8" |
| 40 | 163 + 0.6981 Ω | 65 | 65 | 95  | 32.5 | 29.5 | 52 | 47 | M8  | 47 | 3.0 | G1/4" |
| 50 | 163 + 0.6981 Ω | 65 | 65 | 95  | 32.5 | 29.5 | 65 | 47 | M8  | 47 | 3.0 | G1/4" |
| 63 | 209 + 0.9424 Ω | 95 | 95 | 126 | 40.0 | 38.0 | 75 | 62 | M10 | 62 | 3.5 | G3/8" |
| 80 | 209 + 0.9424 Ω | 95 | 95 | 126 | 40.0 | 38.0 | 95 | 62 | M10 | 62 | 3.5 | G3/8" |

| Ø  | M  | N  | O    | P | Q    | R  | S  | T | U       | V  | W* | Z  |
|----|----|----|------|---|------|----|----|---|---------|----|----|----|
| 32 | 17 | 10 | 11.7 | 4 | 13.5 | 12 | 20 | 2 | M4 x 10 | 10 | 22 | 31 |
| 40 | 25 | 15 | 17.2 | 5 | 18.0 | 16 | 30 | 3 | M5 x 15 | 12 | 24 | 35 |
| 50 | 25 | 15 | 17.2 | 5 | 18.0 | 16 | 30 | 3 | M5 x 15 | 12 | 29 | 35 |
| 63 | 35 | 24 | 27.2 | 8 | 27.0 | 24 | 40 | 3 | M8 x 20 | 15 | 32 | 32 |
| 80 | 35 | 24 | 27.2 | 8 | 27.0 | 24 | 40 | 3 | M8 x 20 | 15 | 32 | 32 |

\* Add W to A for the magnetic version (magnet on right hand side as standard).

Dimensions (mm)

Cylinder bores Ø 100 to 125mm



The location of the shaft key is indicated when the pistons are on the left.  
First rotation as indicated (clockwise).

**Ω : Rotative angle 96°, 186° or 360°**

| Ø   | A*            | B   | C    | D   | E    | F    | G   | H        | I   | J  | K   | L     |
|-----|---------------|-----|------|-----|------|------|-----|----------|-----|----|-----|-------|
| 100 | 304 + 1.309 Ω | 130 | 142  | 188 | 64.0 | 53.5 | 115 | 90       | M14 | 90 | 4.5 | G1/2" |
| 125 | 304 + 1.309 Ω | 130 | 142  | 188 | 64.0 | 53.5 | 140 | 90       | M14 | 90 | 4.5 | G1/2" |
| Ø   | M             | N   | O    | P   | Q    | R    | S   | U        | V   | W* | Z   |       |
| 100 | 55            | 35  | 38.7 | 10  | 38.5 | 35   | 50  | M12 x 20 | 24  | 4  | 38  |       |
| 125 | 55            | 35  | 38.7 | 10  | 38.5 | 35   | 50  | M12 x 20 | 24  | 4  | 38  |       |

\* Add W to A for the magnetic version (magnet on right hand side as standard).

## Material specification

|   | VRS                               | VRA                               |
|---|-----------------------------------|-----------------------------------|
| Rack  | XC40 steel                        | XC40 steel                        |
| Floating piston                             | Aluminium                         | Aluminium                         |
| Magnet (**M version)                        | Magnetic elastomer                | Magnetic elastomer                |
| Piston seals                                | Polyurethane                      | Polyurethane                      |
| Rack and pinion gear seals                  |                                   | Silicone                          |
| Body  | Anodised aluminium                | Anodised aluminium                |
| Integrated tie rods, nuts, circlips, screws | Zinc plated steel                 | 303 stainless steel               |
| Body  | Hard anodised aluminium extrusion | Hard anodised aluminium extrusion |
| End caps                                    | Anodised aluminium                | Anodised aluminium                |
| Male or female transmission shaft           | XC40 steel                        | 304 stainless steel (female)      |
| Cushion sleeve                              | Brass                             | Brass                             |
| Clearance adjusting block (Ø 32 to 80mm)    | Acetal                            | Acetal                            |
| Adjusting screw blanking plate              |                                   | Aluminium + silicone seal         |

## Condition of use

|                         | Ø 32 to 80mm  | Ø 100 and 125mm             |
|-------------------------|---|-----------------------------|
| Temperature range       | -10°C to +60°C<br>(14°F to 140°F)                                 |                             |
| Pressure range<br>(bar) | 0.5 to 10<br>7 to 145 psi)  | 0.3 to 10<br>(4 to 145 psi) |
| Air condition           | Filtered air 40µ, lubricated or non lubricated,<br>dry or non dry |                             |

## Theoretical torque

| Ø Bore<br>mm | Pinion<br>Module | ØPm | Torque (N.m) |       |       |       |        |
|--------------|------------------|-----|--------------|-------|-------|-------|--------|
|              |                  |     | 2 bar        | 4 bar | 6 bar | 8 bar | 10 bar |
| 32           | 1.5              | 20  | 2.4          | 4.8   | 7.2   | 9.6   | 12     |
| 40           | 2                | 40  | 5.0          | 10.0  | 15.0  | 20.0  | 25     |
| 50           | 2                | 40  | 8.0          | 16.0  | 24.0  | 32.0  | 40     |
| 63           | 3                | 54  | 17.0         | 34.0  | 51.0  | 68.0  | 85     |
| 80           | 3                | 54  | 27.0         | 54.0  | 81.0  | 108.0 | 135    |
| 100          | 5                | 75  | 58.0         | 116.0 | 174.0 | 232.0 | 290    |
| 125          | 5                | 75  | 92.0         | 184.0 | 276.0 | 368.0 | 460    |

The table above shows the theoretical torque at different pressures. A maximum efficiency of 80% should be assured due to functional losses.

## Technical data

| Bore (mm)                                      |        | 32              | 40    | 50    | 63    | 80    | 100  | 125  |
|--|--------|-----------------|-------|-------|-------|-------|------|------|
| Maximum load (N)                               | Axial  | 110             | 350   | 350   | 1050  | 1050  | 2500 | 2500 |
|  | Radial | 35              | 220   | 220   | 900   | 900   | 2000 | 2000 |
| Cushion angle (°)                              |        | 50              | 45    | 45    | 32    | 32    | 30   | 30   |
| Nominal moment of inertia (kg.m <sup>2</sup> ) |        | 0.003           | 0.01  | 0.02  | 0.1   | 0.2   | 0.3  | 0.4  |
| Rotative angle (-1°)                           |        | 96°, 186°, 366° |       |       |       |       |      |      |
| Angular tolerance                              |        | 0°10'           | 0°10' | 0°10' | 0°10' | 0°10' | 1°   | 1°   |





# Thrust Drives

# 9109 & SP Air Bellows

## Removable and Crimped Types



Air bellows are the ideal choice for applications requiring short stroke, high thrust single acting actuators. Manufactured from fabric reinforced synthetic rubber in one, two or three convolutions according to stroke and model. They incorporate no reciprocating metal parts and so provide virtually frictionless thrust compared with conventional pneumatic cylinders. All models are single acting only. The return stroke is provided in part by the natural spring action of the bellows but more usually by the load itself. The simplicity of construction provides an extremely long, virtually maintenance-free service life even under arduous conditions. Air bellows are suitable for vibration applications i.e. device feeders at high frequency.

- **10 sizes, diameters 70 to 660 mm, Strokes from 20 to 410 mm, single, double or triple convolutions (removable type)**
- **7 sizes, diameters 82 to 288 mm, Strokes from 55 to 170 mm, single or double convolutions (crimped type)**
- **High thrust and frictionless movement**
- **Oil free**
- **Short stroke for high force application**
- **Easy to install**
- **Easy to work**
- **Single acting**
- **Use as a cylinder or an isolator**



Air bellows are the ideal choice for applications requiring short stroke, high thrust single acting actuators.

Manufactured from fabric reinforced synthetic rubber in one, two or three convolutions according to stroke and model. They incorporate no reciprocating metal parts and so provide virtually frictionless thrust compared with conventional pneumatic cylinders.

- 10 sizes, diameters 70-660 mm
- Strokes from 45 to 375 mm
- Single, double or triple convolutions
- High thrust and frictionless movement
- Maintenance free



### Operating information




Working pressure: Max 8 bar  
 Working temperature: -30°C to +70°C  
 High temperature version  
 Working temperature: -30°C to +90°C  
 Operation: Dry air



It is recommended that external mechanical stops are used to limit the stroke. The units should not achieve maximum stroke or be allowed to 'bottom out'.  
 Air Bellows may not be stacked, use singly only.

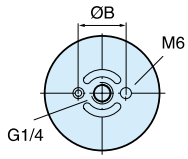
Air bellows are suitable for vibration applications i.e. device feeders at high frequency.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

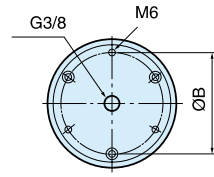
| Symbol   | Ø<br>(mm)  | Types<br>inch x nb conv.              | Port<br>size | Max<br>stroke<br>(mm) | Order code<br>Standard | Order code<br>High temp | Order code<br>With<br>stainless<br>steel<br>parts |
|--|--|---------------------------------------|--------------|-----------------------|------------------------|-------------------------|---|
| <b>One convolution</b><br>    | <b>70</b>  | 2¾ x 1 (alu.)                         | G1/4         | 20                    | <b>9109025A</b>        | <b>9109225A</b>         | /   |
|  | <b>110</b>   | 4½ x 1 (alu.)                         | G3/8         | 45                    | <b>9109400</b>         | <b>9109600</b>          | <b>9109400N</b>                                   |
|  | <b>150</b>   | 6 x 1 (alu.)                          | G1/2         | 55                    | <b>9109004A</b>        | <b>9109204A</b>         | /   |
|  | <b>150</b>   | 6 x 1 (steel)                         | G1/2         | 55                    | <b>9109004</b>         | <b>9109204</b>          | <b>9109004N</b>                                   |
|  | <b>200</b>   | 8 x 1 (steel)                         | G1/2         | 75                    | <b>9109014</b>         | <b>9109214</b>          | <b>9109014N</b>                                   |
|  | <b>250</b>   | 10 x 1 (steel)                        | G1/2         | 100                   | <b>9109024</b>         | <b>9109224</b>          | <b>9109024N</b>                                   |
|  | <b>300</b>   | 12 x 1 (steel)                        | G1/2         | 100                   | <b>9109044</b>         | <b>9109244</b>          | <b>9109044N</b>                                   |
|  | <b>370</b>   | 14½ x 1 (steel)                       | G1/2         | 115                   | <b>9109064</b>         | <b>9109264</b>          | <b>9109064N</b>                                   |
|  | <b>410</b>   | 16 x 1 (steel)                        | G1/2         | 160                   | <b>9109026</b>         | <b>9109226</b>          | <b>9109026N</b>                                   |
|  | <b>550</b>   | 21½ x 1 (alu.)                        | G3/4         | XXX                   | <b>9109027A</b>        | <b>9109227A</b>         | /   |
| <b>Two convolutions</b><br>   | <b>70</b>  | 2¾ x 2 (alu.)                         | G1/4         | 50                    | <b>9109009</b>         | <b>9109509</b>          | /   |
|  | <b>110</b>   | 4½ x 2 (alu.)                         | G3/8         | 80                    | <b>9109401</b>         | <b>9109502</b>          | <b>9109401N</b>                                   |
|  | <b>150</b>   | 6 x 2 (alu.)                          | G1/2         | 112                   | <b>9109001A</b>        | <b>9109201A</b>         | /   |
|  | <b>150</b>   | 6 x 2 (steel)                         | G1/2         | 112                   | <b>9109001</b>         | <b>9109201</b>          | <b>9109001N</b>                                   |
|  | <b>200</b>   | 8 x 2 (steel)                         | G1/2         | 180                   | <b>9109011</b>         | <b>9109211</b>          | <b>9109011N</b>                                   |
|  | <b>250</b>   | 10 x 2 (steel)                        | G1/2         | 200                   | <b>9109021</b>         | <b>9109221</b>          | <b>9109021N</b>                                   |
|  | <b>300</b>   | 12 x 2 (steel)                        | G1/2         | 195                   | <b>9109041</b>         | <b>9109241</b>          | <b>9109041N</b>                                   |
|  | <b>370</b>   | 14½ x 2 (steel)                       | G1/2         | 225                   | <b>9109061</b>         | <b>9109261</b>          | <b>9109061N</b>                                   |
|  | <b>410</b>   | 16 x 2 (steel)                        | G1/2         | 250                   | <b>9109171</b>         | <b>9109271</b>          | <b>9109171N</b>                                   |
|  | <b>550</b>   | 21½ x 2<br>(Air bellow less end caps) | G3/4         | 300                   | <b>9109150</b>         | <b>9109250</b>          | /   |
|  |  |                                       |              | <b>9109153</b>        | <b>9109253</b>         | /                       |   |
| <b>660</b>   | 26 x 2 (steel)<br>26 x 2<br>(Air bellow less end caps) | G3/4                                  | 310          | <b>9109156</b>        | /                      | /                       |   |
|  |  |                                       |              | <b>9109159</b>        | /                      | /                       |   |
| <b>Three convolutions</b><br> | <b>70</b>  | 2¾ x 3 (alu.)                         | G1/4         | 65                    | <b>9109010</b>         | <b>9109510</b>          | /   |
|  | <b>110</b>   | 4½ x 3 (alu.)                         | G3/8         | 100                   | <b>9109402</b>         | <b>9109503</b>          | <b>9109402N</b>                                   |
|  | <b>150</b>   | 6 x 3 (alu.)                          | G1/2         | 173                   | <b>9109007A</b>        | <b>9109207A</b>         | /   |
|  | <b>150</b>   | 6 x 3 (steel)                         | G1/2         | 173                   | <b>9109007</b>         | <b>9109207</b>          | <b>9109007N</b>                                   |
|  | <b>200</b>   | 8 x 3 (steel)                         | G1/2         | 225                   | <b>9109017</b>         | <b>9109217</b>          | <b>9109017N</b>                                   |
|  | <b>250</b>   | 10 x 3 (steel)                        | G1/2         | 300                   | <b>9109031</b>         | <b>9109231</b>          | <b>9109031N</b>                                   |
|  | <b>300</b>   | 12 x 3 (steel)                        | G1/2         | 330                   | <b>9109051</b>         | <b>9109251</b>          | <b>9109051N</b>                                   |
|  | <b>370</b>   | 14½ x 3 (steel)                       | G1/2         | 350                   | <b>9109069</b>         | <b>9109269</b>          | <b>9109069N</b>                                   |
| <b>410</b>   | 16 x 3 * (steel)                                       | G1/2                                  | 375          | <b>9109177</b>        | <b>9109277</b>         | <b>9109177N</b>         |   |

Dimensions (mm)

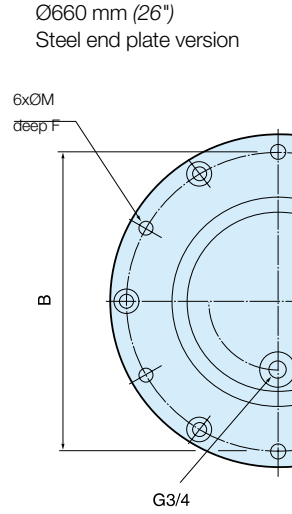
Ø70 mm (2¾")  
Aluminium end plate version



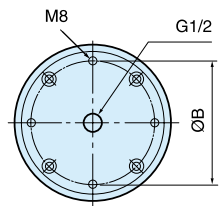
Ø110 mm (4½")  
Aluminium end plate version



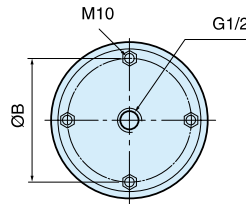
Ø550 mm (21½")  
Steel end plate version



Ø150 mm (6")  
Aluminium end plate version

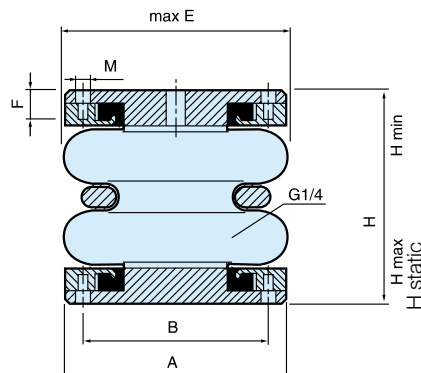


Ø200-410 mm (8-16")  
Aluminium end plate version

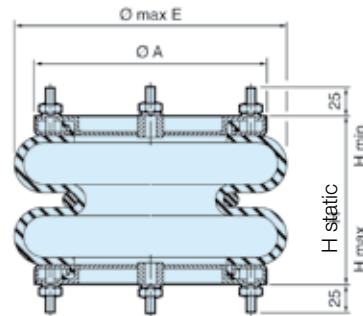


| Ø   | Number of convolutions | H min | H static | H max | Stroke max | ØE max | ØA    | ØB    | ØM  | F  |
|-----|------------------------|-------|----------|-------|------------|--------|-------|-------|-----|----|
| 70  | 2                      | 65    | 90       | 115   | 50         | 80     | 78    | 36    | M6  | 9  |
| 70  | 3                      | 80    | 110      | 145   | 65         | 80     | 78    | 36    | M6  | 9  |
| 110 | 1                      | 45    | 65       | 90    | 45         | 125    | 110   | 93    | M6  | 13 |
| 110 | 2                      | 65    | 100      | 145   | 80         | 125    | 110   | 93    | M6  | 13 |
| 110 | 3                      | 100   | 145      | 200   | 100        | 125    | 110   | 93    | M6  | 13 |
| 150 | 1                      | 50    | 80       | 105   | 55         | 175    | 155   | 127   | M8  | 16 |
| 150 | 2                      | 78    | 130      | 190   | 172        | 175    | 155   | 127   | M8  | 16 |
| 150 | 3                      | 102   | 190      | 275   | 173        | 175    | 155   | 127   | M8  | 16 |
| 200 | 1                      | 50    | 90       | 125   | 75         | 230    | 184   | 155,5 | M10 |    |
| 200 | 2                      | 70    | 160      | 250   | 180        | 230    | 184   | 155,5 | M10 |    |
| 200 | 3                      | 100   | 205      | 325   | 225        | 230    | 184   | 155,5 | M10 |    |
| 250 | 1                      | 50    | 100      | 150   | 100        | 280    | 210   | 181   | M10 |    |
| 250 | 2                      | 70    | 170      | 270   | 250        | 280    | 210   | 181   | M10 |    |
| 250 | 3                      | 100   | 250      | 400   | 300        | 280    | 210   | 181   | M10 |    |
| 300 | 1                      | 50    | 100      | 150   | 100        | 330    | 260   | 232   | M10 |    |
| 300 | 2                      | 75    | 170      | 270   | 195        | 330    | 260   | 232   | M10 |    |
| 300 | 3                      | 100   | 250      | 430   | 330        | 330    | 260   | 232   | M10 |    |
| 370 | 1                      | 50    | 110      | 165   | 115        | 395    | 310   | 282,5 | M10 |    |
| 370 | 2                      | 70    | 180      | 295   | 225        | 395    | 310   | 282,5 | M10 |    |
| 370 | 3                      | 100   | 280      | 450   | 350        | 395    | 310   | 282,5 | M10 |    |
| 410 | 2                      | 75    | 200      | 325   | 250        | 440    | 310   | 282,5 | M10 |    |
| 410 | 3                      | 125   | 300      | 500   | 375        | 440    | 310   | 282,5 | M10 |    |
| 550 | 2                      | 90    | 200      | 390   | 300        | 580    | 498,5 | 470   | M10 | 19 |
| 660 | 2                      | 90    | 200      | 400   | 310        | 700    | 498,5 | 470   | M10 | 19 |

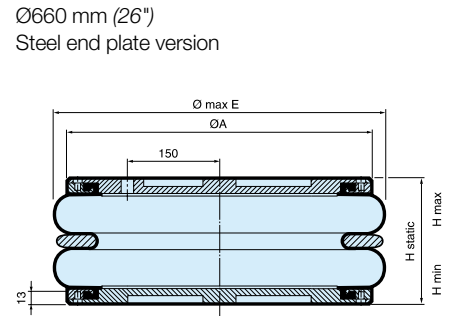
Ø70-150 mm (2¾-6")



Ø200-410 mm (8-16")  
Steel end plate version



Ø550 mm (21½")  
Aluminium end plate version



Air bellows are the ideal choice for applications requiring short stroke, high thrust single acting actuators.

Manufactured from fabric reinforced synthetic rubber in one or two convolutions according to stroke and model. They incorporate no reciprocating metal parts and so provide virtually frictionless thrust compared with conventional pneumatic cylinders.

- 13 variants, diameters 150 to 420 mm
- Strokes from 45 to 170 mm
- Single or double convolutions
- High thrust and frictionless movement
- Maintenance free



### Operating information

Working pressure: Max 8 bar  
 Working temperature: -40°C to +70°C  
 Operation: Dry air



It is recommended that external mechanical stops are used to limit the stroke. The units should not achieve maximum stroke or be allowed to 'bottom out'. Air Bellows may not be stacked, use singly only.

Air bellows are suitable for vibration applications i.e. device feeders at high frequency.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Single convolution

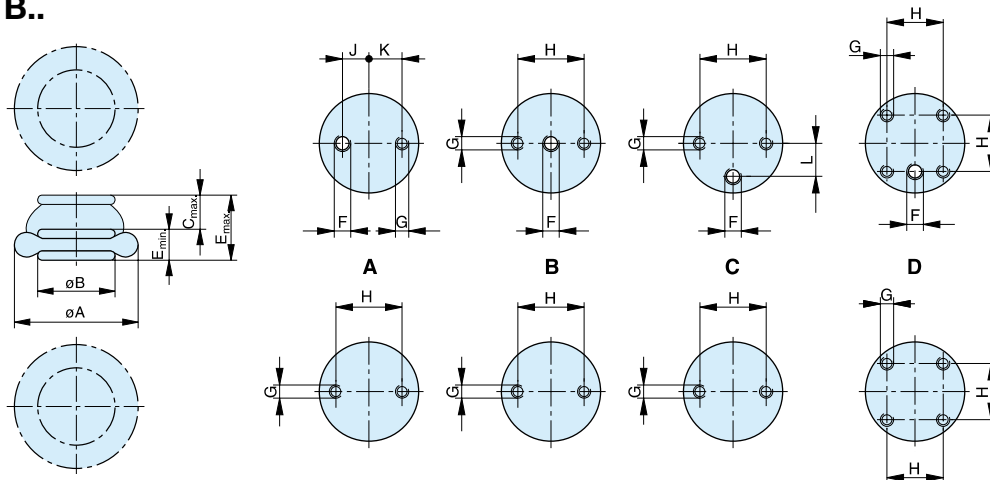
| Symbol | Ø<br>mm (inches) | Port size | Max force (N) at<br>1 bar (0 stroke) | Max stroke<br>mm | Type    | Order code    |
|--------|------------------|-----------|--------------------------------------|------------------|---------|---------------|
|        | 150              | G1/4      | 1250                                 | 55               | SP-1B04 | <b>KY9500</b> |
|        | 165              | G1/4      | 1350                                 | 45               | SP-1B05 | <b>KY8401</b> |
|        | 205              | G1/4      | 1550                                 | 90               | SP-1B07 | <b>KY9501</b> |
|        | 250              | G3/4      | 2800                                 | 100              | SP-1B12 | <b>KY9502</b> |
|        | 350              | G3/4      | 5050                                 | 110              | SP-1B22 | <b>KY9590</b> |
|        | 420              | G3/4      | 7600                                 | 110              | SP-1B34 | <b>KY8010</b> |

### Double convolution

| Symbol | Ø<br>mm (inches) | Port size | Max force (N) at<br>1 bar (0 stroke) | Max stroke<br>mm | Type     | Order code    |
|--------|------------------|-----------|--------------------------------------|------------------|----------|---------------|
|        | 165              | G1/4      | 1250                                 | 110              | SP-2B04  | <b>KY9612</b> |
|        | 165              | G1/4      | 1350                                 | 80               | SP-2B05  | <b>KY8011</b> |
|        | 170              | G1/4      | 1750                                 | 105              | SP-2B05A | <b>KY8012</b> |
|        | 215              | G1/4      | 2200                                 | 125              | SP-2B07  | <b>KY9589</b> |
|        | 250              | G3/4      | 3700                                 | 150              | SP-2B12  | <b>KY9611</b> |
|        | 320              | G3/4      | 5000                                 | 170              | SP-2B22  | <b>KY9591</b> |
|        | 390              | G3/4      | 8000                                 | 170              | SP-2B34  | <b>KY8007</b> |

**Dimensions Series SP-1B..**

**Dimensions of Mounting Plates – Series SP-1B..**



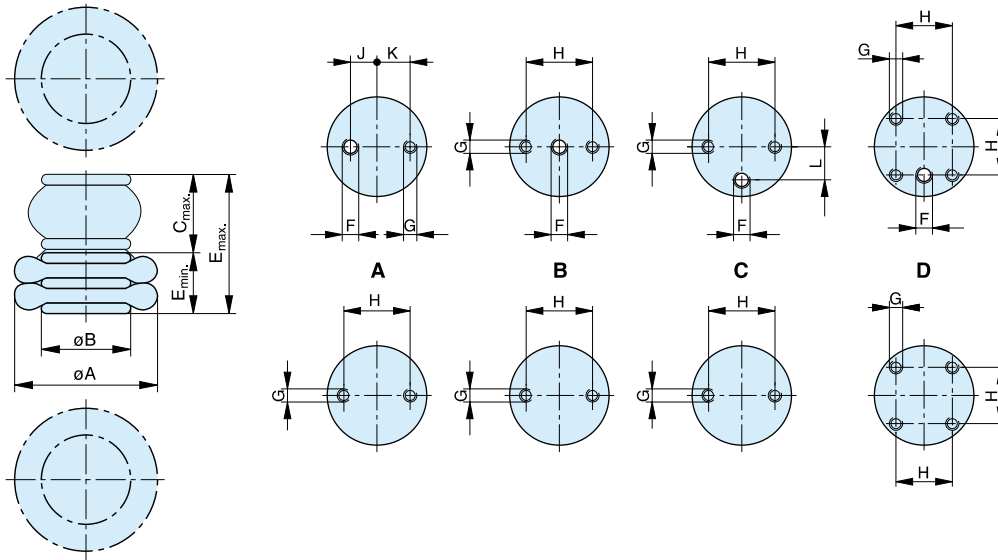
| Type    | Order-No.      | Mounting plate | $\phi A$<br>at 8 bar | $\phi B$ | $C_{max}^{**}$ | $E_{max}^{**}$ | $E_{min}$ | F    | G*  | H     | J | K  | L  |
|---------|----------------|----------------|----------------------|----------|----------------|----------------|-----------|------|-----|-------|---|----|----|
| SP-1B04 | <b>KY 9500</b> | A              | 150                  | 88       | 55             | 105            | 50        | G1/4 | M8  | 22    | 9 | 11 | -  |
| SP-1B05 | <b>KY 8401</b> | B              | 165                  | 110      | 45             | 95             | 50        | G1/4 | M8  | 44.5  | - | -  | -  |
| SP-1B07 | <b>KY 9501</b> | C              | 205                  | 135      | 80             | 130            | 50        | G1/4 | M8  | 54    | - | -  | 27 |
| SP-1B12 | <b>KY 9502</b> | C              | 250                  | 160      | 100            | 150            | 50        | G3/4 | M8  | 89    | - | -  | 38 |
| SP-1B22 | <b>KY 9590</b> | C              | 350                  | 229      | 110            | 170            | 60        | G3/4 | M12 | 157.5 | - | -  | 73 |
| SP-1B34 | <b>KY 8010</b> | D              | 420                  | 288      | 110            | 170            | 60        | G3/4 | M8  | 158.8 | - | -  | -  |

\*15 deep

\*\*These dimensions depend on the operating pressure: see force diagrams

**Dimensions Series SP-2B..**

**Dimensions of Mounting Plates – Series SP-2B..**



| Type     | Order-No.      | Mounting plate | $\phi A$<br>at 8 bar | $\phi B$ | $C_{max}^{**}$ | $E_{max}^{**}$ | $E_{min}$ | F    | G*  | H     | J | K  | L  |
|----------|----------------|----------------|----------------------|----------|----------------|----------------|-----------|------|-----|-------|---|----|----|
| SP-2B04  | <b>KY 9612</b> | A              | 165                  | 82       | 110            | 190            | 80        | G1/4 | M8  | 22    | 9 | 11 | -  |
| SP-2B05  | <b>KY 8011</b> | B              | 165                  | 110      | 80             | 160            | 80        | G1/4 | M8  | 44.5  | - | -  | -  |
| SP-2B05A | <b>KY 8012</b> | B              | 170                  | 110      | 105            | 185            | 80        | G1/4 | M8  | 44.5  | - | -  | -  |
| SP-2B07  | <b>KY 9589</b> | C              | 215                  | 135      | 125            | 220            | 95        | G1/4 | M8  | 54    | - | -  | 27 |
| SP-2B12  | <b>KY 9611</b> | C              | 250                  | 160      | 150            | 240            | 90        | G3/4 | M8  | 89    | - | -  | 38 |
| SP-2B22  | <b>KY 9591</b> | C              | 320                  | 229      | 170            | 260            | 90        | G3/4 | M12 | 157.5 | - | -  | 73 |
| SP-2B34  | <b>KY 8007</b> | D              | 390                  | 288      | 170            | 260            | 90        | G3/4 | M8  | 158.8 | - | -  | -  |

\*15 deep

\*\*These dimensions depend on the operating pressure: see force diagrams

The thrust cylinders are linear actuators, designed for a high force to size ratio. This makes the cylinder ideal to use for clamping, riveting, punching and similar applications where a high force is required.

- Thrust cylinders provide large forces
- Compact dimensions
- C0D, diaphragm type
- C0P, piston type
- Available in single and double acting versions



**Operating information**

Working pressure: Max 8 bar  
 Working temperature: -20°C to +70°C

Stainless steel piston rod  
 Piston rod according to ISO 4395



Compressed air cylinders, types C0D and C0P should not be used in vertical applications without external stop.

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**C0D - Double acting**

| Force at 6 bar, N | Port size | Stroke mm | Order code        |
|-------------------|-----------|-----------|-------------------|
| 3000              | G1/4      | 40        | <b>C0D300-40</b>  |
| 6000              | G1/4      | 50        | <b>C0D600-50</b>  |
| 12000             | G1/2      | 50        | <b>C0D1200-50</b> |
| 25000             | G1/2      | 60        | <b>C0P2500-60</b> |
| 25000             | G1/2      | 80        | <b>C0P2500-80</b> |

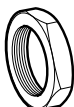
**C0P - Single acting**

| Force at 6 bar, N | Spring N force |       | Port size | Stroke mm | Order code          |
|-------------------|----------------|-------|-----------|-----------|---------------------|
|                   | Max N          | Min N |           |           |                     |
| 1600              | 314            | 128   | G1/4      | 50        | <b>C0P160-50S</b>   |
| 1600              | 314            | 128   | G1/4      | 80        | <b>C0P160-80S</b>   |
| 3000              | 314            | 128   | G1/4      | 50        | <b>C0P300-50S</b>   |
| 3000              | 314            | 128   | G1/4      | 80        | <b>C0P300-80S</b>   |
| 3000              | 294            | 98    | G1/4      | 40        | <b>C0D300-40S</b>   |
| 6000              | 638            | 98    | G1/4      | 50        | <b>C0D600-50S</b>   |
| 12000             | 981            | 235   | G1/2      | 50        | <b>C0D1200-50S</b>  |
| 25000             | 2700           | 883   | G1/2      | 60        | <b>C0P2500-60S</b>  |
| 25000             | 2700           | 883   | G1/2      | 100       | <b>C0P2500-100S</b> |


The spring forces in single acting cylinders are sufficient to return the piston rod without load

**Accessories**

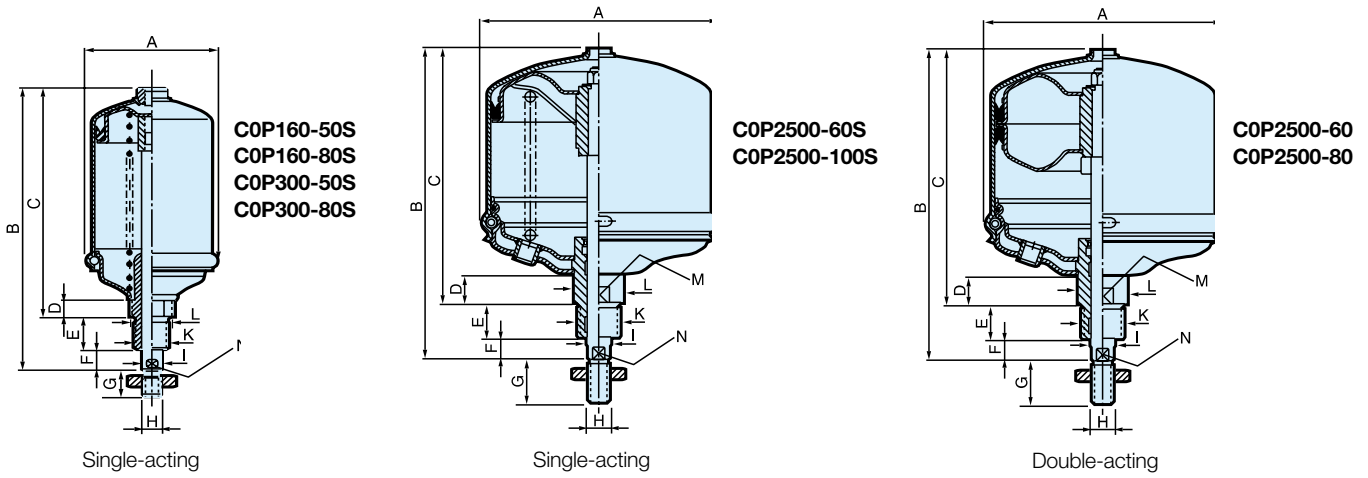
**Neck mounting nut**

| Lock nut thread   | For cylinder | Order code        |
|---|--------------|-------------------|
|  M24x2 | C0D300       | <b>9141100000</b> |
| M36x3   | C0D600/1200  | <b>9141100100</b> |
| M48x3   | C0P2500      | <b>9141100200</b> |
| M24x3   | C0P160/300   | <b>9141100300</b> |

**Piston rod nut (one nut is included)**

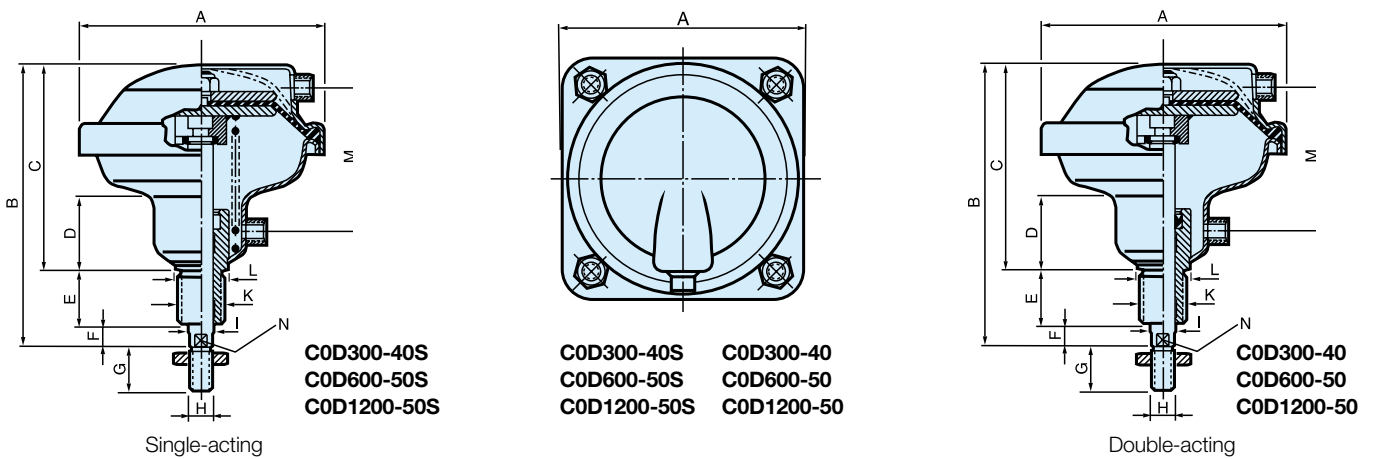
| Piston rod nut thread   | For cylinder          | Order code        |
|---|-----------------------|-------------------|
|  M12 | C0P160/300 and C0D300 | <b>0266211200</b> |
| M16   | C0D600                | <b>0266211400</b> |
| M20   | C0D1200               | <b>0266211600</b> |
| M24   | C0P2500               | <b>0266211800</b> |

Dimensions (mm), piston type



| Type         | Connection thread | A   | B   | C   | D  | E  | F  | G  | H        | I<br>Ø | K     | L<br>Ø | M  | N  |
|--------------|-------------------|-----|-----|-----|----|----|----|----|----------|--------|-------|--------|----|----|
| C0P160-50S   | G1/4              | 66  | 192 | 151 | 18 | 30 | 11 | 24 | M12x1,75 | 14     | M24x3 | 30     | 30 | 12 |
| C0P160-80S   | G1/4              | 66  | 222 | 181 | 18 | 30 | 11 | 24 | M12x1,75 | 14     | M24x3 | 30     | 30 | 12 |
| C0P300-50S   | G1/4              | 93  | 192 | 151 | 18 | 30 | 11 | 24 | M12x1,75 | 14     | M24x3 | 30     | 30 | 12 |
| C0P300-80S   | G1/4              | 93  | 222 | 181 | 18 | 30 | 11 | 24 | M12x1,75 | 14     | M24x3 | 30     | 30 | 12 |
| C0P2500-60S  | G1/2              | 268 | 345 | 285 | 33 | 40 | 20 | 48 | M24x3    | 28     | M48x3 | 56     | 50 | 25 |
| C0P2500-100S | G1/2              | 268 | 385 | 325 | 33 | 40 | 20 | 48 | M24x3    | 28     | M48x3 | 56     | 50 | 25 |
| C0P2500-60   | G1/2              | 268 | 345 | 285 | 33 | 40 | 20 | 48 | M24x3    | 28     | M48x3 | 56     | 50 | 25 |
| C0P2500-80   | G1/2              | 268 | 385 | 325 | 33 | 40 | 20 | 48 | M24x3    | 28     | M48x3 | 56     | 50 | 25 |

Dimensions (mm), diaphragm type



| Type        | Connection thread | A   | B   | C   | D  | E  | F  | G  | H        | I<br>Ø | K     | L<br>Ø | M   | N  |
|-------------|-------------------|-----|-----|-----|----|----|----|----|----------|--------|-------|--------|-----|----|
| C0D300-40S  | G1/4              | 150 | 183 | 131 | 48 | 38 | 14 | 24 | M12x1,75 | 16     | M24x2 | 30     | 90  | 13 |
| C0D300-40   | G1/4              | 150 | 183 | 131 | 48 | 38 | 14 | 24 | M12x1,75 | 16     | M24x2 | 30     | 90  | 13 |
| C0D600-50S  | G1/4              | 195 | 212 | 154 | 55 | 38 | 20 | 32 | M16x2    | 20     | M36x3 | 43     | 107 | 17 |
| C0D600-50   | G1/4              | 195 | 212 | 154 | 55 | 38 | 20 | 32 | M16x2    | 20     | M36x3 | 43     | 107 | 17 |
| C0D1200-50S | G1/2              | 261 | 243 | 178 | 58 | 45 | 20 | 40 | M20x2,5  | 25     | M36x3 | 43     | 117 | 22 |
| C0D1200-50  | G1/2              | 261 | 243 | 178 | 58 | 45 | 20 | 40 | M20x2,5  | 25     | M36x3 | 43     | 117 | 22 |

**Press stand for thrust cylinders**

A simple press for efficient mounting and pressing can easily be built by screwing the thrust cylinders into the threaded holes in the very stable and strong steel press stand. The stand is available in two versions with different fastening threads for the cylinders.

The top plate has two different threads, and can be rotated through 180 degrees to present the correct thread for nose fitting of the cylinders.

The sub-base is fitted with a T-track for easy mounting of accessories. It also has two through holes for simple and secure fitting to a work bench.

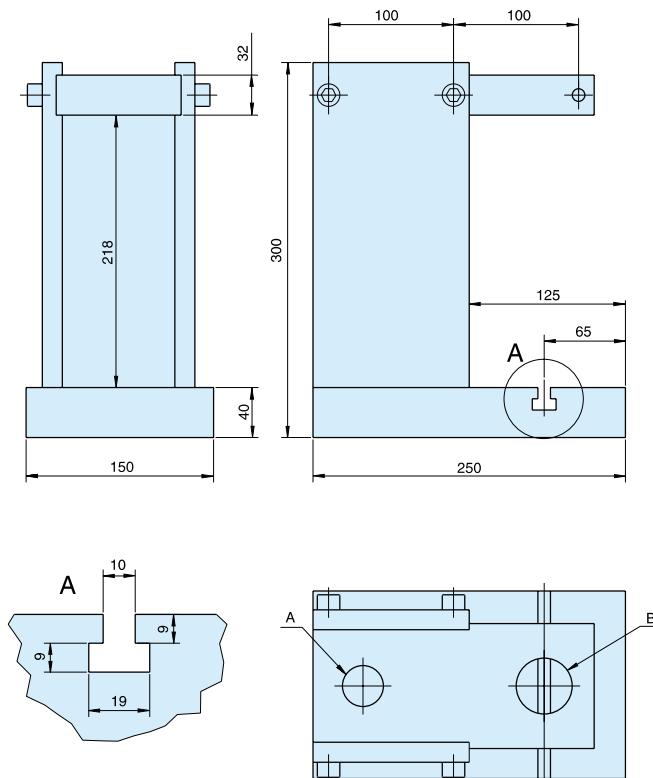


**NOTE!** Remember that an approved two-handed press control must be used with the cylinders and the press stand to prevent crush injuries. We recommend the use of our type PXP two-handed press control. It is available in a number of versions, and is simple, ergonomic and safe to incorporate in the press stand. It meets the requirements of safety standards EN574 and EN954-1.

For more information, see our website:  
[www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

| Description                                | Threads A/B | Weight kg | Order No.          |
|--|-------------|-----------|--------------------|
| Press stand for C0P160 / C0P300 / C0D300   | M24x2/M24x3 | 24        | <b>C0P-C0D-P01</b> |
| Press stand for C0D600 / C0D1200 / C0P2500 | M36x3/M48x3 | 24        | <b>C0P-C0D-P02</b> |

**Dimensions**



Clamp cylinders are single acting pneumatic cylinders with built-in oleo-pneumatic intensifiers. They can be used to solve most clamping, tightening etc problems.

- Single acting cylinders with built-in hydro-pneumatic intensifier
- Compact size with large clamping forces up to 2700 daN (depending on air pressure)
- Operated using a compressed air supply, no special installation required
- Easy adjustment through a fully threaded body
- Simple and rapid installation



**Operating information**

|                               |  |
|-------------------------------|--|
| Working pressure:             | Max 9bar                                   |
| except VBH603 and VBH606 :    | Max 7bar                                   |
| Permissible fluid:            | Filtered (40µ) with or without lubrication |
| Standard working temperature: | +5°C to +50°C                              |

**Hydraulic clamps**

| Order code | Max.stroke (mm) | Ø external (mm) | Force at 6bar (daN) |
|------------|-----------------|-----------------|---------------------|
| VB363C     | 3               | 36              | 240                 |
| VB366C     | 6               | 36              | 240                 |
| VB369C     | 9               | 36              | 240                 |
| VB483C     | 3               | 48              | 530                 |
| VB486C     | 6               | 48              | 530                 |
| VB489C     | 9               | 48              | 530                 |
| VB4812C    | 12              | 48              | 530                 |
| VBH483C    | 3               | 48              | 1060                |
| VB606C     | 6               | 60              | 1140                |
| VB609C     | 9               | 60              | 1140                |
| VB6012C    | 12              | 60              | 1140                |
| VBH603C    | 3               | 60              | 1800                |
| VBH606C    | 6               | 60              | 1800                |

**Maintenance**

|              |        |        |         |        |         |
|--------------|--------|--------|---------|--------|---------|
| Seal kit for | VB Ø36 | VB Ø48 | VBH Ø48 | VB Ø60 | VBH Ø60 |
| Order code   | JJVB36 | JJVB48 | JJVBH48 | JJVB60 | JJVBH60 |

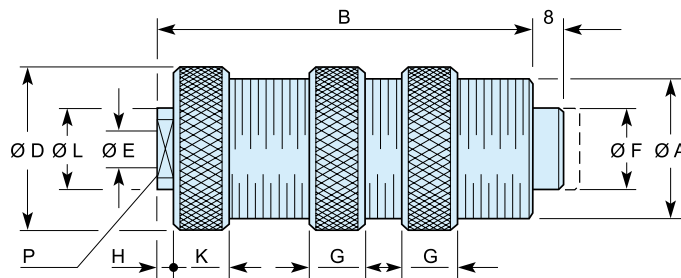
Oil container for all types of hydraulic clamp cylinders (250ml capacity) :  
Order code BH680VB

**Hydraulic clamp mountings**

| Mounting for VB | Mounting block | Rounded end | V groove end |
|-----------------|----------------|-------------|--------------|
| Ø36             | FVA36-1        | BVA36-16    | BVA36-17     |
| Ø48             | FVA48-1        | BVA48-16    | BVA48-17     |
| Ø60             | FVA60-1        | BVA60-16    | BVA60-17     |



**Dimensions (mm)**



| Model No | ØA        | B     | ØD | ØE   | ØF | G  | H | K  | ØL | P  |
|----------|-----------|-------|----|------|----|----|---|----|----|----|
| VB363C   | M36 x 1,5 | 98,0  | 42 | G1/8 | 22 | 12 | 4 | 13 | 22 | 17 |
| VB366C   | M36 x 1,5 | 127,5 | 42 | G1/8 | 22 | 12 | 4 | 13 | 22 | 17 |
| VB369C   | M36 x 1,5 | 185,0 | 42 | G1/8 | 22 | 12 | 4 | 13 | 22 | 17 |
| VB483C   | M48 x 1,5 | 111,0 | 56 | G1/8 | 32 | 12 | 4 | 13 | 22 | 17 |
| VBH483C  | M48 x 1,5 | 148,0 | 56 | G1/8 | 32 | 12 | 4 | 13 | 22 | 17 |
| VB486C   | M48 x 1,5 | 148,0 | 56 | G1/8 | 32 | 12 | 4 | 13 | 22 | 17 |
| VB489C   | M48 x 1,5 | 188,0 | 56 | G1/8 | 32 | 12 | 4 | 13 | 22 | 17 |
| VB4812C  | M48 x 1,5 | 234,0 | 56 | G1/8 | 32 | 12 | 4 | 13 | 22 | 17 |
| VBH603C  | M60 x 2   | 175,0 | 70 | G1/4 | 40 | 14 | 5 | 17 | 25 | 22 |
| VB606C   | M60 x 2   | 175,0 | 70 | G1/4 | 40 | 14 | 5 | 17 | 25 | 22 |
| VBH606C  | M60 x 2   | 290,0 | 70 | G1/4 | 40 | 14 | 5 | 17 | 25 | 22 |
| VB609C   | M60 x 2   | 249,0 | 70 | G1/4 | 40 | 14 | 5 | 17 | 25 | 22 |
| VB6012C  | M60 x 2   | 314,0 | 70 | G1/4 | 40 | 14 | 5 | 17 | 25 | 22 |





# Hydrochecks

## Self contained hydraulic checking units



Hydrochecks are precision built self contained hydraulic control units designed to smooth out pneumatic cylinder movements over any distance within their own stroke length, up to 450 mm.

Basic single acting models provide adjustable speed control over the full outward or inward stroke and fast return, with the facility for rapid approach to the controlled stroke by adjustment of the piston rod engaging nut.

- Gives smooth control feeds
- Strokes up to 450 mm.





# Electromechanical Drives



# ORIGA SYSTEM PLUS OSPE

## Electric Linear Actuators



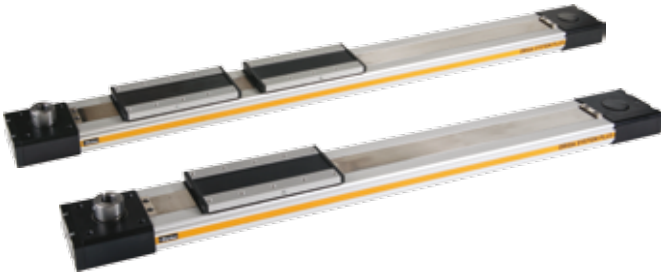
### The latest generation of **high capacity** actuators

The OSP-E series combines robustness, precision and high performance. The aesthetic design is easily integrated into any machine constructions by virtue of extremely adaptable mountings.

- For particularly high requirements regarding loads and forces
- For high-speed applications and highly dynamic motion profiles
- BHD with toothed belt and integrated heavy duty guide: roller guide or re-circulating ball bearing guide

# One complete system - Seven actuator options For all possible applications

Series OSP-E..BHD  
Belt Actuator with integrated Guide  
- Ball Bearing Guide  
- Roller Guide



Series OSP-E..BV  
Vertical Belt Actuator with integrated Ball  
Bearing Guide



Series OSP-E..B  
Belt Actuator with Internal  
Guide



Series OSP-E..SB  
Ball Screw Actuator with internal  
Plain Bearing Guide



Series OSP-E..ST  
Trapezoidal Screw Actuator with  
Internal Plain Bearing Guide



Series OSP-E..SBR  
Ball Screw Actuator with internal Plain  
Bearing Guide and Piston Rod



Series OSP-E..STR  
Trapezoidal Screw actuator with  
Internal Plain Bearing Guide and  
Piston Rod



## Belt actuator with integrated guide for heavy duty applications

The latest generation of high capacity actuators, the OSP-E..BHD series combines robustness, precision and high performance. The aesthetic design is easily integrated into any machine constructions by virtue of extremely adaptable mountings.

### Belt Actuator with Integrated Guide - selective with Ball Bearing Guide or Roller Guide

#### Advantages:

- Accurate path and position control
- High force output
- High speed operation
- High load capacity
- Easy installation
- Low maintenance
- Ideal for multi-axis applications

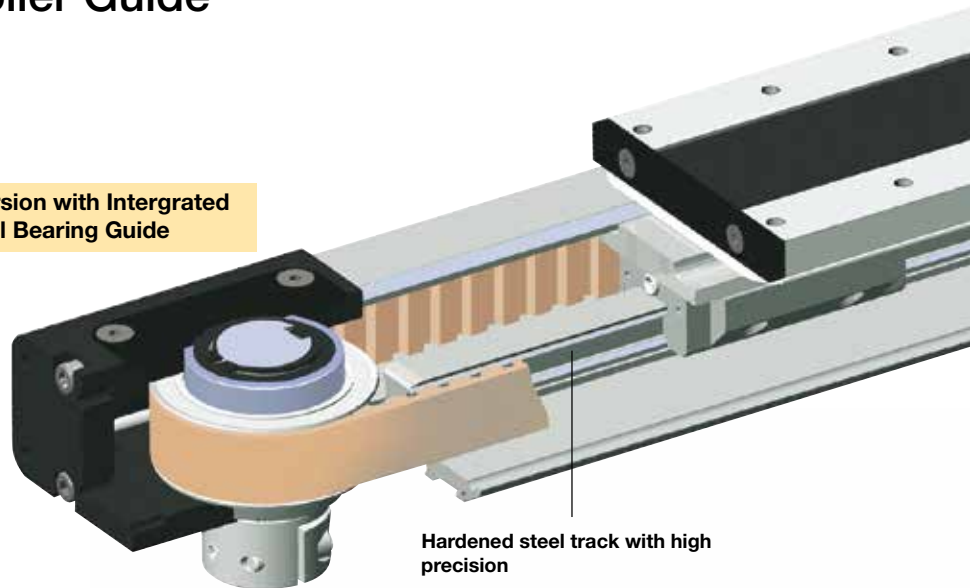
#### Features:

- Integrated ball bearing guide or integrated roller guide
- Diverse range of multi-axis connection elements
- Diverse range of accessories and mountings
- Complete motor and control packages
- Optional integrated planetary gearbox
- Special options on request

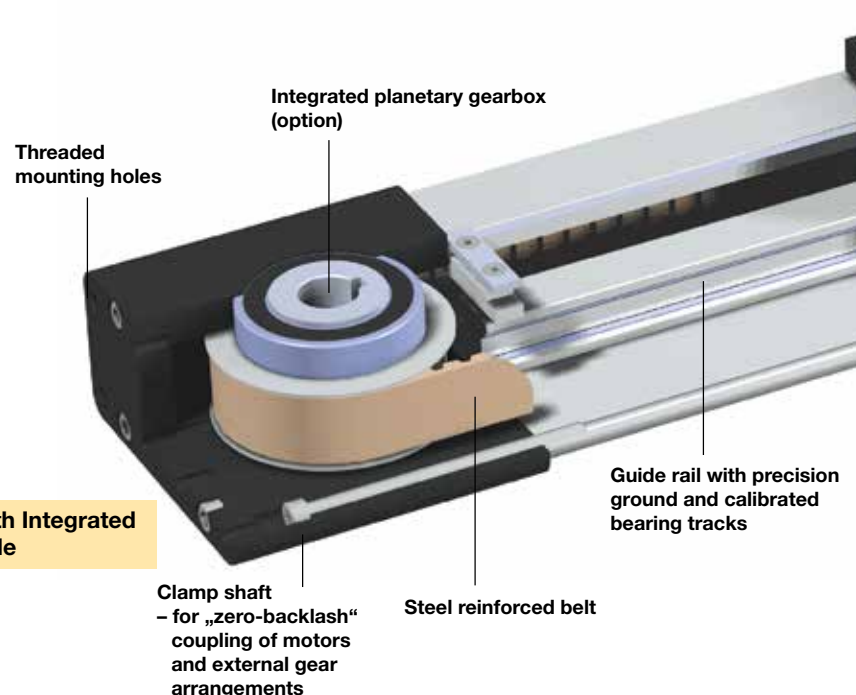
Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at [www.parker-origa.com](http://www.parker-origa.com)



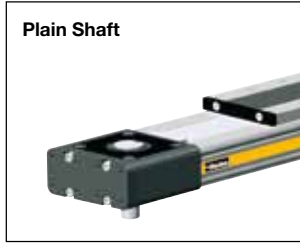
Version with Intergrated Ball Bearing Guide



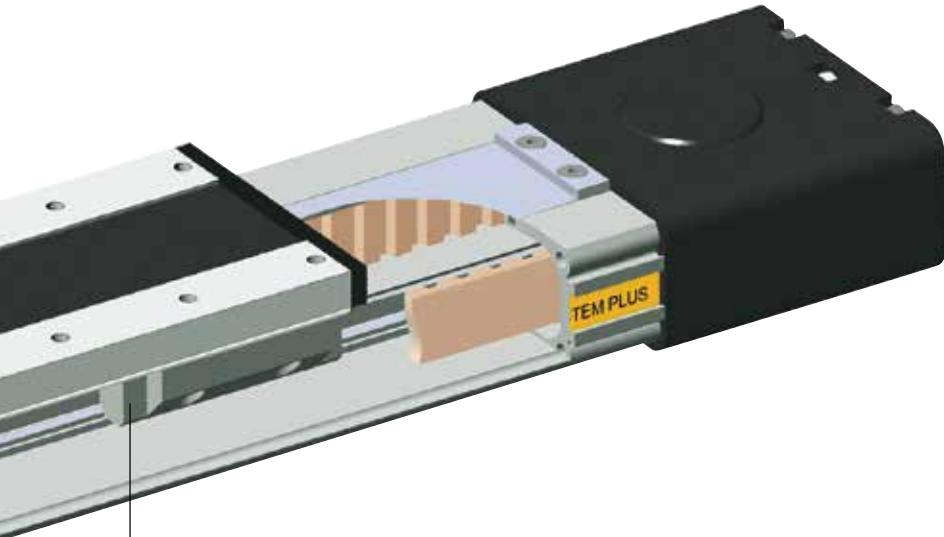
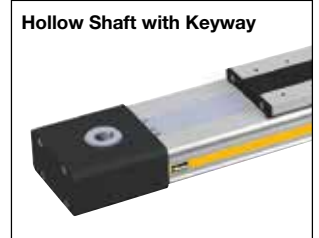
Version with Integrated Roller Guide



**Drive Shaft Versions**



**Drive Shaft OPTIONS**



Steel runner block with integrated scraper system and grease nipples

Corrosion resistant steel sealing band

Threaded mounting holes compatible with Proline series

Carriage

Slotted profile with dovetail grooves

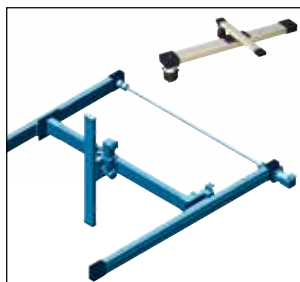
Permanent magnet for contactless position sensing

Rollers on needle bearings for smooth operation up to 10 m/s.

BI-PARTING Version for perfectly synchronised bi-parting movements.



**MULTI-AXIS SYSTEMS**  
 A wide range of adapter plates and intermediate drive shafts simplify engineering and installation



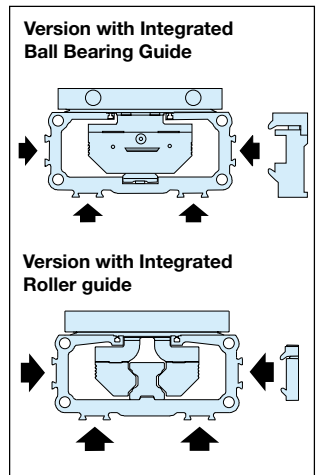
**OPTION**

Integrated planetary gearbox



- Highly compact and rigid solution fully integrated in the drive cap housing
- Purpose designed for the BHD series
- Available with three standard ratios (3, 5 and 10)
- Very low backlash
- A wide range of available motor flanges

The dovetailed mounting rails of the new linear actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on

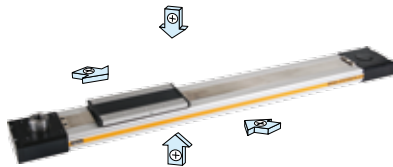


# Options and Accessories

## OSP-E..BHD Belt actuator with integrated guide

### STANDARD VERSIONS OSP-E..BHD

Standard carrier with integrated guide and magnets for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.



### DRIVE SHAFT WITH CLAMP SHAFT

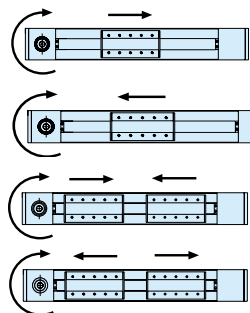


### DRIVE SHAFT WITH PLAIN SHAFT



### ACTUATING DIRECTION

Important in parallel operations, e.g. with intermediate drive shaft

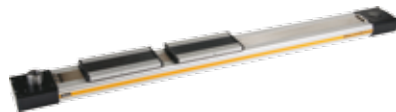


Standard

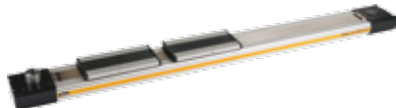
Standard - Bi-Parting Version

### OPTIONS

**TANDEM**  
 For higher moment support.



**BI-PARTING VERSION**  
 For perfectly synchronised bi-parting movements.



**DRIVE SHAFT WITH CLAMP SHAFT AND PLAIN SHAFT**  
 For connections with intermediate drive shaft



**HOLLOW SHAFT WITH KEYWAY**  
 For close coupling of motors and external gears.



**INTEGRATED PLANETARY GEARBOX**  
 For compact installation and very low backlash.



### ACCESSORIES

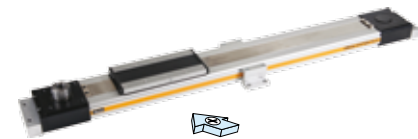
#### MOTOR MOUNTINGS



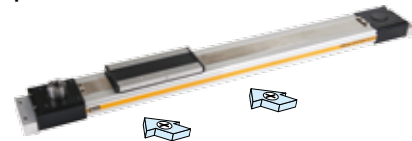
**END CAP MOUNTING**  
 For mounting the actuators on the end cap.



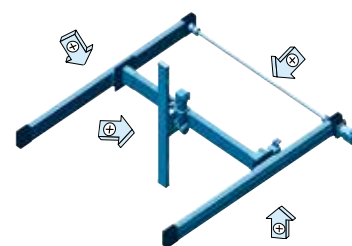
**PROFILE MOUNTING**  
 For supporting long actuators or mounting the actuators on dovetail grooves.



**MAGNETIC SWITCHES TYPE RS AND ES**  
 For contactless position sensing of end stop and intermediate carrier positions.



**MULTI-AXIS SYSTEMS**  
 For modular assembly of actuators up to multi-axis systems.

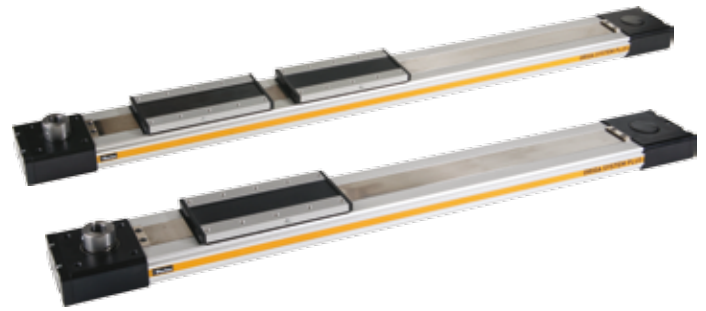




## Belt Actuator with Integrated Ball Bearing Guide

### Size 20 to 50

Type: OSP-E..BHD



#### Standard Versions:

- Belt Actuator with integrated Ball Bearing Guide
- Drive shaft with clamp shaft or plain shaft
- Choice of motor mounting side
- Dovetail profile for mounting of accessories and the actuator itself

#### Options:

- Tandem version for higher moments
- Bi-parting version for synchronised movements
- Integrated planetary gearbox
- Drive shaft with
  - clamp shaft and plain shaft
  - hollow shaft with keyway
- Special drive shaft versions on request

#### Installation Instructions

Use the threaded holes in the end cap for mounting the actuator.

Check if profile mountings are needed using the maximum allowable unsupported length graph.

At least one end cap must be secured to prevent axial sliding when profile mountings are used.

| Characteristics                                    | Description   |
|--|---|
| Series   | OSP-E..BHD  |
| Mounting   | See drawings  |
| Ambient temperature range                          | -30 °C to +80 °C  |
| Installation                                       | In any position   |
| Encapsulation class                                | IP 54   |
| <b>Material</b>                                    |   |
| Slotted profile                                    | Extruded anodized aluminium                                 |
| Belt   | Steel-corded polyurethane                                   |
| Pulley   | Aluminium   |
| Guide  | Ball bearing guide  |
| Guide rail   | Hardened steel rail with high precision, accuracy class N   |
| Guide carrier preloaded 0.02 x C, accuracy class H | Steel carrier with integrated wiper system, grease nipples, |
| Steel band   | Hardened, corrosion resistant steel                         |
| Screws, nuts                                       | Zinc plated steel   |
| Mountings  | Zinc plated steel and aluminium                             |

#### Weight (mass) and Inertia

| Series      | Weight (mass)[kg] |                      |             | Inertia [x 10 <sup>-6</sup> kgm <sup>2</sup> ] |                      |             |
|-------------|-------------------|----------------------|-------------|--|----------------------|-------------|
|             | At stroke 0 m     | Add per metre stroke | Moving mass | At stroke 0 m                                  | Add per metre stroke | per kg mass |
| OSP-E20BHD  | 2.8               | 4                    | 0.8         | 280  | 41                   | 413         |
| OSP-E25BHD  | 4.3               | 4.5                  | 1.5         | 1229   | 227                  | 821         |
| OSP-E32BHD  | 8.8               | 7.8                  | 2.6         | 3945   | 496                  | 1459        |
| OSP-E50BHD  | 26                | 17                   | 7.8         | 25678  | 1738                 | 3103        |
| OSP-E20BHD* | 4.3               | 4                    | 1.5         | 540  | 41                   | 413         |
| OSP-E25BHD* | 6.7               | 4.5                  | 2.8         | 2353   | 227                  | 821         |
| OSP-E32BHD* | 13.5              | 7.8                  | 5.2         | 7733   | 496                  | 1459        |
| OSP-E50BHD* | 40                | 17                   | 15          | 49180  | 1738                 | 3103        |

\* Version: Tandem and Bi-parting (Option)

#### Maintenance

Depending on operating conditions, inspection of the actuator is recommended after 12 months or 3000 km operation. Please refer to the operating instructions supplied with the actuator.

#### First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

- Determination of the lever arm length  $l_x, l_y$  and  $l_z$  from  $m_e$  to the centre axis of the actuator.
- Calculation of the load  $F_x$  or  $F_y$  to the carrier caused by  $m_e$   
 $F = m_e \cdot g$
- Calculation of the static and dynamic force  $F_A$  which must be transmitted by the belt.  

$$F_{A(horizontal)} = F_a + F_0 = m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$$

$$F_{A(vertical)} = F_g + F_a + F_0 = m_g \cdot g + m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$$
- Calculation of all static and dynamic bending moments  $M_x, M_y$  and  $M_z$  which occur in the application  
 $M = F \cdot l$
- Selection of maximum permissible loads via Table T3.
- Calculation and checking of the combined load, which must not be higher than 1.
- Checking of the maximum torque that occurs at the drive shaft in Table T2.
- Checking of the required action force  $F_A$  with the permissible load value from Table T1.

For motor sizing, the effective torque must be determined, taking into account the cycle time.

#### Legend

- $l$  = distance of a mass in the x-, y- and z-direction from the guide [m]
- $m_e$  = external moved mass [kg]
- $m_{LA}$  = moved mass of actuator [kg]
- $m_g$  = total moved mass ( $m_e + m_{LA}$ ) [kg]
- $F_{x/y}$  = load exerted on the carrier in dependence of the installation position [N]
- $F_A$  = action force [N]
- $M_0$  = no-load torque [Nm]
- $U_{ZR}$  = circumference of the pulley (linear movement per revolution) [m]
- $g$  = gravity [m/s<sup>2</sup>]
- $a_{max}$  = maximum acceleration [m/s<sup>2</sup>]

#### Performance Overview

T1

| Characteristics                             | Unit                 | Description        |                    |                    |                    |      |
|---|----------------------|--------------------|--------------------|--------------------|--------------------|------|
| Series                                      |                      | OSP-E20BHD         | OSP-E25BHD         | OSP-E32BHD         | OSP-E50BHD         |      |
| Max. speed                                  | [m/s]                | 3 <sup>1)</sup>    | 5 <sup>1)</sup>    | 5 <sup>1)</sup>    | 5 <sup>1)</sup>    |      |
| Linear motion per revolution of drive shaft | [mm]                 | 125                | 180                | 240                | 350                |      |
| Max. rpm on drive shaft                     | [min <sup>-1</sup> ] | 2000               | 1700               | 1250               | 860                |      |
| Max. effective Action force $F_A$ at speed  | < 1 m/s:             | [N]                | 550                | 1070               | 1870               | 3120 |
|   | 1-3 m/s:             | [N]                | 450                | 890                | 1560               | 2660 |
|   | > 3 m/s:             | [N]                | –                  | 550                | 1030               | 1940 |
| No-load torque                              | [Nm]                 | 0.6                | 1.2                | 2.2                | 3.2                |      |
| Max. acceleration/deceleration              | [m/s <sup>2</sup> ]  | 50                 | 50                 | 50                 | 50                 |      |
| Repeatability                               | [mm/m]               | ±0.05              | ±0.05              | ±0.05              | ±0.05              |      |
| Max. standard stroke length                 | [mm]                 | 5760 <sup>2)</sup> | 5700 <sup>2)</sup> | 5600 <sup>2)</sup> | 5500 <sup>2)</sup> |      |

<sup>1)</sup> up to 10 m/s on request  
<sup>2)</sup> longer strokes on request

#### Maximum Permissible Torque on Drive Shaft Speed / Stroke

T2

| OSP-E20BHD  |             |            |             | OSP-E25BHD  |             |            |             | OSP-E32BHD  |             |            |             | OSP-E50BHD  |             |            |             |
|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] |
| 1           | 11          | 1          | 11          | 1           | 31          | 1          | 31          | 1           | 71          | 1          | 71          | 1           | 174         | 1          | 174         |
| 2           | 10          | 2          | 11          | 2           | 28          | 2          | 31          | 2           | 65          | 2          | 71          | 2           | 159         | 2          | 174         |
| 3           | 9           | 3          | 8           | 3           | 25          | 3          | 31          | 3           | 59          | 3          | 60          | 3           | 153         | 3          | 138         |
| 4           |             | 4          | 7           | 4           | 23          | 4          | 25          | 4           | 56          | 4          | 47          | 4           | 143         | 4          | 108         |
| 5           |             | 5          | 5           | 5           | 22          | 5          | 21          | 5           | 52          | 5          | 38          | 5           | 135         | 5          | 89          |

#### Important:

The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

#### Example above:

OSP-E25BHD, stroke 5 m, required speed 3 m/s from table T2  
 speed 3 m/s gives 25 Nm and stroke 5 m gives 21 Nm. Max. torque for this application is 21 Nm.

#### Maximum Permissible Loads

T3

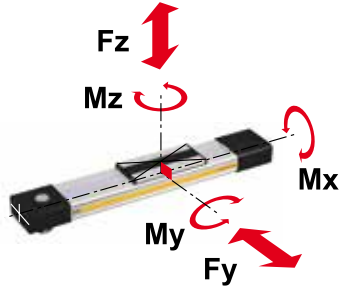
| Series     | Max. applied load |       | Max. moments [Nm] |      |      |
|------------|-------------------|-------|-------------------|------|------|
|            | Fy[N]             | Fz[N] | Mx                | My   | Mz   |
| OSP-E20BHD | 1600              | 1600  | 21                | 150  | 150  |
| OSP-E25BHD | 2000              | 3000  | 50                | 500  | 500  |
| OSP-E32BHD | 5000              | 10000 | 120               | 1000 | 1400 |
| OSP-E50BHD | 12000             | 15000 | 180               | 1800 | 2500 |

## Loads, Forces and Moments

### Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.

The maximum permissible loads must not be exceeded.



### Maximum Permissible Unsupported Length

#### Stroke length

The stroke lengths of the actuators are available in multiples of 1 mm up to 5700 mm.

Other stroke lengths are available on request.

The end of stroke must not be used as a mechanical stop.

Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 100 mm.

The use of an AC motor with frequency converter normally requires a larger clearance than that required for servo systems.

For advice, please contact your local Parker Origa technical support department.

\* For Bi-parting version the max. load (F) is the total load of both carriers

$$F = F_{\text{carrier 1}} + F_{\text{carrier 2}}$$

k = Max. permissible distance between mountings/Profile Mounting for a given load F.

When loadings are below or up to the curve in the graph below the deflection will be max. 0.01 % of distance k.

### Equation of Combined Loads

$$\frac{F_y}{F_y(\text{max})} + \frac{F_z}{F_z(\text{max})} + \frac{M_x}{M_x(\text{max})} + \frac{M_y}{M_y(\text{max})} + \frac{M_z}{M_z(\text{max})} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

$$M = F \cdot l \text{ [Nm]}$$

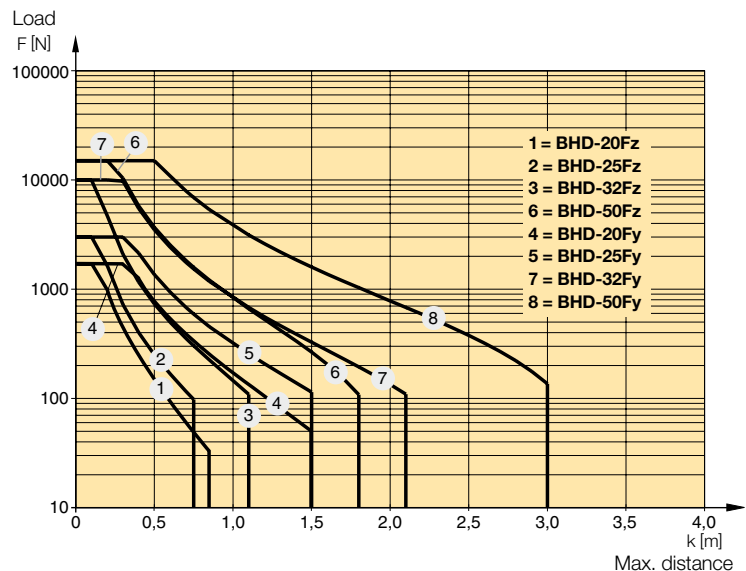
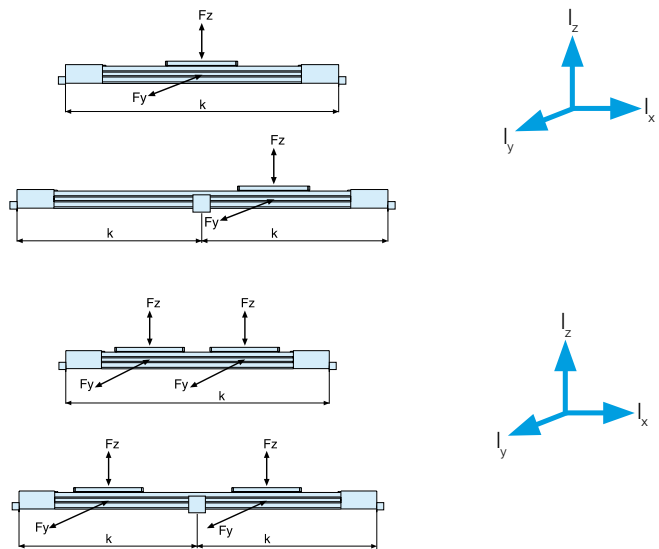
$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

The distance ( $l_x, l_y, l_z$ ) for calculation of moments relates to the centre axis of the actuator. Bending moments are calculated from the centre of the actuator and F indicates actual force.

### Maximum Permissible Unsupported Length – Placing of Profile Mounting

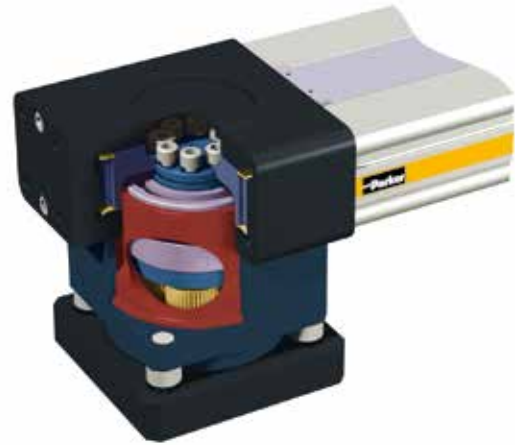


## Integrated Planetary Gearbox Series OSP-E..BHD - with Integrated Planetary Gearbox (Option)

### Features:

- Highly compact and rigid solution fully integrated in the drive cap housing
- Purpose designed for the BHD series.
- Available with three standard ratios (3, 5 and 10)
- Very low backlash
- A wide range of available motor flanges

Please contact your local Parker Origa technical support for available motor flanges.



### Standard Version:

- Gearbox on opposite side to carrier.

### Note:

When ordering, specify model/type of motor and manufacturer for correct motor flange.

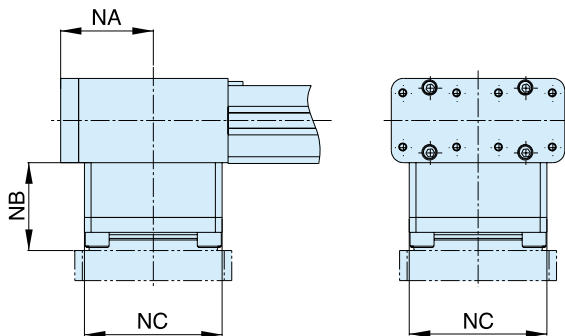
### Material:

Aluminium (AL-H) / Steel (St-H)

### Performance Overview

| Characteristics                                       | Unit                                   | Description |            |            |
|---|--|-------------|------------|------------|
| Series  |  | OSP-E25BHD  | OSP-E32BHD | OSP-E50BHD |
| Ratio (1-stage)                                       | i                                      | 3/5/10      |            |            |
| Max. axial load                                       | F <sub>amax</sub> [N]                  | 1550        | 1900       | 4000       |
| Torsional rigidity (i=5)                              | C <sub>t,21</sub> [Nm/arcmin]          | 3.3         | 9.5        | 25.0       |
| Torsional rigidity (i=3/10)                           | C <sub>t,21</sub> [Nm/arcmin]          | 2.8         | 7.5        | 222.0      |
| Torsional backlash                                    | J <sub>t</sub> [arcmin]                | <12         |            |            |
| Linear motion per revolution of drive shaft           | [mm]                                   | 220         | 280        | 360        |
| Nominal input speed                                   | n <sub>nom</sub> [min <sup>-1</sup> ]  | 3700        | 3400       | 2600       |
| Max. input speed                                      | n <sub>1max</sub> [min <sup>-1</sup> ] | 6000        |            |            |
| No-load torque at Nominal input speed                 | T <sub>012</sub> [Nm]                  | <0.14       | <0.51      | <1.50      |
| Lifetime  | [h]                                    | 20 000      |            |            |
| Efficiency  | η [%]                                  | >97         |            |            |
| Noise level (n <sub>1</sub> =3000 min <sup>-1</sup> ) | L <sub>PA</sub> [db]                   | <70         | <72        | <74        |

### Dimensions



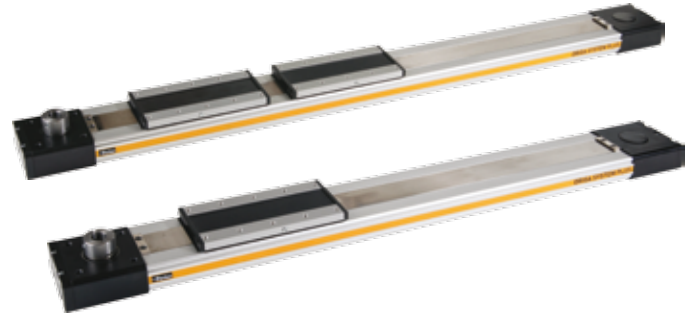
### Dimension table (mm) and additional weight

| Series     | NA | NB | NC  | Weight (Mass) [kg] |
|------------|----|----|-----|--------------------|
| OSP-E25BHD | 49 | 43 | 76  | 2.6                |
| OSP-E32BHD | 62 | 47 | 92  | 4.9                |
| OSP-E50BHD | 80 | 50 | 121 | 9.6                |

## Belt Actuator with Integrated Roller Guide

Size 25, 32, 50

Type: OSP-E..BHD



### Standard Versions:

- Belt Actuator with integrated Roller Guide
- Drive shaft with clamp shaft or plain shaft
- Choice of motor mounting side
- Dovetail profile for mounting of accessories and the actuator itself

### Options:

- Tandem version for higher moments
- Bi-parting version for synchronised movements
- Integrated planetary gearbox
- Drive shaft with
  - clamp shaft and plain shaft
  - hollow shaft with keyway
- Special drive shaft versions on request

### Installation Instructions

Use the threaded holes in the end cap for mounting the actuator.

Check if profile mountings are needed using the maximum allowable unsupported length graph.

At least one end cap must be secured to prevent axial sliding when profile mountings are used.

| Characteristics           | Description                         |
|---------------------------|-------------------------------------|
| Series                    | OSP-E..BHD                          |
| Mounting                  | See drawings                        |
| Ambient temperature range | -30 °C to +80 °C                    |
| Installation              | In any position                     |
| Encapsulation class       | IP 54                               |
| <b>Material</b>           |                                     |
| Slotted profile           | Extruded anodized aluminium         |
| Belt                      | Steel-corded polyurethane           |
| Pulley                    | Aluminium                           |
| Guide                     | Roller guide                        |
| Guide rail                | Aluminium                           |
| Track                     | High alloyed steel                  |
| Roller cartridge          | Steel rollers in aluminium housing  |
| Steel band                | Hardened, corrosion resistant steel |
| Screws, nuts              | Zinc plated steel                   |
| Mountings                 | Zinc plated steel and aluminium     |

### Weight (mass) and Inertia

| Series      | Weight (mass)[kg] |                      |             | Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ] |                      |             |
|-------------|-------------------|----------------------|-------------|---|----------------------|-------------|
|             | At stroke 0 m     | Add per metre stroke | Moving mass | At stroke 0 m                                 | Add per metre stroke | per kg mass |
| OSP-E25BHD  | 3.8               | 4.3                  | 1.0         | 984   | 197                  | 821         |
| OSP-E32BHD  | 7.7               | 6.7                  | 1.9         | 3498  | 438                  | 1459        |
| OSP-E50BHD  | 22.6              | 15.2                 | 4.7         | 19690   | 1489                 | 3103        |
| OSP-E25BHD* | 5.7               | 4.3                  | 2.0         | 1805  | 197                  | 821         |
| OSP-E32BHD* | 11.3              | 6.7                  | 3.8         | 6358  | 438                  | 1459        |
| OSP-E50BHD* | 31.7              | 15.2                 | 9.4         | 34274   | 1489                 | 3103        |

\* Version: Tandem and Bi-parting (Option)

### Maintenance

Depending on operating conditions, inspection of the actuator is recommended after 12 months or 3000 km operation. Please refer to the operating instructions supplied with the actuator.

### First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

1. Determination of the lever arm length  $l_x, l_y$  and  $l_z$  from  $m_e$  to the centre axis of the actuator.
2. Calculation of the load  $F_x$  or  $F_y$  to the carrier caused by  $m_e$   
 $F = m_e \cdot g$
3. Calculation of the static and dynamic force  $F_A$  which must be transmitted by the belt.  

$$F_{A(horizontal)} = \frac{F_a + F_0}{m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}}$$

$$F_{A(vertical)} = \frac{F_g + F_a + F_0}{m_g \cdot g + m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}}$$
4. Calculation of all static and dynamic bending moments  $M_x, M_y$  and  $M_z$  which occur in the application  
 $M = F \cdot l$
5. Selection of maximum permissible loads via Table T3.
6. Calculation and checking of the combined load, which must not be higher than 1.
7. Checking of the maximum torque that occurs at the drive shaft in Table T2.
8. Checking of the required action force  $F_A$  with the permissible load value from Table T1.

For motor sizing, the effective torque must be determined, taking into account the cycle time.

#### Legend

- $l$  = distance of a mass in the x-, y- and z-direction from the guide [m]
- $m_e$  = external moved mass [kg]
- $m_{LA}$  = moved mass of actuator [kg]
- $m_g$  = total moved mass ( $m_e + m_{LA}$ ) [kg]
- $F_{x/y}$  = load exerted on the carrier in dependence of the installation position [N]
- $F_A$  = action force [N]
- $M_0$  = no-load torque [Nm]
- $U_{ZR}$  = circumference of the pulley (linear movement per revolution) [m]
- $g$  = gravity [m/s<sup>2</sup>]
- $a_{max.}$  = maximum acceleration [m/s<sup>2</sup>]

#### Performance Overview

T1

| Characteristics                            | Unit                 | Description |            |            |      |
|--|----------------------|-------------|------------|------------|------|
| Series                                     |                      | OSP-E25BHD  | OSP-E32BHD | OSP-E50BHD |      |
| Max. speed                                 | [m/s]                | 10          | 10         | 10         |      |
| Linear motion per revolution drive shaft   | [mm]                 | 180         | 240        | 350        |      |
| Max. rpm. drive shaft                      | [min <sup>-1</sup> ] | 3000        | 2500       | 1700       |      |
| Max. effective action force $F_A$ at speed | < 1 m/s:             | [N]         | 1070       | 1870       | 3120 |
|  | 1-3 m/s:             | [N]         | 890        | 1560       | 2660 |
|  | > 3-10 m/s:          | [N]         | 550        | 1030       | 1940 |
| No-load torque                             | [Nm]                 | 1.2         | 2.2        | 3.2        |      |
| Max. acceleration/deceleration             | [m/s <sup>2</sup> ]  | 40          | 40         | 40         |      |
| Repeatability                              | [mm/m]               | ±0.05       | ±0.05      | ±0.05      |      |
| Max. standard stroke length                | [mm]                 | 7000        | 7000       | 7000       |      |

#### Maximum Permissible Torque on Drive Shaft Speed / Stroke

T2

| OSP-E25BHD  |             |            |             | OSP-E32BHD  |             |            |             | OSP-E50BHD  |             |            |             |
|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] |
| 1           | 31          | 1          | 31          | 1           | 71          | 1          | 71          | 1           | 174         | 1          | 174         |
| 2           | 28          | 2          | 31          | 2           | 65          | 2          | 71          | 2           | 159         | 2          | 174         |
| 3           | 25          | 3          | 31          | 3           | 59          | 3          | 60          | 3           | 153         | 3          | 138         |
| 4           | 23          | 4          | 25          | 4           | 56          | 4          | 47          | 4           | 143         | 4          | 108         |
| 5           | 22          | 5          | 21          | 5           | 52          | 5          | 38          | 5           | 135         | 5          | 89          |
| 6           | 21          | 6          | 17          | 6           | 50          | 6          | 32          | 6           | 132         | 6          | 76          |
| 7           | 19          | 7          | 15          | 7           | 47          | 7          | 28          | 7           | 126         | 7          | 66          |
| 8           | 18          |            |             | 8           | 46          |            |             | 8           | 120         |            |             |
| 9           | 17          |            |             | 9           | 44          |            |             | 9           | 116         |            |             |
| 10          | 16          |            |             | 10          | 39          |            |             | 10          | 108         |            |             |

#### Important:

The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

#### Example above:

OSP-E25BHD, stroke 5 m, required speed 3 m/s from table T2  
 speed 3 m/s gives 25 Nm and stroke 5 m gives 21 Nm. Max. torque for this application is 21 Nm.

#### Maximum Permissible Loads

T3

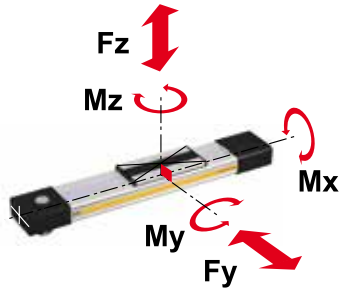
| Series     | Max. applied load $F_y, F_z$ [N] | Max. moments [Nm] |       |       |
|------------|----------------------------------|-------------------|-------|-------|
|            |                                  | $M_x$             | $M_y$ | $M_z$ |
| OSP-E25BHD | 986                              | 11                | 64    | 64    |
| OSP-E32BHD | 1348                             | 19                | 115   | 115   |
| OSP-E50BHD | 3704                             | 87                | 365   | 365   |

## Loads, Forces and Moments

### Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.

The maximum permissible loads must not be exceeded.



### Equation of Combined Loads

$$\frac{F_y}{F_y(\max)} + \frac{F_z}{F_z(\max)} + \frac{M_x}{M_x(\max)} + \frac{M_y}{M_y(\max)} + \frac{M_z}{M_z(\max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

$$M = F \cdot l \text{ [Nm]}$$

$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

The distance ( $l_x, l_y, l_z$ ) for calculation of moments relates to the centre axis of the actuator. Bending moments are calculated from the centre of the actuator and F indicates actual force.

## Maximum Permissible Unsupported Length

### Stroke length

The stroke lengths of the actuators are available in multiples of 1 mm up to 5700 mm.

Other stroke lengths are available on request.

The end of stroke must not be used as a mechanical stop.

Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 100 mm.

The use of an AC motor with frequency converter normally requires a larger clearance than that required for servo systems.

For advice, please contact your local Parker Origa technical support department.

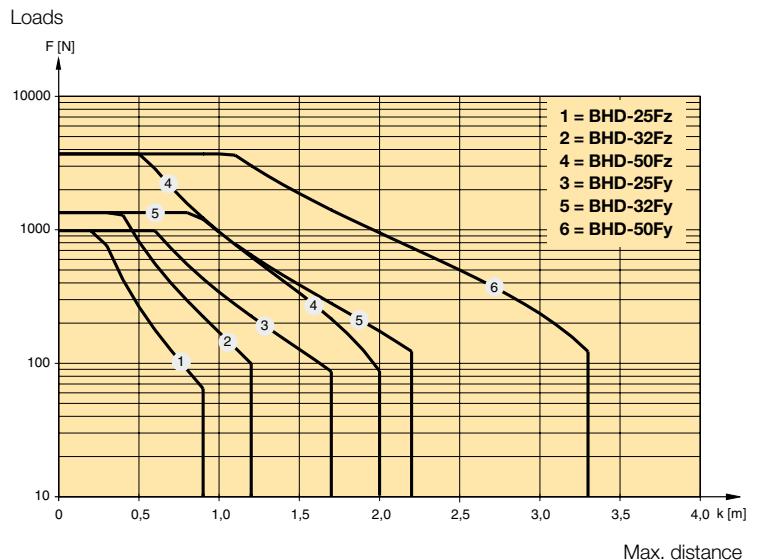
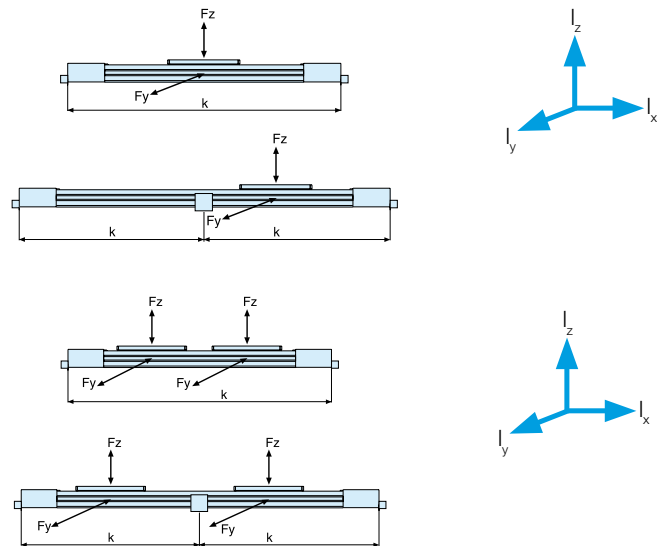
\* For the bi-parting version the maximum load (F) complies with the total of the load at both carriers.

$$F = F_{\text{carriage 1}} + F_{\text{carriage 2}}$$

k = Maximum permissible distance between mountings/mid-section support for a given load F.

If the loads are below or up to the curve in the graph the deflection will be max. 0.01 % of distance k.

### Maximum Permissible Unsupported Length – Placing of Profile Mounting



# Options and Accessories

## OSP-E..BV, Vertical belt actuator with integrated ball bearing guide

### STANDARD VERSION OSP-E..BV

Standard actuator head with clamp shaft or plain shaft and integrated ball bearing guide with two carriers.  
 Choice of side on which gearbox or motor is to be mounted.

**DRIVE SHAFT**  
 "CLAMP SHAFT AND PLAIN SHAFT" OR "DOUBLE PLAIN SHAFT"  
 e.g. for parallel operation of two Z-axes with an intermediate drive shaft.

### ACCESSORIES

**MOTOR MOUNTINGS**  
 For connection of gearbox or motor direct to drive shaft with clamp shaft, or with a motor coupling to drive shaft with plain shaft.

Drive Shaft with Clamp Shaft

Drive Shaft with Plain Shaft

Drive Shaft with Clamp Shaft and Plain Shaft

Drive Shaft with Double Plain Shaft

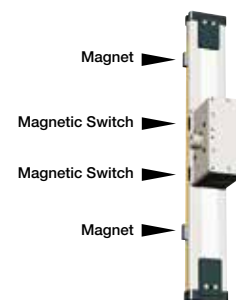


**MAGNETIC SWITCHES SET**  
 Magnetic switches with connector, mounting rail and magnets for contactless sensing of the end positions. Cable (suitable for cable chain) can be ordered separately in 5 m, 10 m or 15 m length.

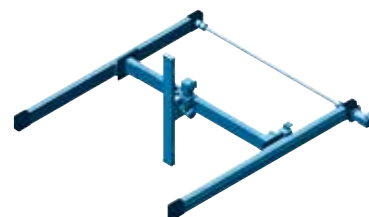
### OPTIONS

**TANDEM**  
 Additional actuator head and two additional carriers for higher bending moments.

**HOLLOW SHAFT WITH KEYWAY**  
 For direct connection of gearbox or motor with keyway.



**MULTI-AXIS SYSTEMS**  
 For modular assembly of actuators up to multi-axis systems.





## Vertical belt actuator with integrated ball bearing guide in multi-axis systems

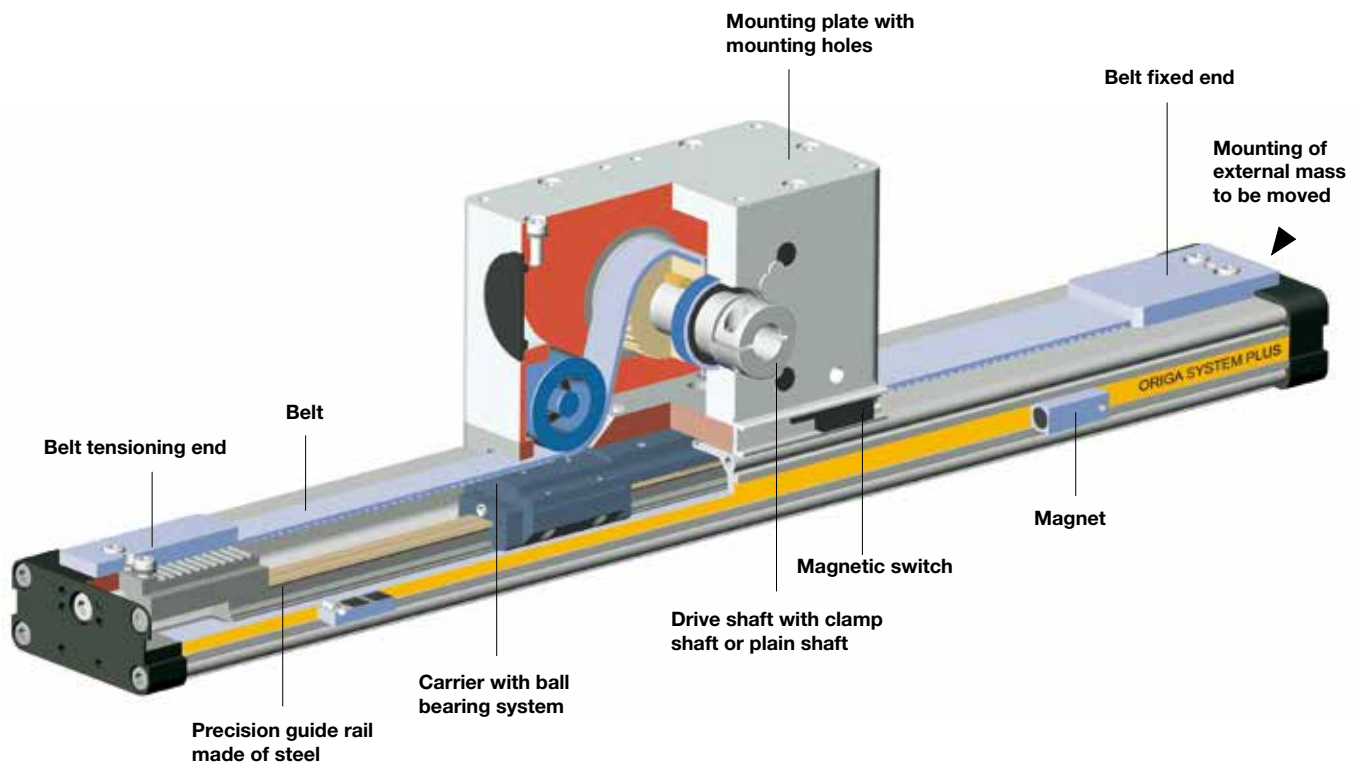
The OSP-E..BV vertical belt actuator with integrated ball bearing guide has been specially developed for lifting movements in the Z-axis. The especially low vibration OSP-E..BV vertical actuator in combination with the heavy duty series OSP-E..BHD meets the highest demands in portal and handling applications.

### Advantages

- Fixed actuator head for low moving mass
- Integrated ball bearing guide for high bending moments
- Magnetic switch set for contactless position sensing
- Easy to install
- Low maintenance

### Features

- High acceleration and speed
- Drive Shaft versions with clamp shaft or plain shaft
- Power transmission by belt
- Moving axis profile
- Complete motor and control packages



Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at [www.parker-origa.com](http://www.parker-origa.com)



**Vertical Belt Actuator with Integrated Ball Bearing Guide**  
**Size 20, 25**  
 Type: OSP-E..BV



**Standard Versions:**

- Vertical belt actuator with integrated ball bearing guide
- Drive shaft with clamp shaft or plain shaft
- Choice of motor mounting side

**Options:**

- Tandem version for higher moments
- Drive shaft with
  - clamp shaft and plain shaft or double plain shaft
  - hollow shaft with keyway
- Special drive shaft versions on request

**Installation Instructions**

Make sure that the OSP-E..BV is always operated by motor with holding brake on the actuator side. For the mounting of the external mass to be moved there are threaded holes in the end caps. Before mounting, check the correct centre of gravity distance from the table. Mount the external mass on the belt fixed end, so that the belt tension can be checked and adjusted at the belt tensioning end without dismantling.

| Characteristics                                    | Description   |
|--|---|
| Series   | OSP-E..BV   |
| Mounting   | See drawings  |
| Ambient temperature range                          | -30 °C to +80 °C  |
| Installation                                       | Vertical  |
| Encapsulation class                                | IP 20   |
| <b>Material</b>                                    |   |
| Profile  | Extruded anodized aluminium                                 |
| Belt   | Steel-corded polyurethane                                   |
| Pulley   | Aluminium   |
| Guide  | Ball bearing guide  |
| Guide rail   | Hardened steel rail with high precision, accuracy class N   |
| Guide carrier preloaded 0.08 x C, accuracy class N | Steel carrier with integrated wiper system, grease nipples, |
| Screws, nuts                                       | Zinc plated steel   |

**Weight (mass) and Inertia**

| Series     | Total weight (Mass) [kg] |               | Moving mass [kg] |                      | Inertia [x 10 <sup>-6</sup> kgm <sup>2</sup> ] |                      |                 |
|------------|--------------------------|---------------|------------------|----------------------|--|----------------------|-----------------|
|            | At stroke 0 m            | Actuator head | At stroke 0 m    | Add per metre stroke | At Stroke 0 m                                  | Add per metre stroke | Add per kg mass |
| OSP-E20BV  | 3.4                      | 1.9           | 1.6              | 4.0                  | 486  | 1144                 | 289             |
| OSP-E25BV  | 7.7                      | 5.3           | 2.4              | 4.4                  | 1695   | 2668                 | 617             |
| OSP-E20BV* | 5.3                      | 2 x 1.9       | 1.6              | 4.0                  | 533  | 1144                 | 289             |
| OSP-E25BV* | 13                       | 2 x 5.3       | 2.4              | 4.4                  | 1915   | 2668                 | 617             |

\* Version: Tandem (Option)

**Maintenance**

Depending on operating conditions, inspection of the actuator is recommended after 12 months or 3000 km operation. Please refer to the operating instructions supplied with the actuator.

**First service start-up**

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

1. Determination of the lever arm length  $l_x, l_y$  and  $l_z$  from  $m_e$  to the centre axis of the actuator.
2. Calculation of the static and dynamic force  $F_A$  which must be transmitted by the belt.  

$$F_A = F_g + F_a + F_0$$

$$= m_g \cdot g + m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$$
3. Calculation of all static and dynamic moments  $M_x, M_y$  and  $M_z$  which occur in the application.  

$$M = F \cdot l$$
4. Selection of maximum permissible loads via Table T3.
5. Calculation and checking of the combined load, which must not be higher than 1.
6. Checking of the maximum moment that occurs at the drive shaft in Table T2.
7. Checking of the required action force  $F_A$  with the permissible load value from Table T1.

For motor sizing, the effective torque must be determined, taking into account the cycle time.

#### Legend

- $l$  = distance of a mass in the x-, y- and z-direction from the guide [m]
- $m_e$  = external moved mass [kg]
- $m_{LA}$  = moved mass of actuator [kg]
- $m_g$  = total moved mass ( $m_e + m_{LA}$ ) [kg]
- $F_A$  = action force [N]
- $M_0$  = no-load torque [Nm]
- $U_{ZR}$  = circumference of the pulley (linear movement per revolution) [m]
- $g$  = gravity [m/s<sup>2</sup>]
- $a_{max}$  = maximum acceleration [m/s<sup>2</sup>]

#### Performance Overview

T1

| Characteristics                                 | Unit                 | Description |           |      |
|---|----------------------|-------------|-----------|------|
| Series  |                      | OSP-E20BV   | OSP-E25BV |      |
| Max. Speed                                      | [m/s]                | 3.0         | 5.0       |      |
| Linear motion per revolution of drive shaft     | [mm/U]               | 108         | 160       |      |
| Max. rpm. drive shaft                           | [min <sup>-1</sup> ] | 1700        | 1875      |      |
| Max. effective action force $F_A$ at speed      | 1m/s                 | [N]         | 650       | 1430 |
|   | 1 - 2 m/s            | [N]         | 450       | 1200 |
|   | > 3 - 5 m/s          | [N]         | -         | 1050 |
| No-load torque <sup>2)</sup>                    | [Nm]                 | 0.6         | 1.2       |      |
| Max. acceleration/deceleration                  | [m/s <sup>2</sup> ]  | 20          | 20        |      |
| Repeatability                                   | +/- [mm/m]           | 0.05        | 0.05      |      |
| Max. standard stroke length <sup>1)</sup>       | [mm]                 | 1000        | 1500      |      |
| Max. recommended permissible mass <sup>3)</sup> | [kg]                 | 10          | 20        |      |

<sup>1)</sup> Longer strokes on request

<sup>2)</sup> As a result of static friction force

<sup>3)</sup> vertical

#### Maximum Permissible Torque on Drive Shaft Speed / Stroke

T2

| OSP-E-20BV  |             |            |             | OSP-E-25BV  |             |            |             |
|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] |
| 1           | 19          | 1          | 17          | 1           | 36          | 1          | 36          |
| 2           | 17          | 2          | 11          | 2           | 30          | 2          | 36          |
| 3           | 16          |            |             | 3           | 30          |            |             |
|             |             |            |             | 4           | 28          |            |             |
|             |             |            |             | 5           | 27          |            |             |

#### Important:

The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

#### Example above:

OSP-E25BV required speed  $v = 3$  m/s and stroke = 1 m.

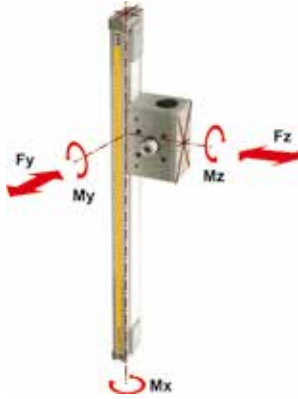
Accordingly Table T2 shows permissible moments of 30 Nm for the speed and 36 Nm for the stroke. Therefore the maximum moment at the drive shaft is determined by the speed and must not exceed 30 Nm.

## Loads, Forces and Moments

### Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.

The maximum permissible loads must not be exceeded.



$$M = F \cdot l \text{ [Nm]}$$

$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

### Maximum Permissible Loads

T3

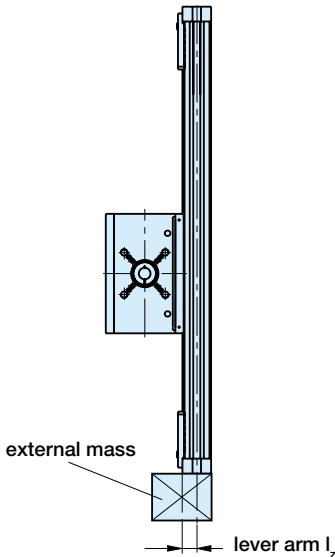
| Size      | Max. applied load [N] |        | Max. moments [Nm] |     |     |
|-----------|-----------------------|--------|-------------------|-----|-----|
|           | Fy [N]                | Fz [N] | Mx                | My  | Mz  |
| OSP-E20BV | 1600                  | 1600   | 20                | 100 | 100 |
| OSP-E25BV | 2000                  | 3000   | 50                | 200 | 200 |

### Equation of Combined Loads

$$\frac{F_z}{F_z \text{ (max)}} + \frac{M_x}{M_x \text{ (max)}} + \frac{M_y}{M_y \text{ (max)}} + \frac{M_z}{M_z \text{ (max)}} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

### Distance of Centre of Gravity of External Mass from Mid-Point of Actuator



| Mass [kg]  | OSP-E20BV         |  | OSP-E25BV         |  |
|------------|-------------------|--|-------------------|--|
|            | Lever arm lz [mm] | Max. permissible acceleration/ deceleration [m/s²] | Lever arm lz [mm] | Max. permissible acceleration/ deceleration [m/s²] |
| > 3 to 5   | 0                 | 20   | 50                | 20   |
| >5 to 10   | 0                 | 20   | 40                | 20   |
| > 10 to 15 | -                 | -  | 35                | 20   |
| > 15 to 20 | -                 | -  | 30                | 15   |

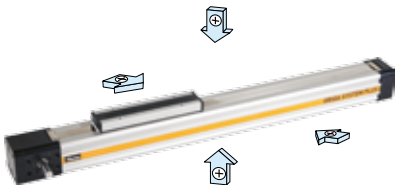
# Options and Accessories

## OSP-E..B

### Belt actuator with internal plain bearing guide

#### STANDARD VERSIONS OSP-E..B

Carrier with internal guidance and magnet packet for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.



#### DRIVE SHAFT VERSIONS

- Plain shaft or
- double plain shaft (Option)  
e.g. to drive two actuators in parallel.



#### OPTIONS

##### TANDEM

For higher moment support.



##### BI-PARTING

For perfectly synchronised bi-parting movements.



#### ACCESSORIES

##### MOTOR MOUNTING



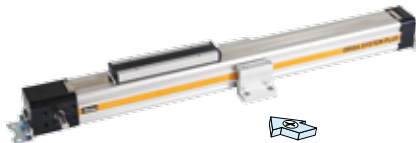
##### END CAP MOUNTING

For end-mounting of the actuator.



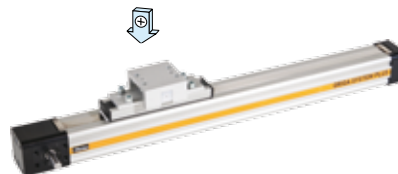
##### PROFILE MOUNTING

For supporting long actuators or mounting the actuator on the dovetail grooves.



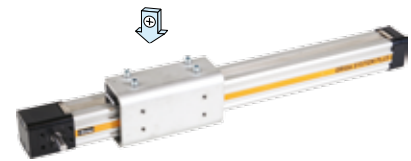
##### CLEVIS MOUNTING

Carrier with tolerance and parallelism compensation to drive external linear guides.



##### INVERSION MOUNTING

The inversion mounting, mounted on the carrier, transfers the driving force to the opposite side, e.g. for dirty environments.



##### MAGNETIC SWITCHES SERIES RST AND EST

For contactless position sensing of end stop and intermediate carrier positions.



# Belt actuator with internal plain bearing guide for point-to-point applications

A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

## Advantages

- Precise path and position control
- High speed operation
- Easy installation
- Low maintenance
- Ideal for precise point-to-point applications

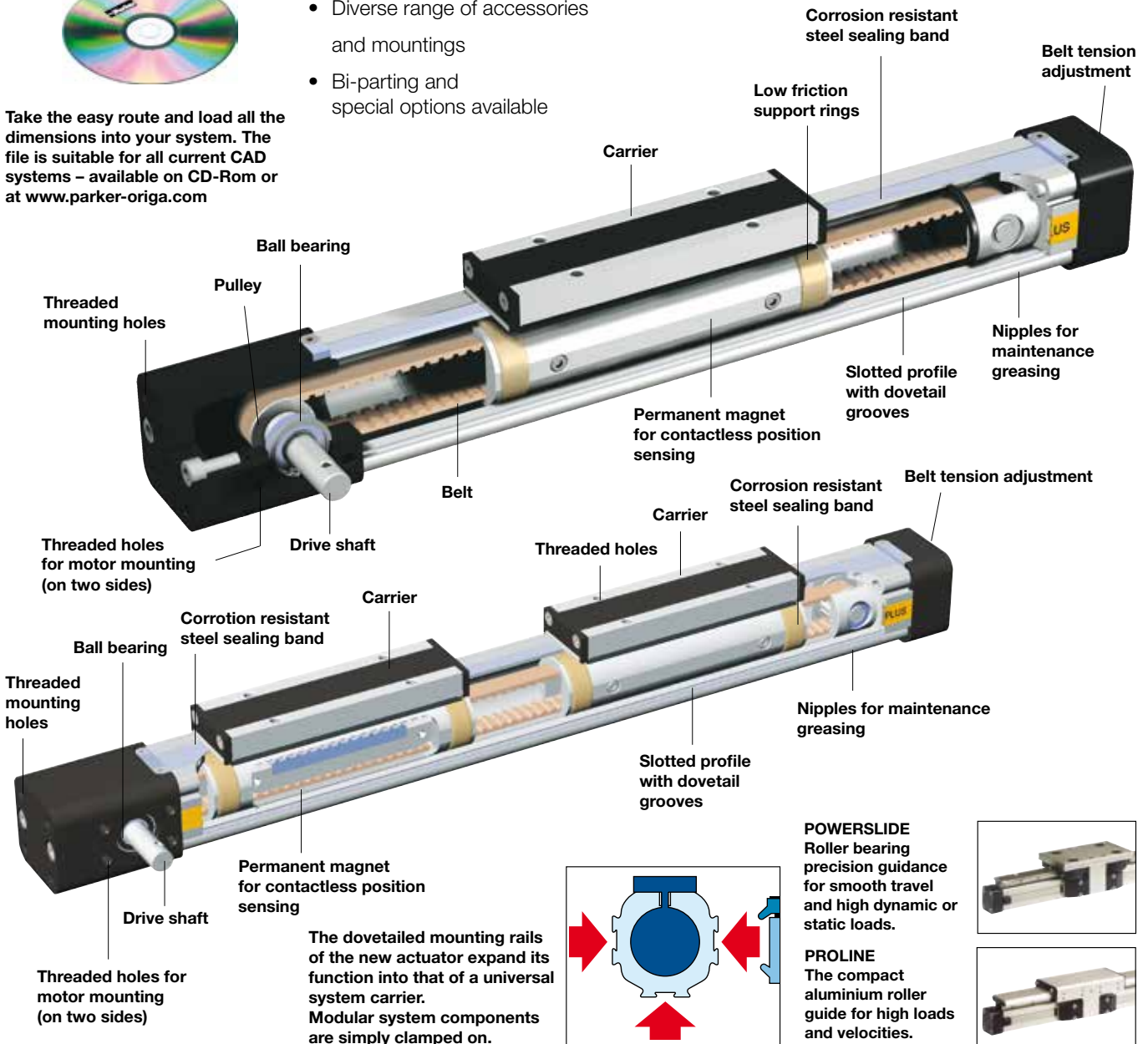
## Features

- Integrated drive and guidance system
- Tandem configuration with increased carrier distance for higher moment supports
- Long available strokes
- Complete motor and control packages
- Diverse range of accessories and mountings
- Bi-parting and special options available

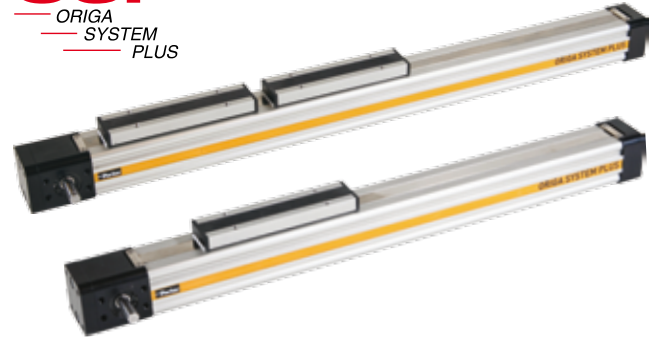
Tandem configuration with increased carrier distance for higher moment supports.  
 Bi-parting version for precise synchronized movements



Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at [www.parker-origa.com](http://www.parker-origa.com)



**Belt Actuator with Internal Plain Bearing Guide**  
**Size 25, 32, 50**  
 Type: OSP-E..B



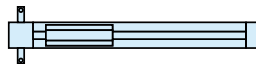
**Standard Versions:**

- Standard carrier with internal plain bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Position of drive shafts



**Options:**

- Tandem version
- Bi-parting version for synchronized movements
- Drive shaft with double plain shaft



**Installation Instructions**

Use the threaded holes in the end cap for mounting the actuator. See if Profile Mountings are needed using the maximum allowable unsupported length graph. At least one end cap must be secured to prevent axial sliding when profile mounting is used. When the actuator is moving an externally guided load, the compensation must be used.

The actuators can be fitted with the standard carrier mounting facing in any direction. To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards. The inversion mounting can be fitted to transfer the driving force to the opposite side.

| Characteristics           | Description                        |
|---------------------------|------------------------------------|
| Series                    | OSP-E..B                           |
| Mounting                  | See drawings                       |
| Ambient temperature range | -30 °C to +80 °C                   |
| Installation              | See table                          |
| Encapsulation class       | IP 54                              |
| <b>Material</b>           |                                    |
| Slotted Profile           | Extruded anodized aluminium        |
| Belt                      | Steel-corded polyurethane          |
| Pulley                    | Aluminium                          |
| Guide bearings            | Low friction plastic               |
| Sealing band              | Hardened corrosion resistant steel |
| Screws, nuts              | Zinc plated steel                  |
| Mountings                 | Zinc plated steel and aluminium    |

**Weight (mass) and Inertia**

| Series    | at stroke 0 m | Weight (mass) [kg]  |             | Inertia [x 10 <sup>-6</sup> kgm <sup>2</sup> ] |                     |
|-----------|---------------|---------------------|-------------|--|---------------------|
|           |               | ad per meter stroke | moving mass | at stroke 0 m                                  | ad per meter stroke |
| OSP-E25B  | 0.9           | 1.6                 | 0.2         | 25   | 6.6                 |
| OSP-E32B  | 1.9           | 3.2                 | 0.4         | 43   | 10                  |
| OSP-E50B  | 5.2           | 6.2                 | 1.0         | 312  | 45                  |
| OSP-E25B* | 1.2           | 1.6                 | 0.5         | 48   | 6.6                 |
| OSP-E32B* | 2.3           | 3.2                 | 0.8         | 83   | 10                  |
| OSP-E50B* | 6.3           | 6.2                 | 2.1         | 585  | 45                  |

\* Version: Tandem and Bi-parting (Option)

**Maintenance**

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of the belt and wear parts, after an operation time of 12 months of operation or 3 000 km travel of distance. Additional greasing is easily done by using nipples in the slotted profile. Please refer to the operating instructions supplied with the actuator.

**First service start-up**

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

1. Required acceleration,
2. Required torque is shown on page 332
3. Check that maximum values in the table 3 are not exceeded
4. Drive shaft by using table T2. (Pay attention to note under table) If value is lower than required, overview the moving profile or select if possible a bigger unit.
5. Before sizing and specifying the motor, the average torque must be calculated using the cycle time of the application.
6. Check that the maximum allowable unsupported length is not exceeded.

#### Performance Overview

| Characteristics                                     | Unit                 | Description |          |          |     |
|---|----------------------|-------------|----------|----------|-----|
| Size  |                      | OSP-E25B    | OSP-E32B | OSP-E50B |     |
| Max. speed  | [m/s]                | 2           | 3        | 5        |     |
| Linear motion per revolution, drive shaft           | [mm]                 | 60          | 60       | 100      |     |
| Max. rpm drive shaft                                | [min <sup>-1</sup> ] | 2 000       | 3 000    | 3 000    |     |
| Max. effective action force F <sub>A</sub> at speed | < 1 m/s:             | [N]         | 50       | 150      | 425 |
|   | 1 - 2 m/s:           | [N]         | 50       | 120      | 375 |
|   | > 2 m/s:             | [N]         | -        | 100      | 300 |
| No-load torque                                      | [Nm]                 | 0.4         | 0.5      | 0.6      |     |
| Max. acceleration/deceleration                      | [m/s <sup>2</sup> ]  | 10          | 10       | 10       |     |
| Repeatability                                       | [mm/m]               | ±0.05       | ±0.05    | ±0.05    |     |
| Max. stroke length OSP-E..B                         | [mm]                 | 3000        | 5000     | 5000     |     |
| Max. stroke length OSP-E..B*                        | [mm]                 | 2 x 1500    | 2 x 2500 | 2 x 2500 |     |

\* Bi-parting version

#### Maximum Permissible Torque on Drive Shaft Speed / Stroke T2

| OSP-E25B    |             |            |             | OSP-E32B     |             |            |             | OSP-E50B     |             |            |             |
|-------------|-------------|------------|-------------|--------------|-------------|------------|-------------|--------------|-------------|------------|-------------|
| Speed [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed. [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] | Speed. [m/s] | Torque [Nm] | Stroke [m] | Torque [Nm] |
| 1           | 0.9         | 1          | 0.9         | 1            | 2.3         | 1          | 2.3         | 1            | 10.0        | 1          | 10.0        |
| 2           | 0.9         | 2          | 0.9         | 2            | 2.0         | 2          | 2.3         | 2            | 9.5         | 2          | 10.0        |
|             |             | 3          | 0.9         | 3            | 1.8         | 3          | 2.3         | 3            | 9.0         | 3          | 9.0         |
|             |             |            |             |              |             | 4          | 2.3         | 4            | 8.0         | 4          | 7.0         |
|             |             |            |             |              |             | 5          | 1.8         | 5            | 7.5         | 5          | 6.0         |

#### Important:

The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

#### Example above:

OSP-E32B stroke 2 m, required speed 3 m/s;

From table T2: speed 3 m/s gives 1.8 Nm and stroke 2 m gives 2.3 Nm.

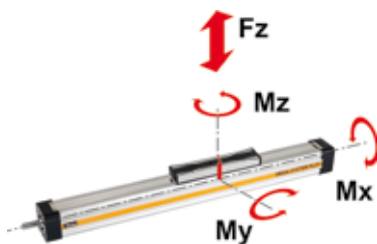
Max. torque for this application is 1.8 Nm.

## Loads, Forces and Moments

#### Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.

The maximum permissible loads must not be exceeded.



$$M = F \cdot l \text{ [Nm]}$$

$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

#### Maximum Permissible Loads T3

| Size                  | Max. applied load [N]<br>Fz   | Max. moments [Nm] |    |    |
|-----------------------|---|-------------------|----|----|
|                       |   | Mx                | My | Mz |
| OSP-E25B              | 500   | 2                 | 12 | 8  |
| OSP-E32B              | 1200  | 8                 | 25 | 16 |
| OSP-E50B              | 3000  | 16                | 80 | 32 |
| OSP-E..B Bi-partional | The maximum load F must be equally distributed among the two carriers |                   |    |    |

#### Equation of Combined Loads

$$\frac{F_z}{F_z \text{ (max)}} + \frac{M_x}{M_x \text{ (max)}} + \frac{M_y}{M_y \text{ (max)}} + \frac{M_z}{M_z \text{ (max)}} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.



## Maximum Permissible Unsupported Length

### Stroke length

The stroke lengths of the actuators are available in multiples of 1 mm up to max.

**OSP-E25B:** 3 m / 2 x 1.5 m \*

**OSP-E32B:** 5 m / 2 x 2.5 m \*

**OSP-E50B:** 5 m / 2 x 2.5 m \*

\* Version: Bi-partional

Other stroke lengths are available on request.

The end of stroke must not be used as a mechanical stop.

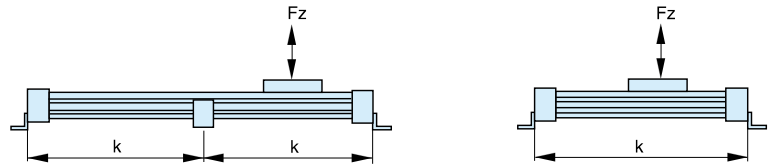
Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft.

The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems.

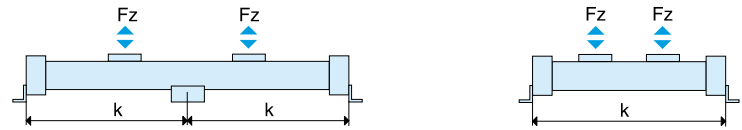
For advise, please contact your local Parker Origas technical support department.

## Maximum Permissible Unsupported Length – Placing of Profile Mounting

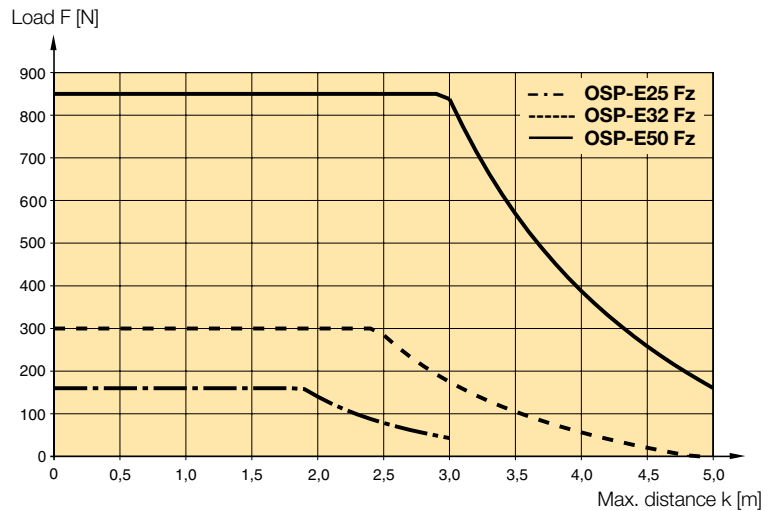
### Series OSP-E..B



### Series OSP-E..B Bi-parting version



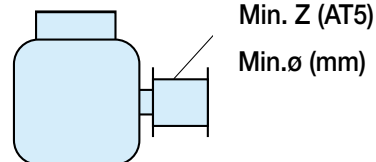
$k$  = Maximum permissible distance between mountings/mid-section support for a given load  $F$ .



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance  $k$ .)

## Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupling or pulley, a steadying block should be used.



## Pulleys

Minimum allowable number of teeth  $Z$  (AT5) at maximum applied torque.

| Size     | Min. Z | Min. ø |
|----------|--------|--------|
| OSP-E25B | 24     | 38     |
| OSP-E32B | 24     | 38     |
| OSP-E50B | 36     | 57     |

## Required Acceleration

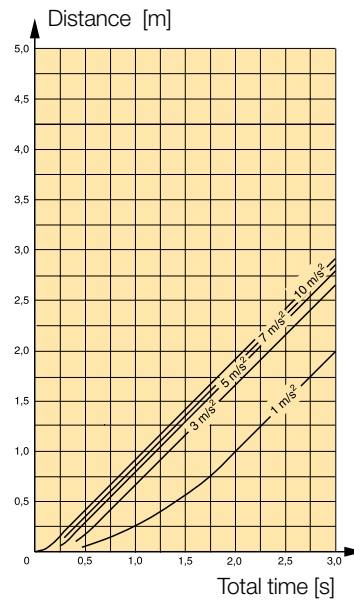
### Distance / Time Graph

Using the required travel distance and total time, the adjacent graphs show the required acceleration based on maximum speed.

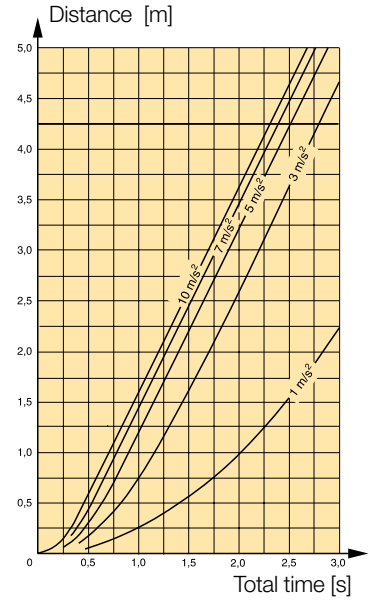
The graphs assume that acceleration and deceleration are equal.

Please note that specifying non-essential high acceleration or short cycle time will result in an oversized motor.

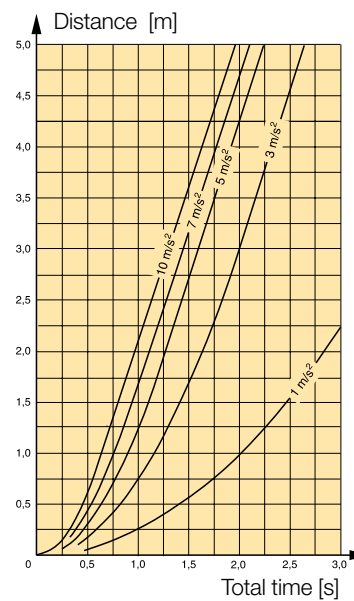
**Max speed 1 m/s**



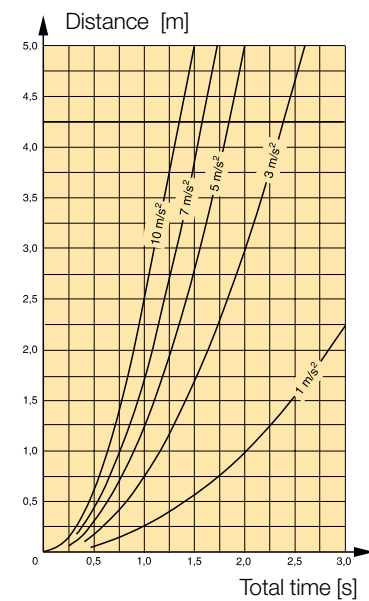
**Max speed 2 m/s**



**Max speed 3 m/s**



**Max speed 5 m/s**



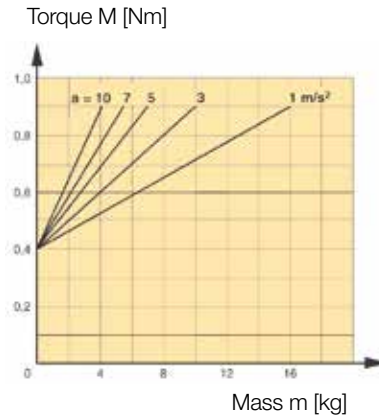
## Required Torque / Mass

Using the known mass, the direction of the application and the required acceleration from the distance-time graphs, the actuator can be sized and the required torque is shown in the adjacent graphs. Mass in graphs = Load + moving mass of the actuator.

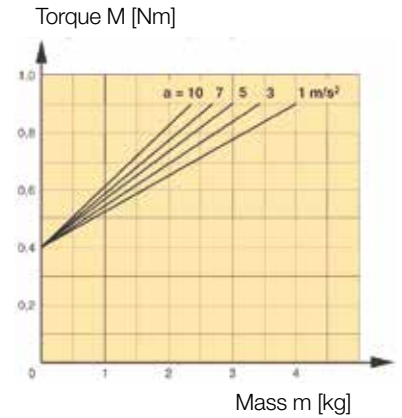
**Please note:**

When using an additional guide, please add the mass of the carriage to the total moving mass.

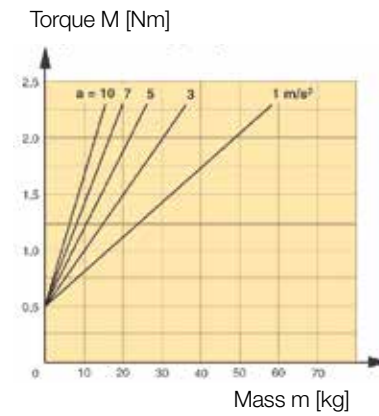
**Size OSP-E25B,  
 Horizontal Application**



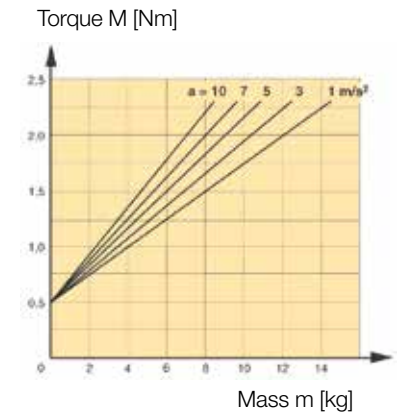
**Size OSP-E25B,  
 Vertical Application**



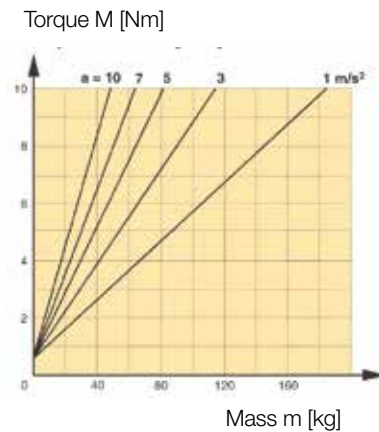
**Size OSP-E32B,  
 Horizontal Application**



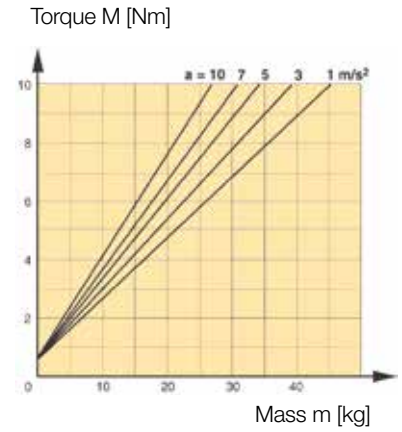
**Size OSP-E32B,  
 Vertical Application**



**Size OSP-E50B,  
 Horizontal Application**



**Size OSP-E50B,  
 Vertical Application**



# Ball screw actuator with internal plain bearing guide for high accuracy applications

A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

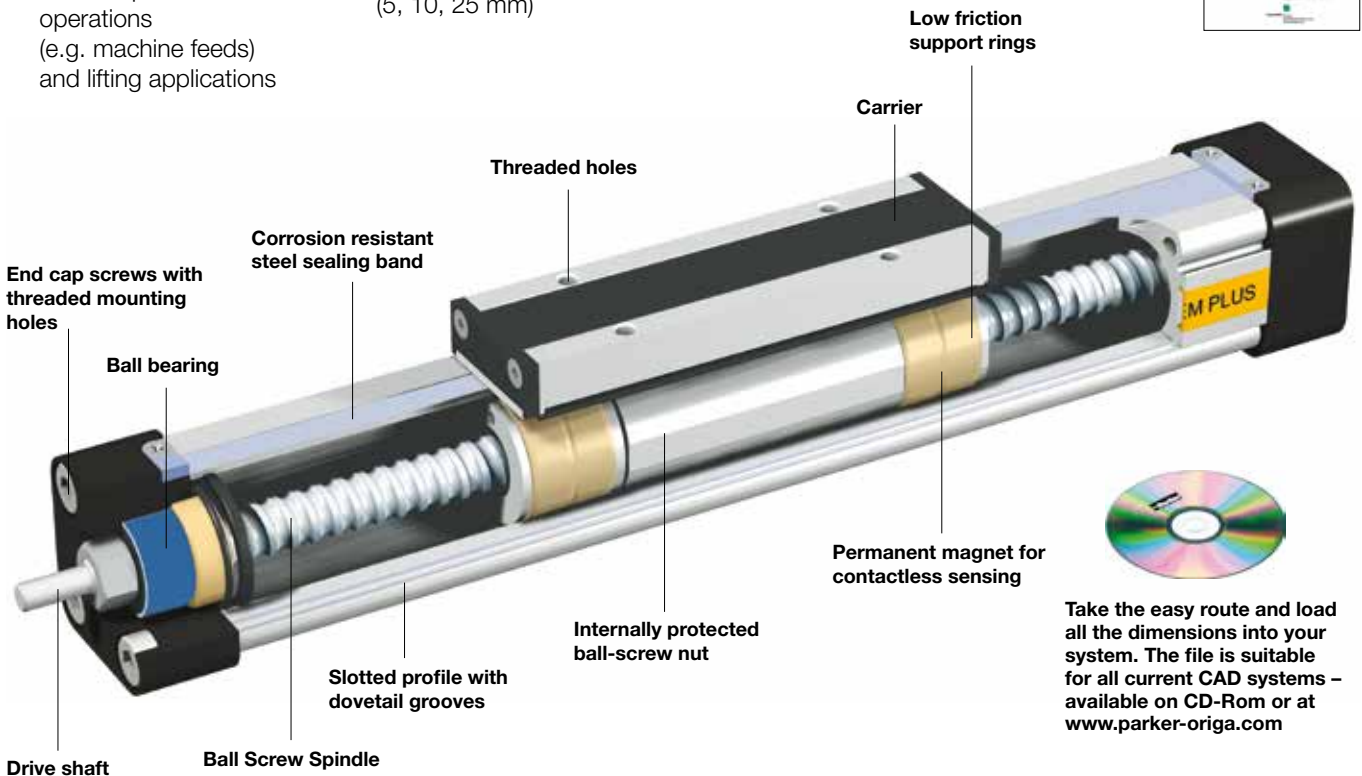
## Advantages

- Accurate path and position control
- High force output
- Easy installation
- Excellent slow speed characteristics
- Ideal for precise traverse operations (e.g. machine feeds) and lifting applications

## Features

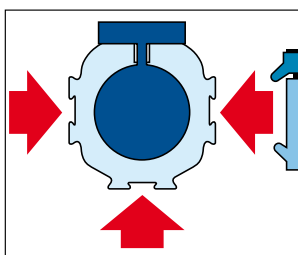
- Integrated drive and guidance system
- Complete motor and control packages
- Diverse range of accessories and mountings
- Optimal screw pitches (5, 10, 25 mm)

Clean Room-Version certified to DIN EN ISO 14644-1

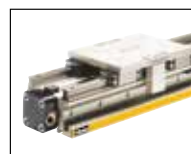


Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at [www.parker-origa.com](http://www.parker-origa.com)

The dovetailed mounting rails of the new actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on.



Heavy Duty guide HD linear guides for heavy duty applications



SFI-plus displacement measuring system



**SLIDELINE**  
 Combination with linear guides provides for heavier loads.



**POWERSLIDE**  
 Roller bearing precision guidance for smooth travel and high dynamic or static loads.



**PROLINE**  
 The compact aluminium roller guide for high loads and velocities.



**Ball Screw Actuator with Internal Plain Bearing Guide**  
**Size 25, 32, 50**  
 Type: OSP-E..SB



**Standard Versions:**

- Standard carrier with internal plain bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Pitches of Ball Screw Spindle  
 Type OSP-E25 : 5 mm  
 Type OSP-E32: 5 , 10 mm  
 Type OSP-E50: 5 , 10, 25 mm

**Options:**

- Tandem version
- Clean room-version, according to DIN EN ISO 14644-1
- Displacement Measuring System SFI-plus

**Installation Instructions**

Use the threaded holes in the end cap for mounting the actuator. See if Profile Mountings are needed using the maximum allowable unsupported length graph. At least one end cap must be secured to prevent axial sliding when profile mounting is used.

When the actuator is moving an externally guided load, the compensation must be used.

The actuators can be fitted with the standard carrier mounting facing in any direction.

To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.

The inversion mounting can be fitted to transfer the driving force to the opposite side.

| Characteristics           | Description                        |
|---------------------------|------------------------------------|
| Series                    | OSP-E..SB                          |
| Ambient temperature range | -20 °C to +80 °C                   |
| Installation              | In any position                    |
| Mounting                  | See drawing                        |
| Encapsulation class       | IP 54                              |
| <b>Material</b>           |                                    |
| Slotted Profile           | Extruded anodized aluminium        |
| Ball screw                | Hardened steel                     |
| Ball screw nut            | Hardened steel                     |
| Guide bearings            | Low friction plastic               |
| Sealing band              | Hardened corrosion resistant steel |
| Screws, nuts              | Zinc plated steel                  |
| Mountings                 | Zinc plated steel and aluminium    |

**Weight (mass) and Inertia**

| Series    | at stroke 0 m | Weight (mass) [kg]  |             | Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ] |                     |
|-----------|---------------|---------------------|-------------|---|---------------------|
|           |               | ad per meter stroke | moving mass | at stroke 0 m                                 | ad per meter stroke |
| OSP-E25SB | 0.8           | 2.3                 | 0.2         | 2.2   | 11                  |
| OSP-E32SB | 2.0           | 4.4                 | 0.4         | 8.4   | 32                  |
| OSP-E50SB | 5.2           | 9.4                 | 1.2         | 84.0  | 225                 |

**Maintenance**

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of the belt and wear parts, after an operation time of 12 months of operation or 3 000 km travel of distance. Please refer to the operating instructions supplied with the actuator.

**First service start-up**

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

1. Recommended maximum acceleration is shown in graphs
2. Required torque is shown in graphs
3. Check that maximum values in the adjacent charts are not exceeded.
4. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time of the application.
5. Check that the maximum allowable unsupported length is not exceeded.

#### Performance Overview

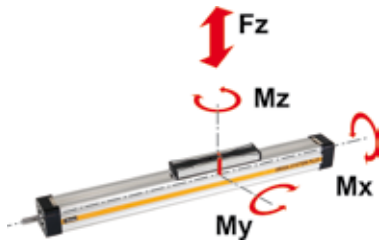
| Characteristics                            | Unit                 | Description |      |           |       |           |      |
|--|----------------------|-------------|------|-----------|-------|-----------|------|
| Series                                     |                      | OSP-E25SB   |      | OSP-E32SB |       | OSP-E50SB |      |
| Pitch                                      | [mm]                 | 5           | 5    | 10        | 5     | 10        | 25   |
| Max. speed                                 | [m/s]                | 0.25        | 0.25 | 0.5       | 0.25  | 0.5       | 1.25 |
| Linear motion per revolution drive shaft   | [mm]                 | 5           | 5    | 10        | 5     | 10        | 25   |
| Max. rpm, drive shaft                      | [min <sup>-1</sup> ] | 3 000       |      | 3 000     |       | 3 000     |      |
| Max. effective action force F <sub>A</sub> | [N]                  | 250         | 600  |           | 1 500 |           |      |
| Corresponding torque on drive shaft        | [Nm]                 | 0.35        | 0.75 | 1.3       | 1.7   | 3.1       | 7.3  |
| No-load torque                             | [Nm]                 | 0.2         | 0.2  | 0.3       | 0.3   | 0.4       | 0.5  |
| Max. allowable torque on drive shaft       | [Nm]                 | 0.6         | 1.5  | 2.8       | 4.2   | 7.5       | 20   |
| Repeatability                              | [mm/m]               | ±0.05       |      | ±0.05     |       | ±0.05     |      |
| Max. Standard stroke length                | [mm]                 | 1100        | 2000 |           | 3200  |           |      |

## Loads, Forces and Moments

### Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.

The maximum permissible loads must not be exceeded.



$$M = F \cdot l \text{ [Nm]}$$

$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

### Maximum Permissible Loads

| Size      | Max. applied load [N]<br>Fz | Max. moments [Nm] |    | Mz |
|-----------|-----------------------------|-------------------|----|----|
|           |                             | Mx                | My |    |
| OSP-E25SB | 500                         | 2                 | 12 | 8  |
| OSP-E32SB | 1200                        | 8                 | 25 | 16 |
| OSP-E50SB | 3000                        | 16                | 80 | 32 |

### Equation of Combined Loads

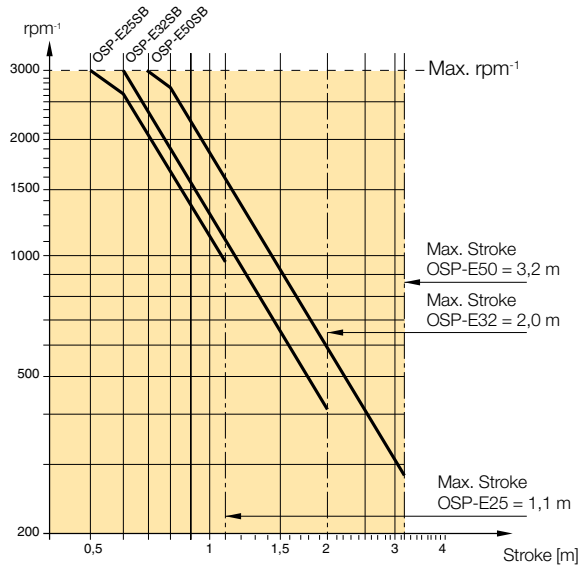
$$\frac{Fz}{Fz \text{ (max)}} + \frac{Mx}{Mx \text{ (max)}} + \frac{My}{My \text{ (max)}} + \frac{Mz}{Mz \text{ (max)}} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

## Maximum rpm / Stroke

At longer strokes the speed has to be reduced according to the adjacent graphs.

## Maximum rpm / Stroke



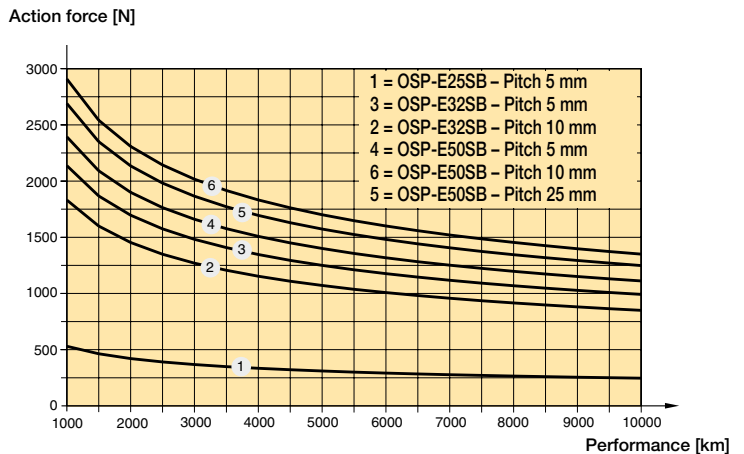
The maximum rpm shown in the graph, is 80% of the critical rpm.

## Performance / Action Force

The performance to be expected depends on the maximum required actions force of the application.

An increase of the action force will lead to a reduced performance.

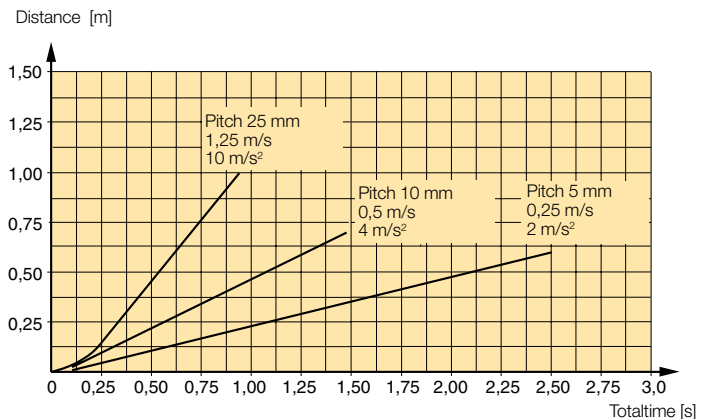
## Performance as a function of the action force



## Distance / Time Graph

The adjacent graphs show travel distance and total time at maximum speed and recommended maximum acceleration. The graph assumes that acceleration and deceleration are equal.

## Distance / Time Graph



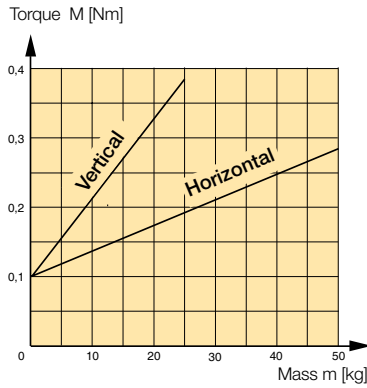
## Required Torque / Mass

Using the known mass, the direction of the application and the recommended acceleration, the actuator can be sized and the required torque is shown in the adjacent graphs.  
 Mass in graphs = Load + moving mass of the actuator according to the weight chart.

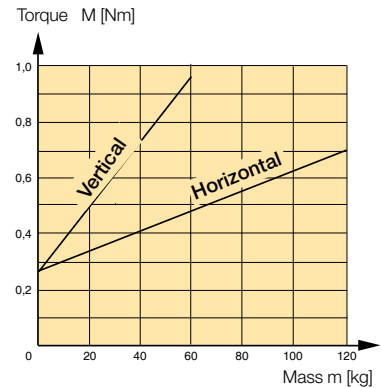
**Please mind:**

If an additional guide is used, mind the weight of the guide carriage.

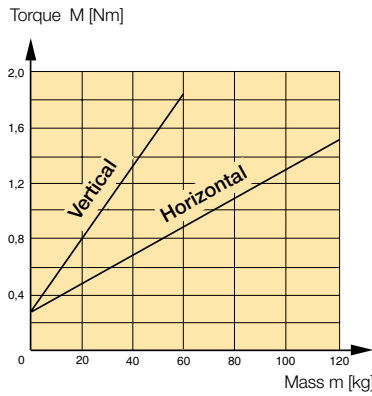
**Size OSP-E25SB, Pitch 5mm  
Acceleration 2 m/s<sup>2</sup>**



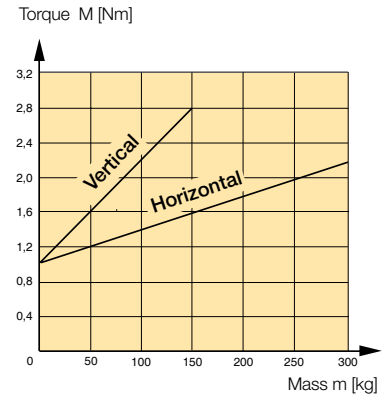
**Size OSP-E32SB, Pitch 5mm  
Acceleration 2 m/s<sup>2</sup>**



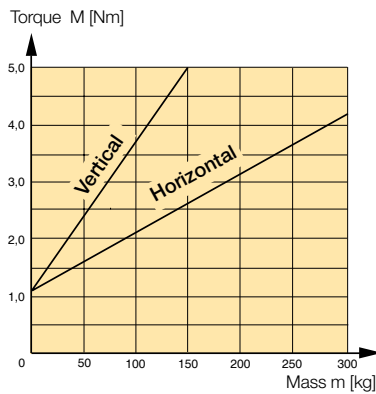
**Size OSP-E32SB, Pitch 10mm  
Acceleration 4 m/s<sup>2</sup>**



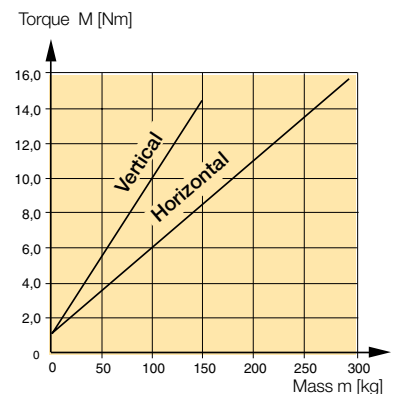
**Size OSP-E50SB, Pitch 5mm  
Acceleration 2 m/s<sup>2</sup>**



**Size OSP-E50SB, Pitch 10mm  
Acceleration 4 m/s<sup>2</sup>**



**Size OSP-E50SB, Pitch 25mm  
Acceleration 10 m/s<sup>2</sup>**





# Trapezoidal screw actuator with internal plain bearing guide for intermittent applications

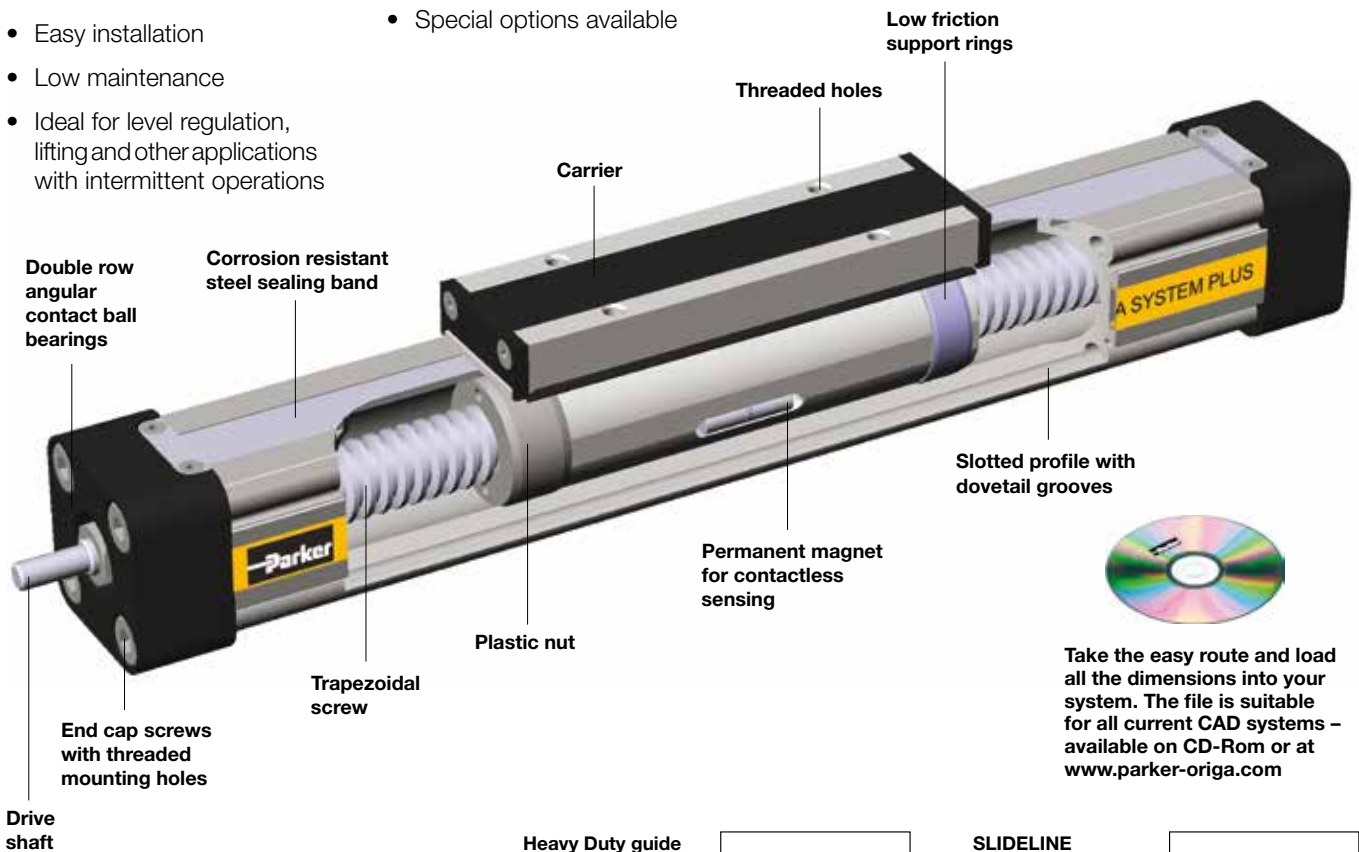
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

## Advantages

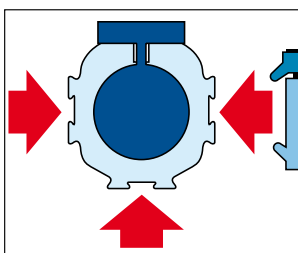
- Accurate path and position control
- High force output
- Self-locking
- Excellent slow speed characteristics
- Easy installation
- Low maintenance
- Ideal for level regulation, lifting and other applications with intermittent operations

## Features

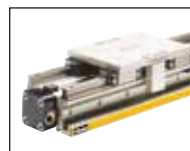
- Integrated drive and guidance system
- Complete motor and control packages
- Diverse range of accessories and mountings
- Special options available



The dovetailed mounting rails of the new actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on.



**Heavy Duty guide HD linear guides for heavy duty applications**



**SFI-plus displacement measuring system**



**SLIDELINE**  
Combination with sliding guide for heavy-duty operation



**POWERSLIDE**  
Roller bearing precision guidance for smooth travel and high dynamic or static loads.



**PROLINE**  
The compact aluminium roller guide for high loads and velocities.



**Trapezoidal Screw Actuator with Internal Plain Bearing Guide**  
**Size 25, 32, 50**  
 Type: OSP-E..ST



**Standard Versions:**

- Standard carrier with internal plain bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Pitch of Trapezoidal Spindle:  
 Type OSP-E25ST : 4 mm  
 Type OSP-E32ST : 4 mm  
 Type OSP-E50ST : 6 mm

**Options:**

- Displacement Measuring System SFI-plus
- Keyway

**Installation Instructions**

Use the threaded holes in the free end cap and a profile mounting close to the motor end for mounting the actuator. See if profile mountings are needed using the maximum permissible unsupported length graph.

At least one end cap must be secured to prevent axial sliding when Profile Mounting is used.

When the actuator is moving an externally guided load, the compensation must be used.

The actuators can be fitted with the standard carrier mounting facing in any direction.

To prevent contamination such as fluid ingress, the drive should be fitted with its sealing band facing downwards.

The inversion mounting can be fitted to transfer the driving force to the opposite side.

| Characteristics           | Description                        |
|---------------------------|------------------------------------|
| Series                    | OSP-E..ST                          |
| Mounting                  | See drawings                       |
| Ambient temperature range | -20 °C to +70 °C                   |
| Installation              | In any position                    |
| <b>Material</b>           |                                    |
| Slotted Profile           | Extruded anodized aluminium        |
| Trapezoidal screw         | Cold rolled steel                  |
| Drive nut                 | Thermoplastic polyester            |
| Guide bearings            | Low friction plastic               |
| Sealing band              | Hardened corrosion resistant steel |
| Screws, nuts              | Zinc plated steel                  |
| Mountings                 | Zinc plated steel and aluminium    |

**Weight (mass) and Inertia**

| Series    | at stroke 0 m | Weight (mass) [kg]  |             | Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ] |                     |
|-----------|---------------|---------------------|-------------|---|---------------------|
|           |               | ad per meter stroke | moving mass | at stroke 0 m                                 | ad per meter stroke |
| OSP-E25ST | 0.9           | 2.8                 | 0.2         | 6   | 30                  |
| OSP-E32ST | 2.1           | 5.0                 | 0.5         | 21.7  | 81                  |
| OSP-E50ST | 5.1           | 10.6                | 1.3         | 152   | 400                 |

**Maintenance**

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of the belt and wear parts, after an operation time of 12 months of operation or 3000 km travel of distance.

Please refer to the operating instructions supplied with the drive

**First service start-up**

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

1. Check that maximum values in the table T3 are not exceeded.
2. Check the maximum values in graph are not exceeded.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time of the application.
4. Check that the maximum allowable unsupported length is not exceeded

#### Performance Overview

| Characteristics                          | Unit    | Description |           |           |
|--|---------|-------------|-----------|-----------|
|  |         | OSP-E25ST   | OSP-E32ST | OSP-E50ST |
| Size                                     |         |             |           |           |
| Pitch                                    | [mm]    | 4           | 4         | 6         |
| Max. speed                               | [m/s]   | 0.1         | 0.1       | 0.15      |
| Linear motion per revolution drive shaft | [mm]    | 4           | 4         | 6         |
| Max. rpm, drive shaft                    | [min-1] | 1500        | 1500      | 1500      |
| Max. effective action force FA           | [N]     | 600         | 1300      | 2 500     |
| Corresponding torque on drive shaft      | [Nm]    | 1.35        | 3.2       | 8.8       |
| No-load torque                           | [Nm]    | 0.3         | 0.4       | 0.5       |
| Max. allowable torque on drive shaft     | [Nm]    | 1.55        | 4.0       | 9.4       |
| Self-locking force FL1)                  | [N]     | 600         | 1300      | 2500      |
| Repeatability                            | [mm/m]  | ±0.5        | ±0.5      | ±0.5      |
| Max. Standard stroke length              | [mm]    | 1100        | 2000      | 2500*     |

<sup>1)</sup> Related to screw types Tr 16x4, Tr 20x4, TR 30x6

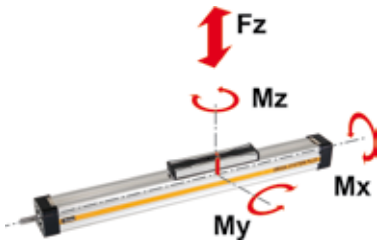
\* For strokes longer than 2000 mm in horizontal applications, please contact our customer support.

## Loads, Forces and Moments

### Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.

The maximum permissible loads must not be exceeded.



$$M = F \cdot l \text{ [Nm]}$$

$$M_x = M_{x \text{ static}} + M_{x \text{ dynamic}}$$

$$M_y = M_{y \text{ static}} + M_{y \text{ dynamic}}$$

$$M_z = M_{z \text{ static}} + M_{z \text{ dynamic}}$$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

### Maximum Permissible Loads

T3

| Size      | Max. applied load [N]<br>Fz | Max. moments [Nm] |     | Mz |
|-----------|-----------------------------|-------------------|-----|----|
|           |                             | Mx                | My  |    |
| OSP-E25ST | 500                         | 2                 | 24  | 7  |
| OSP-E32ST | 1000                        | 6                 | 65  | 12 |
| OSP-E50ST | 1500                        | 13                | 155 | 26 |

### Equation of Combined Loads

$$\frac{F_z}{F_z \text{ (max)}} + \frac{M_x}{M_x \text{ (max)}} + \frac{M_y}{M_y \text{ (max)}} + \frac{M_z}{M_z \text{ (max)}} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

## Maximum Permissible Unsupported Length

### Stroke length

The stroke lengths of the actuators are available in multiples of 1 mm up to the following maximum stroke lengths.

**OSP-E25ST**: max. 1100 mm

**OSP-E32ST**: max. 2000 mm

**OSP-E50ST**: max. 2500 mm \*

Other stroke lengths are available on request.

\* For strokes longer than 2000 mm in horizontal applications, please contact our customer support

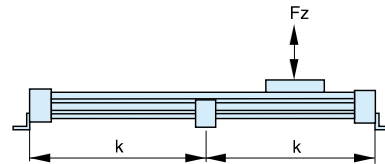
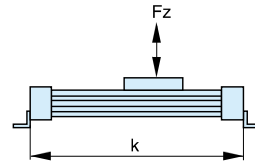
The end of stroke must not be used as a mechanical stop.

Allow an additional safety clearance of minimum 25 mm at both ends.

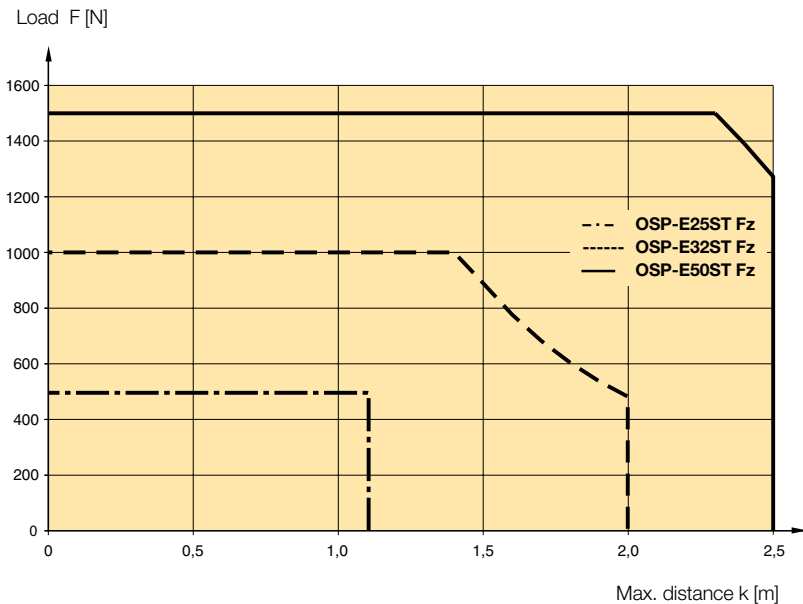
The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems.

For advise, please contact your local Parker Origa technical support department.

## Maximum Permissible Unsupported Length – Placing of Profile Mounting



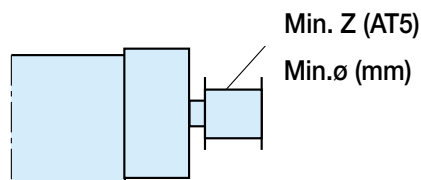
k = Maximum permissible distance between mountings/mid-section support for a given load F.



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance k.)

## Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupling or pulley, a steadying block should be used.



## Pulleys

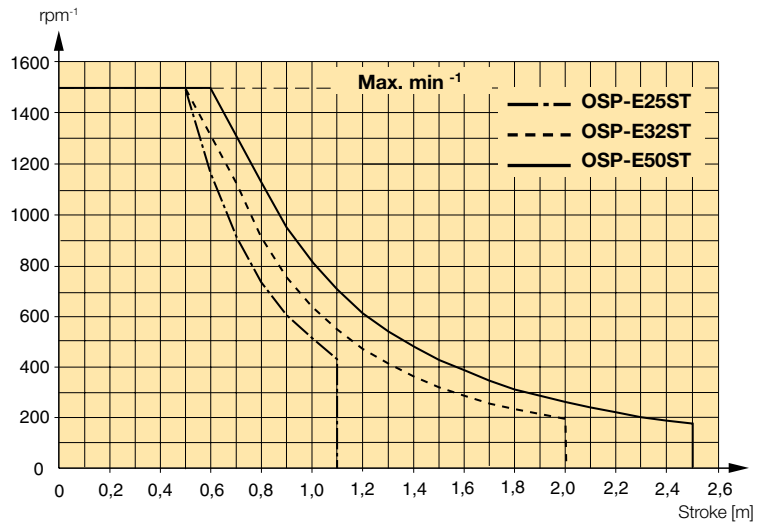
Minimum allowable number of teeth (AT5) and diameter of pulley at maximum applied torque.

| Size      | Min. Z | Min. ø |
|-----------|--------|--------|
| OSP-E25ST | 24     | 38     |
| OSP-E32ST | 24     | 38     |
| OSP-E50ST | 36     | 57     |

## Maximum rpm / Stroke

At longer strokes the speed has to be reduced according to the adjacent graphs.

## Maximum rpm / Stroke



The maximum rpm shown in the graph, is 80% of the critical rpm.

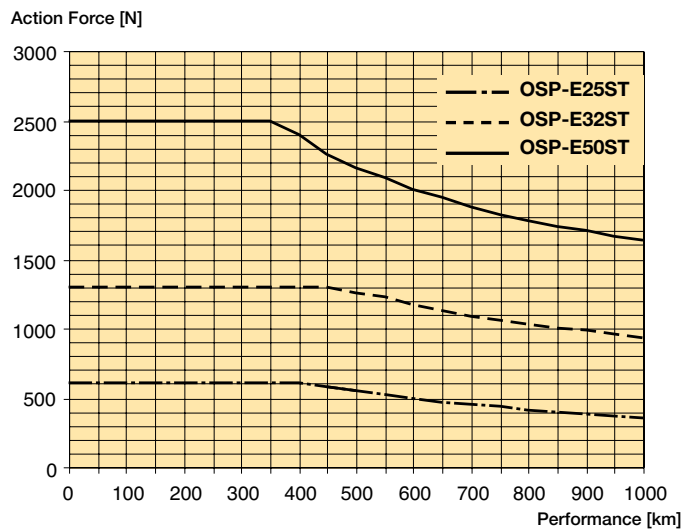
## Performance / Action Force

The actuators are designed for a 10% intermittent usage.

The performance to be expected depends on the maximum required actions force of the application.

An increase of the action force will lead to a reduced performance.

## Performance as a function of the action force



Note: Graph above is based upon 10% intermittent usage

# Ball screw actuator with internal plain bearing guide and piston rod for accurate piston rod applications

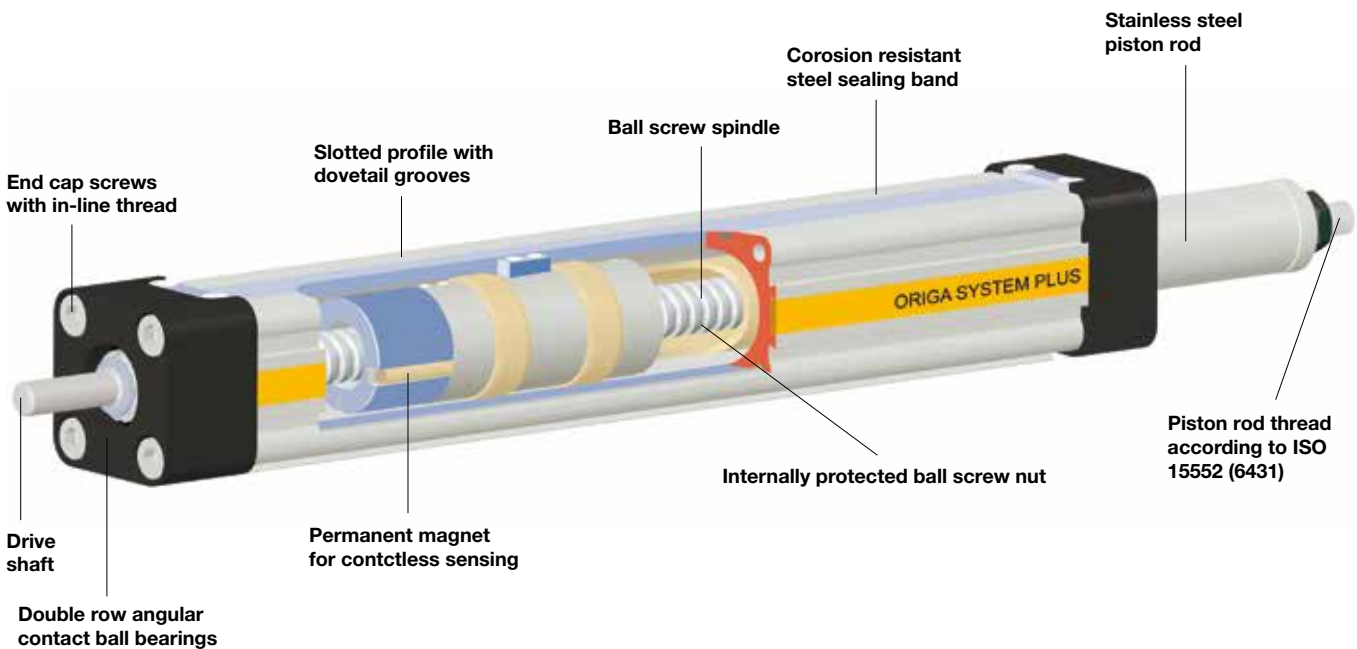
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

## Advantages

- High output force
- Excellent running characteristics
- Accurate path and position control
- High levels of repeatability

## Features

- Extending drive rod
- Ball screw spindle
- Non-rotating drive rod
- Continuous duty operation
- Large range of accessories



Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at [www.parker-origa.com](http://www.parker-origa.com)



## Options and Accessories

### OSP-E..SBR

### Ball screw actuator with internal plain bearing guide and piston rod

#### STANDARD VERSIONS OSP-E..SBR

Standard piston rod with internal guidance and integrated magnet set for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.



**END CAP MOUNTING**  
For end-mounting the actuator on the extending rod side.



**COMPENSATION**  
Piston Rod eye



Piston rod Clevis



**Flange Mounting C**  
For end-mounting the actuator on the extending rod side.



**Piston Rod compensating coupling**  
For compensating of radial and angular misalignments



#### BALL SCREW PITCH

The ball screws spindles are available in various pitches:  
OSP-E25SBR: 5 mm  
OSP-E32SBR: 5, 10 mm  
OSP-E50SBR: 5, 10, 25 mm

**PROFILE MOUNTING**  
For mounting the actuator on the dovetail grooves and on the motor end.



**MAGNETIC SWITCHES  
SERIES RST AND EST**  
For contactless position sensing of end stop and intermediate carrier positions.



#### ACCESSORIES

##### MOTOR MOUNTINGS



**Trunning mounting EN in combination with pivot mounting EL.**  
– steplessly adjustable in axial direction.



**Ball Screw Actuator with Internal Plain Bearing Guide and Piston Rod**  
**Size 25, 32, 50**  
 Type: OSP-E..SBR



**Standard Versions:**

- Standard piston rod with internal plain bearing guide
- Pitches of Ball Screw Spindle:  
 Type OSP-E25SBR : 5 mm  
 Type OSP-E32SBR: 5, 10 mm  
 Type OSP-E50SBR: 5, 10, 25 mm

**Options:**

- Keyway version

**Installation Instructions**

Use the threaded holes in the free end cap and a profile mounting close to the motor end for mounting the actuator.

The piston rod is locked against rotations, but must not be used for radial loads  $M_x$ , that need to be guided externally. A compensation part e. g. piston rod eye is recommended.

| Characteristics           | Description                        |
|---------------------------|------------------------------------|
| Series                    | OSP-E..SBR                         |
| Mounting                  | See drawings                       |
| Ambient temperature range | -20 °C to +80 °C                   |
| Installation              | In any position                    |
| Encapsulation class       | IP 54                              |
| <b>Material</b>           |                                    |
| Slotted Profile           | Extruded anodized aluminium        |
| Ball screw                | Steel                              |
| Ball nut                  | Steel                              |
| Piston rod                | Stainless steel                    |
| Guide bearings            | Low friction plastic               |
| Sealing band              | Hardened corrosion resistant steel |
| Screws, nuts              | Zinc plated steel                  |
| Mountings                 | Zinc plated steel and aluminium    |

**Weight (mass) and Inertia**

| Series     | Total weight (Mass) [kg] |               | Moving mass [kg] |                      | Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ] |                      |
|------------|--------------------------|---------------|------------------|----------------------|---|----------------------|
|            | At stroke 0 m            | Actuator head | At stroke 0 m    | Add per metre stroke | At Stroke 0 m                                 | Add per metre stroke |
| OSP-E25SBR | 0.7                      | 3.0           | 0.2              | 0.9                  | 1.2   | 11.3                 |
| OSP-E32SBR | 1.7                      | 5.6           | 0.6              | 1.8                  | 5.9   | 32.0                 |
| OSP-E50SBR | 4.5                      | 10.8          | 1.1              | 2.6                  | 50.0  | 225.0                |

**Maintenance**

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of wear parts, after an operation time of 12 months or 3000 km travel of distance. Please refer to the operating instructions supplied with the actuator.

**First service start-up**

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.



## Sizing Performance Overview

### Maximum Loadings

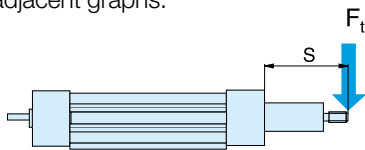
#### Sizing of Actuator

The following steps are recommended for selection :

1. Check that the maximum values in the adjacent chart and transverse force/ stroke graph below are not exceeded.
2. Check the lifetime/travel distance in graph below.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time in application

### Transverse Force / Stroke

The permissible transverse force is reduced with increasing stroke length. according to the adjacent graphs.



### Maximum rpm / Stroke

At longer strokes the speed has to be reduced according to the adjacent graphs.

### Performance / Action Force

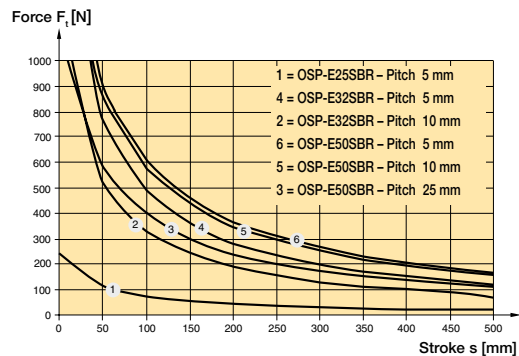
The performance to be expected depends on the maximum required actions force of the application.

An increase of the action force will lead to a reduced performance.

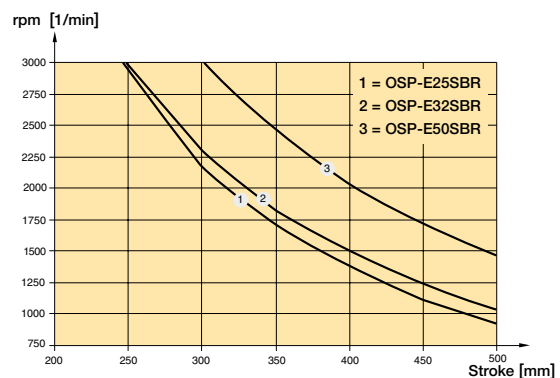
### Performance Overview

| Characteristics                          | Unit                | Description          |       |            |      |            |      |
|--|---------------------|----------------------|-------|------------|------|------------|------|
|  |                     | OSP-E25SBR           |       | OSP-E32SBR |      | OSP-E50SBR |      |
| Series                                   |                     | OSP-E25SBR           |       | OSP-E32SBR |      | OSP-E50SBR |      |
| Pitch                                    | [mm]                | 5                    | 5     | 10         | 5    | 10         | 25   |
| Max. speed                               | [m/s]               | 0.25                 | 0.25  | 0.5        | 0.25 | 0.5        | 1.25 |
| Linear motion per revolution drive shaft | [mm]                | 5                    | 5     | 10         | 5    | 10         | 25   |
| Max. rpm drive shaft                     |                     | [min <sup>-1</sup> ] |       | 3000       | 3000 | 3000       |      |
| Max. effective action force $F_A$        | [N]                 | 260                  | 900   | 1200       |      |            |      |
| Corresponding torque drive shaft         | [Nm]                | 0.45                 | 1.1   | 1.8        | 1.3  | 2.8        | 6.0  |
| No-load torque                           | [Nm]                | 0.2                  | 0.2   | 0.3        | 0.3  | 0.4        | 0.5  |
| Max. allowable torque on drive shaft     | [Nm]                | 0.6                  | 1.5   | 2.8        | 4.2  | 7.5        | 20   |
| Max. allowable acceleration              | [m/s <sup>2</sup> ] | 5                    | 5     | 5          |      |            |      |
| Typical repeatability                    | [mm/m]              | ±0.05                | ±0.05 | ±0.05      |      |            |      |
| Max. Standard stroke length              | [mm]                | 500                  | 500   | 500        |      |            |      |

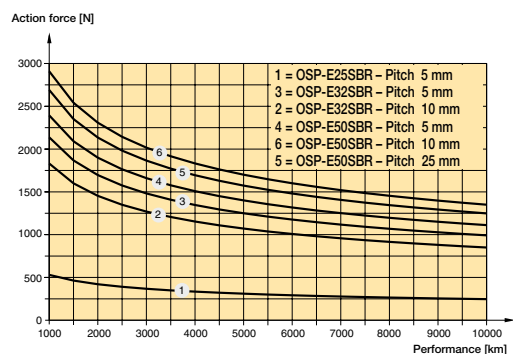
### Transverse Force / Stroke



### Maximum rpm / Stroke



### Performance as a function of the action force



# Trapezoidal screw actuator with internal plain bearing guide and piston rod for intermittent applications

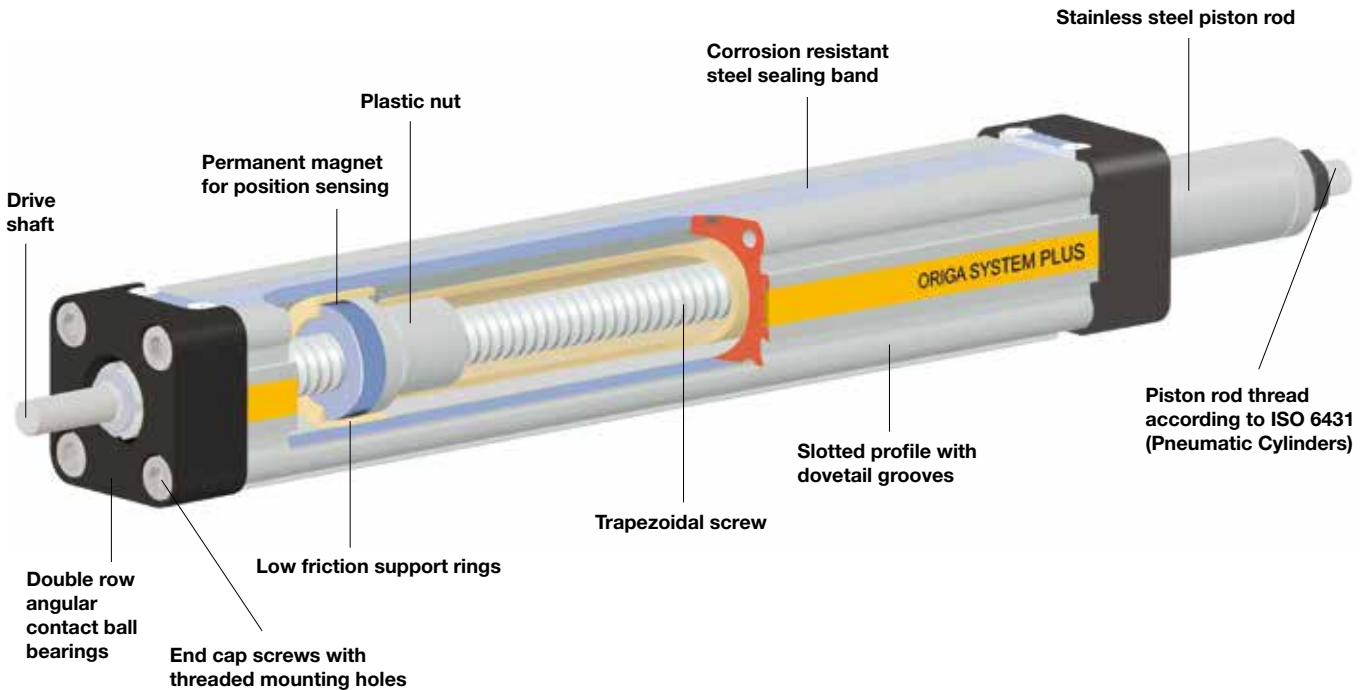
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

## Advantages

- Accurate path and position control
- High force output
- Self-locking
- Excellent slow speed characteristics
- Easy installation
- Low maintenance
- Ideal for level regulation, lifting and other applications with intermittent operations

## Features

- Piston rod-end dimensions conforming to ISO pneumatic standards
- Complete motor and control packages
- Diverse range of accessories and mountings
- Special options available



Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at [www.parker-origa.com](http://www.parker-origa.com)



## Options and Accessories

### OSP-E..STR

Trapezoidal screw actuator with internal plain bearing guide and piston rod

#### STANDARD VERSIONS

##### OSP-E..STR

Standard piston rod with internal guidance and integrated magnet set for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.



#### ACCESSORIES

##### MOTOR MOUNTINGS



##### END CAP MOUNTING

For end-mounting the actuator on the extending rod side.



##### COMPENSATION PISTON ROD EYE



##### FLANGE MOUNTING C

For end-mounting the actuator on the extending rod side.



##### PISTON ROD CLEVIS



##### PISTON ROD COMPENSATING COUPLING

For compensating of radial and angular misalignments



##### PROFILE MOUNTING

For mounting the actuator on the dovetail grooves and on the motor end.



##### MAGNETIC SWITCHES SERIES RST AND EST

For contactless position sensing of end stop and intermediate carrier positions.



##### TRUNNING MOUNTING EN in combination with pivot mounting EL.

– steplessly adjustable in axial direction.

## Trapezoidal Screw Actuator with Internal Plain Bearing Guide and Piston rod

Size 25, 32, 50

Type: OSP-E..STR



### Standard Versions:

- Dovetail profile for mounting of accessories and the actuator itself
- Pitch of Trapezoidal Spindle:  
Type OSP-E25STR: 3 mm  
Type OSP-E32STR: 4 mm  
Type OSP-E50STR: 5 mm

### Contactless position sensing

Please use the magnetic switch mentioned below:

**KL3096** (Type RS-K, normally closed, Reed-contact, with cable)

**KL3098** (Type ES-S, Magnetic electronic, PNP-switch with DIN-plug)

### Installation Instructions

Use the threaded holes in the free end cap and a profile mounting close to the motor end for mounting the actuator.

The piston rod is not locked against rotation and needs to be guided externally. A compensation part e. g. piston rod eye is recommended.

| Characteristics           | Description                        |
|---------------------------|------------------------------------|
| Series                    | OSP-E..STR                         |
| Mounting                  | See drawings                       |
| Ambient temperature range | -20 °C to +70 °C                   |
| Installation              | In any position                    |
| Encapsulation class       | IP 54                              |
| <b>Material</b>           |                                    |
| Slotted Profile           | Extruded anodized aluminium        |
| Trapezoidal screw         | Cold rolled steel                  |
| Drive nut                 | Thermoplastic polyester            |
| Piston rod                | Stainless steel                    |
| Guide bearings            | Low friction plastic               |
| Sealing band              | Hardened corrosion resistant steel |
| Screws, nuts              | Zinc plated steel                  |
| Mountings                 | Zinc plated steel and aluminium    |

### Weight (mass) and Inertia

| Series     | Total weight (Mass) [kg] |               | Moving mass [kg] |                      | Inertia [ $\times 10^{-6}$ kgm <sup>2</sup> ] |                      |
|------------|--------------------------|---------------|------------------|----------------------|---|----------------------|
|            | At stroke 0 m            | Actuator head | At stroke 0 m    | Add per metre stroke | At Stroke 0 m                                 | Add per metre stroke |
| OSP-E25STR | 0.4                      | 2.9           | 0.1              | 0.7                  | 1.1   | 10.3                 |
| OSP-E32STR | 0.9                      | 5.4           | 0.2              | 1.2                  | 3.9   | 29.6                 |
| OSP-E50STR | 2.4                      | 10.6          | 0.8              | 1.6                  | 24.6  | 150                  |

### Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of wear parts, after an operation time of 12 months or 3000 km travel of distance. Please refer to the operating instructions supplied with the actuator.

### First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

## Sizing Performance Overview

### Maximum Loadings

#### Sizing of Actuator

The following steps are recommended for selection :

1. Check that the maximum values in the adjacent chart and transverse force/stroke graph below are not exceeded.
2. Check the lifetime/travel distance in graph below.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time in application

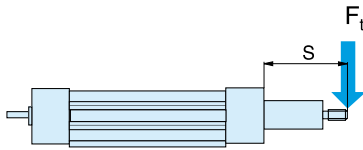
#### Performance Overview

| Characteristics                           | Unit                 | Description        |            |            |
|---|----------------------|--------------------|------------|------------|
| Size                                      |                      | OSP-E25STR         | OSP-E32STR | OSP-E50STR |
| Pitch                                     | [mm]                 | 3                  | 4          | 5          |
| Max. speed                                | [m/s]                | 0.075              | 0.1        | 0.125      |
| Linear motion per revolution, drive shaft | [mm]                 | 3                  | 4          | 5          |
| Max. rpm, drive shaft                     | [min <sup>-1</sup> ] | 1500 <sup>2)</sup> | 1500       | 1500       |
| Max. effective action force $F_A$         | [N]                  | 800                | 1600       | 3300       |
| Corresponding torque on drive shaft       | [Nm]                 | 1.35               | 3.4        | 9.25       |
| No-load torque                            | [Nm]                 | 0.3                | 0.4        | 0.5        |
| Max. allowable torque on drive shaft      | [Nm]                 | 1.7                | 4.4        | 12         |
| Self-locking force $F_L$ <sup>1)</sup>    | [N]                  | 800                | 1600       | 3300       |
| Typical repeatability                     | [mm/m]               | ±0,5               | ±0,5       | ±0,5       |
| Max. Standard stroke length               | [mm]                 | 500                | 500        | 500        |

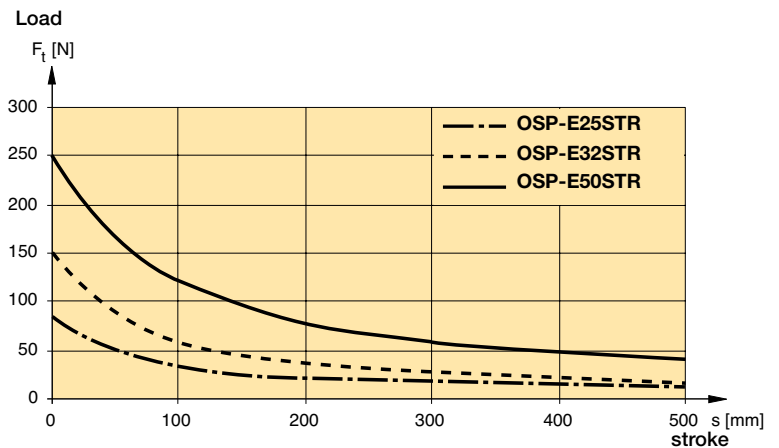
<sup>1)</sup> Related to screw types Tr 12x3, Tr 16x4, Tr 24x5

<sup>2)</sup> from 0,4 m stroke max. 1200 min<sup>-1</sup> permissible

## Transverse Force / Stroke



#### Transverse Force / Stroke

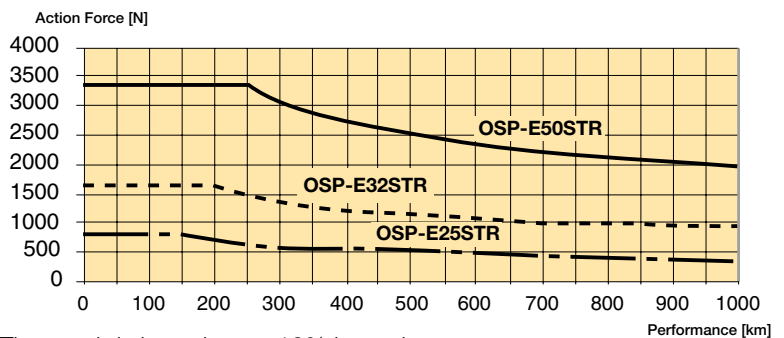


The graph is based upon 10% intermittent usage

## Performance / Action Force

The Actuators are designed for a 10% intermittent usage. The performance to be expected depends on the maximum required actions force of the application. An increase of the action force will lead to a reduced performance.

#### Performance as a function of the action force



The graph is based upon 10% intermittent usage



# ORIGA HMR

High Moment Rodless Electric Linear Actuators - Two Drive Technologies: Screw & Toothed Belt



## *Driving the future*

The HMR linear drive system can be equipped with a “basic” or “reinforced” profile as standard. The “basic” profile is suitable for fitting directly to a machine base that has a corresponding support surface. The “reinforced” profile, on the other hand, is the preferred choice for self-supporting systems or for use in conjunction with a base surface offering limited support.

- Two alternative drive technologies in one profile
- Unique flexibility and reliability
- High speed and precision
- Two profile versions
- Optional IP54 snap-in covers

# ORIGA HMR Electromechanical Linear Actuators

We drive the future - with screw, toothed belt.



### Profile designs

- Basic profile for assembling directly to the machine base
- Reinforced profile for self-supporting assembly

### Position sensing

- Integrated, adjustable position switch for end positions and homing



### Mounting systems

- Integrated T-slots for attaching from below and from the side

### Impact protection

- Integrated shock absorbers for both end positions



### Protection classes

- Without cover: IP20
- With cover: IP54

### Distance measurement

- Contact-free, incremental displacement measuring system



### Guide systems

- Plain bearing guide
- Recirculating ball bearing guide

### Brake system

- Holding brake can be implemented for horizontal and vertical movements

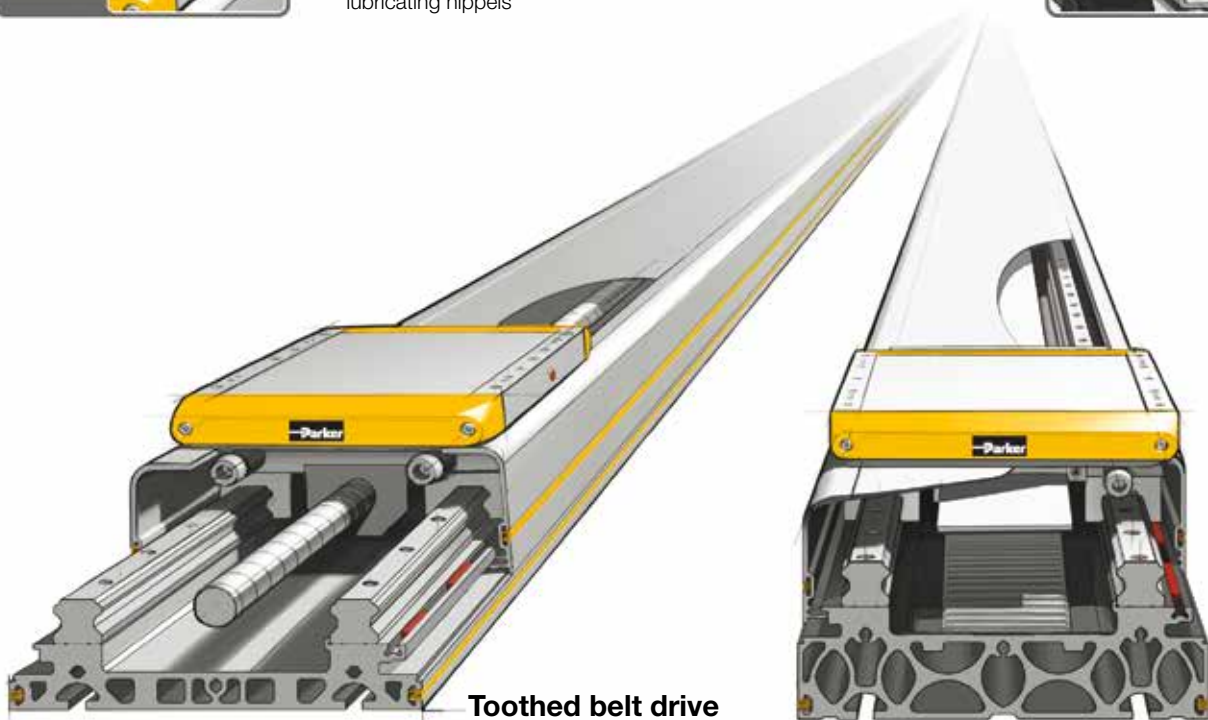


### Lubrication

- Central lubrication via externally accessible lubricating nipples

### Cable drag chains

- Directly attachable drag chains for various cabling



### Toothed belt drive

The solution for fast path and position control for medium loads



### Screw drive

The solution for precise path and position control for heavy loads



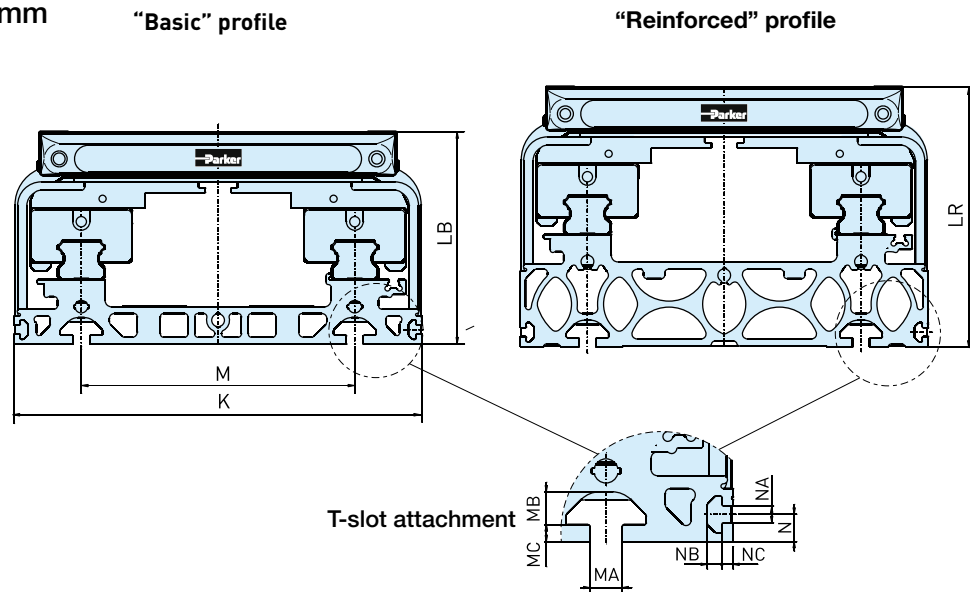
## Origa Linear Drives

Sizes 85, 110, 150, 180, 240 mm

HMR Series

Profile designs

- Basic
- Reinforced



The HMR linear drive system can be equipped with a “basic” or “reinforced” profile as standard. The “basic” profile is suitable for fitting directly to a machine base that has a corresponding support surface. The “reinforced” profile, on the other hand, is the preferred choice for self-supporting systems or for use in conjunction with a base surface offering limited support.

### Dimensions (mm) - Profil design HMR

| Size    | K     | LB    | LR    | M     | MA   | MB   | MC  | N   | NA  | NB  | NC  |
|---------|-------|-------|-------|-------|------|------|-----|-----|-----|-----|-----|
| HMRx085 | 85.0  | 60.0  | 71.0  | 50.0  | 5.2  | 4.5  | 1.5 | 4.5 | 3.4 | 3.0 | 2.5 |
| HMRx110 | 110.0 | 69.5  | 89.5  | 70.0  | 5.2  | 4.5  | 1.8 | 4.5 | 3.4 | 3.0 | 2.5 |
| HMRx150 | 150.0 | 90.0  | 114.0 | 96.0  | 6.2  | 6.8  | 3.0 | 6.5 | 5.2 | 4.6 | 3.5 |
| HMRx180 | 180.0 | 111.5 | 134.5 | 116.0 | 8.0  | 7.8  | 4.5 | 8.5 | 5.2 | 4.5 | 3.5 |
| HMRx240 | 240.0 | 125.0 | 153.0 | 161.0 | 10.0 | 10.2 | 5.3 | 8.5 | 5.2 | 4.5 | 3.5 |



## Origa Linear Drives

Sizes 85, 110, 150, 180, 240 mm

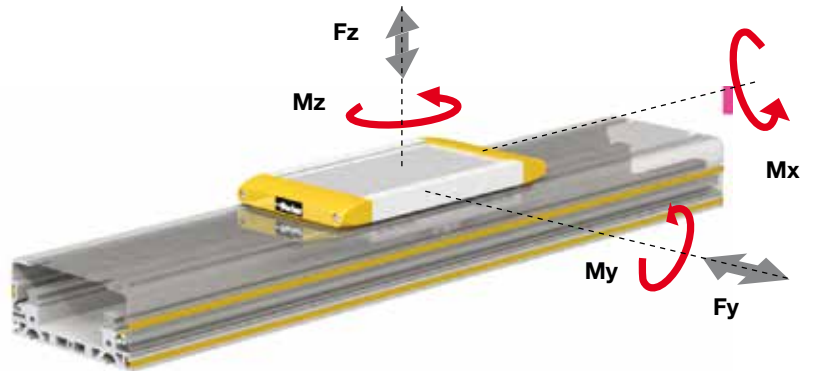
HMR Series

Ball Bearing Guide

The occurring loads, forces and bending moments depend on the application. The mass of the construction attached to the carriage has a center of gravity. This mass creates static forces ( $F = m \cdot g$ ) and bending moments ( $M = m \cdot g \cdot l$ ).

Additional dynamic moments ( $M = m \cdot a \cdot l$ ) arise in dependence of the acceleration during travel. Care should be taken when selecting suitable guides that the permissible sum of loads does not exceed 1.

## Loads, Forces and Moments



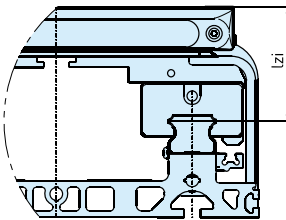
### Combined loads

The maximum permissible load for linear drives subject to simultaneous multiple loads, forces and bending moments are calculated using the formula below. Maximum permissible loads must not be exceeded.

$$L = \frac{F_y}{F_{y(max)}} + \frac{F_z}{F_{z(max)}} + \frac{M_x}{M_{x(max)}} + \frac{M_y}{M_{y(max)}} + \frac{M_z}{M_{z(max)}} \leq 1$$

The sum of all loads must under no circumstance be > 1.

### Internal lever arm $l_{zi}$



### Dimension table - $l_{zi}$

| Product size | $l_{zi}$ |
|--------------|----------|
| HMR-085 [mm] | 33.0     |
| HMR-110 [mm] | 39.5     |
| HMR-150 [mm] | 50.0     |
| HMR-180 [mm] | 57.5     |
| HMR-240 [mm] | 68.0     |

### Maximum permissible loads based on a performance of 2,540 km

| Product Size                           | HMRx08   | HMRx11 | HMRx15 | HMRx18 | HMRx24 | HMRx08 | HMRx11 | HMRx15 | HMRx18 | HMRx24 |
|--|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Carriage                               | Standard |        |        |        |        | Tandem |        |        |        |        |
| <b>Max. permissible load</b>           |          |        |        |        |        |        |        |        |        |        |
| $F_{z2540}$<br>$F_{y2540}$ [N]         | 1,800    | 4,450  | 8,800  | 16,200 | 26,600 | 2,700  | 6,700  | 13,200 | 24,300 | 39,900 |
| <b>Max. permissible bending moment</b> |          |        |        |        |        |        |        |        |        |        |
| $M_{z2540}$ [Nm]                       | 45       | 155    | 430    | 940    | 2,150  | 68     | 235    | 645    | 1,410  | 3,225  |
| $M_{y2540}$ [Nm]                       | 80       | 200    | 560    | 1,230  | 2,430  | 120    | 300    | 840    | 1,845  | 3,645  |

### Maximum permissible loads based on a performance of 8,000 km

| Product Size                           | HMRx08   | HMRx11 | HMRx15 | HMRx18 | HMRx24 | HMRx08 | HMRx11 | HMRx15 | HMRx18 | HMRx24 |
|--|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Carriage                               | Standard |        |        |        |        | Tandem |        |        |        |        |
| <b>Max. permissible load</b>           |          |        |        |        |        |        |        |        |        |        |
| $F_{z8000}$<br>$F_{y8000}$ [N]         | 1,250    | 3,000  | 6,000  | 11,000 | 18,200 | 1,875  | 4,500  | 9,000  | 16,500 | 27,300 |
| <b>Max. permissible bending moment</b> |          |        |        |        |        |        |        |        |        |        |
| $M_{x8000}$ [Nm]                       | 30       | 105    | 290    | 640    | 1,460  | 45     | 160    | 435    | 960    | 2,190  |
| $M_{y8000}$<br>$M_{z8000}$ [Nm]        | 55       | 135    | 380    | 840    | 1,660  | 80     | 205    | 570    | 1,260  | 2,490  |

## Ball Screw

Sizes 85, 110, 150, 180, 240 mm

HMRS Series



### Technical Data HMRS

| Product Size      |                  |                     | HMRS08 |         | HMRS11 |         | HMRS15 |         | HMRS18  |         | HMRS24  |         |
|-------------------|------------------|---------------------|--------|---------|--------|---------|--------|---------|---------|---------|---------|---------|
| Type of Screw     |                  |                     | 12 x 5 | 12 x 12 | 16 x 5 | 16 x 16 | 20 x 5 | 20 x 20 | 25 x 10 | 25 x 25 | 32 x 10 | 32 x 32 |
| Pitch             | p                | [mm]                | 5      | 12      | 5      | 16      | 5      | 20      | 10      | 25      | 10      | 32      |
| Max. speed        | v <sub>max</sub> | [m/s]               | 0.25   | 0.60    | 0.25   | 0.80    | 0.25   | 1.00    | 0.50    | 1.25    | 0.50    | 1.60    |
| Max. acceleration | a <sub>max</sub> | [m/s <sup>2</sup> ] | 10     |         | 10     |         | 10     |         | 10      |         | 10      |         |
| Repeatability     |                  | [μm]                | ± 20   |         | ± 20   |         | ± 20   |         | ± 20    |         | ± 20    |         |
| Max. stroke       |                  | [mm]                | 1,200  |         | 1,500  |         | 2,500  |         | 3,400   |         | 4,000   |         |

### Thrust force and torque

|                            |                    |      |     |     |       |       |       |       |       |       |       |       |
|----------------------------|--------------------|------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Max. thrust force          | F <sub>Amax</sub>  | [N]  | 820 | 820 | 2,200 | 2,200 | 2,600 | 2,600 | 4,800 | 4,800 | 5,500 | 5,500 |
|                            | F <sub>A2540</sub> | [N]  | 820 | 650 | 1,550 | 1,150 | 1,800 | 2,160 | 3,300 | 3,960 | 3,500 | 4,880 |
| Max. torque at drive shaft | M <sub>Amax</sub>  | [Nm] | 0.7 | 1.7 | 1.9   | 6.1   | 2.2   | 9.0   | 8.3   | 20.8  | 9.5   | 30.4  |
|                            | M <sub>A2540</sub> | [Nm] | 0.7 | 1.3 | 1.3   | 3.1   | 1.6   | 7.5   | 5.7   | 17.1  | 6.1   | 27.0  |
| No load torque             | M <sub>0</sub>     | [Nm] | 0.2 | 0.2 | 0.3   | 0.4   | 0.7   | 0.9   | 0.9   | 1.0   | 1.0   | 1.1   |

### Stroke dependent on speed

|      |      |     |     |     |     |     |       |     |       |     |       |
|------|------|-----|-----|-----|-----|-----|-------|-----|-------|-----|-------|
| 200  | [mm] | 250 | 600 | 250 | 800 | 250 | 1,000 | 500 | 1,250 | 500 | 1,600 |
| 400  | [mm] | 250 | 600 | 250 | 800 | 250 | 1,000 | 500 | 1,250 | 500 | 1,600 |
| 600  | [mm] | 152 | 366 | 197 | 631 | 250 | 1,000 | 500 | 1,250 | 500 | 1,600 |
| 800  | [mm] | 102 | 245 | 132 | 424 | 169 | 678   | 382 | 956   | 423 | 1,354 |
| 1000 | [mm] | 73  | 176 | 95  | 304 | 122 | 486   | 277 | 694   | 312 | 997   |
| 1200 | [mm] | 55  | 132 | 71  | 228 | 91  | 366   | 211 | 526   | 239 | 765   |
| 1400 | [mm] | -   | -   | 56  | 178 | 71  | 285   | 165 | 413   | 189 | 605   |
| 1600 | [mm] | -   | -   | 45  | 143 | 57  | 228   | 133 | 333   | 153 | 491   |
| 1800 | [mm] | -   | -   | -   | -   | 47  | 187   | 109 | 274   | 127 | 406   |
| 2000 | [mm] | -   | -   | -   | -   | 39  | 156   | 92  | 229   | 107 | 342   |
| 2200 | [mm] | -   | -   | -   | -   | 33  | 132   | 78  | 195   | 91  | 291   |
| 2400 | [mm] | -   | -   | -   | -   | 28  | 113   | 67  | 167   | 79  | 251   |
| 2600 | [mm] | -   | -   | -   | -   | -   | -     | 58  | 145   | 68  | 219   |
| 2800 | [mm] | -   | -   | -   | -   | -   | -     | 51  | 128   | 60  | 193   |
| 3000 | [mm] | -   | -   | -   | -   | -   | -     | 45  | 113   | 53  | 171   |
| 3200 | [mm] | -   | -   | -   | -   | -   | -     | 40  | 100   | 48  | 152   |
| 3400 | [mm] | -   | -   | -   | -   | -   | -     | -   | -     | 43  | 137   |
| 3600 | [mm] | -   | -   | -   | -   | -   | -     | -   | -     | 39  | 123   |
| 3800 | [mm] | -   | -   | -   | -   | -   | -     | -   | -     | 35  | 112   |
| 4000 | [mm] | -   | -   | -   | -   | -   | -     | -   | -     | 32  | 102   |

**Ball Screw**

Sizes 85, 110, 150, 180, 240 mm

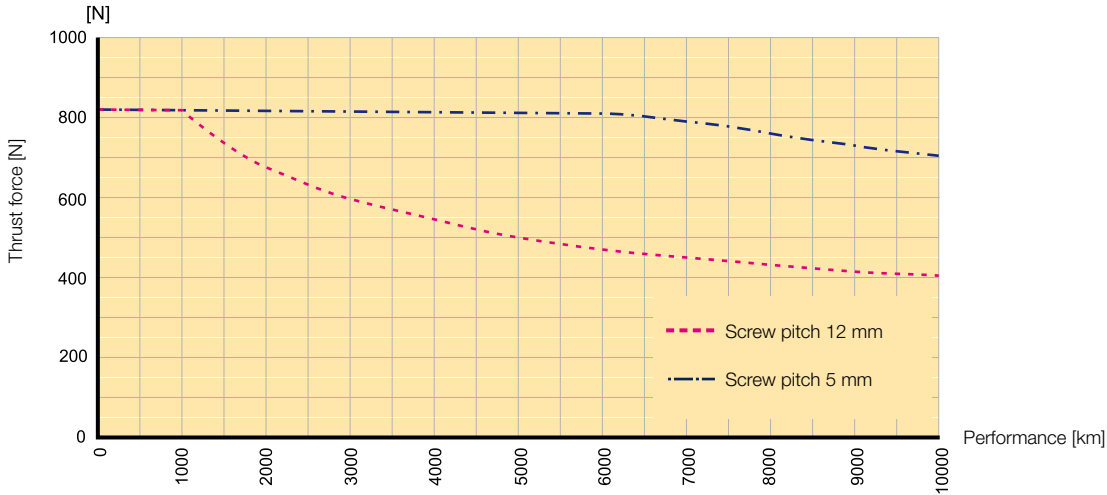
**HMRS Series**

Performance expectancy depends on the application's required force.

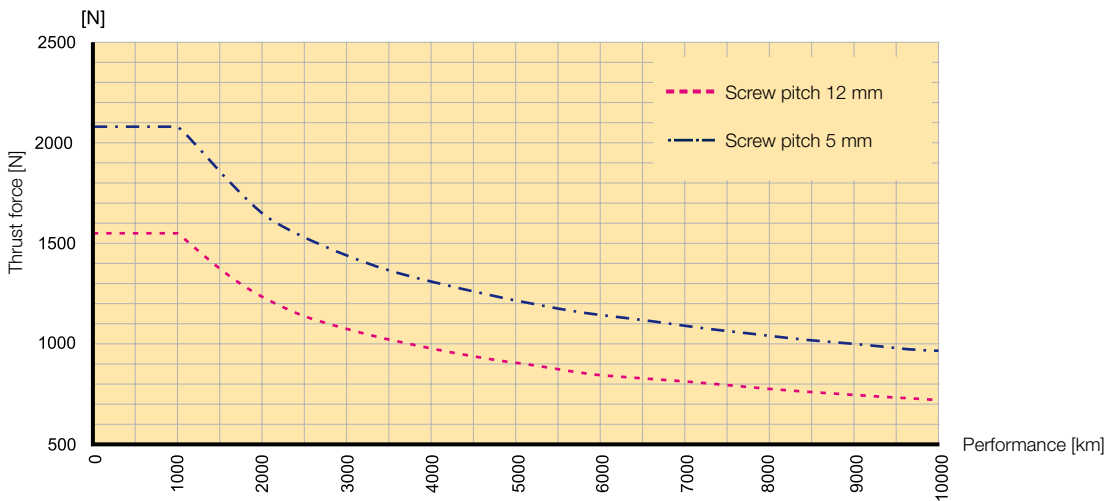
An increase in force will reduce performance.

**Performance / thrust force**

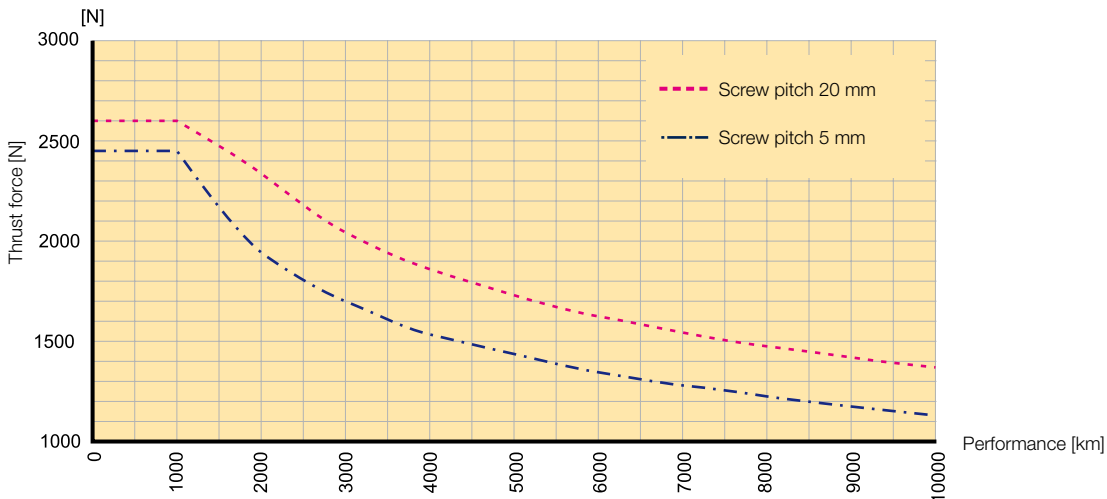
**HMRS08 Performance / Thrust force**



**HMRS11 Performance / Thrust force**



**HMRS15 Performance / Thrust force**



## Ball Screw

Sizes 85, 110, 150, 180, 240 mm

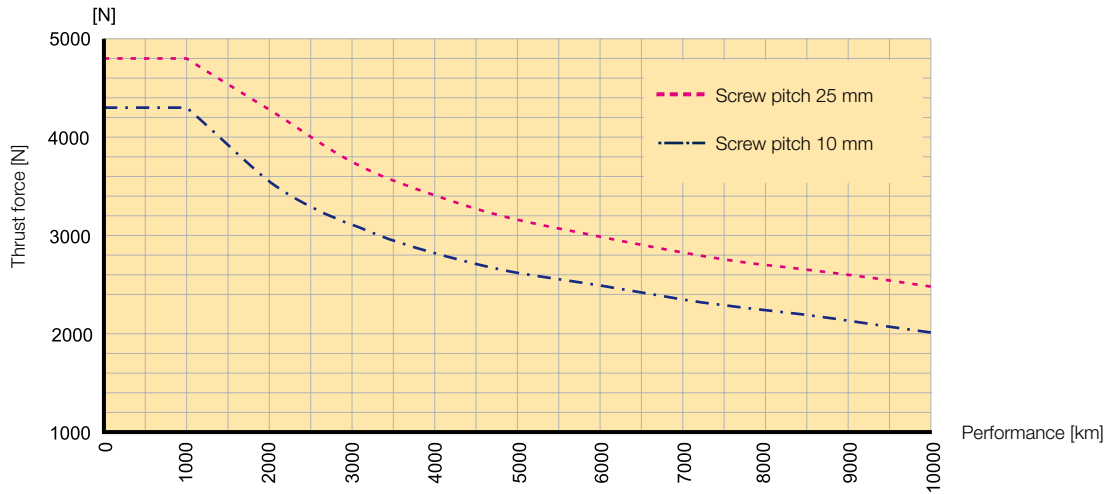
HMRS Series

Performance expectancy depends on the application's required force.

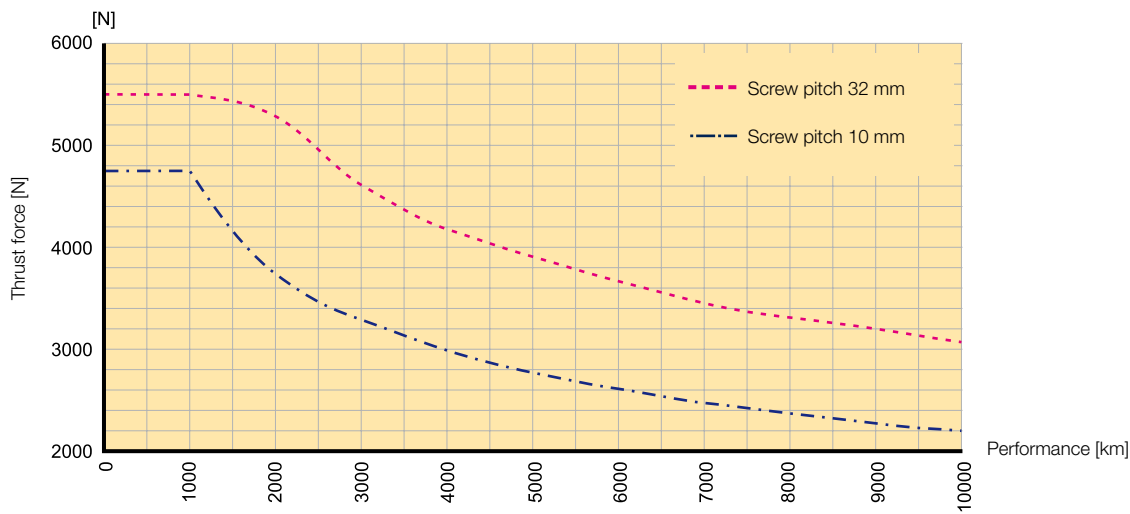
An increase in force will reduce performance.

### Performance / thrust force

**HMRS18 Performance / Thrust force**



**HMRS24 Performance / Thrust force**

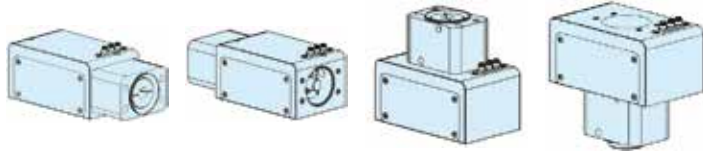
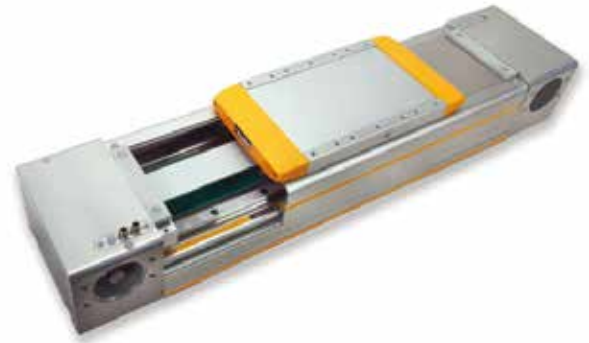


**Belt Drive**

Sizes 85, 110, 150, 180, 240 mm

**HMRB Series**

**Description Motor mounting position**



| horizontal  |  | upright        |  |
|-------------|--|----------------|--|
| 090° / 270° |  | 000° / 180°    |  |
| BD, DD      |  | AP, CP, AD, CD |  |

Type and orientation of the belt is given by the motor mounting position.

**Technical Data HMRB**

| Production size            |             |                     | HMRB08    |           | HMRB11    |           | HMRB15    |           |
|----------------------------|-------------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Motor mounting position    |             |                     | 090°/270° | 000°/180° | 090°/270° | 000°/180° | 090°/270° | 000°/180° |
| Lead constant              | $s_{lin.}$  | [mm]                | 66        | 66        | 90        | 90        | 100       | 125       |
| Max. speed                 | $v_{max.}$  | [m/s]               | 2         |           |           |           | 5         |           |
| Max. acceleration          | $a_{max.}$  | [m/s <sup>2</sup> ] | 30        |           |           |           | 50        |           |
| Repeatability              |             | [µm]                | ± 50      |           |           |           |           |           |
| Max. order stroke          |             | [mm]                | 3,000     |           | 4,000     |           | 6,000     |           |
| Thrust force and torque    |             |                     |           |           |           |           |           |           |
| Max. thrust force          | $F_{Amax.}$ | [N]                 | 295       | 295       | 630       | 630       | 1,050     | 630       |
| Max. torque on drive shaft | $M_{Amax.}$ | [Nm]                | 3.1       | 3.1       | 9.0       | 9.0       | 17.0      | 13.0      |
| No load torque             | $M_0$       | [Nm]                | 1.0       | 1.0       | 1.2       | 1.2       | 1.2       | 1.2       |

| Production size            |             |                     | HMRB18    |           | HMRB24    |           |
|----------------------------|-------------|---------------------|-----------|-----------|-----------|-----------|
| Motor mounting position    |             |                     | 090°/270° | 000°/180° | 090°/270° | 000°/180° |
| Lead constant              | $s_{lin.}$  | [mm]                | 130       | 150       | 160       | 224       |
| Max. speed                 | $v_{max.}$  | [m/s]               | 5         |           |           |           |
| Max. acceleration          | $a_{max.}$  | [m/s <sup>2</sup> ] | 50        |           |           |           |
| Repeatability              |             | [µm]                | ± 50      |           |           |           |
| Max. order stroke          |             | [mm]                | 6,000     |           |           |           |
| Thrust force and torque    |             |                     |           |           |           |           |
| Max. thrust force          | $F_{Amax.}$ | N                   | 1,300     | 1,000     | 4,000     | 3,750     |
| Max. torque on drive shaft | $M_{Amax.}$ | Nm                  | 27        | 24        | 101       | 134       |
| No load torque             | $M_0$       | Nm                  | 2.0       | 2.0       | 4.0       | 4.0       |

## Belt Drive

Sizes 85, 110, 150, 180, 240 mm

### HMRB Series

The permissible thrust force from the table is depending on speed level and order stroke length.

The minimum thrust force value must not be exceeded in the application.

#### Information:

Limiting the torque from the motor may avoid exceeding permitted thrust force.

### HMRB thrust force

| Product size   |                             |     | HMRB08      |             | HMRB11      |             | HMRB15      |             | HMRB18      |             | HMRB24      |             |
|--|-----------------------------|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Motor mounting position                                    |                             |     | 090° / 270° | 000° / 180° | 090° / 270° | 000° / 180° | 090° / 270° | 000° / 180° | 090° / 270° | 000° / 180° | 090° / 270° | 000° / 180° |
| Thrust force $F_A$ corresponding to speed $v$              | $F_{A(v<1 \text{ m/s})}$    | [N] | 295         | 295         | 630         | 630         | 1,050       | 630         | 1,300       | 1,000       | 4,000       | 3,750       |
|  | $F_{A(v<2 \text{ m/s})}$    | [N] | 295         | 295         | 550         | 550         | 990         | 630         | 1,300       | 1,000       | 4,000       | 3,380       |
|  | $F_{A(v<3 \text{ m/s})}$    | [N] | -           | -           | -           | -           | 930         | 630         | 1,300       | 1,000       | 3,650       | 3,140       |
|  | $F_{A(v<4 \text{ m/s})}$    | [N] | -           | -           | -           | -           | 890         | 630         | 1,300       | 1,000       | 3,370       | 2,950       |
|  | $F_{A(v<5 \text{ m/s})}$    | [N] | -           | -           | -           | -           | 840         | 630         | 1,300       | 1,000       | 3,200       | 2,800       |
| Thrust force $F_A$ corresponding to order stroke length OS | $F_{A(OS<1000 \text{ mm})}$ | [N] | 250         | 250         | 630         | 630         | 1,050       | 630         | 1,300       | 1,000       | 4,000       | 3,750       |
|  | $F_{A(OS<2000 \text{ mm})}$ | [N] | 140         | 140         | 550         | 550         | 820         | 490         | 1,000       | 775         | 4,000       | 3,360       |
|  | $F_{A(OS<3000 \text{ mm})}$ | [N] | 100         | 100         | 385         | 385         | 570         | 340         | 710         | 550         | 3,370       | 2,440       |
|  | $F_{A(OS<4000 \text{ mm})}$ | [N] | -           | -           | 295         | 295         | 445         | 265         | 550         | 430         | 2,860       | 1,880       |
|  | $F_{A(OS<5000 \text{ mm})}$ | [N] | -           | -           | -           | -           | 365         | 215         | 450         | 350         | 2,350       | 1,540       |
|  | $F_{A(OS<6000 \text{ mm})}$ | [N] | -           | -           | -           | -           | 305         | 185         | 380         | 295         | 2,000       | 1,300       |

#### Example:

HMRB18 with motor mounting position 1 (090° front), speed  $v = 2 \text{ m/s}$  ( $F_A = 1,300 \text{ N}$ )

and order stroke length OS = 2,500 mm ( $F_A = 710 \text{ N}$ ).

The maximum permissible thrust force  $F_A = 710 \text{ N}$  must not be exceeded.

## Protection Class

### HMR Series

**Standard** - without cover

**IP54** - with cover

HMR was developed for various environment conditions. HMR can be equipped with a cover to comply with IP54 protection class if a higher rating is required.

#### Version - Standard



#### Version - Protected Class IP54



## Impact Protection

### HMR Series

HMR can be equipped with impact protection. The mounted structure shock absorbers can compensate the energy released by unintentional impact and afford protection against mechanical damage.

Two structure shock absorbers are fitted to each side of the carriage prior to delivery.

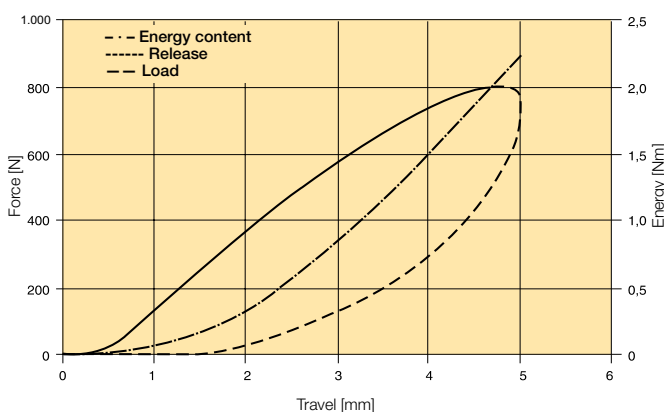


#### Shock absorbers for impact protection

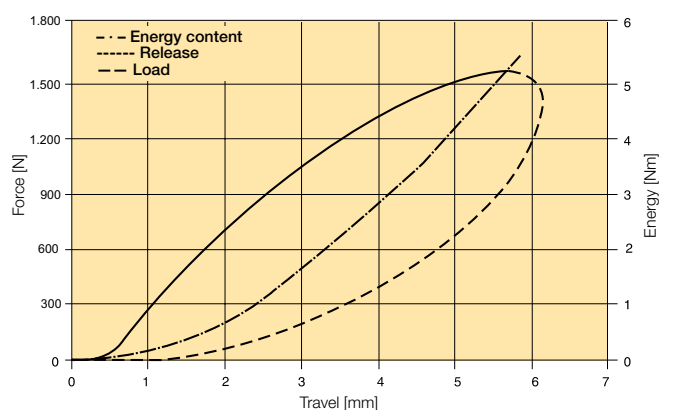
| Product size      | HMRx08 | HMRx11 | HMRx15 | HMRx18 | HMRx24 |
|-------------------|--------|--------|--------|--------|--------|
| Shock absorber    | TA12-5 | TA12-5 | TA12-5 | TA17-7 | TA17-7 |
| Energy absorption | 3.0 Nm | 3.0 Nm | 3.0 Nm | 8.5 Nm | 8.5 Nm |
| Maximum stroke    | 5.0 mm | 5.0 mm | 5.0 mm | 7.0 mm | 7.0 mm |



#### Distance-force and energy-distance characteristic curve (dynamic) – production size HMR-145



#### Distance-force and energy-distance characteristic curve (dynamic) – production size HMR-175, HMR-225







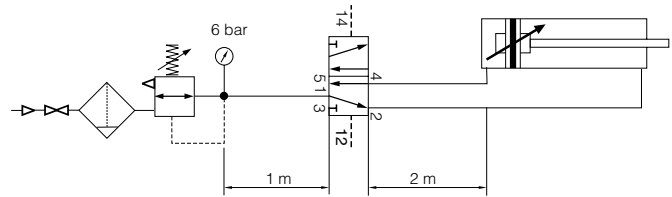


# Valves

**Choice of components for air supply to cylinders**

In the chart below can you find the suitable valves, tubes etc. for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than in the chart. The table is based on a maximum cylinder speed of 0,5m/s.

Following data is valid:  
 Supply pressure: min 7,0 bar  
 Regulator pressure setting: 6,0 bar  
 Pipe length between air treatment unit and valve: max 1 m  
 Pipe length between valve and cylinder : max 2 m  
 The table is made for a cylinder speed max 0,5 m/s



| <b>Cylinder</b>            |         |         |         |       |       |       |       |                 |        |                   |        |         |         |         |
|----------------------------|---------|---------|---------|-------|-------|-------|-------|-----------------|--------|-------------------|--------|---------|---------|---------|
| Cylinder diameter mm       | Ø10     | Ø12     | Ø16     | Ø20   | Ø25   | Ø32   | Ø40   | Ø50             | Ø63    | Ø80               | Ø100   | Ø125    | Ø160    | Ø200    |
| Cylinder ISO connection    | M5      | M5      | M5      | G1/8  | G1/8  | G1/8  | G1/4  | G1/4            | G3/8   | G3/8              | G1/2   | G1/2    | G3/4    | G3/4    |
| <b>Tube</b>                |         |         |         |       |       |       |       |                 |        |                   |        |         |         |         |
| Tube diameter mm Ext / Int | 4 / 2.7 | 4 / 2.7 | 4 / 2.7 | 6 / 4 | 6 / 4 | 6 / 4 | 8 / 6 | 8 / 6<br>10 / 8 | 10 / 8 | 12 / 9<br>14 / 11 | 12 / 9 | 16 / 13 | 18 / 15 | 22 / 16 |
| <b>FRL units</b>           |         |         |         |       |       |       |       |                 |        |                   |        |         |         |         |
| Global P31                 | Green   | Green   | Green   | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| Global P32                 | Green   | Green   | Green   | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| Global P33                 | Green   | Green   | Green   | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| <b>Valves</b>              |         |         |         |       |       |       |       |                 |        |                   |        |         |         |         |
| 4mm inst. fitting valve    | Green   | Green   | Green   | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| M5 valve                   | Green   | Green   | Green   | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| 6mm inst. fitting valve    | Yellow  | Yellow  | Yellow  | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| 1/8 valve                  | Yellow  | Yellow  | Yellow  | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| 1/4 valve                  | Yellow  | Yellow  | Yellow  | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| 3/8 valve                  | Yellow  | Yellow  | Yellow  | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |
| 1/2 valve                  | Yellow  | Yellow  | Yellow  | Green | Green | Green | Green | Green           | Green  | Green             | Green  | Green   | Green   | Green   |

Possible     
  Recommended     
  Cylinder speed < 0,5 m/s     
  Not recommended

# Viking Lite

*rust and corrosion resistant,  
high reliability with flexible installation*



## **Rust and corrosion resistant designs.**

Viking Lite valves are made of anodized aluminium, for good corrosion resistance. The smooth design, with no dirt-collecting pockets, makes the valve suitable for most environments.

## **High reliability**

Viking Lite valves easily comply with the requirements for the component reliability in accordance with EU Machinery Directive standards EN292-2 and EN983. The valves are designed for use with or without supplementary lubrication.

## **Compact installation dimensions - flexible installation**

Compact dimensions direct body porting and integral mounting holes are all features of the Viking Lite range. In addition to single valve installation, the Viking Lite valves may be installed on manifolds so that the valves have a common supply and manifolded exhausts.

The Viking Lite valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.



Designed to operate with pressures up to 10 bar in temperatures -10°C to +50°C.

- 3 sizes: G1/8, G1/4 and G3/8.
- Large flow capacity with short change-over times.
- Low change over pressure.
- Dynamic bi-directional spool seals.
- Do not require lubrication in operation but can also be installed in systems that are lubricated.

**Operating information**

|                     | <b>P2L-AZ</b>    | <b>P2L-BZ</b> | <b>P2L-CZ</b> |
|---------------------|------------------|---------------|---------------|
| Port size:          | G1/8             | G1/4          | G3/8          |
| Working pressure:   | 10 bar           | 10 bar        | 10 bar        |
| Working temperature | -10 °C to +50 °C |               |               |
| Flow (Qmax);        | 15,6 l/s         | 37,8 l/s      | 68,3 l/s      |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Solenoid and pneumatically operated directional control valves**

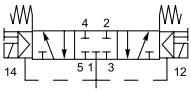
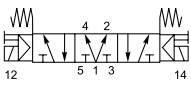
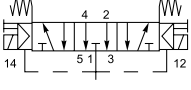
**3/2 valves, internal air, standard temperature**

| Symbol | Size | Actuation       | Return          | Min Operating Pressure (bar) | Changeover time (ms) at 6 bar @20°C actua./return | Weight Kg | Order code Without coil | Order code With 24V DC (22mm coil) |
|--------|------|-----------------|-----------------|------------------------------|---|-----------|-------------------------|------------------------------------|
|        | G1/8 | Air signal      | Air signal      | 1.5                          | 5/5   | 0.18      | <b>P2LAZ311PP</b>       |                                    |
|        | G1/4 |                 |                 | 1.5                          | 6/6   | 0.18      | <b>P2LBZ312PP</b>       |                                    |
|        | G3/8 |                 |                 | 1.5                          | 8/8   | 0.36      | <b>P2LCZ313PP</b>       |                                    |
|        | G1/8 | Air signal      | Spring          | 3.0                          | 8/15  | 0.16      | <b>P2LAZ311PS</b>       |                                    |
|        | G1/4 |                 |                 | 3.0                          | 10/20   | 0.16      | <b>P2LBZ312PS</b>       |                                    |
|        | G3/8 |                 |                 | 3.0                          | 10/30   | 0.35      | <b>P2LCZ313PS</b>       |                                    |
|        | G1/8 | Electric signal | Electric signal | 1.5                          | 10/10   | 0.18      | <b>P2LAZ311EENDCN</b>   | <b>P2LAZ311EENDCB49</b>            |
|        | G1/4 |                 |                 | 1.5                          | 12/12   | 0.18      | <b>P2LBZ312EENDCN</b>   | <b>P2LBZ312EENDCB49</b>            |
|        | G3/8 |                 |                 | 1.5                          | 17/17   | 0.36      | <b>P2LCZ313EENDCN</b>   | <b>P2LCZ313EENDCB49</b>            |
|        | G1/8 | Electric signal | Spring          | 3.0                          | 15/35   | 0.16      | <b>P2LAZ311ESNDCN</b>   | <b>P2LAZ311ESNDCB49</b>            |
|        | G1/4 |                 |                 | 3.0                          | 18/45   | 0.16      | <b>P2LBZ312ESNDCN</b>   | <b>P2LBZ312ESNDCB49</b>            |
|        | G3/8 |                 |                 | 3.0                          | 27/75   | 0.35      | <b>P2LCZ313ESNDCN</b>   | <b>P2LCZ313ESNDCB49</b>            |

**5/2 valves, internal air, standard temperature**

| Symbol | Size | Actuation       | Return          | Min Operating Pressure (bar) | Changeover time (ms) at 6 bar @20°C actua./return | Weight Kg | Order code Without coil | Order code With 24V DC (22mm coil) |
|--------|------|-----------------|-----------------|------------------------------|---|-----------|-------------------------|------------------------------------|
|        | G1/8 | Air signal      | Air signal      | 1.5                          | 5/5   | 0.18      | <b>P2LAZ511PP</b>       |                                    |
|        | G1/4 |                 |                 | 1.5                          | 6/6   | 0.18      | <b>P2LBZ512PP</b>       |                                    |
|        | G3/8 |                 |                 | 1.5                          | 8/8   | 0.36      | <b>P2LCZ513PP</b>       |                                    |
|        | G1/8 | Air signal      | Spring          | 3.0                          | 8/15  | 0.16      | <b>P2LAZ511PS</b>       |                                    |
|        | G1/4 |                 |                 | 3.0                          | 10/20   | 0.16      | <b>P2LBZ512PS</b>       |                                    |
|        | G3/8 |                 |                 | 3.0                          | 10/30   | 0.35      | <b>P2LCZ513PS</b>       |                                    |
|        | G1/8 | Electric signal | Electric signal | 1.5                          | 10/10   | 0.19      | <b>P2LAZ511EENDCN</b>   | <b>P2LAZ511EENDCB49</b>            |
|        | G1/4 |                 |                 | 1.5                          | 12/12   | 0.21      | <b>P2LBZ512EENDCN</b>   | <b>P2LBZ512EENDCB49</b>            |
|        | G3/8 |                 |                 | 1.5                          | 17/17   | 0.44      | <b>P2LCZ513EENDCN</b>   | <b>P2LCZ513EENDCB49</b>            |
|        | G1/8 | Electric signal | Spring          | 3.0                          | 15/35   | 0.17      | <b>P2LAZ511ESNDCN</b>   | <b>P2LAZ511ESNDCB49</b>            |
|        | G1/4 |                 |                 | 3.0                          | 18/45   | 0.20      | <b>P2LBZ512ESNDCN</b>   | <b>P2LBZ512ESNDCB49</b>            |
|        | G3/8 |                 |                 | 3.0                          | 27/75   | 0.43      | <b>P2LCZ513ESNDCN</b>   | <b>P2LCZ513ESNDCB49</b>            |

## 5/3 valves, internal air, standard temperature

| Symbol  | Size | Actuation                    | Min Operating Pressure (bar) | Changeover time (ms) at 6 bar @20°C actua./return | Weight Kg | Order code Without coil | Order code With 24V DC (22mm coil) |
|---|------|------------------------------|------------------------------|---|-----------|-------------------------|------------------------------------|
|  | G1/8 | Self centring                | 3,0                          | 18/40   | 0,26      | <b>P2LAZ611EENDCN</b>   | <b>P2LAZ611EENDCB49</b>            |
|   | G1/4 | Electric/Electric Closed     | 3,0                          | 22/55   | 0,28      | <b>P2LBZ612EENDCN</b>   | <b>P2LBZ612EENDCB49</b>            |
|   | G3/8 | Centre                       | 3,0                          | 30/90   | 0,60      | <b>P2LCZ613EENDCN</b>   | <b>P2LCZ613EENDCB49</b>            |
|  | G1/8 | Self centring                | 3,0                          | 18/40   | 0,26      | <b>P2LAZ711EENDCN</b>   | <b>P2LAZ711EENDCB49</b>            |
|   | G1/4 | Electric/Electric Presurised | 3,0                          | 22/45   | 0,28      | <b>P2LBZ712EENDCN</b>   | <b>P2LBZ712EENDCB49</b>            |
|   | G3/8 | Centre                       | 3,0                          | 30/90   | 0,60      | <b>P2LCZ713EENDCN</b>   | <b>P2LCZ713EENDCB49</b>            |
|  | G1/8 | Self centring                | 3,0                          | 18/40   | 0,26      | <b>P2LAZ811EENDCN</b>   | <b>P2LAZ811EENDCB49</b>            |
|   | G1/4 | Electric/Electric Vented     | 3,0                          | 22/45   | 0,28      | <b>P2LBZ812EENDCN</b>   | <b>P2LBZ812EENDCB49</b>            |
|   | G3/8 | Centre                       | 3,0                          | 30/90   | 0,60      | <b>P2LCZ813EENDCN</b>   | <b>P2LCZ813EENDCB49</b>            |

**Note:** All valves may be ordered with non locking manual override, replacing

...**CN** with ...**BN**

...**CB49** with ...**BB49**

# Viking Lite

Available in boxed quantities of 25



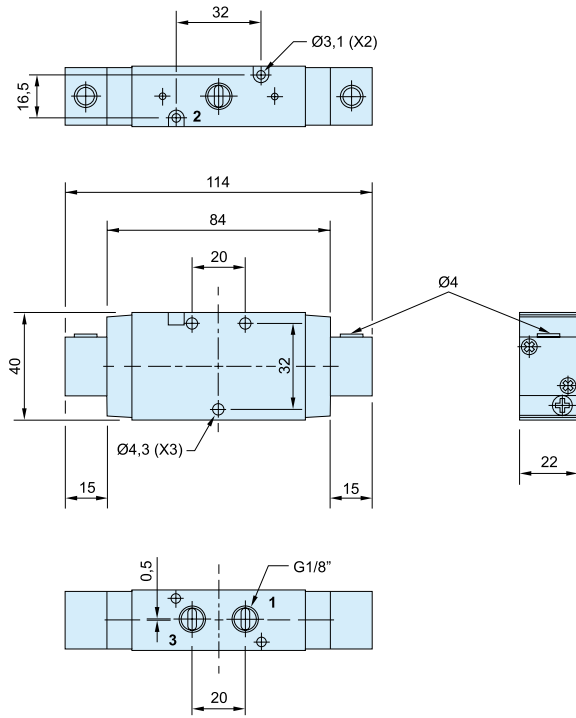
## 5/2 valves, internal air, standard temperature

| Size | Actuation | Return   | Order code Without solenoid | Order code With 24V DC (22mm coil) |
|------|-----------|----------|-----------------------------|------------------------------------|
| G1/8 | Electric  | Electric | <b>P2LAZ511EENDCNQ25</b>    | <b>P2LAZ511EENDCB49Q25</b>         |
| G1/4 | signal    | signal   | <b>P2LBZ512EENDCNQ25</b>    | <b>P2LBZ512EENDCB49Q25</b>         |
| G1/8 | Electric  | Spring   | <b>P2LAZ511ESNDCNQ25</b>    | <b>P2LAZ511ESNDCB49Q25</b>         |
| G1/4 | signal    |          | <b>P2LBZ512ESNDCNQ25</b>    | <b>P2LBZ512ESNDCB49Q25</b>         |

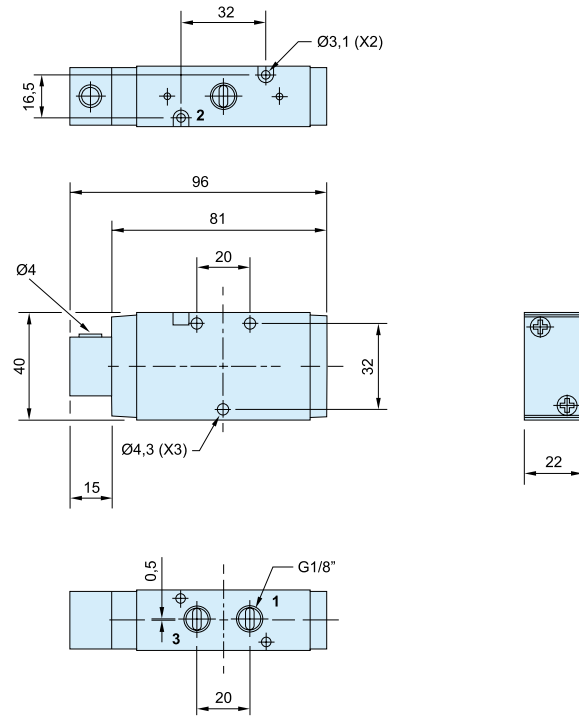
The Viking Lite valve is available in boxed quantities of 25 combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

**Dimensions**

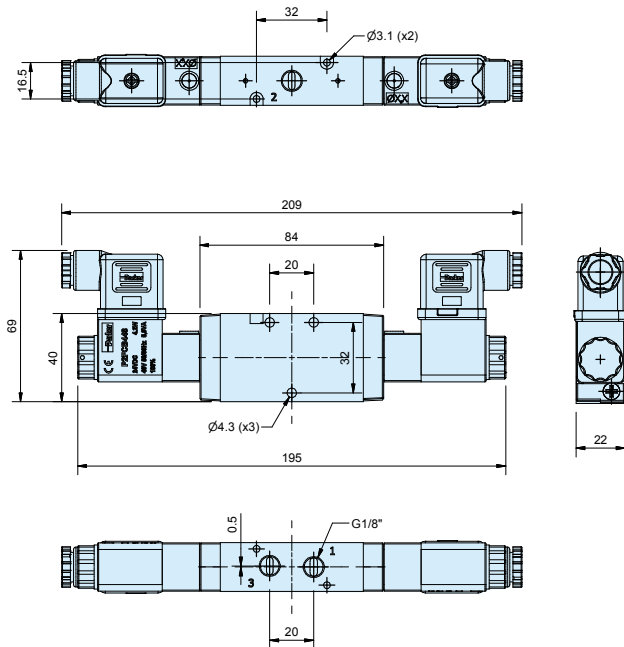
**P2LAZ 3/2**  
 Air / Air



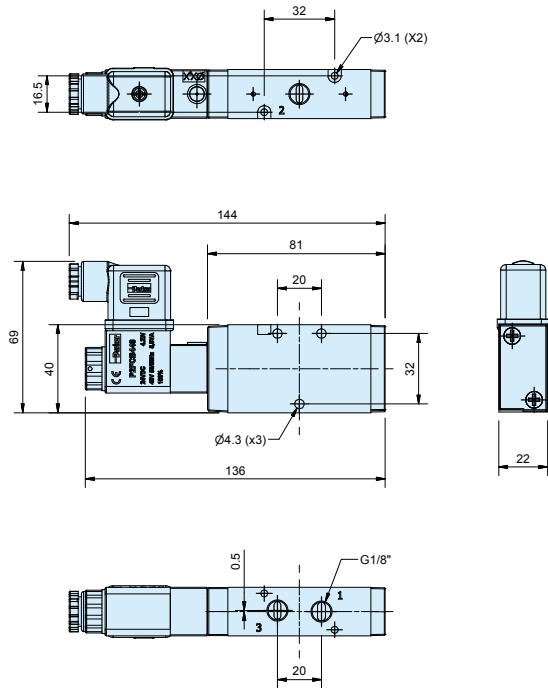
**P2LAZ 3/2**  
 Air / Spring



**P2LAZ 3/2**  
 Solenoid / Solenoid



**P2LAZ 3/2**  
 Solenoid / Spring

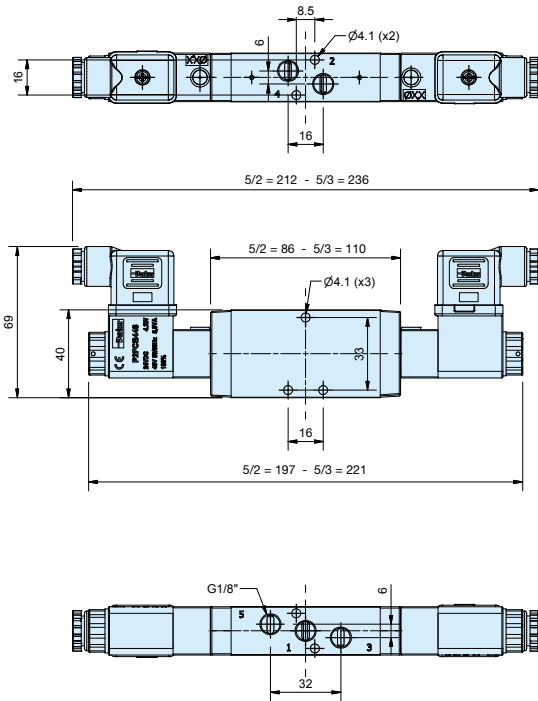


**Solenoid valves**

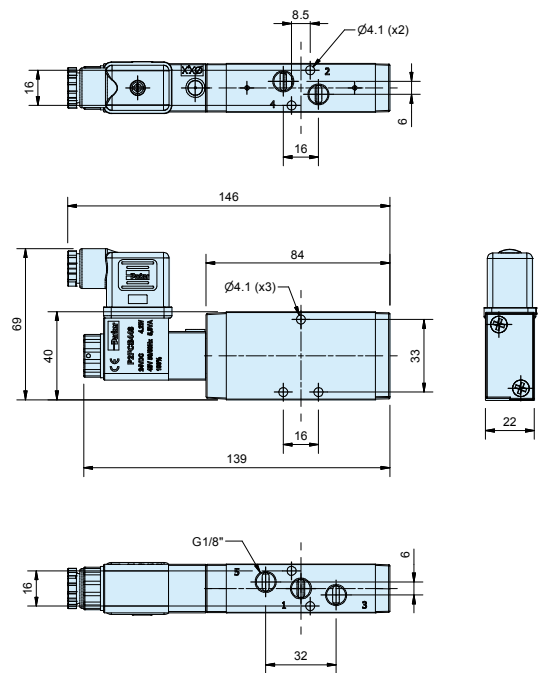
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

**Dimensions**

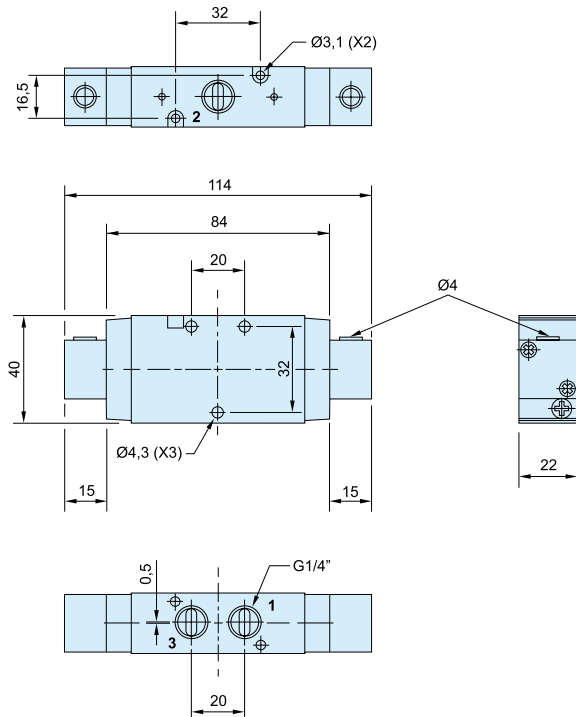
**P2LAZ 5/2 and 5/3  
 Solenoid / Solenoid**



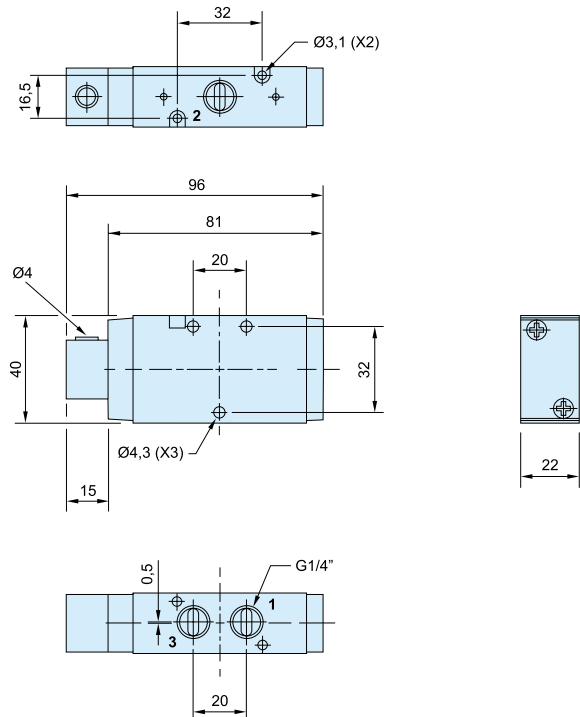
**P2LAZ 5/2  
 Solenoid / Spring**



**P2LBZ 3/2  
 Air / Air**



**P2LBZ 3/2  
 Air / Spring**

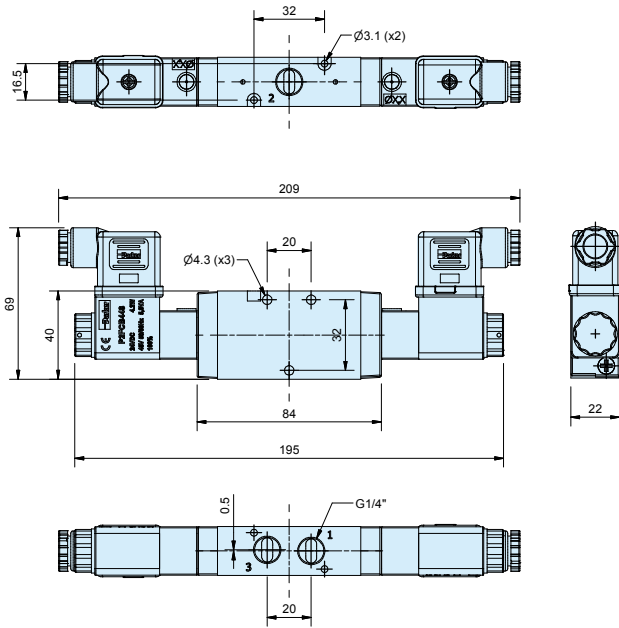


**Solenoid valves**

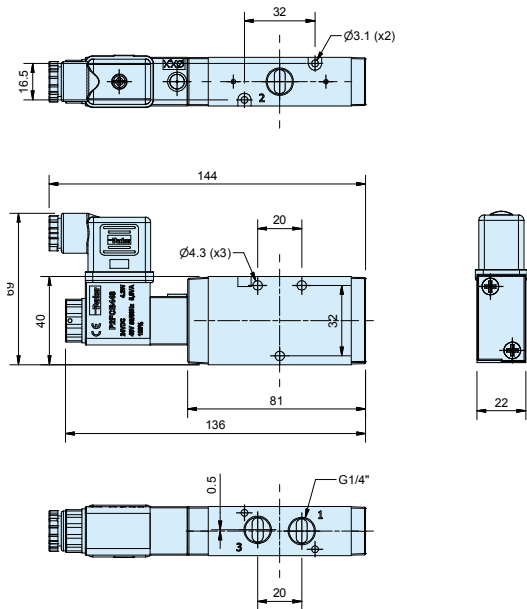
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

Dimensions

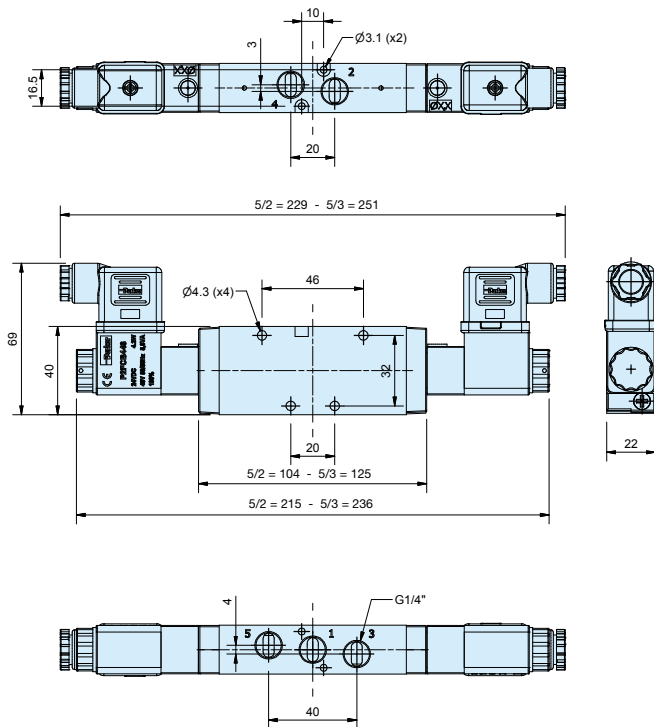
P2LBZ 3/2  
Solenoid / Solenoid



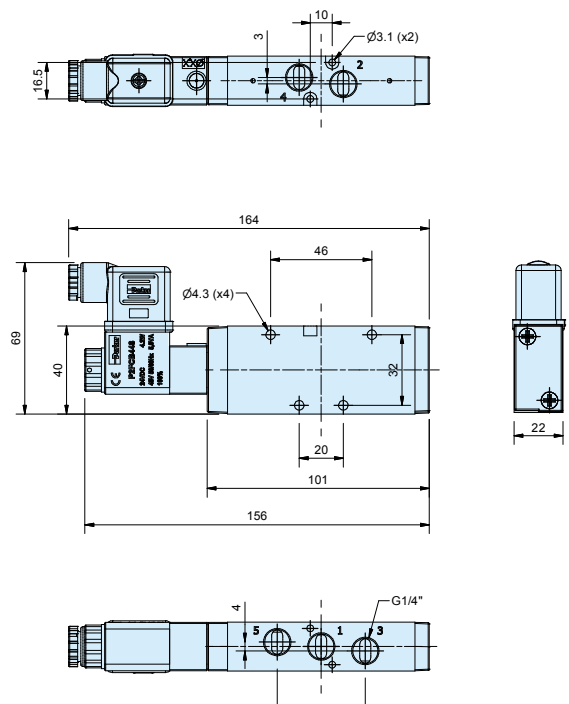
P2LBZ 3/2  
Solenoid / Spring



P2LBZ 5/2 and 5/3  
Solenoid / Solenoid



P2LBZ 5/2  
Solenoid / Spring



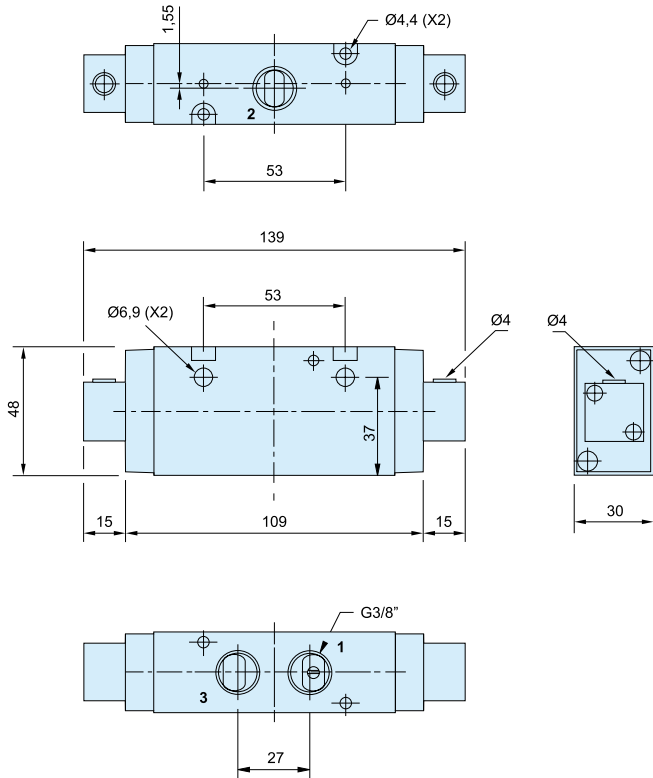
**Solenoid valves**

Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

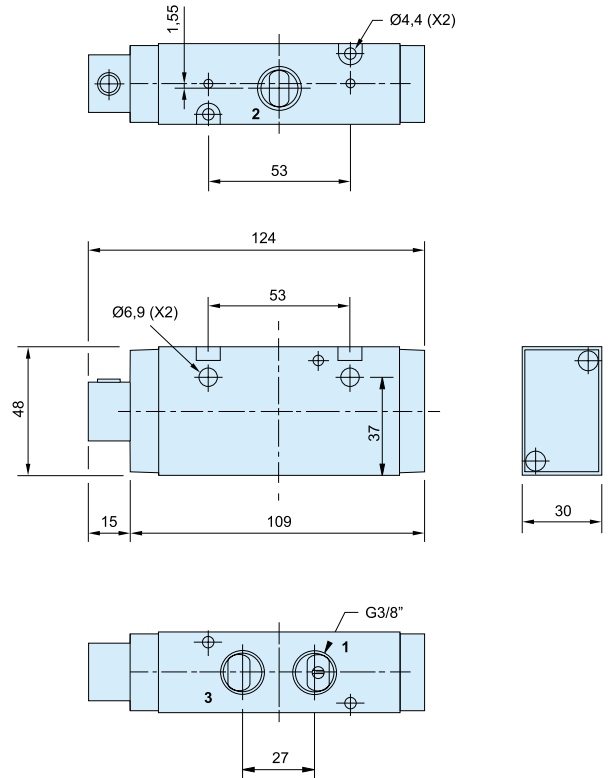


**Dimensions**

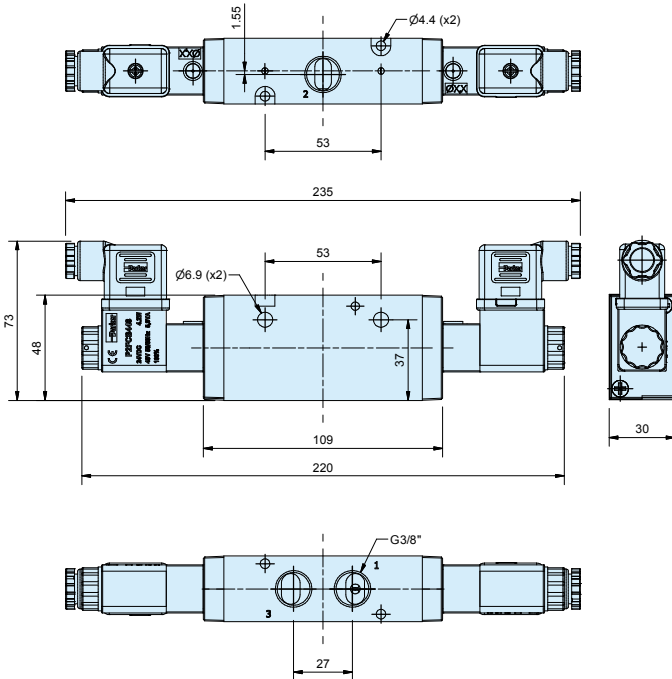
**P2LCZ 3/2**  
 Air / Air



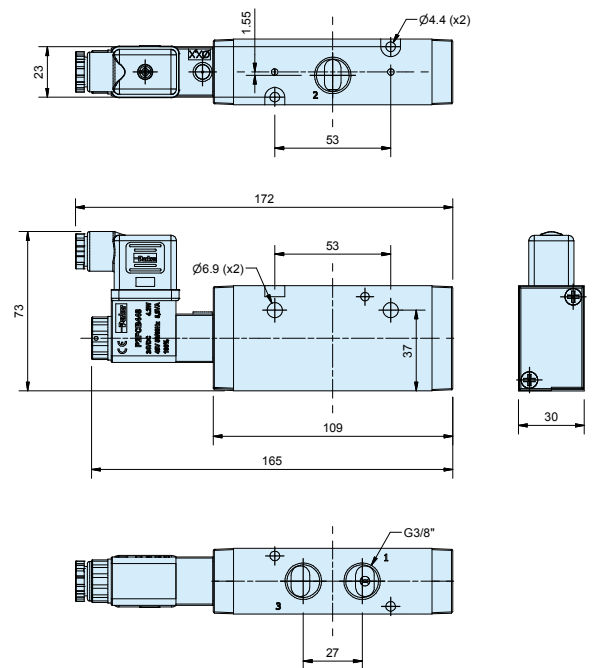
**P2LCZ 3/2**  
 Air / Spring



**P2LCZ 3/2**  
 Solenoid / Solenoid



**P2LCZ 3/2**  
 Solenoid / Spring

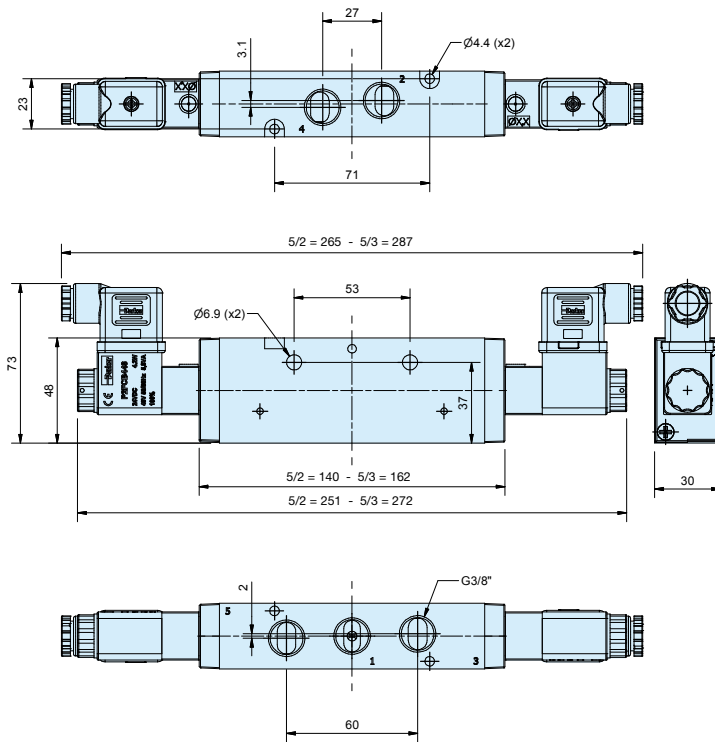


**Solenoid valves**

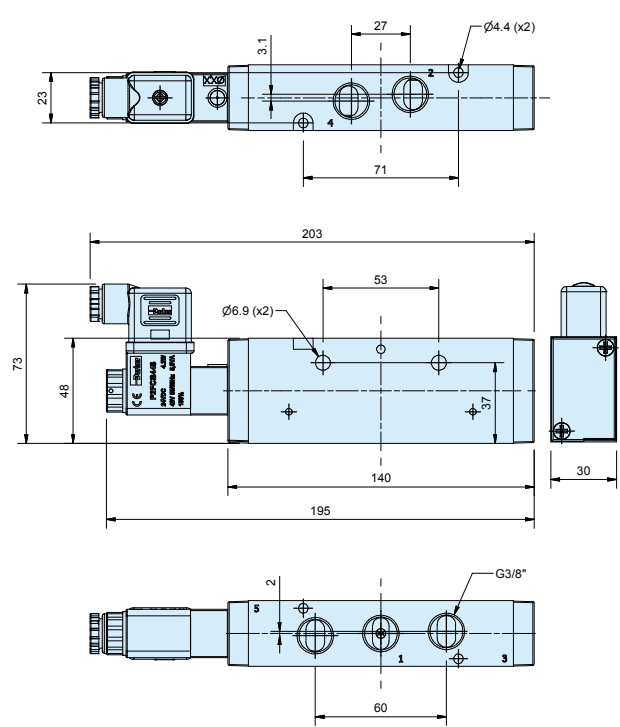
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

**Dimensions**

**P2LCZ 5/2 and 5/3  
 Solenoid / Solenoid**





**P2LCZ 5/2  
 Solenoid / Spring**



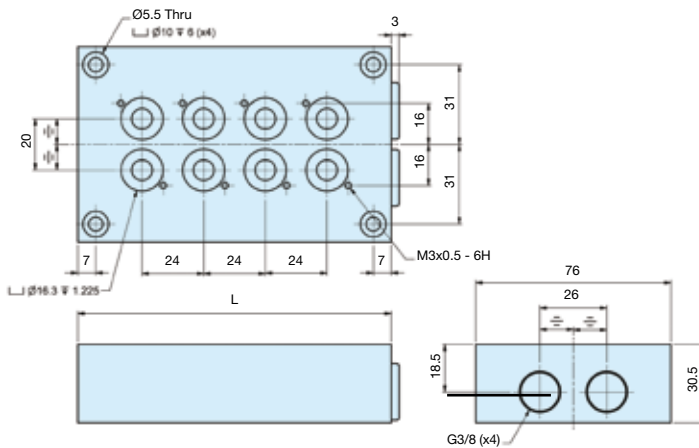
**Solenoid valves**

Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

| Accessories   | Type P2LA / P2LB 3/2 valves  | Weight<br>kg                         | Order code   |
|---|--|--------------------------------------|--|
|  | <b>Manifold bar, P2LB</b><br>incl. fasteners and O-ring. G3/8<br>For 2 valves<br>For 4 valves<br>For 6 valves<br>For 8 valves<br>For 10 valves | 0,38<br>0,64<br>0,89<br>1,15<br>1,40 | <b>91213202SXZ</b><br><b>91213204SXZ</b><br><b>91213206SXZ</b><br><b>91213208SXZ</b><br><b>91213210SXZ</b> |
|   |   | 0,10                                 | <b>912132BPSXZ</b>   |

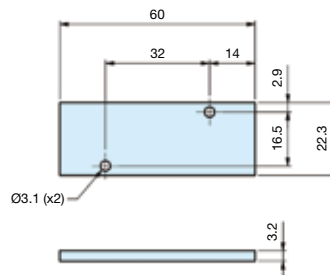
## Dimensions








### Manifold bar



| No. of valves | L mm |
|---------------|------|
| 2             | 74   |
| 4             | 122  |
| 6             | 170  |
| 8             | 218  |
| 10            | 266  |

### Blanking plate for manifold bar, P2LB

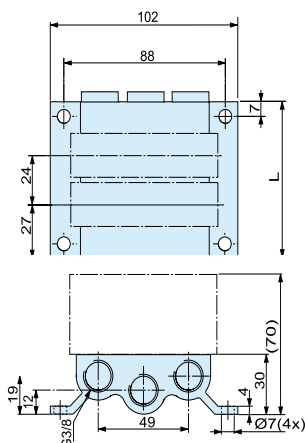


| Accessories   | Type P2LA 5/2 valves   | Weight kg                                    | Order code   |
|---|--|--|--|
|     | <b>Manifold bar, P2LA</b><br>including seals, mounting screws. G3/8<br>For 4 valves<br>For 6 valves<br>For 8 valves<br>For 10 valves<br>For 12 valves<br>For 14 valves | 0,48<br>0,63<br>0,80<br>0,98<br>1,10<br>1,23 | <b>9121658075</b><br><b>9121658076</b><br><b>9121658077</b><br><b>9121658078</b><br><b>9121658079</b><br><b>9121658099</b> |
|    | <b>Blanking plate, P2LA</b><br>for Manifold bar  | 0,05   | <b>9121658063</b>  |
|    | <b>Pressure bar, P2LA</b><br>for common air supply incl. O-rings and mounting screws. G1/4<br>For 2 valves<br>For 4 valves<br>For 6 valves<br>For 8 valves             | 0,13<br>0,20<br>0,26<br>0,33                 | <b>9121658070</b><br><b>9121658071</b><br><b>9121658072</b><br><b>9121658073</b>   |
|    | <b>Blanking plate, P2LA</b><br>for Pressure bar  | 0,05   | <b>9121658074</b>  |
|   | <b>Assembly screws, P2LA</b><br>in stainless steel for valve   | 0,02   | <b>9121658043</b>  |
|  | <b>Assembly screws, P2LA</b><br>in stainless steel for blanking plate  | 0,01   | <b>9121658044</b>  |
|   | <b>O-ring kit, P2LA</b><br>O-rings between valve and manifold bar/Pressure bar   | 0,01   | <b>9121658046</b>  |

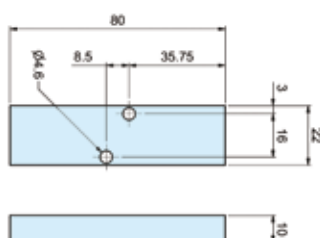
## Dimensions

### Manifold bar, P2LA

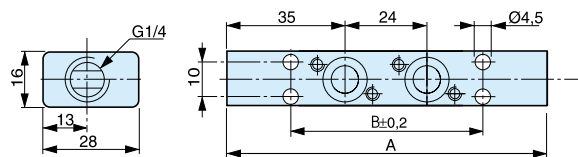
| No. of valves | L mm |
|---------------|------|
| 4             | 126  |
| 6             | 174  |
| 8             | 222  |
| 10            | 270  |
| 12            | 318  |
| 14            | 366  |



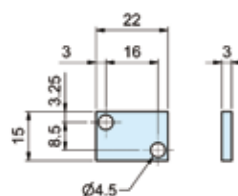
### Blanking plate for manifold bar, P2LA







### Pressure bar, P2LA



### Blanking plate for pressure bar, P2LA

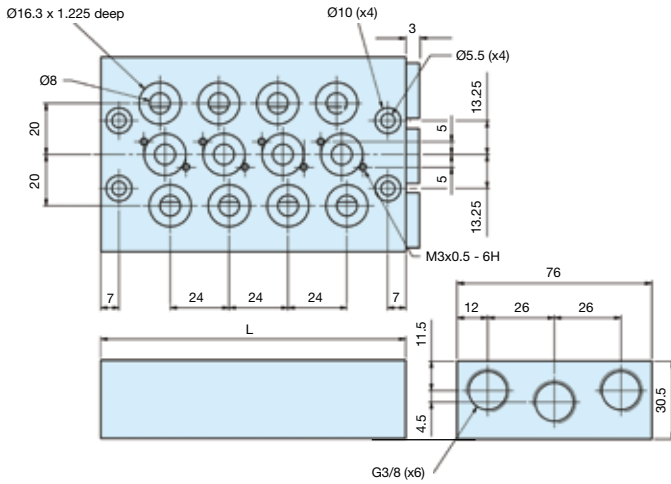


| No. of valves | A mm | B mm |
|---------------|------|------|
| 2             | 94   | 56   |
| 4             | 142  | 104  |
| 6             | 190  | 152  |
| 8             | 238  | 200  |

| Accessories   | Type P2LB 5/2 valves  | Weight kg                            | Order code   |
|---|---|--------------------------------------|--|
|  | <b>Manifold bar, P2LB</b><br>incl. fasteners and O-ring. G3/8<br>For 2 valves<br>For 4 valves<br>For 6 valves<br>For 8 valves<br>For 10 valves                              | 0,69<br>1,13<br>1,56<br>2,00<br>2,45 | <b>9121594805X</b><br><b>9121594806X</b><br><b>9121594807X</b><br><b>9121594808X</b><br><b>9121594812X</b> |
|  | <b>Blanking plate, P2LB</b><br>for Manifold bar   | 0,10                                 | <b>9121594809X</b>   |
|  | <b>Pressure bar, P2LB</b><br>for common air supply incl. O-rings and mounting screws. G3/8<br>For 2 valves<br>For 4 valves<br>For 6 valves<br>For 8 valves<br>For 10 valves | 0,38<br>0,53<br>0,68<br>0,83<br>0,99 | <b>9127113301X</b><br><b>9127113302X</b><br><b>9127113303X</b><br><b>9127113304X</b><br><b>9127113305X</b> |
|  | <b>Blanking plate P2LB</b><br>for Pressure bar. G1/4  | 0,02                                 | <b>9127113306X</b>   |

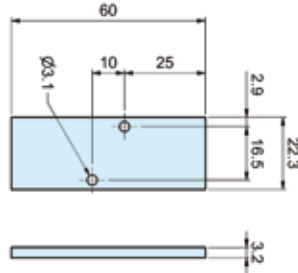
**Dimensions**

**Manifold bar, P2LB**

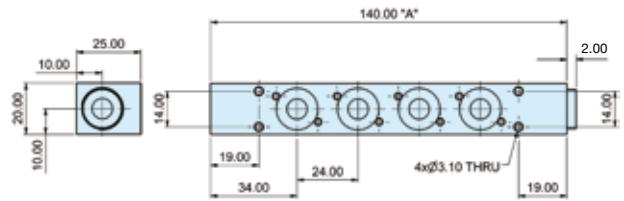


| No. of valves | L mm |
|---------------|------|
| 2             | 74   |
| 4             | 122  |
| 6             | 170  |
| 8             | 218  |
| 10            | 266  |

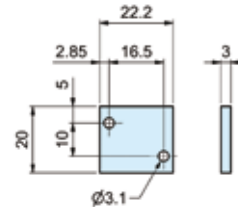
**Blanking plate for manifold bar, P2LB**



**Pressure bar, P2LB**



**Blanking plate for pressure bar, P2LB**



| No. of valves | A mm |
|---------------|------|
| 2             | 92   |
| 4             | 140  |
| 6             | 188  |
| 8             | 236  |
| 10            | 284  |

**22mm solenoid operator part numbers and spares**

**Solenoid coils for 22mm solenoid operators**

| Voltage              | Weight (Kg) | Order code Form B |
|----------------------|-------------|-------------------|
| 12V 60Hz             | 0.093       | <b>P2FCB440</b>   |
| 24V 50/60Hz          | 0.093       | <b>P2FCB442</b>   |
| 12V DC               | 0.093       | <b>P2FCB445</b>   |
| 24V DC               | 0.093       | <b>P2FCB449</b>   |
| 48V DC               | 0.093       | <b>P2FCB451</b>   |
| 110V/50Hz, 120V/60Hz | 0.093       | <b>P2FCB453</b>   |
| 230V/50Hz, 230V/60Hz | 0.093       | <b>P2FCB457</b>   |

**Spare Solenoid Nuts**



**Valves requiring captured exhaust should be fitted with plastic knurled nut**

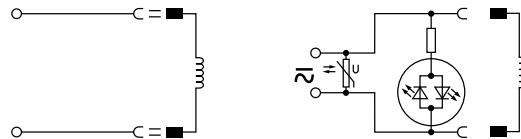
| Order code   |
|--------------|
| <b>P2FNP</b> |

**Valves with vented exhaust are fitted with diffuser plastic nut**

| Order Code   |
|--------------|
| <b>P2FND</b> |

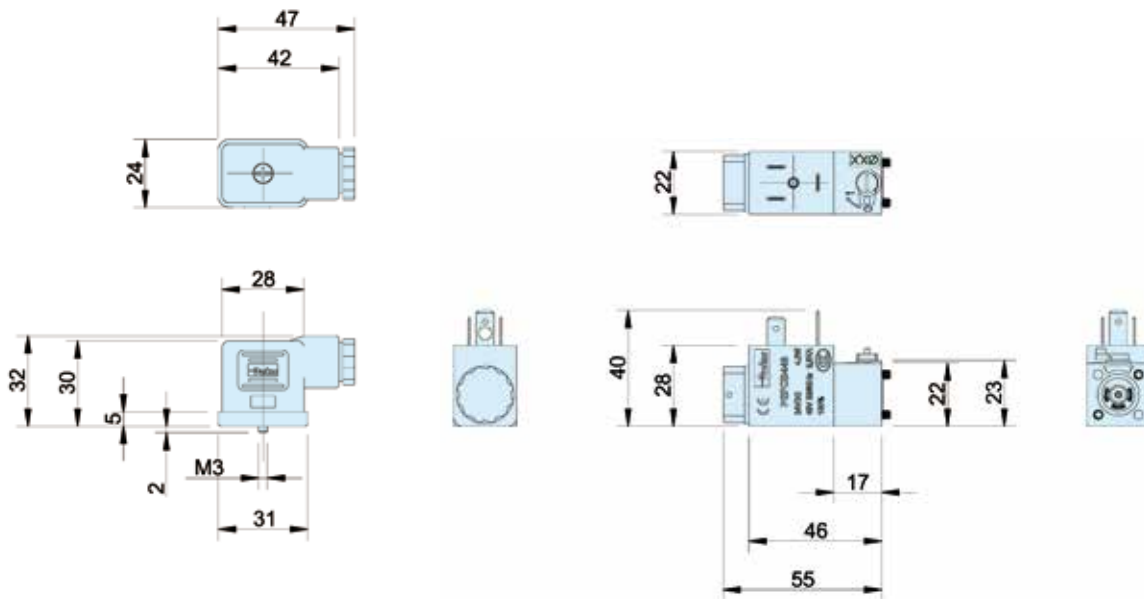
**Solenoid Connectors / Cable Plugs EN175301-803**

|   | Description                                  | Order code            |
|---|--|-----------------------|
|   | 22mm Industrial Form B                       |                       |
| With standard screw   | Standard IP65 without flying lead            | <b>3EV10V10</b>       |
|  | With LED and protection 24V AC/DC            | <b>3EV10V20-24</b>    |
|   | With LED and protection 110V AC              | <b>3EV10V20-110</b>   |
|   | With LED and protection 230V AC              | <b>3EV10V20-230</b>   |
| With cable  | 24V AC/DC, 5m cable LED and protection IP65  | <b>3EV10V20-24L5</b>  |
|  | 110V AC/DC, 5m cable LED and protection IP65 | <b>3EV10V20-110L5</b> |
|   | 230V AC, 5m cable LED and protection IP65    | <b>3EV10V20-230L5</b> |



|                 |                     |                       |
|-----------------|---------------------|-----------------------|
| <b>3EV10V10</b> | <b>3EV10V20-24</b>  | <b>3EV10V20-24L5</b>  |
|                 | <b>3EV10V20-110</b> | <b>3EV10V20-110L5</b> |
|                 | <b>3EV10V20-230</b> | <b>3EV10V20-230L5</b> |

**Cable Plug Dimensions (mm)**





# Viking Xtreme

High performance directional control valves  
G1/8 - G1/2 body ported



## Extreme Environments

*Demand The **Viking Xtreme***

The Viking Xtreme valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

The 1/8 & 1/4 sizes are designed to operate with pressures up to 16 bar and the 3/8 & 1/2 sizes up to 12 bar, in ambient temperatures -40°C to +60°C when fitted with suitable solenoid operators.

The Viking Xtreme valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

- 4 sizes: G1/8, G1/4, G3/8 and G1/2.
- Wide operating temperature range
- Compact design with good corrosion resistance.
- Wide range of 3/2, 5/2 and 5/3 versions.
- High and low temperature versions available for transport applications.
- Lever operated version.
- Twist operated version.



**Operating information**

|                                 | <b>P2L-AX</b>    | <b>P2L-BX</b> | <b>P2L-CX</b> | <b>P2L-DX</b> |
|---------------------------------|------------------|---------------|---------------|---------------|
| Working pressure:               | 16 bar           | 16 bar        | 12 bar        | 12 bar        |
| Working temperature, standard   |                  |               |               |               |
| Air pilot solenoid              | -40 °C to +60 °C |               |               |               |
| Standard and food version       | -10 °C to +50 °C |               |               |               |
| Mobile & Lever operated version | -40 °C to +60 °C |               |               |               |
| Flow (Qmax);                    | <b>P2L-AX</b>    | <b>P2L-BX</b> | <b>P2L-CX</b> | <b>P2L-DX</b> |
|                                 | 19,0 l/s         | 38,0 l/s      | 72,0 l/s      | 78,0 l/s      |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)



**For ATEX specific products contact Sales Office**

**Pneumatically actuated 3/2, 5/2 and 5/3 valves**

| Symbol  | Size | Actuator  | Return    | Order code        |
|---|------|-----------|-----------|-------------------|
| <b>3/2 valves, temperature -40°C to +60°C</b> |      |           |           |                   |
|   | G1/8 | Air pilot | Air pilot | <b>P2LAX311PP</b> |
|   | G1/4 |           |           | <b>P2LBX312PP</b> |
|   | G3/8 |           |           | <b>P2LCX313PP</b> |
|   | G1/2 |           |           | <b>P2LDX314PP</b> |
|   | G1/8 | Air pilot | Spring    | <b>P2LAX311PS</b> |
|   | G1/4 |           |           | <b>P2LBX312PS</b> |
|   | G3/8 |           |           | <b>P2LCX313PS</b> |
|   | G1/2 |           |           | <b>P2LDX314PS</b> |
| <b>5/2 valves, temperature -40°C to +60°C</b> |      |           |           |                   |
|   | G1/8 | Air pilot | Air pilot | <b>P2LAX511PP</b> |
|   | G1/4 |           |           | <b>P2LBX512PP</b> |
|   | G3/8 |           |           | <b>P2LCX513PP</b> |
|   | G1/2 |           |           | <b>P2LDX514PP</b> |
|   | G1/8 | Air pilot | Spring    | <b>P2LAX511PS</b> |
|   | G1/4 |           |           | <b>P2LBX512PS</b> |
|   | G3/8 |           |           | <b>P2LCX513PS</b> |
|   | G1/2 |           |           | <b>P2LDX514PS</b> |

| Symbol  | Size | Actuator  | Return    | Order code        |
|---|------|-----------|-----------|-------------------|
| <b>5/3 valves, temperature -40°C to +60°C</b> |      |           |           |                   |
|   | G1/8 | Air pilot | Air pilot | <b>P2LAX611PP</b> |
|   | G1/4 | Closed    | Self      | <b>P2LBX612PP</b> |
|   | G3/8 | centre    | centring  | <b>P2LCX613PP</b> |
|   | G1/2 |           |           | <b>P2LDX614PP</b> |
|   | G1/8 | Air pilot | Air pilot | <b>P2LAX811PP</b> |
|   | G1/4 | Vented    | Self      | <b>P2LBX812PP</b> |
|   | G3/8 | centre    | centring  | <b>P2LCX813PP</b> |
|   | G1/2 |           |           | <b>P2LDX814PP</b> |
|   | G1/8 | Air pilot | Air pilot | <b>P2LAX711PP</b> |
|   | G1/4 | Pressure  | Self      | <b>P2LBX712PP</b> |
|   | G3/8 | centre    | centring  | <b>P2LCX713PP</b> |
|   | G1/2 |           |           | <b>P2LDX714PP</b> |



**Electrically actuated 3/2, 5/2 and 5/3 valves - 15mm solenoid**

| Symbol  | Size | Actuator | Return   | Order code<br>15mm solenoid<br>with 24 VDC sol | Order code<br>without 15mm solenoid |
|---|------|----------|----------|--|-------------------------------------|
| <b>3/2 valves, internal air, standard temperature</b> |      |          |          |  |                                     |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX311EENXB549</b>                        | <b>P2LAX311EENXXX</b>               |
|   | G1/4 |          |          | <b>P2LBX312EENXB549</b>                        | <b>P2LBX312EENXXX</b>               |
|   | G3/8 |          |          | <b>P2LCX313EENXB549</b>                        | <b>P2LCX313EENXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX314EENXB549</b>                        | <b>P2LDX314EENXXX</b>               |
|   | G1/8 | Solenoid | Spring   | <b>P2LAX311ESNXB549</b>                        | <b>P2LAX311ESNXXX</b>               |
|   | G1/4 |          |          | <b>P2LBX312ESNXB549</b>                        | <b>P2LBX312ESNXXX</b>               |
|   | G3/8 |          |          | <b>P2LCX313ESNXB549</b>                        | <b>P2LCX313ESNXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX314ESNXB549</b>                        | <b>P2LDX314ESNXXX</b>               |
| <b>5/2 valves, internal air, standard temperature</b> |      |          |          |  |                                     |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX511EENXB549</b>                        | <b>P2LAX511EENXXX</b>               |
|   | G1/4 |          |          | <b>P2LBX512EENXB549</b>                        | <b>P2LBX512EENXXX</b>               |
|   | G3/8 |          |          | <b>P2LCX513EENXB549</b>                        | <b>P2LCX513EENXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX514EENXB549</b>                        | <b>P2LDX514EENXXX</b>               |
|   | G1/8 | Solenoid | Spring   | <b>P2LAX511ESNXB549</b>                        | <b>P2LAX511ESNXXX</b>               |
|   | G1/4 |          |          | <b>P2LBX512ESNXB549</b>                        | <b>P2LBX512ESNXXX</b>               |
|   | G3/8 |          |          | <b>P2LCX513ESNXB549</b>                        | <b>P2LCX513ESNXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX514ESNXB549</b>                        | <b>P2LDX514ESNXXX</b>               |
| <b>5/3 valves, internal air, standard temperature</b> |      |          |          |  |                                     |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX611EENXB549</b>                        | <b>P2LAX611EENXXX</b>               |
|   | G1/4 | Closed   | Self     | <b>P2LBX612EENXB549</b>                        | <b>P2LBX612EENXXX</b>               |
|   | G3/8 | centre   | centring | <b>P2LCX613EENXB549</b>                        | <b>P2LCX613EENXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX614EENXB549</b>                        | <b>P2LDX614EENXXX</b>               |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX811EENXB549</b>                        | <b>P2LAX811EENXXX</b>               |
|   | G1/4 | Vented   | Self     | <b>P2LBX812EENXB549</b>                        | <b>P2LBX812EENXXX</b>               |
|   | G3/8 | centre   | centring | <b>P2LCX813EENXB549</b>                        | <b>P2LCX813EENXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX814EENXB549</b>                        | <b>P2LDX814EENXXX</b>               |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX711EENXB549</b>                        | <b>P2LAX711EENXXX</b>               |
|   | G1/4 | Pressure | Self     | <b>P2LBX712EENXB549</b>                        | <b>P2LBX712EENXXX</b>               |
|   | G3/8 | centre   | centring | <b>P2LCX713EENXB549</b>                        | <b>P2LCX713EENXXX</b>               |
|   | G1/2 |          |          | <b>P2LDX714EENXB549</b>                        | <b>P2LDX714EENXXX</b>               |

**Electrically actuated 3/2, 5/2 and 5/3 valves - 22mm solenoid**

| Symbol  | Size | Actuator | Return   | Order code<br>22mm solenoid<br>24 VDC | Order code<br>Without solenoid coil |
|---|------|----------|----------|---------------------------------------|-------------------------------------|
| <b>3/2 valves, internal air, standard temperature</b> |      |          |          |                                       |                                     |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX311EENDDB49</b>               | <b>P2LAX311EENDDN</b>               |
|   | G1/4 |          |          | <b>P2LBX312EENDDB49</b>               | <b>P2LBX312EENDDN</b>               |
|   | G3/8 |          |          | <b>P2LCX313EENDDB49</b>               | <b>P2LCX313EENDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX314EENDDB49</b>               | <b>P2LDX314EENDDN</b>               |
|   | G1/8 | Solenoid | Spring   | <b>P2LAX311ESNDB49</b>                | <b>P2LAX311ESNDDN</b>               |
|   | G1/4 |          |          | <b>P2LBX312ESNDB49</b>                | <b>P2LBX312ESNDDN</b>               |
|   | G3/8 |          |          | <b>P2LCX313ESNDB49</b>                | <b>P2LCX313ESNDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX314ESNDB49</b>                | <b>P2LDX314ESNDDN</b>               |
| <b>5/2 valves, internal air, standard temperature</b> |      |          |          |                                       |                                     |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX511EENDDB49</b>               | <b>P2LAX511EENDDN</b>               |
|   | G1/4 |          |          | <b>P2LBX512EENDDB49</b>               | <b>P2LBX512EENDDN</b>               |
|   | G3/8 |          |          | <b>P2LCX513EENDDB49</b>               | <b>P2LCX513EENDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX514EENDDB49</b>               | <b>P2LDX514EENDDN</b>               |
|   | G1/8 | Solenoid | Spring   | <b>P2LAX511ESNDB49</b>                | <b>P2LAX511ESNDDN</b>               |
|   | G1/4 |          |          | <b>P2LBX512ESNDB49</b>                | <b>P2LBX512ESNDDN</b>               |
|   | G3/8 |          |          | <b>P2LCX513ESNDB49</b>                | <b>P2LCX513ESNDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX514ESNDB49</b>                | <b>P2LDX514ESNDDN</b>               |
| <b>5/3 valves, internal air, standard temperature</b> |      |          |          |                                       |                                     |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX611EENDDB49</b>               | <b>P2LAX611EENDDN</b>               |
|   | G1/4 | Closed   | Self     | <b>P2LBX612EENDDB49</b>               | <b>P2LBX612EENDDN</b>               |
|   | G3/8 | centre   | centring | <b>P2LCX613EENDDB49</b>               | <b>P2LCX613EENDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX614EENDDB49</b>               | <b>P2LDX614EENDDN</b>               |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX811EENDDB49</b>               | <b>P2LAX811EENDDN</b>               |
|   | G1/4 | Vented   | Self     | <b>P2LBX812EENDDB49</b>               | <b>P2LBX812EENDDN</b>               |
|   | G3/8 | centre   | centring | <b>P2LCX813EENDDB49</b>               | <b>P2LCX813EENDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX814EENDDB49</b>               | <b>P2LDX814EENDDN</b>               |
|   | G1/8 | Solenoid | Solenoid | <b>P2LAX711EENDDB49</b>               | <b>P2LAX711EENDDN</b>               |
|   | G1/4 | Pressure | Self     | <b>P2LBX712EENDDB49</b>               | <b>P2LBX712EENDDN</b>               |
|   | G3/8 | centre   | centring | <b>P2LCX713EENDDB49</b>               | <b>P2LCX713EENDDN</b>               |
|   | G1/2 |          |          | <b>P2LDX714EENDDB49</b>               | <b>P2LDX714EENDDN</b>               |

## Electrically actuated 3/2, 5/2 and 5/3 - Xtreme duty 16 bar - 40°C to +60°C.

P2LAX/P2LBX 16 bar and P2LCX/P2LDX 12 bar

| Symbol   | Size | Actuator | Return    | Order code<br>22mm solenoid<br>24 VDC | Order code<br>Without solenoid coil |
|--|------|----------|-----------|---------------------------------------|-------------------------------------|
| <b>3/2 valves, internal air, low temperature</b> |      |          |           |                                       |                                     |
|  | G1/8 | Solenoid | Solenoid  | <b>P2LAX311EEHDB49</b>                | <b>P2LAX311EEHDDN</b>               |
|  | G1/4 |          | Low temp. | <b>P2LBX312EEHDB49</b>                | <b>P2LBX312EEHDDN</b>               |
|  | G3/8 |          |           | <b>P2LCX313EEHDB49</b>                | <b>P2LCX313EEHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX314EEHDB49</b>                | <b>P2LDX314EEHDDN</b>               |
|  | G1/8 | Solenoid | Spring    | <b>P2LAX311ESHDB49</b>                | <b>P2LAX311ESHDDN</b>               |
|  | G1/4 |          | Low temp. | <b>P2LBX312ESHDB49</b>                | <b>P2LBX312ESHDDN</b>               |
|  | G3/8 |          |           | <b>P2LCX313ESHDB49</b>                | <b>P2LCX313ESHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX314ESHDB49</b>                | <b>P2LDX314ESHDDN</b>               |
| <b>5/2 valves, internal air, low temperature</b> |      |          |           |                                       |                                     |
|  | G1/8 | Solenoid | Solenoid  | <b>P2LAX511EEHDB49</b>                | <b>P2LAX511EEHDDN</b>               |
|  | G1/4 |          | Low temp. | <b>P2LBX512EEHDB49</b>                | <b>P2LBX512EEHDDN</b>               |
|  | G3/8 |          |           | <b>P2LCX513EEHDB49</b>                | <b>P2LCX513EEHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX514EEHDB49</b>                | <b>P2LDX514EEHDDN</b>               |
|  | G1/8 | Solenoid | Spring    | <b>P2LAX511ESHDB49</b>                | <b>P2LAX511ESHDDN</b>               |
|  | G1/4 |          | Low temp. | <b>P2LBX512ESHDB49</b>                | <b>P2LBX512ESHDDN</b>               |
|  | G3/8 |          |           | <b>P2LCX513ESHDB49</b>                | <b>P2LCX513ESHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX514ESHDB49</b>                | <b>P2LDX514ESHDDN</b>               |
| <b>5/3 valves, internal air, low temperature</b> |      |          |           |                                       |                                     |
|  | G1/8 | Solenoid | Solenoid  | <b>P2LAX611EEHDB49</b>                | <b>P2LAX611EEHDDN</b>               |
|  | G1/4 | Closed   | Self      | <b>P2LBX612EEHDB49</b>                | <b>P2LBX612EEHDDN</b>               |
|  | G3/8 | centre   | centring  | <b>P2LCX613EEHDB49</b>                | <b>P2LCX613EEHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX614EEHDB49</b>                | <b>P2LDX614EEHDDN</b>               |
|  | G1/8 | Solenoid | Solenoid  | <b>P2LAX811EEHDB49</b>                | <b>P2LAX811EEHDDN</b>               |
|  | G1/4 | Vented   | Self      | <b>P2LBX812EEHDB49</b>                | <b>P2LBX812EEHDDN</b>               |
|  | G3/8 | centre   | centring  | <b>P2LCX813EEHDB49</b>                | <b>P2LCX813EEHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX814EEHDB49</b>                | <b>P2LDX814EEHDDN</b>               |
|  | G1/8 | Solenoid | Solenoid  | <b>P2LAX711EEHDB49</b>                | <b>P2LAX711EEHDDN</b>               |
|  | G1/4 | Pressure | Self      | <b>P2LBX712EEHDB49</b>                | <b>P2LBX712EEHDDN</b>               |
|  | G3/8 | centre   | centring  | <b>P2LCX713EEHDB49</b>                | <b>P2LCX713EEHDDN</b>               |
|  | G1/2 |          |           | <b>P2LDX714EEHDB49</b>                | <b>P2LDX714EEHDDN</b>               |

## Pneumatic twist operated valves - Xtreme operating pressure / temperature


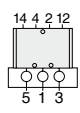

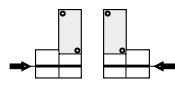

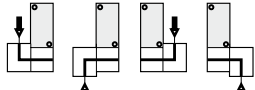

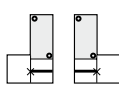

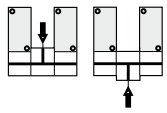

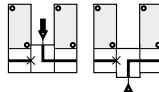


Max operating pressure 16 bar (A &amp; B) 12 bar (C &amp; D). temp range -40°C to +60°C

| Symbol  | Size | Actuation | Return | Changeover<br>Angle | Order code        |
|---|------|-----------|--------|---------------------|-------------------|
| <b>3/2 valves, temperature -40°C to +60°C</b> |      |           |        |                     |                   |
|   | G1/4 | Twist     | Twist  | 45                  | <b>P2LBX312JJ</b> |
| <b>5/2 valves, temperature -40°C to +60°C</b> |      |           |        |                     |                   |
|   | G1/4 | Twist     | Twist  | 45                  | <b>P2LBX512JJ</b> |
| <b>5/3 valves, temperature -40°C to +60°C</b> |      |           |        |                     |                   |
|   | G1/4 | Twist     | Twist  | 54                  | <b>P2LBX71277</b> |
|   | G1/4 | Twist     | Twist  | 54                  | <b>P2LBX61277</b> |
|   | G1/4 | Twist     | Twist  | 54                  | <b>P2LBX81277</b> |

**Lever operated directional control valves**

Max operating pressure 16 bar (A & B) 12 bar (C & D). temp range -40°C to +60°C





| Symbol  | Size | Actuation  | Return | Changeover angle | Changeover Force | Type | Weight Kg         | Order code        |
|---|------|--|--------|------------------|------------------|------|-------------------|-------------------|
| <b>3/2 valves, standard temperature / Low temperature, lever 90° to ports</b> |      |  |        |                  |                  |      |                   |                   |
|   | G1/8 | Lever  | Lever  | 20°              | 9 N              | Std. | 0,33              | <b>P2LAX311VV</b> |
|   | G1/4 | Lever  | Lever  | 20°              | 9 N              | Std. | 0,33              | <b>P2LBX312VV</b> |
|   | G3/8 | Lever  | Lever  | 32°              | 25 N             | Std. | 0,40              | <b>P2LCX313VV</b> |
|   | G1/2 | Lever  | Lever  | 32°              | 25 N             | Std. | 0,60              | <b>P2LDX314VV</b> |
|   | G1/8 | Lever  | Spring | 20°              | 10N              | Std. | 0,33              | <b>P2LAX311VS</b> |
|   | G1/4 | Lever  | Spring | 20°              | 10N              | Std. | 0,33              | <b>P2LBX312VS</b> |
|   | G3/8 | Lever  | Spring | 32°              | 15 N             | Std. | 0,40              | <b>P2LCX313VS</b> |
|   | G1/2 | Lever  | Spring | 32°              | 15 N             | Std. | 0,60              | <b>P2LDX314VS</b> |
| <b>5/2 valves, standard temperature / Low temperature, lever 90° to ports</b> |      |  |        |                  |                  |      |                   |                   |
|   | G1/8 | Lever  | Lever  | 28°              | 9 N              | Std. | 0,18              | <b>P2LAX511VV</b> |
|   | G1/4 | Lever  | Lever  | 20°              | 9 N              | Std. | 0,33              | <b>P2LBX512VV</b> |
|   | G3/8 | Lever  | Lever  | 32°              | 25 N             | Std. | 0,40              | <b>P2LCX513VV</b> |
|   | G1/2 | Lever  | Lever  | 32°              | 25 N             | Std. | 0,60              | <b>P2LDX514VV</b> |
|   | G1/8 | Lever  | Spring | 28°              | 10N              | Std. | 0,18              | <b>P2LAX511VS</b> |
|   | G1/4 | Lever  | Spring | 20°              | 10N              | Std. | 0,33              | <b>P2LBX512VS</b> |
|   | G3/8 | Lever  | Spring | 32°              | 15 N             | Std. | 0,40              | <b>P2LCX513VS</b> |
|   | G1/2 | Lever  | Spring | 32°              | 15 N             | Std. | 0,60              | <b>P2LDX514VS</b> |
| <b>5/3 valves, low temperature, lever 90° to ports</b>                        |      |  |        |                  |                  |      |                   |                   |
|   | G1/8 | Lever  | Lever  | ±14°             | 15 N             | Std. | 0,18              | <b>P2LAX61122</b> |
|   | G1/4 | Closed centre position held in three positions           |        | ±12°             | 15 N             | Std. | 0,33              | <b>P2LBX61222</b> |
|   | G3/8 |  | ±16°   | 17 N             | Std.             | 0,71 | <b>P2LCX61322</b> |                   |
|   | G1/2 |  |        | ±16°             | 17 N             | Std. | 0,73              | <b>P2LDX61422</b> |
|   | G1/8 | Lever  | Lever  | ±14°             | 15 N             | Std. | 0,18              | <b>P2LAX81122</b> |
|   | G1/4 | Exhausted centre position held in three positions        |        | ±12°             | 15 N             | Std. | 0,33              | <b>P2LBX81222</b> |
|   | G3/8 |  | ±16°   | 17 N             | Std.             | 0,71 | <b>P2LCX81322</b> |                   |
|   | G1/2 |  |        | ±16°             | 17 N             | Std. | 0,73              | <b>P2LDX81422</b> |
|   | G1/8 | Lever  | Lever  | ±14°             | 15 N             | Std. | 0,18              | <b>P2LAX71122</b> |
|   | G1/4 | Pressure applied centre position held in three positions |        | ±12°             | 15 N             | Std. | 0,33              | <b>P2LBX71222</b> |
|   | G3/8 |  | ±16°   | 17 N             | Std.             | 0,71 | <b>P2LCX71322</b> |                   |
|   | G1/2 |  |        | ±16°             | 17 N             | Std. | 0,73              | <b>P2LDX71422</b> |
|   | G1/8 | Lever  | Lever  | ±14°             | 16 N             | Std. | 0,18              | <b>P2LAX61111</b> |
|   | G1/4 | Closed centre position Self centring                     |        | ±12°             | 16 N             | Std. | 0,33              | <b>P2LBX61211</b> |
|   | G3/8 |  | ±16°   | 30 N             | Std.             | 0,71 | <b>P2LCX61311</b> |                   |
|   | G1/2 |  |        | ±16°             | 30 N             | Std. | 0,73              | <b>P2LDX61411</b> |
|   | G1/8 | Lever  | Lever  | ±14°             | 16 N             | Std. | 0,18              | <b>P2LAX81111</b> |
|   | G1/4 | Exhausted centre position Self centring                  |        | ±12°             | 16 N             | Std. | 0,33              | <b>P2LBX81211</b> |
|   | G3/8 |  | ±16°   | 30 N             | Std.             | 0,71 | <b>P2LCX81311</b> |                   |
|   | G1/2 |  |        | ±16°             | 30 N             | Std. | 0,73              | <b>P2LDX81411</b> |
|   | G1/8 | Lever  | Lever  | ±14°             | 16 N             | Std. | 0,18              | <b>P2LAX71111</b> |
|   | G1/4 | Pressure applied centre position Self centring           |        | ±12°             | 16 N             | Std. | 0,33              | <b>P2LBX71211</b> |
|   | G3/8 |  | ±16°   | 30 N             | Std.             | 0,71 | <b>P2LCX71311</b> |                   |
|   | G1/2 |  |        | ±16°             | 30 N             | Std. | 0,73              | <b>P2LDX71411</b> |

| Accessories P2LAX  | Connection alternatives   | Type   | Weight kg | Order code        |
|--|---|--|-----------|-------------------|
|   |    | <b>Multiple manifold</b><br>including seals,<br>mounting screws,<br>and guiding pins.            | 0,11      | <b>9121658060</b> |
|   |    | <b>Connection block S</b><br>including seals,<br>mounting screws,<br>and guiding pins.<br>G1/4   | 0,15      | <b>9121658064</b> |
|   |    | <b>Connection block L</b><br>including seals,<br>mounting screws,<br>and guiding pins.<br>G1/4   | 0,15      | <b>9121658061</b> |
|   |    | <b>End cover</b><br>including seals,<br>mounting screws,<br>and guiding pins.                    | 0,16      | <b>9121658066</b> |
|   |    | <b>Intermediate block T</b><br>including seals,<br>mounting screws,<br>and guiding pins.<br>G1/4 | 0,17      | <b>9121658062</b> |
|   |    | <b>Intermediate block L</b><br>including seals,<br>mounting screws,<br>and guiding pins.<br>G1/4 | 0,17      | <b>9121658065</b> |
|  |  | <b>Blanking plate</b><br>including seals,<br>mounting screws.                                    | 0,05      | <b>9121658063</b> |

**Accessories P2LAX**

| Type   | Weight kg | Order code |
|--|-----------|------------|
| <br><b>Manifold bar, P2LA</b><br>including seals,<br>mounting screws. G3/8<br>For 4 valves 0,48 <b>9121658075</b><br>For 6 valves 0,63 <b>9121658076</b><br>For 8 valves 0,80 <b>9121658077</b><br>For 10 valves 0,98 <b>9121658078</b><br>For 12 valves 1,10 <b>9121658079</b><br>For 14 valves 1,23 <b>9121658099</b> |           |            |
| <br><b>Blanking plate, P2LA</b><br>for Manifold bar 0,05 <b>9121658063</b>  |           |            |
| <br><b>Pressure bar, P2LA</b><br>for common air supply<br>incl. O-rings and<br>mounting screws. G1/4<br>For 2 valves 0,13 <b>9121658070</b><br>For 4 valves 0,20 <b>9121658071</b><br>For 6 valves 0,26 <b>9121658072</b><br>For 8 valves 0,33 <b>9121658073</b>  |           |            |
| <br><b>Blanking plate, P2LA</b><br>for Pressure bar 0,05 <b>9121658074</b>  |           |            |
| <br><b>Assembly screws, P2LA</b><br>in stainless steel for valve 0,02 <b>9121658043</b>   |           |            |
| <br><b>Assembly screws, P2LA</b><br>in stainless steel for<br>blanking plate 0,01 <b>9121658044</b>   |           |            |
| <br><b>O-ring kit, P2LA</b><br>O-rings between valve<br>and manifold bar/<br>Pressure bar 0,01 <b>9121658046</b>  |           |            |

**Accessories P2LBX**

| Type   | Weight kg | Order code |
|--|-----------|------------|
| <br><b>Manifold bar, P2LB,</b><br><b>(not for P2LB with</b><br><b>external air supply</b><br><b>to solenoid valves)</b><br>incl. fasteners and<br>O-ring. G3/8<br>For 2 valves 0,69 <b>9121594805X</b><br>For 4 valves 1,13 <b>9121594806X</b><br>For 6 valves 1,56 <b>9121594807X</b><br>For 8 valves 2,00 <b>9121594808X</b><br>For 10 valves 2,45 <b>9121594812X</b> |           |            |
| <br><b>Blanking plate, P2LB</b><br>for Manifold bar 0,10 <b>9121594809X</b>   |           |            |
| <br><b>Pressure bar, P2LB</b><br>for common air supply<br>incl. O-rings and<br>banjo-bolts. G3/8<br>For 2 valves 0,38 <b>9127113301X</b><br>For 4 valves 0,53 <b>9127113302X</b><br>For 6 valves 0,68 <b>9127113303X</b><br>For 8 valves 0,83 <b>9127113304X</b><br>For 10 valves 0,99 <b>9127113305X</b>   |           |            |
| <br><b>Blanking plug, P2LB</b><br>for Pressure bar. G1/4 0,02 <b>9127113306X</b>  |           |            |

## 22mm solenoid operator part numbers and spares

### Solenoid coils for 22mm solenoid operators

| Voltage              | Order code Form A | Weight (Kg) | Order code Form B | Weight (Kg) |
|----------------------|-------------------|-------------|-------------------|-------------|
| 12V 60Hz             |                   |             | <b>P2FCB440</b>   | 0.093       |
| 24V 50/60Hz          |                   |             | <b>P2FCB442</b>   | 0.093       |
| 12V DC               |                   |             | <b>P2FCB445</b>   | 0.093       |
| 12V DC Mobile        | <b>P2FCA447</b>   | 0.17        | <b>P2FCB447</b>   | 0.093       |
| 24v DC Mobile        | <b>P2FCA448</b>   | 0.17        | <b>P2FCB448</b>   | 0.093       |
| 24V DC               |                   |             | <b>P2FCB449</b>   | 0.093       |
| 24V DC Low power     |                   |             | <b>P2FCB249</b>   | 0.093       |
| 48V DC               |                   |             | <b>P2FCB451</b>   | 0.093       |
| 110V/50Hz, 120V/60Hz |                   |             | <b>P2FCB453</b>   | 0.093       |
| 230V/50Hz, 230V/60Hz |                   |             | <b>P2FCB457</b>   | 0.093       |

**Note:** Mobile solenoids are only suitable for Viking Xtreme valves with 'H' specification having 0,8/1,0 operator type P2FP13H4D

### Spare Solenoid Nuts

Valves requiring captured exhaust should be fitted with plastic knurled nut

| Order code   |
|--------------|
| <b>P2FNP</b> |

Valves with vented exhaust are fitted with diffuser plastic nut

| Order code   |
|--------------|
| <b>P2FND</b> |

### Spare Solenoid Operators

**Solenoid pilot operator 22mm NC, Normal duty**  
(Max Operating pressure 10bar, Temp -10°C to +50°C)

| Order code<br>(with locking<br>bi-stable m/o) | Weight<br>Kg | Order code<br>(with Non-locking<br>monostable m/o) | Weight<br>Kg |
|---|--------------|--|--------------|
| <b>P2FP13N4C</b>                              | 0.05kg       | <b>P2FP13N4D</b>                                   | 0.05kg       |

**Low power pilot operator NC, Normal duty**  
(Max Operating pressure 10bar, Temp -10°C to +50°C)

| Order code<br>(with locking<br>bi-stable m/o) | Weight<br>Kg | Order code<br>(with Non-locking<br>monostable m/o) | Weight<br>Kg |
|---|--------------|--|--------------|
| <b>P2FP13N2C</b>                              | 0.05kg       | <b>P2FP13N2D</b>                                   | 0.05kg       |

**Solenoid pilot operator 22mm NC, Xtreme duty**  
(Max Operating pressure 16bar, Temp -40°C to +60°C)

| Order code<br>(with Non-locking<br>monostable m/o) | Weight<br>Kg |
|--|--------------|
| <b>P2FP13H4D</b>                                   | 0.05kg       |

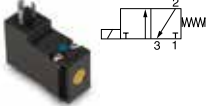





















**Note.**

Solenoid pilot operators are fitted to the Viking valve range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface 'O' rings.

**Coils and connectors must be ordered separately.**

### Solenoid Operators - Electrical connection EN175301-803 C/ISO15217 (Ex DIN 43650C)

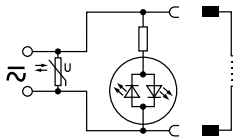
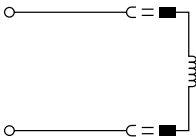
#### Solenoids 15 mm NC, standard

|   | Voltage                       | Weight<br>Kg | Order code<br>Without manual<br>override  | Weight<br>Kg | Order code<br>Override, blue,<br>non locking flush  | Weight<br>Kg | Order code<br>Override, yellow,<br>locking flush  |
|---|-------------------------------|--------------|---|--------------|---|--------------|---|
|  | 12 VDC                        | 0,038        | <b>P2E-KV32B0</b>  | 0,038        | <b>P2E-KV32B1</b>  | 0,038        | <b>P2E-KV32B2</b>  |
|   | 24 VDC                        | 0,038        | <b>P2E-KV32C0</b>  | 0,038        | <b>P2E-KV32C1</b>  | 0,038        | <b>P2E-KV32C2</b>  |
|   | 48 VDC                        | 0,038        | <b>P2E-KV32D0</b>  | 0,038        | <b>P2E-KV32D1</b>  | 0,038        | <b>P2E-KV32D2</b>  |
|   | 24 VAC 50Hz                   | 0,038        | <b>P2E-KV31C0</b>  | 0,038        | <b>P2E-KV31C1</b>  | 0,038        | <b>P2E-KV31C2</b>  |
|   | 48 VAC 50/60Hz                | 0,038        | <b>P2E-KV34D0</b>  | 0,038        | <b>P2E-KV34D1</b>  | 0,038        | <b>P2E-KV34D2</b>  |
|   | 115 VAC 50Hz/<br>120 VAC 60Hz | 0,038        | <b>P2E-KV31F0</b>  | 0,038        | <b>P2E-KV31F1</b>  | 0,038        | <b>P2E-KV31F2</b>  |
|   | 230 VAC 50Hz/<br>240 VAC 60Hz | 0,038        | <b>P2E-KV31J0</b>  | 0,038        | <b>P2E-KV31J1</b>  | 0,038        | <b>P2E-KV31J2</b>  |

In accordance with the EU Machine Directive, EN 983, solenoid valves with manual override should have spring-return operating arms for safety.

**Solenoid Connectors / Cable Plugs EN175301-803**

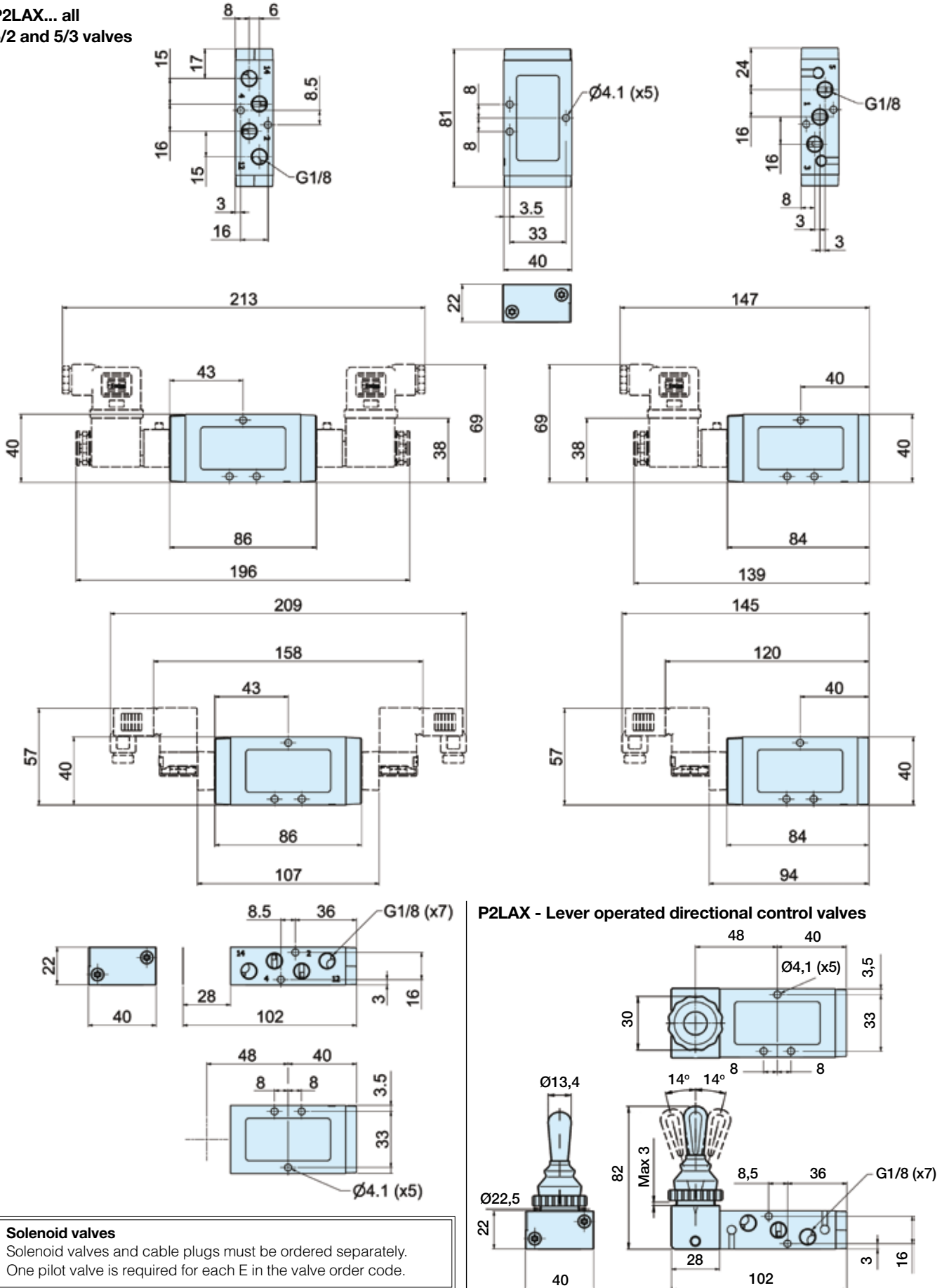
|   | Description                                     | Order code<br>15mm Form<br>C/ISO15217 | Order code<br>22mm<br>Industrial Form B |
|---|---|---------------------------------------|---|
| With large headed screw suitable for mounting in inaccessible or recess position<br> | Standard IP65                                   | <b>P8C-C</b>                          |   |
|   | 24V DC<br>LED and protection IP65               | <b>P8C-C26C</b>                       |   |
|   | 110V AC<br>LED and protection IP65              | <b>P8C-C21E</b>                       |   |
| With standard screw<br>  | Standard IP65<br>without flying lead            | <b>P8C-D</b>                          | <b>3EV10V10</b>                         |
|   | With LED and protection<br>24V AC/DC            | <b>P8C-D26C</b>                       | <b>3EV10V20-24</b>                      |
|   | With LED and protection<br>110V AC              | <b>P8C-D21E</b>                       | <b>3EV10V20-110</b>                     |
|   | With LED and protection<br>230V AC              |                                       | <b>3EV10V20-230</b>                     |
| With cable<br>  | Standard with 2m cable IP65                     | <b>P8L-C2</b>                         |   |
|   | Standard with 5m cable IP65                     | <b>P8L-C5</b>                         |   |
|   | 24V AC/DC, 2m cable<br>LED and protection IP65  | <b>P8L-C226C</b>                      |   |
|   | 24V AC/DC, 5m cable<br>LED and protection IP65  | <b>P8L-C526C</b>                      | <b>3EV10V20-24L5</b>                    |
|   | 24V AC/DC, 10m cable<br>LED and protection IP65 | <b>P8L-CA26C</b>                      |   |
|   | 110V AC/DC, 2m cable<br>LED and protection IP65 | <b>P8L-C221E</b>                      |   |
|   | 110V AC/DC, 5m cable<br>LED and protection IP65 | <b>P8L-C521E</b>                      | <b>3EV10V20-110L5</b>                   |
|   | 230V AC, 5m cable<br>LED and protection IP65    |                                       | <b>3EV10V20-230L5</b>                   |



|                  |                     |                       |
|------------------|---------------------|-----------------------|
| <b>P8C-C</b>     | <b>P8C-D26C</b>     | <b>P8L-C226C</b>      |
| <b>P8C-D</b>     | <b>P8C-D21E</b>     | <b>P8L-C526C</b>      |
| <b>P8L-C2</b>    | <b>P8C-C26C</b>     | <b>P8L-CA26C</b>      |
| <b>P8L-C5</b>    | <b>P8C-C21E</b>     | <b>P8L-C221E</b>      |
| <b>3EV10V10</b>  |                     | <b>P8L-C521E</b>      |
| <b>3EV290V10</b> | <b>3EV10V20-24</b>  | <b>3EV10V20-24L5</b>  |
|                  | <b>3EV10V20-110</b> | <b>3EV10V20-110L5</b> |
|                  | <b>3EV10V20-230</b> | <b>3EV10V20-230L5</b> |

Dimensions

P2LAX... all  
5/2 and 5/3 valves



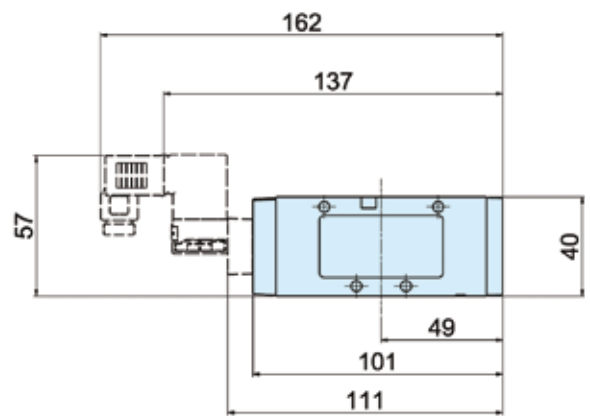
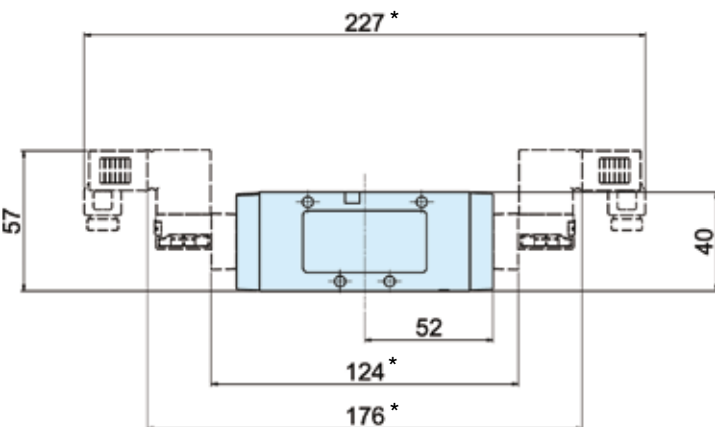
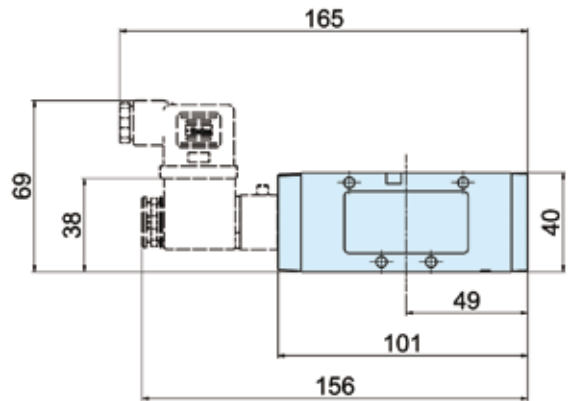
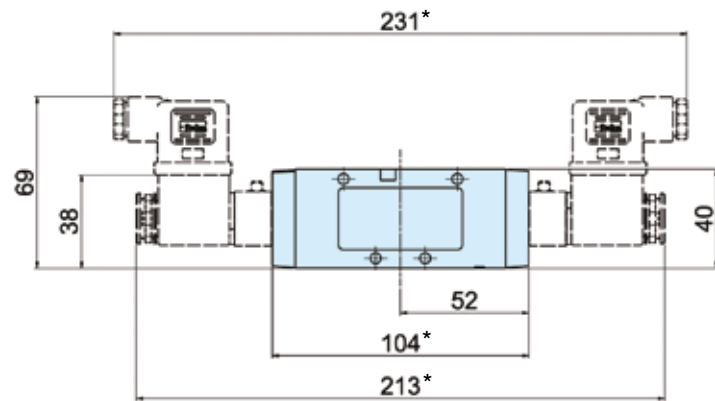
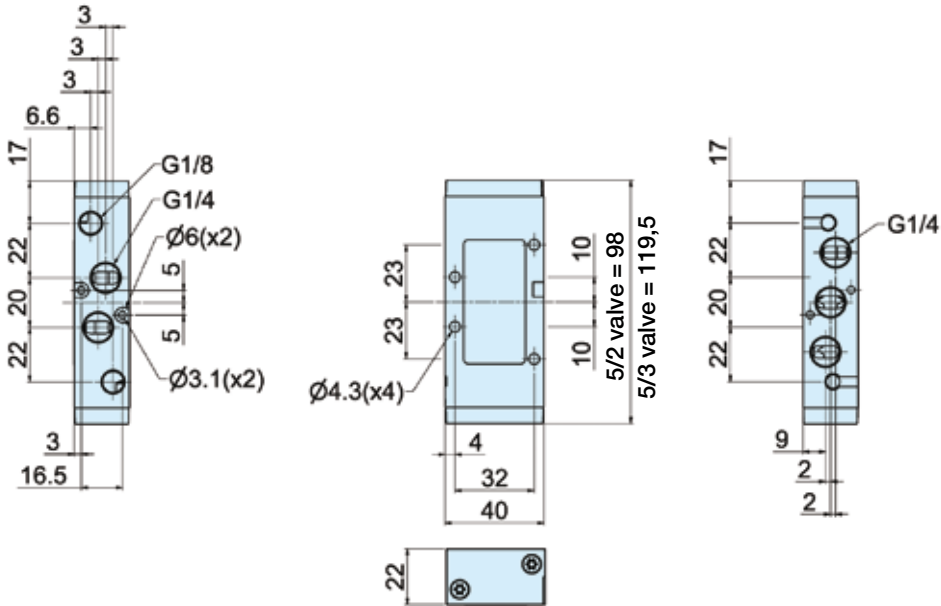
P2LAX - Lever operated directional control valves

**Solenoid valves**  
Solenoid valves and cable plugs must be ordered separately.  
One pilot valve is required for each E in the valve order code.



Dimensions

P2LBX... all  
5/2 and 5/3 valves



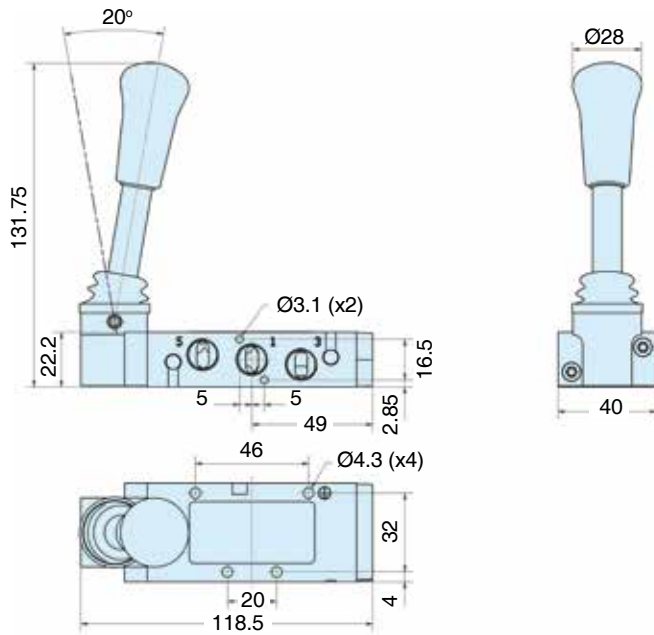
\* Note: 5/3 valves - add 21.5mm

**Solenoid valves**  
Solenoid valves and cable plugs must be ordered separately.  
One pilot valve is required for each E in the valve order code.

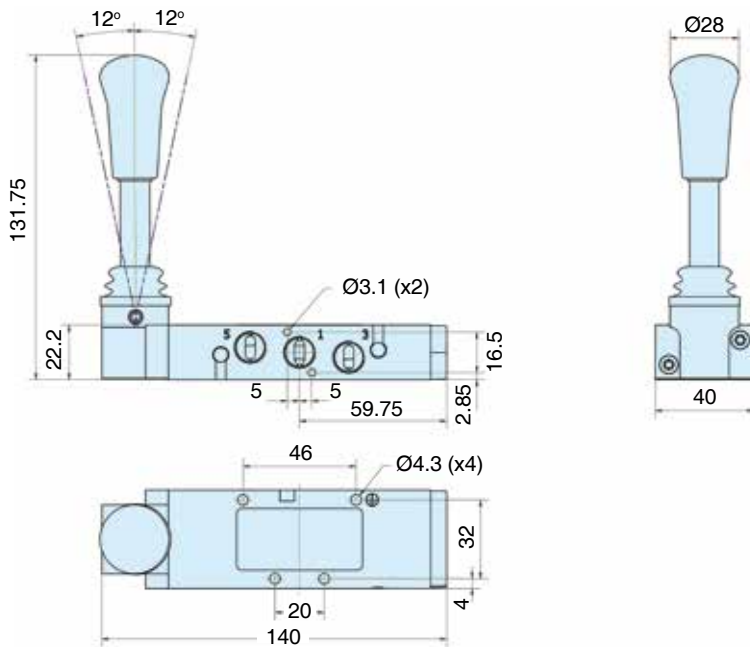


**Dimensions**

**P2LBX - 5/2 Lever operated directional control valves**

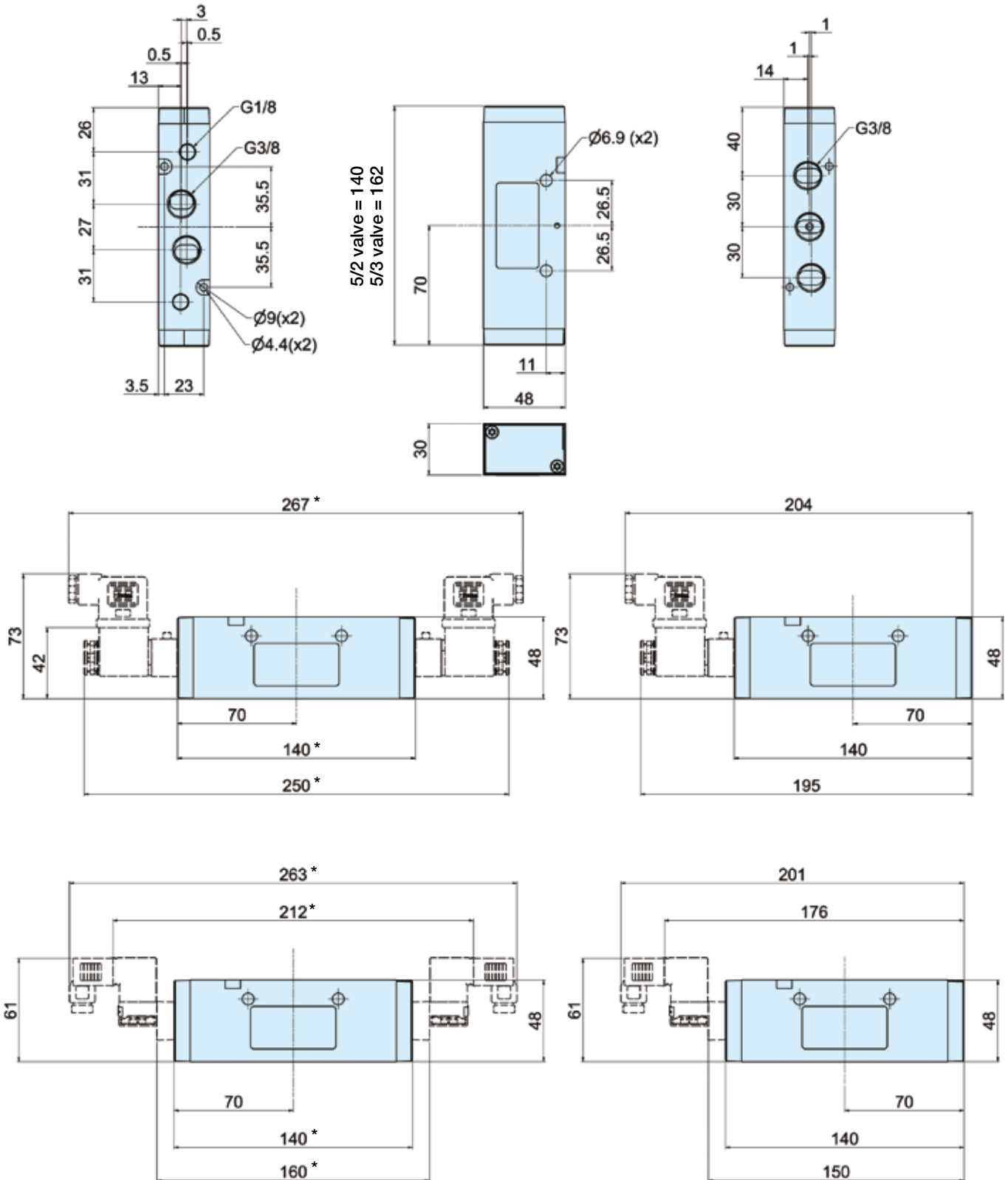


**P2LBX - 5/3 Lever operated directional control valves**



Dimensions

P2LCX... all  
5/2 and 5/3 valves

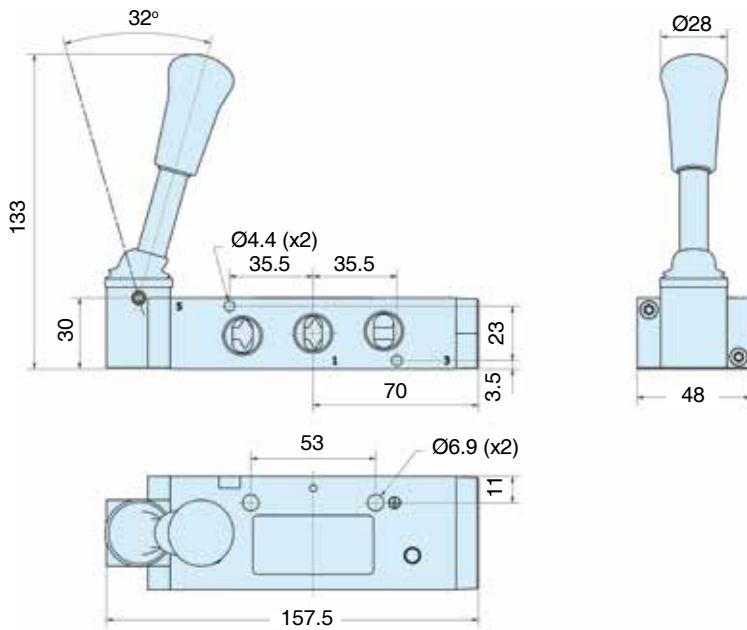


\* Note: 5/3 valves - add 22.0mm

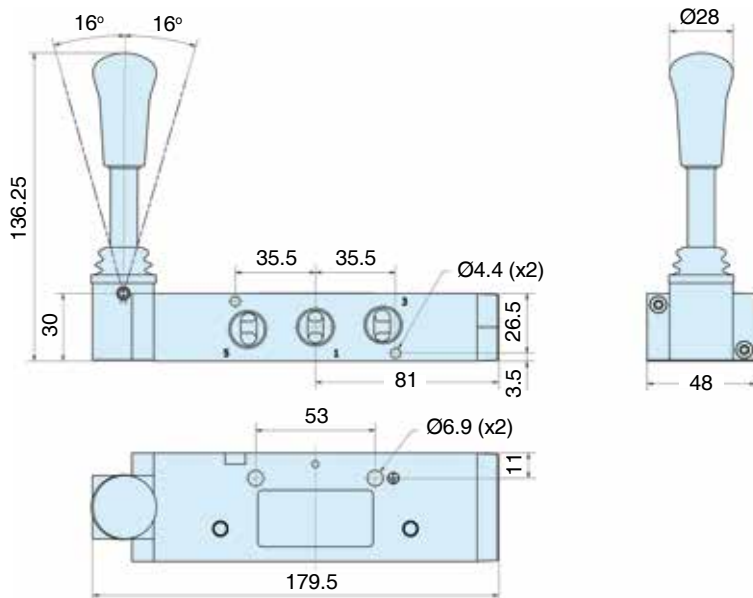
**Solenoid valves**  
Solenoid valves and cable plugs must be ordered separately.  
One pilot valve is required for each E in the valve order code.

**Dimensions**

**P2LCX - 5/2 Lever operated directional control valves**

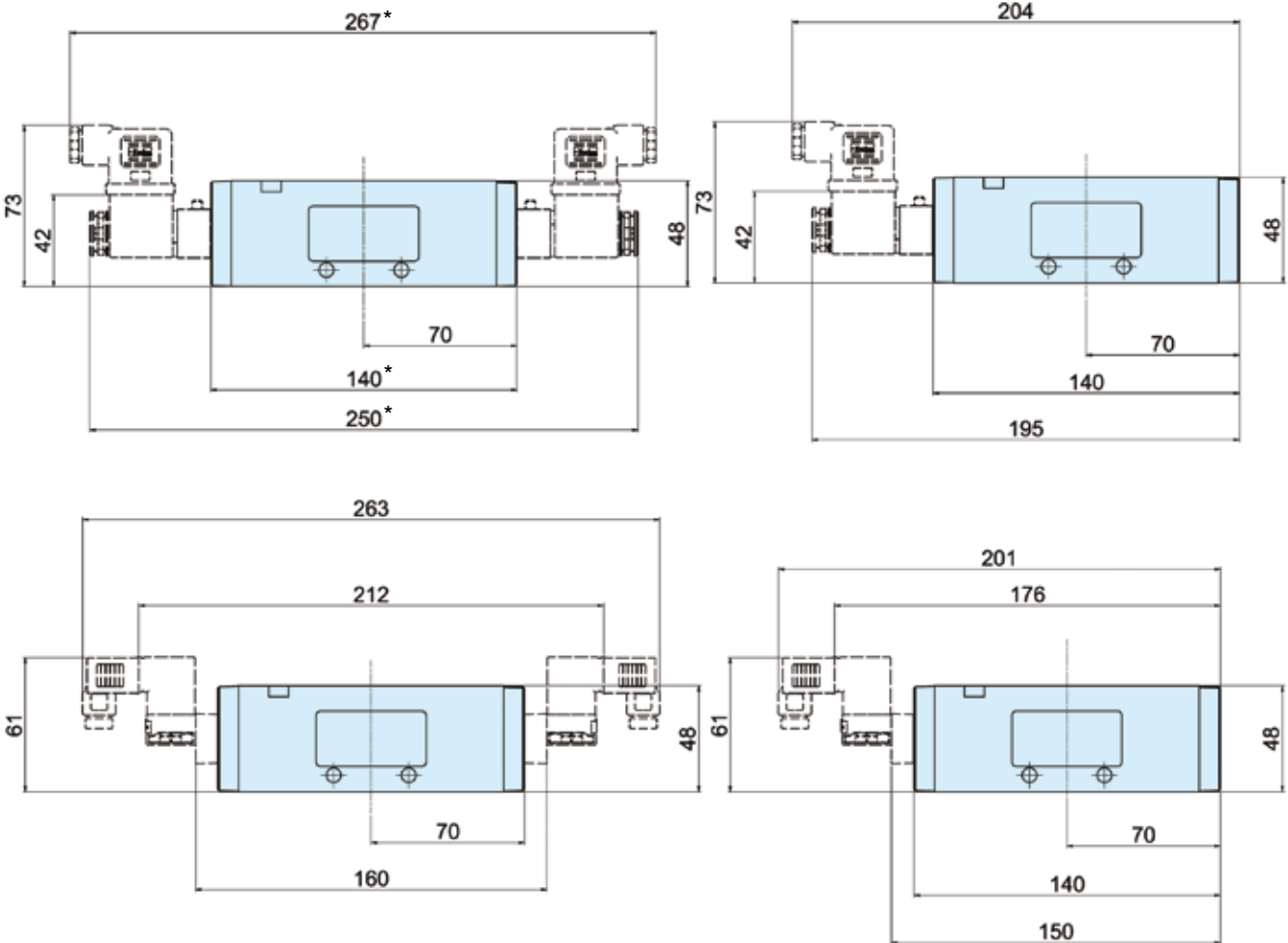
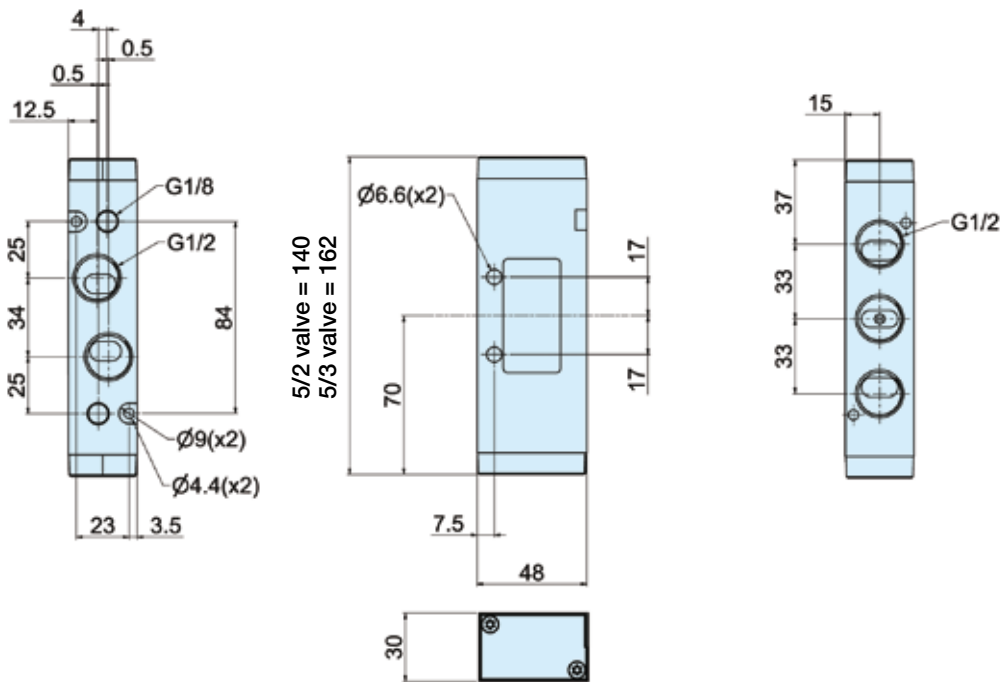


**P2LCX - 5/3 Lever operated directional control valves**



Dimensions

P2LDX... all  
5/2 and 5/3 valve:

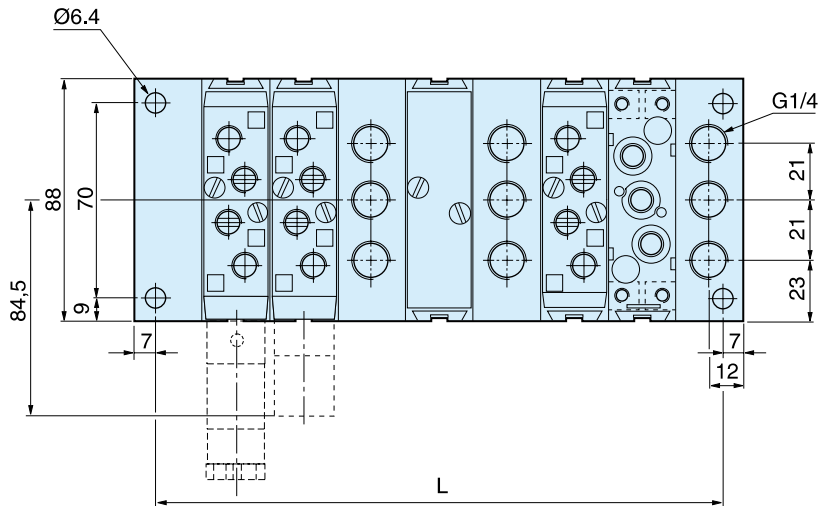


\* Note: 5/3 valves - add 22.0mm

**Solenoid valves**

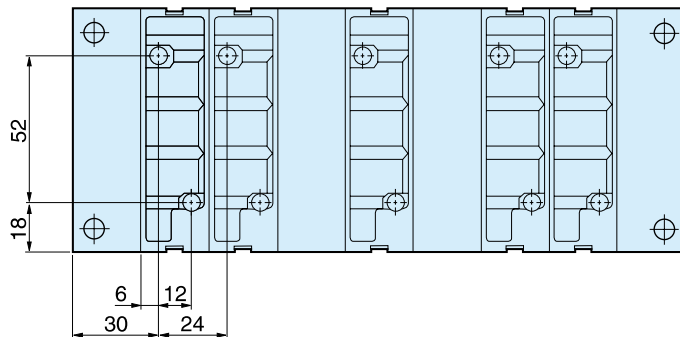
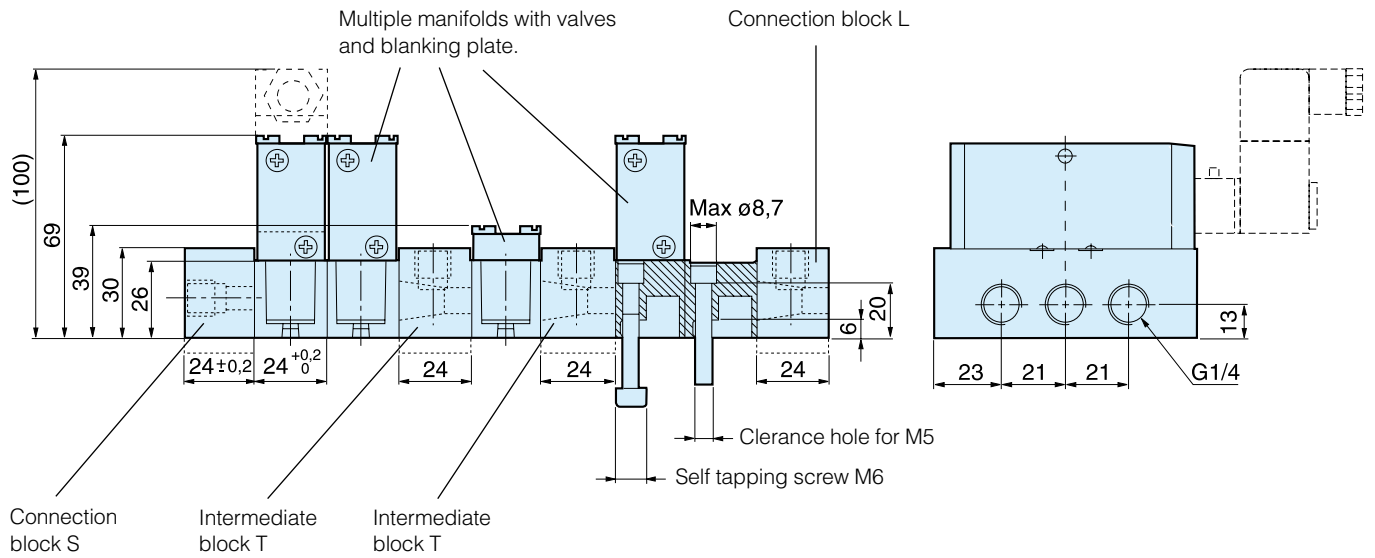
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E in the valve order code.

**Dimensions**



$L = 34 + (\text{Number of manifolds and Intermediate blocks} \times 24)$

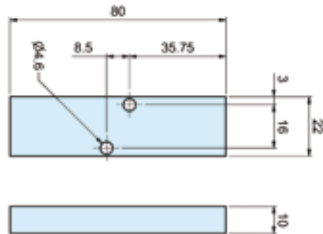
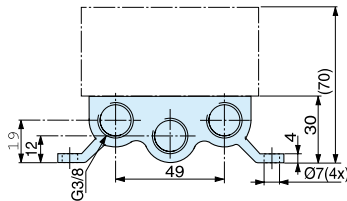
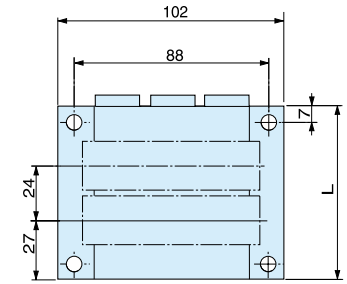
Connection block L and intermediate blocks L and T can be turned so that connection can be made from above or below. Multiple manifolds must be fitted with the top indication line (a 10 mm long line) facing the same side on all manifolds.



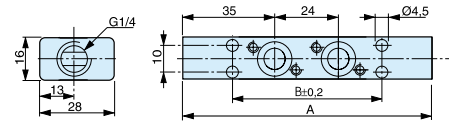
**Dimensions**

**Manifold bar, P2LA**

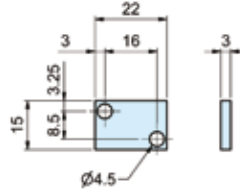
| No. of valves | L mm |
|---------------|------|
| 4             | 126  |
| 6             | 174  |
| 8             | 222  |
| 10            | 270  |
| 12            | 318  |
| 14            | 366  |



**Pressure bar, P2LA**

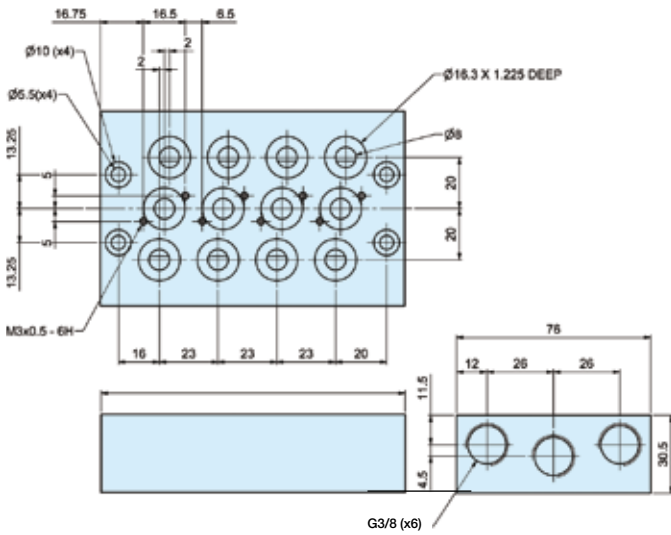


**Pressure bar, P2LA**

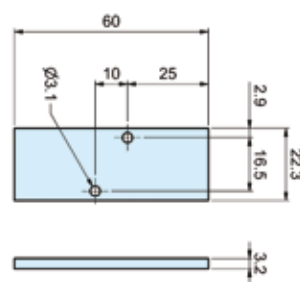


| No. of valves | A mm | B mm |
|---------------|------|------|
| 2             | 94   | 56   |
| 4             | 142  | 104  |
| 6             | 190  | 152  |
| 8             | 238  | 200  |

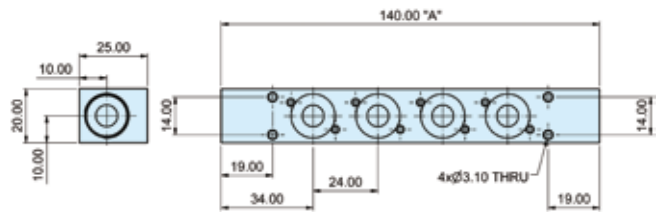
**Manifold bar, P2LB**



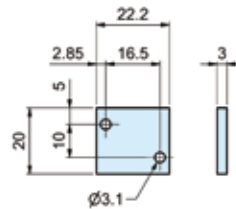
| No. of valves | L mm |
|---------------|------|
| 2             | 74   |
| 4             | 122  |
| 6             | 170  |
| 8             | 218  |
| 10            | 266  |



**Pressure bar, P2LB**



**Blanking plug, P2LB**



| No. of valves | A mm |
|---------------|------|
| 2             | 92   |
| 4             | 140  |
| 6             | 188  |
| 8             | 236  |
| 10            | 284  |

Miniature low voltage solenoid valves, ideal for powering small cylinders in the packaging and process industries. Metal bodies with stand alone or manifold mounted versions.

- 2 sizes: M5 and 1/8"
- Compact body with large flow
- Quick response time, faster than 10ms
- Expected life time more than 50,000,000 cycles
- Low power consumption only 0.6W
- Optional multipin connector manifold
- Manual override






**Operating information**




|                     |                 |
|---------------------|-----------------|
| Working pressure    | : 1.5 to 7 bar  |
| Working temperature | : -5°C to +50°C |
| Flow (Qmax)         | A05 : 260 l/min |
|                     | A12 : 850 l/min |
| Flow Qn             | A05 : 160 l/min |
|                     | A12 : 510 L/min |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Directional control valves A05R and A12R series, inline / IEM manifold - Voltage 24V DC**


| Description<br>(Electrically Actuated)   | Order code<br><b>A05R - M5 ports</b> | Order code<br><b>A12R - G1/8 ports</b> |
|--|--------------------------------------|--|
| 5/2 single solenoid<br> | <b>A05RS251PM5MF</b>                 | <b>A12RS251PG1MF</b>                   |
| 5/2 double solenoid<br> | <b>A05RD251PM5MF</b>                 | <b>A12RD251PG1MF</b>                   |
| 5/3 closed centre<br>   | <b>A05RD351PM5MF</b>                 | <b>A12RD351PG1MF</b>                   |

**Directional control valves A05P/A12P series, sub-base version - Voltage 24V DC**

| Description<br>(Electrically Actuated)   | Order code<br><b>A05P</b> | Order code<br><b>A12P</b> |
|--|---------------------------|---------------------------|
| 5/2 single solenoid<br> | <b>A05PS251P</b>          | <b>A05PS251P</b>          |
| 5/2 double solenoid<br> | <b>A05PD251P</b>          | <b>A05PD251P</b>          |
| 5/3 closed centre<br>   | <b>A05PD351P</b>          | <b>A05PD351P</b>          |


**A05R/A12R Series Manifolds**

Manifold for individual wiring threaded type




|  | No. of stations | Port size | Size             | Order Code<br>Manifold |
|---|-----------------|-----------|------------------|------------------------|
|   | 4               | M5        | A05              | <b>MMFU4A05G</b>       |
|   | G1/8            | A12       | <b>MMFU4A12G</b> |                        |
| 6   | M5              | A05       | <b>MMFU6A05G</b> |                        |
|   | G1/8            | A12       | <b>MMFU6A12G</b> |                        |
| 8   | M5              | A05       | <b>MMFU8A05G</b> |                        |
|   | G1/8            | A12       | <b>MMFU8A12G</b> |                        |

**A05R/A12R Series Manifolds**

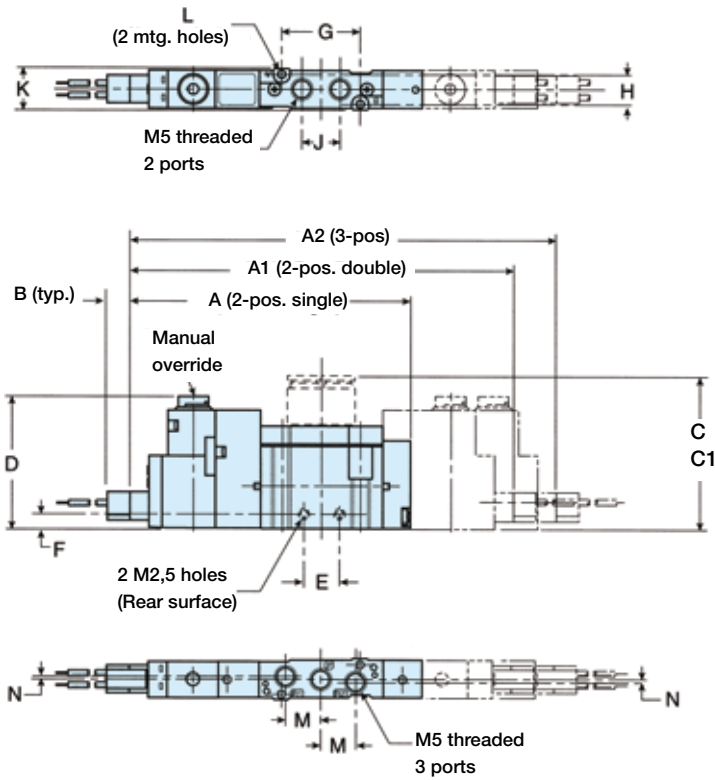
Manifold for individual wiring threaded type

|  | No. of stations | Port size | Size               | Order Code<br>Manifold |
|--|-----------------|-----------|--------------------|------------------------|
|  | 4               | M5        | A05                | <b>MMFS4A05GM5</b>     |
|  | G1/8            | A12       | <b>MMFS4A12GG1</b> |                        |
| 6  | M5              | A05       | <b>MMFS6A05GM5</b> |                        |
|  | G1/8            | A12       | <b>MMFS6A12GG1</b> |                        |
| 8  | M5              | A05       | <b>MMFS8A05GM5</b> |                        |
|  | G1/8            | A12       | <b>MMFS8A12GG1</b> |                        |

**Mounting and Wiring Accessories**

| Description  | Order code                       |
|--|----------------------------------|
|  Connector with lead wire black (-) red (+) 500mm | <b>A05PDCCL5</b>                 |
|  IEM blank plate kit (pack of 5)                 | <b>A05RGBP</b><br><b>A12RGBP</b> |
|  Subbase blank plate kit (pack of 5)             | <b>A05PGBP</b><br><b>A12PGBP</b> |

**A05R - Single and double operators - Body ported**

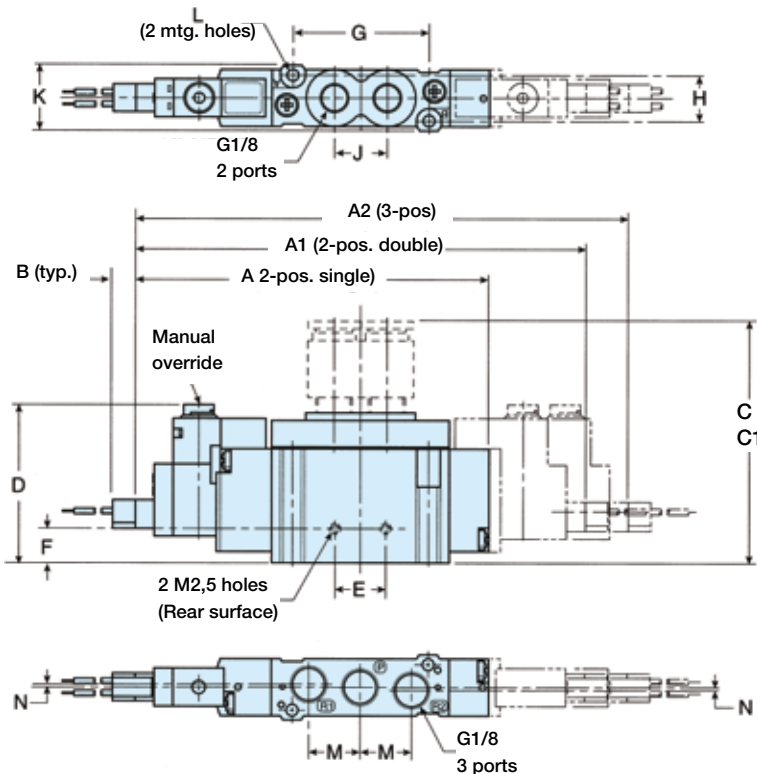


**A05R - Body ported**

| A   | A1   | A2   | B    | C   |
|-----|------|------|------|-----|
| 74  | 100  | 108  | 6    | -   |
| C1  | D    | E    | F    | G   |
| -   | 34,6 | 9,6  | 4    | 21  |
| H   | J    | K    | L    | M   |
| 8,5 | 10,2 | 11,4 | Ø2,1 | 9,5 |
| N   |      |      |      |     |
| 1   |      |      |      |     |

Dimensions in mm

**A12R - Single and double operators - Body ported**



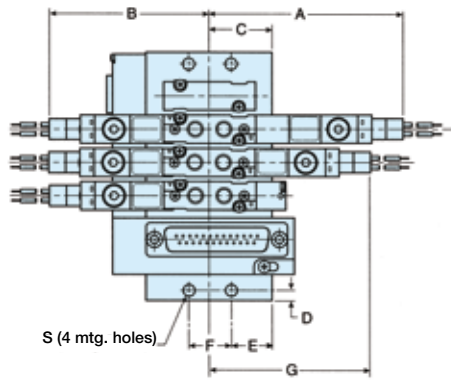
**A12R - Body ported**

| A    | A1   | A2   | B    | C    |
|------|------|------|------|------|
| 93,5 | 119  | 130  | 6    | -    |
| C1   | D    | E    | F    | G    |
| -    | 41,6 | 13,4 | 9    | 36   |
| H    | J    | K    | L    | M    |
| 12   | 14   | 17,2 | Ø3,1 | 13,6 |
| N    |      |      |      |      |
| 0,8  |      |      |      |      |

Dimensions in mm



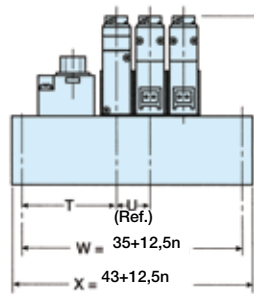
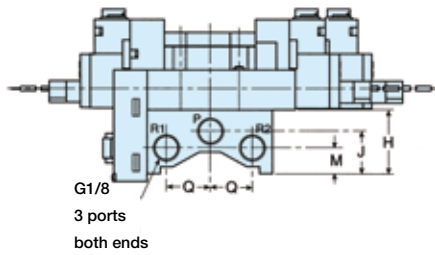
A05R - Manifold - Valve body ports



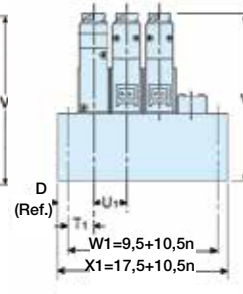
A05R - Manifold - valve body port

| A    | B    | C    | D    | E    |
|------|------|------|------|------|
| 64   | 56   | 23,5 | 4    | 15,5 |
| F    | G    | H    | J    | M    |
| 16   | 56   | 24   | 15,5 | 9,5  |
| Q    | S    | T    | T1   | U    |
| 16   | Ø4,5 | 34   | 10   | 12,5 |
| U1   | V    |      |      |      |
| 10,5 | 63   |      |      |      |

Dimensions in mm



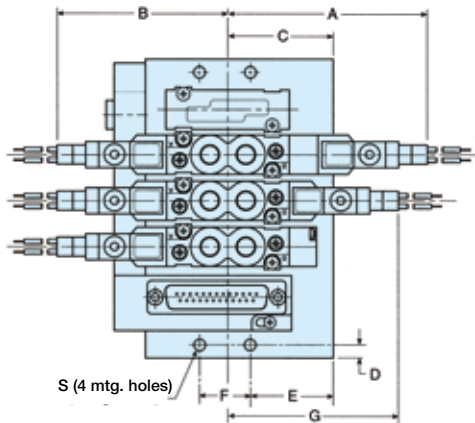
MMCU...



MMFU...

n = number of stations

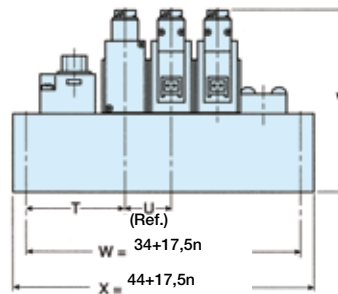
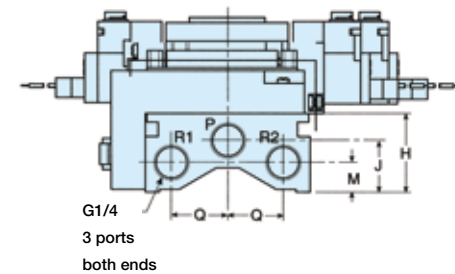
A12R - Manifold - Valve body ports



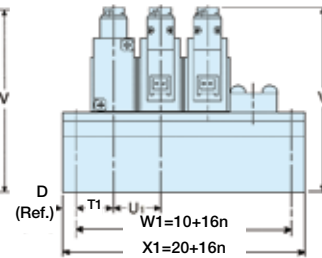
A12R - Manifold - valve body port

| A    | B    | C    | D    | E    |
|------|------|------|------|------|
| 77   | 66   | 29   | 5    | 19,2 |
| F    | G    | H    | J    | M    |
| 19,6 | 66   | 27,5 | 18   | 10,5 |
| Q    | S    | T    | T1   | U    |
| 19,5 | Ø4,5 | 37,5 | 12,2 | 17,5 |
| U1   | V    |      |      |      |
| 16   | 70   |      |      |      |

Dimensions in mm



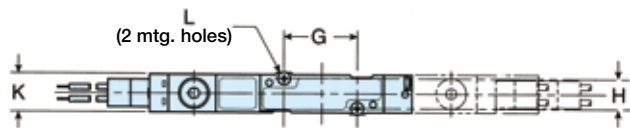
MMCU...



MMFU...

n = number of stations

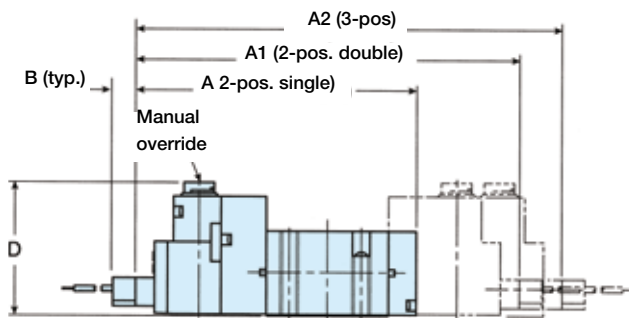
**A05P - Single and double operators - Subbase**



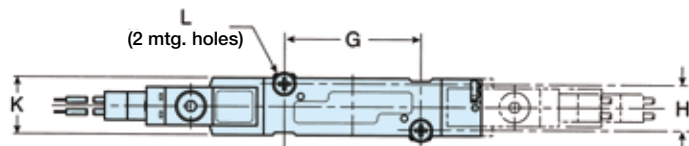
**A05P - Subbase**

| A  | A1  | A2  | B    | D    |
|----|-----|-----|------|------|
| 74 | 100 | 108 | 6    | 35,1 |
| G  | H   | K   | L    |      |
| 19 | 8,5 | 10  | Ø2,1 |      |

Dimensions in mm



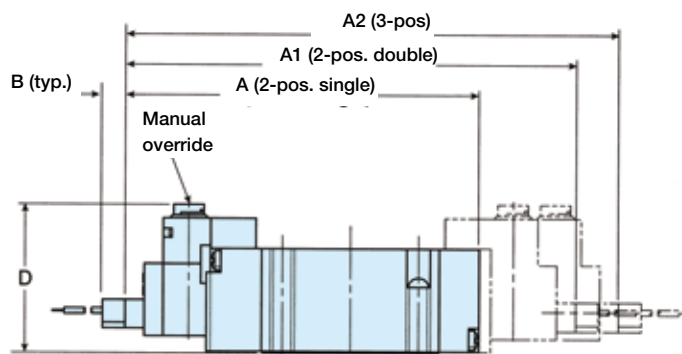
**A12P - Single and double operators - Subbase**



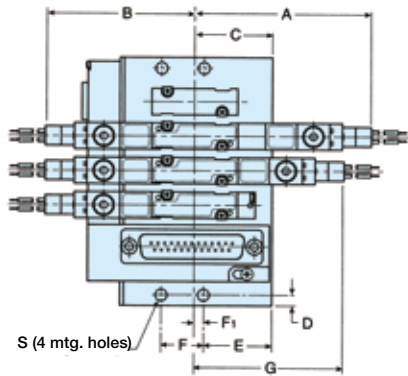
**A12P - Subbase**

| A    | A1  | A2  | B    | D    |
|------|-----|-----|------|------|
| 93,5 | 119 | 130 | 6    | 39,1 |
| G    | H   | K   | L    |      |
| 34   | 12  | 15  | Ø3,1 |      |

Dimensions in mm



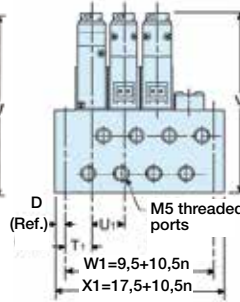
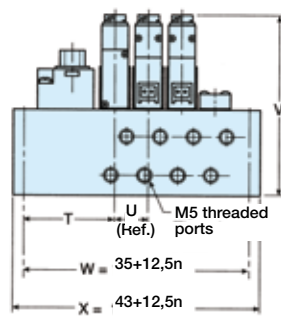
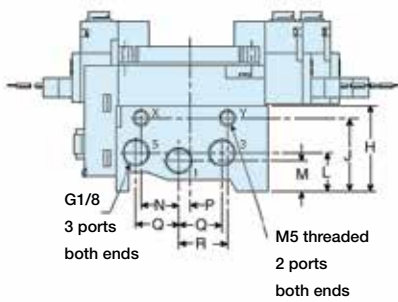
A05P - Manifold - Side ports



A05P - Manifold - Side ports

| A    | B    | C    | D  | E    |
|------|------|------|----|------|
| 64   | 56   | 30,2 | 4  | 25,5 |
| F    | F1   | G    | H  | J    |
| 16   | 4,7  | 56   | 32 | 28   |
| L    | M    | N    | P  | Q    |
| 14,5 | 11,5 | 14   | 3  | 16   |
| R    | S    | T    | T1 | U    |
| 18   | Ø4,5 | 33,8 | 10 | 12,5 |
| U1   | V    |      |    |      |
| 10,5 | 67   |      |    |      |

Dimensions in mm

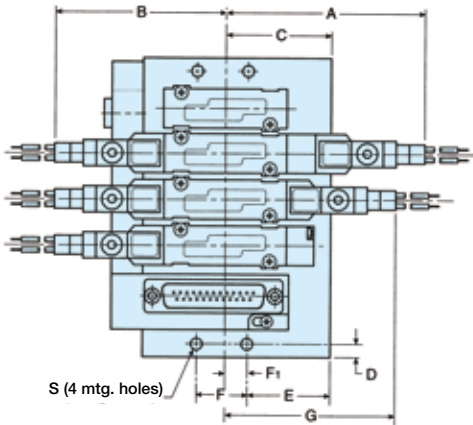


n = number of stations

MMCS...

MMFS...

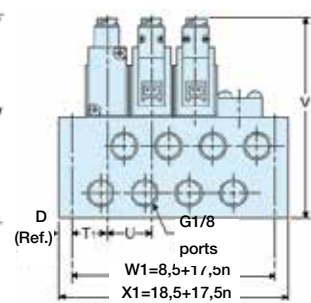
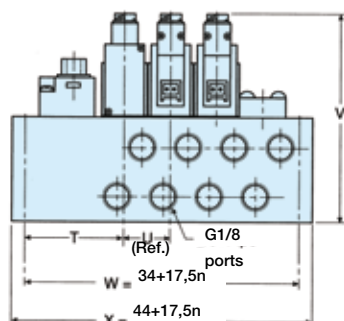
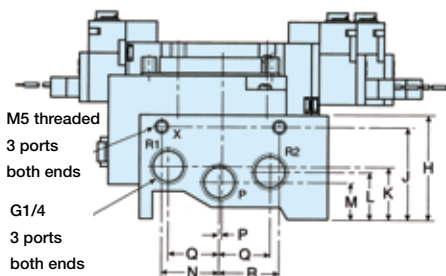
A12P - Manifolds - Side ports



A12P - Manifold - Side ports

| A    | B  | C    | D    | E    |
|------|----|------|------|------|
| 77   | 66 | 40,4 | 5    | 31,7 |
| F    | F1 | G    | H    | J    |
| 19,6 | 11 | 66   | 39,5 | 35   |
| K    | L  | M    | N    | P    |
| 20,5 | 18 | 14   | 22   | 1    |
| Q    | R  | S    | T    | T1   |
| 19,5 | 23 | Ø4,5 | 37,2 | 12,7 |
| U    | V  |      |      |      |
| 17,5 | 79 |      |      |      |

Dimensions in mm



n = number of stations

MMCS...

MMFS...

The compact design of these valves make them a popular choice for manual or mechanical operation and their modular construction permit different operators to be fitted to the actuator and return assemblies.

The Midget and Intermediate valves are designed to have balanced forces across the spool so that 3/2 valves can be piped normally open or normally closed by changing the inlet supply from port 1 to port 3.



- B 43 - 1/8" ported, B53 - 1/4 ported
- Manual and mechanical operation
- Stainless steel spools
- Viton seals
- 3/2, 5/2, 3/3 and 5/3 versions.
- Integral mounting holes

**Operating information**

|                         |                  |
|-------------------------|------------------|
| Type                    | Spool valves     |
| Style                   | Body ported      |
| Port size               | G1/8 & G1/4      |
| Mounting                | Any plane        |
| Pressure range          | Vacuum to 10 bar |
| Temperature range       | -10°C to +80°C   |
| Flow acc. (to ISO 6358) |                  |

| Midget B43 series   | Intermediate B53 series |
|---------------------|-------------------------|
| c = 1.13 NI/s x bar | c = 3.69 NI/s x bar     |
| b = 0.36            | b = 0.33                |
| Qn = 5.5 l/s        | Qn = 17.5 l/s           |
| Qmax = 9.0 l/s      | Qmax = 29 l/s           |
| Cv = 0.24           | Cv = 1.02               |

**Material specification**

|                  |                 |
|------------------|-----------------|
| Valve body       | Aluminium       |
| Spool            | Stainless steel |
| Seal spacers     | Zinc die cast   |
| Seals            | Viton           |
| Spring housing   | Nylon           |
| Spring           | Zinc plated     |
| End covers       | Zinc die cast   |
| Actuators        | Zinc die cast   |
| End cover screws | Zinc plated     |

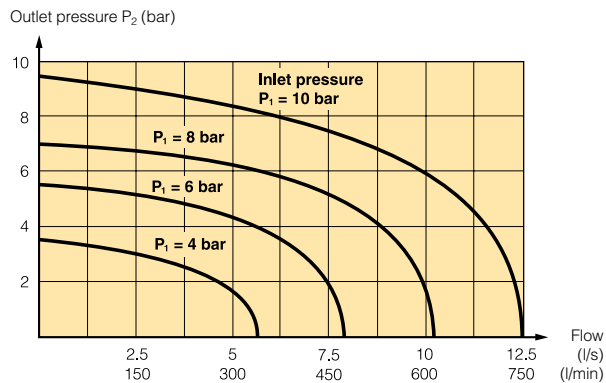
**Working medium, air quality**

Working medium: Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

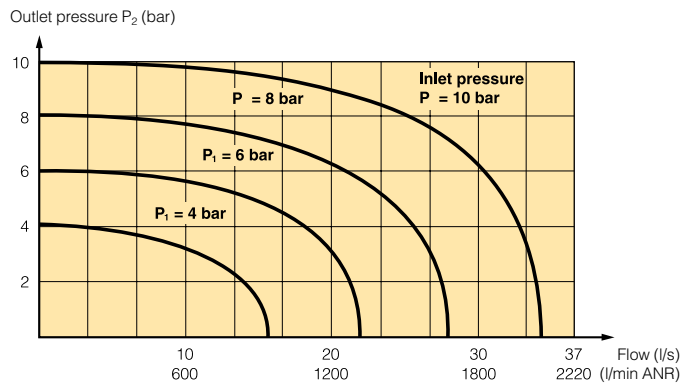
**Flow characteristics**

Flow capacities in accordance with ISO 6358  
The flow curves shown below are typical.

**Midget B43 series valves**



**Intermediate B53 series valves**



**Midget mechanically operated valves, B43 series - G1/8**

| Symbol | Type | Actuator Button      | Return | Operating force at 6 bar, N | Order code       |
|--------|------|----------------------|--------|-----------------------------|------------------|
|        | 3/2  | Plunger              | Spring | 36                          | <b>B43003CS</b>  |
|        | 3/2  | Plunger              | Air    | 14                          | <b>B43003CP</b>  |
|        | 5/2  | Plunger              | Spring | 36                          | <b>B43004CS</b>  |
|        | 5/2  | Plunger              | Air    | 14                          | <b>B43004CP</b>  |
|        | 3/2  | Roller Lever         | Spring | 20                          | <b>B43003RS</b>  |
|        | 3/2  | Roller Lever         | Air    | 7                           | <b>B43003RP</b>  |
|        | 5/2  | Roller Lever         | Spring | 20                          | <b>B43004RS</b>  |
|        | 5/2  | Roller Lever         | Air    | 7                           | <b>B43004RP</b>  |
|        | 3/2  | One way lever        | Spring | 20                          | <b>B43003RTS</b> |
|        | 3/2  | One way roller lever | Air    | 7                           | <b>B43003RTP</b> |
|        | 5/2  | One way roller lever | Spring | 20                          | <b>B43004RTS</b> |
|        | 5/2  | One way roller lever | Air    | 7                           | <b>B43004RTP</b> |

**Midget manually operated valves, B43 series - G1/8**

| Symbol | Type | Actuator Button | Return        | Operating force at 6 bar, N | Order code       |
|--------|------|-----------------|---------------|-----------------------------|------------------|
|        | 3/2  | Black           | Spring        | 36                          | <b>B43003BXS</b> |
|        | 3/2  | Black           | Button        | 13                          | <b>B43003HXS</b> |
|        | 5/2  | Black           | Spring        | 36                          | <b>B43004BXS</b> |
|        | 5/2  | Black           | Button        | 13                          | <b>B43004HXS</b> |
|        | 3/2  | Black           | Air           | 13                          | <b>B43003BXP</b> |
|        | 3/2  | Black           | Air or Button | 13                          | <b>B43003HXP</b> |
|        | 5/2  | Black           | Air           | 13                          | <b>B43004BXP</b> |
|        | 5/2  | Black           | Air or Button | 13                          | <b>B43004HXP</b> |
|        | 3/2  | Lock down lever | Spring        | 9                           | <b>B43003LS</b>  |
|        | 3/2  | Lock down lever | Spring        | 9                           | <b>B43004LS</b>  |
|        | 3/2  | Lock down lever | Air           | 3                           | <b>B43003LP</b>  |
|        | 3/2  | Lock down lever | Air           | 3                           | <b>B43004LP</b>  |

**Intermediate mechanically operated valves, B53 series - G1/4**

| Symbol | Type | Actuator Button | Return | Operating force at 6 bar, N | Order code      |
|--------|------|-----------------|--------|-----------------------------|-----------------|
|        | 3/2  | Plunger         | Spring | 53                          | <b>B53003CS</b> |
|        | 3/2  | Plunger         | Air    | 27                          | <b>B53003CP</b> |
|        | 5/2  | Plunger         | Spring | 53                          | <b>B53004CS</b> |
|        | 5/2  | Plunger         | Air    | 27                          | <b>B53004CP</b> |
|        | 3/2  | Roller          | Spring | 53                          | <b>B53003RS</b> |
|        | 3/2  | Roller          | Air    | 27                          | <b>B53003RP</b> |
|        | 5/2  | Roller          | Spring | 53                          | <b>B53004RS</b> |
|        | 5/2  | Roller          | Air    | 27                          | <b>B53004RP</b> |

**Intermediate manually operated valves, B53 series - G1/4**

| Symbol | Type | Actuator Button             | Return               | Operating force at 6 bar, N | Order code       |
|--------|------|-----------------------------|----------------------|-----------------------------|------------------|
|        | 3/2  | Black                       | Spring               | 53                          | <b>B53003HXS</b> |
|        | 3/2  | Black                       | Button               | 27                          | <b>B53003HXP</b> |
|        | 3/2  | Black                       | Air                  | 27                          | <b>B53003HXP</b> |
|        | 5/2  | Black                       | Spring               | 53                          | <b>B53004HXS</b> |
|        | 5/2  | Black                       | Button               | 27                          | <b>B53004HXP</b> |
|        | 5/2  | Black                       | Air                  | 27                          | <b>B53004HXP</b> |
|        | 5/3  | Button closed centring      | Button self centring | 13                          | <b>B53005HXX</b> |
|        | 5/3  | Button vented centring      | Air self centring    | 13                          | <b>B53004HXY</b> |
|        | 5/3  | Button pressurised centring | Air self centring    | 13                          | <b>B53004HXZ</b> |

**Intermediate lever operated valve,  
B53 series - G1/4**

| Symbol | Type | Actuator Button                   | Return                        | Operating force at 6 bar, N | Order code      |
|--------|------|-----------------------------------|-------------------------------|-----------------------------|-----------------|
|        | 3/2  | Lever                             | Spring                        | 14                          | <b>B53003LS</b> |
|        | 3/2  | Lever                             | Air                           | 9                           | <b>B53003LP</b> |
|        | 3/2  | Lever                             | Lever                         | 9                           | <b>B53003LT</b> |
|        | 3/3  | Lever closed centre position      | Lever                         | 9                           | <b>B53003L</b>  |
|        | 3/3  | Lever closed centre position      | Lever self centring           | 14                          | <b>B53003LX</b> |
|        | 5/2  | Lever                             | Spring                        | 14                          | <b>B53004LS</b> |
|        | 5/2  | Lever                             | Air                           | 14                          | <b>B53004LP</b> |
|        | 5/2  | Lever                             | Lever                         | 14                          | <b>B53004LT</b> |
|        | 5/3  | Lever closed centre position      | Lever held in three positions | 9                           | <b>B53004L</b>  |
|        | 5/3  | Lever vented centre position      | Lever held in three positions | 9                           | <b>B53004LW</b> |
|        | 5/3  | Lever pressurised centre position | Lever held in three positions | 9                           | <b>B53004LN</b> |
|        | 5/3  | Lever closed centre position      | Lever self centring           | 14                          | <b>B53004LX</b> |
|        | 5/3  | Lever vented centre position      | Lever self centring           | 14                          | <b>B53004LY</b> |
|        | 5/3  | Lever pressurised centre position | Lever self centring           | 14                          | <b>B53004LZ</b> |

**Mounting kit**



Panel mounting kit **M53004L-10A**  
 Kit includes panel plate and M5 counter sunk head screws

**Midget foot operated valves,  
B43 series - G1/8**

| Symbol | Type | Actuator Button | Return | Operating force at 6 bar, N | Order code      |
|--------|------|-----------------|--------|-----------------------------|-----------------|
|        | 3/2  | Foot pedal      | Spring | 16                          | <b>B43003FS</b> |
|        | 5/2  | Foot pedal      | Spring | 16                          | <b>B43004FS</b> |

**Intermediate foot operated valves,  
B53 series - G1/4**

| Symbol | Type | Actuator Button | Return | Operating force at 6 bar, N | Order code |
|--------|------|-----------------|--------|-----------------------------|------------|
|--------|------|-----------------|--------|-----------------------------|------------|

**Single pedal operated**

|  |     |            |        |    |                 |
|--|-----|------------|--------|----|-----------------|
|  | 3/2 | Foot pedal | Spring | 95 | <b>B53003FS</b> |
|  | 5/2 | Foot pedal | Spring | 95 | <b>B53004FS</b> |

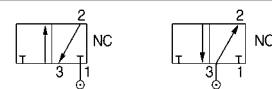
**Rocker pedal operated**

|  |     |  |                          |    |                 |
|--|-----|--|--------------------------|----|-----------------|
|  | 3/2 | Foot pedal                             | Foot pedal               | 18 | <b>B53003G</b>  |
|  | 5/2 | Foot pedal                             | Foot pedal               | 18 | <b>B53004G</b>  |
|  | 5/3 | Foot pedal closed centre position      | Foot pedal self centring | 18 | <b>B53004GX</b> |
|  | 5/3 | Foot pedal vented centre position      | Foot pedal self centring | 18 | <b>B53004GY</b> |
|  | 5/3 | Foot pedal pressurised centre position | Foot pedal self centring | 18 | <b>B53004GZ</b> |

**Accessories**



Foot guard kit **3117**



All 3/2 type B43 & B5/3 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

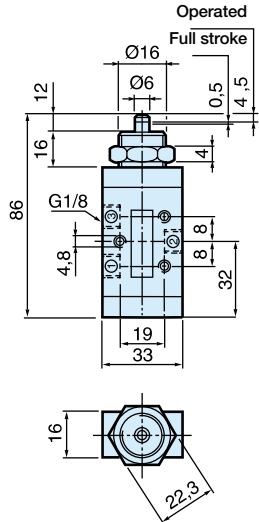
**Dimensions, G1/8 ported spool valves**

All dimensions in mm unless otherwise stated

**Mechanically operated valves**

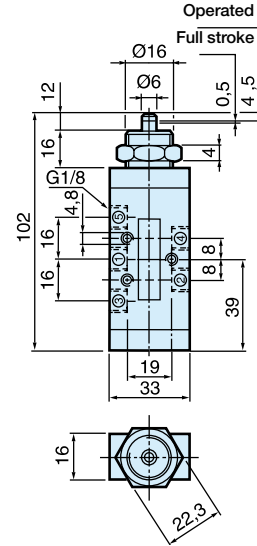
**3/2 valves**

Plunger operated spring return



**5/2 valves**

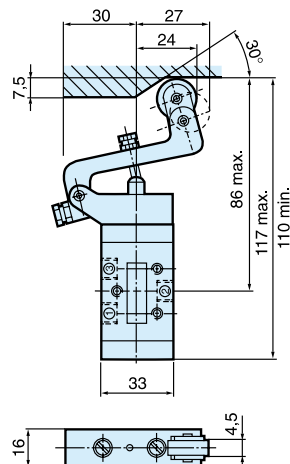
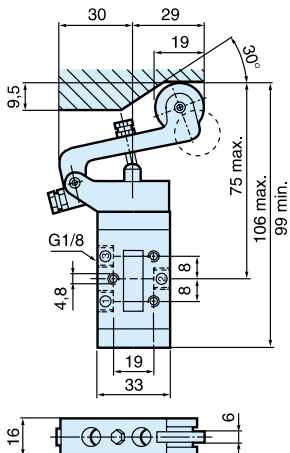
Plunger operated spring return



**3/2 valves**

Roller operated spring return

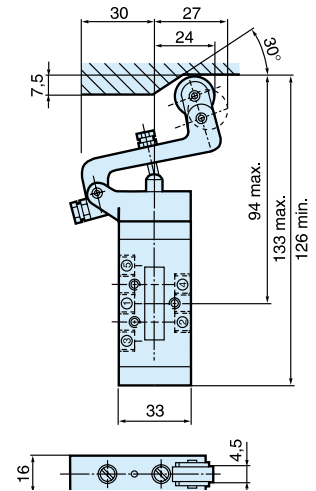
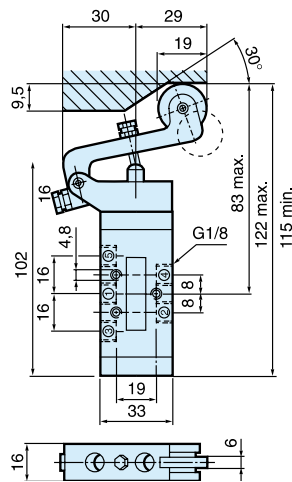
One way roller trip operate spring return



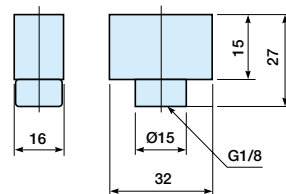
**5/2 valves**

Roller operated spring return

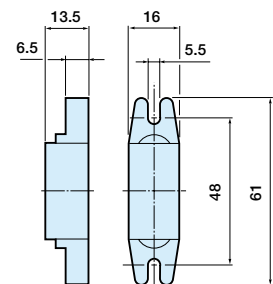
One way roller trip operate spring return



Air Pilot Return



Optional foot mounted - Spring return housing



**Dimensions, G1/8 ported spool valves**

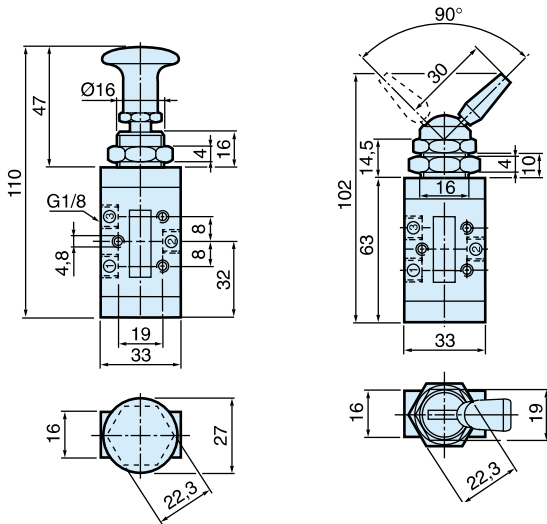
All dimensions in mm unless otherwise stated

**Manually operated valves**

**3/2 valves**

Button operated spring return or button returned

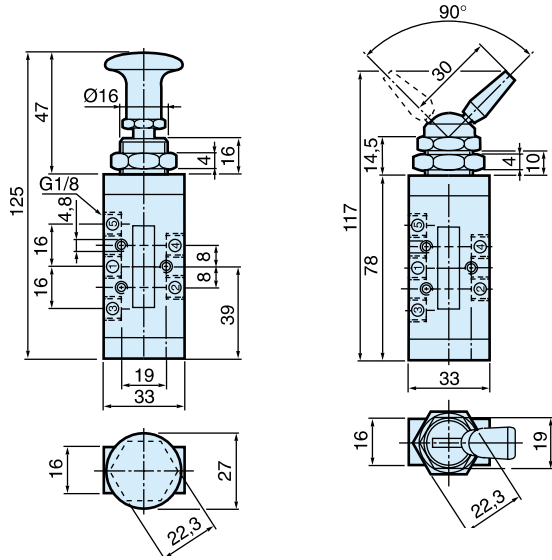
Lock down lever operated spring return



**5/2 valves**

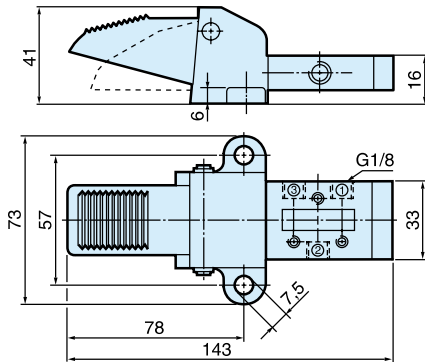
Button operated spring return or button returned

Lock down lever operated spring return



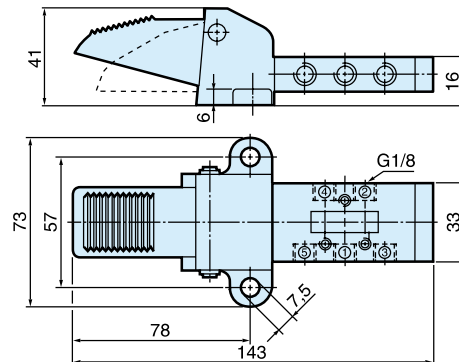
**3/2 valves**

Foot pedal operated spring return

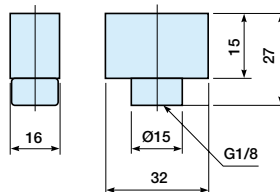


**5/2 valves**

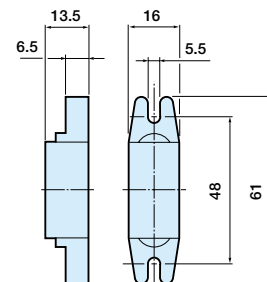
Foot pedal operated spring return



Air Pilot Return



Optional foot mounted - Spring return housing





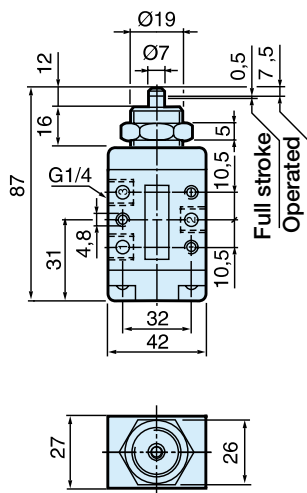
**Dimensions, G1/4 ported spool valves**

All dimensions in mm unless otherwise stated

**Mechanically operated valves**

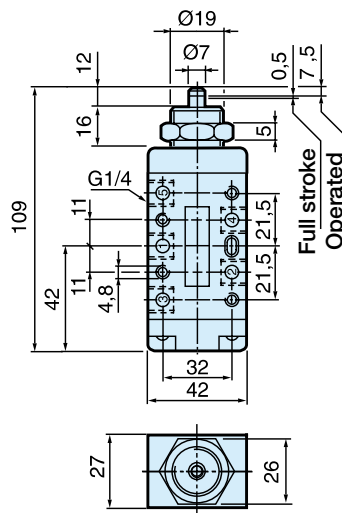
**3/2 valves**

Plunger operated spring return



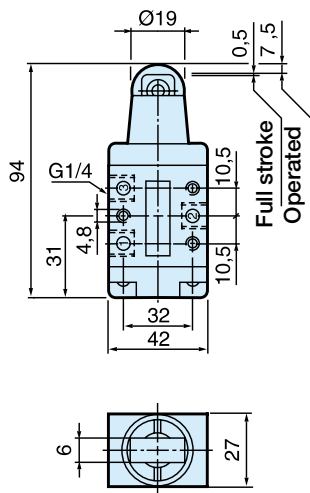
**5/2 valves**

Plunger operated spring return



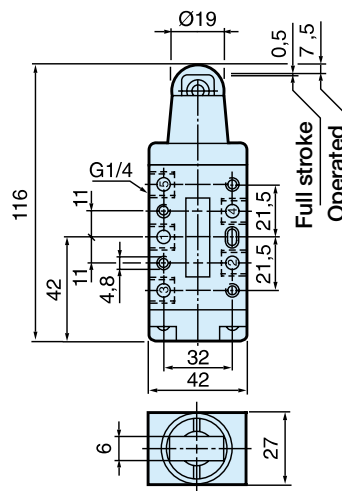
**3/2 valves**

Roller operated spring return

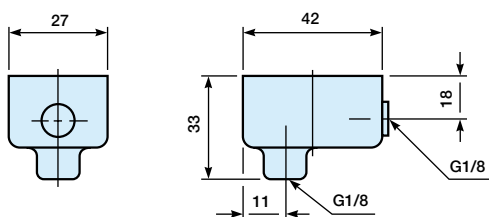


**5/2 valves**

Roller operated spring return



Air Pilot Return



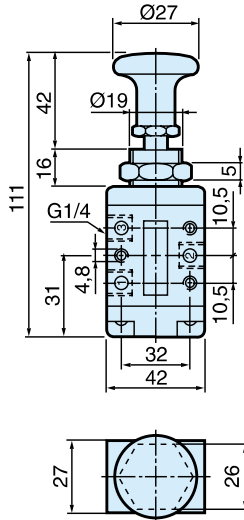
**Dimensions, G1/4 ported spool valves**

All dimensions in mm unless otherwise stated

**Manually operated valves**

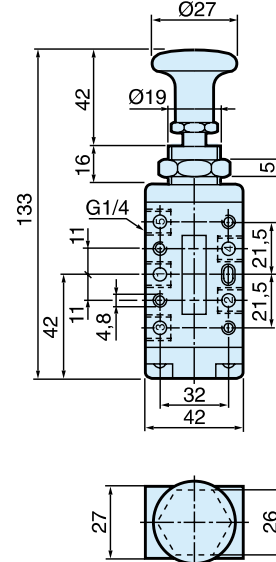
**3/2 valves**

Button operated spring return  
or button returned



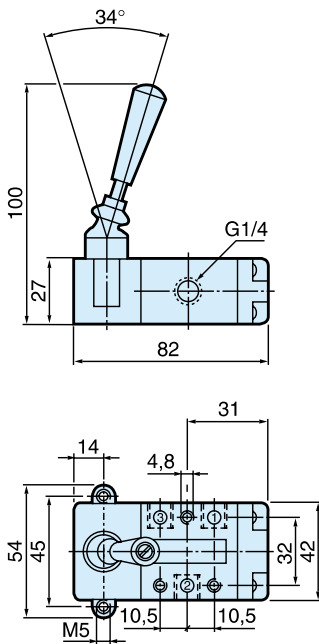
**5/2 valves**

Button operated spring return  
or button returned



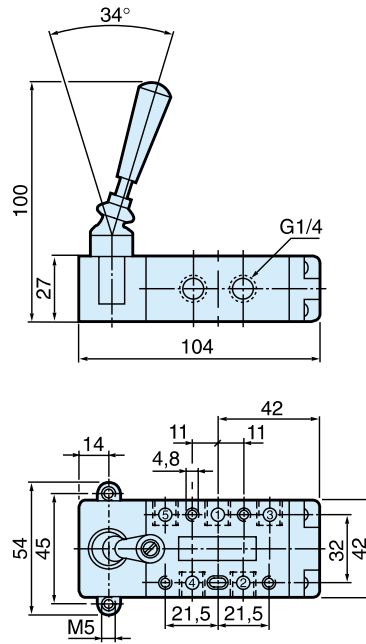
**3/2 valves**

Lever operated

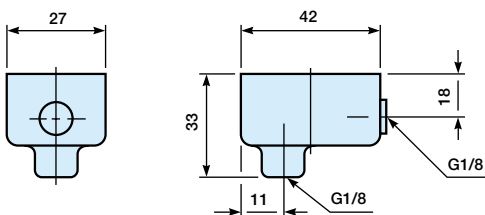


**5/2 valves**

Lever operated



Air Pilot Return



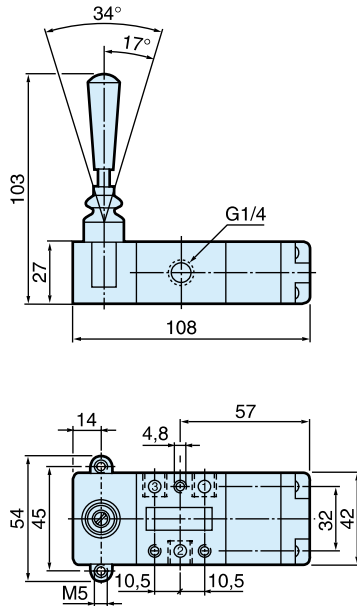
**Dimensions, G1/4 ported spool valves**

All dimensions in mm unless otherwise stated

**Manually operated valves**

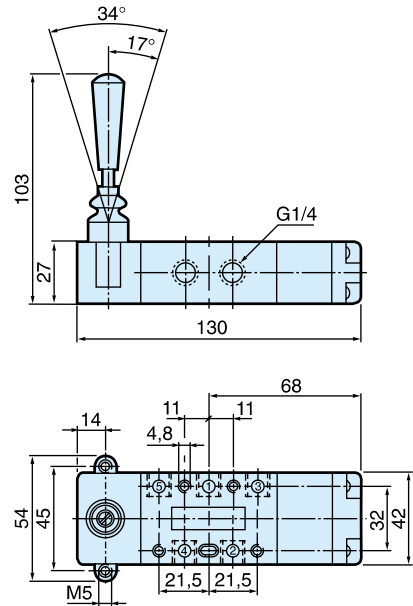
**3/3 valves (Self centring)**

Lever operated



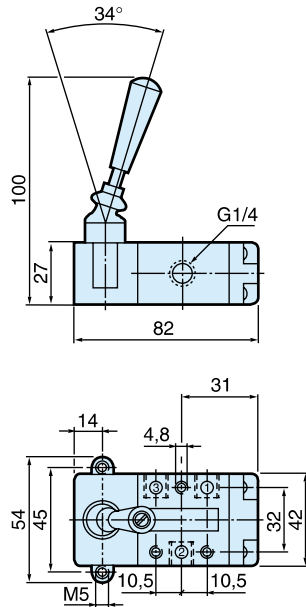
**5/3 valves (Self centring)**

Lever operated



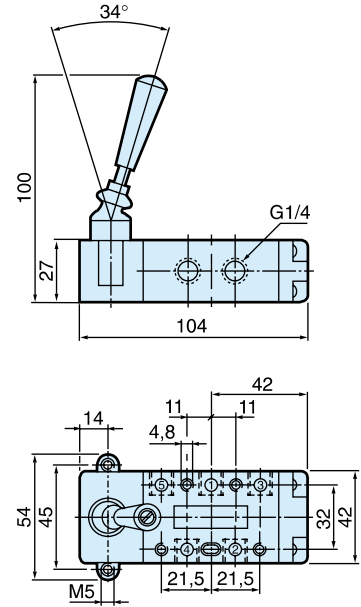
**3/3 valves (3 positions)**

Lever operated

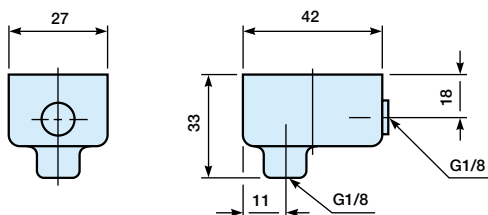


**5/3 valves (3 positions)**

Lever operated



Air Pilot Return



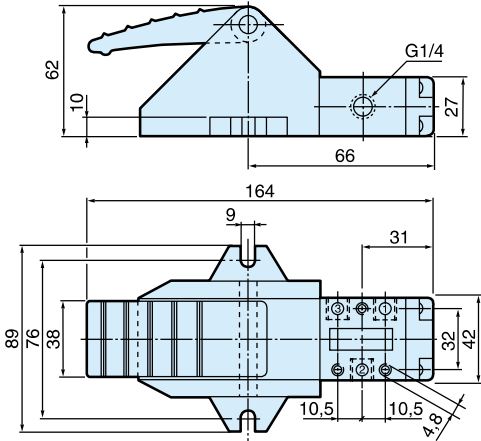
**Dimensions, G1/4 ported spool valves**

All dimensions in mm unless otherwise stated

**Manually operated valves**

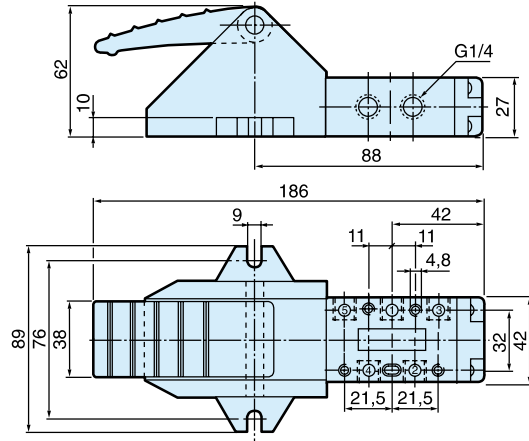
**3/2 valves**

Foot pedal operated spring return



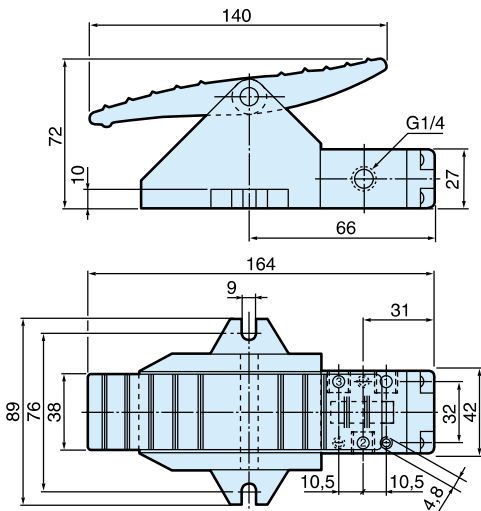
**5/2 valves**

Foot pedal operated spring return



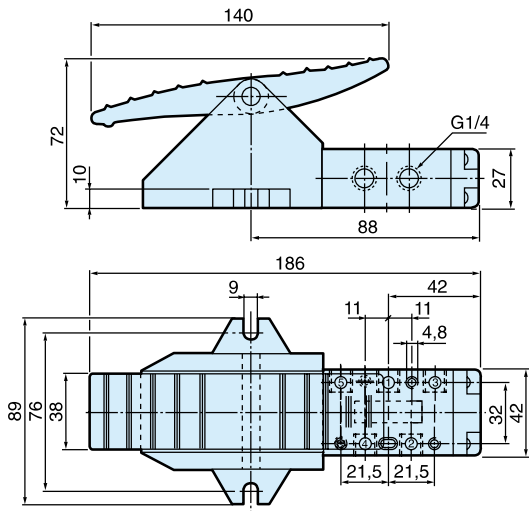
**3/2 valves**

Foot pedal operated



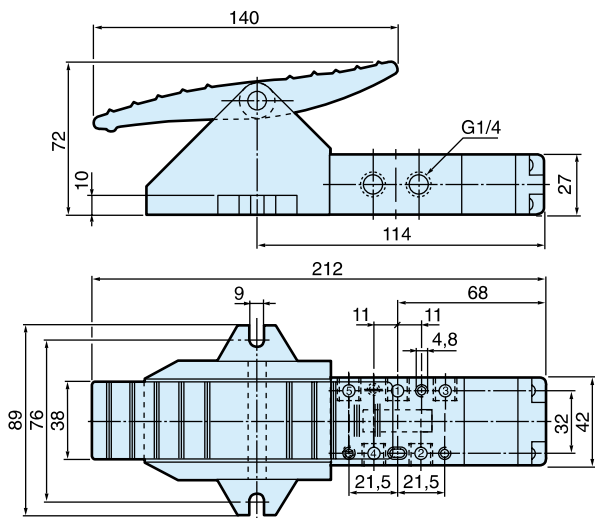
**5/2 valves**

Foot pedal operated



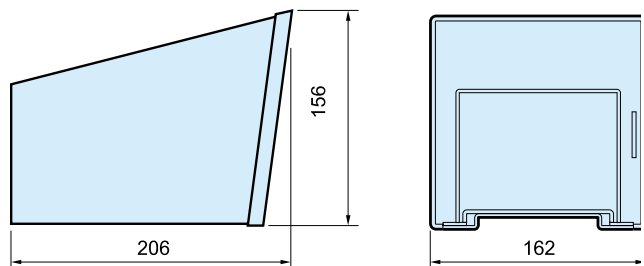
**5/3 valves**

Foot pedal operated



**Foot guard kit**

3117



## Service and Replacement Parts

### B43 Series Manually Operated Valves

| Order code       | Actuator          | Replacement actuator | Repair kit          |
|------------------|-------------------|----------------------|---------------------|
| <b>B43003BXS</b> | Button            | 43004BX-100          |                     |
| <b>B43004BXS</b> | Button            |                      |                     |
| <b>B43004HXS</b> | Button, Push/Pull | 43004H-100           | Body seal<br>43007A |
| <b>B43003LS</b>  | Lockdown lever    |                      |                     |
| <b>B43004LS</b>  | Lockdown lever    | 43004L-200           |                     |

### B53 Series Manually Operated Valves

| Order code       | Actuator              | Replacement actuator | Repair kit               |
|------------------|-----------------------|----------------------|--------------------------|
| <b>B53003HXS</b> | Button                |                      |                          |
| <b>B53004HXS</b> | Button                |                      |                          |
| <b>B53003HX</b>  | Button, Push/Pull     |                      |                          |
| <b>B53004HX</b>  | Button, Push/Pull     | 53004HX-100          | Body seal<br>53007       |
| <b>B53004HXX</b> | Button, Self centring |                      | 53007                    |
| <b>B53004HXY</b> | Button, Self centring |                      |                          |
| <b>B53004HXZ</b> | Button, Self centring |                      |                          |
| <b>B53003FS</b>  | Foot                  | 53004F-100           |                          |
| <b>B53004FS</b>  | Foot                  |                      |                          |
| <b>B53003LS</b>  | Lever                 | 53004L-198           |                          |
| <b>B53004LS</b>  | Lever                 |                      |                          |
| <b>B53003LT</b>  | Lever, 2 positions    | 53004L-196           | Body seal<br>53007       |
| <b>B53004LT</b>  | Lever, 2 positions    |                      | 53007                    |
| <b>B53004L</b>   | Lever, 3 positions    | 53004L-100           | Lever kit<br>53004L-300R |
| <b>B53004LW</b>  | Lever, 3 positions    |                      | 53004L-300R              |
| <b>B53004LX</b>  | Lever, Self centring  | 53004L-198           |                          |
| <b>B53004LY</b>  | Lever, Self centring  |                      |                          |

### B43 Series Mechanically Operated Valves

| Order code      | Actuator     | Replacement actuator | Repair kit          |
|-----------------|--------------|----------------------|---------------------|
| <b>B43003CS</b> | Plunger      | 43004C-100           |                     |
| <b>B43004CS</b> | Plunger      |                      | Body seal<br>43007A |
| <b>B43003RS</b> | Roller Lever | 43004R-200           | 43007A              |
| <b>B43004RS</b> | Roller Lever |                      |                     |

### B53 Series Mechanically Operated Valves

| Order code      | Actuator | Replacement actuator | Repair kit         |
|-----------------|----------|----------------------|--------------------|
| <b>B53003CS</b> | Plunger  | 53004C-100           |                    |
| <b>B53004CS</b> | Plunger  |                      | Body seal<br>53007 |
| <b>B53003RS</b> | Roller   | 53004R-100           | 53007              |
| <b>B53004RS</b> | Roller   |                      |                    |



**Rugged** brass bodies with excellent corrosion resistance make these valves the ideal choice for arduous applications. Large and robust manual actuators are available together with air pilot actuators.

- Rugged valves for heavy duty applications
- Large and robust actuators for easy operation
- Excellent corrosion resistance
- Integral mounting holes
- Panel mounting versions



**Operating information**

|   |                  |
|---|------------------|
| Working temperature   | -40 °C to +70 °C |
| Working pressure  | Max 10 bar       |
| Flow (Qmax):  | 380 l/min        |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a> |                  |

**Push button valves, VA13 Series - G<sup>1</sup>/<sub>8</sub>**

| Symbol | Actuator                       | Return              | Operating force at 6 bar, N | Mounting | Order code          |
|--------|--------------------------------|---------------------|-----------------------------|----------|---------------------|
|        | Flush-Push button, red         | Spring              | 32,5                        | Panel    | <b>VA13-HIS4</b>    |
|        | Flush-Push button, black       | Spring              | 32,5                        | Panel    | <b>VA13-HIS4A06</b> |
|        | Hand lever Held in 2 positions | Hand lever          | 8                           | Panel    | <b>VA13-HB24</b>    |
|        | Hand lever Held in 2 positions | Hand lever          | 8                           | Side     | <b>VA13-HB2</b>     |
|        | Button, red, 2 positions       | Button              | 3                           | Panel    | <b>VA13-KL24</b>    |
|        | Button, red                    | Spring              | 31,5                        | Panel    | <b>VA13-KS4</b>     |
|        | Button, red, 2 positions       | Button              | 3                           | Side     | <b>VA13-KL2</b>     |
|        | Button, red                    | Spring              | 31,5                        | Side     | <b>VA13-KS</b>      |
|        | Button, red, 2 positions       | Knob/<br>Air signal | 6                           | Side     | <b>VA13-KL2A</b>    |

**Accessories for VA13/15HI... Series valves**

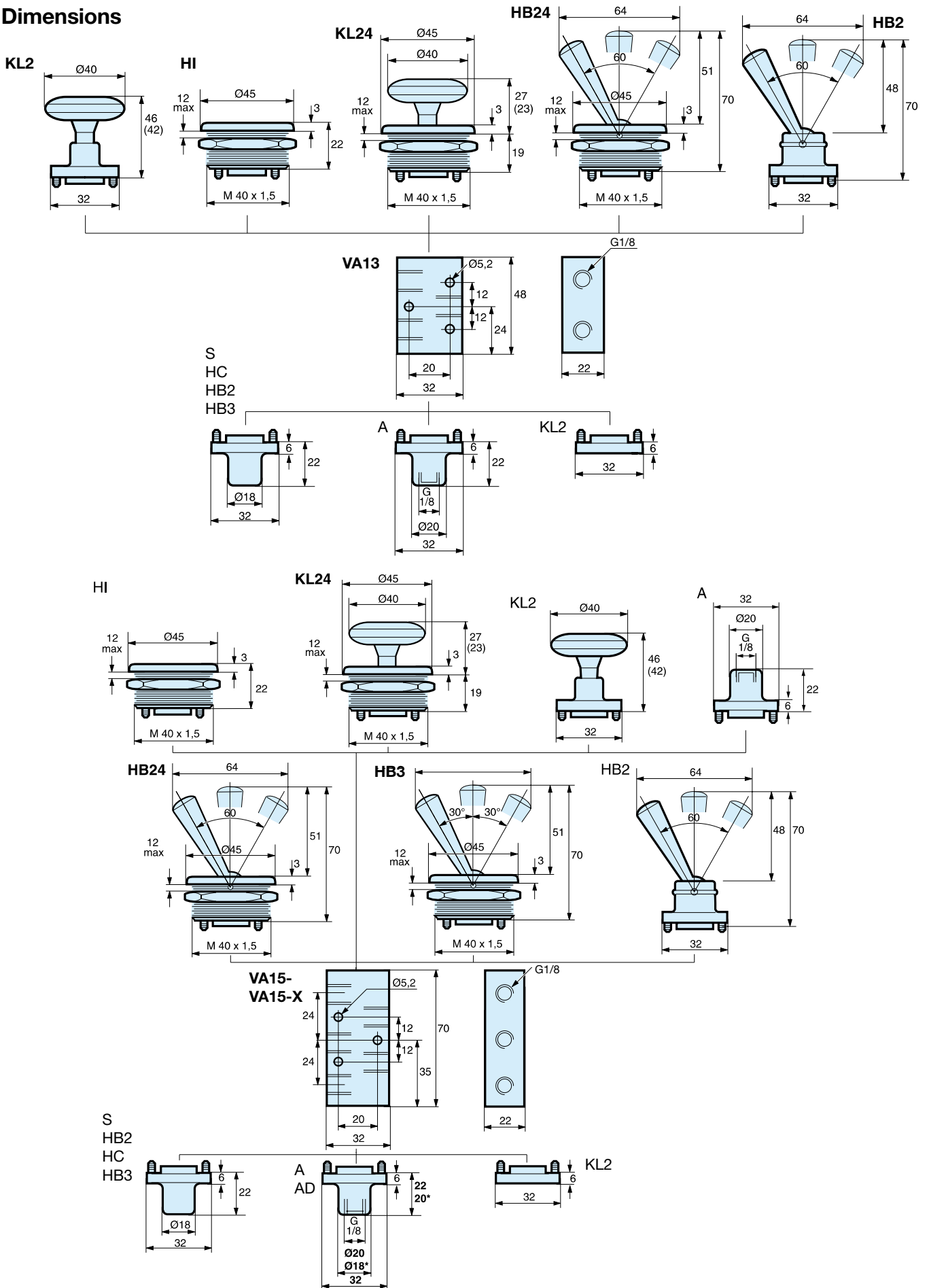
|  | Description       | Order code        |
|--|-------------------|-------------------|
|  | Diaphragm, black  | <b>9127359331</b> |
|  | Diaphragm, yellow | <b>9127359332</b> |
|  | Mounting ring     | <b>9127359334</b> |

**Push button valves, VA15 Series - G<sup>1</sup>/<sub>8</sub> connection**

| Symbol | Actuator  | Return                   | Operating force at 6 bar, N | Mounting | Order code        |
|--------|---|--------------------------|-----------------------------|----------|-------------------|
|        | Flush-Push button, red                                | Spring                   | 34,5                        | Panel    | <b>VA15-HIS4</b>  |
|        | Hand lever Held in 2 positions                        | Hand lever               | 9                           | Panel    | <b>VA15-HB24</b>  |
|        | Hand lever Held in 3 positions closed centre position | Hand lever               | 9                           | Panel    | <b>VA15-HB34</b>  |
|        | Hand lever Held in 3 positions vented centre position | Hand lever               | 9                           | Panel    | <b>VA15-XHB34</b> |
|        | Hand lever 3 positions closed centre position         | Hand lever               | 9                           | Panel    | <b>VA15-HC4</b>   |
|        | Hand lever 3 positions vented centre position         | Hand lever self centring | 9                           | Panel    | <b>VA15-XHC4</b>  |
|        | Hand lever Held in 2 positions                        | Hand lever               | 9                           | Side     | <b>VA15-HB2</b>   |
|        | Button, red red 2 positions                           | Button                   | 5                           | Panel    | <b>VA15-KL24</b>  |
|        | Button, red, 2 positions                              | Button                   | 5                           | Side     | <b>VA15-KL2</b>   |
|        | Air signal  | Air signal               | 3/3                         | Side     | <b>VA15-AA</b>    |
|        | Air signal  | Spring                   | 4/-                         | Side     | <b>VA15-AS</b>    |

All 3/2 type VA13 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

**Dimensions**



**Heavy duty poppet valves  
2/2 & 3/2 - G<sup>3/8</sup>" & G<sup>1/2</sup>"**

These valves use the well proven poppet principle to give high flow rates with short valve travel, both the 2/2 and 3/2 valves in the range are available in G<sup>3/8</sup>" and G<sup>1/2</sup>" port sizes. This means that each actuator is available in four configurations i.e. 3/8" ports 2/2 or 3/2 and G<sup>1/2</sup>" ports 2/2 or 3/2. All valves are normally closed.

The bodies are of block form construction for ease of mounting. Springs are stainless steel; internal seals being of nitrile rubber.

The 2/2 body allows air in one direction only, 3/2 versions having the facility of exhausting air through the actuator unit. This exhaust vent is unthreaded on all valves except the pilot and solenoid types which allows the piping away of exhaust air.

All mechanisms are spring returned.



| Operating information                      |   | Material specification  |                   |
|--|---|---|-------------------|
| Working pressure                           | 0 - 10 bar  | Body  | Zinc die cast     |
| Working temperature                        | -10°C to +80°C  | Roller  | Zinc plated steel |
| Solenoid version                           | -10°C to +50°C  | Mechanical arm  | Zinc plated steel |
| Minimum pilot pressure                     | 1.9 bar @ 6 bar supply  | Poppet  | Stainless steel   |
| Response time (solenoid energised)         | 14 msecs  | Seals   | Nitrile           |
| Response time (solenoid de-energised)      | 75 msecs  | Spring  | Stainless steel   |
|  |   | Bush  | Aluminium         |
|  |   | Piston  | Aluminium         |
| Flow capacities in accordance with ISO6358 |   |   |                   |
| Flow;                                      | <b>B102-B103</b><br>C = 7,54<br>b = 0,29<br>Qn = 33 l/s<br>Qmax = 54 l/s<br>Cv = 2,65 | <b>B202-B203</b><br>C = 10,75 NI/s x bar<br>b = 0,24<br>Qn = 43 l/s<br>Qmax = 75 l/s<br>Cv = 3,20 |                   |

**Working medium, air quality**

Working medium: Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

**Recommended air quality for valves**

For best possible service life and trouble free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5µm filter (standard filter) dew point +3°C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m<sup>3</sup>, which is what a standard compressor with a standard filter gives.

**ISO 8573-1 quality classes**

| Quality class | Pollution          |   | Water max. press. dew point (°C) | Oil max. concentration (mg/m <sup>3</sup> ) |
|---------------|--------------------|---|----------------------------------|---|
|               | particle size (µm) | max. concentration (mg/m <sup>3</sup> ) |                                  |   |
| 1             | 0,1                | 0,1                                     | -70                              | 0,01  |
| 2             | 1                  | 1                                       | -40                              | 0,1   |
| 3             | 5                  | 5                                       | -20                              | 1,0   |
| 4             | 15                 | 8                                       | +3                               | 5,0   |
| 5             | 40                 | 10                                      | +7                               | 25  |
| 6             | -                  | -                                       | +10                              | -   |



Part number configurator for solenoid valves

|          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>D</b> | <b>B</b> | <b>1</b> | <b>2</b> | <b>2</b> | <b>A</b> | <b>4</b> | <b>9</b> |
|----------|----------|----------|----------|----------|----------|----------|----------|

| Valve family |                             |
|--------------|-----------------------------|
| DB           | HD poppet solenoid operated |

| Thread port |         |
|-------------|---------|
| 1           | 3/8 BSP |
| 2           | 1/2 BSP |

| Air supply to solenoid |          |
|------------------------|----------|
| 2                      | Internal |

| Overrides |                        |
|-----------|------------------------|
| A         | None                   |
| C         | Flush - Locking        |
| D         | Extended - non locking |

| Voltage <sup>1</sup> |                          |      |    |
|----------------------|--------------------------|------|----|
|                      | AC                       |      | DC |
|                      | 60Hz                     | 50Hz |    |
| 40                   | 12                       |      |    |
| 42                   | 24                       | 22   |    |
| 45                   |                          |      | 12 |
| 49                   |                          |      | 24 |
| 53                   | 120                      | 110  |    |
| 57                   | 240                      | 230  |    |
| XX                   | valve less solenoid/coil |      |    |

<sup>1</sup> Shaded part numbers are standard  
 Unshaded part numbers are available on request but will be subject to minimum order quantities  
 Otherwise order XX version and order coil separately.

Part number configurator for manual & mechanical operated poppet valves

|          |          |          |          |          |
|----------|----------|----------|----------|----------|
| <b>B</b> | <b>1</b> | <b>0</b> | <b>2</b> | <b>P</b> |
|----------|----------|----------|----------|----------|

| Valve family |                               |
|--------------|-------------------------------|
| B            | HD poppet manual & mechanical |

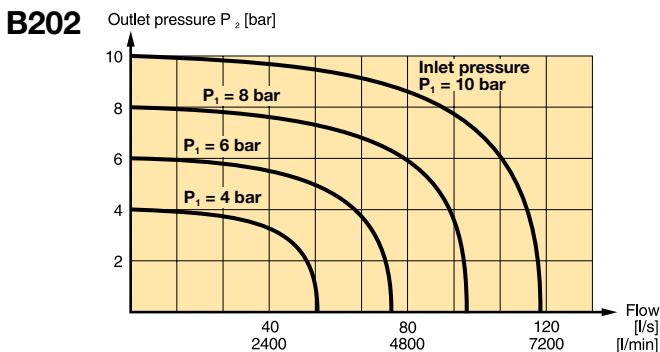
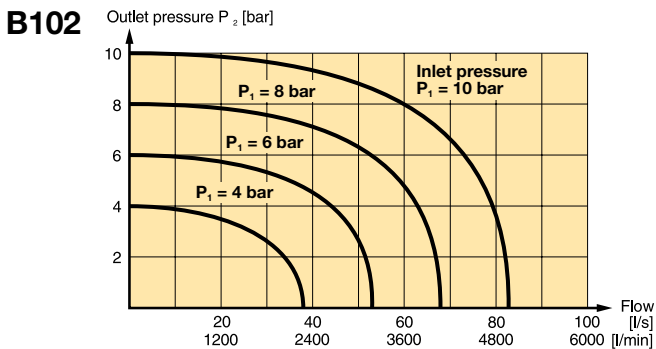
| Thread port |         |
|-------------|---------|
| 1           | 3/8 BSP |
| 2           | 1/2 BSP |

| Function |        |
|----------|--------|
| 2        | 2/2 NC |
| 3        | 3/2 NC |

| Operator |                |
|----------|----------------|
| C        | Ball           |
| L        | Lever          |
| P        | Pilot pressure |
| R        | Roller lever   |

Flow characteristics

Flow capacities in accordance with ISO6358  
 Flow measured with valve on manifold  
 All pressures = effective pressure



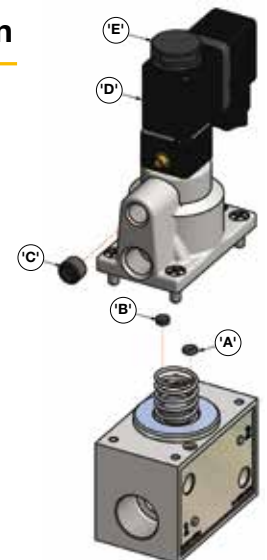
Electrical Information

|                   |                         |                 |
|-------------------|-------------------------|-----------------|
| Power consumption | Inrush                  | Hold            |
|                   | AC VA                   | 8.5VA           |
|                   | DC                      | 4.8 Watt        |
|                   | Rating                  | 100% continuous |
| Isolation class   | F                       |                 |
| Protection class  | IP 65 (P 54) DIN 40 050 |                 |
| Connection        | DIN 43 650 Form B       |                 |
| Solenoid response | milliseconds at 7 bar   |                 |









External pilot supply option

Solenoid pilot operated valves have an internal pilot air supply, but provisions for external pilot supply is provided. To use with external supply interchange 'O'-ring (Item 'A') and Plug (Item 'B') to block off the internal pilot supply. Remove hexagon socket plug (Item 'C') from the external pilot supply port, connecting an air supply as desired.

Orientation of the solenoid coil (Item 'D') can be altered through 90° increments by loosening the diffuser nut (Item 'E').







## Main data for mechanically operated valves, Heavy duty poppet series (NC only)

| Symbol  | Type | Connection | Actuator       | Return | Operating force at 6 bar, N | Weight Kg    | Order code                         |
|---|------|------------|----------------|--------|-----------------------------|--------------|------------------------------------|
|  | 2/2  | G3/8       | Solenoid pilot | Spring | 24VDC<br>Less solenoid      | 0.70<br>0.65 | <b>DB122A49</b><br><b>DB122AXX</b> |
|  | 3/2  | G3/8       | Solenoid pilot | Spring | 24VDC<br>Less solenoid      | 0.70<br>0.65 | <b>DB123A49</b><br><b>DB123AXX</b> |
|  | 2/2  | G1/2       | Solenoid pilot | Spring | 24VDC<br>Less solenoid      | 0.70<br>0.65 | <b>DB222A49</b><br><b>DB222AXX</b> |
|  | 3/2  | G1/2       | Solenoid pilot | Spring | 24VDC<br>Less solenoid      | 0.70<br>0.65 | <b>DB223A49</b><br><b>DB223AXX</b> |
|  | 2/2  | G3/8       | Air pilot      | Spring |                             | 0.61         | <b>B102P</b>                       |
|  | 3/2  | G3/8       | Air pilot      | Spring |                             | 0.61         | <b>B103P</b>                       |
|  | 2/2  | G1/2       | Air pilot      | Spring |                             | 0.61         | <b>B202P</b>                       |
|  | 3/2  | G1/2       | Air pilot      | Spring |                             | 0.61         | <b>B203P</b>                       |

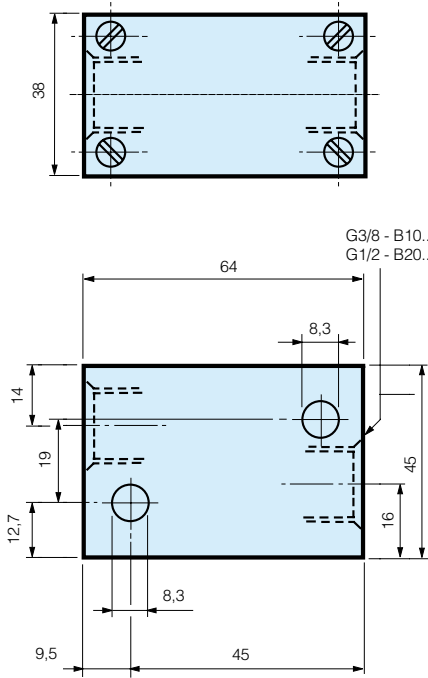
Order electrical connectors for solenoids separately.

## Main data for mechanically operated valves, Heavy duty poppet series (NC only)

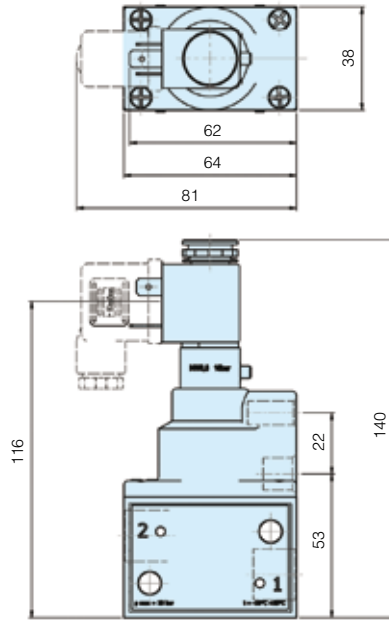
| Symbol  | Type | Connection | Actuator     | Return      | Operating force at 6 bar, N | Weight Kg | Order code   |
|---|------|------------|--------------|-------------|-----------------------------|-----------|--------------|
|  | 2/2  | G3/8       | Lever        | Lever       | 22                          | 0.65      | <b>B102L</b> |
|  | 3/2  | G3/8       | Lock down    | Lever lever | 22                          | 0.65      | <b>B103L</b> |
|  | 2/2  | G1/2       | Lock down    | Lever lever | 22                          | 0.65      | <b>B202L</b> |
|  | 3/2  | G1/2       | Lock down    | Lever lever | 22                          | 0.65      | <b>B203L</b> |
|  | 2/2  | G3/8       | Roller lever | Spring      | 36                          | 0.642     | <b>B102R</b> |
|  | 3/2  | G3/8       | Roller lever | Spring      | 36                          | 0.630     | <b>B103R</b> |
|  | 2/2  | G1/2       | Roller lever | Spring      | 36                          | 0.614     | <b>B202R</b> |
|  | 3/2  | G1/2       | Roller lever | Spring      | 36                          | 0.604     | <b>B203R</b> |
|  | 2/2  | G3/8       | Ball         | Spring      | 220                         | 0.542     | <b>B102C</b> |
|  | 3/2  | G3/8       | Ball         | Spring      | 220                         | 0.532     | <b>B103C</b> |
|  | 2/2  | G1/2       | Ball         | Spring      | 220                         | 0.530     | <b>B202C</b> |
|  | 3/2  | G1/2       | Ball         | Spring      | 220                         | 0.520     | <b>B203C</b> |

**Mechanically operated valves - 2/2, 3/2 valves**

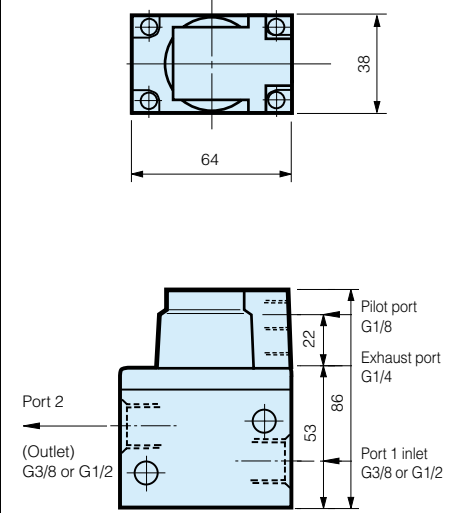
**Basic body dimensions**



**Solenoid pilot operated spring return**  
 DB122, DB123, DB222, DB223

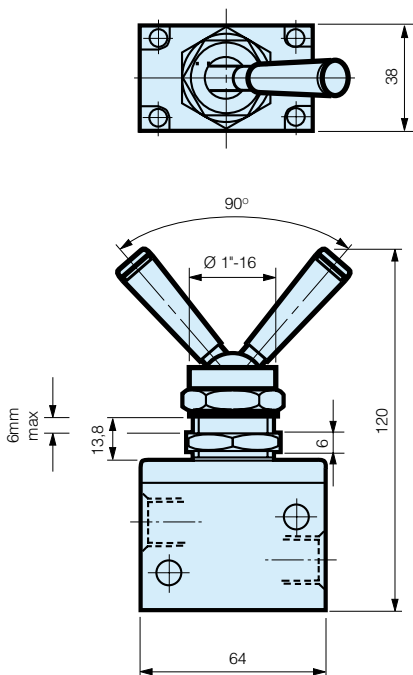


**Air pilot operated spring return**  
 B102P, B103P, B202P, B203P



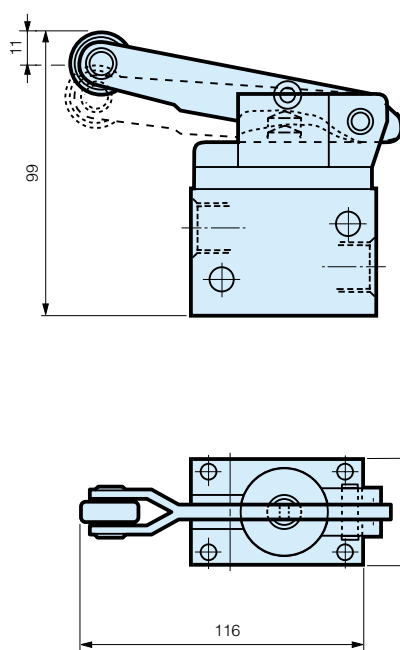
**Lock down lever**

B102L, B103L, B202L, B203L



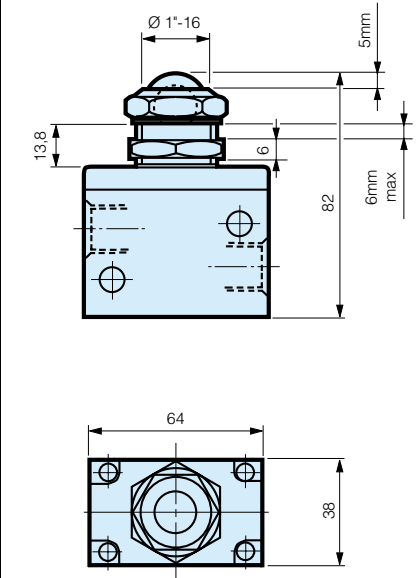
**Roller lever operated spring return**

B102R, B103R, B202R, B203R



**Ball operated spring return**

B102C, B103C, B202C, B203C



All dimensions in mm unless otherwise stated

## 22mm solenoid operator part numbers and spares

### Solenoid coils for 22mm solenoid operators

| Voltage              | Order code Form B | Weight (Kg) |
|----------------------|-------------------|-------------|
| 12V 60Hz             | <b>P2FCB440</b>   | 0.093       |
| 24V 50/60Hz          | <b>P2FCB442</b>   | 0.093       |
| 12V DC               | <b>P2FCB445</b>   | 0.093       |
| 12V DC Mobile        | <b>P2FCB447</b>   | 0.093       |
| 24v DC Mobile        | <b>P2FCB448</b>   | 0.093       |
| 24V DC               | <b>P2FCB449</b>   | 0.093       |
| 48V DC               | <b>P2FCB451</b>   | 0.093       |
| 110V/50Hz, 120V/60Hz | <b>P2FCB453</b>   | 0.093       |
| 230V/50Hz, 230V/60Hz | <b>P2FCB457</b>   | 0.093       |

### Spare Solenoid Nuts

Valves with vented exhaust are fitted with diffuser plastic nut

| Order Code   |
|--------------|
| <b>P2FND</b> |

### Spare Solenoid Operators

Solenoid pilot operator 22mm NC, Normal duty (Max Operating pressure 10bar, Temp -10°C to +50°C)

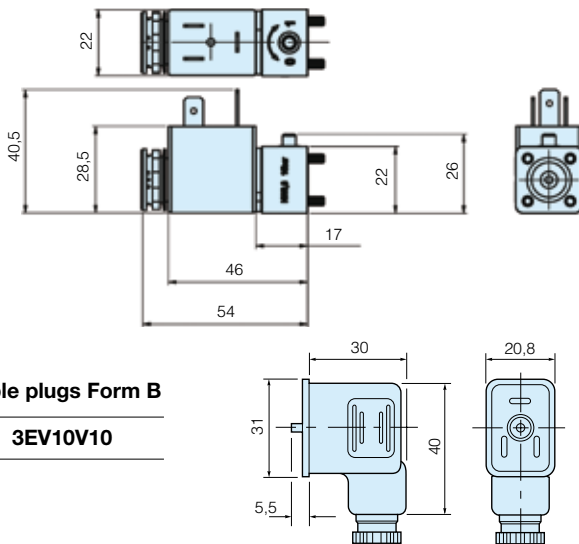
|  |              |
|--|--------------|
| <b>Order code</b><br>(with locking bi-stable m/o)      | Weight<br>Kg |
| <b>P2FP13N4C</b>                                       | 0.05         |
| <b>Order code</b><br>(with Non-locking monostable m/o) | Weight<br>Kg |
| <b>P2FP13N4D</b>                                       | 0.05         |
| <b>Order code</b><br>(with no m/o)                     | Weight<br>Kg |
| <b>P2FP13N4A</b>                                       | 0.05         |

**Note.**

The operators are supplied with mounting screws and interface 'O' rings. Coils and connectors must be ordered separately.

### Cable Plug Dimensions (mm)

Solenoid operators P2E-•V...

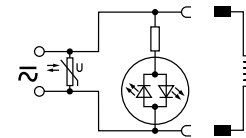
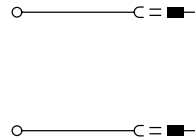


Cable plugs Form B

**3EV10V10**

### Solenoid Connectors / Cable Plugs EN175301-803

| Description   | Order code            |
|---|-----------------------|
| 22mm Industrial Form B                                    |                       |
| With standard screw<br>Standard IP65 without flying lead  | <b>3EV10V10</b>       |
| With LED and protection<br>24V AC/DC                      | <b>3EV10V20-24</b>    |
| With LED and protection<br>110V AC                        | <b>3EV10V20-110</b>   |
| With LED and protection<br>230V AC                        | <b>3EV10V20-230</b>   |
| With cable<br>24V AC/DC, 5m cable LED and protection IP65 | <b>3EV10V20-24L5</b>  |
| 110V AC/DC, 5m cable LED and protection IP65              | <b>3EV10V20-110L5</b> |
| 230V AC, 5m cable LED and protection IP65                 | <b>3EV10V20-230L5</b> |



**3EV10V10**

**3EV10V20-24**

**3EV10V20-24L5**

**3EV10V20-110**

**3EV10V20-110L5**

**3EV10V20-230**

**3EV10V20-230L5**

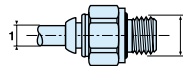
### Accessories

#### Sintered bronze series silencers



| Port | Order code      | Pack Qty |
|------|-----------------|----------|
| G1/4 | <b>P6M-BAA2</b> | 1        |

#### Male straight connectors - Parallel thread



| Tube Ø1 | Thread B | Order code        | Box Qty |
|---------|----------|-------------------|---------|
| 4       | 1/8      | <b>F4PMB4-1/8</b> | 20      |
| 6       | 1/8      | <b>F4PMB6-1/8</b> | 30      |
| 6       | 1/4      | <b>F4PMB6-1/4</b> | 30      |
| 8       | 1/8      | <b>F4PB8-1/8</b>  | 40      |
| 8       | 1/4      | <b>F4PB8-1/4</b>  | 30      |
| 8       | 3/8      | <b>F4PB8-3/8</b>  | 20      |
| 10      | 1/4      | <b>F4PB10-1/4</b> | 20      |
| 10      | 3/8      | <b>F4PB10-3/8</b> | 20      |
| 10      | 1/2      | <b>F4PB10-1/2</b> | 10      |
| 12      | 1/4      | <b>F4PB12-1/4</b> | 10      |
| 12      | 3/8      | <b>F4PB12-3/8</b> | 10      |
| 12      | 1/2      | <b>F4PB12-1/2</b> | 10      |
| 14      | 3/8      | <b>F4PB14-3/8</b> | 10      |
| 14      | 1/2      | <b>F4PB14-1/2</b> | 10      |

# DX Global ISO Valves

A complete range of pneumatic  
**ISO valves**



## Rust and corrosion resistant body

With the valve body in polyamide reinforced fiberglass and the casting in anodised aluminium, the Isomax range presents a comprehensive modern design to suit most industrial environments.

- **ISO 15407-1 Sizes 02 & 01 and ISO 5599-1 Sizes 1, 2 & 3**
- **Ceramic technology for long life operation**
- **From vacuum up to 12 bar applications**
- **Internal or external pilot supply with same valves**
- **M12 on each coil**
- **Common M12**

Ceramic slide valves for maximum operational life. Solenoid or air pilot actuation. Vacuum to 10 bar general applications.

- Size 01 and 02 (26 and 18 mm)
- Ceramic technology for long life operation
- From vacuum up to 10 bar applications
- Internal or external pilot supply with same valves
- Capture solenoid exhaust



**Operation information**

|                       |                |             |
|-----------------------|----------------|-------------|
| Working pressure :    | -0,9 to 10 bar |             |
| Working temperature : | -10 to +60°C   |             |
|                       | <b>DX02</b>    | <b>DX01</b> |
| Flow (Qmax.) :        | 630 l/min      | 1000 l/min  |
| Flow (Qn) :           | 385 l/min      | 585 l/min   |

**Ceramic technology**

All ISOMAX products use high-tech ceramic switching technology :

• **Excellent reliability :**

- Long life in excess of 100 million operations\*.
- Operates with lubricated or non lubricated air.
- Low sensitivity to air quality changes switching without seal.
- Stiction free.

• **High performances :**

Slide valve concept allows high flow / size ratio and short response time due to short slide stroke and low friction.



• **Switchable selector**

Valves fitted with switchable selector to give internal or external pilot supply

**Ceramic plate**



• **Size 02 & Size 01**

Solenoid exhaust pilot


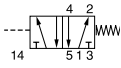
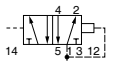
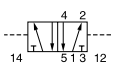
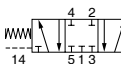
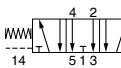
• **Stable long lasting performances**

Low friction switching : minimum wear of the valve member/seal assembly.

## Isomax - ISO 15407-1 - Sizes 02 &amp; 01


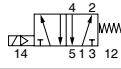
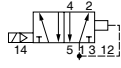
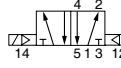
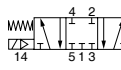
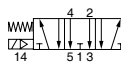
## Pneumatic remote pilot operated

## Without valve spool manual override

| Symbol  | Description   | Size                          | Weight (g) | Order code         |                    |
|---|---|-------------------------------|------------|--------------------|--------------------|
|  |  | 5/2 Air pilot - Spring return | 02 - 18 mm | 90                 | <b>DX02-421-60</b> |
|   |   | 01 - 26mm                     | 130        | <b>DX01-421-60</b> |                    |
|   |  | 5/2 Air pilot - Differential  | 02 - 18 mm | 90                 | <b>DX02-451-60</b> |
|   |   | 01 - 26mm                     | 130        | <b>DX01-451-60</b> |                    |
|   |  | 5/2 Double air pilot          | 02 - 18 mm | 90                 | <b>DX02-406-60</b> |
|   |   | 01 - 26mm                     | 130        | <b>DX01-406-60</b> |                    |
|   |  | 5/3 Closed Centre (APB)       | 02 - 18 mm | 90                 | <b>DX02-416-60</b> |
|   |   | 01 - 26mm                     | 130        | <b>DX01-416-60</b> |                    |
|   |  | 5/3 Vented Center             | 02 - 18 mm | 90                 | <b>DX02-411-60</b> |
|   |   | 01 - 26mm                     | 130        | <b>DX01-411-60</b> |                    |

## Isomax - ISO 15407-1 - Sizes 02 &amp; 01


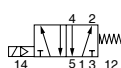
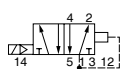
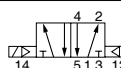
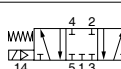

## 15 mm DIN C / 24 Vdc / 1,2 W solenoid valve operator

| Symbol   | Description   | Size                                | Weight (g) | Order code           |                      |
|--|---|-------------------------------------|------------|----------------------|----------------------|
|  |    | 5/2 Single solenoid - Spring return | 02 - 18 mm | 130                  | <b>DX02-621-951M</b> |
|  |   | 01 - 26mm                           | 170        | <b>DX01-621-951M</b> |                      |
|  |  | 5/2 Single solenoid - Differential  | 02 - 18 mm | 130                  | <b>DX02-651-951M</b> |
|  |   | 01 - 26mm                           | 170        | <b>DX01-651-951M</b> |                      |
|  |  | 5/2 Double solenoid                 | 02 - 18 mm | 130                  | <b>DX02-606-951M</b> |
|  |   | 01 - 26mm                           | 170        | <b>DX01-606-951M</b> |                      |
|  |  | 5/3 Closed Centre (APB)             | 02 - 18 mm | 130                  | <b>DX02-616-951M</b> |
|  |   | 01 - 26mm                           | 170        | <b>DX01-616-951M</b> |                      |
|  |  | 5/3 Vented Center                   | 02 - 18 mm | 160                  | <b>DX02-611-951M</b> |
|  |   | 01 - 26mm                           | 170        | <b>DX01-611-951M</b> |                      |

Solenoid connectors & cable plugs to be ordered separately. See solenoid section

## Isomax - ISO 15407-1 - Sizes 02 &amp; 01

## Without 15 mm DIN C solenoid valve operator

| Symbol  | Description   | Size                                | Weight (g) | Order code         |                    |
|---|---|-------------------------------------|------------|--------------------|--------------------|
|  |  | 5/2 Single solenoid - Spring return | 02 - 18 mm | 130                | <b>DX02-621-60</b> |
|   |   | 01 - 26mm                           | 170        | <b>DX01-621-60</b> |                    |
|   |  | 5/2 Single solenoid - Differential  | 02 - 18 mm | 130                | <b>DX02-651-60</b> |
|   |   | 01 - 26mm                           | 170        | <b>DX01-651-60</b> |                    |
|   |  | 5/2 Double solenoid                 | 02 - 18 mm | 130                | <b>DX02-606-60</b> |
|   |   | 01 - 26mm                           | 170        | <b>DX01-606-60</b> |                    |
|   |  | 5/3 Closed Centre (APB)             | 02 - 18 mm | 130                | <b>DX02-616-60</b> |
|   |   | 01 - 26mm                           | 170        | <b>DX01-616-60</b> |                    |
|   |  | 5/3 Vented Center                   | 02 - 18 mm | 160                | <b>DX02-611-60</b> |
|   |   | 01 - 26mm                           | 170        | <b>DX01-611-60</b> |                    |

15mm solenoid valve operator, solenoid connectors & cable plug to be ordered separately. See solenoid section

Ceramic slide valves for maximum operational life. Solenoid or air pilot operated with a wide choice of bases and manifolds. Vacuum to 12 bar general applications.

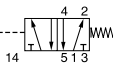
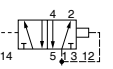
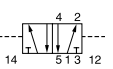
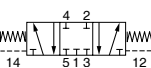
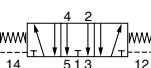
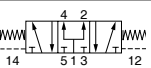
- Size 1, 2 and 3
- Ceramic technology for long life operation
- From vacuum up to 12 bar applications
- Internal or external pilot supply with same valves
- M12 on each coil
- Common M12



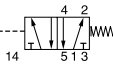
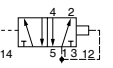
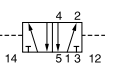
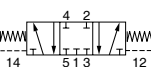
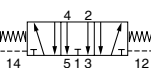
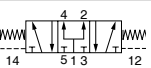
 **For ATEX specific products contact Sales Office**

**Isomax - ISO 5599-1 - Sizes 1, 2 & 3  
Pneumatic remote pilot operated  
With direct valve spool manual override**

| Operation information |                      |            |            |
|-----------------------|----------------------|------------|------------|
| Working pressure :    | -0,9 to 12 bar       |            |            |
| Working temperature : | -10 to +60°C         |            |            |
|                       | <b>DX1</b>           | <b>DX2</b> | <b>DX3</b> |
| Flow (Qmax.) :        | 1680 l/min           | 3640 l/min | 6420 l/min |
| Flow (Qn.) :          | 1150 l/min           | 2330 l/min | 4050 l/min |
| ATEX approval:        | CE Ex II 2 GD c 85°C |            |            |

| Symbol  | Description                   | Size      | Weight (g) | Order code        |
|---|-------------------------------|-----------|------------|-------------------|
|   | 5/2 Air pilot - Spring return | 1 - 43 mm | 350        | <b>DX1-421-70</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-421-70</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-421-70</b> |
|  | 5/2 Air pilot - Differential  | 1 - 43 mm | 350        | <b>DX1-451-70</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-451-70</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-451-70</b> |
|  | 5/2 Double air pilot          | 1 - 43 mm | 350        | <b>DX1-406-70</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-406-70</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-406-70</b> |
|  | 5/3 Closed Center (APB)       | 1 - 43 mm | 350        | <b>DX1-416-70</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-416-70</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-416-70</b> |
|  | 5/3 Vented Center             | 1 - 43 mm | 350        | <b>DX1-411-70</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-411-70</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-411-70</b> |
|  | 5/3 Pressurised Center        | 1 - 43 mm | 350        | <b>DX1-413-70</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-413-70</b> |

**Isomax - ISO 5599-1 - Sizes 1, 2 & 3  
Pneumatic remote pilot operated  
Without direct valve spool manual override**


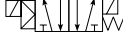

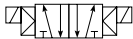


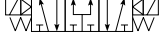
| Symbol  | Description                   | Size      | Weight (g) | Order code        |
|---|-------------------------------|-----------|------------|-------------------|
|  | 5/2 Air pilot - Spring return | 1 - 43 mm | 350        | <b>DX1-421-60</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-421-60</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-421-60</b> |
|  | 5/2 Air pilot - Differential  | 1 - 43 mm | 350        | <b>DX1-451-60</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-451-60</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-451-60</b> |
|  | 5/2 Double air pilot          | 1 - 43 mm | 350        | <b>DX1-406-60</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-406-60</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-406-60</b> |
|  | 5/3 Closed Center (APB)       | 1 - 43 mm | 350        | <b>DX1-416-60</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-416-60</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-416-60</b> |
|  | 5/3 Vented Center             | 1 - 43 mm | 350        | <b>DX1-411-60</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-411-60</b> |
|   |                               | 3 - 71 mm | 1100       | <b>DX3-411-60</b> |
|  | 5/3 Pressurised Center        | 1 - 43 mm | 350        | <b>DX1-413-60</b> |
|   |                               | 2 - 56 mm | 600        | <b>DX2-413-60</b> |



**Isomax - ISO 5599-1 - Sizes 1, 2 & 3**

**CNOMO operator with 30 x 30 DIN Form A / 24 Vdc / 2,7 W solenoid**

With non locking manual override on solenoid valve operator - Without direct valve spool manual override





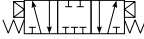

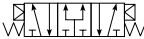
| Symbol   | Description  | Size      | Weight (g)          | Order code          |
|--|--|-----------|---------------------|---------------------|
|                             | 5/2 Single solenoid - Spring return<br> | 1 - 43 mm | 500                 | <b>DX1-621-BL49</b> |
|  |  | 2 - 56 mm | 750                 | <b>DX2-621-BL49</b> |
|  |  | 3 - 71 mm | 1250                | <b>DX3-621-BL49</b> |
|  | 5/2 Single solenoid - Differential<br>  | 1 - 43 mm | 500                 | <b>DX1-651-BL49</b> |
|  |  | 2 - 56 mm | 750                 | <b>DX2-651-BL49</b> |
|  |  | 3 - 71 mm | 1250                | <b>DX3-651-BL49</b> |
|  | 5/2 Double solenoid<br>                 | 1 - 43 mm | 650                 | <b>DX1-606-BL49</b> |
|  |  | 2 - 56 mm | 900                 | <b>DX2-606-BL49</b> |
|  |  | 3 - 71 mm | 1400                | <b>DX3-606-BL49</b> |
| 5/3 Closed Center (APB)<br> | 1 - 43 mm  | 560       | <b>DX1-616-BL49</b> |                     |
|  | 2 - 56 mm  | 900       | <b>DX2-616-BL49</b> |                     |
|  | 3 - 71 mm  | 1400      | <b>DX3-616-BL49</b> |                     |
| 5/3 Vented Center<br>       | 1 - 43 mm  | 650       | <b>DX1-611-BL49</b> |                     |
|  | 2 - 56 mm  | 900       | <b>DX2-611-BL49</b> |                     |
|  | 3 - 71 mm  | 1400      | <b>DX3-611-BL49</b> |                     |
| 5/3 Pressurised Center<br> | 1 - 43 mm  | 650       | <b>DX1-613-BL49</b> |                     |
|  | 2 - 56 mm  | 900       | <b>DX2-613-BL49</b> |                     |

Solenoid connectors & cable plug to be ordered separately. See solenoid section

**Isomax - ISO 5599-1 - Sizes 1, 2 & 3**

**CNOMO operator without coil**

With non locking manual override on solenoid valve operator - Without direct valve spool manual override





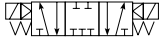
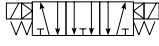
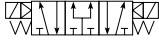
| Symbol   | Description  | Size      | Weight (g)        | Order code        |
|--|--|-----------|-------------------|-------------------|
|                             | 5/2 Single solenoid - Spring return<br> | 1 - 43 mm | 400               | <b>DX1-621-BN</b> |
|  |  | 2 - 56 mm | 650               | <b>DX2-621-BN</b> |
|  |  | 3 - 71 mm | 1150              | <b>DX3-621-BN</b> |
|  | 5/2 Single solenoid - Differential<br>  | 1 - 43 mm | 400               | <b>DX1-651-BN</b> |
|  |  | 2 - 56 mm | 650               | <b>DX2-651-BN</b> |
|  |  | 3 - 71 mm | 1150              | <b>DX3-651-BN</b> |
|  | 5/2 Double solenoid<br>                 | 1 - 43 mm | 550               | <b>DX1-606-BN</b> |
|  |  | 2 - 56 mm | 800               | <b>DX2-606-BN</b> |
|  |  | 3 - 71 mm | 1300              | <b>DX3-606-BN</b> |
| 5/3 Closed Center (APB)<br> | 1 - 43 mm  | 550       | <b>DX1-616-BN</b> |                   |
|  | 2 - 56 mm  | 800       | <b>DX2-616-BN</b> |                   |
|  | 3 - 71 mm  | 1300      | <b>DX3-616-BN</b> |                   |
| 5/3 Vented Center<br>       | 1 - 43 mm  | 550       | <b>DX1-611-BN</b> |                   |
|  | 2 - 56 mm  | 800       | <b>DX2-611-BN</b> |                   |
|  | 3 - 71 mm  | 1300      | <b>DX3-611-BN</b> |                   |
| 5/3 Pressurised Center<br>  | 1 - 43 mm  | 550       | <b>DX1-613-BN</b> |                   |
|  | 2 - 56 mm  | 800       | <b>DX2-613-BN</b> |                   |

30 x 30 DIN Form A or 22 x 30 DIN Form B coil & coil connectors to be ordered separately. See solenoid section

## Isomax - ISO 5599-1 - Sizes 1, 2 &amp; 3

## Valve alone without operator





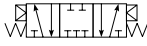

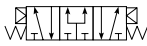
## With direct valve spool manual override

| Symbol   | Description   | Size                          | Weight (g)        | Order code        |                   |
|--|---|-------------------------------|-------------------|-------------------|-------------------|
|    |  | 5/2 Air pilot - Spring return | 1 - 43 mm         | 350               | <b>DX1-621-70</b> |
|  |   | 2 - 56 mm                     | 600               | <b>DX2-621-70</b> |                   |
|  |   | 3 - 71 mm                     | 1100              | <b>DX3-621-70</b> |                   |
|  |  | 5/2 Air pilot - Differential  | 1 - 43 mm         | 350               | <b>DX1-651-70</b> |
|  |   | 2 - 56 mm                     | 600               | <b>DX2-651-70</b> |                   |
|  |   | 3 - 71 mm                     | 1100              | <b>DX3-651-70</b> |                   |
|  |  | 5/2 Double air pilot          | 1 - 43 mm         | 350               | <b>DX1-606-70</b> |
|  |   | 2 - 56 mm                     | 600               | <b>DX2-606-70</b> |                   |
|  |   | 3 - 71 mm                     | 1100              | <b>DX3-606-70</b> |                   |
|   | 5/3 Closed Center (APB)   | 1 - 43 mm                     | 350               | <b>DX1-616-70</b> |                   |
|  | 2 - 56 mm   | 600                           | <b>DX2-616-70</b> |                   |                   |
|  | 3 - 71 mm   | 1100                          | <b>DX3-616-70</b> |                   |                   |
|   | 5/3 Vented Center   | 1 - 43 mm                     | 350               | <b>DX1-611-70</b> |                   |
|  | 2 - 56 mm   | 600                           | <b>DX2-611-70</b> |                   |                   |
|  | 3 - 71 mm   | 1100                          | <b>DX3-611-70</b> |                   |                   |
|  | 5/3 Pressurised Center  | 1 - 43 mm                     | 350               | <b>DX1-613-70</b> |                   |
|  | 2 - 56 mm   | 600                           | <b>DX2-613-70</b> |                   |                   |








## Isomax - ISO 5599-1 - Sizes 1, 2 &amp; 3

## Valve alone without operator

## Without direct valve spool manual override


| Symbol  | Description   | Size                          | Weight (g)        | Order code        |                   |
|---|---|-------------------------------|-------------------|-------------------|-------------------|
|   |  | 5/2 Air pilot - Spring return | 1 - 43 mm         | 350               | <b>DX1-621-60</b> |
|   |   | 2 - 56 mm                     | 600               | <b>DX2-621-60</b> |                   |
|   |   | 3 - 71 mm                     | 1100              | <b>DX3-621-60</b> |                   |
|   |  | 5/2 Air pilot - Differential  | 1 - 43 mm         | 350               | <b>DX1-621-60</b> |
|   |   | 2 - 56 mm                     | 600               | <b>DX2-621-60</b> |                   |
|   |   | 3 - 71 mm                     | 1100              | <b>DX3-621-60</b> |                   |
|   |  | 5/2 Double air pilot          | 1 - 43 mm         | 350               | <b>DX1-606-60</b> |
|   |   | 2 - 56 mm                     | 600               | <b>DX2-606-60</b> |                   |
|   |   | 3 - 71 mm                     | 1100              | <b>DX3-606-60</b> |                   |
|  | 5/3 Closed Center (APB)   | 1 - 43 mm                     | 350               | <b>DX1-616-60</b> |                   |
|   | 2 - 56 mm   | 600                           | <b>DX2-616-60</b> |                   |                   |
|   | 3 - 71 mm   | 1100                          | <b>DX3-616-60</b> |                   |                   |
|  | 5/3 Vented Center   | 1 - 43 mm                     | 350               | <b>DX1-611-60</b> |                   |
|   | 2 - 56 mm   | 600                           | <b>DX2-611-60</b> |                   |                   |
|   | 3 - 71 mm   | 1100                          | <b>DX3-611-60</b> |                   |                   |
|  | 5/3 Pressurised Center  | 1 - 43 mm                     | 350               | <b>DX1-613-60</b> |                   |
|   | 2 - 56 mm   | 600                           | <b>DX2-613-60</b> |                   |                   |

**15 mm DIN Form C (8mm spacing) pilot solenoid valve - Standard version**

|  | Manual Overrides |       |   | Flush (Not Extended)                     |  | Extended                                 |  |                   |
|--|------------------|-------|---|--|--|--|--|-------------------|
|  | Voltage          | W (g) | Without Manual Override<br>Order code   | Blue Override, non locking<br>Order code | Yellow Override, Locking<br>Order code | Blue Override, non locking<br>Order code | Yellow Override, Locking<br>Order code |                   |
|  <p>Pins/Air Opposite (Pins UP)</p> | 12 Vdc           | 38    |  <b>P2E-KV32B0</b> | <b>P2E-KV32B1</b>                        | <b>P2E-KV32B2</b>                      | <b>P2E-KV32B3</b>                        | <b>P2E-KV32B4</b>                      |                   |
|  | 24 Vdc           | 38    |  <b>P2E-KV32C0</b> | <b>P2E-KV32C1</b>                        | <b>P2E-KV32C2</b>                      | <b>P2E-KV32C3</b>                        | <b>P2E-KV32C4</b>                      |                   |
|  | 48 Vdc           | 38    |  <b>P2E-KV32D0</b> | <b>P2E-KV32D1</b>                        | <b>P2E-KV32D2</b>                      | <b>P2E-KV32D3</b>                        | <b>P2E-KV32D4</b>                      |                   |
|  | 24 Vac 50Hz      | 38    |  <b>P2E-KV31C0</b> | <b>P2E-KV31C1</b>                        | <b>P2E-KV31C2</b>                      | <b>P2E-KV31C3</b>                        | <b>P2E-KV31C4</b>                      |                   |
|  | 48 Vac 50/60Hz   | 38    |  <b>P2E-KV34D0</b> | <b>P2E-KV34D1</b>                        | <b>P2E-KV34D2</b>                      | <b>P2E-KV34D3</b>                        | <b>P2E-KV34D4</b>                      |                   |
|  | 115 Vac 50Hz     | 38    |  <b>P2E-KV31F0</b> | <b>P2E-KV31F1</b>                        | <b>P2E-KV31F2</b>                      | <b>P2E-KV31F3</b>                        | <b>P2E-KV31F4</b>                      |                   |
|  | 120 Vac 60 Hz    |       |   |  |  |  |  |                   |
|  | 230 Vac 50Hz     |       |   |  |  |  |  |                   |
|  | 240 Vac 60 Hz    |       |   | <b>P2E-KV31J0</b>                        | <b>P2E-KV31J1</b>                      | <b>P2E-KV31J2</b>                        | <b>P2E-KV31J3</b>                      | <b>P2E-KV31J4</b> |







Mounting screws included with the DX valve body

**15mm DIN Form C (8mm spacing) pilot solenoid valve - Mobile version**

|  | Voltage  | W (g) | Without Manual Override | Not Extended Blue Override non locking flush |
|--|----------|-------|-------------------------|--|
|  |          |       | Order code              | Order code                                   |
|  | 12 Vdc   | 38    | <b>P2E-MV35B0</b>       | <b>P2E-MV35B1</b>                            |
|  | 24 Vdc   | 38    | <b>P2E-MV35C0</b>       | <b>P2E-MV35C1</b>                            |
|  | 37,5 Vdc | 38    | <b>P2E-MV35W0</b>       | <b>P2E-MV35W1</b>                            |
|  | 48 Vdc   | 38    | <b>P2E-MV35D0</b>       | <b>P2E-MV35D1</b>                            |
|  | 72 Vdc   | 38    | <b>P2E-MV35T0</b>       | <b>P2E-MV35T1</b>                            |
|  | 78 Vdc   | 38    | <b>P2E-MV35Y0</b>       | <b>P2E-MV35Y1</b>                            |
|  | 96 Vdc   | 38    | <b>P2E-MV35V0</b>       | <b>P2E-MV35V1</b>                            |
|  | 110 Vdc  | 38    | <b>P2E-MV35E0</b>       | <b>P2E-MV35E1</b>                            |



Mounting screws included with the DX valve body

**15mm DIN Form C (8mm spacing) pilot solenoid valve - Food Industry version**

|   | Voltage                   | W (g) | Without Manual Override   | Not Extended                                  |   | Extended                                      |   |
|---|---------------------------|-------|---|---|---|---|---|
|   |                           |       | Order code  | Blue Override non locking flush<br>Order code | Yellow Override Locking flush<br>Order code | Blue Override non locking flush<br>Order code | Yellow Override Locking flush<br>Order code |
|  | 24 Vdc                    | 38    |  <b>P2E-QV32C0</b> | <b>P2E-QV32C1</b>                             | <b>P2E-QV32C2</b>                           | <b>P2E-QV32C3</b>                             | <b>P2E-QV32C4</b>                           |
|   | 48 Vdc                    | 38    |  <b>P2E-QV32D0</b> | <b>P2E-QV32D1</b>                             | <b>P2E-QV32D2</b>                           |   |   |
|   | 24 Vac 50 Hz              | 38    |  <b>P2E-QV31C0</b> | <b>P2E-QV31C1</b>                             | <b>P2E-QV31C2</b>                           | <b>P2E-QV31C3</b>                             | <b>P2E-QV31C4</b>                           |
|   | 48 Vac 50/60Hz            | 38    |  <b>P2E-QV34D0</b> | <b>P2E-QV34D1</b>                             | <b>P2E-QV34D2</b>                           |   |   |
|   | 115 Vac 50Hz/120 Vac 60Hz | 38    |  <b>P2E-QV31F0</b> | <b>P2E-QV31F1</b>                             | <b>P2E-QV31F2</b>                           | <b>P2E-QV31F3</b>                             | <b>P2E-QV31F4</b>                           |
|   | 230 Vac 50Hz              | 38    | <b>P2E-QV31J0</b>   | <b>P2E-QV31J1</b>                             | <b>P2E-QV31J2</b>                           | <b>P2E-QV31J3</b>                             | <b>P2E-QV31J4</b>                           |
|   | 240 Vac 60Hz/             |       |   |   |   |   |   |




Mounting screws included with the DX valve body

**Solenoid Connectors 15 mm DIN Form C / ISO15217**


| Description   | Characteristic | Visualisation  | Cable length | W (g)     | Order code      |                  |
|---|----------------|----------------|--------------|-----------|-----------------|------------------|
|  <p>With large headed screw suitable for mounting in inaccessible or recess position</p> | Standard IP65  | No LED         | No cable     | 20        | <b>P8C-C</b>    |                  |
|   |                | 24 Vdc LED     | No cable     | 20        | <b>P8C-C26C</b> |                  |
|   |                | 110 Vac LED    | No cable     | 20        | <b>P8C-C21E</b> |                  |
|  <p>With standard screw</p>  | Standard IP65  | No LED         | No cable     | 15        | <b>P8C-D</b>    |                  |
|   |                |                | No cable     | 2 meters  | 115             | <b>P8L-C2</b>    |
|   |                |                | No cable     | 5 meters  | 240             | <b>P8L-C5</b>    |
|   |                | 24 Vdc/Vac LED | No cable     | 15        | <b>P8C-D26C</b> |                  |
|   |                |                | No cable     | 2 meters  | 170             | <b>P8L-C226C</b> |
|   |                |                | No cable     | 5 meters  | 240             | <b>P8L-C526C</b> |
|   |                |                | No cable     | 10 meters | 440             | <b>P8L-CA26C</b> |
|   |                | 110 Vac LED    | No cable     | 115       | <b>P8C-D21E</b> |                  |
|   |                |                | No cable     | 2 meters  | 115             | <b>P8L-C221E</b> |
|   |                |                | No cable     | 5 meters  | 230             | <b>P8L-C521E</b> |

In accordance with the EU Machine Directive, EN 983, solenoid valves with manual override should have spring-return operating arms for safety.


### 3/2 N.C. CNOMO Operator - Without Coil

| Description   | Manual override    | W (g) | Order code       |
|---|--------------------|-------|------------------|
|  Solenoid operator for 30 x 30 DIN Form A Coil<br>Dedicated to Low Power 2,5W / 3VA Coil    | No manual override | 65    | <b>P2FP23N4A</b> |
|   | Pulse non locking  | 65    | <b>P2FP23N4B</b> |
|   | Locking            | 65    | <b>P2FP23N4C</b> |
|  Solenoid operator for 30 x 30 DIN Form A Coil<br>Dedicated to High Power 4,5W / 5VA Coil   | No manual override | 65    | <b>EV3000100</b> |
|   | Pulse non locking  | 65    | <b>EV3001100</b> |
|   | Locking            | 65    | <b>EV3003100</b> |
|  Solenoid operator for 22 x 30 DIN Form B Coil<br>Dedicated to Low Power 2,5W / 4,5VA Coil | No manual override | 65    | <b>1EV0*310</b>  |
|   | Pulse non locking  | 65    | <b>1EV1*310</b>  |
|   | Locking            | 65    | <b>1EV3*310</b>  |



### 30 x 30 DIN Form A and 22 x 30 DIN Form B Coils for CNOMO Operator

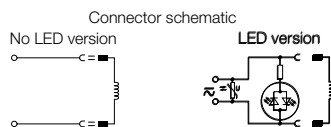
| Voltage   | W (g)                         | 30 x 30 DIN Form A                                     |   | 22 x 30 DIN Form B                               |            |                 |
|---|-------------------------------|--|---|--|------------|-----------------|
|   |                               | Low Power<br>(to be used with P2FP23N4x)<br>Order code | High Power<br>(to be used with EV300x100)<br>Order code | Low Power<br>(to be used with 1EVx*310)<br>W (g) | Order code |                 |
|  | 12 Vdc                        | 105  | <b>P2FCA445</b>   | <b>P2FCA545</b>                                  | 93         | <b>P2FCB345</b> |
|   | 24 Vdc                        | 105  | <b>P2FCA449</b>   | <b>P2FCA549</b>                                  | 93         | <b>P2FCB349</b> |
|   | 48 Vdc                        | 105  | <b>P2FCA451</b>   | <b>P2FCA551</b>                                  | 93         | <b>P2FCB351</b> |
|   | 12 Vac 50/60 Hz               | 105  | <b>P2FCA440</b>   | <b>P2FCA540</b>                                  | 93         | <b>P2FCB340</b> |
|   | 24 Vac 50/60 Hz               | 105  | <b>P2FCA445</b>   | <b>P2FCA545</b>                                  | 93         | <b>P2FCB345</b> |
|   | 48 Vac 50/60 Hz               | 105  | <b>P2FCA449</b>   | <b>P2FCA549</b>                                  | 93         | <b>P2FCB349</b> |
|   | 110 Vac 50 Hz / 120 Vac 60 Hz | 105  | <b>P2FCA453</b>   | <b>P2FCA553</b>                                  | 93         | <b>P2FCB353</b> |
|   | 230 Vac 50 Hz / 240 Vac 60 Hz | 105  | <b>P2FCA457</b>   | <b>P2FCA557</b>                                  | 93         | <b>P2FCB357</b> |

### Spare Solenoid Nuts

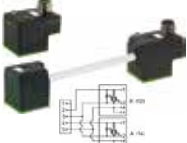
| Description   | Usage                | W (g)                                | Order code |               |
|---|----------------------|--------------------------------------|------------|---------------|
|  | Plastic knurled nut  | For valve requiring Captured exhaust | 5          | <b>P2FNPA</b> |
|   | Diffuser plastic nut | For valve requiring Vented exhaust   | 5          | <b>P2FNDA</b> |

### 30 x 30 DIN Form A and 22 x 30 DIN Form B Solenoid Connectors

| Description  | Characteristic | Visualisation  | Cable length           | W (g) | Order code             |
|--|----------------|----------------|------------------------|-------|------------------------|
|  30 x 30 DIN Form A connector<br>With standard screw | Standard IP65  | No LED         | No cable               | 15    | <b>3EV290V10</b>       |
|  |                | 24 Vdc/Vac LED | No cable               | 30    | <b>3EV290V20-24</b>    |
|  |                |                | 5 meters               | 355   | <b>3EV290V20-24L5</b>  |
|  |                | 110 Vac LED    | No cable               | 30    | <b>3EV290V20-110</b>   |
|  |                |                | 5 meters               | 470   | <b>3EV290V20-110L5</b> |
|  |                | 230 Vac LED    | No cable               | 30    | <b>3EV290V20-230</b>   |
| 5 meters   | 350            |                | <b>3EV290V20-230L5</b> |       |                        |
|  22 x 30 DIN Form B connector<br>With standard screw | Standard IP65  | No LED         | No cable               | 15    | <b>3EV10V10</b>        |
|  |                | 24 Vdc/Vac LED | No cable               | 20    | <b>3EV10V20-24</b>     |
|  |                |                | 5 meters               | 350   | <b>3EV10V20-24L5</b>   |
|  |                | 110 Vac LED    | No cable               | 25    | <b>3EV10V20-110</b>    |
|  |                |                | 5 meters               | 355   | <b>3EV10V20-110L5</b>  |
|  |                | 230 Vac LED    | No cable               | 25    | <b>3EV10V20-230</b>    |
| 5 meters   | 360            |                | <b>3EV10V20-230L5</b>  |       |                        |



### M12 Adaptor for 30 x 30 DIN Form A Coil

| Description   | Characteristics | Visualisation | Cable                       | W (g)           | Order code       |
|---|-----------------|---------------|-----------------------------|-----------------|------------------|
|  M12 Connector for one coil | 24 V AC/DC - 4A | LED           | No cable                    | 30              | <b>P8C-A626C</b> |
|   |                 |               | M12 Connector for two coils | 24 V AC/DC - 4A | LED              |

**Note:** Solenoid pilot operators are fitted to the ISO valve range.  
 Order the above part numbers for spares.  
 The operators are supplied with mounting screws and interface 'O' rings.  
**Coils and connectors must be ordered separately.**

# H Series ISO Valves

A complete range of pneumatic  
**ISO valves**



## Flexibility, fast response, and high performance

Parker's H Series ISO valve line offers a complete ISO valve package, from ISO 15407 18mm and 26mm valves, to the larger ISO 5599 size 1, 2, and 3 valves, all available in either plug-in -2 or individual connector -1 options.

- **ISO 15407-1 & 15407-2 Sizes 02 & 01 and ISO 5599-1 & 5599-2 Sizes 1, 2 & 3**
- **From vacuum up to 10 bar applications**
- **Internal or external pilot supply with same valves**

## H Series ISO Valves - Heavy Duty Applications

### Market Applications

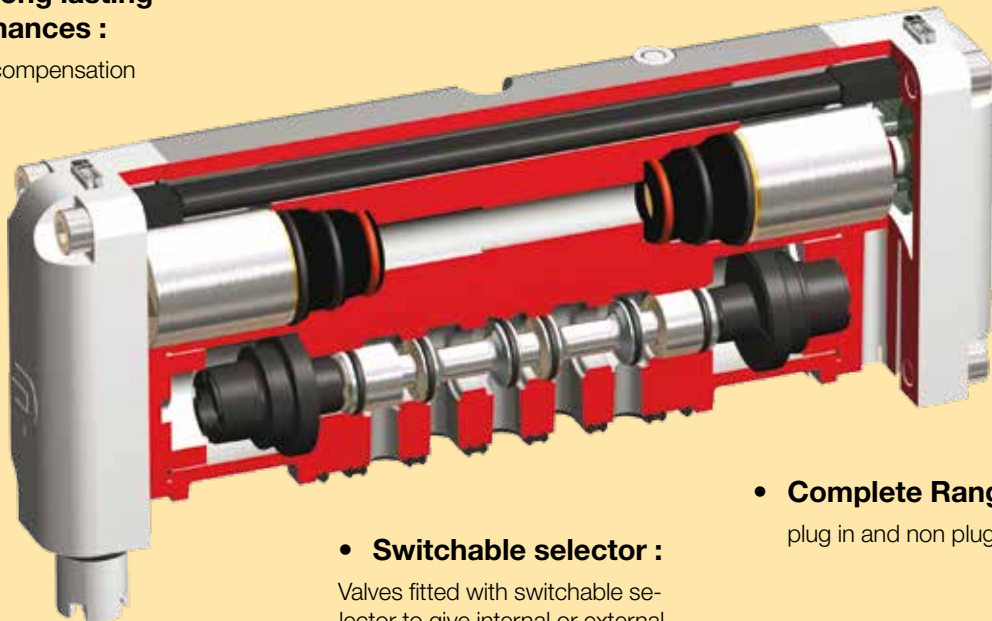
- Automotive
- Machine tools
- Mobile



- **Stable long lasting performances :**  
due to wear compensation

- **Excellent reliability :**  
Long life in excess of 30 million operations.

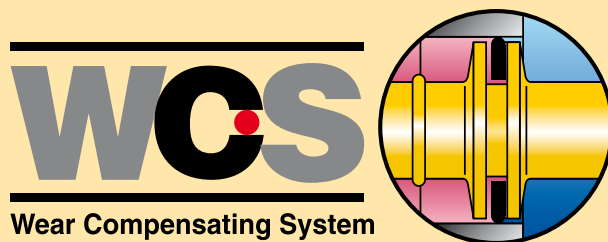
- **Heavy Duty Metal Body**



- **Complete Range :**  
plug in and non plug in

- **Switchable selector :**  
Valves fitted with switchable selector to give internal or external pilot supply

- **WCS Spool Technology**




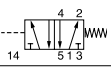

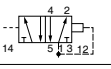

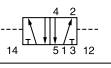

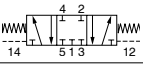

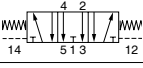

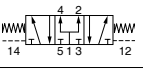
Solenoid or air pilot actuation. Vacuum to 10 bar heavy duty applications.

- Size HA and HB (26mm and 18mm)
- Heavy duty and corrosion resistant body
- Internal led & rectifier
- Internal or external pilot supply with same valve
- M12 common wiring


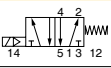

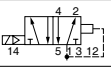

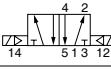

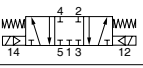

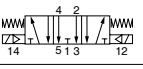

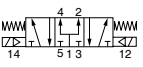


| Operation information |                |                |
|-----------------------|----------------|----------------|
| Working pressure :    | 2,0 to 10 bar  |                |
| Working temperature : | -15 to +50°C   |                |
|                       | <b>Size 02</b> | <b>Size 01</b> |
| Flow (Qmax.) :        | 10,8 l/s       | 25,3 l/s       |
| Flow (Qn) :           | 6,5 l/s        | 15,3 l/s       |

**H Series ISO 15407-1 - Sizes 02 & 01  
Pneumatic remote pilot operated**

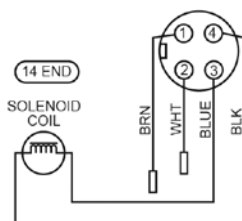
|   | Symbol  | Description                   | Size       | Weight (g) | Order code         |
|---|---|-------------------------------|------------|------------|--------------------|
|    |    | 5/2 Air pilot - Spring return | 02 - 18 mm | 150        | <b>HBFWX000XXA</b> |
|   |   |                               | 01 - 26 mm | 250        | <b>HAFWX000XXA</b> |
|    |    | 5/2 Air pilot - Differential  | 02 - 18 mm | 150        | <b>HB3WX000XXA</b> |
|   |   |                               | 01 - 26 mm | 250        | <b>HA3WX000XXA</b> |
|    |    | 5/2 Double air pilot          | 02 - 18 mm | 165        | <b>HB4WX000XXA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA4WX000XXA</b> |
|  |   | 5/3 Closed Center (APB)       | 02 - 18 mm | 165        | <b>HB8WX000XXA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA8WX000XXA</b> |
|  |  | 5/3 Vented Center             | 02 - 18 mm | 165        | <b>HB9WX000XXA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA9WX000XXA</b> |
|  |  | 5/3 Pressurised Center        | 02 - 18 mm | 165        | <b>HB0WX000XXA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA0WX000XXA</b> |

**H Series ISO 15407-1 - Sizes 02 & 01  
With 24 Vdc / 1 W built-in coil - Integrated M12 connector  
Oriented side 14, LED & Surge suppressor**

|   | Symbol  | Description                   | Size       | Weight (g) | Order code             |
|---|---|-------------------------------|------------|------------|------------------------|
|  |  | 5/2 Air pilot - Spring return | 02 - 18 mm | 150        | <b>HBEXWBG2G9000FA</b> |
|   |   |                               | 01 - 26 mm | 250        | <b>HAEXWBG2G9000FA</b> |
|  |  | 5/2 Air pilot - Differential  | 02 - 18 mm | 150        | <b>HB1WXBG2G9000FA</b> |
|   |   |                               | 01 - 26 mm | 250        | <b>HA1WXBG2G9000FA</b> |
|  |  | 5/2 Double air pilot          | 02 - 18 mm | 165        | <b>HB2WXBG2G9000FA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA2WXBG2G9000FA</b> |
|  |  | 5/3 Closed Center (APB)       | 02 - 18 mm | 165        | <b>HB5WXBG2G9000FA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA5WXBG2G9000FA</b> |
|  |  | 5/3 Vented Center             | 02 - 18 mm | 165        | <b>HB6WXBG2G9000FA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA6WXBG2G9000FA</b> |
|  |  | 5/3 Pressurised Center        | 02 - 18 mm | 165        | <b>HB7WXBG2G9000FA</b> |
|   |   |                               | 01 - 26 mm | 265        | <b>HA7WXBG2G9000FA</b> |

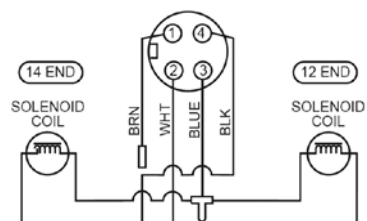
**ISO 20401  
4-Pin Male / Single Solenoid**

4-PIN Micro  
(Top Cover)



**ISO 20401  
4-Pin Male / Double Solenoid**

4-PIN Micro  
(Top Cover)



Heavy duty valve. Solenoid or air pilot. Vacuum to 10 bar. Wide choice of electrical connections.

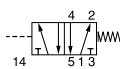
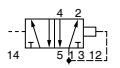
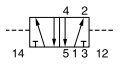
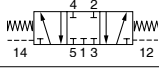

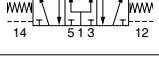
- Size 1, 2, 3
- Heavy duty and corrosion resistant body
- Vacuum to 10 bar
- Internal or external pilot supply with same valve
- Din A, M12, M23 connections



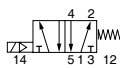
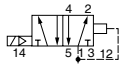
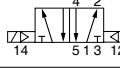
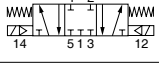
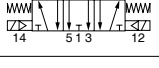
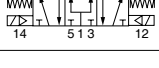
**Operation information**

|                       |               |               |               |
|-----------------------|---------------|---------------|---------------|
| Working pressure :    | 2,0 to 10 bar |               |               |
| Working temperature : | -15 to +50°C  |               |               |
|                       | <b>Size 1</b> | <b>Size 2</b> | <b>Size 3</b> |
| Flow (Qmax.) :        | 34,5 l/s      | 69,0 l/s      | 130,8 l/s     |
| Flow (Qn) :           | 20,8 l/s      | 42,0 l/s      | 83,7 l/s      |

**H Series ISO 5599-1 - Sizes 1, 2 & 3  
Pneumatic Remote Pilot operated valve**

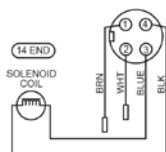
| Symbol  | Description                         | Size      | Weight (g) | Order code         |
|---|-------------------------------------|-----------|------------|--------------------|
|    | 5/2 Single solenoid - Spring return | 1 - 43 mm | 600        | <b>H1FWX000XXD</b> |
|   |                                     | 2 - 56 mm | 1020       | <b>H2FWX000XXD</b> |
|   |                                     | 3 - 71 mm | 1300       | <b>H3FWX000XXD</b> |
|    | 5/2 Single solenoid - Differential  | 1 - 43 mm | 600        | <b>H13WX000XXD</b> |
|   |                                     | 2 - 56 mm | 1020       | <b>H23WX000XXD</b> |
|   |                                     | 3 - 71 mm | 1300       | <b>H33WX000XXD</b> |
|    | 5/2 Double solenoid                 | 1 - 43 mm | 600        | <b>H14WX000XXD</b> |
|   |                                     | 2 - 56 mm | 1020       | <b>H24WX000XXD</b> |
|   |                                     | 3 - 71 mm | 1300       | <b>H34WX000XXD</b> |
|   | 5/3 Closed Center (APB)             | 1 - 43 mm | 600        | <b>H18WX000XXD</b> |
|   |                                     | 2 - 56 mm | 1020       | <b>H28WX000XXD</b> |
|   |                                     | 3 - 71 mm | 1300       | <b>H38WX000XXD</b> |
|  | 5/3 Vented Center                   | 1 - 43 mm | 600        | <b>H19WX000XXD</b> |
|   |                                     | 2 - 56 mm | 1020       | <b>H29WX000XXD</b> |
|   |                                     | 3 - 71 mm | 1300       | <b>H39WX000XXD</b> |
|  | 5/3 Pressurised Center              | 1 - 43 mm | 600        | <b>H10WX000XXD</b> |
|   |                                     | 2 - 56 mm | 1020       | <b>H20WX000XXD</b> |
|   |                                     | 3 - 71 mm | 1300       | <b>H30WX000XXD</b> |

**H Series ISO 5599-1 - Sizes 1, 2 & 3  
CNOMO operator with Central M12 connector / 24 Vdc / 2,7 W solenoid**

| Symbol  | Description                         | Size      | Weight (g) | Order code             |
|---|-------------------------------------|-----------|------------|------------------------|
|  | 5/2 Single solenoid - Spring return | 1 - 43 mm | 770        | <b>H1EWXBG2B9000FD</b> |
|   |                                     | 2 - 56 mm | 1290       | <b>H2EWXBG2B9000FD</b> |
|   |                                     | 3 - 71 mm | 1570       | <b>H3EWXBG2B9000FD</b> |
|  | 5/2 Single solenoid - Differential  | 1 - 43 mm | 770        | <b>H11WXBG2B9000FD</b> |
|   |                                     | 2 - 56 mm | 1290       | <b>H21WXBG2B9000FD</b> |
|   |                                     | 3 - 71 mm | 1570       | <b>H31WXBG2B9000FD</b> |
|  | 5/2 Double solenoid                 | 1 - 43 mm | 1040       | <b>H12WXBG2B9000FD</b> |
|   |                                     | 2 - 56 mm | 1460       | <b>H22WXBG2B9000FD</b> |
|   |                                     | 3 - 71 mm | 1740       | <b>H32WXBG2B9000FD</b> |
|  | 5/3 Closed Center (APB)             | 1 - 43 mm | 1040       | <b>H15WXBG2B9000FD</b> |
|   |                                     | 2 - 56 mm | 1460       | <b>H25WXBG2B9000FD</b> |
|   |                                     | 3 - 71 mm | 1740       | <b>H35WXBG2B9000FD</b> |
|  | 5/3 Vented Center                   | 1 - 43 mm | 1040       | <b>H16WXBG2B9000FD</b> |
|   |                                     | 2 - 56 mm | 1460       | <b>H26WXBG2B9000FD</b> |
|   |                                     | 3 - 71 mm | 1740       | <b>H36WXBG2B9000FD</b> |
|  | 5/3 Pressurised Center              | 1 - 43 mm | 1040       | <b>H17WXBG2B9000FD</b> |
|   |                                     | 2 - 56 mm | 1460       | <b>H27WXBG2B9000FD</b> |
|   |                                     | 3 - 71 mm | 1740       | <b>H37WXBG2B9000FD</b> |

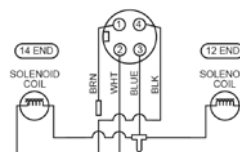
**ISO 20401  
4-Pin Male / Single Solenoid**

4-PIN Micro (Top Cover)




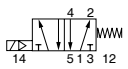
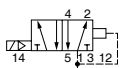
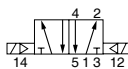

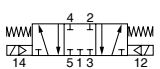
**ISO 20401  
4-Pin Male / Double Solenoid**

4-PIN Micro (Top Cover)




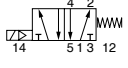
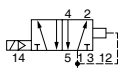
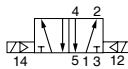
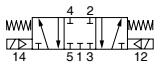



**H Series ISO 5599-1 - Sizes 1, 2 & 3  
CNOMO operator with 30 x 30 DIN Form A / 24 Vdc / 2,7 W solenoid**

| Symbol   | Description                         | Size      | Weight (g) | Order code         |
|--|-------------------------------------|-----------|------------|--------------------|
|   | 5/2 Single solenoid - Spring return | 1 - 43 mm | 770        | <b>H1EWXBBL49D</b> |
|  |                                     | 2 - 56 mm | 1190       | <b>H2EWXBBL49D</b> |
|  |                                     | 3 - 71 mm | 1470       | <b>H3EWXBBL49D</b> |
|   | 5/2 Single solenoid - Differential  | 1 - 43 mm | 770        | <b>H11WXBBL49D</b> |
|  |                                     | 2 - 56 mm | 1190       | <b>H21WXBBL49D</b> |
|  |                                     | 3 - 71 mm | 1470       | <b>H31WXBBL49D</b> |
|   | 5/2 Double solenoid                 | 1 - 43 mm | 940        | <b>H12WXBBL49D</b> |
|  |                                     | 2 - 56 mm | 1360       | <b>H22WXBBL49D</b> |
|  |                                     | 3 - 71 mm | 1640       | <b>H32WXBBL49D</b> |
|   | 5/3 Closed Center (APB)             | 1 - 43 mm | 940        | <b>H15WXBBL49D</b> |
|  |                                     | 2 - 56 mm | 1360       | <b>H25WXBBL49D</b> |
|  |                                     | 3 - 71 mm | 1640       | <b>H35WXBBL49D</b> |
|   | 5/3 Vented Center                   | 1 - 43 mm | 940        | <b>H16WXBBL49D</b> |
|  |                                     | 2 - 56 mm | 1360       | <b>H26WXBBL49D</b> |
|  |                                     | 3 - 71 mm | 1640       | <b>H36WXBBL49D</b> |
|  | 5/3 Pressurised Center              | 1 - 43 mm | 940        | <b>H17WXBBL49D</b> |
|  |                                     | 2 - 56 mm | 1360       | <b>H27WXBBL49D</b> |
|  |                                     | 3 - 71 mm | 1640       | <b>H37WXBBL49D</b> |


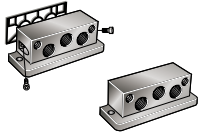


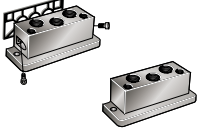


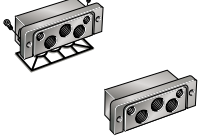


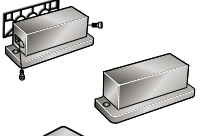


Solenoid connectors & cable plug to be ordered separately. See solenoid section

**H Series ISO 5599-1 - Sizes 1, 2 & 3  
CNOMO operator without coil**

| Symbol  | Description                         | Size      | Weight (g) | Order code         |
|---|-------------------------------------|-----------|------------|--------------------|
|  | 5/2 Single solenoid - Spring return | 1 - 43 mm | 650        | <b>H1EWXBBNXXD</b> |
|   |                                     | 2 - 56 mm | 1070       | <b>H2EWXBBNXXD</b> |
|   |                                     | 3 - 71 mm | 1350       | <b>H3EWXBBNXXD</b> |
|  | 5/2 Single solenoid - Differential  | 1 - 43 mm | 650        | <b>H11WXBBNXXD</b> |
|   |                                     | 2 - 56 mm | 1070       | <b>H21WXBBNXXD</b> |
|   |                                     | 3 - 71 mm | 1350       | <b>H31WXBBNXXD</b> |
|  | 5/2 Double solenoid                 | 1 - 43 mm | 700        | <b>H12WXBBNXXD</b> |
|   |                                     | 2 - 56 mm | 1120       | <b>H22WXBBNXXD</b> |
|   |                                     | 3 - 71 mm | 1400       | <b>H32WXBBNXXD</b> |
|  | 5/3 Closed Center (APB)             | 1 - 43 mm | 700        | <b>H15WXBBNXXD</b> |
|   |                                     | 2 - 56 mm | 1120       | <b>H25WXBBNXXD</b> |
|   |                                     | 3 - 71 mm | 1400       | <b>H35WXBBNXXD</b> |
|  | 5/3 Vented Center                   | 1 - 43 mm | 700        | <b>H16WXBBNXXD</b> |
|   |                                     | 2 - 56 mm | 1120       | <b>H26WXBBNXXD</b> |
|   |                                     | 3 - 71 mm | 1400       | <b>H36WXBBNXXD</b> |
|  | 5/3 Pressurised Center              | 1 - 43 mm | 700        | <b>H17WXBBNXXD</b> |
|   |                                     | 2 - 56 mm | 1120       | <b>H27WXBBNXXD</b> |
|   |                                     | 3 - 71 mm | 1400       | <b>H37WXBBNXXD</b> |

30 x 30 DIN Form A or 22 x 30 DIN Form B solenoid & solenoid connectors to be ordered separately. See solenoid section



Bottom ported manifold & End plate - ISO 15407-1 - Sizes 02 & 01

| Description  |   | Size  | Port Size  | Weight (g) | Order code         |                    |
|--|---|---|------------|------------|--------------------|--------------------|
|  | <b>Two valve position manifold</b>  | Int. pilot supply   | 02 - 18 mm | 1/8 BSPP   | 200                | <b>P2V-AM511PB</b> |
|  |   |   | 01 - 26 mm | 1/4 BSPP   | 400                | <b>P2V-BM512PB</b> |
|  | Including seal, fitting screws and plugs.   | Ext. pilot supply   | 02 - 18 mm | 1/8 BSPP   | 200                | <b>P2V-AM511NB</b> |
|  |   |   | 01 - 26 mm | 1/4 BSPP   | 400                | <b>P2V-BM512NB</b> |
|  | <b>Side ported</b>  |  Left end plate<br>Including seal and fitting screws | 02 - 18 mm | 1/4 BSPP   | 180                | <b>P2V-AM512GS</b> |
|  |   |   | 01 - 26 mm | 3/8 BSPP   | 210                | <b>P2V-BM513GS</b> |
|  |  Right end plate | 02 - 18 mm  | 1/4 BSPP   | 180        | <b>P2V-AM512HS</b> |                    |
|  |   | 01 - 26 mm  | 3/8 BSPP   | 210        | <b>P2V-BM513HS</b> |                    |
|  | <b>Top ported</b>   |  Left end plate<br>Including seal and fitting screws | 02 - 18 mm | 1/4 BSPP   | 180                | <b>P2V-AM512GT</b> |
|  |   |   | 01 - 26 mm | 3/8 BSPP   | 210                | <b>P2V-BM513GT</b> |
|  |  Right end plate | 02 - 18 mm  | 1/4 BSPP   | 180        | <b>P2V-AM512HT</b> |                    |
|  |   | 01 - 26 mm  | 3/8 BSPP   | 210        | <b>P2V-BM513HT</b> |                    |
|  | <b>Bottom ported</b>  |  Left end plate<br>Including seal and fitting screws | 02 - 18 mm | 1/4 BSPP   | 180                | <b>P2V-AM512GB</b> |
|  |   |   | 01 - 26 mm | 3/8 BSPP   | 220                | <b>P2V-BM513GB</b> |
|  |  Right end plate | 02 - 18 mm  | 1/4 BSPP   | 180        | <b>P2V-AM512HB</b> |                    |
|  |   | 01 - 26 mm  | 3/8 BSPP   | 220        | <b>P2V-BM513HB</b> |                    |
|  | <b>End cover</b>  |  Left end plate<br>Including seal and fitting screws | 02 - 18 mm |            | 190                | <b>P2V-AM500G0</b> |
|  |   |   | 01 - 26 mm |            | 240                | <b>P2V-BM500G0</b> |
|  |  Right end plate | 02 - 18 mm  |            | 190        | <b>P2V-AM500H0</b> |                    |
|  |   | 01 - 26 mm  |            | 240        | <b>P2V-BM500H0</b> |                    |
| <b>Size manifolds adaptor plate</b>  |   |   | 02 to 01   |            | 330                | <b>P2V-AM500BE</b> |
| <b>Plug</b>  | Left end plate  | 02 - 18 mm  |            |            | 4                  | <b>P2V-AK0P</b>    |
|  |   | 01 - 26 mm  |            |            | 10                 | <b>P2V-BK0P</b>    |


Side ported individual subbase - ISO 15407-1 - Sizes 02 & 01

| Description   |                           | Size   | Port Size  | Weight (g) | Order code |                   |
|---|---------------------------|--|------------|------------|------------|-------------------|
|  | <b>Individual Subbase</b> | Can be used for External pilot supply or Single or Double pneumatic remote pilot | 02 - 18 mm | 1/8 BSPP   | 70         | <b>PL02-01-70</b> |
|   |                           |  |            | 1/8 NPT    | 70         | <b>PL02-01-80</b> |
|   |                           |  | 01 - 26 mm | 1/4 BSPP   | 120        | <b>PL01-02-70</b> |
|   |                           |  |            | 1/4 NPT    | 120        | <b>PL01-02-80</b> |


Front ported manifold & End plate - ISO 15407-1 - Sizes 02 & 01

| Description  |                                   | Size   | Port Size  | Weight (g) | Order code         |                      |
|--|-----------------------------------|--|------------|------------|--------------------|----------------------|
|  | <b>Two position manifold base</b> | Can be used for External pilot supply<br>Cannot be used for remote pilot                   | 02 - 18 mm | 1/8 BSPP   | 140                | <b>PJLP02-201-70</b> |
|  |                                   |  |            | 1/8 NPT    | 140                | <b>PJLP02-201-80</b> |
|  |                                   |  | 01 - 26 mm | 1/4 BSPP   | 700                | <b>PJLP01-202-70</b> |
|  |                                   |  |            | 1/4 NPT    | 700                | <b>PJLP01-202-80</b> |
|  | <b>Two position manifold base</b> | Can be used for External pilot supply using #14 or Single or Double pneumatic remote pilot | 01 - 26 mm | 1/4 BSPP   | 730                | <b>PJL01-202-70</b>  |
|  |                                   |  |            | 1/4 NPT    | 730                | <b>PJL01-202-80</b>  |
|  | <b>End plate kit</b>              |  | 02 - 18 mm | 1/4 BSPP   | 150                | <b>PEJ02-02-70</b>   |
|  |                                   |  |            | 1/4 NPT    | 150                | <b>PEJ02-02-80</b>   |
|  |                                   | 01 - 26 mm   | 3/8 BSPP   | 520        | <b>PEJ01-03-70</b> |                      |
|  |                                   |  | 3/8 NPT    | 520        | <b>PEJ01-03-80</b> |                      |



Accessories

| Description   |                       | Size                    | Weight (g) | Order code      |
|---|-----------------------|-------------------------|------------|-----------------|
|  | <b>Blanking plate</b> | 02 - 18 mm              | 40         | <b>DX02BLK</b>  |
|   |                       | 01 - 26 mm              | 50         | <b>DX01BLK</b>  |
|   | <b>Blanking plug</b>  | 02 - 18 mm              | 10         | <b>D02BD0</b>   |
|   |                       | 01 - 26 mm              | 20         | <b>D01BD0</b>   |
| <b>Bolt, Washer and Nut</b>   |                       | 02 - 18 mm & 01 - 26 mm | 120        | <b>DX02M2MB</b> |


**VDMA Side Ported Subbases**

| Description   |   | Size     | Port size | Weight (g) | Order code         |
|---|---|----------|-----------|------------|--------------------|
|  | <b>Subbases VDMA</b><br>Side port according to VDMA | 1 - 43mm | G1/4      | 160        | <b>P2N-VS512SD</b> |
|   |   | 2 - 56mm | G3/8      | 280        | <b>P2N-WS513SD</b> |
|   |   | 3 - 71mm | G1/2      | 350        | <b>P2N-YS514SD</b> |


**VDMA Bottom Ported Manifold**

| Description   |  | Size     | Port size | Weight (g) | Order code         |
|---|--|----------|-----------|------------|--------------------|
|  | <b>VDMA Form C</b><br>Bottom port according to VDMA  | 1 - 43mm | G1/4      | 240        | <b>P2N-VM512MB</b> |
|   |  | 2 - 56mm | G3/8      | 360        | <b>P2N-WM513MB</b> |
|   |  | 3 - 71mm | G1/2      | 700        | <b>P2N-YM514MB</b> |
|  | <b>VDMA Transition plate</b><br>Size 1 to Size 3<br><b>Kit includes:</b> Transition plate only | 1 to 3   | G1/4      |            | <b>P2N-VM500AK</b> |
|   | <b>VDMA Form D - End plate</b><br>According to VDMA  | 1 - 43mm | G3/8      | 210        | <b>P2N-VM513ES</b> |
|   |  | 2 - 56mm | G1/2      | 360        | <b>P2N-WM514ES</b> |
|   |  | 3 - 71mm | G1        | 680        | <b>P2N-YM518ES</b> |
|   | <b>VDMA Isolation - Main galley</b><br>According to VDMA                                       | 1 - 43mm |           |            | <b>P2N-VK0P</b>    |
|   |  | 2 - 56mm |           |            | <b>P2N-WK0P</b>    |
|   | <b>Kit includes:</b> (1) Isolator plug.  | 3 - 71mm |           |            | <b>P2N-YK0P</b>    |


**Accessories**

| Description   |   | Size     | Port size | Weight (g) | Order code      |
|---|---|----------|-----------|------------|-----------------|
|  | <b>Blanking plate</b><br><b>Kit includes:</b> (1) Blanking plate, (1) Gasket and (4) Mounting bolts | 1 - 43mm | G1/4      | 100        | <b>P2N-AA5B</b> |
|   |   | 2 - 56mm | G3/8      | 150        | <b>P2N-BA5B</b> |
|   |   | 3 - 71mm | G1/2      | 200        | <b>P2N-CA5B</b> |




**Side ported subbases**

| Description   |  | Size     | Port size | Weight | Order code BSP     | Order code NPT    |
|---|--|----------|-----------|--------|--------------------|-------------------|
|  | <b>Single subbase with side ports</b><br>1 3 5 2 4 ports & 12 14 | 1 - 43mm | G1/4      | 0.16   | <b>PL1-1/4-70</b>  | <b>PL1-1/4-80</b> |
|   |  | 1 - 43mm | G3/8      | 0.16   | <b>PL1-3/8-70</b>  |                   |
|   |  | 2 - 56mm | G3/8      | 0.28   | <b>PL2-3/8-70</b>  | <b>PL2-3/8-80</b> |
|   |  | 2 - 56mm | G1/2      |        | <b>P2N-HS514SS</b> |                   |
|   |  | 3 - 71mm | G1/2      |        | <b>PL3-1/2-70</b>  | <b>PL3-1/2-80</b> |
|   |  | 3 - 71mm | G3/4      |        | <b>P2N-JS516SD</b> |                   |



**Bottom ported subbases**

| Description   |  | Size     | Port size | Weight | Order code BSP    | Order code NPT    |
|---|--|----------|-----------|--------|-------------------|-------------------|
|  | <b>Single subbase with bottom ports</b><br>1 3 5 2 4 ports & 12 14 | 1 - 43mm | G1/4      | 0.37   | <b>PD1-1/4-70</b> | <b>PD1-1/4-80</b> |
|   |  | 2 - 56mm | G3/8      | 0.59   | <b>PD2-3/8-70</b> | <b>PD2-3/8-80</b> |
|   |  | 3 - 71mm | G1/2      | 0.59   | <b>PD3-1/2-70</b> |                   |

**Size 1 bottom ported manifold**

| Description   |   | Size     | Port size | Weight | Order code         |
|---|---|----------|-----------|--------|--------------------|
|  | <b>Manifold</b><br>with bottom ports low profile  | 1 - 43mm | G1/4      | 0.2    | <b>P2N-AM512MB</b> |
|   | <b>Connecting block</b><br>Top or bottom ported connecting block for above manifold "low profile"       | 1 - 43mm | G3/8      | 0.15   | <b>P2N-AM513GT</b> |
|  | <b>End</b><br>End piece for above manifold "low profile"  | 1 - 43mm | no        | 0.06   | <b>P2N-AM500J</b>  |
|   | <b>Intermediate supply</b><br>Top or bottom ported intermediate supply for above manifold "low profile" | 1 - 43mm | G3/8      | 0.14   | <b>P2N-AM513BT</b> |
|  | <b>Isolation plugs</b><br>isolating seal for above manifold "low profile"                               | 1 - 43mm |           | 0.07   | <b>P2N-AK0P</b>    |


**Sizes 1 & 2 side ported manifold**

| Description   |   | Size     | Port size | Weight | Order code         |
|---|---|----------|-----------|--------|--------------------|
|  | <b>Manifold</b><br>Manifold with side port                                  | 1 - 43mm | G1/4      | 0.24   | <b>P2N-EM512MD</b> |
|   |   | 2 - 56mm | G3/8      | 0.21   | <b>P2N-FM513MD</b> |
|  | <b>End</b><br>Side ported connecting kit for above manifold with side ports | 1 - 43mm | G3/8      | 0.36   | <b>P2N-EM513ES</b> |
|   |   | 2 - 56mm | G1/2      | 0.29   | <b>P2N-FM514ES</b> |






## Plug-in 15407-2, Size 02 (18mm - HB) & 01 (26mm - HA) End Plate Kits

Left and Right end plates, with pressure exhaust and auxilliary ports


### Individual connection

|  | Description   | ISO Size | Port size | Weight (g) | Order code        |
|--|---|----------|-----------|------------|-------------------|
|  | No connector<br>To be used with individually wired base | 02 & 01  | G3/8"     | -          | <b>PS5631011P</b> |



### Multiwiring connection

|  | Description                  | ISO Size | Port size | Weight (g) | Order code        |
|--|------------------------------|----------|-----------|------------|-------------------|
|    | 16-Points Terminal Strip     | 02 & 01  | G3/8"     | -          | <b>PS5620L51P</b> |
|    | 25-Pin, D-Sub                | 02 & 01  | G3/8"     | -          | <b>PS5620L21P</b> |
|   | 19-Pin, Round, Brad Harrison | 02 & 01  | G3/8"     | -          | <b>PS5620L31P</b> |
|  | M23, 12-Pin                  | 02 & 01  | G3/8"     | -          | <b>PS5620L41P</b> |
|  | M23, 19-Pin                  | 02 & 01  | G3/8"     | -          | <b>PS5620M21P</b> |

### Accessories

|  | Description          | Protection | Length   | Weight (g) | Order code        |
|--|----------------------|------------|----------|------------|-------------------|
|  | 25-Pin - D-Sub cable | IP40       | 3 meters | 380        | <b>P8LMH25M3A</b> |
|  |                      |            | 9 meters | 780        | <b>P8LMH25M9A</b> |
|  |                      | IP65       | 9 meters | 790        | <b>P8LMH25B9A</b> |

### Adaptors for Industrial Communication

|  | Description  | ISO Size | Port size | Weight (g) | Order code        |
|--|--|----------|-----------|------------|-------------------|
|  | Turck BL76 Valve Driver Module<br>Without 16 DO module   | 02 & 01  | G3/8"     | -          | <b>PS5620T01P</b> |
|  | 16 outputs and blank module to be ordered seaparely (See Turck BL67 section)                                   |          |           |            |                   |
|  | Turck BL76 Valve Driver Module<br>For configuration up to 16 solenoids<br>Including 1 x 16 DO & 1 blank module | 02 & 01  | G3/8"     | -          | <b>PS5620T11P</b> |
|  | Turck BL76 Valve Driver Module<br>For configuration up to 32 solenoids<br>Including 2 x 16 DO modules          | 02 & 01  | G3/8"     | -          | <b>PS5620T21P</b> |
|  | Industrial Communication Valve Driver Module<br>For configuration up to 32 solenoids                           | 02 & 01  | G3/8"     | -          | <b>PS5620L61P</b> |
|  | Moduflex Fieldbus module adaptor   | 02 & 01  | G3/8"     | -          | <b>PS5620M41P</b> |

For Turck BL67, Moduflex communication gateways and I/O modules, refer to respective sections in following pages.

Plug-in 15407-2, Size 02 (18mm - HB) & 01 (26mm - HA) Manifold Kits

2 Position Front Ported Manifold

| Description                                  |  | ISO Size | Port size | Weight (g) | Order code        |
|--|--|----------|-----------|------------|-------------------|
| Non collective wiring                        | Terminal strip<br>For single or double solenoid valves | 01       | G1/4"     | 520        | <b>PS551154CP</b> |
|  | Collective wiring                                      |          |           |            |                   |
| Collective wiring                            | Single address board<br>For single solenoid valves     | 02       | G1/8"     | 450        | <b>PS561152JP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551154JP</b> |
|  | Double address board<br>For double solenoid valves     | 02       | G1/8"     | 450        | <b>PS561152MP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551154MP</b> |
| Extension Manifold<br>Including ribbon cable | Single address board<br>For single solenoid valves     | 02       | G1/8"     | 450        | <b>PS561152NP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551154NP</b> |
|  | Double address board<br>For double solenoid valves     | 02       | G1/8"     | 450        | <b>PS561152PP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551154PP</b> |



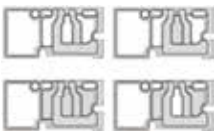
2 Position Front and Bottom Ported Manifold

| Description                                  |  | ISO Size | Port size | Weight (g) | Order code        |
|--|--|----------|-----------|------------|-------------------|
| Non collective wiring                        | Terminal strip<br>For single or double solenoid valves | 01       | G1/4"     | 520        | <b>PS551164CP</b> |
|  | Collective wiring                                      |          |           |            |                   |
| Collective wiring                            | Single address board<br>For single solenoid valves     | 02       | G1/8"     | 450        | <b>PS561162JP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551164JP</b> |
|  | Double address board<br>For double solenoid valves     | 02       | G1/8"     | 450        | <b>PS561162MP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551164MP</b> |
| Extension Manifold<br>Including ribbon cable | Single address board<br>For single solenoid valves     | 02       | G1/8"     | 450        | <b>PS561162NP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551164NP</b> |
|  | Double address board<br>For double solenoid valves     | 02       | G1/8"     | 450        | <b>PS561162PP</b> |
|  |  | 01       | G1/4"     | 520        | <b>PS551164PP</b> |



Accessories

| Description                        | Blocked ports   | ISO Size | Port size | Weight (g) | Order code      |
|------------------------------------|-----------------|----------|-----------|------------|-----------------|
| Blanking Plate                     |                 | 02       | G1/8"     | -          | <b>PS5634P</b>  |
|                                    |                 | 01       | G1/4"     | -          | <b>PS5534P</b>  |
| Manifold to Manifold<br>gasket kit | No port plugged | 02 & 01  |           | -          | <b>PS5611AP</b> |
|                                    | #1              | 02 & 01  |           | -          | <b>PS5611BP</b> |
|                                    | #1, 3 & 5       | 02 & 01  |           | -          | <b>PS5611CP</b> |
|                                    | #3 & 5          | 02 & 01  |           | -          | <b>PS5611DP</b> |



Solenoid actuated Iso valve for multiple and centralised field bus (Plug-in)

- Size HA and HB (26mm and 18mm)
- Heavy duty and corrosion resistant body
- Internal led & rectifier
- Internal or external pilot supply with same valve
- Multiple connection, Sub D25, M23, Terminal block
- Communication with Turck BL67 Remote I/O System or Moduflex Bus


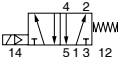
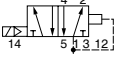

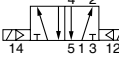
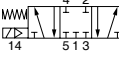
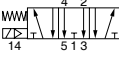
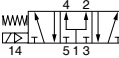


#### Operation information

|                       |                |                |
|-----------------------|----------------|----------------|
| Working pressure :    | 2,0 to 10 bar  |                |
| Working temperature : | -15 to +50°C   |                |
|                       | <b>Size 02</b> | <b>Size 01</b> |
| Flow (Qmax.) :        | 10,8 l/s       | 25,3 l/s       |
| Flow (Qn) :           | 6,5 l/s        | 15,3 l/s       |

### H Series ISO Plug-in 15407-2 - Sizes 02 & 01 With 24 Vdc / 1 W built-in coil


#### Manual override non locking, LED & surge suppressor

|  | Symbol  | Description                         | Size      | Weight (g)         | Order code         |
|--|---|-------------------------------------|-----------|--------------------|--------------------|
| <br>HB 18 mm |  | 5/2 single solenoid - Spring return | 02 - 18mm | 130                | <b>HBEVXBG0G9A</b> |
|  |   |                                     | 01 - 26mm | 230                | <b>HAEVXBG0G9A</b> |
|  |  | 5/2 single solenoid - Differential  | 02 - 18mm | 130                | <b>HB1VXBG0G9A</b> |
|  |   |                                     | 01 - 26mm | 230                | <b>HA1VXBG0G9A</b> |
| <br>HA 26 mm |  | 5/2 double solenoid                 | 02 - 18mm | 145                | <b>HB2VXBG0G9A</b> |
|  |   |                                     | 01 - 26mm | 245                | <b>HA2VXBG0G9A</b> |
|  |  | 5/3 Closed center (APB)             | 02 - 18mm | 145                | <b>HB5VXBG0G9A</b> |
|  |   |                                     | 01 - 26mm | 245                | <b>HA5VXBG0G9A</b> |
|  |  | 5/3 Vented center                   | 02 - 18mm | 145                | <b>HB6VXBG0G9A</b> |
|  |   |                                     | 01 - 26mm | 245                | <b>HA6VXBG0G9A</b> |
|             | 5/3 Pressurised center  | 02 - 18mm                           | 145       | <b>HB7VXBG0G9A</b> |                    |
|  |   |                                     | 01 - 26mm | 245                | <b>HA7VXBG0G9A</b> |





## Plug-in 5599-2, Sizes 1, 2 & 3 End Plate Kits

Left and Right end plates, with pressure exhaust and auxilliary ports


### Individual connection

| Description   | ISO Size | Port size | Weight (g) | Order code         |
|---|----------|-----------|------------|--------------------|
|  No connector<br>To be used with individually wired base | Size 1   | G1/2"     | 1360       | <b>PS4031011CP</b> |
|   | Size 2   | G3/4"     | 1600       | <b>PS4131011CP</b> |
|   | Size 3   | G3/4"     | 2800       | <b>PS4231011CP</b> |






### Multiwiring connection

| Description  | ISO Size | Port size | Weight (g) | Order code         |
|--|----------|-----------|------------|--------------------|
|  25-Pin, D-Sub                | Size 1   | G1/2"     | 1360       | <b>PS4020L21CP</b> |
|  | Size 2   | G3/4"     | 1600       | <b>PS4120L21CP</b> |
|  | Size 3   | G3/4"     | 2800       | <b>PS4220L21CP</b> |
|  19-Pin, Round, Brad Harrison | Size 1   | G1/2"     | 1360       | <b>PS4020L31CP</b> |
|  | Size 2   | G3/4"     | 1600       | <b>PS4120L31CP</b> |
|  | Size 3   | G3/4"     | 2800       | <b>PS4220L31CP</b> |
|  19-Pin, M23                  | Size 1   | G1/2"     | 1360       | <b>PS4020M21CP</b> |
|  | Size 2   | G3/4"     | 1600       | <b>PS4120M21CP</b> |
|  | Size 3   | G3/4"     | 2800       | <b>PS4220M21CP</b> |
|  12-Pin, M23                 | Size 1   | G1/2"     | 1360       | <b>PS4020L41CP</b> |
|  | Size 2   | G3/4"     | 1600       | <b>PS4120L41CP</b> |
|  | Size 3   | G3/4"     | 2800       | <b>PS4220L41CP</b> |

### Accessories

| Description  | Protection | Length   | Weight (g) | Order code        |
|--|------------|----------|------------|-------------------|
|  25-Pin - D-Sub cable | IP40       | 3 meters | 380        | <b>P8LMH25M3A</b> |
|  |            | 9 meters | 780        | <b>P8LMH25M9A</b> |
|  | IP65       | 9 meters | 790        | <b>P8LMH25B9A</b> |


### Adaptors for Industrial Communication

| Description  | ISO Size | Port size | Weight (g) | Order code         |
|--|----------|-----------|------------|--------------------|
|  Turck BL76 Valve Driver Module<br>Without 16 DO module<br>16 outputs and blank module to be ordered separely<br>(See Turck BL67 section) | Size 1   | G1/2"     | 1400       | <b>PS4020T01CP</b> |
|  | Size 2   | G3/4"     | 1600       | <b>PS4120T01CP</b> |
|  | Size 3   | G3/4"     | 2800       | <b>PS4220T01CP</b> |
|  Turck BL76 Valve Driver Module<br>For configuration up to 16 solenoids<br>Including 1 x 16 DO & 1 blank module                           | Size 1   | G1/2"     | 1520       | <b>PS4020T11CP</b> |
|  | Size 2   | G3/4"     | 1720       | <b>PS4120T11CP</b> |
|  | Size 3   | G3/4"     | 2920       | <b>PS4220T11CP</b> |
|  Turck BL76 Valve Driver Module<br>For configuration up to 32 solenoids<br>Including 2 x 16 DO modules                                    | Size 1   | G1/2"     | 1520       | <b>PS4020T21CP</b> |
|  | Size 2   | G3/4"     | 1720       | <b>PS4120T21CP</b> |
|  | Size 3   | G3/4"     | 2920       | <b>PS4220T21CP</b> |
|  Industrial Communication Valve Driver Module<br>For configuration up to 32 solenoids   | Size 1   | G1/2"     | 1580       | <b>PS4020L61CP</b> |
|  | Size 2   | G3/4"     | 1800       | <b>PS4120L61CP</b> |
|  | Size 3   | G3/4"     | 3000       | <b>PS4220L61CP</b> |
|  Moduflex Fieldbus module adaptor   | Size 1   | G1/2"     | 1300       | <b>PS4020M41CP</b> |
|  | Size 2   | G3/4"     | 1500       | <b>PS4120M41CP</b> |
|  | Size 3   | G3/4"     | 2700       | <b>PS4220M41CP</b> |


For Turck BL67, Moduflex communication gateways and I/O modules, refer to respective sections in following pages.

## Plug-in 5599-2, Sizes 1, 2 & 3 Manifold Kits




### Single Position Front Ported Manifold

| Description   |                       | ISO Size   | Port size | Weight (g) | Order code |                    |
|---|-----------------------|--|-----------|------------|------------|--------------------|
|  | Non collective wiring | Terminal strip<br>For single or double solenoid valves | 2 - 56 mm | G1/2"      | -          | <b>PS411158CCP</b> |
|   |                       |  | 3 - 71 mm | G3/4"      | -          | <b>PS421150CCP</b> |
|   | Collective wiring     | Single address board<br>For single solenoid valves     | 2 - 56 mm | G1/2"      | -          | <b>PS411158JCP</b> |
|   |                       |  | 3 - 71 mm | G3/4"      | -          | <b>PS421150JCP</b> |
|   |                       | Double address board<br>For double solenoid valves     | 2 - 56 mm | G1/2"      | -          | <b>PS411158MCP</b> |
|   |                       |  | 3 - 71 mm | G3/4"      | -          | <b>PS421150MCP</b> |

### Single Position Front & Bottom Ported Manifold

| Description   |                       | ISO Size   | Port size | Weight (g) | Order code |                    |
|---|-----------------------|--|-----------|------------|------------|--------------------|
|  | Non collective wiring | Terminal strip<br>For single or double solenoid valves | 1 - 43 mm | G3/8"      | -          | <b>PS401166CCP</b> |
|   |                       |  | 2 - 56 mm | G1/2"      | -          | <b>PS411168CCP</b> |
|   |                       |  | 3 - 71 mm | G3/4"      | -          | <b>PS421160CCP</b> |
|   | Collective wiring     | Single address board<br>For single solenoid valves     | 1 - 43 mm | G3/8"      | -          | <b>PS401166JCP</b> |
|   |                       |  | 2 - 56 mm | G1/2"      | -          | <b>PS411168JCP</b> |
|   |                       |  | 3 - 71 mm | G3/4"      | -          | <b>PS421160JCP</b> |
|   |                       | Double address board<br>For double solenoid valves     | 1 - 43 mm | G3/8"      | -          | <b>PS401166MCP</b> |
|   |                       |  | 2 - 56 mm | G1/2"      | -          | <b>PS411168MCP</b> |
|   |                       |  | 3 - 71 mm | G3/4"      | -          | <b>PS421160MCP</b> |

### Accessories

| Description   |                                 | ISO Size  | Port size | Weight (g) | Order code      |
|---|---------------------------------|-----------|-----------|------------|-----------------|
|  | Blanking Plate                  | 1 - 43 mm | G3/8"     | -          | <b>PS4034CP</b> |
|   |                                 | 2 - 56 mm | G1/2"     | -          | <b>PS4134CP</b> |
|   |                                 | 3 - 71 mm | G3/4"     | -          | <b>PS4234CP</b> |
|  | Insulating Plugs                | 1 - 43 mm | G3/8"     | -          | <b>PS4032CP</b> |
|   |                                 | 2 - 56 mm | G1/2"     | -          | <b>PS4132CP</b> |
|   |                                 | 3 - 71 mm | G3/4"     | -          | <b>PS4232CP</b> |
|  | Manifold to Manifold Gasket Kit | 1 - 43 mm | G3/8"     | -          | <b>PS4013P</b>  |
|   |                                 | 2 - 56 mm | G1/2"     | -          | <b>PS4113P</b>  |
|   |                                 | 3 - 71 mm | G3/4"     | -          | <b>PS4213P</b>  |



Solenoid actuator Iso valve for multiple and centralised field bus

- Size 1, 2, 3
- Heavy duty and corrosion resistant body
- Internal led rectifier
- Internal or external pilot supply with same valve
- Multiple connection, SubD25, M23, Terminal block
- Communication with Turck BL67 Remote I/O System or Moduflex Bus

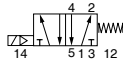
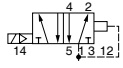
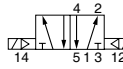
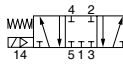
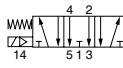
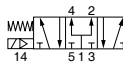


**Operation information**

|                       |               |               |               |
|-----------------------|---------------|---------------|---------------|
| Working pressure :    | 2,0 to 10 bar |               |               |
| Working temperature : | -15 to +50°C  |               |               |
|                       | <b>Size 1</b> | <b>Size 2</b> | <b>Size 3</b> |
| Flow (Qmax.) :        | 34,5 l/s      | 69,0 l/s      | 130,8 l/s     |
| Flow (Qn) :           | 20,8 l/s      | 42,0 l/s      | 83,7 l/s      |

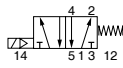
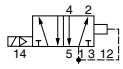
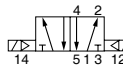
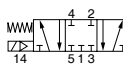

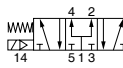
**H Series ISO 5599-2 - Sizes 1, 2 & 3**

**Solenoid operated ISO valve with operator and 24 Vdc / 2,7 W Plug-in coil**

| Symbol  | Description                         | Size       | Weight (g) | Order code         |
|---|-------------------------------------|------------|------------|--------------------|
|    | 5/2 single solenoid - Spring return | 1 - 43 mmm | 770        | <b>H1EVXBG0B9D</b> |
|   |                                     | 2 - 56 mm  | 1190       | <b>H2EVXBG0B9D</b> |
|   |                                     | 3 - 71 mm  | 1470       | <b>H3EVXBG0B9D</b> |
|    | 5/2 single solenoid - Differential  | 1 - 43 mmm | 770        | <b>H11VXBG0B9D</b> |
|   |                                     | 2 - 56 mm  | 1190       | <b>H21VXBG0B9D</b> |
|   |                                     | 3 - 71 mm  | 1470       | <b>H31VXBG0B9D</b> |
|   | 5/2 double solenoid                 | 1 - 43 mmm | 940        | <b>H12VXBG0B9D</b> |
|   |                                     | 2 - 56 mm  | 1360       | <b>H22VXBG0B9D</b> |
|   |                                     | 3 - 71 mm  | 1640       | <b>H32VXBG0B9D</b> |
|  | 5/3 Closed center (APB)             | 1 - 43 mmm | 940        | <b>H15VXBG0B9D</b> |
|   |                                     | 2 - 56 mm  | 1360       | <b>H25VXBG0B9D</b> |
|   |                                     | 3 - 71 mm  | 1640       | <b>H35VXBG0B9D</b> |
|  | 5/3 Vented center                   | 1 - 43 mmm | 940        | <b>H16VXBG0B9D</b> |
|   |                                     | 2 - 56 mm  | 1360       | <b>H26VXBG0B9D</b> |
|   |                                     | 3 - 71 mm  | 1640       | <b>H36VXBG0B9D</b> |
|  | 5/3 Pressurised center              | 1 - 43 mmm | 940        | <b>H17VXBG0B9D</b> |
|   |                                     | 2 - 56 mm  | 1360       | <b>H27VXBG0B9D</b> |
|   |                                     | 3 - 71 mm  | 1640       | <b>H37VXBG0B9D</b> |

**H Series ISO 5599-2 - Sizes 1, 2 & 3**

**Solenoid operated ISO valve with operator without Plug-in coil**

| Symbol  | Description                         | Size       | Weight (g) | Order code        |
|---|-------------------------------------|------------|------------|-------------------|
|  | 5/2 single solenoid - Spring return | 1 - 43 mmm | 650        | <b>H1EVXBGNXD</b> |
|   |                                     | 2 - 56 mm  | 1070       | <b>H2EVXBGNXD</b> |
|   |                                     | 3 - 71 mm  | 1350       | <b>H3EVXBGNXD</b> |
|  | 5/2 single solenoid - Differential  | 1 - 43 mmm | 650        | <b>H11VXBGNXD</b> |
|   |                                     | 2 - 56 mm  | 1070       | <b>H21VXBGNXD</b> |
|   |                                     | 3 - 71 mm  | 1350       | <b>H31VXBGNXD</b> |
|  | 5/2 double solenoid                 | 1 - 43 mmm | 700        | <b>H12VXBGNXD</b> |
|   |                                     | 2 - 56 mm  | 1120       | <b>H22VXBGNXD</b> |
|   |                                     | 3 - 71 mm  | 1400       | <b>H32VXBGNXD</b> |
|  | 5/3 Closed center (APB)             | 1 - 43 mmm | 700        | <b>H15VXBGNXD</b> |
|   |                                     | 2 - 56 mm  | 1120       | <b>H25VXBGNXD</b> |
|   |                                     | 3 - 71 mm  | 1400       | <b>H35VXBGNXD</b> |
|  | 5/3 Vented center                   | 1 - 43 mmm | 700        | <b>H16VXBGNXD</b> |
|   |                                     | 2 - 56 mm  | 1120       | <b>H26VXBGNXD</b> |
|   |                                     | 3 - 71 mm  | 1400       | <b>H36VXBGNXD</b> |
|  | 5/3 Pressurised center              | 1 - 43 mmm | 700        | <b>H17VXBGNXD</b> |
|   |                                     | 2 - 56 mm  | 1120       | <b>H27VXBGNXD</b> |
|   |                                     | 3 - 71 mm  | 1400       | <b>H37VXBGNXD</b> |

**Plug-in Coil for 5599-2 ISO Valve - Sizes 1, 2 & 3**

| Description   | Voltage      | Weight (g) | Order code       |
|---|--------------|------------|------------------|
|  | 12 Vdc       | -          | <b>PS404145P</b> |
|   | 24 Vdc       | -          | <b>PS4041B9P</b> |
|   | 24 Vac       | -          | <b>PS404142P</b> |
|   | 120 Vac      | -          | <b>PS404123P</b> |
|   | 240 Vac      | -          | <b>PS404157P</b> |
|   | Plug-in coil |            |                  |

Sandwich regulator for Plug-in or not Plug-in ISO 15407 (Sizes 02 & 01) and 5599 (Sizes 1, 2 & 3)

Order chart

Function Description see below

**PS40 37 1 6 6 CP**

| ISO Size         |                      |
|------------------|----------------------|
| <b>ISO 15407</b> |                      |
| <b>PS56</b>      | Size 02 (HB - 18 mm) |
| <b>PS55</b>      | Size 01 (HA - 26 mm) |
| <b>ISO 5599</b>  |                      |
| <b>PS40</b>      | Size 1 (H1 - 43 mm)  |
| <b>PS41</b>      | Size 2 (H2 - 56 mm)  |
| <b>PS42</b>      | Size 3 (H3 - 71 mm)  |

| ISO Version |               |
|-------------|---------------|
| <b>P</b>    | For ISO 15407 |
| <b>CP</b>   | For ISO 5599  |

| Connecting version |                               |
|--------------------|-------------------------------|
| <b>37</b>          | ISO-1 : For Non Plug-in Valve |
| <b>38</b>          | ISO-2 : For Plug-in Valve     |

| Regulator function |                                |
|--------------------|--------------------------------|
| <b>1</b>           | Common Pressure Regulator      |
| <b>2</b>           | Independent Pressure Regulator |

| Port 4                         | Port 2                  |
|--------------------------------|-------------------------|
| <b>Port Regulator / Gauge*</b> |                         |
| <b>0</b>                       | Line By-Pass Plate**    |
| <b>1</b>                       | 0-2 Bar - without gauge |
| <b>2</b>                       | 0-4 Bar - without gauge |
| <b>3</b>                       | 0-8 Bar - without gauge |
| <b>4</b>                       | 0-2 Bar - with gauge    |
| <b>5</b>                       | 0-4 Bar - with gauge    |
| <b>6</b>                       | 0-8 Bar - with gauge    |

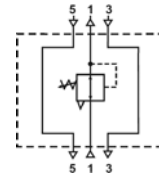
\* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both port #4 and Port #2 (Example: 166)

\*\* For H1, H2 & H3 only. Pressure Line By-Pass Option can only be used with Independent Pressure Regulators

Pressure Regulators functions

Common port regulation

Provides adjustable regulated air pressure to the valves #1 port which gives the same regulated pressure to both the #2 and #4 port of the manifold or subbase. The regulator is always on the 14 end of the valve.



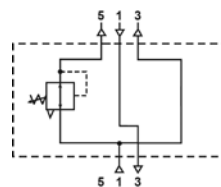
Independent port regulation

Single Port Regulator

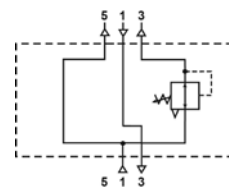
Provides regulated pressure to both ports. Pressure regulation can occur out of the #2 or #4 port of the valve. Full line pressure would be provided with a pass plate.



Regulation on port #4



Regulation on port #2

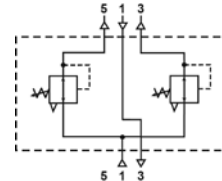


Dual Port Regulator






When using an independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #2 port. The 3-position CE and PC functions are also reversed.



Regulation on both ports #4 & #2



### Sandwich regulator with Gauge

|   | ISO Size   | Regulator function | Pressure On port 4 and / or port 2 | Order code         |                    |
|---|------------|--------------------|------------------------------------|--------------------|--------------------|
|   |            |                    |                                    | ISO-1 Non Plug-in  | ISO-2 Plug-in      |
|  | 02 - 18 mm | Common             | 0 to 4 bar                         | <b>PS5637155P</b>  | <b>PS5638155P</b>  |
|   |            |                    | 0 to 8 bar                         | <b>PS5637166P</b>  | <b>PS5638166P</b>  |
|   |            | Independent        | 0 to 4 bar                         | <b>PS5637255P</b>  | <b>PS5638255P</b>  |
|   |            |                    | 0 to 8 bar                         | <b>PS5637266P</b>  | <b>PS5638266P</b>  |
|  | 01 - 26 mm | Common             | 0 to 4 bar                         | <b>PS5537155P</b>  | <b>PS5538155P</b>  |
|   |            |                    | 0 to 8 bar                         | <b>PS5537166P</b>  | <b>PS5538166P</b>  |
|   |            | Independent        | 0 to 4 bar                         | <b>PS5537255P</b>  | <b>PS5538255P</b>  |
|   |            |                    | 0 to 8 bar                         | <b>PS5537266P</b>  | <b>PS5538266P</b>  |
|  | 1 - 43 mm  | Common             | 0 to 4 bar                         | <b>PS4037155CP</b> | <b>PS4038155CP</b> |
|   |            |                    | 0 to 8 bar                         | <b>PS4037166CP</b> | <b>PS4038166CP</b> |
|   |            | Independent        | 0 to 4 bar                         | <b>PS4037255CP</b> | <b>PS4038255CP</b> |
|   |            |                    | 0 to 8 bar                         | <b>PS4037266CP</b> | <b>PS4038266CP</b> |
|  | 2 - 56 mm  | Common             | 0 to 4 bar                         | <b>PS4137155CP</b> | <b>PS4138155CP</b> |
|   |            |                    | 0 to 8 bar                         | <b>PS4137166CP</b> | <b>PS4138166CP</b> |
|   |            | Independent        | 0 to 4 bar                         | <b>PS4137255CP</b> | <b>PS4138255CP</b> |
|   |            |                    | 0 to 8 bar                         | <b>PS4137266CP</b> | <b>PS4138266CP</b> |
|  | 3 - 71 mm  | Common             | 0 to 4 bar                         | <b>PS4237155CP</b> | <b>PS4238155CP</b> |
|   |            |                    | 0 to 8 bar                         | <b>PS4237166CP</b> | <b>PS4238166CP</b> |
|   |            | Independent        | 0 to 4 bar                         | <b>PS4237255CP</b> | <b>PS4238255CP</b> |
|   |            |                    | 0 to 8 bar                         | <b>PS4237266CP</b> | <b>PS4238266CP</b> |

### How to Configure Sandwich Regulator / Valve Combinations

#### Ordering Components

- Manifold or Subbase Kit required.
- Sandwich Regulator Kit configured for Internal Pilot as standard.
- Order valve as External Pilot.


#### Internal Pilot Configuration

Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.



#### External Pilot Configuration - H1, H2, H3

An External Pilot pressure in port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

### Sandwich Regulator Accessories

|   | Description  | Pressure range | w (g) | Order code        |
|---|--|----------------|-------|-------------------|
|  | Gauge kit Including:<br>Gauge<br>1/8" female to 1/8" female coupling<br>1/8" male to 1/8" male long nipple | 0 to 8 bar     | 80    | <b>PS5651160P</b> |

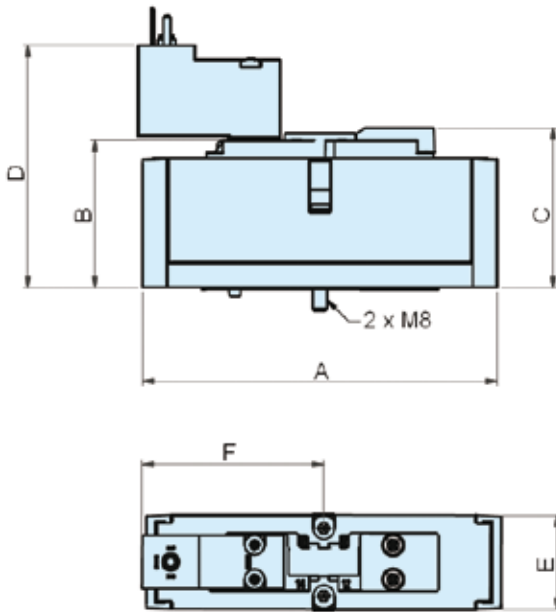
### Sandwich Flow Control

|   | ISO Size   | w (g) | Order code        |                 |
|---|------------|-------|-------------------|-----------------|
|   |            |       | ISO-1 Non Plug-in | ISO-2 Plug-in   |
|  | 02 - 18 mm | 180   | <b>PS5635P</b>    | <b>PS5642P</b>  |
|   | 01 - 26 mm | 240   | <b>PS5535P</b>    | <b>PS5542P</b>  |
|  | 1 - 43 mm  | 340   | <b>PS4035CP</b>   | <b>PS4042CP</b> |
|   | 2 - 56 mm  | 520   | <b>PS4135CP</b>   | <b>PS4142CP</b> |
|   | 3 - 71 mm  | 1180  | <b>PS4235CP</b>   | <b>PS4242CP</b> |

#### Note:

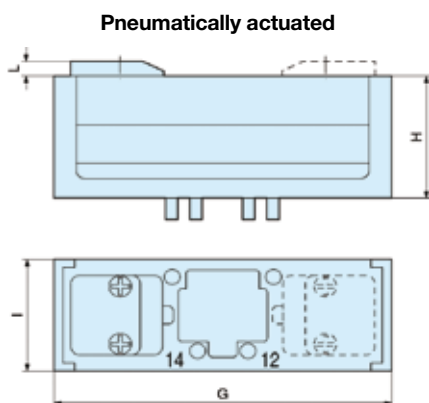
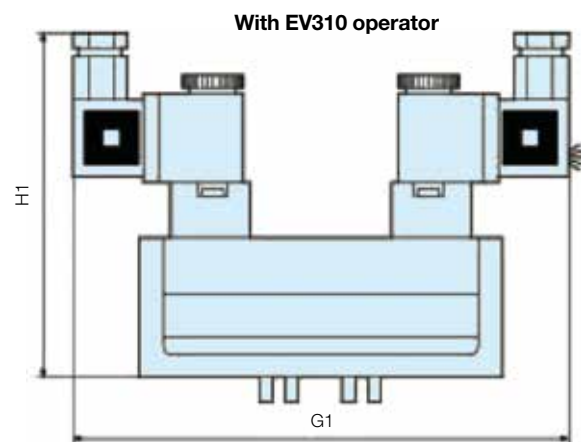
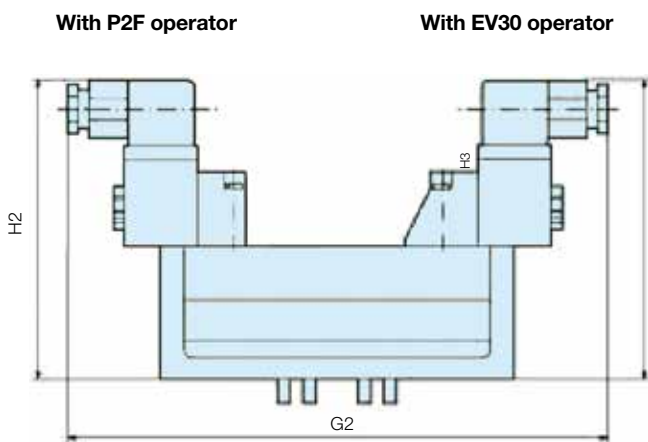
- Both adjustment screws are located on the same 12 end of the unit
- Sandwich Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting
- Sandwich Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down

## ISOMAX - ISO 15407-1 - Sizes 02 & 01



|                  | A   | B  | C    | D    | E  | F    |
|------------------|-----|----|------|------|----|------|
| <b>ISOMAX 02</b> | 80  | 41 | 44,5 | 67,8 | 18 | 51,2 |
| <b>ISOMAX 01</b> | 100 | 42 | 45,5 | 68,8 | 26 | 51,2 |

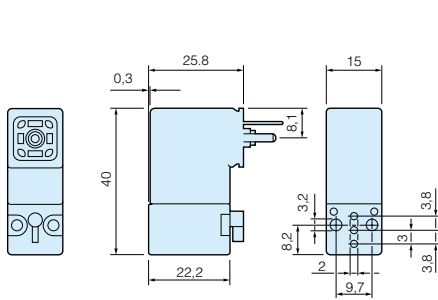
## ISOMAX - ISO 5599-1 - Sizes 1, 2 & 3



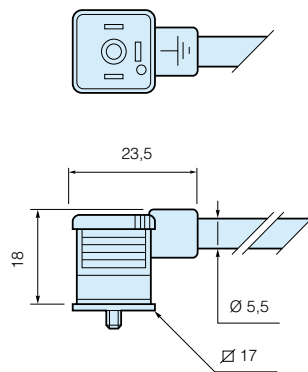
|               | G   | G1    | G2    | H    | H1    | H2    | I  | L |
|---------------|-----|-------|-------|------|-------|-------|----|---|
| <b>Size 1</b> | 120 | 164   | 202,5 | 47   | 115   | 119   | 42 | 5 |
| <b>Size 2</b> | 140 | 179,5 | 218   | 58,5 | 126,5 | 130   | 54 | 5 |
| <b>Size 3</b> | 170 | 198   | 235,5 | 71   | 139   | 142,5 | 68 | 5 |

**15 mm DIN Form C solenoid operators and connectors**

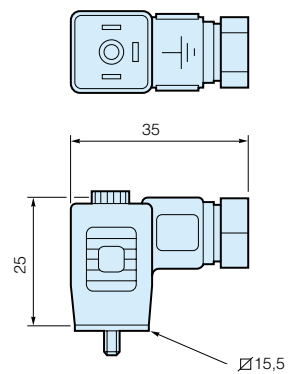
**P2E Operator**



**Connector with standard screw**

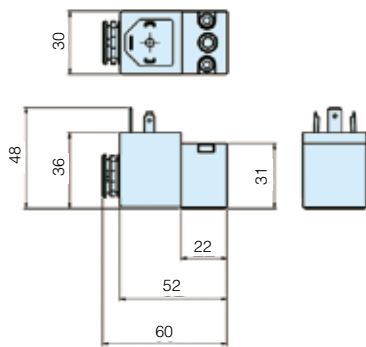


**Connector with large headed screw**

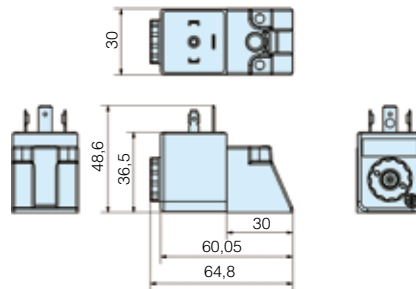


**CNOMO 22 x 30 solenoid operators and connectors**

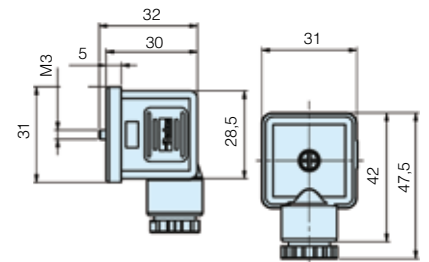
**P2F Operator with 30 x 30 DIN form A coil**



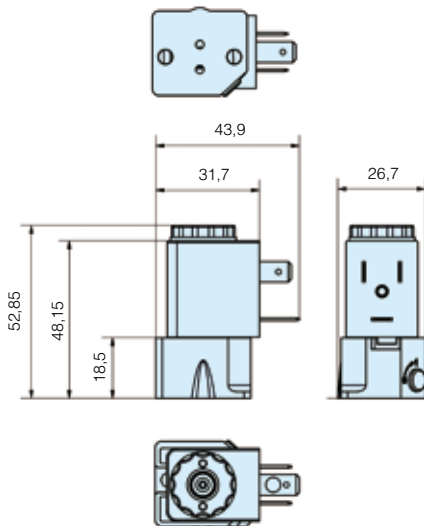
**EV30 Operator with 30 x 30 DIN form A coil**



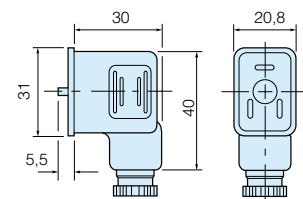
**30 x 30 DIN form A connector**



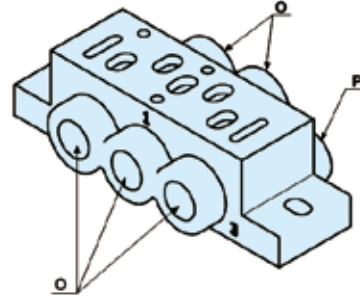
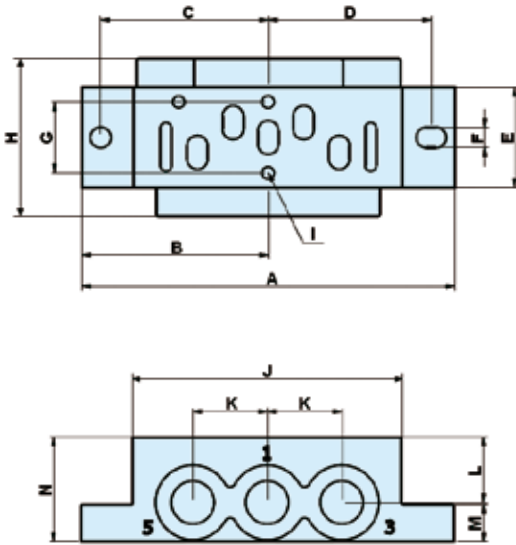
**EV310 Operator with 22 x 30 DIN form B coil**



**22 x 30 DIN form B connector**



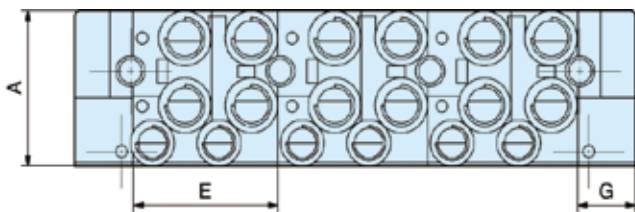
Side ported individual subbase - ISO 15407-1 - Sizes 02 & 01



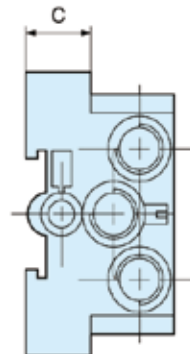
|            |      | Size | A   | B  | C  | D     | E  | F   | G    | H    | I  | J  | K  | L    | M  | N    | O   | P   |
|------------|------|------|-----|----|----|-------|----|-----|------|------|----|----|----|------|----|------|-----|-----|
| PL02-01-70 | BSPP | 02   | 80  | 40 | 35 | 33.75 | 19 | 5.5 | 12.5 | 27   | M8 | 50 | 16 | 14   | 8  | 22.5 | 1/8 | 1/8 |
| PL02-01-80 | NPT  | 02   | 80  | 40 | 35 | 33.75 | 19 | 5.5 | 12.5 | 27   | M8 | 50 | 16 | 14   | 8  | 22.5 | 1/8 | 1/8 |
| PL01-02-70 | BSPP | 01   | 100 | 50 | 45 | 43.75 | 27 | 5.5 | 19   | 42,5 | M8 | 72 | 20 | 17,5 | 10 | 28   | 1/4 | 1/8 |
| PL01-02-80 | NPT  | 01   | 100 | 50 | 45 | 43.75 | 27 | 5.5 | 19   | 42,5 | M8 | 72 | 20 | 17,5 | 10 | 28   | 1/4 | 1/8 |

Front ported manifold & End plate - ISO 15407-1 - Sizes 02 & 01

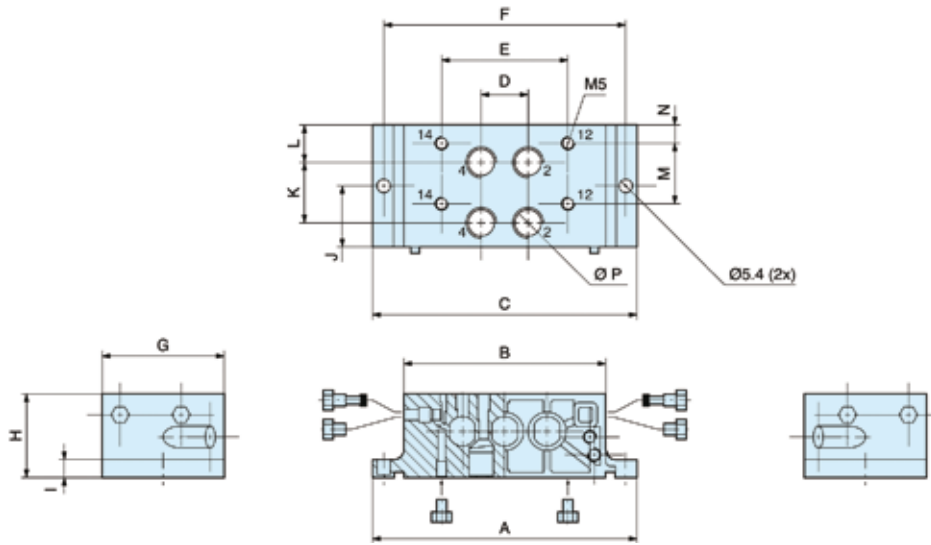
|               |      | Size | A    | B   | C  | D    | E  | F  | G  | H  |
|---------------|------|------|------|-----|----|------|----|----|----|----|
| PJLP02-201-70 | BSPP | 02   | 38,5 | 80  | -  | -    | 38 | -  | -  | -  |
| PJLP02-201-80 | NPT  | 02   | 38,5 | 80  | -  | -    | 38 | -  | -  | -  |
| PJLP01-202-70 | BSPP | 01   | 55   | 100 | -  | -    | 54 | -  | -  | -  |
| PJLP01-202-80 | NPT  | 01   | 55   | 100 | -  | -    | 54 | -  | -  | -  |
| PJL01-202-70  | BSPP | 01   | 55   | 100 | -  | -    | 54 | -  | -  | -  |
| PJL01-202-80  | NPT  | 01   | 55   | 100 | -  | -    | 54 | -  | -  | -  |
| PEJ02-02-70   | BSPP | 02   | 38,5 | 80  | 12 | Ø4,2 | -  | 14 | 18 | 70 |
| PEJ02-02-80   | NPT  | 02   | 38,5 | 80  | 12 | Ø4,2 | -  | 14 | 18 | 70 |
| PEJ01-03-70   | BSPP | 01   | 55   | 100 | 24 | Ø5,5 | -  | 17 | 22 | 90 |
| PEJ01-03-80   | NPT  | 01   | 55   | 100 | 24 | Ø5,5 | -  | 17 | 22 | 90 |



PJLP01-201-70  
PJLP01-202-70

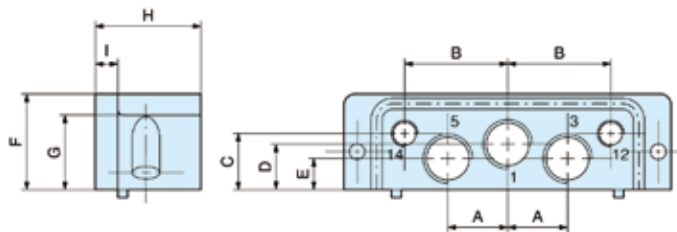


**Bottom ported manifold - ISO 15407-1 - Sizes 02 & 01**



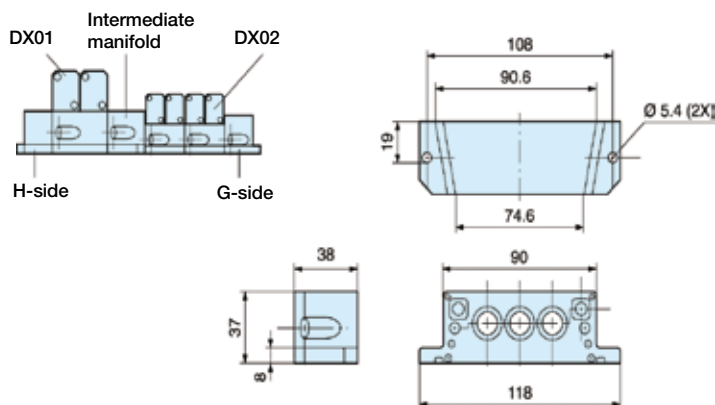
|             | Size | A   | B  | C    | D  | E    | F   | G  | H  | I | J  | K  | L    | M  | N | P    |
|-------------|------|-----|----|------|----|------|-----|----|----|---|----|----|------|----|---|------|
| P2V-AM511PB | 02   | 102 | 74 | 74,6 | 16 | 43   | 92  | 38 | 26 | 7 | 19 | 19 | 11   | 19 | 5 | G1/8 |
| P2V-BM512PB | 01   | 118 | 90 | 90,6 | 21 | 56,5 | 108 | 54 | 37 | 8 | 27 | 27 | 16,5 | 27 | 8 | G1/4 |

**Bottom ported End plate - ISO 15407-1 - Sizes 02 & 01**



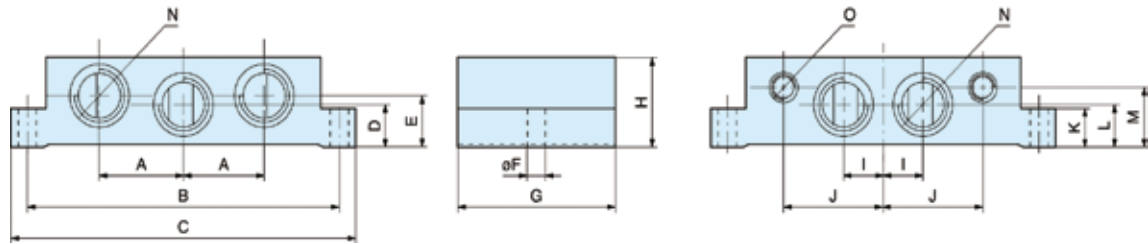
|                             | Size | Port size 1,2,3 | Port size 12, 14 | A    | B  | C  | D    | E   | F    | G  | H  | I |
|-----------------------------|------|-----------------|------------------|------|----|----|------|-----|------|----|----|---|
| P2V-AM512XX and P2V-AM512XX | 02   | G1/4            | G1/8             | 17   | 29 | 21 | 18,5 | 9,5 | 35,5 | 28 | 33 | 7 |
| P2V-BM513XX and P2V-BM513XX | 01   | G3/8            | G1/8             | 21,5 | 37 | 20 | 16   | 11  | 34,5 | 28 | 38 | 8 |

**Transfer plate size 01 to size 02 for above bottom ported manifold**



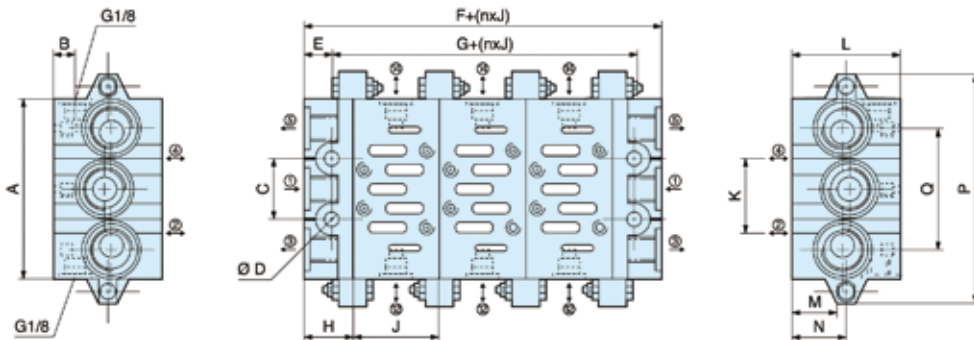
## ISO 5599-1 Subbase & Manifolds

### VDMA Side Ported Subbases



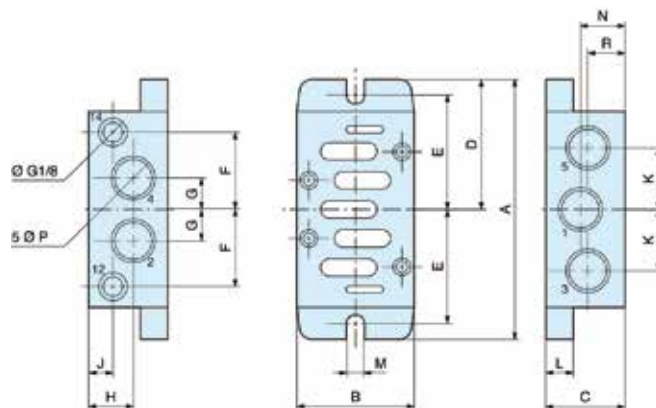
| Order code  | ISO Size | Port Size | A    | B   | C   | D  | E  | F   | G  | H  | I  | J  | K  | L  | M  | N    | O    |
|-------------|----------|-----------|------|-----|-----|----|----|-----|----|----|----|----|----|----|----|------|------|
| P2N-VS512SD | 1        | G1/4      | 21,5 | 98  | 110 | 11 | 20 | 5,5 | 48 | 32 | 12 | 29 | 10 | 11 | 23 | G1/4 | G1/8 |
| P2N-WS513SD | 2        | G3/8      | 28   | 112 | 124 | 14 | 26 | 6,6 | 56 | 40 | 15 | 37 | 13 | 14 | 30 | G3/8 | G1/8 |
| P2N-YS514SD | 3        | G1/2      | 34   | 136 | 149 | 17 | 17 | 6,6 | 71 | 32 | 16 | 45 | 18 | 17 | 22 | G1/2 | G1/8 |

### VDMA Bottom Ported Manifold



| Order code  | ISO Size | Port 1, 3, 5 | Port 2, 4 | A   | B   | C  | D  | E  | F  | G  | H  | J  | K  | L  | M  | N  | O   | P   |
|-------------|----------|--------------|-----------|-----|-----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|
| P2N-VM512MB | 1        | G3/8         | G1/4      | 85  | 8,5 | 28 | 7  | 11 | 44 | 22 | 22 | 43 | 26 | 46 | 21 | 24 | 56  | 110 |
| P2N-WM513MB | 2        | G1/2         | G3/8      | 100 | 9   | 35 | 9  | 13 | 52 | 26 | 26 | 56 | 30 | 47 | 22 | 24 | 68  | 135 |
| P2N-YM514MB | 3        | G1           | G1/2      | 140 | 10  | 52 | 12 | 15 | 60 | 30 | 30 | 71 | 38 | 56 | 31 | 34 | 104 | 190 |

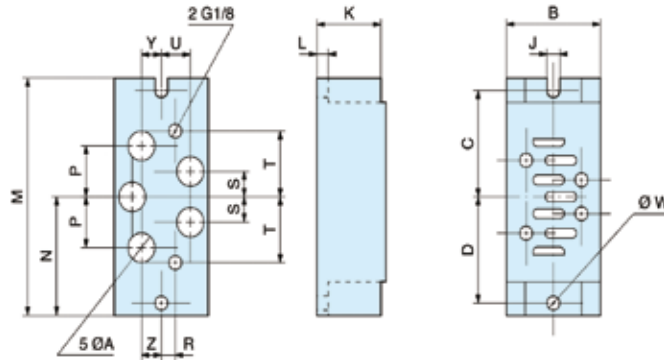
### Side ported subbases



| Order code  | ISO Size | ØP   | A   | B  | C  | D    | E  | F  | G    | H     | J     | K  | L  | M   | N     | R     |
|-------------|----------|------|-----|----|----|------|----|----|------|-------|-------|----|----|-----|-------|-------|
| PL1-1/4-70  | 1        | G1/4 | 110 | 46 | 29 | 55   | 49 | 30 | 11   | 17,75 | 17,75 | 22 | 6  | 5,5 | 17,75 | 17,75 |
| PL2-3/8-70  | 2        | G3/8 | 124 | 56 | 37 | 62   | 55 | 37 | 14,5 | 22,5  | 14    | 28 | 6  | 5,5 | 22,5  | 14,5  |
| P2N-JS516SD | 3        | G3/4 | 149 | 71 | 60 | 74,5 | 68 | 45 | 21   | 33    | 10    | 40 | 18 | 6,6 | 37,5  | 22,5  |



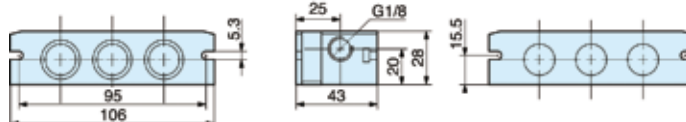
## Bottom ported subbases



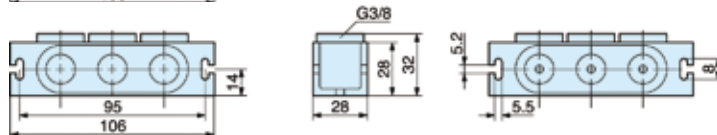
| Order code | ISO Size | A    | B  | C  | D  | J   | K  | L  | M   | N    | P  | R  | S    | T  | U    | W   | Y    | Z    |
|------------|----------|------|----|----|----|-----|----|----|-----|------|----|----|------|----|------|-----|------|------|
| PD1-1/4-70 | 1        | G1/4 | 46 | 49 | 49 | 5,5 | 29 | 6  | 110 | 55   | 22 | 10 | 11   | 30 | 10   | 5,5 | 10   | 10   |
| PD2-3/8-70 | 2        | G3/8 | 56 | 55 | 55 | 5,5 | 37 | 6  | 124 | 62   | 29 | 10 | 14,5 | 37 | 12,5 | 5,5 | 12,5 | 12,5 |
| PD3-1/2-70 | 3        | G1/2 | 77 | 68 | 68 | 6,6 | 32 | 18 | 149 | 74,5 | 34 | 10 | 17   | 45 | 17   | 6,5 | 17   | 17   |

## Size 1 bottom ported manifold

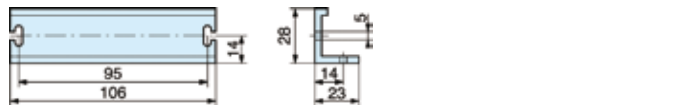
Manifold P2N-AM512MB



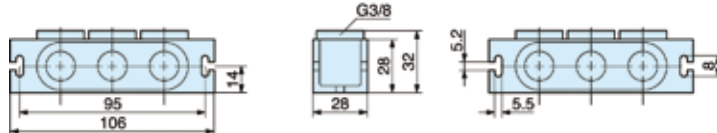
Connecting block P2N-AM513GT



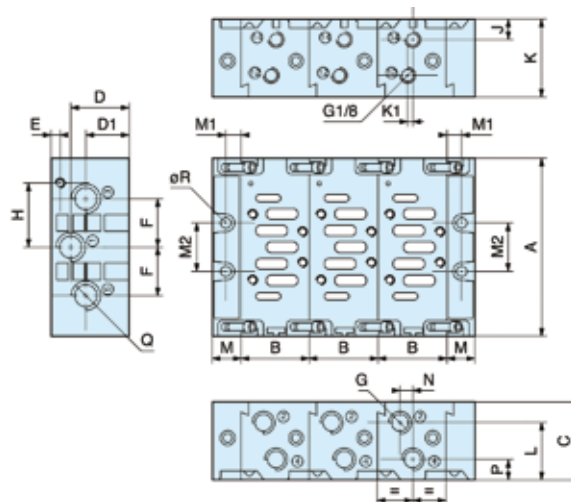
End piece P2N-AM500J



Intermediate supply P2N-AM513BT



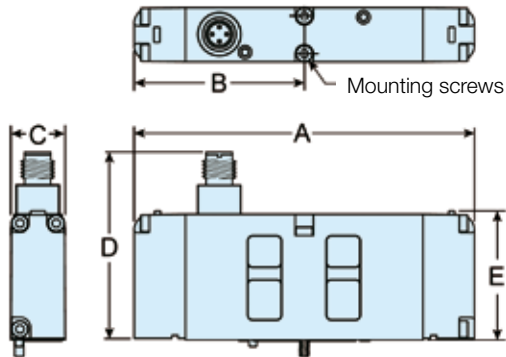
## Sizes 1 & 2 side ported manifold



| Order code | A   | B  | C  | D    | D1   | E   | F    | G    | H  | J    | K    | K1 | L  | M  | M1 | M2 | N    | P    | Q    | R |
|------------|-----|----|----|------|------|-----|------|------|----|------|------|----|----|----|----|----|------|------|------|---|
| P2N-EM ... | 110 | 43 | 48 | 35,5 | 26,5 | 5,5 | 28   | G1/4 | 36 | 15,5 | 35   | 3  | 32 | 20 | 11 | 28 | 12   | 12,5 | G3/8 | 6 |
| P2N-FM ... | 129 | 56 | 60 | 44,5 | 35,5 | 6   | 34,5 | G3/8 | 45 | 16   | 41,5 | 3  | 41 | 24 | 13 | 35 | 12,5 | 16   | G1/2 | 8 |

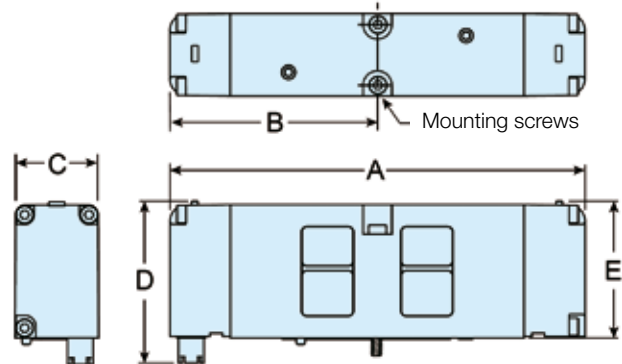
**H Series ISO Valves**

**HA / HB Series - ISO 15407-1**



|           | A   | B  | C  | D  | E  |
|-----------|-----|----|----|----|----|
| <b>HB</b> | 113 | 56 | 18 | 61 | 43 |
| <b>HA</b> | 130 | 65 | 26 | 61 | 42 |

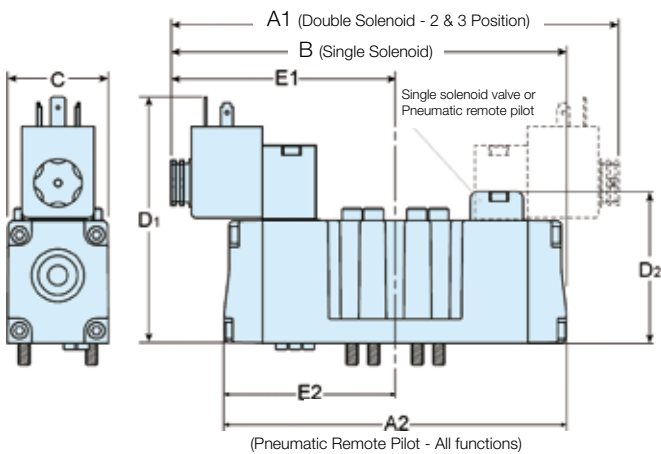
**HA / HB Series - ISO 15407-2**



|           | A   | B  | C  | D  | E  |
|-----------|-----|----|----|----|----|
| <b>HB</b> | 113 | 56 | 18 | 50 | 43 |
| <b>HA</b> | 130 | 65 | 26 | 50 | 42 |

**H1 / H2 / H3 Series - ISO 5599-1**

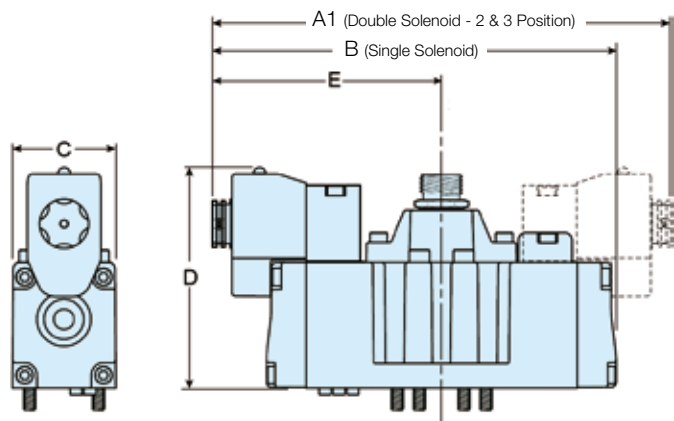
CNOMO Operator or Remote Pilot



|           | A1  | A2  | B   | C  | D1  | D2   | E1  | E2 |
|-----------|-----|-----|-----|----|-----|------|-----|----|
| <b>H1</b> | 186 | 142 | 164 | 42 | 109 | 63,5 | 93  | 71 |
| <b>H2</b> | 212 | 168 | 190 | 55 | 122 | 76   | 106 | 84 |
| <b>H3</b> | 241 | 177 | 209 | 55 | 122 | 76   | 121 | 89 |

**H1 / H2 / H3 Series - ISO 5599-2**

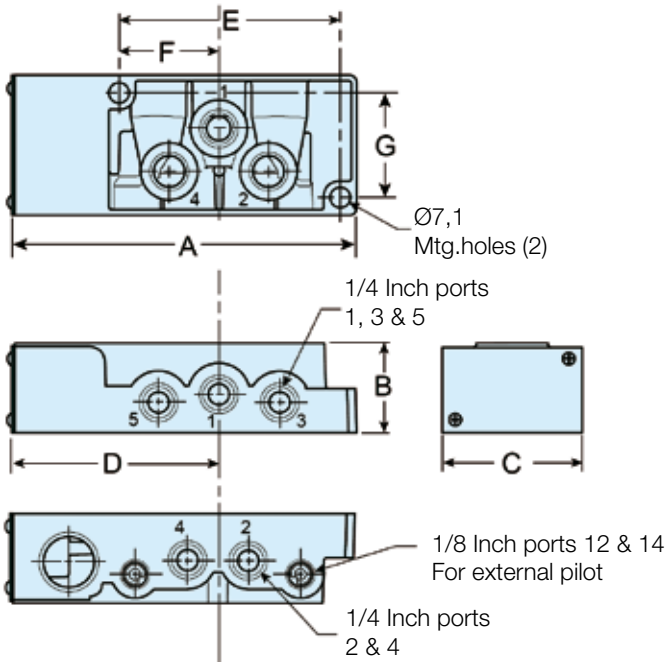
Plug-in and M12 Connector Versions



|           | A   | B   | C  | D   | E   |
|-----------|-----|-----|----|-----|-----|
| <b>H1</b> | 186 | 164 | 42 | 90  | 93  |
| <b>H2</b> | 212 | 190 | 55 | 103 | 106 |
| <b>H3</b> | 241 | 209 | 55 | 103 | 121 |

## H Series ISO Valves Subbases

### HA Series - ISO 15407-1 & -2

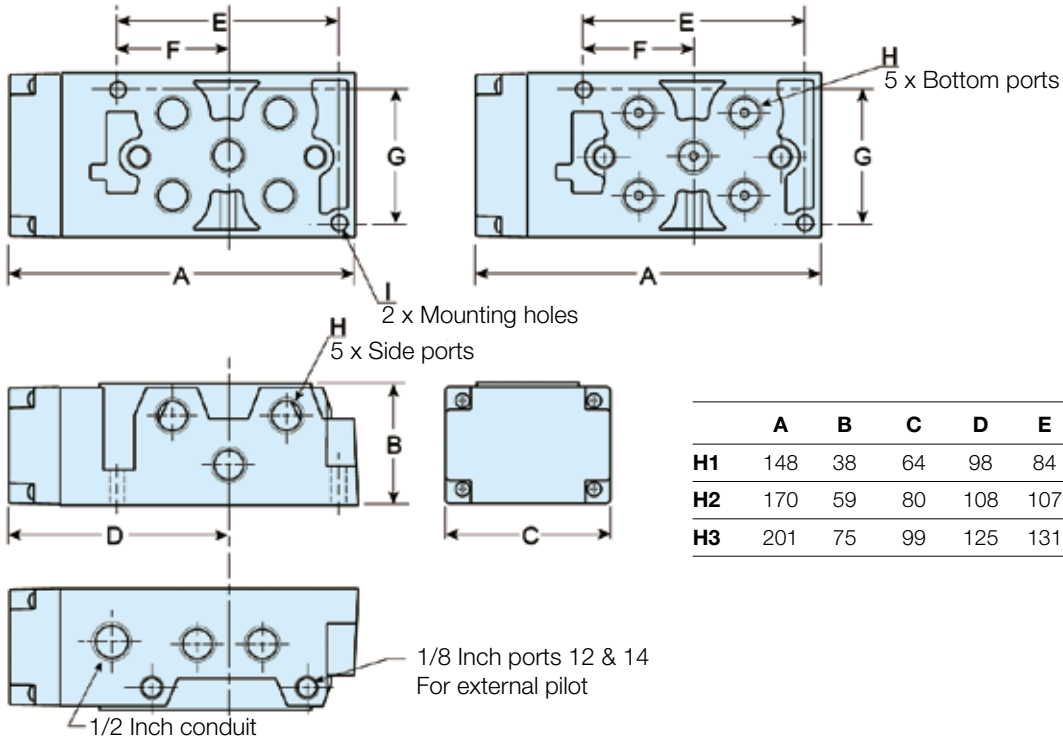


|           | A   | B    | C    | D  | E    | F    | G    |
|-----------|-----|------|------|----|------|------|------|
| <b>HA</b> | 124 | 32,5 | 50,8 | 74 | 36,2 | 80,2 | 37,9 |

### H1 / H2 / H3 Series - ISO 5599-1 & -2

**Side Ported Subbase**

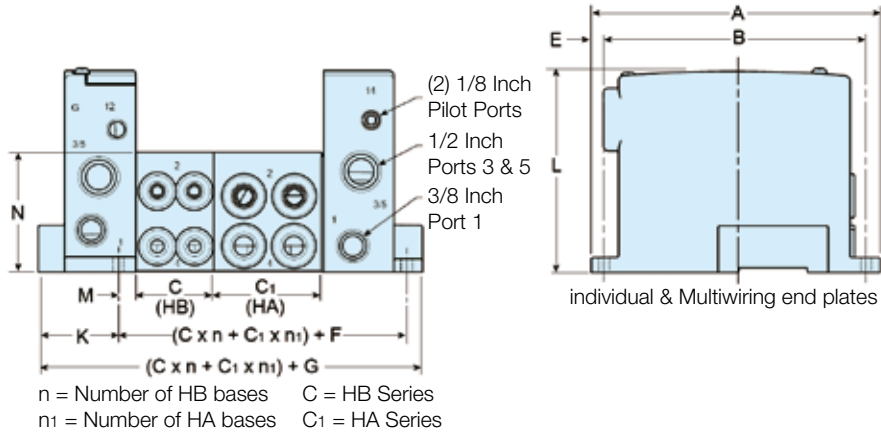
**Bottom Ported Subbase**



|           | A   | B  | C  | D   | E   | F  | G  | H    | I   |
|-----------|-----|----|----|-----|-----|----|----|------|-----|
| <b>H1</b> | 148 | 38 | 64 | 98  | 84  | 40 | 51 | 3/8" | 5,5 |
| <b>H2</b> | 170 | 59 | 80 | 108 | 107 | 52 | 65 | 1/2" | 7,1 |
| <b>H3</b> | 201 | 75 | 99 | 125 | 131 | 64 | 82 | 3/4" | 9   |

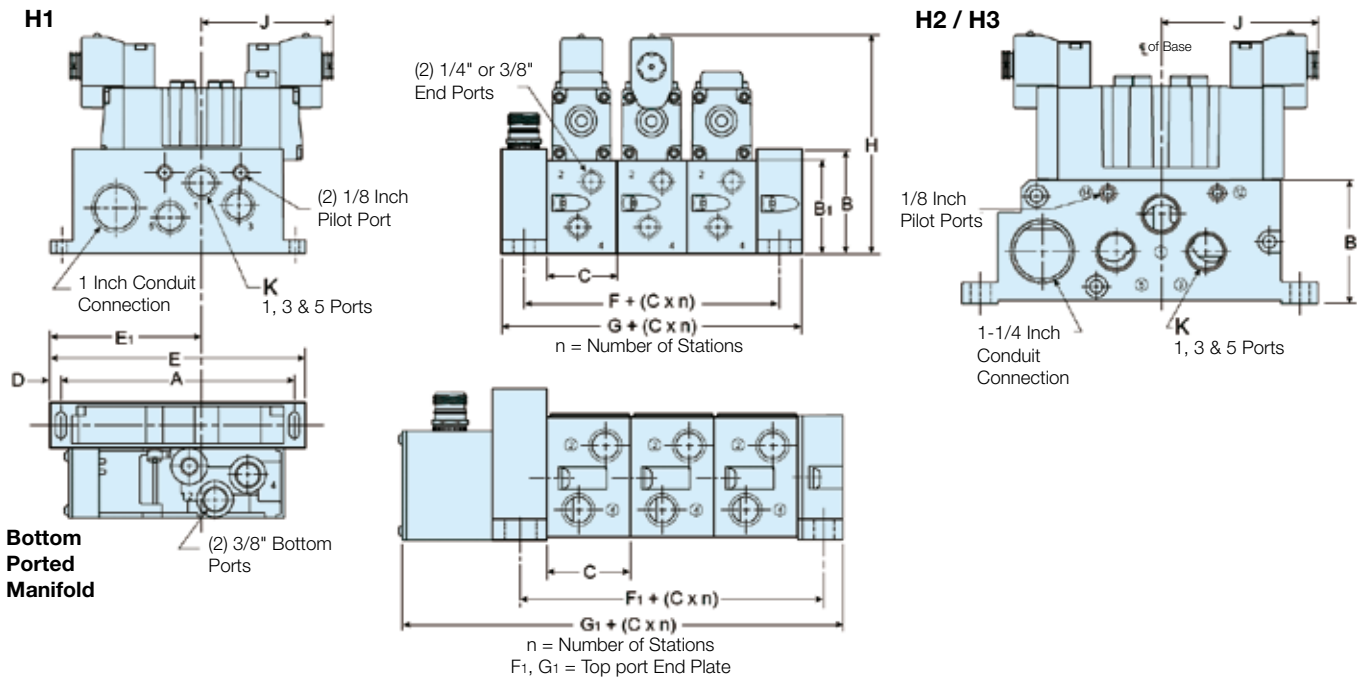
**H Series ISO Valve Manifolds**

**HA/HB Series - ISO 15407-2**



|       | A     | B     | C    | C1   | D   | E   | F    |
|-------|-------|-------|------|------|-----|-----|------|
| HA/HB | 152   | 137   | 40,8 | 56,8 | 16  | 7,5 | 54,4 |
|       | G     | H     | J    | K    | L   | M   | N    |
| HA/HB | 104,6 | 109,8 | 4    | 42,7 | 106 | 8,4 | 63   |

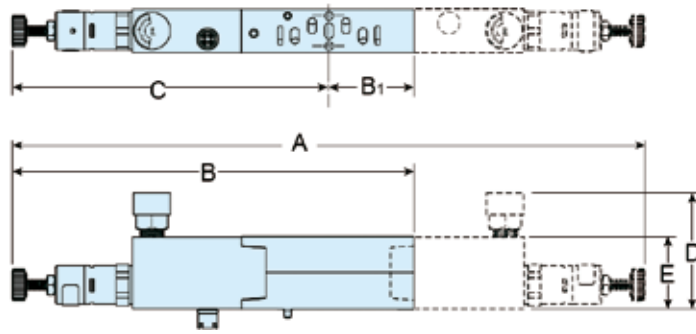
**H1 / H2 / H3 Series - ISO 5599-2**



|    | A   | B   | B1 | C  | D  | E   | E1  | F  | F1 | G    | G1  | H   | J   | K    |
|----|-----|-----|----|----|----|-----|-----|----|----|------|-----|-----|-----|------|
| H1 | 165 | 73  | 67 | 50 | 8  | 182 | 108 | 32 | -  | 63,5 | 86  | 157 | 93  | 1/2" |
| H2 | 215 | 85  | -  | 56 | 12 | 239 | 134 | 30 | 33 | 60   | 96  | 188 | 106 | 3/4" |
| H2 | 265 | 105 | -  | 71 | 15 | 295 | 159 | 33 | 41 | 63   | 111 | 208 | -   | 1"   |

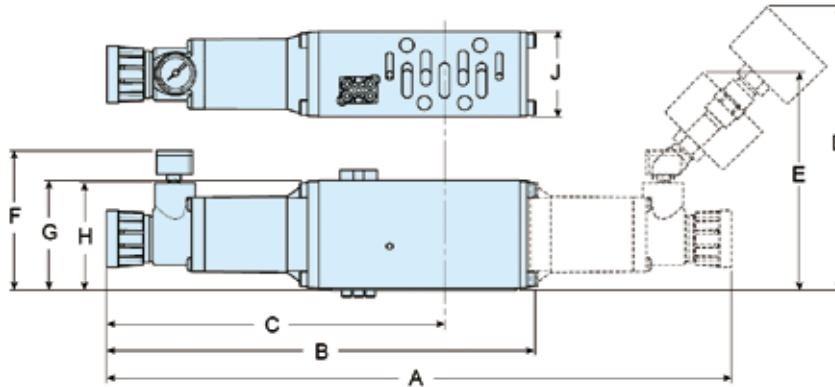
**Sandwich Regulator with Gauge**

**HA / HB Series**



|           | A   | B   | B1 | C   | D  | E  |
|-----------|-----|-----|----|-----|----|----|
| <b>HB</b> | 261 | 156 | 26 | 130 | 66 | 30 |
| <b>HA</b> | 254 | 163 | 36 | 127 | 69 | 30 |

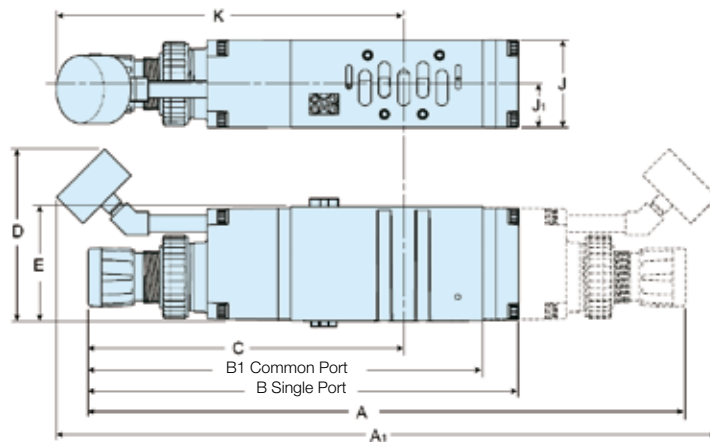
**H1 Series**



Liquid Gauge &  
 Large Air Gauge  
 Dimensions

|           | A   | B   | C   | D   | E   | F  | G  | H  | J  |
|-----------|-----|-----|-----|-----|-----|----|----|----|----|
| <b>H1</b> | 301 | 207 | 163 | 138 | 108 | 72 | 53 | 52 | 41 |

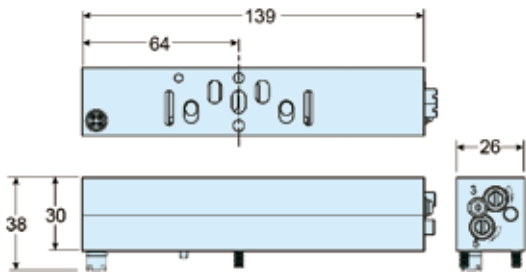
**H2 / H3 Series**



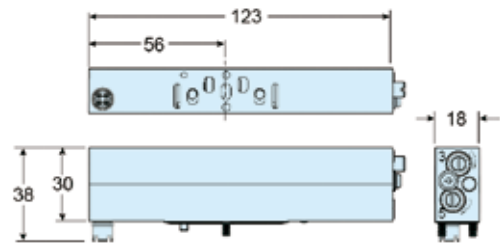
|           | A   | A1  | B   | B1  | C   | D   | E  | J  | J1 | K   |
|-----------|-----|-----|-----|-----|-----|-----|----|----|----|-----|
| <b>H2</b> | 372 | 411 | 268 | 250 | 196 | 107 | 71 | 55 | 27 | 216 |
| <b>H3</b> | 398 | 436 | 293 | 271 | 213 | 107 | 75 | 64 | 32 | 231 |

**Sandwich Flow Control**

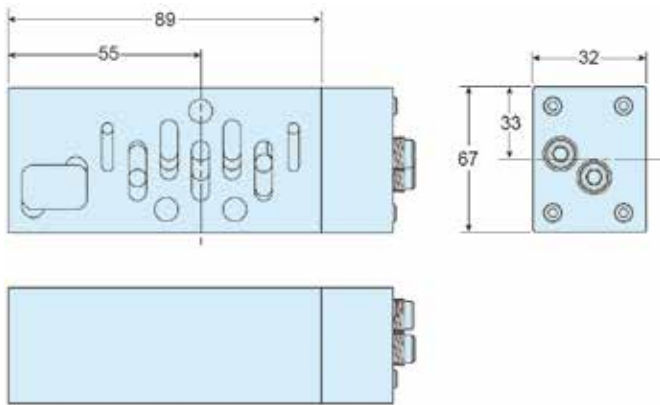
**HA Series**



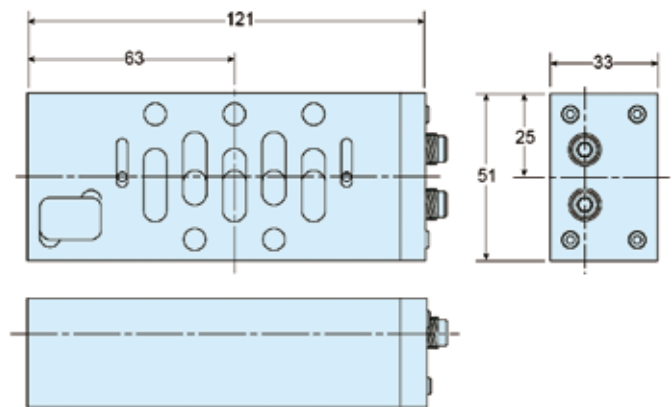
**HB Series**



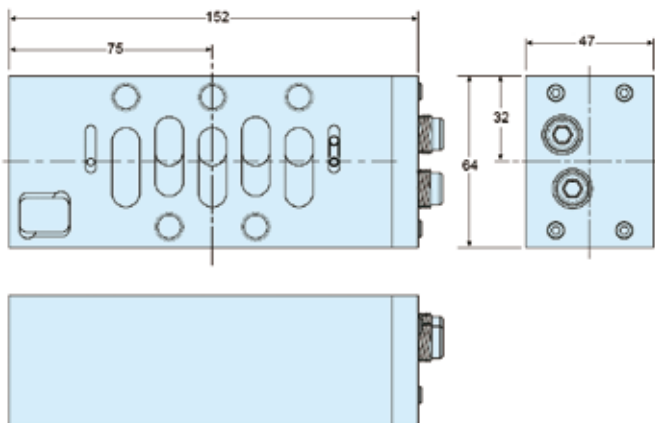
**H1 Series**



**H2 Series**



**H3 Series**

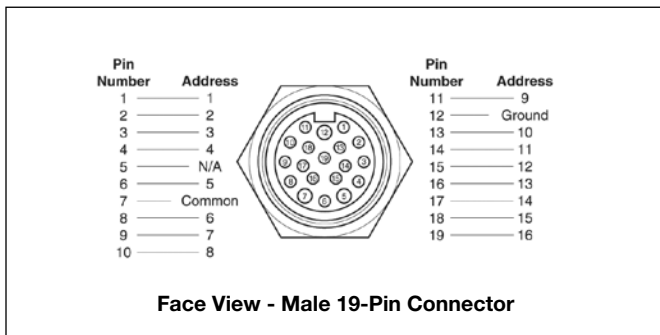


### Maximum Solenoids Energized Simultaneously

| HA HB code | Voltage D-Sub | 25-pin round | 19-pin M23   | Single 12-pin     |                          |         |
|------------|---------------|--------------|--------------|-------------------|--------------------------|---------|
| 24 V DC    | B9 / G9       | 24           | 16           | 8                 | 32                       |         |
| 120 V AC*  | 23            | 24           | 16           | 8                 | 32                       |         |
| H1 H2 H3   | Voltage code  | 25-pin D-Sub | 19-pin round | Single 12-pin M23 | Industrial Communication | SAM 3.0 |
| 12 V DC    | 45            | 13           | 13           | 8                 | N/A                      | N/A     |
| 24 V AC*   | 42            | 24           | 16           | 8                 | N/A                      | N/A     |
| 24 V DC    | B9            | 20           | 16           | 8                 | 21                       | 4       |
| 120 V AC*  | 23            | 24           | 16           | 8                 | N/A                      | N/A     |

\* Not CSA certified for 25-pin, D-Sub option.

### 19-Pin Round Brad Harrison



### 19-Pin Round Cable Specifications

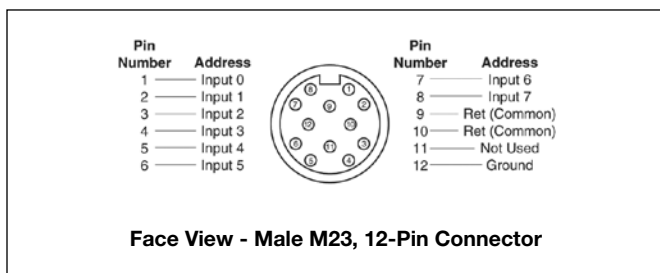
Common Pin "7" is rated for 8 amps. Cable common wire must be greater than total amperage of solenoids on Add-A-Fold assembly.

**Example:-** 8 station manifold, 16 solenoids,  
 120VAC - 16 x .039 amps = .63 total amp rating.  
 NEMA 4 rated with properly assembled NEMA 4 rated cable.

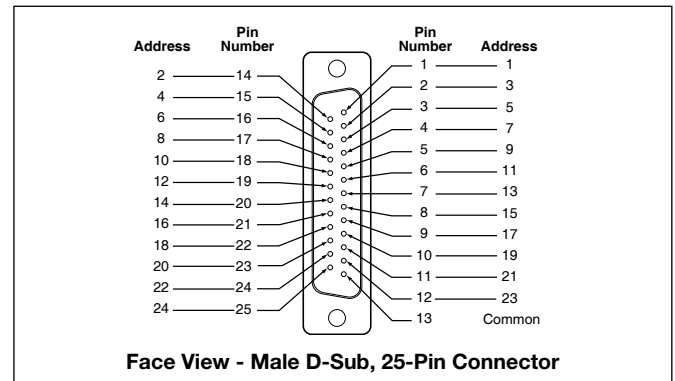
Brad Harrison #333030P80M050 16.40 ft. (Female to Male Cable)

Brad Harrison #333030P80M0100 32.80 ft. (Female to Male Cable)

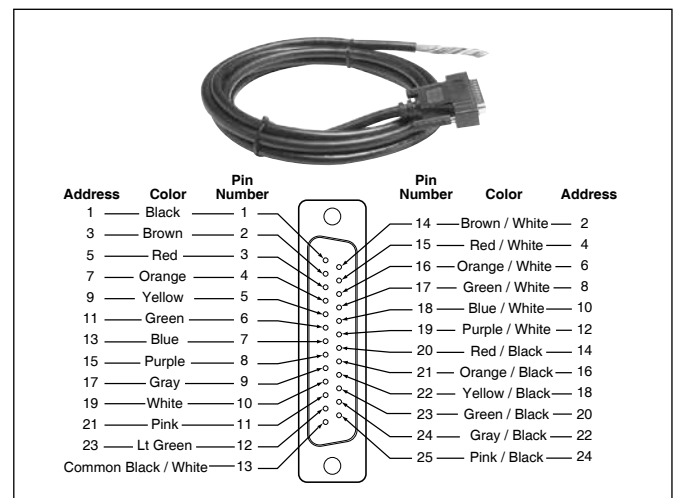
### M23, 12-Pin Round Connector (Male)



### 25-Pin, D-Sub Connector (Male)



### 25-Pin, D-Sub Cable (Female)

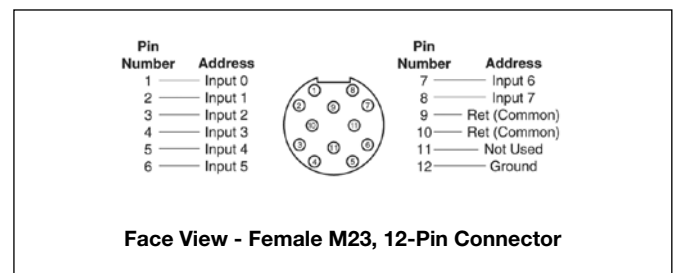


### 25-Pin, D-Sub Cable Specifications

Common Pin "13" is rated for 3 amps. Common wire rating must be greater than total amperage of all solenoids on a Add-A-Fold assembly.

IP65 rated with properly assembled IP65 rated cable.

### M23, 12-Pin Round Connector (Female)

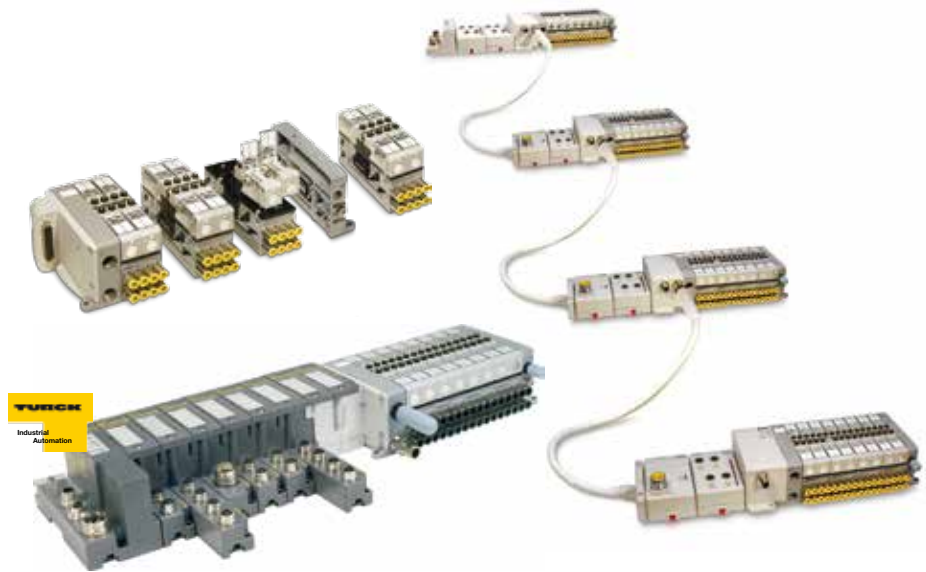




# H Series Micro

## Plug-in valve island

*Parker's newest and most innovative valve design offers functionality for **every** machine configuration.*



The H Series Micro valve redefines flexibility for pneumatic users. When either configured from basic components or ordered as pre-assembled and tested valve islands, H Series Micro valves are the answer to all your needs.

### **Flexible in use**

The H Series Micro range is fully dedicated to centralized applications where a high quantity of valves have to be concentrated in a single location.

Solenoid valve island can also be implemented with digital or analogical electrical I/O.

From a centralized application high complexity level to a basic configuration, with H Series Industrial Communication or traditional multi-connection, an H Series Micro valve island can be designed.

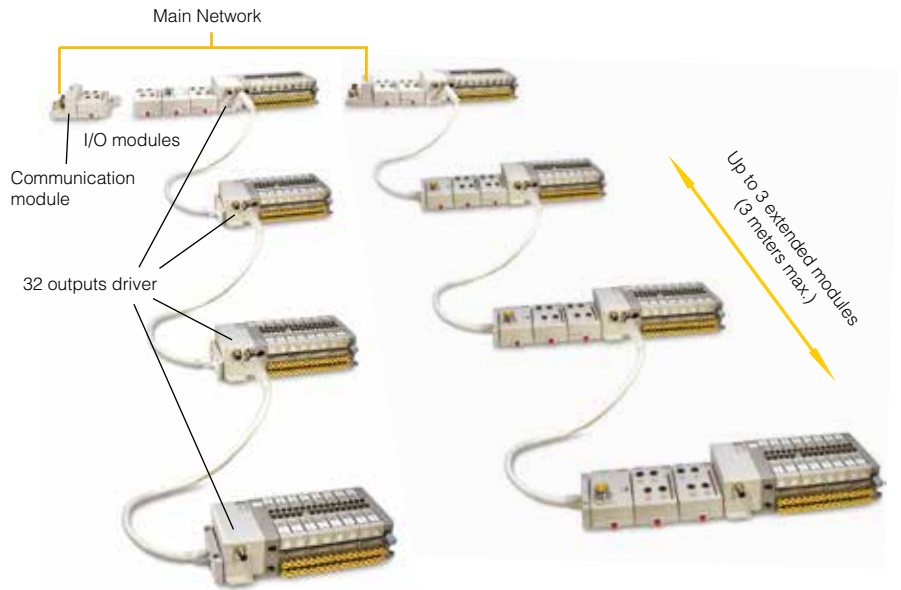


**One communication module for 256 Inputs and 256 Outputs**

The combination of 32 output drivers and electrical I/O modules linked to the main communication module allows H Series Micro valve islands to drive up to 512 I/O, including up to 128 solenoids split between 4 interconnected devices.

Both electrical inputs and outputs modules can also be assembled either on the main or extended islands.

Expansion power supply may be used to provide additional Pointbus backplane current.



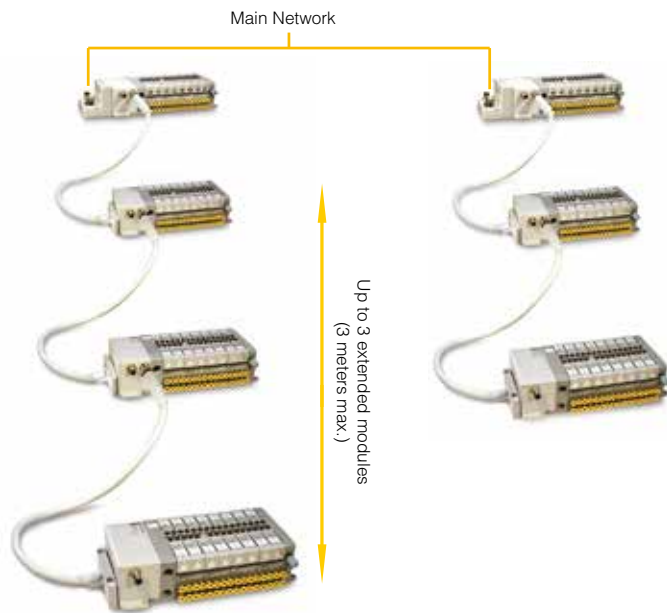
**Up to 128 solenoid valves configuration**

If a high quantity of valves is required in a centralized application, up to 3 extended islands can be connected to the main device communication module.

All extended islands are connected through a bus extension cable PSSVEXT1 (including 1 m cable and head plate).

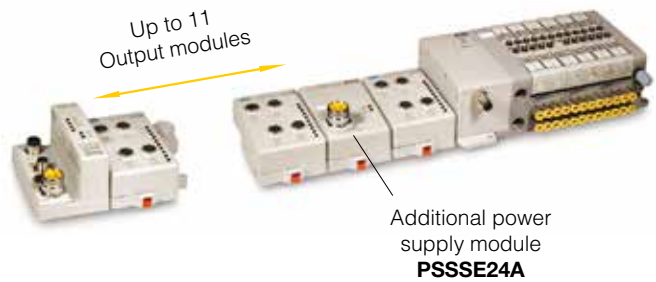
In this configuration, the 32 outputs driver module, on the main island and the extended island, have to be equipped with a "bus extension" M12 connector, excepted for the last extended island.

All 32 outputs driver modules need to be equipped with a M12 solenoids power supply connector.



**Up to 256 electrical outputs including 32 solenoid valves**

Communication modules include a main 24 VDC power supply for the Bus and up to 10 digital or analogical output modules. Additional power supply is only requested if there are more than 11 output modules.



**Up to 32 solenoid valves**

Communication modules include a main 24 VDC power supply for the bus and the 32 output driver modules. All solenoids can be energized at the same time.



**Island up to 16 or 32 solenoid valves linked to the Turck BL67 remote I/O device series**

**TURCK** Industrial Automation  
 This electro-mechanical interface allows, with its modularity up to 16 or 32 solenoid valves, an inter-connection to the TURCK BL67 Series, offering a wide choice of H Series Industrial Communication with Field bus and Industrial Ethernet protocols and a complete range of electrical I/O modules.



**Island for fieldbus communication in decentralized application**

In a decentralized application where a serial communication is required and only a few valves are necessary, different fieldbus protocol modules are also available.

In that case, the valve island has to be equipped with a bus communication head module adaptor.

Depending on the protocol, the head module can pilot up to 16 solenoid valves.



**Island with multi-pole connection**

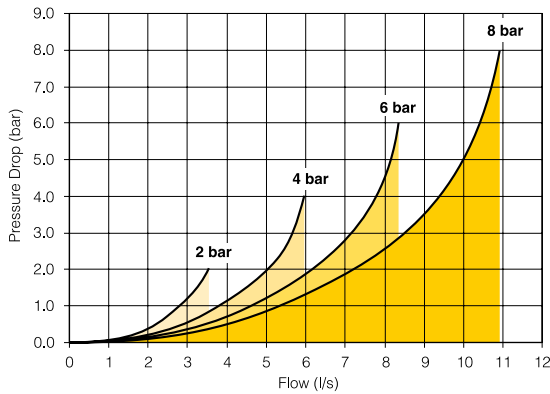
In a decentralized application, when a multi-pole connection is required, the valve island head module can be equipped with a standard Sub-D25 connector.

With this Sub-D25 connection, up to 24 solenoid valves can be piloted.



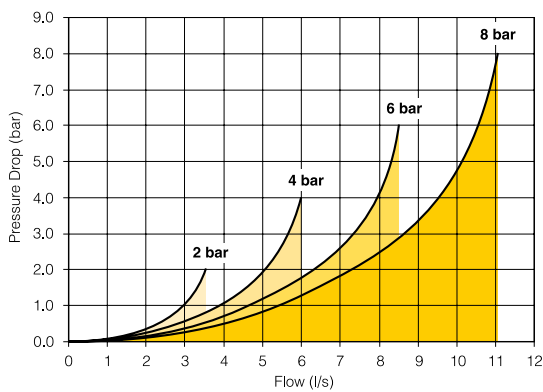
**Flow Characteristics**

**Dual 3/2**



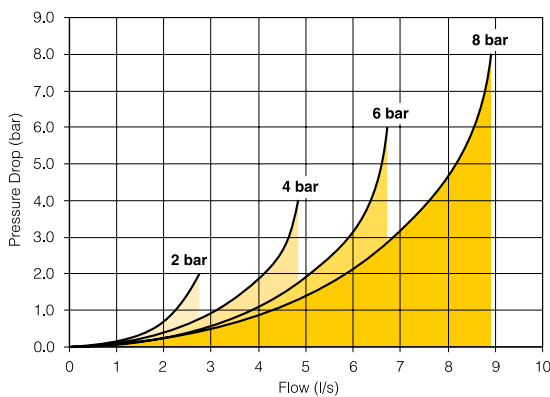
|                            |  |
|----------------------------|--|
| Operating pressure :       | 2,7 to 8,3 bar   |
| Change-over time (side 14) | Actua. 15 ms<br>Return 20 ms P = 6b                                |
| Change-over time (side 12) | 15 ms / 25 ms P = 6b   |
| Flow (acc. to ISO 6358) :  | c = 1,2 NI/s x bar<br>b = 0,13<br>Qn = 4,6 NI/s<br>Qmax = 8,4 NI/s |

**5/2 single and double solenoid**



|                                     |  |
|-------------------------------------|--|
| Operating pressure single solenoid: | 2,7 to 8,3 bar   |
| Operating pressure double solenoid: | 1,7 to 8,3 bar   |
| Change-over time single solenoid:   | Actua. 15 ms<br>Return 25 ms P = 6b                                |
| Change-over time double solenoid:   | 13 ms / 13 ms P = 6b   |
| Flow (acc. to ISO 6358) :           | c = 1,2 NI/s x bar<br>b = 0,13<br>Qn = 4,7 NI/s<br>Qmax = 8,5 NI/s |

**5/3 all ports blocked**













|                           |  |
|---------------------------|--|
| Operating pressure :      | 2,7 to 8,3 bar   |
| Change-over time          | Actua. 20 ms<br>Return 20 ms P = 6b                              |
| Flow (acc. to ISO 6358) : | c = 1 NI/s x bar<br>b = 0,14<br>Qn = 3,8 NI/s<br>Qmax = 6,7 NI/s |



**Characteristics**

|                       |   |                        |   |
|-----------------------|---|------------------------|---|
| Fluid :               | Air or inert gas<br>Filtered 40 µ<br>Class 5 (according to ISO 8573-1)<br><br>Dry class 4 (according to ISO 8573-1)<br>Non-lubricated or lubricated | Operating pressure :   | -0.9 to 8,3 bar<br>with external pressure 6 bar |
| Storage temperature : | -40 °C to + 70 °C   | Piloting pressure :    | 2.7 to 8.3 bar                                  |
| Working temperature   | -15 °C to + 50°C  | Exhaust collection :   | Independant exhaust collection                  |
| Vibration :           | according to IEC 68-2-6<br>2G to 150 Hz   | Rated coil voltage :   | 24 VDC -15 % / +10 %                            |
| Shock :               | according to IEC 68-2-27<br>15G 11 ms   | Electrical connection: | Not polarised                                   |
|                       |   | Coil insulation :      | Class B   |
|                       |   | Power consumption :    | 1 W (42 mA) with LED                            |
|                       |   | Duty factor :          | 100 % at 20°C                                   |











Solenoid operated valve fitted with 24 VDC solenoid

|   | Symbol  | Description   | Weight (g) | Order code        |
|---|---|---|------------|-------------------|
|  <p>Including multi-function manual override cap</p> |  | Double 3/2 NC + NC  | 60         | <b>HMNVX2049A</b> |
|   |  | Double 3/2 NO + NO  | 60         | <b>HMPVX2049A</b> |
|   |  | Double 3/2 NC + NO  | 60         | <b>HMQVX2049A</b> |
|   |  | 5/2 single solenoid - Spring return                       | 49         | <b>HMEVX2049A</b> |
|   |  | 5/2 double solenoid                                       | 60         | <b>HM2VX2049A</b> |
|   |  | 5/3 all ports blocked (APB)                               | 65         | <b>HM5VX2049A</b> |
|    |  | Blanking module kit (including two M7 plugs for manifold) | 30         | <b>HMBVX00XXA</b> |
|   |  | Additional pressure module                                | 30         | <b>HMCVX00XXA</b> |



Metal manifold for 4 valves (M7 threaded)

|   | Description                                   | Weight (g) | Order code      |
|---|---|------------|-----------------|
|  <p>Side ported</p>   | 4 position manifold single electrical address | 332        | <b>PSM21JAP</b> |
|   | 4 position manifold double electrical address | 332        | <b>PSM21MAP</b> |
|  <p>Bottom ported</p> | 4 position manifold single electrical address | 310        | <b>PSM22JAP</b> |
|   | 4 position manifold double electrical address | 310        | <b>PSM22MAP</b> |


Complete manifold without fitting (M7 threaded)

|   | Symbol  | Description                             | Weight (g) | Order code              |
|---|---|---|------------|-------------------------|
|  <p>Side ported</p>   |  | 4 x Double 3/2 NC + NC                  | 572        | <b>PSM31MAPN0N0N0N0</b> |
|   |  | 4 x 5/2 single solenoid - Spring return | 528        | <b>PSM31JAPE0E0E0E0</b> |
|   |  | 4 x 5/2 double solenoid                 | 572        | <b>PSM31MAP20202020</b> |
|   |  | 4 x 5/3 all ports blocked (APB)         | 592        | <b>PSM31MAP50505050</b> |
|  <p>Bottom ported</p> |  | 4 x Double 3/2 NC + NC                  | 550        | <b>PSM32MAPN0N0N0N0</b> |
|   |  | 4 x 5/2 single solenoid - Spring return | 506        | <b>PSM32JAPE0E0E0E0</b> |
|   |  | 4 x 5/2 double solenoid                 | 550        | <b>PSM32MAP20202020</b> |
|   |  | 4 x 5/3 all ports blocked (APB)         | 570        | <b>PSM32MAP50505050</b> |


**Pneumatic accessories**

|   | Description   | Size                  | Tube OD | Material | Order code         |
|---|---|-----------------------|---------|----------|--------------------|
|  | Straight pneumatic connector for sub-base and <b>Px</b>                           | M7                    | 4 mm    | Metal    | <b>F28PMB4M7MD</b> |
|   |   | M7                    | 6 mm    | Metal    | <b>F28PMB6M7MD</b> |
|   | Straight pneumatic connector for <b>Ex</b>  | 1/8"                  | 6 mm    | Metal    | <b>F4PMB6-1/8</b>  |
|   |   | 3/8"                  | 8 mm    | Metal    | <b>F4PB8-3/8</b>   |
|   |   | 3/8"                  | 10 mm   | Metal    | <b>F4PB10-3/8</b>  |
|   |  | Muffler for <b>Ex</b> | 1/8"    |          | Metal              |
| 1/8"  |   |                       |         | Plastic  | <b>P6M-PAB1</b>    |
| Muffler for exhaust port  |   | 3/8"                  |         | Metal    | <b>ESB37MC</b>     |

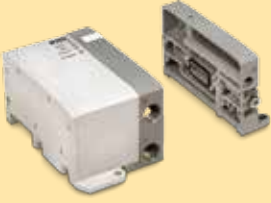
**Multi-pressure inter-manifold seal plate**

|   | Description               | Pressure port     | Exhaust port | Weight (g) | Order code     |
|---|---------------------------|-------------------|--------------|------------|----------------|
|  | Inter-manifold seal plate | Passing / Passing | Passing      | 16         | <b>PSM0001</b> |
|   |                           | Passing / Block   | Passing      | 20         | <b>PSM0002</b> |
|   |                           | Passing / Block   | Block        | 30         | <b>PSM0003</b> |
|   |                           | Block / Block     | Block        | 40         | <b>PSM0004</b> |

**Spare parts**

|   | Description   | Weight (g) | Order code     |
|---|---|------------|----------------|
|  | 24 VDC Pilot solenoid with screws   | 11         | <b>PSM0010</b> |
|   | Set of 10 multifunction manual override caps  | 15         | <b>PSM0011</b> |
|   | Set of 5 valve manifold gaskets and 10 screws   | 25         | <b>PSM0012</b> |
|   | Set of 10 M7 plugs for auxiliary pressure selection                                       | 30         | <b>PSM0013</b> |
|   | Set of 10 labels (in the P/N, <b>x</b> has to be replaced with the valve function letter) | 5          | <b>PSM002x</b> |
|   | Set of 10 manifold to manifold M3 screws  | 20         | <b>PSM0014</b> |

32 output driver end modules ordering chart



|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| P | S | M | L | 6 | 1 | A | P |
|---|---|---|---|---|---|---|---|

| 32 Output driver end modules |                              |                        |
|------------------------------|------------------------------|------------------------|
|                              | 24VDC power supply connector | Extender bus connector |
| <b>L6</b>                    | NO                           | NO                     |
| <b>M5</b>                    | NO                           | YES                    |
| <b>M6</b>                    | YES                          | NO                     |
| <b>M7</b>                    | YES                          | YES                    |

| Ported design |               | Thread type |
|---------------|---------------|-------------|
| <b>1</b>      | Side ported   | 3/8" BSPP   |
| <b>2</b>      | Bottom ported | 3/8" BSPP   |
| <b>5</b>      | Side ported   | 3/8" NPT    |
| <b>6</b>      | Bottom ported | 3/8" NPT    |

32 outputs driver selection guide :

**L6 type**

- 32 outputs driver with internal solenoids power supply from the communication head module
- Extended valve island not possible



**M6 type**

- 32 outputs driver with external solenoids power supply by M12 male connector
- Extended valve island not possible



**M7 type**

- 32 outputs driver with external solenoids power supply by separated M12 male connector
- Extended Bus link connection for additional valve islands by separate M12 female connector



**M5 type**

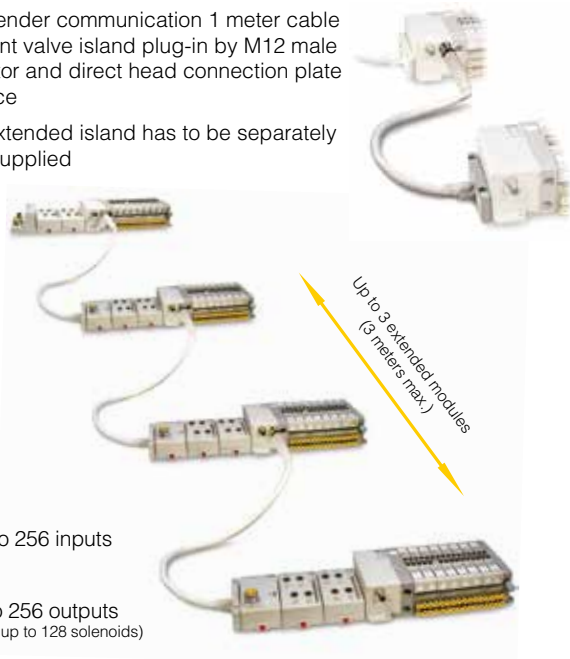
- 32 outputs driver with internal solenoids power supply from the communication head module
- Extended Bus link connection for additional valve islands by separate M12 female connector



**Bus extender**

Bus extender communication 1 meter cable for instant valve island plug-in by M12 male connector and direct head connection plate on device

Every extended island has to be separately power supplied







**Technical data**


**32 Outputs driver modules**

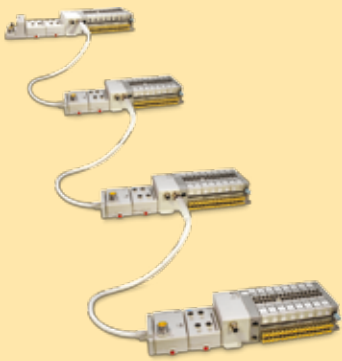
- Number of Outputs : 32
- Operating Voltage Range : 20,4 to 26.4 VDC
- Output current rating Nom. : 50 mA per chanel (100 mA Max)  
3.2A per module
- Pointbus current : 200 mA
- Working temperature : -15°C to 50°C
- Dust and water protection : IP65

**32 outputs driver modules**

|   | Sub-base design | Thread type | 24 VDC power supply | Extender bus | Weight (g) | Order code      |
|---|-----------------|-------------|---------------------|--------------|------------|-----------------|
|  | Side ported     | 3/8" BSPP   | NO                  | NO           | 400        | <b>PSML61AP</b> |
|   | Bottom ported   | 3/8" BSPP   | NO                  | NO           | 400        | <b>PSML62AP</b> |
|  | Side ported     | 3/8" BSPP   | YES                 | NO           | 400        | <b>PSMM61AP</b> |
|   | Bottom ported   | 3/8" BSPP   | YES                 | NO           | 400        | <b>PSMM62AP</b> |
|  | Side ported     | 3/8" BSPP   | NO                  | YES          | 400        | <b>PSMM51AP</b> |
|   | Bottom ported   | 3/8" BSPP   | NO                  | YES          | 400        | <b>PSMM52AP</b> |
|  | Side ported     | 3/8" BSPP   | YES                 | YES          | 400        | <b>PSMM71AP</b> |
|   | Bottom ported   | 3/8" BSPP   | YES                 | YES          | 400        | <b>PSMM72AP</b> |

**Bus extender**

|  | Description  | Weight (g) | Order code      |
|--|--|------------|-----------------|
|  | Head plate<br>1 meter cable / M12 male connector<br>for extended island inter-connection | 380        | <b>PSSVEXT1</b> |



Communication modules :

- Fieldbus
- Industrial Ethernet

Digital and Analogical I/O modules  
 Extended power supply module  
 IP67 modules

**H Series Industrial Communication and I/O modules**

**H Series Industrial Communication modules**

H Series Industrial Communication modules are available in :

- DeviceNet
- Profibus DP
- Ethernet I/P
- ControlNet



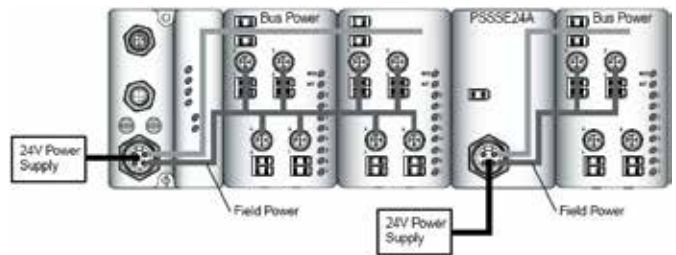
**Digital or Analogical electrical I/O modules**

Some modules have diagnostic features, electronic fusing, or individually isolated inputs/ outputs. The H Series Industrial Communication family provides a wide range of input and output modules to span many applications, from highspeed discrete to process control. H Series Industrial Communication supports producer/consumer technology, which allows input information and output status to be shared among multiple Logix controllers.



**Extension Power Unit**

The auxiliary power supports up to 10 I/O modules and 32 output driver with a maximum of 10 A field power. The 24 VDC extension power unit (PSSSE24A) extends the backplane bus power to support up to 10 more I/O modules. Connect additional extension power units to expand the I/O assembly up to 63 I/O modules



**Technical data**

**Industrial Communication modules & Extension power unit**

Bus power supply : 24 VDC at 400 mA  
 Power supply input voltage : 24 VDC  
 Operative voltage range : 10 to 28.8 VDC  
 Input overvoltage protection : Reverse polarity protected

**Analogue Input modules**

Number of Outputs : 2  
 Input signal Range : 4 to 20 mA / 0 to 10 VDC  
 Pointbus current : 75 mA

**Analogue Output modules**

Number of Outputs : 2  
 Input signal Range : 4 to 20 mA / 0 to 10 VDC  
 Pointbus current : 75 mA

**Digital Input modules**

Number of Outputs : 8 – PNP or NPN  
 Operating Voltage Range : 10 to 28.8 VDC  
 Input current on-state : 2 to 5 mA  
 Input current off-state : 1,5 mA  
 Pointbus current : 75 mA

**Digital Output modules**


Number of Outputs : 8  
 Operating Voltage Range : 10 to 28.8 VDC  
 Output current rating Max. : 1 A per channel  
 3 A per module  
 Pointbus current : 75 mA

**Relay Output modules**






Number of Outputs : 4 – NO contacts  
 Operating Voltage Range : 5 to 28.8 VDC  
 Output current rating Max. : 2 A per channel  
 8 A per module  
 Pointbus current : 90 mA




**H Series Industrial Communication modules**

|   | Description | Fieldbus connection | Power supply connector | Weight (g)    | Order code        |                |
|---|-------------|---------------------|------------------------|---------------|-------------------|----------------|
|  | DeviceNet   | M18                 | 7/8" - 4 pins          | 400           | <b>PSSCDM18PA</b> |                |
|   |             | M12 - A coding      | 7/8" - 4 pins          | 400           | <b>PSSCDM12A</b>  |                |
|   |             | Profibus DP         | M12 - B coding         | 7/8" - 5 pins | 380               | <b>PSSCPBA</b> |
|   |             | Ethernet I/P        | M12 - D coding         | 7/8" - 4 pins | 380               | <b>PSSCENA</b> |
|   |             | ControlNet          | M12 - D coding         | 7/8" - 4 pins | 380               | <b>PSSCCNA</b> |



**Electrical I/O modules**

|  | Description        | Polarity  | Connector type    | Weight (g) | Order code        |
|--|--------------------|-----------|-------------------|------------|-------------------|
|   | 8 Digital Inputs   | PNP       | 8 x M8            | 400        | <b>PSSN8M8A</b>   |
|  |                    |           | 4 x M12           | 380        | <b>PSSN8M12A</b>  |
|  |                    | NPN       | 4 x M12           | 380        | <b>PSSP8M12A</b>  |
|   | 8 Digital Outputs  | PNP       | 8 x M8            | 400        | <b>PSST8M8A</b>   |
|  |                    |           | 4 x M12           | 380        | <b>PSST8M12A</b>  |
|  |                    |           | 1 x M23           | 400        | <b>PSST8M23A</b>  |
|   | 4 Digital Outputs  | Relay     | 4 x M12           | 410        | <b>PSSTR4M12A</b> |
|  |                    |           | 2 Analogue Inputs | 0 - 10 V   | 2 x M12           |
|   | 2 Analogue Outputs | 4 - 20 mA |                   | 2 x M12    | 400               |
|  |                    | 0 - 10 V  | 2x M12            | 400        | <b>PSSTAVM12A</b> |
|  | 2 Analogue Outputs | 4 - 20 mA | 2 x M12           | 400        | <b>PSSTACM12A</b> |




**Auxiliary electrical modules**

|   | Description                 | Connector type | Weight (g) | Order code      |
|---|-----------------------------|----------------|------------|-----------------|
|  | 24 VDC expansion power unit | 7/8" - 4 pins  | 420        | <b>PSSSE24A</b> |

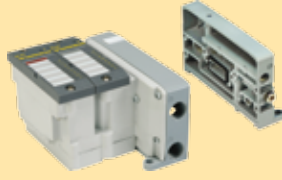
**Bus extender**

|   | Description                                   | Length   | Weight (g) | Order code      |
|---|---|----------|------------|-----------------|
|  | Bus extender cable for module interconnection | 1 meter  | 380        | <b>PSSVEXT1</b> |
|   |   | 3 meters | 760        | <b>PSSVEXT3</b> |
|  | Termination module                            |          | 200        | <b>PSSTERM</b>  |

**Accessories**

|   | Description                   | Bus protocol                     | Connector type | Weight (g)     | Order code        |                   |
|---|-------------------------------|----------------------------------|----------------|----------------|-------------------|-------------------|
|  | Power supply connector        | DeviceNet, ControlNet & Ethernet | 7/8" - 4 pins  | 40             | <b>P8CS7804AA</b> |                   |
|   |                               | Profibus DP                      | 7/8" - 5 pins  | 40             | <b>P8CS7805AA</b> |                   |
|  | Line termination              | DeviceNet                        | M12 - A coding | 25             | <b>P8BPA00MA</b>  |                   |
|   |                               | Profibus DP                      | M12 - B coding | 25             | <b>P8BPA00MB</b>  |                   |
|   |                               | Bus IN female connector          | DeviceNet      | M12 - A coding | 25                | <b>P8CS1205AA</b> |
|   |                               | Profibus DP                      | M12 - B coding | 25             | <b>P8CS1205AB</b> |                   |
|  | Bus OUT male connector        | DeviceNet                        | M12 - A coding | 25             | <b>P8CS1205BA</b> |                   |
|   |                               | Profibus DP                      | M12 - B coding | 25             | <b>P8CS1205BB</b> |                   |
|   | Cable quick connect connector |                                  | M8             | 25             | <b>P8CS0803J</b>  |                   |
|   |                               |                                  | M12 - A coding | 25             | <b>P8CS1204J</b>  |                   |
|   | "Y" shape, thread to thread   |                                  | M12 - 2 x M12  | 25             | <b>P8CSY1212A</b> |                   |

16 Outputs Moduflex Bus ends module adaptor



**TURCK**  
Industrial Automation

**P S M T 2 1 A P**

| TURCK BL67 Series adaptor |   | Ported design |               | Thread type |
|---------------------------|---|---------------|---------------|-------------|
| <b>T0</b>                 | Valve Driver Module without output module | <b>1</b>      | Side ported   | 3/8" BSPP   |
| <b>T1</b>                 | Valve Driver Module for 16 Outputs        | <b>2</b>      | Bottom ported | 3/8" BSPP   |
| <b>T2</b>                 | Valve Driver Module for 32 Outputs        | <b>5</b>      | Side ported   | 3/8" NPT    |
|                           |   | <b>6</b>      | Bottom ported | 3/8" NPT    |

For T0 version, 16 output module and blank module can be ordered separately from the next page or directly from TURCK under the same part number.

Valve driver Module for 16 or 32 Outputs

Modularity up to 16 or 32 Outputs :

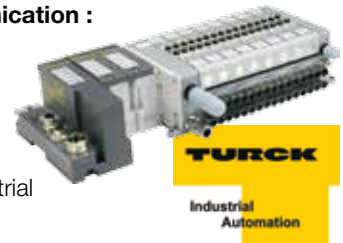
- Populated with 1 or 2 standard TURCK 16 Output modules BL67-16DO-0. 1A-P, the Valve Driver Module can handle up to 16 or 32 solenoid valves.
- For a 16 Outputs configuration, the second slot has to be populated with 1 standard TURCK blank module BL67-E.



TURCK BL67 communication gateway

H Series Industrial Communication :

- Linked to a TURCK BL67 communication module (programmable or not programmable), the device can be connected to a wide choice of Field Bus or Industrial Ethernet protocols.

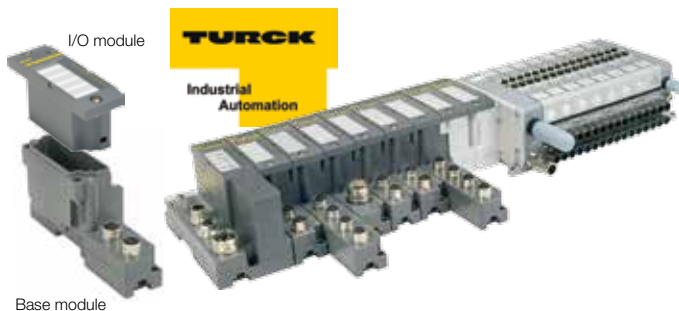


TURCK BL67 I/O and Base modules

The 2 piece design allows to complete the device with a choice through a full digital or analogue **I/O modules** range populating the **base module** existing with a multiple choice of electrical connection (M8, M12, M23, 7/8")


The complete resulting configuration can handle :

- Up to 32 electrical modules (up to 2 in the Valve Driver Module)
- Up to 256 digital I/O (up to 32 outputs in the Valve Driver Module)
- Up to 64 analog I/O




Full description of TURCK BL67 Series on <http://www.turck.com>

**Valve Driver Module - TURCK BL67 adaptor**

|   | Description   | Solenoid Valves                                      | Sub-base design | Thread type | Weight (g)      | Order code      |
|---|---|--|-----------------|-------------|-----------------|-----------------|
|  | Valve Driver Module   | 0  | Side ported     | 3/8" BSPP   | 200             | <b>PSMT01AP</b> |
|   |   | Without 16 O module                                  | Bottom ported   | 3/8" BSPP   | 200             | <b>PSMT02AP</b> |
|   | 16 Outputs or blank module to be ordered separately (see below) |  |                 |             |                 |                 |
|   |   | 16   | Side ported     | 3/8" BSPP   | 270             | <b>PSMT11AP</b> |
|   |   | Including :<br>- 1 x 16 O module<br>- 1 blank module | Bottom ported   | 3/8" BSPP   | 270             | <b>PSMT12AP</b> |
|   |   | 32   | Side ported     | 3/8" BSPP   | 310             | <b>PSMT21AP</b> |
|   | Including :<br>- 2 x 16 O modules                               | Bottom ported  | 3/8" BSPP       | 310         | <b>PSMT22AP</b> |                 |

**Standard TURCK BL67 module**


|  | Description  | Weight (g) | Order code              |
|--|--|------------|-------------------------|
|  | 16 Outputs module for 16 or 32 solenoid valves configuration | 55         | <b>BL67-16DO-0.1A-P</b> |
|  | Blank module for 16 solenoid valves configuration            | 15         | <b>BL67-E</b>           |

Both standard TURCK BL67 Outputs module and Blank module can be ordered directly from TURCK under the same part number.

**16 Outputs module BL67-16DO-0.1A-P technical specifications**

|                                 |   |                                 |  |
|---------------------------------|---|---------------------------------|--|
| Number of channels              | 16  | Dimensions (W x L x H)          | 32 x 91 x 59 mm                        |
| Nominal voltage $V_0$           | 24 VDC  | Approvals                       | CE, cULus                              |
| Rated current from field supply | ≤ 100 mA  | Operating temperature           | Refer to solenoid valve                |
| Rated current from module bus   | ≤ 30 mA   | Storage temperature             | -40°C to +70°C                         |
| Power loss, typical             | ≤ 1.5 W   | Vibration                       | According to IEC68-2-6 : 2g to 150 Hz  |
|                                 |   | Shock test                      | According to IEC68-2-27 : 15g to 11 ms |
| Output type                     | PNP   | Electro-magnetic compatibility  | acc. to EN61131-2                      |
| Output voltage                  | 24 VDC  | Protection class                | IP 65                                  |
| Output current per channel      | 140 mA rated current<br>(with VN 01-05 or higher) | Tightening torque fixing screws | 0.9 ... 1.2 Nm                         |
| Output delay                    | 3 ms  |                                 |  |
| Load type                       | resistive, inductive                              |                                 |  |
| Short-circuit protection        | yes   |                                 |  |
| Simultaneity factor             | 1   |                                 |  |
| Electrical isolation            | electronics for the field level                   |                                 |  |

### 16 Outputs Moduflex Bus ends module adaptor



## P S M M C 1 A P

| Moduflex 16 Outputs adaptor |                                 |
|-----------------------------|---------------------------------|
| <b>M4</b>                   | Adaptor without bus module      |
| <b>MC</b>                   | Adaptor with CANopen module     |
| <b>MD</b>                   | Adaptor with DeviceNet module   |
| <b>MP</b>                   | Adaptor with Profibus DP module |

For AS-i communication, use M4 and see Moduflex Valve catalogue for AS-i module part number.

| Ported design |               | Thread type |
|---------------|---------------|-------------|
| <b>1</b>      | Side ported   | 3/8" BSPP   |
| <b>2</b>      | Bottom ported | 3/8" BSPP   |
| <b>5</b>      | Side ported   | 3/8" NPT    |
| <b>6</b>      | Bottom ported | 3/8" NPT    |

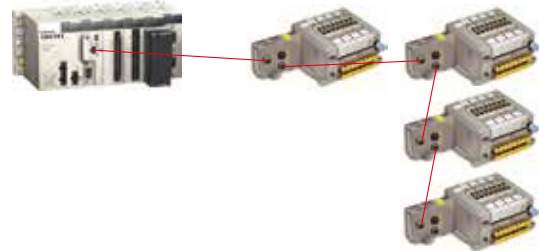
### Moduflex Bus 16 Outputs

16 solenoids fieldbus modules available in DeviceNet, CANopen, and Profibus DP protocols.



### Closer to the cylinder

Decentralized application when solenoid valves have to be closer to the pneumatic actuators.




### Technical data

#### Moduflex Bus communication modules

|                               |              |                             |                    |
|-------------------------------|--------------|-----------------------------|--------------------|
| Bus power supply :            | 20 to 30 VDC | Water and dust Protection : | IP65               |
| Power supply output voltage : | 24 VDC       | Output protection :         | overload protected |
| Module consumption :          |              |                             |                    |
| • DeviceNet :                 | 1,5 W        |                             |                    |
| • CANopen :                   | 1,5 W        |                             |                    |
| • Profibus DP :               | 1,5 W        |                             |                    |

### Moduflex Bus modules




|  | Description         | Bus protocol  | Sub-base design | Thread type | Weight (g)      | Order code      |
|--|---------------------|---------------|-----------------|-------------|-----------------|-----------------|
|  | Moduflex Bus module | CANopen       | Side ported     | 3/8" BSPP   | 250             | <b>PSMMC1AP</b> |
|  |                     |               | Bottom ported   | 3/8" BSPP   | 250             | <b>PSMMC2AP</b> |
|  | DeviceNet           | Side ported   | 3/8" BSPP       | 250         | <b>PSMMD1AP</b> |                 |
|  |                     | Bottom ported | 3/8" BSPP       | 250         | <b>PSMMD2AP</b> |                 |
|  | Profibus DP         | Side ported   | 3/8" BSPP       | 250         | <b>PSMMP1AP</b> |                 |
|  |                     | Bottom ported | 3/8" BSPP       | 250         | <b>PSMMP2AP</b> |                 |

Also available, AS-i interface protocol, standard version or extended version (A - B coded). See Moduflex Valve catalogue.


|  |   |     |               |           |     |                 |
|--|---|-----|---------------|-----------|-----|-----------------|
|  | End modules adaptor without Moduflex Bus module | All | Side ported   | 3/8" BSPP | 200 | <b>PSMM41AP</b> |
|  |   |     | Bottom ported | 3/8" BSPP | 200 | <b>PSMM42AP</b> |

For configuration files, go to : <http://www.parker.com/pneu/moduflex>.

### Decentralized Device bus accessories

|  | Description                            | Bus protocol                | Connector type           | Weight (g) | Order code        |
|--|--|-----------------------------|--------------------------|------------|-------------------|
|  <p><b>P8CS0803J</b></p>  | Power supply female straight connector | All                         | M12 - A coding           | 25         | <b>P8CS1205AA</b> |
|  | Line termination                       | DeviceNet                   | M12 - A coding           | 25         | <b>P8BPA00MA</b>  |
|  |  | CANopen                     | M12 - B coding           | 25         | <b>P8BPA00MB</b>  |
|  <p><b>P8CSY1212A</b></p> | Bus IN female connector                | DeviceNet                   | M12 - A coding           | 25         | <b>P8CS1205AA</b> |
|  |  | CANopen                     | M12 - B coding           | 25         | <b>P8CS1205AB</b> |
|  | Bus OUT male connector                 | DeviceNet                   | M12 - A coding           | 25         | <b>P8CS1205BA</b> |
|                           | Cable quick connect connector          | CANopen                     | M12 - B coding           | 25         | <b>P8CS1205BB</b> |
|  |  | Profibus DP                 | M12 - B coding           | 25         | <b>P8CS1205BB</b> |
|  |  | "Y" shape, thread to thread | M8                       | 25         | <b>P8CS0803J</b>  |
|  |  |                             | M12 - A coding           | 25         | <b>P8CS1204J</b>  |
|  |  |                             | M12 - 2 x M12 - A coding | 25         | <b>P8CSY1212A</b> |

**Multi-connection head module**



P S M L 2 1 A P

**Multi-wire connection**

|           |                   |
|-----------|-------------------|
| <b>L2</b> | Sub-D25 connector |
|-----------|-------------------|


|          | Ported design | Thread type |
|----------|---------------|-------------|
| <b>1</b> | Side ported   | 3/8" BSPP   |
| <b>2</b> | Bottom ported | 3/8" BSPP   |
| <b>5</b> | Side ported   | 3/8" NPT    |
| <b>6</b> | Bottom ported | 3/8" NPT    |

**Sub-D25 connection**


Up to 24 solenoids on standard Sub-D25 connector.



**Technical data**




| Address | Pin Number | Pin Number | Address |
|---------|------------|------------|---------|
| 2       | 14         | 1          | 1       |
| 4       | 15         | 2          | 3       |
| 6       | 16         | 3          | 5       |
| 8       | 17         | 4          | 7       |
| 10      | 18         | 5          | 9       |
| 12      | 19         | 6          | 11      |
| 14      | 20         | 7          | 13      |
| 16      | 21         | 8          | 15      |
| 18      | 22         | 9          | 17      |
| 20      | 23         | 10         | 19      |
| 22      | 24         | 11         | 21      |
| 24      | 25         | 12         | 23      |
|         |            | 13         | Common  |




| Address | Color    | Pin Number | Pin Number | Color          | Address |
|---------|----------|------------|------------|----------------|---------|
| 1       | Black    | 1          | 14         | Brown / White  | 2       |
| 3       | Brown    | 2          | 15         | Red / White    | 4       |
| 5       | Red      | 3          | 16         | Orange / White | 6       |
| 7       | Orange   | 4          | 17         | Green / White  | 8       |
| 9       | Yellow   | 5          | 18         | Blue / White   | 10      |
| 11      | Green    | 6          | 19         | Purple / White | 12      |
| 13      | Blue     | 7          | 20         | Red / Black    | 14      |
| 15      | Purple   | 8          | 21         | Orange / Black | 16      |
| 17      | Gray     | 9          | 22         | Yellow / Black | 18      |
| 19      | White    | 10         | 23         | Green / Black  | 20      |
| 21      | Pink     | 11         | 24         | Gray / Black   | 22      |
| 23      | Lt Green | 12         | 25         | Pink / Black   | 24      |
|         |          | 13         |            |                |         |

|                                    |   |
|------------------------------------|---|
| Rated voltage :                    | 24 VDC  |
| Maximum addresses :                | 24  |
| Maximum energised simultaneously : | 24  |
| Electrical connection :            | Sub-D25 pin DIN 41652, MIL-C-24308, NFC93425 type HE5 |
| Polarity :                         | PNP and NPN compatible (solenoids not polarized)      |
| Dust and water protection :        | IP65 rated with properly assembled IP65 rated cable   |

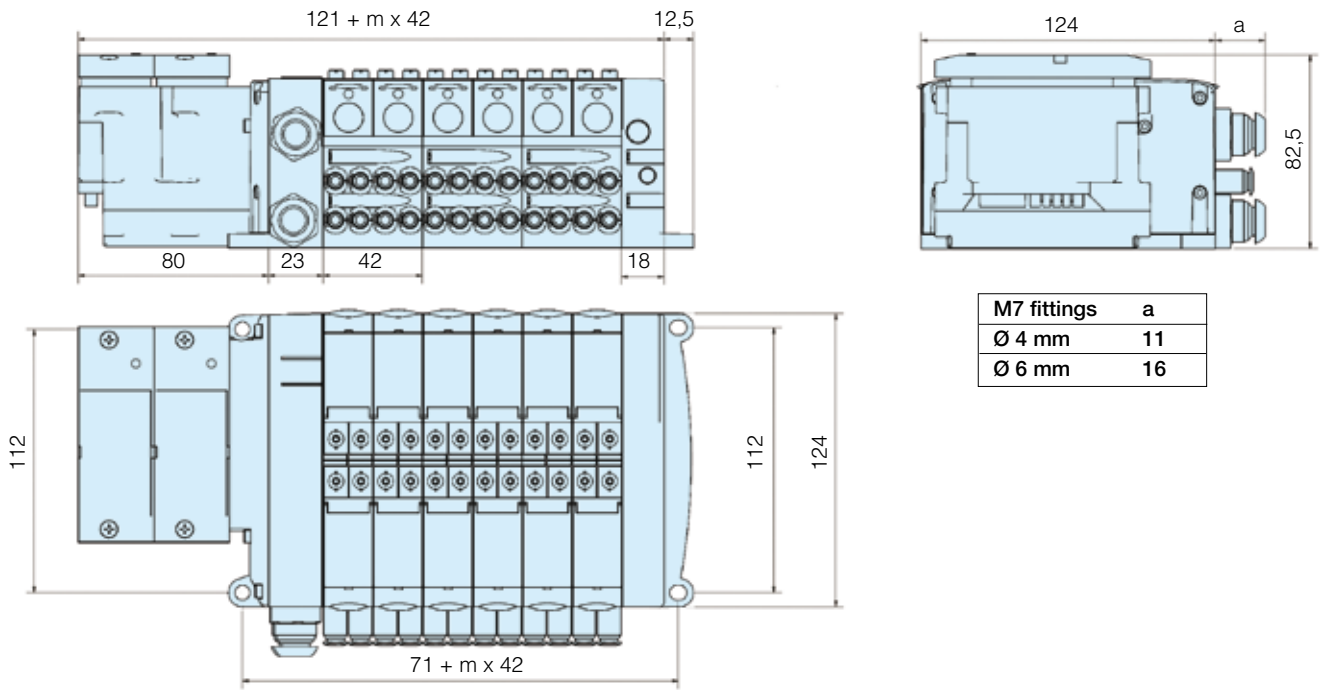
**Electrical multi-pole end modules**

|   | Description         | Sub-base design | Thread type | Weight (g) | Order code      |
|---|---------------------|-----------------|-------------|------------|-----------------|
|  | Sub-D25 ends module | Side ported     | 3/8" BSPP   | 250        | <b>PSML21AP</b> |
|   |                     | Bottom ported   | 3/8" BSPP   | 250        | <b>PSML22AP</b> |

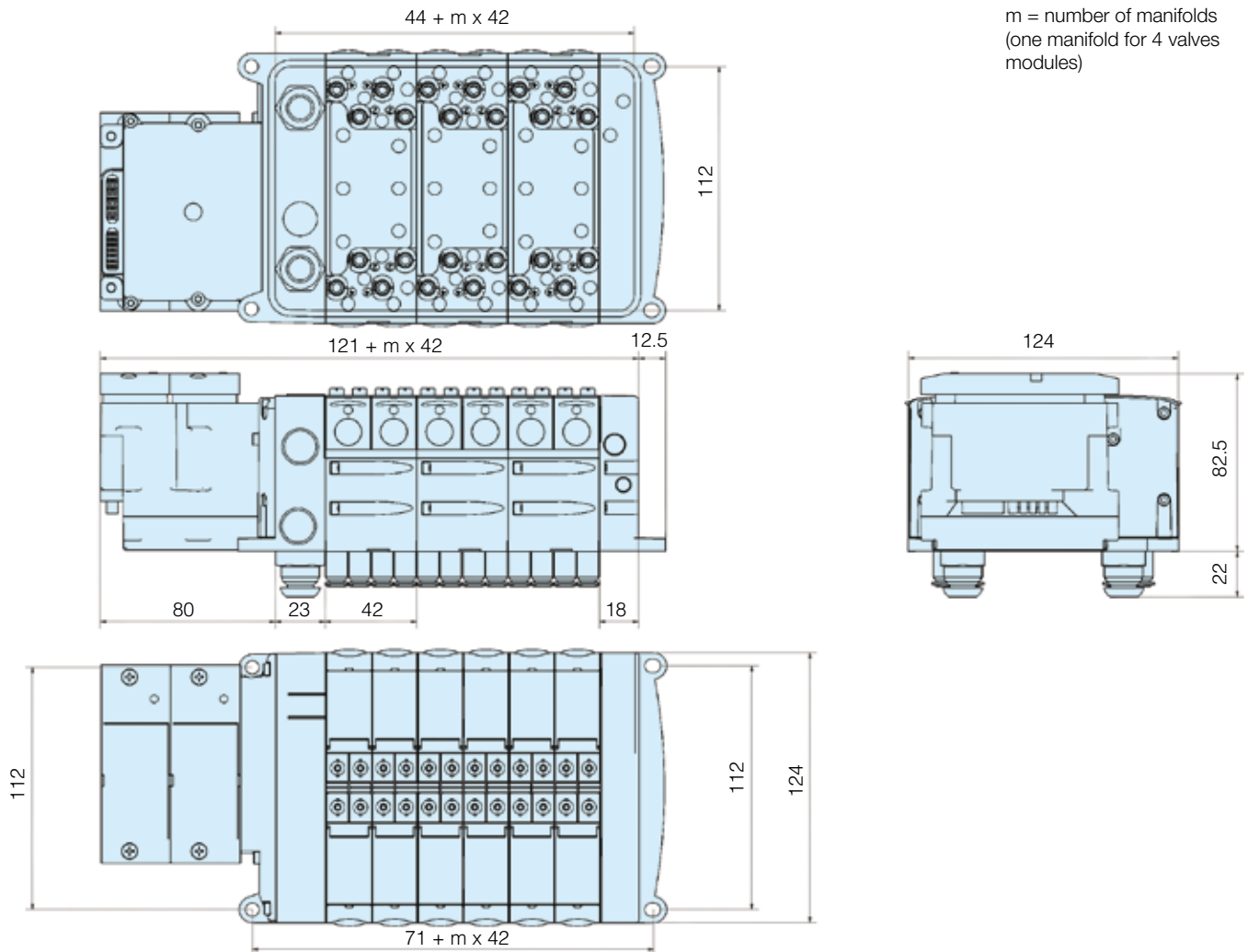
**Electrical accessories**

|   | Description  | Cable length | Weight (g) | Order code        |
|---|--|--------------|------------|-------------------|
|  | Sub-D25 connector IP40 with flying leads multi-cable | 3 m          | 380        | <b>P8LMH25M3A</b> |
|   |  | 9 m          | 780        | <b>P8LMH25M9A</b> |
| <b>P8LMH25M3A</b>   | Sub-D25 connector IP65 with flying leads multi-cable | 9 m          | 790        | <b>P8LMH25B9A</b> |

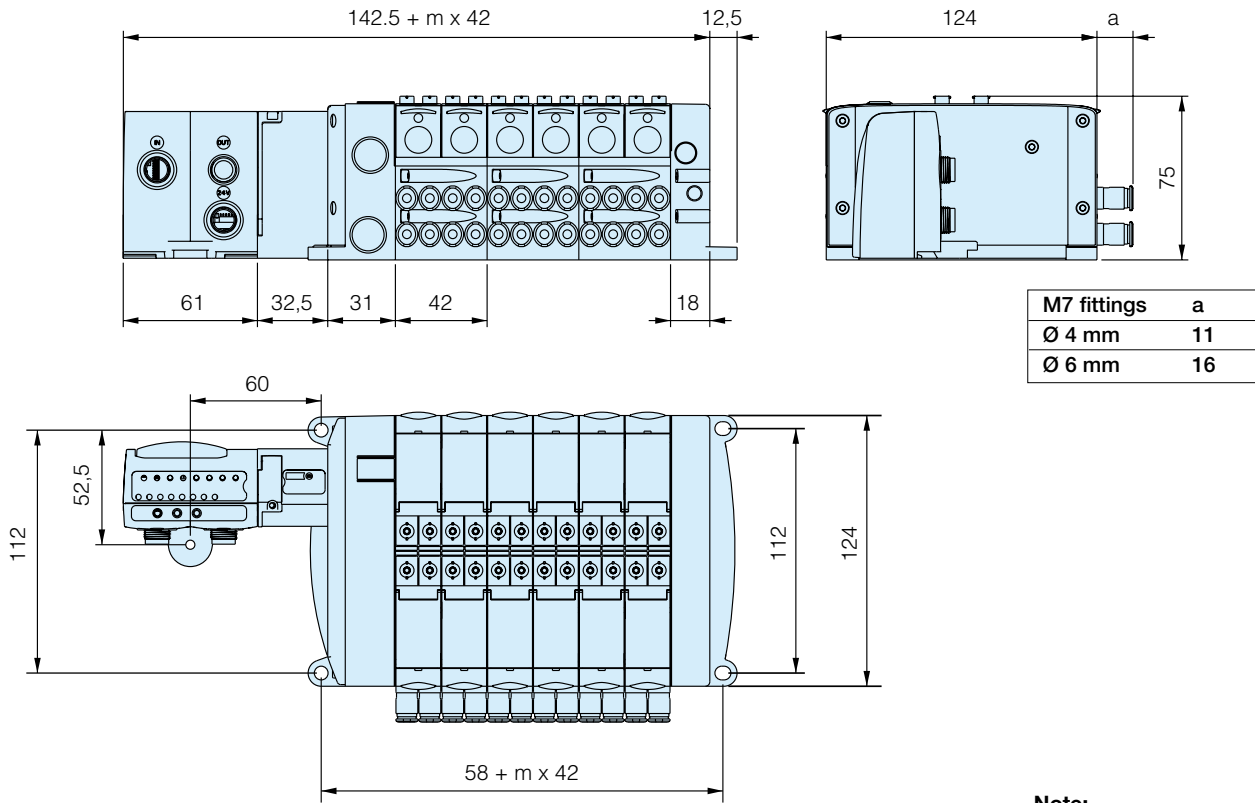
**H Series Micro Valve with TURCK BL67 adaptor - Side ported**



**H Series Micro Valve with TURCK BL67 adaptor - Bottom ported**

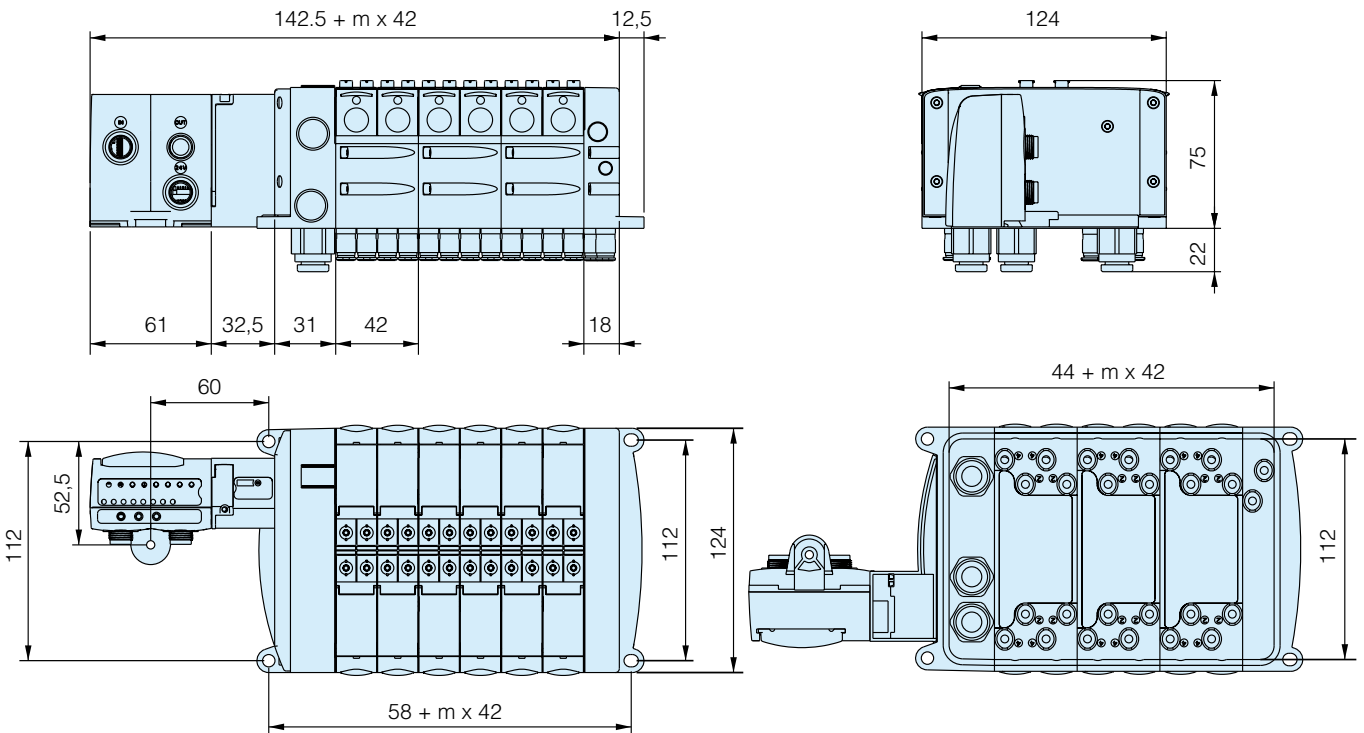


**Fieldbus - Side ported**

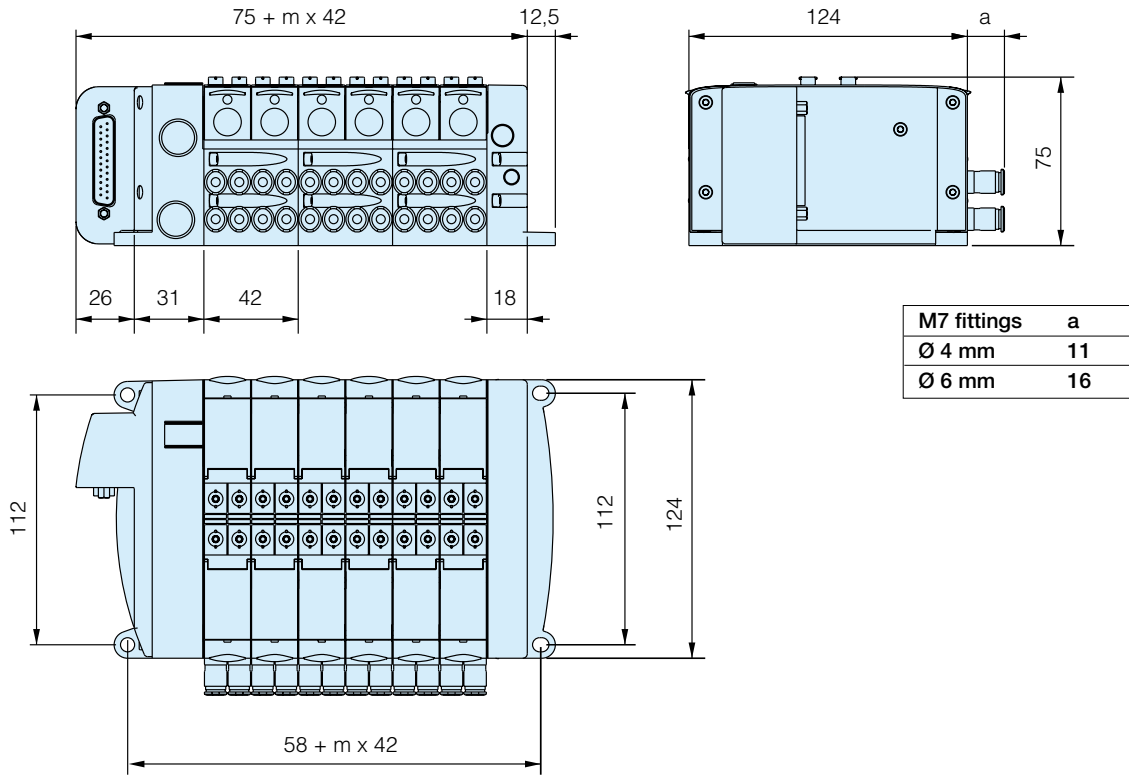


**Note:**  
 m = number of manifolds  
 (one manifold for 4 valves  
 modules)

**Fieldbus - Bottom ported**

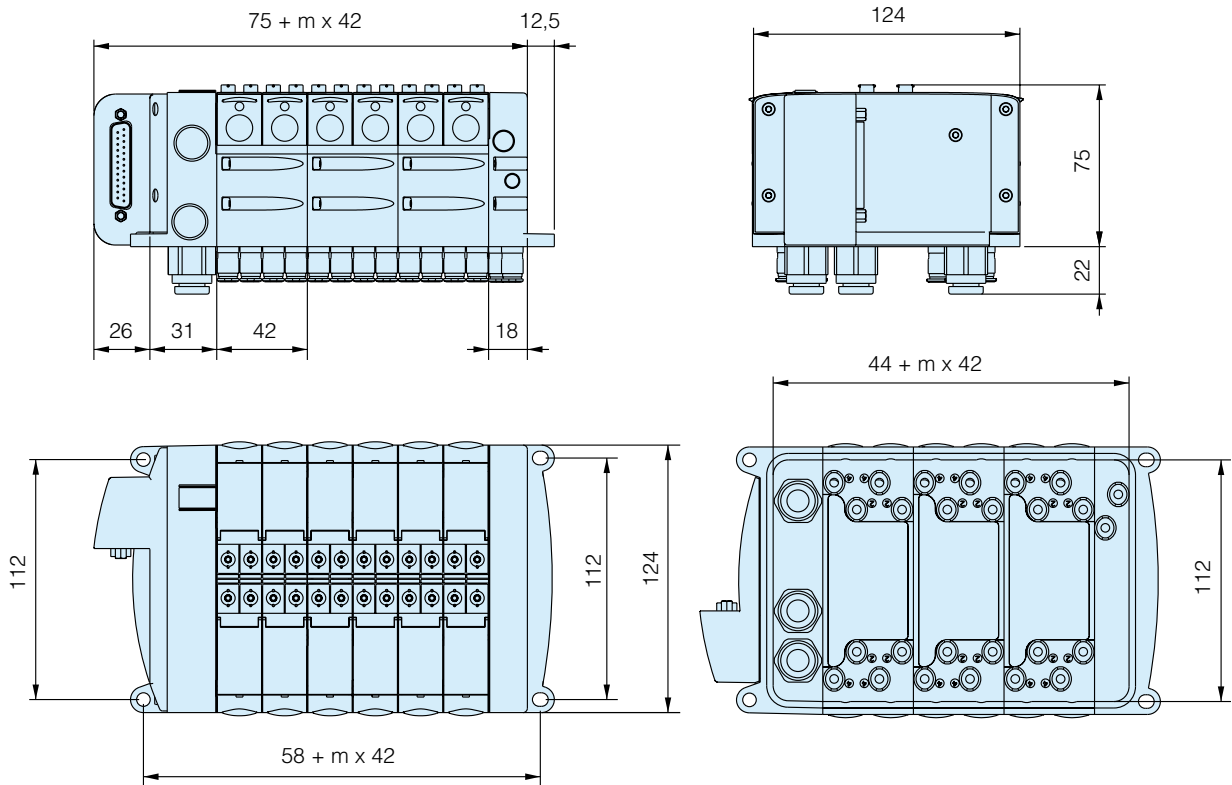


**SubD25 - Side ported**



**Note:**  
 m = number of manifolds  
 (one manifold for 4 valves  
 modules)

**SubD25 - Bottom ported**

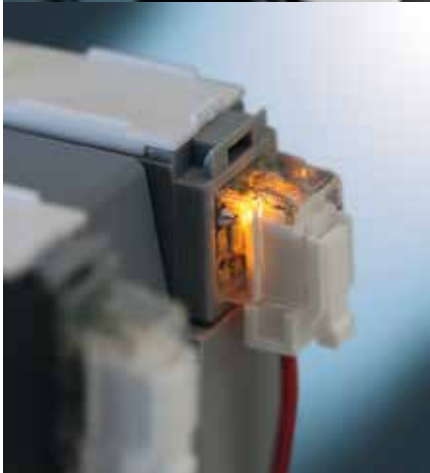




# Moduflex Valve System®

## Flexibility for pneumatic users

Whether configured from basic components or ordered as a pre-assembled and tested valve island, **Moduflex flexibility** is unmatched in the market place.



### Innovative

The 6 patents awarded to the Moduflex Valve System reflect that innovation is core to the Parker design process. Maintaining a clear understanding of our customer's expectations has defined the individuality of the Moduflex, and clearly differentiated it as a leading automation solution.

### Adaptive

No other system can be adapted so simply once specified. Unique, captive fitting release system, quick release electrical connectors and single mechanical screw connection between manifolds offer the ultimate capability for late system design changes.

### Multi-Functional

From stand-alone valves to fieldbus ready valve islands, from cylinder flow controls to vacuum generators with integrated blow-off, the Moduflex Valve System meets the requirements of the whole automation spectrum.

## Moduflex Valve System

The Moduflex Valve System redefines flexibility for pneumatic users. Whether configured from basic components or ordered as a pre-assembled and tested valve island, Moduflex flexibility is unmatched in the market place.



### V Series



### T Series



Lockable Connector IP67



Clip Connector IP40

### S Series



Lockable Connector IP67



Clip Connector IP40

### P Series



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### Multi-Functional

From stand-alone valves to fieldbus ready valve islands, from cylinder flow controls to vacuum generators with integrated blow-off, the Moduflex Valve System meets the requirements of the whole automation spectrum.

### Light-weight

An As-i compatible valve manifold with 8 electrical inputs and 8 pneumatic outputs weighs a mere 800grams, making the Moduflex Valve System the perfect choice for end of arm tooling application.

## Moduflex Valve technology

Two technology platforms enable the compact design and high performance of the Moduflex Valve System.

The compact dual 4/2 and 3/2 valves utilize well proven Parker seal technology. The standard 4/2 valves adopt the long life super durable ceramic switching technology.

**Dual 4/2 valve**

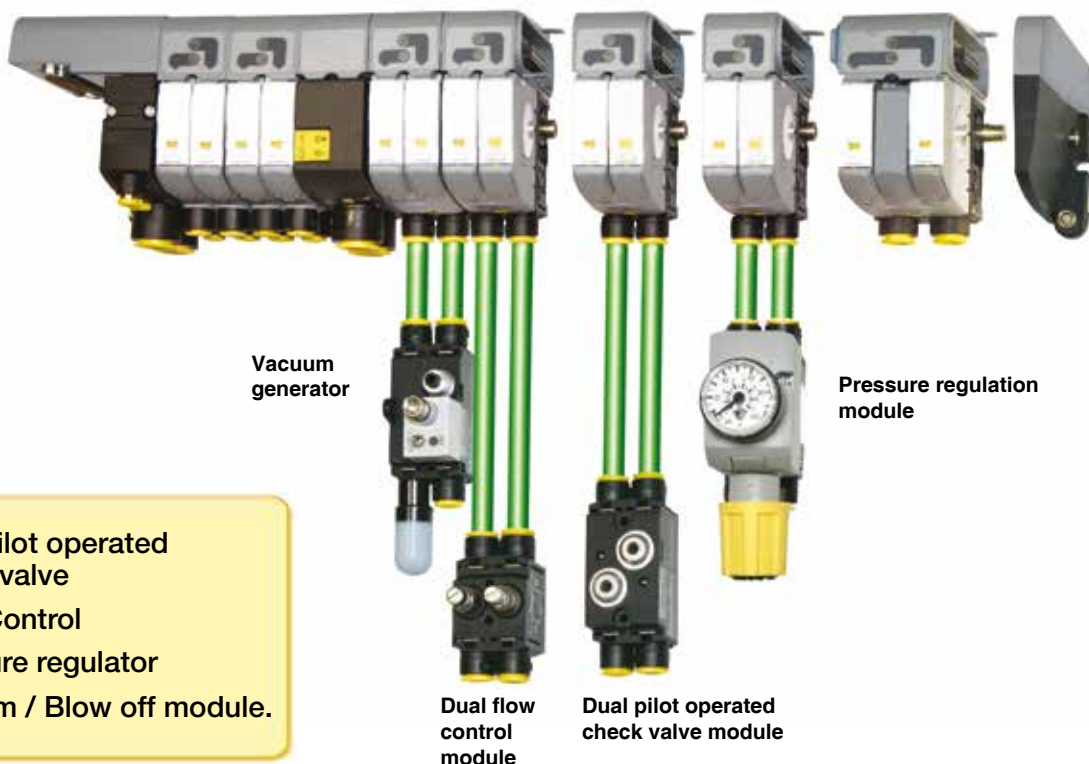


**4/2 Valve**



## Moduflex Complete Control

With the introduction of the dual 4/2 size 1 valves, Moduflex now offers unrivaled ability of matching valves to exact flow requirements, ensuring cost and space are minimized. In addition, Moduflex Valve System offers all the necessary control peripherals to provide a complete automation solution. Moduflex is the complete control package.



- Dual pilot operated check valve
- Flow Control
- Pressure regulator
- Vacuum / Blow off module.

With high performance technology, Moduflex opens a new era in the field of electro-pneumatic automation. Valves are easily assembled into compact islands that conform to any application requirement.

### Adaptive pneumatic

With the Moduflex Valve design, pneumatic automation is now totally flexible.

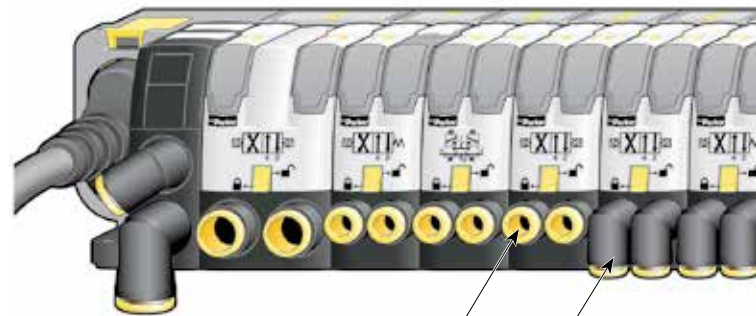
- Valves may be stand-alone or assembled into short or long islands, depending on application.
- IP 65-67 water and dust protection allows valve to be installed near the cylinders for shorter response time and lower air consumption.
- The IP40 water and dust protection allows an optimized electrical connection for applications into cabinet or soft and none aggressive environments.
- Valve island electrical connections may be integrated.
- Push-in pneumatic connectors may be straight or elbow, for 4, 6, 8 or 10 mm OD tubes.
- A given island may incorporate different valve sizes in order to fulfill each cylinder flow requirement. A single island will accommodate all cylinders, up to 100 mm bore size.
- Island modifications are easy : add or remove a valve, change a valve function, change tubing size, change piloting in minutes.
- Manual overrides are also adaptive : locking for set up, non-locking for production, ...



stand-alone valve



short valve island

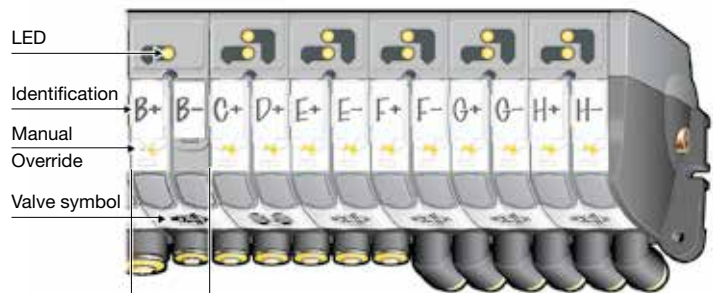


or long valve island

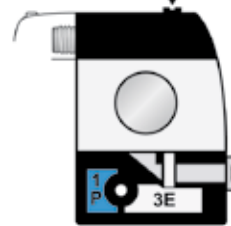
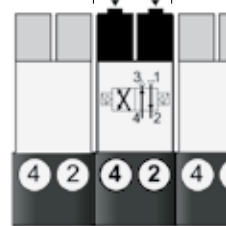
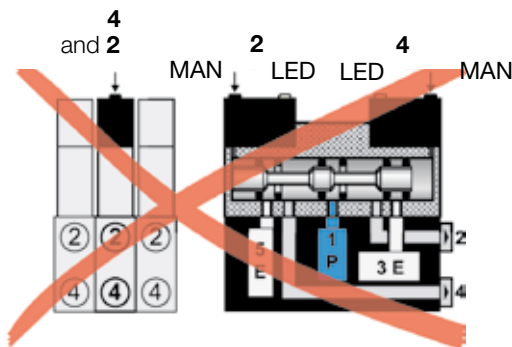
straight or elbow pneumatics connectors

### Easy man-machine dialog

- Moduflex incorporates LED indicators, manual overrides (MAN), in conjunction with valve symbols and identification.
- As compared to traditional 5/2 valve islands, Moduflex offers a more user friendly dialog : each marking, LED and MAN are all lined up with the corresponding cylinder output.



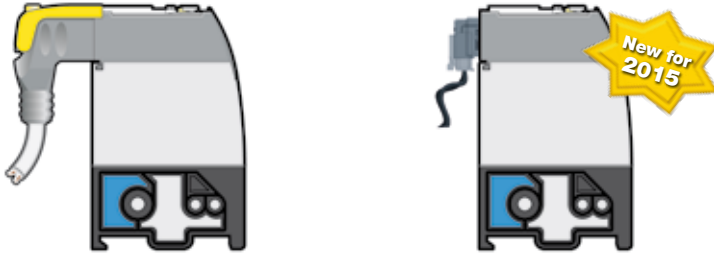
**Island with traditional 5/2 spool valves :**  
Before any action, LED and MAN have to be carefully related to the corresponding output. Man-machine dialog is difficult.



**Island with Moduflex 4/2 slides valves:**  
Each marking, LED and MAN line up with the corresponding output. Man-machine dialog is easy.

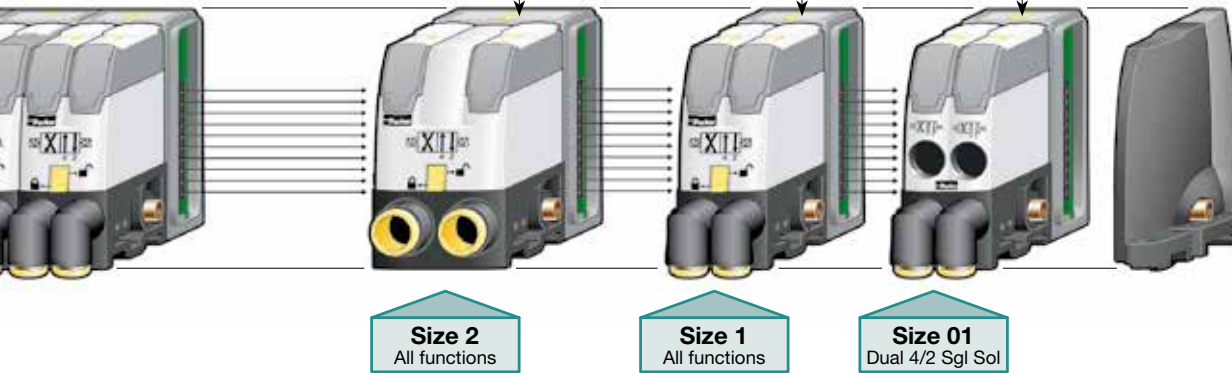
## Adaptive design

individual electrical connector  
 Lockable M8 Connector - IP67 or Clip Connector - IP40



or Valve Bank with integrated IP65 electrical connections

3 valves sizes in the same valve bank

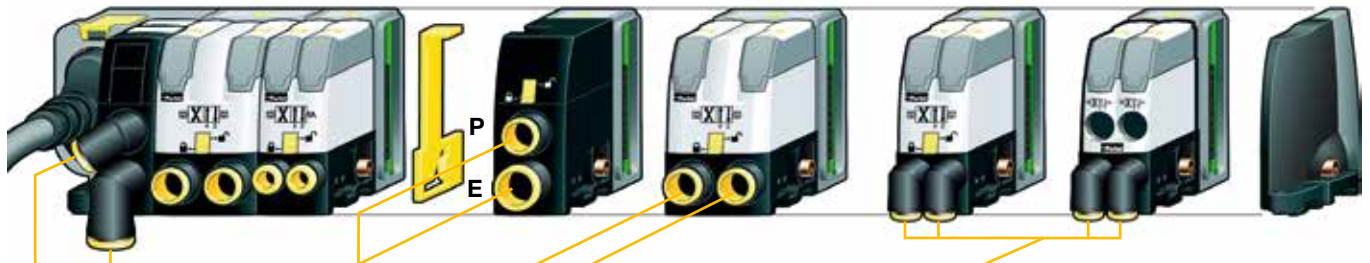


## Flows and tube connections

Optimal nominal section for a full flow with appropriate fitting

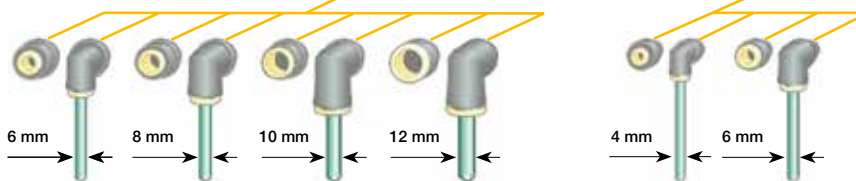
**3 valve sizes lead to a global choice of tube sizes, thus covering all usual applications**

| Size 2   |                  | Size 1   |                 | Size 01                           |
|--|------------------|--|-----------------|-----------------------------------|
| Nominal section 40 mm <sup>2</sup>                     |                  | Nominal section 12 mm <sup>2</sup>                     |                 | Nominal section 4 mm <sup>2</sup> |
| Qn 800 NI/mn*<br>Qmax 1340 NI/mn*                      |                  | Qn 310 NI/mn*<br>Qmax 510 NI/mn*                       |                 | Qn 165 NI/mn*<br>Qmax 275 NI/mn*  |
| *) For 3/2 functions<br>Qn 450 NI/mn<br>Qmax 800 NI/mn |                  | *) For 3/2 functions<br>Qn 230 NI/mn<br>Qmax 415 NI/mn |                 |                                   |
| Tube size to cylinder                                  | Ø Ext. 10 mm     | Ø Ext. 8 mm  | Ø Ext. 6 mm     | Ø Ext. 4 mm                       |
| Cylinder bore size                                     | Ø 63 to Ø 100 mm | Ø 40 to Ø 63 mm  | Ø 25 to Ø 40 mm | Ø 6 to Ø 25 mm                    |



### Adaptive pneumatic connection

Valve outputs are equipped with clip-on push-in tube connectors with a choice of straight or elbow in different sizes



Typical cylinder speeds are shown on next pages. Module size, tube diameter and length, cylinder size, load and exhaust collection are taken into account.

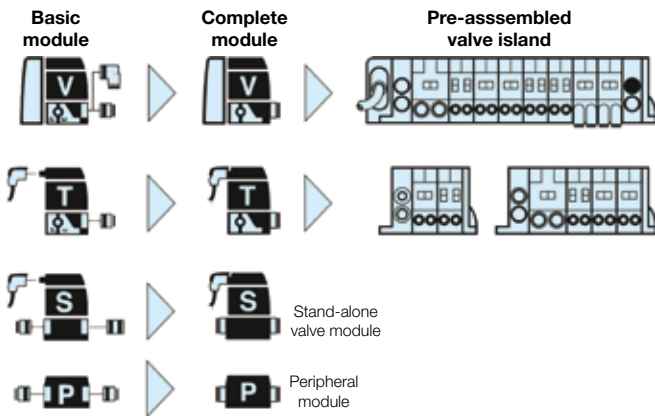
**Operating information**

|                                  |                 |
|----------------------------------|-----------------|
| Working pressure                 | -0,9 to 8 bar   |
| Pilot pressure                   | 3 to 8 bar *    |
| Working temperature              | -15 °C to 60 °C |
| Protection individual connectors | IP 67 NEMA4     |
| Protection integrated connectors | IP 65           |
| Voltage                          | 24 V DC         |
| * Single and double 3/2          | 3,5 to 8 bar    |

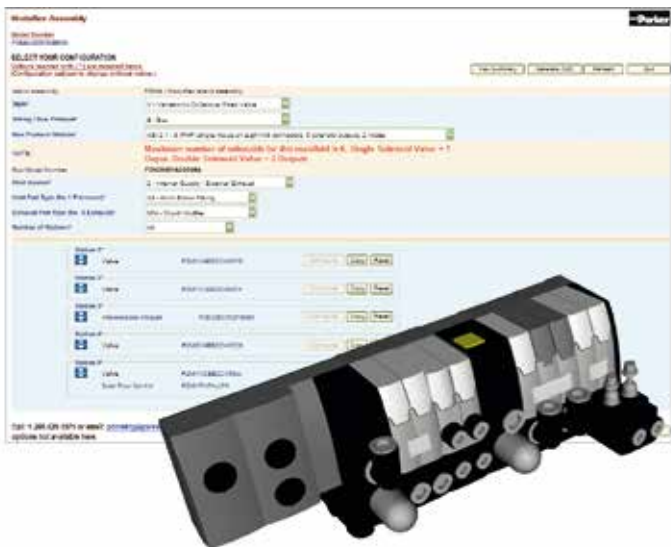
|               |              | Dual 4/2  | Dual 3/2  | 3/2       | 4/2        |
|---------------|--------------|-----------|-----------|-----------|------------|
| <b>Size 1</b> | <b>Qmax.</b> | 275 l/min | 415 l/min | 415 l/min | 510 l/min  |
|               | <b>Qn</b>    | 165 l/min | 235 l/min | 235 l/min | 310 l/min  |
| <b>Size 2</b> | <b>Qmax.</b> | -         | 805 l/min | 805 l/min | 1340 l/min |
|               | <b>Qn</b>    | -         | 450 l/min | 440 l/min | 800 l/min  |

**Total ordering flexibility**

Additionally to the complete product adaptability, the Moduflex Valve range offers for V, T, S and P series an ordering flexibility with 3 different designs; from all components separately ordered (basic module) to pre-assembled and tested valve island.



The Moduflex Valve Island in-line e-Configurator software is the easy way to, step by step, configure and order the required valve island for the application.



**Ordering options**

**1 - Basic modules ordering**

Using this option, all basic components are separately ordered :

- Head and Tail set
- Valve modules
- Intermediate module kit
- Peripheral modules
- Pneumatic connectors, mufflers and plugs
- Electrical connection or fieldbus module

The complete bill of material needed for the valve island assembly can be easily details using page 1 of the Moduflex Valve Configurator software report.

**2 - Complete modules ordering**

Using this option, modules are defined, ordered and supplied, pneumatic connectors and electrical connection equipped. One part number defines :

- Function module
- Pneumatic connectors, muffler and plugs
- Electrical connection and cable

For an entire valve island configuration, the list of complete modules can be easily details using page 3 of the Moduflex Valve Configurator software report.

**3 - Pre-assembled valve islands ordering**

Using this option, the complete valves island configuration has to be defined, and may be ordered, delivered fully assembly and tested under one part number.

The Moduflex Valve in-line e-Configurator software is an easy way for a clear definition of the requested valve island configuration.

**V series**

Integrated connection field bus  
 or multi-connector valve island



**T series**

Individual connector valve islands  
 Solenoid clip or lockable connector  
 or remote air pilot



**S series**

Stand alone valves  
 Solenoid clip or lockable connector  
 or remote air pilot

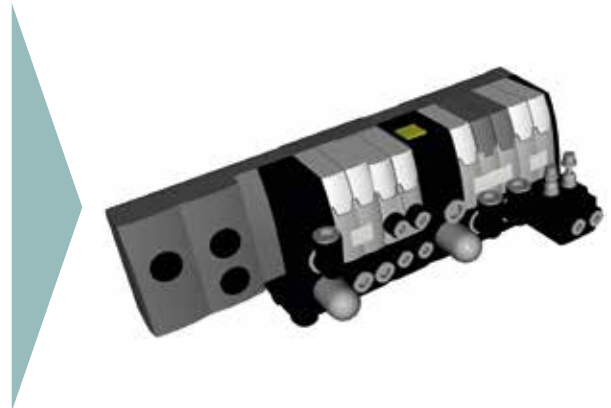


**P series**

Peripheral modules  
 Flow control, check valves,  
 pressure regulator, vacuum



**Moduflex Valve in-line e-Configurator**



**Integrated connections valve islands : V series**

In a V series Moduflex valve island, electrical controls are all received by the head module and transmitted to the concerned valve modules through the modular integrated circuit.

The head module may either be a cable multi-connector or a Fieldbus communication module : the next pages show multi-connector cable and a complete choice of bus protocols.

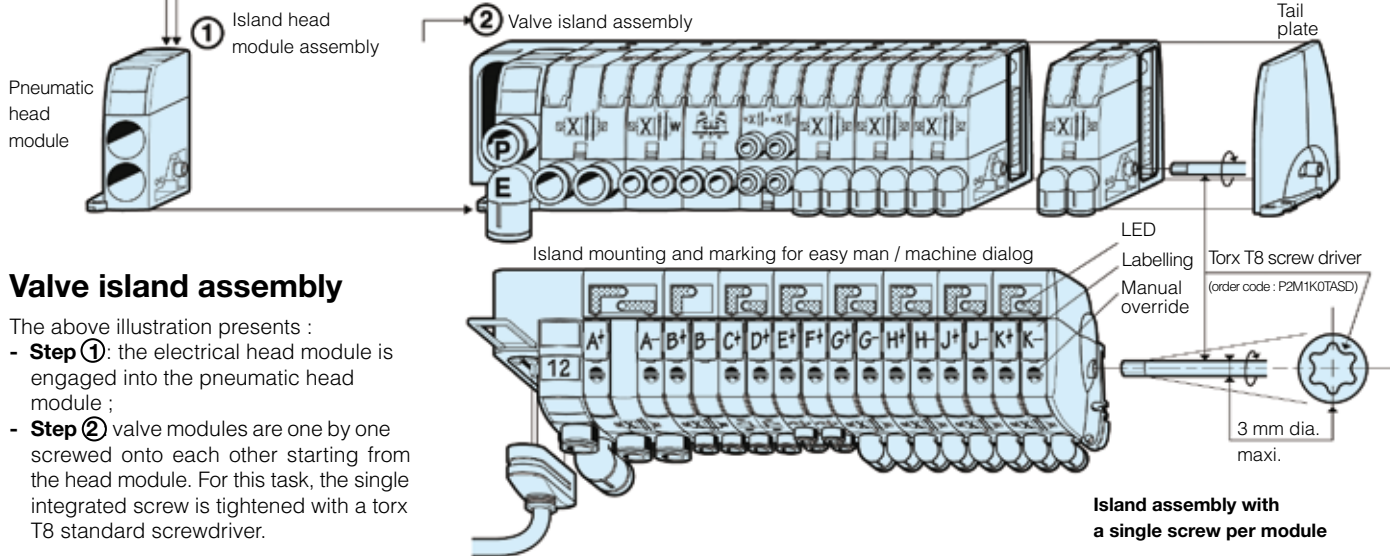
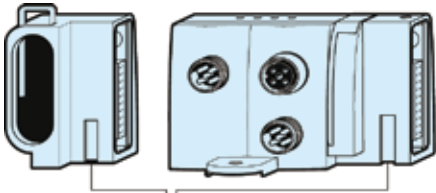


**Valve island configuration**

The following page shows all valve sizes and functions that may enter into a V series valve island and, for each valve size, a choice of clip-on pneumatic connectors : tubing size, straight, elbow...  
To receive its pressure supply and collect its exhaust, the island also requires a pneumatic

head and tail module set and sometimes an intermediate module set with 4 configuration plates for different functions. To receive its electrical controls, the island is completed by an electrical head module, either a multi-connector or by a bus module to be chosen from the next pages.

Valve island electrical head module : multi-connector or field bus connection



**Valve island assembly**

The above illustration presents :

- **Step 1** : the electrical head module is engaged into the pneumatic head module ;
- **Step 2** valve modules are one by one screwed onto each other starting from the head module. For this task, the single integrated screw is tightened with a torx T8 standard screwdriver.

The pneumatic connectors may be clipped or unclipped at any stage.

With a LED, a manual override and a labelling for each valve pilot (see illustration), the island front face eases the "man / machine" dialog.

The resulting valve island length is expressed by the drawing below, while further size details and mountings are presented on dimensions pages.

**Modules and island ordering**

Choice between 3 approaches :

**1 - Basic modules ordering :**

The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

**2 - Complete modules ordering :**

Page 265 shows the ordering chart for modules supplied with their connectors.

**3 - Assembled island ordering :**

Page 268 shows the valve island configurator CD-Rom to specify a valve island that may be delivered assembled.

Field bus head module :  
■ width : 94 mm

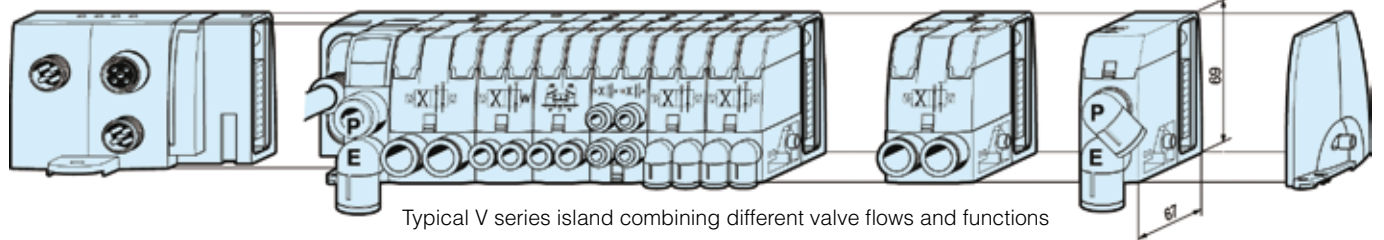
Multi-connector head module :  
■ guillotine, width : 47 mm  
■ sub-D 25, width : 56 mm

Valve modules size 1 :  
■ width : 25 mm

Valve module size 2 :  
■ width : 37.5 mm











Intermediate module :  
■ width : 25 mm

Tail plate :  
■ width : 16 mm









Basic modules (without connector)

| Valve Modules   |   |   | Size 1     |                    | Size 2     |                    |
|---|---|---|------------|--------------------|------------|--------------------|
|   | Symbol  | Description   | Weight (g) | Order code         | Weight (g) | Order code         |
|  <p>Size 1</p> |  | 4/2 Solenoid spring   | 94         | <b>P2M1V4ES2CV</b> | 100        | <b>P2M2V4ES2CV</b> |
|   |  | 4/2 Double solenoid   | 103        | <b>P2M1V4EE2CV</b> | 110        | <b>P2M2V4EE2CV</b> |
|   |  | 2 x 3/2 NC + NC<br>with exhaust check valves                          | 106        | <b>P2M1VDEE2CV</b> | 115        | <b>P2M2VDEE2CV</b> |
|   |  | 2 x 3/2 NO + NO<br>with exhaust check valves                          | 106        | <b>P2M1VCEE2CV</b> | 115        | <b>P2M2VCEE2CV</b> |
|  <p>Size 2</p> |  | 2 x 3/2 NC + NO<br>with exhaust check valves                          | 106        | <b>P2M1VEEE2CV</b> | 115        | <b>P2M2VEEE2CV</b> |
|   |  | 2 x 4/2 Solenoid spring<br>with exhaust check valves                  | 114        | <b>P2M1VJEE2CV</b> |            |                    |
|   |  | 3/2 NC<br>with exhaust check valves                                   | 102        | <b>P2M1V3ES2CV</b> | 110        | <b>P2M2V3ES2CV</b> |
|   |  | 4/3 Centre exhaust<br>2 x 3/2 NC + NC<br>without exhaust check valves | 106        | <b>P2M1VGEE2CV</b> | 115        | <b>P2M2VGEE2CV</b> |

Island head and intermediate module sets

| Valve Modules  | Description  | Weight (g) | Order code       |
|--|--|------------|------------------|
|  <p>P2M2HXT01</p> | Valve island pneumatic head and tail module set                              | 64         | <b>P2M2HXT01</b> |
|  | Valve island intermediate supply module with a set of 4 configuration plates | 68         | <b>P2M2BXV0A</b> |

Clip-On pneumatic connectors \*



| Valve Modules   |                    |         | Size 1     |                | Size 2     |                |
|---|--------------------|---------|------------|----------------|------------|----------------|
|   | Description        | Tube OD | Weight (g) | Order code     | Weight (g) | Order code     |
|  | Straight connector | G1/8"   | 2          | <b>FMDG1-1</b> |            |                |
|   |                    | 4 mm    | 2          | <b>FMD04-1</b> |            |                |
|   |                    | 6 mm    | 3          | <b>FMD06-1</b> | 3          | <b>FMD06-2</b> |
|   |                    | 8 mm    |            |                | 4          | <b>FMD08-2</b> |
|   |                    | 10 mm   |            |                | 5          | <b>FMD10-2</b> |
|   |                    | 12 mm   |            |                | 6          | <b>FMD12-2</b> |
|  | Elbow connector    | G1/8"   | 3          | <b>CMDG1-1</b> |            |                |
|   |                    | 4 mm    | 3          | <b>CMD04-1</b> |            |                |
|   |                    | 6 mm    | 5          | <b>CMD06-1</b> | 5          | <b>CMD06-2</b> |
|   |                    | 8 mm    |            |                | 6          | <b>CMD08-2</b> |
|   |                    | 10 mm   |            |                | 7          | <b>CMD10-2</b> |
|   |                    | 12 mm   |            |                | 8          | <b>CMD12-2</b> |
|  | Silencer           |         |            |                | 5          | <b>MMDVA2</b>  |
|   | Plug               |         | 3          | <b>PMDXX1</b>  | 5          | <b>PMDXX2</b>  |

\* Fittings and plugs pack quantity : 10

Electrical multi-connection and field bus head modules

Multiconnector or field bus head module to be chosen from next pages.



V series valve island : Electrical multi-connector head module

| Description   | Protection           | Cable length | Weight (g) | Order code       |                   |
|---|----------------------|--------------|------------|------------------|-------------------|
|  <p><b>Guillotine type</b></p> <p>Multi-connection head module</p>        |                      |              | 38         | <b>P2M2HEV0A</b> |                   |
|   | Guillotine connector | IP65         | 2 m        | 335              | <b>P8LMH20M2A</b> |
|   | with flying leads    |              | 5 m        | 802              | <b>P8LMH20M5A</b> |
|   | multi-cable          |              | 9 m        | 1425             | <b>P8LMH20M9A</b> |
|  <p><b>Standard Sub-D 25 type</b></p> <p>Multi-connection head module</p> |                      |              | 60         | <b>P2M2HEV0D</b> |                   |
|   | Sub-D 25 connector   | IP40         | 3 m        | 435              | <b>P8LMH25M3A</b> |
|   | with flying leads    |              | 9 m        | 1425             | <b>P8LMH25M9A</b> |
|   | multi-cable          | IP65         | 9 m        | 1425             | <b>P8LMH25B9A</b> |


V series valve island : Electrical field bus head modules for AS-i protocol




Standard AS-i protocol (up to 31 nodes) electrical head modules

|  |                   |           |                       |
|--|-------------------|-----------|-----------------------|
|  <p>Electrical module for <b>8 outputs</b> max.</p> <ul style="list-style-type: none"> <li>V series islands may have up to 8 solenoid pilots</li> <li>2 nodes per module, 4 I / 4 O per node</li> </ul> | Input connections | Weight(g) | <b>Order code</b>     |
|  | no input          | 150       | <b>P2M2HBVA10800</b>  |
|  | 8 M8 inputs       | 200       | <b>P2M2HBVA10808A</b> |
|  | 8 inputs on 4 M12 | 200       | <b>P2M2HBVA10808B</b> |
|  <p>Electrical module for <b>4 outputs</b> max.</p> <ul style="list-style-type: none"> <li>V series islands may have up to 4 solenoid pilots</li> <li>1 node per module, 4 I / 4 O</li> </ul>          | No inputs         | 150       | <b>P2M2HBVA10400</b>  |
|  | 4 inputs on 4 M12 | 200       | <b>P2M2HBVA10404B</b> |

AS-i version 2-1 protocol (up to 62 nodes) electrical head modules


|   |                   |     |                       |
|---|-------------------|-----|-----------------------|
|  <p>Electrical module for <b>6 outputs</b> max.</p> <ul style="list-style-type: none"> <li>V series islands may have up to 6 solenoid pilots</li> <li>2 nodes per module, 4 I / 3 O per node</li> </ul> | none              | 150 | <b>P2M2HBVA20600</b>  |
|   | 8 M8 Inputs       | 200 | <b>P2M2HBVA20608A</b> |
|   | 8 inputs on 4 M12 | 200 | <b>P2M2HBVA20608B</b> |

AS-i head module accessories




| Description   | Connector type                | Weight (g) | Order code        |
|---|-------------------------------|------------|-------------------|
|  <p><b>P8CS0803J</b></p> <p><b>P8CSY1212A</b></p> | Cable quick connect connector |            |                   |
|   | M8 Male                       | 25         | <b>P8CS0803J</b>  |
|   | M12 Male - A coding           | 25         | <b>P8CS1204J</b>  |
| « Y » shape   | M12 Male - 2 x M12 Female     | 25         | <b>P8CSY1212A</b> |
| Addressing cable 1 meter  | M12 Male - Jack               | 100        | <b>P8LS12JACK</b> |

**V series valve island : Electrical field bus head modules for device bus**

Electrical modules for 16 outputs  
 (The V series modules may have up to 16 solenoid pilot valves)

| Description   | Bus Protocol  | Bus In / Bus Out | Power supply   | Weight (g)           | Order code           |
|---|---|------------------|----------------|----------------------|----------------------|
|                          | <b>Profibus DP</b>  | M12 - B coding   | M12 - A coding | 250                  | <b>P2M2HBVP21600</b> |
|   | For GSD file, go to <a href="http://www.parker.com/pneu/moduflex">http://www.parker.com/pneu/moduflex</a> |                  |                |                      |                      |
|   | <b>DeviceNet</b>  | M12 - A coding   | M12 - A coding | 250                  | <b>P2M2HBVD21600</b> |
|   |   | M12 - B coding   |                | 250                  | <b>P2M2HBVD11600</b> |
|   | For EDS file, go to <a href="http://www.parker.com/pneu/moduflex">http://www.parker.com/pneu/moduflex</a> |                  |                |                      |                      |
|   | <b>CANopen</b>  | M12 - A coding   | M12 - A coding | 250                  | <b>P2M2HBVC21600</b> |
|   |   | M12 - B coding   | 250            | <b>P2M2HBVC11600</b> |                      |
| For EDS file, go to <a href="http://www.parker.com/pneu/moduflex">http://www.parker.com/pneu/moduflex</a> |   |                  |                |                      |                      |
| <b>InterBus-S</b>   |   | M23 - 9 Pins     | M12 - A coding | 300                  | <b>P2M2HBVS11600</b> |

**Device Bus connection accessories**

| Description   | Bus Protocol | Connector type | Weight (g) | Order code        |
|---|--------------|----------------|------------|-------------------|
|  | All          | M12 - A coding | 25         | <b>P8CS1205AA</b> |
|   |              | DeviceNet      | 25         | <b>P8CS1205AB</b> |
|   |              | CANopen        |            |                   |
|  | All          | M12 - A coding | 25         | <b>P8CS1205AA</b> |
|   |              | DeviceNet      | 25         | <b>P8CS1205BA</b> |
|  | All          | M12 - B coding | 25         | <b>P8CS1205AB</b> |
|   |              | Profibus DP    | 25         | <b>P8CS1205BB</b> |
| Line termination  | DeviceNet    | M12 - A coding | 25         | <b>P8BPA00MA</b>  |
|   |              | CANopen        |            |                   |
|   | Profibus DP  | M12 - B coding | 25         | <b>P8BPA00MB</b>  |



M12 - A coding connector



M12 - B coding connector

**Individual connection valve islands : T series**

In a T series valve island, electrical controls are individually connected to each valve module, onto its solenoid pilot.

As an alternative, air pilot valve modules are also available, to be controlled by individual pneumatic signals.



**Valve island assembly**

As shown by the above illustration, the valve modules are one by one screwed onto each other, starting from the head module. For this task, the single integrated screw is tightened with a torx T8 standard screwdriver.

The pneumatic connectors may be clipped or unclipped at any stage.

With a LED, a manual override and a labelling for each valve pilot (see above illustration), the island front face eases the "man / machine" dialog.

The resulting valve island length is expressed by the drawing below, while further size details and mountings are presented on dimensions pages.

**Valve island configuration**

The following page presents all valve sizes and functions that may enter into a T series valve island and, for each valve size, a choice of clip-on pneumatic connectors : tubing size, straight, elbow... To receive its pressure supply and collect its exhaust, the island also requires a

pneumatic head and tail module set and sometimes an intermediate module set including 4 configuration plates for different functions. Valve modules may either be solenoid versions or air pilot versions. Mixing both versions into the same valve island is possible.

**Valve pilot connections**

**1 - Solenoid valve modules**



In its IP40 version, each solenoid shows Clip connection integrating LED and voltage surge protection. The clip connector with flying leads may be ordered separately with independent or interconnected common.

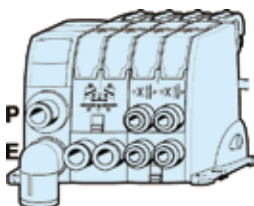
In its IP67 version, each solenoid shows a M8 connection. Lockable connectors, IP67 protected, with LED voltage surge protection and flying lead cable may be ordered for the required length.

**2 - Air pilot valve modules**



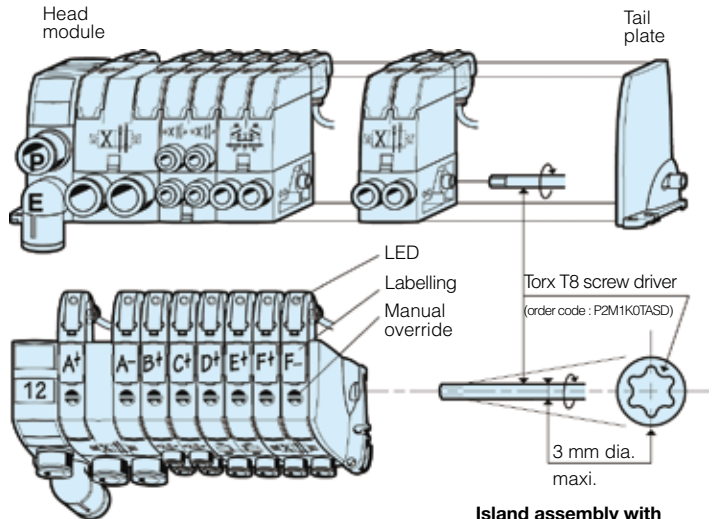
No connector has to be ordered : each pneumatic pilot port includes its integrated swivable elbow 4 mm OD tube push-in connector.

Typical T series short island for single or double acting small cylinders.



**Valve island assembly**

**Island mounting and marking for easy man / machine dialog**



**Island assembly with a single screw per module**

**Modules and island ordering**

Choice between 3 approaches :

**1 - Basic modules ordering :**

The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

**2 - Complete modules ordering :**

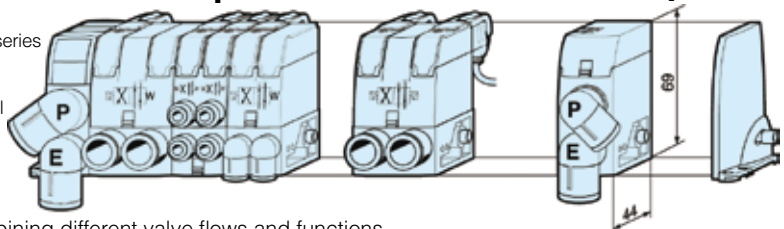
Page 265 shows the ordering chart for modules supplied with their connectors.

**3 - Assembled island ordering :**

Page 268 shows the valve island configurator CD-Rom to specify a valve island that may be delivered assembled.









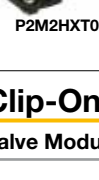



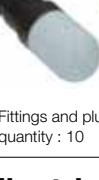



- Pneumatic head module : width : 32 mm
- Valve module size 1 : width : 25 mm
- Valve module size 2 : width : 37.5 mm
- Intermediate module : width : 25 mm
- Tail plate : width : 16 mm

Typical T series high flow island for both small and large cylinders.





Typical T series islands combining different valve flows and functions



## Basic modules (without connector)

| Valve Modules  |   |   |   |  | Size 1      |                    | Size 2             |                    |                    |                    |
|--|---|---|---|--|-------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|  | Symbol  | Description   | Actuator  | Pilot connector                              | W (g)       | Order code         | W (g)              | Order code         |                    |                    |
|  <p>Size 1<br/>Dual 4/2</p> |                  | 4/2 Spring return   | Solenoid  | M8 Lockable                                  | 68          | <b>P2M1T4ES2C</b>  | 74                 | <b>P2M2T4ES2C</b>  |                    |                    |
|  |   |   | Air pilot   | Clip   | 68          | <b>P2M1T4ES2CW</b> | 74                 | <b>P2M2T4ES2CW</b> |                    |                    |
|  |  <p>Size 1</p>   |                | 4/2 Double pilot  | Solenoid                                     | M8 Lockable | 77                 | <b>P2M1T4EE2C</b>  | 83                 | <b>P2M2T4EE2C</b>  |                    |
|  |   |   |   | Air pilot                                    | Clip        | 77                 | <b>P2M1T4EE2CW</b> | 83                 | <b>P2M2T4EE2CW</b> |                    |
|  |   |  <p>Size 1</p> |  | 2 x 3/2 NC + NC<br>with exhaust check valves | Solenoid    | M8 Lockable        | 80                 | <b>P2M1TDEE2C</b>  | 94                 | <b>P2M2TDEE2C</b>  |
|  |   |   |   |  | Air pilot   | Clip               | 80                 | <b>P2M1TDEE2CW</b> | 94                 | <b>P2M2TDEE2CW</b> |
|  <p>Size 1</p>             |                  | 2 x 3/2 NO + NO<br>with exhaust check valves  | Solenoid  | M8 Lockable                                  | 80          | <b>P2M1TCEE2C</b>  | 94                 | <b>P2M2TCEE2C</b>  |                    |                    |
|  |   |   | Air pilot   | Clip   | 80          | <b>P2M1TCEE2CW</b> | 94                 | <b>P2M2TCEE2CW</b> |                    |                    |
|  |  <p>Size 1</p> |                | 2 x 3/2 NC + NO<br>with exhaust check valves                                      | Solenoid                                     | M8 Lockable | 80                 | <b>P2M1TEEE2C</b>  | 94                 | <b>P2M2TEEE2C</b>  |                    |
|  |   |   |   | Air pilot                                    | Clip        | 80                 | <b>P2M1TEEE2CW</b> | 94                 | <b>P2M2TEEE2CW</b> |                    |
|  |  <p>Size 2</p> |                | 2 x 4/2 Spring return<br>with exhaust check valves                                | Solenoid                                     | M8 Lockable | 88                 | <b>P2M1TJEE2C</b>  |                    |                    |                    |
|  |   |   |   | Air pilot                                    | Clip        | 88                 | <b>P2M1TJEE2CW</b> |                    |                    |                    |
|  <p>Size 2</p>            |   |                | 3/2 NC<br>with exhaust check valves   | Solenoid                                     | M8 Lockable | 76                 | <b>P2M1T3ES2C</b>  | 90                 | <b>P2M2T3ES2C</b>  |                    |
|  |   |   |   | Air pilot                                    | Clip        | 76                 | <b>P2M1T3ES2CW</b> | 90                 | <b>P2M2T3ES2CW</b> |                    |
|  <p>Size 2</p>            |                  | 4/3 Centre exhaust<br>2 x 3/2 NC + NC<br>without exhaust check valves                           | Solenoid  | M8 Lockable                                  | 80          | <b>P2M1TGEE2C</b>  | 94                 | <b>P2M2TGEE2C</b>  |                    |                    |
|  |   |   | Air pilot   | Clip   | 80          | <b>P2M1TGEE2CW</b> | 94                 | <b>P2M2TGEE2CW</b> |                    |                    |
|  |   |   | Air pilot   |  | 70          | <b>P2M1TGPP</b>    | 84                 | <b>P2M2TGPP</b>    |                    |                    |

## Island head and intermediate module sets



| Valve Modules  |  | Description  | W (g) | Order code       |
|--|--|--|-------|------------------|
|  <p>P2M2HXT01</p> |  <p>P2M2BXT0A</p> | Valve island pneumatic head and tail module set                              | 64    | <b>P2M2HXT01</b> |
|  |  | Valve island intermediate supply module with a set of 4 configuration plates | 64    | <b>P2M2BXT0A</b> |

## Clip-On pneumatic connectors \*

| Valve Modules   |                    |         |       |                | Size 1 |                | Size 2     |  |
|---|--------------------|---------|-------|----------------|--------|----------------|------------|--|
|   | Description        | Tube OD | W (g) | Order code     | W (g)  | Order code     | Order code |  |
|  | Straight connector | G1/8"   | 2     | <b>FMDG1-1</b> |        |                |            |  |
|   |                    | 4 mm    | 2     | <b>FMD04-1</b> |        |                |            |  |
|   |                    | 6 mm    | 3     | <b>FMD06-1</b> | 3      | <b>FMD06-2</b> |            |  |
|   |                    | 8 mm    |       |                | 4      | <b>FMD08-2</b> |            |  |
|   |                    | 10 mm   |       |                | 5      | <b>FMD10-2</b> |            |  |
|   |                    | 12 mm   |       |                | 6      | <b>FMD12-2</b> |            |  |
|  | Elbow connector    | G1/8"   | 3     | <b>CMDG1-1</b> |        |                |            |  |
|   |                    | 4 mm    | 3     | <b>CMD04-1</b> |        |                |            |  |
|   |                    | 6 mm    | 5     | <b>CMD06-1</b> | 5      | <b>CMD06-2</b> |            |  |
|   |                    | 8 mm    |       |                | 6      | <b>CMD08-2</b> |            |  |
|   |                    | 10 mm   |       |                | 7      | <b>CMD10-2</b> |            |  |
|   |                    | 12 mm   |       |                | 8      | <b>CMD12-2</b> |            |  |
|   | Silencer           |         |       |                | 5      | <b>MMDVA2</b>  |            |  |
|   | Plug               |         | 3     | <b>PMDXX1</b>  | 5      | <b>PMDXX2</b>  |            |  |

\* Fittings and plugs pack quantity : 10

## Electrical connectors

| M8 connector  | Description                            | Connector type        | Cable length | W (g) | Order code         |
|---|--|-----------------------|--------------|-------|--------------------|
|  <p>M8 connector</p>  <p>Clip connector</p> | Individual Clip-on connector – IP67    | M8 / 2 x Flying leads | 2 meters     | 62    | <b>P8LS08L226C</b> |
|   | Including LED and surge protection     |                       | 5 meters     | 155   | <b>P8LS08L526C</b> |
|   | 2 Flying leads                         |                       | 9 meters     | 180   | <b>P8LS08L926C</b> |
|   | Clip-on connector – IP40               | 1 x Clip connector    | 1 meter      | 8     | <b>P8LW021C</b>    |
|   | Individual : Including 2 flying leads  | 2 x Clip connectors   | 1 meter      | 12    | <b>P8LW021C02</b>  |
|   | Multiple : Including 1 common (0 Vdc)  | 4 x Clip connectors   | 1 meter      | 20    | <b>P8LW021C04</b>  |
|   | and 1 flying lead per connector        | 8 x Clip connectors   | 1 meter      | 36    | <b>P8LW021C08</b>  |
|   | Straight cable quick connect to thread | M8                    |              | 12    | <b>P8CS0803J</b>   |
|   | connector, IP67 protected              | M12                   |              | 15    | <b>P8CS1204J</b>   |

**Stand-Alone Valve Modules : S series**

Very useful to control isolated cylinders, these stand-alone valves module are compact and easy to mount on the machines with neat electrical and pneumatic connections.

As an alternative to electrical controls, valves with air pilots are also available, to be controlled by individual pneumatic signals.



**Valve functions**

The following page shows all valve sizes and functions and, for each valve size, a choice of clip-on pneumatic connectors : tubing size, straight, elbow, ...

**Valve main connections**

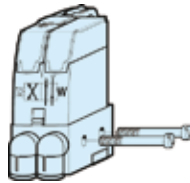
- Outlets to cylinders (ports 2 and 4) on one side.
- Supply P (port 1) and exhaust E (port 3) on the other side. At port 3, exhaust may be collected or receive a clip-on muffler.



**Valve mounting**

All valves may be mounted either with side screws or with their integrated retractable brackets.

**Side screw mounting**



The brackets are then retracted.

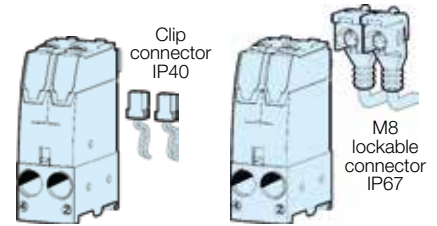
**Optional foot mounting**



The brackets are then extended.

**Valve pilot connections**

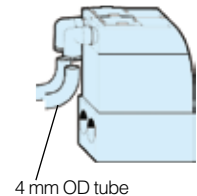
**1- Solenoid valve modules**



In its IP40 version, each solenoid shows Clip connection integrating LED and voltage surge protection. The clip connector with flying leads may be ordered separately with independent or interconnected common. In its IP67 version, each solenoid shows a M8 connection. Lockable connectors, IP67 protected, with LED voltage surge protection and flying lead cable may be ordered for the required length.

**2- Air pilot valve modules**

No connector has to be ordered : each pneumatic pilot port includes its integrated swivable elbow 4 mm OD tube push-in connector.



**Modules and island ordering**

Choice between 2 approaches :

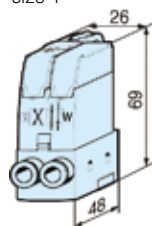
**1 - Basic modules ordering :**

The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

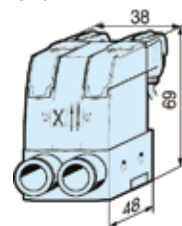
**2 - Complete modules ordering :**

Ordering chart for modules supplied with their pneumatic and electrical connectors and muffler.











Valve module size 1



Valve module size 2






Valve Modules

|   | Symbol  | Description                                  | Actuator    | Pilot connector | Size 1            |                    | Size 2            |                    |
|---|---|--|-------------|-----------------|-------------------|--------------------|-------------------|--------------------|
|   |   |  |             |                 | W (g)             | Order code         | W (g)             | Order code         |
|  <p>Size 1</p> |  | 4/2 Spring return                            | Solenoid    | M8 Lockable     | 72                | <b>P2M1S4ES2C</b>  | 78                | <b>P2M2S4ES2C</b>  |
|   |   |  |             | Clip            | 72                | <b>P2M1S4ES2CW</b> | 78                | <b>P2M2S4ES2CW</b> |
|   |   |  | Air pilot   |                 | 67                | <b>P2M1S4PS</b>    | 73                | <b>P2M2S4PS</b>    |
|   |  | 4/2 Double pilot                             | Solenoid    | M8 Lockable     | 87                | <b>P2M1S4EE2C</b>  | 93                | <b>P2M2S4EE2C</b>  |
|   |   |  |             | Clip            | 87                | <b>P2M1S4EE2CW</b> | 93                | <b>P2M2S4EE2CW</b> |
|   |   |  | Air pilot   |                 | 77                | <b>P2M1S4PP</b>    | 73                | <b>P2M2S4PP</b>    |
|  <p>Size 2</p> |  | 2 x 3/2 NC + NC<br>with exhaust check valves | Solenoid    | M8 Lockable     | 85                | <b>P2M1SDEE2C</b>  | 91                | <b>P2M2SDEE2C</b>  |
|   |   |  |             | Clip            | 85                | <b>P2M1SDEE2CW</b> | 91                | <b>P2M2SDEE2CW</b> |
|   |   |  | Air pilot   |                 | 75                | <b>P2M1SDPP</b>    | 81                | <b>P2M2SDPP</b>    |
|   |  | 2 x 3/2 NO + NO<br>with exhaust check valves | Solenoid    | M8 Lockable     | 85                | <b>P2M1SCEE2C</b>  | 91                | <b>P2M2SCEE2C</b>  |
|   |   |  |             | Clip            | 85                | <b>P2M1SCEE2CW</b> | 91                | <b>P2M2SCEE2CW</b> |
|   |   |  | Air pilot   |                 | 75                | <b>P2M1SCPP</b>    | 81                | <b>P2M2SCPP</b>    |
|  <p>Size 2</p> |  | 2 x 3/2 NC + NO<br>with exhaust check valves | Solenoid    | M8 Lockable     | 85                | <b>P2M1SEEE2C</b>  | 91                | <b>P2M2SEEE2C</b>  |
|   |   |  |             | Clip            | 85                | <b>P2M1SEEE2CW</b> | 91                | <b>P2M2SEEE2CW</b> |
|   |   |  | Air pilot   |                 | 75                | <b>P2M1SEPP</b>    | 81                | <b>P2M2SEPP</b>    |
|   |  | 3/2 NC<br>with exhaust check valves          | Solenoid    | M8 Lockable     | 80                | <b>P2M1S3ES2C</b>  | 86                | <b>P2M2S3ES2C</b>  |
|   |   |  |             | Clip            | 80                | <b>P2M1S3ES2CW</b> | 86                | <b>P2M2S3ES2CW</b> |
|   |   |  | Air pilot   |                 | 70                | <b>P2M1S3PS</b>    | 76                | <b>P2M2S3PS</b>    |
|                | 4/3 Centre exhaust<br>2 x 3/2 NC + NC<br>without exhaust check valves             | Solenoid                                     | M8 Lockable | 85              | <b>P2M1SGEE2C</b> | 91                 | <b>P2M2SGEE2C</b> |                    |
|   |   | Air pilot                                    |             | 75              | <b>P2M1SGPP</b>   | 81                 | <b>P2M2SGPP</b>   |                    |


Clip-On pneumatic connectors \*

Valve Modules

|   | Description        | Tube OD | Size 1 |                | Size 2 |                |
|---|--------------------|---------|--------|----------------|--------|----------------|
|   |                    |         | W (g)  | Order code     | W (g)  | Order code     |
|  | Straight connector | G1/8"   | 2      | <b>FMDG1-1</b> |        |                |
|   |                    | 4 mm    | 2      | <b>FMD04-1</b> |        |                |
|   |                    | 6 mm    | 3      | <b>FMD06-1</b> | 3      | <b>FMD06-2</b> |
|   |                    | 8 mm    |        |                | 4      | <b>FMD08-2</b> |
|   |                    | 10 mm   |        |                | 5      | <b>FMD10-2</b> |
|   |                    | 12 mm   |        |                | 6      | <b>FMD12-2</b> |
|  | Elbow connector    | G1/8"   | 3      | <b>CMDG1-1</b> |        |                |
|   |                    | 4 mm    | 3      | <b>CMD04-1</b> |        |                |
|   |                    | 6 mm    | 5      | <b>CMD06-1</b> | 5      | <b>CMD06-2</b> |
|   |                    | 8 mm    |        |                | 6      | <b>CMD08-2</b> |
|   |                    | 10 mm   |        |                | 7      | <b>CMD10-2</b> |
|   |                    | 12 mm   |        |                | 8      | <b>CMD12-2</b> |
|  | Silencer           |         | 3      | <b>MMDVA1</b>  | 5      | <b>MMDVA2</b>  |
|   | Plug               |         | 3      | <b>PMDXX1</b>  | 5      | <b>PMDXX2</b>  |

\* Fittings and plugs pack quantity : 10

Electrical connectors

|  | Description  | Connector type        | Cable length        | W (g)      |                    |                   |
|--|--|-----------------------|---------------------|------------|--------------------|-------------------|
|  |  |                       |                     | Order code |                    |                   |
|  <p>M8 connector<br/>Clip connector</p> | Individual Clip-on connector – IP67                                      | M8 / 2 x Flying leads | 2 meters            | 62         | <b>P8LS08L226C</b> |                   |
|  | Including LED and surge protection                                       |                       | 5 meters            | 155        | <b>P8LS08L526C</b> |                   |
|  | 2 Flying leads   |                       | 9 meters            | 180        | <b>P8LS08L926C</b> |                   |
|  | Clip-on connector – IP40   |                       | 1 x Clip connector  | 1 meter    | 8                  | <b>P8LW021C</b>   |
|  | Individual : Including 2 flying leads                                    |                       | 2 x Clip connectors | 1 meter    | 12                 | <b>P8LW021C02</b> |
|  | Multiple : Including 1 common (0 Vdc)<br>and 1 flying lead per connector |                       | 4 x Clip connectors | 1 meter    | 20                 | <b>P8LW021C04</b> |
|  |  |                       | 8 x Clip connectors | 1 meter    | 36                 | <b>P8LW021C08</b> |
|  | Straight cable quick connect to thread<br>connector, IP67 protected      |                       | M8                  |            | 12                 | <b>P8CS0803J</b>  |
|  |  |                       | M12                 |            | 15                 | <b>P8CS1204J</b>  |

**Peripheral Valve Modules : P series**

Four additional peripheral modules complete the valve system in order to facilitate the installation of specific cylinder controls :

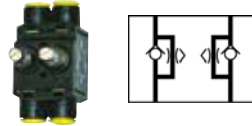
- Dual flow control, for cylinder speed adjusting;
- Dual pilot operated check valve, for cylinder positioning;
- Pressure regulator, for cylinder thrust adjusting;
- Vacuum generator, for vacuum pad controls.



**Module function selection**

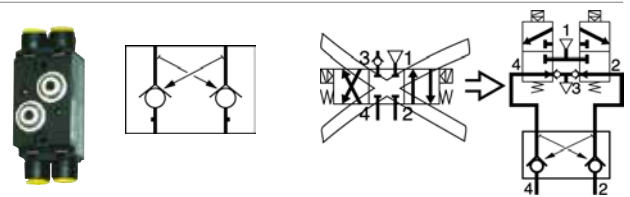
**Dual flow control**

By controlling the exhaust flows of a double acting cylinder, this module can adjust both speeds : forward and backward.



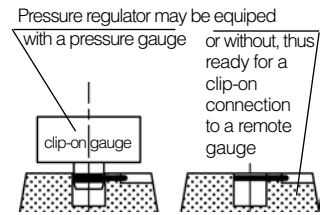
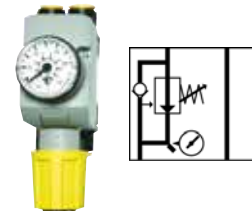
**Dual pilot operated check valve**

Combined with a double 3/2 NC + NC valve, this module will block flows and stop cylinder movement as soon as the valve outputs are both exhausted. Better than a 3 position closed centre valve, it provides accurate positioning when mounted close to the cylinder.



**Pressure regulator**

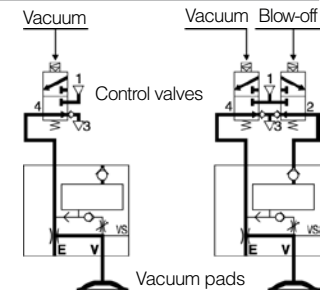
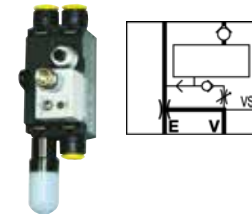
The thrust developed by a cylinder often requires adjustment by controlling the pressure to the front or back of the piston. This pressure regulator module enables manual adjustment of pressure on one side of the piston, with visual indication provided by the pressure gauge.



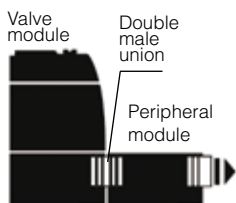
**Vacuum generator**

This multi-purpose module controls vacuum pads with a choice between two basic schematics :

- Controlled with only one 3/2 NC valve, the vacuum generator provides vacuum to the pads during valve actuation and then blow-off supplied from an integrated chamber.
  - Controlled with a double 3/2 NC + NC, the vacuum generator provides vacuum during the first valve actuation, and then strong blow-off from the second valve.
- Integrated blow-off flow controller. Optional plug-in vacuum sensor.



**Module installation selection**

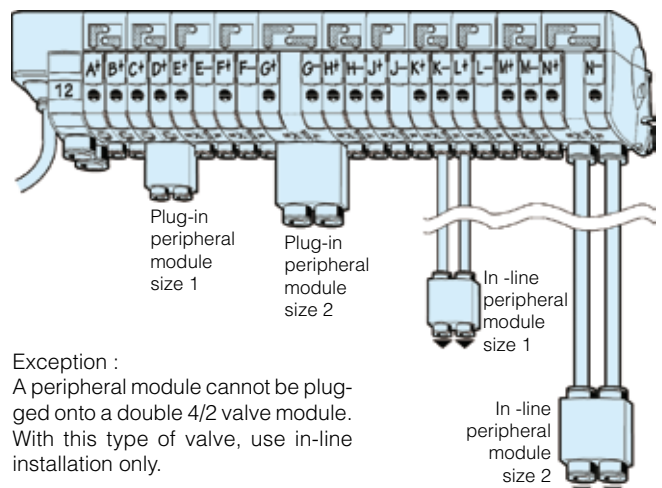


Stand alone valve complete with a plug-in peripheral module



Peripheral modules may either be mounted :

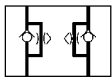
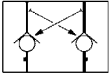
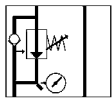
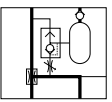
- Plugged into the valve module through double male unions;
- Or in line, close to the cylinder to control it better.






Exception :  
A peripheral module cannot be plugged onto a double 4/2 valve module. With this type of valve, use in-line installation only.



**Basic peripheral modules (without connector)**




| Peripheral Modules  |                       | Size 1         |                 | Size 2     |                 |     |                 |
|---|-----------------------|----------------|-----------------|------------|-----------------|-----|-----------------|
| Symbol  | Description           | Weight (g)     | Order code      | Weight (g) | Order code      |     |                 |
|  | Dual flow control     | 50             | <b>P2M1PXFA</b> | 50         | <b>P2M2PXFA</b> |     |                 |
|  | Dual P.O. check valve | 50             | <b>P2M1PXCA</b> | 50         | <b>P2M2PXCA</b> |     |                 |
|  | Pressure regulator    | Pressure range | Gauge           |            |                 |     |                 |
|   |                       | 0 - 2 bar      | 0 - 4 bar       | 135        | <b>P2M1PXSR</b> | 135 | <b>P2M2PXSR</b> |
|   |                       |                | Without         | 105        | <b>P2M1PXST</b> | 165 | <b>P2M2PXST</b> |
|   |                       | 0 - 4 bar      | 0 - 7 bar       | 135        | <b>P2M1PXSM</b> | 135 | <b>P2M2PXSM</b> |
|   |                       |                | Without         | 105        | <b>P2M1PXSL</b> | 165 | <b>P2M2PXSL</b> |
|   |                       | 0 - 8 bar      | 0 - 11 bar      | 135        | <b>P2M1PXSG</b> | 135 | <b>P2M2PXSG</b> |
|   | Without               | 105            | <b>P2M1PXSN</b> | 165        | <b>P2M2PXSN</b> |     |                 |
|  | 90% Vacuum generator  | 30             | <b>P2M1PXVA</b> |            |                 |     |                 |

**Clip-On pneumatic connectors \***

| Valve Modules   |                    | Size 1     |               | Size 2         |               |                |
|---|--------------------|------------|---------------|----------------|---------------|----------------|
| Description   | Tube OD            | Weight (g) | Order code    | Weight (g)     | Order code    |                |
|  | Straight connector | G1/8"      | 2             | <b>FMDG1-1</b> |               |                |
|   |                    | 4 mm       | 2             | <b>FMD04-1</b> |               |                |
|   |                    | 6 mm       | 3             | <b>FMD06-1</b> | 3             | <b>FMD06-2</b> |
|   |                    | 8 mm       |               |                | 4             | <b>FMD08-2</b> |
|   |                    | 10 mm      |               |                | 5             | <b>FMD10-2</b> |
|   |                    | 12 mm      |               |                | 6             | <b>FMD12-2</b> |
|  | Elbow connector    | G1/8"      | 3             | <b>CMDG1-1</b> |               |                |
|   |                    | 4 mm       | 3             | <b>CMD04-1</b> |               |                |
|   |                    | 6 mm       | 5             | <b>CMD06-1</b> | 5             | <b>CMD06-2</b> |
|   |                    | 8 mm       |               |                | 6             | <b>CMD08-2</b> |
|   |                    | 10 mm      |               |                | 7             | <b>CMD10-2</b> |
|   |                    | 12 mm      |               |                | 8             | <b>CMD12-2</b> |
|  | Double male union  | 5          | <b>HMDXX1</b> | 8              | <b>HMDXX2</b> |                |
|   | Silencer           | 3          | <b>MMDVA1</b> |                |               |                |
|   | Plug               | 3          | <b>PMDXX1</b> | 5              | <b>PMDXX2</b> |                |

\* Fittings and plugs pack quantity : 10

**Clip-on accessories**

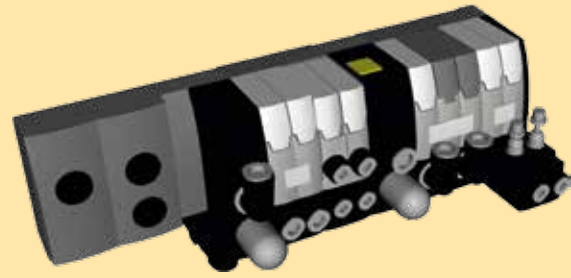
| Description   | Connection                               | Pressure range  | Weight (g)  | Order code      |                     |
|---|--|-----------------|-------------|-----------------|---------------------|
|  | Clip-on                                  | 0 to 4 bar      | 30          | <b>P2M1K0GT</b> |                     |
|   |  | 0 to 7 bar      | 30          | <b>P2M1K0GL</b> |                     |
|   |  | 0 to 11 bar     | 30          | <b>P2M1K0GN</b> |                     |
|  | Analog (1 - 5 Vdc) Vacuum Sensor         | Diam. 4 mm tube | 0 to -1 bar | 25              | <b>MPS-V8T4-AG</b>  |
|   | Flying lead 2 meter cable                | Diam. 6 mm tube | 0 to -1 bar | 25              | <b>MPS-V8T-AG</b>   |
|  | Dig. PNP / Ana (4 - 20 mA) Vacuum Sensor | G 1/8" male     | 0 to -1 bar | 45              | <b>MPS-V34G-PCI</b> |
|   | 15 cm cable - M8 4 pin's connector       |                 |             |                 |                     |

**Moduflex Valve Island e-Configurator**

The comprehensive **Moduflex Valve CAD e-Configurator** enable online Moduflex Valve Island configuration giving Bill of Material and 3D or 2D CAD download

Go to <http://www.parker.com/pde/cad> to start

Stacking Air Valve  
 Moduflex P2M Series



**Valve island configuration practice :**

**Moduflex Assembly**

Model Number  
 P2MAVB2C8MM05

**SELECT YOUR CONFIGURATION**  
Options marked with "\*" are required items.  
 (Configuration subject to change without notice.)

---

Island Assembly: P2MA - Moduflex Island Assembly

Style\*: V - Valvebonic Collective Wired Valve

Wiring / Bus Protocol\*: B - Bus

Bus Protocol Module\*: ASI 2 1 - 8 (PnP) single inputs on eight M8 connectors, 6 solenoid outputs, 2 nodes

**NOTE:**  
Maximum number of solenoids for this manifold is 6. Single Solenoid Valve = 1 Output. Double Solenoid Valve = 2 Outputs

Bus Model Number: P2M2HEVA20608A

Pilot Source\*: 2 - Internal Supply / External Exhaust

Inlet Port Type (No. 1 Pressure)\*: CS - 3mm Elbow Fitting

Exhaust Port Type (No. 3 Exhaust)\*: MM - Clip-In Muffler

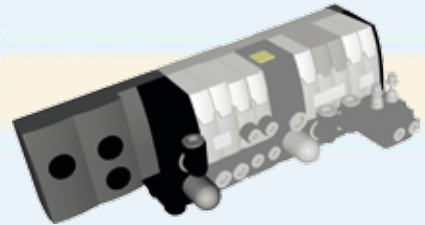
Number of Stations\*: 05

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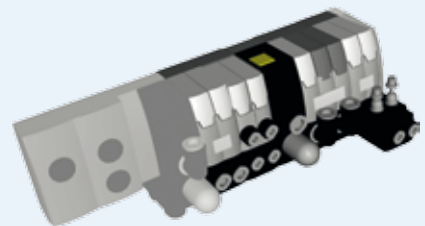
| Station #* | Valve               | Part Number     | Configure | Copy | Reset |
|------------|---------------------|-----------------|-----------|------|-------|
| Station 1* | Valve               | P2M1V4EE2CV00R6 | Configure | Copy | Reset |
| Station 2* | Valve               | P2M1V4EE2CV00F4 | Configure | Copy | Reset |
| Station 3* | Intermediate Module | P2M2B3CV02F8MM  | Configure | Copy | Reset |
| Station 4* | Valve               | P2M2V4EE2CV00C8 | Configure | Copy | Reset |
| Station 5* | Valve               | P2M1V0EE2CV00JJ | Configure | Copy | Reset |
|            | Dual Flow Control   | P2M1FXFAJUF4    | Configure | Copy | Reset |

Call: 1.269.629.5575 or email: [pdnmtg@parker.com](mailto:pdnmtg@parker.com) for special options not available here.

Step 1 : Head and tail definition



Step 2 : Valves definition



**Get the bill of material**

By clicking on  button :

1. View the bill of material :
  - Head and Tail Set
  - Valves detail
2. Click to Print

**Parker eConfigurator™**  
The Asst 11 31 12 16 17 18 19 20 21 22

Model Number: P2MAVB2C8MM05

**Configuration Summary**

Style: V - Valvebonic Collective Wired Valve

Wiring / Bus Protocol: B - Bus

Bus Protocol Module: ASI 2 1 - 8 (PnP) single inputs on eight M8 connectors, 6 solenoid outputs, 2 nodes

Bus Model Number: P2M2HEVA20608A

Pilot Source: 2 - Internal Supply / External Exhaust

Inlet Port Type (No. 1 Pressure): CS - 3mm Elbow Fitting

Exhaust Port Type (No. 3 Exhaust): MM - Clip-In Muffler

Number of Stations: 05

|           |                 |                     |
|-----------|-----------------|---------------------|
| Station 1 | P2M1V4EE2CV00R6 | Valve               |
| Station 2 | P2M1V4EE2CV00F4 | Valve               |
| Station 3 | P2M2B3CV02F8MM  | Intermediate Module |
| Station 4 | P2M2V4EE2CV00C8 | Valve               |
| Station 5 | P2M1V0EE2CV00JJ | Valve               |
|           | P2M1FXFAJUF4    | Dual Flow Control   |

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**Parker eConfigurator 3D CAD Generator**

Do you wish to:

View drawing\*

Download drawing file (Note: You may be required to add <http://www.parker.com> to your trusted sites in IE and/or lower your internet security settings to low if you encounter an error with the download)

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\*The file selected (STEP View or Model) is a 3D CAD file. Download to install Autodesk® Design Review FREE! Download: Windows and Mac OS.

Please note the following:

- Using Autodesk's secure internet site to assist in 3D file transfer.
- Internet Explorer's security settings set at the Autodesk 3D CAD file download and 3D CAD drawing file download.

**ENGINEERING YOUR SUCCESS.**

1 - Multi-connector or sub-D 25 valve island

Multi-connector or sub-D 25 electrical head module width : 15 mm

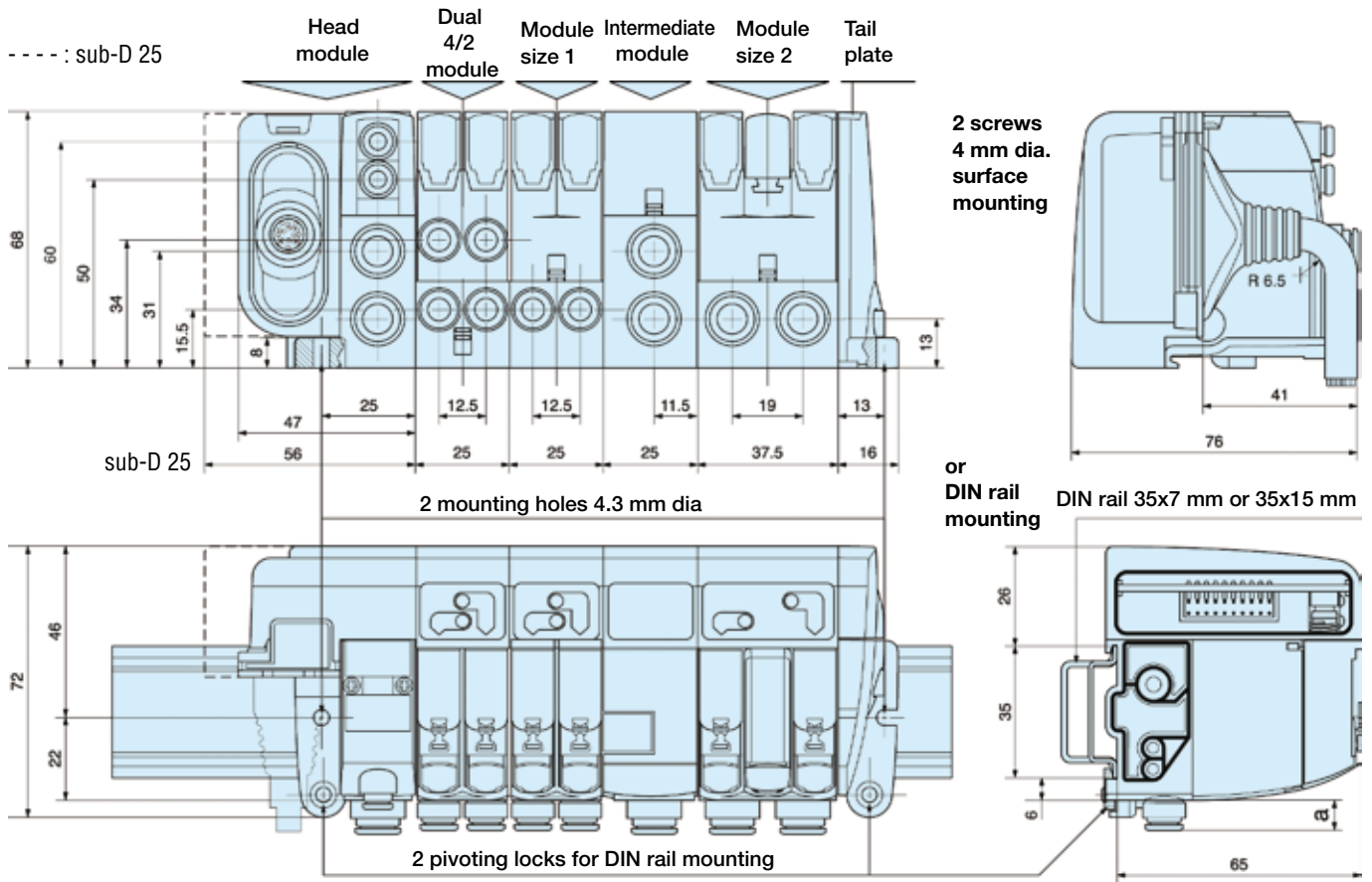
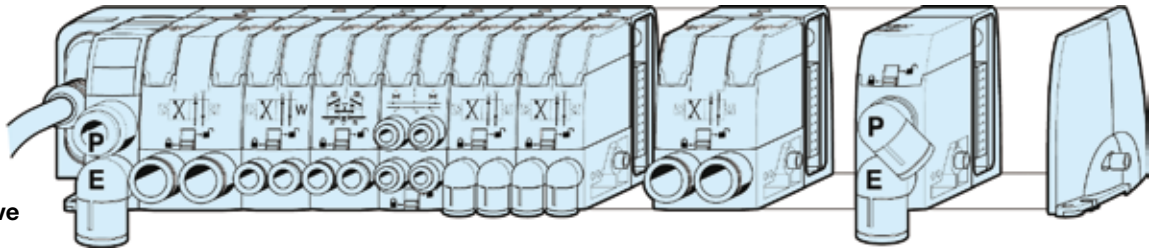
Head and tail pneumatic module set width : 48 mm

Modules size 1 width : 25 mm

Modules size 2 width : 37.5 mm

Intermediate module width : 25 mm

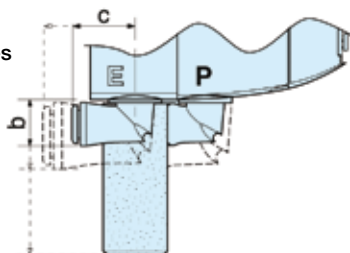
Island total width depending on valve composition



Special case : 4/3 closed centre function within island version : Add the dimensions of the dual P.O. check valve module plugged into the island.

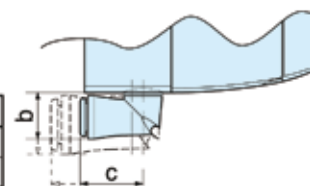
Island head and intermediate modules

|               | a  | b  | c  |
|---------------|----|----|----|
| 6 mm tube OD  | 8  | 13 | 16 |
| 8 mm tube OD  | 9  | 16 | 19 |
| 10 mm tube OD | 13 | 18 | 22 |
| 12 mm tube OD | 13 | 19 | 25 |
| muffler       |    | 40 |    |



Island valves modules

|                | OD tube | a  | b  | c  |
|----------------|---------|----|----|----|
| Size 1 modules | 4 mm    | 8  | 10 | 12 |
|                | 6 mm    | 8  | 13 | 16 |
| Size 2 modules | 8 mm    | 9  | 16 | 19 |
|                | 10 mm   | 13 | 18 | 22 |



2 - Field bus connected islands

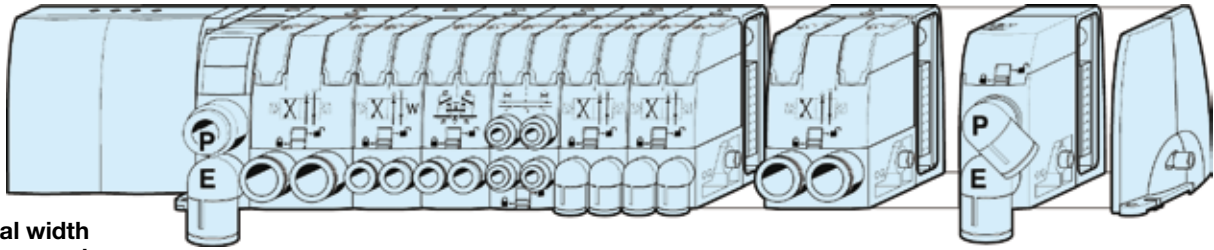
Electrical field bus head module width : 62 mm

Head and tail pneumatic module set width : 48 mm

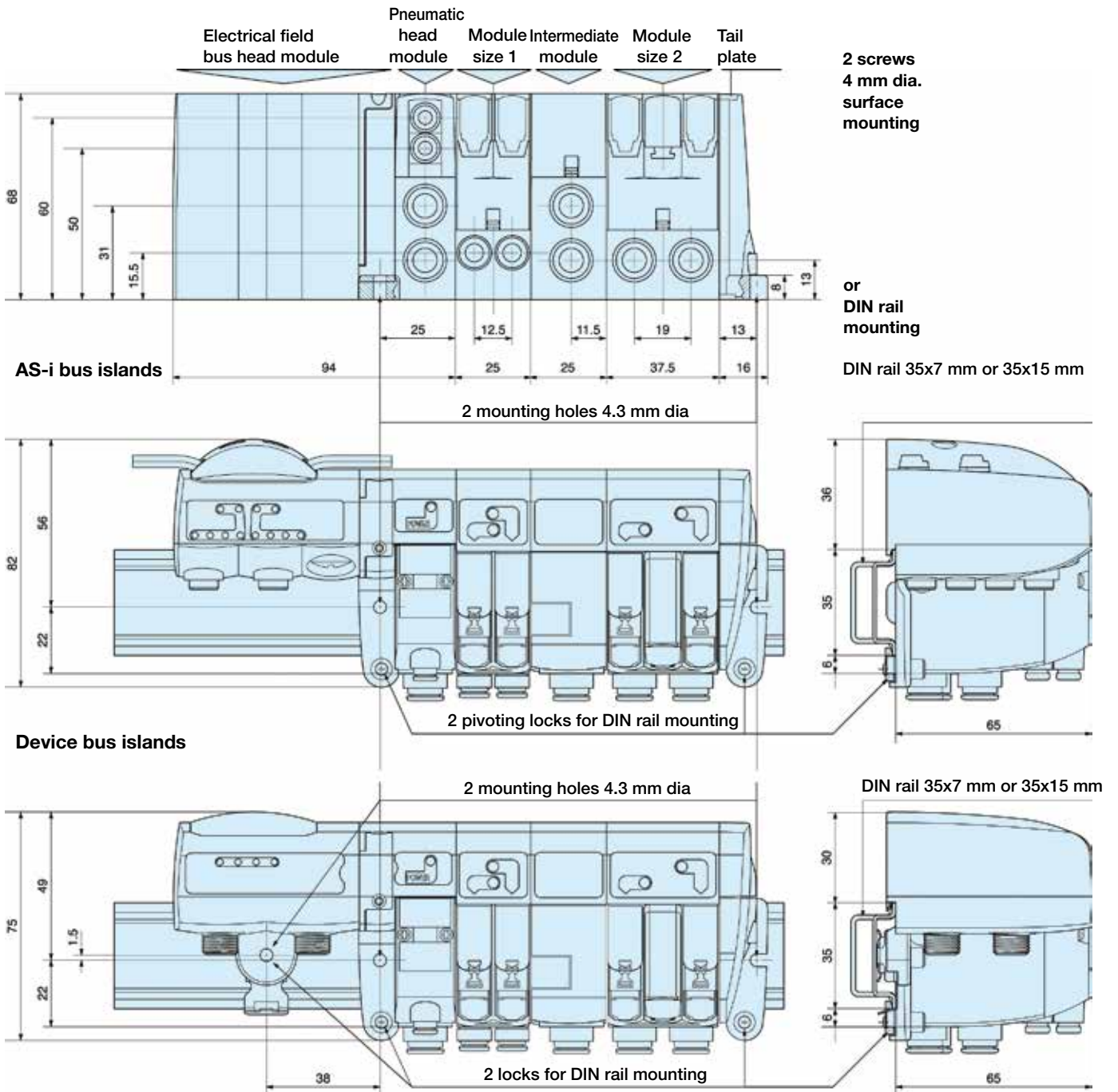
Modules size 1 width : 25 mm

Modules size 2 width : 37.5 mm

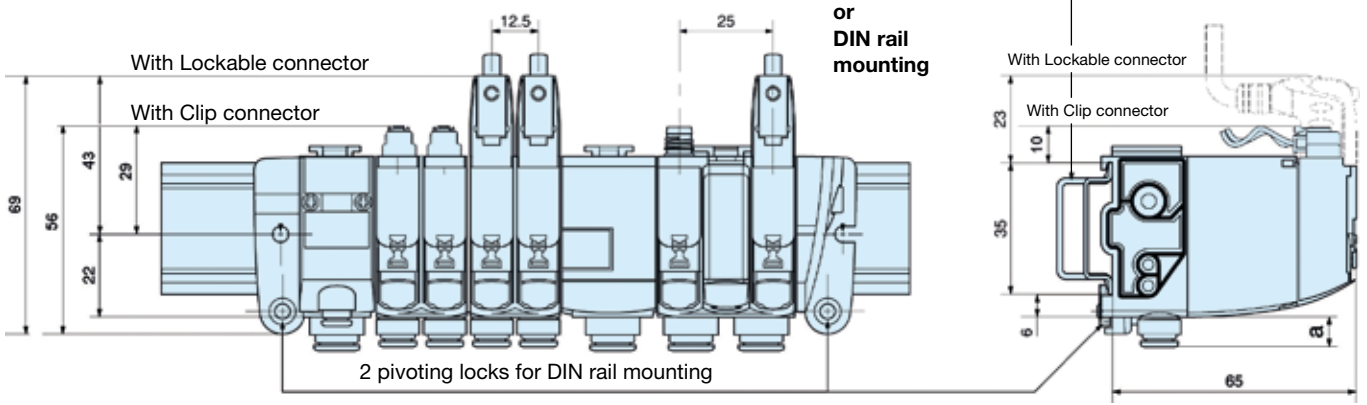
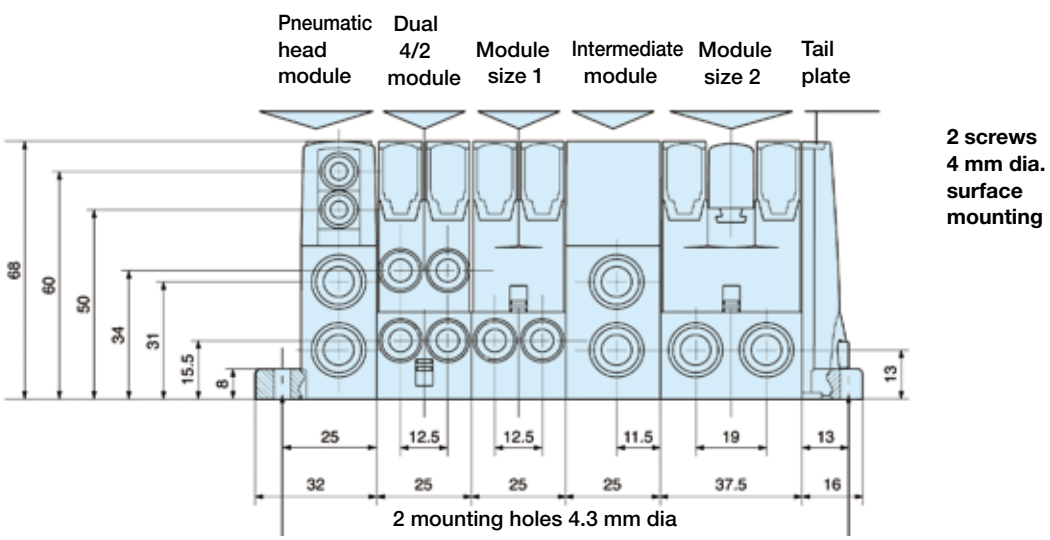
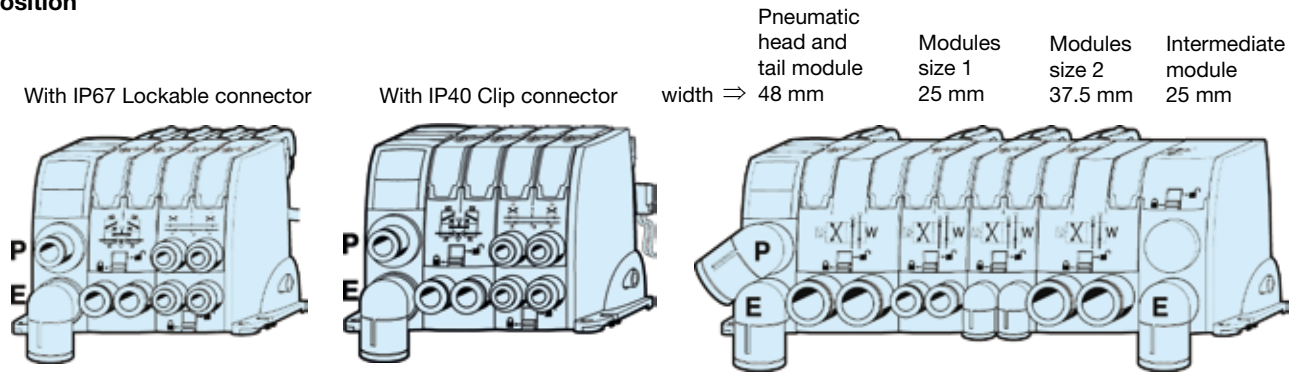
Intermediate module width : 25 mm



Island total width depending on valve composition



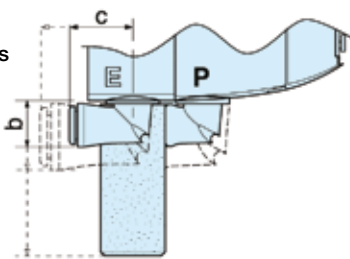
**Island total width depending on valve composition**



Special case : 4/3 closed centre function within island version :  
Add the dimensions of the dual P.O. check valve module plugged into the island.

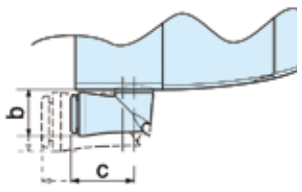
**Island head and intermediate modules**

|               | a  | b  | c  |
|---------------|----|----|----|
| 6 mm tube OD  | 8  | 13 | 16 |
| 8 mm tube OD  | 9  | 16 | 19 |
| 10 mm tube OD | 13 | 18 | 22 |
| 12 mm tube OD | 13 | 19 | 25 |
| muffler       |    | 40 |    |



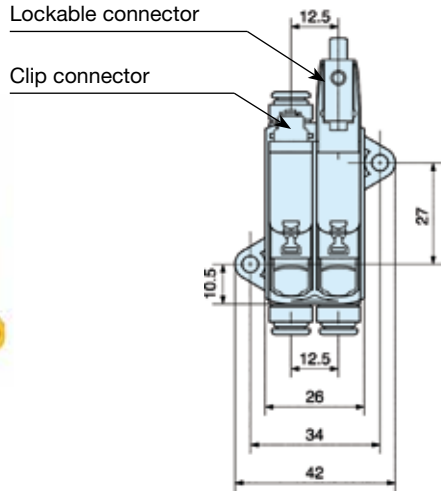
**Island valves modules**

|                | OD tube | a  | b  | c  |
|----------------|---------|----|----|----|
| Size 1 modules | 4 mm    | 8  | 10 | 12 |
|                | 6 mm    | 8  | 13 | 16 |
| Size 2 modules | 8 mm    | 9  | 16 | 19 |
|                | 10 mm   | 13 | 18 | 22 |

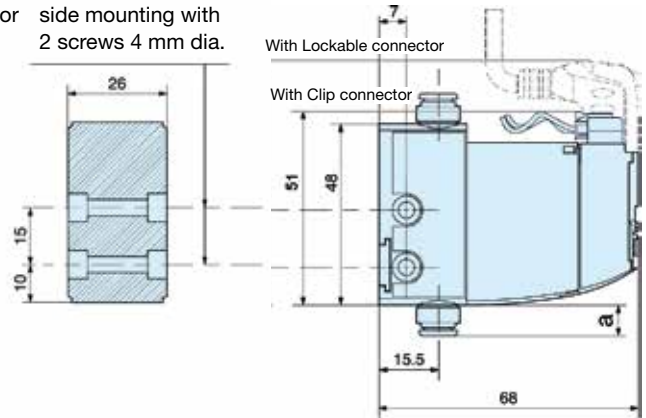


**Stand-alone valve size 1**

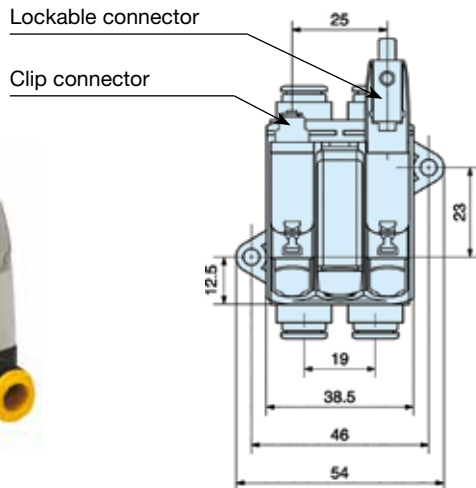
surface mounting with screws  
4 mm dia. into retractable brackets 3 mm thick



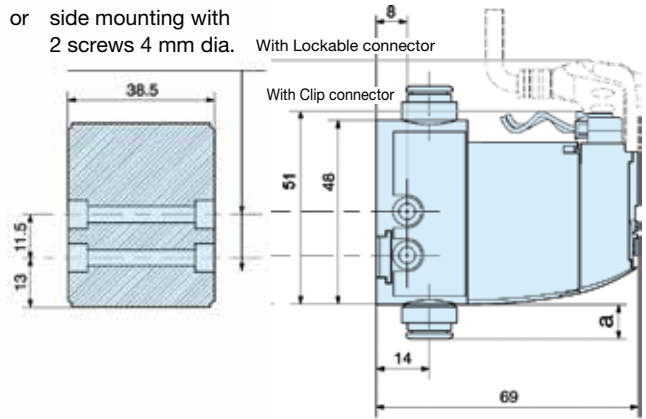
or side mounting with 2 screws 4 mm dia.



**Stand-alone valve size 2**



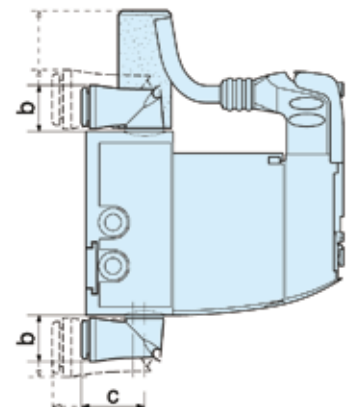
or side mounting with 2 screws 4 mm dia.



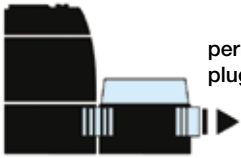
Dimensions and mountings of the stand-alone valves 4/2, double and single 3/2, 4/3 vented centre and 4/3 pressure centre.

Special case : 4/3 closed centre. Add the dual P.O. check valve module that has been plugged in the basic valve.

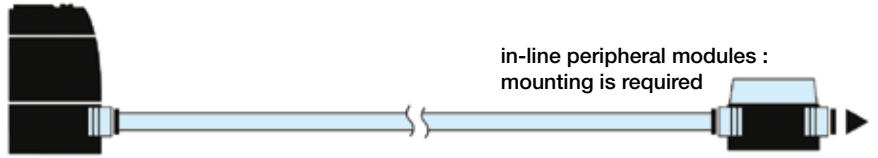
|                |               | a  | b  | c  |
|----------------|---------------|----|----|----|
| Size 1 modules | 4 mm tube OD  | 8  | 10 | 12 |
|                | 6 mm tube OD  | 8  | 13 | 16 |
|                | muffler       |    | 31 |    |
| Size 2 modules | 8 mm tube OD  | 9  | 16 | 19 |
|                | 10 mm tube OD | 13 | 18 | 22 |
|                | muffler       |    | 40 |    |



Reminder : peripheral modules may either be plugged in the valve output ports or mounted in line separate from the valve

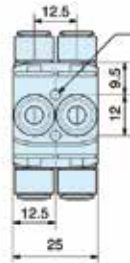
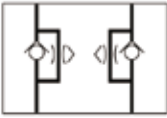


peripheral module plugged in a valve or an island

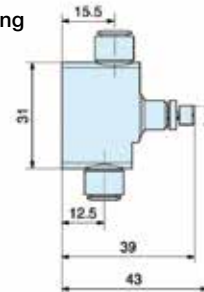


in-line peripheral modules : mounting is required

Dual flow control module size 1

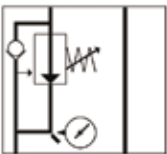


possible mounting with 2 screws 3 mm dia.

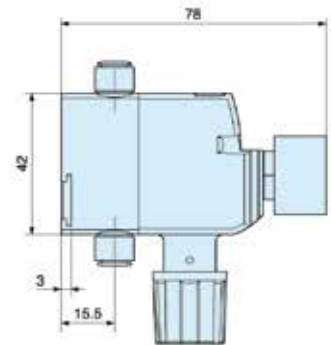
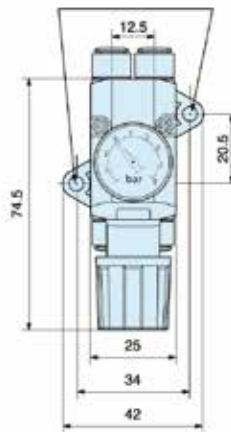


Pressure regulation module size 1

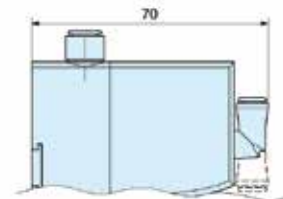
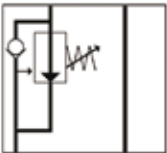
- with gauge



mounting with 2 screws 4 mm dia. on retractable brackets

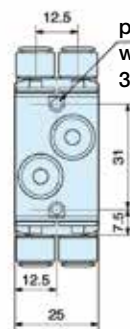
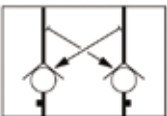


- without gauge



swivel elbow push-in connector 4 mm OD tube

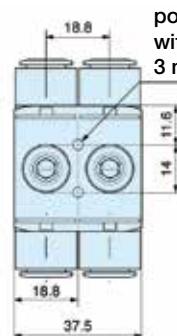
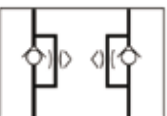
Dual P.O. check valve module size 1



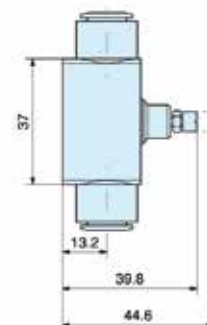
possible mounting with 2 screws 3 mm dia.



Dual flow control module size 2

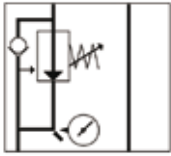


possible mounting with 2 screws 3 mm dia.

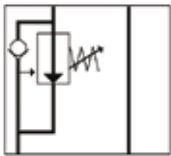


**Pressure regulation module size 2**

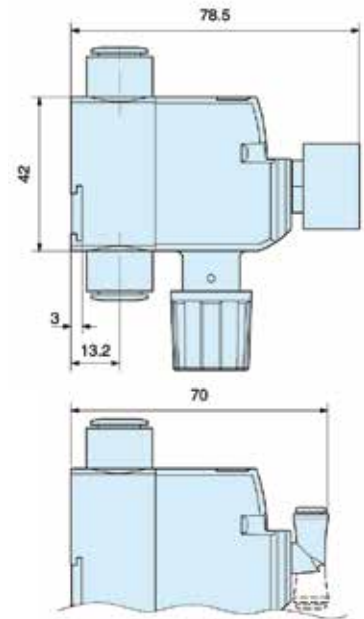
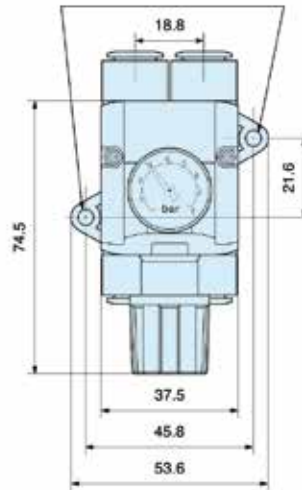
- with gauge



- without gauge

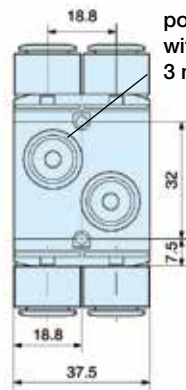
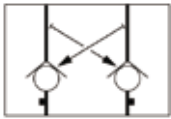


mounting with 2 screws 4 mm dia.  
on retractable brackets

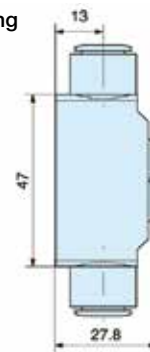


swivel elbow push-in  
connector 4 mm OD tube

**Dual P.O. check valve module size 2**

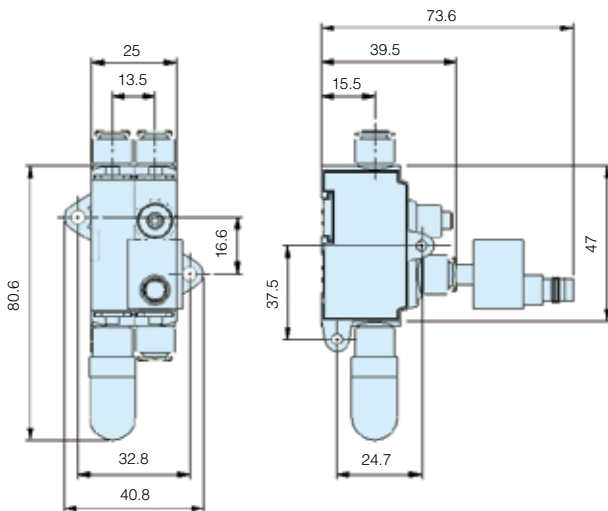


possible mounting  
with 2 screws  
3 mm dia.

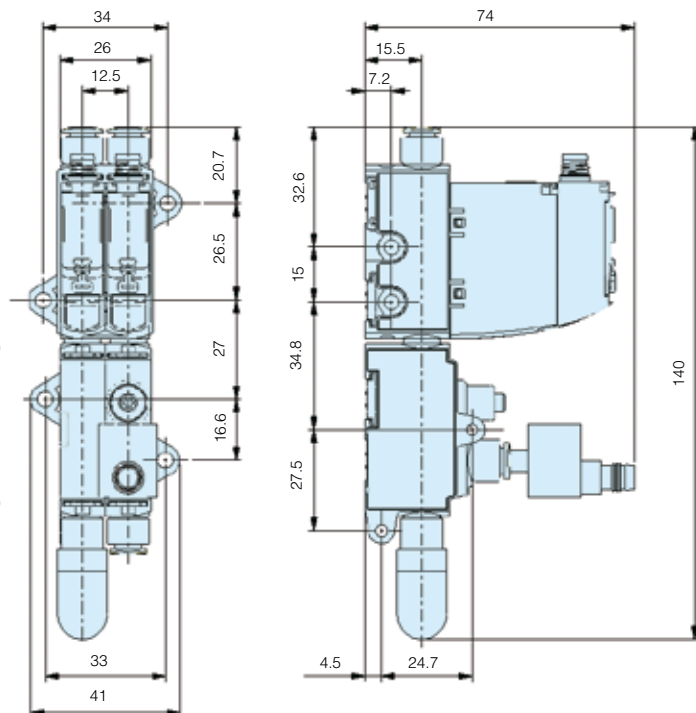


**Vacuum generator module**

In-line



With Moduflex valve





# H Series Industrial Communication System

## Moduflex Bus / TURCK BL67

*H Series Industrial Communication System for **centralised** and **decentralised** applications*



## H Series Industrial Communication System for Centralised applications

H Series Industrial Communication System has 4 major components :

- **Communication interface modules** provide the network-interface circuitry
- **I/O modules** provide the field interface, system-interface circuitry, and bases for mounting
- **Power distribution module** provide the solution to expandability of the H Series Industrial Communication System or multiple power supply

## Moduflex Bus System for Decentralised applications

The Moduflex communication module is directly attach the either, a Moduflex, H Series Micro or H Series ISO manifold in a compact valve island directly connectable to the industrial network.

Pneumatic variants using H Series Industrial Communication system for Centralised applications

Device with electric modules only



H Series Industrial Communication with H Series Micro Valves extended device



H Series Industrial Communication with H Series Micro Valves island



H Series Industrial Communication with H Series ISO valves island

ISO 15407-2 – HA & HB  
ISO 5599-2 – H1 to H3



Pneumatic variants using Moduflex Fieldbus modules for Decentralised applications

Moduflex Bus with Moduflex Valve System



Moduflex Bus with H Series Micro Valves island



Moduflex Bus With H Series ISO 15407-2 or 5599-2 valves island

ISO 15407-2 – HA & HB  
ISO 5599-2 – H1 to H3



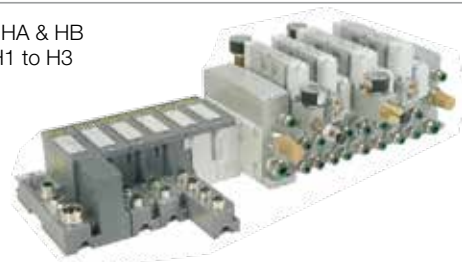
Pneumatic variants using TURCK BL67 H Series Industrial Communication system for Centralised applications

TURCK BL67 with H Series Micro Valves Island



TURCK BL67 with H Series ISO Valves Island

ISO 15407-2 – HA & HB  
ISO 5599-2 – H1 to H3



**H Series Industrial Communication Device constitution overview for a Centralised application**

**For main device**

**For both main and extended devices**



**For extended device**



**Communication modules :**

- Fieldbus or Industrial Ethernet protocol
- Network connection
- Separated 24VDC for logic and user power supply
- Configuration with coding wells and bus status display by LED

**Bus extender cable :**

- Cable linking extended device through the Sub-network
- Sub-network connection from H Series Industrial Communication module or H Series Micro Valve driver
- Transferring both sub-network communication and 5VDC for bus power supply

**I/O modules :**

- Choice of Digital or Analogic I/O modules offering multiple industrial connection types
- Connection to the Sub-network and the separated 24VDC for both logic and user through the socket
- I/O and sub-network status display by LEDs

**Power extender module :**

- Additional separated 24VDC power supply for logic and user allowing multiple permanent or safety power supply recommendations
- Both Logic and User electrical power supply display by separated LEDs

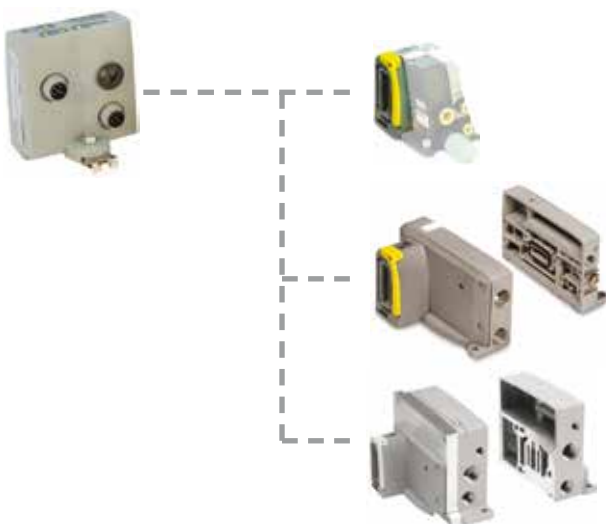
**End section :**

- Specific socket or valve driver without extender bus connector for end section

**Prologation section :**

- Specific socket with sub-network extender cable and extended device head plate
- Valve driver including extender bus connector for sub-network continuity

**Moduflex constitution overview for a Decentralised application**



**Communication module :**

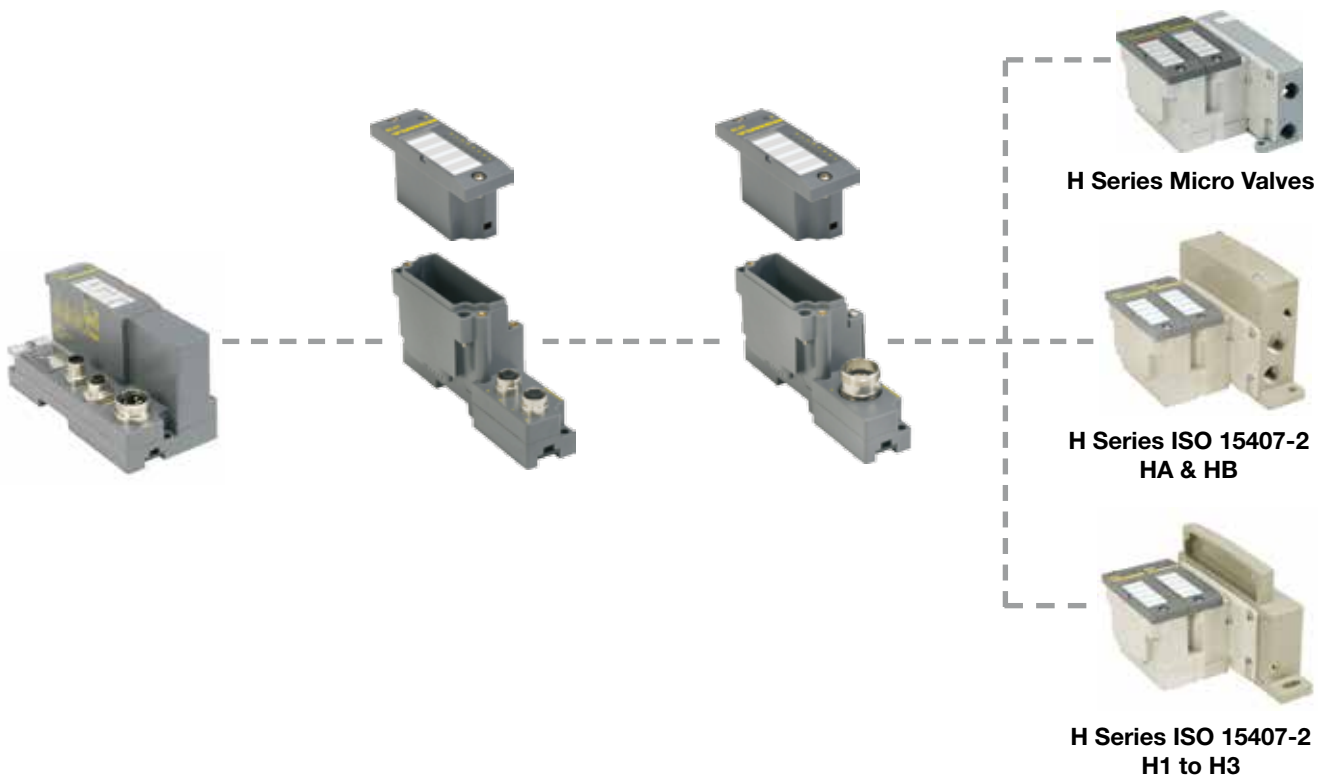
- Fieldbus protocols
- Network connection
- Separated power supply for communication and solenoid valves
- Addressing and speed communication configuration by coding wells
- Bus status display by LED

**Bus module adaptor :**

Using the appropriate adaptor, the Moduflex Bus module can be assembled to :

- Moduflex Valve System
- H Series Micro Valves
- H Series ISO 15407-2 – HA & HB
- H Series ISO 5599-2 – H1

TURCK BL67 Device constitution overview for a Centralised application



**TURCK BL67 communication gateway**

**H Series Industrial Communication :**

- Linked to a TURCK BL67 communication module (programmable or not programmable), the device can be connected to a wide choice of Fieldbus or Industrial Ethernet protocols.

**TURCK BL67 I/O and Base modules**

The separation between electronic and base module for connectivity allows to complete the device with a choice through a full digital or analogue **I/O modules** range populating the **base module** existing with a multiple choice of electrical connection (M8, M12, M23)

The complete resulting configuration can handle :

- Up to 32 electrical modules (up to 2 in the Valve Driver Module)
- Up to 512 digital I/O (up to 32 outputs in the Valve Driver Module)
- Up to 128 analog I/O

**Other TURCK BL67 Electronic modules**

Other electronic modules, as CANopen gateway allowing a sub-network connectivity with other CANopen slaves, RFID System or counting modules complet the full TURCK BL67 Remote I/O System.

**Valve driver Module for 16 or 32 Outputs**

**Modularity up to 16 or 32 Outputs :**

Thanks to its modularity, the H Series Micro Valve Driver Module to Turck BL67 Remote I/O System adaptor can be configure up to either a 16 or 32 solenoid valves configuration :

For a light configuration up to 16 solenoid valves (2 double address or 4 single address manifolds), the Valve Driver Module can be optimized being populated with:

- 1 Standard Turck 16 DO module BL67-16DO-0.1A-P in slot 1
- 1 blank module BL67-E in slot 2

For a full configuration up to 32 solenoid valves (4 double address or 8 single address manifolds), the Valve Driver Module must be fully populated with 1 Standard Turck 16 DO module BL67-16DO-0.1A-P in each slot.

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### H Series Industrial Communication modules

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A choice of different protocols to connect the Isysnet device to the requested industrial network :

- DeviceNet
- Profibus DP
- ControlNet
- Ethernet I/P

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### Digital and Analogue I/O modules :

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Application always needs a wide sensor quantity, diversity and additional electric actuators as well, with an appropriate electrical connection.

With a modularity from 2 to 16 channels, the wide range of digital or analogue inputs and outputs modules offers a choice of industrial connection :

- M8 -3 PINs
- M12 -5 PINs
- M23 - 12 PINs

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### Extension power supply module :

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The auxiliary power from the communication module supports up to 10 I/O modules. For applications requiring a larger I/O module quantity, this 24VDC extension power module extends the backplane bus power to support up to 10 more I/O modules.

Also, when safety recommendations require multiple permanent and safety power supplies, this 24VDC extension power module avoids the need for a separate power supply section in the H Series Industrial Communication device.

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### H Series Industrial Communication and H Series Micro Valve bus extender cable

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An H Series Industrial Communication device can be split into the H Series Industrial Communication section or, from an H Series Micro valve manifold to an extended section. Both cables avoid the backplane Bus power and communication.

The H Series Industrial Communication device has to be closed with a 32 output driver (internally ending the backplane bus) or using the terminating base module

**32 Outputs driver for valve islands in centralised applications**

**32 Outputs driver for H Series Micro Valve Islands**



- H Series Micro valve nominal flow up to 280 NI/mn
- 32 outputs per module to handle up to 32 solenoids per valve island
- Up to 4 valve islands linked through the internal sub-network for a total of 128 solenoids per device
- With or without additional user power supply
- With or without bus extender

**32 Outputs driver for H Series ISO Valve Islands**



ISO 15407-2

ISO 5599-2

- ISO 15407-2      Size 02 (HB)      18 mm      380 NI/mn
- ISO 15407-2      Size 01 (HA)      26 mm      590 NI/mn
- ISO 5599-2      Size 1 (H1)      42 mm      1030 NI/mn
- 32 outputs per module to handle up to 32 solenoids per valve island.

**Moduflex fieldbus modules for valve islands in decentralised applications**

**Moduflex fieldbus adaptor for H Series Micro and H Series ISO valve islands**



Moduflex valve system

H Series Micro Valves

- Compatible with all Moduflex fieldbus protocol modules handling up to 16 solenoids:
  - DeviceNet
  - CANopen
  - Profibus DP
  - InterBus-S
  - AS-i standard and extended a-b coding versions.



ISO 15407-2  
HA - HB

ISO 5599-2  
H1

**TURCK BL67 H Series Industrial Communication modules**



- A choice of different protocols to connect the TURCK BL67 device to the requested industrial network:
  - CANopen
  - DeviceNet
  - Profibus DP
  - Ethernet Modbus TCP, EtherNet/IP™ and PROFINET

Programmable versions



**TURCK BL67 Electronic and Base Modules**



The separation between electronic and base module for connectivity allows to complete the device with a choice through a full digital or analogue **I/O modules** range populating the **base module** existing with a multiple choice of electrical connection (M8, M12, M23)

The complete resulting configuration can handle :

- Up to 32 electrical modules (up to 2 in the Valve Driver Module)
- Up to 512 digital I/O (up to 32 outputs in the Valve Driver Module)
- Up to 128 analog I/O

**32 Outputs Driver for H Series Micro and H Series ISO Valve Islands**



H Series Micro Valves



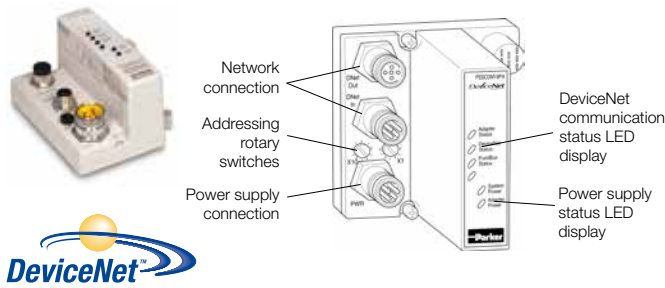
ISO 15407-2  
 HA & HB



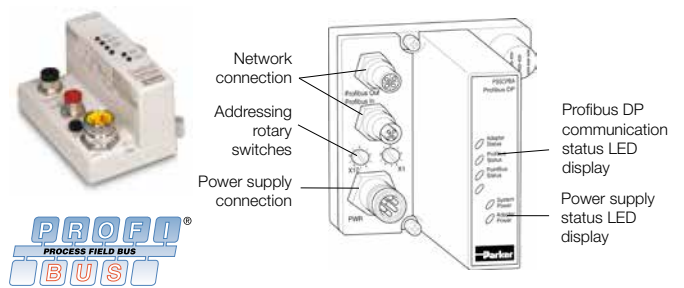
ISO 15407-2  
 H1 to H3

- H Series Micro 4 valve function in 42 mm 280 NI/mn
- ISO 15407-2 Size 02 (HB) 18 mm 390 NI/mn
- ISO 15407-2 Size 01 (HA) 26 mm 920 NI/mn
- ISO 5599-2 Size 1 (H1) 42 mm 1200 NI/mn
- ISO 5599-2 Size 2 (H2) 56 mm 2500 NI/mn
- ISO 5599-2 Size 3 (H3) 71 mm 5000 NI/mn
- Modularity of 16 or 32 outputs per module to handle up to 32 solenoids per valve island.

**DeviceNet communication module**



**Profibus DP communication module**



|   |  |
|---|--|
| <b>DeviceNet Adapters</b>   |  |
| DeviceNet module order code   |  |
| <b>PSSCDM12A</b>  | <b>PSSCDM18PA</b>  |
| <b>Adapters connection</b>  |  |
| Power supply connection<br>7/8" - 4 PINs - Male :   |  |
|   | - PIN 1 : User power +<br>- PIN 2 : Adapter power +<br>- PIN 3 : Adapter power -<br>- PIN 4 : User power - |
| Bus IN connection   |  |
| M12 - 5 PINs - Male - A coding<br>  | M18 - 5 PINs - Male :<br>  |
| - PIN 1 : Drain<br>- PIN 2 : DeviceNet V+<br>- PIN 3 : DeviceNet V-<br>- PIN 4 : CAN High<br>- PIN 5 : CAN Low  |  |
| Bus OUT connection  |  |
| M12 - 5 PINs - Female - A coding<br>  | M18 - 5 PINs - Female :<br>  |
| - PIN 1 : Drain<br>- PIN 2 : V+<br>- PIN 3 : V-<br>- PIN 4 : CAN High<br>- PIN 5 : CAN Low  |  |
| LED display<br>1 - Adapter status : green/red<br>2 - DeviceNet status : green/red<br>3 - Status : green/red<br>4 - System power (5V power) : green<br>5 - Adapter power (24V from field supply) : green |  |

|   |  |
|---|--|
| <b>Profibus DP Adapters</b>   |  |
| Profibus DP module order code   |  |
| <b>PSSCPBA</b>  |  |
| <b>Adapters connection</b>  |  |
| Power supply connection<br>7/8" - 5 PINs - Male :   |  |
|   | - PIN 1 : User power +<br>- PIN 2 : Adapter power +<br>- PIN 3 : Protective GND<br>- PIN 4 : Adapter power -<br>- PIN 5 : User power - |
| Bus IN connection   |  |
| M12 - 5 PINs - Male - B coding<br>  | - PIN 1 : + 5 VDC Bus<br>- PIN 2 : A - Line<br>- PIN 3 : GND Bus<br>- PIN 4 : B - Line<br>- PIN 5 : Shield                             |
| Bus OUT connection  |  |
| M12 - 5 PINs - Female - B coding<br>  | - PIN 1 : + 5 VDC Bus<br>- PIN 2 : A - Line<br>- PIN 3 : GND Bus<br>- PIN 4 : B - Line<br>- PIN 5 : Shield                             |
| LED display<br>1 - Adapter status : green/red<br>2 - Profibus DP status : green/red<br>3 - Bus status : green/red<br>4 - System power (5V power) : green<br>5 - Adapter power (24V from field supply) : green |  |

**DeviceNet communication module connection accessories**



P8CS1205BA

**Profibus DP communication module connection accessories**



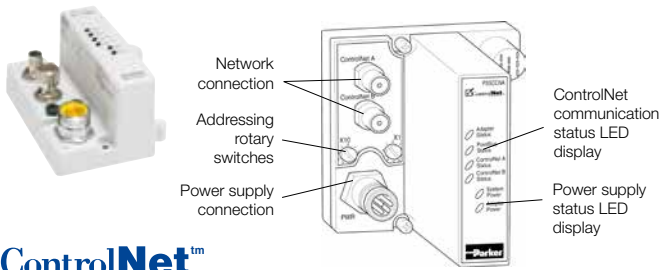
P8CS1205BB

| Description            | Connector type        | W (g) | Order code        |
|------------------------|-----------------------|-------|-------------------|
| Power supply connector | 7/8" - 4 PINs         | 40    | <b>P8CS7804AA</b> |
| Bus IN connector       | M12 female - A coding | 25    | <b>P8CS1205AA</b> |
| Bus OUT connector      | M12 male - A coding   | 25    | <b>P8CS1205BA</b> |
| Line terminaiton       | M12 male - A coding   | 25    | <b>P8BPA00MA</b>  |

| Description            | Connector type        | W (g) | Order code        |
|------------------------|-----------------------|-------|-------------------|
| Power supply connector | 7/8" - 5 PINs         | 40    | <b>P8CS7805AA</b> |
| Bus IN connector       | M12 female - B coding | 25    | <b>P8CS1205AB</b> |
| Bus OUT connector      | M12 male - B coding   | 25    | <b>P8CS1205BB</b> |
| Line terminaiton       | M12 male - B coding   | 25    | <b>P8BPA00MB</b>  |

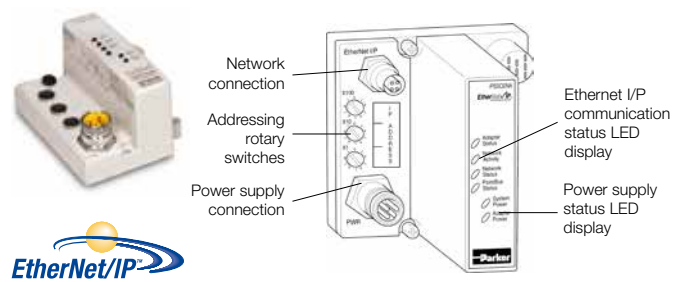


**ControlNet communication module**

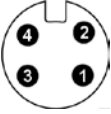


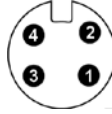
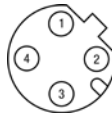
**ControlNet™**

**Ethernet I/P communication module**



**EtherNet/IP™**

|   |  |
|---|--|
| <b>ControlNet Adapters</b>  |  |
| ControlNet module order code  |  |
| <b>PSSCCNA</b>  |  |
| <b>Adapters connection</b>  |  |
| Power supply connection<br>7/8" - 4 PINs - Male :                                 |  |
|  | - PIN 1 : User power +<br>- PIN 2 : Adapter power +<br>- PIN 3 : Adapter power -<br>- PIN 4 : User power - |
| ControlNet IN connection  | TNC style connector  |
| ControlNet OUT connection   | TNC style connector  |
| LED display   |  |
| 1 - Adapter status : green/red  |  |
| 2 - Bus status : green/red  |  |
| 3 - ControlNet A status : green/red   |  |
| 4 - ControlNet B status : green/red   |  |
| 5 - System power (Bus 5V power) : green   |  |
| 6 - Adapter power (24V from field supply) : green                                 |  |

|  |  |
|--|--|
| <b>Ethernet I/P Adapters</b>   |  |
| Ethernet I/P module order code   |  |
| <b>PSSCENA</b>   |  |
| <b>Adapters connection</b>   |  |
| Power supply connection<br>7/8" - 4 PINs - Male :                                    |  |
|    | - PIN 1 : User power +<br>- PIN 2 : Adapter power +<br>- PIN 3 : Adapter power -<br>- PIN 4 : User power - |
| Ethernet I/P connection  |  |
| M12 - 4 PINs - Female - D coding :   |  |
|  | - PIN 1 : Tx +<br>- PIN 2 : Rx +<br>- PIN 3 : Tx -<br>- PIN 4 : Rx -                                       |
| LED display  |  |
| 1 - Adapter status : green/red   |  |
| 2 - Network activity : green   |  |
| 3 - Network status : green/red   |  |
| 4 - Bus status : green/red   |  |
| 5 - System power (Bus 5V power) : green  |  |
| 6 - Adapter power (24V from field supply) : green                                    |  |

**ControlNet communication module connection accessories**



P8CS7804AA

| Description            | Connector type | W (g) | Order code        |
|------------------------|----------------|-------|-------------------|
| Power supply connector | 7/8" - 4 PINs  | 40    | <b>P8CS7804AA</b> |

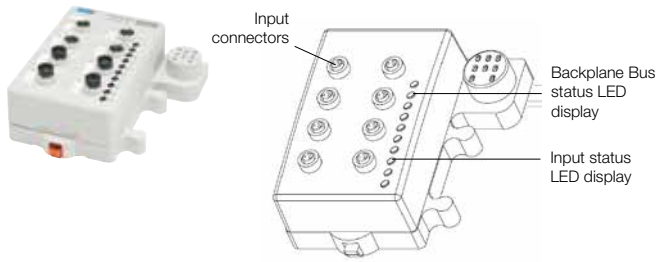
**Ethernet I/P communication module connection accessories**



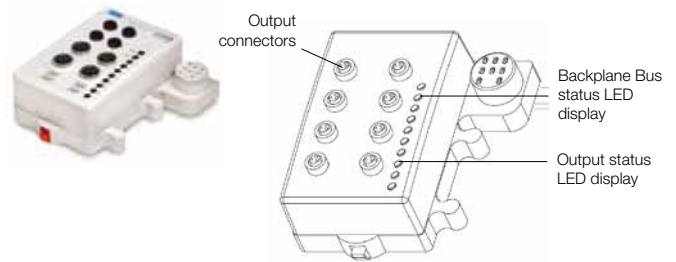
P8CS7804AA

| Description            | Connector type | W (g) | Order code        |
|------------------------|----------------|-------|-------------------|
| Power supply connector | 7/8" - 4 PINs  | 40    | <b>P8CS7804AA</b> |

Digital Input modules



Digital Output modules



| Digital DC Input modules  |   |           |
|---|---|-----------|
| Input module order code   |   |           |
| PSSN8M8A  | PSSN8M12A   | PSSP8M12A |
|   |   |           |
| Nb of Inputs  |   |           |
| 8   | 8   | 8         |
| Nb of Input connectors  |   |           |
| 8 x M8  | 4 x M12   | 4 x M12   |
| Input density/connector   |   |           |
| 1   | 2   | 2         |
| Sensor polarity   |   |           |
| PNP   | PNP   | NPN       |
| Input module connection   |   |           |
| Input connector   |   |           |
| M8 - 3 PINs<br>Female   | M12 - 5 PINs<br>Female  |           |
| <br>- PIN 1 : +24 VDC<br>- PIN 3 : Common<br>- PIN 4 : Input        | <br>- PIN 1 : +24 VDC<br>- PIN 2 : Odd input (1, 3, 5, 7)<br>- PIN 3 : Common<br>- PIN 4 : Even input (0, 2, 4, 6)<br>- PIN 5 : n/a |           |
| Input status LED display (Logic side)                               |   |           |
| 8 x Yellow / Red  |   |           |
| Backplane Bus status LED display (Logic side)                       |   |           |
| Module status : 1 x green / red<br>Network status : 1 x green / red |   |           |

| Digital DC Output modules   |   |   |   |
|---|---|---|---|
| Output module order code  |   |   |   |
| PSST8M8A  | PSST8M12A   | PSST8M23A   | PSSTR4M12A  |
|   |   |   |   |
| Nb of Outputs   |   |   |   |
| 8   | 8   | 8   | 8   |
| Nb of Output connectors   |   |   |   |
| 8 x M8  | 4 x M12   | 1 x M23   | 4 x M12   |
| Output density/connector  |   |   |   |
| 1   | 2   | 8   | 1   |
| Output module connection  |   |   |   |
| Output connector  |   |   |   |
| M8 - 3 PINs<br>Female   | M12 - 5 PINs<br>Female  | M23 - 12 PINs<br>Female   | M12 - 5 PINs<br>Female  |
| <br>- PIN 1 : +24 VDC<br>- PIN 3 : Common<br>- PIN 4 : Outputs (0 to 7) | <br>- PIN 1 : +24 VDC<br>- PIN 2 : Odd output (1, 3, 5, 7)<br>- PIN 3 : Common<br>- PIN 4 : Even output (0, 2, 4, 6)<br>- PIN 5 : n/a | <br>- PIN 1 : Output 0<br>- PIN 2 : Output 1<br>- PIN 3 : Output 2<br>- PIN 4 : Output 3<br>- PIN 5 : Output 4<br>- PIN 6 : Output 5<br>- PIN 7 : Output 6<br>- PIN 8 : Output 7<br>- PIN 9 : Return (common)<br>- PIN 10 : Return (common)<br>- PIN 11 : +24 VDC<br>- PIN 12 : Chassis | <br>- PIN 1 : +24 VDC<br>- PIN 2 : Odd outputs<br>- PIN 3 : Common<br>- PIN 4 : Even outputs<br>- PIN 5 : n/a |
| Output status LED display (Logic side)                                  |   |   |   |
| 8 x Yellow / Red  |   |   | 4 x Yellow/Red  |
| Backplane Bus status LED display (Logic side)                           |   |   |   |
| Module status : 1 x green / red<br>Network status : 1 x green / red     |   |   |   |

Backplane Bus accessories



| Description            | Cable length | W (g) | Order code |
|------------------------|--------------|-------|------------|
| Backplane Bus extender | 1 meter      | 380   | PSSEXT1    |
|                        | 3 meter      | 760   | PSSEXT3    |
| Termination module     |              | 200   | PSSTERM    |

Backplane Bus accessories



| Description            | Cable length | W (g) | Order code |
|------------------------|--------------|-------|------------|
| Backplane Bus extender | 1 meter      | 380   | PSSEXT1    |
|                        | 3 meter      | 760   | PSSEXT3    |
| Termination module     |              | 200   | PSSTERM    |

Connectors for outputs



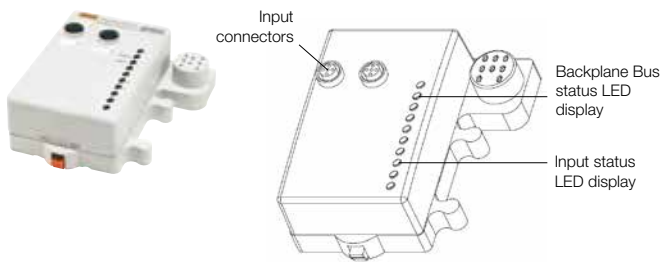
| Description                   | Connector type            | W (g) | Order code |
|-------------------------------|---------------------------|-------|------------|
| Cable quick connect connector | M8 male                   | 25    | P8CS0803J  |
| Y shape                       | M12 male - 2 x M12 female | 25    | P8CSY1212A |

Connectors for outputs

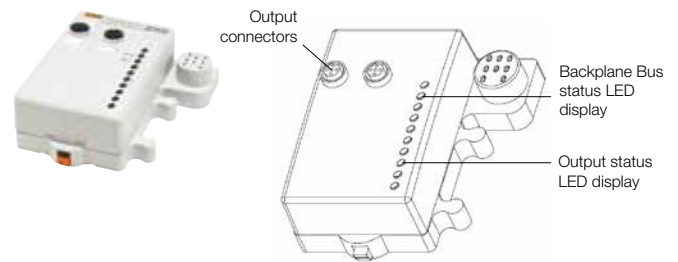



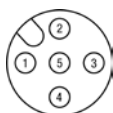
| Description                   | Connector type            | W (g) | Order code |
|-------------------------------|---------------------------|-------|------------|
| Cable quick connect connector | M8 male                   | 25    | P8CS0803J  |
| Y shape                       | M12 male - 2 x M12 female | 25    | P8CSY1212A |


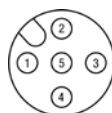
**Analogue Input modules**



**Analogue Output modules**



| <b>Analogue Input modules</b>   |   |                   |
|---|---|-------------------|
| Input module order code   | <b>PSSNAVM12A</b>   | <b>PSSNACM12A</b> |
|  |   |                   |
| Nb of Inputs  | 2   | 2                 |
| Nb of Input connectors  | 2 x M12   | 2 x M12           |
| Input density/connector   | 1   | 1                 |
| Input signal  | 0 - 10 V  | 4 - 20 mA         |
| <b>Analogue Input module connection</b>   |   |                   |
| Input connector   | M12 - 5 PINs - Female   |                   |
|   | <br>- PIN 1 : +24 VDC<br>- PIN 2 : Inputs<br>- PIN 3 : Common<br>- PIN 4 : Common<br>- PIN 5 : n/a |                   |
| Input status LED display (Logic side)   | 2 x green / red   |                   |
| Backplane Bus status LED display (Logic side)                                     | Module status : 1 x green / red<br>Network status : 1 x green / red   |                   |

| <b>Analogue Output modules</b>  |  |                   |
|---|--|-------------------|
| Output module order code  | <b>PSSTAVM12A</b>  | <b>PSSTACM12A</b> |
|  |  |                   |
| Nb of Outputs   | 2  | 2                 |
| Nb of Output connectors   | 2 x M12  | 2 x M12           |
| Output density/connector  | 1  | 1                 |
| Output signal   | 0 - 10 V   | 4 - 20 mA         |
| <b>Analogue Output module connection</b>  |  |                   |
| Output connector  | M12 - 5 PINs - Female  |                   |
|   | <br>- PIN 1 : Outputs<br>- PIN 2 : +24 VDC<br>- PIN 3 : Common<br>- PIN 4 : Common<br>- PIN 5 : n/a |                   |
| Output status LED display (Logic side)  | 2 x green / red  |                   |
| Backplane Bus status LED display (Logic side)                                       | Module status : 1 x green / red<br>Network status : 1 x green / red  |                   |

**Backplane Bus accessories**



| Description            | Cable length | W (g) | <b>Order code</b> |
|------------------------|--------------|-------|-------------------|
| Backplane Bus extender | 1 meter      | 380   | <b>PSSEXT1</b>    |
|                        | 3 meter      | 760   | <b>PSSEXT3</b>    |
| Termination module     |              | 200   | <b>PSSTERM</b>    |

**Backplane Bus accessories**



| Description            | Cable length | W (g) | <b>Order code</b> |
|------------------------|--------------|-------|-------------------|
| Backplane Bus extender | 1 meter      | 380   | <b>PSSEXT1</b>    |
|                        | 3 meter      | 760   | <b>PSSEXT3</b>    |
| Termination module     |              | 200   | <b>PSSTERM</b>    |

**Connectors for inputs**



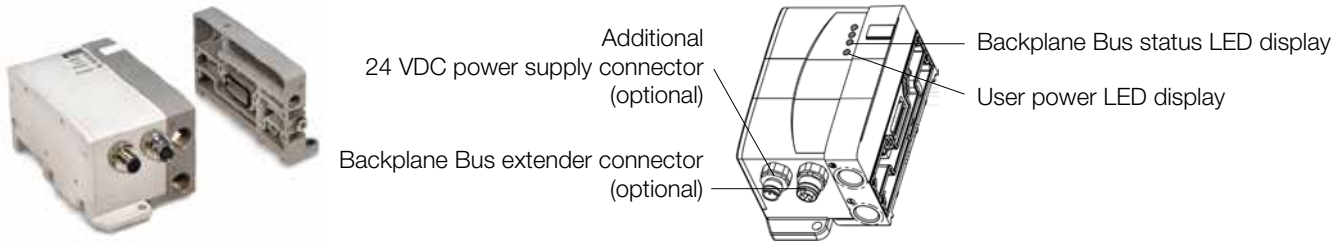
| Description        | Connector type      | W (g) | <b>Order code</b> |
|--------------------|---------------------|-------|-------------------|
| Straight connector | M12 male - A coding | 25    | <b>P8CS1205BA</b> |

**Connectors for outputs**



| Description        | Connector type      | W (g) | <b>Order code</b> |
|--------------------|---------------------|-------|-------------------|
| Straight connector | M12 male - A coding | 25    | <b>P8CS1205BA</b> |

**32 Output drivers**



| Dedicated valve range               |               | H Series Micro Valves |                 |                 |                 | H Series ISO 15407-2 | H Series ISO 5599-2 |
|-------------------------------------|---------------|-----------------------|-----------------|-----------------|-----------------|----------------------|---------------------|
| 32 Output driver modules order code | Side ported   | <b>PSML61AP</b>       | <b>PSMM61AP</b> | <b>PSMM71AP</b> | <b>PSMM51AP</b> | <b>PS5620L61P</b>    | <b>PS4020L61CP</b>  |
|                                     | Bottom ported | <b>PSML62AP</b>       | <b>PSMM62AP</b> | <b>PSMM72AP</b> | <b>PSMM52AP</b> |                      |                     |
| Pneumatic port sizes                |               | Power supply          |                 | G3/8"           |                 |                      |                     |
|                                     |               | Exhaust               |                 | G3/8"           |                 |                      |                     |
| Pneumatic pilot port sizes          |               | Internal or M7        |                 |                 |                 | Internal             |                     |
|                                     |               | G1/8"                 |                 |                 |                 | Internal             |                     |

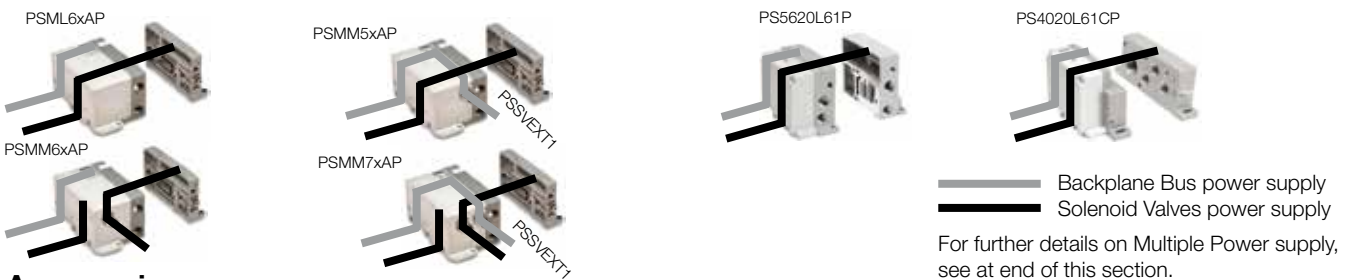
**32 Output driver module connection**

|   |  |     |     |                      |  |    |
|---|--|-----|-----|----------------------|--|----|
| 24 VDC power supply connector                 | NO   | YES | YES | NO                   | NO   | NO |
|   | <ul style="list-style-type: none"> <li>- PIN 1 : +24 VDC</li> <li>- PIN 2 : n/a</li> <li>- PIN 3 : Common</li> <li>- PIN 4 : n/a</li> <li>- PIN 5 : Protective Earth</li> </ul>  |     |     |                      |  |    |
| Backplane Bus Extender connector              | NO   | NO  | YES | YES                  | NO   | NO |
|   | <ul style="list-style-type: none"> <li>- PIN 1 : CAN SHLD</li> <li>- PIN 2 : CAN V+</li> <li>- PIN 3 : CAN GND</li> <li>- PIN 4 : CAN High</li> <li>- PIN 5 : CAN Low</li> </ul> |     |     | To use with PSSVEXT1 |  |    |
| Backplane Bus status LED display (Logic side) | Backplane Bus power supply : 1 x green / red<br>Backplane Bus status : 1 x green / red<br>Output fault : 1 x red<br>Valve power supply : 1 x green                               |     |     |                      | Module status : 1 x green / red<br>Backplane Bus status : 1 x green/red<br>Output fault : 1 x yellow / red |    |

**Backplane Bus and Solenoid Valves Power Supply Sourcing :**

**H Series Micro 32 output driver modules**

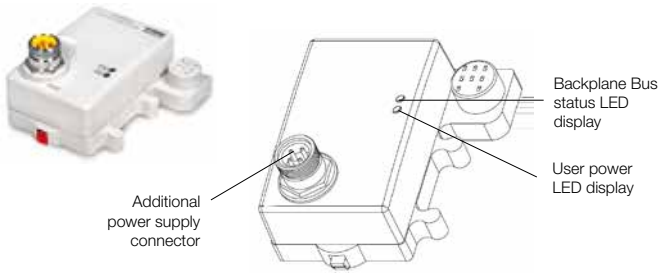
**H Series ISO 32 output driver modules**



**Accessories**

|  | Description                                      | Connector type                 | W (g) | Order code        |
|--|--|--------------------------------|-------|-------------------|
|  | Backplane Bus extension cable with 1 meter cable | M12 male - A coding Head plate | 380   | <b>PSSVEXT1</b>   |
|  | Connector for 24 VDC power supply connector      | M12 Female - A coding          | 25    | <b>P8CS1205AA</b> |
|  | Line termination                                 | M12 Male - A coding            | 25    | <b>P8BPA00MA</b>  |

**Power Extender module**



| <b>Backplane Bus Extension Power Supply module</b> |  |
|--|--|
| Power Supply Extender module order code            | <b>PSSE24A</b>   |
|  |  |
| <b>Extender module connection</b>                  |  |
| Power supply connection                            | 7/8" - 4 PINs - Male<br><br>- PIN 1 : User power +<br>- PIN 2 : Backplane bus power +<br>- PIN 3 : Backplane bus power +<br>- PIN 4 : User power - |
| Status LED display (Logic side)<br>1 x green       | Field power status : 1 x green<br>5 VDC system power status:   |

**Backplane Bus connector**



P8CS7804AA

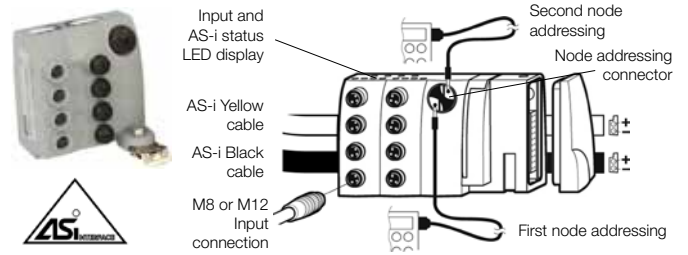
| Description            | Connector type | W (g) | Order code        |
|------------------------|----------------|-------|-------------------|
| Power supply connector | 7/8" - 4 PINs  | 40    | <b>P8CS7804AA</b> |

**Backplane Bus accessories**



| Description   | Cable length | W (g) | Order code      |
|---|--------------|-------|-----------------|
| Backplane Bus extender from Industrial communication module | 1 meter      | 380   | <b>PSSEXT1</b>  |
|   | 3 meter      | 760   | <b>PSSEXT3</b>  |
| Backplane Bus extender cable from 32 outputs driver         | 1 meter      | 380   | <b>PSSVEXT1</b> |

**AS-interface communication module**



**AS-i Adapters**

| P2M2HBVA 10400                    | P2M2HBVA 10800 | P2M2HBVA 20600 | P2M2HBVA 10808A | P2M2HBVA 20608A | P2M2HBVA 10404B | P2M2HBVA 10404B | P2M2HBVA 20608B |
|-----------------------------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                   |                |                |                 |                 |                 |                 |                 |
| AS-i Version                      |                |                |                 |                 |                 |                 |                 |
| V2.0                              | V2.0           | V2.1           | V2.0            | V2.1            | V2.0            | V2.0            | V2.1            |
| Number of addresses               |                |                |                 |                 |                 |                 |                 |
| 1 / 31                            | 2 / 31         | 2 / 31a + 31b  | 2 / 31          | 2 / 31a + 31b   | 1 / 31          | 2 / 31          | 2 / 31a + 31b   |
| Nb of outputs for solenoid valves |                |                |                 |                 |                 |                 |                 |
| 4                                 | 8              | 6              | 8               | 8               | 4               | 8               | 6               |
| Nb of Inputs                      |                |                |                 |                 |                 |                 |                 |
| -                                 |                |                | 8               | 8               | 4               | 8               | 8               |
| Nb of Input connectors            |                |                |                 |                 |                 |                 |                 |
| -                                 |                |                | 8 x M8          | 8 x M8          | 4 x M12         | 4 x M12         | 4 x M12         |
| Input density / connector         |                |                |                 |                 |                 |                 |                 |
| -                                 |                |                | 1               | 1               | 1               | 2               | 2               |

**Adapter connection**

|   |  |  |
|---|--|--|
| Yellow cable  |  |  |
| Bus signal<br>Bus module and sensors power supply   |  |  |
| Black cable   |  |  |
| 24 VDC outputs for solenoid valves  |  |  |
| INPUTS connection   | M8 - 3 Pins - Female                                     | M12 - 5 Pins Female  |
|   |  |  |
|   | - PIN 1 : +24 VDC<br>- PIN 3 : Common<br>- PIN 4 : Input | PIN 1: +24 VDC<br>PIN 2: Input 2 & 3<br>PIN 3: Common<br>PIN 4: Input 0 to 3<br>PIN 5: n/a<br>*on left connectors only |
|   |  | PIN 1: +24 VDC<br>PIN 2: Odd Input<br>PIN 3: Common<br>PIN 4: Even Input<br>PIN 5: n/a                                 |
| LED Display   |  |  |
| Node status : 2 x green/red per node<br>Input status : 4 x yellow per node<br>Valve power (24V from field supply) : 1 x green / red |  |  |

**Valve range adapters**



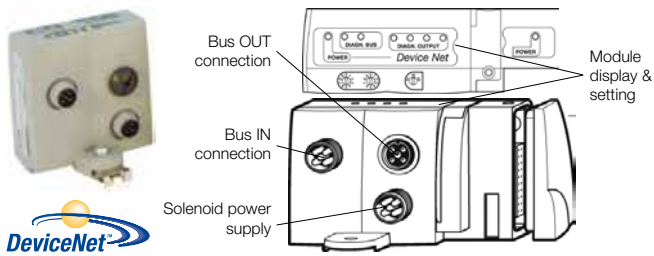
| Description                                       | Valve range               | W (g) | Order code         |
|---|---------------------------|-------|--------------------|
| Moduflex Bus adapter without communication module | Moduflex Valve            | 30    | <b>P2M2HEV0B</b>   |
|   | H Series Side ported      | 200   | <b>PSMM41AP</b>    |
|   | Micro Valve Bottom ported | 200   | <b>PSMM42AP</b>    |
|   | ISO 15407-2-HA-HB         | 200   | <b>PS5620M41P</b>  |
|   | ISO 5599-2 - H1           | 300   | <b>PS4020M41CP</b> |

**Connectors for Inputs**



| Description                   | Valve range                   | W (g) | Order code        |
|-------------------------------|-------------------------------|-------|-------------------|
| Cable quick connect connector | M8 Male                       | 25    | <b>P8CS0803J</b>  |
|                               | M12 Male - A coding "Y" shape | 25    | <b>P8CS1204J</b>  |
|                               | M12 Male - 2 x M12 Female     | 25    | <b>P8CSY1212A</b> |
| Addressing cable              | M12 Male - Jack               | 100   | <b>P8LS12JACK</b> |

DeviceNet 16 outputs communication module



| DeviceNet Adapters           |                      | H Series Micro                  |
|------------------------------|----------------------|---------------------------------|
| <b>Moduflex Valve System</b> |                      |                                 |
| <b>P2M2HBVD11600</b>         | <b>P2M2HBVD21600</b> | <b>Side ported : PSMMD1AP</b>   |
|                              |                      | <b>Bottom ported : PSMMD2AP</b> |
|                              |                      |                                 |

| Adapter connection   |   |
|--|---|
| Power supply connection  |   |
| M12 - 5 PINS<br>Male - B coding  | M12 - 5 PINS<br>Male - A coding   |
| <br>- PIN 1 : n/a<br>- PIN 2 : n/a<br>- PIN 3 : 0 VDC Solenoid<br>- PIN 4 : 24 VDC Solenoid<br>- PIN 5 : Protected earth (PE)                  | <br>- PIN 1 : n/a<br>- PIN 2 : n/a<br>- PIN 3 : 0 VDC Solenoid<br>- PIN 4 : 24 VDC Solenoid<br>- PIN 5 : Protected earth (PE) |
| Bus IN connection  |   |
| M12 - 5 PINS - Male - A coding   |   |
| <br>- PIN 1 : Drain<br>- PIN 2 : CAN V+<br>- PIN 3 : CAN V-<br>- PIN 4 : CAN High<br>- PIN 5 : CAN Low   |   |
| Bus OUT connection   |   |
| M12 - 5 PINS - Female - A coding   |   |
| <br>- PIN 1 : Drain<br>- PIN 2 : CAN V+<br>- PIN 3 : CAN V-<br>- PIN 4 : CAN High<br>- PIN 5 : CAN Low   |   |
| LED Display  |   |
| Adapter power : 1 x green<br>DeviceNet status : 2 x green/red<br>Solenoid pilots power : 1 x green/red<br>Solenoid pilots diagnostic : 4 x red |   |

Valve range adapters



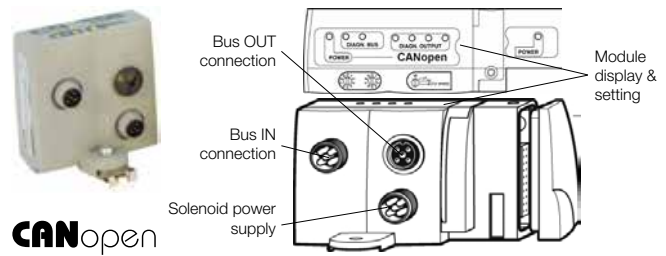
| Description                                       | Valve range W (g)          | Order code             |
|---|----------------------------|------------------------|
| Moduflex Bus adapter without communication module | Moduflex Valve             | 30 <b>P2M2HEV0B</b>    |
|   | H Series Side ported       | 200 <b>PSMM41AP</b>    |
|   | Micro valves Bottom ported | 200 <b>PSMM42AP</b>    |
|   | ISO 15407-2-HA-HB          | 200 <b>PS5620M41P</b>  |
|   | ISO 5599-2 - H1            | 300 <b>PS4020M41CP</b> |

DeviceNet communication module connection accessories



| Description             | Connector type        | W (g) | Order code        |
|-------------------------|-----------------------|-------|-------------------|
| Power supply connection | M12 Female - A coding | 40    | <b>P8CS1205AA</b> |
|                         | M12 Female - B coding | 40    | <b>P8CS1205AB</b> |
| Bus IN connector        | M12 Female - A coding | 25    | <b>P8CS1205AA</b> |
| Bus OUT connector       | M12 Male - A coding   | 25    | <b>P8CS1205BA</b> |
| Line termination        | M12 Male - A coding   | 25    | <b>P8BPA00MA</b>  |

CANopen 16 outputs communication module



| CANopen Adapters             |                      | H Series Micro                  |
|------------------------------|----------------------|---------------------------------|
| <b>Moduflex Valve System</b> |                      |                                 |
| <b>P2M2HBVC11600</b>         | <b>P2M2HBVC21600</b> | <b>Side ported : PSMMC1AP</b>   |
|                              |                      | <b>Bottom ported : PSMMC2AP</b> |
|                              |                      |                                 |

| Adapter connection   |   |
|--|---|
| Power supply connection  |   |
| M12 - 5 PINS<br>Male - B coding  | M12 - 5 PINS<br>Male - A coding   |
| <br>- PIN 1 : n/a<br>- PIN 2 : n/a<br>- PIN 3 : 0 VDC Solenoid<br>- PIN 4 : 24 VDC Solenoid<br>- PIN 5 : Protected earth (PE)                | <br>- PIN 1 : n/a<br>- PIN 2 : n/a<br>- PIN 3 : 0 VDC Solenoid<br>- PIN 4 : 24 VDC Solenoid<br>- PIN 5 : Protected earth (PE) |
| Bus IN connection  |   |
| M12 - 5 PINS - Male - A coding   |   |
| <br>- PIN 1 : Drain<br>- PIN 2 : CAN V+<br>- PIN 3 : CAN V-<br>- PIN 4 : CAN High<br>- PIN 5 : CAN Low                                       |   |
| Bus OUT connection   |   |
| M12 - 5 PINS - Female - A coding   |   |
| <br>- PIN 1 : Drain<br>- PIN 2 : CAN V+<br>- PIN 3 : CAN V-<br>- PIN 4 : CAN High<br>- PIN 5 : CAN Low                                       |   |
| LED Display  |   |
| Adapter power : 1 x green<br>CANopen status : 2 x green/red<br>Solenoid pilots power : 1 x green/red<br>Solenoid pilots diagnostic : 4 x red |   |

Valve range adapters



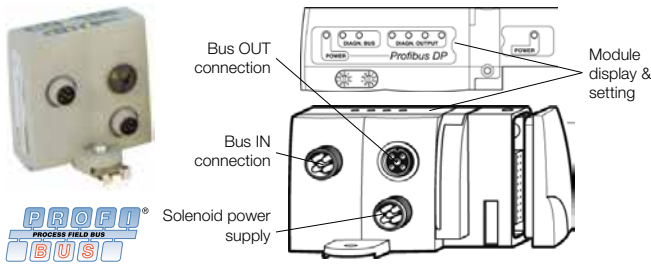
| Description                                       | Valve range W (g)          | Order code             |
|---|----------------------------|------------------------|
| Moduflex Bus adapter without communication module | Moduflex Valve             | 30 <b>P2M2HEV0B</b>    |
|   | H Series Side ported       | 200 <b>PSMM41AP</b>    |
|   | Micro valves Bottom ported | 200 <b>PSMM42AP</b>    |
|   | ISO 15407-2-HA-HB          | 200 <b>PS5620M41P</b>  |
|   | ISO 5599-2 - H1            | 300 <b>PS4020M41CP</b> |

CANopen communication module connection accessories



| Description             | Connector type        | W (g) | Order code        |
|-------------------------|-----------------------|-------|-------------------|
| Power supply connection | M12 Female - A coding | 40    | <b>P8CS1205AA</b> |
|                         | M12 Female - B coding | 40    | <b>P8CS1205AB</b> |
| Bus IN connector        | M12 Female - A coding | 25    | <b>P8CS1205AA</b> |
| Bus OUT connector       | M12 Male - A coding   | 25    | <b>P8CS1205BA</b> |
| Line termination        | M12 Male - A coding   | 25    | <b>P8BPA00MA</b>  |

**Profibus DP 16 outputs communication module**



| Profibus DP Adapters   |   |
|--|---|
| Moduflex Valve System  | H Series Micro Valves   |
| <b>P2M2HBVC11600</b>   | <b>Side ported : PSMMC1AP</b><br><b>Bottom ported : PSMMC2AP</b>  |
|  |   |
| <b>Adapter connection</b>  |   |
| Power supply connection  |   |
| M12 - 5 PINs - Male - A coding   |   |
|  | <ul style="list-style-type: none"> <li>- PIN 1 : +24 VDC adapter</li> <li>- PIN 2 : n/a</li> <li>- PIN 3 : 0 VDC Adapter &amp; Solenoids</li> <li>- PIN 4 : 24 VDC Solenoids</li> <li>- PIN 5 : Protected earth (PE)</li> </ul> |
| Bus IN connection  |   |
| M12 - 5 PINs - Male - B coding   |   |
|  | <ul style="list-style-type: none"> <li>- PIN 1 : +5 VDC Bus</li> <li>- PIN 2 : A - Line</li> <li>- PIN 3 : GND Bus</li> <li>- PIN 4 : B - Line</li> <li>- PIN 5 : Shield</li> </ul>   |
| Bus OUT connection   |   |
| M12 - 5 PINs - Female - B coding   |   |
|  | <ul style="list-style-type: none"> <li>- PIN 1 : +5 VDC Bus</li> <li>- PIN 2 : A - Line</li> <li>- PIN 3 : GND Bus</li> <li>- PIN 4 : B - Line</li> <li>- PIN 5 : Shield</li> </ul>   |
| LED Display  |   |
| Adapter power : 1 x green<br>Profibus DP status : 2 x green/red<br>Solenoid pilots power : 1 x green/red<br>Solenoid pilots diagnostic : 4 x red |   |

**Valve range adapters**



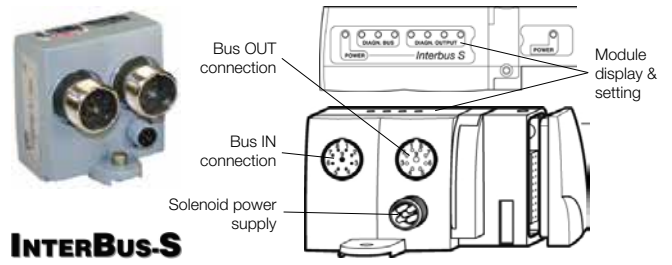
| Description                                       | Valve range                | W (g) | Order code         |
|---|----------------------------|-------|--------------------|
| Moduflex Bus adapter without communication module | Moduflex Valve             | 30    | <b>P2M2HEV0B</b>   |
|   | H Series Side ported       | 200   | <b>PSMMC1AP</b>    |
|   | Micro valves Bottom ported | 200   | <b>PSMMC2AP</b>    |
|   | ISO 15407-2-HA-HB          | 200   | <b>PS5620M41P</b>  |
|   | ISO 5599-2 - H1            | 300   | <b>PS4020M41CP</b> |

**Profibus DP communication module connection accessories**



| Description             | Connector type        | W (g) | Order code        |
|-------------------------|-----------------------|-------|-------------------|
| Power supply connection | M12 Female - A coding | 40    | <b>P8CS1205AA</b> |
| Bus IN connector        | M12 Female - B coding | 25    | <b>P8CS1205AB</b> |
| Bus OUT connector       | M12 Male - B coding   | 25    | <b>P8CS1205BB</b> |
| Line termination        | M12 Male - B coding   | 25    | <b>P8BPA00MB</b>  |

**InterBus-S 16 outputs communication module**



| InterBus-S Adapters   |   |
|---|---|
| Moduflex Valve System   |   |
| <b>P2M2HBVS11600</b>  |   |
|   |   |
| <b>Adapter connection</b>   |   |
| Power supply connection   |   |
| M12 - 5 PINs - Male - A coding  |   |
|   | <ul style="list-style-type: none"> <li>- PIN 1 : +24 VDC adapter</li> <li>- PIN 2 : n/a</li> <li>- PIN 3 : 0 VDC Adapter &amp; Solenoids</li> <li>- PIN 4 : 24 VDC Solenoids</li> <li>- PIN 5 : Protected earth (PE)</li> </ul>                         |
| Bus IN connection   |   |
| M23 - 9 PINs - Male   |   |
|   | <ul style="list-style-type: none"> <li>- PIN 1 : DO</li> <li>- PIN 2 : DO</li> <li>- PIN 3 : DI</li> <li>- PIN 4 : DI</li> <li>- PIN 5 : Ground</li> <li>- PIN 6 : n/a</li> <li>- PIN 7 : n/a</li> <li>- PIN 8 : n/a</li> <li>- PIN 9 : n/a</li> </ul>  |
| Bus OUT connection  |   |
| M23 - 9 PINs - Female   |   |
|   | <ul style="list-style-type: none"> <li>- PIN 1 : DO</li> <li>- PIN 2 : DO</li> <li>- PIN 3 : DI</li> <li>- PIN 4 : DI</li> <li>- PIN 5 : Ground</li> <li>- PIN 6 : n/a</li> <li>- PIN 7 : n/a</li> <li>- PIN 8 : n/a</li> <li>- PIN 9 : RBST</li> </ul> |
| LED Display   |   |
| Adapter power : 1 x green<br>InterBus S status : 2 x green/red<br>Solenoid pilots power : 1 x green/red<br>Solenoid pilots diagnostic : 4 x red |   |

**Valve range adapters**




| Description                                       | Valve range                | W (g) | Order code         |
|---|----------------------------|-------|--------------------|
| Moduflex Bus adapter without communication module | Moduflex Valve             | 30    | <b>P2M2HEV0B</b>   |
|   | H Series Side ported       | 200   | <b>PSMMC1AP</b>    |
|   | Micro valves Bottom ported | 200   | <b>PSMMC2AP</b>    |
|   | ISO 15407-2-HA-HB          | 200   | <b>PS5620M41P</b>  |
|   | ISO 5599-2 - H1            | 300   | <b>PS4020M41CP</b> |

**InterBus S communication module connection accessories**




| Description             | Connector type        | W (g) | Order code        |
|-------------------------|-----------------------|-------|-------------------|
| Power supply connection | M12 Female - A coding | 40    | <b>P8CS1205AA</b> |

## TURCK BL67 Communication Gateway

|  | Protocol   | Network connection | Power Sup. Connection | Weight (g) | Order code          |
|--|--|--------------------|-----------------------|------------|---------------------|
|  | CANopen (Bus IN & OUT)   | M12 - A coding     | 7/8" - 5 Pin's        | 375        | <b>BL67-GW-CO</b>   |
|  | DeviceNet™   | 7/8" - 5 Pin's     | 7/8" - 5 Pin's        | 360        | <b>BL67-GW-DN</b>   |
|  | Profibus-DP (DPV0/DPV1)  | M12 - B coding     | 7/8" - 5 Pin's        | 370        | <b>BL67-GW-DPV1</b> |
|  | Multiprotocol Ethernet:<br>Modbus TCP, EtherNet/IP™ and PROFINET | M12 - D coding     | 7/8" - 5 Pin's        | 375        | <b>BL67-GW-EN</b>   |


All TURCK BL67 System Modules can be ordered directly from TURCK under the same part number

## TURCK BL67 Programmable Communication Gateway

|   | Protocol     | Network connection | Power Sup. Connection | Weight (g) | Order code           |
|---|--------------|--------------------|-----------------------|------------|----------------------|
|  | Profibus-DP  | M12 - B coding     | 7/8" - 5 Pin's        | 380        | <b>BL67-PG-DP</b>    |
|   | EtherNet/IP™ | M12 - D coding     | 7/8" - 5 Pin's        | 375        | <b>BL67-PG-EN-IP</b> |
|   | Modbus TCP   | M12 - D coding     | 7/8" - 5 Pin's        | 375        | <b>BL67-PG-EN</b>    |

All TURCK BL67 System Modules can be ordered directly from TURCK under the same part number

## TURCK BL67 Electronic Modules

|  | Description                 | Characteristic      | Polarity          | Weight (g) | Order code            |                         |
|--|-----------------------------|---------------------|-------------------|------------|-----------------------|-------------------------|
|  | Blank module                |                     |                   | 15         | <b>BL67-E</b>         |                         |
|  | 4 Digital Inputs            |                     |                   | PNP        | 55                    | <b>BL67-4DI-P</b>       |
|  |                             |                     |                   | NPN        | 55                    | <b>BL67-4DI-N</b>       |
|  | 8 Digital Inputs            | Channel diagnostics |                   | PNP        | 55                    | <b>BL67-4DI-PD</b>      |
|  |                             |                     |                   | PNP        | 55                    | <b>BL67-8DI-P</b>       |
|  |                             |                     |                   | NPN        | 55                    | <b>BL67-8DI-N</b>       |
|  |                             |                     |                   | NPN        | 55                    | <b>BL67-8DI-N</b>       |
|  | 16 Digital Inputs           |                     |                   | PNP        | 55                    | <b>BL67-16DI-P</b>      |
|  |                             |                     |                   | PNP        | 55                    | <b>BL67-16DI-P</b>      |
|  | 4 Digital Outputs           | 0.5 A               |                   | PNP        | 55                    | <b>BL67-4DO-0.5A-P</b>  |
|  |                             |                     |                   | PNP        | 55                    | <b>BL67-4DO-2A-P</b>    |
|  |                             |                     |                   | NPN        | 55                    | <b>BL67-4DO-2A-N</b>    |
|  |                             |                     |                   | PNP        | 55                    | <b>BL67-4DO-4A-P</b>    |
|  | 8 Digital Outputs           | 0.5 A               |                   | PNP        | 55                    | <b>BL67-8DO-0.5A-P</b>  |
|  |                             |                     |                   | NPN        | 55                    | <b>BL67-8DO-0.5A-N</b>  |
|  | 16 Digital Outputs          | 0.1 A               |                   | PNP        | 55                    | <b>BL67-16DO-0.1A-P</b> |
| 4 Digital Inputs & Outputs   | 0.5 A - Channel Diagnostic  |                     | PNP               | 55         | <b>BL67-4DI4DO-PD</b> |                         |
| 8 Configurable Digital Channels  | 0.5 A                       |                     | PNP               | 55         | <b>BL67-8XSG-P</b>    |                         |
|  | 0.5 A - Channel Diagnostics |                     | PNP               | 55         | <b>BL67-8XSG-PD</b>   |                         |
| 8 Isolated Relay Outputs   | Normally open               |                     |                   | 55         | <b>BL67-8DO-R-NO</b>  |                         |
| 2 analogue Inputs  | 16 bit resolution           |                     | Current           | 55         | <b>BL67-2AI-I</b>     |                         |
|  |                             |                     | Voltage           | 55         | <b>BL67-2AI-V</b>     |                         |
|  |                             |                     |                   | 55         | <b>BL67-2AI-PT</b>    |                         |
|  |                             |                     |                   | 55         | <b>BL67-2AI-TC</b>    |                         |
| 4 analogue Inputs  | 16 bit resolution           |                     | Current / Voltage | 55         | <b>BL67-4AI-V/I</b>   |                         |
|  |                             |                     |                   | 55         | <b>BL67-4AI-TC</b>    |                         |
| 2 analogue Outputs   | 16 bit resolution           |                     | Current           | 55         | <b>BL67-2AO-I</b>     |                         |
|  |                             |                     | Voltage           | 55         | <b>BL67-2AO-V</b>     |                         |
| 4 analogue Outputs   | 16 bit resolution           |                     | Voltage           | 55         | <b>BL67-4AO-V</b>     |                         |

All TURCK BL67 System Modules can be ordered directly from TURCK under the same part number

The complete TURCK BL67 Remote I/O System range on <http://www.turck.com> and <http://www.parker.com/pneu/fieldbus>



**TURCK BL67 Base modules for Digital and Analog I/O Modules**



| Description  | Connector Type                       | Con. Number | Weight (g) | Order code            |
|--------------|--------------------------------------|-------------|------------|-----------------------|
| Base Modules | M8, 3-pole, female                   | 4           | 160        | <b>BL67-B-4M8</b>     |
|              |                                      | 8           | 215        | <b>BL67-B-8M8</b>     |
|              | M8, 4-pole, female                   | 8           | 215        | <b>BL67-B-8M8-4</b>   |
|              | M12, 5-pole, female, A-coded         | 2           | 185        | <b>BL67-B-2M12</b>    |
|              | M12, 5-pole, female, A-coded, paired | 2           | 185        | <b>BL67-B-2M12-P</b>  |
|              | M12, 5-pole, female, A-coded         | 4           | 245        | <b>BL67-B-4M12</b>    |
|              | M12, 5-pole, female, A-coded, paired | 4           | 245        | <b>BL67-B-4M12-P</b>  |
|              | M23, 12-pole, female                 | 1           | 190        | <b>BL67-B-1M23</b>    |
|              | M23, 19-pole, female                 | 1           | 190        | <b>BL67-B-1M23-19</b> |

All TURCK BL67 System Modules can be ordered directly from TURCK under the same part number

**Electronic and Base Module Combinations**

|  | BL67-B-4M8 | BL67-B-8M8 | BL67-B-2M12 | BL67-B-2M12-P | BL67-B-4M12 | BL67-B-4M12-P | BL67-B-1M23 | BL67-B-1M23-19 | BL67-B-8M8-4 |
|--|------------|------------|-------------|---------------|-------------|---------------|-------------|----------------|--------------|
| <b>Digital Input Modules</b>                     |            |            |             |               |             |               |             |                |              |
| BL67-4DI-P                                       | ✓          |            | ✓           | ✓             | ✓           |               | ✓           |                |              |
| BL67-4DI-N                                       | ✓          |            | ✓           | ✓             | ✓           |               | ✓           |                |              |
| BL67-4DI-PD                                      | ✓          |            | ✓           | ✓             | ✓           |               |             |                |              |
| BL67-8DI-P                                       |            | ✓          |             |               | ✓           | ✓             | ✓           |                |              |
| BL67-8DI-N                                       |            | ✓          |             |               | ✓           | ✓             | ✓           |                |              |
| BL67-8DI-PD                                      |            | ✓          |             |               | ✓           | ✓             |             |                |              |
| BL67-16DI-P                                      |            |            |             |               |             |               | ✓           | ✓              |              |
| <b>Digital Output Modules</b>                    |            |            |             |               |             |               |             |                |              |
| BL67-4DO-0.5A-P                                  | ✓          |            | ✓           | ✓             | ✓           |               | ✓           |                |              |
| BL67-4DO-2A-P                                    | ✓          |            | ✓           | ✓             | ✓           |               | ✓           |                |              |
| BL67-4DO-2A-N                                    | ✓          |            | ✓           | ✓             | ✓           |               | ✓           |                |              |
| BL67-4DO-4A-P                                    | ✓          |            | ✓           | ✓             | ✓           |               | ✓           |                |              |
| BL67-8DO-0.5A-P                                  |            | ✓          |             |               | ✓           | ✓             | ✓           |                |              |
| BL67-8DO-0.5A-N                                  |            | ✓          |             |               | ✓           | ✓             | ✓           |                |              |
| BL67-16DO-0.1A-P                                 |            |            |             |               |             |               | ✓           | ✓              |              |
| BL67-4DI4DO-PD                                   |            | ✓          |             |               | ✓           | ✓             |             |                |              |
| <b>Configurable Digital Input/Output Modules</b> |            |            |             |               |             |               |             |                |              |
| BL67-8XSG-P                                      |            | ✓          |             |               | ✓           | ✓             |             |                |              |
| BL67-8XSG-PD                                     |            | ✓          |             |               | ✓           | ✓             |             |                |              |
| <b>Relay Output Module</b>                       |            |            |             |               |             |               |             |                |              |
| BL67-8DO-R-NO                                    |            |            |             |               |             | ✓             |             |                |              |
| <b>Analogue Input Module</b>                     |            |            |             |               |             |               |             |                |              |
| BL67-2AI-I                                       |            |            | ✓           |               |             |               |             |                |              |
| BL67-2AI-V                                       |            |            | ✓           |               |             |               |             |                |              |
| BL67-2AI-PT                                      |            |            | ✓           |               |             |               |             |                |              |
| BL67-2AI-TC                                      |            |            | ✓           |               |             |               |             |                |              |
| BL67-4AI-V/I                                     |            |            |             |               | ✓           |               |             |                |              |
| BL67-4AI-TC                                      |            |            |             |               | ✓           |               |             |                |              |
| <b>Analogue Output Module</b>                    |            |            |             |               |             |               |             |                |              |
| BL67-2AO-I                                       |            |            | ✓           |               |             |               |             |                |              |
| BL67-2AO-V                                       |            |            | ✓           |               |             |               |             |                |              |
| BL67-4AO-V                                       |            |            |             |               | ✓           |               |             |                |              |

The complete TURCK BL67 Remote I/O System range on <http://www.turck.com>

**TURCK BL67 Power Feeding and Base Modules**



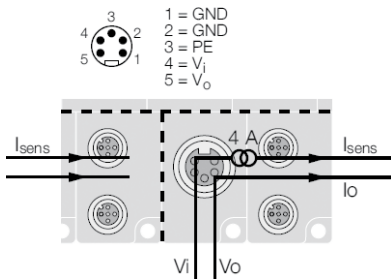
| Description   | Connector Type         | Weight (g)       | Order code            |
|---|------------------------|------------------|-----------------------|
| Power Feeding Module for 24 VDC additional sourcing |                        | 55               | <b>BL67-PF-24VDC</b>  |
| Base Modules  | 1 x 7/8", 5-pole, male | VI / VO Sourcing | <b>BL67-B-1RSM</b>    |
|   |                        | VO Sourcing      | <b>BL67-B-1RSM-VO</b> |
|   | 1 x 7/8", 4-pole, male | 55               | <b>BL67-B-1RSM-4</b>  |

All TURCK BL67 System Modules can be ordered directly from TURCK under the same part number

**Power Feeding Base Modules Connection**

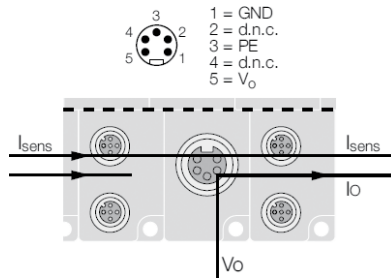
**Standard version**

**BL67-B-1RSM**

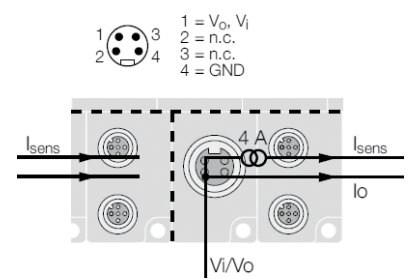


**Other possible versions**

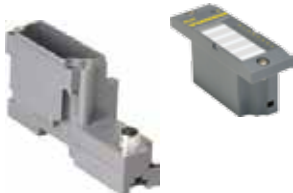
**BL67-B-1RSM-VO**



**BL67-B-1RSM-4**



**TURCK BL67 CANopen Gateway and Base Module**



| Description   | Connector Type                   | Weight (g) | Order code         |
|---|----------------------------------|------------|--------------------|
| CANopen Gateway Module for CANopen Valve Island Interface |                                  | 55         | <b>BL67-1CVI</b>   |
| Base Modules  | 1 x M12, 5-pole, female, A-coded | 170        | <b>BL67-B-1M12</b> |

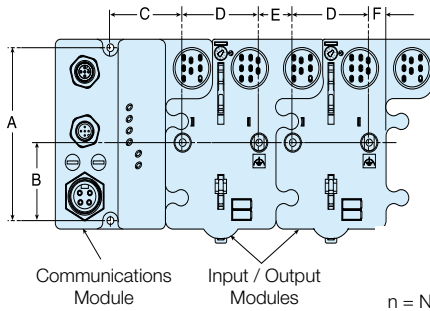
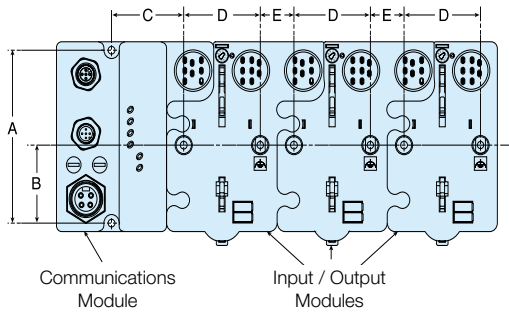
All TURCK BL67 System Modules can be ordered directly from TURCK under the same part number



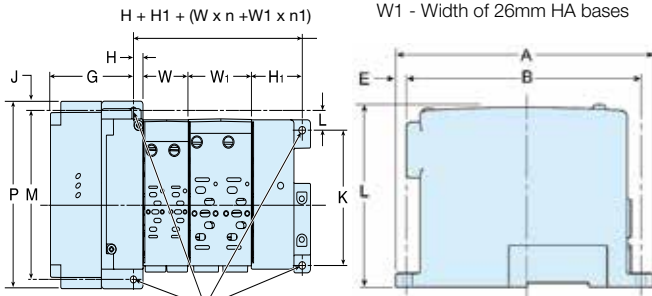
**BL67-1CVI electronic module with BL67-B-1M12**  
 • Offering a CANopen Sub-Network connectivity up to 8 CANopen slaves

The complete TURCK BL67 Remote I/O System range on <http://www.turck.com>

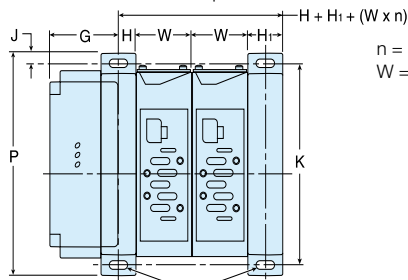
**H Series ISO 15407-2 & 5599-2 Sizes 02 to 3 with H Series Industrial Communication  
 Fieldbus System**



n = Number of 18mm HB bases  
 N1 = Number of 26mm HA bases  
 W = Width of 18mm HB bases  
 W1 = Width of 26mm HA bases

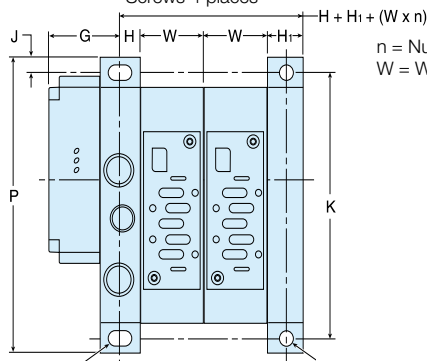


Holes for M6 (or 1/4")  
 Screws 4 places



n = Number of H1 bases  
 W = Width of H1 bases

Slots for M6 (or 1/4")  
 Screws 4 places



n = Number of H2 / H3 bases  
 W = Width of H2 / H3 bases

Slots for M10 (or 7/16")  
 Screws 2 places

Holes for M10 (or 7/16")  
 Screws 2 places

**HA / HB Dimensions**

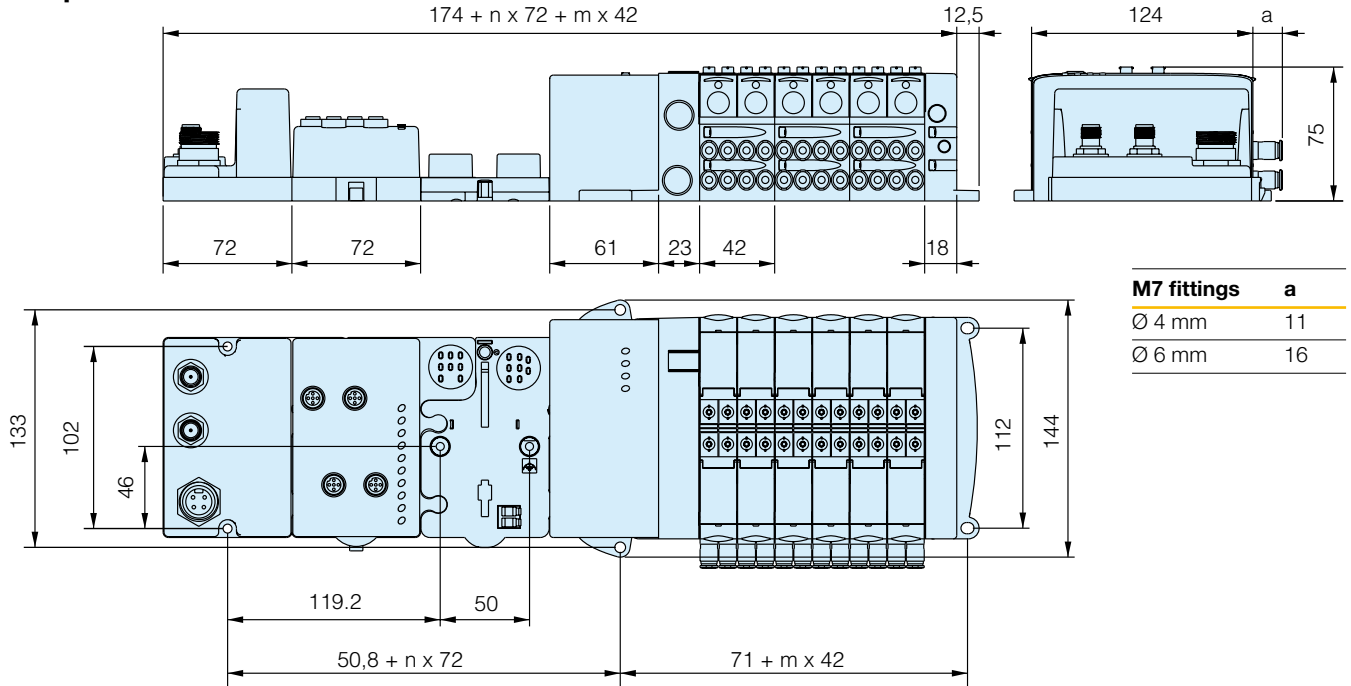
|              | A   | B  | C  | D  | E  | F  |
|--------------|-----|----|----|----|----|----|
| <b>HA/HB</b> | 102 | 46 | 48 | 51 | 22 | 11 |

|              | A   | B   | E   | L   | G   | H    | H <sub>1</sub> |
|--------------|-----|-----|-----|-----|-----|------|----------------|
| <b>HA/HB</b> | 152 | 137 | 7,5 | 106 | 68  | 8,4  | 45,8           |
|              | J   | K   | L   | M   | P   | W    | W <sub>1</sub> |
| <b>HA/HB</b> | 4   | 110 | 16  | 137 | 152 | 40,8 | 56,8           |

|           | G  | H    | H <sub>1</sub> | J   | K   | P   | W  |
|-----------|----|------|----------------|-----|-----|-----|----|
| <b>H1</b> | 56 | 15,9 | 15,9           | 8,5 | 165 | 182 | 49 |
| <b>H2</b> | 58 | 18   | 15             | 12  | 215 | 239 | 56 |
| <b>H3</b> | 64 | 24   | 16,5           | 15  | 265 | 295 | 71 |

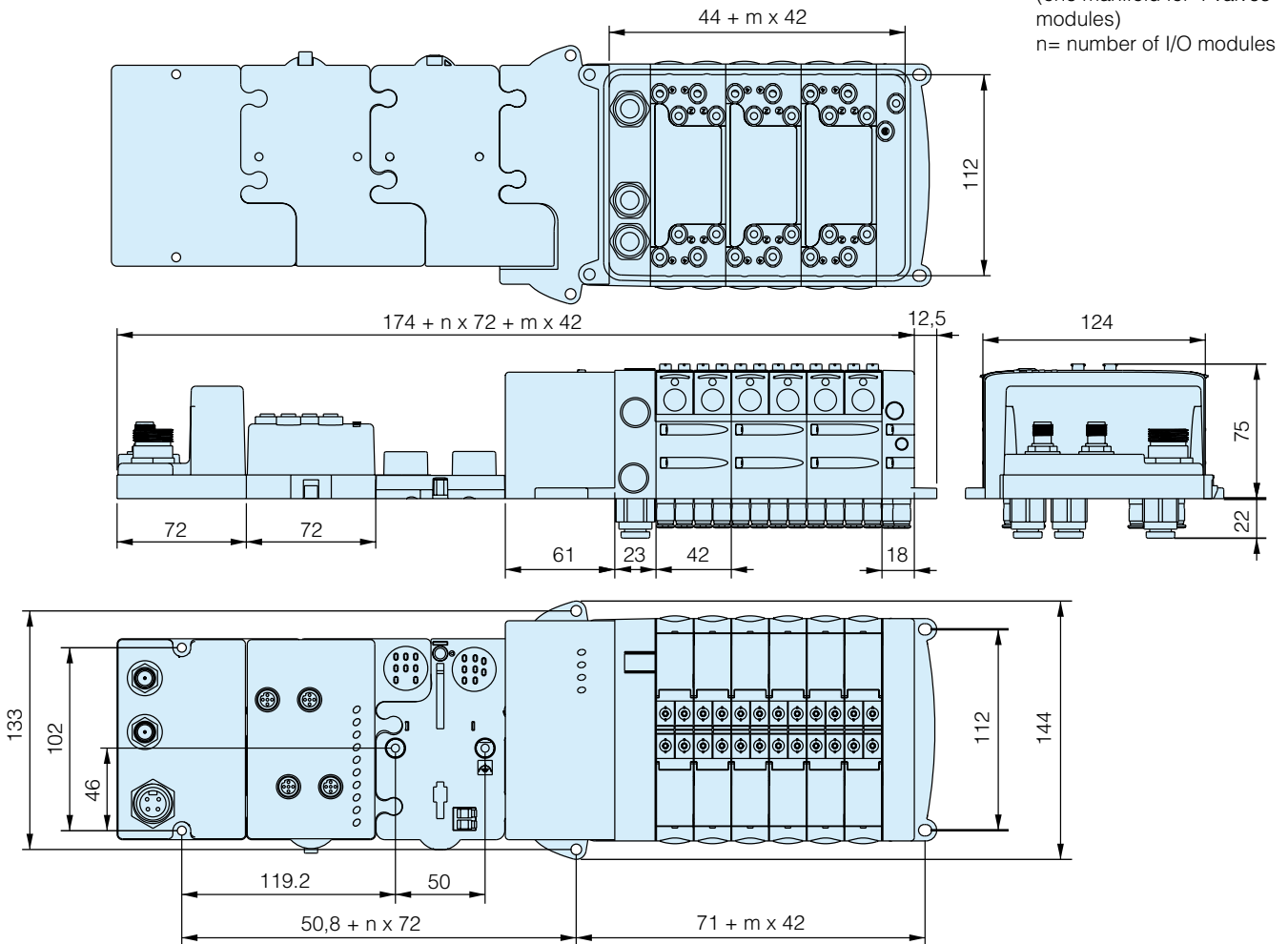
H Series Industrial Communication with H Series Micro Valves

Side ported



| M7 fittings | a  |
|-------------|----|
| Ø 4 mm      | 11 |
| Ø 6 mm      | 16 |

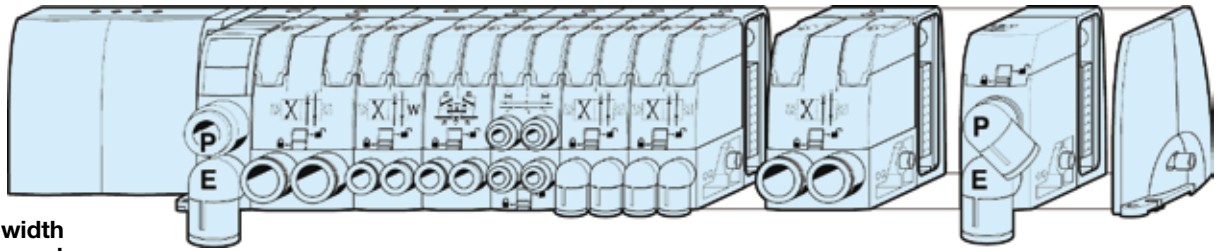
Bottom ported



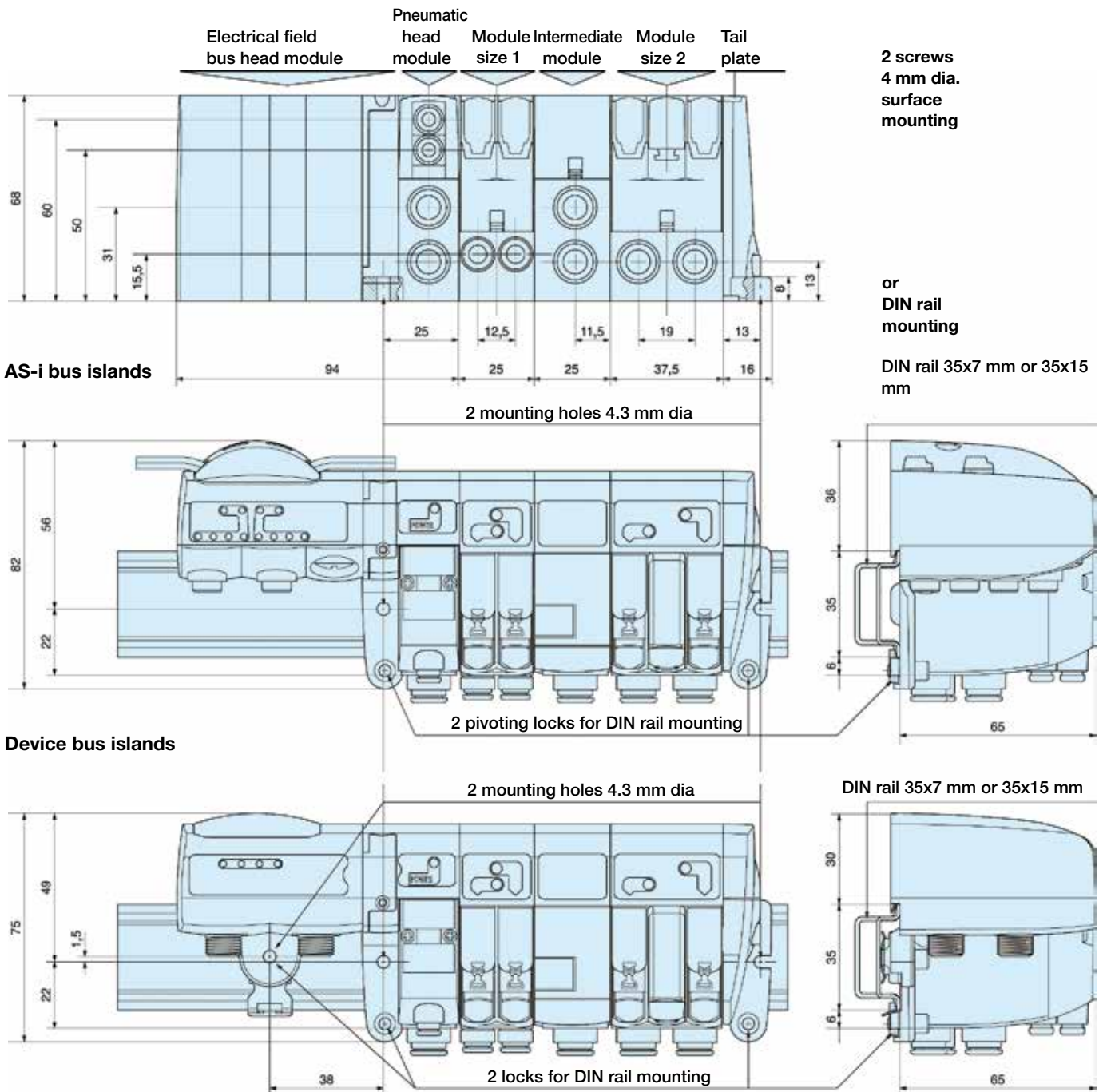
**Note:**  
 m = number of manifolds  
 (one manifold for 4 valves  
 modules)  
 n = number of I/O modules

**Moduflex Bus with Moduflex Valve**

|   |   |                                 |                                   |                                     |
|---|---|---------------------------------|-----------------------------------|-------------------------------------|
| Electrical field bus head module<br>width : 62 mm | Head and tail pneumatic module set<br>width : 48 mm | Modules size 1<br>width : 25 mm | Modules size 2<br>width : 37.5 mm | Intermediate module<br>width :25 mm |
|---|---|---------------------------------|-----------------------------------|-------------------------------------|

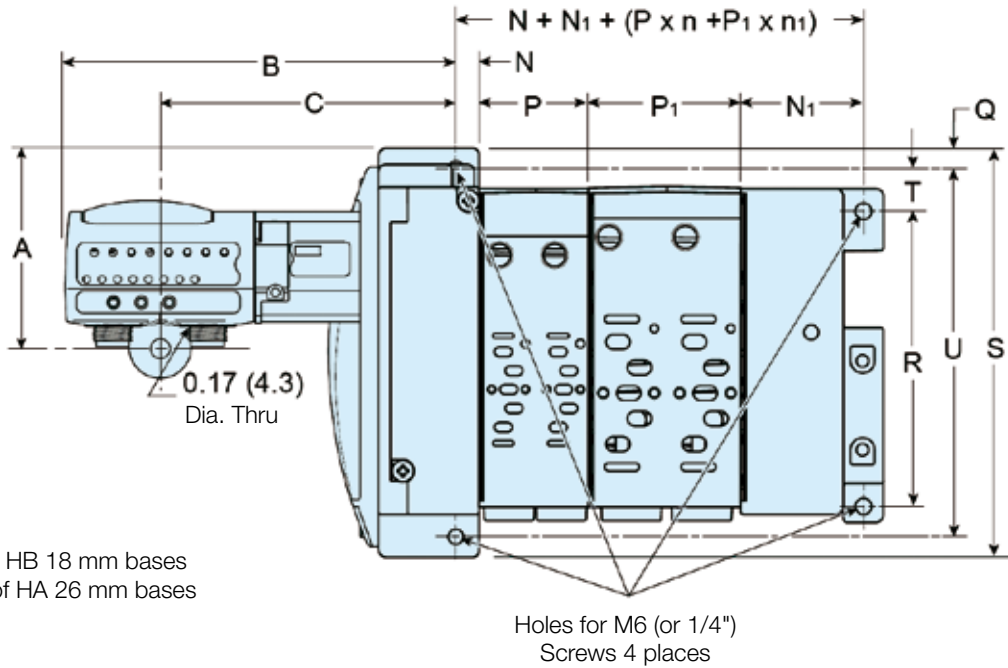


Island total width depending on valve composition



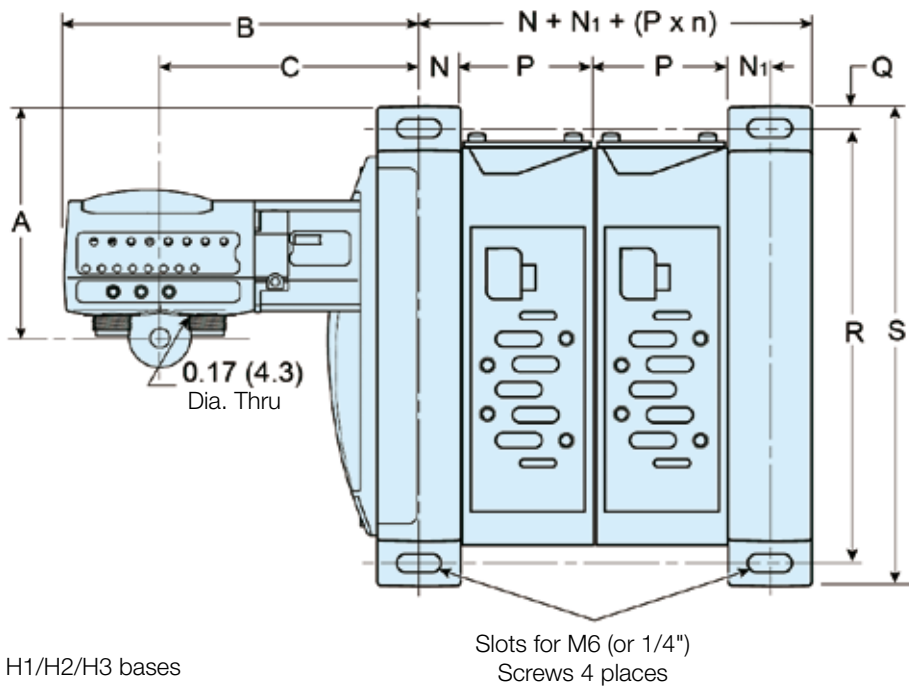
H Series ISO 15407-2 & 5599-2 Sizes 02 to 3 with Moduflex Bus

HA/HB Series



n = Number of HB 18 mm bases  
n1 = Number of HA 26 mm bases

H1/H2/H3 Series

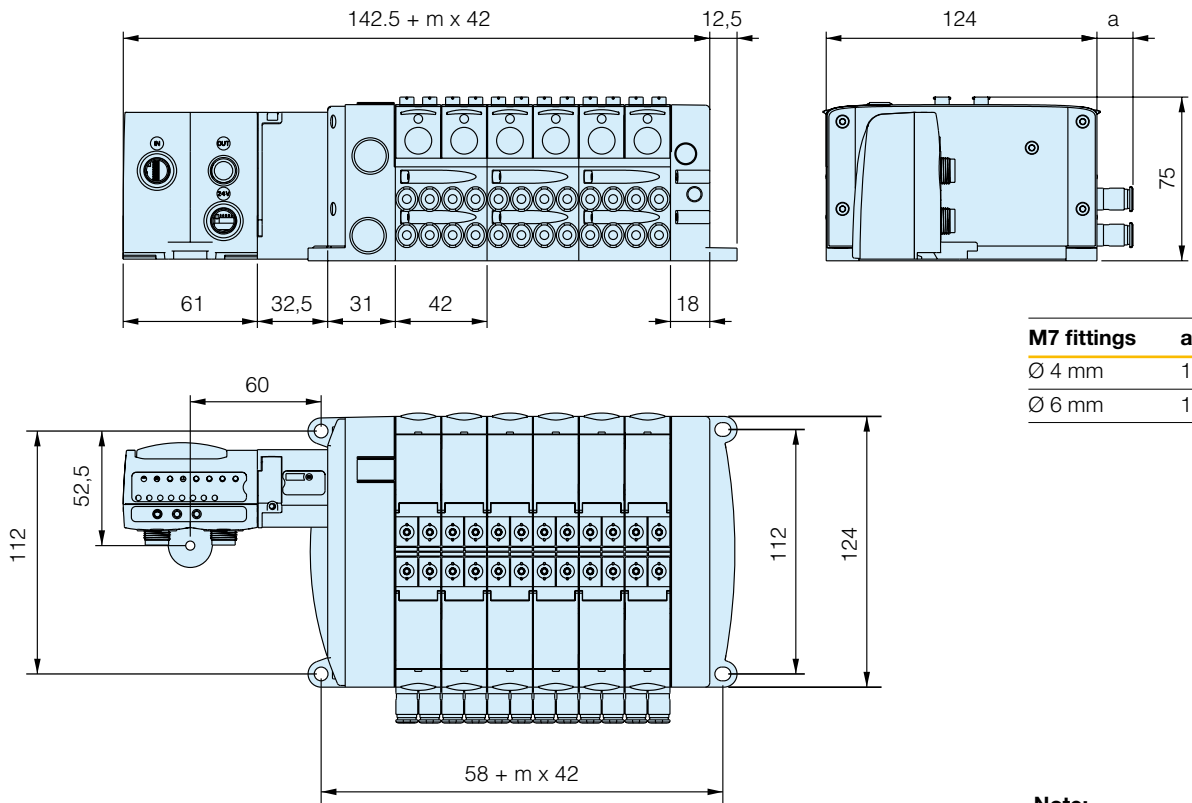


n = Number of H1/H2/H3 bases

|              | A    | B     | C     | N    | N <sub>1</sub> | P    | P <sub>1</sub> | Q   | R   | S   | T  | U   |
|--------------|------|-------|-------|------|----------------|------|----------------|-----|-----|-----|----|-----|
| <b>HA/HB</b> | 69,8 | 142,5 | 111,8 | 8,4  | 45,8           | 40,8 | 56,8           | 4   | 110 | 152 | 16 | 137 |
| <b>H1</b>    | 82   | 130,2 | 160,9 | 15,9 | 15,9           | 49   | -              | 8,5 | 165 | 182 | -  | -   |
| <b>H2</b>    | 78,2 | 130,3 | 161   | 18   | 15             | 56   | -              | 12  | 215 | 239 | -  | -   |
| <b>H3</b>    | 84,2 | 138,2 | 168,9 | 24   | 16,5           | 71   | -              | 15  | 265 | 295 | -  | -   |

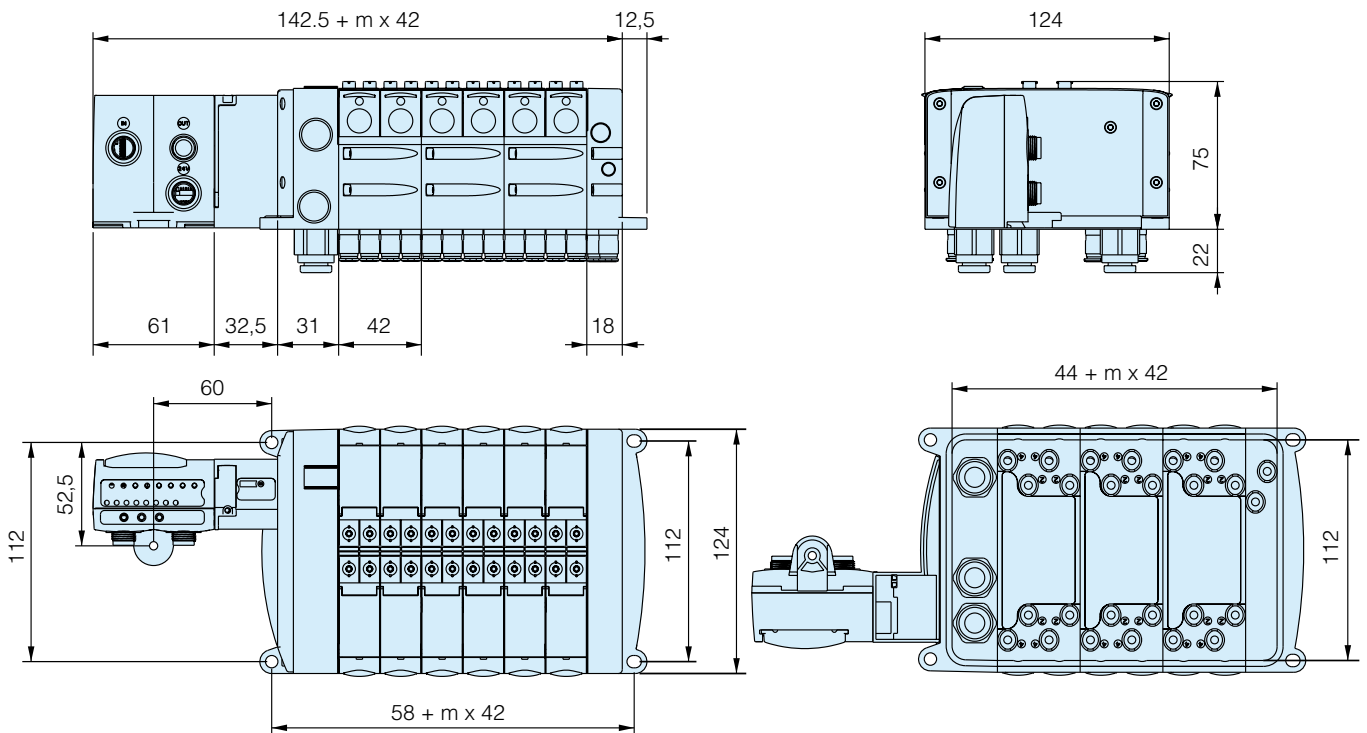
**Moduflex Bus with H Series Micro Valves**

**Side ported**



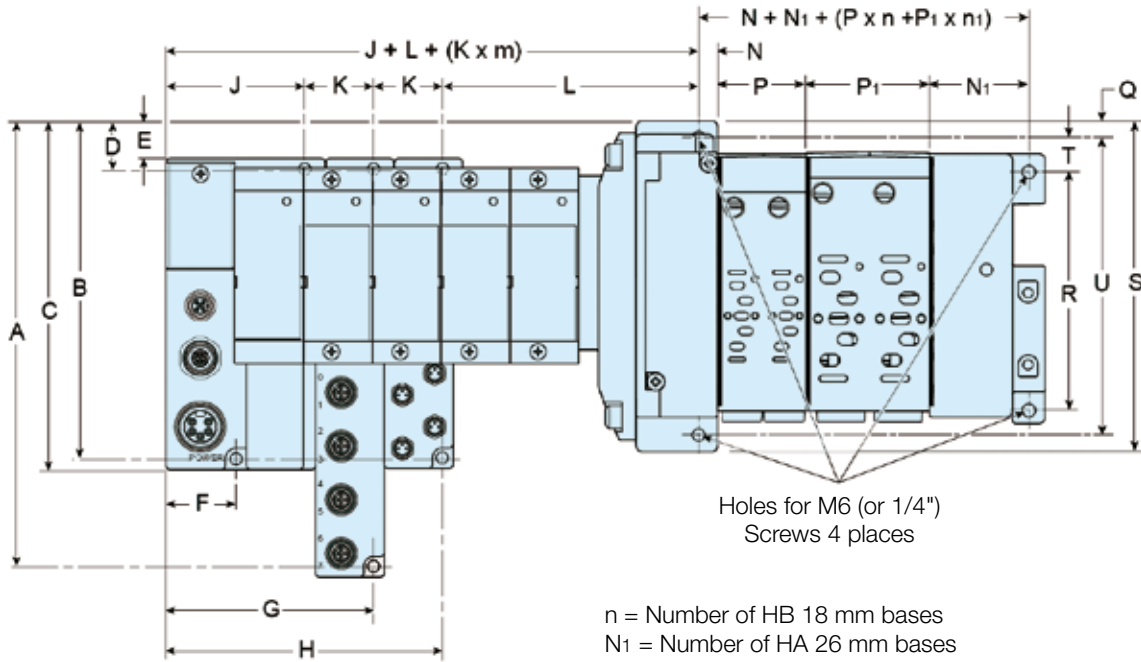
**Note:**  
 m = number of manifolds  
 (one manifold for 4 valves  
 modules)

**Bottom ported**

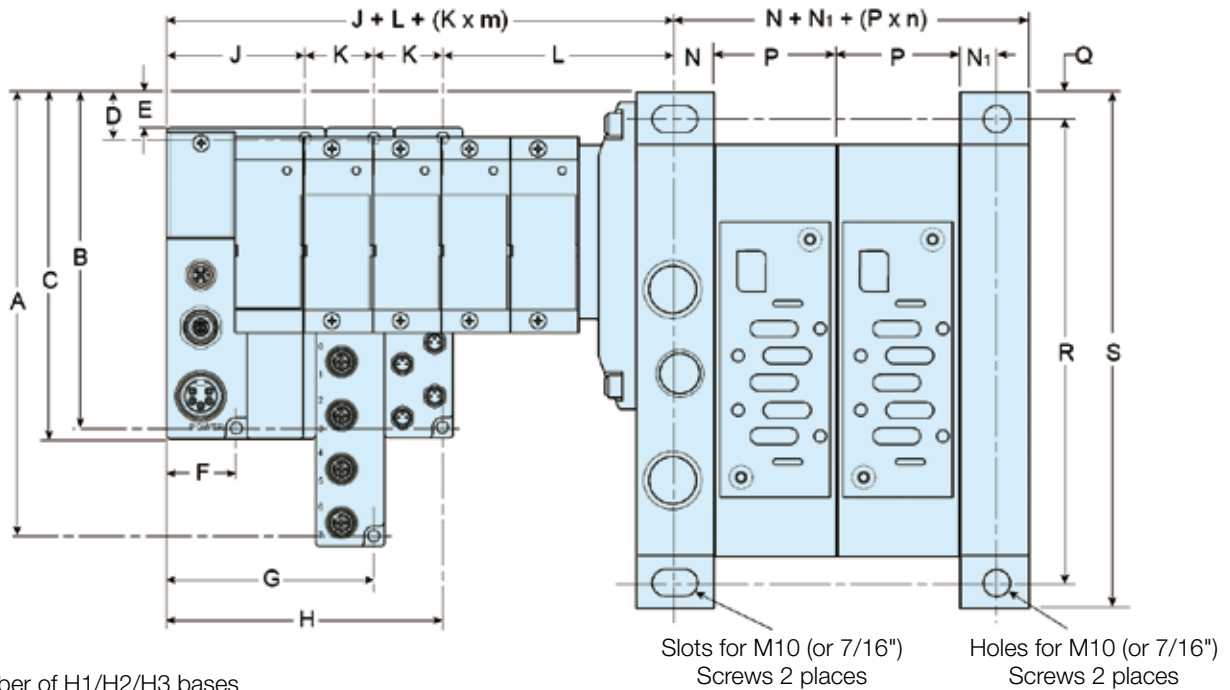


H Series ISO 15407-2 & 5599-2 Sizes 02 to 3 with Turck BL67 Remote IO System

HA/HB Series



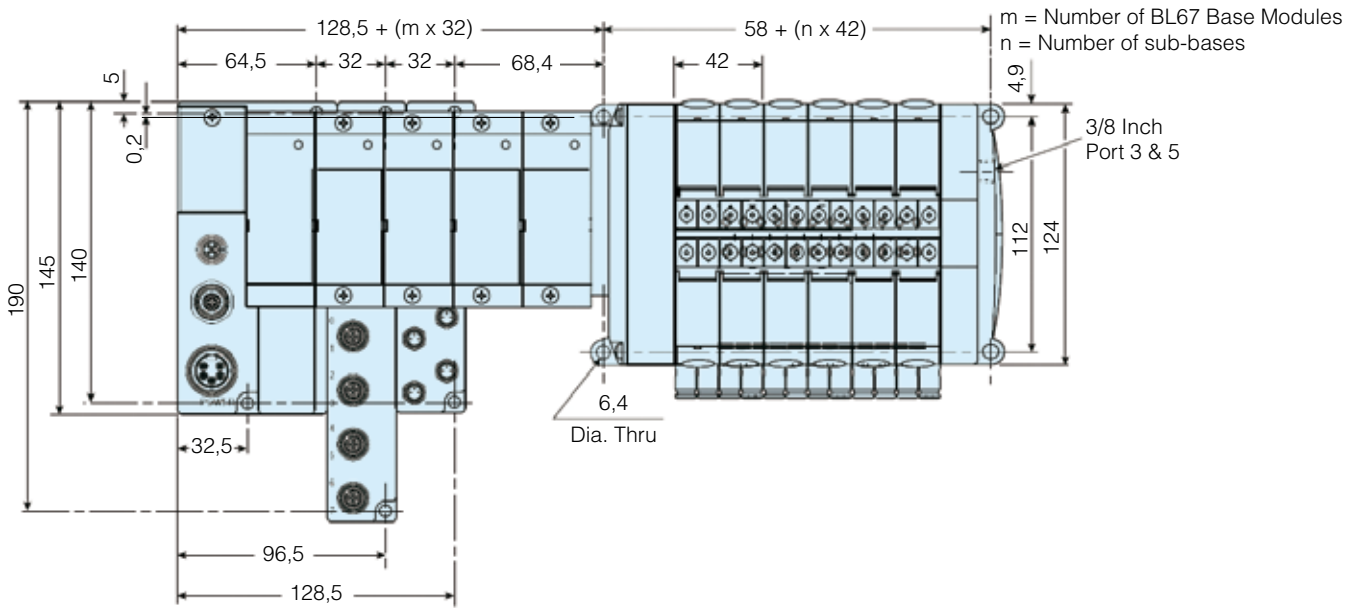
H1/H2/H3 Series



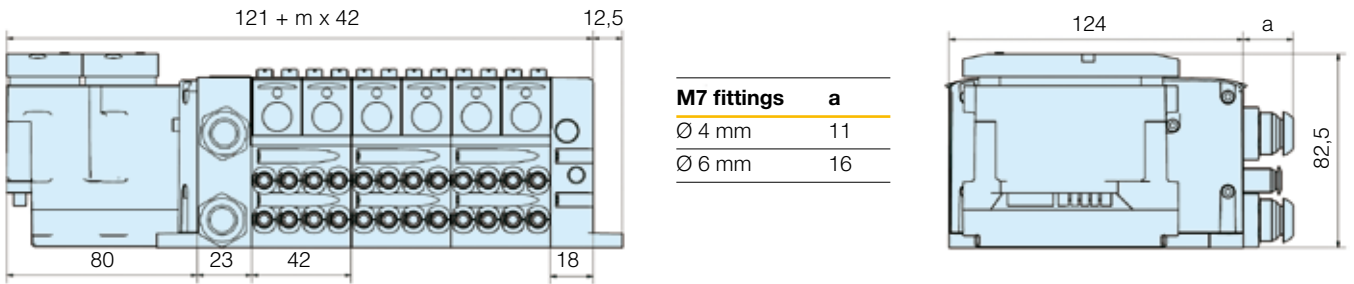
|              | A     | B     | C     | D    | E    | F    | G    | H     | J    | K  | L     | N    | N <sub>1</sub> | P    | P <sub>1</sub> | Q   | R   | S   | T  | U   |
|--------------|-------|-------|-------|------|------|------|------|-------|------|----|-------|------|----------------|------|----------------|-----|-----|-----|----|-----|
| <b>HA/HB</b> | 204,5 | 154,5 | 159,5 | 19,5 | 14,5 | 32,5 | 96,5 | 128,5 | 64,5 | 32 | 120,8 | 8,4  | 45,8           | 40,8 | 56,8           | 4   | 110 | 152 | 16 | 137 |
| <b>H1</b>    | 216,7 | 166,7 | 171,7 | 31,7 | 26,7 | 32,5 | 96,5 | 128,5 | 64,5 | 32 | 108,5 | 15,9 | 15,9           | 49   | -              | 8,5 | 165 | 182 | -  | -   |
| <b>H2</b>    | 212,9 | 162,9 | 167,9 | 27,9 | 22,9 | 32,5 | 96,5 | 128,5 | 64,5 | 32 | 108,6 | 18   | 15             | 56   | -              | 12  | 215 | 239 | -  | -   |
| <b>H3</b>    | 218,9 | 168,9 | 173,9 | 33,9 | 28,9 | 32,5 | 96,5 | 128,5 | 64,5 | 32 | 116,6 | 24   | 16,5           | 71   | -              | 15  | 265 | 295 | -  | -   |



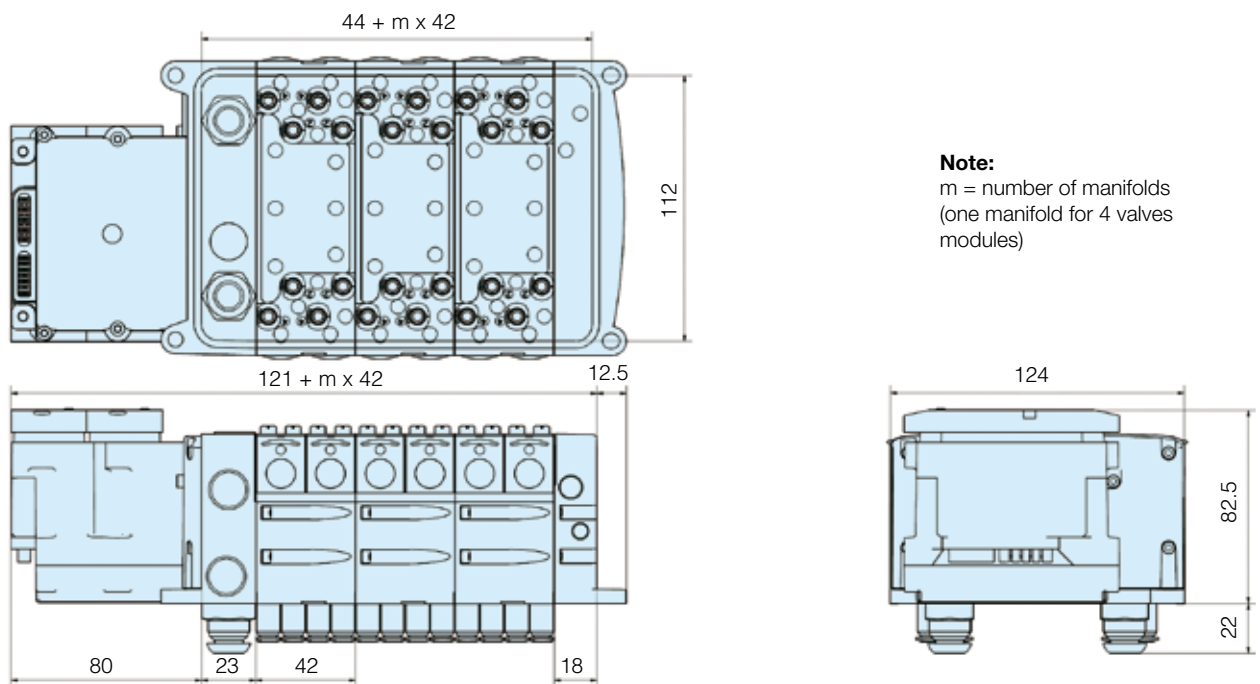
**H Series Micro Valves with TURCK BL67 Remote I/O System**



**H Series Micro Valves with TURCK BL67 adaptor - Side ported**



**H Series Micro Valves with TURCK BL67 adaptor - Bottom ported**



High speed poppet type solenoid valves with individual electrical connections. Light weight plastic bodies with DIN rail manifold. Ideal for cabinet installations.

- High speed poppet valve
- Push-in connection
- Built-in terminal block
- Pneumatic output indicator
- DIN rail mounting






Poppet valve, not suitable for use with Soft or Slow start Valves. When pressure is applied, the double solenoid interface takes a pre-determined position (non activated). In the absence of electrical signal, output 2 (yellow indicator) is activated, output 4 (red indicator) is non activated. Double solenoid version is delivered as standard with Non locking flush override.

**Operating information**

Working pressure;  
 3/2 and 4/2: 3-8 bar  
 Low pressure interface 3/2: 1-8 bar  
 Flow (Qmax): 200 l/min  
 Working temperature -15 °C to +60 °C  
 For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Head and tail sets - intermediate supply modules**

For 3/2 and 4/2 interface modules

|  | Description                          | Characteristics  | Pneumatic connection       | Weight (g)     | Order code                              |
|--|--------------------------------------|--|----------------------------|----------------|---|
|   | Set for single air supply connection | 1 electrical common terminal<br>1 main air supply port<br>1 exhaust port   | Push-in Ø 6 mm<br><br>G1/8 | 100<br><br>100 | <b>PS1-E101</b><br><br><b>PS1-E1018</b> |
|  | Set for double air supply connection | 1 electrical common terminal<br>2 main air supply ports<br>2 exhaust ports | Push-in Ø 6 mm<br><br>G1/8 | 125<br><br>125 | <b>PS1-E102</b><br><br><b>PS1-E1028</b> |
|  | Intermediate air supply module       | 1 air supply port<br>1 exhaust port<br><i>(see description below)</i>      | G1/8                       | 45             | <b>PS1-E1038</b>                        |

Incorporating an intermediate air supply module into a group of electro-pneumatic modules gives the following options :

**Air supply connection**

- Additional G1/8 port to supplement the air supply to the manifold
- Blank the common air supply, enabling different pressures to be supplied to groups of modules within the manifold.

**Exhaust connection**









- Additional exhaust flow through the G1/8 port
- Blank the common exhaust, enabling separation of exhaust from module groups

The intermediate air supply module is supplied with 4 interchangeable connectors to enable the above supply options to be achieved.

**Electro-pneumatic modules**

Modules without solenoid valve


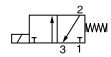
Visual indication of pneumatic output status : Closed = Red      Open = Yellow

|   | Symbol function   | Description                         | Pneumatic connection | Weight (g) | Order code      |
|---|---|-------------------------------------|----------------------|------------|-----------------|
|  |  | 3/2 normally closed (NC)            | Push-in Ø 4 mm       | 52         | <b>PS1-E111</b> |
|   |   |                                     | M5                   | 55         | <b>PS1-E115</b> |
|   |   |                                     | Push-in Ø 6 mm       | 55         | <b>PS1-E116</b> |
|  |  | 3/2 normally open (NO)              | Push-in Ø 4 mm       | 52         | <b>PS1-E121</b> |
|   |   |                                     | M5                   | 55         | <b>PS1-E125</b> |
|   |   |                                     | Push-in Ø 6 mm       | 55         | <b>PS1-E126</b> |
|  |  | 4/2 single solenoid / spring return | Push-in Ø 4 mm       | 120        | <b>PS1-E181</b> |
|   |   |                                     | M5                   | 120        | <b>PS1-E185</b> |
|   |   |                                     | Push-in Ø 6 mm       | 125        | <b>PS1-E186</b> |
|  |  | 4/2 double solenoid                 | Push-in Ø 4 mm       | 120        | <b>PS1-E191</b> |
|   |   |                                     | M5                   | 120        | <b>PS1-E195</b> |
|   |   |                                     | Push-in Ø 6 mm       | 125        | <b>PS1-E196</b> |

**Low pressure Electro-Pneumatic modules 3/2 (1 to 8 bar)**


Modules without solenoid valve

Visual indication of pneumatic output status : Closed = Red Open = Yellow

|   | Symbol  | Description              | Pneumatic connection | Weight (g) | Order code      |
|---|---|--------------------------|----------------------|------------|-----------------|
|  |  | 3/2 normally closed (NC) | Push-in Ø 4 mm       | 52         | <b>PS1-E311</b> |
|   |   |                          | M5                   | 52         | <b>PS1-E315</b> |
|   |   |                          | Push-in Ø 6 mm       | 52         | <b>PS1-E316</b> |

**15mm DIN Form C (8mm spacing) pilot solenoid valve**



For use with Valve module

|   | Manual Overrides        |            | Flush (Not Extended)       |                          | Extended                   |                          |
|---|-------------------------|------------|----------------------------|--------------------------|----------------------------|--------------------------|
|   | Without Manual Override | Order code | Blue Override, non locking | Yellow Override, Locking | Blue Override, non locking | Yellow Override, Locking |
|  | Voltage                 | W (g)      | <b>Order code</b>          | <b>Order code</b>        | <b>Order code</b>          | <b>Order code</b>        |
|   | 12 Vdc                  | 38         | <b>P2E-KS32B0</b>          | <b>P2E-KS32B1</b>        | <b>P2E-KS32B2</b>          | <b>P2E-KS32B3</b>        |
|   | 24 Vdc                  | 38         | <b>P2E-KS32C0</b>          | <b>P2E-KS32C1</b>        | <b>P2E-KS32C2</b>          | <b>P2E-KS32C3</b>        |
|   | 48 Vdc                  | 38         | <b>P2E-KS32D0</b>          | <b>P2E-KS32D1</b>        | <b>P2E-KS32D2</b>          | <b>P2E-KS32D3</b>        |
|   | 24 Vac 50Hz             | 38         | <b>P2E-KS31C0</b>          | <b>P2E-KS31C1</b>        | <b>P2E-KS31C2</b>          | <b>P2E-KS31C3</b>        |
|   | 48 Vac 50/60Hz          | 38         | <b>P2E-KS34D0</b>          | <b>P2E-KS34D1</b>        | <b>P2E-KS34D2</b>          | <b>P2E-KS34D3</b>        |
|   | 115 Vac 50Hz            | 38         | <b>P2E-KS31F0</b>          | <b>P2E-KS31F1</b>        | <b>P2E-KS31F2</b>          | <b>P2E-KS31F3</b>        |
|   | 120 Vac 60 Hz           | 38         | <b>P2E-KS31F0</b>          | <b>P2E-KS31F1</b>        | <b>P2E-KS31F2</b>          | <b>P2E-KS31F3</b>        |
|   | 230 Vac 50Hz            | 38         | <b>P2E-KS31J0</b>          | <b>P2E-KS31J1</b>        | <b>P2E-KS31J2</b>          | <b>P2E-KS31J3</b>        |
|   | 240 Vac 60 Hz           | 38         | <b>P2E-KS31J0</b>          | <b>P2E-KS31J1</b>        | <b>P2E-KS31J2</b>          | <b>P2E-KS31J4</b>        |

Mounting screws included with the valve module

**Suppressor and LED indicators**


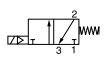

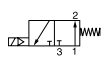

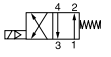

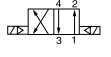
For 8 mm solenoid pin spacing - For mounting between the valve body and the 15 mm pilot solenoid valve

|   | Symbol  | Description   | Pneumatic connection          | Weight (g) | Order code       |
|---|---|---------------|-------------------------------|------------|------------------|
|  |  | LED indicator | 24 VAC/DC                     | 3          | <b>P8V-CR26C</b> |
|   |   |               | 115 VAC 50 Hz - 120 VAC 60 Hz | 3          | <b>P8V-CR24F</b> |
|   |   |               | 230 VAC 50 Hz - 240 VAC 60 Hz | 3          | <b>P8V-CR24J</b> |

**Electro-pneumatic modules**

Modules including 24 VDC solenoid valve - Flush non locking manual override (using P2E-KS32C1 solenoid)

Visual indication of pneumatic output status : Closed = Red Open = Yellow

|   | Symbol  | Description                            | Manual override   | Pneumatic connection | Weight (g) | Order code         |
|---|---|--|-------------------|----------------------|------------|--------------------|
|  |  | 3/2 normally closed (NC) Spring return | Push-in Ø 4 mm 90 | PS1-E21102B          | 90         | <b>PS1-E21102B</b> |
|   |   |  |                   |                      |            |                    |
|  |  | 3/2 normally open (NO)                 | Spring return     | Push-in Ø 4 mm       | 90         | <b>PS1-E22102B</b> |
|   |   |  |                   |                      |            |                    |
|  |  | 4/2 single solenoid / spring return    | Spring return     | Push-in Ø 4 mm       | 160        | <b>PS1-E28102B</b> |
|   |   |  |                   |                      |            |                    |
|  |  | 4/2 double solenoid                    | -                 | Push-in Ø 4 mm       | 200        | <b>PS1-E29102B</b> |


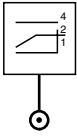
**Maintenance avertissement - Solenoid pin spacing**



The electro-pneumatic interface modules have been re-designed to accept both 8 mm and 9,4 mm solenoid pin spacing. If you are purchasing a solenoid or a suppressor & LED indicator for maintenance on an electro-pneumatic interface module purchased before June 2004, above solenoid P2E-KS3xxx and P8V-CRxxx (8 mm pin spacing) will not be compatible. Please, contact your Parker customer service.

**Accessories : Pressure switch**

With Ø4 push in connection (pneumatic input)  
With electrical terminals 1,5 mm<sup>2</sup> (electric output)

| Type   | Symbol  | Electrical characteristics                   | Pneumatic characteristics                    | Override        | Weight (g) | Order code       |
|--|---|--|--|-----------------|------------|------------------|
|  |  | Pressure switch<br>1 CO contact<br>5 A/250 V | Fixed operating threshold<br>< 1,3 bar       | Manual override | 50         | <b>PS1-P1081</b> |
|  |   |  | Adjustable operating threshold<br>2 to 5 bar | Manual override | 50         | <b>PS1-P1091</b> |

**Technical characteristics : Pressure switch**

- Effective detection for preventing hazardous risks linked with equipments operating at to low pressure
- Manual override
- Easy clip on DIN rail mounting
- Fixed or adjustable threshold versions
- Recessed Electrical Terminals

|   |                  |
|---|------------------|
| Working pressure                                  | Max 10 bar       |
| Working temperature                               | -15 °C to +60 °C |
| Minimum actuating pressure, non adjustable        | ≤1,3 bar         |
| Minimum actuating pressure, adjustable 2 to 5 bar |                  |
| Operating frequency                               | Max 10 Hz        |
| Nominal isolation voltage                         | 660 V AC or DC   |
| Nominal thermal current                           | 10 A             |
| Operating voltage                                 | 250 V            |
| Pending current                                   | 5 A              |
| Protection level                                  | IP 40            |
| According Power switches (inductive load)         |                  |

**Electrical durability**

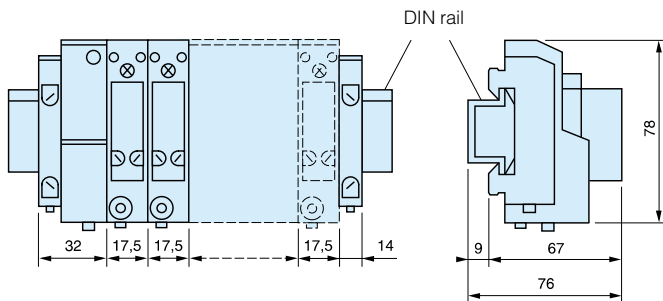
|           | 24 VAC | 48 VAC | 115 VAC | 24 VDC | 48 VDC | 115 VDC |
|-----------|--------|--------|---------|--------|--------|---------|
| 1 million | 25 VA  | 56 VA  | 115 VA  | 24 W   | 37 W   | 50 W    |
| 2 million | -      | -      | -       | 14 W   | 25 W   | 40 W    |
| 5 million | 10 VA  | 14 VA  | 19 VA   | -      | -      | -       |

**Dimensions, PS1 valve Series**

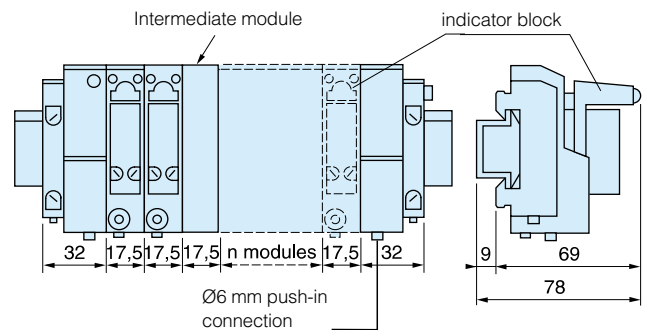
**Electropneumatic interface modules 3/2 NC or NO**

3/2 modules equipped with solenoid  
Head and tail set for single air supply connection

3/2 modules equipped with solenoid, suppressor and LED indicator  
Head and tail set for double air supply connection



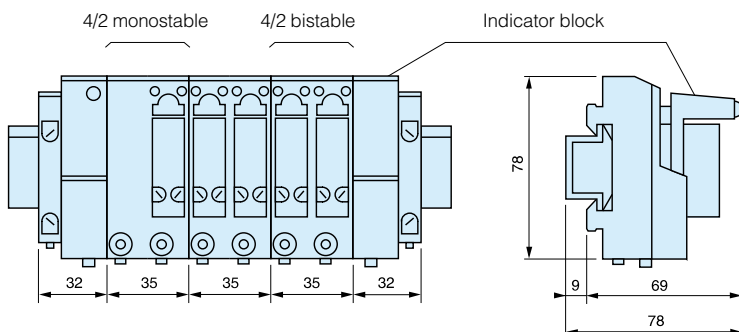
**Total length (mm)**  
L = 46 + (n x 17,5)  
n = number of modules



**Total length (mm)**  
L = 64 + (n x 17,5)  
n = number of modules

**Electropneumatic interface modules 4/2 single or double solenoid**

4/2 modules equipped with solenoid, suppressor and LED indicator  
Head and tail set for double air supply connection



**Total length (mm)**  
L = 64 + (n x 35)  
n = number of modules



# PVL-B2

## Stackable and Stand-alone Inline Valves



### PVL-B21 - Stand-alone Series

Stand-alone high flow valves with 10 or 15mm DIN C Pilot Solenoid Valve. Light weight plastic bodies feature push-in or threaded connection.

### PVL-B22 - Stackable Series

Stacking high flow valves with 10 or 15mm DIN C Pilot Solenoid Valve. Light weight plastic bodies feature push-in or threaded connection. Stacking valves feature modular inlet and exhaust facility.

- High flow – Compact size with a 18 mm width body
- Push-in fitting diameter 6mm, 8mm or threaded G1/8"
- DIN rail or surface mounting
- Economic clip connector (IP40) or DIN Form C connection (IP65)
- Light weight construction

**PVL-B2 Valve Range**

18mm width

**10mm 24 Vdc Pilot Valve**

Economic electrical connection (IP40)



**15mm Pilot Valve**

Standard DIN form C electrical connection (IP65)



**10mm Pilot Valve**

**Series Overview**

**15mm Pilot Valve**



**PVL-B21 : Stand- alone Series – Traditional wiring**

Very useful to control isolated cylinders, these stand-alone valve Series are compact and easy to mount on the machines close to the actuator with neat electrical pilot. Available with either 15 or 10 mm pilot solenoid valve traditional wiring, these Series can also be stacked and mixed into a stacking valve island Series



**PVL-B22 : Stackable Series – Traditional wiring**

The PVL-B2 Series stacking system permits assembly of several valves into one stack. Supply is connected at either a single or a dual head/tail set. Two common exhaust galleries are provided. Connections to outlet ports 2 and 4 on each valve can be accomplished by G1/8" threaded pipe or instant tube fittings, 6 or 8 mm OD. Electrical connection is made to each solenoid using either a 15 mm - 3 pin - 8 mm spacing DIN Form C connector plug or Clip Connector. Each stack assembly can handle any combination of single or double solenoid valves



**Compatibility with original PVL-B & PVL-C Series**

Issued from the original PVL-B Series, the new PVL-B2 Series can be associated in one configuration mixing PVL-B & PVL-C Valves. For further details on the PVL-B & PVL-C Series, you can refer to the dedicated technical catalogue PDE2628TCUK



# PVL-B2

## 3 Porting options for an optimized flow

### 2 Electrical Pilot options 10 mm Pilot Solenoid Valve

Pins-UP option



Non locking Manual Override

24 Vdc – Low power (1W)

Economic electrical connection  
 by Clip Connector – IP40



Integrated  
 LED Indicator



Pneumatic Symbol

### 15 mm DIN For C Pilot Solenoid Valve



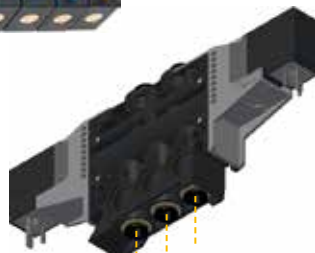
Standard DIN Form C connectors – IP65  
 8 mm spacing



Pins-DOWN option

Wide range of DC and AC Voltage options

5 manual override options



Supply and Exhaust Bottom Ported  
 for Stand-alone design

Common Supply and Exhaust Channels  
 for stackable design



**PVL-B22 - Stackable Series**

Stacking high flow valves with 10 or 15mm DIN C Pilot Solenoid Valve. Light weight plastic bodies feature push-in or threaded connection. Stacking valves feature modular inlet and exhaust facility.

- High flow – Compact size with a 18 mm width body
- Push-in fitting diameter 6mm, 8mm or threaded G1/8"
- DIN rail or surface mounting
- Economic clip connector (IP40) or DIN Form C connection (IP65)
- Light weight construction



**PVL-B22 - Valve module**

Equipped with 10mm - 24 Vdc - 1W pilot solenoid valve – LED Indicator – Pins Down\*

|  | Symbol | Description                         | Pilot Man. Overr. | Connection  | W (g) | Order code            |
|--|--------|-------------------------------------|-------------------|-------------|-------|-----------------------|
|  |        | 5/2 single acting spring return     | Non-locking flush | Push-in 6mm | 165   | <b>PVL-B2213062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 165   | <b>PVL-B2213082C1</b> |
|  |        |                                     |                   | G1/8"       | 165   | <b>PVL-B2213182C1</b> |
|  |        | 5/2 single acting air spring return | Non-locking flush | Push-in 6mm | 165   | <b>PVL-B2233062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 165   | <b>PVL-B2233082C1</b> |
|  |        |                                     |                   | G1/8"       | 165   | <b>PVL-B2233182C1</b> |
|  |        | Dual 3/2 N.C. air spring return     | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2253062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2253082C1</b> |
|  |        |                                     |                   | G1/8"       | 210   | <b>PVL-B2253182C1</b> |
|  |        | 5/2 Double acting                   | Non-locking flush | Push-in 6mm | 200   | <b>PVL-B2223062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 200   | <b>PVL-B2223082C1</b> |
|  |        |                                     |                   | G1/8"       | 200   | <b>PVL-B2223182C1</b> |
|  |        | 5/3 Closed center (APB)             | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2273062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2273082C1</b> |
|  |        |                                     |                   | G1/8"       | 210   | <b>PVL-B2273182C1</b> |
|  |        | 5/3 Vented center                   | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2283062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2283082C1</b> |
|  |        |                                     |                   | G1/8"       | 210   | <b>PVL-B2283182C1</b> |
|  |        | 5/3 Pressurised center              | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2293062C1</b> |
|  |        |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2293082C1</b> |
|  |        |                                     |                   | G1/8"       | 210   | <b>PVL-B2293182C1</b> |

\* Other electrical connection orientations or low voltages DC on demand (can be subject to quantity)


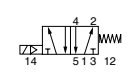
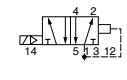
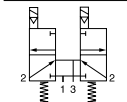

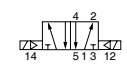
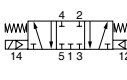
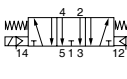
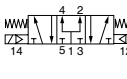
**10 mm Pilot solenoid valve electrical clip connector**

| Description   | Connector type    | Cable length | W (g) | Order code        |
|---|-------------------|--------------|-------|-------------------|
| <p>Clip-on connector – IP40<br/>                     Individual : Including 2 flying leads<br/>                     Multiple : Including 1 common (0 Vdc) and 1 flying lead per connector</p> | 1 clip connector  | 1 meter      | 8     | <b>P8LW021C</b>   |
|   | 2 clip connectors | 1 meter      | 12    | <b>P8LW021C02</b> |
|   | 4 clip connectors | 1 meter      | 20    | <b>P8LW021C04</b> |
|   | 8 clip connectors | 1 meter      | 36    | <b>P8LW021C08</b> |



**PVL-B22 - Valve module**

Equipped with 15mm DIN Form C (8mm spacing) - 24 Vdc - 1,2W pilot solenoid valve – Pins Up


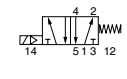
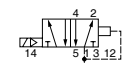
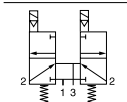
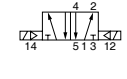
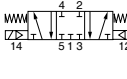
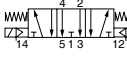

|  | Symbol  | Description                            | Pilot Man. Overr. | Connection  | W (g)                 | Order code            |
|--|---|--|-------------------|-------------|-----------------------|-----------------------|
|   |  | 5/2 single acting<br>spring return     | Locking flush     | Push-in 6mm | 165                   | <b>PVL-B2216062C2</b> |
|  |   |  |                   | Push-in 8mm | 165                   | <b>PVL-B2216082C2</b> |
|  |   |  |                   | G1/8"       | 165                   | <b>PVL-B2216182C2</b> |
|  |  | 5/2 single acting<br>air spring return | Locking flush     | Push-in 6mm | 165                   | <b>PVL-B2236062C2</b> |
|  |   |  |                   | Push-in 8mm | 165                   | <b>PVL-B2236082C2</b> |
|  |   |  |                   | G1/8"       | 165                   | <b>PVL-B2236182C2</b> |
|  |  | Dual 3/2 N.C.<br>air spring return     | Locking flush     | Push-in 6mm | 210                   | <b>PVL-B2256062C2</b> |
|  |   |  |                   | Push-in 8mm | 210                   | <b>PVL-B2256082C2</b> |
|  |   |  |                   | G1/8"       | 210                   | <b>PVL-B2256182C2</b> |
|   |  | 5/2 Double acting                      | Non-locking flush | Push-in 6mm | 200                   | <b>PVL-B2226062C1</b> |
|  |   |  |                   | Push-in 8mm | 200                   | <b>PVL-B2226082C1</b> |
|  |   |  |                   | G1/8"       | 200                   | <b>PVL-B2226182C1</b> |
|  |  | 5/3 Closed center (APB)                | Locking flush     | Push-in 6mm | 210                   | <b>PVL-B2276062C2</b> |
|  |   |  |                   | Push-in 8mm | 210                   | <b>PVL-B2276082C2</b> |
|  |   |  |                   | G1/8"       | 210                   | <b>PVL-B2276182C2</b> |
|  |  | 5/3 Vented center                      | Locking flush     | Push-in 6mm | 210                   | <b>PVL-B2286062C2</b> |
|  |   |  |                   | Push-in 8mm | 210                   | <b>PVL-B2286082C2</b> |
|  |   |  |                   | G1/8"       | 210                   | <b>PVL-B2286182C2</b> |
|  | 5/3 Pressurised center  | Locking flush                          | Push-in 6mm       | 210         | <b>PVL-B2296062C2</b> |                       |
|  |   |  | Push-in 8mm       | 210         | <b>PVL-B2296082C2</b> |                       |
|  |   |  | G1/8"             | 210         | <b>PVL-B2296182C2</b> |                       |

For other 15mm pilot valve options (voltage, manual override or pins orientation), valve body and 15mm pilot valve must be ordered separately (see below)

**PVL-B22 - Valve module**


(Without Pilot solenoid valve – including 2 mounting screws for Pilot solenoid valve)

For use with 15mm DIN Form C (8mm spacing) Pins UP or Pins DOWN pilot solenoid valve


|   | Symbol  | Description                            | Connection  | W (g)              | Order code         |
|---|---|--|-------------|--------------------|--------------------|
|  |  | 5/2 single acting<br>spring return     | Push-in 6mm | 125                | <b>PVL-B221606</b> |
|   |   |  | Push-in 8mm | 125                | <b>PVL-B221608</b> |
|   |   |  | G1/8"       | 125                | <b>PVL-B221618</b> |
|   |  | 5/2 single acting<br>air spring return | Push-in 6mm | 125                | <b>PVL-B223606</b> |
|   |   |  | Push-in 8mm | 125                | <b>PVL-B223608</b> |
|   |   |  | G1/8"       | 125                | <b>PVL-B223618</b> |
|   |  | Dual 3/2 N.C.<br>air spring return     | Push-in 6mm | 130                | <b>PVL-B225606</b> |
|   |   |  | Push-in 8mm | 130                | <b>PVL-B225608</b> |
|   |   |  | G1/8"       | 130                | <b>PVL-B225618</b> |
|  | 5/2 Double acting   | Push-in 6mm                            | 120         | <b>PVL-B222606</b> |                    |
|   |   | Push-in 8mm                            | 120         | <b>PVL-B222608</b> |                    |
|   |   | G1/8"                                  | 120         | <b>PVL-B222618</b> |                    |
|  | 5/3 Closed center (APB)   | Push-in 6mm                            | 130         | <b>PVL-B227606</b> |                    |
|   |   | Push-in 8mm                            | 130         | <b>PVL-B227608</b> |                    |
|   |   | G1/8"                                  | 130         | <b>PVL-B227618</b> |                    |
|  | 5/3 Vented center   | Push-in 6mm                            | 130         | <b>PVL-B228606</b> |                    |
|   |   | Push-in 8mm                            | 130         | <b>PVL-B228608</b> |                    |
|   |   | G1/8"                                  | 130         | <b>PVL-B228618</b> |                    |
|  | 5/3 Pressurised center  | Push-in 6mm                            | 130         | <b>PVL-B229606</b> |                    |
|   |   | Push-in 8mm                            | 130         | <b>PVL-B229608</b> |                    |
|   |   | G1/8"                                  | 130         | <b>PVL-B229618</b> |                    |

15mm DIN Form C (8mm spacing) pilot solenoid valve – Pin's UP or Pin's DOWN – must be ordered separately (Refer to 15 mm pilot valve section)




## Head and Tail sets – Intermediate supply modules

|  | Description         | Mounting    | Air supply               | Port size | W (g)             | Order code       |
|--|---------------------|-------------|--------------------------|-----------|-------------------|------------------|
|  | Head and tail set   | On DIN rail | Left end                 | G1/4"     | 175               | <b>PVL-B1719</b> |
|  |                     |             | Both left and right ends | G1/4"     | 195               | <b>PVL-B1729</b> |
|  | Intermediate module | On surface  | Left end                 | G1/8"     | 175               | <b>PVL-B1818</b> |
|  |                     |             | Both left and right ends | G1/8"     | 195               | <b>PVL-B1828</b> |
| Intermediate module  | On DIN rail         | Up side     | G1/8"                    | 150       | <b>PVU-LBB118</b> |                  |

## Pneumatic accessories

|   | Description                                    | Size  | Orientation     | Material       | Tube OD | W (g) | Order code        |
|---|--|-------|-----------------|----------------|---------|-------|-------------------|
|    | Push-in fitting for Pressure and Exhaust ports | G1/4" | Straight        | Metal          | 8 mm    | 16    | <b>3101 08 13</b> |
|   |  |       |                 |                | 10 mm   | 18    | <b>3101 10 13</b> |
|   |  |       |                 |                | 12 mm   | 27    | <b>3101 12 13</b> |
|    |  |       | Elbow           | Metal/Plastic  | 8 mm    | 21    | <b>3199 08 13</b> |
|   |  |       |                 |                | 10 mm   | 28    | <b>3199 10 13</b> |
|   |  |       |                 |                | 12 mm   | 44    | <b>3199 12 13</b> |
|     | Silencer                                       | G1/4" | Straight        | Plastic        |         | 10    | <b>P6M-PAB2</b>   |
|   |  |       |                 | Sintered metal |         | 20    | <b>P6M-BAA2</b>   |
|   | Push-in fitting for PVL-B2 Valve               | G1/8" | Straight        | Metal          | 4 mm    | 6     | <b>3101 04 10</b> |
|   |  |       |                 |                | 6 mm    | 7     | <b>3101 06 10</b> |
|   |  |       |                 |                | 8 mm    | 11    | <b>3101 08 10</b> |
|  |  |       | Elbow prolonged | Plastic        | 4 mm    | 8     | <b>3169 04 10</b> |
|   |  |       |                 |                | 6 mm    | 11    | <b>3169 06 10</b> |
|   |  |       |                 |                | 8 mm    | 18    | <b>3169 08 10</b> |
|  |  |       | Elbow short     | Plastic        | 4 mm    | 6     | <b>3199 04 10</b> |
|   |  |       |                 |                | 6 mm    | 6     | <b>3199 06 10</b> |
|   |  |       |                 |                | 8 mm    | 9     | <b>3199 08 10</b> |
|  |  | 6 mm  | Elbow prolonged | Plastic        | 4 mm    | 2     | <b>3184 04 06</b> |
|   |  |       |                 |                | 6 mm    | 4     | <b>3184 06 00</b> |
|   |  |       |                 |                | 8 mm    | 9     | <b>3184 08 00</b> |
|  |  |       | Elbow short     | Plastic        | 4 mm    | 3     | <b>3182 04 06</b> |
|   |  |       |                 |                | 6 mm    | 1     | <b>3182 06 00</b> |
|   |  |       |                 |                | 8 mm    | 10    | <b>3184 08 00</b> |
|  |  | 8 mm  | Elbow prolonged | Plastic        | 6 mm    | 7     | <b>3184 06 08</b> |
|   |  |       |                 |                | 8 mm    | 10    | <b>3184 08 00</b> |
|   |  |       |                 |                | 8 mm    | 10    | <b>3182 08 00</b> |
|   |  |       | Elbow short     | Plastic        | 6 mm    | 7     | <b>3182 06 08</b> |
|   |  |       |                 |                | 8 mm    | 10    | <b>3182 08 00</b> |
|   |  |       |                 |                | 8 mm    | 10    | <b>3182 08 00</b> |

## Spare mounting and assembly kits

|  | Description   | W (g) | Order code       |
|--|---|-------|------------------|
|  | Sealing kit for supply/exhaust common channels<br>Included :  | 35    | <b>PVL-B1901</b> |
|  | <ul style="list-style-type: none"> <li>• 3 common blanking plugs</li> <li>• 2 drilled and threaded rods</li> <li>• 2 screws for extended tie rod</li> </ul> |       |                  |
|  | Pack of 10 common blanking  | 35    | <b>PVL-B1902</b> |
|  | Pack of 10 stacking rods  | 35    | <b>PPR-V21</b>   |
|  | Pack of 20 rail clip assembly   | 70    | <b>PPR-L09</b>   |
|  | Pack of 30 O-ring seals for supply/exhaust common channels  | 15    | <b>PPR-V23</b>   |

**Mounting on 35 mm DIN Rail**

Valve stacks mount quickly and easily to 35 mm DIN rail with the use of a pneumatic head / tail set. The dual head / tail set provides input and exhaust ports at both ends and is recommended if more than 5 valves are to be operated simultaneously.

**Surface mounting**

**For single or dual air supply**

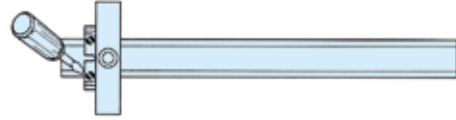
This mounting does not use DIN rail and can be directly fixed on the panel. Particularly compact and threaded G1/8", it is recommended for combinations of only a few power valves (maximum 5 valves) since the supply and exhaust common ports 1-3-5 are not G1/4" oversized.

**Removal or Replacement**

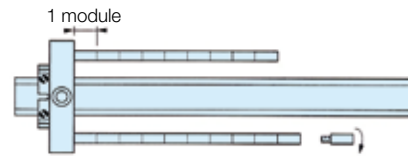
Modules are removed in reverse of the order shown at right. Before removing a module for service or replacement, loosen the pneumatic tail piece.

**Mounting Procedure**

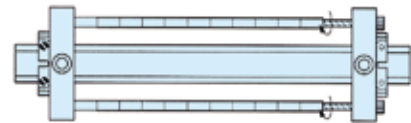
1 - Clip on and tighten the pneumatic head piece.



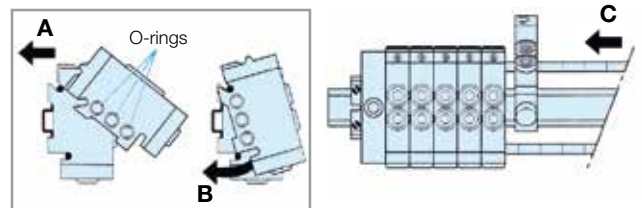
2 - Assemble the two parallel mounting rods using cross rod provided with modules.



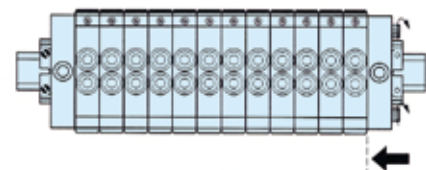
3 - Clip on the pneumatic tail piece. Start screws into mounting rod but leave loose for modules insertion.



4 - To mount valves, position upper slot then push-lock lower slot. Mount modules (valves, modules, transition pieces, etc...) and press together.



5 - Tighten the assembly.



**PVL-B21 - Stand-alone Series**

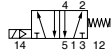
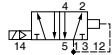
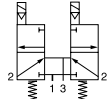
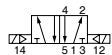
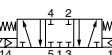

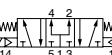
Stand-alone high flow valves with 10 or 15mm DIN C Pilot Solenoid Valve. Leight weight plastic bodies feature push-in or threaded connection.

- High flow – Compact size with a 18 mm width body
- Push-in fitting diameter 6mm, 8mm or threaded G1/8"
- Enonomic clip connector (IP40) or DIN Form C connection (IP65)
- Leight weight construction
- Compatible with stackable version



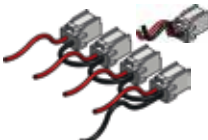
**PVL-B21 - Valve module**

Equiped with 10mm - 24 Vdc - 1W pilot solenoid valve – LED Indicator – Pins Down\*

| Symbol  | Description                         | Pilot Man. Overr. | Connection  | W (g) | Order code            |
|---|-------------------------------------|-------------------|-------------|-------|-----------------------|
|    | 5/2 single acting spring return     | Non-locking flush | Push-in 6mm | 165   | <b>PVL-B2113062C1</b> |
|   |                                     |                   | Push-in 8mm | 165   | <b>PVL-B2113082C1</b> |
|   |                                     |                   | G1/8"       | 165   | <b>PVL-B2113182C1</b> |
|  | 5/2 single acting air spring return | Non-locking flush | Push-in 6mm | 165   | <b>PVL-B2133062C1</b> |
|   |                                     |                   | Push-in 8mm | 165   | <b>PVL-B2133082C1</b> |
|   |                                     |                   | G1/8"       | 165   | <b>PVL-B2133182C1</b> |
|  | Dual 3/2 N.C. air spring return     | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2153062C1</b> |
|   |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2153082C1</b> |
|   |                                     |                   | G1/8"       | 210   | <b>PVL-B2153182C1</b> |
|  | 5/2 Double acting                   | Non-locking flush | Push-in 6mm | 200   | <b>PVL-B2123062C1</b> |
|   |                                     |                   | Push-in 8mm | 200   | <b>PVL-B2123082C1</b> |
|   |                                     |                   | G1/8"       | 200   | <b>PVL-B2123182C1</b> |
|  | 5/3 Closed center (APB)             | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2173062C1</b> |
|   |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2173082C1</b> |
|   |                                     |                   | G1/8"       | 210   | <b>PVL-B2173182C1</b> |
|  | 5/3 Vented center                   | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2183062C1</b> |
|   |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2183082C1</b> |
|   |                                     |                   | G1/8"       | 210   | <b>PVL-B2183182C1</b> |
|  | 5/3 Pressurised center              | Non-locking flush | Push-in 6mm | 210   | <b>PVL-B2193062C1</b> |
|   |                                     |                   | Push-in 8mm | 210   | <b>PVL-B2193082C1</b> |
|   |                                     |                   | G1/8"       | 210   | <b>PVL-B2193182C1</b> |


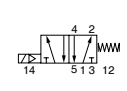
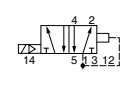
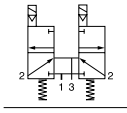

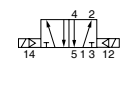
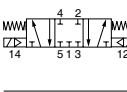
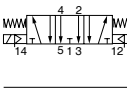
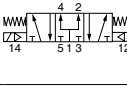
\* Other electrical connection orientations or low voltages DC on demand (can be subject to quantity)

**10 mm Pilot solenoid valve electrical clip connector**

| Description  | Connector type    | Cable length | W (g) | Order code        |
|--|-------------------|--------------|-------|-------------------|
|  <p>Clip-on connector – IP40<br/>                     Individual : Including 2 flying leads<br/>                     Multiple : Including 1 common (0 Vdc) and 1 flying lead per connector</p> | 1 clip connector  | 1 meter      | 8     | <b>P8LW021C</b>   |
|  | 2 clip connectors | 1 meter      | 12    | <b>P8LW021C02</b> |
|  | 4 clip connectors | 1 meter      | 20    | <b>P8LW021C04</b> |
|  | 8 clip connectors | 1 meter      | 36    | <b>P8LW021C08</b> |

**PVL-B21 - Valve module**

Equipped with 15mm DIN Form C (8mm spacing) - 24 Vdc - 1,2W pilot solenoid valve – Pins Up


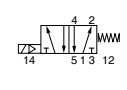
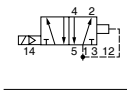
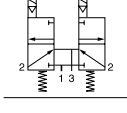
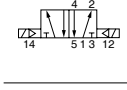


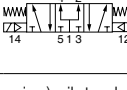
|  | Symbol  | Description                         | Pilot Man. Overr. | Connection  | W (g)                 | Order code            |
|--|---|-------------------------------------|-------------------|-------------|-----------------------|-----------------------|
|   |  | 5/2 single acting spring return     | Locking flush     | Push-in 6mm | 165                   | <b>PVL-B2116062C2</b> |
|  |   |                                     |                   | Push-in 8mm | 165                   | <b>PVL-B2116082C2</b> |
|  |   |                                     |                   | G1/8"       | 165                   | <b>PVL-B2116182C2</b> |
|  |  | 5/2 single acting air spring return | Locking flush     | Push-in 6mm | 165                   | <b>PVL-B2136062C2</b> |
|  |   |                                     |                   | Push-in 8mm | 165                   | <b>PVL-B2136082C2</b> |
|  |   |                                     |                   | G1/8"       | 165                   | <b>PVL-B2136182C2</b> |
|  |  | Dual 3/2 N.C. air spring return     | Locking flush     | Push-in 6mm | 210                   | <b>PVL-B2156062C2</b> |
|  |   |                                     |                   | Push-in 8mm | 210                   | <b>PVL-B2156082C2</b> |
|  |   |                                     |                   | G1/8"       | 210                   | <b>PVL-B2156182C2</b> |
|   |  | 5/2 Double acting                   | Non-locking flush | Push-in 6mm | 200                   | <b>PVL-B2126062C1</b> |
|  |   |                                     |                   | Push-in 8mm | 200                   | <b>PVL-B2126082C1</b> |
|  |   |                                     |                   | G1/8"       | 200                   | <b>PVL-B2126182C1</b> |
|  |  | 5/3 Closed center (APB)             | Locking flush     | Push-in 6mm | 210                   | <b>PVL-B2176062C2</b> |
|  |   |                                     |                   | Push-in 8mm | 210                   | <b>PVL-B2176082C2</b> |
|  |   |                                     |                   | G1/8"       | 210                   | <b>PVL-B2176182C2</b> |
|  |  | 5/3 Vented center                   | Locking flush     | Push-in 6mm | 210                   | <b>PVL-B2186062C2</b> |
|  |   |                                     |                   | Push-in 8mm | 210                   | <b>PVL-B2186082C2</b> |
|  |   |                                     |                   | G1/8"       | 210                   | <b>PVL-B2186182C2</b> |
|  | 5/3 Pressurised center  | Locking flush                       | Push-in 6mm       | 210         | <b>PVL-B2196062C2</b> |                       |
|  |   |                                     | Push-in 8mm       | 210         | <b>PVL-B2196082C2</b> |                       |
|  |   |                                     | G1/8"             | 210         | <b>PVL-B2196182C2</b> |                       |

For other 15mm pilot valve options (voltage, manual override or pins orientation), valve body and 15mm pilot valve must be ordered separately (see below)

**PVL-B21 - Valve module**




(Without Pilot solenoid valve – including 2 mounting screws for Pilot solenoid valve)

For use with 15mm DIN Form C (8mm spacing) Pins UP or Pins DOWN pilot solenoid valve

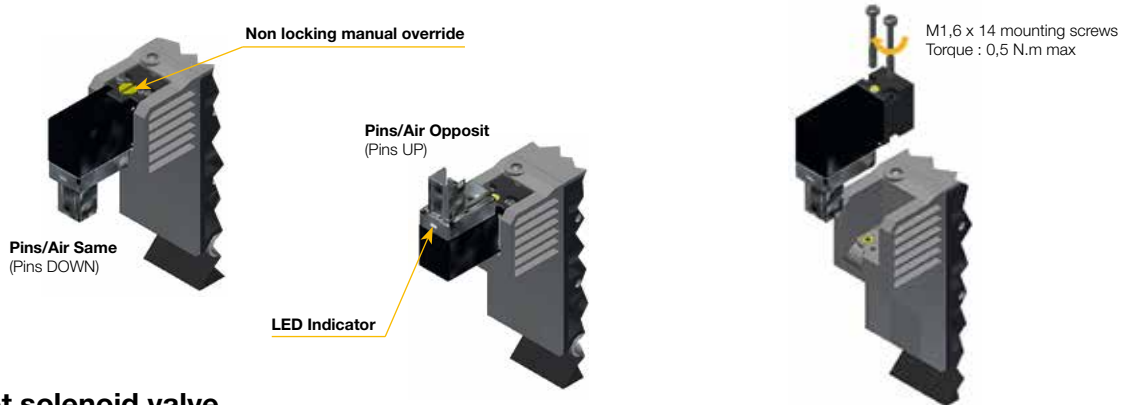
|   | Symbol  | Description                         | Connection    | W (g)       | Order code         |                    |
|---|---|-------------------------------------|---------------|-------------|--------------------|--------------------|
|  |  | Dual 3/2 N.C. air spring return     | Push-in 6mm   | 130         | <b>PVL-B215606</b> |                    |
|   |   |                                     | Push-in 8mm   | 130         | <b>PVL-B215608</b> |                    |
|   |   |                                     | G1/8"         | 130         | <b>PVL-B215618</b> |                    |
|   |  | 5/2 single acting spring return     | Locking flush | Push-in 6mm | 125                | <b>PVL-B211606</b> |
|   |   |                                     |               | Push-in 8mm | 125                | <b>PVL-B211608</b> |
|   |   |                                     |               | G1/8"       | 125                | <b>PVL-B211618</b> |
|   |  | 5/2 single acting air spring return | Locking flush | Push-in 6mm | 125                | <b>PVL-B213606</b> |
|   |   |                                     |               | Push-in 8mm | 125                | <b>PVL-B213608</b> |
|   |   |                                     |               | G1/8"       | 125                | <b>PVL-B213618</b> |
|  | 5/2 Double acting   | Non-locking flush                   | Push-in 6mm   | 120         | <b>PVL-B212606</b> |                    |
|   |   |                                     | Push-in 8mm   | 120         | <b>PVL-B212608</b> |                    |
|   |   |                                     | G1/8"         | 120         | <b>PVL-B212618</b> |                    |
|  | 5/3 Closed center (APB)   | Locking flush                       | Push-in 6mm   | 130         | <b>PVL-B217606</b> |                    |
|   |   |                                     | Push-in 8mm   | 130         | <b>PVL-B217608</b> |                    |
|   |   |                                     | G1/8"         | 130         | <b>PVL-B217618</b> |                    |
|  | 5/3 Vented center   | Locking flush                       | Push-in 6mm   | 130         | <b>PVL-B218606</b> |                    |
|   |   |                                     | Push-in 8mm   | 130         | <b>PVL-B218608</b> |                    |
|   |   |                                     | G1/8"         | 130         | <b>PVL-B218618</b> |                    |
|  | 5/3 Pressurised center  | Locking flush                       | Push-in 6mm   | 130         | <b>PVL-B219606</b> |                    |
|   |   |                                     | Push-in 8mm   | 130         | <b>PVL-B219608</b> |                    |
|   |   |                                     | G1/8"         | 130         | <b>PVL-B219618</b> |                    |

15mm DIN Form C (8mm spacing) pilot solenoid valve – Pin's UP or Pin's DOWN – must be ordered separately (Refer to 15 mm pilot valve section)


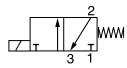
Pneumatic accessories

|   | Description                      | Size  | Orientation     | Material          | Tube OD           | W (g) | Order code        |                   |
|---|----------------------------------|-------|-----------------|-------------------|-------------------|-------|-------------------|-------------------|
|  <p>3101 ...</p>                 | Push-in fitting for PVL-B2 Valve | G1/8" | Straight        | Metal             | 4 mm              | 6     | <b>3101 04 10</b> |                   |
|   |                                  |       |                 |                   | 6 mm              | 7     | <b>3101 06 10</b> |                   |
|   |                                  |       |                 |                   | 8 mm              | 11    | <b>3101 08 10</b> |                   |
|  <p>3169 ...</p> <p>3199 ...</p> |                                  |       | Elbow prolonged | Plastic           | 4 mm              | 8     | <b>3169 04 10</b> |                   |
|   |                                  |       |                 |                   | 6 mm              | 11    | <b>3169 06 10</b> |                   |
|   |                                  |       |                 |                   | 8 mm              | 18    | <b>3169 08 10</b> |                   |
|   |                                  |       | Elbow short     | Plastic           | 4 mm              | 6     | <b>3199 04 10</b> |                   |
|   |                                  |       |                 |                   | 6 mm              | 6     | <b>3199 06 10</b> |                   |
|   |                                  |       |                 |                   | 8 mm              | 9     | <b>3199 08 10</b> |                   |
|  <p>3184 ...</p> <p>3182 ...</p> |                                  |       | Elbow prolonged | Plastic           | 6 mm              | 2     | <b>3184 04 06</b> |                   |
|   |                                  |       |                 |                   | 6 mm              | 4     | <b>3184 06 00</b> |                   |
|   |                                  |       | Elbow short     | Plastic           | 4 mm              | 3     | <b>3182 04 06</b> |                   |
|   |                                  |       |                 |                   | 6 mm              | 1     | <b>3182 06 00</b> |                   |
|   |                                  |       | Elbow prolonged | Plastic           | 8 mm              | 6 mm  | 7                 | <b>3184 06 08</b> |
|   |                                  |       |                 |                   | 8 mm              | 10    | <b>3184 08 00</b> |                   |
| Elbow short   | Plastic                          | 8 mm  | 6 mm            | 7                 | <b>3182 06 08</b> |       |                   |                   |
|   |                                  | 8 mm  | 10              | <b>3182 08 00</b> |                   |       |                   |                   |

PVL-B2 – 10 mm pilot solenoid valve options

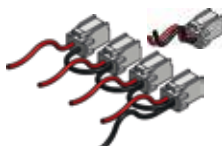


10 mm pilot solenoid valve

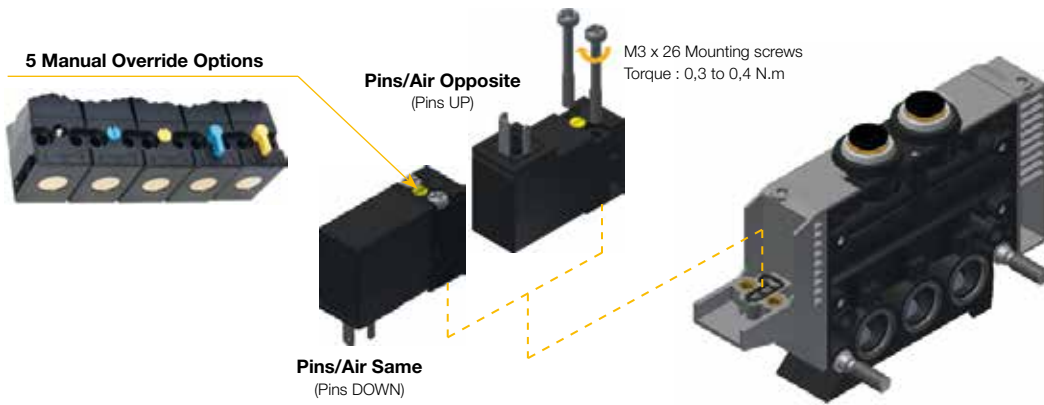
|   | Voltage | Electrical connection orientation | Manual Override   | W (g) | Order code        |
|---|---------|-----------------------------------|-------------------|-------|-------------------|
|   | 24 Vdc  | PINs /AIR same (PINs down)        | Non-locking flush | 20    | <b>P2D-KS32C1</b> |
|   |         | PINs/AIR opposit (PINs UP)        | Non-locking flush | 20    | <b>P2D-KV32C1</b> |

Other electrical connection orientations or low voltages DC on demand (can be subject to quantity)

10 mm Pilot solenoid valve electrical clip connector

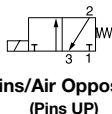













| Description   | Connector type    | Cable length | W (g) | Order code        |
|---|-------------------|--------------|-------|-------------------|
|  <p>Clip-on connector – IP40<br/>                     Individual : Including 2 flying leads<br/>                     Multiple : Including 1 common (0 Vdc)<br/>                     and 1 flying lead per connector</p> | 1 clip connector  | 1 meter      | 8     | <b>P8LW021C</b>   |
|   | 2 clip connectors | 1 meter      | 12    | <b>P8LW021C02</b> |
|   | 4 clip connectors | 1 meter      | 20    | <b>P8LW021C04</b> |
|   | 8 clip connectors | 1 meter      | 36    | <b>P8LW021C08</b> |

**PVL-B2 – 15 mm pilot solenoid valve options**



**15mm DIN Form C (8mm spacing) pilot solenoid valve**

For use with 15mm pilot solenoid valve PVL-B2 body

|  | Manual Overrides        |   | Flush (Not Extended)  |                          | Extended                   |                          |                   |
|--|-------------------------|---|---|--------------------------|----------------------------|--------------------------|-------------------|
|  | Without Manual Override |   | Blue Override, non locking  | Yellow Override, Locking | Blue Override, non locking | Yellow Override, Locking |                   |
|  | Voltage                 | W (g)   | Order code  | Order code               | Order code                 | Order code               |                   |
| <br>Pins/Air Opposite (Pins UP) | 12 Vdc                  | 38  |  <b>P2E-KV32B0</b>   | <b>P2E-KV32B1</b>        | <b>P2E-KV32B2</b>          | <b>P2E-KV32B3</b>        | <b>P2E-KV32B4</b> |
|  | 24 Vdc                  | 38  |  <b>P2E-KV32C0</b>   | <b>P2E-KV32C1</b>        | <b>P2E-KV32C2</b>          | <b>P2E-KV32C3</b>        | <b>P2E-KV32C4</b> |
|  | 48 Vdc                  | 38  |  <b>P2E-KV32D0</b>   | <b>P2E-KV32D1</b>        | <b>P2E-KV32D2</b>          | <b>P2E-KV32D3</b>        | <b>P2E-KV32D4</b> |
|  | 24 Vac 50Hz             | 38  |  <b>P2E-KV31C0</b>  | <b>P2E-KV31C1</b>        | <b>P2E-KV31C2</b>          | <b>P2E-KV31C3</b>        | <b>P2E-KV31C4</b> |
|  | 48 Vac 50/60Hz          | 38  |  <b>P2E-KV34D0</b> | <b>P2E-KV34D1</b>        | <b>P2E-KV34D2</b>          | <b>P2E-KV34D3</b>        | <b>P2E-KV34D4</b> |
| <br>Pins/Air Same (Pins DOWN) | 115 Vac 50Hz            |   |   |                          |                            |                          |                   |
|  | 120 Vac 60 Hz           | 38  |  <b>P2E-KV31F0</b> | <b>P2E-KV31F1</b>        | <b>P2E-KV31F2</b>          | <b>P2E-KV31F3</b>        | <b>P2E-KV31F4</b> |
|  | 230 Vac 50Hz            |   |   |                          |                            |                          |                   |
|  | 240 Vac 60 Hz           | 38  | <b>P2E-KV31J0</b>   | <b>P2E-KV31J1</b>        | <b>P2E-KV31J2</b>          | <b>P2E-KV31J3</b>        | <b>P2E-KV31J4</b> |
|  | 12 Vdc                  | 38  |  <b>P2E-KS32B0</b> | <b>P2E-KS32B1</b>        | <b>P2E-KS32B2</b>          | <b>P2E-KS32B3</b>        | <b>P2E-KS32B4</b> |
| 24 Vdc   | 38                      |  <b>P2E-KS32C0</b> | <b>P2E-KS32C1</b>   | <b>P2E-KS32C2</b>        | <b>P2E-KS32C3</b>          | <b>P2E-KS32C4</b>        |                   |
| 48 Vdc   | 38                      |  <b>P2E-KS32D0</b> | <b>P2E-KS32D1</b>   | <b>P2E-KS32D2</b>        | <b>P2E-KS32D3</b>          | <b>P2E-KS32D4</b>        |                   |
| 24 Vac 50Hz  | 38                      |  <b>P2E-KS31C0</b> | <b>P2E-KS31C1</b>   | <b>P2E-KS31C2</b>        | <b>P2E-KS31C3</b>          | <b>P2E-KS31C4</b>        |                   |
| 48 Vac 50/60Hz   | 38                      |  <b>P2E-KS34D0</b> | <b>P2E-KS34D1</b>   | <b>P2E-KS34D2</b>        | <b>P2E-KS34D3</b>          | <b>P2E-KS34D4</b>        |                   |
| 115 Vac 50Hz   |                         |   |   |                          |                            |                          |                   |
| 120 Vac 60 Hz  | 38                      |  <b>P2E-KS31F0</b> | <b>P2E-KS31F1</b>   | <b>P2E-KS31F2</b>        | <b>P2E-KS31F3</b>          | <b>P2E-KS31F4</b>        |                   |
| 230 Vac 50Hz   |                         |   |   |                          |                            |                          |                   |
| 240 Vac 60 Hz  | 38                      | <b>P2E-KS31J0</b>   | <b>P2E-KS31J1</b>   | <b>P2E-KS31J2</b>        | <b>P2E-KS31J3</b>          | <b>P2E-KS31J4</b>        |                   |


Mounting screws included with the valve body

**Pilot solenoid valve mounting screw**

|   | Description               | Size     | Material | W (g) | Order code          |
|---|---------------------------|----------|----------|-------|---------------------|
|  | Kit of 10 mounting screws | M23 x 26 | Steel    | 20    | <b>P2E-KP026PM3</b> |


**Cable plugs 15 mm - IP65**

(8 mm pin spacing)

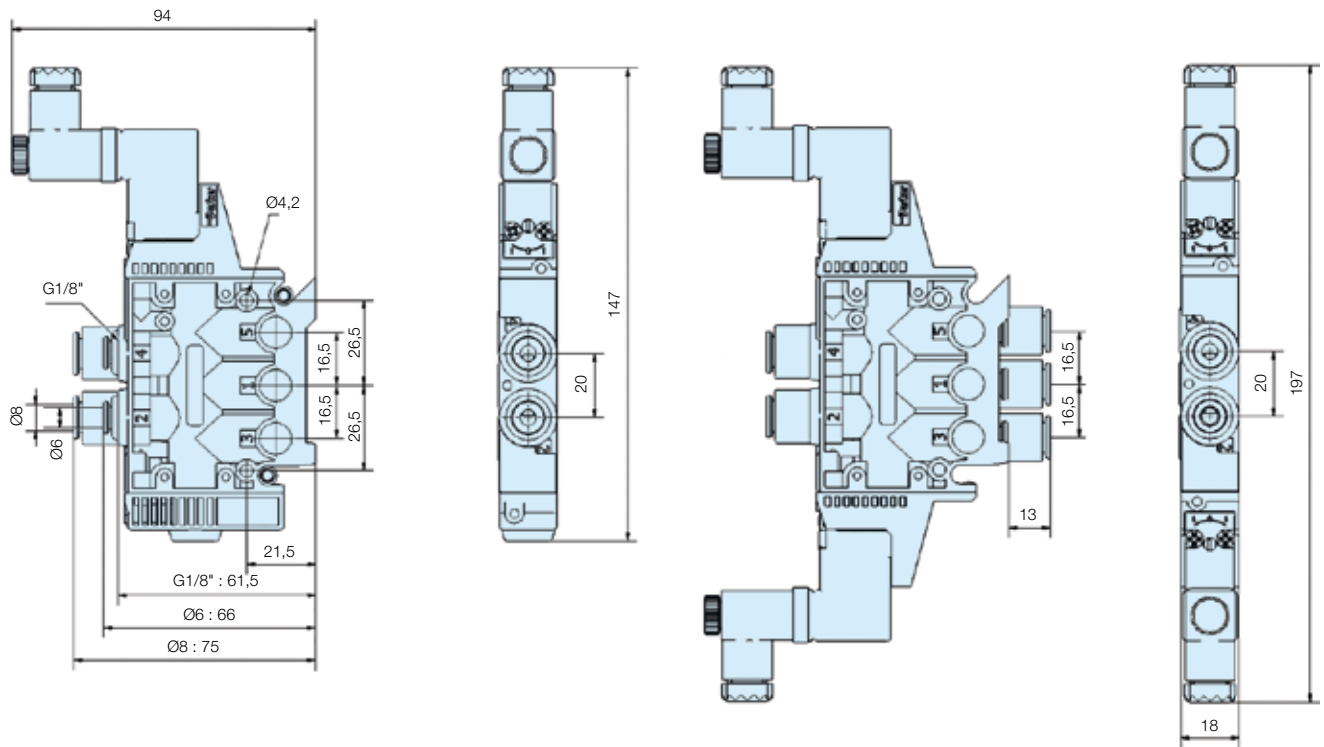
|   | Description | Electrical protection      | Cable length | W (g) | Order code       |
|---|-------------|----------------------------|--------------|-------|------------------|
|   |             | No protection              | No cable     | 11    | <b>P8C-D</b>     |
| <br>Standard screw |             |                            | 2 meter      | 97    | <b>P8L-C2</b>    |
|   |             |                            | 5 meter      | 228   | <b>P8L-C5</b>    |
|   |             | LED + Protection 24 VDC    | No cable     | 11    | <b>P8C-D26C</b>  |
|   |             | LED + Protection 24 VDC/AC | 2 meter      | 97    | <b>P8L-C226C</b> |
|   |             |                            | 5 meter      | 229   | <b>P8L-C526C</b> |

**Suppressor and LED indicators**

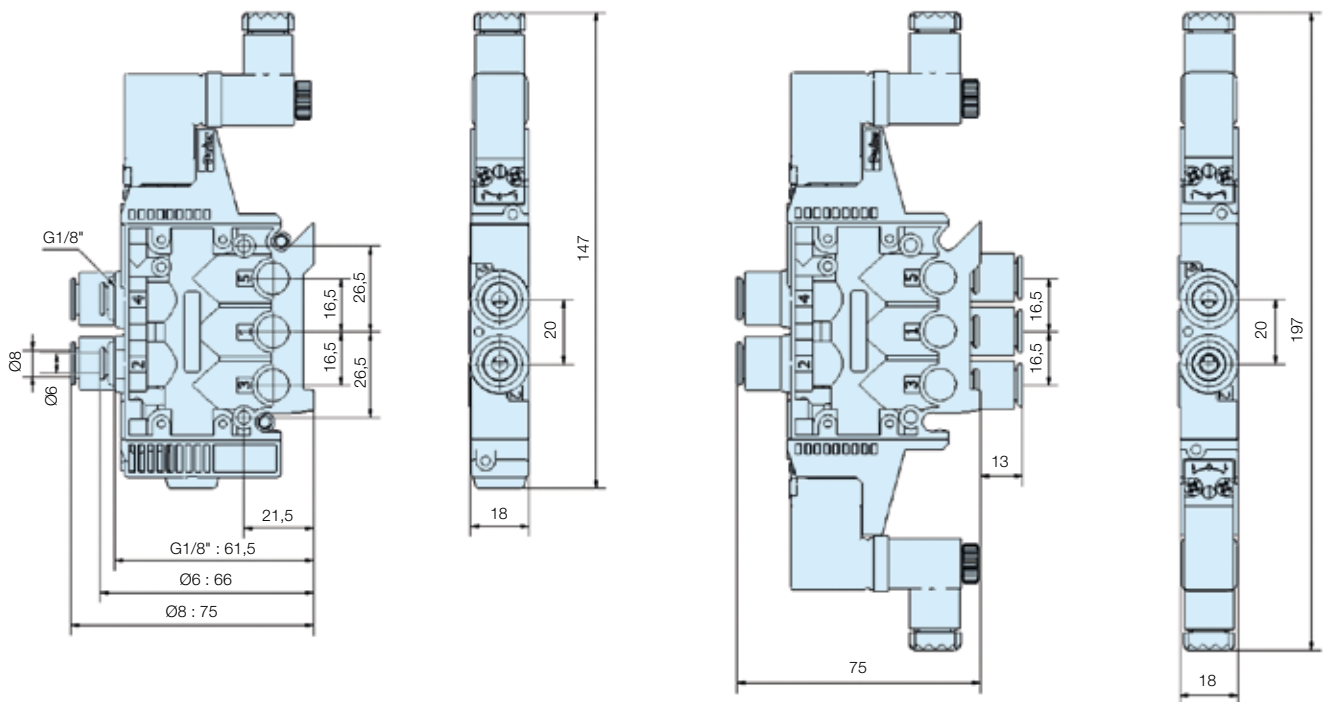
For 8 mm solenoid pin spacing - For mounting between the solenoid valve and the cable plug

|   | Symbol | Description | Pneumatic connection          | W (g)     | Order code       |
|---|--------|-------------|-------------------------------|-----------|------------------|
|   |        |             | LED indicator                 | 24 VAC/DC | 3                |
|  |        |             | 115 VAC 50 Hz - 120 VAC 60 Hz | 3         | <b>P8V-CR24F</b> |
|   |        |             | 230 VAC 50 Hz - 240 VAC 60 Hz | 3         | <b>P8V-CR24J</b> |

**PVL-B21 (Stand-alone) & PVL-B22 (Stackable) – with 15 mm pilot solenoid valve – Pins UP**

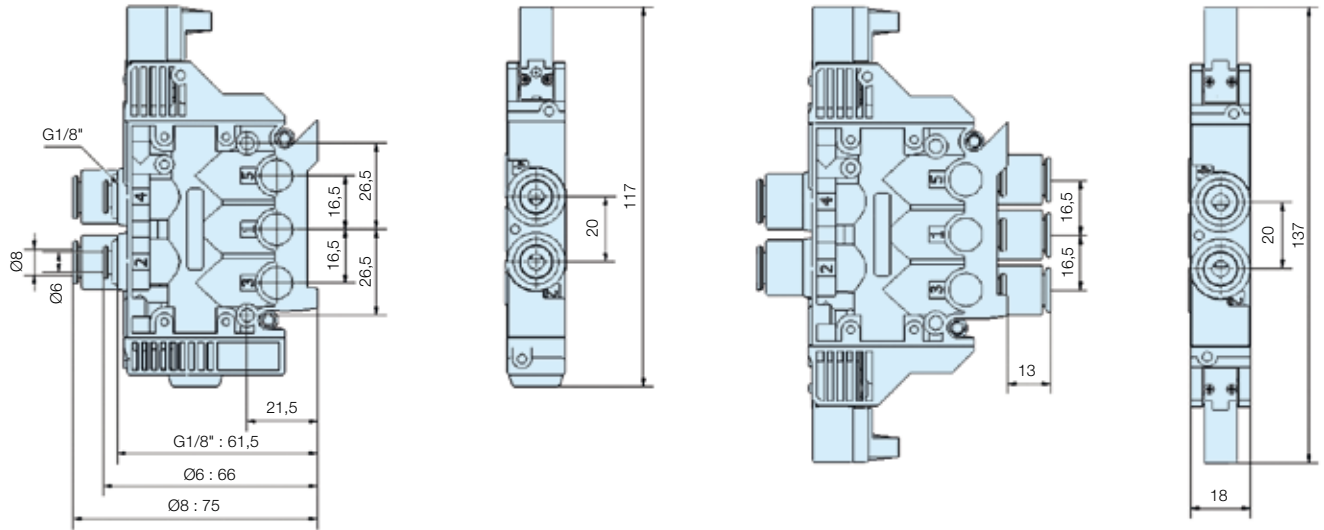


**PVL-B21 (Stand-alone) & PVL-B22 (Stackable) – with 15 mm pilot solenoid valve – Pins DOWN**

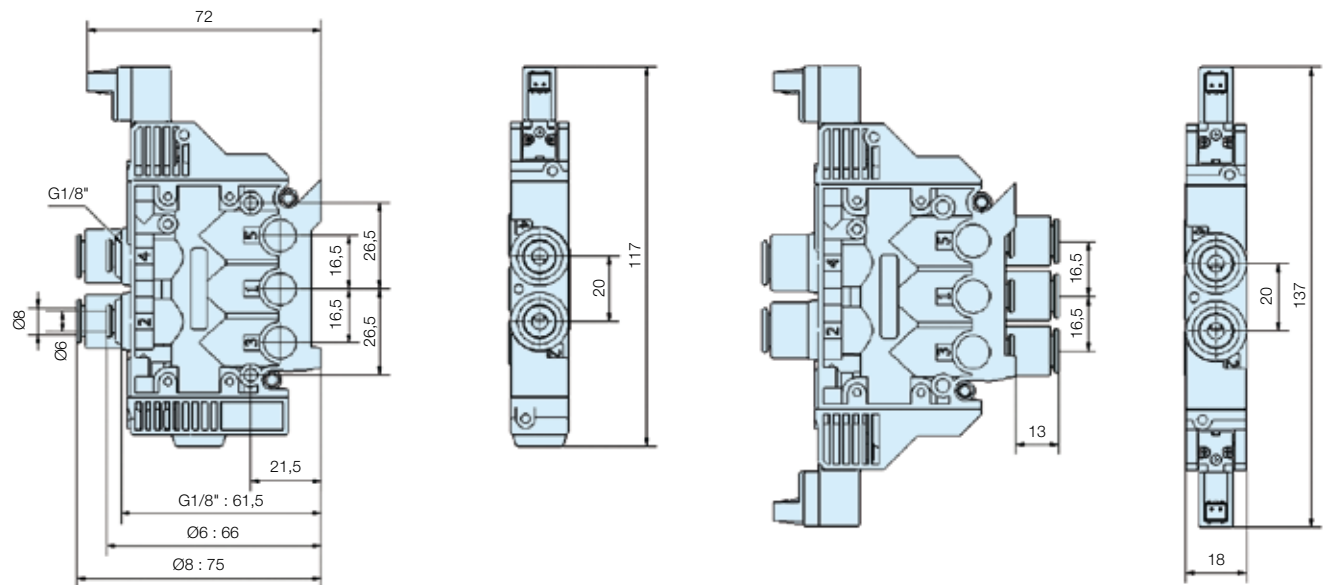




**PVL-B21 (Stand-alone) & PVL-B22 (Stackable) – with 10 mm pilot solenoid valve – Pins DOWN**

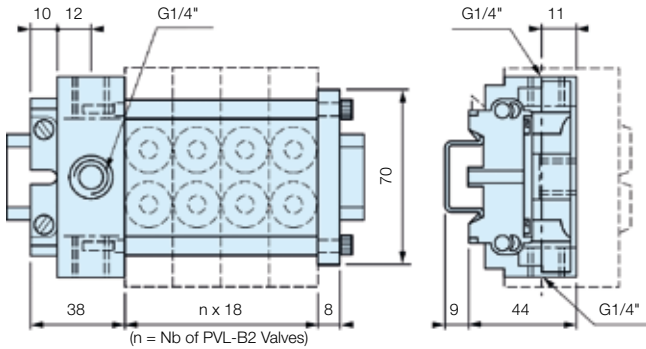


**PVL-B21 (Stand-alone) & PVL-B22 (Stackable) – with 10 mm pilot solenoid valve – Pins UP**

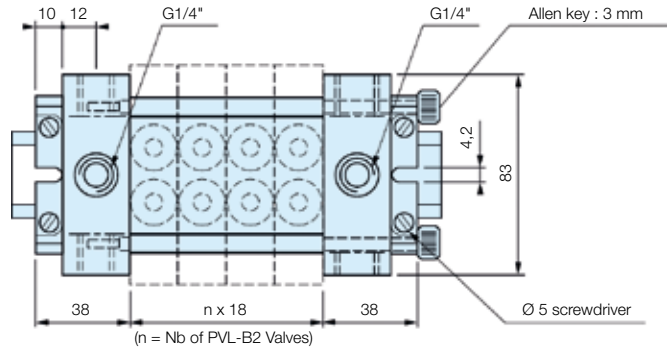


**PVL-B22 (Stackable) – Head and Tail sets – DIN rail mounting**

**Single air supply – PVL-B1719**

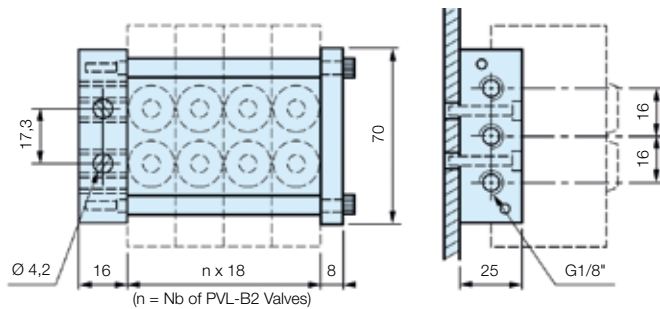


**Dual air supply – PVL-B1729**

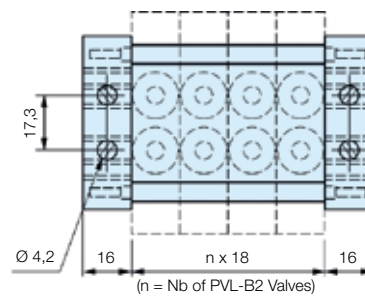


**PVL-B22 (Stackable) – Head and Tail sets – Surface mounting**

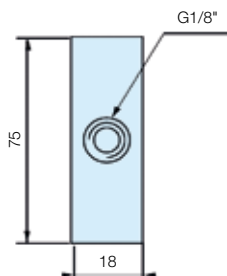
**Single air supply – PVL-B1818**



**Dual air supply – PVL-B1828**



**PVL-B22 (Stackable) – Intermediate supply module – PVU-LBB118**



Stacking high flow valves with air pilot or solenoid actuation. Lightweight plastic bodies feature push-in or threaded connections. Stacking valves feature modular inlet and exhaust facility.



- High flow, compact size
- Push-in or threaded connection
- DIN rail or block mounting
- Light weight construction



**For ATEX specific products  
contact Sales Office**

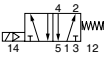
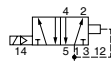
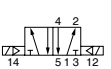
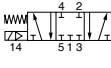

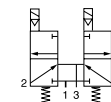
**Operating information**

Working pressure;  
 Pneumatically operated: 2-10 bar  
 Electrically operated, bistable: 2-10 bar  
 Electrically operated, monostable: 3-10 bar  
 Working temperature -15 °C to +60 °C





|   |              |              |
|---|--------------|--------------|
|   | <b>PVL-B</b> | <b>PVL-C</b> |
| Flow (Qmax):                                | 900 l/min    | 1800 l/min   |
| Flow Qn:                                    | 540 l/min    | 1100 l/min   |
| Flow measured with valve stacked in island. |              |              |

**PVL-B & PVL-C Valve body - Stand alone and stackable design - Without pilot**

Pneumatic or 15 mm electric pilot must be ordered separately


| Symbol  | Description                              | Valve size | Connection     | Weight (g) | Stand Alone        | Stackable          |
|---|--|------------|----------------|------------|--------------------|--------------------|
|   |  |            |                |            | Order code         | Order code         |
|  | 5/2 single acting /<br>Spring return     | PVL-B      | Push-in Ø 6 mm | 125        | <b>PVL-B111606</b> | <b>PVL-B121606</b> |
|   |  |            | G 1/8          | 125        | <b>PVL-B111618</b> | <b>PVL-B121618</b> |
|   |  | PVL-C      | Push-in Ø 8 mm | 240        | <b>PVL-C111608</b> | <b>PVL-C121608</b> |
|   |  |            | G 1/4          | 240        | <b>PVL-C111619</b> | <b>PVL-C121619</b> |
|  | 5/2 single acting /<br>Air spring return | PVL-B      | Push-in Ø 6 mm | 125        | <b>PVL-B113606</b> | <b>PVL-B123606</b> |
|   |  |            | G 1/8          | 125        | <b>PVL-B113618</b> | <b>PVL-B123618</b> |
|   |  | PVL-C      | Push-in Ø 8 mm | 240        | <b>PVL-C113608</b> | <b>PVL-C123608</b> |
|   |  |            | G 1/4          | 240        | <b>PVL-C113619</b> | <b>PVL-C123619</b> |
|  | 5/2 double acting                        | PVL-B      | Push-in Ø 6 mm | 120        | <b>PVL-B112606</b> | <b>PVL-B122606</b> |
|   |  |            | G 1/8          | 120        | <b>PVL-B112618</b> | <b>PVL-B122618</b> |
|   |  | PVL-C      | Push-in Ø 8 mm | 230        | <b>PVL-C112608</b> | <b>PVL-C122608</b> |
|   |  |            | G 1/4          | 230        | <b>PVL-C112619</b> | <b>PVL-C122619</b> |
|  | 5/3 APB<br>(All Ports Blocked)           | PVL-B      | Push-in Ø 6 mm | 130        | <b>PVL-B117606</b> | <b>PVL-B127606</b> |
|   |  |            | G 1/8          | 130        | <b>PVL-B117618</b> | <b>PVL-B127618</b> |
|   |  | PVL-C      | Push-in Ø 8 mm | 250        | <b>PVL-C117608</b> | <b>PVL-C127608</b> |
|   |  |            | G 1/4          | 250        | <b>PVL-C117619</b> | <b>PVL-C127619</b> |
|  | 5/3 Vented centre                        | PVL-B      | Push-in Ø 6 mm | 130        | <b>PVL-B118606</b> | <b>PVL-B128606</b> |
|   |  |            | G 1/8          | 130        | <b>PVL-B118618</b> | <b>PVL-B128618</b> |
|   |  | PVL-C      | Push-in Ø 8 mm | 250        | <b>PVL-C118608</b> | <b>PVL-C128608</b> |
|   |  |            | G 1/4          | 250        | <b>PVL-C118619</b> | <b>PVL-C128619</b> |
|  | Double 3/2<br>Normally Closed (NC)       | PVL-B      | Push-in Ø 6 mm | 130        | <b>PVL-B115606</b> | <b>PVL-B125606</b> |
|   |  |            | G 1/8          | 130        | <b>PVL-B115618</b> | <b>PVL-B125618</b> |

## Head and tail sets and intermediate supply modules

|   | Type of mounting | Description                     | Valve size | Port size | Weight (g) | Order code        |
|---|------------------|---------------------------------|------------|-----------|------------|-------------------|
|   | On DIN rail      | Single air supply               | PVL-B      | G1/4      | 175        | <b>PVL-B1719</b>  |
|   |                  | head and tail set               | PVL-C      | G3/8      | 195        | <b>PVL-C1713</b>  |
|   |                  | Dual air supply                 | PVL-B      | G1/4      | 245        | <b>PVL-B1729</b>  |
|   |                  | head and tail set               | PVL-C      | G3/8      | 285        | <b>PVL-C1723</b>  |
|  | Surface          | Single air supply               | PVL-B      | G1/8      | 200        | <b>PVL-B1818</b>  |
|   |                  | head and tail set               | PVL-C      | G1/4      | 225        | <b>PVL-C1819</b>  |
|   |                  | Dual air supply                 | PVL-B      | G1/8      | 260        | <b>PVL-B1828</b>  |
|   |                  | head and tail set               | PVL-C      | G1/4      | 280        | <b>PVL-C1829</b>  |
|  | On DIN rail      | Intermediate                    | PVL-B      | G1/8      | 150        | <b>PVU-LBB118</b> |
|   |                  | supply module                   | PVL-C      | G1/4      | 200        | <b>PVU-LCC119</b> |
|   | On DIN rail      | Kit for stacking                | PVL-C/B    | G1/4-G1/8 | 640        | <b>PVU-LCB119</b> |
|   |                  | PVL-B & PVL-C                   |            |           |            |                   |
|   |                  | Including :                     |            |           |            |                   |
|   |                  | - 1 transfert / take-off module |            |           |            |                   |
|   |                  | - 1 PVL-C head module           |            |           |            |                   |
|   |                  | - 1 PVL-B end plate             |            |           |            |                   |







## Air-pilot actuator for PVL-B and PVL-C valve

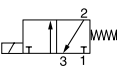
For use with PVL-B and PVL-C valve body

|   | Description   | Pneumatic connection | Weight (g) | Order code      |
|---|---|----------------------|------------|-----------------|
|  | Air-pilot actuator for PVL-B & PVL-C 15mm solenoid body | Push-in Ø 4 mm       | 7          | <b>PVA-P111</b> |
|   |   | Threaded M5          | 2          | <b>PVA-P115</b> |

## 15mm DIN Form C (8mm spacing) pilot solenoid valve

For use with PVL-B and PVL-C valve body

|                               | Manual Overrides |   | Flush (Not Extended)       |                          |                            | Extended                 |  |
|-------------------------------|------------------|---|----------------------------|--------------------------|----------------------------|--------------------------|--|
|                               |                  | Without Manual Override   | Blue Override, non locking | Yellow Override, Locking | Blue Override, non locking | Yellow Override, Locking |  |
| Voltage                       | W (g)            | Order code  | Order code                 | Order code               | Order code                 | Order code               |  |
| 12 Vdc                        | 38               |  <b>P2E-KV32B0</b> | <b>P2E-KV32B1</b>          | <b>P2E-KV32B2</b>        | <b>P2E-KV32B3</b>          | <b>P2E-KV32B4</b>        |  |
| 24 Vdc                        | 38               |  <b>P2E-KV32C0</b> | <b>P2E-KV32C1</b>          | <b>P2E-KV32C2</b>        | <b>P2E-KV32C3</b>          | <b>P2E-KV32C4</b>        |  |
| 48 Vdc                        | 38               |  <b>P2E-KV32D0</b> | <b>P2E-KV32D1</b>          | <b>P2E-KV32D2</b>        | <b>P2E-KV32D3</b>          | <b>P2E-KV32D4</b>        |  |
| 24 Vac 50Hz                   | 38               |  <b>P2E-KV31C0</b> | <b>P2E-KV31C1</b>          | <b>P2E-KV31C2</b>        | <b>P2E-KV31C3</b>          | <b>P2E-KV31C4</b>        |  |
| 48 Vac 50/60Hz                | 38               |  <b>P2E-KV34D0</b> | <b>P2E-KV34D1</b>          | <b>P2E-KV34D2</b>        | <b>P2E-KV34D3</b>          | <b>P2E-KV34D4</b>        |  |
| 115 Vac 50Hz<br>120 Vac 60 Hz | 38               |  <b>P2E-KV31F0</b> | <b>P2E-KV31F1</b>          | <b>P2E-KV31F2</b>        | <b>P2E-KV31F3</b>          | <b>P2E-KV31F4</b>        |  |
| 230 Vac 50Hz<br>240 Vac 60 Hz | 38               | <b>P2E-KV31J0</b>   | <b>P2E-KV31J1</b>          | <b>P2E-KV31J2</b>        | <b>P2E-KV31J3</b>          | <b>P2E-KV31J4</b>        |  |






Pins/Air Opposite  
(Pins UP)




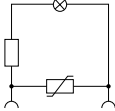
**Cable plugs 15 mm - IP65**

(8mm pin spacing)


|   | Description  | Electrical protection   | Cable length               | Weight (g) | Order code       |                  |
|---|--|-------------------------|----------------------------|------------|------------------|------------------|
|  | Large headed screw                                     | No protection           | No cable                   | 16         | <b>P8C-C</b>     |                  |
|   | For inaccessible or recess position                    | LED + Protection 24 VDC | No cable                   | 16         | <b>P8C-C26C</b>  |                  |
|  | Standard screw   | No protection           | No cable                   | 11         | <b>P8C-D</b>     |                  |
|   |  |                         | 2 m cable                  | 97         | <b>P8L-C2</b>    |                  |
|  | Connector schematic<br>No LED version      LED version | LED + Protection 24 VDC | 5 m cable                  | 228        | <b>P8L-C5</b>    |                  |
|   |  |                         | No cable                   | 11         | <b>P8C-D26C</b>  |                  |
|   |  |                         | LED + Protection 24 VDC/AC | 2 m cable  | 97               | <b>P8L-C226C</b> |
|   |  |                         | 5 m cable                  | 229        | <b>P8L-C526C</b> |                  |

**Suppressor and LED indicators**

For 8 mm solenoid pin spacing - For mounting between the solenoid valve and the cable plug

|   | Symbol  | Description   | Pneumatic connection          | Weight (g) | Order code       |
|---|---|---------------|-------------------------------|------------|------------------|
|  |  | LED indicator | 24 VAC/DC                     | 3          | <b>P8V-CR26C</b> |
|   |   |               | 115 VAC 50 Hz - 120 VAC 60 Hz | 3          | <b>P8V-CR24F</b> |
|   |   |               | 230 VAC 50 Hz - 240 VAC 60 Hz | 3          | <b>P8V-CR24J</b> |

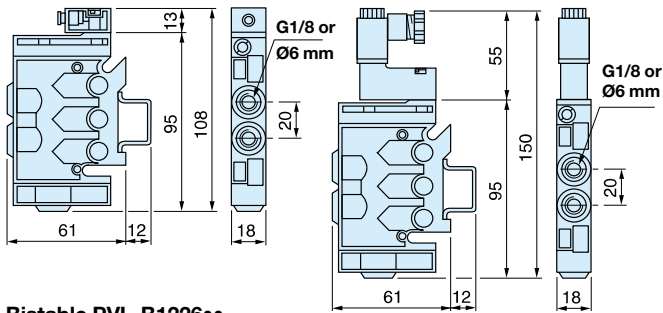
**Spare mounting and assembly kits**

|   | Description   | Valve size | Port size | Weight (g) | Order code       |
|---|---|------------|-----------|------------|------------------|
|  | Kit for sealing the inlet/exhaust common gallery including :<br>- 3 common blanking plugs<br>- 2 drilled and threaded rods<br>- 2 screws for extended tie rod | PVL-B      |           | 35         | <b>PVL-B1901</b> |
|   |   | PVL-C      |           | 65         | <b>PVL-C1901</b> |

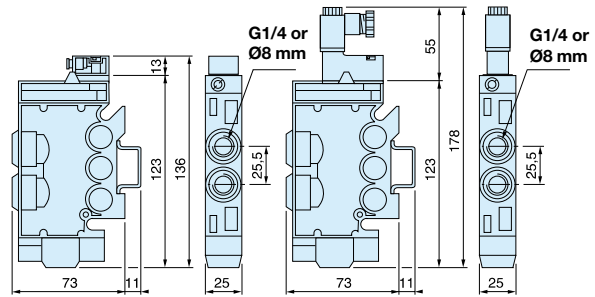
**Dimensions, PVL valve Series**

All dimensions in mm unless otherwise stated

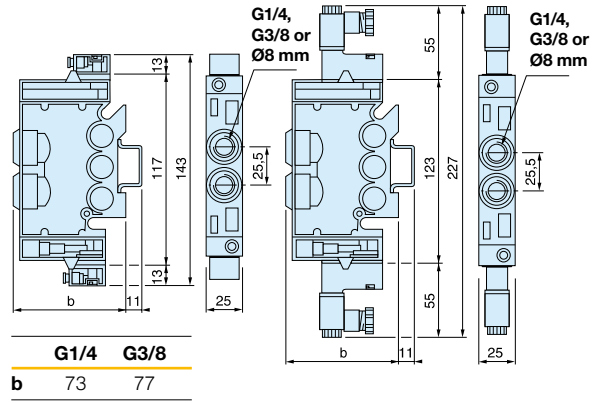
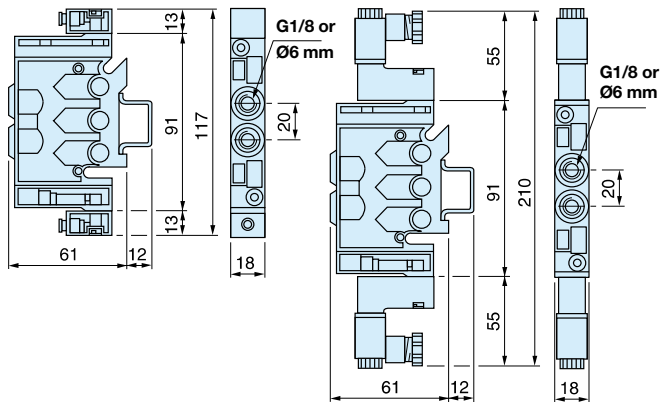
**Stacking power valves 1/8" with pneumatic or electrical piloting - Monostable PVL-B1216••, PVL-B1236••**



**Stacking power valves 1/4" with pneumatic or electrical control - With 1 W solenoid actuator and suitable pneumatic connector - Monostable PVL-C1216••, PVL-C1236••**

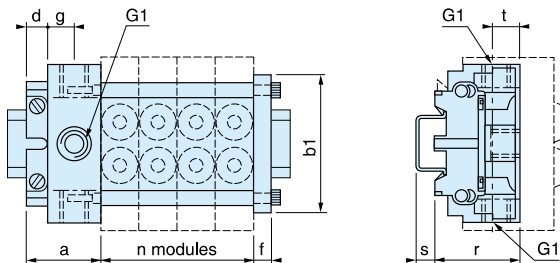


**Bistable PVL-B1226••**

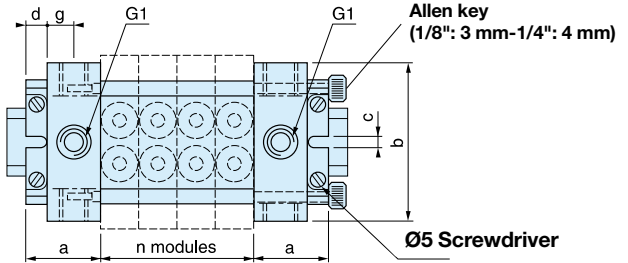


**Head and tail sets**

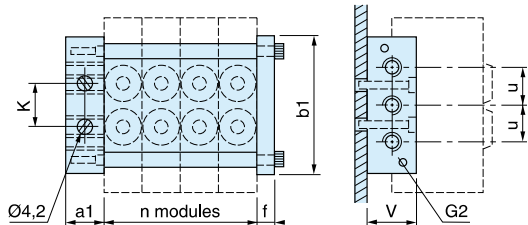
**Single air supply  
PVL-B1719, PVL-C1713, mounting on DIN rail**



**Dual air supply  
PVL-B1729, PVL-C1723, mounting on DIN rail**

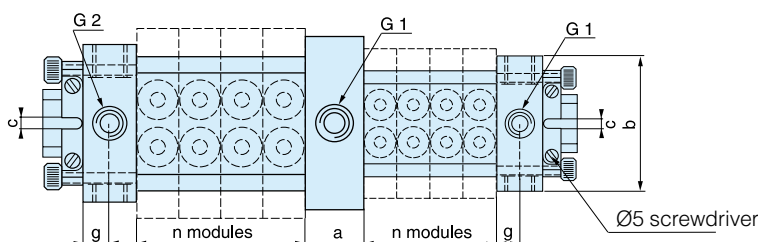


**Single air supply  
PVL-B1818, PVL-C1819, "stack mounting"**

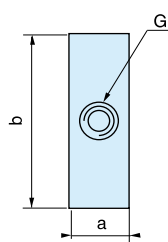


|      | a  | a1 | b   | b1  | c   | d  | f | g  | G1   | G2   | k    | r  | s | t  | u  | v  |
|------|----|----|-----|-----|-----|----|---|----|------|------|------|----|---|----|----|----|
| 1/8" | 38 | 16 | 83  | 70  | 4,2 | 10 | 8 | 12 | 1/4" | 1/8" | 17,3 | 44 | 9 | 11 | 16 | 25 |
| 1/4" | 38 | 20 | 108 | 100 | 4,2 | 10 | 8 | 12 | 3/8" | 1/4" | 63,5 | 55 | 9 | 13 | 20 | 30 |

**"Transfer / take-off" module, intermediate supply module  
For combination of sizes 1/4" - 1/8" - PVU-LCB119**



**PVUL-BB118 - PVU-LCC119**



|      | a  | b   | G   |
|------|----|-----|-----|
| 1/8" | 18 | 75  | 1/8 |
| 1/4" | 25 | 100 | 1/4 |

Miniature high-speed valves in stand alone, stackable or combined modules, incorporating standard logic functions. The range also includes timers and impulse modules.

- Complete range
- Stand alone, stackable or combinable modules
- Very fast response time
- Flexible and highly maintainable system
- DIN rail mounting
- Ø 4mm connection



**Operating information**

|   |                            |
|---|----------------------------|
| Working pressure  | 3 to 8 bar                 |
| Working temperature   | -15 °C to 60 °C            |
| Flow (Qmax)   | 180 l/min (PRD = 60 l/min) |
| ATEX approval:  | CE Ex II 2 GD c 85°C       |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a> |                            |

 **For ATEX specific products contact Sales Office**

**Logic sequencer**

**Step modules**



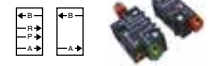
|   | Order code     |
|---|----------------|
| Without sub base  | <b>PSM-A10</b> |
| Pneumatic output  | <b>PSM-A12</b> |
| Visual indication of pneumatic output and manual override | <b>PSM-B12</b> |
| With sub base   | <b>PSM-B12</b> |
| Without manual override                                   |                |

**Step module subbase**



|                      | Order code     |
|----------------------|----------------|
| Subbase              | <b>PSB-A12</b> |
| Additional interlock | <b>PSV-A12</b> |

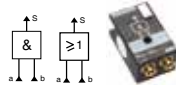
**Set of head and tail modules and deviation modules**



|                      | Order code     |
|----------------------|----------------|
| Head & tail set      | <b>PSE-A12</b> |
| Deviation standard   | <b>PSD-A12</b> |
| Deviation for remote | <b>PSD-B12</b> |

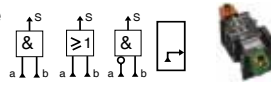
**Logic elements**

**Line mounted elements**



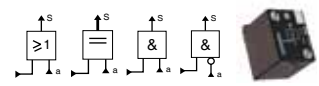
| Logic Function   | Order code      |
|------------------|-----------------|
| AND              | <b>PLL-A11</b>  |
| OR               | <b>PLK-A11</b>  |
| Clip on Din-rail | <b>PZM-L199</b> |

**Combinable elements**



| Logic Function | Order code     |
|----------------|----------------|
| AND            | <b>PLL-B12</b> |
| OR             | <b>PLK-B12</b> |
| NOT            | <b>PLN-B12</b> |
| INPUT          | <b>PLE-B12</b> |

**Subbase mounted elements**



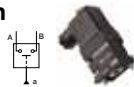
| Logic Function        | Order code     |
|-----------------------|----------------|
| AND                   | <b>PLL-C10</b> |
| NOT inhibit standard  | <b>PLN-C10</b> |
| NOT inhibit threshold | <b>PLN-D10</b> |
| OR                    | <b>PLK-C10</b> |
| YES regenerated       | <b>PLJ-C10</b> |

3 port subbase to be ordered separately.

**Logic relays**

**Pressure switch**

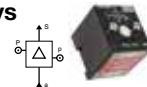
To be used with 3 port subbase



|                 | Order code     |
|-----------------|----------------|
| With subbase    | <b>PRE-A12</b> |
| Without subbase | <b>PRE-A10</b> |

**Amplifier relays**

To be used with 4 port subbase



|                 | Order code     |
|-----------------|----------------|
| With subbase    | <b>PRD-A12</b> |
| Without subbase | <b>PRD-A10</b> |

**Memory relays**

To be used with 4 port subbase



|                 | Order code     |
|-----------------|----------------|
| With subbase    | <b>PLM-A12</b> |
| Without subbase | <b>PLM-A10</b> |

**Sensor relays**



|                 | Order code     |
|-----------------|----------------|
| With subbase    | <b>PRF-A12</b> |
| Without subbase | <b>PRF-A10</b> |

**Time delay relays**

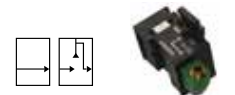
To be mounted on 3 port subbase



| Function                   | Timing     | Order code     |
|----------------------------|------------|----------------|
| Output after timed period  | 0,1 to 3s  | <b>PRT-E10</b> |
|                            | 0,1 to 30s | <b>PRT-A10</b> |
|                            | 10 to 180s | <b>PRT-B10</b> |
| With subbase               | 0,1 to 30s | <b>PRT-A12</b> |
| Output during timed period | 0,1 to 3s  | <b>PRT-F10</b> |
|                            | 0,1 to 30s | <b>PRT-C10</b> |
|                            | 10 to 180s | <b>PRT-D10</b> |

**Subbase for logic elements and relays**

3 port and 4 port subbases

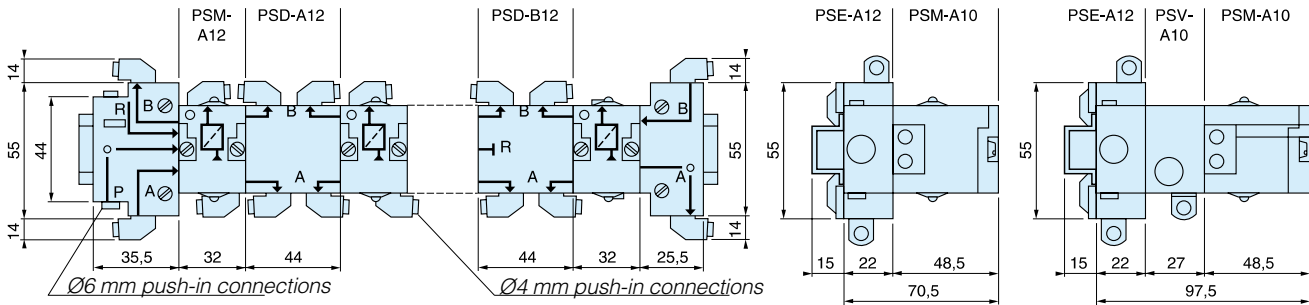


|                       | Order code     |
|-----------------------|----------------|
| Input module          | <b>PZU-E12</b> |
| 3 port "common input" | <b>PZU-A12</b> |
| 3 port "cascade"      | <b>PZU-C12</b> |
| 4 port subbase*       | <b>PZU-B12</b> |

\* For combination with memory relay and amplified relay.

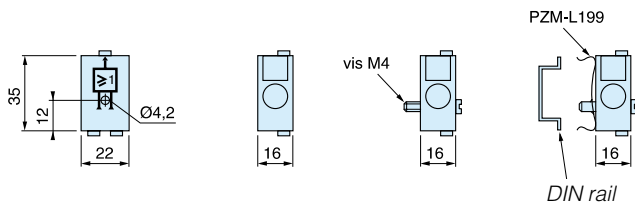
**Dimensions, Logic processing**

**Modular sequencer**



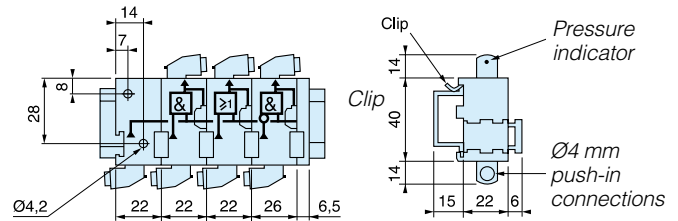
**Line mounted logic elements**

PLL-A11 and PLK-A11



**Combinable logic elements**

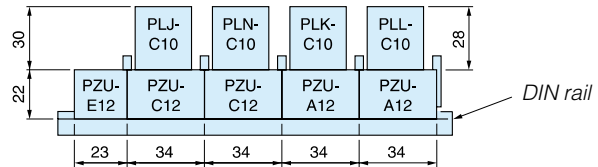
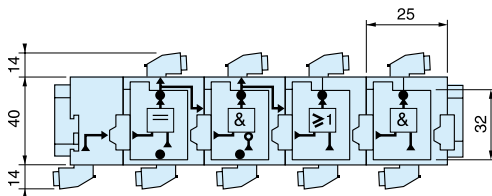
PLE-B12 — PLL-B12 — PLK-B12 and PLN-B12



**Logic elements mounted on 3-port modular subbases**

PZU-E12

PLJ-C10 — PLN-C10 — PLK-C10 and PLL-C10 mounted on PZU-C12 and PZU-A12

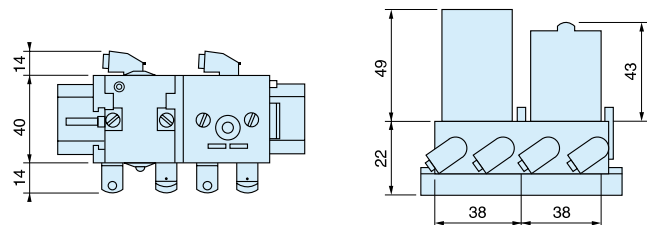
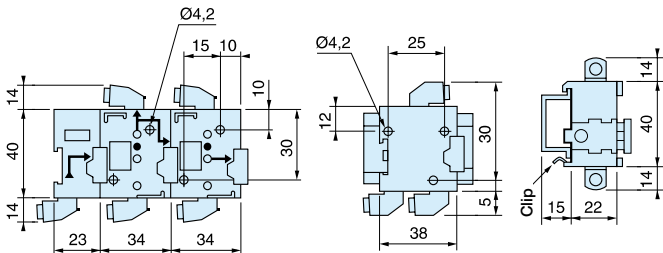


**3 and 4-port modular subbases**

PZU-E12 — PZU-C12 — PZU-A12 PZU-B12

**Relays mounted on 4-port modular subbases**

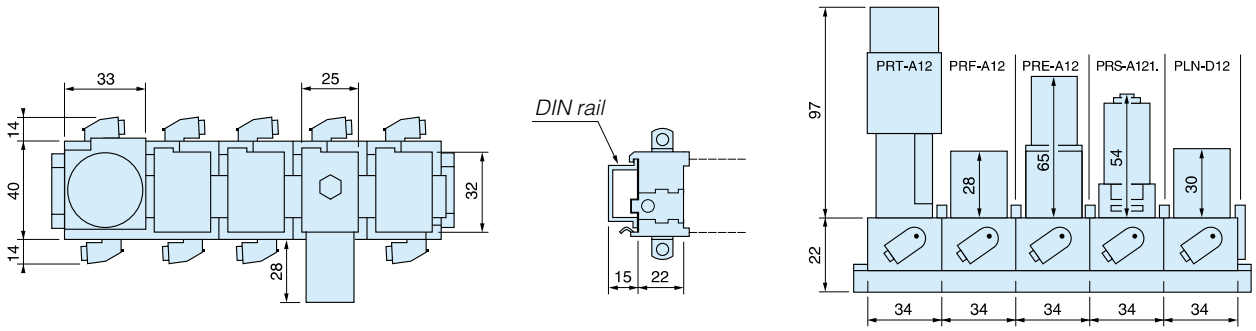
PLM-A12 and PRD-A12





**Relays mounted on 3-port modular subbases**

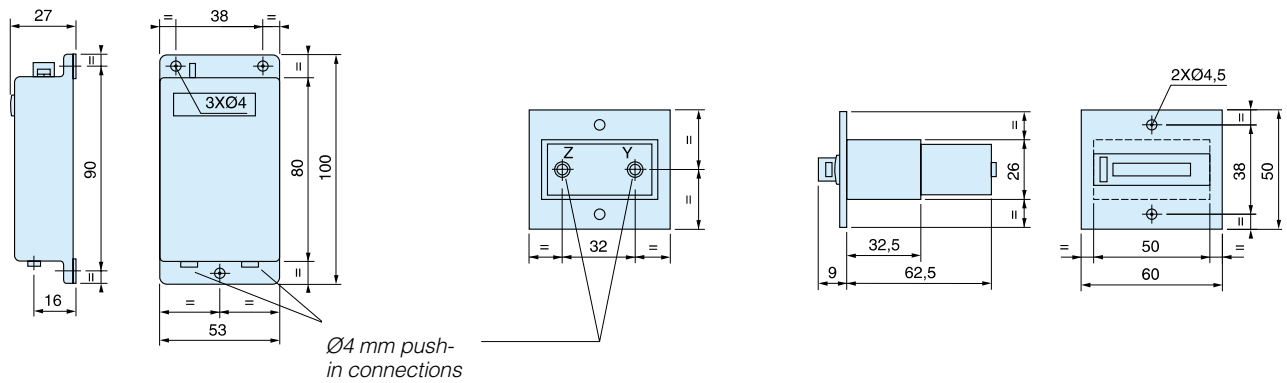
PRT-A12 — PRF-A12 — PRE-A12 — PRS-A121 and PLN-D12



**Totalling counters**

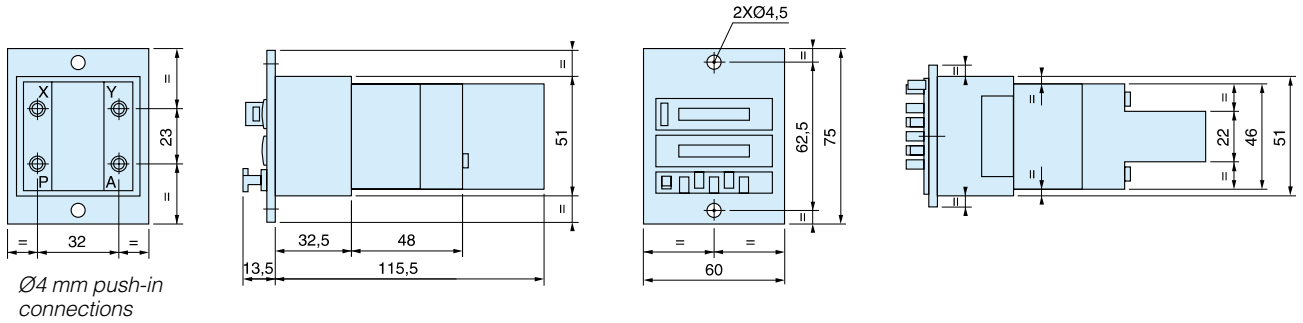
PCT-A11

PCT-B11



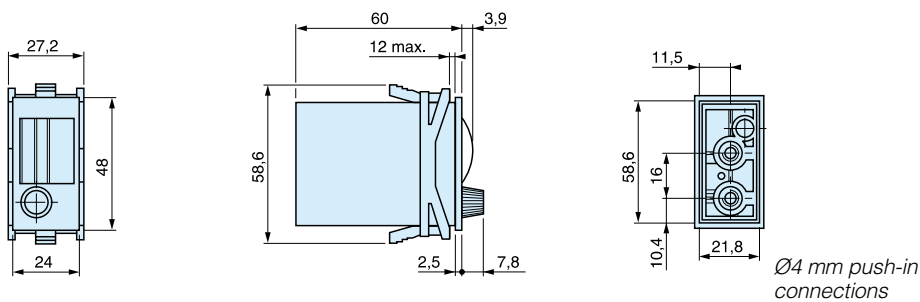
**Digital display timers**

PCM-A11 to PCM-B11



**Timers with calibrated dial**

PCM-F11 and PCM-G11



# Air Saver Unit ASC/ASV Series

An easy solution to your environmental protection efforts!  
 The air saving unit contributes to power savings and CO2 reduction.

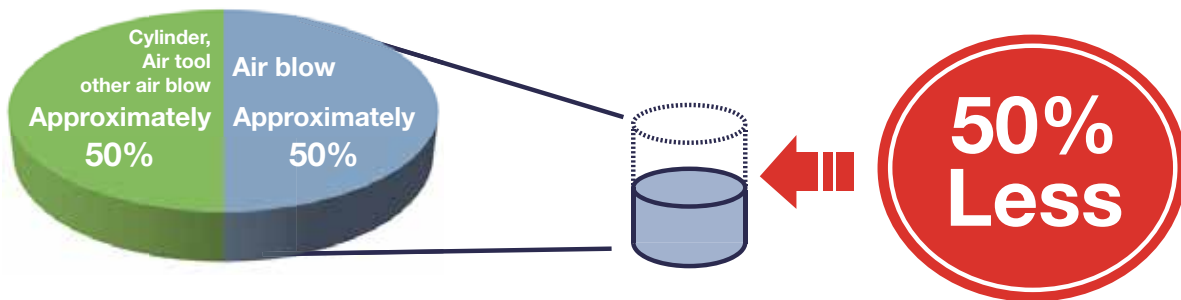


**ASV2000**



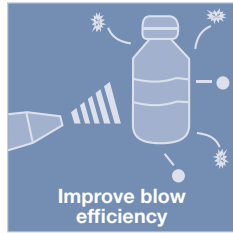
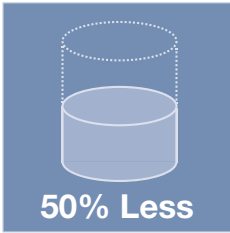
**ASV5000**

The air Saver Unit can reduce air consumption by up to 50% and improves blow efficiency in air blow applications.



**Savings example (Using 100 ASC500, Unit 8 hours/day and 20 days)**

|                                 |                   |   |                   |
|---------------------------------|-------------------|---|-------------------|
| <b>Power Consumption</b>        | 53,600kW / month  | ➡ | 26,800kW / month  |
| <b>CO<sub>2</sub> discharge</b> | 17 t              | ➡ | 8.5 t             |
| <b>Cost</b>                     | EUR 7,000 / month | ➡ | EUR 3,500 / month |



**ASV200**

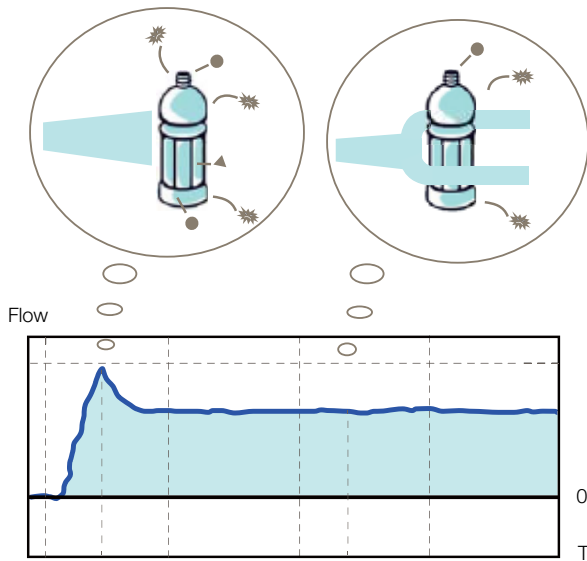


**ASC/ASO500**

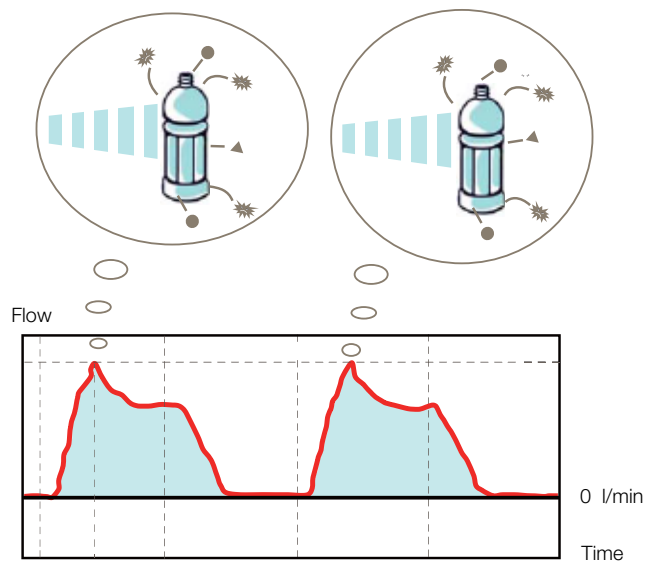
**Pulsed air by Air Saver Unit reduces air consumption.**

The Air saver unit is a valve that converts a continuous air blow to a pulsed air blow without the need for any other external control. Air is blown with a series of ON and OFF pulses. When the blow is OFF, there is no air consumption. This is how the air saver unit contributes to reduction in air consumption.

**Continuous air blow**



**Pulsed air blow**



Compared to continuous air blow, the pulsed air blow hits the work repeatedly, improving the efficiency of the air blow.

When an air saver unit is used, several positive effects can be expected. Air blow accounts for almost 50% of all compressed air used in plants. The air saver unit with a switching valve technology for air blow. Can reduce air consumption by up to 50% !

- Large reductions in plant air consumption.
- Savings in plant compressor power consumption.
- Reduction in plant CO<sub>2</sub> emissions.
- Big contribution to energy-saving activities.



**Operating information**

|  | ASV200                            | ASV2000 | ASV5000 | ASV13000 | ASV15000 | ASC500                        | ASO500        |
|--|-----------------------------------|---------|---------|----------|----------|-------------------------------|---------------|
| <b>Function</b>                        | Normally closed                   |         |         |          |          |                               | Normally open |
| <b>Fluid</b>                           | Non lubricated air                |         |         |          |          |                               |               |
| <b>Flow l/min (ANR) (at 5 bar)</b>     | 150                               | 2000    | 5000    | 13000    | 15000    | 450                           | 450           |
| <b>Port size (BSPP)</b>                | M5                                | 3/8     | 1/2     | 1"       | 1 1/4"   | 1/8                           | 1/8           |
| <b>Operating temperature</b>           | -5 to +50° C                      |         |         |          |          |                               |               |
| <b>Pressure range (bar)</b>            | 3 - 8                             |         | 0 - 8   |          |          | 2 - 7                         | 2 - 5         |
| <b>Pilot air supply (bar)</b>          | 3 - 8                             |         | 3 - 8   |          |          | Internal pilot                |               |
| <b>Blow</b>                            | Pulse blow                        |         |         |          |          | Pulse/Continuous blow         |               |
| <b>Rated voltage (V)</b>               | Electrical power is not necessary |         |         |          |          | DC 24 V                       |               |
| <b>Power consumption (W)</b>           |                                   |         |         |          |          | 1.2 W                         |               |
| <b>Grade of Insulation</b>             |                                   |         |         |          |          | JIS grade E                   |               |
| <b>Permissible voltage fluctuation</b> |                                   |         |         |          |          | ± 10 %                        |               |
| <b>Wiring</b>                          |                                   |         |         |          |          | e-CON standard 4 pole sockets |               |

- (1) In case of using the Unit under 5°C, complete dry air by air dryer shall be supplied to prevent from freezing.  
 (2) Please note that supply air for port 1 should be more than 2 bar.  
 (3) Please note that supply air for port 1 should be more than 3 bar.

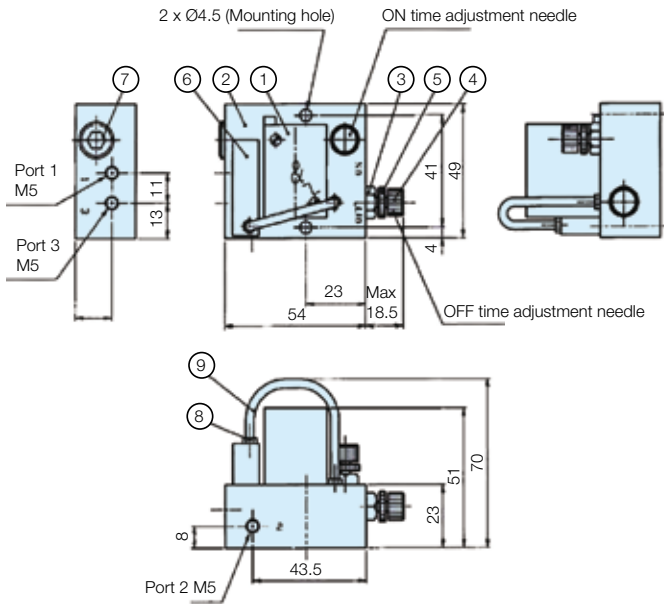
**Order key**

**WP AS V 2000 - AA - 17**

|   |   |   |
|---|---|---|
| <b>Grease</b>   | <b>Type / Flow rate</b>                                       | <b>Port Size</b>  |
| <b>Blank</b> Standard grease                              | <b>200</b> 2-position, internal air pilot / 200 liter/min     | <b>M5</b> M5 (ASV200 only)  |
| <b>WP</b> Petrolatum grease (for painting applications.)  | <b>500</b> 2-position, single solenoid / 500 liter/min        | <b>10</b> BSPP 1/8 (ASC/O500 only)                                      |
| <b>Series</b>   | <b>2000</b> 2-position, external air pilot / 2000 liter/min   | <b>17</b> BSPP 3/8 (ASV2000 only)                                       |
| <b>AS</b> Air Saver Unit                                  | <b>5000</b> 2-position, external air pilot / 5000 liter/min   | <b>21</b> BSPP 1/2 (ASV5000 only)                                       |
| <b>Operation method / Function</b>                        | <b>13000</b> 2-position, external air pilot / 13000 liter/min | <b>34</b> BSPP 1 (ASV13000 only)  |
| <b>V</b> Pneumatic operated Normally Closed.              | <b>15000</b> 2-position, external air pilot / 15000 liter/min | <b>42</b> BSPP 1 1/4 (ASV15000 only)                                    |
| <b>C</b> Electrical actuated. Normal Close. (ASC500 only) |   | <b>Operation / Voltage</b>  |
| <b>O</b> Electrical actuated. Normal Open. (ASO500 only)  |   | <b>AA</b> Pneumatic operated (WP)ASV200, 2000, 5000, ASV13000 and 15000 |
|   |   | <b>1W</b> Electrical operated 24VDC (ASC/O500)                          |

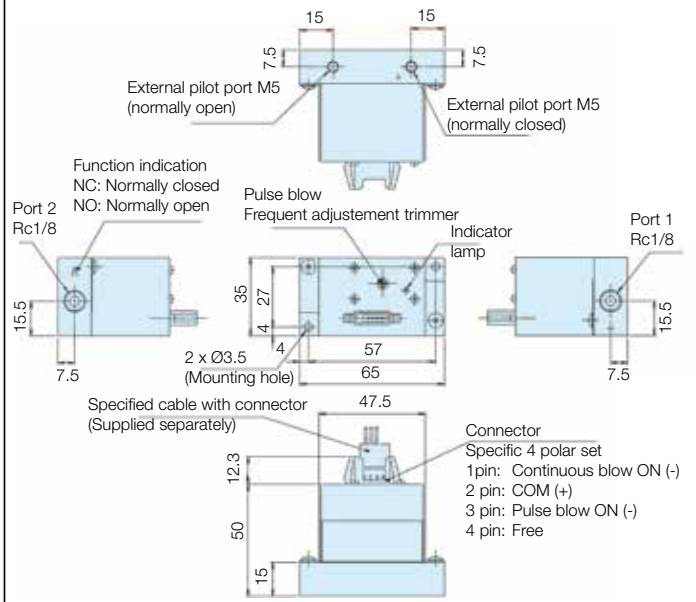
**Note:** Cable with e-CON connector (Model No. ASC-D24-CL10) will be ordered separately.

**ASV200-AA-M5**



| Part name           | Qty | Material treatment |
|---------------------|-----|--------------------|
| 1 PLN-D10           | 1   | Assembly           |
| 2 Flicker base      | 1   | Aluminium alloy    |
| 3 Cover             | 2   | Brass              |
| 4 Needle            | 2   | Aluminium alloy    |
| 5 Lock nut          | 2   | Aluminium alloy    |
| 6 VCC232-NB-Z12-005 | 1   | Assembly           |
| 7 Plug R1/4         | 1   | Black oxide finish |
| 8 BC-03-M3          | 2   | Stainless          |
| 9 TN-3.2            | 8cm | Polyamide resin    |

**ASC500-1W-10 / ASO500-1W-10**

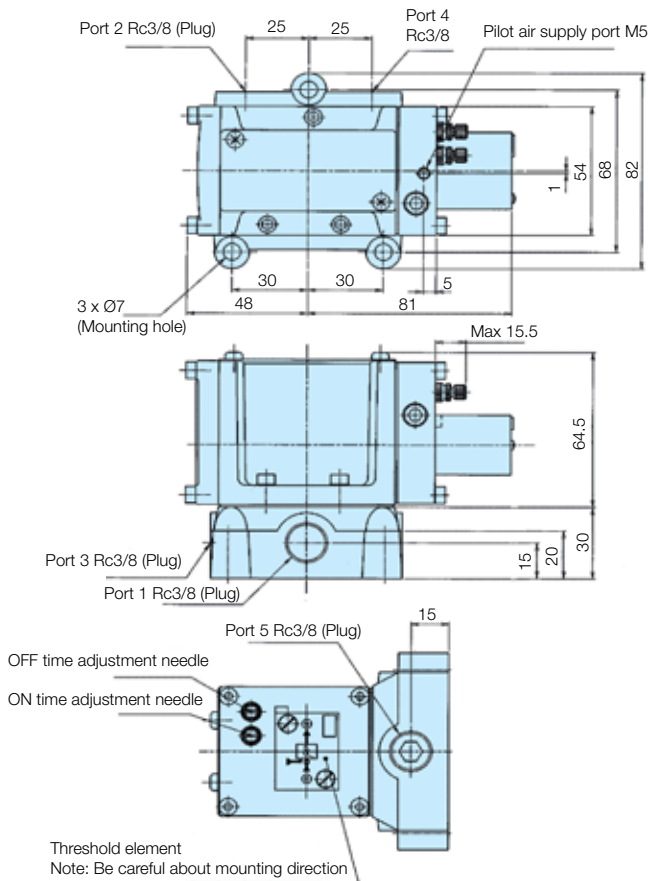


| Pin no. | Colour |
|---------|--------|
| 1       | Black  |
| 2       | Red    |
| 3       | Yellow |
| 4       | (Free) |

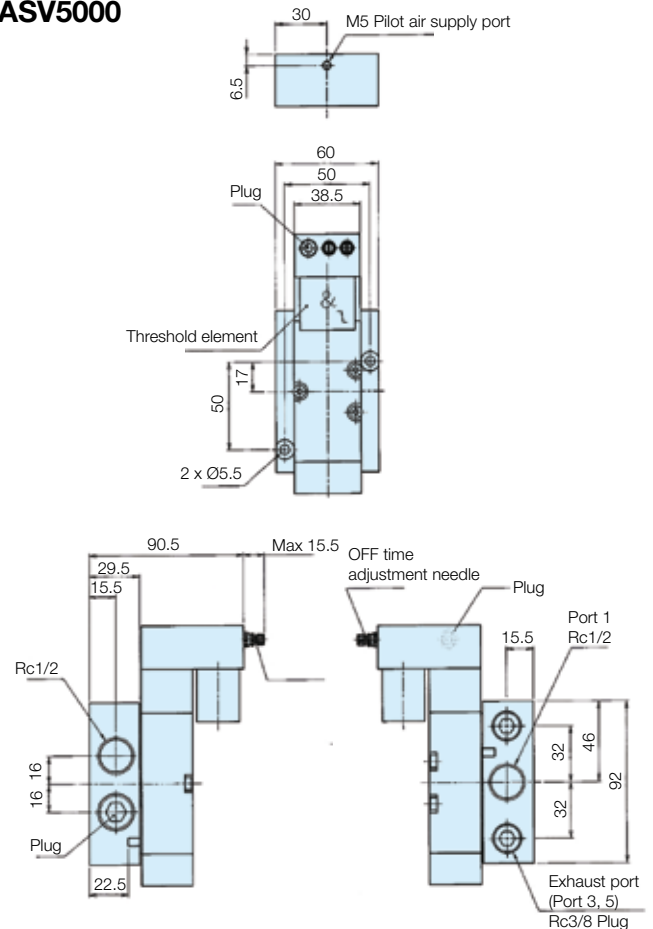


\*Cable with specific connector "ASC-D24-CL10" (AWG26 ASC/ASO in common)

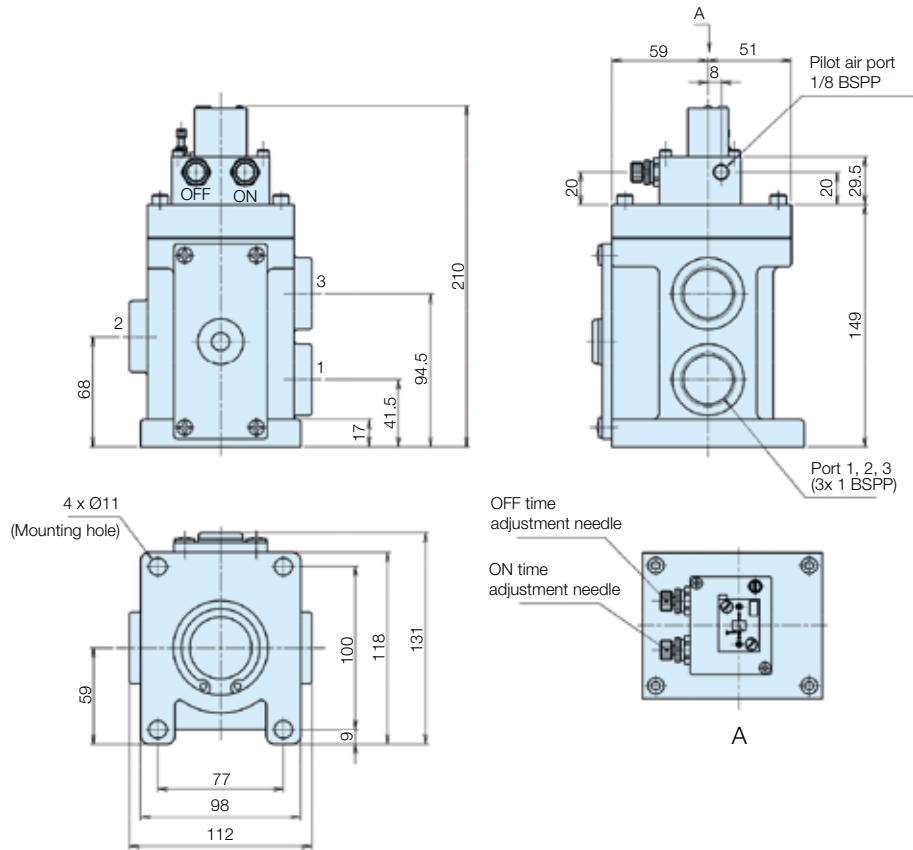
**ASV2000**



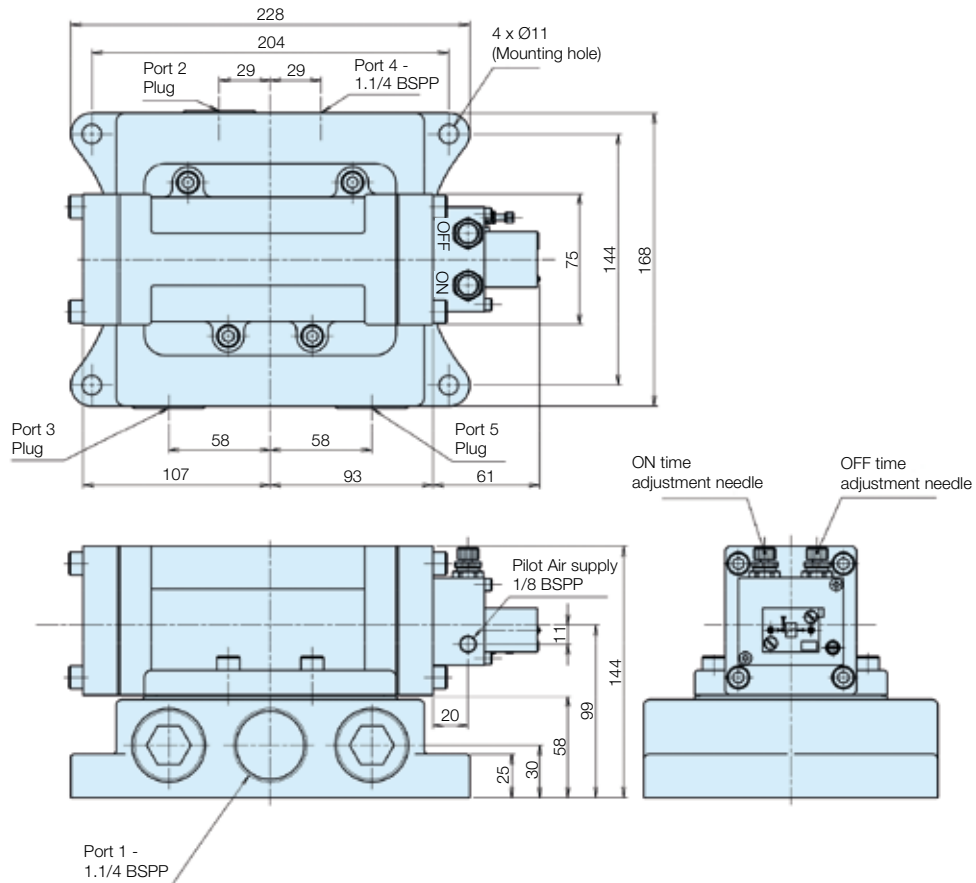
**ASV5000**



**ASV13000\_AA\_34**



**ASV15000\_AA\_42**



Designed to fit the standard electrical Ø22mm knock out, they can provide dual pneumatic and electrical output signals. A variety of button and switch actuators are available.

- Facia mounted operation
- 3/2 NO or NC
- Modular construction
- Wide range of actuators
- Dual pneumatic and electrical output signal




 **For ATEX specific products contact Sales Office**


| Flow characteristics |  |
|----------------------|--|
| <b>PXB-B3••</b>      | Q <sub>max</sub> = 60 l/min<br>Q <sub>n</sub> = 30 l/min   |
| <b>PXB-B4••</b>      | Q <sub>max</sub> = 240 l/min<br>Q <sub>n</sub> = 120 l/min |
| Connections          | Ø 4 mm push-in   |

| Operating information                         |                |
|---|----------------|
| <b>Push button valves - Visual indicators</b> |                |
| Working pressure                              |                |
| PXB-B3••                                      | 1 to 9 bar     |
| PXB-B4••                                      | 1 to 10 bar    |
| PXV-••  | 1 to 8 bar     |
| Working temperature                           | -15°C to +60°C |
| ATEX approval:                                | CE Ex II 3 GD  |


**Spring return push buttons**

| Symbol  | Flow      | Order code          |
|---|-----------|---------------------|
|  | 60 l/min  | <b>PXB-B3111BA2</b> |
|   | 240 l/min | <b>PXB-B4131BA2</b> |

Black - With 1 NC valve


| Symbol  | Flow      | Order code          |
|---|-----------|---------------------|
|  | 60 l/min  | <b>PXB-B3111BA3</b> |
|   | 240 l/min | <b>PXB-B4131BA3</b> |

Green - With 1 NC valve


| Symbol  | Flow      | Order code          |
|---|-----------|---------------------|
|  | 60 l/min  | <b>PXB-B3111BA4</b> |
|   | 240 l/min | <b>PXB-B4131BA4</b> |

Red - With 1 NC valve

**Mushroom head push buttons**


| Symbol  | Flow      | Order code          |
|---|-----------|---------------------|
|  | 60 l/min  | <b>PXB-B3111BC2</b> |
|   | 240 l/min | <b>PXB-B4131BC2</b> |

Black - Spring return - With 1 NC valve

| Symbol  | Flow      | Order code          |
|---|-----------|---------------------|
|  | 60 l/min  | <b>PXB-B3111BT4</b> |
|   | 240 l/min | <b>PXB-B4131BT4</b> |

Red - Latching - With 1 NC valve

**Selector switches**

| Symbol  | Flow      | Order code          |
|---|-----------|---------------------|
|  | 60 l/min  | <b>PXB-B3111BD2</b> |
|   | 240 l/min | <b>PXB-B4131BD2</b> |

Black - 2 positions - With 1 NC valve

**Additional switch valves, electrical contact block and mounting brackets**

| Symbol | Flow            | Order code       |
|--------|-----------------|------------------|
|        | 60 l/min<br>NC  | <b>PXB-B3911</b> |
|        | 240 l/min<br>NC | <b>PXB-B4931</b> |
|        | 60 l/min<br>NO  | <b>PXB-B3921</b> |
|        | 240 l/min<br>NO | <b>PXB-B4931</b> |
|        | 60 l/min<br>NC  | <b>PXB-B3912</b> |
|        | 60 l/min<br>NO  | <b>PXB-B3922</b> |

| Symbol | Flow           | Order code        |
|--------|----------------|-------------------|
|        | 60 l/min<br>NC | <b>PXB-B3111B</b> |
|        | 60 l/min<br>NO | <b>PXB-B3121B</b> |

| Contact               | Order code     |
|-----------------------|----------------|
| Normally open<br>NO   | <b>ZBE-101</b> |
| Normally closed<br>NC | <b>ZBE-102</b> |

All PXB-B4 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3.

| Description    | Order code       |
|----------------|------------------|
| Mounting block | <b>ZB4-BZ009</b> |

**Spring return push buttons**

| Colour | Order code     |
|--------|----------------|
| Black  | <b>ZB4-BA2</b> |
| Green  | <b>ZB4-BA3</b> |
| Red    | <b>ZB4-BA4</b> |

Flush

| Colour | Order code     |
|--------|----------------|
| Black  | <b>ZB4-BC2</b> |
| Green  | <b>ZB4-BC3</b> |
| Red    | <b>ZB4-BC4</b> |

Ø40 mm  
spring return

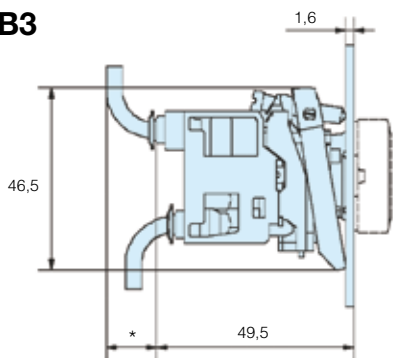
**Selector switches**

| Function          | Order code     |
|-------------------|----------------|
| 2 positions fixed | <b>ZB4-BD2</b> |
| 3 positions fixed | <b>ZB4-BD3</b> |

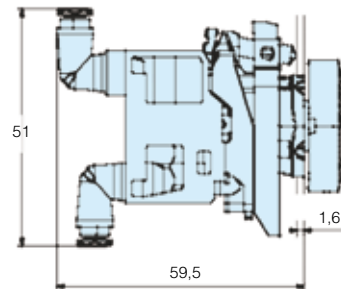
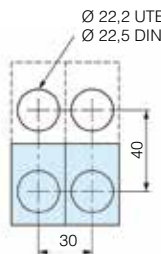
Standard

| Colour actuated | Colour unactuated | Order code       |
|-----------------|-------------------|------------------|
| Green           | Black             | <b>PXV-F131</b>  |
| Red             | Black             | <b>PXV-F141</b>  |
| Yellow          | Black             | <b>PXV-F151</b>  |
| Blue            | Black             | <b>PXV-F161</b>  |
| White           | Black             | <b>PXV-F111</b>  |
| Green           | Red               | <b>PXV-F1314</b> |

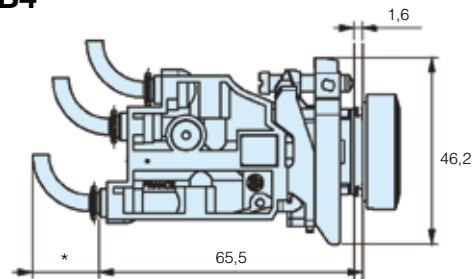
**PXB-B3**



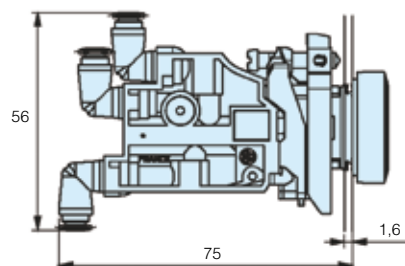
Body width 30mm  
\* With 2 x 4mm tube = 10  
With 2,7 x 4mm tube = 15



**PXB-B4**



Body width 30mm  
\* With 2 x 4mm tube = 10  
With 2,7 x 4mm tube = 15





Compact 3/2 normally closed metal bodied valves with push-in air connections. Designed for the process duty cycle with high durability. Ideal for the process or packaging industry.

- High durability
- Very good repeat accuracy
- Design for process duty cycle
- Push-in connection
- Versatile and easily maintained
- Miniature size

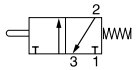
 **For ATEX specific products contact Sales Office**



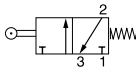
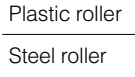
**Operating information**

|   |                  |                 |                     |
|---|------------------|-----------------|---------------------|
| Working pressure; PXC-M   | 3 to 8 bar       |                 |                     |
| Working temperature   | -15 °C to +60 °C |                 |                     |
| <b>PXC-M111</b>   | <b>PXC-M121</b>  | <b>PXC-M521</b> | <b>PXC-M601</b>     |
| Flow (Qmax):  | 60 l/min         | 85 l/min        | 250 l/min 250 l/min |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a> |                  |                 |                     |

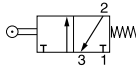
**Bore Ø1,5 mm, flow 60 NI/min**

| Symbol  | Actuator      | Return at 6 bar, N | Operating forces | Order code      |
|---|---------------|--------------------|------------------|-----------------|
|  | Steel plunger | Spring             | 11               | <b>PXC-M111</b> |

**Bore Ø1,5 mm, flow 85 NI/min**

| Symbol  | Actuator       | Return at 6 bar, N | Operating forces | Order code      |
|---|----------------|--------------------|------------------|-----------------|
|  | Plastic roller | Spring             | 4,5              | <b>PXC-M121</b> |
|  | Steel roller   | Spring             | 4,5              | <b>PXC-M131</b> |

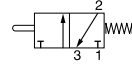
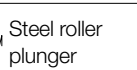
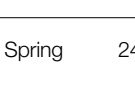
**Bore Ø2,5 mm, flow 250 NI/min**

| Symbol  | Actuator       | Return at 6 bar, N | Operating forces | Order code      |
|---|----------------|--------------------|------------------|-----------------|
|  | Plastic roller | Spring             | 7                | <b>PXC-M521</b> |

**3/2 compact limit switches -**

With Ø4mm Push-in connections with pipeable exhaust port

**Bore Ø2,5mm, flow 250 NI/min - With plunger head**

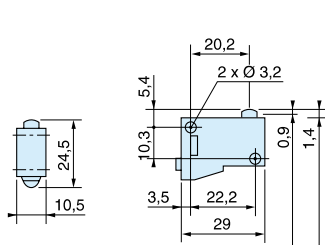
| Symbol  | Actuator                 | Return at 6 bar, N | Operating forces | Order code          |
|---|--------------------------|--------------------|------------------|---------------------|
|      | Steel plunger            | Spring             | 24               | <b>PXC-M601A110</b> |
|    | Steel roller plunger     | Spring             | 24               | <b>PXC-M601A102</b> |
|  | 90° Steel roller plunger | Spring             | 24               | <b>PXC-M601A103</b> |

**Dimensions, Limit switches, Series PXC**

All dimensions in mm unless otherwise stated

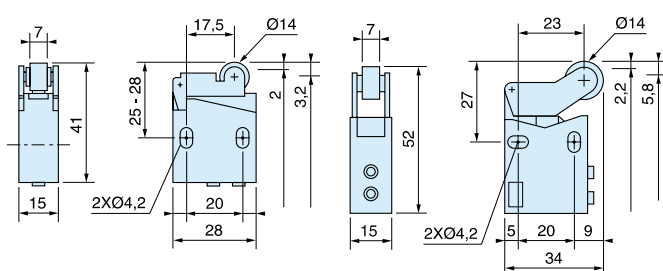
**3/2 miniature limit switches**

**PXC-M111      PXC-Z12      PXC-Z11**



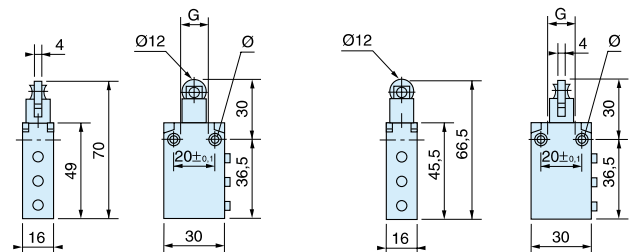
**PXC-M121 - PXC-M131**

**PXC-M521**

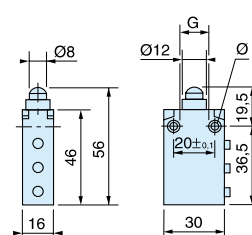


**3/2 compact limit switches**

**PXC-M601A102      PXC-M601A103**



**PXC-M601A110**



Ergonomically designed units to provide protection against accidental operation of machines. Completely sealed units prevent tampering and comply with latest European safety standards.



- Ergonomic design
- Robust polymer or metal enclosure
- Meets requirements for protection against accidental operation and tampering
- Metal enclosure features a wrist-rest bar which helps prevent illness due to repetitive actions
- Conforms to EN574 and EN954-1 requirements

**Operating information**

|   |                 |
|---|-----------------|
| Working pressure  | 3 to 8 bar      |
| Working temperature   | -5 °C to +60 °C |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a> |                 |

**Control module only**

| Symbol | Connections      | Order code     |
|--------|------------------|----------------|
|        | Ø4 mm<br>Push-in | <b>PXP-A11</b> |

**Complete units**

Polymer enclosure, with two Ø40 mm push button with protective guards and control module

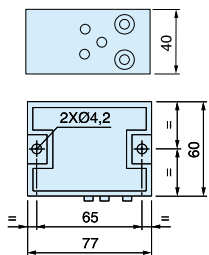
| Symbol | Connections      | Number of control modules | Order code      |
|--------|------------------|---------------------------|-----------------|
|        | Ø4 mm<br>Push-in | 1                         | <b>PXP-C111</b> |
|        | Ø4 mm<br>Push-in | 2                         | <b>PXP-D121</b> |

Metal enclosure, with two Ø60 push buttons, wrist restbar, built in protective guard and control module

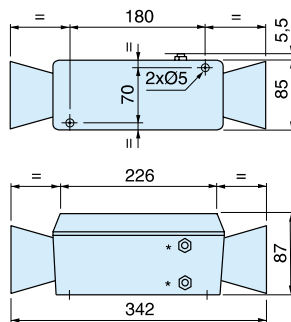
| Symbol | Connections                                     | Number of control modules | Order code      |
|--------|---|---------------------------|-----------------|
|        | Push-in<br>Ø6 mm for supply<br>Ø4 mm for output | 1                         | <b>PXP-S111</b> |
|        | Push-in<br>Ø6 mm for supply<br>Ø4 mm for output | 2                         | <b>PXP-S121</b> |

**Dimensions**

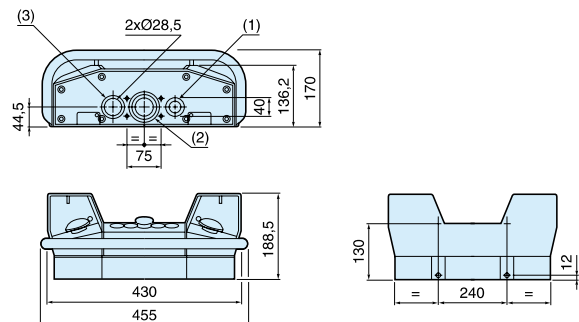
**PXP-A11**



**PXP-C111 and PXP-D121**



**PXP-S111 and PXP-S121**



\* Ø4 mm push-in connections  
\*\* Ø6 mm push-in connections

- 12 mm solenoids sub-base mounting type
- Instant push-in fittings for inlet (Ø 8 mm) and outlets (Ø 4 mm)
- Brass silencer
- Quick response time
- Multi-functional manual override



| Operating Information                         |                | Materials               |                                    |
|---|----------------|-------------------------|------------------------------------|
| Working pressure                              | 0,9 to 8 bar   | Manifold complete :     | Polyamide      Aluminium           |
| Power DC                                      | 1 W            | Armature tube:          | Brass            Stainless steel   |
| Voltage                                       | 24 VDC         | Plunger & core:         | Corrosion resistant Cr-Ni steel    |
| Voltage tolerance                             | +/- 10 %       | Seals:                  | FKM (Viton™)    Low temp FKM       |
| Electrical connection                         | M8             | Screws:                 | Zinc plated      Stainless steel   |
| Flow rate at 6 bar input, 1 bar pressure drop | 15NI/min       | <b>Coil</b>             |                                    |
| Valve function                                | 3/2 NC         | Encapsulation material: | Thermoplastic as standard          |
| Response time                                 | 5 ms           |                         | thermoset resin for M12 connection |
| Frequency                                     | 200 cycles/min |                         |                                    |

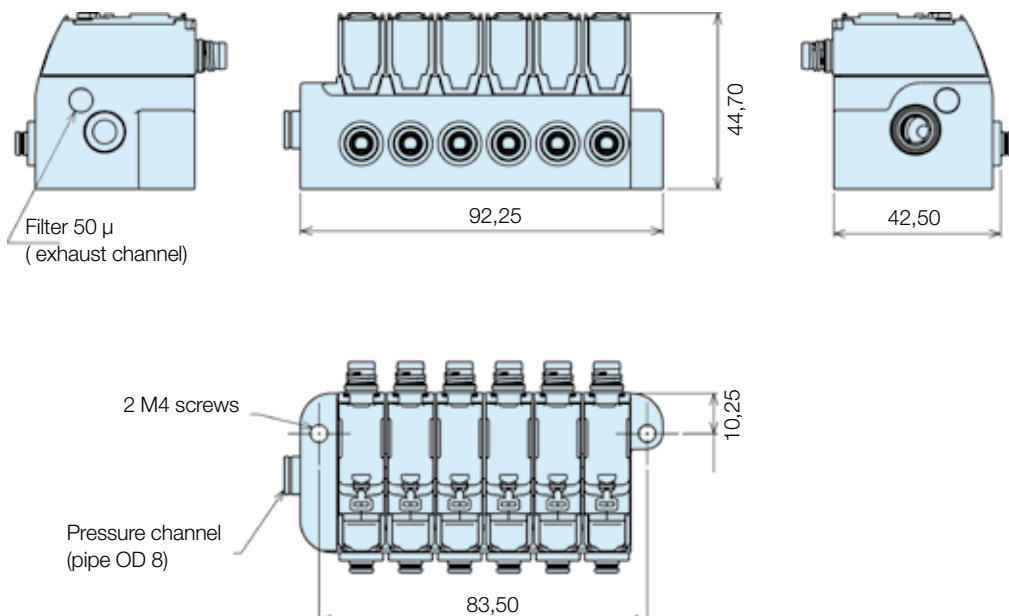
**Order codes**

| Designation                  |     | Weight (kg) | Order code         |
|------------------------------|-----|-------------|--------------------|
| 5 stations manifold complete |     | 0,130       | <b>P2DFIX5PC</b>   |
| 6 stations manifold complete |     | 0,155       | <b>P2DFIX6PC</b>   |
| Electrical connector *       | 2 m | -           | <b>P8LS08L226C</b> |
|                              | 5 m | -           | <b>P8LS08L526C</b> |
|                              | 9 m | -           | <b>P8LS08L926C</b> |

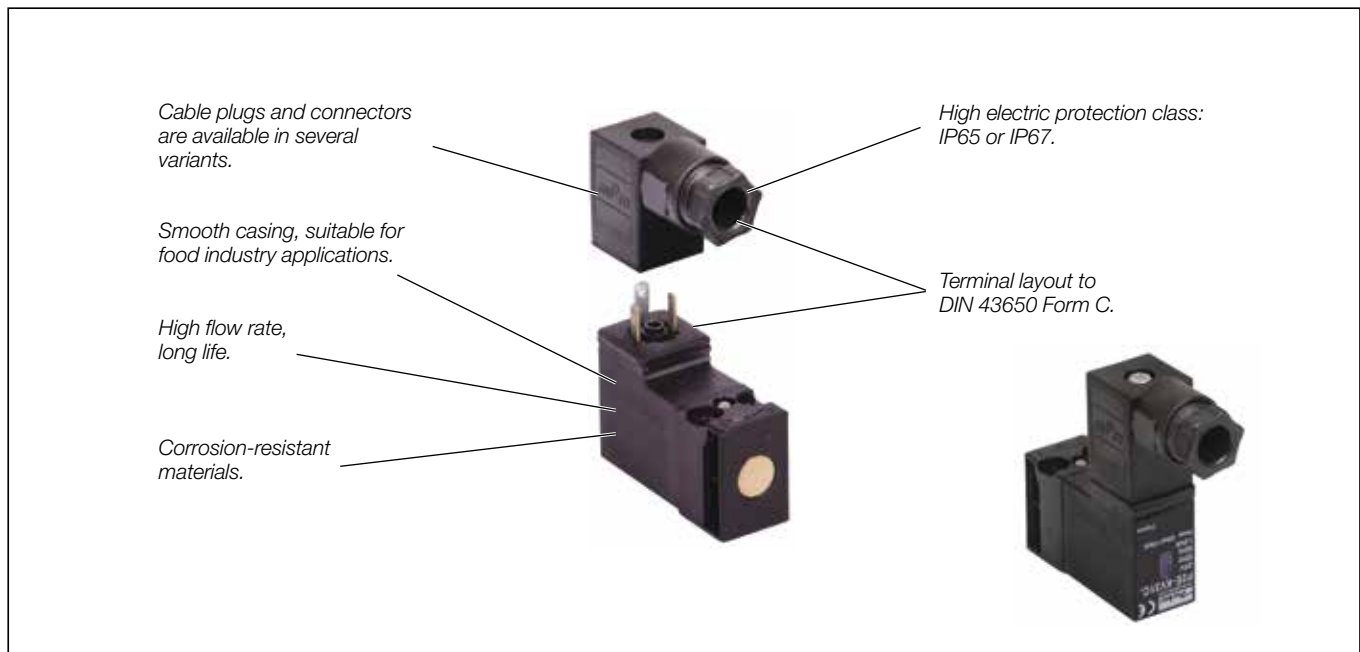


\* Clip-on individual electrical connector, for each solenoid pilot, IP67 protected, including LED, voltage surge protection and flying lead cable

**Dimensions (mm)**



## Solenoid operators - 15 mm



### The P2E-•V solenoid operator range

The P2E-•V range of operators are normally closed (NC) 3/2 solenoid valves, with exceedingly compact dimensions in relation to their capacity.

#### International standard

The port connection pattern complies with a new French CNOMO standard (in process of drafting), with cable plug connections in accordance with DIN 43650 Form C.

#### Compact design

Overall dimensions of the P2E-•V operators are substantially less than those of earlier generations of solenoid operators.

#### High flow capacity

High flow capacity relative to the electrical operating power as a result of optimised internal flow paths.

#### Corrosion-resistant design

The valve is made of thermoplastic material and stainless steel, with Viton™ and nitrile rubber seals for excellent corrosion resistance.

#### Clean lines suitable for food industry applications, P2E-QV

The valve has been designed in conjunction with several machine manufacturers and organisations in the food processing industry, with corrosion-resistant materials and smooth lines being important starting points. The valve and its accessories have been designed so that there are no gaps or crevices in which dirt could collect.

#### High reliability

Few moving parts result in high reliability, rapid changeover and very long life.

#### Low power demand

The solenoids have a power demand of 1.2 W at 24 VDC and 1.6 VA at 24 VAC, 115 V AC and 230 VAC.

#### High protection class

The protection class is IP 67 when connected using the cable plug with a moulded cable. When using the standard cable plug for fitting by the user, the protection class is IP65, the valve, with Fast-on connectors, has an encapsulation class of IP 20.

#### Insensitive to dirty air

The use of generously sized flow paths (1.0 mm diameter) means that the valve can be used in normal industrial environments without problems of blocking.

#### Manual override as option

The operators can be supplied with our without manual override. The manual override device is available as a screwdriver groove or with a control arm, and is either spring return (blue) or lockable (yellow).

Order key, solenoid operators (15mm)

|          |          |          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>P</b> | <b>2</b> | <b>E</b> | <b>-</b> | <b>Q</b> | <b>V</b> | <b>3</b> | <b>2</b> | <b>C</b> | <b>3</b> |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|

| Valve family |                   |
|--------------|-------------------|
| <b>P2E</b>   | Solenoid operator |

| Subfamily |  |
|-----------|--|
|           | Solenoid operator, 15 mm wide<br>Electric connection acc. to ISO 15217 Form C<br>EI/supply connection on opposite side |
| <b>K</b>  | Standard version   |
| <b>M</b>  | Mobile version   |
| <b>Q</b>  | Food industry version  |
| <b>H</b>  | Hight flow   |

| Type of current |                           |
|-----------------|---------------------------|
| <b>1</b>        | AC 50 Hz                  |
| <b>2</b>        | DC                        |
| <b>4</b>        | AC 50/60 Hz               |
| <b>5</b>        | Mobile and wide band only |

| Voltage  |          |
|----------|----------|
| <b>B</b> | 12 V     |
| <b>C</b> | 24 V     |
| <b>D</b> | 48 V     |
| <b>F</b> | 115 V*   |
| <b>J</b> | 230 V*   |
| <b>W</b> | 37,5 V** |
| <b>T</b> | 72 V**   |
| <b>Y</b> | 78 V**   |
| <b>V</b> | 96 V**   |
| <b>E</b> | 110 V**  |

| Overrides |                             |
|-----------|-----------------------------|
| <b>0</b>  | Without                     |
| <b>1</b>  | Non locking (blue)          |
| <b>2</b>  | Locking (yellow)            |
| <b>3</b>  | Extended non locking (blue) |
| <b>4</b>  | Extended locking (yellow)   |


  

| Valve type / Function |                                 |
|-----------------------|---------------------------------|
| <b>3</b>              | 3/2 valve, normally closed (NC) |
| <b>1</b>              | 3/2 valve, normally opened (NO) |

\* For standard and food type only  
\*\* For mobile "M" version only

Technical data

|                      | NC, Standard  | NC, Food <sup>1)</sup> | NC, Mobile <sup>2)</sup> | NC, Hight flow       |
|----------------------|---|------------------------|--------------------------|----------------------|
| Working pressure     | 0 to 10 bar   | 0 to 10 bar            | 0 to 10 bar              | 0 to 10 bar          |
| Working temperature  | -15 °C to +60 °C  | -15 °C to +60 °C       | -40 °C to +70 °C         | -15 °C to +50 °C     |
| Orifice              | 1,0 mm  | 1,0 mm                 | 1,0 mm                   | 1,4 mm               |
| Flow Qmax            | 33 NI/min   | 33 NI/min              | 22 NI/min                | 50 NI/min            |
| Power, hold          | DC 1,2 W / AC 1,6 VA *  | DC 1,2 W / AC 1,6 VA * | DC 1,4 W                 | DC 1,8 W / AC 2,4 VA |
| Power, surge         | DC 1,2 W / AC 3,5 VA *  | DC 1,2 W / AC 3,5 VA * | DC 1,4 W                 | DC 1,8 W / AC 5,5 VA |
| Connection time      | 100%  | 100%                   | 100%                     | 100%                 |
| Voltage tolerance    | +10%/-15%   | +10%/-15%              | +25%/-30%                | +10%/-15%            |
| Electric connection: | DIN 43650 Form C  |                        |                          |                      |
| Port pattern:        | To future CNOMO standard  |                        |                          |                      |
| Protection:          | IP 65   |                        |                          |                      |
| Approval:            | Standard solenoids are UL 429 recognized and marked with the following symbol  |                        |                          |                      |
| Working media:       | All neutral media, such as compressed air, water, hydraulic oil and many gases.   |                        |                          |                      |
| Design:              | 1) Completely smooth exterior, suitable for food industry.  |                        |                          |                      |
| 2) Mobile standard   | According to European standard EN 50 155.   |                        |                          |                      |

\* Power, hold for 230VAC 2.4VA  
Power, surge for 230VAC 5.5VA

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All cable plugs with a yellow LED also incorporate such protection.

Service life

With compressed air at 6 bar, 20 °C and complying with the requirements for compressed air quality as set out in ISO8573-1 norm (class 4 for dry and class 5 for filtered air), the valves should have a life of at least 50 million cycles.

Materials

Operator

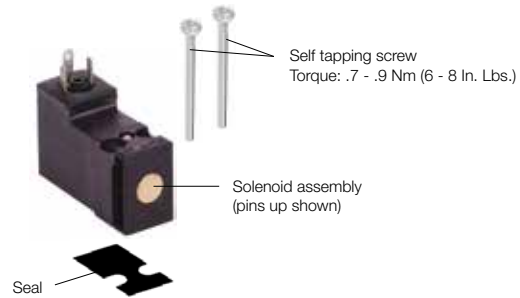
|                      |                                 |
|----------------------|---------------------------------|
| Body, coil casing    | Thermoplastic                   |
| Internal metal parts | Steel                           |
| Screws               | Stainless steel                 |
| Bottom plug          | Thermoplastic                   |
| Sealing materials    | FPM (Viton™) and nitrile rubber |

Cable head

|                 |                                    |
|-----------------|------------------------------------|
| Sheath          | Thermoplastic                      |
| Retaining screw | Stainless steel, zinc-plated steel |

Solenoid Operators - 15 mm

Electrical connection EN175301-803 C/ISO15217 (Ex DIN 43650C)



Solenoids 15 mm NC, standard

(Note! Mounting screws included in basic valve)

|  | Voltage                       | Weight kg | Order code Without manual override | Weight kg | Order code Override, blue, non locking flush | Weight kg | Order code Override, yellow, locking flush |
|--|-------------------------------|-----------|------------------------------------|-----------|--|-----------|--|
|  | 12 VDC                        | 0,038     | <b>P2E-KV32B0</b>                  | 0,038     | <b>P2E-KV32B1</b>                            | 0,038     | <b>P2E-KV32B2</b>                          |
|  | 24 VDC                        | 0,038     | <b>P2E-KV32C0</b>                  | 0,038     | <b>P2E-KV32C1</b>                            | 0,038     | <b>P2E-KV32C2</b>                          |
|  | 48 VDC                        | 0,038     | <b>P2E-KV32D0</b>                  | 0,038     | <b>P2E-KV32D1</b>                            | 0,038     | <b>P2E-KV32D2</b>                          |
|  | 24 VAC 50Hz                   | 0,038     | <b>P2E-KV31C0</b>                  | 0,038     | <b>P2E-KV31C1</b>                            | 0,038     | <b>P2E-KV31C2</b>                          |
|  | 48 VAC 50/60Hz                | 0,038     | <b>P2E-KV34D0</b>                  | 0,038     | <b>P2E-KV34D1</b>                            | 0,038     | <b>P2E-KV34D2</b>                          |
|  | 115 VAC 50Hz/<br>120 VAC 60Hz | 0,038     | <b>P2E-KV31F0</b>                  | 0,038     | <b>P2E-KV31F1</b>                            | 0,038     | <b>P2E-KV31F2</b>                          |
|  | 230 VAC 50Hz/<br>240 VAC 60Hz | 0,038     | <b>P2E-KV31J0</b>                  | 0,038     | <b>P2E-KV31J1</b>                            | 0,038     | <b>P2E-KV31J2</b>                          |

|  | Voltage     | Weight kg | Order code Override extended, blue, non locking flush | Weight kg | Order code Override extended, yellow, locking flush |
|--|-------------|-----------|---|-----------|---|
|  | 24 VDC      | 0,038     | <b>P2E-KV32C3</b>                                     | 0,038     | <b>P2E-KV32C4</b>                                   |
|  | 24 VAC 50Hz | 0,038     | <b>P2E-KV31C3</b>                                     | 0,038     | <b>P2E-KV31C4</b>                                   |

Solenoids 15 mm NC, mobile

(Note! Mounting screws included in basic valve)

|  | Voltage  | Weight kg | Order code Without manual override | Weight kg | Order code Override, blue, non locking flush |
|--|----------|-----------|------------------------------------|-----------|--|
|  | 12 VDC   | 0,038     | <b>P2E-MV35B0</b>                  | 0,038     | <b>P2E-MV35B1</b>                            |
|  | 24 VDC   | 0,038     | <b>P2E-MV35C0</b>                  | 0,038     | <b>P2E-MV35C1</b>                            |
|  | 37,5 VDC | 0,038     | <b>P2E-MV35W0</b>                  | 0,038     | <b>P2E-MV35W1</b>                            |
|  | 48 VDC   | 0,038     | <b>P2E-MV35D0</b>                  | 0,038     | <b>P2E-MV35D1</b>                            |
|  | 72 VDC   | 0,038     | <b>P2E-MV35T0</b>                  | 0,038     | <b>P2E-MV35T1</b>                            |
|  | 78 VDC   | 0,038     | <b>P2E-MV35Y0</b>                  | 0,038     | <b>P2E-MV35Y1</b>                            |
|  | 96 VDC   | 0,038     | <b>P2E-MV35V0</b>                  | 0,038     | <b>P2E-MV35V1</b>                            |
|  | 110 VDC  | 0,038     | <b>P2E-MV35E0</b>                  | 0,038     | <b>P2E-MV35E1</b>                            |

Solenoids 15 mm NC, food industry version

(Note! Mounting screws included in basic valve)

|  | Voltage                       | Weight kg | Order code Without manual override | Weight kg | Order code Override, blue, non locking flush | Weight kg | Order code Override, yellow, locking flush |
|--|-------------------------------|-----------|------------------------------------|-----------|--|-----------|--|
|  | 24 VDC                        | 0,038     | <b>P2E-QV32C0</b>                  | 0,038     | <b>P2E-QV32C1</b>                            | 0,038     | <b>P2E-QV32C2</b>                          |
|  | 48 VDC                        | 0,038     | <b>P2E-QV32D0</b>                  | 0,038     | <b>P2E-QV32D1</b>                            | 0,038     | <b>P2E-QV32D2</b>                          |
|  | 24 VAC 50Hz                   | 0,038     | <b>P2E-QV31C0</b>                  | 0,038     | <b>P2E-QV31C1</b>                            | 0,038     | <b>P2E-QV31C2</b>                          |
|  | 48 VAC 50/60Hz                | 0,038     | <b>P2E-QV34D0</b>                  | 0,038     | <b>P2E-QV34D1</b>                            | 0,038     | <b>P2E-QV34D2</b>                          |
|  | 115 V 50Hz/<br>120 V 60Hz     | 0,038     | <b>P2E-QV31F0</b>                  | 0,038     | <b>P2E-QV31F1</b>                            | 0,038     | <b>P2E-QV31F2</b>                          |
|  | 230 VAC 50Hz/<br>240 VAC 60Hz | 0,038     | <b>P2E-QV31J0</b>                  | 0,038     | <b>P2E-QV31J1</b>                            | 0,038     | <b>P2E-QV31J2</b>                          |

|  | Voltage       | Weight kg | Order code Override extended, blue, non locking flush | Weight kg | Order code Override extended, yellow, locking flush |
|--|---------------|-----------|---|-----------|---|
|  | 24 VDC        | 0,038     | <b>P2E-QV32C3</b>                                     | 0,038     | <b>P2E-QV32C4</b>                                   |
|  | 24 VAC 50Hz   | 0,038     | <b>P2E-QV31C3</b>                                     | 0,038     | <b>P2E-QV31C4</b>                                   |
|  | 115 VAC 50 Hz | 0,038     | <b>P2E-QV31F3</b>                                     | 0,038     | <b>P2E-QV31F4</b>                                   |
|  | 230 VAC 50 Hz | 0,038     | <b>P2E-QV31J3</b>                                     | 0,038     | <b>P2E-QV31J4</b>                                   |

In accordance with the EU Machine Directive, EN 983, solenoid valves with manual override should have spring-return operating arms for safety.

## 2/2-Way Direct Operated Valve

General application valves for dry or lubricated air, neutral gases and liquids

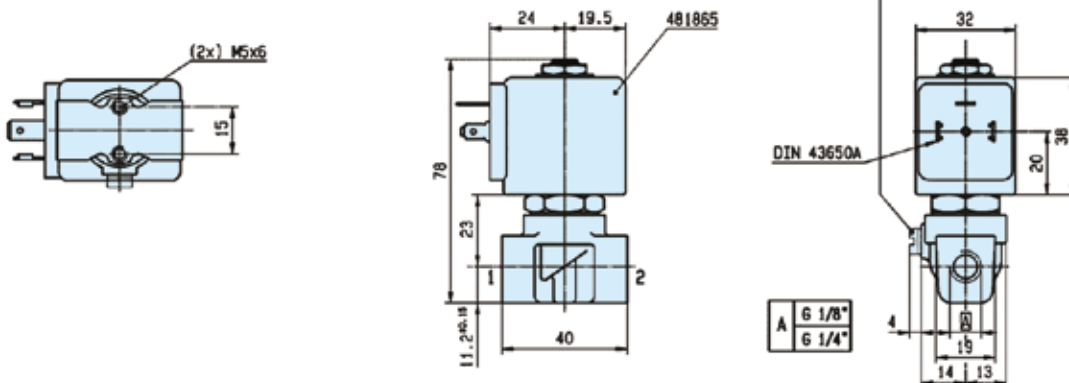


- Description:
- 2/2-Way Direct Operated Valve - Normally Closed.
  - Coil IP65 for 2 P + E plug according to DIN 43650 type A
  - Power Consumption 8W (AC), 9W (DC).
- Applications:
- Shut-off and control (On-Off) of water, air, light oils, steam and inert gases
  - Humidifiers, welding systems, industrial washing machines, automatic dispensers, diesel oil burners, sterilizers, compressors.
- Temperature Range:
- Min: -10°C | Max: see table
- Seals Material:
- See table
- Advantages:
- Versatile product for many 2/2 NC valve requiring applications, robust design.

| Port size<br>G                       | Orifice<br>mm | K <sub>v</sub><br>l/min | Admissible differential pressure (bar) |         |         | Fluid Temp. | Seal Material<br>C° | Reference number<br>Valve | Reference number |        | Options         |
|--------------------------------------|---------------|-------------------------|--|---------|---------|-------------|---------------------|---------------------------|------------------|--------|-----------------|
|                                      |               |                         | Min.                                   | Max. DC | Max. AC |             |                     |                           | Housing          | Coil   |                 |
| <b>2/2-Way Direct Operated Valve</b> |               |                         |  |         |         |             |                     |                           |                  |        | Normally CLOSED |
| 1/8"                                 | 2.5           | 3.50                    | 0                                      | 10.0    | 28.0    | 100°C       | Ruby <sup>1</sup>   | E121K23                   | 2995             | 481865 | -               |
| 1/8"                                 | 3.0           | 4.50                    | 0                                      | 7.0     | 10.0    | 100°C       | FKM                 | 121K1302                  | 2995             | 481865 | -               |
| 1/4"                                 | 1.2           | 0.85                    | 0                                      | 36.0    | 80.0    | 100°C       | Ruby <sup>1</sup>   | E121K65                   | 2995             | 481865 | -               |
| 1/4"                                 | 1.5           | 1.50                    | 0                                      | 25.0    | 60.0    | 75°C        | PCTFE               | E121K04                   | 2995             | 481865 | -               |
| 1/4"                                 | 1.5           | 1.50                    | 0                                      | 25.0    | 60.0    | 100°C       | Ruby <sup>1</sup>   | E121K67                   | 2995             | 481865 | -               |
| 1/4"                                 | 1.5           | 1.50                    | 0                                      | 20.0    | 20.0    | 100°C       | FKM                 | E121K0402                 | 2995             | 481865 | -               |
| 1/4"                                 | 2.5           | 3.50                    | 0                                      | 10.0    | 28.0    | 75°C        | PCTFE               | E121K07                   | 2995             | 481865 | -               |
| 1/4"                                 | 2.5           | 3.50                    | 0                                      | 7.0     | 14.0    | 100°C       | FKM                 | 121K0706                  | 2995             | 481865 | -               |
| 1/4"                                 | 2.5           | 3.50                    | 0                                      | 10.0    | 28.0    | 100°C       | Ruby <sup>1</sup>   | E121K63                   | 2995             | 481865 | -               |
| 1/4"                                 | 3.0           | 4.50                    | 0                                      | 7.0     | 20.0    | 75°C        | PCTFE               | E121K03                   | 2995             | 481865 | -               |
| 1/4"                                 | 3.0           | 4.50                    | 0                                      | 7.0     | 10.0    | 100°C       | FKM                 | E121K0302                 | 2995             | 481865 | -               |
| 1/4"                                 | 3.0           | 4.50                    | 0                                      | 7.0     | 10.0    | 100°C       | EPDM                | 121K0323                  | 2995             | 481865 | -               |
| 1/4"                                 | 3.0           | 4.50                    | 0                                      | 7.0     | 10.0    | 100°C       | FKM                 | E121K0352                 | 2995             | 481865 | **              |
| 1/4"                                 | 3.0           | 4.50                    | 0                                      | 7.0     | 20.0    | 100°C       | Ruby <sup>1</sup>   | E121K64                   | 2995             | 481865 | -               |
| 1/4"                                 | 4.0           | 7.50                    | 0                                      | 4.0     | 10.0    | 100°C       | FKM                 | 121K02                    | 2995             | 481865 | -               |
| 1/4"                                 | 4.0           | 7.50                    | 0                                      | 4.0     | 10.0    | 100°C       | FKM                 | 121K0250                  | 2995             | 481865 | **              |
| 1/4"                                 | 5.0           | 11.00                   | 0                                      | 2.0     | 7.0     | 100°C       | FKM                 | 121K01                    | 2995             | 481865 | -               |
| 1/4"                                 | 5.0           | 11.00                   | 0                                      | 2.0     | 7.0     | 100°C       | EPDM                | 121K0103                  | 2995             | 481865 | -               |
| 1/4"                                 | 5.0           | 11.00                   | 0                                      | 2.0     | 7.0     | 100°C       | FKM                 | 121K0150                  | 2995             | 481865 | **              |
| 1/4"                                 | 5.0           | 11.00                   | 0                                      | 2.0     | 7.0     | 100°C       | FKM                 | 121K3106                  | 2995             | 481865 | -               |
| 3/8"                                 | 4.0           | 7.50                    | 0                                      | 4.0     | 10.0    | 100°C       | FKM                 | 121K3206                  | 2995             | 481865 | -               |
| 3/8"                                 | 6.0           | 12.00                   | 0                                      | 1.1     | 5.0     | 100°C       | FKM                 | 121K3303                  | 2995             | 481865 | -               |
| 3/8"                                 | 6.0           | 12.00                   | 0                                      | 1.1     | 5.0     | 100°C       | FKM                 | 121K3306                  | 2995             | 481865 | -               |
| 1/2"                                 | 8.5           | 25.00                   | 0                                      | 0.5     | 1.1     | 100°C       | FKM                 | E121K46                   | 2995             | 481865 | -               |
| 1/2"                                 | 11.0          | 36.00                   | 0                                      | 0.3     | 0.7     | 100°C       | FKM                 | E121K45                   | 2995             | 481865 | -               |

<sup>1</sup> Valve with Ruby seal is only compatible with hydraulic oil and neutral liquids

\*\* Manual override standard



## 2/2 & 3/2 Solenoid Valves for High Pressure pneumatic applications - 40 bar

### Product offering:

- 2/2 valves and 3/2 way valves - pilot operated
- Pipe mounting (G 1/2- 3/4) or sub-base mounting
- 1.5 (2) - 40 bar
- Normally open or closed
- Internal or external pilot pressure supply

### Customer Value Proposition:

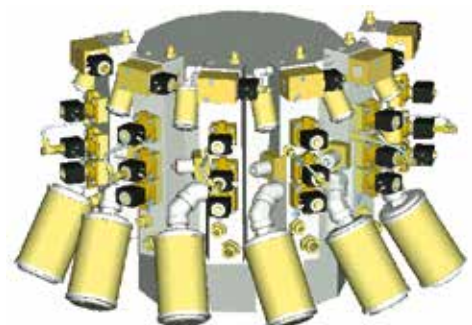
- Safety of operation
- Reliability
- Response time stability
- Repeatability
- No leakage
- Integrated non return valve (421version)

The use of high pressure gases became a necessity in the new technologies developed during the last years.

The control of these fluids can be done through the solenoid valves specially designed by Parker Lucifer for high pressure applications (maximum 50 bar).

The **life expectancy of several millions** of cycles, with **response time of few milliseconds**, allows the use of these valves on intensive applications and on high technology machines, as the plastic bottle blowing machines, or the laser cutting machines.

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs. Please contact your agent for more information.





## Application Example

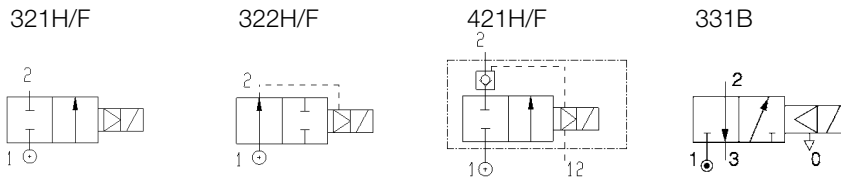
### Main Technical Specifications

#### Function

2/2 pilot operated: Normally closed (with internal pilot pressure) 321H/F type  
 Normally closed (with external pilot pressure) 421H/F type  
 Normally open (with internal pilot pressure) 322H/F type

3/2 pilot operated: normally closed (with internal pressure) 331B type

#### ISO diagram



#### Mounting

- For direct pipe mounting G 1/2" or 3/4" (2/2 Valve type H); G 1/4 (3/2 Valve type B)
- For sub-base mounting (type F)

#### Nominal diameter

15 mm (type H), 14 mm (type F)

#### Pressures

For the version with external pilot pressure, the pilot pressure must always be higher than the controlled pressure

#### External Leakage

0 Ncc/min.

#### Internal Leakage

< 20 Ncc/min.

#### Fluids

Dry lubricated or non lubricated air, Argon, Nitrogen.  
 Oxygen on request

#### Proof pressure

200 bar

#### Filtration

< 1 µm

#### Life expectancy

> 2 10<sup>6</sup> cycles (dry and clean air)  
 > 8 10<sup>6</sup> cycles (lubricated air)

#### Temperatures

Ambient / fluid mini: -10 °C  
 Ambient / fluid maxi: +50 °C

#### Materials specifications

Body/cover: 2/2 Valves: Brass - 3/2 Valves: Aluminium  
 Pilot seals : PUR  
 Main seals : FKM (Viton®) with isolating diaphragm from PUR  
 Tube and plunger : Stainless steel  
 Coil : Encapsulation from PA66 + 30% fiber glass

#### Options

Δp maxi 50 bar on request

#### Response Time

Depends on application

#### Mounting Position

Indifferent

#### Specials

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs.  
 Please contact your agent for more information.

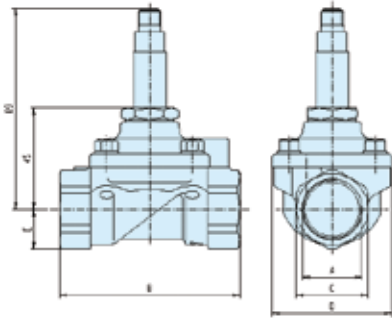
| Port size                                | Orifice | Flow Factor (l/min) | Admissible differential pressure (bar) |         |         | Fluid Temp. | Seal Material (C°) | Global Ref. No. | Reference number |         |                 | Dim. Ref. N°    |
|--|---------|---------------------|--|---------|---------|-------------|--------------------|-----------------|------------------|---------|-----------------|-----------------|
|  |         |                     | Min.                                   | Max. DC | Max. AC |             |                    |                 | Valve            | Housing | Coil            |                 |
| G  | mm      | Gaz Qn              |  |         |         | Gaz Max.    |                    |                 |                  |         |                 |                 |
| <b>2/2 Valves - Direct Pipe Mounting</b> |         |                     |  |         |         |             |                    |                 |                  |         | Normally CLOSED |                 |
| 1/2"                                     | 15      | 3150                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 321H35           | 2995    | 481865          | 1               |
| 3/4"                                     | 15      | 3550                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 321H36           | 2995    | 481865          | 1               |
| <b>2/2 Valves - Direct Pipe Mounting</b> |         |                     |  |         |         |             |                    |                 |                  |         | Normally OPEN   |                 |
| 1/2"                                     | 15      | 3150                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 322H35           | 2995    | 481865          | 2               |
| 3/4"                                     | 15      | 3550                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 322H36           | 2995    | 481865          | 2               |
| <b>2/2 Valves - Direct Pipe Mounting</b> |         |                     |  |         |         |             |                    |                 |                  |         | External Pilot  | Normally CLOSED |
| 1/2"                                     | 15      | 3150                | 2                                      | 40      | 40      | 50          | FKM                | -               | 421H35           | 2995    | 481865          | 3               |
| 3/4"                                     | 15      | 3550                | 2                                      | 40      | 40      | 50          | FKM                | -               | 421H36           | 2995    | 481865          | 3               |
| <b>2/2 Valves - Sub-base Mounting</b>    |         |                     |  |         |         |             |                    |                 |                  |         | Normally CLOSED |                 |
| -  | 14      | 2100                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 321F35           | 2995    | 481865          | 4               |
| -  | 22      | 7000                | 5                                      | 40      | 40      | 50          | FKM                | -               | 321F37           | 2995    | 481865          | -               |
| <b>2/2 Valves - Sub-base Mounting</b>    |         |                     |  |         |         |             |                    |                 |                  |         | Normally OPEN   |                 |
| -  | 14      | 2100                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 322F35           | 2995    | 481865          | 5               |
| -  | 22      | 7000                | 1.5                                    | 40      | 40      | 50          | FKM                | -               | 322F37           | 2995    | 481865          | -               |
| <b>2/2 Valves - Sub-base Mounting</b>    |         |                     |  |         |         |             |                    |                 |                  |         | External Pilot  | Normally CLOSED |
| -  | 14      | 2100                | 2                                      | 40      | 40      | 50          | FKM                | -               | 421F35           | 2995    | 481865          | 6               |
| <b>3/2 Valves - Direct Pipe Mounting</b> |         |                     |  |         |         |             |                    |                 |                  |         | Normally CLOSED |                 |
| 1/4"                                     | 8       | 750                 | 1                                      | 40      | 40      | 50          | PUR                | -               | 331B31           | 2995    | 481865          | 7               |
| <b>3/2 Valves - Sub-base Mounting</b>    |         |                     |  |         |         |             |                    |                 |                  |         | Normally CLOSED |                 |
| -  | 8       | 750                 | 1                                      | 40      | 40      | 50          | PUR                | -               | 331F31           | 2995    | 481865          | -               |

**Available electrical parts:**

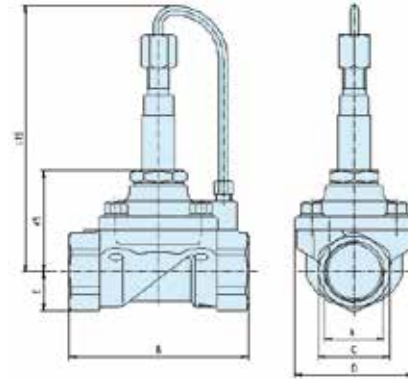
You will find standard available coil details on the next pages.

**Dimensions**

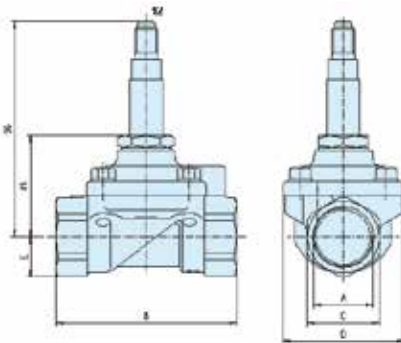
Dimensions Reference N° 1



Dimensions Reference N° 2

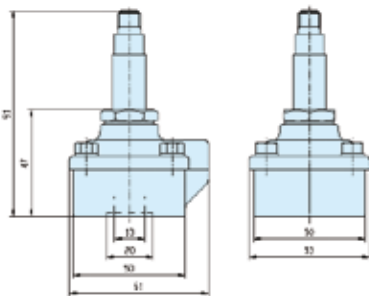


Dimensions Reference N° 3

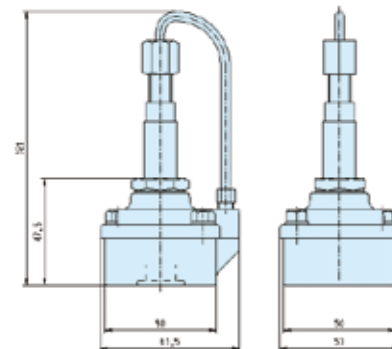


| A     | B  | C  | D  | E    |
|-------|----|----|----|------|
| G3/4" | 80 | 32 | 53 | 17.5 |
| G1/2" | 75 | 27 | 53 | 13.5 |

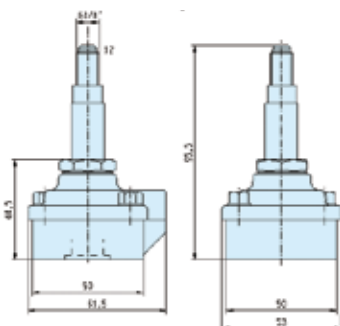
Dimensions Reference N° 4



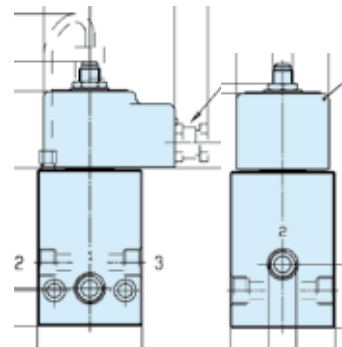
Dimensions Reference N° 5



Dimensions Reference N° 6



Dimensions Reference N° 7



### 3-Way Solenoid Valve - Direct Acting

General application valves for dry or lubricated air, neutral gases and liquids



**Description:**

- 3-Way Solenoid Valve - Direct Acting - Normally Closed.
- Coil IP65 for 2 P + E plug according to DIN 43650 type A
- Power Consumption 8W (AC), 9W (DC).

**Applications:**

- This series is used in applications which require actuation and automatic discharge of moving systems.
- Typical applications can be found in: sterilizers, Cylinder actuation, air compressors, Diesel oil burners, pilot valves, water treatment installations.

**Temperature Range:**

- Min: -10°C | Max: see table

**Seals Material:**

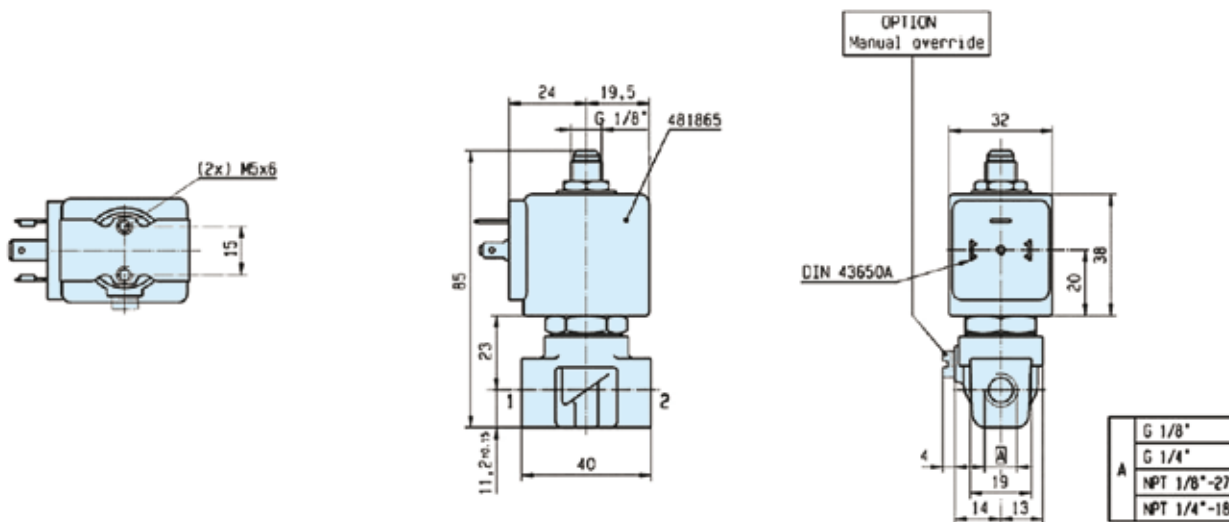
- FKM, PCTFE

**Advantages:**

- Versatile product for many 2/2 NC v alve requiring applications, robust design.

| Port size   | Orifice | K <sub>v</sub> | Admissible differential pressure (bar) |      | Fluid Temp. C° | Seal Material | Reference number |         |        | Options         |
|---|---------|----------------|--|------|----------------|---------------|------------------|---------|--------|-----------------|
|   |         |                | Min.                                   | Max. |                |               | Valve            | Housing | Coil   |                 |
| <b>3-Way Solenoid Valve - Direct Acting - Normally Closed</b> |         |                |  |      |                |               |                  |         |        |                 |
|   |         |                |  |      |                |               |                  |         |        | Normally CLOSED |
| 1/8"  | 1.5     | 1.5            | 0                                      | 15   | 100°C          | FKM           | E131K14          | 2995    | 481865 | -               |
| 1/8"  | 2.0     | 2.5 (3.5)*     | 0                                      | 10   | 100°C          | FKM           | 131K16           | 2995    | 481865 | -               |
| 1/8"  | 2.0     | 2.5 (3.5)*     | 0                                      | 10   | 100°C          | FKM           | 131K1650         | 2995    | 481865 | **              |
| 1/8"  | 2.5     | 3.5            | 0                                      | 7    | 100°C          | FKM           | E131K13          | 2995    | 481865 | -               |
| 1/4"  | 0.8     | 0.3            | 0                                      | 40   | 75°C           | PCTFE         | 131K05           | 2995    | 481865 | -               |
| 1/4"  | 1.5     | 1.5            | 0                                      | 15   | 100°C          | FKM           | E131K04          | 2995    | 481865 | -               |
| 1/4"  | 1.5     | 1.5            | 0                                      | 15   | 100°C          | FKM           | E131K0450        | 2995    | 481865 | **              |
| 1/4"  | 2.0     | 2.5 (3.5)*     | 0                                      | 10   | 100°C          | FKM           | E131K06          | 2995    | 481865 | -               |
| 1/4"  | 2.0     | 2.5 (3.5)*     | 0                                      | 10   | 100°C          | FKM           | E131K0650        | 2995    | 481865 | **              |
| 1/4"  | 2.5     | 3.5            | 0                                      | 7    | 100°C          | FKM           | E131K03          | 2995    | 481865 | -               |
| 1/4"  | 2.5     | 3.5            | 0                                      | 7    | 100°C          | FKM           | E131K0350        | 2995    | 481865 | **              |

\* Kv for Exhaust side  
 \*\* Manual override standard



Please consult the "How to Order" part at the end of each coil chapter.

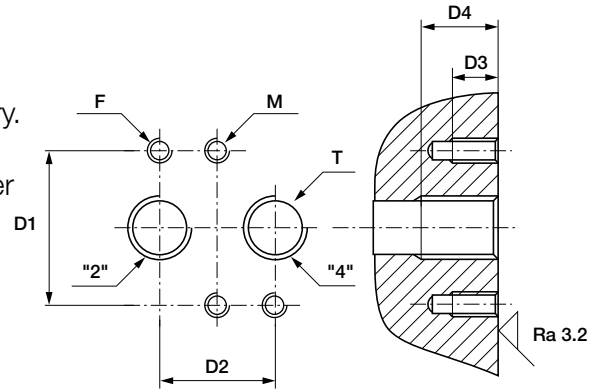
## Valves for Pneumatic Actuator Control

### NAMUR Interfaces 1/4" & 1/2"

NAMUR + piped versions in safe or dangerous areas.

The interface design conforms to the NAMUR standard and to the VDI/VDE 3845 recommendations of the actuator industry. It allows a compact design of the actuator/valve unit. In case of a 3/2 function, the air of the actuator spring chamber also flows through the pilot valve (re-breather function). This prevents corrosion of the actuator springs.

| F  | T   | D1<br>mm | D2<br>mm | D3<br>mm | D4 min.<br>mm | M<br>mm |
|----|-----|----------|----------|----------|---------------|---------|
| M5 | 1/4 | 32       | 24       | 8        | 12            | M5      |
| M6 | 1/2 | 45       | 40       | 10       | 16            | M6      |



F: 2 mounting holes - T: 2 actuators control port - M: 2 holes for dowel pins

- High flow: 1.250 l/min (1/4"), 3.000 l/min (1/2")
- Compact design
- Long life expectancy
- N3x & P3x Series compatible with any Parker Lucifer coil (ATEX or not) of electrical group 2 (8/9 W coils)
- Fail safe standard
- Reduced inventory (3/2 & 5/2 functions with the same valve on 341Nx5 series)
- Mechanical part of the valve ATEX certified according standard EN 13463-1 & -5

### General Information

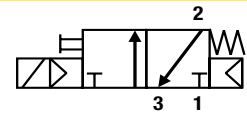
|                                    |  |
|------------------------------------|--|
| Function:                          | 3/2, 5/2, 3/2 <=> 5/2 and 5/3 valves.  |
| Manual override:                   | Standard on all versions.  |
| Design:                            | Nxx & Pxx Series: Solenoid operated spool valve with combined spring and air return & external air pressure operated versions.<br>B0x Series: Solenoid direct acting valve with spring return.   |
| Mounting:                          | Nxx Series: For direct mounting on NAMUR interface 1/4" & 1/2"<br>Pxx Series: Piped valves G1/4" & G1/2"<br>Bxx Series: Equipped with a banjo bolt G1/8" or G1/4"  |
| Mounting position:                 | Indifferent.   |
| Material specifications:           | Aluminium body. Internal parts of stainless steel.<br>Sealing material from NBR.   |
| Range of admissible pressure drop: | $\Delta p$ min. = see table.<br>$\Delta p$ max. = 10 bar.  |
| Media:                             | Dry or lubricated air.   |
| Fluid temperature:                 | Min. 0°C Max. + 50°C   |
| Ambient temperature:               | -20°C to +50°C   |
| Electrical part:                   | N0x / P0x / Bxx Series are compatible with 22 mm coil 496131 / 496482 / 496637 size<br>N3x / P3x Series are compatible with 32/37/40 mm coils part of electrical group 2 (8/9W), including 481865 / 495870 / 495905 Series / N3x90 Series are compatible with coils from electrical group 6,7,8 including coil 495900,495910,483580. |
| Solenoid duty:                     | 100% ED.   |
| Voltage:                           | 481865 coil: 12 VDC , 24 VDC , 48 VDC , 110VDC, 24 V / 50 AC, 48 V / 50 AC, 110 V / 50 AC, 220-230V/50 AC, 115 V / 60 Hz AC, 230 V / 60 AC.  |
| Voltage tolerance:                 | $\pm$ 10% of nominal for 481865 coil.  |
| Class of insulation material:      | Class F for 481865 coil.   |
| Standards:                         | Mechanical ATEX conform to EN 13463-1 & -5.  |

# NAMUR Valves G1/4" Series

## Solenoid Operated Versions N03-N05 Series with 22 mm Coil

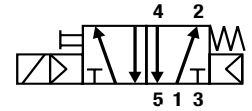
| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) |     | Max. admissible fluid temperature (°C) |                     | Seat disc | Reference number    |       |         | Consumption Power (Watt) |    | Weight (g) | Dimensions Reference |
|-----------|---------|----------------|--|-----|--|---------------------|-----------|---------------------|-------|---------|--------------------------|----|------------|----------------------|
|           |         |                | max.                                   | DC= | AC~                                    | min. = 0°C          |           | Air & Neutral gases | Valve | Housing | Coil                     | DC |            |                      |
| G         | mm      | l/min          | min                                    | DC= | AC~                                    | Air & Neutral gases |           |                     |       |         |                          |    |            |                      |

### 3/2 Solenoid operated - Combined spring & air return (monostable)



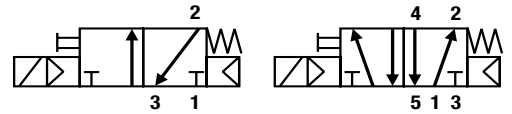
|     |   |      |     |    |    |    |     |               |   |               |   |   |     |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|---------------|---|---|-----|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>331N03</b> | - | <b>496131</b> | 3 | 3 | 300 | 1 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>331N03</b> | - | <b>496482</b> | 3 | 3 | 300 | 1 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>331N03</b> | - | <b>496637</b> | 3 | 3 | 300 | 1 |

### 5/2 Solenoid operated - Combined spring & air return (monostable)



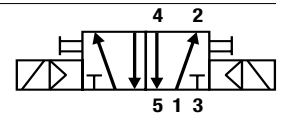
|     |   |      |     |    |    |    |     |               |   |               |   |   |     |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|---------------|---|---|-----|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N03</b> | - | <b>496131</b> | 3 | 3 | 300 | 2 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N03</b> | - | <b>496482</b> | 3 | 3 | 300 | 2 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N03</b> | - | <b>496637</b> | 3 | 3 | 300 | 2 |

### 3/2 <=> 5/2 with conversion plate - Solenoid operated Combined spring & air return (monostable)



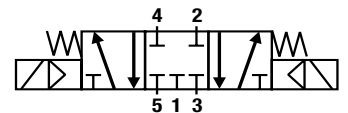
|     |   |      |     |    |    |    |     |                  |   |               |   |   |     |   |
|-----|---|------|-----|----|----|----|-----|------------------|---|---------------|---|---|-----|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N05</b>    | - | <b>496131</b> | 3 | 3 | 310 | 3 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N05</b>    | - | <b>496482</b> | 3 | 3 | 310 | 3 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N05</b>    | - | <b>496637</b> | 3 | 3 | 310 | 3 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N0502*</b> | - | <b>496131</b> | 3 | 3 | 310 | 3 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N0502*</b> | - | <b>496482</b> | 3 | 3 | 310 | 3 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N0502*</b> | - | <b>496637</b> | 3 | 3 | 310 | 3 |

### 5/2 Solenoid operated and return (bistable)



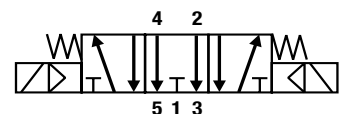
|     |   |      |     |    |    |    |     |               |   |               |   |   |     |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|---------------|---|---|-----|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N03</b> | - | <b>496131</b> | 3 | 3 | 430 | 4 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N03</b> | - | <b>496482</b> | 3 | 3 | 430 | 4 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N03</b> | - | <b>496637</b> | 3 | 3 | 430 | 4 |

### 5/3 W1 closed in center position - Solenoid operated and return



|     |   |      |     |    |    |    |     |               |   |               |   |   |     |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|---------------|---|---|-----|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>342N03</b> | - | <b>496131</b> | 3 | 3 | 430 | 4 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>342N03</b> | - | <b>496482</b> | 3 | 3 | 430 | 4 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>342N03</b> | - | <b>496637</b> | 3 | 3 | 430 | 4 |

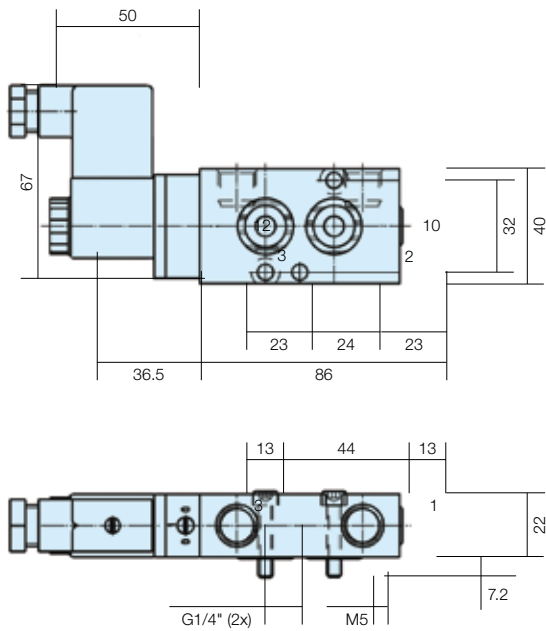
### 5/3 W3 exhausted in center position Solenoid operated and return



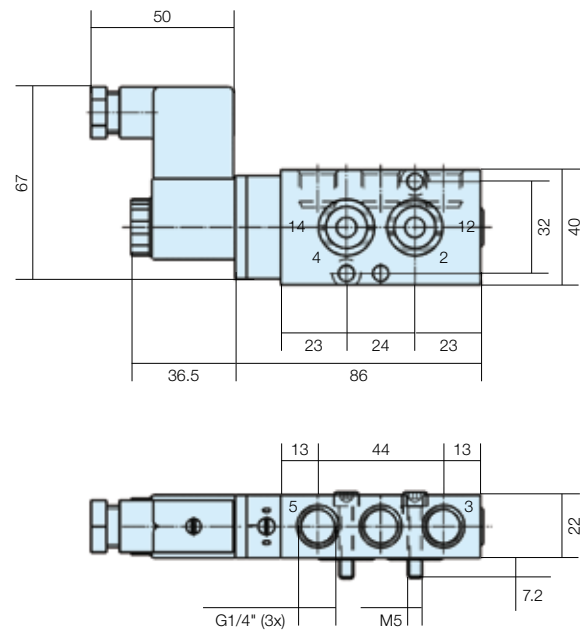
|     |   |      |     |    |    |    |     |               |   |               |   |   |     |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|---------------|---|---|-----|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>343N03</b> | - | <b>496131</b> | 3 | 3 | 430 | 4 |
|-----|---|------|-----|----|----|----|-----|---------------|---|---------------|---|---|-----|---|

Please consult the "How to Order" part at the end of each coil chapter.

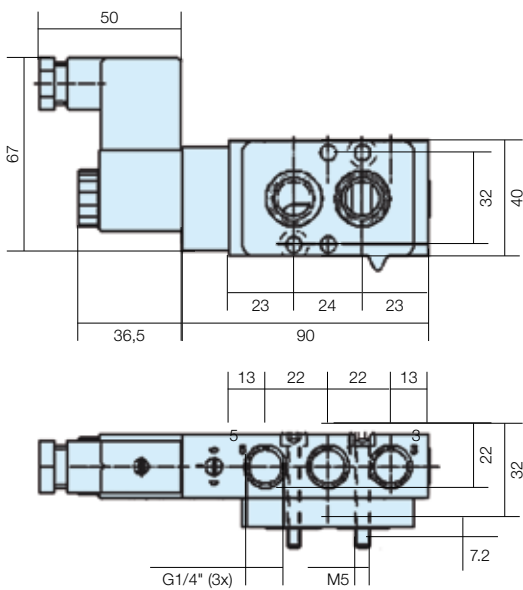
Dimensions Reference 1



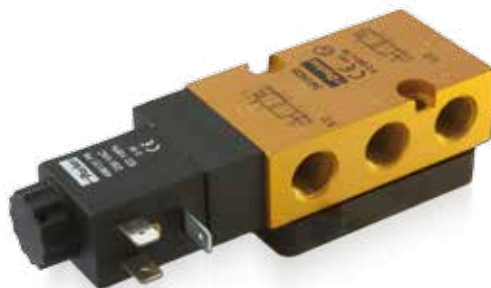
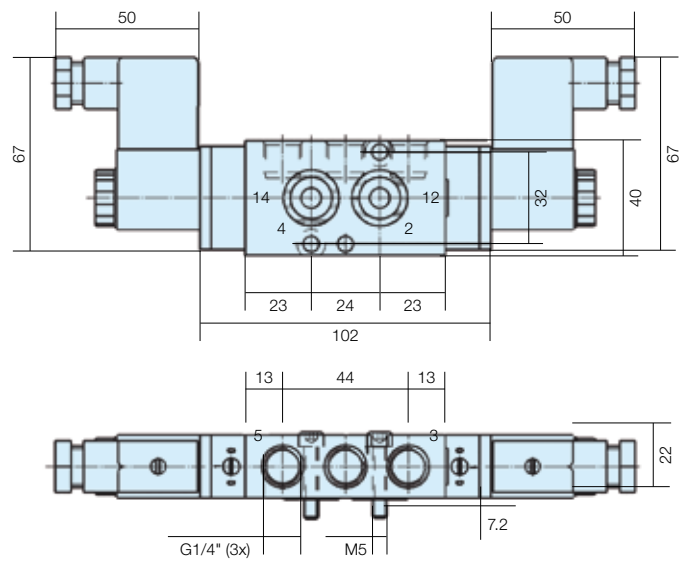
Dimensions Reference 2



Dimensions Reference 3



Dimensions Reference 4



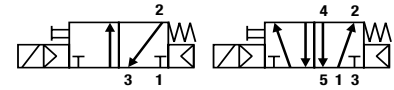
Please consult the "How to Order" part at the end of each coil chapter.

# NAMUR Valves G1/4" Series

## Solenoid Operated Versions N33-N35 Series with 32 / 37 / 40 mm Coil

| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) |     |     | Maximum admissible fluid temperature (°C) |       | Seat disc | Reference number |      |    | Consumption Power (Watt) |  | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|-----|-----|---|-------|-----------|------------------|------|----|--------------------------|--|------------|--------------|-----------|
|           |         |                | maximum                                | DC= | AC~ | Air & Neutral gases                       | Valve |           | Housing          | Coil | DC | AC                       |  |            |              |           |
| G         | mm      | l/min          | min                                    | DC= | AC~ | Air & Neutral gases                       |       |           |                  |      |    |                          |  |            |              |           |

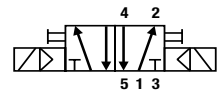
### 3/2 <=> 5/2 with conversion plate - Solenoid operated Combined spring & air return (monostable)



|     |   |      |     |    |    |    |     |                  |             |        |       |     |     |   |   |
|-----|---|------|-----|----|----|----|-----|------------------|-------------|--------|-------|-----|-----|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N35</b>    | <b>2995</b> | 481865 | 9     | 8   | 480 | 2 | 5 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N35</b>    | <b>2995</b> | 495870 | 9     | 8   | 700 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N35</b>    | -           | 495905 | 8     | 8   | 740 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N3502*</b> | <b>2995</b> | 481865 | 9     | 8   | 480 | 2 | 5 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N3502*</b> | <b>2995</b> | 495870 | 9     | 8   | 700 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N3502*</b> | -           | 495905 | 8     | 8   | 740 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N3590*</b> | -           | 483580 | 0.5-3 | -   | 560 | 7 | 5 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N3590*</b> | -           | 495910 | 0.3-3 | -   | 920 | 8 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341N3590*</b> | -           | 495900 | 2     | 2,5 | 920 | 6 | - |

\* Valves without manual override

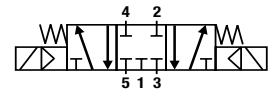
### 5/2 Solenoid operated and return



|     |   |      |     |    |    |    |     |                  |             |        |       |     |      |   |   |
|-----|---|------|-----|----|----|----|-----|------------------|-------------|--------|-------|-----|------|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N33</b>    | <b>2995</b> | 481865 | 9     | 8   | 750  | 2 | 6 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N33</b>    | <b>2995</b> | 495870 | 9     | 8   | 1190 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N33</b>    | -           | 495905 | 8     | 8   | 1270 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N3390*</b> | -           | 483580 | 0.5-3 | -   | 700  | 7 | 6 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N3390*</b> | -           | 495910 | 0.3-3 | -   | 1420 | 8 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347N3390*</b> | -           | 495900 | 2     | 2,5 | 1420 | 6 | - |

\* Valves without manual override

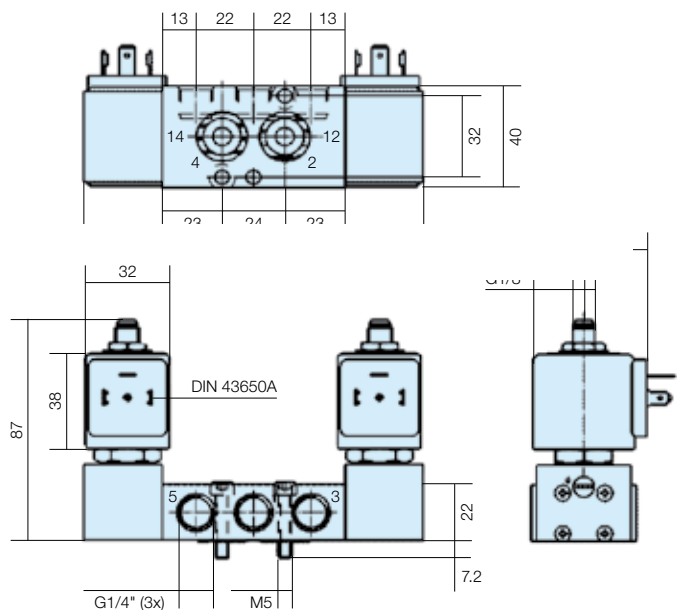
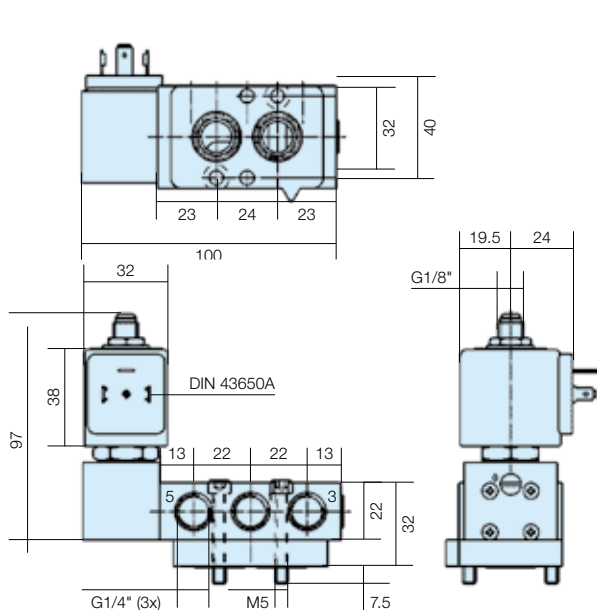
### 5/3 W1 Closed in center position Solenoid operated and return



|     |   |      |     |    |    |    |     |               |             |        |   |   |      |   |   |
|-----|---|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|------|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>342N33</b> | <b>2995</b> | 481865 | 9 | 8 | 750  | 2 | 6 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>342N33</b> | <b>2995</b> | 495870 | 9 | 8 | 1190 | 2 | - |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>342N33</b> | -           | 495905 | 8 | 8 | 1270 | 2 | - |

#### Dimensions Reference 5

#### Dimensions Reference 6



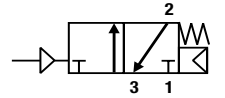


# NAMUR Valves G1/4" Series

## External Pressure Air Operated Series 5xx N03 Series

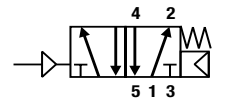
| Port size | Orifice | Q <sub>n</sub> | Admissible differential pressure (bar) |         | Maximum admissible fluid temperature (°C) |         | Seat disc           | Reference number    |         |         | Consumption Power (Watt) |    | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|---------|---|---------|---------------------|---------------------|---------|---------|--------------------------|----|------------|--------------|-----------|
|           |         |                | maximum                                | DC= AC~ | minimum                                   | DC= AC~ |                     | Air & Neutral gases | Valve   | Housing | Coil                     | DC |            |              |           |
| G         | mm      | l/min          | min                                    | DC= AC~ | min                                       | DC= AC~ | Air & Neutral gases | Valve               | Housing | Coil    | DC                       | AC |            |              |           |

**3/2 External pressure air operated  
Combined spring & air return (monostable)  
External pressure supply 2.5 to 10 bar**



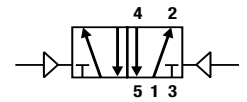
|     |   |      |     |    |    |    |     |               |   |     |   |   |     |   |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>531N03</b> | - | w/o | - | - | 210 | - | 7 |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|

**5/2 External pressure air operated  
Combined spring & air return (monostable)  
External pressure supply 2.5 to 10 bar**



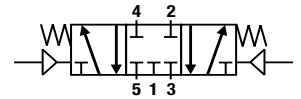
|     |   |      |     |    |    |    |     |               |   |     |   |   |     |   |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>541N03</b> | - | w/o | - | - | 210 | - | 8 |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|

**5/2 External pressure air operated  
External pressure air return (bistable)  
External pressure supply 2.5 to 10 bar**



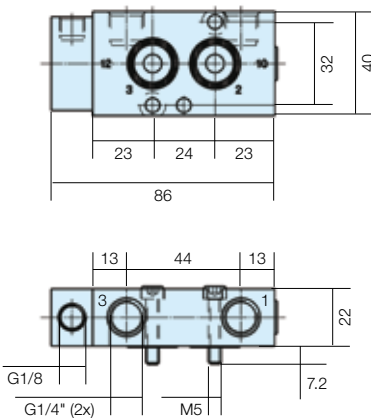
|     |   |      |     |    |    |    |     |               |   |     |   |   |     |   |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>547N03</b> | - | w/o | - | - | 240 | - | 9 |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|

**5/3 W1 closed in center position - External pressure air operated  
External pressure air return  
External pressure supply 2.5 to 10 bar**

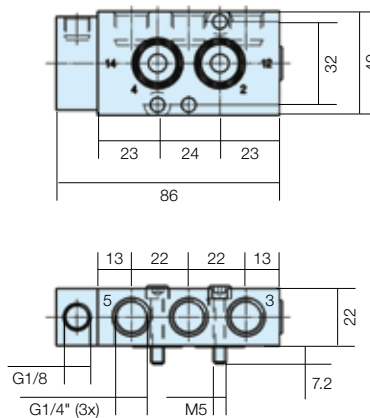


|     |   |      |     |    |    |    |     |               |   |     |   |   |     |   |   |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>542N03</b> | - | w/o | - | - | 240 | - | 9 |
|-----|---|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|---|

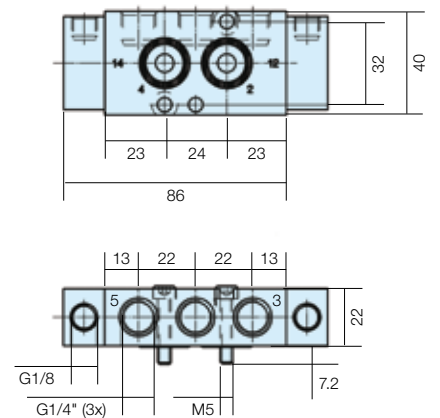
Dimensions Reference 7



Dimensions Reference 8



Dimensions Reference 9

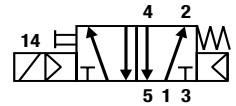


# NAMUR Valves G1/2" Series

## Solenoid Operated Versions N04 Versions with 22 mm Coil

| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) |     | Maximum admissible fluid temperature (°C) | Seat disc | Reference number |         | Consumption Power (Watt) |    | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|-----|---|-----------|------------------|---------|--------------------------|----|------------|--------------|-----------|
|           |         |                | maximum                                | AC~ |   |           | Valve            | Housing | DC                       | AC |            |              |           |
| G         | mm      | l/min          | min                                    | DC= | Air & Neutral gases                       |           |                  | Coil    |                          |    |            |              |           |

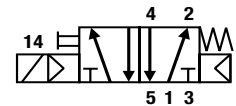
### 3/2 Solenoid operated Combined spring & air return (monostable)



|     |    |      |     |    |    |    |     |                  |   |        |   |   |     |   |    |
|-----|----|------|-----|----|----|----|-----|------------------|---|--------|---|---|-----|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N04</b>    | - | 496131 | 3 | 3 | 910 | - | 10 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N04</b>    | - | 496482 | 3 | 3 | 925 | - | 10 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N04</b>    | - | 496637 | 3 | 3 | 925 | - | 10 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N0402*</b> | - | 496131 | 3 | 3 | 910 | - | 10 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N0402*</b> | - | 496482 | 3 | 3 | 925 | - | 10 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N0402*</b> | - | 496637 | 3 | 3 | 925 | - | 10 |

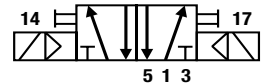
\* Valves without manual override

### 5/2 Solenoid operated Combined spring & air return (monostable)



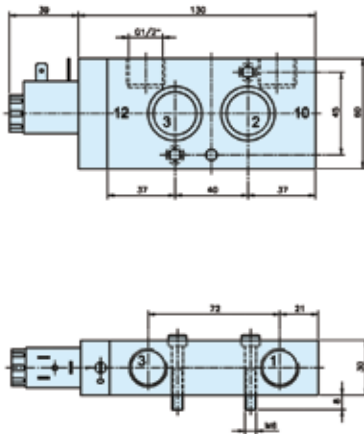
|     |    |      |     |    |    |    |     |               |   |        |   |   |     |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|---|--------|---|---|-----|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341N04</b> | - | 496131 | 3 | 3 | 910 | - | 11 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341N04</b> | - | 496482 | 3 | 3 | 925 | - | 11 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341N04</b> | - | 496637 | 3 | 3 | 925 | - | 11 |

### 5/2 Solenoid operated and return (bistable)

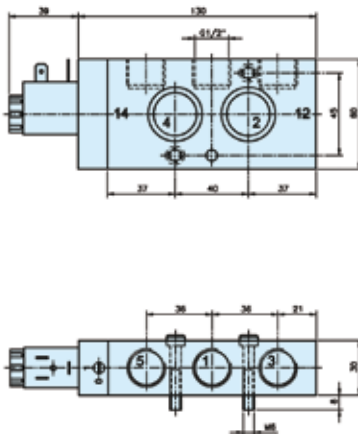


|     |    |      |     |    |    |    |     |               |   |        |   |   |      |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|---|--------|---|---|------|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347N04</b> | - | 496131 | 3 | 3 | 1240 | - | 12 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347N04</b> | - | 496482 | 3 | 3 | 1255 | - | 12 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347N04</b> | - | 496637 | 3 | 3 | 1255 | - | 12 |

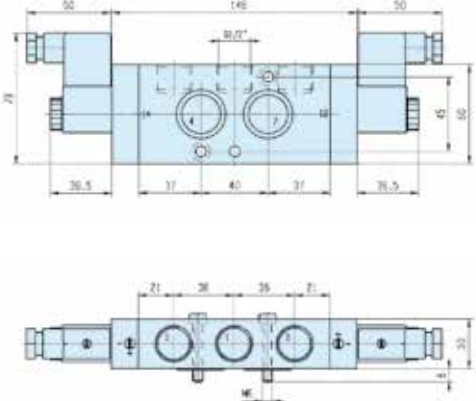
#### Dimensions Reference 10



#### Dimensions Reference 11



#### Dimensions Reference 12



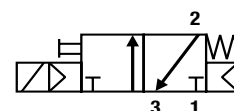
Please consult the "How to Order" part at the end of each coil chapter.

## NAMUR Valves G1/2" Series

### Solenoid Operated Versions N34 Series with 32 / 37 / 40 mm Coil

| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) |         | Maximum admissible fluid temperature (°C) | Seat disc | Reference number |         |      | Consumption Power (Watt) |    | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|---------|---|-----------|------------------|---------|------|--------------------------|----|------------|--------------|-----------|
|           |         |                | maximum                                | DC= AC~ |   |           | Valve            | Housing | Coil | DC                       | AC |            |              |           |
| G         | mm      | l/min          | min                                    | DC= AC~ | Air & Neutral gases                       |           |                  |         |      |                          |    |            |              |           |

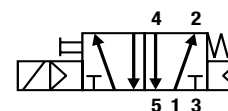
#### 3/2 Solenoid operated Combined spring & air return (monostable)



|     |    |      |     |    |    |    |     |                  |             |        |   |   |      |   |    |
|-----|----|------|-----|----|----|----|-----|------------------|-------------|--------|---|---|------|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N34</b>    | <b>2995</b> | 481865 | 9 | 8 | 810  | 2 | 13 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N34</b>    | <b>2995</b> | 495870 | 9 | 8 | 830  | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N34</b>    | -           | 495905 | 8 | 8 | 1150 | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N3402*</b> | <b>2995</b> | 481865 | 9 | 8 | 810  | 2 | 13 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N3402*</b> | <b>2995</b> | 495870 | 9 | 8 | 830  | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>331N3402*</b> | -           | 495905 | 8 | 8 | 1150 | 2 | -  |

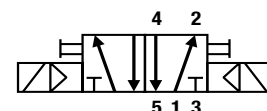
\* Valves without manual override

#### 5/2 Solenoid operated Combined spring & air return (monostable)



|     |    |      |     |    |    |    |     |               |             |        |   |   |      |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|------|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341N34</b> | <b>2995</b> | 481865 | 9 | 8 | 800  | 2 | 14 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341N34</b> | <b>2995</b> | 495870 | 9 | 8 | 820  | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341N34</b> | -           | 495905 | 8 | 8 | 1140 | 2 | -  |

#### 5/2 Solenoid operated and return (bistable)

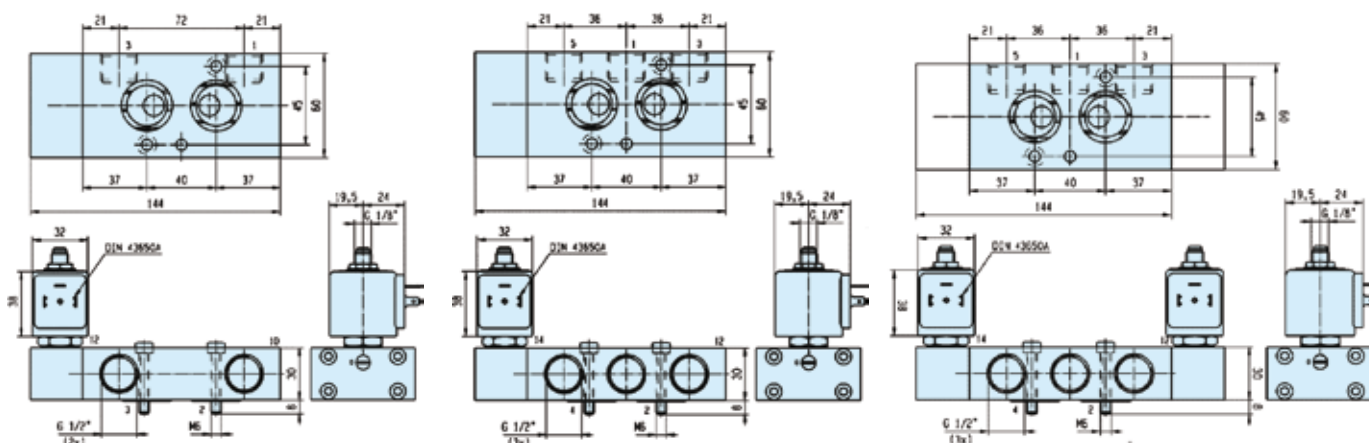


|     |    |      |     |    |    |    |     |               |             |        |   |   |      |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|------|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347N34</b> | <b>2995</b> | 481865 | 9 | 8 | 960  | 2 | 15 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347N34</b> | <b>2995</b> | 495870 | 9 | 8 | 1000 | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347N34</b> | -           | 495905 | 8 | 8 | 1640 | 2 | -  |

Dimensions Reference 13

Dimensions Reference 14

Dimensions Reference 15



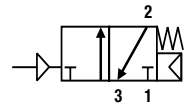
Please consult the "How to Order" part at the end of each coil chapter.

# NAMUR Valves G1/2" Series

## External Pressure Air Operated Series 5 xx N04 Series

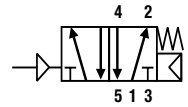
| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) |         | Maximum admissible fluid temperature (°C) |         | Seat disc           | Reference number |         |      | Consumption Power (Watt) |    | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|---------|---|---------|---------------------|------------------|---------|------|--------------------------|----|------------|--------------|-----------|
|           |         |                | minimum                                | DC= AC~ | DC=                                       | AC~     |                     | Valve            | Housing | Coil | DC                       | AC |            |              |           |
| G         | mm      | l/min          | min                                    | DC= AC~ | min                                       | DC= AC~ | Air & Neutral gases |                  |         |      |                          |    |            |              |           |

### 3/2 External pressure air operated Combined spring & air return (monostable) External pressure supply 2.5 to 10 bar



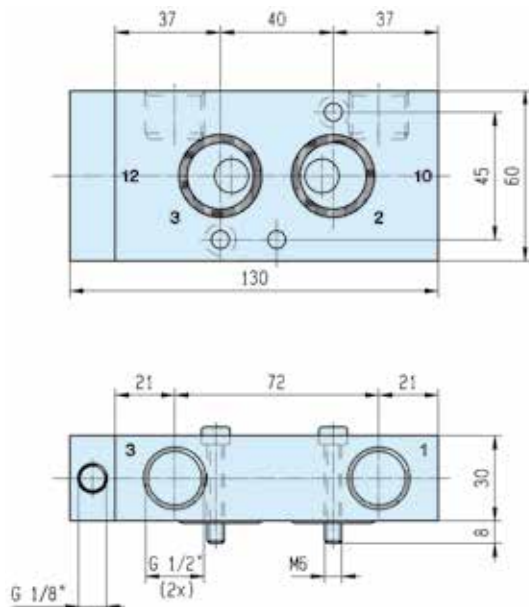
|     |    |      |     |    |    |    |     |               |   |     |   |   |     |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>531N04</b> | - | w/o | - | - | 620 | - | 16 |
|-----|----|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|----|

### 5/2 External pressure air operated Combined spring & air return (monostable) External pressure supply 2.5 to 10 bar

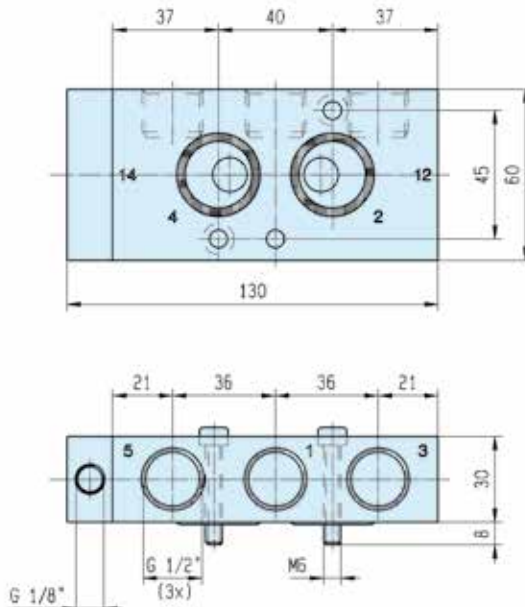


|     |    |      |     |    |    |    |     |               |   |     |   |   |     |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>541N04</b> | - | w/o | - | - | 600 | - | 17 |
|-----|----|------|-----|----|----|----|-----|---------------|---|-----|---|---|-----|---|----|

Dimensions Reference 16



Dimensions Reference 17



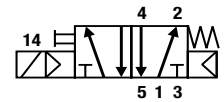
Please consult the "How to Order" part at the end of each coil chapter.

## Piped Valves - G1/4" Series

### Solenoid Operated Versions P03 Versions with 22 mm Coil

| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) maximum |         | Maximum admissible fluid temperature (°C) |       | Seat disc | Reference number |         |      | Consumption Power (Watt) |    | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|---------|---|-------|-----------|------------------|---------|------|--------------------------|----|------------|--------------|-----------|
|           |         |                | min  | DC= AC~ | Air & Neutral gases                       | Valve |           | Housing          | Coil    | DC   | AC                       |    |            |              |           |
| G         | mm      | l/min          | min  | DC= AC~ | Air & Neutral gases                       |       |           | Valve            | Housing | Coil | DC                       | AC |            |              |           |

#### 5/2 Solenoid operated Combined spring & air return (monostable)



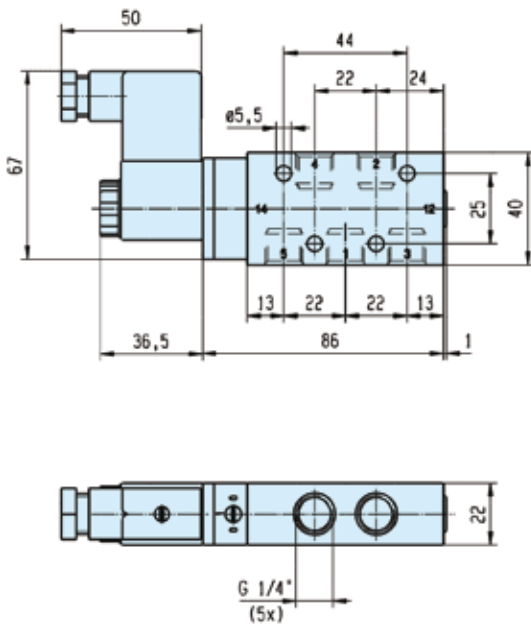
|     |   |      |     |    |    |    |     |               |   |        |   |   |     |   |    |
|-----|---|------|-----|----|----|----|-----|---------------|---|--------|---|---|-----|---|----|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341P03</b> | - | 496131 | 3 | 3 | 250 | - | 18 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341P03</b> | - | 496482 | 3 | 3 | 250 | - | 18 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341P03</b> | - | 496637 | 3 | 3 | 250 | - | 18 |

#### 5/2 Solenoid operated and return (bistable)

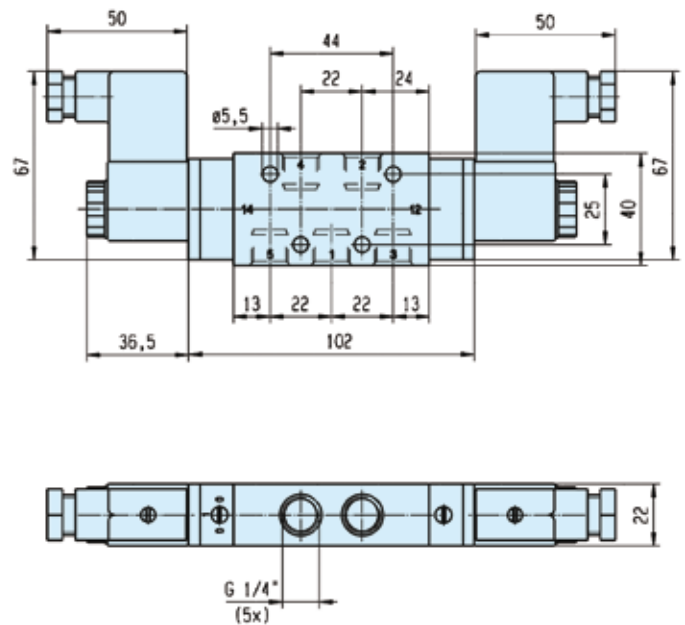


|     |   |      |     |    |    |    |     |               |   |        |   |   |     |   |    |
|-----|---|------|-----|----|----|----|-----|---------------|---|--------|---|---|-----|---|----|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347P03</b> | - | 496131 | 3 | 3 | 350 | - | 19 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347P03</b> | - | 496482 | 3 | 3 | 350 | - | 19 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347P03</b> | - | 496637 | 3 | 3 | 350 | - | 19 |

#### Dimensions Reference 18



#### Dimensions Reference 19



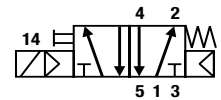
Please consult the "How to Order" part at the end of each coil chapter.

# Piped Valves - G1/4" Series

## Solenoid Operated Versions P33 Versions with 32-37-40 mm Coil

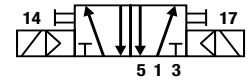
| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) maximum |         | Maximum admissible fluid temperature (°C) |               | Seat disc | Reference number |         |      | Consumption Power (Watt) |    | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|---------|---|---------------|-----------|------------------|---------|------|--------------------------|----|------------|--------------|-----------|
|           |         |                | min  | DC= AC~ | Air & Neutral gases                       | minimum = 0°C |           | Valve            | Housing | Coil | DC                       | AC |            |              |           |

### 5/2 Solenoid operated Combined spring & air return (monostable)



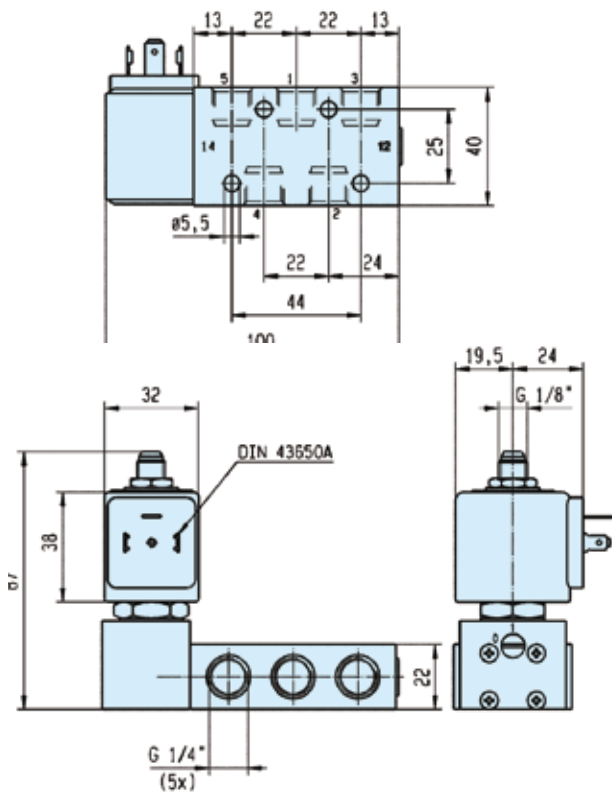
|     |   |      |     |    |    |    |     |               |             |        |   |   |     |   |    |
|-----|---|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|-----|---|----|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341P33</b> | <b>2995</b> | 481865 | 9 | 8 | 470 | 2 | 20 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341P33</b> | <b>2995</b> | 495870 | 9 | 8 | 490 | 2 | -  |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>341P33</b> | -           | 495905 | 8 | 8 | 810 | 2 | -  |

### 5/2 Solenoid operated and return (bistable)

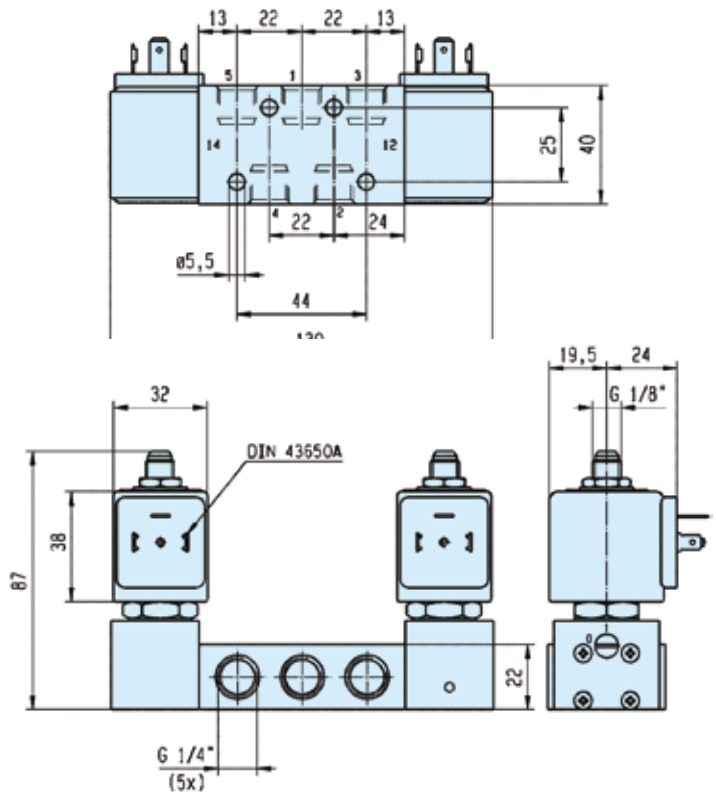


|     |   |      |     |    |    |    |     |               |             |        |   |   |     |   |    |
|-----|---|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|-----|---|----|
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347P33</b> | <b>2995</b> | 481865 | 9 | 8 | 620 | 2 | 21 |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347P33</b> | <b>2995</b> | 495870 | 9 | 8 | 640 | 2 | -  |
| 1/4 | 7 | 1250 | 2.5 | 10 | 10 | 50 | NBR | <b>347P33</b> | -           | 495905 | 8 | 8 | 960 | 2 | -  |

Dimensions Reference 20



Dimensions Reference 21

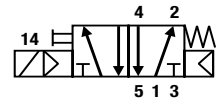


## Piped Valves - G1/2" Series

### Solenoid Operated Versions P04 Versions with 22 mm Coil

| Port size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) maximum |         | Maximum admissible fluid temperature (°C) |       | Seat disc | Reference number |      |    | Consumption Power (Watt) |  | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|---------|---|-------|-----------|------------------|------|----|--------------------------|--|------------|--------------|-----------|
|           |         |                | min  | DC= AC~ | Air & Neutral gases                       | Valve |           | Housing          | Coil | DC | AC                       |  |            |              |           |

#### 5/2 Solenoid operated Combined spring & air return (monostable)



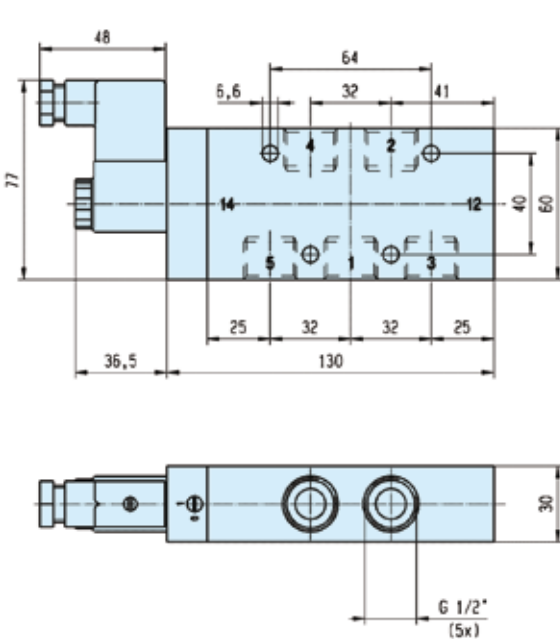
|     |    |      |     |    |    |    |     |               |   |        |   |   |     |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|---|--------|---|---|-----|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341P04</b> | - | 496131 | 3 | 3 | 670 | - | 22 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341P04</b> | - | 496482 | 3 | 3 | 670 | - | 22 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341P04</b> | - | 496637 | 3 | 3 | 670 | - | 22 |

#### 5/2 Solenoid operated and return (bistable)

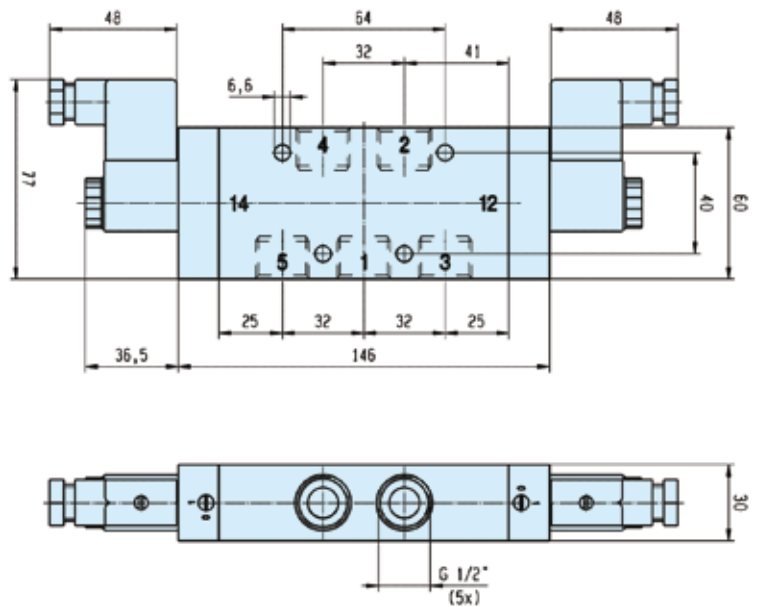


|     |    |      |     |    |    |    |     |               |   |        |   |   |     |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|---|--------|---|---|-----|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347P04</b> | - | 496131 | 3 | 3 | 840 | - | 23 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347P04</b> | - | 496482 | 3 | 3 | 840 | - | 23 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347P04</b> | - | 496637 | 3 | 3 | 840 | - | 23 |

#### Dimensions Reference 22



#### Dimensions Reference 23



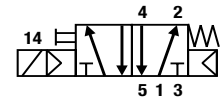
Please consult the "How to Order" part at the end of each coil chapter.

# Piped Valves - G1/2" Series

## Solenoid Operated Versions P34 Versions with 32/37/40 mm Coil

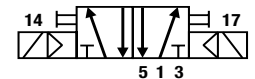
| Port size | Orifice | Q <sub>n</sub> | Admissible differential pressure (bar) |     |     | Maximum admissible fluid temperature (°C) |       | Seat disc | Reference number |      |    | Consumption Power (Watt) |  | Weight (g) | Elect. Group | Dim. Ref. |
|-----------|---------|----------------|--|-----|-----|---|-------|-----------|------------------|------|----|--------------------------|--|------------|--------------|-----------|
|           |         |                | maximum                                | DC= | AC~ | Air & Neutral gases                       | Valve |           | Housing          | Coil | DC | AC                       |  |            |              |           |

### 5/2 Solenoid operated Combined spring & air return (monostable)



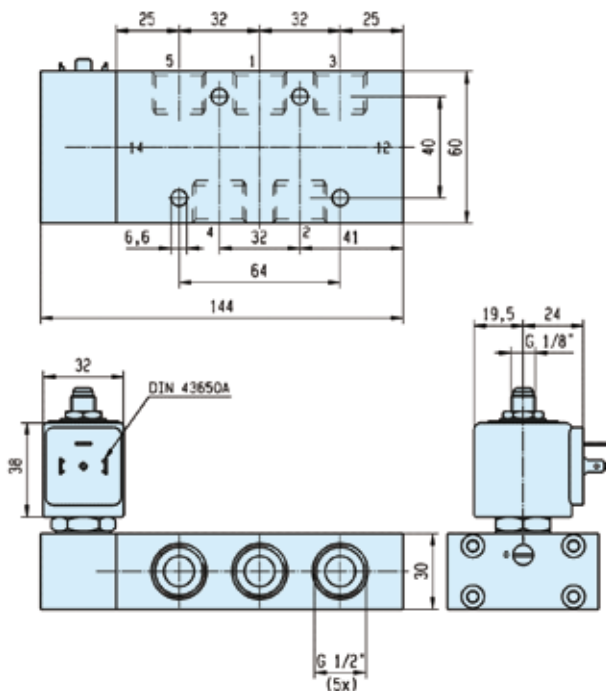
|     |    |      |     |    |    |    |     |               |             |        |   |   |      |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|------|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341P34</b> | <b>2995</b> | 481865 | 9 | 8 | 900  | 2 | 24 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341P34</b> | <b>2995</b> | 495870 | 9 | 8 | 920  | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>341P34</b> | -           | 495905 | 8 | 8 | 1240 | 2 | -  |

### 5/2 Solenoid operated and return (bistable)

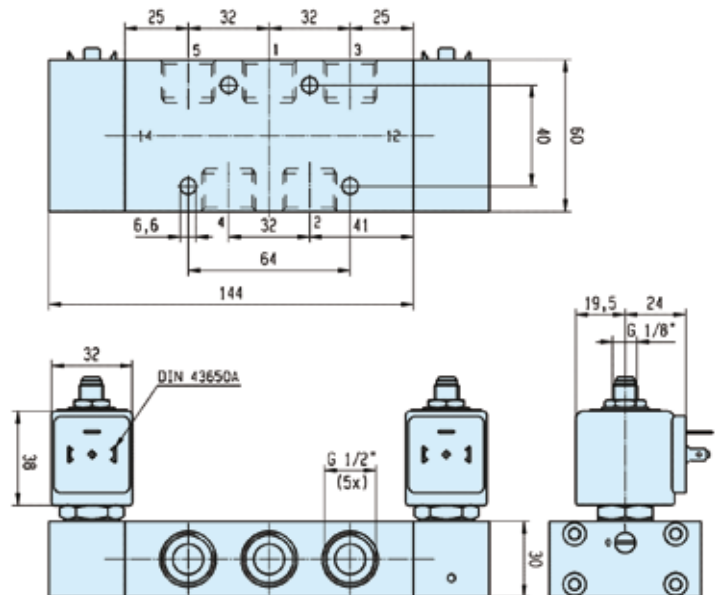


|     |    |      |     |    |    |    |     |               |             |        |   |   |      |   |    |
|-----|----|------|-----|----|----|----|-----|---------------|-------------|--------|---|---|------|---|----|
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347P34</b> | <b>2995</b> | 481865 | 9 | 8 | 1240 | 2 | 25 |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347P34</b> | <b>2995</b> | 495870 | 9 | 8 | 1280 | 2 | -  |
| 1/2 | 12 | 3000 | 2.5 | 10 | 10 | 50 | NBR | <b>347P34</b> | -           | 495905 | 8 | 8 | 2080 | 2 | -  |

### Dimensions Reference 24



### Dimensions Reference 25



Please consult the "How to Order" part at the end of each coil chapter.




## Coils and Spare Parts Informations

### Coils 22 mm for N03-N05 Series

#### Safe Area & ATEX Zone 22

**Ref. 496131 / 496482 / 496637**

These coils with connection for 2 P+G DIN 43650 B plug are encapsulated in synthetic material, conform to the IEC/CENELEC safety standards and comply with European low voltage directive 73/23/EC .

- Power: 3W
  - Insulation Class: F (155°C)
  - Degree of Protection: IP65 (with plug)
  - Duty Cycle: 100% ED
  - Ambient Temperature: -10°C to 50°C
- 3 different types are available:**
- Ref. 496131 for a safe area without plug
  - Ref. 496482 for a safe area with plug
  - Ref. 496637 for an ATEX area Zone 22 



496637 coil series with connection 2P + G when mounted together with the supplied Pg9 plug (delivered with the coil) are suitable for use in dangerous areas (dust Zone 22) according to the European directive ATEX 94/9/C. Protection mode: Ex tD A22 IP65 - T95°C

| Available Voltages | Safe area without DIN plug Order Code | Safe area with DIN plug Order Code | ATEX Zone 22 EX II 3D Order Code |
|--------------------|---------------------------------------|------------------------------------|----------------------------------|
| 12 VDC             | 496131 C1                             | 496482 C1                          | 496637 C1                        |
| 24 VDC             | 496131 C2                             | 496482 C2                          | 496637 C2                        |
| 48 VDC             | 496131 C4                             | 496482 C4                          | 496637 C4                        |
| 110 VDC            | 496131 C5                             | 496482 C5                          | 496637 C5                        |
| 24/50-60 VAC       | 496131 P0                             | 496482 P0                          | 496637 P0                        |
| 48/50-60 VAC       | 496131 S4                             | 496482 S4                          | 496637 S4                        |
| 110/50-60 VAC      | 496131 P2                             | 496482 P2                          | 496637 P2                        |
| 115/60 VAC         | 496131 K8                             | 496482 K8                          | 496637 K8                        |
| 230/50-60 VAC      | 496131 P9                             | 496482 P9                          | 496637 P9                        |

### How to Order

The housing kit is already included into the coil reference, so it's not needed to add it with the order code:

Valve Reference Number - Coil Reference - Voltage code = Order code

**Example: 341N03 - 496131 C2**

Valves and coils may be ordered also separately.

## Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

### Safe Area

Ref. 481865

These coils can be mounted with every Parker solenoid valves corresponding to the specified Coil Group.  
See column "Coil Group" within valve pages. This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc. Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc.

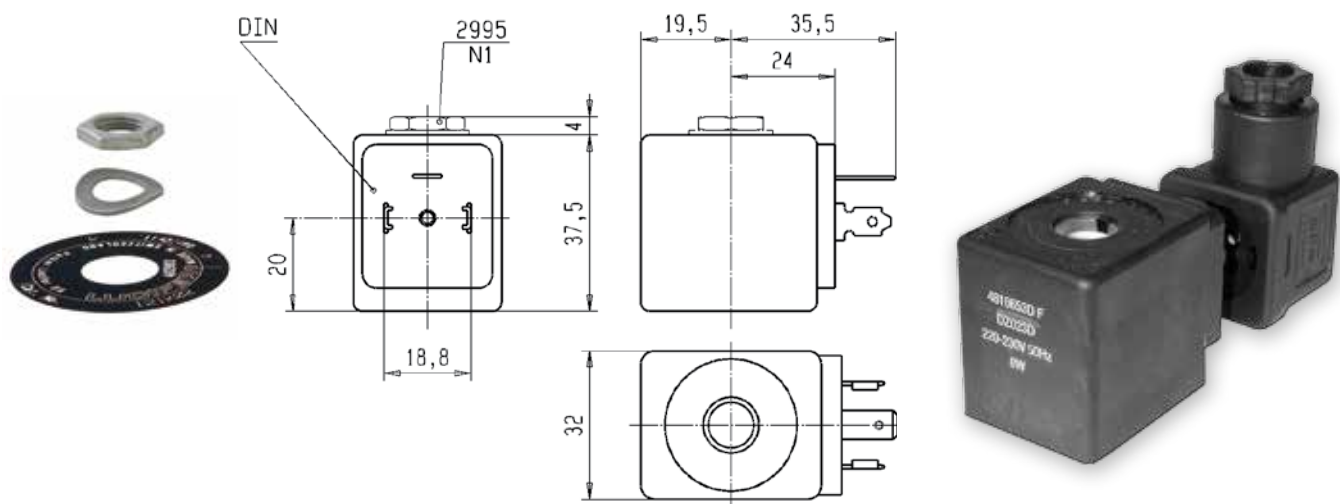
Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.



| Specification           |    | Standard  |             | Double frequency |              |                    |      |
|-------------------------|----|---|-------------|------------------|--------------|--------------------|------|
| Ref. (without DIN plug) |    | 481865  |             | 483510           |              |                    |      |
| Ref. (with DIN plug)    |    | 482725  |             | 482635           |              |                    |      |
| Coil Group              |    | 2.0 / 2.1   |             |                  |              |                    |      |
| Degree of protection    |    | IP65 according to IEC / EN 60529 standards (with DIN plug).                             |             |                  |              |                    |      |
| Class of insulation     |    | F 155°C   |             |                  |              |                    |      |
| Electrical connection   |    | The coil is connected with a 2 P + E plug according to EN 175301-803 type A             |             |                  |              |                    |      |
| Ambient temperature     |    | -40°C to +50°C - The application is limited also by the temperature range of the valve. |             |                  |              |                    |      |
| Elect. Power            | DC | Pn (hot)  | 9 W         |                  | -            |                    |      |
|                         |    | P (cold) 20°C   | 12 W        |                  | -            |                    |      |
|                         | AC | Pn (holding)  | 8 W         |                  | 9 W          |                    |      |
|                         |    | Attraction cold   | 26 VA (9 W) |                  | 32 VA (10 W) |                    |      |
| Weight                  |    | 130 g (without plug)  |             |                  |              |                    |      |
| Voltages "Un"           |    | VAC/Hz  | Code        | VDC              | Code         | VAC/Hz             | Code |
| -10% to +10% of the Un  |    | 24/50   | A2          | 24               | C2           | 24/50, 24/60       | P0   |
|                         |    | 48/50   | A4          | 48               | C4           | 48/50, 48/60       | S4   |
|                         |    | 110/50  | A5          | 110              | C5           | 110-115/50, 120/60 | S5   |
|                         |    | 220-230/50  | 3D          |                  |              | 220-240/50, 240/60 | S6   |

### These coils must be used with suitable housings, see example below:

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage). It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



## How to Order

### To Order a Coil choose Coil Ref + Voltage Code

Example: **481865 for 24VDC = 481865C2**

More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

### To Order a Valve + Coil Combination:

Example: **341N35-2995-481865C2**

## Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

**ATEX Zone 2-22**

**REF. 495870**

These coils can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group. See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T3 to T6 is required.

Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc. Coils conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.

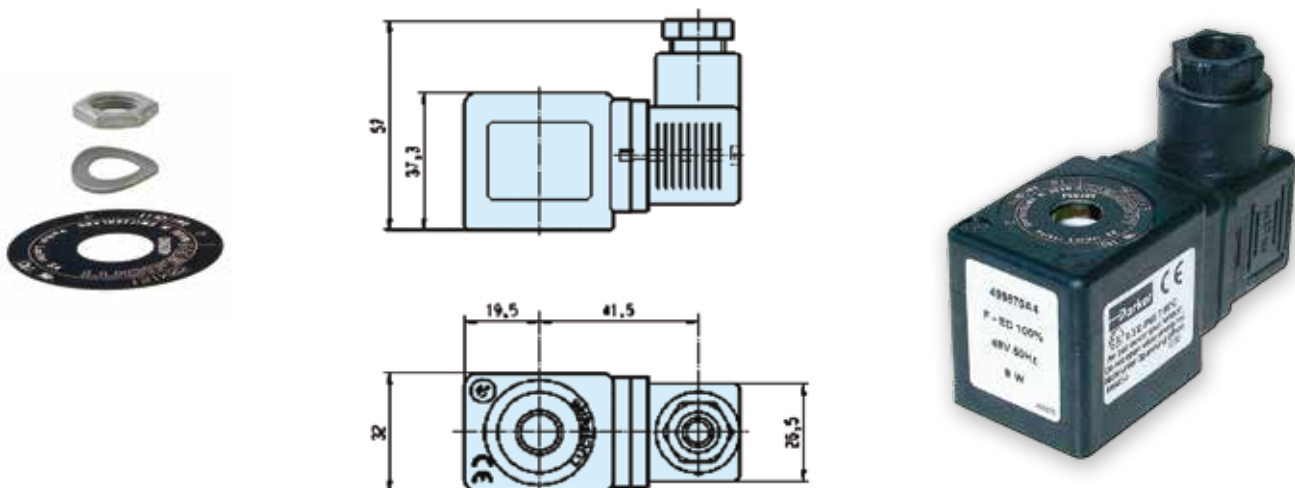
Small size for ease of mounting in confined spaces.



| Reference              |      | 495870   |             |     | 496110                                |              |      |  |
|------------------------|------|--|-------------|-----|---------------------------------------|--------------|------|--|
| Certificate            |      | LCIE 05 ATEX 6003 X  |             |     |                                       |              |      |  |
| Coil Group             |      | 2.0 / 2.1  |             |     |                                       |              |      |  |
| Type of protection     | Gas  | II 3 G - Ex nc AC IIC T3 / T4  |             |     | II 3 G - Ex nc AC IIC T3 / T4         |              |      |  |
|                        | Dust | II 3 D - Ex tc IIIC - T195°C / T130°C  |             |     | II 3 D - Ex tc IIIC - T195°C / T130°C |              |      |  |
| Degree of protection   |      | IP65 (with plug) according to IEC/EN 60529   |             |     |                                       |              |      |  |
| Insulation Class       |      | F (155°C)  |             |     |                                       |              |      |  |
| Duty cycle             |      | 100%   |             |     |                                       |              |      |  |
| Ambiant temperature    |      | -40°C to +50°C<br>The application is limited also by the temperature range of the valve. |             |     |                                       |              |      |  |
| Elect. Power           | DC   | Pn (hot)   | 9 W         |     |                                       | -            |      |  |
|                        |      | P (cold) 20°C  | 12 W        |     |                                       | -            |      |  |
|                        | AC   | Pn (holding)   | 8 W         |     |                                       | 9 W          |      |  |
|                        |      | Attraction cold  | 26 VA (9 W) |     |                                       | 32 VA (10 W) |      |  |
| Weight                 |      | 150 g  |             |     |                                       |              |      |  |
| Voltages "Un"          |      | VAC/Hz   | Code        | VDC | Code                                  | VAC/Hz       | Code |  |
| -10% to +10% of the Un |      | 24/50  | A2          | 24  | C2                                    | 24/50-60     | P0   |  |
|                        |      | 48/50  | A4          | 48  | C4                                    | 48/50-60     | S4   |  |
|                        |      | 110/50   | A5          | 110 | C5                                    | 110/50-60    | S5   |  |
|                        |      | 220-230/50   | 3D          |     |                                       | 220/50-60    | S6   |  |

**These coils must be used with suitable housings, see example below:**

The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage). It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



## How to Order

**To Order a Coil choose Coil Ref + Voltage Code**

Example: 495870 for 24VDC = 495870C2

**To Order a Valve + Coil Combination:**

Example: 341N35-2995-495870C2

# Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

## ATEX Zone 1-21

Ref. 495905

These coils can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.

See column "Coil Group" within valve pages.

Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 is required.

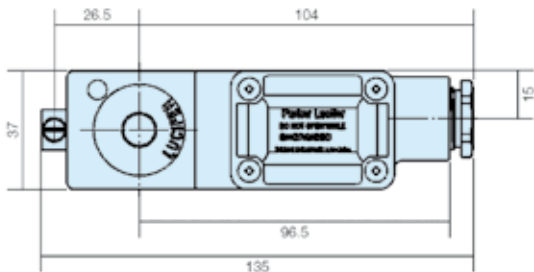
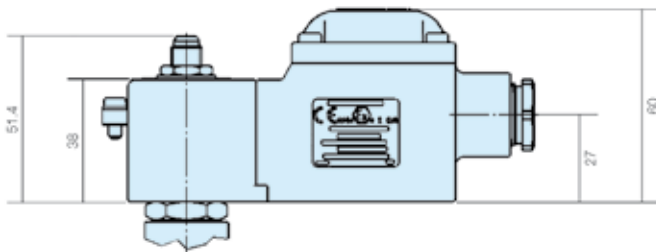
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.

The plastic housing is delivered with M20 x 1.5 cable gland certified for use "db" protection.

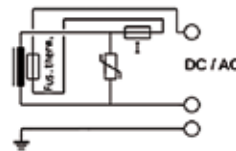
Small size for ease of mounting in confined space.



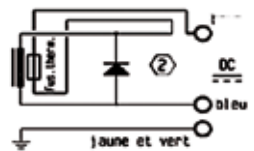
|                              |             |   |             |                  |             |
|------------------------------|-------------|---|-------------|------------------|-------------|
| <b>Reference</b>             |             | <b>495905</b>   |             | <b>495905.05</b> |             |
| <b>Certificate</b>           |             | <b>LCIE 03 ATEX 6451 X - IECEx LCI 06.0004 X</b>  |             |                  |             |
| <b>Coil Group</b>            |             | <b>2.0 / 2.1</b>  |             |                  |             |
| <b>Type of protection</b>    | <b>Gas</b>  | II 2 G - Ex db mb IIC T4  |             |                  |             |
|                              | <b>Dust</b> | II 2 D - Ex tb IIC - 130°C  |             |                  |             |
| <b>Degree of protection</b>  |             | <b>IP67</b>   |             |                  |             |
| <b>Ambient temperature</b>   |             | -40°C to +65°C<br>The application is limited also by the temperature range of the valve.  |             |                  |             |
| <b>Class of insulation</b>   |             | H (180 °)   |             |                  |             |
| <b>Electrical connection</b> |             | Electric connection is done in the connection box on an easily accessible connector terminals.<br>The introduction of the cable (Ø min 5 mm, Ømax. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland. |             |                  |             |
| <b>Elect. Power</b>          | <b>DC</b>   | <b>Pn (hot)</b>   | 8 W         |                  |             |
|                              |             | <b>P (cold) 20°C</b>  | 9 W         |                  |             |
|                              | <b>AC</b>   | <b>Pn (holding)</b>   | 8 W         |                  |             |
|                              |             | <b>Attraction cold</b>  | 9 W         |                  |             |
| <b>Voltages "Un"</b>         |             | <b>VAC/Hz</b>   | <b>Code</b> | <b>VDC</b>       | <b>Code</b> |
| -10% to +10% of Un for AC    |             | 24/50   | A2          | 24               | C2          |
| - 10 % to + 10 % for Un DC.  |             | 48/50   | A4          | 48               | C4          |
|                              |             | 115/50  | E5          | 110              | C5          |
|                              |             | 230/50  | F4          |                  |             |



495905



\*495905.05



## How to Order

To Order a Coil choose Coil Ref + Voltage Code

Example: 495905 for 24VDC = 495905C2

To Order a Valve + Coil Combination:

Example: 341N35-495905C2



## Spare Parts Mounting Kit and Accessories

### Kit for G1/4" Models without conversion plate (N x 3 Series)



Kit includes the 2 mounting screws M5 x 25 A2, the dowel pin M5 x 10 A2, the 2 O-rings NBR 15 x 2.5

**Order code: 496132**

### Kit for G1/4" Models with conversion plate (N x 5 Series)



Kit includes the 2 mounting screws M5 x 35 A2, the dowel pin M5 x 20 A2, the conversion plate equipped with its seals

**Order code: 496742 (equipped plate)**

**Order code: 496852 (screws + pin)**

### Kit for G1/2" Models (N x 4 Series)



Kit includes the 2 mounting screws M6 x 35 A2, the dowel pin M6 x 12 A2, the 2 O-rings NBR 24 x 3

**Order code: 496133**

## Exhaust Flow Regulators



|                |                 |                 |                 |
|----------------|-----------------|-----------------|-----------------|
| Material Body: | Brass           | Filter element: | Sintered bronze |
| Spring:        | Stainless Steel | Seal:           | NBR             |

**G1/8" Order code: 496551**

**G1/4" Order code: 496552**

**G1/2" Order code: 496553**



### Connector for 22 mm Coil

Connector DIN43650 AB Pg9 2P+E

**Order code: 481043**



### Housing for 22 mm Coil

Plastic nut with O-ring

**Order code: 3125**



### Connector for 32 mm Coil

Connector DIN43650 AA Pg9 2P+E

**Order code: 486586**



**G1/8 - 4/3 Way Flat Slide Valves  
 Series DRS**

**Actuation System:**

- Rotary lever
- Rotary switch



**Operating information**

|                           |   |  |
|---------------------------|---|--|
| System                    | Flat slide valve without automatic return to neutral position |  |
| Mounting                  | 2 Screws M4   |  |
| Tube connection           | Thread  |  |
| Port size                 | Port P, A, B: G1/8<br>Port R: M5                              |  |
| Weight (mass)             | 0.500 kg  |  |
| Installation              | In any position   |  |
| Ambient temperature range | -10 °C to +55 °C  | Note:<br>Please consult us for operating temperatures below 0° C |
| Medium temperature range  | -10 °C to +60 °C  |  |
| Medium                    | Filtered compressed air                                       |  |
| Lubrication               | Oil mist lubrication compatible with Buna N                   |  |

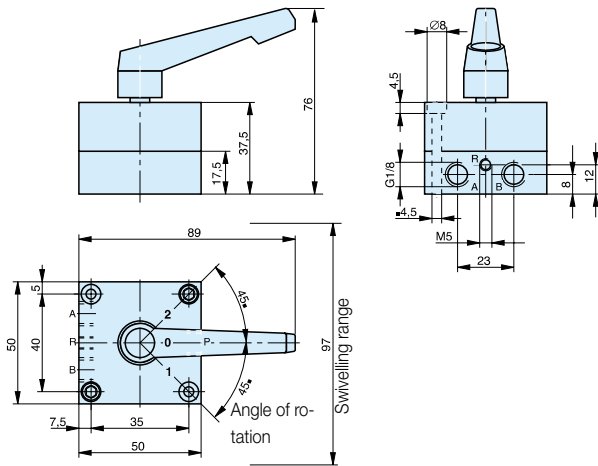
**Pneumatic Characteristics**

|                          |            |
|--------------------------|------------|
| Nominal pressure         | 6 bar      |
| Operating pressure range | 0 – 10 bar |
| Nominal flow             | 350 l/min  |

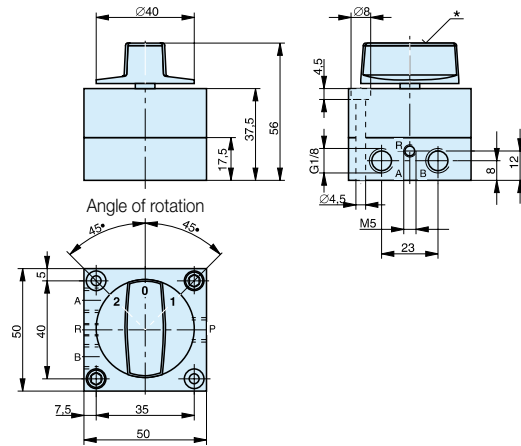
**Actuation**

|                 |         |
|-----------------|---------|
| Manual control  | Direct  |
| Actuation force | ca. 6 N |

**Rotary Lever – Type: DRS 412 .-1/8**



**Rotary Switch – Type: DRS 417 .-1/8**



Port identification:  
 A = 4 Outlet  
 B = 2 Outlet  
 R = 5 Exhaust  
 P = 1 Pressure supply

\* After removing the cover and loosening the mounting screws, the rotary switch is infinitely variable.

**Order Instructions – 4/3 Way Flat Slide Valves, Series DRS**

| Actuation                                    | Symbol | Order Instructions |                 |
|--|--------|--------------------|-----------------|
|  |        | Type               | Order code      |
| Rotary lever<br>Middle position pressurized  |        | DRS 412 B-1/8      | <b>PA 10267</b> |
| Rotary lever<br>Middle position vented       |        | DRS 412 E-1/8      | <b>PA 10266</b> |
| Rotary lever<br>Middle position closed       |        | DRS 412G-1/8       | <b>PA 10268</b> |
| Rotary switch<br>Middle position pressurized |        | DRS 417 B-1/8      | <b>PA 10264</b> |
| Rotary switch<br>Middle position vented      |        | DRS 417 E-1/8      | <b>PA 10263</b> |
| Rotary switch<br>Middle position closed      |        | DRS 417 G-1/8      | <b>PA 10265</b> |



## G1/4 - 3/2 and 5/2 Way Valves Pedal Actuated - Series F

### Actuation System:

- Pedal

Connections for  
3/2 way version:

### Version

„Normally closed“: P, B, S

„Normally open“: P, A, R

\* Only for version “both switch positions indexed”

– return is only effected after actuating the locking pedal.

### Mounting Instruction:

Use only screw connections with max. wrench size  
across flats of 15.



### Connection designation:

- A = 4 Outlet
- B = 2 Outlet
- R = 5 Exhaust
- P = 1 Air supply
- S = 3 Exhaust

### Operating information

|  |   |
|--|---|
| Type                                     | Poppet Valve  |
| Mounting                                 | 4 Screws M8 <sup>(1)</sup>                                |
| Tube connection                          | Thread  |
| Port size                                | G1/4  |
| Weight (mass)                            | 1.5 kg  |
| Installation                             | In any position   |
| Ambient temperature range <sup>(2)</sup> | -10 °C to +55 °C  |
| Medium temperature range <sup>(3)</sup>  | -10 °C to +60 °C  |
| Medium                                   | Filtered and oiled or filtered,<br>unoiled compressed air |
| Lubrication <sup>(2)</sup>               | Oil mist lubrication compatible<br>with Buna N            |

### Pneumatic Characteristics

|                          |            |
|--------------------------|------------|
| Nominal pressure         | 6 bar      |
| Operating pressure range | 0 – 10 bar |
| Nominal flow             | 1400 l/min |

**Actuation**

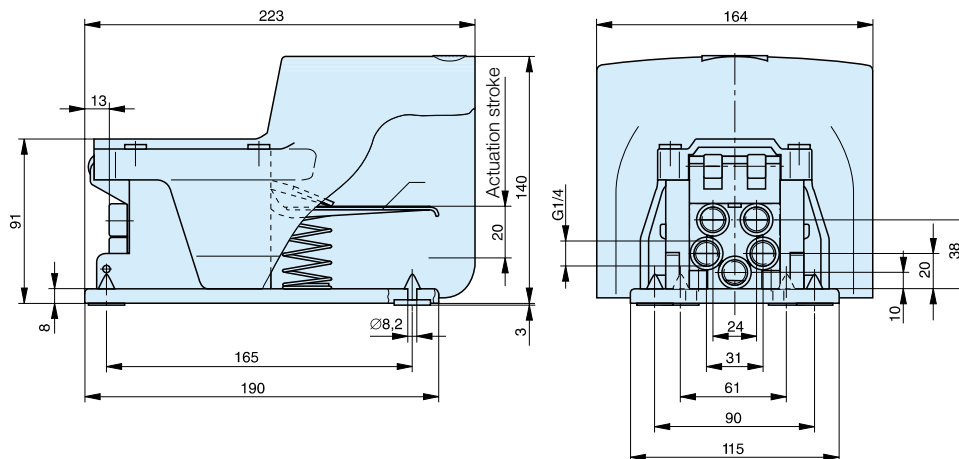
|                 |          |
|-----------------|----------|
| Manual control  | Direct   |
| Stroke          | 2 mm     |
| Actuation force | ca. 30 N |

<sup>(1)</sup> After removing the rubber footing

<sup>(2)</sup> We recommend the use of mineral oil type VG 32 to ISO 3448

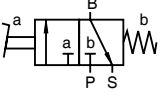
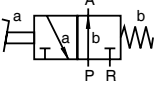
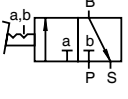
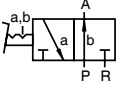
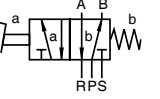
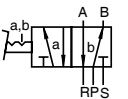
<sup>(3)</sup> Note: Please consult us for operating temperatures below 0° C

### Pedal actuated – Type: F331..-08., F531..-08



Dimensions in mm

## Order Instructions – 3/2 and 5/2 Way Valves

| Actuation                                 | Symbol   | Order Instructions |                |
|---|--|--------------------|----------------|
|   |  | Type               | Order code     |
| Pedal<br>with spring return               |   | F 331RF-08NG*      | <b>KZ 4410</b> |
|   |   | F 331RF-08NO*      | <b>KZ 4411</b> |
| Pedal<br>without reset                    |   | F 331-08NG*        | <b>KZ 4408</b> |
|   |   | F 331-08NO*        | <b>KZ 4409</b> |
| Pedal<br>with spring return               |   | F 531RF-08         | <b>KZ 4413</b> |
| Pedal<br>both switch positions<br>indexed |  | F 531-08           | <b>KZ 4412</b> |

\* NC – Version normally closed  
NO – Version normally open

**G1/2 to G2 - 2/2-Way Stop Valves  
 Series ARKV**

**Actuation System:**

- Pneumatic

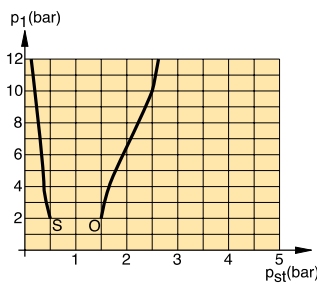


**Operating information**

|                           |                               |                                  |   |
|---------------------------|-------------------------------|----------------------------------|---|
| Description               | 2/2 Way Valve                 | Medium                           | Compressed air, neutral gases, presswater (for low flow- und valve closingspeed only) |
| Type                      | Poppet valve normally closed  | Actuating medium                 | filtered compressed air   |
| Mounting                  | Direct in piping              | <b>Pneumatic characteristics</b> |   |
| Tube connection           | Thread                        | Nominal pressure                 | 6.3 bar   |
| Port size                 | G1/2 G3/4 G1 G1 1/2 G2        | Operating pressure range         | 0–10 bar  |
| Weight (mass) Kg          | 0.745 1.115 1.365 2.695 4.290 | Nominal flow (l/min)             | 2200 5000 6900 22000 40000  |
| Installation              | In any position               | <b>Actuation</b>                 |   |
| Ambient temperature range | -20 °C to +80 °C              | Pneumatic                        | Direct  |
| Medium temperature range  | 0 °C to +80 °C                |                                  |   |

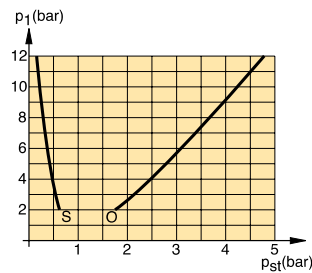
Note:  
Please consult us for operating temperatures below 0 °C

**Actuating Pressure – Type: ARKV-15**



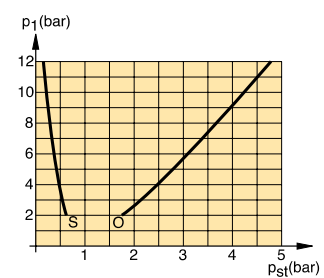
O =  $p_{st \min}$  to open  
 S =  $p_{st \max}$  to close

**Actuating Pressure – Type: ARKV-20**



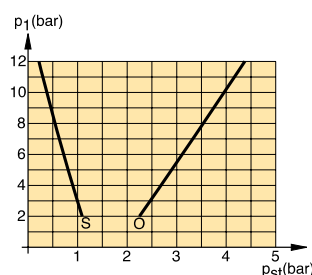
O =  $p_{st \min}$  to open  
 S =  $p_{st \max}$  to close

**Actuating Pressure – Type: ARKV-25**



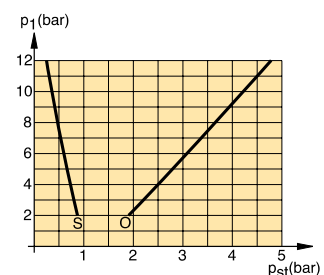
O =  $p_{st \min}$  to open  
 S =  $p_{st \max}$  to close

**Actuating Pressure – Type: ARKV-40**



O =  $p_{st \min}$  to open  
 S =  $p_{st \max}$  to close

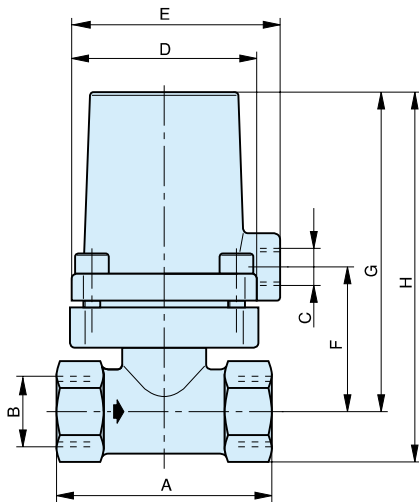
**Actuating Pressure – Type: ARKV-50**



O =  $p_{st \min}$  to open  
 S =  $p_{st \max}$  to close

Dimensions in mm

## Pneumatically actuated – Type: ARKV-..



## Dimensions

| Type       | A   | B      | C    | D   | E   | F    | G   | H     |
|------------|-----|--------|------|-----|-----|------|-----|-------|
| ARKV-15 NC | 65  | G1/2   | G1/8 | 55  | 61  | 41.5 | 95  | 109.5 |
| ARKV-20 NC | 76  | G3/4   | G1/4 | 65  | 75  | 50   | 112 | 129   |
| ARKV-25 NC | 91  | G1     | G1/4 | 65  | 75  | 57   | 119 | 139   |
| ARKV-40 NC | 123 | G1 1/2 | G1/4 | 110 | 112 | 67   | 137 | 167.5 |
| ARKV-50 NC | 150 | G2     | G1/4 | 130 | 134 | 75   | 153 | 190   |

## Order Instructions

| Actuation System | Symbol | Order data |                 |
|------------------|--------|------------|-----------------|
|                  |        | Type       | Order code      |
| Pneumatic        |        | ARKV-15 NC | <b>PD 07334</b> |
|                  |        | ARKV-20 NC | <b>PD 07580</b> |
|                  |        | ARKV-25 NC | <b>PD 07581</b> |
|                  |        | ARKV-40 NC | <b>PD 07757</b> |
|                  |        | ARKV-50 NC | <b>PD 07765</b> |

## G1/8 - 3/2-Way Valves - Series K9

### Actuation:

- Rotary lever, indexed
- Rotary lever, spring return
- Rotary lever, indexed, secured in two positions
- Pushbutton
- Cam operation
- Toggle cam operation
- Plunger operated
- Cam operated, free cam left or free cam right
- Pivoted lever
- Pedal
- Actuators for panel mounting



### Operating information

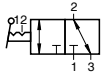
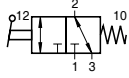
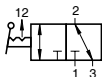
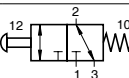
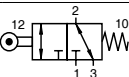
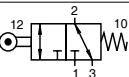
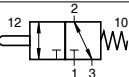
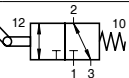
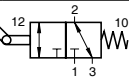
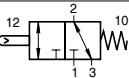
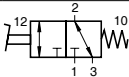
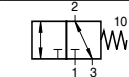







|                           |  |   |
|---------------------------|--|---|
| System                    | Poppet Valve   | <b>Pneumatic Characteristics</b>                            |
| Mounting                  | 2 Screws M4  |   |
| Tube connection           | Thread   | Nominal pressure 6 bar                                      |
| Port size                 | G1/8   | Operating pressure range 0–10 bar                           |
| Installation              | In any position  | Nominal flow 220 l/min                                      |
| Ambient temperature range | -10 °C to +55 °C   | Flow direction 1 → 2 normally closed<br>3 → 2 normally open |
| Medium temperature range  | +5 °C* to +60 °C   | Actuation Manual, mechanical and pedal actuated             |
|                           | Note:<br>Please consult us for operating temperatures below 0° C | Stroke 1.5–3 mm   |
| Medium                    | Filtered and lubricated or filtered and unlubricated air         | * -10°C when using dry compressed air                       |
| Lubrication               | None or oil mist lubrication                                     |   |

### Actuation Forces, Rotation Angles and Weight

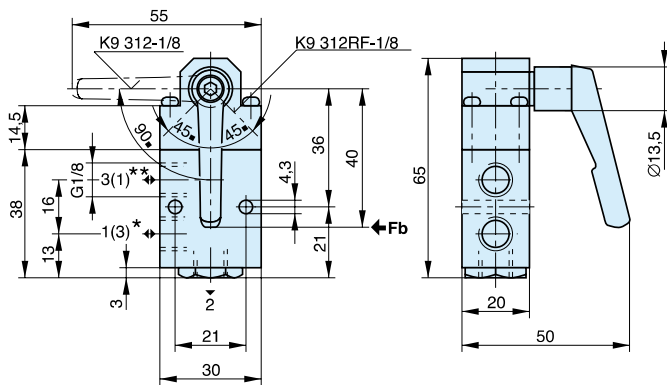
| Description                                     | Type         | Actuation force (N) | Rotation angle | Weight mass (kg) |
|---|--------------|---------------------|----------------|------------------|
| Rotary lever, indexed                           | K9 312-1/8   | 4.5                 | ±45°, 90°      | 0.110            |
| Rotary lever, spring return                     | K9 312RF-1/8 | 4.5                 | ±45°, 90°      | 0.110            |
| Rotary lever, indexed secured in both positions | K9 312S-1/8  | 4.5                 | ±45°, 90°      | 0.110            |
| Pushbutton                                      | K9 314RF-1/8 | 25                  | –              | 0.075            |
| Cam operation                                   | K9 321RF-1/8 | 11                  | –              | 0.070            |
| Toggle cam operation                            | K9 324RF-1/8 | 5                   | ±40°           | 0.120            |
| Plunger operated                                | K9 323RF-1/8 | 32                  | –              | 0.050            |
| Cam operated free cam left                      | K9 325RF-1/8 | 5                   | ±40°           | 0.120            |
| Cam operated free cam right                     | K9 326RF-1/8 | 5                   | ±40°           | 0.120            |
| Pivoted lever                                   | K9 329RF-1/8 | 2*                  | ±40°           | 0.115            |
| Pedal   | K9 331RF-1/8 | 12                  | –              | 0.800            |
| Basic valve for panel mounting actuators        | K9 390RF-1/8 | 35                  | –              | 0.060            |

\* at a distance of 100 mm from fulcrum

## Order Instructions – 3/2 Way Poppet Valves, Series K9

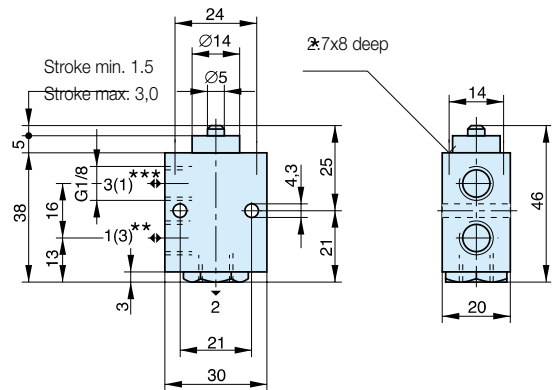
| Actuation   | Symbol  | Mounting<br>Ø (mm) | Order Instructions<br>Type | Order code         |
|---|---|--------------------|----------------------------|--------------------|
| Rotary lever,<br>indexed  |    |                    | K9312-1/8                  | PA 10269           |
| Rotary lever,<br>spring return  |    |                    | K9312RF-1/8                | PA 10270           |
| Rotary lever,<br>indexed<br>secured in both positions                 |    |                    | K9312S-1/8                 | PA 10349           |
| Pushbutton  |    |                    | K9314RF-1/8                | PA 10271           |
| Cam operation   |    |                    | K9321RF-1/8                | PA 10272           |
| Toggle cam operation  |    |                    | K9324RF-1/8                | PA 10273           |
| Plunger operated  |    |                    | K9323RF-1/8                | PA 10235           |
| Cam operated<br>free cam left   |   |                    | K9325RF-1/8                | PA 10274           |
| Cam operated<br>free cam right  |  |                    | K9326RF-1/8                | PA 10275           |
| Pivoted lever   |  |                    | K9329RF-1/8                | PA 10276           |
| Pedal   |  |                    | K9331RF-1/8                | PA 10277           |
| Panel mounting valve with<br>adaptor for interchangeable<br>actuation |  |                    | K9390RF-1/8                | PA 10278           |
| Rotary lever,<br>indexed  |  | 22<br>30           | 12T-22<br>12T-30           | KX 9355<br>KX 9314 |
| Rotary lever,<br>spring return  |  | 22<br>30           | 12T-RF-22<br>12T-RF-30     | KX 9356<br>KX 9315 |
| Pushbutton  |  | 22<br>30           | 13T-RF-22<br>13T-RF-30     | KX 9357<br>KX 9316 |
| Mushroom pushbutton   |  | 22<br>30           | 15T-RF-22<br>15T-RF-30     | KX 9358<br>KX 9317 |
| Locking switch  |  | 22<br>30           | 16T-22<br>16T-30           | KX 9359<br>KX 9318 |
| Rotary switch   |  | 22<br>30           | 17T-22<br>17T-30           | KX 9360<br>KX 9319 |
| Mushroom switch<br>Emergency Shutdown                                 |  | 22<br>30           | 18T-22<br>18T-30           | KX 9361<br>KX 9320 |

**Rotary Lever – Type: K9 312..-1/8**



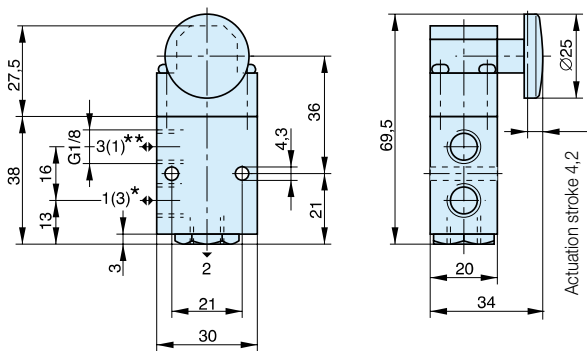
\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”

**Plunger Operated – Type: K9 323RF-1/8**



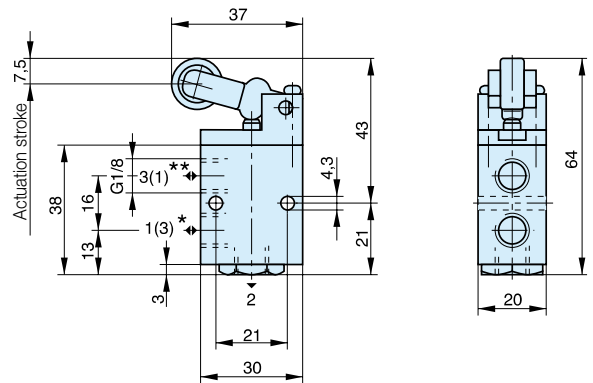
\* Self tapping screws CM 3x.. DIN 7500 to be used  
 \*\* = P when used as “normally closed”  
 \*\*\* = P when used as “normally open”

**Pushbutton – Type: K9 314RF-1/8**



\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”

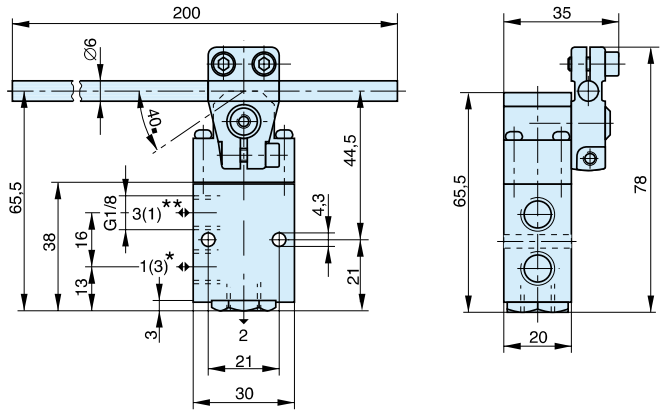
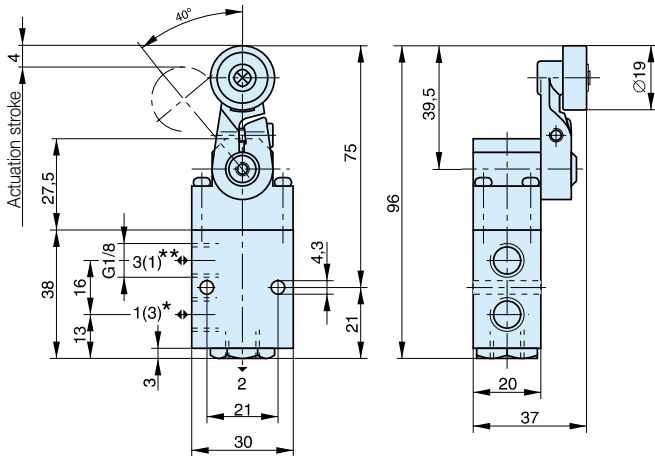
**Cam operation– Type: K9 321RF-1/8**



\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”

Toggle Cam Operation – Type: K9 324RF-1/8

Pivoted Lever – Type: K9 329RF-1/8

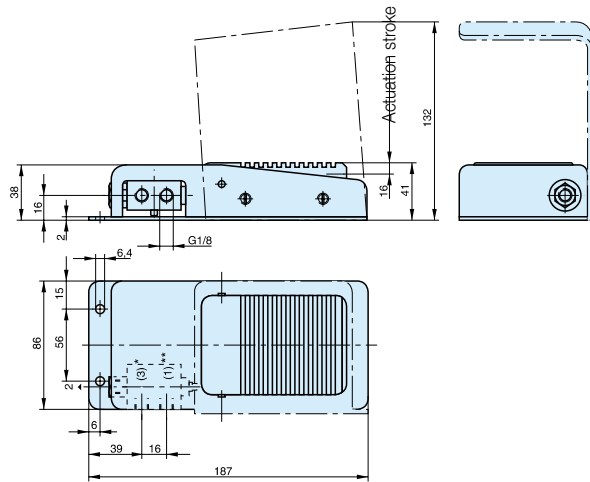
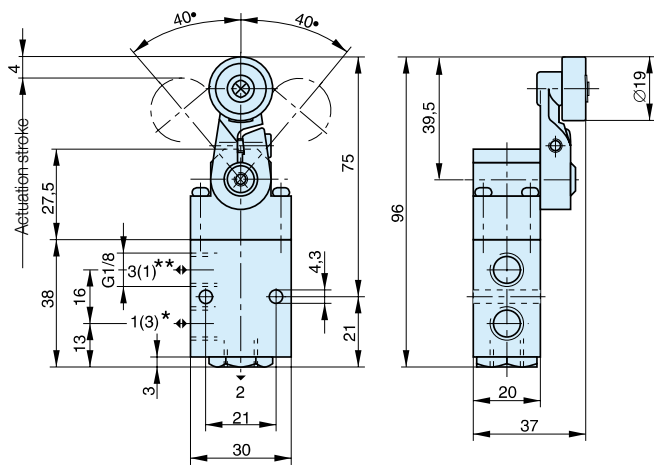


\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”

\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”

Cam Operated free cam left / right  
 Type: K9 325RF-1/8, K9 326RF-1/8

Pedal – Type: K9 331RF-1/8



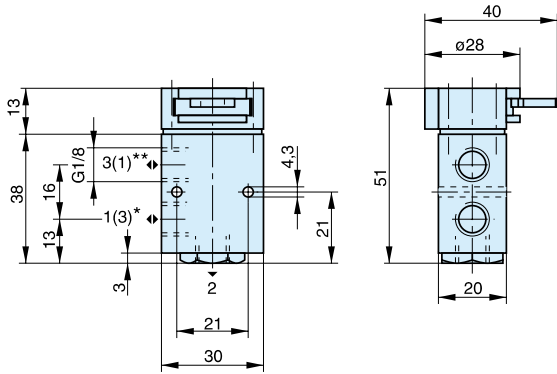
\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”

\* = P when used as “normally closed”  
 \*\* = P when used as “normally open”



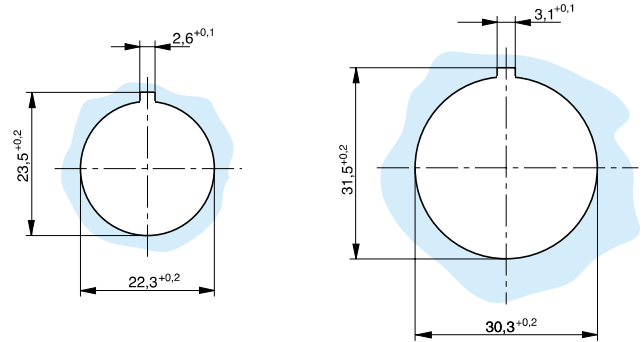
**Basic Valve with adaptor for panel mounting  
Type: K9 390RF-1/8**

**Mounting holes for mounting  
diameters 22 and 30 mm**



Mounting diameter Ø22 mm

Mounting diameter Ø30 mm



\* = P when used as "normally closed"  
\*\* = P when used as "normally open"

**Rotary Lever, indexed – Type: 12T-22, 12T-30**

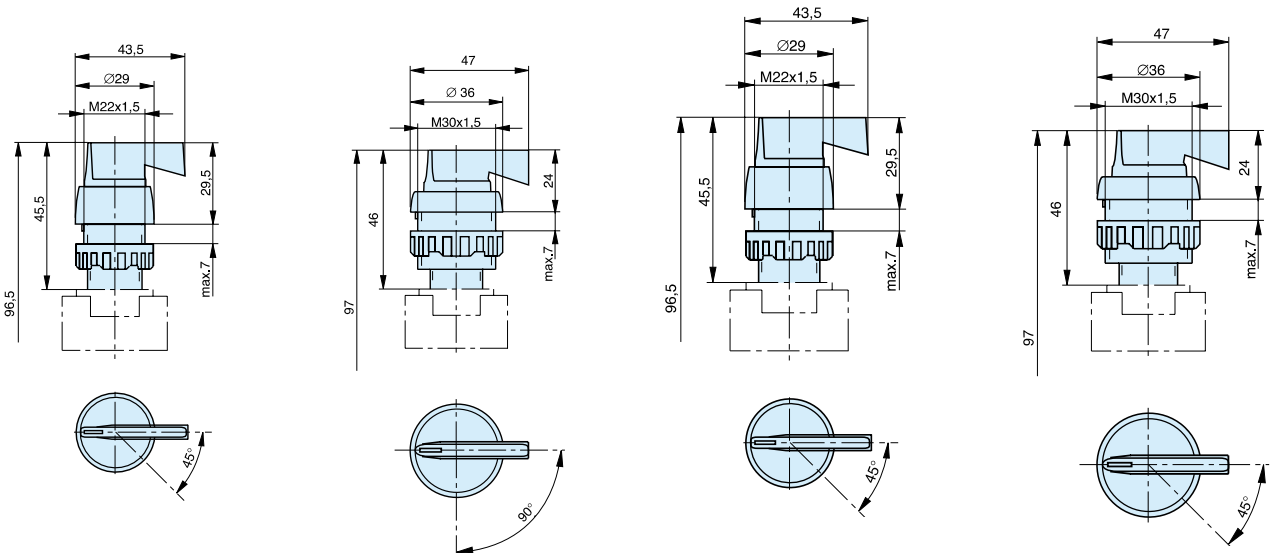
**Rotary Lever with spring return  
Type: 12T-RF-22, 12T-RF-30**

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm

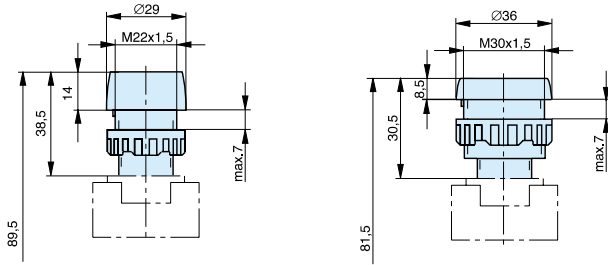
Mounting diameter Ø22 mm

Mounting diameter Ø30 mm



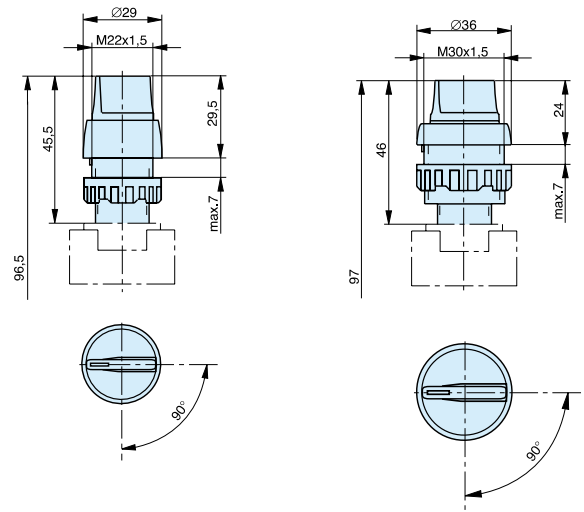
**Pushbutton**  
 Type: 13T-RF-22, 13T-RF-30

Mounting diameter Ø22 mm      Mounting diameter Ø30 mm



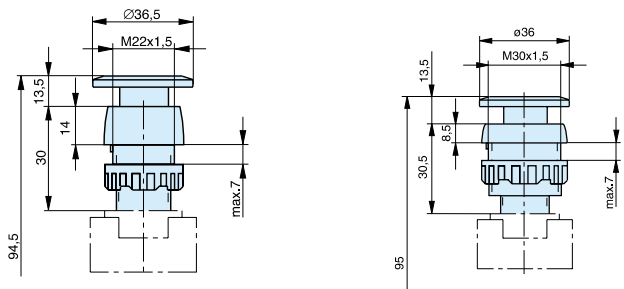
**Rotary Switch**  
 Type: 17T-22, 17T-30

Mounting diameter Ø22 mm      Mounting diameter Ø30 mm



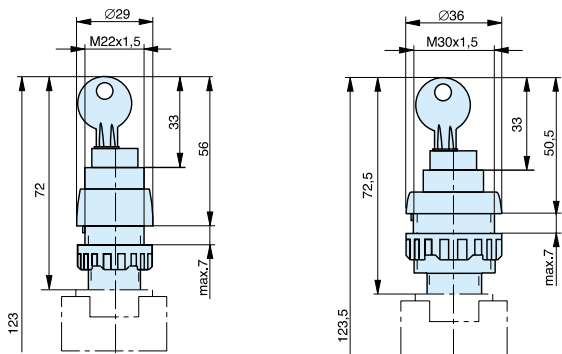
**Mushroom Pushbutton**  
 Type: 15T-RF-22, 15T-RF-30

Mounting diameter Ø22 mm      Mounting diameter Ø30 mm



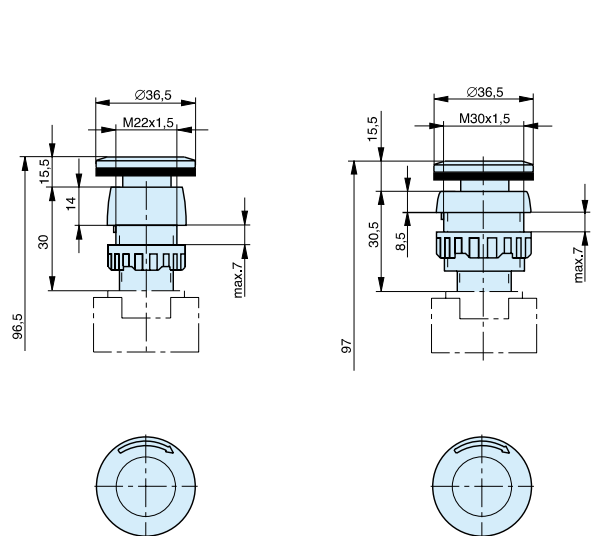
**Locking Switch**  
 Type: 16T-22, 16T-30

Mounting diameter Ø22 mm      Mounting diameter Ø30 mm



**Mushroom Switch (Emergency Shutdown)**  
 Type: 18T-22, 18T-30

Mounting diameter Ø22 mm      Mounting diameter Ø30 mm



## S9 Series Directional Control Valves

**Actuation:**

- Hand lever
- Pneumatic
- Electrical pilot operated
- Electrical pilot operated with external pilot air
- Panel mounting actuators for mounting diameter to DIN 43696

**Versions:**

- Normally closed
- Normally open
- With external pilot air
- With biased position
- Version to ATEX Standard



**Note:** The “normally open” valve S9 381S-RF-1/8 cannot be used on a P-supply manifold.

### 3/2 Way Valves – Standard versions

| Actuation System                            | Symbol | Mounting Ø (mm) | Order Instructions Type | Order No. |
|---|--------|-----------------|-------------------------|-----------|
| Hand lever, indexed                         |        |                 | S9 311-1/8              | PA 10293  |
|   |        |                 | S9 311-1/4              | PA 12708  |
|   |        |                 | S9 311-1/2              | PA 16404  |
| Hand lever, spring return                   |        |                 | S9 311RF-1/8            | PA 10294  |
|   |        |                 | S9 311RF-1/4            | PA 12709  |
|   |        |                 | S9 311RF-1/2            | PA 16405  |
| Hand lever secured in 2 switching positions |        |                 | S9 311S-1/4             | PA 12710  |
|   |        |                 | S9 311S-1/2             | PA 16406  |
| Rotary lever, indexed                       |        |                 | S9 312-1/4              | PA 12711  |
|   |        |                 | S9 312-1/2              | PA 16407  |
| Rotary lever, spring return                 |        |                 | S9 312RF-1/4            | PA 12712  |
|   |        |                 | S9 312RF-1/2            | PA 16408  |
| Pneumatic, by permanent signal              |        |                 | S9 361RF-1/8            | PA 10295  |
|   |        |                 | S9 361RF-1/4            | PA 12713  |
|   |        |                 | S9 361RF-1/2            | PA 16409  |
| Pneumatic, by impulse                       |        |                 | S9 361-1/8              | PA 10296  |
|   |        |                 | S9 361-1/4              | PA 12714  |
|   |        |                 | S9 361-1/2              | PA 16410  |
| Pneumatic, by impulse, with biased position |        |                 | S9 362-1/4              | PA 12715  |
|   |        |                 | S9 362-1/2              | PA 16411  |
| Basic valve for panel mounting              |        |                 | S9 390RF-1/8            | PA 10307  |

3/2 Way Valves – Standard versions

| Actuation System                                | Symbol                 | Mounting Ø (mm)       | Order Instructions Type | Order No.                |
|---|------------------------|-----------------------|-------------------------|--------------------------|
| Rotary lever, indexed                           |                        | 22                    | 12T-22                  | <b>KX 9355</b>           |
|   |                        | 30                    | 12T-30                  | <b>KX 9314</b>           |
| Rotary lever, spring return                     |                        | 22                    | 12T-RF-22               | <b>KX 9356</b>           |
|   |                        | 30                    | 12T-RF-30               | <b>KX 9315</b>           |
| Pushbutton                                      |                        | 22                    | 13T-RF-22               | <b>KX 9357</b>           |
|   |                        | 30                    | 13T-RF-30               | <b>KX 9316</b>           |
| Mushroom pushbutton                             |                        | 22                    | 15T-RF-22               | <b>KX 9358</b>           |
|   |                        | 30                    | 15T-RF-30               | <b>KX 9317</b>           |
| Locking switch                                  |                        | 22                    | 16T-22                  | <b>KX 9359</b>           |
|   |                        | 30                    | 16T-30                  | <b>KX 9318</b>           |
| Rotary switch                                   |                        | 22                    | 17T-22                  | <b>KX 9360</b>           |
|   |                        | 30                    | 17T-30                  | <b>KX 9319</b>           |
| Mushroom pushbutton emergency-Off               |                        | 22                    | 18T-22                  | <b>KX 9361</b>           |
|   |                        | 30                    | 18T-30                  | <b>KX 9320</b>           |
| Electrical by permanent signal                  |                        |                       | S9 381RF-1/8-NC-..      | <b>PA 10297-...33</b>    |
|   |                        |                       | S9 381RF-1/4-NC-..      | <b>PA 12716-...33</b>    |
|   |                        |                       | S9 381RF-1/2-NC-..      | <b>PA 16412-...33</b>    |
|   |                        |                       | S9 381RF-1/8-NO-..      | <b>PA 10298-...33</b>    |
|   |                        |                       | S9 381RF-1/4-NO-..      | <b>PA 12717-...33</b>    |
|   |                        |                       | S9 381RF-1/2-NO-..      | <b>PA 16413-...33</b>    |
| with external pilot air                         |                        |                       | S9 381S-RF-1/8-..       | <b>PA 10300-...33</b>    |
|   |                        |                       | S9 381S-RF-1/4-..       | <b>PA 12719-...33</b>    |
|   |                        |                       | S9 381S-RF-1/2-..       | <b>PA 16415-...33</b>    |
| Electrical by impulse                           |                        |                       | S9 381-1/8-..           | <b>PA 10299-...33</b>    |
|   |                        |                       | S9 381-1/4-..           | <b>PA 12718-...33</b>    |
|   |                        |                       | S9 381-1/2-..           | <b>PA 16414-...33</b>    |
| Electrical, by impulse, with external pilot air |                        |                       | S9 381S-1/8-..          | <b>PA 10301-...33</b>    |
|   |                        |                       | S9 381S-1/4-..          | <b>PA 12720-...33</b>    |
|   |                        |                       | S9 381S-1/2-..          | <b>PA 16417-...33</b>    |
| Electrical by impulse, with biased position     |                        |                       | S9 382-1/4-..           | <b>PA 12721-...33</b>    |
|   |                        |                       | S9 382-1/2-..           | <b>PA 16418-...33</b>    |
| with external pilot air                         |                        |                       | S9 382S-1/4-..          | <b>PA 12722-...33</b>    |
|   |                        |                       | S9 382S-1/2-..          | <b>PA 16419-...33</b>    |
| <b>Solenoid version</b>                         | <b>Nominal voltage</b> | <b>Applicable for</b> | <b>Key code</b>         | <b>ATEX Type additon</b> |
| Standard version                                | 230V 50/60Hz           | 110 V =               | 61                      | -                        |
|   | 24V =                  | 60V 50/60Hz           | 02                      | -                        |
| Low wattage version                             | 24V =                  |                       | 13                      | -                        |
|   | 230V 50/60Hz           |                       | 69                      | -                        |



## EX Area versions to ATEX Standard Category, type of ignition protection

Single valve: Ⓢ II 2G c T4 T135°C -10°C≤Ta≤+60°C

Solenoid/individual use: Ⓢ II 2G EEx m II T5 -20°C≤Ta≤+50°C

Solenoid/manifold mounting: Ⓢ II 2G EEx m II T5 -20°C≤Ta≤+40°C

| Solenoid version   | Nominal voltage | Applicable for | Key code | ATEX Type additon |
|--------------------|-----------------|----------------|----------|-------------------|
| Solenoid           | 24V =           |                | 48       | ATEX              |
| - with cable 1.2 m |                 |                |          |                   |
| - with cable 3 m   | 24V =           |                | 45       | ATEX              |
| - with cable 5 m   | 24V =           |                | 46       | ATEX              |
| - with cable 10 m  | 24V =           |                | 47       | ATEX              |
| - with cable 1.2 m | 24V 50/60Hz     |                | 99       | ATEX              |
| - with cable 1.2 m | 110V 50/60Hz    |                | 97       | ATEX              |
| - with cable 1.2 m | 230V 50/60Hz    |                | 98       | ATEX              |

Example for valves in ATEX-Version:

- for valves Series S9-G1/8, S9-G1/4, S9-G1/2

Please add behind the Standard Order No. "ATEX"



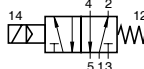

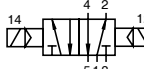

Type: S9 381RF-1/8-NC-4633

Order No. PA10297-4633ATEX

## Order Instructions – 5/2 Way Valves – Standard versions

| Actuation System                                  | Symbol | Mounting<br>Ø (mm) | Order Instructions<br>Type | Order No.       |
|---|--------|--------------------|----------------------------|-----------------|
| Hand lever,<br>indexed                            |        |                    | S9 511-1/8                 | <b>PA 10308</b> |
|   |        |                    | S9 511-1/4                 | <b>PA 12671</b> |
|   |        |                    | S9 511-1/2                 | <b>PA 16367</b> |
| Hand lever,<br>spring return                      |        |                    | S9 511RF-1/8               | <b>PA 10309</b> |
|   |        |                    | S9 511RF-1/4               | <b>PA 12672</b> |
|   |        |                    | S9 511RF-1/2               | <b>PA 16366</b> |
| Hand lever<br>secured in 2 switching<br>positions |        |                    | S9 511S-1/8                | <b>PA 10368</b> |
|   |        |                    | S9 511S-1/4                | <b>PA 12673</b> |
|   |        |                    | S9 511S-1/2                | <b>PA 16368</b> |
| Rotary lever,<br>indexed                          |        |                    | S9 512-1/4                 | <b>PA 12674</b> |
|   |        |                    | S9 512-1/2                 | <b>PA 16378</b> |
| Rotary lever,<br>spring return                    |        |                    | S9 512RF-1/4               | <b>PA 12675</b> |
|   |        |                    | S9 512RF-1/2               | <b>PA 16379</b> |
| Pneumatic,<br>by permanent signal                 |        |                    | S9 561RF-1/8               | <b>PA 10310</b> |
|   |        |                    | S9 561RF-1/4               | <b>PA 12676</b> |
|   |        |                    | S9 561RF-1/2               | <b>PA 16165</b> |
| Pneumatic,<br>by impulse                          |        |                    | S9 561-1/8                 | <b>PA 10311</b> |
|   |        |                    | S9 561-1/4                 | <b>PA 12677</b> |
|   |        |                    | S9 561-1/2                 | <b>PA 16166</b> |
| Pneumatic,<br>by impulse,<br>with biased position |        |                    | S9 562-1/4                 | <b>PA 12678</b> |
|   |        |                    | S9 562-1/2                 | <b>PA 16167</b> |
| Basic valve for<br>panel mounting                 |        |                    | S9 590RF-1/8               | <b>PA 10320</b> |
| Rotary lever,<br>indexed                          |        | 22                 | 12T-22                     | <b>KX 9355</b>  |
|   |        | 30                 | 12T-30                     | <b>KX 9314</b>  |
| Rotary lever,<br>spring return                    |        | 22                 | 12T-RF-22                  | <b>KX 9356</b>  |
|   |        | 30                 | 12T-RF-30                  | <b>KX 9315</b>  |
| Pushbutton  |        | 22                 | 13T-RF-22                  | <b>KX 9357</b>  |
|   |        | 30                 | 13T-RF-30                  | <b>KX 9316</b>  |
| Mushroom pushbutton                               |        | 22                 | 15T-RF-22                  | <b>KX 9358</b>  |
|   |        | 30                 | 15T-RF-30                  | <b>KX 9317</b>  |
| Locking switch                                    |        | 22                 | 16T-22                     | <b>KX 9359</b>  |
|   |        | 30                 | 16T-30                     | <b>KX 9318</b>  |

**Order Instructions - 5/2 Way Valves - Standard Versions**

| Actuation System                     | Symbol  | Mounting Ø (mm) | Order Instructions Type | Order No.            |
|--------------------------------------|---|-----------------|-------------------------|----------------------|
| Rotary switch                        |  | 22              | 17T-22                  | <b>KX 9360</b>       |
|                                      |   | 30              | 17T-30                  | <b>KX 9319</b>       |
| Mushroom pushbutton<br>Emergency-Off |  | 22              | 18T-22                  | <b>KX 9361</b>       |
|                                      |   | 30              | 18T-30                  | <b>KX 9320</b>       |
| Electrical,<br>by permanent signal   |  |                 | S9 581RF-1/8-..         | <b>PA 10312-..33</b> |
|                                      |   |                 | S9 581RF-1/4-..         | <b>PA 12679-..33</b> |
|                                      |   |                 | S9 581RF-1/2-..         | <b>PA 16171-..33</b> |
| with external pilot air              |  |                 | S9 581S-RF-1/8-..       | <b>PA 10314-..33</b> |
|                                      |   |                 | S9 581S-RF-1/4-..       | <b>PA 12681-..33</b> |
|                                      |   |                 | S9 581S-RF-1/2-..       | <b>PA 16174-..33</b> |
| Electrical,<br>by impulse            |  |                 | S9 581-1/8-..           | <b>PA 10313-..33</b> |
|                                      |   |                 | S9 581-1/4-..           | <b>PA 12680-..33</b> |
|                                      |   |                 | S9 581-1/2-..           | <b>PA 16172-..33</b> |
| with external pilot air              |  |                 | S9 581S-1/8-..          | <b>PA 10315-..33</b> |
|                                      |   |                 | S9 581S-1/4-..          | <b>PA 12682-..33</b> |
|                                      |   |                 | S9 581S-1/2-..          | <b>PA 16175-..33</b> |

| Solenoid version    | Nominal voltage | Applicable for | Key code | ATEX Type additon |
|---------------------|-----------------|----------------|----------|-------------------|
| Standard version    | 230V 50/60Hz    | 110 V =        | 61       | -                 |
|                     | 24V =           | 60V 50/60Hz    | 02       | -                 |
| Low wattage version | 24V =           |                | 13       | -                 |
|                     | 230V 50/60Hz    |                | 69       | -                 |

**EX Area versions to ATEX Standard**

**Category, type of ignition protection**

Single valve: Ⓢ II 2G c T4 T135°C -10°C≤Ta≤+60°C

Solenoid/individual use: Ⓢ II 2G EEx m II T5 -20°C≤Ta≤+50°C

Solenoid/manifold mounting: Ⓢ II 2G EEx m II T5 -20°C≤Ta≤+40°C

| Solenoid version   | Nominal voltage | Applicable for | Key code | ATEX Type additon |
|--------------------|-----------------|----------------|----------|-------------------|
| Solenoid           | 24V =           |                | 48       | ATEX              |
| - with cable 1.2 m |                 |                |          |                   |
| - with cable 3 m   | 24V =           |                | 45       | ATEX              |
| - with cable 5 m   | 24V =           |                | 46       | ATEX              |
| - with cable 10 m  | 24V =           |                | 47       | ATEX              |
| - with cable 1.2 m | 24V 50/60Hz     |                | 99       | ATEX              |
| - with cable 1.2 m | 110V 50/60Hz    |                | 97       | ATEX              |
| - with cable 1.2 m | 230V 50/60Hz    |                | 98       | ATEX              |

Example for valves in ATEX-Version:

- for valves Series S9-G1/8, S9-G1/4, S9-G1/2

Please add behind the Standard Order No. "ATEX"

Type: S9 381RF-1/8-NC-4633

Order No. PA10297-4633ATEX

Order Instructions – 5/3 Way Valves – Standard versions

| Actuation System                               | Symbol | Order Instructions Type | Order No. |
|--|--------|-------------------------|-----------|
| Hand lever, secured in 3 operating positions   |        | S9 511G-1/8             | PA 10321  |
|  |        | S9 511G-1/4             | PA 12687  |
|  |        | S9 511G-1/2             | PA 16369  |
|  |        | S9 511E-1/8             | PA 10322  |
|  |        | S9 511E-1/4             | PA 12688  |
|  |        | S9 511E-1/2             | PA 16370  |
|  |        | S9 511B-1/8             | PA 10323  |
|  |        | S9 511B-1/4             | PA 12689  |
|  |        | S9 511B-1/2             | PA 16371  |
| Hand lever, spring return to middle position   |        | S9 511RFG-1/8           | PA 10324  |
|  |        | S9 511RFG-1/4           | PA 12690  |
|  |        | S9 511RFG-1/2           | PA 16372  |
|  |        | S9 511RFE-1/8           | PA 10325  |
|  |        | S9 511RFE-1/4           | PA 12691  |
|  |        | S9 511RFE-1/2           | PA 16373  |
|  |        | S9 511RFB-1/8           | PA 10326  |
|  |        | S9 511RFB-1/4           | PA 12692  |
|  |        | S9 511RFB-1/2           | PA 16374  |
| Hand lever, secured in 3 operating positions   |        | S9 511SG-1/8            | PA 10327  |
|  |        | S9 511SG-1/4            | PA 12693  |
|  |        | S9 511SG-1/2            | PA 16375  |
|  |        | S9 511SE-1/8            | PA 10328  |
|  |        | S9 511SE-1/4            | PA 12694  |
|  |        | S9 511SE-1/2            | PA 16376  |
|  |        | S9 511SB-1/8            | PA 10329  |
|  |        | S9 511SB-1/4            | PA 12695  |
|  |        | S9 511SB-1/2            | PA 16377  |
| Rotary lever, indexed in 3 operating positions |        | S9 512G-1/4             | PA 12696  |
|  |        | S9 512G-1/2             | PA 16380  |
|  |        |                         |           |
|  |        | S9 512E-1/4             | PA 12697  |
|  |        | S9 512E-1/2             | PA 16381  |
|  |        |                         |           |
|  |        | S9 512B-1/4             | PA 12698  |
|  |        | S9 512B-1/2             | PA 16382  |
|  |        |                         |           |



| Actuation System                                     | Symbol                            | Order Instructions<br>Type | Order No.             |                       |
|--|-----------------------------------|----------------------------|-----------------------|-----------------------|
| Rotary lever,<br>spring return to<br>middle position |                                   | S9 512RFG-1/4              | <b>PA 12699</b>       |                       |
|  |                                   | S9 512RFG-1/2              | <b>PA 16383</b>       |                       |
|  |                                   | S9 512RFE-1/4              | <b>PA 12700</b>       |                       |
|  |                                   | S9 512RFE-1/2              | <b>PA 16384</b>       |                       |
|  |                                   | S9 512RFB-1/4              | <b>PA 12701</b>       |                       |
|  |                                   | S9 512RFB-1/2              | <b>PA 16385</b>       |                       |
| Pneumatic,<br>by permanent signal                    |                                   | S9 561RFG-1/8              | <b>PA 10330</b>       |                       |
|  |                                   | S9 561RFG-1/4              | <b>PA 12702</b>       |                       |
|  |                                   | S9 561RFG-1/2              | <b>PA 16168</b>       |                       |
|  |                                   | S9 561RFE-1/8              | <b>PA 10331</b>       |                       |
|  |                                   | S9 561RFE-1/4              | <b>PA 12703</b>       |                       |
|  |                                   | S9 561RFE-1/2              | <b>PA 16169</b>       |                       |
|  |                                   | S9 561RFB-1/8              | <b>PA 10332</b>       |                       |
|  |                                   | S9 561RFB-1/4              | <b>PA 12704</b>       |                       |
|  |                                   | S9 561RFB-1/2              | <b>PA 16170</b>       |                       |
|  | Electrical<br>by permanent signal |                            | S9 581RFG-1/8-..      | <b>PA 10333-...33</b> |
|  |                                   |                            | S9 581RFG-1/4-..      | <b>PA 12705-...33</b> |
|  |                                   |                            | S9 581RFG-1/2-..      | <b>PA 16176-...33</b> |
|  |                                   | S9 581RFE-1/8-..           | <b>PA 10334-...33</b> |                       |
|  |                                   | S9 581RFE-1/4-..           | <b>PA 12706-...33</b> |                       |
|  |                                   | S9 581RFE-1/2-..           | <b>PA 16177-...33</b> |                       |
|  |                                   | S9 581RFB-1/8-..           | <b>PA 10335-...33</b> |                       |
|  |                                   | S9 581RFB-1/4-..           | <b>PA 12707-...33</b> |                       |
|  |                                   | S9 581RFB-1/2-..           | <b>PA 16178-...33</b> |                       |

| Actuation System                    | Symbol | Order Instructions Type | Order No.            |
|-------------------------------------|--------|-------------------------|----------------------|
| Electrical<br>by permanent signal   |        | S9 581S-RFG-1/8-..      | <b>PA 10377-..33</b> |
|                                     |        | S9 581S-RFG-1/4-..      | <b>PA 12925-..33</b> |
| spring return to<br>middle position |        | S9 581S-RFE-1/8-..      | <b>PA 10379-..33</b> |
|                                     |        | S9 581S-RFE-1/4-..      | <b>PA 12923-..33</b> |
| with external pilot air             |        | S9 581S-RFB-1/8-..      | <b>PA 10378-..33</b> |
|                                     |        | S9 581S-RFB-1/4-..      | <b>PA 12924-..33</b> |

| Solenoid version    | Nominal voltage | Applicable for | Key code | ATEX Type addition |
|---------------------|-----------------|----------------|----------|--------------------|
| Standard version    | 230V 50/60Hz    | 110 V =        | 61       | -                  |
|                     | 24V =           | 60V 50/60Hz    | 02       | -                  |
| Low wattage version | 24V =           |                | 13       | -                  |
|                     | 230V 50/60Hz    |                | 69       | -                  |

Single valve: ☉ II 2G c T4 T135°C -10°C ≤ Ta ≤ +60°C  
 Solenoid/individual use: ☉ II 2G EEx m II T5 -20°C ≤ Ta ≤ +50°C  
 Solenoid/manifold mounting: ☉ II 2G EEx m II T5 -20°C ≤ Ta ≤ +40°C

| Solenoid version   | Nominal voltage | Applicable for | Key code | ATEX Type addition |
|--------------------|-----------------|----------------|----------|--------------------|
| Solenoid           | 24V =           |                | 48       | ATEX               |
| - with cable 1.2 m |                 |                |          |                    |
| - with cable 3 m   | 24V =           |                | 45       | ATEX               |
| - with cable 5 m   | 24V =           |                | 46       | ATEX               |
| - with cable 10 m  | 24V =           |                | 47       | ATEX               |
| - with cable 1.2 m | 24V 50/60Hz     |                | 99       | ATEX               |
| - with cable 1.2 m | 110V 50/60Hz    |                | 97       | ATEX               |
| - with cable 1.2 m | 230V 50/60Hz    |                | 98       | ATEX               |

Example for valves in ATEX-Version:  
 - for valves Series S9-G1/8, S9-G1/4, S9-G1/2  
 Please add behind the Standard Order No. "ATEX"  
 Type: S9 381RF-1/8-NC-4633  
 Order No. PA10297-4633ATEX

### 3/2, 5/2 and 5/3 Directional Control Valves Series S9-G1/8 / G1/4 / G1/2

| Characteristics                          | Series S9 G1/8   |                   |            | Series S9 G1/4            |                       |                       | Series S9 G1/2                |                       |                       |
|--|--|-------------------|------------|---------------------------|-----------------------|-----------------------|-------------------------------|-----------------------|-----------------------|
| Actuation                                | Manual control   | pneumatic         | electrical | Manual control            | pneumatic             | electrical            | Manual control                | pneumatic             | electrical            |
| General Features                         |  |                   |            |                           |                       |                       |                               |                       |                       |
| Type                                     | Spool valve  |                   |            | Spool valve               |                       |                       | Spool valve                   |                       |                       |
| Mounting                                 | 2 Screws M5  |                   |            | 2 Screws M6               |                       |                       | 2 Screws M6                   |                       |                       |
| Tube connection                          | Thread   |                   |            | Thread                    |                       |                       | Thread                        |                       |                       |
| Thread                                   | G1/8 – 7.4 deep  |                   |            | G1/4 – 11 deep            |                       |                       | G1/2 – 16 deep                |                       |                       |
| Installation                             | In any position  |                   |            | In any position           |                       |                       | In any position               |                       |                       |
| Ambient temperature range <sup>(1)</sup> | -10 °C to +60 °C *   |                   |            | -10 °C to +60 °C*         |                       |                       | -10 °C to +60 °C*             |                       |                       |
| Medium temperature range <sup>(1)</sup>  | -10 °C to +60 °C *   |                   |            | -10 °C to +60 °C*         |                       |                       | -10 °C to +60 °C*             |                       |                       |
| Medium                                   | Filtered compressed air  |                   |            |                           |                       |                       |                               |                       |                       |
| Lubrication                              | With or without oil mist lubrication<br>(We recommend the use of mineral oil type VG 32 to ISO 3448) |                   |            |                           |                       |                       |                               |                       |                       |
| Pneumatic Characteristics                |  |                   |            |                           |                       |                       |                               |                       |                       |
| Nominal pressure (bar)                   | 6  |                   |            | 6                         |                       |                       | 6                             |                       |                       |
| Operating pressure range (bar)           | 0–10 <sup>(10)</sup>   | –                 | –          | 0–10                      | –                     | –                     | 0–10                          | –                     | –                     |
| – permanent signal version (bar)         | –  | 0–10              | 2–10       | –                         | 0–10                  | 2–10                  | –                             | 0–10                  | 2.2–10                |
| – impulse version (bar)                  | –  | 0–10              | 2–10       | –                         | 0–10                  | 2–10                  | –                             | 0–10                  | 2.2–10                |
| – with external pilot air (bar)          | –  | –                 | 0–10       | –                         | –                     | 0–10                  | –                             | –                     | 0–10                  |
| Nominal flow                             | 500 l/min (450 bei 3/2 Way Valve)  |                   |            | 1300 l/min <sup>(7)</sup> |                       |                       | 3500 l/min <sup>(8)</sup>     |                       |                       |
| Actuation                                |  |                   |            |                           |                       |                       |                               |                       |                       |
| Manual control                           | Direct   |                   |            | Direct                    |                       |                       | Direct                        |                       |                       |
| Stroke                                   | 4.5 mm   |                   |            | 6.5 mm                    |                       |                       | 9.4 mm                        |                       |                       |
| Actuation force (N)                      | 7 <sup>(2)</sup>   | 10 <sup>(2)</sup> |            | 10 <sup>(2)</sup>         | 15 <sup>(3)</sup>     |                       | 15 <sup>(2)</sup>             | 40 <sup>(3)</sup>     |                       |
| Pneumatic                                | Direct   |                   |            | Direct                    |                       |                       | Direct                        |                       |                       |
| Actuation pressure range                 |  |                   |            |                           |                       |                       |                               |                       |                       |
| – permanent signal version (bar)         | –  | 2–10              | 2–10       | 2–10                      | 2–10                  | 2–10                  | –                             | 2.2–10 <sup>(9)</sup> | 2.2–10                |
| – impulse version (bar)                  | –  | 1.5–10            | 1.5–10     | 1.5–10                    | 1.5–10 <sup>(4)</sup> | 1.5–10 <sup>(4)</sup> | –                             | 1.5–10 <sup>(5)</sup> | 1.5–10 <sup>(4)</sup> |
| Electrical                               | Electrical pilot operated  |                   |            |                           |                       |                       | Electrical pilot operated     |                       |                       |
| Voltage type                             | Alternating current (50/60Hz)  |                   |            | Direct current            |                       |                       | Alternating current (50/60Hz) |                       |                       |
| Nominal voltage                          |  |                   |            |                           |                       |                       |                               |                       |                       |
| – Standard version                       | 230 V ±10%   |                   |            | 24 V ±10%                 |                       |                       | Other voltages on request     |                       |                       |
| – Low wattage version                    | 230 V ±10%   |                   |            | 24 V ±10%                 |                       |                       | 230 V ±10%                    |                       |                       |
| Initial power consumption                | G1/8   | G1/4              | G1/2       | G1/8                      | G1/4                  | G1/2                  | G1/8                          | G1/4                  | G1/2                  |
| – Standard version (VA)                  | 8.5  | 8.5               | 11.0       | 2.5                       | 2.5                   | 4.8                   | 8.5                           | 8.5                   | 11.0                  |
| – Low wattage version (VA)               | 6.6  | 6.6               | 7.8        | 2.1                       | 2.1                   | 2.7                   | 6.6                           | 6.6                   | 7.8                   |
| Continuous consumption                   | G1/8   | G1/4              | G1/2       | G1/8                      | G1/4                  | G1/2                  | G1/8                          | G1/4                  | G1/2                  |
| – Standard version (VA)                  | 6.0  | 6.0               | 8.5        | 2.5                       | 2.5                   | 4.8                   | 6.0                           | 6.0                   | 8.5                   |
| – Low wattage version (VA)               | 3.9  | 4.9               | 4.9        | 2.1                       | 2.1                   | 2.7                   | 3.9                           | 4.9                   | 4.9                   |
| Duty cycle                               | 100%   |                   |            | 100%                      |                       |                       | 100%                          |                       |                       |
| Electrical protection                    | IP65 to DIN 40050 (applies only to solenoid with plug)   |                   |            |                           |                       |                       |                               |                       |                       |
| Connection                               | Plug to DIN EN 175301-803 form B – industrial standard <sup>(6)</sup>                                |                   |            |                           |                       |                       |                               |                       |                       |

\* Valve Manifold Assemblies with electrically actuated valves -10 to +50°C

<sup>(1)</sup> Note: For use below freezing point please contact us

<sup>(2)</sup> Actuation force for valves without spring return, actuation with rotary lever: 5N

<sup>(3)</sup> Actuation force for valves with spring return, Actuation with rotary lever: 15N

<sup>(4)</sup> Only for version with biased position 2 – 10 bar, pneumatically actuated

2 – 10 bar, electrically actuated 2.5 – 10 bar

<sup>(5)</sup> Version with biased position 2.5 – 10 bar

<sup>(6)</sup> Low wattage version: Plug to DIN EN 175301-803 form A

<sup>(7)</sup> Version "middle position vented" 1000 l/min

<sup>(8)</sup> Version "middle position vented" 3300 l/min Version "middle position pressured" 3600 l/min

<sup>(9)</sup> 5/3 Way Valve 2.5 – 10 bar

<sup>(10)</sup> Valves with panel mounting actuators 2 – 10 bar

### 3/2, 5/2 and 5/3 Way Valves for use in EX areas Series S9-G1/8 / G1/4 / G1/2

| Characteristics                          | Series S9 G1/8   | Series S9 G1/4  | Series S9 G1/2  |
|--|--|---|---|
| Actuation                                | Manual Control pneumatic electrical  | Manual Control pneumatic electrical   | Manual Control pneumatic electrical   |
| General Features                         |  |   |   |
| Type                                     | Spool valve  | Spool valve   | Spool valve   |
| Mounting                                 | 2 screws M5  | 2 Screws M6   | 2 Screws M6   |
| Tube connection                          | Thread   | Thread  | Thread  |
| Thread                                   | G1/8 – 7.4 deep  | G1/4 – 11 deep  | G1/2 – 16 deep  |
| Installation                             | In any position  | In any position   | In any position   |
| Ambient temperature range (1)            | -10 °C to +60 °C *   | -10 °C to +60 °C *  | -10 °C to +60 °C *  |
| Medium temperature range (1)             | -10 °C to +60 °C *   | -10 °C to +60 °C *  | -10 °C to +60 °C *  |
| Medium                                   | Filtered, unlubricated compressed air<br>– free from water and dirt to ISO8573-1         | Solids: Class 7 particle size <40 µm<br>for gas Water content: pressure dew point<br>+ 3°C, Class 4, but at least 5°C<br>below minimum operating<br>temperature | Solids: Class 7 particle size <40 µm<br>for gas Water content: pressure dew point<br>+ 3°C, Class 4, but at least 5°C<br>below minimum operating<br>temperature |
| Pneumatic Characteristics                |  |   |   |
| Nominal pressure (bar)                   | 6  | 6   | 6   |
| Operating pressure range (bar)           | 0–8 (10) – –   | 0–8 – –   | 0–8 – –   |
| – permanent signal version (bar)         | – 0–8 2–8  | – 0–8 2–8   | – 0–8 2.2–8   |
| – impulse version (bar)                  | – 0–8 1.5–8(4)   | – 0–8 1.5–8(4)  | – 0–8 1.5–8(4)  |
| – with external pilot air (bar)          | – – 0–8  | – – 0–8   | – – 0–8   |
| Nominal flow                             | 500 l/min (450 bei 3/2 Way Valve)  | 1300 l/min (7)  | 3500 l/min (8)  |
| Actuation                                |  |   |   |
| Manual control                           | Direct   | Direct  | Direct  |
| Stroke                                   | 4.5 mm   | 6.5 mm  | 9.4 mm  |
| Actuation force (N)                      | 7 (2)<br>10 (3)  | 10 (2)<br>15 (3)  | 15 (2)<br>40 (3)  |
| Pneumatic                                | Direct   | Direct  | Direct  |
| Actuation pressure range                 |  |   |   |
| – permanent signal version (bar)         | – 2–8 2–8  | 2–8 2–8 2–8   | – 2.2–8(9) 2.2–8  |
| – impulse version (bar)                  | – 1.5–8 1.5–8(4)   | 1.5–8 1.5–8(4) 1.5–8(4)   | – 1.5–8(5) 1.5–8(4)   |
| Electrical                               | Electrical pilot operated  |   |   |
| Certification                            | EC Type Test Certificate for single valve:<br>not required for mechanical units in II 2G | EC Type Test Certificate for solenoid:<br>PTB-No. 03 Ex IEC 2019X and<br>PTB 03 ATEX 2018X toT5   | EC Type Test Certificate for solenoid:<br>PTB-No. 03 Ex IEC 2019X and<br>PTB 03 ATEX 2018X toT5   |
| Category,<br>type of ignition protection | Single valve<br>II 2G c T4T135°C-10°C≤Ta≤+60°C   | Solenoid/individual use:<br>II 2G EEx m II T5 -20°C≤Ta≤+50°C<br>Solenoid/manifold mounting:<br>II 2G EEx m II T5 -20°C≤Ta≤+40°C                                 | Solenoid/individual use:<br>II 2G EEx m II T5 -20°C≤Ta≤+50°C<br>Solenoid/manifold mounting:<br>II 2G EEx m II T5 -20°C≤Ta≤+40°C                                 |
| Voltage type                             | Alternating current (50/60Hz)  | Direct current  |   |
| Nominal voltage                          | 230 V ±10%<br>110 V ±10%<br>24 V ±10%  | 24 V ±10%   | Other voltages on request   |
| Power rating at Un                       | G1/8, G1/4, G1/2<br>3.1 VA (230V)<br>3.0 VA (110V)<br>2.5 VA (24V)                       | G1/8, G1/4, G1/2<br>3.3 VA (24V)  |   |
| Max. power at Un (6)                     | G1/8, G1/4, G1/2<br>2.9 VA (230V)<br>2.8 VA (110V)<br>2.4 VA (24V)                       | G1/8, G1/4, G1/2<br>3.0 VA (24V)  |   |
| Electrical protection                    | IP65 (applies only to solenoid with cable)   |   |   |
| Connection                               | Cable – cable lengths see Order Instructions   |   |   |

\* Valve Manifold Assemblies with electrically actuated valves -10 to +50°C

(1) Note: For use below freezing point please contact us

(2) Actuation force for valves without spring return, Actuation with rotary lever: 5N

(3) Actuation force for valves with spring return, actuation with rotary lever: 15N

(4) Only for version with biased position pneumatically actuated 2 – 8 bar,

electrically actuated 2.5 – 8 bar

(5) Version with biased position 2.5 – 8 bar

(6) Maximum power if warmed up to thermal load limit

(7) Version "middle position vented" 1000 l/min

(8) Version "middle position vented" 3300 l/min, Version "middle position  
pressured" 3600 l/min

(9) 5/3 Way Valve 2.5 – 8 bar

(10) Valves with panel mounting actuators 2 – 8 bar

## Valve Combinations with Logic Elements 3/2, 5/2 and 5/3 Way Valves

### Actuation Systems:

- Pneumatic
- AND
- OR
- TIMER
- Electrical pilot operated

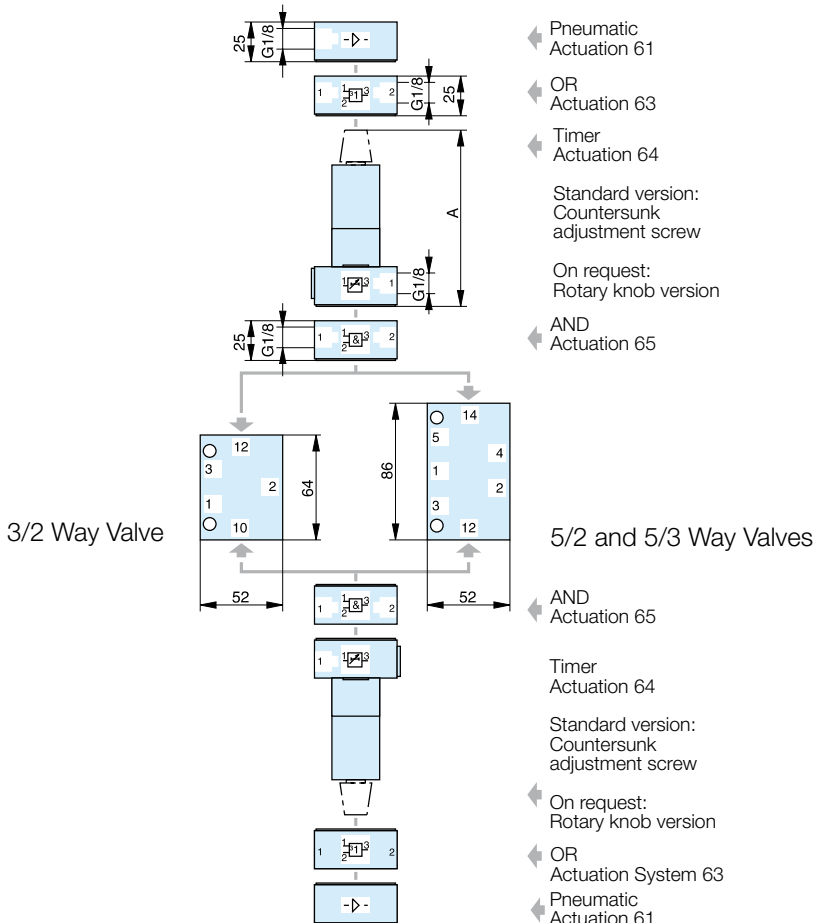
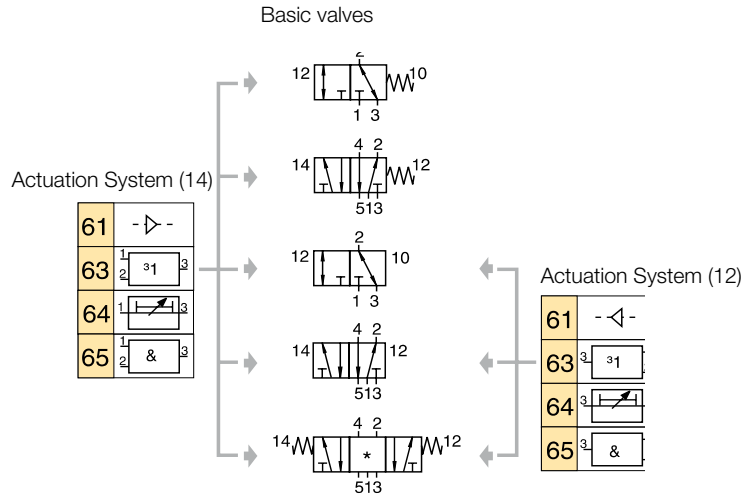
### Versions:

- Freely selectable types
- See Order information
- All Timer-Versions on request



### Possible combinations:

- \* RFG = middle position closed
- RFE = middle position exhausted
- RFB = middle position pressurized



- ◀ Pneumatic Actuation 61
- ◀ OR Actuation 63
- ◀ Timer Actuation 64
- Standard version: Countersunk adjustment screw
- On request: Rotary knob version
- ◀ AND Actuation 65

| Dimension Table and adjustment ranges |                  |
|---------------------------------------|------------------|
| Adjustment range [s]                  | Dimension A [mm] |
| 0.1 to 15                             | 103 (133*)       |
| 0.1 to 30                             | 117 (147*)       |
| 0.1 to 60                             | 150 (180*)       |

\* Version with rotary knob (optional)

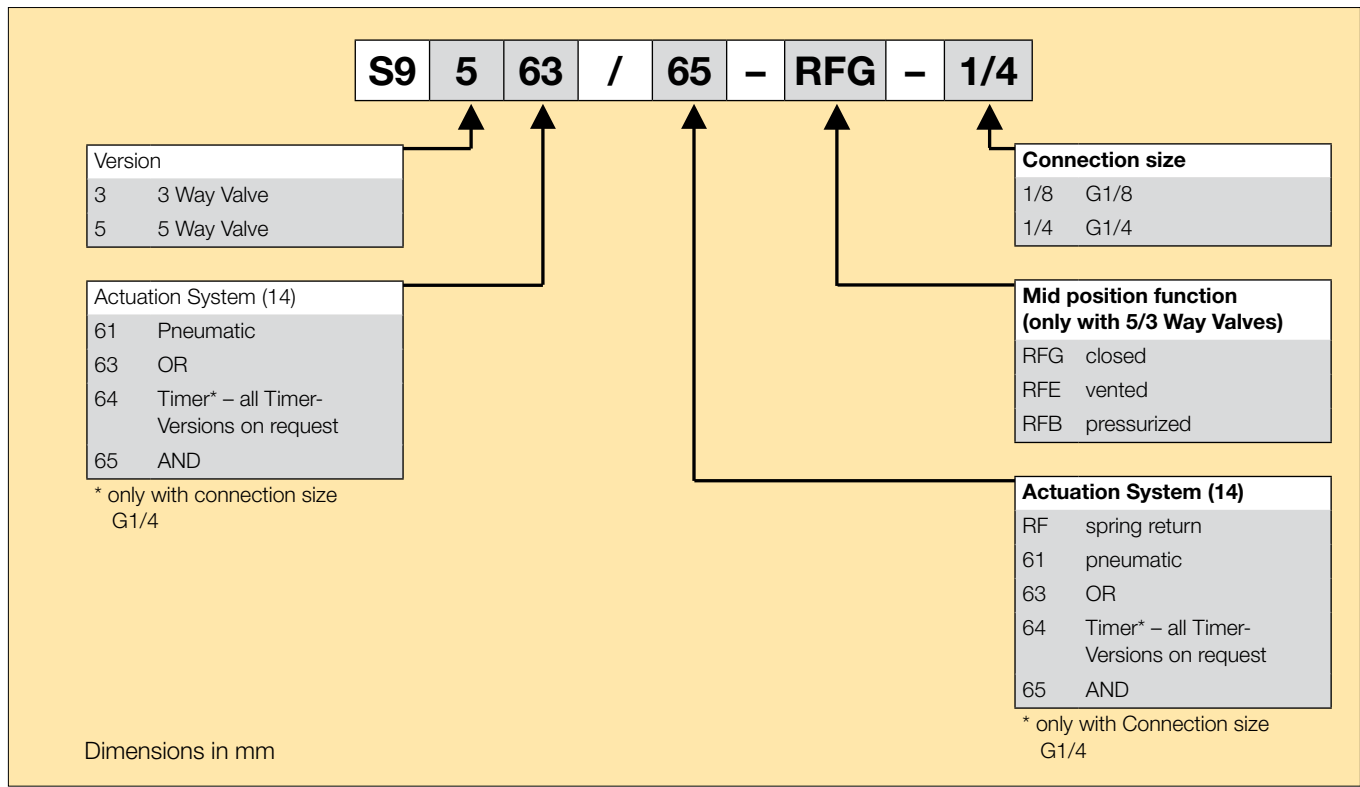
- ◀ AND Actuation 65
- ◀ Timer Actuation 64
- Standard version: Countersunk adjustment screw
- On request: Rotary knob version
- ◀ OR Actuation System 63
- ◀ Pneumatic Actuation 61

| Dimension Table and adjustment ranges |                  |
|---------------------------------------|------------------|
| Adjustment range [s]                  | Dimension A [mm] |
| 0.1 to 15                             | 103 (133*)       |
| 0.1 to 30                             | 117 (147*)       |
| 0.1 to 60                             | 150 (180*)       |

\* Version with rotary knob (optional)

## Valve Combinations with Logic Elements 3/2, 5/2 and 5/3 Way Valves

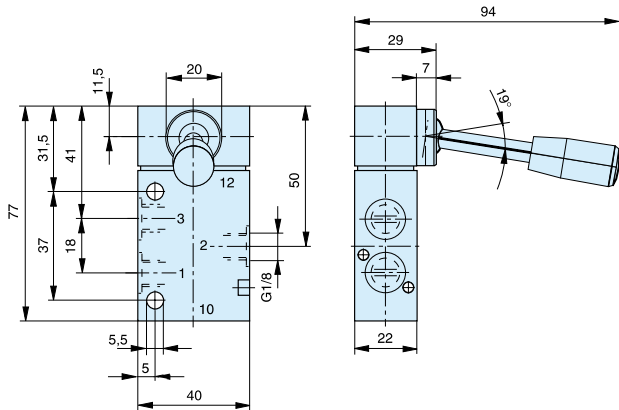
### Order Instructions



### 3/2 Way Lever Operated Valves

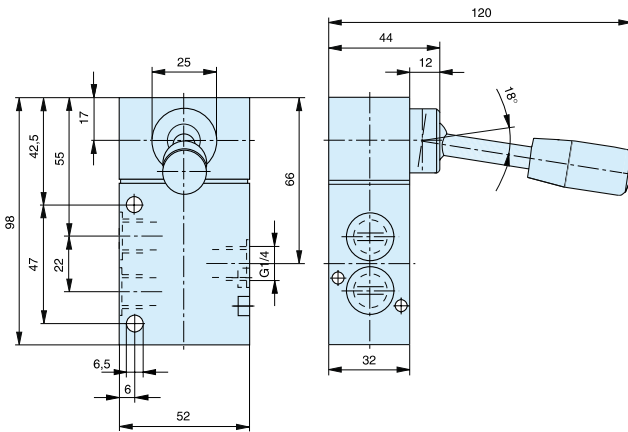
G1/8 Hand lever actuated

Type: S9 311-1/8, S9 311RF-1/8



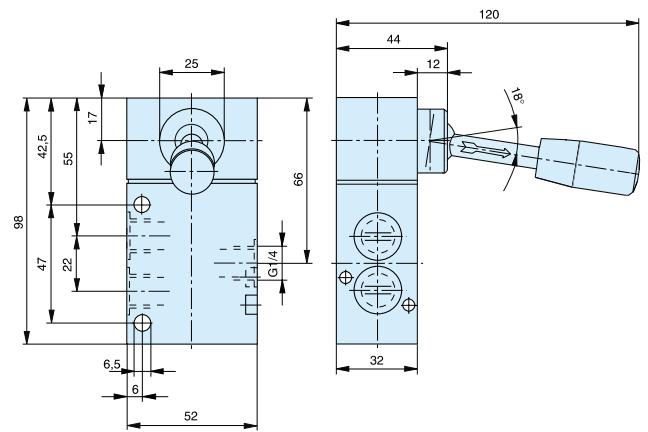
G1/4 Hand lever actuated

Type: S9 311-1/4, S9 311RF-1/4



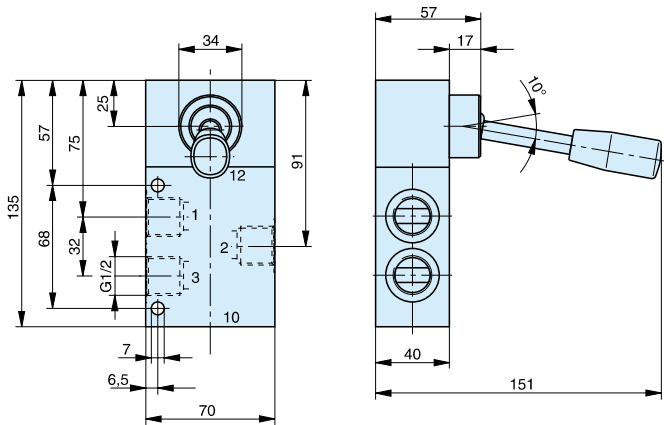
G1/4 Safety hand lever actuated

Type: S9 311S-1/4



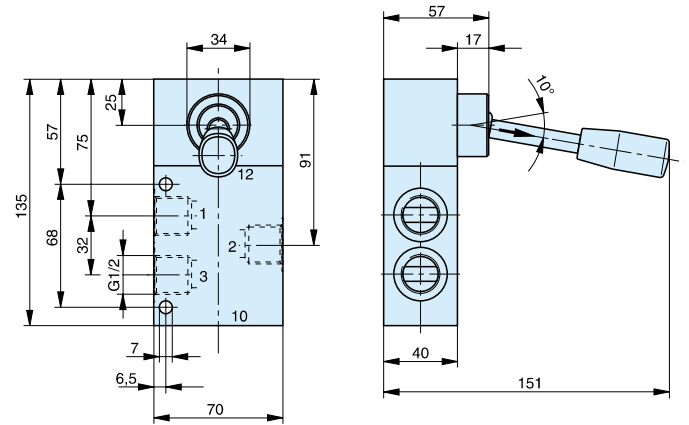
G1/2 Hand lever actuated

Type: S9 311-1/2, S9 311RF-1/2



G1/2 Safety hand lever actuated

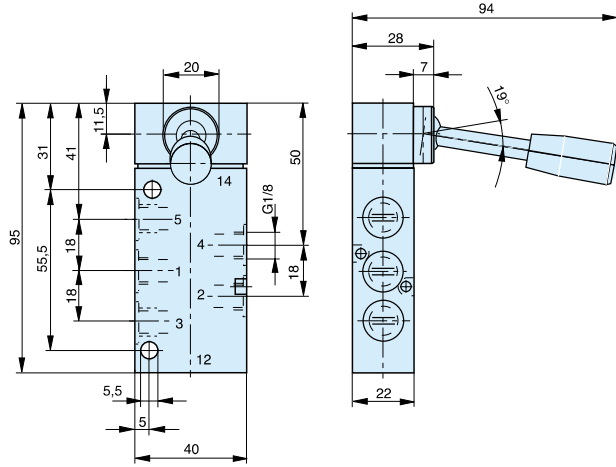
Type: S9 311S-1/2



### 5/2 Way Lever Operated Valves

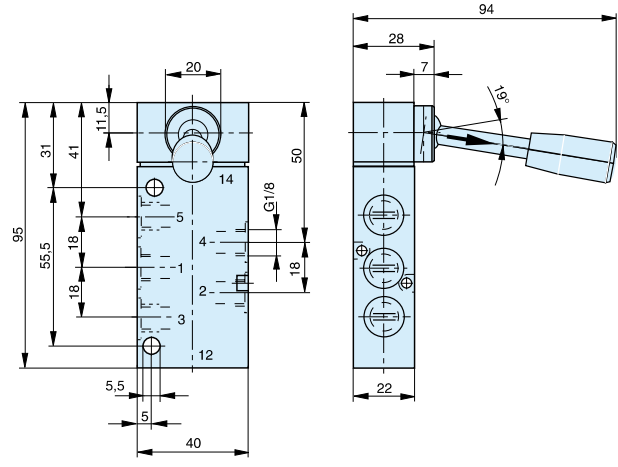
G1/8 Hand lever actuated

Type: S9 511-1/8, S9 511RF-1/8



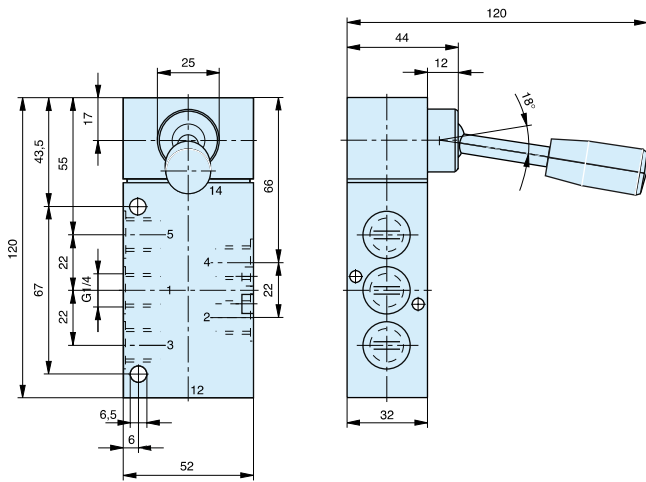
G1/8 Safety Hand lever actuated

Type: S9 511S.-1/8



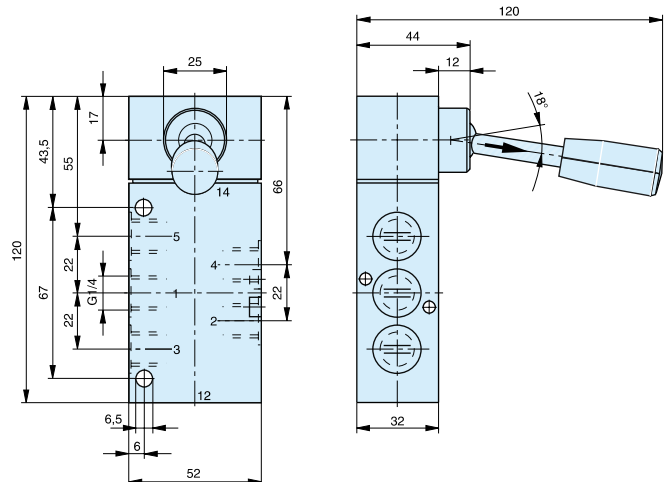
G1/4 Hand lever actuated

Type: S9 511-1/4, S9 511RF-1/4



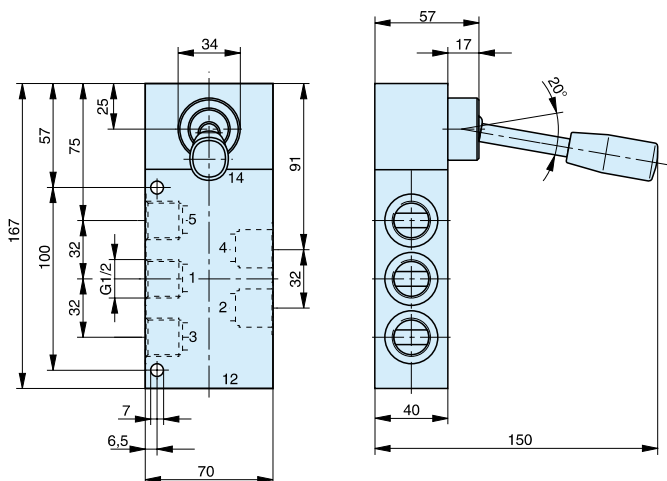
G1/4 Safety hand lever actuated

Type: S9 511S-1/4



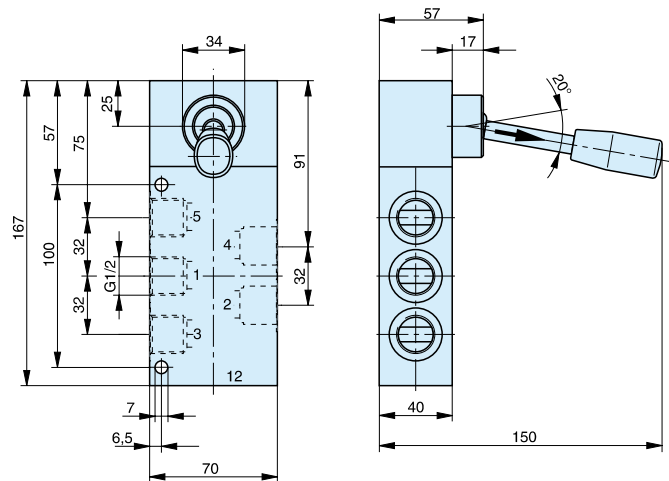
G1/2 Hand lever actuated

Type: S9 511-1/2, S9 511RF-1/2



G1/2 Safety hand lever actuated

Type: S9 511S-1/2

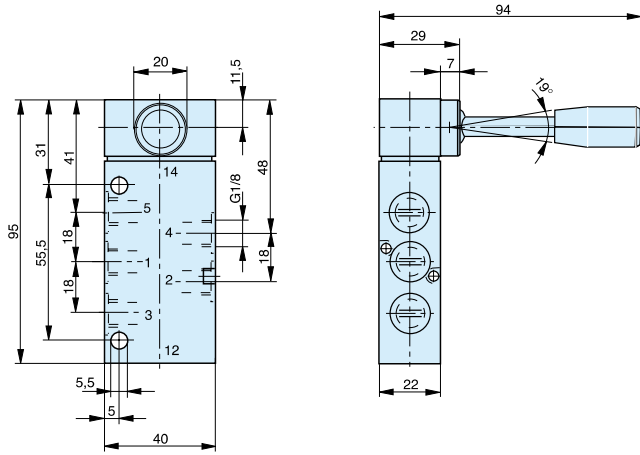




### 5/3 Way Lever Operated Valves

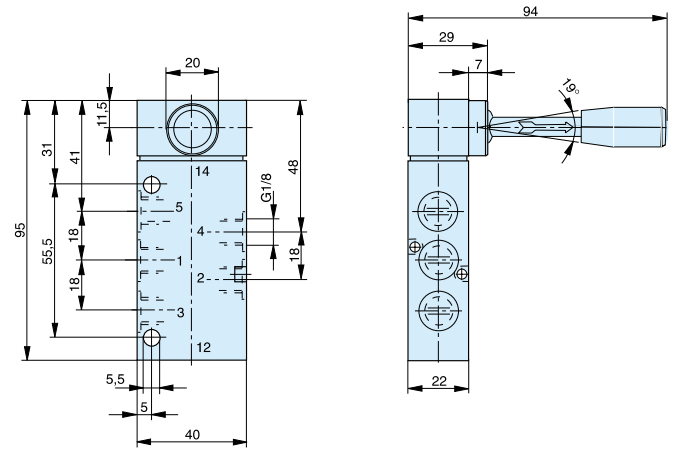
G1/8 Hand lever actuated

Type: S9 511.-1/8, S9 511RF.-1/8



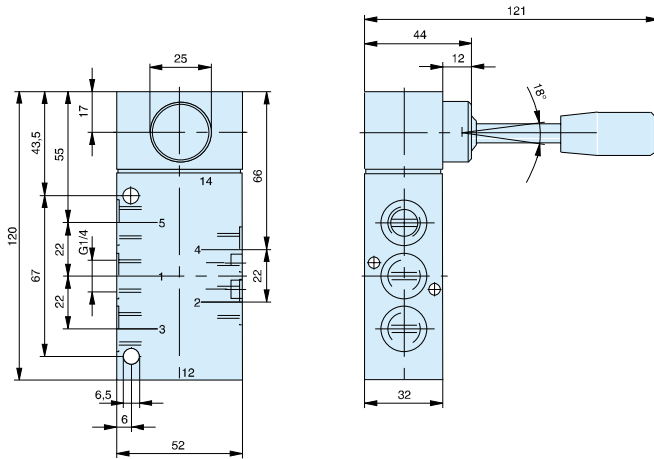
G1/8 Safety Hand lever actuated

Type: S9 511S.-1/8



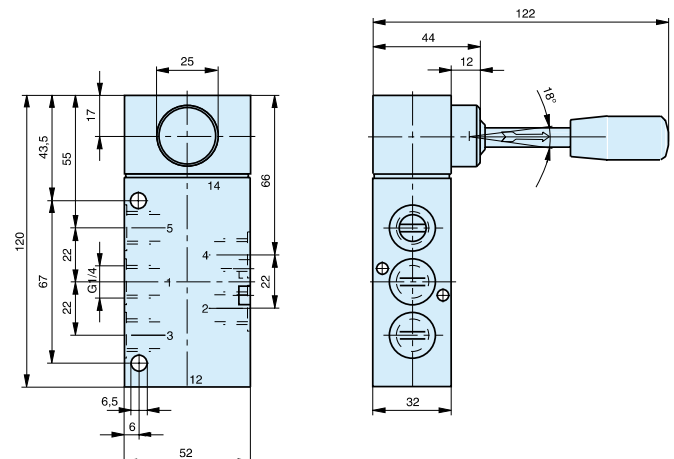
G1/4 Hand lever actuated

Type: S9 511.-1/4, S9 511RF.-1/4



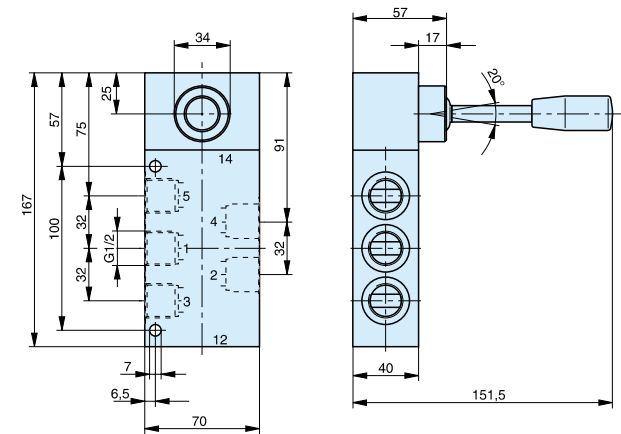
G1/4 Safety hand lever actuated

Type: S9 511S.-1/4



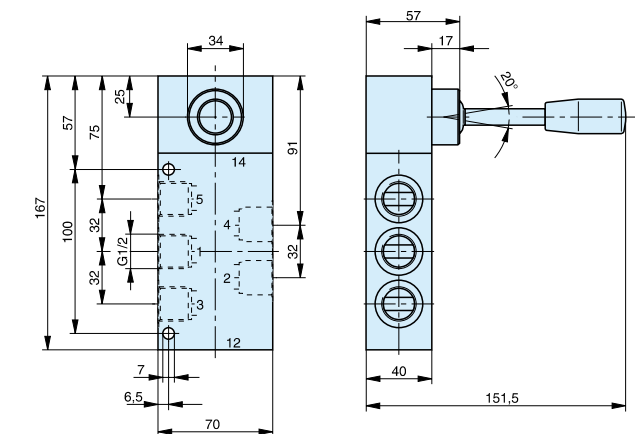
G1/2 Hand lever actuated

Type: S9 511.-1/2, S9 511RF.-1/2



G1/2 Safety hand lever actuated

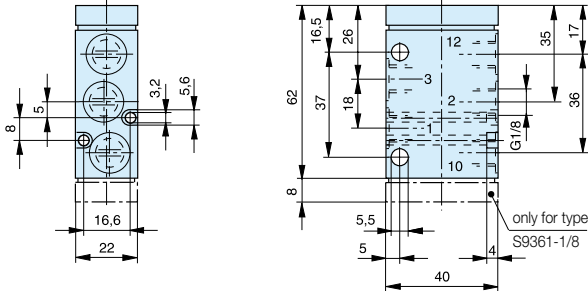
Type: S9 511S.-1/2



### G1/8 - 3/2 Way Valves

Pneumatically actuated

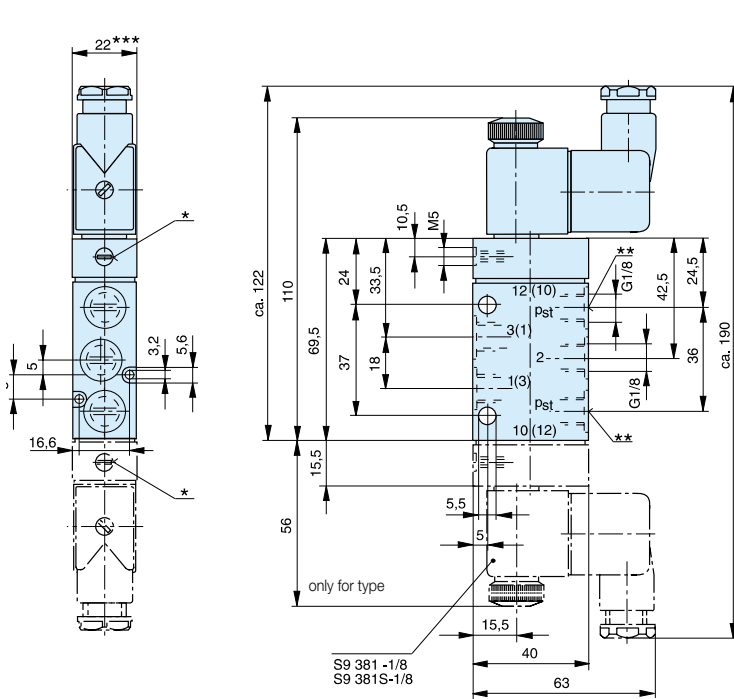
Type: S9 361-1/8, S9 361RF-1/8



Electrically actuated

Type: S9 381(S)-1/8, S9 381(S)RF-1/8

### Solenoid for use in EX areas – Dimensions

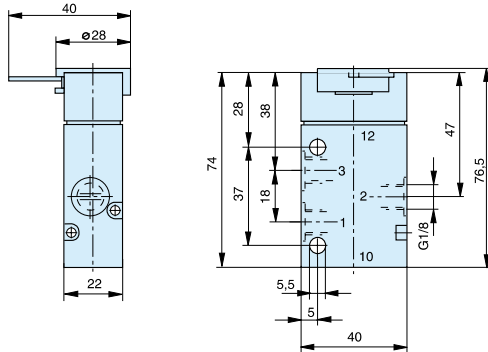


- \* Manual override
- \*\* Operating pressure supply  $p_{st}$  only for type S9 381S
- \*\*\* Solenoid width = 30 mm on low wattage coil version

Dimensions in mm

### G1/8 - 3/2 Way Valves

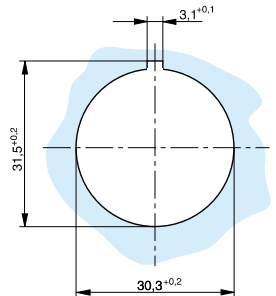
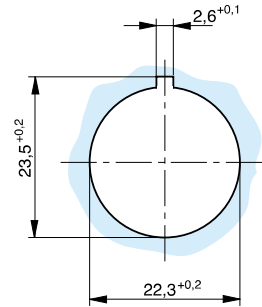
Basic valve for panel mounting actuators  
Type: S9 390RF-1/8



#### Mounting diameter

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm



The actuators for these valves are interchangeable and can be mounted with 180° displacement on the basic valve. The actuators are not mounted upon delivery.

#### Rotary lever, indexed – Type: 12T-22, 12T-30,

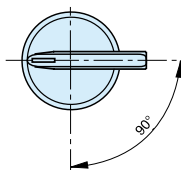
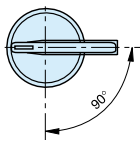
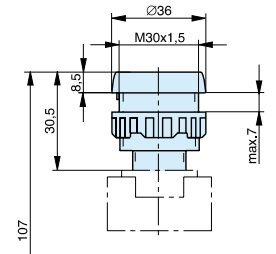
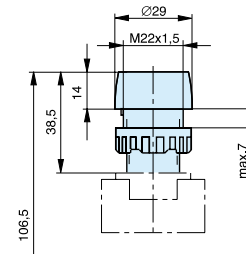
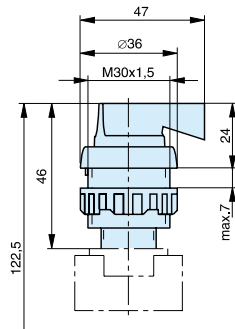
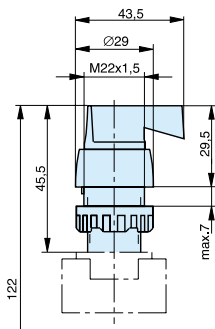
#### Pushbutton – Type: 13T-RF-22, 13T-RF-30

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm



Dimensions in mm

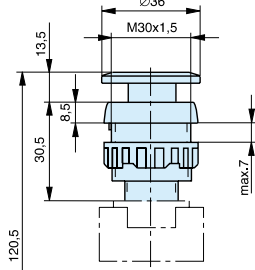
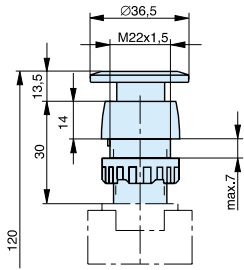
### G1/8 - 3/2 Way Valves

#### Mushroom pushbutton

Type: 15T-RF-22, 15T-RF-30

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm

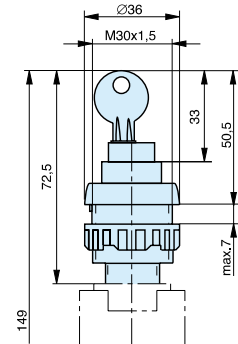
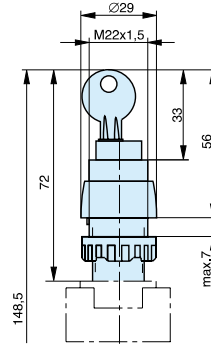


#### Locking switch

Type: 16T-22, 16T-30

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm

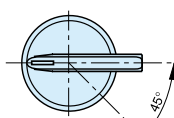
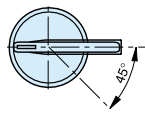
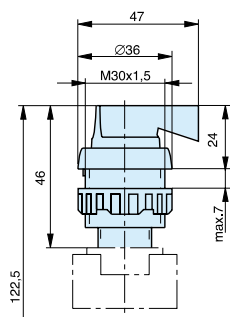
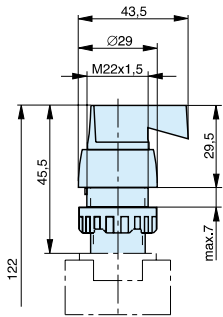


#### Rotary lever with spring return

Type: 12T-RF-22, 12T-RF-30

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm

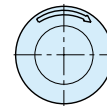
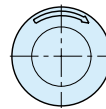
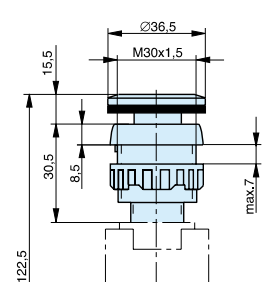
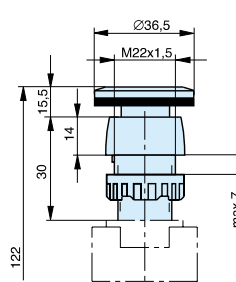


#### Mushroom pushbutton emergency-Off

Type: 18T-22, 18T-30

Mounting diameter Ø22 mm

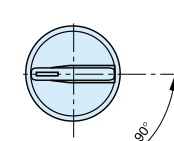
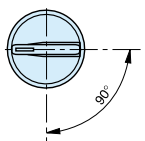
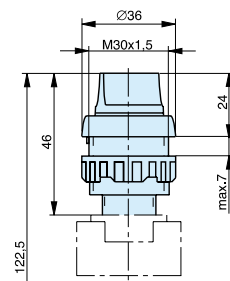
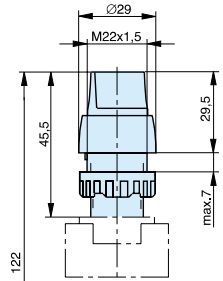
Mounting diameter Ø30 mm



#### Rotary switch – Type: 17T-22, 17T-30

Mounting diameter Ø22 mm

Mounting diameter Ø30 mm

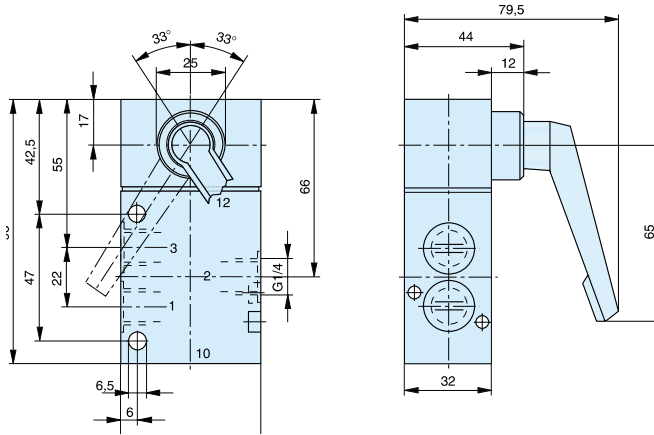


Dimensions in mm

**G1/4 - 3/2 Way Valves**

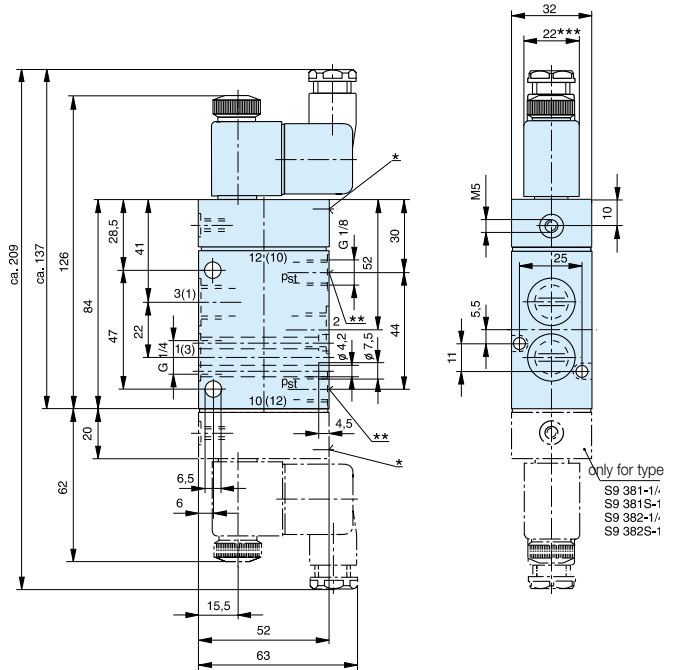
**Rotary lever actuated**

Type: S9 312-1/4, S9 312RF-1/4



**Electrically actuated**

- Type: S9 381(S)-1/4, S9 382(S)-1/4,  
 S9 381(S)RF-1/4



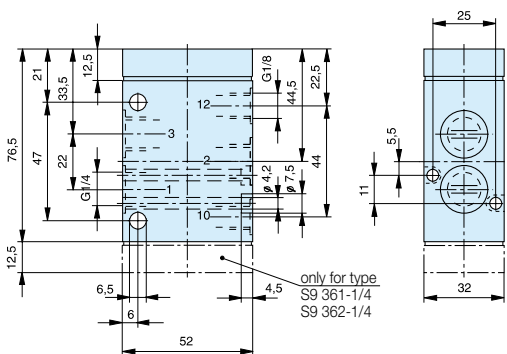
- \* Manual override
- \*\* Operating pressure supply  $p_{st}$  only for type S9 381S
- \*\*\* Solenoid width = 30 mm on low wattage coil version

**Note:**

The "normally open" valve S9 381S-RF-1/4 cannot be used on a P-supply manifold.

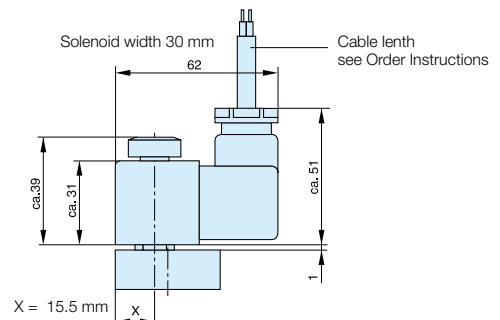
**Pneumatically actuated**

Type: S9 361-1/4, S9 362-1/4, S9 361RF-1/4



**Solenoid for use in EX areas**

**Dimensions**

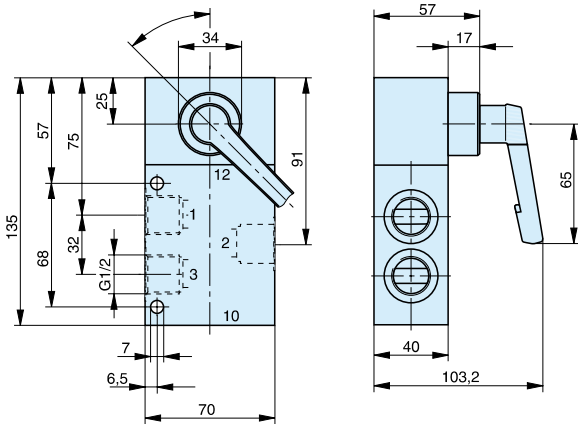


Dimensions in mm

G1/2 - 3/2 Way Valves

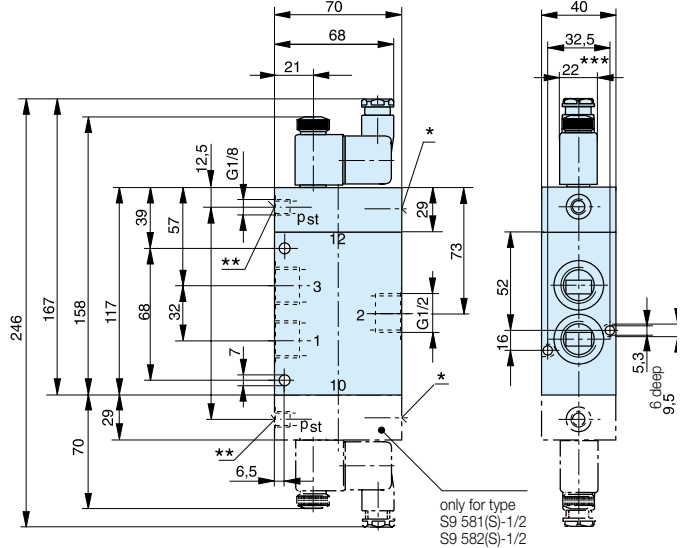
Rotary lever actuated

Type: S9 312-1/2, S9 312RF-1/2



Electrically actuated

Type: S9 381(S)-1/2, S9 382(S)-1/2, S9 381(S)RF-1/2



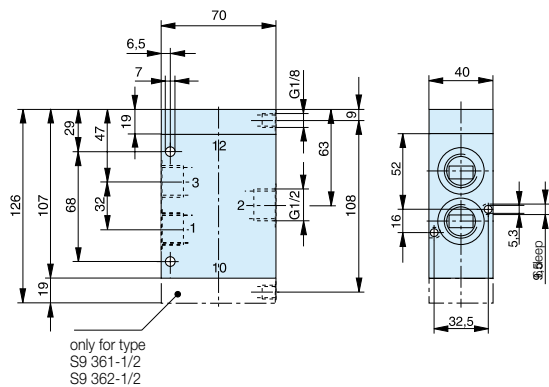
- \* Manual override
- \*\* Operating pressure supply  $p_{st}$  only for type S9 381S
- \*\*\* Solenoid width = 30 mm on low wattage coil version

Note:

The "normally open" valve S9 381S-RF-1/2 cannot be used on a P-supply manifold.

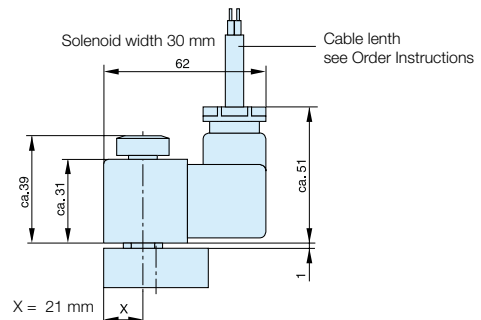
Pneumatically actuated

Type: S9 361-1/2, S9 361RF-1/2



Solenoid for use in EX areas

Dimensions

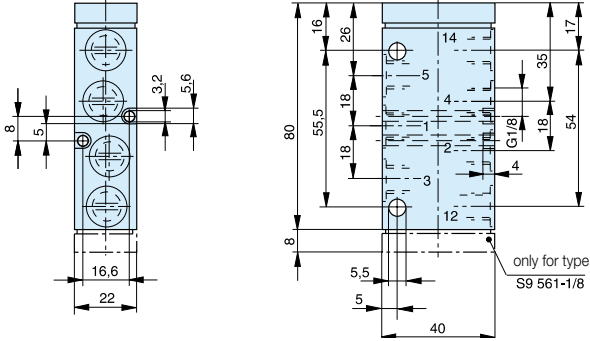


Dimensions in mm

### G1/8 - 5/2 Way Valves

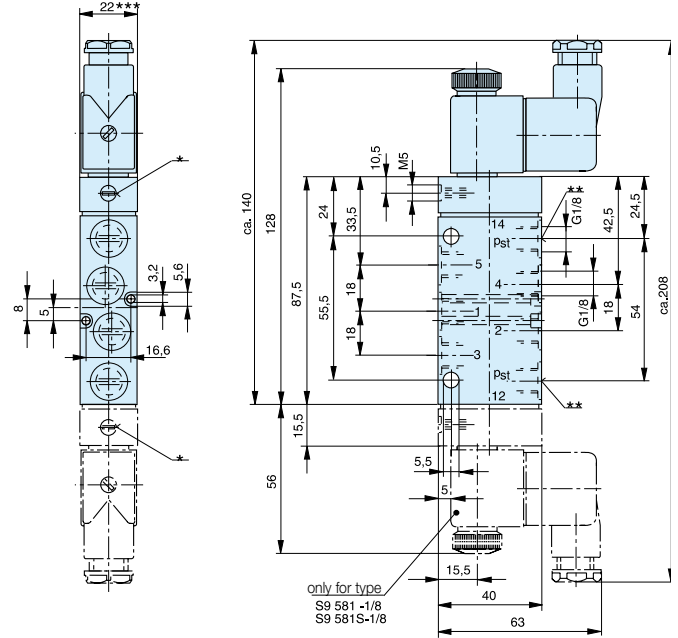
Pneumatically actuated

Type: S9 561-1/8, S9 561RF-1/8



Electrically actuated

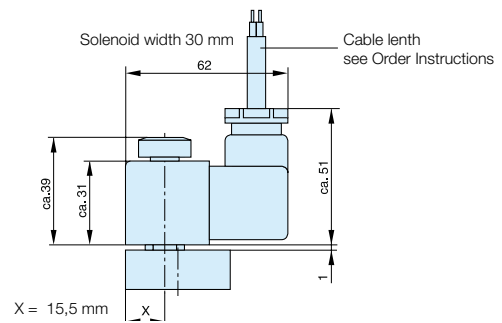
Type: S9 581(S)-1/8, S9 581(S)RF-1/8, S9 582-1/8



- \* Manual override
- \*\* Operating pressure supply  $p_{st}$  only for type S9 581S
- \*\*\* Solenoid width = 30 mm on low wattage coil version

### Solenoid for use in EX areas

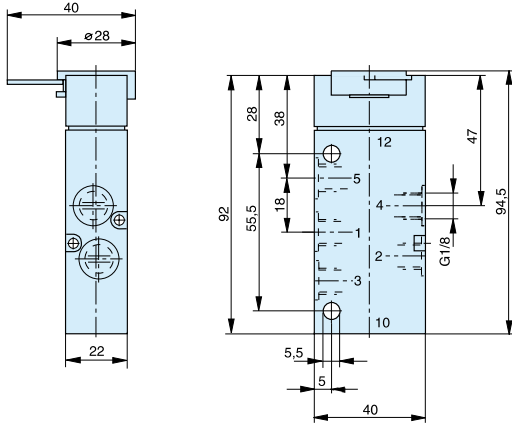
#### Dimensions



Dimensions in mm

### G1/8 - 5/2 Way Valves

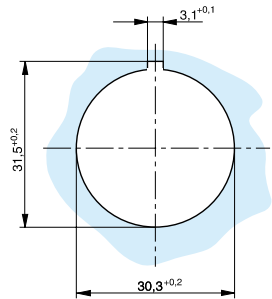
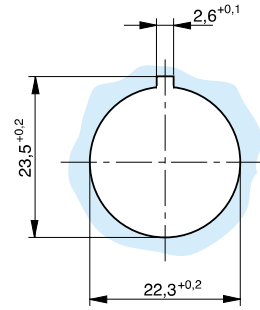
Basic valve for panel mounting actuators  
 Type: S9 590RF-1/8



#### Mounting diameter

Mounting diameter  $\varnothing 22$  mm

Mounting diameter  $\varnothing 30$  mm

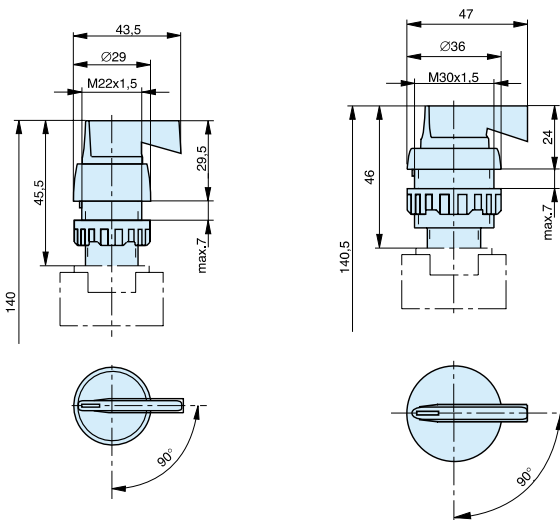


The actuators for these valves are interchangeable and can be mounted with 180° displacement on the basic valve. The actuators are not mounted upon delivery.

Rotary lever, indexed  
 Type: 12T-22, 12T-30

Mounting diameter  $\varnothing 22$  mm

Mounting diameter  $\varnothing 30$  mm

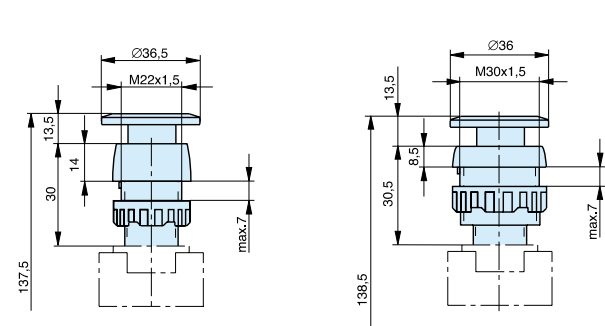


Mushroom pushbutton

Type: 15T-RF-22, 15T-RF-30

Mounting diameter  $\varnothing 22$  mm

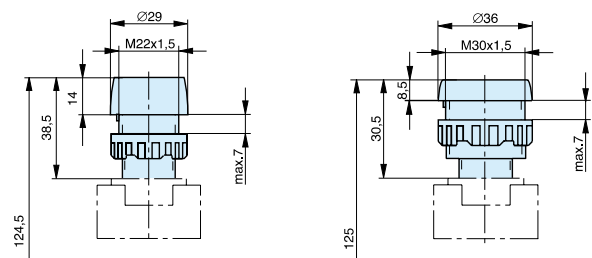
Mounting diameter  $\varnothing 30$  mm



Pushbutton - Type: 13T-RF-22, 13T-RF-30

Mounting diameter  $\varnothing 22$  mm

Mounting diameter  $\varnothing 30$  mm



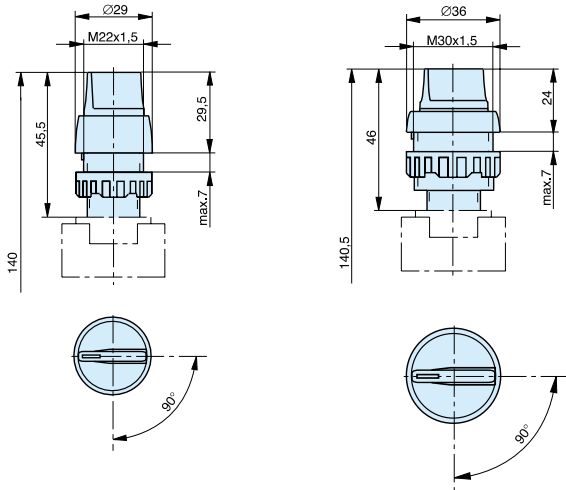
Dimensions in mm



**G1/8 - 5/2 Way Valves**

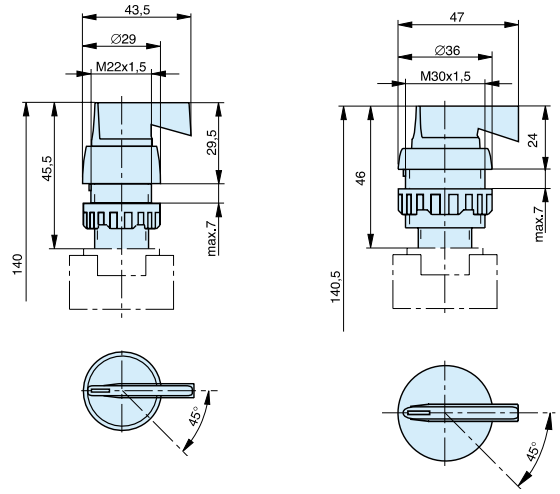
**Rotary switch**  
**Type: 17T-22, 17T-30**

**Mounting diameter Ø22 mm    Mounting diameter Ø30 mm**



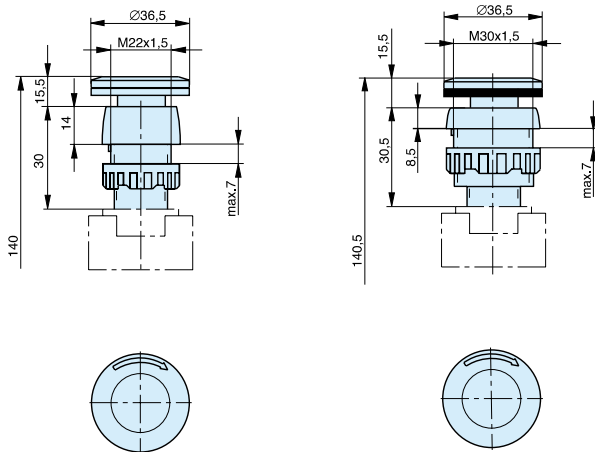
**Rotary lever with spring return**  
**Type: 12T-RF-22, 12T-RF-30**

**Mounting diameter Ø22 mm    Mounting diameter Ø30 mm**



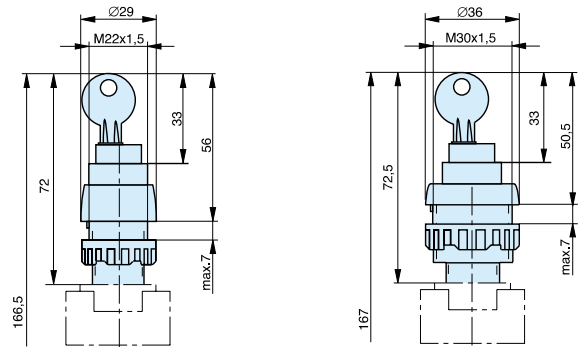
**Mushroom pushbutton emergency-Off**  
**Type: 18T-22, 18T-30**

**Mounting diameter Ø22 mm    Mounting diameter Ø30 mm**



**Locking switch**  
**Type: 16T-22, 16T-30**

**Mounting diameter Ø22 mm    Mounting diameter Ø30 mm**

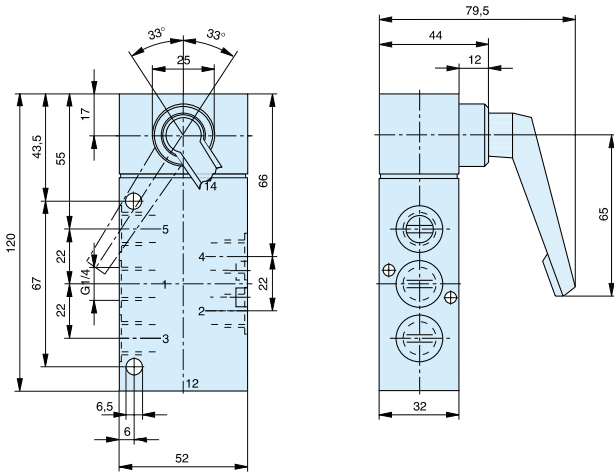


Dimensions in mm

G1/4 - 5/2 Way Valves

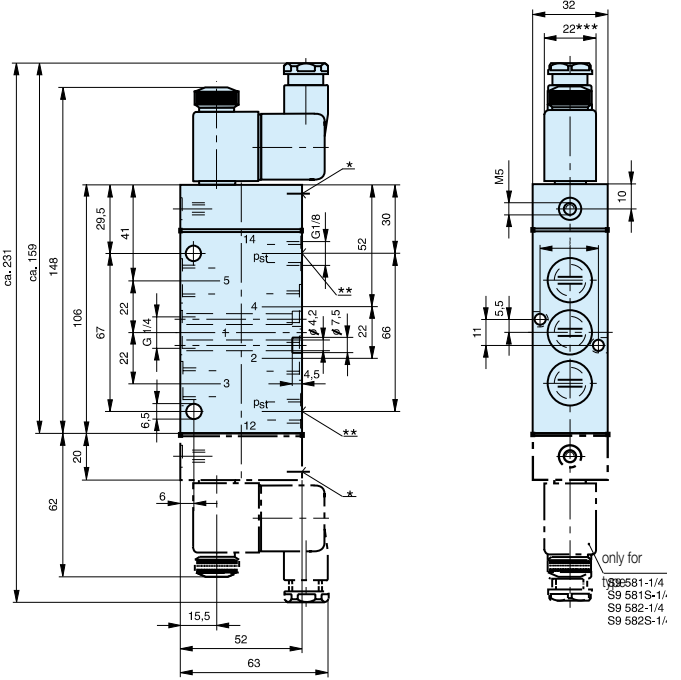
Rotary lever actuated

Type: S9 512-1/4, S9 512RF-1/4



Electrically actuated

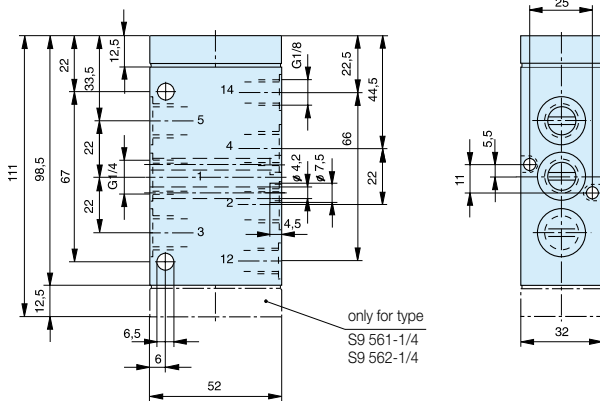
Type: S9 581(S)-1/4, S9 582(S)-1/4, S9 581(S)RF-1/4



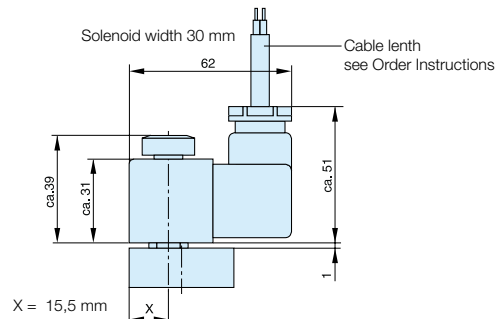
- \* Manual override
- \*\* Operating pressure supply  $p_{st}$  only for type S9 581S
- \*\*\* Solenoid width = 30 mm on low wattage coil version

Pneumatically actuated

Type: S9 561-1/4, S9 562-1/4, S9 561RF-1/4



Solenoid for use in EX areas  
Dimensions

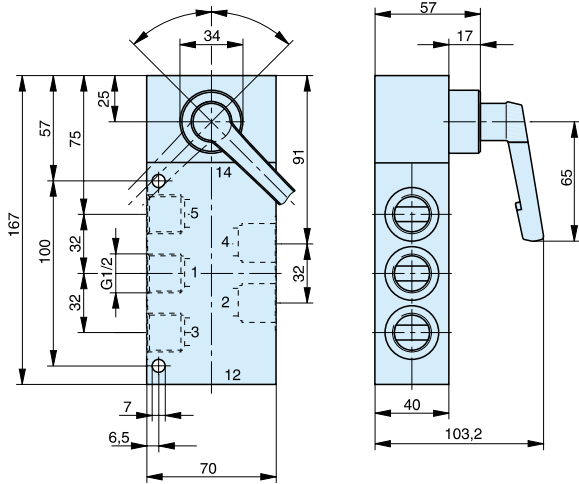


Dimensions in mm

### G1/2 - 5/2 Way Valves

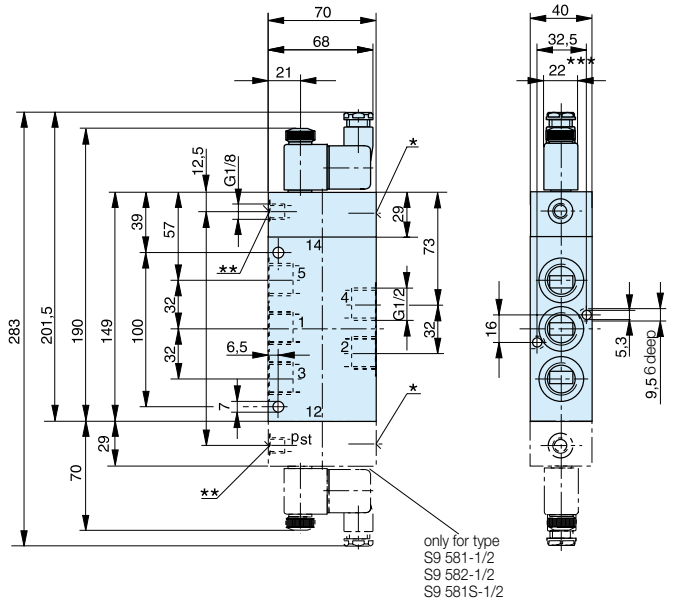
#### Rotary lever actuated

Type: S9 512-1/2, S9 512RF-1/2



#### Electrically actuated

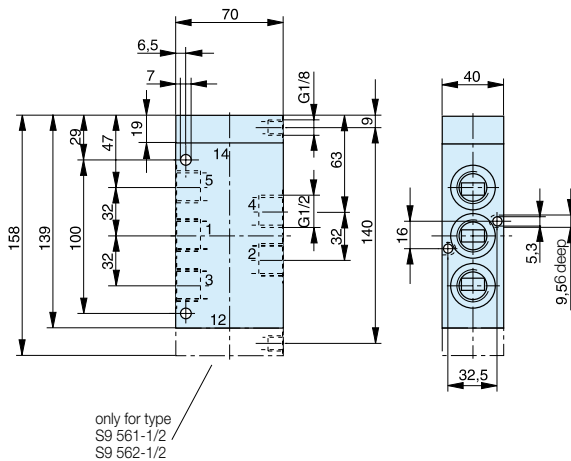
Type: S9 581(S)-1/2, S9 582-1/2, S9 581(S)RF-1/2



- \* Manual override
- \*\* Operating pressure supply  $p_{st}$  only for type S9 581S
- \*\*\* Solenoid width is 30 mm on low wattage coil version

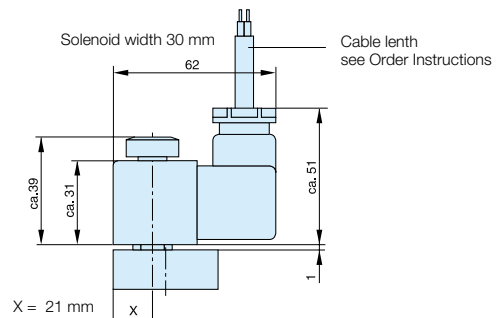
#### Pneumatically actuated

Type: S9 561-1/2, S9 561RF-1/2, S9 562-1/2



#### Solenoid for use in EX areas

##### Dimensions

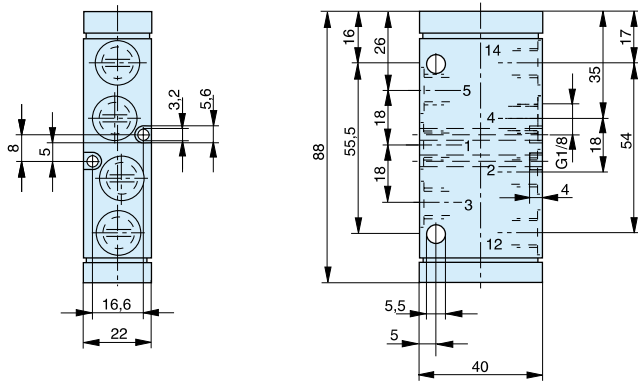


Dimensions in mm

### G1/8 - 5/3 Way Valves

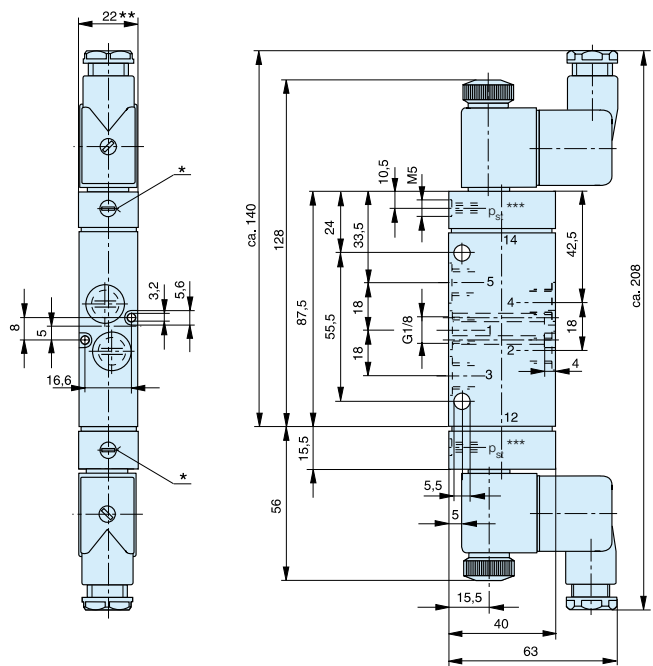
Pneumatically actuated

Type: S9 561RF.-1/8



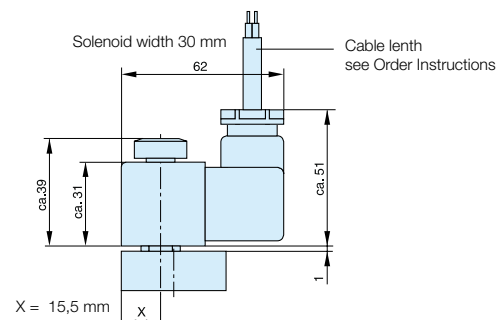
Electrically actuated

Type: S9 581(S)-RF.-1/8



Solenoid for use in EX areas

Dimensions



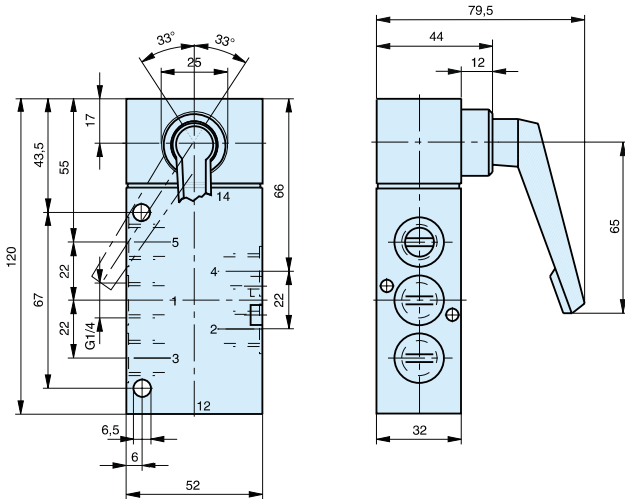
- \* Manual override
- \*\* Solenoid width = 30 mm on low wattage coil version
- \*\*\* Operating pressure supply  $p_{st}$  only for type S9 581S

Dimensions in mm

### G1/4 - 5/3 Way Valves

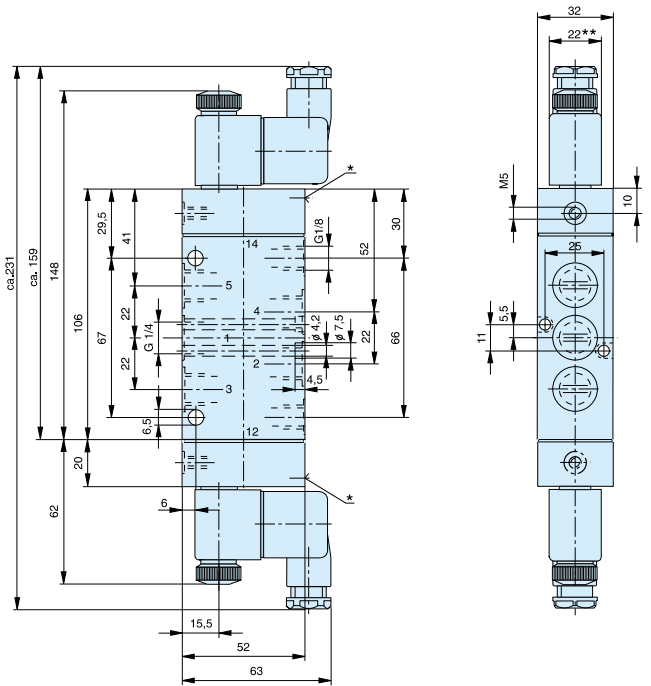
#### Rotary lever actuated

Type: S9 512.-1/4, S9 512RF.-1/4



#### Electrically actuated

Type: S9 581RF.-1/4

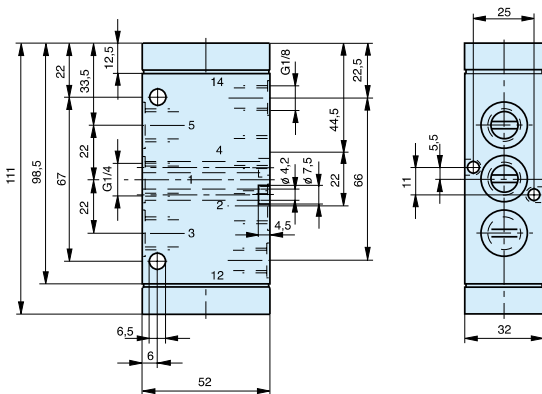


\* Manual override

\*\* Solenoid width is 30 mm on low wattage coil version

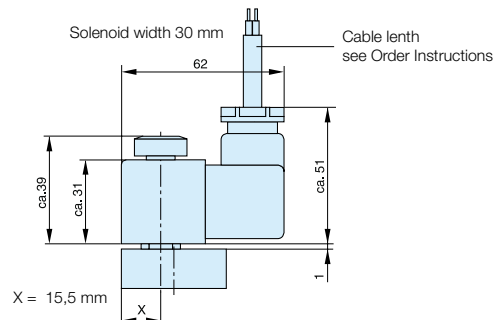
#### Pneumatically actuated

Type: S9 561RF.-1/4



#### Solenoid for use in EX areas

##### Dimensions

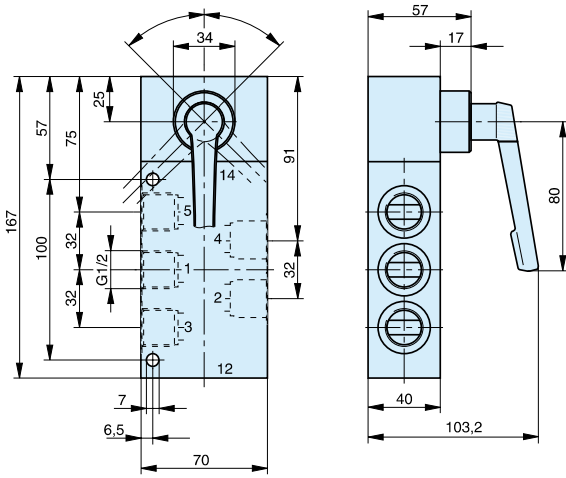


Dimensions in mm

G1/2 - 5/3 Way Valves

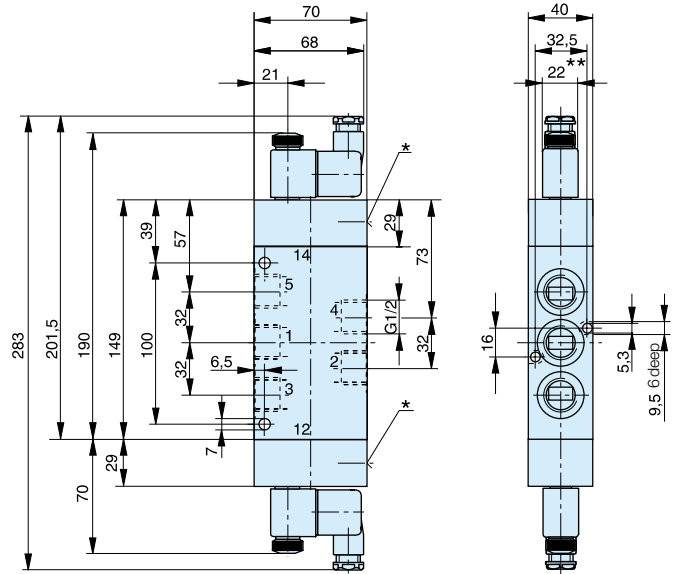
Rotary lever actuated

Type: S9 512.-1/2, S9 512RF.-1/2



Electrically actuated

Type: S9 581RF.-1/2

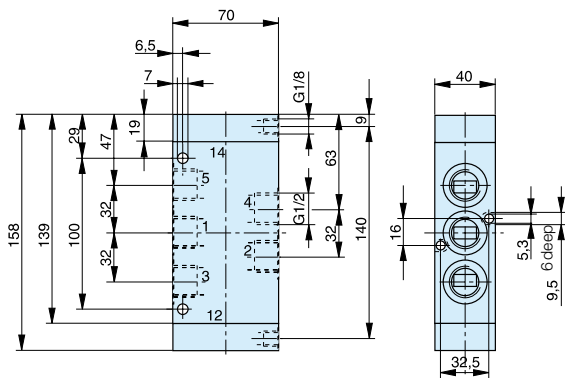


\* Manual override

\*\* Solenoid width is 30 mm on low wattage coil version

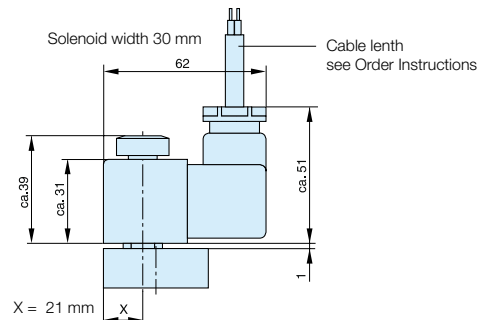
Pneumatically actuated

Type: S9 561RF.-1/2



Solenoid for use in EX areas

Dimensions



Dimensions in mm

## 5/2-Way Oscillating Valves

The oscillating valve generates oscillating movements such as e.g. shaking, hammering, plunging, feed motions etc.

**Function:**

If compressed air is introduced into inlet port 1, the outlet ports 4 and 2 are alternately supplied with compressed air.

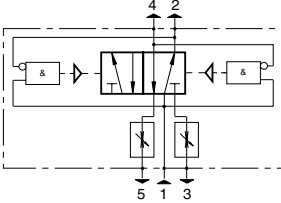
The speed of the operated cylinder and also the stroke frequency are adjusted with two exhaust air throttles.



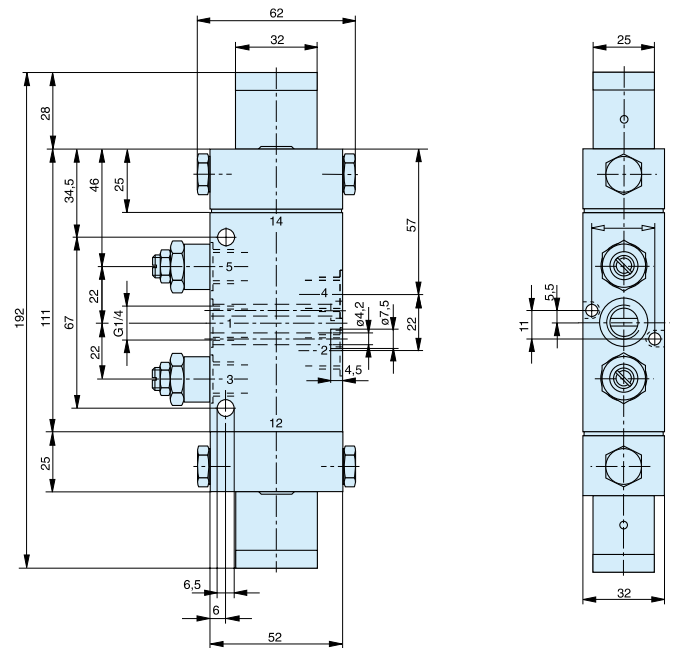
### Operating information

|                              |   |                           |                              |
|------------------------------|---|---------------------------|------------------------------|
| Type                         | Spool valve   | Lubrication *             | None or oil mist lubrication |
| Mounting                     | 2 Screws M6 (M4)                                      | Pneumatic Characteristics |                              |
| Tube connection              | Thread  | Nominal pressure          | 6 bar                        |
| Connection size              | G1/4, 11 deep   | Operating pressure range  | 3–8 bar                      |
| Weight (mass)                | 0.65 kg   | Nominal flow              | 1300 l/min                   |
| Installation                 | In any position                                       | Actuation                 |                              |
| Ambient temperature range ** | -10 °C to +60 °C                                      | Pneumatic                 | Direct                       |
| Medium temperature range **  | -10 °C to +60 °C                                      | Actuation pressure range  | 3–8 bar                      |
| Medium                       | Filtered and oiled or filtered, unoled compressed air |                           |                              |

\* We recommend the use of mineral oil type VG 32 to ISO 3448  
 \*\* Note: Please consult us for operating temperatures below 0° C

| Symbol  | Type             | Order Code |
|---|------------------|------------|
|  | S9 568/68-1/4-SO | PD 34796   |

### Pneumatic oscillating – Type: S9 568/68-1/4-SO



Dimensions in mm

### 3/2-Way Screw-In Valve Series EV



#### Operating information

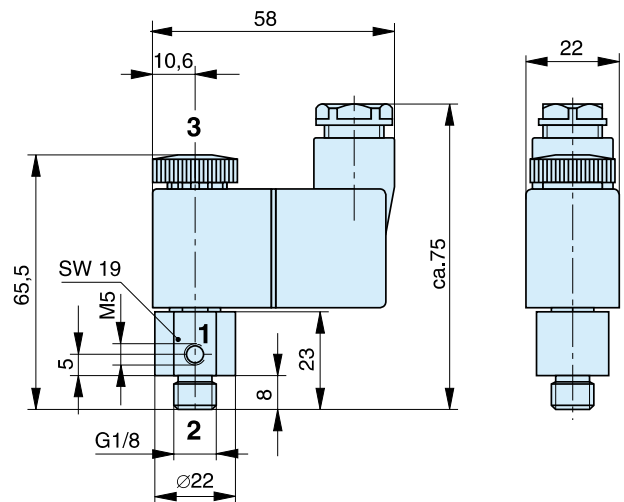
|                                  |   |                                       |  |                |
|----------------------------------|---|---------------------------------------|--|----------------|
| Actuation                        | Electrical directly operated  | <b>Actuation</b>                      |  |                |
| Type                             | Poppet valve, normally closed   | Electrical                            | Direct   |                |
| Mounting                         | Screws into thread G1/8   | Voltage type                          | Alternating current (50/60Hz)  | Direct current |
| Tube connection                  | Thread  | <b>Nominal voltage <sup>(1)</sup></b> |  |                |
| Port size                        | Port 1: M5, port 2: G1/8  | - Standard version **                 | 230 ±10%   | 24 ±10%        |
| Weight                           | 0.1 kg  | - Low wattage version                 | 230 ±10%   | 24 ±10%        |
| Nominal diameter                 | 1 mm  | <b>Initial power consumption</b>      |  |                |
| Installation                     | in any position   | - Standard version (VA)               | 11   | 4.8            |
| Ambient temperature range        | -10 °C to +60 °C  | - Low wattage version (VA)            | 7.8  | 2.7            |
| Medium temperature range         | -10 °C to +60 °C  | Continuous consumption                |  |                |
| Medium                           | Filtered compressed air (30µ)   | - Standard version (VA)               | 8.5  | 4.8            |
| Lubrication                      | With or without oil mist lubrication (We recommend the use of mineral oil type VG 32 to ISO 3448) | - Low wattage version (VA)            | 4.9  | 2.7            |
| <b>Pneumatic Characteristics</b> |   | Duty cycle                            | 100%   |                |
| Nominal pressure                 | 6 bar   | Electrical protection                 | IP 65 to DIN 40050 (applies only to solenoid with plug)                            |                |
| Operating pressure range         | 0 – 10 bar  | Connection                            | Plug to DIN EN 175301-803 form B – industrial standard, Low wattage version form A |                |
| Nominal flow                     | 30 l/min  |                                       |  |                |

(<sup>1</sup> see Order Instructions  
\*\* other voltages on request

#### Order Instructions – 3/2 Way Screw-In Valve – Series EV

| Actuation                       | Symbol                    | Order Instructions                 |
|---------------------------------|---------------------------|------------------------------------|
|                                 |                           | Type <b>Order code</b>             |
| Electrical, by permanent signal |                           | EV 381RF-M5-.. <b>PD25076-..33</b> |
| Solenoid version                | Nominal voltage           | Key code                           |
| Cast                            | 24V =                     | 02                                 |
| encapsulated housing            | 230V 50/60Hz              | 61                                 |
|                                 | Other voltages on request |                                    |

#### 3/2 Way Valve – Type: EV 381RF-M5



Dimensions in mm



### 3/2-Way Valve Series V9

NW 1.3 and 2.5

**Actuation System:**

- Electrically actuated, directly actuated

**Versions:**

Threaded version

- Normally closed
- Normally open
- With manual override



#### Operating information

|                               |  |        |   |
|-------------------------------|--|--------|---|
| Type                          | Poppet valve   |        |   |
| Mounting                      | 2 Screws M3 (NW 2.5: 2 x M4)   |        |   |
| Tube connection               | Thread   |        |   |
| Thread                        | G1/8 – 8 deep  |        |   |
| Weight                        | NW 1.3: 0.140 kg<br>NW 2.5: 0.320 kg   |        |   |
| Installation                  | In any position  |        |   |
| Ambient temperature range (1) | -10 °C to +60 °C   | Note : | Please consult us for operating temperatures below 0° C |
| Medium temperature range (1)  | -10 °C to +70 °C   |        |   |
| Medium                        | Filtered compressed air  |        |   |
| Lubrication                   | With or without oil mist lubrication<br>(We recommend the use of mineral oil type VG 32 to ISO 3448) |        |   |

**Pneumatic Characteristics**

|                          |                                       |
|--------------------------|---------------------------------------|
| Nominal pressure         | 6 bar                                 |
| Operating pressure range | NW 1.3: 0–10 bar<br>NW 2.5: 0-7 bar   |
| Nominal flow             | NW 1.3: 37 l/min<br>NW 2.5: 150 l/min |

**Actuation**

|              |                               |                |
|--------------|-------------------------------|----------------|
| Electrical   | Direct                        |                |
| Voltage type | Alternating current (50/60Hz) | Direct current |

**Nominal voltage**

|                       |                                   |                                  |                           |
|-----------------------|-----------------------------------|----------------------------------|---------------------------|
| – Standard version    | 230 V ±10%                        | 24 V ±10%                        | other voltages on request |
| – Low wattage version | 230 V ±10%<br>(not for V9-NW 2.5) | 24 V ±10%<br>(not for V9-NW 2.5) |                           |

**Initial power consumption**

|                       |                                  |                                 |
|-----------------------|----------------------------------|---------------------------------|
| – Standard version    | NW 1.3: 11 VA<br>NW 2.5: 11.5 VA | NW 1.3: 4.8 VA<br>NW 2.5: 10 VA |
| – Low wattage version | 7.8 VA                           | 2.7 VA                          |

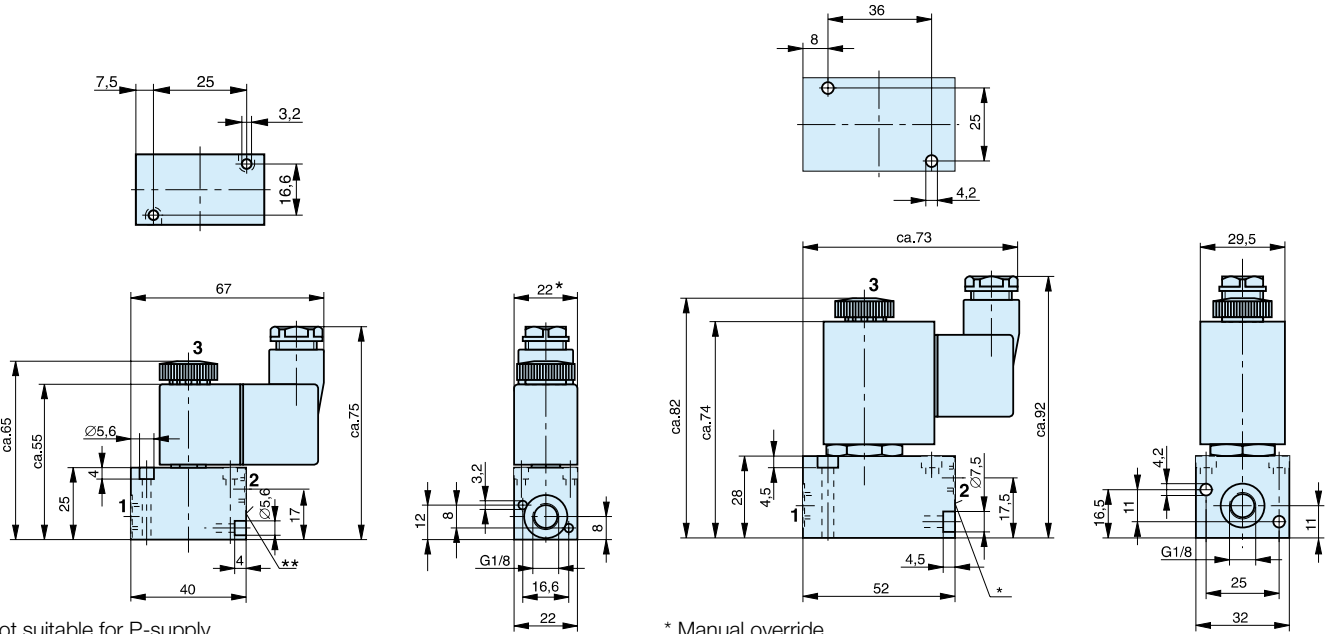
**Continuous consumption**

|                       |                                  |                                  |
|-----------------------|----------------------------------|----------------------------------|
| – Standard version    | NW 1.3: 8.5 VA<br>NW 2.5: 7.5 VA | NW 1.3: 4.8 VA<br>NW 2.5: 7.5 VA |
| – Low wattage version | 4.9 VA                           | 2.7 VA                           |

|                       |  |
|-----------------------|--|
| Duty cycle            | 100%   |
| Electrical protection | IP 65 to DIN 40050 (applies only to solenoid with connector)   |
| Connection            | NW 1.3: connector to DIN EN 175301-803 form B – industrial standard<br>NW 2.5: connector to DIN EN 175301-803 form A – industrial standard |

**Type: V9 381RF-1/8NG (NO<sup>(†)</sup>)– NW 1.3**  
**Type: V9 381H-RF-1/8NG (NO<sup>(†)</sup>)– NW 1.3**

**Type: V9 381RF-1/8NG – NW 2.5**  
**Type: V9 381H-RF-1/8NG – NW 2.5**



<sup>(†)</sup> not suitable for P-supply manifold mounting

\* Manual override  
 Dimensions in mm

**Order Instructions – 3/2 Way Valves – Series V9**

| Actuation System                | Symbol | Nominal Size (mm) | Order Instructions Type | Order code           |
|---------------------------------|--------|-------------------|-------------------------|----------------------|
| Electrical, by permanent signal |        | NW 1.3            | V9 381RF-1/8-NC-..      | <b>PA 10362-..33</b> |
|                                 |        | NW 2.5            | V9 381RF-1/8-NC-..      | <b>PA 10369-..33</b> |
|                                 |        | NW 1.3            | V9 381H-RF-1/8-NC-..    | <b>PA 10363-..33</b> |
|                                 |        | NW 2.5            | V9 381H-RF-1/8-NC-..    | <b>PA 10370-..33</b> |
|                                 |        | NW 1.3            | V9 381H-RF-1/8-NO-..    | <b>PA 10367-..33</b> |

| Solenoid version    | Nominal voltage | Applicable for | Key code |
|---------------------|-----------------|----------------|----------|
| Standard version    | 230V 50/60Hz    | 110 V =        | 61       |
|                     | 24V =           | 48V 50/60Hz    | 02       |
| Low wattage version | 24V =           |                | 13       |
|                     | 230V 50/60Hz    |                | 69       |

Other voltages on request

**Order Instructions – Accessories for P-Supply Manifold Mounting**

| Description           | for NW | Order No.     |
|-----------------------|--------|---------------|
| P-Manifold PL-1/8-..  | 1.3    | PD32763-....* |
| P-Manifold PLK-1/8-.. | 1.3    | PD37174-....* |
| P-Manifold PL-1/4-..  | 2.5    | PD32765-....* |
| P-Manifold PLK-1/4-.. | 2.5    | PD32175-....* |

\* Complete order no. with no. of valve

The delivery includes:  
 P-Manifold complete incl. mounting kit







# Air Preparation & Airline Accessories



# Parker Global Air Preparation System

**Global.**  
**Economical.**  
**Modular.**



*Performance you need,  
**wherever** you need it.*

The comprehensive Global Air Preparation System is available in three body sizes with either BSPP or NPT to accommodate thread type requirements.

Full featured filters, regulators, filter/regulators, and lubricators are available with a wide range of standard options to meet air preparation needs.

Individual units can easily be assembled into various combinations, utilizing patented modular lightweight body connectors.

[www.parker.com/globalfrl](http://www.parker.com/globalfrl)

## Validated for transport applications



As you would expect from a member of the Rail Industry Association, the Global FRL meets the test specification standards enabling the Global FRL to be used as a validated product in a variety of rail applications.

RAILWAY INDUSTRY  
ASSOCIATION

CEI/ICE 61373 1999-1 Category 2 (BS EN 61373:1999)






# Application Guide

**FRL to Valve:** The chart below contains recommendations for the correct selection of Global Air Preparation units to suit the number and size of valves in a typical application.

|                                | P31 Mini Series                             |        |        |        | P32 Compact Series |       |       |       |       |       | P33 Standard Series |       |       |       |       |       |
|--------------------------------|---|--------|--------|--------|--------------------|-------|-------|-------|-------|-------|---------------------|-------|-------|-------|-------|-------|
|                                | Number of valves that would actuate at once |        |        |        |                    |       |       |       |       |       |                     |       |       |       |       |       |
|                                | 1   | 2      | 3      | 4      | 5                  | 6     | 7     | 8     | 9     | 10    | 11                  | 12    | 13    | 14    | 15    | 16    |
| Moduflex 1                     | Yellow                                      | Yellow | Yellow | Yellow | Yellow             | Green | Green | Green | Green | Green | Green               | Green | Green | Green | Green | Green |
| Isys Micro                     | Yellow                                      | Yellow | Yellow | Yellow | Green              | Green | Green | Green | Green | Green | Green               | Green | Green | Green | Green | Green |
| HB / Viking Xtreme             | Yellow                                      | Yellow | Yellow | Green  | Green              | Green | Green | Green | Green | Green | Green               | Green | Green | Green | Green | Green |
| Moduflex 2                     | Yellow                                      | Yellow | Green  | Green  | Green              | Green | Green | Green | Green | Green | Green               | Green | Green | Green | Green | Green |
| HA / Global ISO                | Yellow                                      | Green  | Green  | Green  | Green              | Green | Green | Green | Green | Green | Green               | Green | Green | Green | Green | Green |
| See Larger Parker FRL Offering |   |        |        |        |                    |       |       |       |       |       |                     |       |       |       |       |       |

**Actuator to FRL:** The chart below contains recommendations for the correct selection of Global Air Preparation units suitable for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than the chart. The table is based on a Maximum cylinder speed of 0.5m/s

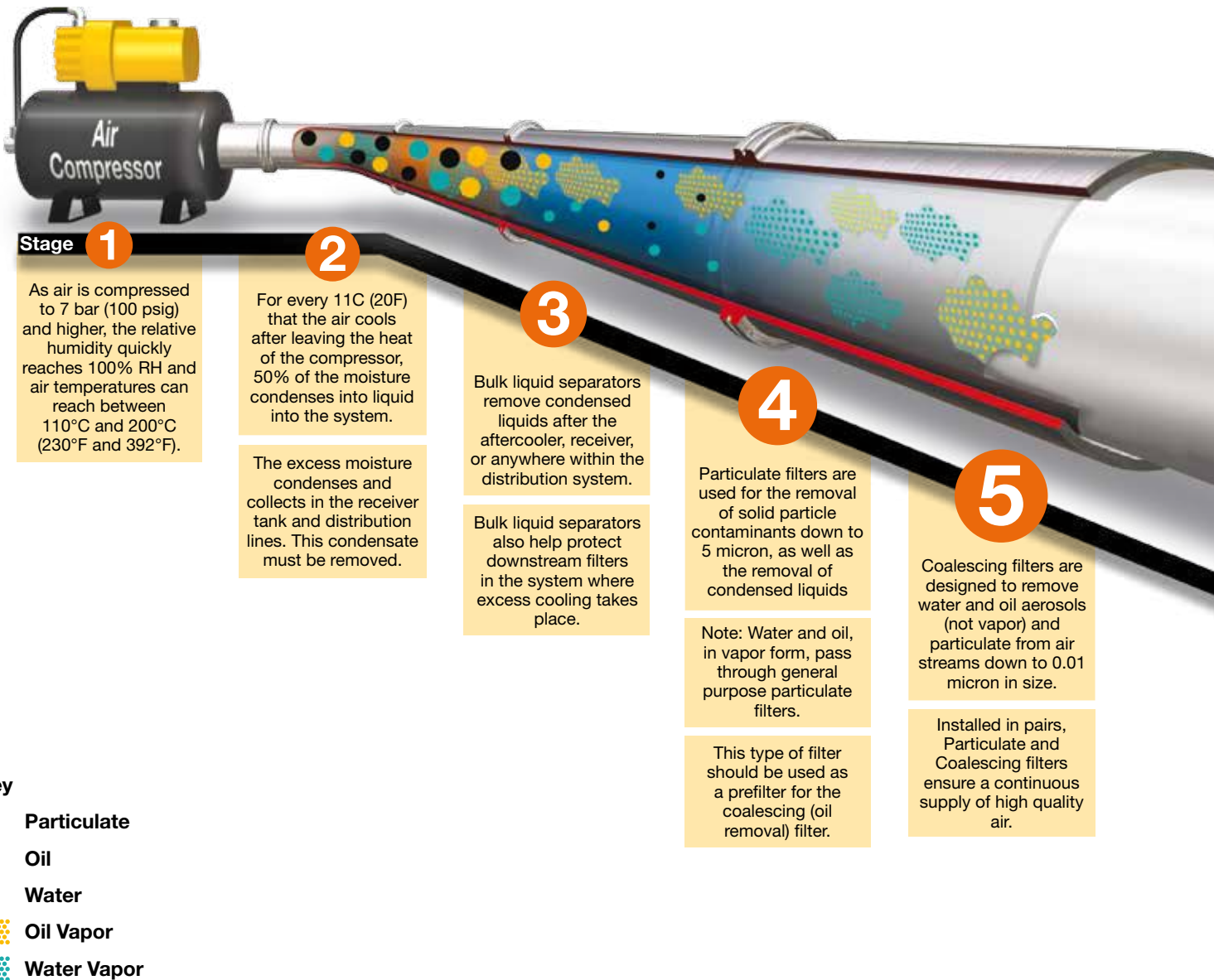
| Cyl Ø mm<br>Cyl Ø inches              |    | Cylinder bore size  |              |              |             |   |               |               |               |   |             |               |             |                                |             |        |
|---------------------------------------|----|---|--------------|--------------|-------------|---|---------------|---------------|---------------|---|-------------|---------------|-------------|--------------------------------|-------------|--------|
|                                       |    | 5<br>(5/16)   | 10<br>(7/16) | 16<br>(9/16) | 20<br>(3/4) | 25<br>(1)   | 28<br>(1-1/8) | 32<br>(1-1/4) | 40<br>(1-1/2) | 45<br>(1-3/4)   | 50<br>(2)   | 63<br>(2-1/2) | 75<br>(3)   | 80<br>(3-1/4)                  | 100<br>(4)  |        |
| Tube Ø mm<br>Tube Ø inches            |    | Tube diameter external  |              |              |             |   |               |               |               |   |             |               |             |                                |             |        |
|                                       |    | 4<br>(5/32)   | 4<br>(5/32)  | 4<br>(5/32)  | 6<br>(1/4)  | 6<br>(1/4)  | 6<br>(1/4)    | 6<br>(1/4)    | 8<br>(5/16)   | 8<br>(5/16)   | 8<br>(5/16) | 10<br>(3/8)   | 10<br>(3/8) | 12<br>(1/2)                    | 12<br>(1/2) |        |
| Number of cylinders actuating at once | 1  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 2  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 3  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 4  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 5  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 6  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 7  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 8  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 9  | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       | 10 | Yellow  | Yellow       | Yellow       | Yellow      | Yellow  | Yellow        | Yellow        | Yellow        | Yellow  | Yellow      | Yellow        | Yellow      | Yellow                         | Yellow      | Yellow |
|                                       |    | P31 Mini Series   |              |              |             | P32 Compact Series  |               |               |               | P33 Standard Series   |             |               |             | See Larger Parker FRL Offering |             |        |
|                                       |    |  |              |              |             |  |               |               |               |  |             |               |             |                                |             |        |

**Note:** Data listed above is simply a guideline for a typical application only. Proper sizing and correct flow requirements must be taken into account.







# Together we can power your application with clean, dry air

Fast cycle times, high product quality, and low downtime all require a clean, dry pneumatic system to function properly. Parker has what it takes to make sure pneumatic systems perform at their best.

## Clean, dry pneumatic systems with Parker Global Air Preparation





|   |   |  |   |   |  |   |
|---|---|--|---|---|--|---|
|   |    |                                   |      |  |                 |  |
| <b>Stages</b>                                 | <b>1 2</b>  | <b>3</b>   | <b>4</b>  | <b>5</b>  | <b>6</b>   | <b>7</b>  |
| <b>Function</b>                               | <b>Air Compressor</b>   | <b>Bulk Liquid Removal</b>   | <b>Particulate Filtration</b>   | <b>Coalescing Filtration</b>  | <b>Air Dryers</b>  | <b>Hydrocarbon Removal</b>  |
| <b>Application</b>                            | All pneumatic systems   | Basic pneumatic systems  | Basic pneumatic systems   | Systems requiring highest quality air.  | Systems requiring air with reduced moisture content  | Systems requiring highest quality air for critical applications                     |
| <b>Description</b>                            | Air leaving the compressor room at 93°C (200°F) releases 95% of its moisture into the piping system when it cools to 38°C (100°F) | Removes bulk liquid contamination and protects filters where excess cooling takes place in the distribution piping | Removes solid particulates down to 5 micron, and the separation of bulk contaminants. | Removes liquid aerosols and submicron particulates (not vapor) down to 0.01 micron. | Removes water vapor from air stream. Dew point reduced down to -40°C membrane and -70°C desiccant. | Removal of odors and trace vapors for critical applications.                        |
| <b>Parker Global Air Preparation Solution</b> | Customer supplied   | P3TF Bulk Liquid Separator   | P31, P32, P33 Particulate Filter  | P31, P32, P33 Coalescing Filter   | P3XJ Membrane Dryer<br>P3TJ Regenerative Desiccant Dryer   | P31, P32, P33 Activated Carbon (Adsorber) Filter                                    |



**6**

Refrigeration, membrane and desiccant dryers lower the air's dew point by removing water vapor, providing appropriately dry air for the downstream application.

**7**

Hydrocarbon and oil vapors are removed using filters utilizing activated carbon. These airborne hydrocarbons are often left over from the compressor oils.



## DECLARATION



We **Parker Hannifin Manufacturing  
Austria GmbH**  
Badener Straße 12  
2700 Wiener Neustadt  
Austria

| Product                                | Series              | Category       |
|--|---------------------|----------------|
| Filter*                                | P31FB, P32FB, P33FA | for zone 1, 21 |
| Regulator                              | P31RB, P32RB, P33RA | for zone 1, 21 |
| Filter regulator*                      | P31EB, P32EB, P33EA | for zone 1, 21 |
| Lubricator*                            | P31LB, P32LB, P33LA | for zone 1, 21 |
| Ball Valve & Slide Valve               | P31VB, P32VB, P33VB | for zone 1, 21 |
| Manifold                               | P31MA, P32MA, P33MA | for zone 1, 21 |
| <b>For non-fitted solenoid product</b> |                     |                |
| Soft start & Dump Valve                | P31TA, P32TA        | for zone 1, 21 |
| Soft Start Valve                       | P31SA, P32SA        | for zone 1, 21 |
| Dump Valve                             | P31DA, P32DA        | for zone 1, 21 |

\*Filter, Filter Regulator and Lubricator – This evaluation applies to products fitted with metal bowls only.

Following Ignition Hazard Assessments performed on the non-electrical products listed above, in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness.  
Refer to technical file for surface areas of plastics.  
The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis  
Refer to technical file for chemicals known to be incompatible.  
Product cleaning must be undertaken using a method complying with the specifications of the ATEX zone, preferably by using mild soap and water or antistatic products.
- **Regulators, Filter Regulators:**  
Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator/Filter Regulator unit.
- **Solenoid Operated Valves:**  
Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

Approved by:

Engineering Manager – Air Preparation EMEA

**Validated for transport applications**



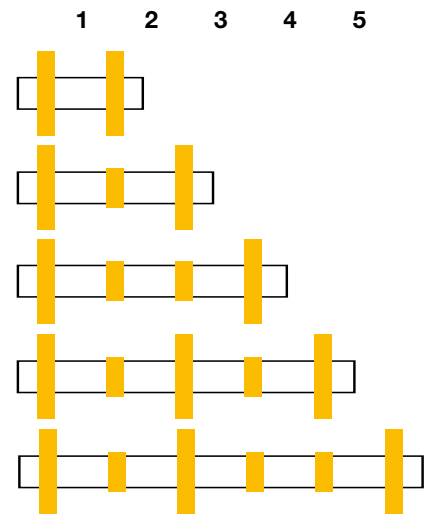
As you would expect from a member of the Rail Industry Association, Global air preparation meets the test specification standards enabling the Global series to be used as a validated product in a variety of rail applications.



**Railway Industry Association**

**CEI/ICE 61373 1999-1 Category 2 (BS EN 61373:1999)**

**Position of T-Brackets for multiple units**



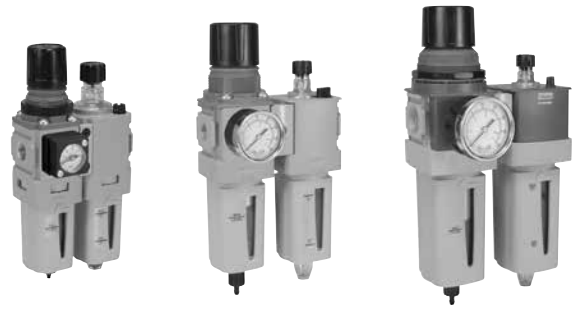
**Recommended mounting / fixation method for use in transportation applications.**

- The use of a port block kit and T-bracket should be used at all times (angle / L-brackets should not be used in rail applications)
- Additional security is recommended with the use of 'vibration proof adhesive' on the wall mounting screws to the port / connector block
- Inlet (P1) and Outlet (P2) ports should always have a T-Bracket fixation to eliminate product cantilever stress
- 'L' brackets should not be used in the use for rail service



For illustration purposes only

- High flow modular air-preparation series
- Space saving integral gauge (P31 size only)
- Manifold style regulators available
- OSHA compliant shut-off valves



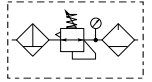
| Operating information   |  | Flow characteristics   |              |                                      |              |                               |              |
|---|--|------------------------|--------------|--------------------------------------|--------------|-------------------------------|--------------|
| Working pressure :  |  | <b>40mm body width</b> |              | <b>60mm body width</b>               |              | <b>73mm body width</b>        |              |
| Plastic bowl: 10 bar max  |  | <b>1/4" Ported</b>     |              | <b>1/4", 3/8", &amp; 1/2" Ported</b> |              | <b>1/2" &amp; 3/4" Ported</b> |              |
| Metal bowl: 17 bar max  |  | <b>Flow</b>            | <b>dm³/s</b> | <b>Flow</b>                          | <b>dm³/s</b> | <b>Flow</b>                   | <b>dm³/s</b> |
| Working temperature :   |  | Filter                 | 12           | Filter                               | 39           | Filter                        | 40           |
| * Plastic bowl: -10°C to +52°C                                  |  | Coalescing Filter      | 3,6          | Coalescing Filter                    | 17           | Coalescing Filter             | 34           |
| * Metal bowl: -10°C to +65.5°C                                  |  | Regulator              | 32           | Regulator                            | 78           | Regulator                     | 111          |
| * Refer to Technical Catalogue for individual unit temperatures |  | Filter Regulator       | 35           | Filter Regulator                     | 64           | Filter Regulator              | 108          |
|   |  | Lubricator             | 19           | Lubricator                           | 42           | Lubricator                    | 71           |

**Popular Combinations - P31 Series**

|  |   |             |                        |         |                        |         |  |
|--|---|-------------|------------------------|---------|------------------------|---------|--|
|  | <b>Filter + Regulator + Lubricator Combinations + Poly bowl</b>             |             |                        |         |                        |         |  |
|  | <b>5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets</b> |             |                        |         |                        |         |  |
| <b>Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.</b> |   |             |                        |         |                        |         |  |
| Port size  | Flow dm³/s  | Flow (scfm) | Manual Drain           | Weight  | Pulse Drain            | Weight  |  |
| 1/4"   | 13  | 27          | <b>P31CB12GEMNTLNW</b> | 0.46 kg | <b>P31CB12GEBNTLNW</b> | 0.46 kg |  |
|  | <b>Filter/Regulator + Lubricator Combinations + Poly bowl</b>               |             |                        |         |                        |         |  |
|  | <b>5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets</b> |             |                        |         |                        |         |  |
| <b>Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.</b> |   |             |                        |         |                        |         |  |
| Port size  | Flow dm³/s  | Flow (scfm) | Manual Drain           | Weight  | Pulse Drain            | Weight  |  |
| 1/4"   | 14  | 28          | <b>P31CA12GEMNTLNW</b> | 0.35 kg | <b>P31CA12GEBNTLNW</b> | 0.35 kg |  |
|  | <b>Ball Valve + Filter/Regulator + Lubricator Combinations + Poly bowl</b>  |             |                        |         |                        |         |  |
|  | <b>5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets</b> |             |                        |         |                        |         |  |
| <b>Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.</b> |   |             |                        |         |                        |         |  |
| Port size  | Flow dm³/s  | Flow (scfm) | Manual Drain           | Weight  | Pulse Drain            | Weight  |  |
| 1/4"   | 14  | 28          | <b>P31QA12GEMNTLNW</b> | 0.54 kg | <b>P31QA12GEBNTLNW</b> | 0.54 kg |  |
|  | <b>Ball Valve + Filter/Regulator Combinations + Poly bowl</b>               |             |                        |         |                        |         |  |
|  | <b>5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets</b> |             |                        |         |                        |         |  |
| <b>Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.</b> |   |             |                        |         |                        |         |  |
| Port size  | Flow dm³/s  | Flow (scfm) | Manual Drain           | Weight  | Pulse Drain            | Weight  |  |
| 1/4"   | 14  | 28          | <b>P31QN12GEMNTW</b>   | 0.4 kg  | <b>P31QN12GEBNTW</b>   | 0.4 kg  |  |

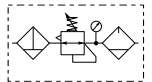
|  |  |   |  |                  |          |                       |          |   |           |                                      |
|--|--|---|--|------------------|----------|-----------------------|----------|---|-----------|--------------------------------------|
| <b>P 3 1</b>                           |  |   |  |                  | <b>E</b> |                       | <b>N</b> |   | <b>LN</b> | <b>W</b>                             |
| <b>Combination</b>                     |  | <b>Thread type</b>                      |  | <b>Port size</b> |          | <b>Drain type</b>     |          | <b>Adjustment range</b>                         |           | Add only for options with Lubricator |
| Combination <b>C</b>                   |  | BSPP <b>1</b>                           |  | 1/4 <b>2</b>     |          | Manual drain <b>M</b> |          | <b>With square gauge</b>                        |           |                                      |
| Shut off + Combi <sup>1</sup> <b>Q</b> |  | NPT <b>9</b>                            |  |                  |          | Pulse drain <b>B</b>  |          | 2 bar * <b>V</b>                                |           |                                      |
| <b>Combination type</b>                |  | <b>Bowl type</b>                        |  |                  |          |                       |          | 4 bar <b>S</b>                                  |           |                                      |
| F/R+L <b>A</b>                         |  | Poly bowl with bowl guard <b>G</b>      |  |                  |          |                       |          | 8 bar ** <b>T</b>                               |           |                                      |
| F+R+L <b>B</b>                         |  | Metal bowl without sight glass <b>M</b> |  |                  |          |                       |          | * Unit comes with 0-4 bar, gauge respectively   |           |                                      |
| F/R <b>N</b>                           |  |   |  |                  |          |                       |          | ** Unit comes with 0-10 bar, gauge respectively |           |                                      |
|  |  |   |  |                  |          |                       |          | <sup>1</sup> Option not available with F+R+L    |           |                                      |

Popular Combinations - P32 Series



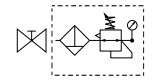
**Filter + Regulator + Lubricator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow               |        | Manual Drain           | Weight  | Auto Drain             | Weight  |
|-----------|--------------------|--------|------------------------|---------|------------------------|---------|
|           | dm <sup>3</sup> /s | (scfm) |                        |         |                        |         |
| 1/4"      | 20                 | 42     | <b>P32CB12GEMNGLNW</b> | 1.29 kg | <b>P32CB12GEANGLNW</b> | 1.29 kg |
| 3/8"      | 32                 | 68     | <b>P32CB13GEMNGLNW</b> | 1.29 kg | <b>P32CB13GEANGLNW</b> | 1.29 kg |
| 1/2"      | 40                 | 85     | <b>P32CB14GEMNGLNW</b> | 1.29 kg | <b>P32CB14GEANGLNW</b> | 1.29 kg |



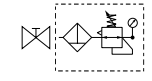
**Filter/Regulator + Lubricator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow               |        | Manual Drain           | Weight  | Auto Drain             | Weight  |
|-----------|--------------------|--------|------------------------|---------|------------------------|---------|
|           | dm <sup>3</sup> /s | (scfm) |                        |         |                        |         |
| 1/4"      | 22                 | 45     | <b>P32CA12GEMNGLNW</b> | 1.03 kg | <b>P32CA12GEANGLNW</b> | 1.03 kg |
| 3/8"      | 33                 | 70     | <b>P32CA13GEMNGLNW</b> | 1.03 kg | <b>P32CA13GEANGLNW</b> | 1.03 kg |
| 1/2"      | 43                 | 90     | <b>P32CA14GEMNGLNW</b> | 1.03 kg | <b>P32CA14GEANGLNW</b> | 1.03 kg |



**Ball Valve + Filter/Regulator + Lubricator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow               |        | Manual Drain           | Weight | Auto Drain             | Weight |
|-----------|--------------------|--------|------------------------|--------|------------------------|--------|
|           | dm <sup>3</sup> /s | (scfm) |                        |        |                        |        |
| 3/8"      | 33                 | 70     | <b>P32QA13GEMNGLNW</b> | 1.5 kg | <b>P32QA13GEANGLNW</b> | 1.5 kg |
| 1/2"      | 43                 | 90     | <b>P32QA14GEMNGLNW</b> | 1.5 kg | <b>P32QA14GEANGLNW</b> | 1.5 kg |



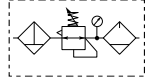
**Ball Valve + Filter/Regulator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow               |        | Manual Drain         | Weight | Auto Drain           | Weight |
|-----------|--------------------|--------|----------------------|--------|----------------------|--------|
|           | dm <sup>3</sup> /s | (scfm) |                      |        |                      |        |
| 3/8"      | 33                 | 70     | <b>P32QN13GEMNGW</b> | 1.1 kg | <b>P32QN13GEANGW</b> | 1.1 kg |
| 1/2"      | 43                 | 90     | <b>P32QN14GEMNGW</b> | 1.1 kg | <b>P32QN14GEANGW</b> | 1.1 kg |

|  |  |                                      |  |  |          |                       |          |                                     |            |                                      |
|--|--|--------------------------------------|--|--|----------|-----------------------|----------|-------------------------------------|------------|--------------------------------------|
| <b>P 3 2</b>                                 |  |                                      |  |  | <b>E</b> |                       | <b>N</b> |                                     | <b>L N</b> | <b>W</b>                             |
| <b>Combination</b>                           |  | <b>Thread type</b>                   |  | <b>Port size</b>   |          | <b>Drain type</b>     |          | <b>Adjustment range</b>             |            | Add only for options with Lubricator |
| Combination <b>C</b>                         |  | BSPP <b>1</b>                        |  | 1/4 <b>2</b>   |          | Auto drain <b>A</b>   |          | <b>With round gauge</b>             |            |                                      |
| Shut off + Combination <sup>1</sup> <b>Q</b> |  | NPT <b>9</b>                         |  | 3/8 <b>3</b>   |          | Manual drain <b>M</b> |          | 0-2 bar; 0-30 psi; 0.2 MPa <b>Z</b> |            |                                      |
|  |  |                                      |  | 1/2 <b>4</b>   |          |                       |          | 4 bar; 60 psi; 0.4 MPa <b>M</b>     |            |                                      |
|  |  |                                      |  |  |          |                       |          | 8 bar; 125 psi; 0.8 MPa <b>G</b>    |            |                                      |
| <b>Combination type</b>                      |  | <b>Bowl type</b>                     |  | <b>Note:</b> All bowl types are the same for each component  |          |                       |          |                                     |            |                                      |
| F/R+L <b>A</b>                               |  | Poly bowl with bowl guard <b>G</b>   |  | <b>Example:</b> If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard. |          |                       |          |                                     |            |                                      |
| F+R+L <b>B</b>                               |  | Metal bowl with sight glass <b>S</b> |  |  |          |                       |          |                                     |            |                                      |
| F/R <b>N</b>                                 |  |                                      |  |  |          |                       |          |                                     |            |                                      |

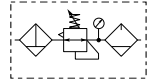
<sup>1</sup> Option not available with F+R+L and 1/4" port size (2)

Popular Combinations - P33 Series



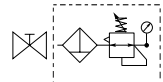
**Filter + Regulator + Lubricator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow<br>dm <sup>3</sup> /s (scfm) |     | Manual Drain           | Weight             | Auto Drain             | Weight             |
|-----------|-----------------------------------|-----|------------------------|--------------------|------------------------|--------------------|
| 1/2"      | 43                                | 90  | <b>P33CB14GEMNGLNW</b> | 1.84 kg (4.06 lbs) | <b>P33CB14GEANGLNW</b> | 1.84 kg (4.06 lbs) |
| 3/4"      | 52                                | 110 | <b>P33CB16GEMNGLNW</b> | 1.84 kg (4.06 lbs) | <b>P33CB16GEANGLNW</b> | 1.84 kg (4.06 lbs) |



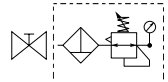
**Filter/Regulator + Lubricator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow<br>dm <sup>3</sup> /s (scfm) |     | Manual Drain           | Weight             | Auto Drain             | Weight             |
|-----------|-----------------------------------|-----|------------------------|--------------------|------------------------|--------------------|
| 1/2"      | 52                                | 110 | <b>P33CA14GEMNGLNW</b> | 1.51 kg (3.33 lbs) | <b>P33CA14GEANGLNW</b> | 1.51 kg (3.33 lbs) |
| 3/4"      | 71                                | 150 | <b>P33CA16GEMNGLNW</b> | 1.51 kg (3.33 lbs) | <b>P33CA16GEANGLNW</b> | 1.51 kg (3.33 lbs) |



**Ball Valve + Filter/Regulator + Lubricator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow<br>dm <sup>3</sup> /s (scfm) |     | Manual Drain           | Weight            | Auto Drain             | Weight            |
|-----------|-----------------------------------|-----|------------------------|-------------------|------------------------|-------------------|
| 1/2"      | 52                                | 110 | <b>P33QA14GEMNGLNW</b> | 2.35 kg (5.2 lbs) | <b>P33QA14GEANGLNW</b> | 2.35 kg (5.2 lbs) |
| 3/4"      | 71                                | 150 | <b>P33QA16GEMNGLNW</b> | 2.35 kg (5.2 lbs) | <b>P33QA16GEANGLNW</b> | 2.35 kg (5.2 lbs) |



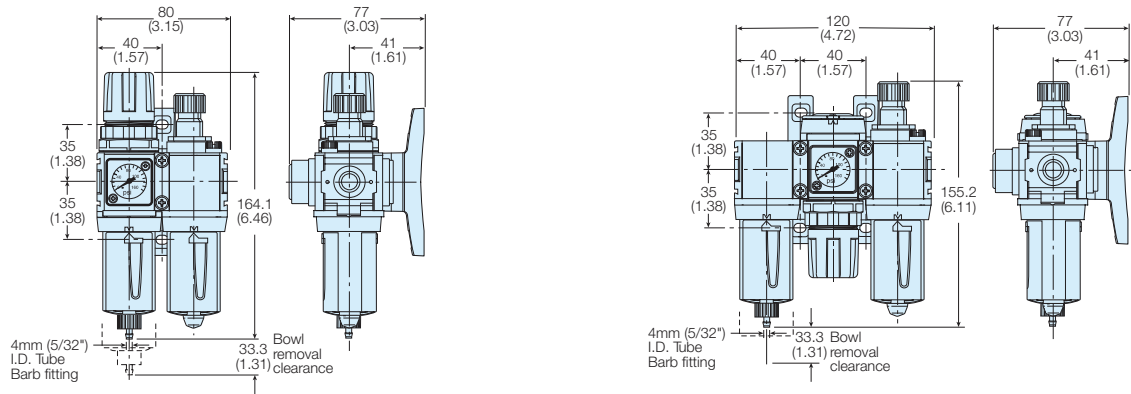
**Ball Valve + Filter/Regulator Combinations + Poly bowl**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**  
**Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.**

| Port size | Flow<br>dm <sup>3</sup> /s (scfm) |     | Manual Drain         | Weight            | Auto Drain           | Weight            |
|-----------|-----------------------------------|-----|----------------------|-------------------|----------------------|-------------------|
| 1/2"      | 52                                | 110 | <b>P33QN14GEMNGW</b> | 1.7 kg (3.75 lbs) | <b>P33QN14GEANGW</b> | 1.7 kg (3.75 lbs) |
| 3/4"      | 71                                | 150 | <b>P33QN16GEMNGW</b> | 1.7 kg (3.75 lbs) | <b>P33QN16GEANGW</b> | 1.7 kg (3.75 lbs) |

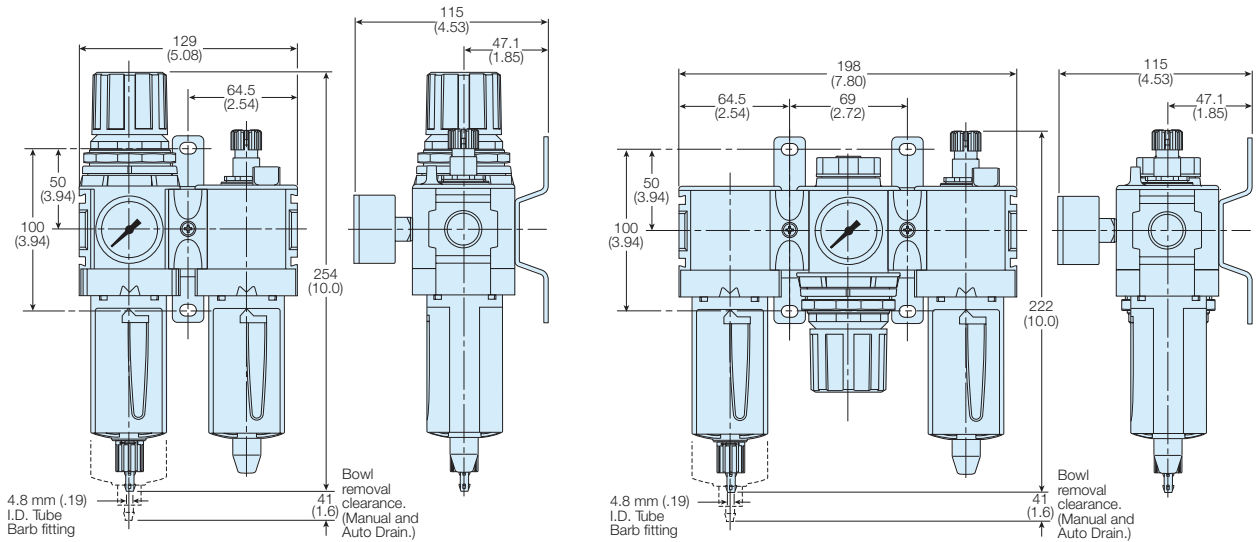
|  |  |                         |  |                                      |  |  |  |                                     |  |                                      |          |
|--|--|-------------------------|--|--------------------------------------|--|--|--|-------------------------------------|--|--------------------------------------|----------|
| <b>P 3 3</b>                                 |  |                         |  |                                      |  | <b>E</b>   |  | <b>N</b>                            |  | <b>LN</b>                            | <b>W</b> |
| <b>Combination</b>                           |  | <b>Thread type</b>      |  | <b>Port size</b>                     |  | <b>Drain type</b>  |  | <b>Adjustment range</b>             |  | Add only for options with Lubricator |          |
| Combination <b>C</b>                         |  | BSPP <b>1</b>           |  | 1/2 <b>4</b>                         |  | Auto drain <b>A</b>  |  | <b>With round gauge</b>             |  |                                      |          |
| Shut off + Combination <sup>1</sup> <b>Q</b> |  | NPT <b>9</b>            |  | 3/4 <b>6</b>                         |  | Manual drain <b>M</b>  |  | 0-2 bar; 0-30 psi; 0.2 MPa <b>Z</b> |  |                                      |          |
|  |  |                         |  |                                      |  |  |  | 4 bar; 60 psi; 0.4 MPa <b>M</b>     |  |                                      |          |
|  |  |                         |  |                                      |  |  |  | 8 bar; 125 psi; 0.8 MPa <b>G</b>    |  |                                      |          |
| <sup>1</sup> Option not available with F+R+L |  | <b>Combination type</b> |  | <b>Bowl type</b>                     |  | <b>Note:</b> All bowl types are the same for each component  |  |                                     |  |                                      |          |
|  |  | F/R+L <b>A</b>          |  | Poly bowl with bowl guard <b>G</b>   |  | <b>Example:</b> If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard. |  |                                     |  |                                      |          |
|  |  | F+R+L <b>B</b>          |  | Metal bowl with sight glass <b>S</b> |  |  |  |                                     |  |                                      |          |
|  |  | F/R <b>N</b>            |  |                                      |  |  |  |                                     |  |                                      |          |

Popular Combination Dimensions - mm (inches)

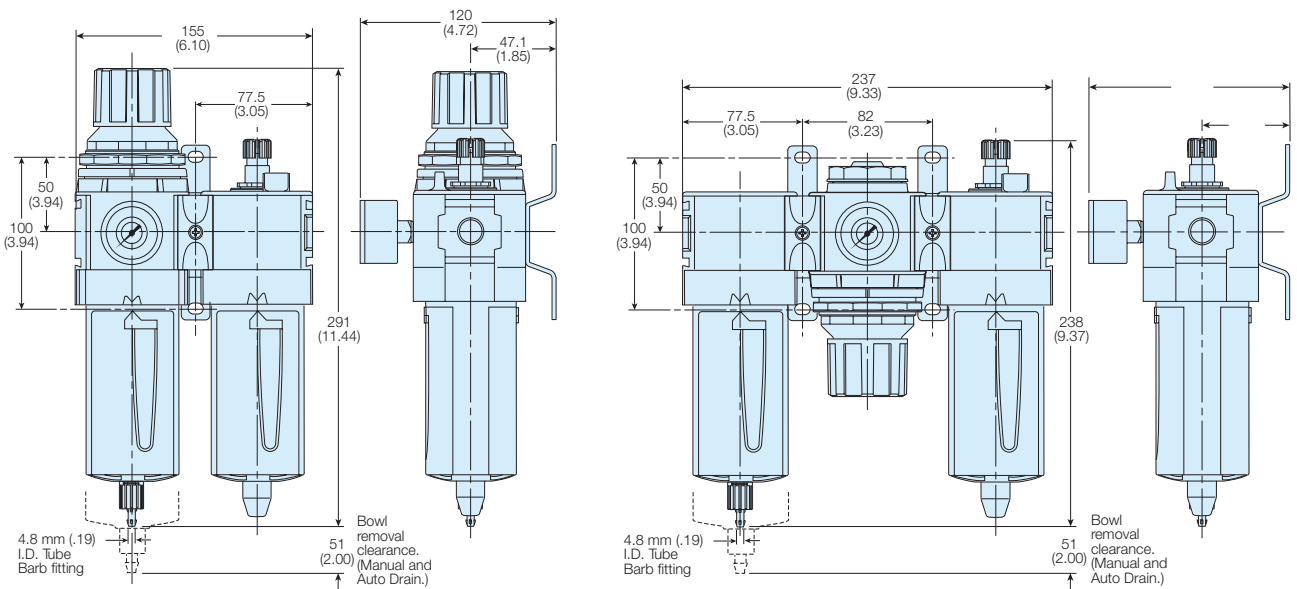
P31



P32



P33





### Filters - 5 µm

| Port | Description                           | Order code         |
|------|---------------------------------------|--------------------|
| 1/4" | Poly bowl - Manual drain              | <b>P31FB12EGMN</b> |
| 1/4" | Poly bowl - Pulse drain               | <b>P31FB12EGBN</b> |
| 1/4" | Metal bowl - Manual drain             | <b>P31FB12EMMN</b> |
| 1/4" | Metal bowl - Pulse drain              | <b>P31FB12EMBN</b> |
| 1/4" | Poly bowl - Manual drain              | <b>P32FB12EGMN</b> |
| 1/4" | Poly bowl - Auto drain                | <b>P32FB12EGAN</b> |
| 1/4" | Metal bowl sight glass - Manual drain | <b>P32FB12ESMN</b> |
| 1/4" | Metal bowl sight glass - Auto drain   | <b>P32FB12ESAN</b> |
| 3/8" | Poly bowl - Manual drain              | <b>P32FB13EGMN</b> |
| 3/8" | Poly bowl - Auto drain                | <b>P32FB13EGAN</b> |
| 3/8" | Metal bowl sight glass - Manual drain | <b>P32FB13ESMN</b> |
| 3/8" | Metal bowl sight glass - Auto drain   | <b>P32FB13ESAN</b> |
| 1/2" | Poly bowl - Manual drain              | <b>P32FB14EGMN</b> |
| 1/2" | Poly bowl - Auto drain                | <b>P32FB14EGAN</b> |
| 1/2" | Metal bowl sight glass - Manual drain | <b>P32FB14ESMN</b> |
| 1/2" | Metal bowl sight glass - Auto drain   | <b>P32FB14ESAN</b> |
| 1/2" | Poly bowl - Manual drain              | <b>P33FA14EGMN</b> |
| 1/2" | Poly bowl - Auto drain                | <b>P33FA14EGAN</b> |
| 1/2" | Metal bowl sight glass - Manual drain | <b>P33FA14ESMN</b> |
| 1/2" | Metal bowl sight glass - Auto drain   | <b>P33FA14ESAN</b> |
| 3/4" | Poly bowl - Manual drain              | <b>P33FA16EGMN</b> |
| 3/4" | Poly bowl - Auto drain                | <b>P33FA16EGAN</b> |
| 3/4" | Metal bowl sight glass - Manual drain | <b>P33FA16ESMN</b> |
| 3/4" | Metal bowl sight glass - Auto drain   | <b>P33FA16ESAN</b> |



### Regulators

| Port | Description                       | Order code         |
|------|-----------------------------------|--------------------|
| 1/4" | 8 bar relieving                   | <b>P31RB12BNNP</b> |
| 1/4" | 8 bar relieving + gauge           | <b>P31RB12BNTP</b> |
| 1/4" | 8 bar (125 psi) Relieving         | <b>P32RB12BNNP</b> |
| 1/4" | 8 bar (125 psi) Relieving + Gauge | <b>P32RB12BNGP</b> |
| 3/8" | 8 bar (125 psi) Relieving         | <b>P32RB13BNNP</b> |
| 3/8" | 8 bar (125 psi) Relieving + Gauge | <b>P32RB13BNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving         | <b>P32RB14BNNP</b> |
| 1/2" | 8 bar (125 psi) Relieving + Gauge | <b>P32RB14BNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving         | <b>P33RA14BNNP</b> |
| 1/2" | 8 bar (125 psi) Relieving + Gauge | <b>P33RA14BNGP</b> |
| 3/4" | 8 bar (125 psi) Relieving         | <b>P33RA16BNNP</b> |
| 3/4" | 8 bar (125 psi) Relieving + Gauge | <b>P33RA16BNGP</b> |



### Coalescing Filters + Absorbers - 0,01 µm

| Port | Description                                  | Order code         |
|------|--|--------------------|
| 1/4" | Poly bowl - 0.01 µm - Manual drain           | <b>P31FB12DGMN</b> |
| 1/4" | Poly bowl - 0.01 µm - Pulse drain            | <b>P31FB12DGBN</b> |
| 1/4" | Metal bowl - 0.01 µm - Manual drain          | <b>P31FB12DMMN</b> |
| 1/4" | Metal bowl - 0.01 µm - Pulse drain           | <b>P31FB12DMBN</b> |
| 1/4" | Poly bowl - Adsorber                         | <b>P31FB12AGMN</b> |
| 1/4" | Metal bowl - Adsorber                        | <b>P31FB12AMMN</b> |
| 1/4" | Poly bowl - 0.01 µm, Manual drain            | <b>P32FB12DGMN</b> |
| 1/4" | Poly bowl - 0.01 µm, Auto drain              | <b>P32FB12DGAN</b> |
| 1/4" | Metal bowl sight glass - 0.01 µm, Man. drain | <b>P32FB12DSMN</b> |
| 1/4" | Metal bowl sight glass - 0.01 µm, Auto drain | <b>P32FB12DSAN</b> |
| 3/8" | Poly bowl - 0.01 µm, Manual drain            | <b>P32FB13DGMN</b> |
| 3/8" | Poly bowl - 0.01 µm, Auto drain              | <b>P32FB13DGAN</b> |
| 3/8" | Metal bowl sight glass - 0.01 µm, Man. drain | <b>P32FB13DSMN</b> |
| 3/8" | Metal bowl sight glass - 0.01 µm, Auto drain | <b>P32FB13DSAN</b> |
| 1/2" | Poly bowl - 0.01 µm, Manual drain            | <b>P32FB14DGMN</b> |
| 1/2" | Poly bowl - 0.01 µm, Auto drain              | <b>P32FB14DGAN</b> |
| 1/2" | Metal bowl sight glass - 0.01 µm, Man. drain | <b>P32FB14DSMN</b> |
| 1/2" | Metal bowl sight glass - 0.01 µm, Auto drain | <b>P32FB14DSAN</b> |
| 1/4" | Poly bowl - Adsorber                         | <b>P32FB12AGMN</b> |
| 1/4" | Metal bowl sight glass - Adsorber            | <b>P32FB12ASMN</b> |
| 3/8" | Poly bowl - Adsorber                         | <b>P32FB13AGMN</b> |
| 3/8" | Metal bowl sight glass - Adsorber            | <b>P32FB13ASMN</b> |
| 1/2" | Poly bowl - Adsorber                         | <b>P32FB14AGMN</b> |
| 1/2" | Metal bowl sight glass - Adsorber            | <b>P32FB14ASMN</b> |
| 1/2" | Poly bowl - 0.01 µm, Manual drain            | <b>P33FA14DGMN</b> |
| 1/2" | Poly bowl - 0.01 µm, Auto drain              | <b>P33FA14DGAN</b> |
| 1/2" | Metal bowl sight glass - 0.01 µm, Man. drain | <b>P33FA14DSMN</b> |
| 1/2" | Metal bowl sight glass - 0.01 µm, Auto drain | <b>P33FA14DSAN</b> |
| 3/4" | Poly bowl - 0.01 µm, Manual drain            | <b>P33FA16DGMN</b> |
| 3/4" | Poly bowl - 0.01 µm, Auto drain              | <b>P33FA16DGAN</b> |
| 3/4" | Metal bowl sight glass - 0.01 µm, Man. drain | <b>P33FA16DSMN</b> |
| 3/4" | Metal bowl sight glass - 0.01 µm, Auto drain | <b>P33FA16DSAN</b> |
| 1/2" | Poly bowl - Adsorber                         | <b>P33FA14AGMN</b> |
| 1/2" | Metal bowl sight glass - Adsorber            | <b>P33FA14ASMN</b> |
| 3/4" | Poly bowl - Adsorber                         | <b>P33FA16AGMN</b> |
| 3/4" | Metal bowl sight glass - Adsorber            | <b>P33FA16ASMN</b> |





**Filter Regulators** - (P31) pressures 2 & 4 bar (P32/P33) pressures 2,4 & 17 bar available.

| Port | Description   | Order code            |
|------|---|-----------------------|
| 1/4" | 8 bar (125 psi) Relieving - Poly bowl - Manual drain              | <b>P31EB12EGMBNTP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Poly bowl - Pulse drain               | <b>P31EB12EGBBNTP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Metal bowl - Manual drain             | <b>P31EB12EMMBNTP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Metal bowl - Pulse drain              | <b>P31EB12EMBBNTP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Poly bowl - Manual drain              | <b>P32EB12EGMBNGP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Poly bowl - Auto drain                | <b>P32EB12EGABNGP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain | <b>P32EB12ESMBNGP</b> |
| 1/4" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain   | <b>P32EB12ESABNGP</b> |
| 3/8" | 8 bar (125 psi) Relieving - Poly bowl - Manual drain              | <b>P32EB13EGMBNGP</b> |
| 3/8" | 8 bar (125 psi) Relieving - Poly bowl - Auto drain                | <b>P32EB13EGABNGP</b> |
| 3/8" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain | <b>P32EB13ESMBNGP</b> |
| 3/8" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain   | <b>P32EB13ESABNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Poly bowl - Manual drain              | <b>P32EB14EGMBNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Poly bowl - Auto drain                | <b>P32EB14EGABNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain | <b>P32EB14ESMBNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain   | <b>P32EB14ESABNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Poly bowl - Manual drain              | <b>P33EA14EGMBNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Poly bowl - Auto drain                | <b>P33EA14EGABNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain | <b>P33EA14ESMBNGP</b> |
| 1/2" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain   | <b>P33EA14ESABNGP</b> |
| 3/4" | 8 bar (125 psi) Relieving - Poly bowl - Manual drain              | <b>P33EA16EGMBNGP</b> |
| 3/4" | 8 bar (125 psi) Relieving - Poly bowl - Auto drain                | <b>P33EA16EGABNGP</b> |
| 3/4" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain | <b>P33EA16ESMBNGP</b> |
| 3/4" | 8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain   | <b>P33EA16ESABNGP</b> |



**Lubricators**

| Port | Description           | Order code         |
|------|-----------------------|--------------------|
| 1/4" | Poly bowl - No drain  | <b>P31LB12LGNN</b> |
| 1/4" | Metal bowl - No drain | <b>P31LB12LMNN</b> |
| 1/4" | Poly bowl - No drain  | <b>P32LB12LGNN</b> |
| 1/4" | Metal bowl - No drain | <b>P32LB12LSNN</b> |
| 3/8" | Poly bowl - No drain  | <b>P32LB13LGNN</b> |
| 3/8" | Metal bowl - No drain | <b>P32LB13LSNN</b> |
| 1/2" | Poly bowl - No drain  | <b>P32LB14LGNN</b> |
| 1/2" | Metal bowl - No drain | <b>P32LB14LSNN</b> |
| 1/2" | Poly bowl - No drain  | <b>P33LA14LGNN</b> |
| 1/2" | Metal bowl - No drain | <b>P33LA14LSNN</b> |
| 3/4" | Poly bowl - No drain  | <b>P33LA16LGNN</b> |
| 3/4" | Metal bowl - No drain | <b>P33LA16LSNN</b> |



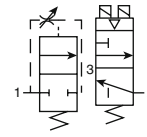
**Gauges**

| Port      | Description                     | Order code   |
|-----------|---------------------------------|--|
| P31       | Square Flush Mounting Gauge Kit | 0-4 bar <b>K4511SCR04B</b><br>0-11 bar <b>K4511SCR11B</b>  |
| P31       | 40mm Round Gauge                | 0-30 psi / 0-2 bar 1/8" <b>P3D-KAB1AYN</b><br>0-60 psi / 0-4.1 bar 1/8" <b>P3D-KAB1ALN</b><br>0-160 psi / 0-10 bar 1/8" <b>P3D-KAB1ANN</b>   |
| P32 / P33 | 40mm Round Gauge                | 0-60 psi / 0-4.1 bar 1/4" <b>P6G-ERB2040</b><br>0-160 psi / 0-10 bar 1/4" <b>P6G-ERB2110</b><br>0-300 psi / 0-20 bar 1/4" <b>P6G-ERB2200</b> |

Redundant Safety Exhaust Valve

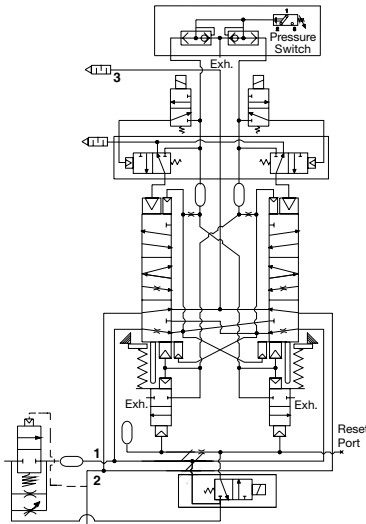


Symbol



- Proven control reliable technology with integrated soft start
- Soft start application of air to the system when energized; can be adjusted for slower or faster buildup of system pressure
- Rapid exhaust of downstream air when de-energized to remove stored energy and allow safe access
- Memory, monitoring, and air flow control functions are integrated into two identical valve elements. Valves lock-out if asynchronous movement of valve elements occurs during actuation or de-actuation, resulting in a residual outlet pressure of less than 1% of supply.
- Reset can only be accomplished by the integrated electrical (solenoid) reset. Cannot be reset by removing and re-applying supply pressure.
- Basic 3/2 normally closed valve function: Dirt tolerant, wear compensating poppet design for quick response and high flow capacity.
- LED indicators of main solenoid operation, reset solenoid operation, and status indicator condition.
- Optional transducer for monitoring of downstream pressure in the system.
- Dual exhaust silencers included.
- Not for use with clutch / brake applications.
- For use in conjunction with a safety relay or safety PLC.

P33T Schematic



Options:

|                    |                              |                  |                                 |                 |                           |                 |   |                |                                       |
|--------------------|------------------------------|------------------|---------------------------------|-----------------|---------------------------|-----------------|---|----------------|---------------------------------------|
| <b>P33TA</b>       |                              | <b>6</b>         | <b>R</b>                        | <b>G</b>        | <b>4</b>                  |                 | <b>2CN</b>  |                |                                       |
| <b>Body size</b>   | Standard <b>P33T</b>         | <b>Port size</b> | 3/4" <b>6</b>                   | <b>Operator</b> | 15mm Solenoid <b>G</b>    | <b>Solenoid</b> | Dual M12 connector without transducer <b>F</b><br>Triple M12 connector with transducer <b>G</b> | <b>Voltage</b> | 24VDC with manual override <b>2CN</b> |
| <b>Thread type</b> | BSP <b>1</b><br>NPT <b>9</b> | <b>Type</b>      | Solenoid pilot + gauge <b>R</b> | <b>Mounting</b> | Cat 4 w/ bracket <b>4</b> |                 |   |                |                                       |

| Port size |        |                | Cv     |        | Height<br>mm (inches) | Width<br>mm (inches) | Depth<br>mm (inches) | Weight<br>kg (lb) | Part number*          |
|-----------|--------|----------------|--------|--------|-----------------------|----------------------|----------------------|-------------------|-----------------------|
| Inlet     | Outlet | Transducer     | 1 to 2 | 2 to 3 |                       |                      |                      |                   |                       |
| 3/4       | 3/4    | w/o transducer | 3.7    | 8.5    | 273.8 (10.78)         | 136.0 (5.35)         | 147.6 (581)          | 7.3 (16.1)        | <b>P33TA16RG4F2CN</b> |
| 3/4       | 3/4    | w/ transducer  | 3.7    | 8.5    | 273.8 (10.78)         | 136.0 (5.35)         | 147.6 (581)          | 7.4 (16.3)        | <b>P33TA16RG4G2CN</b> |

\* BSP port threads. For NPT threads, replace "1" in the part number with a "9".

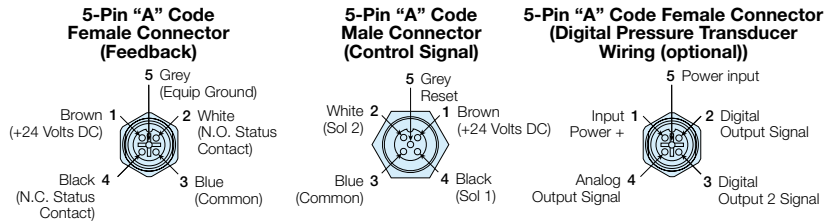
**Technical Information**

|  |   |
|--|---|
| Pilot Solenoids:   | According to VDE 0580   |
| Enclosure rating:  | According to DIN 400 50 IP65  |
| Connector socket:  | According to DIN 43650 Form A<br>Three solenoids, rated for continuous duty   |
| Standard voltages:   | 24VDC   |
| Power consumption (each solenoid):<br>for primary and reset solenoids: | 1.2 Watts on DC   |
| Enclosure rating:  | IP65, IEC 60529   |
| Electrical connection:   | M12, 5-pin  |
| Ambient temperature:   | 15°F to 122°F (-10°C to 50°C)   |
| Media temperature:   | 40°F to 175°F (4°C to 80°C)   |
| Flow media:  | Compressed Air, Filtered to Minimum 40 Micron   |
| Inlet pressure:  | 30 to 150 PSIG (2 to 10 bar)  |
| Pressure switch rating (Status indicator):                             | 5 Amps at 30 Volts DC.  |
| Monitoring:  | Dynamically, cyclically, internally during each actuating and de-actuating movement.<br>Monitoring function has memory and requires an overt act to reset unit after lockout. |
| Mounting orientation:  | Vertically with pilot solenoids on top  |
| Port threads:  | 3/4 NPT, 3/4 BSPP   |
| Control reliable:  | Category 4 (Cat 4); performance Level e (PLe) in accordance with Machine directive - EN ISO 13849-1 (Certification pending)   |

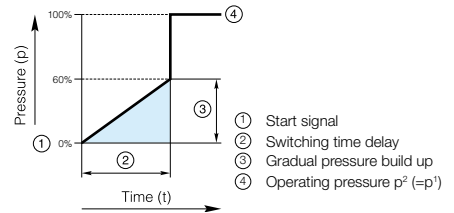
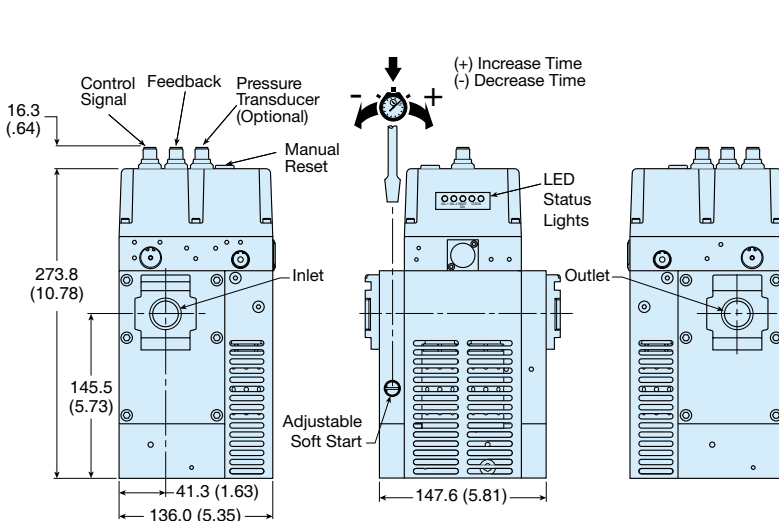
**Repair and Service Kits**

| Description  | Part number      |
|--|------------------|
| Black grill  | 1834C05-001      |
| Body connector   | P32KA00CB        |
| Cables   |                  |
| M12, 5-pin female to flying lead cable, TPE; 2 m (6.6 ft)..... | RKC 4.5T-2/S1587 |
| M12, 5-pin male to flying lead cable, TPE; 2 m (6.6 ft).....   | RSC 4.5T-2/S1587 |
| Port block kit   |                  |
| 1/2 NPT .....  | P32KA94CP        |
| 3/4 NPT .....  | P32KA96CP        |
| 1/2 BSPP .....   | P32KA14CP        |
| 3/4 BSPP .....   | P32KA16CP        |
| Pressure switch  | 1227A30-001      |
| Pressure transducer (Optional)                                 | 1232H30-001      |
| T-bracket w/ body connector                                    | P32KA00MT        |
| T-bracket (Fits to body connector or port block)               | P32KA00MB        |
| Silencer(s) 3/4"   | 5500A5013        |
| Solenoid (Main & reset)  | 1527B7916-001    |
| Square flush mounting gauge kit, 0-160 psig                    | K4511SCR160      |

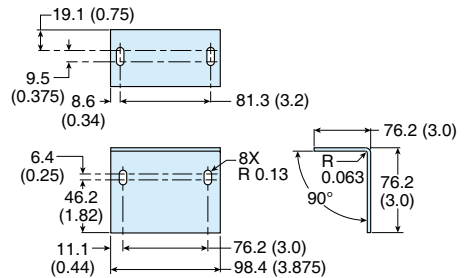
**Valve Wiring**



**Dimensions mm (inches)**



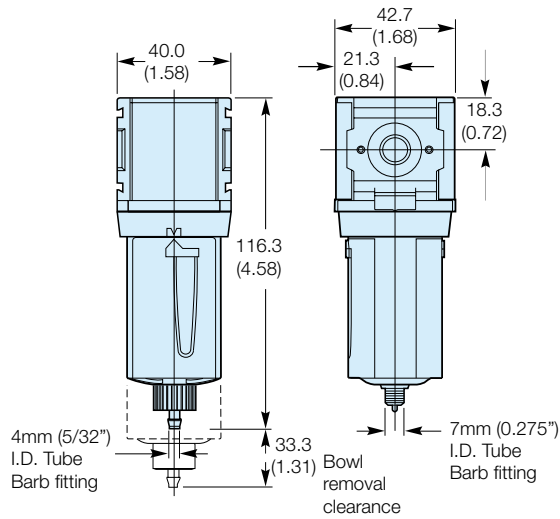
**Angle Mounting Bracket**



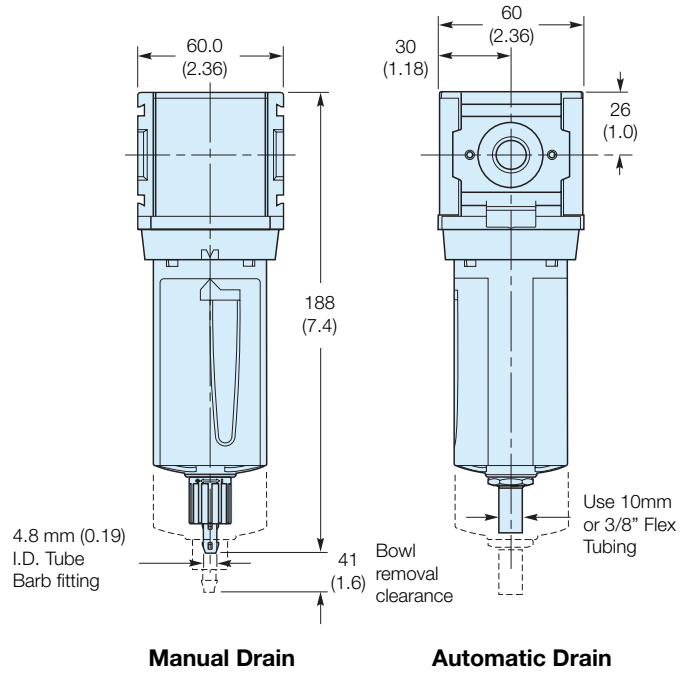
**Note:** Mounting bracket and installation screws included and required to install unit in the system.

Filter Dimensions - mm (inches)

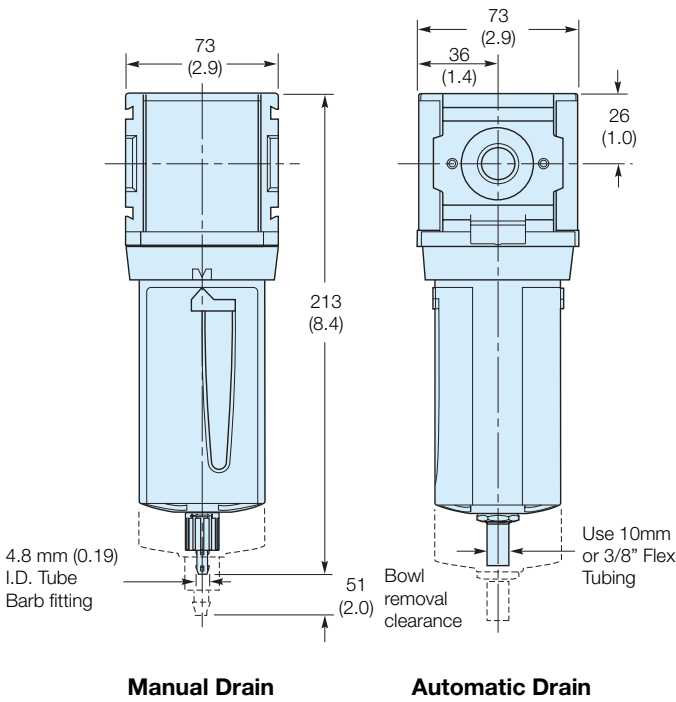
P31



P32

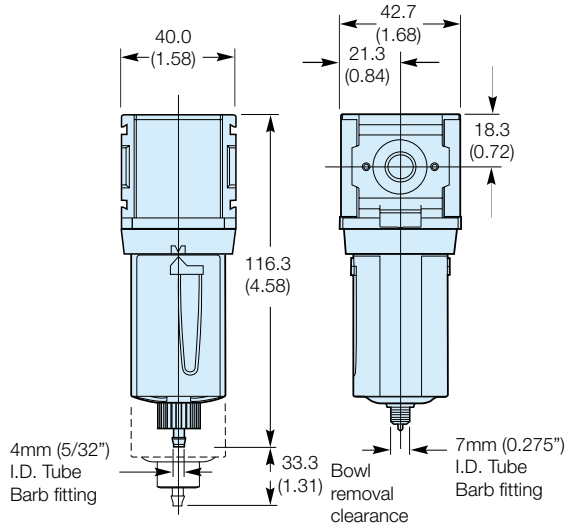


P33

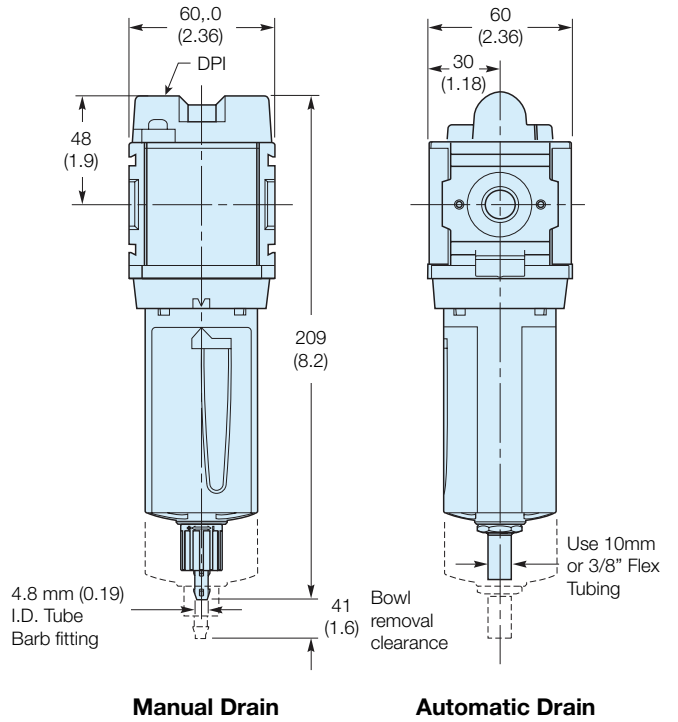


**Coalescing / Adsorber Filter Dimensions - mm (inches)**

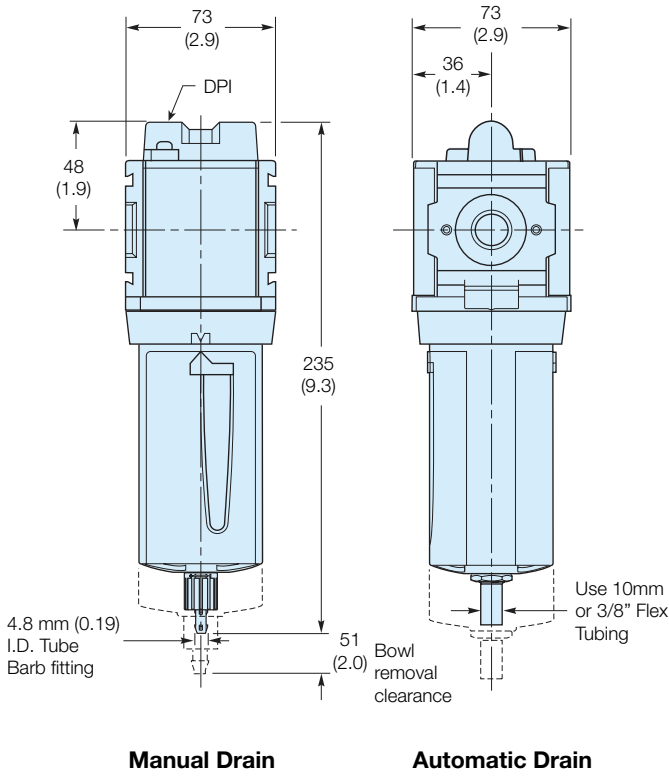
**P31**



**P32**

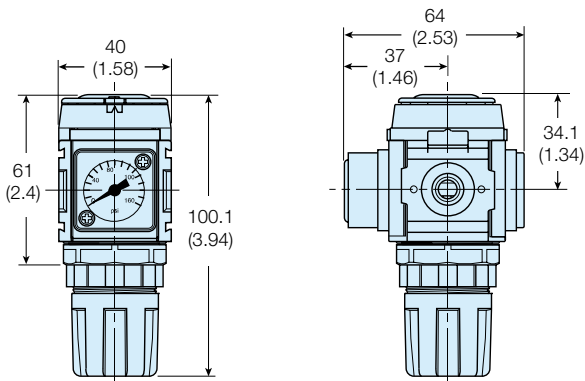


**P33**



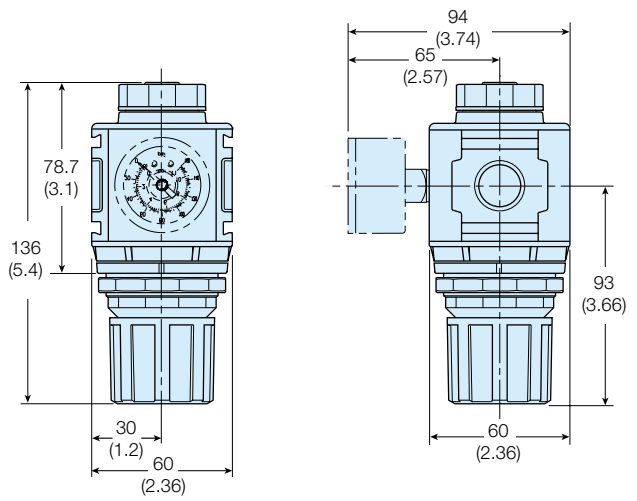
**Regulator Dimensions - mm (inches)**

**P31**



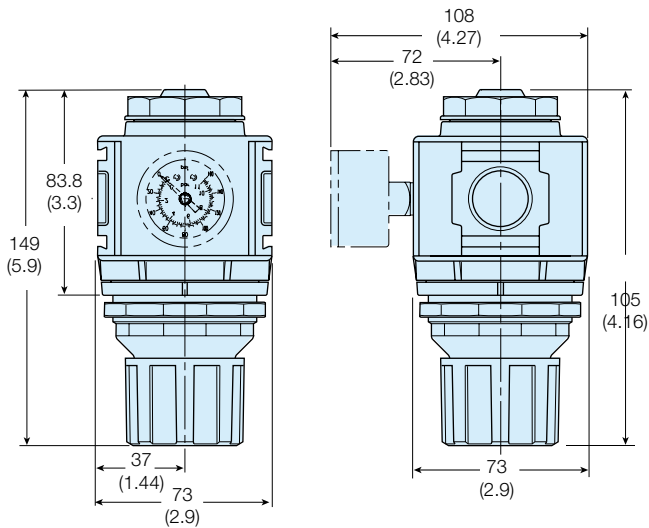
**NOTE:** Ø 30 mm hole required for panel nut mounting.

**P32**



**NOTE:** Ø 47 mm hole required for panel nut mounting.

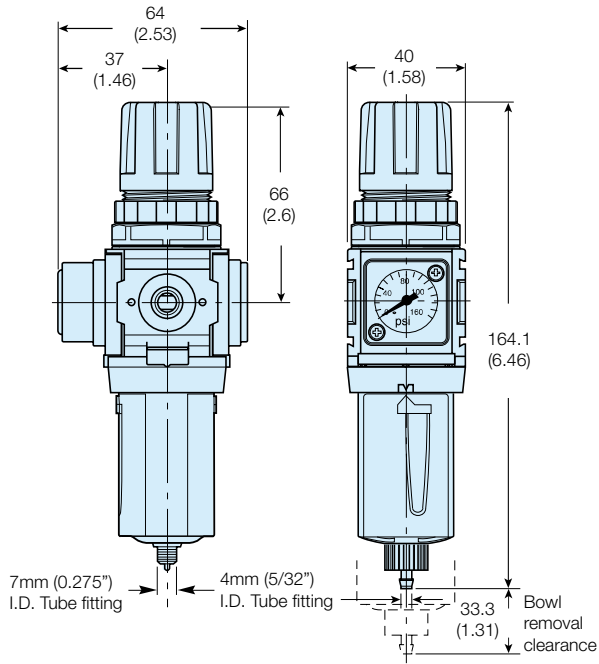
**P33**



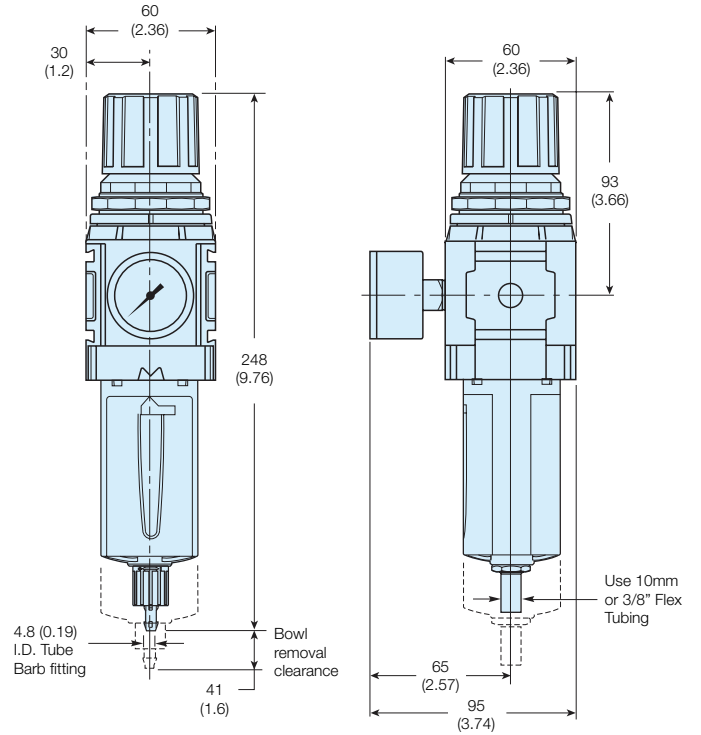
**NOTE:** Ø 60 mm hole required for panel nut mounting.

**Filter Regulator Dimensions - mm (inches)**

**P31**



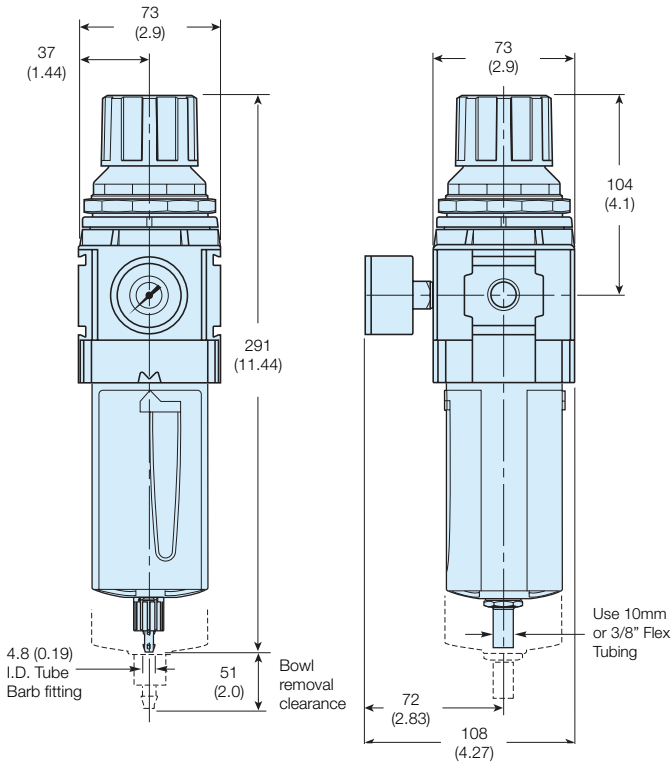
**P32**



**Manual Drain**

**Automatic Drain**

**P33**

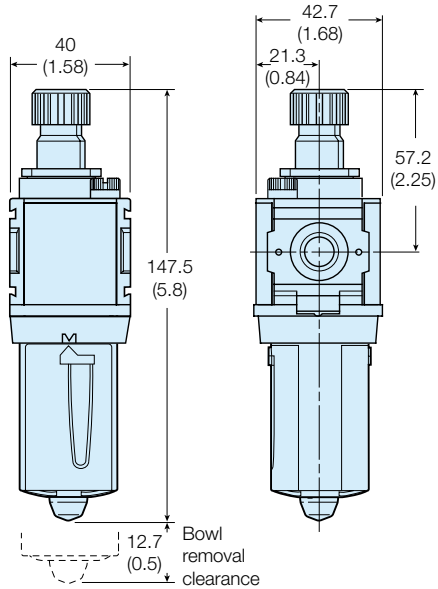


**Manual Drain**

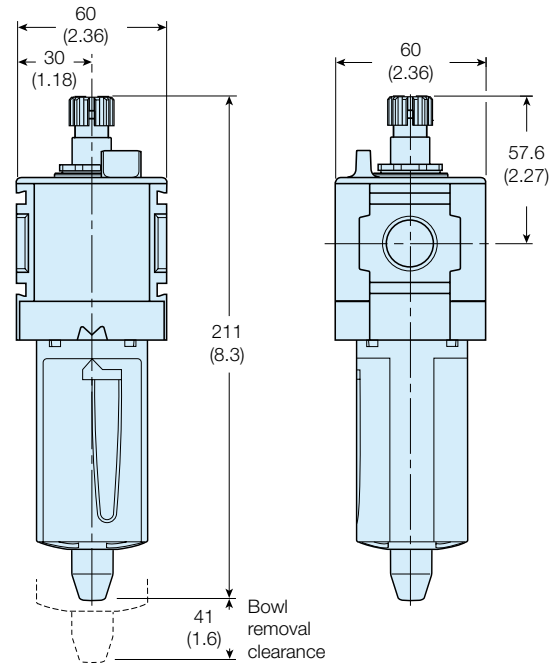
**Automatic Drain**

Lubricator Dimensions - mm (inches)

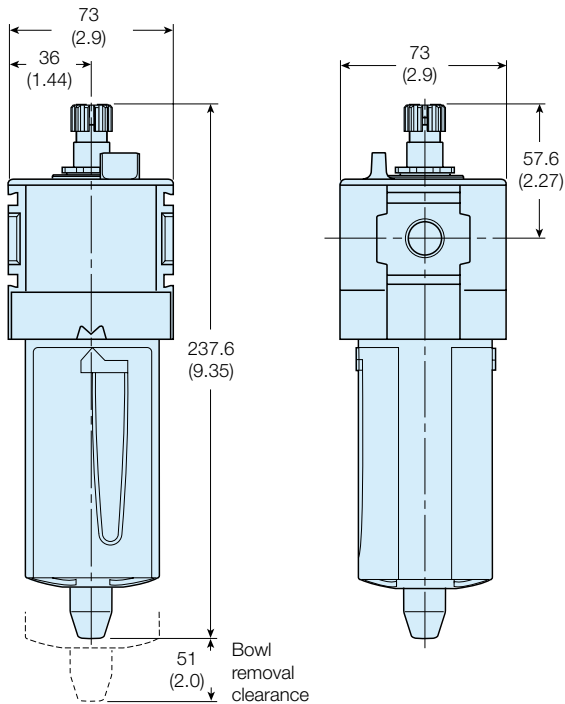
P31



P32



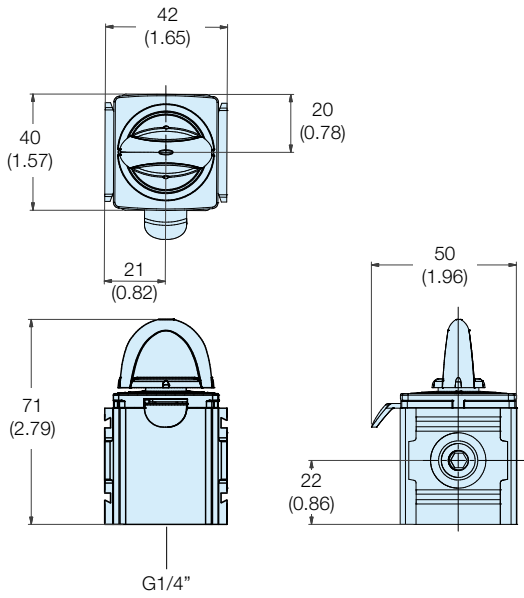
P33



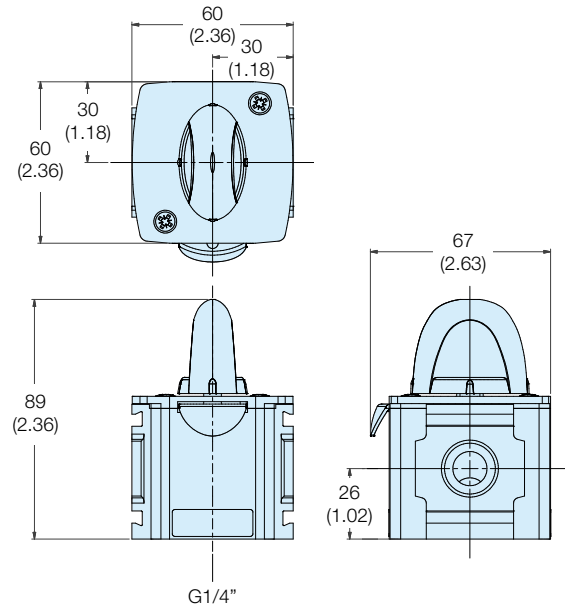


**Modular Ball Valve Dimensions - mm (inches)**

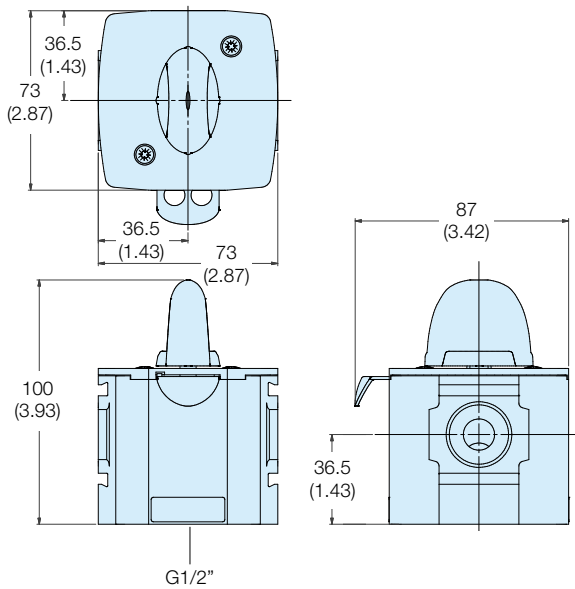
**P31**



**P32**

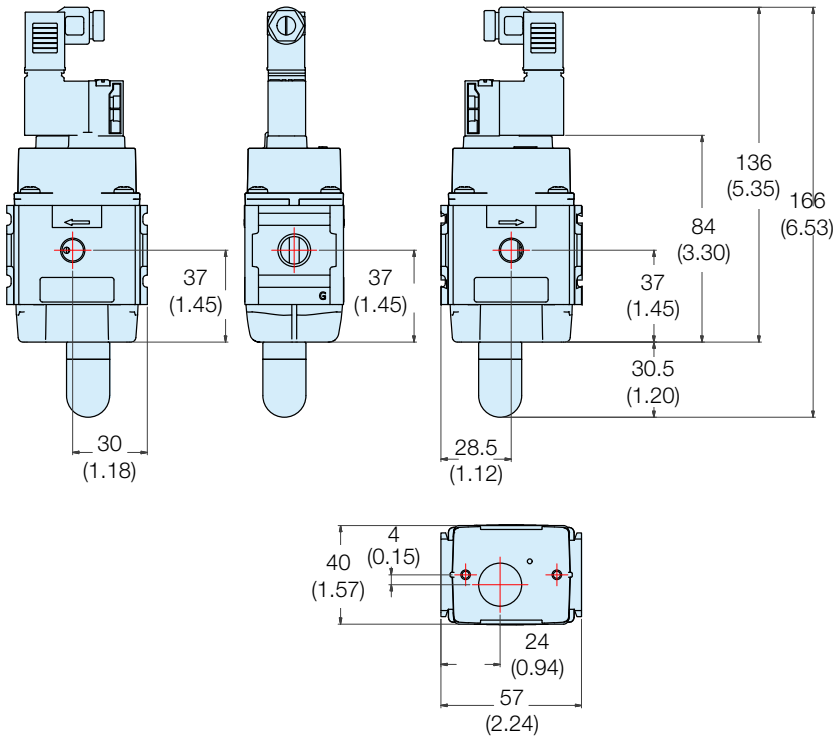


**P33**

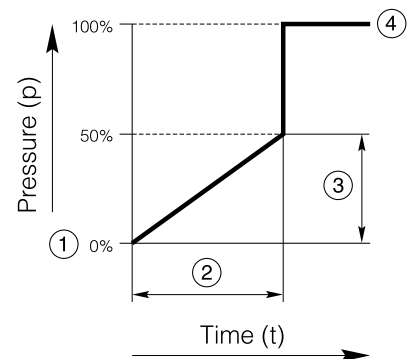
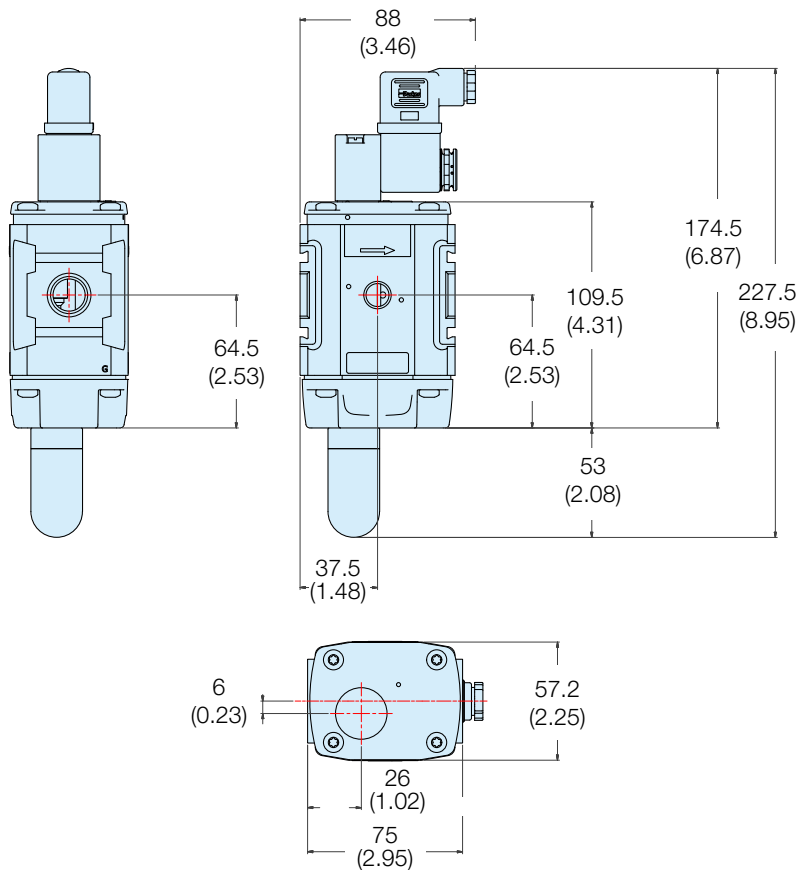


**Combined Soft Start Dump Valve and Remote Operated Dump Valve  
Dimensions - mm (inches)**

**P31**



**P32**



- ① Start signal
- ② Switching time delay
- ③ Gradual pressure build up
- ④ Operating pressure p<sup>2</sup> (=p<sup>1</sup>)

**Combined Soft Start Dump Valve and Remote Operated Dump Valve**

| Port | Description   | Order code            |
|------|---|-----------------------|
| 1/4  | Solenoid operated (not included)  | <b>P31TA12SGN0000</b> |
| 1/4  | 24VDC Solenoid & cable plug   | <b>P31TA12SGNC2CN</b> |
| 1/4  | Air pilot operated  | <b>P31TA12PPN</b>     |
| 1/2  | Solenoid operated (not included)  | <b>P32TA14SCN0000</b> |
| 1/2  | 24VDC 30mm coil & cable plug incl.  | <b>P32TA14SCNA2CN</b> |
| 1/2  | Air pilot operated  | <b>P32TA14PPN</b>     |
| 1/2  | Solenoid operated (not included)<br>Category 2 - Machine Directive Valve<br>Contact - Sales Office for further details. | <b>P32TA14SC20000</b> |

**Soft Start Valve**

| Port | Description                       | Order code            |
|------|-----------------------------------|-----------------------|
| 1/4  | Solenoid operated (not included)  | <b>P31SA12SGN0000</b> |
| 1/4  | 24VDC Solenoid & cable plug       | <b>P31SA12SGNC2CN</b> |
| 1/4  | External air pilot (1/8 threaded) | <b>P31SA12PPN</b>     |
| 1/2  | Solenoid operated (not included)  | <b>P32SA14SCN0000</b> |
| 1/2  | 24VDC 30mm coil & cable plug      | <b>P32SA14SCNA2CN</b> |
| 1/2  | Internal air pilot operated       | <b>P32SA14Y0N</b>     |
| 1/2  | External air pilot (1/8 threaded) | <b>P32SA14PPN</b>     |

**Remote Operated Dump Valve**

| Port | Description   | Order code            |
|------|---|-----------------------|
| 1/4  | Solenoid operated (not included)  | <b>P31DA12SGN0000</b> |
| 1/4  | 24VDC Solenoid & cable plug   | <b>P31DA12SGNC2CN</b> |
| 1/4  | Air pilot operated  | <b>P31DA12PPN</b>     |
| 1/2  | Solenoid operated (not included)  | <b>P32DA14SCN0000</b> |
| 1/2  | 24VDC 30mm coil & cable plug incl.  | <b>P32DA14SCNA2CN</b> |
| 1/2  | Air pilot operated  | <b>P32DA14PPN</b>     |
| 1/2  | Solenoid operated (not included)<br>Category 2 - Machine Directive Valve<br>Contact - Sales Office for further details. | <b>P32DA14SC20000</b> |

**C-Bracket**

(Fits to filter and lubricator body)

| P31              |
|------------------|
| <b>P31KA00MW</b> |

**L-Bracket**

(Fits to filter and lubricator body)

| P32              | P33              |
|------------------|------------------|
| <b>P32KA00ML</b> | <b>P33KA00ML</b> |

**Body Connector 'O' ring kit -**

Pack of 5

| P31              | P32              |
|------------------|------------------|
| <b>P31KA00CY</b> | <b>P32KA00CY</b> |

**T-Bracket**

(Fits to body connector or port block)

| P32              | P33              |
|------------------|------------------|
| <b>P32KA00MB</b> | <b>P33KA00MB</b> |

**Angle Bracket**

(Fits to regulator and filter/regulator)

| P31              | P32              | P33              |
|------------------|------------------|------------------|
| <b>P31KB00MR</b> | <b>P32KB00MR</b> | <b>P33KA00MR</b> |

**Body Connector**

| P31              | P32              | P33              |
|------------------|------------------|------------------|
| <b>P31KA00CB</b> | <b>P32KA00CB</b> | <b>P33KA00CB</b> |

**Modular Ball Valve / Lockout Valve**

| Model type | Port size | Thread type | Flow dm <sup>3</sup> /s (scfm) | Modular Ball Valve Flow from left to right |
|------------|-----------|-------------|--------------------------------|--|
| <b>P31</b> | 1/4"      | BSPP        | 20 (42.4)                      | <b>P31VB12LBNN</b>                         |
| <b>P32</b> | 3/8"      | BSPP        | 90 (190.7)                     | <b>P32VB13LBNN</b>                         |
|            | 1/2"      | BSPP        | 122 (258.5)                    | <b>P32VB14LBNN</b>                         |
| <b>P33</b> | 1/2"      | BSPP        | 122 (258.5)                    | <b>P33VB14LBNN</b>                         |
|            | 3/4"      | BSPP        | 122 (258.5)                    | <b>P33VB16LBNN</b>                         |

For thread type: BSPP 1  
NPT 9

**Manifold Blocks**

| Model Type | In / Out Port Size | Auxiliary Port Size Top | Auxiliary Port Size Bottom | Thread Type | Order Code         |
|------------|--------------------|-------------------------|----------------------------|-------------|--------------------|
| <b>P31</b> | 1/4"               | 1/4"                    | 1/4"                       | BSPP        | <b>P31MA12022N</b> |
| <b>P32</b> | 1/2"               | 1/4"                    | 1/2"                       | BSPP        | <b>P32MA14024N</b> |
| <b>P33</b> | 3/4"               | 1/4"                    | 1/2"                       | BSPP        | <b>P33MA16024N</b> |

For thread type: BSPP 1  
NPT 9

**Branch Manifold**

|            |      |      |      |      |                    |
|------------|------|------|------|------|--------------------|
| <b>P32</b> | 1/2" | 1/4" | 1/4" | BSPP | <b>P32MD14022N</b> |
| <b>P32</b> | 1/4" | 1/4" | 1/4" | BSPP | <b>P32MD12022N</b> |

**T-Bracket w / Body Connector**

| P31              | P32              | P33              |
|------------------|------------------|------------------|
| <b>P31KA00MT</b> | <b>P32KA00MT</b> | <b>P33KA00MT</b> |

**Panel mounting nut (Aluminium)**

| P31              | P32              | P33              |
|------------------|------------------|------------------|
| <b>P31KA00MM</b> | <b>P32KA00MM</b> | <b>P33KA00MM</b> |



## Accessories Kits

| Series            | Description                         | Order Code                             |   |
|-------------------|-------------------------------------|--|---|
| P31<br>P32<br>P33 | Panel Mount Nut (Plastic)           | P31KA00MP<br>P32KA00MP<br>P33KA00MP    |    |
| P31<br>P32<br>P33 | Panel Mount Nut (Aluminium)         | P31KA00MM<br>P32KA00MM<br>P33KA00MM    |    |
| P31<br>P32<br>P33 | 5µ Element Kit                      | P31KA00ESE<br>P32KA00ESE<br>P33KA00ESE |    |
| P31<br>P32<br>P33 | 40µ Element Kit                     | P31KA00ESG<br>P32KA00ESG<br>P33KA00ESG |   |
| P31<br>P32<br>P33 | 1µ Element Kit                      | P31KA00ES9<br>P32KA00ES9<br>P33KA00ES9 |   |
| P31<br>P32<br>P33 | 0.01µ Element Kit                   | P31KA00ESC<br>P32KA00ESC<br>P33KA00ESC |  |
| P31<br>P32<br>P33 | Adsorber Element Kit                | P31KA00ESA<br>P32KA00ESA<br>P33KA00ESA |  |
| P32 / P33         | Auto Drain Kit                      | P32KA00DA                              |  |
| P31<br>P32 / P33  | Differential Pressure Indicator Kit | P31KB00RQ<br>P32KA00RQ                 |  |
| P31<br>P32 / P33  | Fill Plug Kit                       | P31KA00PL<br>P32KA00PL                 |  |
| P31 / P32 / P33   | Drip Control Assembly Kit           | P32KA00PG                              |  |

**Accessories Kits**

| Series            | Description   | Order Code  |   |
|-------------------|---|---|---|
| P31<br>P32<br>P33 | Plastic Bowl with Bowl Guard & Manual Drain   | <b>P31KB00BGM</b><br><b>P32KB00BGM</b><br><b>P33KA00BGM</b> |    |
| P31               | Plastic Bowl with Bowl Guard & Pulse Drain  | <b>P31KB00BGB</b>   |    |
| P32<br>P33        | Plastic Bowl with Bowl Guard & Auto Drain   | <b>P32KB00BGA</b><br><b>P33KA00BGA</b>                      |    |
| P31               | Metal Bowl without Sight Gauge & Pulse Drain  | <b>P31KB00BMB</b>   |   |
| P32<br>P33        | Metal Bowl with Sight Gauge & Manual Drain  | <b>P32KB00BSM</b><br><b>P33KA00BSM</b>                      |  |
| P32<br>P33        | Metal Bowl with Sight Gauge & Auto Drain  | <b>P32KB00BSA</b><br><b>P33KA00BSA</b>                      |  |
| P31<br>P32<br>P33 | Lubricator - Plastic Bowl with Bowl Guard & Close End   | <b>P31KB00BGN</b><br><b>P32KB00BGN</b><br><b>P33KA00BGN</b> |  |
| P31<br>P32<br>P33 | Lubricator - Metal Bowl Without Sight Gauge, No Drain<br>Lubricator - Metal Bowl With Sight Gauge, No Drain<br>Lubricator - Metal Bowl With Sight Gauge, No Drain | <b>P31KB00BMN</b><br><b>P32KB00BSN</b><br><b>P33KA00BSN</b> |   |

- Compact body ported units.
- Port size G<sup>1</sup>/<sub>4</sub>
- Unique deflector plate ensuring maximum water and particulate removal.
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.
- Tamperproof options available.



| Operating information |                  | Flow characteristics         |            |
|-----------------------|------------------|------------------------------|------------|
| Working pressure:     | Max 10 bar       | <b>Flow dm<sup>3</sup>/s</b> | <b>1/4</b> |
| Working temperature:  | -10 °C to +52 °C | Filter                       | 30.5       |
|                       |                  | Coalescing Filter            | 5.9        |
|                       |                  | Adsorber Filter              | 5.9        |
|                       |                  | Regulator                    | 12.9       |
|                       |                  | Regulator - Brass            | 9.8        |
|                       |                  | Filter Regulator             | 9.2        |
|                       |                  | Lubricator                   | 23.3       |

**Filters**

| Port size | Description                                 | Order Code         |
|-----------|---|--------------------|
| G1/4      | Poly bowl - Manual drain - 5µ               | <b>P3LFA12EPPN</b> |
| G1/4      | Poly bowl - Pulse drain - 5µ                | <b>P3LFA12EPSN</b> |
| G1/4      | Poly bowl - Manual drain - 40µ              | <b>P3LFA12GPPN</b> |
| G1/4      | Poly bowl - Pulse drain - 40µ               | <b>P3LFA12GPSN</b> |
|           | Individual mounting bracket - P3LFA / P3LLA | <b>P3LKA00MW</b>   |

**Regulators** - 2 & 4 bar - relieving type & non relieving type

| Port size | Description                           | Order Code         |
|-----------|---------------------------------------|--------------------|
| G1/4      | 8 bar relieving                       | <b>P3LRA12BNNP</b> |
| G1/4      | 8 bar relieving + gauge               | <b>P3LRA12BNGP</b> |
| G1/4      | 8 bar relieving + Tamperproof         | <b>P3LRA12BANP</b> |
| G1/4      | 8 bar relieving + gauge - Tamperproof | <b>P3LRA12BAGP</b> |

**Regulators (Brass)** - 2, 4 & 16 bar-relieving type & non relieving type

| Port size | Description                           | Order Code         |
|-----------|---------------------------------------|--------------------|
| G1/4      | 8 bar relieving                       | <b>P3LRX12BNNP</b> |
| G1/4      | 8 bar relieving + gauge               | <b>P3LRX12BNGP</b> |
| G1/4      | 16 bar relieving                      | <b>P3LRX12BNHP</b> |
| G1/4      | 8 bar relieving + Tamperproof         | <b>P3LRX12BANP</b> |
| G1/4      | 8 bar relieving + gauge - Tamperproof | <b>P3LRX12BAGP</b> |
| G1/4      | 16 bar relieving + Tamperproof        | <b>P3LRX12BAHP</b> |

**Pressure Gauges**

| 40mm (1 1/2") Round 1/8" center back mount |      |                  |
|--|------|------------------|
|  |      | Order Code       |
| 0-30 PSIG / 0-2 bar                        | (2)  | <b>KZ8810-00</b> |
| 0-58 PSIG / 0-4 bar                        | (4)  | <b>KZ8811-00</b> |
| 0-160 PSIG / 0-10 bar                      | (10) | <b>KZ8813-00</b> |

**Coalescing Filters** - 0.01µ element

| Port size | Description                                 | Order Code         |
|-----------|---|--------------------|
| G1/4      | Poly bowl - Manual drain - 0.01µ            | <b>P3LFA12CPPN</b> |
|           | Individual mounting bracket - P3LFA / P3LLA | <b>P3LKA00MW</b>   |

**Adsorber Filters**

| Port size | Description          | Order Code         |
|-----------|----------------------|--------------------|
| G1/4      | Poly bowl - Adsorber | <b>P3LFA12APPN</b> |

**Filter/Regulators** - 2 & 4 bar pressure, 40µ available

| Port size | Description  | Order Code            |
|-----------|--|-----------------------|
| G1/4      | 8 bar relieving - Poly bowl Manual drain - 5µ            | <b>P3LEA12EPPBNNP</b> |
| G1/4      | 8 bar relieving - Poly bowl Semi auto-drain - 5µ         | <b>P3LEA12EPSBNNP</b> |
| G1/4      | 8 bar relieving - Poly bowl Manual drain + Gauge - 5µ    | <b>P3LEA12EPPBNGP</b> |
| G1/4      | 8 bar relieving - Poly bowl Semi auto-drain + Gauge - 5µ | <b>P3LEA12EPSBNGP</b> |

**Lubricators**

| Port size | Description                 | Order Code         |
|-----------|-----------------------------|--------------------|
| G1/4      | Poly bowl - No drain        | <b>P3LLA12LPNN</b> |
|           | Lubricator OIL VG32-1 Litre | <b>P3YKA00PPBB</b> |

**Filter/Regulator + Lubricator Combination**

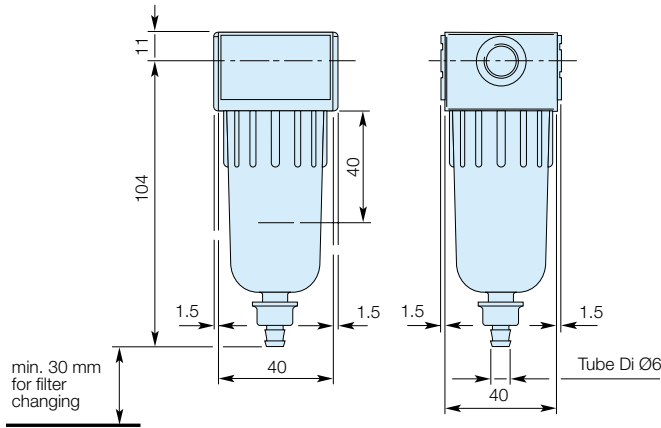
Available in boxed quantities of 25

| Port size | Description       | Order Code                |
|-----------|-------------------|---------------------------|
| G1/4      | Manual push drain | <b>P3LCA12PEPNGLNWQ25</b> |
| G1/4      | Semi auto drain   | <b>P3LCA12PESNGLNWQ25</b> |

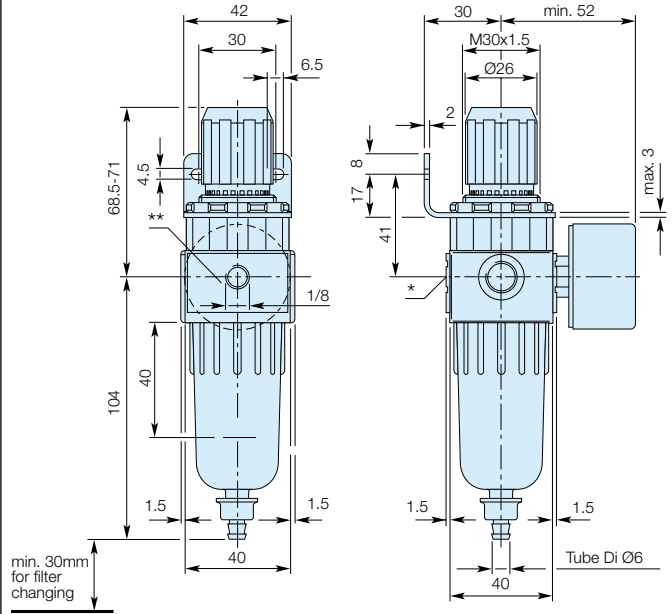


**Dimensions (mm)**

**Filters**

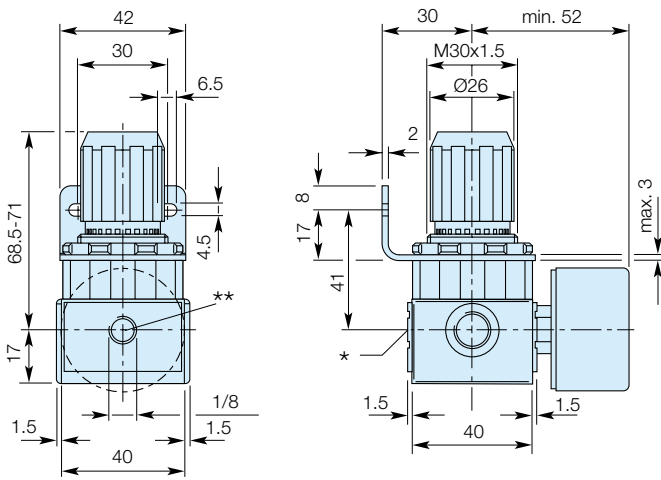


**Filter/Regulators**



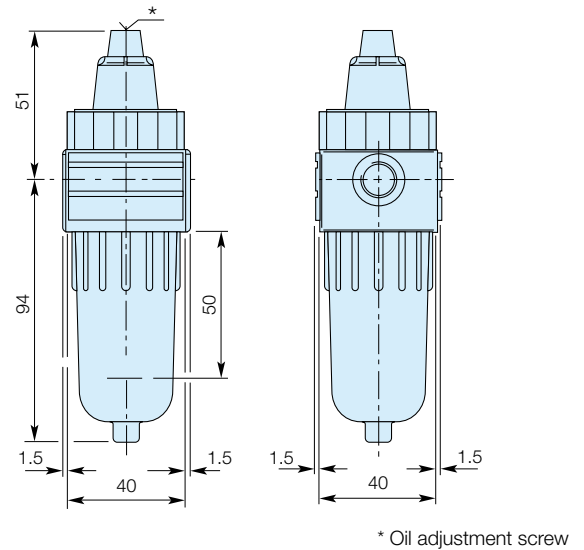
\* On delivery the screw plug is not assembled  
 \*\* Two opposite gauge ports 1/8"

**Regulators**



\* On delivery the screw plug is not assembled  
 \*\* Two opposite gauge ports 1/8"

**Lubricators**



**Service kits**

| Description                              | Order code        |
|--|-------------------|
| Plastic bowl / manual push drain         | <b>P3LKA00BPP</b> |
| Plastic bowl / semi-auto drain           | <b>P3LKA00BPS</b> |
| Plastic bowl - no drain                  | <b>P3LKA00BPN</b> |
| 5µ particle filter element               | <b>P3LKA00ESE</b> |
| 40µ Element Kit                          | <b>P3LKA00ESG</b> |
| 0.01µ coalescing filter element          | <b>P3LKA00ESC</b> |
| Activated carbon adsorber filter element | <b>P3LKA00ESA</b> |

**Accessories**

| Description                              | Order code         |
|--|--------------------|
| Connector kit (E/R + L/F)                | <b>P3LKA00CB1</b>  |
| Connector kit (E/R + M + L)              | <b>P3LKA00CB2</b>  |
| Connector kit (E/R + F + F)              | <b>P3LKA00CB3</b>  |
| Connector kit (F + L/F)                  | <b>P3LKA00CB4</b>  |
| Manifold block                           | <b>P3LMA12020C</b> |
| Mounting bracket (F/L)                   | <b>P3LKA00MW</b>   |
| Panel mount nut - Aluminium              | <b>P3LKA00MM</b>   |
| Panel mount nut - Plastic                | <b>P3LKA00MP</b>   |
| Angle Bracket (uses panel mount threads) | <b>P3LKA00MR</b>   |

- Port size G<sup>1</sup>/<sub>4</sub> - G<sup>3</sup>/<sub>8</sub>
- Modular air preparation series
- Robust and lightweight zinc body construction
- Rolling diaphragm for extended life
- Soft start valve for slow pressure build up in pneumatic circuits
- Dump valves for quick downstream pressure exhaust
- Tamperproof regulator options available
- Secondary pressure ranges 4, 8 and 16 bar



### Operating information

|  |                |
|--|----------------|
| Working pressure:  | Max 16 bar     |
| Working temperature:   | 0 °C to +50 °C |
| * Low temperature capabilities -40°C for Filters, Filter/Regulators and Regulators on request. |                |

### Flow characteristics

| Flow m <sup>3</sup> /h          | 1/4 | 3/8 |
|---------------------------------|-----|-----|
| Filter + Regulator + Lubricator | 50  | 47  |
| Filter-Regulator + Lubricator   | 53  | 47  |
| Filter-Water-Separator          | 86  | 91  |
| Dust Filter                     | 80  | 97  |
| Coalescing Filter               | 35  | 35  |
| Adsorber Filter                 | 35  | 35  |
| Regulator                       | 171 | 198 |
| Filter Regulator                | 137 | 192 |
| Lubricator                      | 110 | 113 |

### Filters

5 micron (40 micron options available)

| Port size | Description                            | Order Code         |
|-----------|--|--------------------|
| G1/4      | Standard with 5μ element               | <b>P3SFA12EPPN</b> |
| G1/4      | Semi auto drain 5μ element             | <b>P3SFA12EPSN</b> |
| G1/4      | Auto drain 5μ element                  | <b>P3SFA12EPAN</b> |
| G1/4      | Metal bowl with sight glass 5μ element | <b>P3SFA12ESPN</b> |
| G3/8      | Standard with 5μ element               | <b>P3SFA13EPPN</b> |
| G3/8      | Semi auto drain 5μ element             | <b>P3SFA13EPSN</b> |
| G3/8      | Auto drain 5μ element                  | <b>P3SFA13EPAN</b> |
| G3/8      | Metal bowl with sight glass 5μ element | <b>P3SFA13ESPN</b> |

### Regulators

4, 8 & 16 bar (non relieving options available)

| Port size | Description               | Order Code         |
|-----------|---------------------------|--------------------|
| G1/4      | Standard 8 bar            | <b>P3SRA12BNNP</b> |
| G1/4      | Standard 8 bar with Gauge | <b>P3SRA12BNGP</b> |
| G1/4      | With adaptor for key lock | <b>P3SRA12BANP</b> |
| G1/4      | With common p1 supply     | <b>P3SHA12BNNP</b> |
| G1/4      | Pilot operated            | <b>P3SRA12BPPP</b> |
| G3/8      | Standard 8 bar            | <b>P3SRA13BNNP</b> |
| G3/8      | Standard 8 bar with Gauge | <b>P3SRA13BNGP</b> |
| G3/8      | With adaptor for key lock | <b>P3SRA13BANP</b> |
| G3/8      | With common p1 supply     | <b>P3SHA13BNNP</b> |
| G3/8      | Pilot operated            | <b>P3SRA13BPPP</b> |

### Coalescing Filters

0,01 micron element

| Port size | Description                 | Order Code         |
|-----------|-----------------------------|--------------------|
| G1/4      | Standard with manual drain  | <b>P3SFA12CPPN</b> |
| G1/4      | Metal bowl with sight glass | <b>P3SFA12CSPN</b> |
| G3/8      | Standard with manual drain  | <b>P3SFA13CPPN</b> |
| G3/8      | Metal bowl with sight glass | <b>P3SFA13CSPN</b> |

### Adsorber Filters

| Port size | Description                 | Order Code         |
|-----------|-----------------------------|--------------------|
| G1/4      | Standard with manual drain  | <b>P3SFA12APPN</b> |
| G1/4      | Metal bowl with sight glass | <b>P3SFA12ASPN</b> |
| G3/8      | Standard with manual drain  | <b>P3SFA13APPN</b> |
| G3/8      | Metal bowl with sight glass | <b>P3SFA13ASPN</b> |

### Lubricators

| Port size | Description                        | Order Code         |
|-----------|------------------------------------|--------------------|
| G1/4      | Standard                           | <b>P3SLA12LPNN</b> |
| G1/4      | Closed metal bowl with sight glass | <b>P3SLA12LSNN</b> |
| G3/8      | Standard                           | <b>P3SLA13LPNN</b> |
| G3/8      | Closed metal bowl with sight glass | <b>P3SLA13LSNN</b> |



**Filter + Regulator + Lubricator combination**

(wall bracket mount and gauge included)

| Port size | Description                              | Order Code             |
|-----------|--|------------------------|
| G1/4      | Standard with 5µ element, manual drain   | <b>P3SCB12PEPNGLNW</b> |
| G1/4      | Semi auto drain 5µ element, manual drain | <b>P3SCB12PESNGLNW</b> |
| G1/4      | Auto drain 5µ element, manual drain      | <b>P3SCB12PEANGLNW</b> |
| G3/8      | Standard with 5µ element, manual drain   | <b>P3SCB13PEPNGLNW</b> |
| G3/8      | Semi auto drain 5µ element, manual drain | <b>P3SCB13PESNGLNW</b> |
| G3/8      | Auto drain 5µ element, manual drain      | <b>P3SCB13PEANGLNW</b> |

**Filter/Regulators**

4, 8 &amp; 16 bar (40 micron options available)

| Port size | Description                            | Order Code             |
|-----------|--|------------------------|
| G1/4      | Standard with 5µ element               | <b>P3SEA12EPPBNNN</b>  |
| G1/4      | Semi auto drain 5µ element             | <b>P3SEA12EPSBNNN</b>  |
| G1/4      | Auto drain 5µ element                  | <b>P3SEA12EPABNNN</b>  |
| G1/4      | Metal bowl with sight glass 5µ element | <b>P3SEA12ESPNGLNW</b> |
| G3/8      | Standard with 5µ element               | <b>P3SEA13EPPBNNN</b>  |
| G3/8      | Semi auto drain 5µ element             | <b>P3SEA13EPSBNNN</b>  |
| G3/8      | Auto drain 5µ element                  | <b>P3SEA13EPABNNN</b>  |
| G3/8      | Metal bowl with sight glass 5µ element | <b>P3SEA13ESPNGLNW</b> |

**Proportional Pressure Regulator**

| Port size | Description   | Order Code            |
|-----------|---|-----------------------|
| G1/4      | Normally closed, Control Signal 0-10V<br>Pressure Range 0-10 bar              | <b>P3SPA12AD2VA2A</b> |
| G1/4      | Normally closed, Control Signal 4-20mA<br>Pressure Range 0-10 bar             | <b>P3SPA12AD2AA2A</b> |
| G1/4      | Normally open / fail safe<br>Control Signal 0-10V<br>Pressure Range 0-10 bar  | <b>P3SPA12ED2VA2A</b> |
| G1/4      | Normally open / fail safe<br>Control Signal 4-20mA<br>Pressure Range 0-10 bar | <b>P3SPA12ED2AA2A</b> |
| G3/8      | Normally closed, Control Signal 0-10V<br>Pressure Range 0-10 bar              | <b>P3SPA13AD2VA2A</b> |
| G3/8      | Normally closed, Control Signal 4-20mA<br>Pressure Range 0-10 bar             | <b>P3SPA13AD2AA2A</b> |
| G3/8      | Normally open / fail safe<br>Control Signal 0-10V<br>Pressure Range 0-10 bar  | <b>P3SPA13ED2VA2A</b> |
| G3/8      | Normally open / fail safe<br>Control Signal 4-20mA<br>Pressure Range 0-10 bar | <b>P3SPA13ED2AA2A</b> |

**Filter/Regulator + Lubricator combination**

(wall bracket mount and gauge included)

| Port size | Description                            | Order Code             |
|-----------|--|------------------------|
| G1/4      | Standard with 5µ element, manual drain | <b>P3SCA12PEPNGLNW</b> |
| G1/4      | Semi auto drain 5µ element             | <b>P3SCA12PESNGLNW</b> |
| G1/4      | Auto drain 5µ element                  | <b>P3SCA12PEANGLNW</b> |
| G1/4      | Metal bowl with sight glass 5µ element | <b>P3SCA12SEPNGLNW</b> |
| G3/8      | Standard with 5µ element, manual drain | <b>P3SCA13PEPNGLNW</b> |
| G3/8      | Semi auto drain 5µ element             | <b>P3SCA13PESNGLNW</b> |
| G3/8      | Auto drain 5µ element                  | <b>P3SCA13PEANGLNW</b> |
| G3/8      | Metal bowl with sight glass 5µ element | <b>P3SCA13SEPNGLNW</b> |

**Slider Valve**

| Port size | Description                            | Order Code        |
|-----------|--|-------------------|
| G1/4      | 3/2 way shut off valve 3-fold lockable | <b>P3SVA12LSN</b> |
| G3/8      | 3/2 way shut off valve 3-fold lockable | <b>P3SVA13LSN</b> |

**Soft Start Valve & Dump Valves**

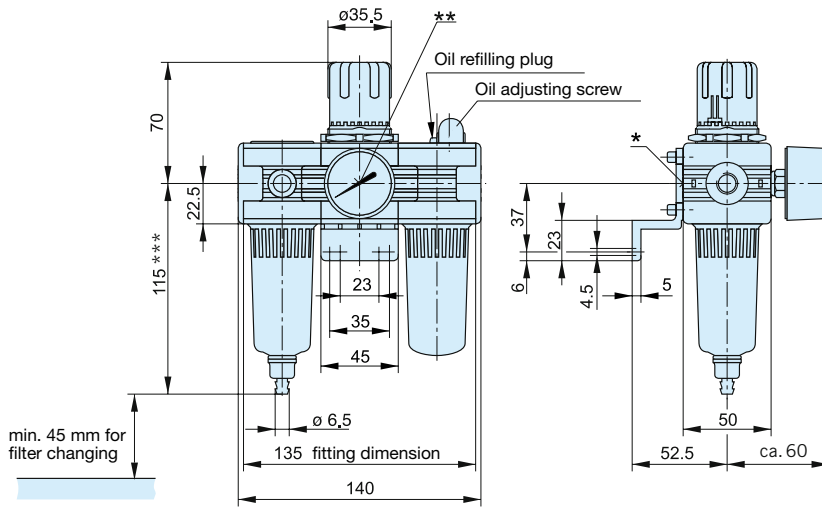
| Port size | Description                               | Order Code            |
|-----------|---|-----------------------|
| G1/4      | Soft Start Valve                          | <b>P3SSA12Y0N</b>     |
| G1/4      | Dump Valve Air Pilot                      | <b>P3SDA12PPN</b>     |
| G1/4      | Solenoid Pilot 24V =                      | <b>P3SDA12SCNB2CN</b> |
| G1/4      | Solenoid Operated (solenoid not included) | <b>P3SDA12SCN0000</b> |
| G3/8      | Soft Start Valve                          | <b>P3SSA13Y0N</b>     |
| G3/8      | Dump Valve Air Pilot                      | <b>P3SDA13PPN</b>     |
| G3/8      | Solenoid Pilot 24V =                      | <b>P3SDA13SCNB2CN</b> |
| G3/8      | Solenoid Operated (solenoid not included) | <b>P3SDA13SCN0000</b> |

**Accessories**

| Description   | Order Code       |
|---|------------------|
| Wall Mount Kit - standard   | <b>P3SKA00MW</b> |
| Wall Mount Kit for common p1 regulator  | <b>P3SKA00MB</b> |
| Assembly Kit  | <b>P3SKA00CB</b> |
| Branch manifold, 3 x G1/8, 1 x G1/4 for pressure switch incl. assembly material | <b>P3SMA1V0N</b> |
| Gauge Ø 40, 0-10 bar, G1/8  | <b>KZ8813-00</b> |
| Lock for tamperproof regulator  | <b>P3XKA00AS</b> |

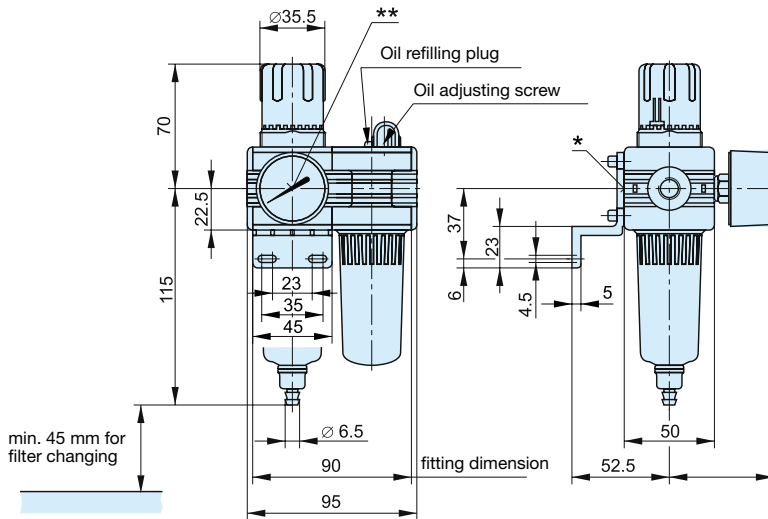
**Dimensions (mm)**

**Filter + Regulator + Lubricator combination**



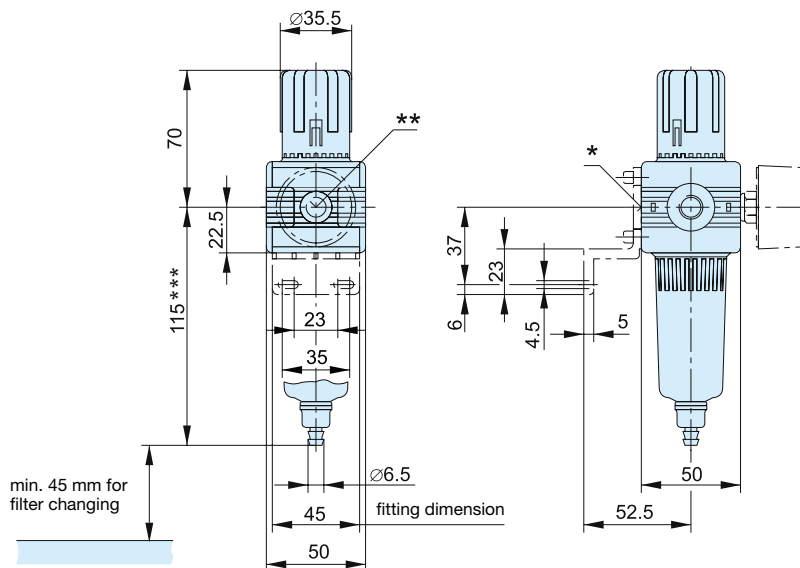
- \* On delivery the plug screw is not assembled
- \*\* Two opposite gauge ports G1/8
- \*\*\* 148 mm on version with automatic drainage

**Filter/Regulator + Lubricator combination**



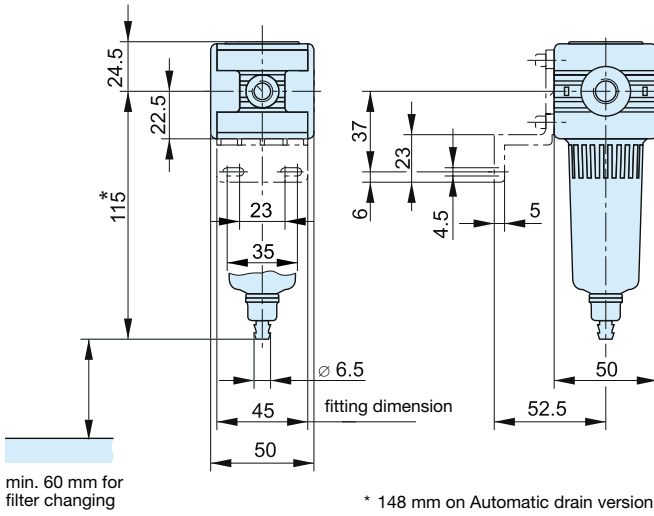
- \* On delivery the plug screw is not assembled
- \*\* Two opposite gauge ports G1/8
- \*\*\* 148 mm on version with automatic drainage

**Filter/Regulator**

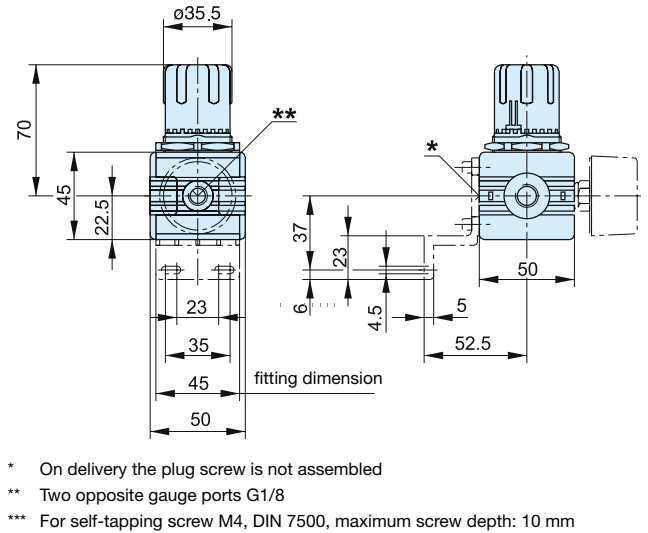


**Dimensions (mm)**

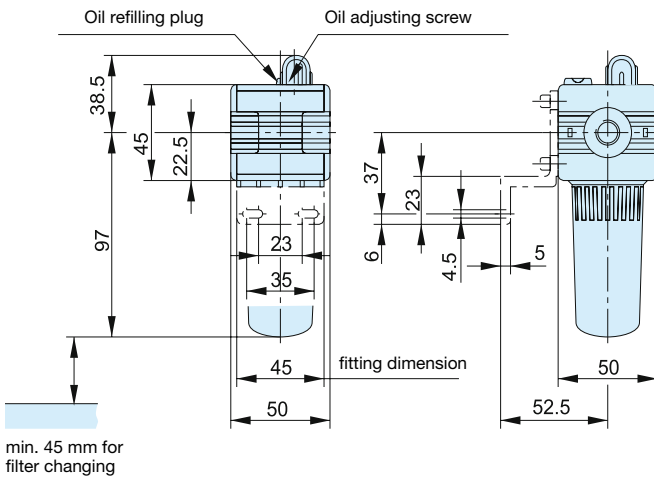
**Filter**



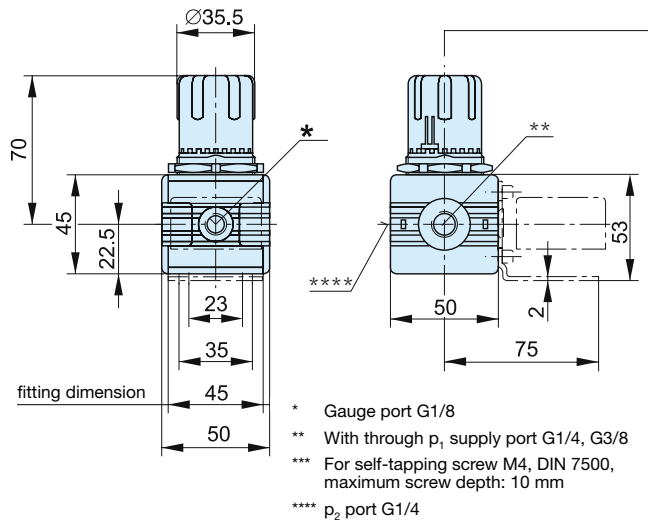
**Regulator**



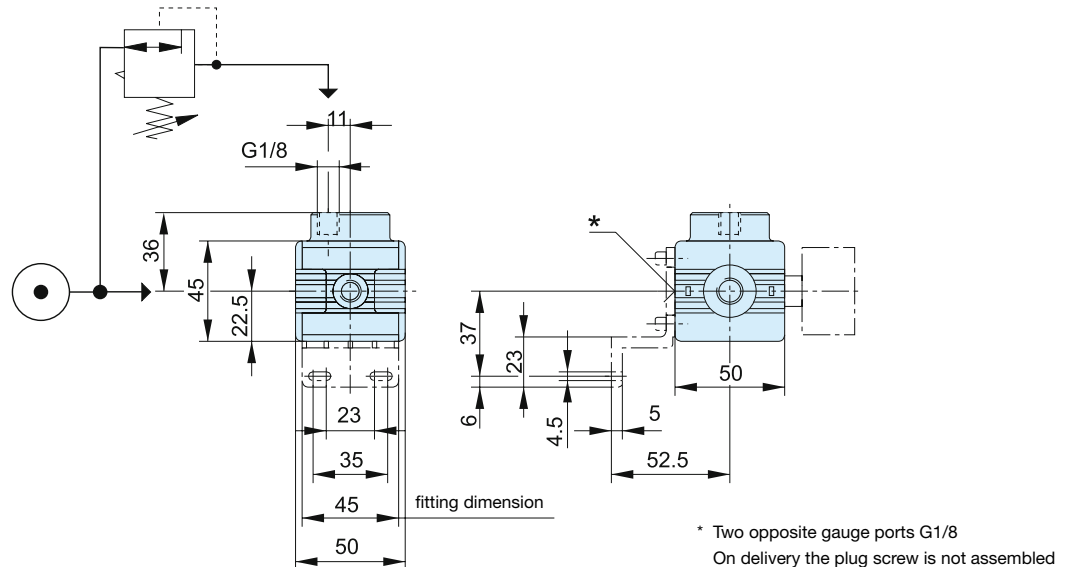
**Lubricator**



**Common - P1 Regulator**

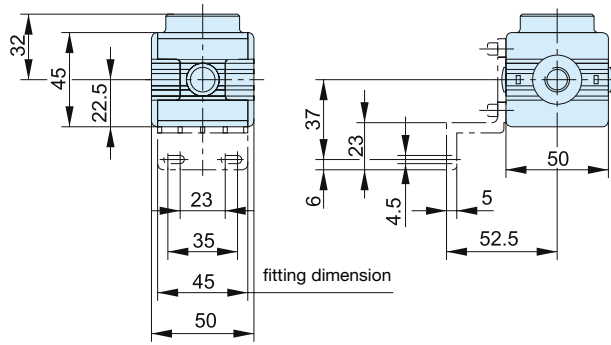


**Pilot Operated Regulator**

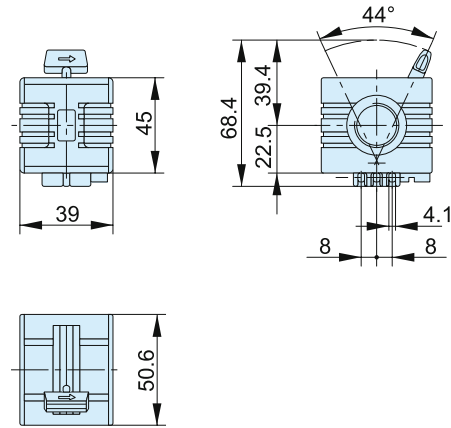


**Dimensions (mm)**

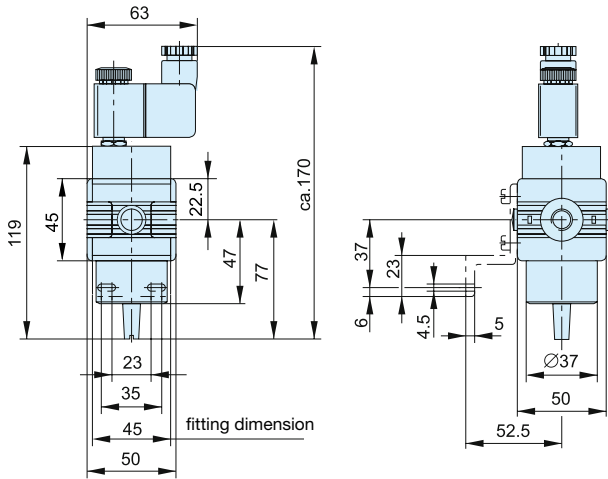
**Start Valve**



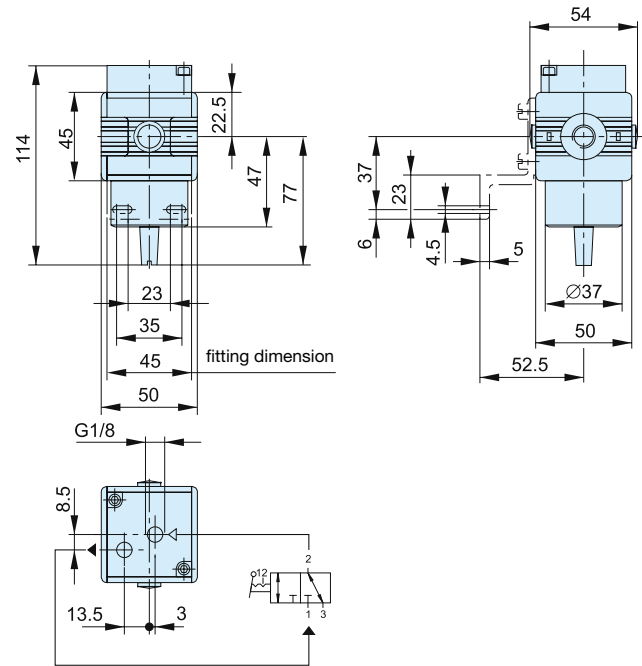
**Slider Valve**



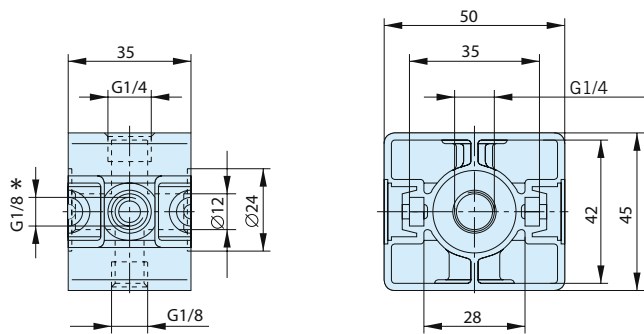
**Remote Operated Dump Valve (electrically actuated)**



**Remote Operated Dump Valve (pneumatically actuated)**



**Branch Manifold**



\* G1/8 thread on both sides



# Nano Mist

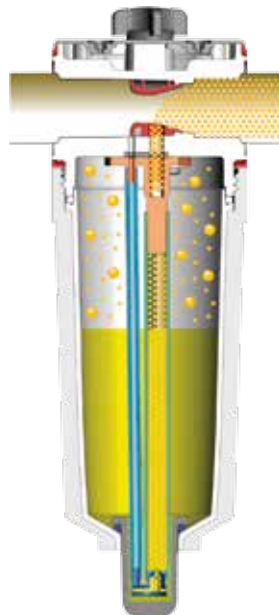
Simple. Convincing in the Details

*There are innovations that bring selective improvements.*

*And then there are real innovations.*

*Innovations that set **new** standards.*

*Like the **new Parker Moduflex Lite** series.*



## **New Nano Mist Technology, New Lubricator Concept. Self-Adjusting.**

With conventional lubricators, only the oil volume per time unit can be adjusted. If the demand changes, the quantity dispensed still remains constant.

The Moduflex Lite lubricator concept sets new benchmarks here. For the first time, the oil volume is automatically adjusted to the flow rate.

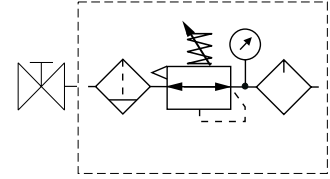
This ensures that there is neither too little nor too much oil in the system, which leads to clear economic and ecological advantages. In addition, with conventional systems, the distance between the lubricator and the equipment has to be less than 8 meters. With larger distances, the dispensed oil is deposited as a wall flow.

The new lubricator principle of the Moduflex Lite allows for distances of up to 40 meters. This opens up new scope for the design of even more efficient production systems.

Popular Combinations



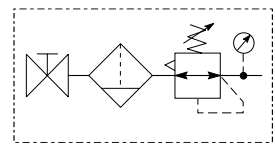
**Slide Valve + Filter/Regulator + Lubricator Combinations** (50mg/m<sup>3</sup>)  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**



| Port size                     | Combined Manual/Semi-Auto Drain | Flow dm <sup>3</sup> /s | Weight (g) | Auto Drain             | Flow dm <sup>3</sup> /s | Weight (g) |
|-------------------------------|---------------------------------|-------------------------|------------|------------------------|-------------------------|------------|
| G <sup>1</sup> / <sub>2</sub> | <b>P3XAA14GECNGPNW</b>          | 76                      | 1300       | <b>P3XAA14GEANGPNW</b> | 76                      | 1300       |
| G <sup>3</sup> / <sub>4</sub> | <b>P3XAA16GECNGPNW</b>          | 77                      | 1300       | <b>P3XAA16GEANGPNW</b> | 77                      | 1300       |



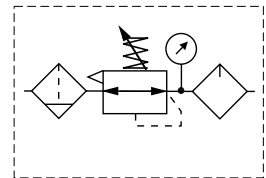
**Slide Valve + Filter/Regulator Combinations**  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**



| Port size                     | Combined Manual/Semi-Auto Drain | Flow dm <sup>3</sup> /s | Weight (g) | Auto Drain           | Flow dm <sup>3</sup> /s | Weight (g) |
|-------------------------------|---------------------------------|-------------------------|------------|----------------------|-------------------------|------------|
| G <sup>1</sup> / <sub>2</sub> | <b>P3XAN14GECNGW</b>            | 105                     | 950        | <b>P3XAN14GEANGW</b> | 105                     | 950        |
| G <sup>3</sup> / <sub>4</sub> | <b>P3XAN16GECNGW</b>            | 106                     | 950        | <b>P3XAN16GEANGW</b> | 106                     | 950        |



**Filter/Regulator + Lubricator Combinations** (50mg/m<sup>3</sup>)  
**5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets**



| Port size                     | Combined Manual/Semi-Auto Drain | Flow dm <sup>3</sup> /s | Weight (g) | Auto Drain             | Flow dm <sup>3</sup> /s | Weight (g) |
|-------------------------------|---------------------------------|-------------------------|------------|------------------------|-------------------------|------------|
| G <sup>1</sup> / <sub>2</sub> | <b>P3XCA14GECNGPNW</b>          | 76                      | 1000       | <b>P3XCA14GEANGPNW</b> | 76                      | 1000       |
| G <sup>3</sup> / <sub>4</sub> | <b>P3XCA16GECNGPNW</b>          | 77                      | 1000       | <b>P3XCA16GEANGPNW</b> | 77                      | 1000       |

Options:

|  |           |          |          |                                 |          |                        |           |                                      |
|--|-----------|----------|----------|---------------------------------|----------|------------------------|-----------|--------------------------------------|
| <b>P 3 X</b>                             |           |          |          | <b>G E</b>                      |          |                        |           | <b>W</b>                             |
| Filter/Reg + Lubricator                  | <b>CA</b> | BSPP (G) | <b>1</b> | Combined Manual/Semi Auto Drain | <b>C</b> | 0 - 8 bar with gauge   |           | <b>G</b>                             |
| Slide valve + Filter/Reg                 | <b>AN</b> | NPT *    | <b>9</b> |                                 |          | 0 - 16 bar with gauge  |           | <b>J</b>                             |
| Slide valve + Filter/Reg + Lubricator    | <b>AA</b> |          |          | Auto Drain                      | <b>A</b> |                        |           |                                      |
| * NPT ports on request<br>1/2" size only |           | 1/2      | <b>4</b> | Non rise - Standard             | <b>N</b> | (50mg/m <sup>3</sup> ) | <b>PN</b> | Add only for options with lubricator |
|  |           | 3/4      | <b>6</b> | Tamperproof - Lockable          | <b>A</b> | (5mg/m <sup>3</sup> )  | <b>SN</b> |                                      |

- Integral 1/2 or 3/4 ports
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Secondary pressure ranges 4, 8 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Low temperature -40°C with Regulators/Filters and Filter Regulators using combined manual/semi auto drain as standard without pressure gauge.



| Operating information |                  | Flow characteristics         |            |            |
|-----------------------|------------------|------------------------------|------------|------------|
| Working pressure:     | Max 16 bar       | <b>Flow dm<sup>3</sup>/s</b> | <b>1/2</b> | <b>3/4</b> |
| Working temperature:  | -40 °C to +60 °C | Filter                       | 55         | 57         |
|                       |                  | Coalescing Filter            | 24         | 24         |
|                       |                  | Adsorber Filter              | 18         | 18         |
|                       |                  | Regulator                    | 122        | 134        |
|                       |                  | Filter Regulator             | 111        | 113        |
|                       |                  | Lubricator                   | 78         | 78         |

**Filters** - 5 micron element

| Port size | Description              | Order Code         |
|-----------|--------------------------|--------------------|
| G1/2      | Manual drain/Semi auto   | <b>P3XFA14EGCN</b> |
| G1/2      | Auto drain               | <b>P3XFA14EGAN</b> |
| G3/4      | Manual drain / Semi auto | <b>P3XFA16EGCN</b> |
| G3/4      | Auto drain               | <b>P3XFA16EGAN</b> |
|           | Mounting bracket         | <b>P3XKA00MW</b>   |

**Regulators** - 4 & 8 bar - non relieving options available

| Port size | Description                          | Order Code         |
|-----------|--------------------------------------|--------------------|
| G1/2      | 8 bar relieving                      | <b>P3XRA14BNNN</b> |
| G1/2      | 8 bar relieving + gauge              | <b>P3XRA14BNGN</b> |
| G3/4      | 8 bar relieving                      | <b>P3XRA16BNNN</b> |
| G3/4      | 8 bar relieving + gauge              | <b>P3XRA16BNGN</b> |
| G1/2      | 8 bar relieving, tamperproof         | <b>P3XRA14BANN</b> |
| G1/2      | 8 bar relieving, tamperproof + gauge | <b>P3XRA14BAGN</b> |
| G3/4      | 8 bar relieving, tamperproof         | <b>P3XRA16BANN</b> |
| G3/4      | 8 bar relieving, tamperproof + gauge | <b>P3XRA16BAGN</b> |
| G1/2      | Air-pilot regulator                  | <b>P3XRA14BPPN</b> |
| G3/4      | Air-pilot regulator                  | <b>P3XRA16BPPN</b> |

**Lubricators**

| Port size | Description  | Order Code         |
|-----------|--|--------------------|
| G1/2      | Oil mist, fill under pressure (50mg/m <sup>3</sup> ) | <b>P3XLA14PGNN</b> |
| G3/4      | Oil mist, fill under pressure (50mg/m <sup>3</sup> ) | <b>P3XLA16PGNN</b> |
| G1/2      | Oil mist, fill under pressure (5mg/m <sup>3</sup> )  | <b>P3XLA14SGNN</b> |
| G3/4      | Oil mist, fill under pressure (5mg/m <sup>3</sup> )  | <b>P3XLA16SGNN</b> |
|           | Lubricator OIL VG15:ISO3448 - 100ml                  | <b>P3XKA00PPA</b>  |
|           | Lubricator OIL VG32-1 Litre                          | <b>P3YKA00PPBB</b> |

**Coalescing Filters** - 0.01 micron element

| Port size | Description                               | Order Code         |
|-----------|---|--------------------|
| G1/2      | Coalescing 0.01µm, manual/semi auto drain | <b>P3XFA14DGCN</b> |
| G1/2      | Coalescing Filter 0.01µm, auto drain      | <b>P3XFA14DGAN</b> |
| G3/4      | Coalescing 0.01µm, manual/semi auto drain | <b>P3XFA16DGCN</b> |
| G3/4      | Coalescing Filter 0.01µm, auto drain      | <b>P3XFA16DGAN</b> |

**Adsorber Filters**

| Port size | Description                      | Order Code         |
|-----------|----------------------------------|--------------------|
| G1/2      | Adsorber, manual/semi auto drain | <b>P3XFA14AGCN</b> |
| G3/4      | Adsorber, manual/semi auto drain | <b>P3XFA16AGCN</b> |

**Filter/Regulators**

4 and 16 bar, non relieving options available

| Port size | Description                               | Order Code            |
|-----------|---|-----------------------|
| G1/2      | 8 bar, relieving manual/semi auto drain   | <b>P3XEA14EGCBNNN</b> |
| G1/2      | 8 bar, relieving auto drain               | <b>P3XEA14EGABNNN</b> |
| G1/2      | 8 bar, relieving manual/semi auto + gauge | <b>P3XEA14EGCBNGN</b> |
| G1/2      | 8 bar, relieving auto drain + gauge       | <b>P3XEA14EGABNGN</b> |
| G3/4      | 8 bar, relieving manual/semi auto drain   | <b>P3XEA16EGCBNNN</b> |
| G3/4      | 8 bar, relieving auto drain               | <b>P3XEA16EGABNNN</b> |
| G3/4      | 8 bar, relieving manual/semi auto + gauge | <b>P3XEA16EGCBNGN</b> |
| G3/4      | 8 bar, relieving auto drain + gauge       | <b>P3XEA16EGABNGN</b> |

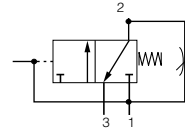
**Pressure Gauges**

|            | Order Code       |
|------------|------------------|
| 0 - 10 bar | <b>KG8012-00</b> |
| 0 - 16 bar | <b>KG8013-00</b> |

**Dump Valve & Combined Soft Start Dump Valve**



**Symbols**



- Modular design with 1/2" & 3/4" integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability

P3X Series Combined Soft Start/Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start/Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

**Options:**

|                                |          |          |          |                    |                    |          |          |                                    |                           |                            |            |
|--------------------------------|----------|----------|----------|--------------------|--------------------|----------|----------|------------------------------------|---------------------------|----------------------------|------------|
| <b>P 3 X</b>                   |          | <b>A</b> |          |                    |                    |          | <b>N</b> |                                    | <b>Solenoid type only</b> |                            |            |
| Combined soft start dump valve | <b>T</b> |          |          |                    | External air pilot | <b>P</b> |          | None (operator is fitted to valve) | <b>0</b>                  | Solenoid / coil not fitted | <b>000</b> |
| Dump valve                     | <b>D</b> |          |          |                    | Solenoid pilot     | <b>S</b> |          | 30mm CNOMO coil (Form connection)  | <b>A</b>                  | 24V DC                     | <b>2CN</b> |
|                                |          |          |          |                    |                    |          |          | 22mm coil (Form connection)        | <b>B</b>                  |                            |            |
| BSPP (G)                       | <b>1</b> | 1/2      | <b>4</b> | 30mm operator      | <b>C</b>           |          |          | 30mm CNOMO coil (M12 connection)   | <b>D</b>                  |                            |            |
| NPT *                          | <b>9</b> | 3/4      | <b>6</b> | Threaded air pilot | <b>P</b>           |          |          | 22mm coil (M12 connection)         | <b>E</b>                  |                            |            |

\* NPT Ports on request 1/2" size only

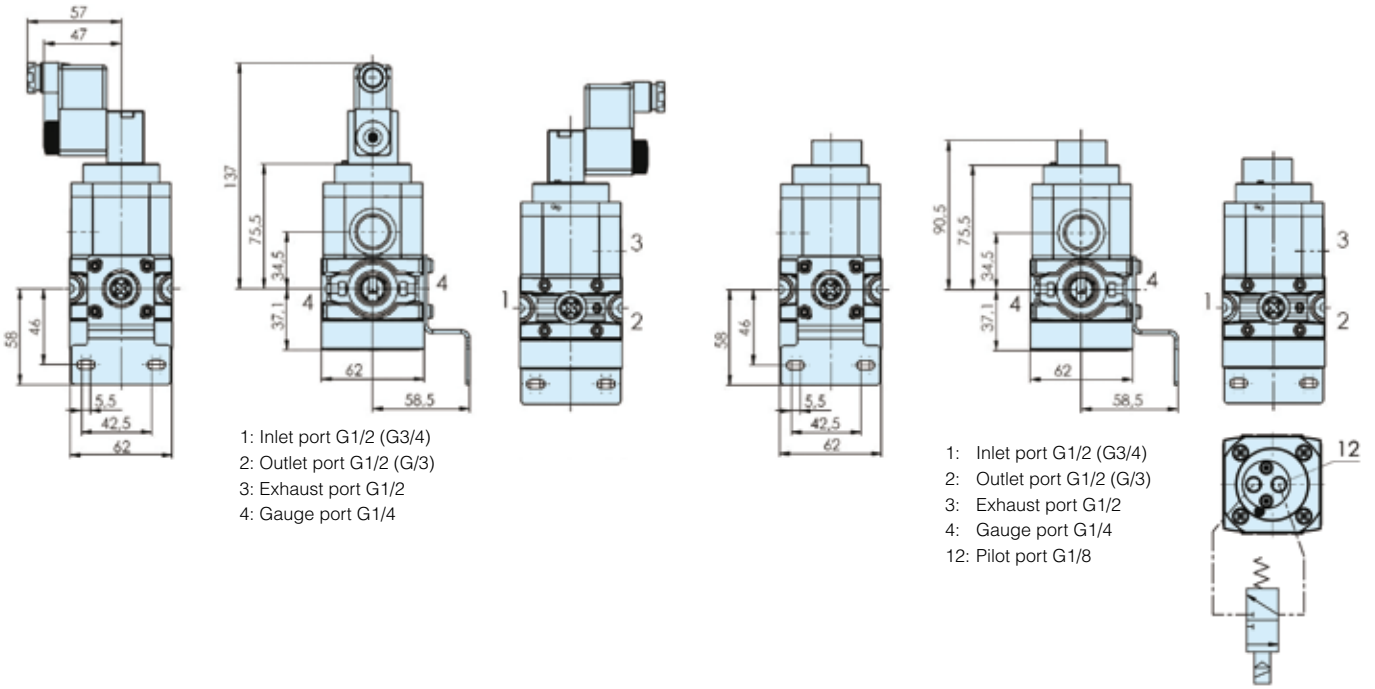
**Combined soft start dump valve**

| Port size | Description                      | Order Code            | Flow dm <sup>3</sup> /s | Max bar | Min temp °C | Max temp °C | Height mm | Width mm | Depth mm | Weight kg |
|-----------|----------------------------------|-----------------------|-------------------------|---------|-------------|-------------|-----------|----------|----------|-----------|
| 1/2       | Solenoid operated (not included) | <b>P3XTA14SCN0000</b> | 80                      | 16      | -10         | 60          | 144       | 62       | 62       | 0.75      |
| 1/2       | 24VDC 22mm coil                  | <b>P3XTA14SCNB2CN</b> | 80                      | 10      | -10         | 60          | 174       | 88       | 62       | 0.75      |
| 1/2       | 24VDC 30mm coil                  | <b>P3XTA14SCNA2CN</b> | 80                      | 16      | -10         | 60          | 174       | 88       | 62       | 0.75      |
| 1/2       | Air pilot operated               | <b>P3XTA14PPN</b>     | 80                      | 16      | -10         | 60          | 127.5     | 62       | 62       | 0.75      |
| 3/4       | Solenoid operated (not included) | <b>P3XTA16SCN0000</b> | 88                      | 16      | -10         | 60          | 144       | 62       | 62       | 0.75      |
| 3/4       | 24VDC 22mm coil                  | <b>P3XTA16SCNB2CN</b> | 88                      | 10      | -10         | 60          | 174       | 88       | 62       | 0.75      |
| 3/4       | 24VDC 30mm coil                  | <b>P3XTA16SCNA2CN</b> | 88                      | 16      | -10         | 60          | 174       | 88       | 62       | 0.75      |
| 3/4       | Air pilot operated               | <b>P3XTA16PPN</b>     | 88                      | 16      | -10         | 60          | 127.5     | 62       | 62       | 0.75      |





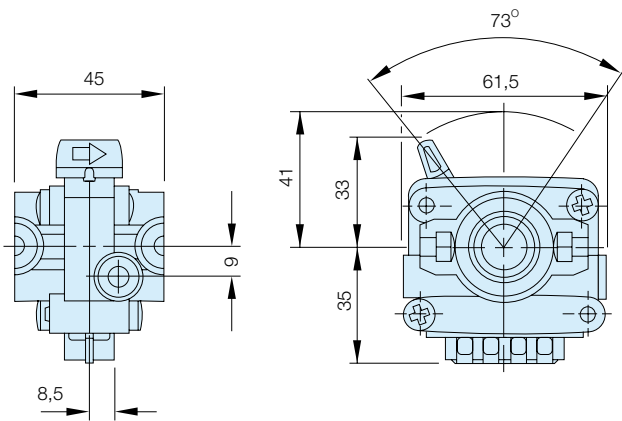
**Dimensions (mm)**



**Modular Slide Valve**

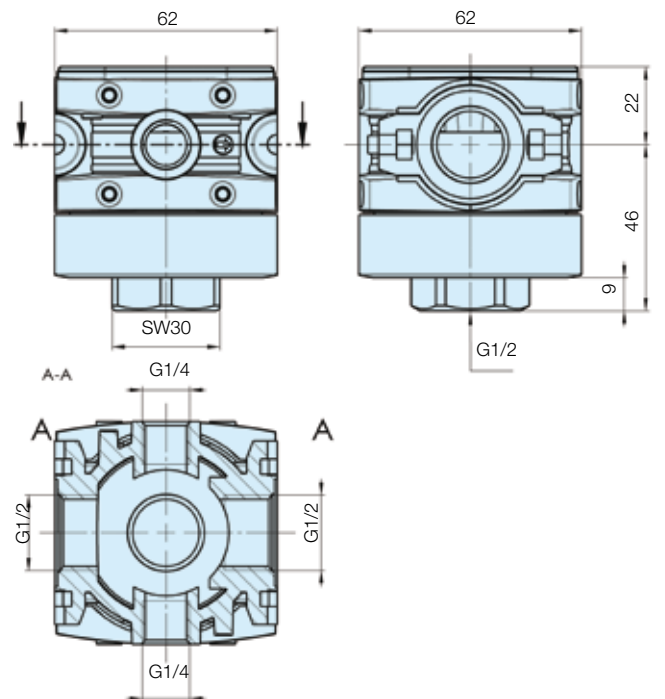
|              |           |      |          |            |
|--------------|-----------|------|----------|------------|
| <b>P 3 X</b> | <b>VA</b> |      |          | <b>LSN</b> |
| BSPP (G)     | <b>1</b>  | G1/2 | <b>4</b> |            |
| NPT *        | <b>9</b>  | G3/4 | <b>6</b> |            |

\* NPT ports on request (1/2" size only)



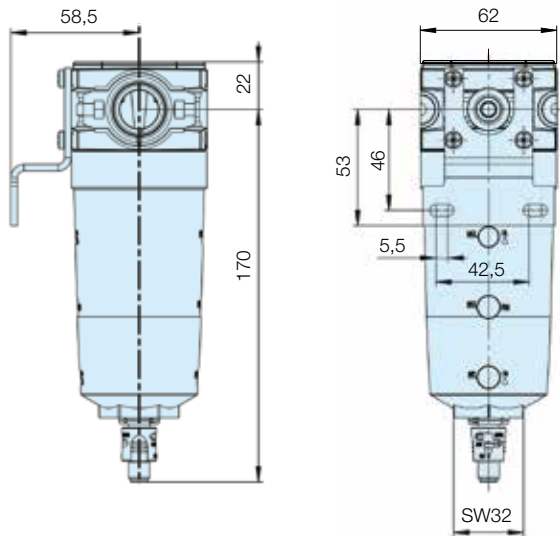
**Modular Manifold**

| Description | Order code       | Order code       | Weight (g) |
|-------------|------------------|------------------|------------|
|             | BSPP             | NPT              |            |
| G1/2"       | <b>P3XMA1V0N</b> | <b>P3XMA9V0N</b> | 170        |
| G3/4"       | <b>P3XMA160N</b> |                  | 170        |

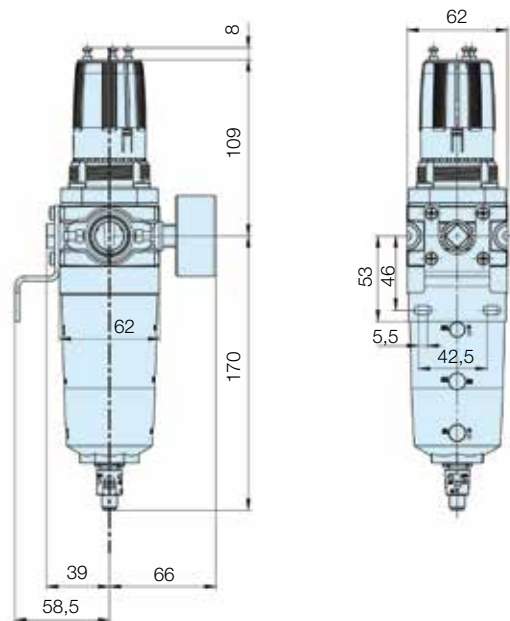


## Dimensions (mm)

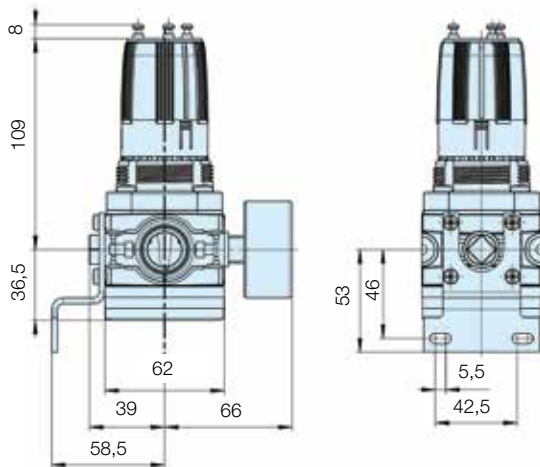
### Filters



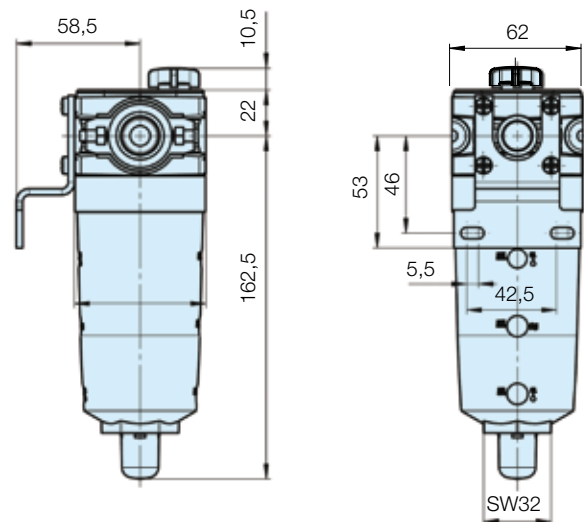
### Filter/Regulators



### Regulators



### Lubricators



### Service kits

| Description                                   | Order code        |
|---|-------------------|
| Adsorber element kit                          | <b>P3XKA00ESA</b> |
| 0.01 micron element kit                       | <b>P3XKA00ESC</b> |
| 1 micron element kit                          | <b>P3XKA00ES9</b> |
| 5 micron element kit                          | <b>P3XKA00ESE</b> |
| 40 micron element kit                         | <b>P3XKA00ESG</b> |
| Bowl kit with combined manual/semi auto drain | <b>P3XKA00BSC</b> |
| Bowl kit with auto drain                      | <b>P3XKA00BSA</b> |
| Diaphragm kit (relieving type)                | <b>P3XKA00RR</b>  |
| Diaphragm kit (non-relieving type)            | <b>P3XKA00RN</b>  |
| Connecting kit                                | <b>P3XKA00CB</b>  |

### Accessories

| Description                     | Order code       |
|---------------------------------|------------------|
| Connector kit                   | <b>P3XKA00CB</b> |
| Connector O'ring kit (5)        | <b>P3XKA04CY</b> |
| Tamper-proof knob kit (keylock) | <b>P3XKA00AS</b> |
| Wall bracket kit                | <b>P3XKA00MW</b> |
| Panel mount nut                 | <b>P3XKA00MM</b> |

- Removes water vapour & lowers the PDP
- Compact design
- No electrical connections necessary
- Suitable for hazardous environments
- No moving parts
- Maintenance & wear free
- No change in air consumption
- Low pressure drop less than 0.1 bar
- Minimal purge air consumption
- Modular design - compatible with the P3X air prep series



**Operating information**

|                                   |               |
|-----------------------------------|---------------|
| Operating pressure range:         | 5 to 16 bar   |
| Temperature range:                | 2 °C to 60 °C |
| Pressure drop:                    | 0.1 bar       |
| Purge air (at 20K PDP reduction): | 10%           |
| Max Flow at inlet (size 50):      | 2800 l/m      |

**Note:**

For optimum system performance and maintenance free conditions, Parker recommend the dryer is preceded with a 5 micron and 0.01 coalescer filter from the P3X series.

**Membrane dryer**

| Port size | Size | Description                               | Order Code         |
|-----------|------|---|--------------------|
| G1/2      | 10   | Membrane dryer with return tube - size 10 | <b>P3XJA14CA1N</b> |
| G1/2      | 15   | Membrane dryer with return tube - size 15 | <b>P3XJA14CB1N</b> |
| G1/2      | 20   | Membrane dryer with return tube - size 20 | <b>P3XJA14CC1N</b> |
| G1/2      | 25   | Membrane dryer with return tube - size 25 | <b>P3XJA14CD1N</b> |
| G1/2      | 35   | Membrane dryer serial type - size 35      | <b>P3XJA14CE1N</b> |
| G1/2      | 50   | Membrane dryer serial type - size 50      | <b>P3XJA14CF1N</b> |



**Note:** For NPT threaded connections replace the 6th digit from a 1 to 9 ie: **P3XJA94CA1N**

**Wall mounting bracket kit**

Order Code

**P3XKA00MWD**

**Note:**

For optimum system performance and maintenance free conditions, Parker recommend the dryer is preceded with a 5 micron and 0.01 coalescer filter from the P3X series.

**Complete Filter / Dryer System combinations available on request**



F + Fc + MD

F + Fc + MD + R

F + Fc + MD + R + Fa

**Selection Criteria**

To correctly select the dryer best suited for your application, the following information is required to ensure optimum performance and trouble free operation.

- Maximum inlet pressure dew point ( °C )
- Outlet PDP ( °C )
- Working pressure (bar)
- Maximum inlet flow rate (m<sup>3</sup>/h)

**Conversion factor for calculation of corrected flow rate**

| Operating pressure range p (bar)    | 5    | 6    | 7   | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   |
|-------------------------------------|------|------|-----|------|------|------|------|------|------|------|------|------|
| Conversion factor<br>f <sub>p</sub> | 0.57 | 0.78 | 1.0 | 1.21 | 1.42 | 1.64 | 1.85 | 2.06 | 2.28 | 2.49 | 2.70 | 2.92 |

**Working Example:**

Selecting a dryer with an inlet pressure dew point of 35°C, a PDP reduction of 35K with a working / operating pressure of 6 bar and an inlet flow of 11 m<sup>3</sup>/h.

**Step 1**

From the correction factor table select the required pressure (6 bar) and read below the corrected factor value (0.78)

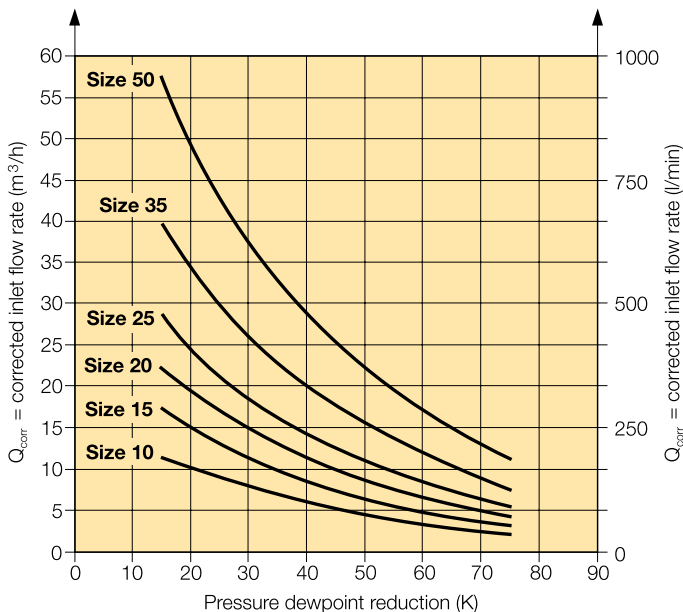
**Step 2**

To adjust the flow for your application, divide the required flow by the 0.78 correction factor

$$\text{Sizing capacity} = \frac{\text{Actual flow}}{\text{Correction factor}} = \frac{11 \text{ m}^3/\text{h}}{0.78} = 14.1 \text{ m}^3/\text{h}$$

**Step 3**

Plot the values on the selection graph (below). Where the dew point reduction value of 35K intersects with the corrected flow value of 14.1 m<sup>3</sup>/h, select the dryer flow curve which is equal or above the intersection point. For example: the optimum dryer would be **size 25 (P3XJA14CD1N)**



**For the most demanding hi-flow industrial applications**



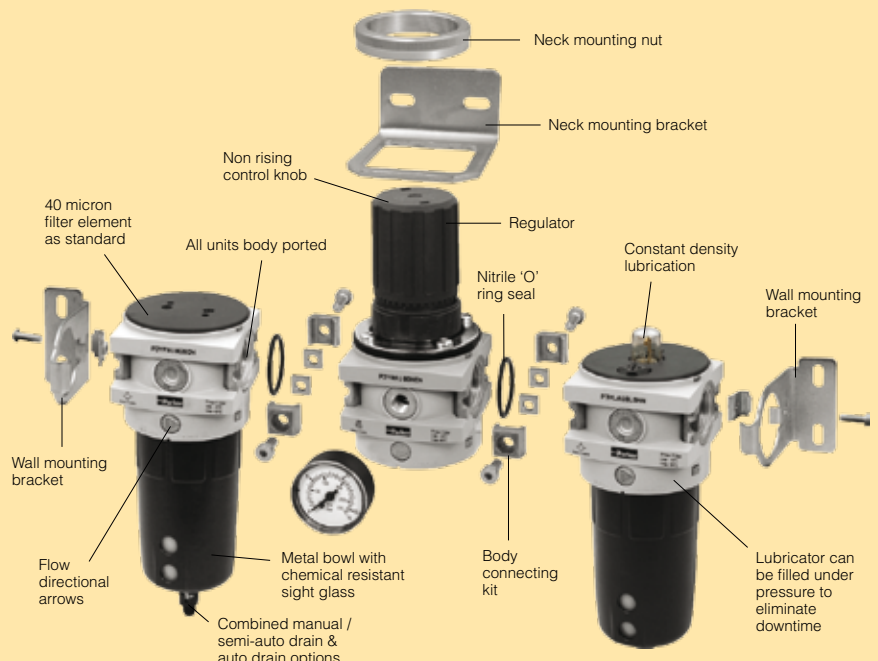
The P3Y system allows units to be connected together, without the use of pipe connectors, saving space; providing constant mounting centres; whilst maintaining a modern aesthetically pleasing appearance.

The P3Y Filters are specially designed to efficiently filter out rust, dirt, moisture and other impurities from compressed air lines. Operation is fully automatic with a minimum of pressure drop. Coalescing filters and adsorber filters for high purity air are also included in the P3Y series.

The P3Y Regulators are designed to provide quick response and accurate pressure regulation for the most demanding hi-flow industrial applications. The rolling diaphragm was designed for long trouble-free operation and will not rupture or tear under high cycle or other demanding applications.



**Selection of Filters**





## DECLARATION



We **Parker Hannifin Manufacturing Austria GmbH**  
**Pneumatic Division**  
**Dr. Alexander Schärfstrasse 12**  
**2700 Wiener Neustadt**  
**Austria**

| Product          | Series | Category       |
|------------------|--------|----------------|
| Filter           | P3YFA  | for zone 1, 21 |
| Regulator        | P3YRA  | for zone 1, 21 |
| Filter regulator | P3YEA  | for zone 1, 21 |
| Lubricator       | P3YLA  | for zone 1, 21 |
| Ball Valve       | P3YVA  | for zone 1, 21 |
| Manifold         | P3YMA  | for zone 1, 21 |

### For non-fitted solenoid product

|                         |       |                |
|-------------------------|-------|----------------|
| Soft Start & Dump Valve | P3YTA | for zone 1, 21 |
| Soft Start Valve        | P3YSA | for zone 1, 21 |
| Dump Valve              | P3YDA | for zone 1, 21 |

Following Ignition Hazard Assessments performed on the non-electrical products listed above, in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness.  
Refer to technical file for surface areas of plastics.  
The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis.  
Refer to technical file for chemicals known to be incompatible.  
Product cleaning must be undertaken using a method complying with the specification of the ATEX zone, preferably by using mild soap and water or antistatic products.
- **Regulators, Filter Regulators:**  
Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator/Filter Regulator unit.
- **Solenoid Operated Valves:**  
Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

Approved by:

**E. Bauregger** ( Location Engineering Manager )

- Integral 3/4 or 1" ports (BSPP or NPT)
- High efficiency element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- Secondary pressure ranges 12 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Low temperature -40°C with Regulators/Filters and Filter Regulators using combined manual/semi auto drain as standard without pressure gauge.



### Operating information

|                      |                  |
|----------------------|------------------|
| Working pressure:    | Max 17.5 bar     |
| Working temperature: | -40 °C to +60 °C |

### Flow characteristics

| Flow dm <sup>3</sup> /s | 3/4 | 1"  |
|-------------------------|-----|-----|
| Filter                  | 116 | 119 |
| Dust Filter             | 137 | 145 |
| Coalescing Filter       | 49  | 59  |
| Adsorber Filter         | 47  | 50  |
| Regulator               | 155 | 321 |
| Filter Regulator        | 190 | 237 |
| Lubricator              | 162 | 184 |

### Filters - 40 micron element

| Port size | Description              | Order Code         |
|-----------|--------------------------|--------------------|
| G3/4      | Manual drain/Semi auto   | <b>P3YFA16GSCN</b> |
| G3/4      | Auto drain               | <b>P3YFA16GSAN</b> |
| G1"       | Manual drain / Semi auto | <b>P3YFA18GSCN</b> |
| G1"       | Auto drain               | <b>P3YFA18GSAN</b> |
|           | Mounting bracket         | <b>P3YKA00CW</b>   |

### Dust Filters - 1 micron element

| Port size | Description              | Order Code         |
|-----------|--------------------------|--------------------|
| G3/4      | Manual drain/Semi auto   | <b>P3YFA162SCN</b> |
| G3/4      | Auto drain               | <b>P3YFA162SAN</b> |
| G1"       | Manual drain / Semi auto | <b>P3YFA182SCN</b> |
| G1"       | Auto drain               | <b>P3YFA182SAN</b> |

### Regulators - relieving type - non relieving options available

| Port size | Description                        | Order Code         |
|-----------|------------------------------------|--------------------|
| G3/4      | 12 bar relieving                   | <b>P3YRA16BNEN</b> |
| G3/4      | 12 bar relieving + gauge           | <b>P3YRA16BNFN</b> |
| G1"       | 12 bar relieving                   | <b>P3YRA18BNEN</b> |
| G1"       | 12 bar relieving + gauge           | <b>P3YRA18BNFN</b> |
| G3/4      | 12 bar relieving, lockable         | <b>P3YRA16BAEN</b> |
| G3/4      | 12 bar relieving, lockable + gauge | <b>P3YRA16BAFN</b> |
| G1"       | 12 bar relieving, lockable         | <b>P3YRA18BAEN</b> |
| G1"       | 12 bar relieving, lockable + gauge | <b>P3YRA18BAFN</b> |

### Pressure Gauges

|            | Order Code       |
|------------|------------------|
| 0 - 10 bar | <b>KG8012-00</b> |
| 0 - 16 bar | <b>KG8013-00</b> |

### Coalescing Filters - 0.01 micron element

| Port size | Description                               | Order Code         |
|-----------|---|--------------------|
| G3/4      | Coalescing 0.01µm, manual/semi auto drain | <b>P3YFA16DSCN</b> |
| G3/4      | Coalescing Filter 0.01µm, auto drain      | <b>P3YFA16DSAN</b> |
| G1"       | Coalescing 0.01µm, manual/semi auto drain | <b>P3YFA18DSCN</b> |
| G1"       | Coalescing Filter 0.01µm, auto drain      | <b>P3YFA18DSAN</b> |

### Adsorber Filters

| Port size | Description            | Order Code         |
|-----------|------------------------|--------------------|
| G3/4      | Adsorber, manual drain | <b>P3YFA16ASCN</b> |
| G1"       | Adsorber, manual drain | <b>P3YFA18ASCN</b> |

### Lubricators

| Port size | Description                   | Order Code         |
|-----------|-------------------------------|--------------------|
| G3/4      | Oil mist, fill under pressure | <b>P3YLA16LSNN</b> |
| G1"       | Oil mist, fill under pressure | <b>P3YLA18LSNN</b> |

### Filter/Regulators - relieving type - non relieving options available

| Port size | Description                                | Order Code            |
|-----------|--|-----------------------|
| G3/4      | 12 bar, relieving manual/semi auto drain   | <b>P3YEA16GSCBNEN</b> |
| G3/4      | 12 bar, relieving auto drain               | <b>P3YEA16GSABNEN</b> |
| G3/4      | 12 bar, relieving manual/semi auto + gauge | <b>P3YEA16GSCBNFN</b> |
| G3/4      | 12 bar, relieving auto drain + gauge       | <b>P3YEA16GSABNFN</b> |
| G1"       | 12 bar, relieving manual/semi auto drain   | <b>P3YEA18GSCBNEN</b> |
| G1"       | 12 bar, relieving auto drain               | <b>P3YEA18GSABNEN</b> |
| G1"       | 12 bar, relieving manual/semi auto + gauge | <b>P3YEA18GSCBNFN</b> |
| G1"       | 12 bar, relieving auto drain + gauge       | <b>P3YEA18GSABNFN</b> |

## Combined Soft Start Dump Valve and Remote Operated Dump Valve

| Port size | Description                      | Order Code            |
|-----------|----------------------------------|-----------------------|
| G3/4      | Solenoid operated (not included) | <b>P3YTA16SCN0000</b> |
| G3/4      | 24VDC 22mm coil                  | <b>P3YTA16SCNB2CN</b> |
| G3/4      | Air pilot operated               | <b>P3YTA16PPN</b>     |
| G1"       | Solenoid operated (not included) | <b>P3YTA18SCN0000</b> |
| G1"       | 24VDC 22mm coil                  | <b>P3YTA18SCNB2CN</b> |
| G1"       | Air pilot operated               | <b>P3YTA18PPN</b>     |

## Soft Start Valve

| Port size | Description      | Order Code        |
|-----------|------------------|-------------------|
| G3/4      | Soft start valve | <b>P3YSA16Y0N</b> |
| G1"       | Soft start valve | <b>P3YSA18Y0N</b> |

## Neck mounting bracket kit

| Description               | Order Code       |
|---------------------------|------------------|
| Neck mounting bracket kit | <b>P3YKA00MS</b> |

## Wall mounting brackets

| Description            | Order Code       |
|------------------------|------------------|
| Wall mounting brackets | <b>P3YKA00CW</b> |

## Pilot Operated Regulator

| Port size | Description              | Order Code         |
|-----------|--------------------------|--------------------|
| G3/4      | Pilot operated regulator | <b>P3YRA16BPPN</b> |
| G1"       | Pilot operated regulator | <b>P3YRA18BPPN</b> |

## Modular Ball Valve

| Port size | Description        | Order Code        |
|-----------|--------------------|-------------------|
| G3/4      | Modular Ball Valve | <b>P3YVA16LBN</b> |
| G1"       | Modular Ball Valve | <b>P3YVA18LBN</b> |

## Modular Manifold

| Port size | Description      | Width   | Order Code         |
|-----------|------------------|---------|--------------------|
| G3/4      | Modular Manifold | (80 mm) | <b>P3YMA1V0N</b>   |
| G1"       | Modular Manifold | (80 mm) | <b>P3YMA9V0N</b>   |
| G3/4      | Modular Manifold | (35 mm) | <b>P3YMA16024N</b> |

## Optional Port Block Kits

| Port size                        | Description           | Order Code       |
|----------------------------------|-----------------------|------------------|
| G1 <sup>1</sup> / <sub>4</sub> " | Port block kit - BSPP | <b>P3YKA1ACP</b> |
| G1 <sup>1</sup> / <sub>2</sub> " | Port block kit - BSPP | <b>P3YKA1BCP</b> |
| G3/4"                            | Port block kit - BSPP | <b>P3YKA16CP</b> |
| G1"                              | Port block kit - BSPP | <b>P3YKA18CP</b> |

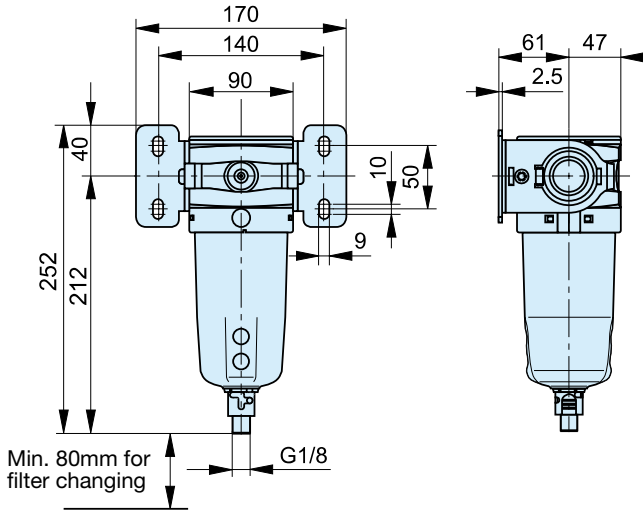
## Connector kit

| Description   | Order Code       |
|---------------|------------------|
| Connector kit | <b>P3YKA00CB</b> |

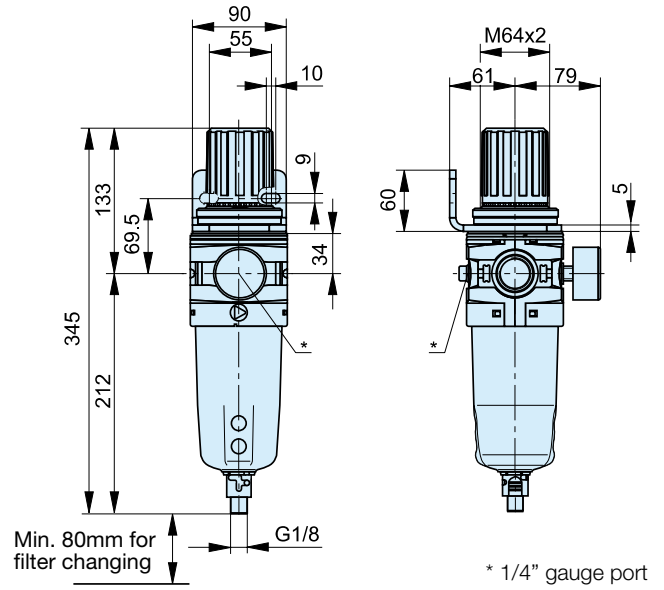


**Dimensions (mm)**

**Filters**

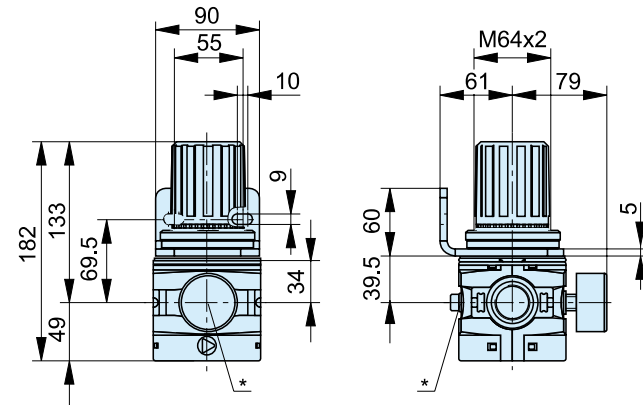


**Filter/Regulators**



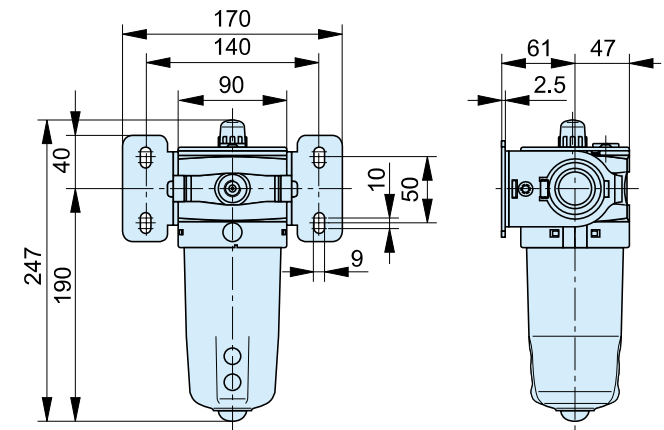
\* 1/4" gauge port

**Regulators**



\* 1/4" gauge port

**Lubricators**



**Service kits**

| Description                                   | Order code        |
|---|-------------------|
| 5 micron element kit                          | <b>P3YKA00ESE</b> |
| 40 micron element kit                         | <b>P3YKA00ESG</b> |
| Bowl kit with combined manual/semi auto drain | <b>P3YKA00BSC</b> |
| Bowl kit with auto drain                      | <b>P3YKA00BSA</b> |
| Key Lock Kit                                  | <b>P3XKA00AS</b>  |
| Diaphragm kit (relieving type)                | <b>P3YKA00RR</b>  |
| Diaphragm kit (non-relieving type)            | <b>P3YKA00RN</b>  |
| Angle bracket + metal lock ring               | <b>P3YKA00MS</b>  |
| Panel mount nut                               | <b>P3YKA00MM</b>  |



## DECLARATION



We **Parker Hannifin Manufacturing Austria GmbH**  
**Pneumatic Division**  
**Dr. Alexander Schärfstrasse 12**  
**2700 Wiener Neustadt**  
**Austria**

| Product                                | Series | Category       |
|--|--------|----------------|
| Filter                                 | P3ZFA  | for zone 1, 21 |
| Regulator                              | P3ZRA  | for zone 1, 21 |
| Lubricator                             | P3ZLA  | for zone 1, 21 |
| Manifold                               | P3ZMA  | for zone 1, 21 |
| <b>For non-fitted solenoid product</b> |        |                |
| Soft Start & Dump Valve                | P3ZTA  | for zone 1, 21 |
| Soft Start Valve                       | P3ZSA  | for zone 1, 21 |
| Dump Valve                             | P3ZDA  | for zone 1, 21 |

Following Ignition Hazard Assessments performed on the non-electrical products listed above, in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness.  
Refer to technical file for surface areas of plastics.  
The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis.  
Refer to technical file for chemicals known to be incompatible.  
Product cleaning must be undertaken using a method complying with the specification of the ATEX zone, preferably by using mild soap and water or antistatic products.
- **Regulators, Filter Regulators:**  
Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator/Filter Regulator unit.
- **Solenoid Operated Valves:**  
Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

Approved by:

**E. Bauregger** ( Location Engineering Manager )

The all metal P3Z Series FRLs are ideal for most medium sized ring main installations.

- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Threaded port flange available to G1-1/2" and G2"
- Proportional oil delivery over a wide range of air flows.



**Operating information**

Working pressure: 0 - 17.5 bar  
 Working temperature: 0 °C to +60 °C

**Flow characteristics**

| Flow | Filter     | >666,6 dm <sup>3</sup> /s |
|------|------------|---------------------------|
|      | Regulator  | >666,6 dm <sup>3</sup> /s |
|      | Lubricator | >666,6 dm <sup>3</sup> /s |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)



**Filters**

| Port size | Description                         | Order Code         |
|-----------|-------------------------------------|--------------------|
| -         | 40µ auto drain without flange SAE   | <b>P3ZFA00HMAN</b> |
| G1.1/2"   | 40µ auto drain flange fitted to SAE | <b>P3ZFA1BHMAN</b> |
| G2"       | 40µ auto drain flange fitted to SAE | <b>P3ZFA1CHMAN</b> |



**Coalescing Filters**

| Port size | Description                                   | Order Code         |
|-----------|---|--------------------|
| -         | 0.01 micron, auto drain                       | <b>P3ZFA00DMAN</b> |
| G1.1/2"   | 0.01 micron, auto drain, flange fitted to SAE | <b>P3ZFA1BDMAN</b> |
| G2"       | 0.01 micron, auto drain, flange fitted to SAE | <b>P3ZFA1CDMAN</b> |



**Dust Filters**

| Port size | Description  | Order Code         |
|-----------|--|--------------------|
| -         | 1µ auto drain (pressure relief) without flange SAE   | <b>P3ZFA00MMAN</b> |
| G1.1/2"   | 1µ auto drain (pressure relief) flange fitted to SAE | <b>P3ZFA1BMMAN</b> |
| G2"       | 1µ auto drain (pressure relief) flange fitted to SAE | <b>P3ZFA1CMMAN</b> |



**Adsorber Filters**

| Port size | Description          | Order Code         |
|-----------|----------------------|--------------------|
| -         | Adsorber, auto drain | <b>P3ZFA00BMAN</b> |
| G1.1/2"   | Adsorber, auto drain | <b>P3ZFA1BBMAN</b> |
| G2"       | Adsorber, auto drain | <b>P3ZFA1CBMAN</b> |



### Regulators

| Port size | Description                                  | Order Code         |
|-----------|--|--------------------|
| -         | 8 bar, relieving + gauge, without flange SAE | <b>P3ZRA00BNGN</b> |
| G1.1/2"   | 8 bar, relieving + gauge                     | <b>P3ZRA1BBNGN</b> |
| G2"       | 8 bar, relieving + gauge                     | <b>P3ZRA1CBNGN</b> |
| -         | 16 bar relieving + gauge, without flange SAE | <b>P3ZRA00BNJN</b> |
| G1.1/2"   | 16 bar, relieving + gauge                    | <b>P3ZRA1BBNJN</b> |
| G2"       | 16 bar, relieving + gauge                    | <b>P3ZRA1CBNJN</b> |



### Regulators Pilot Control

| Port size | Description               | Order Code         |
|-----------|---------------------------|--------------------|
| -         | 16 bar, air pilot         | <b>P3ZRA00BPPN</b> |
| G1.1/2"   | 16 bar, relieving + gauge | <b>P3ZRA1BBPPN</b> |
| G2"       | 16 bar, relieving + gauge | <b>P3ZRA1CBPPN</b> |

### Combined Soft Start Dump Valve and Remote Operated Dump Valve

| Port size | Description                      | Order Code            |
|-----------|----------------------------------|-----------------------|
| -         | Solenoid operated (not included) | <b>P3ZTA00SCN0000</b> |
| -         | 24VDC 22mm coil                  | <b>P3ZTA00SCNB2CN</b> |
| G1.1/2"   | Solenoid operated (not included) | <b>P3ZTA1BSCN0000</b> |
| G1.1/2"   | 24VDC 22mm coil                  | <b>P3ZTA1BSCNB2CN</b> |
| G2"       | Solenoid operated (not included) | <b>P3ZTA1CSCN0000</b> |
| G2"       | 24VDC 22mm coil                  | <b>P3ZTA1CSCNB2CN</b> |

### Soft Start Valve

| Port size | Description                 | Order Code        |
|-----------|-----------------------------|-------------------|
| -         | Internal air pilot operated | <b>P3ZSA00Y0N</b> |
| G1.1/2"   | Internal air pilot operated | <b>P3ZSA1BY0N</b> |
| G2"       | Internal air pilot operated | <b>P3ZSA1CY0N</b> |



### Lubricators

| Port size                       | Description  | Order Code         |
|---------------------------------|--|--------------------|
| -                               | Lubricator, without flange SAE                               | <b>P3ZLA00LSMN</b> |
| G1.1/2"                         | Lubricator   | <b>P3ZLA1BLSMN</b> |
| G2"                             | Lubricator   | <b>P3ZLA1CLSMN</b> |
| G2"                             | Central airline lubricator with electrical oil level control | <b>P3ZLA1CEMMW</b> |
| G2"                             | Central airline lubricator with aluminium bowl               | <b>P3ZLA1CMMMW</b> |
| Lubricator OIL - VG32 - 1 Litre |  | <b>P3YKA00PPBB</b> |



### Options & Accessories

| Port size | Description                                      | Order Code        |
|-----------|--|-------------------|
| G1.1/2"   | Connection flange kit                            | <b>P3ZKA1BCP</b>  |
| G2"       | Connection flange kit                            | <b>P3ZKA1CCP</b>  |
| -         | Wall mounting kit                                | <b>P3ZKA00MW</b>  |
| -         | Coupling kit                                     | <b>P3ZKA00CB</b>  |
| -         | Coupling 'O' ring kit (5 off)                    | <b>P3ZKA00CCY</b> |
| -         | Porting block kit (1", 1/8" & 2 x 1/4" take off) | <b>P3ZMA1V0N</b>  |

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65
- P31P flows to 19 dm<sup>3</sup>/s (40 scfm)
- P32P flows to 57 dm<sup>3</sup>/s (120 scfm)



P31PA Series  
Bottom exhaust



P32PA Series  
Bottom exhaust

**Order Key**

|            |           |          |            |
|------------|-----------|----------|------------|
| <b>P 3</b> | <b>PA</b> | <b>2</b> | <b>1 A</b> |
|------------|-----------|----------|------------|

| Port size             |          |
|-----------------------|----------|
| Global Mini (1/4")    | <b>1</b> |
| Global Compact (1/2") | <b>2</b> |

| Thread type |          |
|-------------|----------|
| BSPP        | <b>1</b> |
| NPT         | <b>9</b> |

| Port size             |          |
|-----------------------|----------|
| Global Mini (1/4")    | <b>2</b> |
| Global Compact (1/2") | <b>4</b> |

| Version                             |          |
|-------------------------------------|----------|
| Bottom ported exhaust NC            | <b>A</b> |
| Bottom ported forced exhaust (NO) * | <b>E</b> |

| Pressure Range |          |
|----------------|----------|
| 0 - 2 bar      | <b>Z</b> |
| 0 - 7 bar      | <b>S</b> |
| 0 - 10 bar     | <b>D</b> |

| Power supply |          |
|--------------|----------|
| 24 volts     | <b>2</b> |

| Control Signal |          |
|----------------|----------|
| 0-10 V         | <b>V</b> |
| 4-20 mA        | <b>A</b> |

| Output Signal   |          |  |
|-----------------|----------|--|
| Digital, PNP 1) | <b>D</b> |  |
| PNP or 0-10V 2) | <b>P</b> |  |
| NPN or 0-10V 3) | <b>N</b> |  |
| 4-20mA fixed 4) | <b>M</b> |  |

| Input connector |          |
|-----------------|----------|
| M12 (4 pin)     | <b>1</b> |

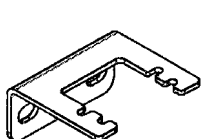
\* When the supply voltage is lost the unit will automatically exhaust the regulated pressure to 0 bar (atmospheric pressure)

- 1) Digital PNP output only, no analogue output selectable
- 2) Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)
- 3) Digital NPN and analogue 0-10 V outputs selectable by means of parameter 6. (Factory default 0-10V)
- 4) Analogue 4-20mA output only.

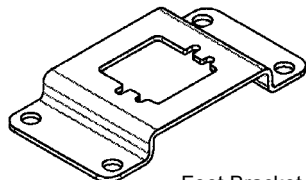
**Note:** On all analogue outputs the F.S. value can be adjusted by means of parameter 8

**P31P Mounting brackets**

| Order Code       | Description               |
|------------------|---------------------------|
| <b>P3HKA00ML</b> | L-Bracket mounting kit    |
| <b>P3HKA00MC</b> | Foot bracket mounting kit |



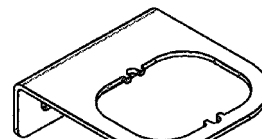
L-Bracket



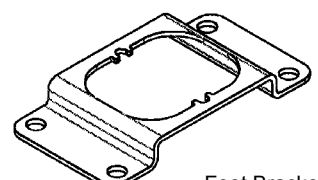
Foot Bracket

**P32P Mounting brackets**

| Order Code       | Description               |
|------------------|---------------------------|
| <b>P3KKA00ML</b> | L-Bracket mounting kit    |
| <b>P3KKA00MC</b> | Foot bracket mounting kit |



L-Bracket



Foot Bracket

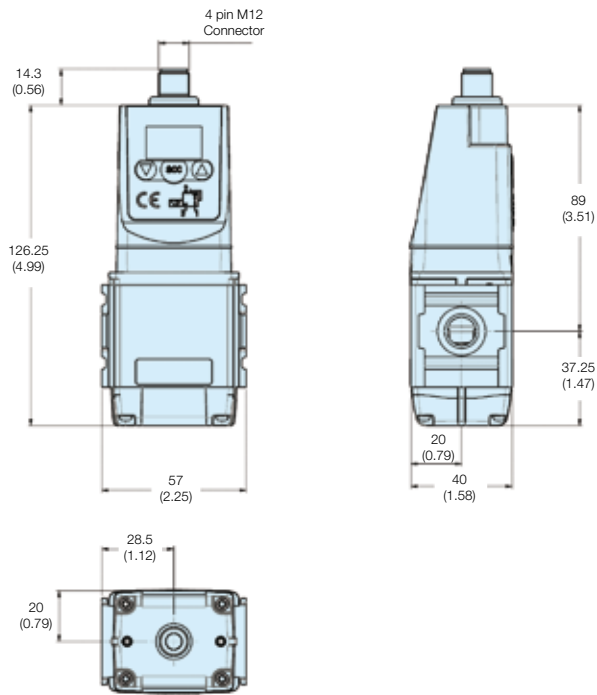
**Cables**

| Order Code             | Description  |
|------------------------|--|
| <b>P8L-MC04A2A-M12</b> | 2 mtr. cable with moulded straight M12x1 connector   |
| <b>P8L-MC04R2A-M12</b> | 2 mtr. cable with moulded 90 degree M12x1 connector. |

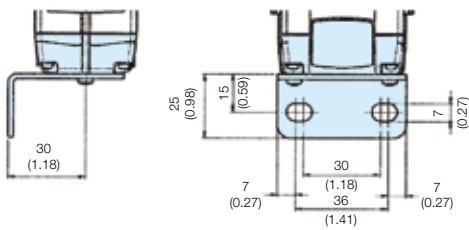
**Note:**

These brackets fit both Proportional Regulators and Combined Soft Start & Dump Valves.

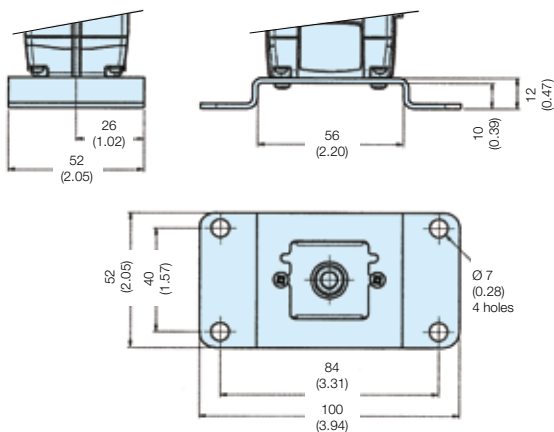
**P31P**



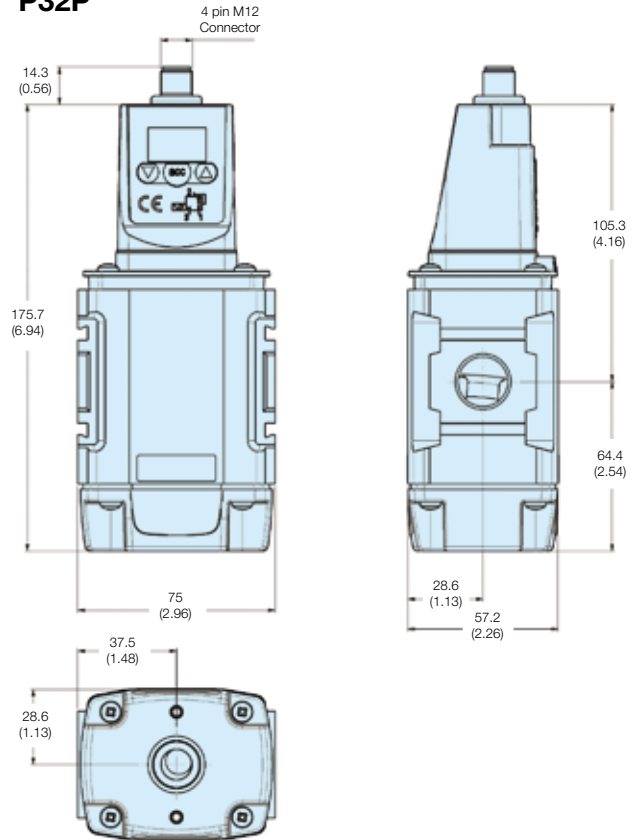
**L-Bracket**



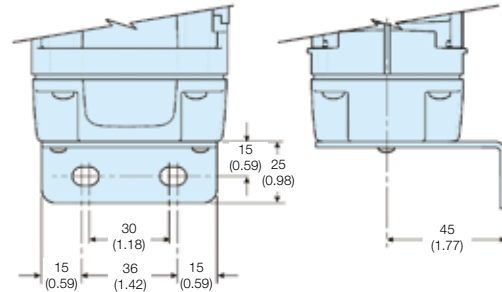
**Foot Bracket**



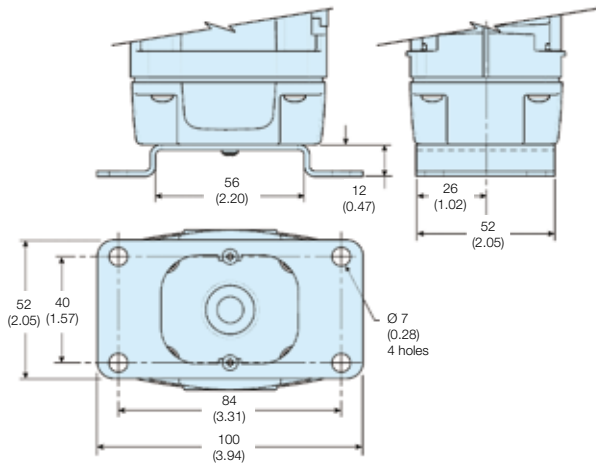
**P32P**



**L-Bracket**



**Foot Bracket**



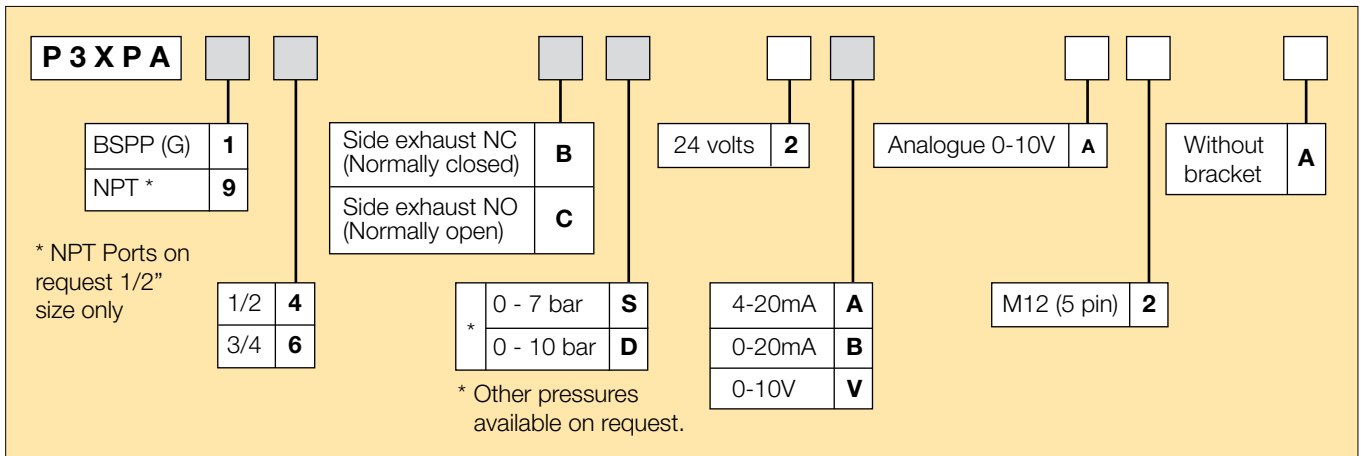
Dimensions are in mm (Inches)

**P3X Proportional Pressure Regulator**



- Integral 1/2" or 3/4" ports (BSPP & NPT)
- Accurate output pressure
- Very fast response times
- Robust but lightweight design.

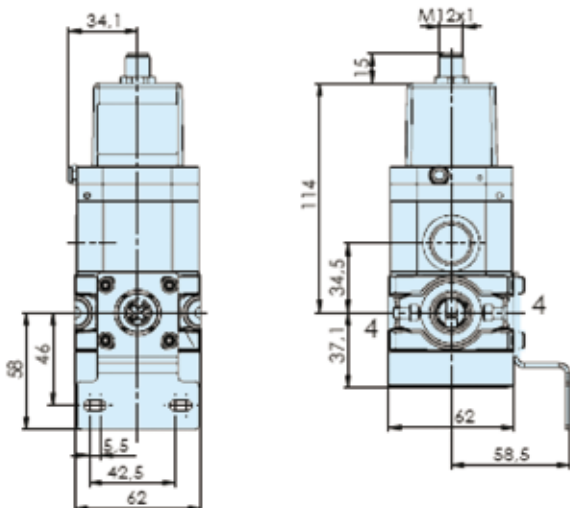
**Options:**



**Popular options:**

| Port size | Description     | Order Code            | Control signal | Output signal | Output pressure | Weight kg |
|-----------|-----------------|-----------------------|----------------|---------------|-----------------|-----------|
| 1/2       | Normally closed | <b>P3XPA14BD2VA2A</b> | 0 - 10 V       | 0 - 10 V      | 0 - 10 bar      | 0.75      |
| 3/4       | Normally closed | <b>P3XPA16BD2VA2A</b> | 0 - 10 V       | 0 - 10 V      | 0 - 10 bar      | 0.75      |

**Dimensions (mm)**



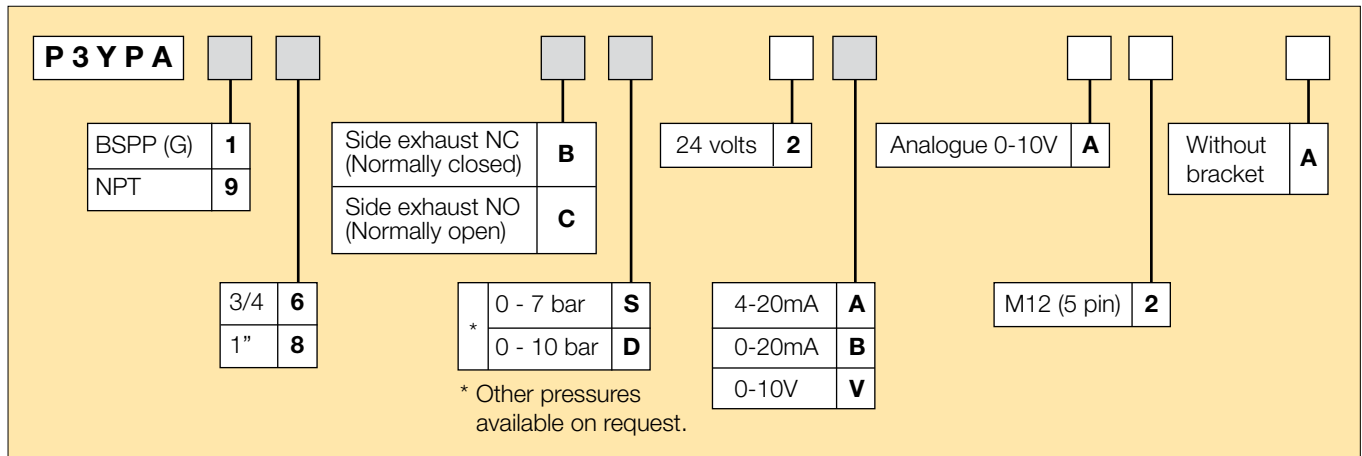
- \* Two opposite gauge ports G1/4, plug screw mounted
- \*\* Connection for 5-pin plug M12 x 1
- \*\*\* Exhaust port 1/2"

P3Y Proportional Pressure Regulator



- Integral 3/4 or 1" ports (BSPP & NPT)
- Accurate output pressure
- Very fast response times
- Robust but lightweight design.

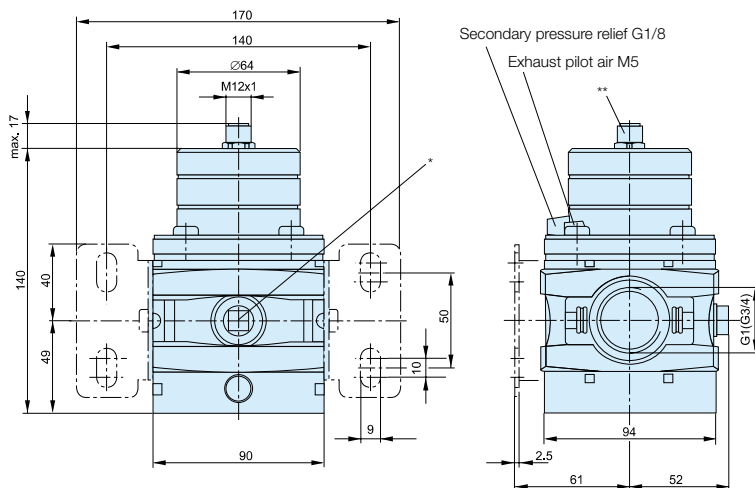
Options:



Popular options:

| Port size | Description     | Order Code            | Control signal | Output signal | Output pressure | Weight kg |
|-----------|-----------------|-----------------------|----------------|---------------|-----------------|-----------|
| 3/4       | Normally closed | <b>P3YPA16BD2VA2A</b> | 0 - 10 V       | 0 - 10 V      | 0 - 10 bar      | 1.2       |
| 1"        | Normally closed | <b>P3YPA18BD2VA2A</b> | 0 - 10 V       | 0 - 10 V      | 0 - 10 bar      | 1.2       |

Dimensions (mm)



\* Two opposite gauge ports G1/4, plug screw mounted  
\*\* Connection for 5-pin plug M12 x 1

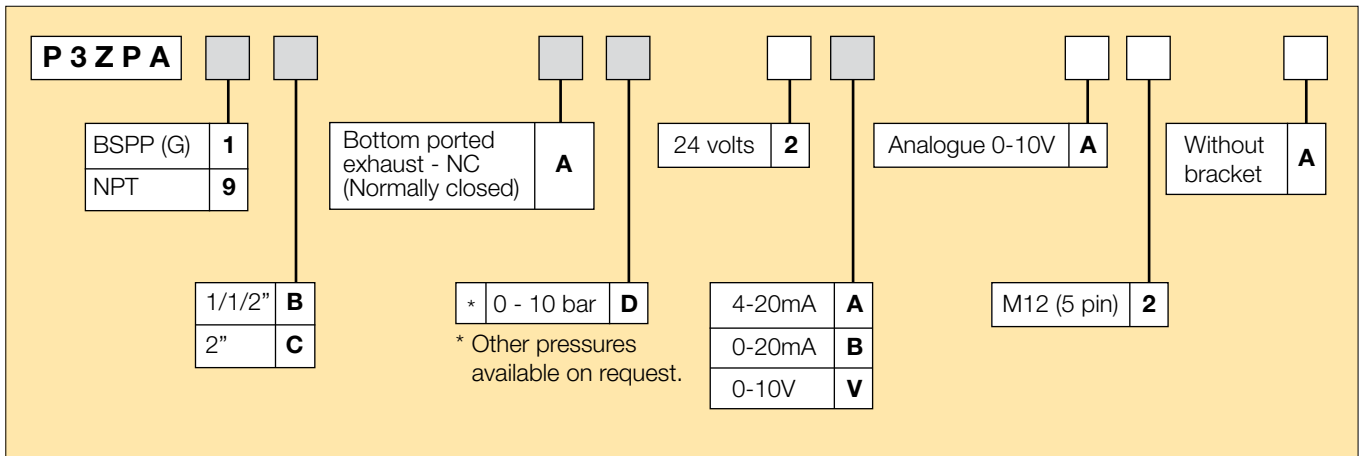


**P3Z Proportional Pressure Regulator**



- Flanged 1-1/2" or 2" ports (BSPP & NPT)
- Accurate output pressure
- Very fast response times
- Robust die-cast aluminium construction

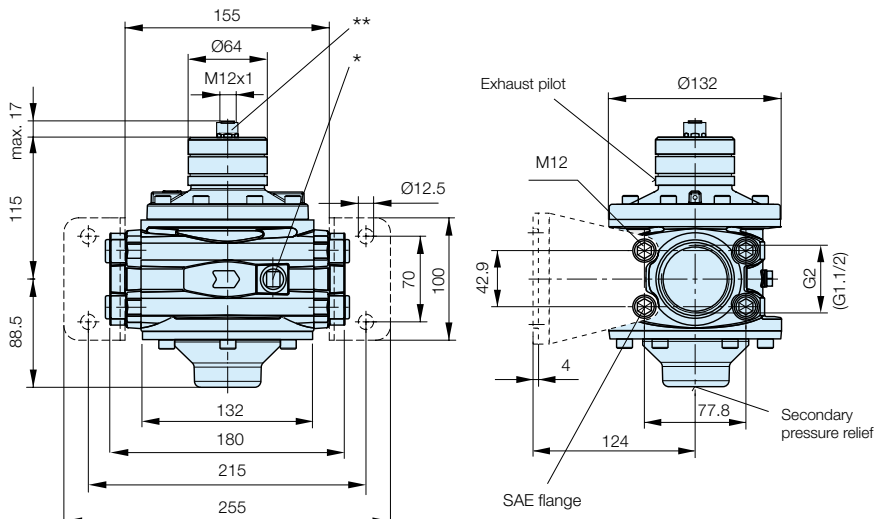
**Options:**



**Popular options:**

| Port size | Description     | Order Code            | Control signal | Output signal | Output pressure | Weight kg |
|-----------|-----------------|-----------------------|----------------|---------------|-----------------|-----------|
| 1-1/2"    | Normally closed | <b>P3ZPA1BAD2VA2A</b> | 0 - 10 V       | 0 - 10 V      | 0 - 10 bar      | 1.2       |
| 2"        | Normally closed | <b>P3ZPA1CAD2VA2A</b> | 0 - 10 V       | 0 - 10 V      | 0 - 10 bar      | 1.2       |

**Dimensions (mm)**



- \* Two opposite gauge ports G1/4, plug screw mounted
- \*\* Connection for 5-pin plug M12 x 1

## Lucifer® EPP4 Basic and Comfort 1/4" and 1/2" Technical Data

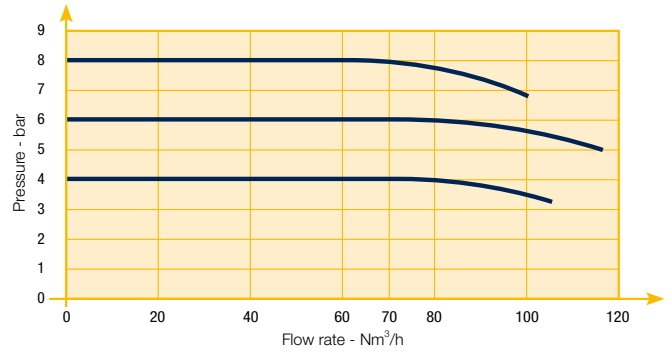
|   | Basic 1/4"   | Basic 1/2"                                |
|---|--|---|
| Fluids:   | Lubricated or non lubricated air and neutral gases Recommended filtration: 50 µm   |   |
| Temperature range:  | Ambient: 0°C to +50 °C<br>Fluid: 0°C to +50 °C   |   |
| Inlet pressure range:<br>The inlet pressure must always be at least 1 bar above the regulated pressure. | 1 to 12 bar  | 1 to 12 bar                               |
| Outlet pressure range:  | 0.05 to 10 bar   |   |
| Hysteresis:   | ± 50 mbar (factory set up)   |   |
| Air consumption at constant control signal:   | 0  |   |
| Supply voltage:   | 24 V DC ± 15 % (Max. ripple 1 V)   |   |
| Power consumption:  | Max. 2.8 W with 24 V DC and constant changes of the control signal<br>< 1.5 W without change of control signal   |   |
| Control signal:   | Analog 0 - 10 V<br>Analog 4 - 20 mA  |   |
| Max. flow:<br>Indicative response time: With a volume of 300 cm³ at the outlet of the regulator         | 70 m³/h  | 150 m³/h                                  |
| Filling 2 to 4 bar:<br>Filling 2 to 8 bar:<br>Emptying 4 to 2 bar:<br>Emptying 8 to 2 bar:              | 50 msec<br>100 msec<br>70 msc<br>130 msc   | 60 msec<br>120 msec<br>90 msec<br>190 msc |
| Safety position:  | In case of control signal failure or if it is less than 50mV, the regulated pressure drops automatically to 0 bar (atmospheric pressure). In case of voltage supply failure, the regulated pressure will be kept constant. |   |
| Electrical connection:  | M12 - 4 pin; 4 x 0.34 mm²  |   |
| Life expectancy:  | > 50 Million changes of control signal steps   |   |
| Mounting position:  | Indifferent (recommended position: upright; electronic part on top)  |   |
| Resistance to vibrations:   | 30 g in all directions   |   |
| Degree of protection:   | IP 65  |   |
| Assembly:   | Silicone free  |   |
| Electromagnetic compatibility:<br>In accordance with:   | EN 61000-6-1: 2001<br>EN 61000-6-2: 2001<br>EN 61000-6-3: 2001<br>EN 61000-6-4: 2001   |   |
| Installation and setting instructions:  | See our "Notice 408038, 408014" and appendix supplied with the product.  |   |

Note: Parker reserves the right to change specifications without notification.

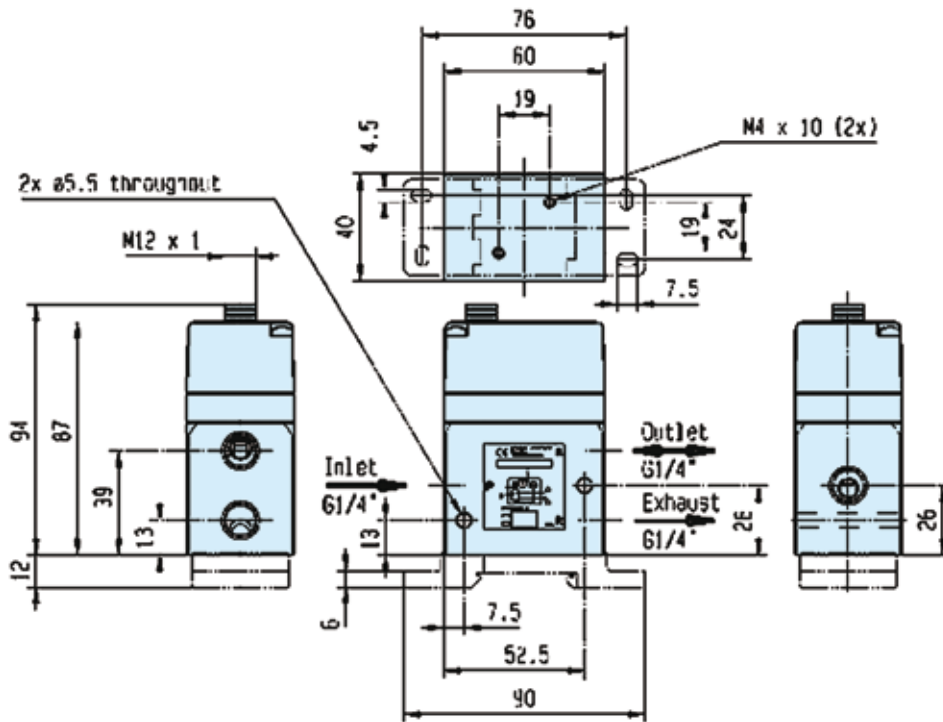
**EPP4 Pressure Regulator Basic  
 G 1/4"**



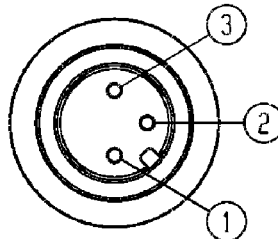
**Flow Curve 1/4"**



**Dimensions**

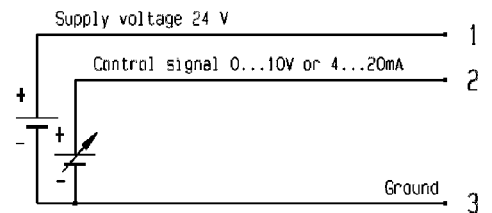


The male connector adopted on the EPP4 is a standard 4 pole M12, without the pin number 4:



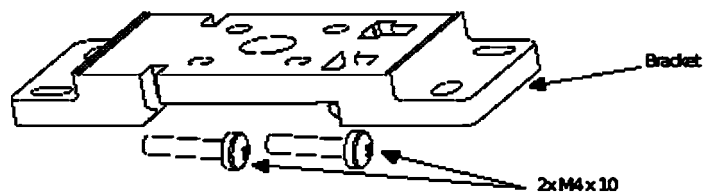
The female connector to mount is the 4 pole M12 connector (IEC 61076-2-101 model LF) where the pin number 4 is not connected.

**ELECTRICAL CONNECTION**



**Accessories**

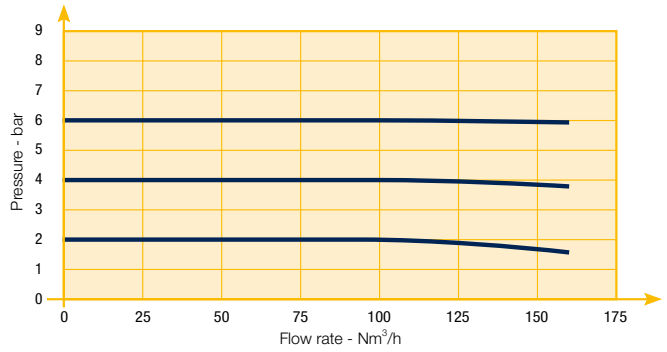
Mounting bracket  
 (automatically supplied with each EPP4)



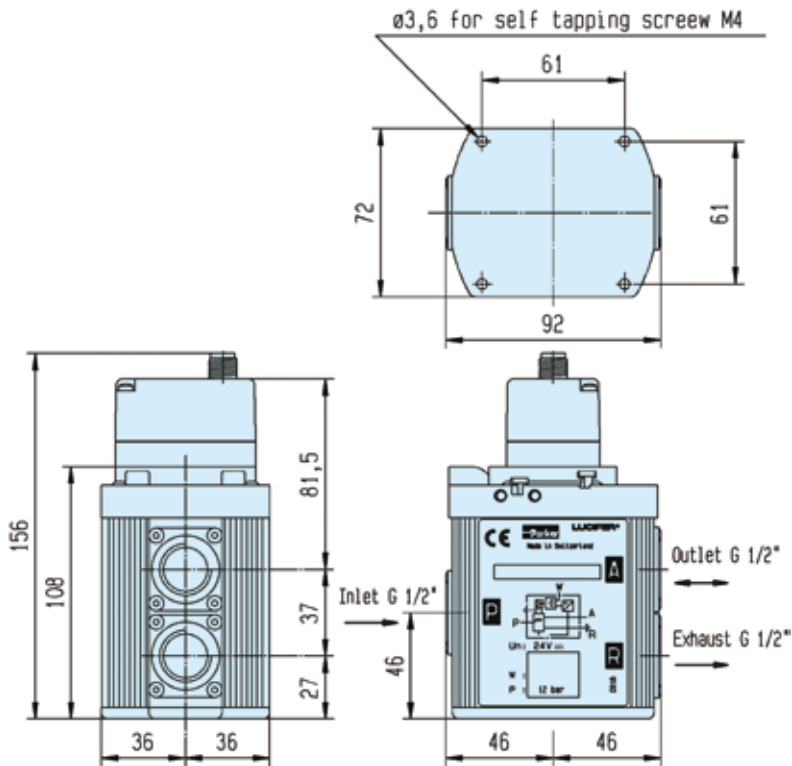
EPP4 Pressure Regulator Basic  
G 1/2"



Flow Curve 1/2"



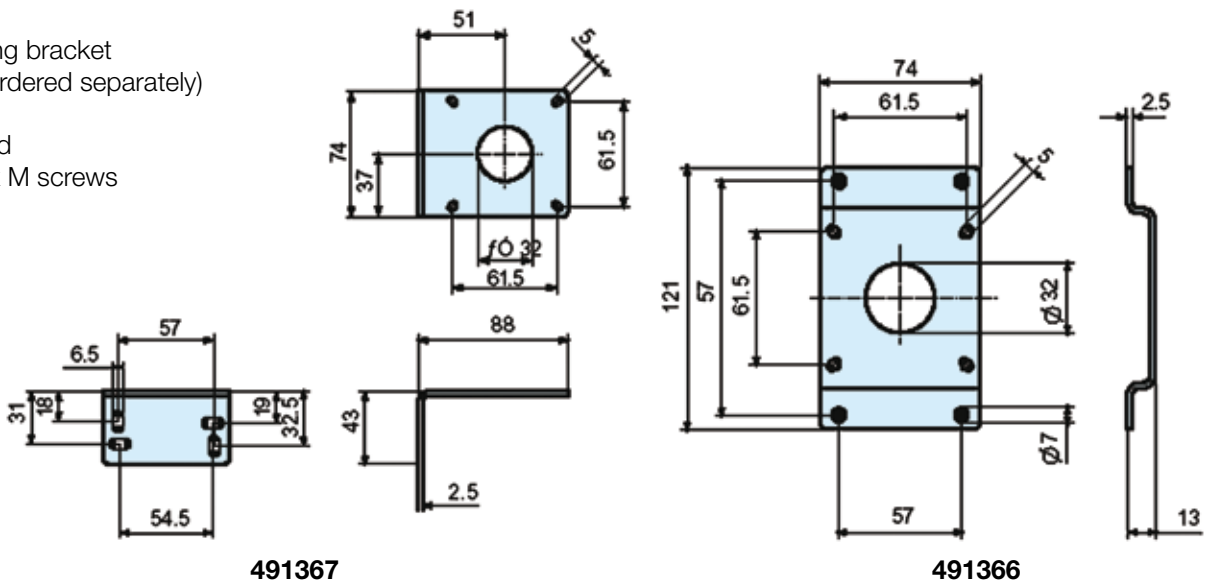
Dimensions



Accessories

Mounting bracket  
(to be ordered separately)

Supplied  
with 4 x M screws



## EPP4 Pressure Regulator Basic G 1/4" and G 1/2"

| Order code       | Pipe     | Pressure Range<br>(bar) | Control Signal<br>(see options) |
|------------------|----------|-------------------------|---------------------------------|
| P4BG2001A001     | G 1/4"   | 0 - 4 bar               | 4 - 20 mA                       |
| P4BG2001A002     | G 1/4"   | 0 - 10 bar              | 0 - 10 V                        |
| P4BG2001A003     | G 1/4"   | 0 - 10 bar              | 4 - 20 mA                       |
| P4BG2001A004     | G 1/4"   | 0 - 6 bar               | 0 - 10 V                        |
| P4BG2001A005     | G 1/4"   | 0 - 6 bar               | 4 - 20 mA                       |
| P4BG2001A006     | G 1/4"   | 0 - 5 bar               | 0 - 10 V                        |
| P4BG2001A007     | G 1/4"   | 0 - 5 bar               | 4 - 20 mA                       |
| P4BG2001A008     | G 1/4"   | 0 - 7 bar               | 0 - 10 V                        |
| P4BG2001A009     | G 1/4"   | 0 - 7 bar               | 4 - 20 mA                       |
| P4BG2003A002 *   | G 1/4"   | 0 - 10 bar              | 0 - 10 V                        |
| P4BG2003A003 *   | G 1/4"   | 0 - 10 bar              | 4 - 20 mA                       |
| P4BG4001A002     | G 1/2"   | 0 - 10 bar              | 0 - 10 V                        |
| P4BG4001A003     | G 1/2"   | 0 - 10 bar              | 4 - 20 mA                       |
| P4BG4001A004     | G 1/2"   | 0 - 6 bar               | 0 - 10 V                        |
| P4BG4001A005     | G 1/2"   | 0 - 6 bar               | 4 - 20 mA                       |
| P4BG4001A006     | G 1/2"   | 0 - 5 bar               | 0 - 10 V                        |
| P4BG4001A007     | G 1/2"   | 0 - 5 bar               | 4 - 20 mA                       |
| P4BG4001A008     | G 1/2"   | 0 - 7 bar               | 0 - 10 V                        |
| P4BG4001A009     | G 1/2"   | 0 - 7 bar               | 4 - 20 mA                       |
| P4BG4004A010 *** | G 1/2"   | 0 - 4 bar               | 0 - 10 V                        |
| P4BG4051A002 **  | G 1/2"   | 0 - 10 bar              | 4 - 20 mA                       |
| P4BN2001A002     | NPT 1/4" | 0 - 10 bar              | 4 - 20 mA                       |
| P4BN2001A003     | NPT 1/4" | 0 - 10 bar              | 0 - 10 V                        |
| P4BN4001A002     | NPT 1/2" | 0 - 10 bar              | 4 - 20 mA                       |
| P4BN4001A003     | NPT 1/2" | 0 - 10 bar              | 0 - 10 V                        |

\* Integrated pilot exhaust

\*\* O<sub>2</sub>

\*\*\* External pressure supply



## Lucifer® EPP4 Comfort 1/4" and 1/2"

## References

| Order code      | Pipe    | Pressure Range (bar) |    | Control Signal (see options) | Display  |
|-----------------|---------|----------------------|----|------------------------------|----------|
| P4CG2001C001    | G 1/4   | 0                    | 10 | 0-10 V                       | -        |
| P4CG2001C002    | G 1/4   | 0                    | 10 | 4-20 mA                      | -        |
| P4CG2001C005    | G 1/4   | 0                    | 7  | 0-10 V                       | -        |
| P4CG2001C006    | G 1/4   | 0                    | 7  | 4-20 mA                      | -        |
| P4CG2002C001    | G 1/4   | 0                    | 10 | 0-10 V                       | included |
| P4CG2002C002    | G 1/4   | 0                    | 10 | 4-20 mA                      | included |
| P4CG2003C001 *  | G 1/4   | 0                    | 10 | 0-10 V                       | -        |
| P4CG2003C002 *  | G 1/4   | 0                    | 10 | 4-20 mA                      | -        |
| P4CG2002C007    | G 1/4   | 0                    | 7  | 0-10 V                       | included |
| P4CG2002C008    | G 1/4   | 0                    | 7  | 4-20 mA                      | included |
| P4CN2001C001    | 1/4 NPT | 0                    | 10 | 0-10 V                       | -        |
| P4CN2001C002    | 1/4 NPT | 0                    | 10 | 4-20 mA                      | -        |
| P4CN2002C001    | 1/4 NPT | 0                    | 10 | 0-10 V                       | included |
| P4CN2002C002    | 1/4 NPT | 0                    | 10 | 4-20 mA                      | included |
| P4CG4001C001    | G 1/2   | 0                    | 10 | 0-10 V                       | -        |
| P4CG4001C002    | G 1/2   | 0                    | 10 | 4-20 mA                      | -        |
| P4CG4001C005    | G 1/2   | 0                    | 7  | 0-10 V                       | -        |
| P4CG4001C006    | G 1/2   | 0                    | 7  | 4-20 mA                      | -        |
| P4CG4002C001    | G 1/2   | 0                    | 10 | 0-10 V                       | included |
| P4CG4002C002    | G 1/2   | 0                    | 10 | 4-20 mA                      | included |
| P4CG4002C005    | G 1/2   | 0                    | 7  | 0-10 V                       | included |
| P4CG4002C006    | G 1/2   | 0                    | 7  | 4-20 mA                      | included |
| P4CG4051C001 ** | G 1/2   | 0                    | 10 | 0-10 V                       | -        |
| P4CG4051C002 ** | G 1/2   | 0                    | 10 | 4-20 mA                      | -        |
| P4CN4001C001    | 1/2 NPT | 0                    | 10 | 0-10 V                       | -        |
| P4CN4001C002    | 1/2 NPT | 0                    | 10 | 4-20 mA                      | -        |
| P4CN4002C001    | 1/2 NPT | 0                    | 10 | 0-10 V                       | included |
| P4CN4002C002    | 1/2 NPT | 0                    | 10 | 4-20 mA                      | included |

\* Integrated pilot exhaust

\*\* O2



## Lucifer® EPP4 Comfort 1/2" High Pressure, 1" and 2" Technical Data

|   | Comfort 1/2" HP   | Comfort 1"   | Comfort 2"     |
|---|---|--|----------------|
| Fluids:   | Lubricated or non lubricated air and neutral gases - Recommended filtration: 50 µm  |  |                |
| Temperature range:  | Ambient: 0°C to +50°C<br>Fluid: 0°C to +50°C  |  |                |
| Inlet pressure range:<br>The inlet pressure must always be at least 1 bar above the regulated pressure. | 1 to 21 bar   | 1 to 21 bar  | 1 to 12 bar    |
| Outlet pressure range:  | 0.05 to 20 bar  | 0.05 to 20 bar   | 0.05 to 10 bar |
| Hysteresis:   | ≤ 100 mbar if P inlet ≤ 10 bar<br>≤ 200 mbar if P inlet > 10 bar  |  |                |
| Air consumption at constant control signal:   | 0   |  |                |
| Supply voltage:   | 24V DC ± 15%  |  |                |
| Power consumption:  | Max. 6 W with 24 V DC<br>and constant changes<br>of the control signal < 2 W<br>without change of control signal  |  |                |
| Control signal:   | Analog 0 - 10 V<br>Analog 4 - 20 mA   |  |                |
| Outlet sensor signal:   | Analog 0 - 10 V<br>Standard for 0 - 10 bar; Adjustable<br><br>Analog 4 - 20 mA<br>Standard for 0 - 10 bar; Adjustable   | Digital 0/24 V for alarm features:<br>Adjustable pressure error (+/-)<br>Adjustable delay ON<br>Adjustable delay OFF<br>Adjustable logic (+/-) |                |
| Max. flow:  | 150 m³/h  | 1 000 m³/h   | 2 700 m³/h     |
| Indicative response time:   | With a volume of 330 cm³ at the outlet of the regulator   |  |                |
| Filling 2 to 8 bar:   | 120 msec  | 250 msec   | 250 msec       |
| Emptying 8 to 2 bar:  | 190 msc   | 400 msc  | 400 msc        |
| Safety position:  | In case of control signal failure or if it is less than 50 mV, the regulated pressure drops automatically to 0 bar atmospheric pressure (for pressure ranges from 0-10 bar, 100 mV for pressure range over 10 bar).<br>In case of voltage supply failure, the regulated pressure will be kept constant. |  |                |
| Electrical connection:  | M12 - 8 pin; male connector power supply/control signal<br>M12 - 5 pin; male connector communication  |  |                |
| Life expectancy:  | > 20 Million changes of control signal steps  |  |                |
| Mounting position:  | Indifferent (recommended position: upright; electronic part on top)   |  |                |
| Resistance to vibrations:   | 30 g in all directions  |  |                |
| Degree of protection:   | IP 65   |  |                |
| Assembly:   | Silicone free   |  |                |
| Electromagnetic compatibility:<br>In accordance with:   | EN 61000-6-1: 2001<br>EN 61000-6-2: 2001<br>EN 61000-6-3: 2001<br>+ A11 2004 edition (01/07/07)<br>EN 61000-6-4: 2001   |  |                |
| Installation and setting instructions:  | See our "408 193" and appendix supplied with the product.   |  |                |

Note: Parker reserves the right to change specifications without notification.

**Lucifer® EPP4 Comfort Options**

**Calys Software**

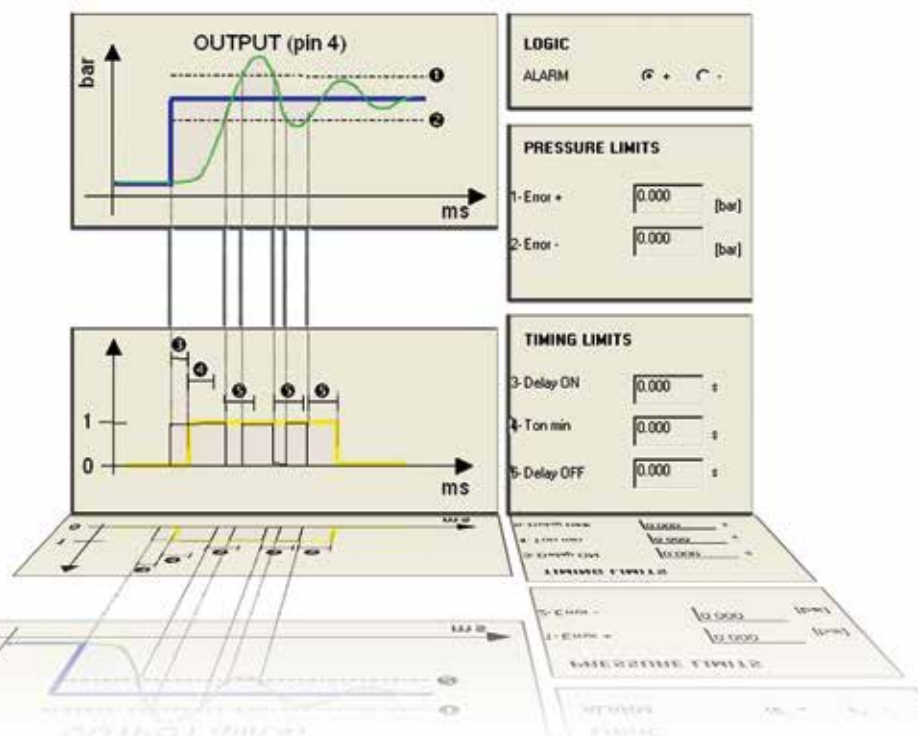
Calys is a unique software in house developed to configurate all the parameters of the EPP4 Comfort range. Calys is an option of the EPP4. A specific cable is needed for the communication between the EPP4 and a PC.



Calys offers the following features:

- Live monitoring (control signal, regulated pressure, supply voltage,...)
- Recording of the main parameters (control signal, regulated pressure, supply voltage,...) in an Excel file
- Free calibration for the inputs and outputs
- Adjustable alarm (positive-negative, pressure limits, delays)
- Configuration files easy to duplicate
- Complete and interactive help file
- Data in 4 different pressure units
- Menus in 4 languages (English, German, French and Italian)

*calys*



**Specific communication cable PC-EPP4 with RS232 and USB connection**

**Order Reference 496449**

To download free Calys software click on [www.parker.com/FCDE/Support](http://www.parker.com/FCDE/Support)



**Lucifer® EPP4 Comfort 1/2" HP, 1" and 2"**

**References**

| Order code          | Pipe | Max inlet pressure (bar) | Pressure range (bar) |     | Control signal (see options) |
|---------------------|------|--------------------------|----------------------|-----|------------------------------|
| <b>P4CG4101D001</b> | G1/2 | 15                       | 0                    | 12  | 0-10 V                       |
| <b>P4CG4201D005</b> | G1/2 | 21                       | 0                    | 16  | 0-10 V                       |
| <b>P4CG4201D003</b> | G1/2 | 21                       | 0                    | 20  | 0-10 V                       |
| <b>P4CG4201D004</b> | G1/2 | 21                       | 0                    | 20  | 4-20 mA                      |
| <b>P4CG6101C009</b> | G1   | 12                       | 0                    | 3.5 | 4-20 mA                      |
| <b>P4CG6101C011</b> | G1   | 12                       | 0                    | 5.0 | 0-10 V                       |
| <b>P4CG6101C010</b> | G1   | 12                       | 0                    | 6.0 | 4-20 mA                      |
| <b>P4CG6101C001</b> | G1   | 12                       | 0                    | 10  | 0-10 V                       |
| <b>P4CG6101C002</b> | G1   | 12                       | 0                    | 10  | 4-20 mA                      |
| <b>P4CG6201D001</b> | G1   | 21                       | 0                    | 12  | -                            |
| <b>P4CG6201D003</b> | G1   | 21                       | 0                    | 20  | 0-10 V                       |
| <b>P4CG9101C012</b> | G2   | 12                       | 0                    | 4.0 | 4-20 mA                      |
| <b>P4CG9101C010</b> | G2   | 12                       | 0                    | 6.0 | 4-20 mA                      |
| <b>P4CG9101C001</b> | G2   | 12                       | 0                    | 10  | 0-10 V                       |
| <b>P4CG9101C002</b> | G2   | 12                       | 0                    | 10  | 4-20 mA                      |

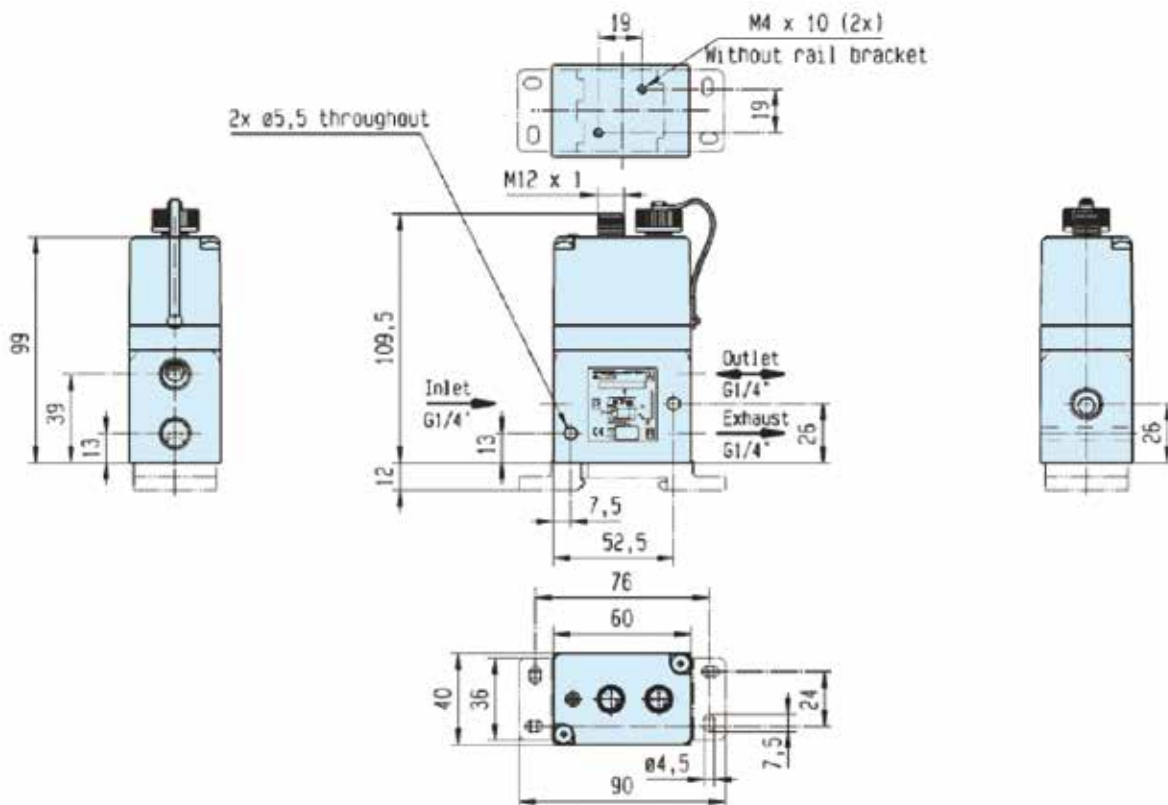
Other specific settings or specialties are available, please contact us.



Lucifer® EPP4 Comfort Range 1/4"

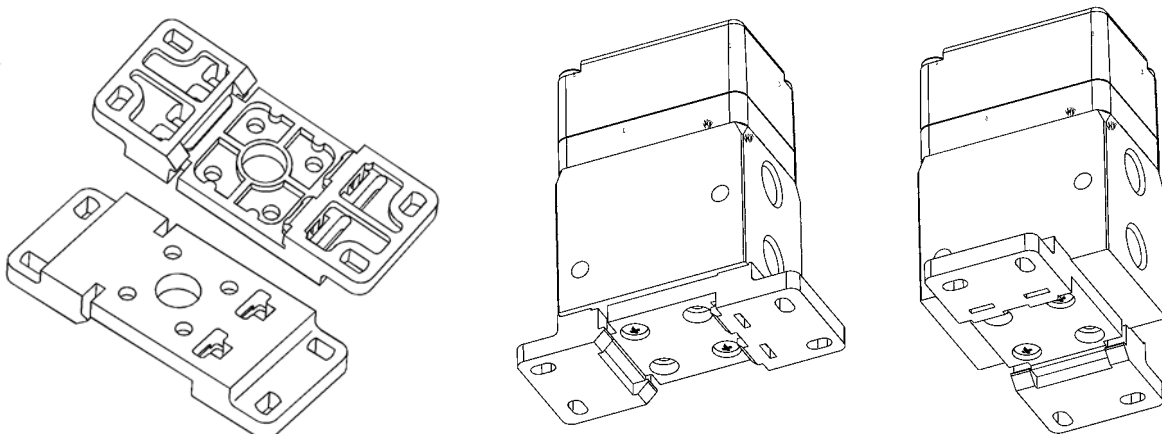


Dimensions



Accessories

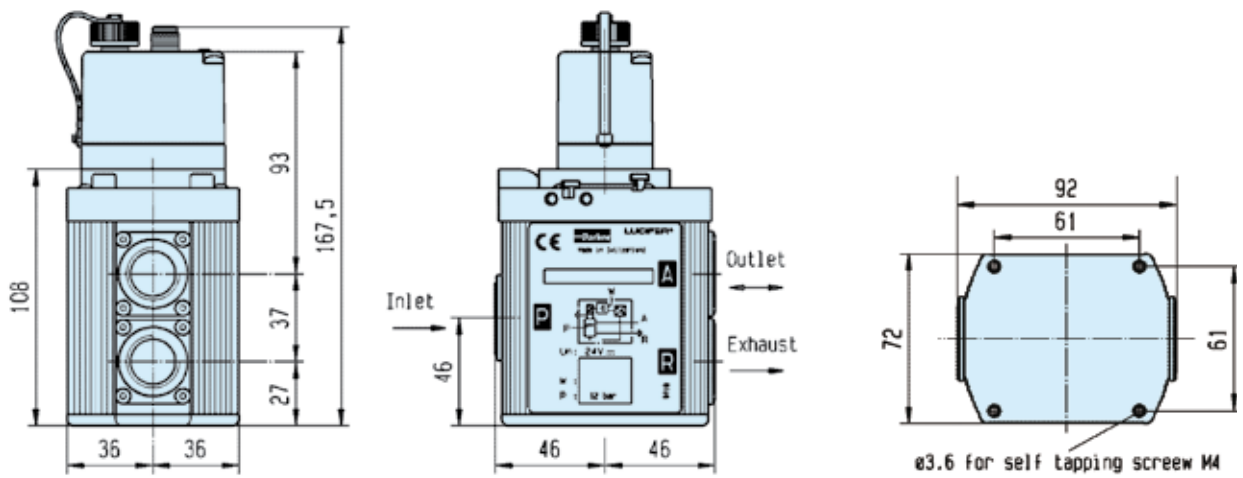
Mounting bracket  
(supplied as a standard with each Lucifer® EPP4 1/4")



**Lucifer® EPP4 Comfort Range 1/2"**

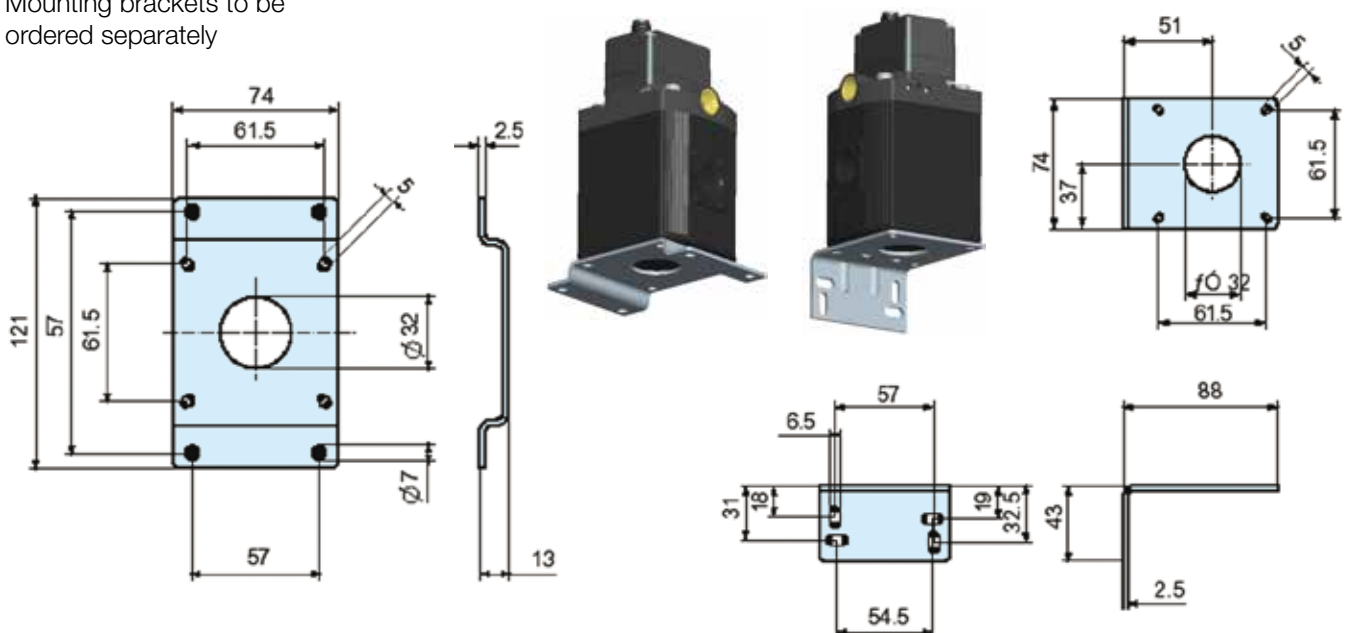


**Dimensions**



**Accessories**

Mounting brackets to be ordered separately



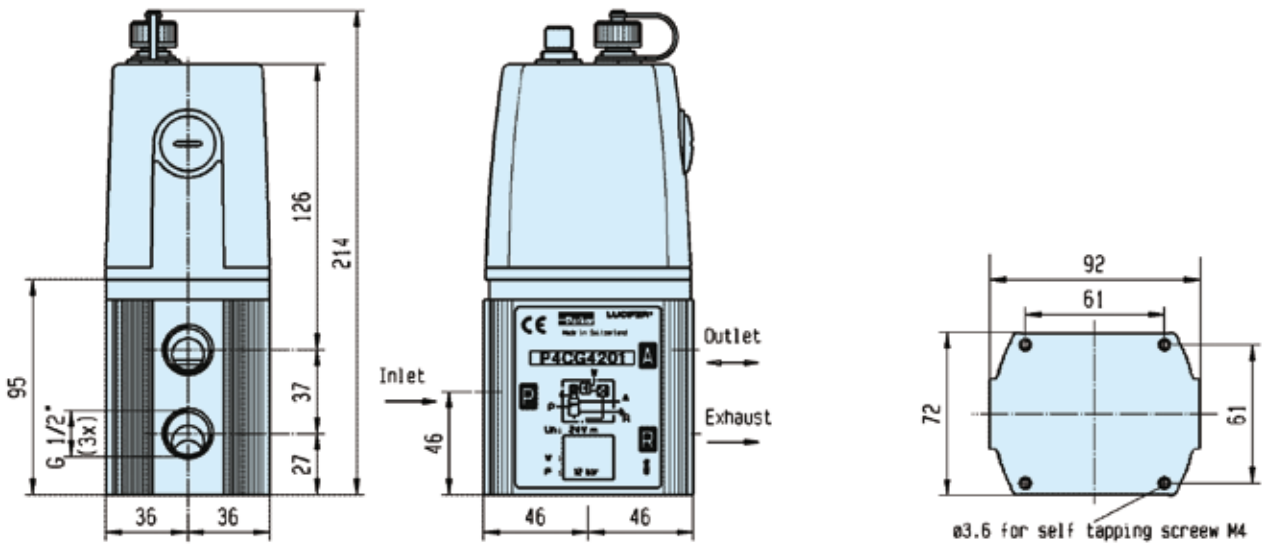
**Order reference 491366**

**Order reference 491367**

Lucifer® EPP4 Comfort Range 1/2"  
High Pressure 21 bar

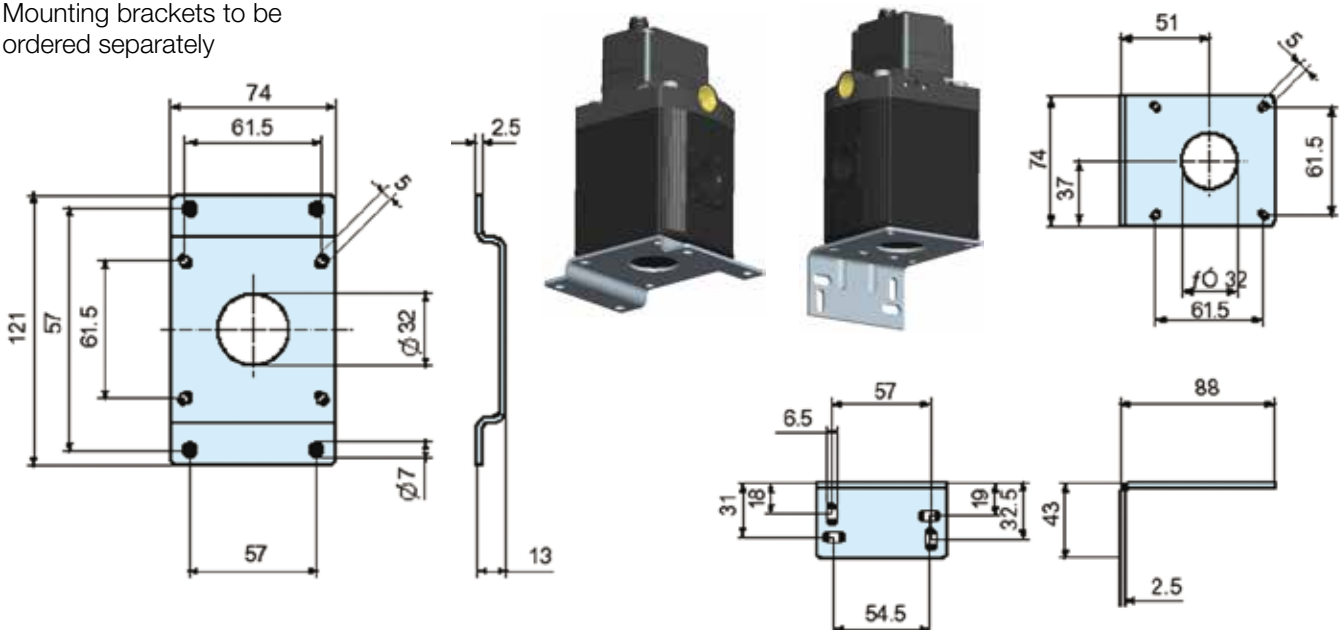


Dimensions



Accessories

Mounting brackets to be ordered separately



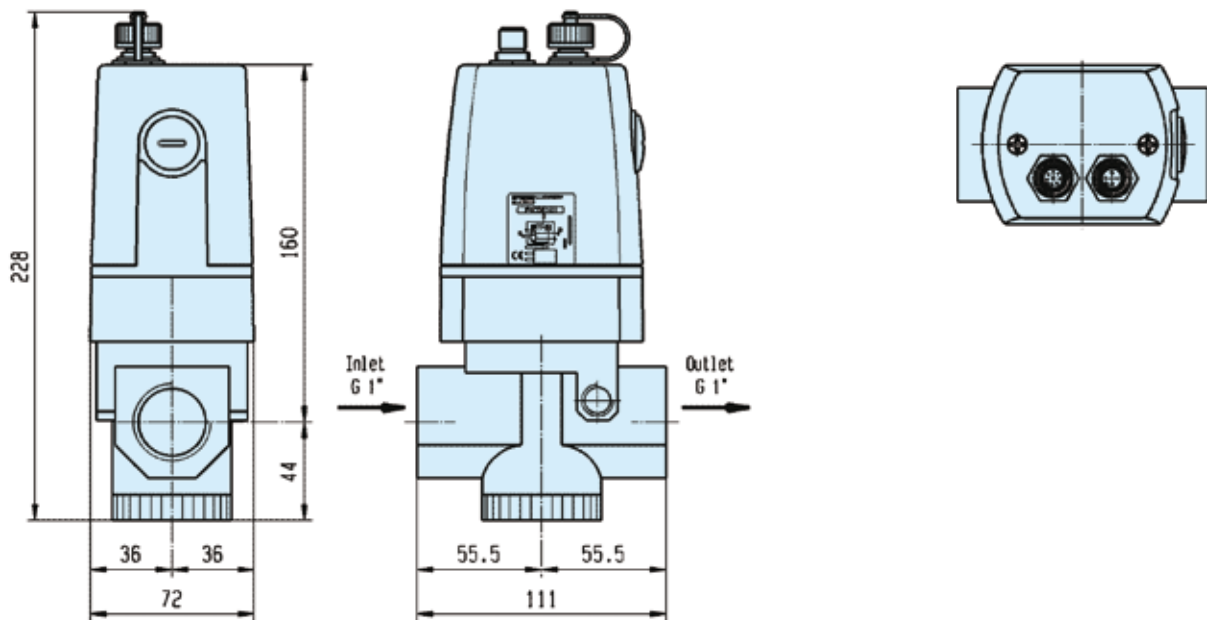
Order reference 491366

Order reference 491367

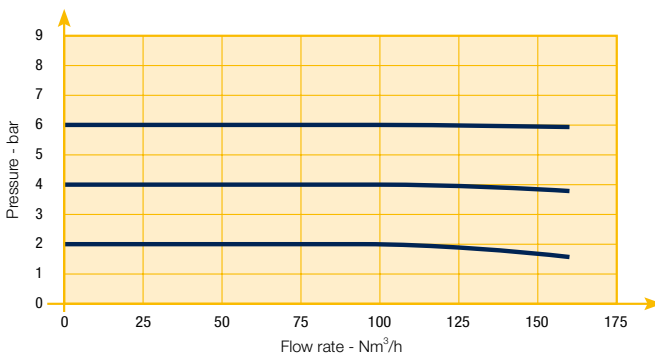
**Lucifer® EPP4 Comfort Range 1"**



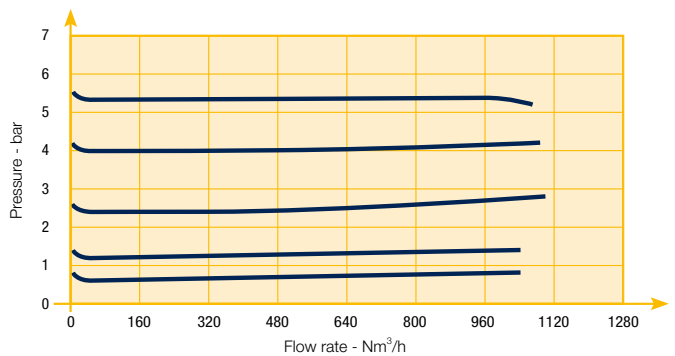
**Dimensions**



**Flow Curve 1/2"**



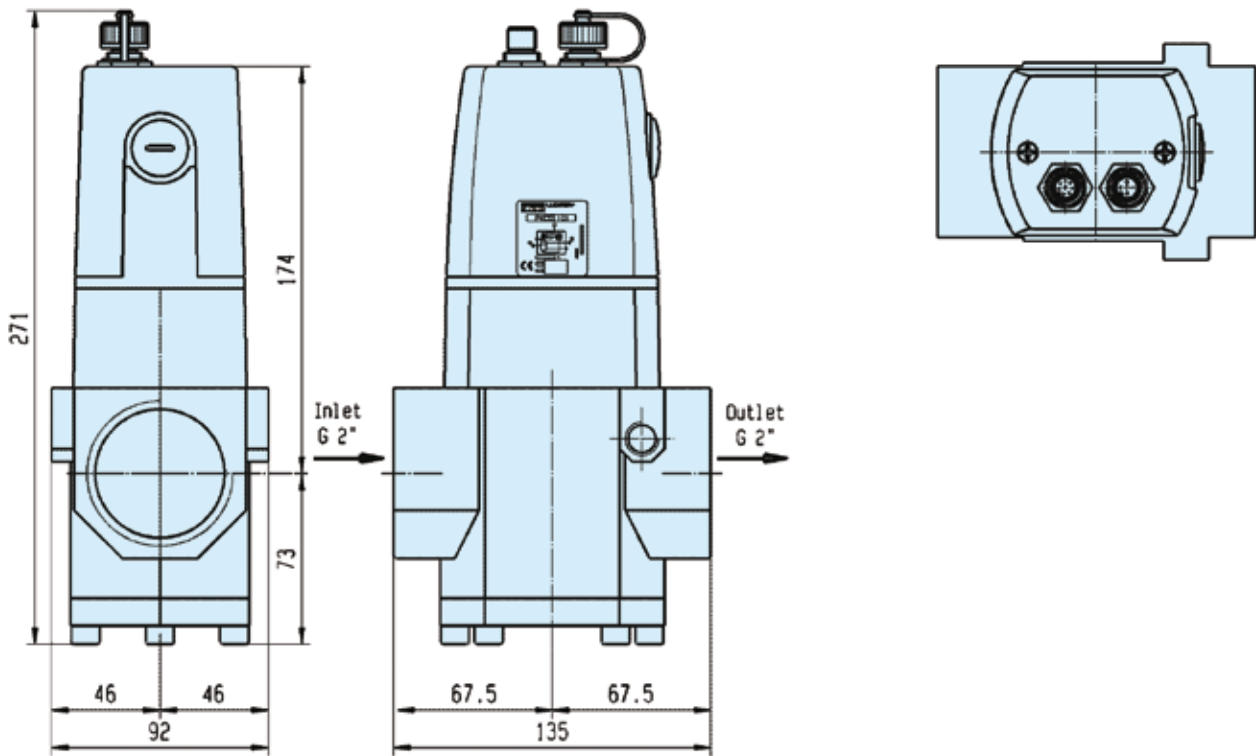
**Flow Curve 1"**



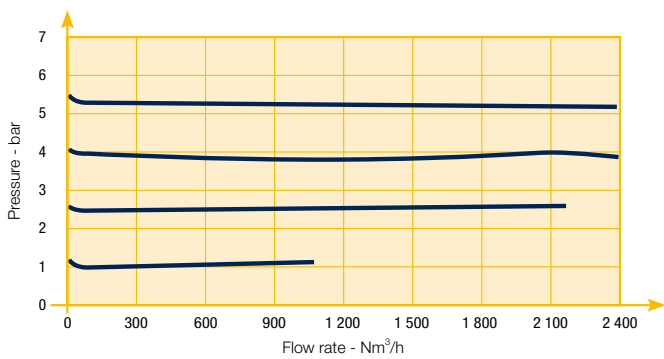
**Lucifer® EPP4 Comfort Range 2"**



**Dimensions**



**Flow Curve 2"**

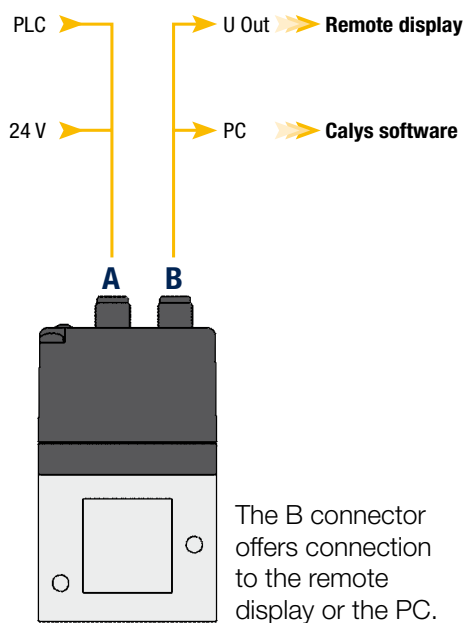


## Lucifer® EPP4 Comfort Options

### Additional Features

The EPP4 Comfort offers two main options - a remote display and a software to easily set the regulator's parameters.

These are the key feature options for a comfortable use.



- A remote display connected to the pressure regulator offers flexible monitoring.
- A panel mounting kit is available to install the remote display.
- Calys is an easy-to-use software package designed to allow the user to match their regulators performance directly to their specific application.
- A power supply and control signal cable.

## Lucifer® EPP4 Comfort 1/4" &amp; 1/2"

## Technical Data

|  | Comfort 1/4"   | Comfort 1/2"   |
|--|--|--|
| <b>Fluids:</b>   | Lubricated or non lubricated air and neutral gases - Recommended filtration: 50 µm   |  |
| <b>Temperature range:</b>  | Ambient: 0°C to +50 °C<br>Fluid: 0°C to +50 °C   |  |
| <b>Inlet pressure range:</b><br>The inlet pressure must always be at least 1 bar above the regulated pressure. | 1 to 12 bar  | 1 to 12 bar  |
| <b>Outlet pressure range:</b>  | 0.05 to 10 bar   |  |
| <b>Hysteresis:</b>   | ± 50 mbar (factory set up)   |  |
| <b>Air consumption at constant control signal:</b>   | 0  |  |
| <b>Supply voltage:</b>   | 24 V DC ± 15 % (Max. ripple 1 V)   |  |
| <b>Power consumption:</b>  | Max. 2.8 W with 24 V DC and constant changes of the control signal < 1.5 W without change of control signal  |  |
| <b>Control signal:</b>   | Analog 0 - 10 V<br>Analog 4 - 20 mA  |  |
| <b>Outlet sensor signal:</b>   | Analog 0 - 10 V<br>Standard for 0 - 10 bar; Adjustable<br><br>Analog 4 - 20 mA<br>Standard for 0 - 10 bar; Adjustable  | Digital 0/24 V for alarm features:<br>Adjustable pressure error (+/-)<br>Adjustable delay ON<br>Adjustable delay OFF<br>Adjustable logic (+/-) |
| <b>Max. flow:</b>  | 70 m³/h  | 150 m³/h   |
| <b>Indicative response time:</b>   | With a volume of 330 cm³ at the outlet of the regulator  |  |
| <b>Filling 2 to 4 bar :</b>  | 50 msec  | 60 msec  |
| <b>Filling 2 to 8 bar:</b>   | 100 msec   | 120 msec   |
| <b>Emptying 4 to 2 bar:</b>  | 70 msc   | 90 msec  |
| <b>Emptying 8 to 2 bar:</b>  | 130 msc  | 190 msec   |
| <b>Safety position:</b>  | In case of control signal failure or if it is less than 50 mV, the regulated pressure drops automatically to 0 bar (atmospheric pressure).<br><br>In case of voltage supply failure, the regulated pressure will be kept constant. |  |
| <b>Electrical connection:</b>  | M12 - 8 pin; male connector power supply/control signal<br>M12 - 5 pin; male connector communication   |  |
| <b>Life expectancy:</b>  | > 50 Million changes of control signal steps   |  |
| <b>Mounting position:</b>  | Indifferent (recommended position: upright; electronic part on top)  |  |
| <b>Resistance to vibrations:</b>   | 30 g in all directions   |  |
| <b>Degree of protection:</b>   | IP 65  |  |
| <b>Assembly:</b>   | Silicone free  |  |
| <b>Electromagnetic compatibility:<br/>In accordance with:</b>  | EN 61000-6-1: 2001<br>EN 61000-6-2: 2001<br>EN 61000-6-3: 2001<br>+ A11 2004 edition (01/07/07)<br>EN 61000-6-4: 2001  |  |
| <b>Installation and setting instructions:</b>  | See our "Notice 408128, 408134" and appendix supplied with the product.  |  |

**Note:** Parker reserves the right to change specifications without notification.

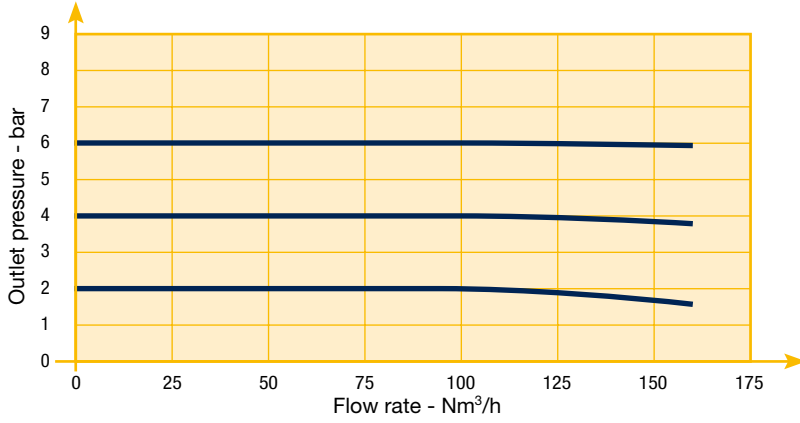


**Lucifer® EPP4 Comfort**  
 1/2", 1" & 2" ATEX

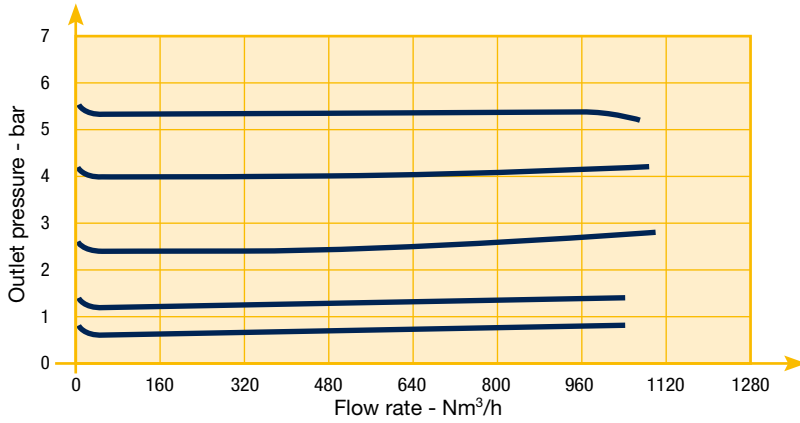


**Flow Curves**

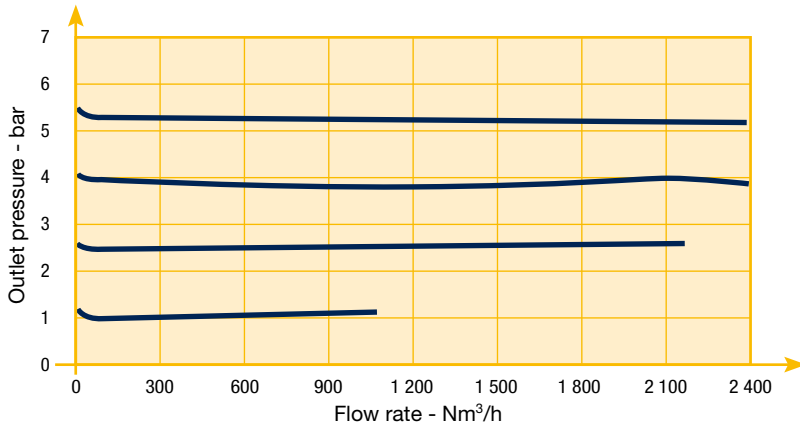
**Flow Curve 1/2"**



**Flow Curve 1"**



**Flow Curve 2"**



## Lucifer® EPP4 Comfort 1/2" ATEX



### References

| Codes                  | Pipe | Max inlet pressure (bar) | Pressure range (bar) |    | Control signal (see options) | Dimensional Drawing |
|------------------------|------|--------------------------|----------------------|----|------------------------------|---------------------|
| <b>P4CG4461C001</b>    | G1/2 | 12                       | 0                    | 10 | 0-10 V                       | 9                   |
| <b>P4CG4461C002</b>    | G1/2 | 12                       | 0                    | 10 | 4-20 mA                      | 9                   |
| <b>P4CG4465C001 **</b> | G1/2 | 12                       | 0                    | 10 | 0-10 V                       | 9                   |
| <b>P4CG4465C002 **</b> | G1/2 | 12                       | 0                    | 10 | 4-20 mA                      | 9                   |

\*\* O2

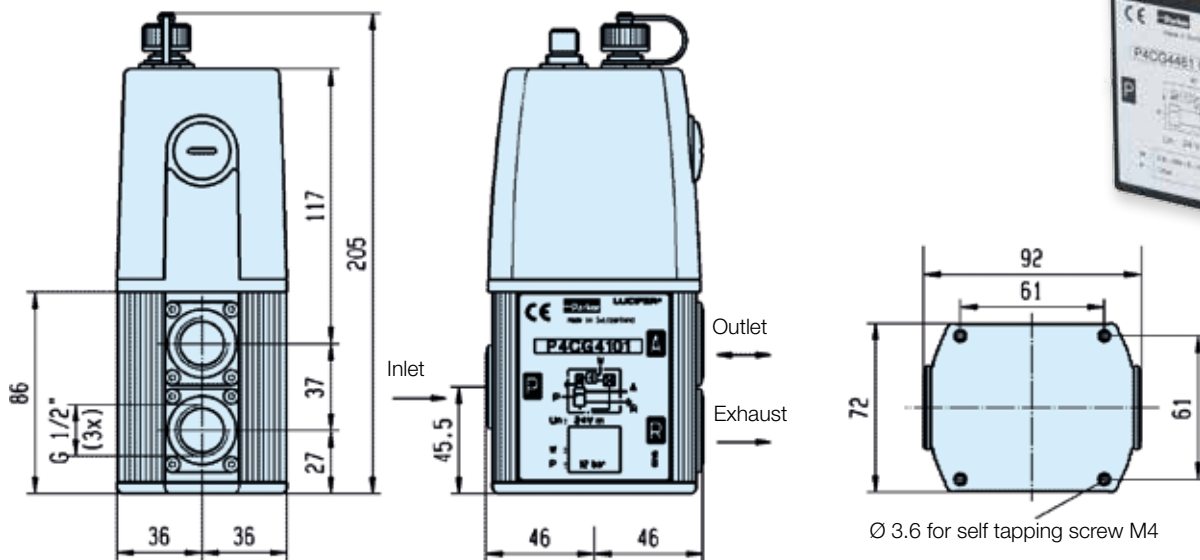
Other specific settings or specialties are available, please contact us.



**Lucifer® EPP4 Comfort**  
**1/2" ATEX**



**Dimensions (mm)**



Drawing 9

**Lucifer® EPP4 Comfort**  
**1" & 2" ATEX**



**References**

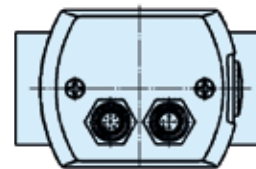
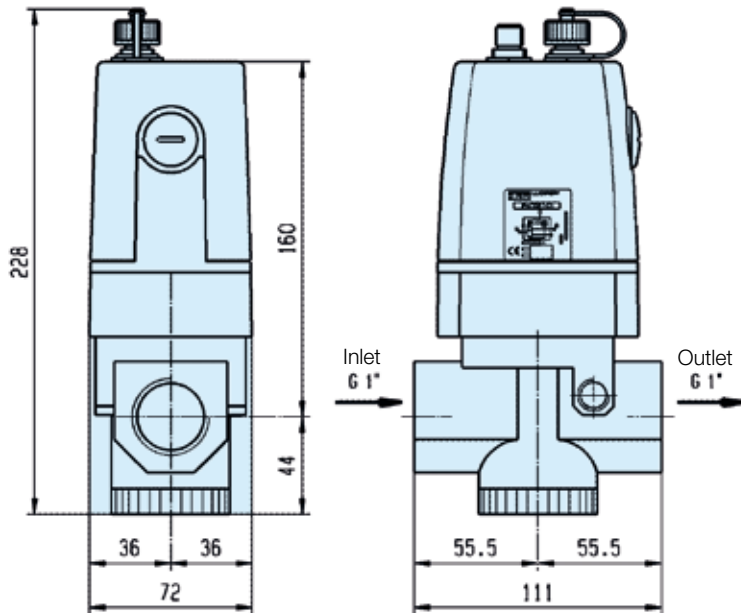
| Codes               | Pipe | Max inlet pressure (bar) | Pressure range (bar) | Control signal (see options) | Dimensional Drawing |
|---------------------|------|--------------------------|----------------------|------------------------------|---------------------|
| <b>P4CG6161C001</b> | G1   | 12                       | 0 10                 | 0-10 V                       | 11                  |
| <b>P4CG6161C002</b> | G1   | 12                       | 0 10                 | 4-20 mA                      | 11                  |
| <b>P4CG9161C001</b> | G2   | 12                       | 0 10                 | 0-10 V                       | 12                  |
| <b>P4CG9161C002</b> | G2   | 12                       | 0 10                 | 4-20 mA                      | 12                  |

Other specific settings or specialties are available, please contact us.

Lucifer® EPP4 Comfort  
1" & 2" ATEX

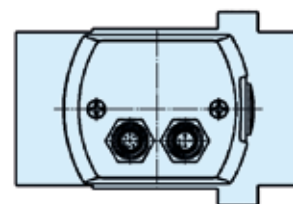
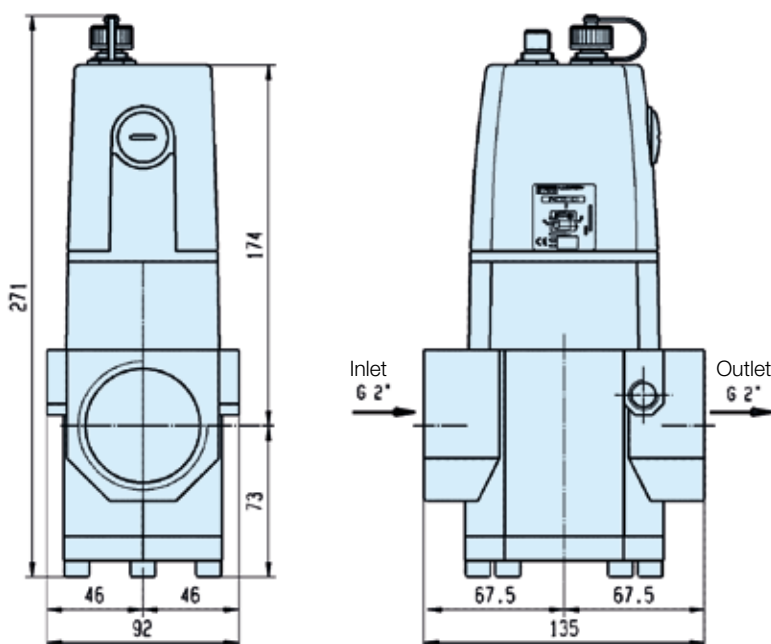


Dimensions (mm) - EPP4 Comfort Range 1"



Drawing 11

Dimensions (mm) - EPP4 Comfort Range 2"



Drawing 12

## Parker Angle Seat Valves

### Introduction

An angle seat valve is actuated by a pneumatically driven piston and is capable to handle slurry solutions with particles or corrosive solutions at high temperature up to 180°C and operating pressure up to 16 Bar.

### Benefits

- Compact design, high flow rates
- Visual position indicator
- For temperatures from -10°C to 180°C
- Working pressures up to 16 Bar
- Dampened closing anti-water hammer design (fluid under seat)
- Stainless Steel actuator housing for exceptional durability in steam and aggressive applications
- Valves meeting Pressure Equipment Directive 97/23/EC
- Mountable in any position
- Tight shut-off and Long Service Life
- Parker Angle Seat Valves conform to the terms of the 94/9/CE directive specific to non electrical equipment for use within potentially explosive environments - zones 1/21 and 2/22

### Angle seat valves are suitable for many process and industrial applications:

- Food and Beverage Processing
- Water Technology & Treatment
- Textile Industry
- Cooling systems on injection molding machines
- Pharmaceutical & cosmetic industry
- Chemical Process technology
- Refrigeration & Cooling heat exchangers
- Sterilizers steam supply
- Water applications: Mining, Cement / Concrete Systems, Pulp & Paper
- General industrial applications of aggressive fluids
- Industrial Laundry Equipment
- Industrial Air Dryers



## PA Series, 2/2 Way, NC or NO 3/8" to 2 1/2" BSP, 16 bar

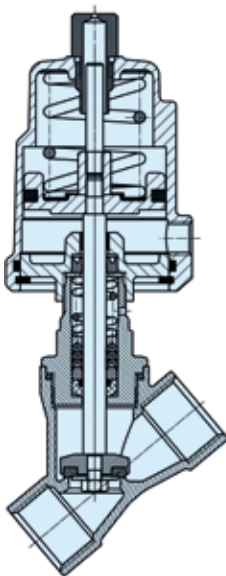


- Body Material 304 Stainless Steel or 316 Stainless Steel
- Actuator Material 304 Stainless Steel, or Aluminum
- Function 2/2 NC, NO, NC (anti-water hammer)
- Port size from DN 10 (3/8") to DN 65 (2 1/2")
- Connections: Threads BSP
- Max Working Pressure 16 Bar
- Flow factor KV from 4.7 m<sup>3</sup>/h (DN10) to 70 m<sup>3</sup>/h (DN 65)
- The PA Series angle seat valves comply with European Pressure Equipment Directive 97/23/EC
- Parker Angle Seat Valves conform to the terms of the 94/9/CE directive specific to non electrical equipment for use within potentially explosive environments - Zones 1/21 and 2/22 - Protection II 2 GD c TX
- Pilot Pressure 3 Bar min to 10 Bar according to control pressure charts
- Maximum Fluid Temp -10°C to 180°C
- Ambient Temperature -10°C to 60°C
- Seat Seal material PTFE/RTFE
- Packing Gland: PTFE and PTFE with Carbon
- Installation Any Position
- Optical Position Indicator Standard on all sizes
- Pilot Control Media Air, Neutral Gas
- Fluids handled: Inert gases, hot water, oils, steam, aggressive and corrosive fluids
- Weight from 0.58 Kg (DN10) to 8.65 Kg (DN 65)
- Viscosity: Maxi. 600 mm<sup>2</sup>/s (600cSt, 80° E, 2700 SSU)

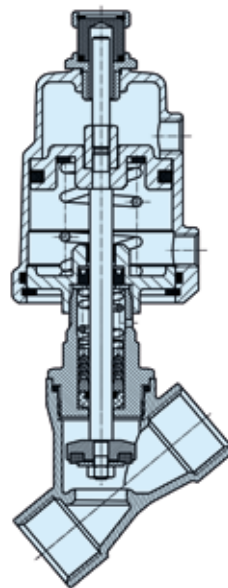


### For liquids, use versions with flow direction under the seat.

- Spare Parts Kits are available for main seat and body gasket replacement (on request)
- 3 Way Direct Acting AC & DC Pilot Control Valves available as separate components



Normally Closed Valve



Normally Open Valve

## PA Series - Normally Closed Valves Flow Direction OVER Seat

Model Numbers Shown are BSP threads



### 304 Stainless Steel Actuators with 304 Stainless Steel Bodies



| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 40          | 4.7                  | 0-16                                | 4  | PA10S1G3S040S | 0.78      |
|      |           |            | 50          | 4.7                  | 0-16                                | 3  | PA10S1G3S050S | 1.01      |
| DN15 | 1/2"      | 13         | 40          | 4.7                  | 0-16                                | 4  | PA15S1G4S040S | 0.80      |
|      |           |            | 50          | 4.7                  | 0-16                                | 3  | PA15S1G4S050S | 1.03      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-16                                | 3-4                                      | PA20S1G5S050S | 1.06      |
| DN25 | 1"        | 24         | 50          | 16.0                 | 0-16                                | 3-5.5                                    | PA25S1G6S050S | 1.38      |
|      |           |            | 63          | 16.0                 | 0-16                                | 3-3.5                                    | PA25S1G6S063S | 2.05      |
| DN32 | 1-1/4"    | 31         | 63          | 24.0                 | 0-16                                | 3-5                                      | PA32S1G7S063S | 2.40      |
| DN40 | 1-1/2"    | 35         | 63          | 32.0                 | 0-16                                | 3-6                                      | PA40S1G8S063S | 2.75      |
|      |           |            | 63          | 50.0                 | 0-10                                | 3-6.5                                    | PA50S1G9S063S | 3.50      |
| DN50 | 2"        | 45         | 80          | 50.0                 | 0-16                                | 3-6.6                                    | PA50S1G9S080S | 4.62      |
|      |           |            | 100         | 50.0                 | 0-16                                | 3-5                                      | PA50S1G9S100S | 5.16      |
| DN65 | 2-1/2"    | 65         | 100         | 70.0                 | 0-10                                | 3-6                                      | PA65S1GTS100S | 8.65      |

### 304 Stainless Steel Actuators with 316L Stainless Steel Bodies

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 40          | 4.7                  | 0-16                                | 4  | PA10S1G3R040S | 0.78      |
|      |           |            | 50          | 4.7                  | 0-16                                | 3  | PA10S1G3R050S | 1.01      |
| DN15 | 1/2"      | 13         | 40          | 4.7                  | 0-16                                | 4  | PA15S1G4R040S | 0.80      |
|      |           |            | 50          | 4.7                  | 0-16                                | 3  | PA15S1G4R050S | 1.03      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-16                                | 3-4                                      | PA20S1G5R050S | 1.06      |
| DN25 | 1"        | 24         | 50          | 16.0                 | 0-16                                | 3-5.5                                    | PA25S1G6R050S | 1.38      |
|      |           |            | 63          | 16.0                 | 0-16                                | 3-3.5                                    | PA25S1G6R063S | 2.05      |
| DN32 | 1-1/4"    | 31         | 63          | 24.0                 | 0-16                                | 3-5                                      | PA32S1G7R063S | 2.40      |
| DN40 | 1-1/2"    | 35         | 63          | 32.0                 | 0-16                                | 3-6                                      | PA40S1G8R063S | 2.75      |
|      |           |            | 63          | 50.0                 | 0-10                                | 3-6.5                                    | PA50S1G9R063S | 3.50      |
| DN50 | 2"        | 45         | 80          | 50.0                 | 0-16                                | 3-6.6                                    | PA50S1G9R080S | 4.62      |
|      |           |            | 100         | 50.0                 | 0-16                                | 3-5                                      | PA50S1G9R100S | 5.16      |
| DN65 | 2-1/2"    | 65         | 100         | 70.0                 | 0-10                                | 3-6                                      | PA65S1GTR100S | 8.65      |

## PA Series - Normally Closed Valves

## Flow Direction OVER Seat

Model Numbers Shown are BSP threads

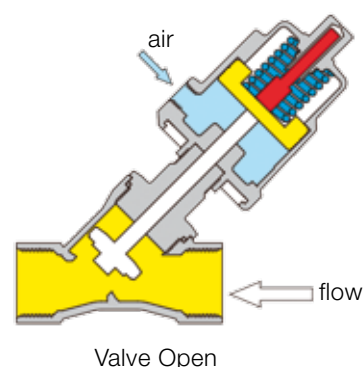
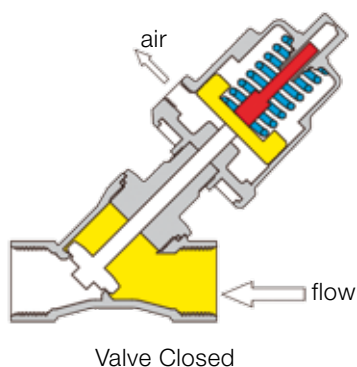
Aluminium Actuators  
with 304 Stainless Steel Bodies

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 50          | 4.7                  | 0-16                                | 3  | PA10S1G3S050A | 0.75      |
| DN15 | 1/2"      | 13         | 50          | 4.7                  | 0-16                                | 3  | PA15S1G4S050A | 0.80      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-16                                | 3-4                                      | PA20S1G5S050A | 0.90      |
| DN25 | 1"        | 24         | 50          | 16.0                 | 0-16                                | 3-5.5                                    | PA25S1G6S050A | 1.27      |
|      |           |            | 63          | 16.0                 | 0-16                                | 3-4                                      | PA25S1G6S063A | 1.65      |
| DN32 | 1-1/4"    | 31         | 63          | 24.0                 | 0-16                                | 3-5.5                                    | PA32S1G7S063A | 1.89      |
| DN40 | 1-1/2"    | 35         | 63          | 32.0                 | 0-16                                | 3-6.5                                    | PA40S1G8S063A | 2.15      |
|      |           |            | 63          | 50.0                 | 0-10                                | 3-6.5                                    | PA50S1G9S063A | 2.98      |
| DN50 | 2"        | 45         | 80          | 50.0                 | 0-16                                | 3-6.6                                    | PA50S1G9S080A | 3.56      |
|      |           |            | 100         | 50.0                 | 0-16                                | 3-5                                      | PA50S1G9S100A | 4.75      |
| DN65 | 2-1/2"    | 65         | 100         | 70.0                 | 0-10                                | 3-6                                      | PA65S1GTS100A | 5.50      |

Aluminium Actuators  
with 316L Stainless Steel Bodies

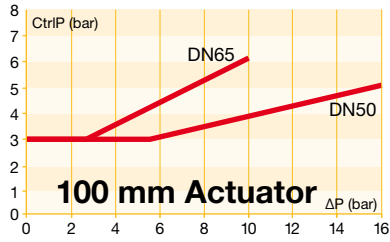
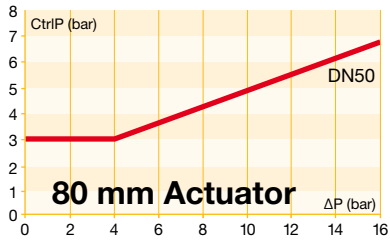
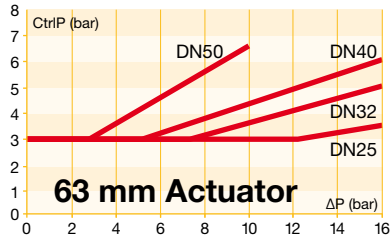
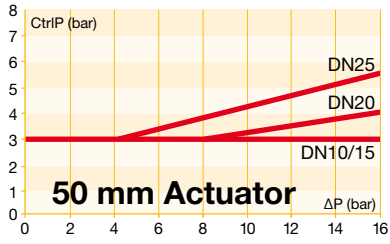
| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 50          | 4.7                  | 0-16                                | 3  | PA10S1G3R050A | 0.75      |
| DN15 | 1/2"      | 13         | 50          | 4.7                  | 0-16                                | 3  | PA15S1G4R050A | 0.80      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-16                                | 3-4                                      | PA20S1G5R050A | 0.90      |
| DN25 | 1"        | 24         | 50          | 16.0                 | 0-16                                | 3-5.5                                    | PA25S1G6R050A | 1.27      |
|      |           |            | 63          | 16.0                 | 0-16                                | 3-4                                      | PA25S1G6R063A | 1.65      |
| DN32 | 1-1/4"    | 31         | 63          | 24.0                 | 0-16                                | 3-5.5                                    | PA32S1G7R063A | 1.89      |
| DN40 | 1-1/2"    | 35         | 63          | 32.0                 | 0-16                                | 3-6.5                                    | PA40S1G8R063A | 2.15      |
|      |           |            | 63          | 50.0                 | 0-10                                | 3-6.5                                    | PA50S1G9R063A | 2.98      |
| DN50 | 2"        | 45         | 80          | 50.0                 | 0-16                                | 3-6.6                                    | PA50S1G9R080A | 3.56      |
|      |           |            | 100         | 50.0                 | 0-16                                | 3-5                                      | PA50S1G9R100A | 4.75      |
| DN65 | 2-1/2"    | 65         | 100         | 70.0                 | 0-10                                | 3-6                                      | PA65S1GTR100A | 5.50      |

## Flow Diagram





**Control Pressure & Operating Pressure Charts  
 for the Normally Closed Valves with Aluminum Actuators**



**PA Series - Normally Closed Valves**  
**Flow Direction UNDER Seat**  
**Anti Water Hammer Construction**

Model Numbers Shown are BSP threads



**304 Stainless Steel Actuators**  
**with 304 Stainless Steel Bodies**

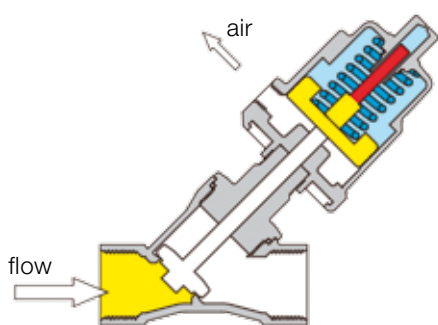


| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|------------------------------------|---------------|-----------|
| DN10 | 3/8"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA10SAG3S050S | 1.01      |
| DN15 | 1/2"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA15SAG4S050S | 1.03      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-10                                | 4.5                                | PA20SAG5S050S | 1.06      |
| DN25 | 1"        | 24         | 63          | 16.0                 | 0-8                                 | 4.5                                | PA25SAG6S063S | 2.05      |
| DN32 | 1-1/4"    | 31         | 80          | 24.0                 | 0-11                                | 4                                  | PA32SAG7S080S | 3.82      |
| DN40 | 1-1/2"    | 35         | 80          | 32.0                 | 0-8                                 | 4                                  | PA40SAG8S080S | 4.07      |
|      |           |            | 100         | 32.0                 | 0-16                                | 4                                  | PA40SAG8S100S | 4.61      |
| DN50 | 2"        | 45         | 100         | 50.0                 | 0-9                                 | 4                                  | PA50SAG9S100S | 5.16      |

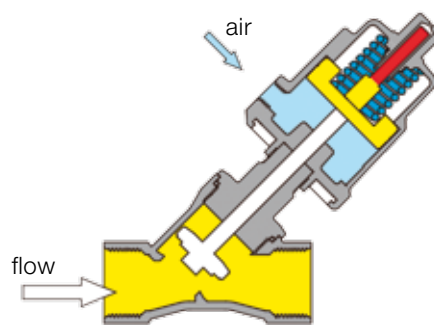
**304 Stainless Steel Actuators**  
**with 316L Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|------------------------------------|---------------|-----------|
| DN10 | 3/8"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA10SAG3R050S | 1.01      |
| DN15 | 1/2"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA15SAG4R050S | 1.03      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-10                                | 4.5                                | PA20SAG5R050S | 1.06      |
| DN25 | 1"        | 24         | 63          | 16.0                 | 0-8                                 | 4.5                                | PA25SAG6R063S | 2.05      |
| DN32 | 1-1/4"    | 31         | 80          | 24.0                 | 0-11                                | 4                                  | PA32SAG7R080S | 3.82      |
| DN40 | 1-1/2"    | 35         | 80          | 32.0                 | 0-8                                 | 4                                  | PA40SAG8R080S | 4.07      |
|      |           |            | 100         | 32.0                 | 0-16                                | 4                                  | PA40SAG8R100S | 4.61      |
| DN50 | 2"        | 45         | 100         | 50.0                 | 0-9                                 | 4                                  | PA50SAG9R100S | 5.16      |

**Flow Diagram**



Valve Closed



Valve Open

**PA Series - Normally Closed Valves  
Flow Direction UNDER Seat  
Anti Water Hammer Construction**

Model Numbers Shown are BSP threads



**Aluminium Actuators  
with 304 Stainless Steel Bodies**



| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|------------------------------------|---------------|-----------|
| DN10 | 3/8"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA10SAG3S050A | 0.75      |
| DN15 | 1/2"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA15SAG4S050A | 0.80      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-10                                | 4.5                                | PA20SAG5S050A | 0.90      |
| DN25 | 1"        | 24         | 63          | 16.0                 | 0-8                                 | 4.5                                | PA25SAG6S063A | 1.65      |
| DN32 | 1-1/4"    | 31         | 80          | 24.0                 | 0-11                                | 4                                  | PA32SAG7S080A | 2.80      |
| DN40 | 1-1/2"    | 35         | 80          | 32.0                 | 0-8                                 | 4                                  | PA40SAG8S080A | 3.10      |
|      |           |            | 100         | 32.0                 | 0-16                                | 4                                  | PA40SAG8S100A | 4.15      |
| DN50 | 2"        | 45         | 100         | 50.0                 | 0-9                                 | 4                                  | PA50SAG9S100A | 4.75      |

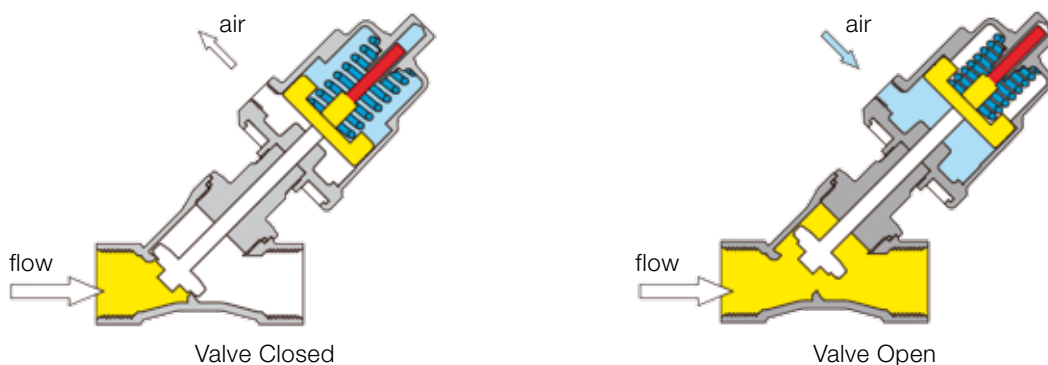
**Aluminium Actuators  
with 316L Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|------------------------------------|---------------|-----------|
| DN10 | 3/8"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA10SAG3R050A | 0.75      |
| DN15 | 1/2"      | 13         | 50          | 4.7                  | 0-16                                | 4.5                                | PA15SAG4R050A | 0.80      |
| DN20 | 3/4"      | 18         | 50          | 9.0                  | 0-10                                | 4.5                                | PA20SAG5R050A | 0.90      |
| DN25 | 1"        | 24         | 63          | 16.0                 | 0-8                                 | 4.5                                | PA25SAG6R063A | 1.65      |
| DN32 | 1-1/4"    | 31         | 80          | 24.0                 | 0-11                                | 4                                  | PA32SAG7R080A | 2.80      |
| DN40 | 1-1/2"    | 35         | 80          | 32.0                 | 0-8                                 | 4                                  | PA40SAG8R080A | 3.10      |
|      |           |            | 100         | 32.0                 | 0-16                                | 4                                  | PA40SAG8R100A | 4.15      |
| DN50 | 2"        | 45         | 100         | 50.0                 | 0-9                                 | 4                                  | PA50SAG9R100A | 4.75      |

**Control Pressure & Operating Pressure**

Charts do not apply for Valves with flow direction Under Seat. A minimum pressure as noted above is all that is required, up to a maximum of 10 bar.

**Flow Diagram**



**PA Series - Compact Design Normally Closed Valves  
Flow Direction OVER Seat**

Model Numbers Shown are BSP threads

**Media Temperature - 10°C to + 100°C**



**304 Stainless Steel Actuators with 304 Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA10C3G3S032S | 0.58      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA15C3G4S032S | 0.60      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-14                                | 4.5-6                                    | PA20C3G5S032S | 0.65      |

**304 Stainless Steel Actuators with 316L Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA10C3G3R032S | 0.58      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA15C3G4R032S | 0.60      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-14                                | 4.5-6                                    | PA20C3G5R032S | 0.65      |

**Media Temperature - 10°C to + 180°C**

**304 Stainless Steel Actuators with 304 Stainless Steel Bodies**

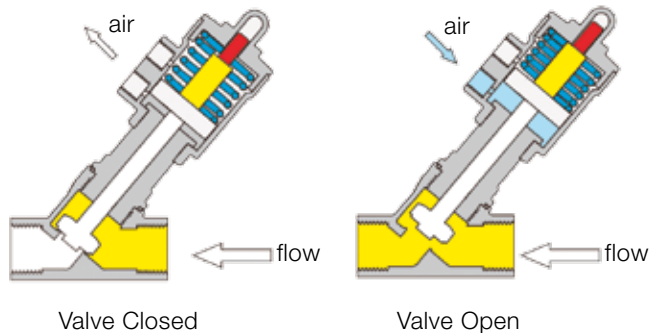
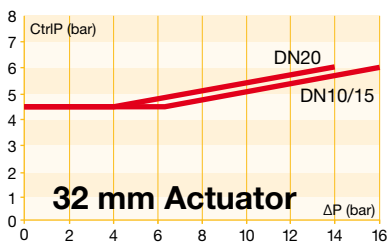
| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA10C1G3S032S | 0.63      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA15C1G4S032S | 0.65      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-14                                | 4.5-6                                    | PA20C1G5S032S | 0.71      |

**304 Stainless Steel Actuators with 316L Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA10C1G3R032S | 0.63      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-16                                | 4.5-6                                    | PA15C1G4R032S | 0.65      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-14                                | 4.5-6                                    | PA20C1G5R032S | 0.71      |

**Control Pressure & Operating Pressure**

**Flow Diagram**



**PA Series - Compact Design Normally Closed Valves  
Flow Direction UNDER Seat**

Model Numbers Shown are BSP threads

Media Temperature - 10°C to + 100°C



**304 Stainless Steel Actuators with 304 Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA10C4G3S032S | 0.58      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA15C4G4S032S | 0.60      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-4                                 | 5-6                                      | PA20C4G5S032S | 0.65      |

**304 Stainless Steel Actuators with 316L Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA10C4G3R032S | 0.58      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA15C4G4R032S | 0.60      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-4                                 | 5-6                                      | PA20C4G5R032S | 0.65      |

Media Temperature - 10°C to + 180°C

**304 Stainless Steel Actuators with 304 Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA10C2G3S032S | 0.63      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA15C2G4S032S | 0.65      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-4                                 | 5-6                                      | PA20C2G5S032S | 0.71      |

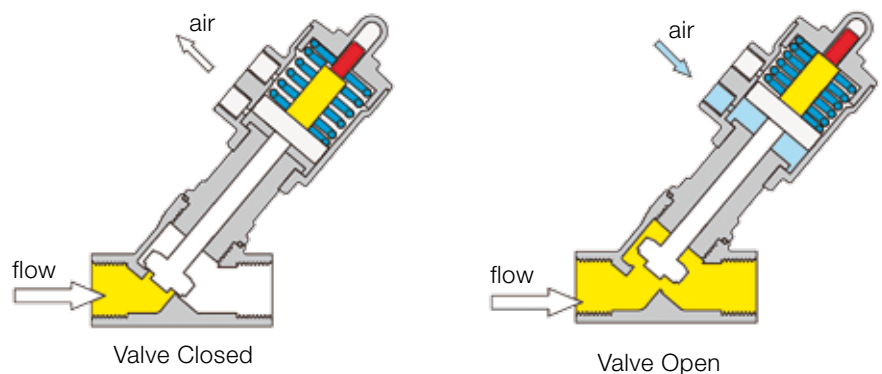
**304 Stainless Steel Actuators with 316L Stainless Steel Bodies**

| Size | Port Size | Orifice mm | Actuator mm | KV m <sup>3</sup> /h | Operating Pressure Differential bar | Minimum Pilot Control Pressure Range bar | Order code    | Weight Kg |
|------|-----------|------------|-------------|----------------------|-------------------------------------|--|---------------|-----------|
| DN10 | 3/8"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA10C2G3R032S | 0.63      |
| DN15 | 1/2"      | 13         | 32          | 4.7                  | 0-6                                 | 5-6                                      | PA15C2G4R032S | 0.65      |
| DN20 | 3/4"      | 15         | 32          | 5.4                  | 0-4                                 | 5-6                                      | PA20C2G5R032S | 0.71      |

**Control Pressure & Operating Pressure**

Charts do not apply for Valves with flow direction Under Seat. A minimum pressure as noted above is all that is required, up to 10 bar maximum.

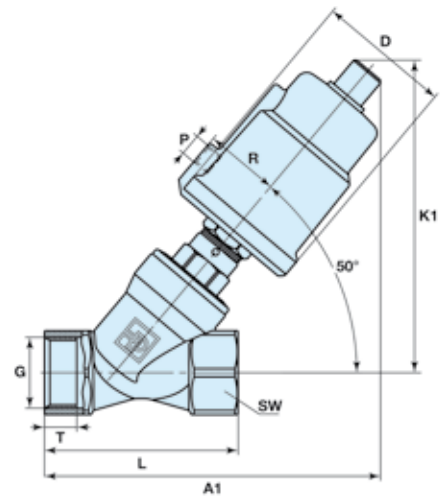
**Flow Diagram**



PA Series - Drawings and Dimensions

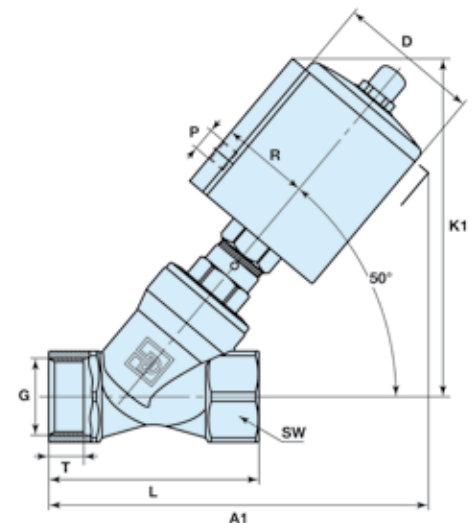
Stainless Steel Actuators Sizes 40, 50, 63, 80, 100 mm

| Type  | Actuator | D    | R    | P    | K1  | A1  | G      | L   | T    | SW |         |
|-------|----------|------|------|------|-----|-----|--------|-----|------|----|---------|
| DN10  | 40       | 50.5 | 27   | G1/8 | 116 | 121 | G3/8   | 60  | 10   | 22 | hexagon |
|       | 50       | 62   | 34   | G1/8 | 130 | 133 | G3/8   | 60  | 10   | 22 | hexagon |
| DN15  | 40       | 50.5 | 27   | G1/8 | 118 | 124 | G1/2   | 65  | 11.5 | 25 | hexagon |
|       | 50       | 62   | 34   | G1/8 | 131 | 135 | G1/2   | 65  | 11.5 | 25 | hexagon |
| DN 20 | 50       | 62   | 34   | G1/8 | 134 | 141 | G3/4   | 75  | 14   | 31 | hexagon |
| DN25  | 50       | 62   | 34   | G1/8 | 141 | 153 | G1     | 90  | 15   | 39 | hexagon |
|       | 63       | 77   | 41.5 | G1/8 | 164 | 175 | G1     | 90  | 15   | 39 | hexagon |
| DN32  | 63       | 77   | 41.5 | G1/8 | 170 | 188 | G1-1/4 | 110 | 18   | 50 | octagon |
|       | 80       | 98   | 52   | G1/4 | 184 | 205 | G1-1/4 | 110 | 18   | 50 | octagon |
| DN40  | 63       | 77   | 41.5 | G1/8 | 181 | 201 | G1-1/2 | 120 | 18   | 56 | octagon |
|       | 80       | 98   | 52   | G1/4 | 195 | 217 | G1-1/2 | 120 | 18   | 56 | octagon |
| DN50  | 63       | 77   | 41.5 | G1/8 | 189 | 216 | G2     | 150 | 22   | 68 | octagon |
|       | 80       | 98   | 52   | G1/4 | 203 | 233 | G2     | 150 | 22   | 68 | octagon |
| DN65  | 100      | 121  | 63   | G1/4 | 221 | 250 | G2     | 150 | 22   | 68 | octagon |
|       | 100      | 121  | 63   | G1/4 | 248 | 285 | G2-1/2 | 180 | 25   | 85 | octagon |



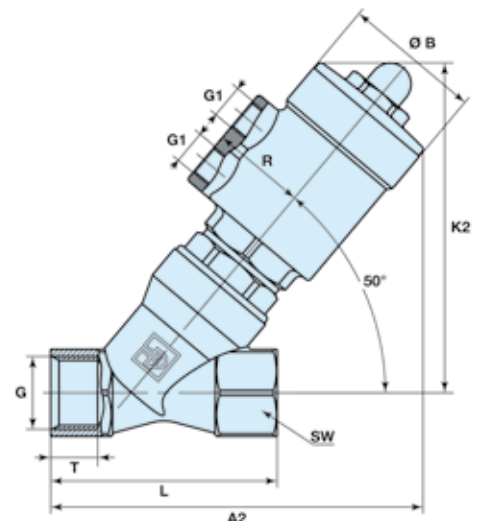
Aluminum Actuators Sizes 50, 63, 80, 100 mm

| Type | Actuator | D   | R  | P    | K1  | A1  | G      | L   | T    | SW |         |
|------|----------|-----|----|------|-----|-----|--------|-----|------|----|---------|
| DN10 | 50       | 61  | 38 | G1/8 | 132 | 141 | G3/8   | 60  | 10   | 22 | hexagon |
| DN15 | 50       | 61  | 38 | G1/8 | 133 | 144 | G1/2   | 65  | 11.5 | 25 | hexagon |
| DN20 | 50       | 61  | 38 | G1/8 | 136 | 150 | G3/4   | 75  | 14   | 31 | hexagon |
| DN25 | 50       | 61  | 38 | G1/8 | 144 | 162 | G1     | 90  | 15   | 39 | hexagon |
|      | 63       | 75  | 45 | G1/8 | 167 | 183 | G1     | 90  | 15   | 39 | hexagon |
| DN32 | 63       | 75  | 45 | G1/8 | 173 | 196 | G1-1/4 | 110 | 18   | 50 | octagon |
|      | 80       | 94  | 54 | G1/4 | 192 | 214 | G1-1/4 | 110 | 18   | 50 | octagon |
| DN40 | 63       | 75  | 45 | G1/8 | 184 | 209 | G1-1/2 | 120 | 18   | 56 | octagon |
|      | 80       | 94  | 54 | G1/4 | 203 | 226 | G1-1/2 | 120 | 18   | 56 | octagon |
| DN50 | 100      | 115 | 64 | G1/4 | 223 | 245 | G1-1/2 | 120 | 18   | 56 | octagon |
|      | 63       | 75  | 45 | G1/8 | 192 | 224 | G2     | 150 | 22   | 68 | octagon |
| DN65 | 80       | 94  | 54 | G1/4 | 211 | 242 | G2     | 150 | 22   | 68 | octagon |
|      | 100      | 115 | 64 | G1/4 | 231 | 260 | G2     | 150 | 22   | 68 | octagon |
| DN65 | 100      | 115 | 64 | G1/4 | 257 | 294 | G2-1/2 | 180 | 25   | 85 | octagon |



Stainless Steel Actuators Size 32 mm

| Type | Actuator | Ø B  | R  | G1   | K2                    |                       | A2                    |                       | G    | L  | T    | SW |         |
|------|----------|------|----|------|-----------------------|-----------------------|-----------------------|-----------------------|------|----|------|----|---------|
|      |          |      |    |      | Type C1/C2<br>(180°C) | Type C3/C4<br>(100°C) | Type C1/C2<br>(180°C) | Type C3/C4<br>(100°C) |      |    |      |    |         |
| DN10 | 32       | 39.6 | 27 | G1/8 | 107                   | 94                    | 117                   | 106                   | G3/8 | 60 | 10   | 22 | hexagon |
| DN15 | 32       | 39.6 | 27 | G1/8 | 109                   | 96                    | 119                   | 108                   | G1/2 | 65 | 11.5 | 25 | hexagon |
| DN20 | 32       | 39.6 | 27 | G1/8 | 112                   | 100                   | 126                   | 115                   | G3/4 | 75 | 14   | 31 | hexagon |



**Solenoid Valves for Controlling the PA Angle Seat Valves**

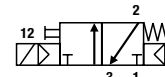
**3 Way Direct Acting Pilot Control Valves**

**Banjo Valve - Available as Separate Components**

**Banjo Valves G1/4" & G1/8" Series with Aluminium Body**

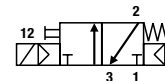
**Solenoid Operated Versions - B14-B04 Versions with 22 mm Coil**

| Port Size | Orifice | Q <sub>N</sub> | Admissible differential pressure (bar) |      | Max. admissible fluid temperature (°C) | Seat disc | Reference number |         |      | Consumption Power (Watt) |    | Weight (g) | Dim. Ref. |
|-----------|---------|----------------|--|------|--|-----------|------------------|---------|------|--------------------------|----|------------|-----------|
|           |         |                | min                                    | max. |  |           | Valve            | Housing | Coil | DC                       | AC |            |           |
| Banjo     | G       | mm             | l/min                                  | min  | DC=                                    | AC~       |                  |         |      |                          |    |            |           |



**3/2 Solenoid operated - Spring return (monostable)**

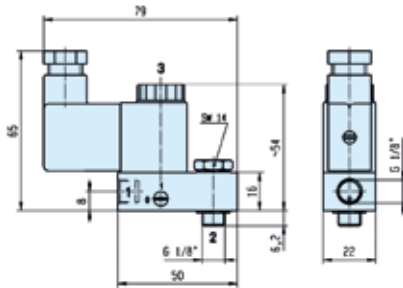
|     |     |     |    |   |    |    |    |     |        |   |        |   |   |     |    |
|-----|-----|-----|----|---|----|----|----|-----|--------|---|--------|---|---|-----|----|
| 1/8 | 1/8 | 1.2 | 50 | 0 | 10 | 10 | 50 | NBR | 131B14 | - | 496131 | 3 | 3 | 140 | 26 |
| 1/8 | 1/8 | 1.2 | 50 | 0 | 10 | 10 | 50 | NBR | 131B14 | - | 496482 | 3 | 3 | 150 | 26 |
| 1/8 | 1/8 | 1.2 | 50 | 0 | 10 | 10 | 50 | NBR | 131B14 | - | 496637 | 3 | 3 | 150 | 26 |
| 1/8 | 1/8 | 1.2 | 50 | 0 | 10 | -  | 50 | NBR | 131B14 | - | 482605 | 5 | - | 170 | 26 |



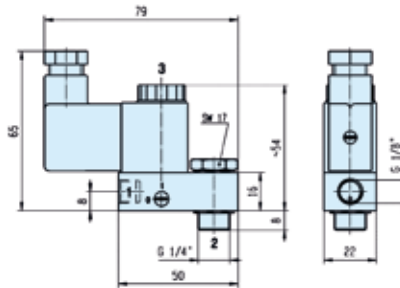
**3/2 Solenoid operated - Spring return (monostable)**

|     |     |     |    |   |    |    |    |     |        |   |        |   |   |     |    |
|-----|-----|-----|----|---|----|----|----|-----|--------|---|--------|---|---|-----|----|
| 1/4 | 1/8 | 1.2 | 50 | 0 | 10 | 10 | 50 | NBR | 131B04 | - | 496131 | 3 | 3 | 160 | 27 |
| 1/4 | 1/8 | 1.2 | 50 | 0 | 10 | 10 | 50 | NBR | 131B04 | - | 496482 | 3 | 3 | 175 | 27 |
| 1/4 | 1/8 | 1.2 | 50 | 0 | 10 | 10 | 50 | NBR | 131B04 | - | 496637 | 3 | 3 | 175 | 27 |
| 1/4 | 1/8 | 1.2 | 50 | 0 | 10 | -  | 50 | NBR | 131B04 | - | 482605 | 5 | - | 190 | 27 |

**Dimensions Reference 26**



**Dimensions Reference 27**



**Coils 22 mm for Banjo Valves Series**

These coils with connection for 2 P+G DIN 43650 B plug are encapsulated in synthetic material, conform to the IEC/CENELEC safety standards and comply with European low voltage directive 2006/95/EC. Banjo Valve bodies conform to the terms of the directive 94/9/CE specific to non electrical equipment for use within potentially explosive environments - Please select appropriate Coil for Safe Area or ATEX zones 1/21 or 2/22 in the following table.

|  | Available Voltages | Safe area without DIN plug Code | Safe area with DIN plug Code | For Zone 2/22          |  | For Zone 1/21      |  |
|--|--------------------|---------------------------------|------------------------------|------------------------|--|--------------------|--|
|  |                    |                                 |                              | II 3 G-Ex nc AC IIC T5 | II 3 D-Ex tc AC IIIC - T 95°C code with DIN plug | II 2 G-Ex mb II T4 | II 2 D-Ex tb IIIC - T 130°C code includes DIN plug and 1.5 m cable |
| I Power: 3 W or 5 W                      | 12 VDC             | <b>496131 C1</b>                | <b>496482 C1</b>             | <b>496637 C1</b>       | <b>482605 C1</b>                                 |                    |  |
| I Insulation Class: F (155°C)            | 24 VDC             | <b>496131 C2</b>                | <b>496482 C2</b>             | <b>496637 C2</b>       | <b>482605 C2</b>                                 |                    |  |
| I Degree of Protection: IP65 (with plug) | 48 VDC             | <b>496131 C4</b>                | <b>496482 C4</b>             | <b>496637 C4</b>       | -  |                    |  |
| I Duty Cycle: 100% ED                    | 110 VDC            | <b>496131 C5</b>                | <b>496482 C5</b>             | <b>496637 C5</b>       | -  |                    |  |
|  | 24/50-60 VAC       | <b>496131 P0</b>                | <b>496482 P0</b>             | <b>496637 P0</b>       | -  |                    |  |
|  | 48/50-60 VAC       | <b>496131 S4</b>                | <b>496482 S4</b>             | <b>496637 S4</b>       | -  |                    |  |
|  | 110/50-60 VAC      | <b>496131 P2</b>                | <b>496482 P2</b>             | <b>496637 P2</b>       | -  |                    |  |
|  | 115/60 VAC         | <b>496131 K8</b>                | <b>496482 K8</b>             | <b>496637 K8</b>       | -  |                    |  |
|  | 230/50-60 VAC      | <b>496131 P9</b>                | <b>496482 P9</b>             | <b>496637 P9</b>       | -  |                    |  |

**How to Order**

Valve Reference Number - Coil Reference - Voltage code = Order code

**Example: 131B14 - 496131 C2** - Valves and coils may be ordered also separately.

Highly accurate units, suitable for applications such as instrumentation where precision regulation is required.



- High repeatability
- High relief capacity on R220 model
- High flow capacity on R230 model



### Operating information

|                           |                     |
|---------------------------|---------------------|
| Max operating pressure    | 10 bar              |
| Max operating temperature | 66°C                |
| Repeatability:            | R210 model 0.3 mbar |
|                           | R220 model 0.3 mbar |
|                           | R230 model 0.6 mbar |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

|   | Port size | Reduced Pressure range | Flow l/min | Relief capacity l/min | Order code      |
|---|-----------|------------------------|------------|-----------------------|-----------------|
|  | G1/4      | 0.13 - 2.7             | 396        | 57                    | <b>R210G02A</b> |
|   | G1/4      | 0.13 - 8.1             | 396        | 57                    | <b>R210G02C</b> |
|   | G1/4      | 0.13 - 8.1             | 396        | 282                   | <b>R220G02C</b> |
|  | G1/4      | 0 - 0.13               | 2280       | 114                   | <b>R230G02E</b> |
|   | G1/4      | 0 - 2                  | 2280       | 114                   | <b>R230G02B</b> |
|   | G1/4      | 0.13 - 4               | 2280       | 114                   | <b>R230G02C</b> |
|   | G1/4      | 0.13 - 10              | 2280       | 114                   | <b>R230G02D</b> |

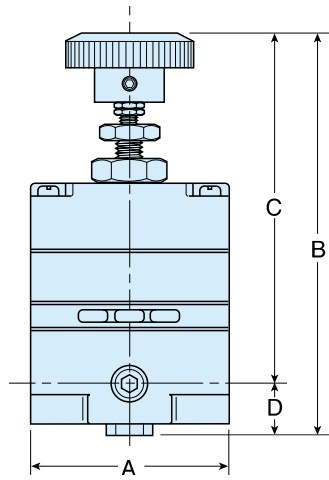
### Mounting brackets

| Series      | Order code         |
|-------------|--------------------|
| R210 / R220 | <b>446-707-045</b> |
| R230        | <b>446-707-025</b> |



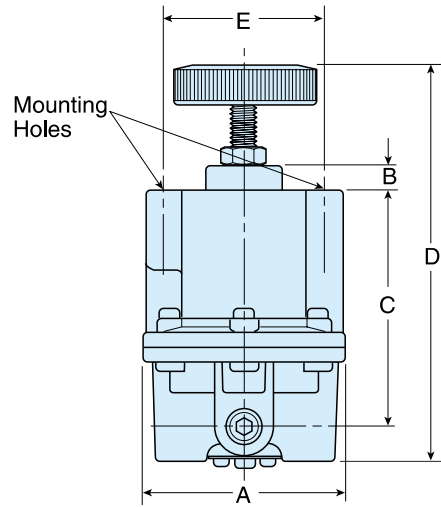
**Dimensions (mm)**

**R210 / 220 High Precision Regulator**



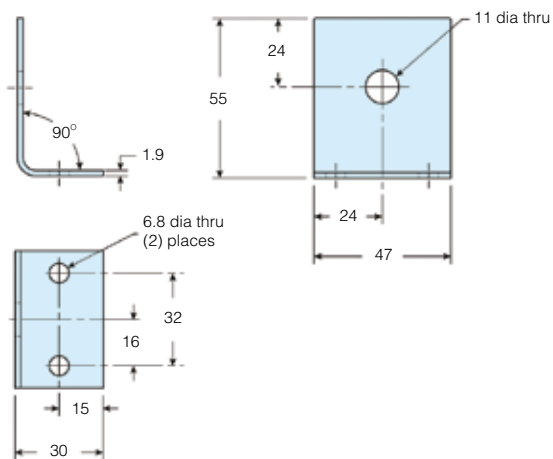
| A    | C     | D    | E      |
|------|-------|------|--------|
| 52mm | 110mm | 97mm | 13.5mm |

**R230 High Flow Precision Regulator**

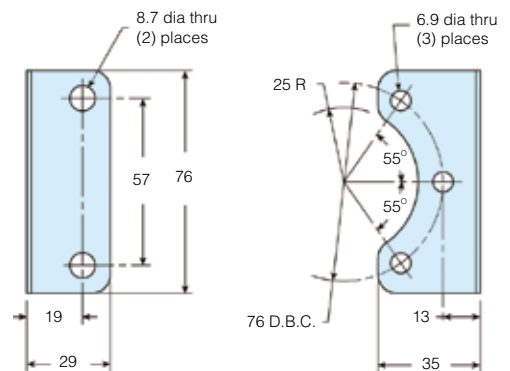


| A    | B    | C    | D     | E    |
|------|------|------|-------|------|
| 76mm | 10mm | 86mm | 154mm | 57mm |

**Mounting bracket - 446-707-045**



**Mounting bracket - 446-707-025**



- Compact body ported units
- Port sizes G<sup>1</sup>/<sub>8</sub> and G<sup>1</sup>/<sub>4</sub>
- Unique deflector plate ensuring maximum water and particulate removal
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.



### Operating information

|                      |                |
|----------------------|----------------|
| Working pressure:    | Max 10 bar     |
| Working temperature: | 0 °C to +52 °C |

### Flow characteristics

|             |                  |         |
|-------------|------------------|---------|
| <b>Flow</b> | Filter           | 11 l/s  |
|             | Regulator        | 9,3 l/s |
|             | Filter Regulator | 9,3 l/s |
|             | Lubricator       | 10 l/s  |

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

### Filters - 5 micron element, transparent bowl

| Port size | Description      | Order Code      |
|-----------|------------------|-----------------|
| G1/8      | Manual drain     | <b>14F01BB1</b> |
| G1/8      | Auto drain       | <b>14F05BB1</b> |
| G1/4      | Manual drain     | <b>14F11BB1</b> |
| G1/4      | Auto drain       | <b>14F15BB1</b> |
|           | Mounting bracket | <b>PS417BP</b>  |

### Regulators - relieving type - non relieving options available

| Port size | Description                                       | Order Code       |
|-----------|---|------------------|
| G1/8      | 2 bar   | <b>14R010FC1</b> |
| G1/8      | 4 bar   | <b>14R011FC1</b> |
| G1/8      | 8 bar   | <b>14R013FC1</b> |
| G1/4      | 2 bar   | <b>14R110FC1</b> |
| G1/4      | 4 bar   | <b>14R111FC1</b> |
| G1/4      | 8 bar   | <b>14R113FC1</b> |
|           | Mounting bracket<br>(Includes panel mounting nut) | <b>PS417BP</b>   |

### Lubricators - transparent bowl

| Port size | Order Code       |
|-----------|------------------|
| G1/8      | <b>04L00GB1</b>  |
| G1/4      | <b>04L10GB1</b>  |
|           | Mounting bracket |
|           | <b>PS419</b>     |

### Pressure Gauges

|           | Order Code         |
|-----------|--------------------|
| 0 - 2 bar | <b>P3D-KAB1AYN</b> |
| 0 - 4 bar | <b>P3D-KAB1ALN</b> |
| 0 - 8 bar | <b>P3D-KAB1ANN</b> |

### Coalescing Filters - 0.01 micron element

| Port size        | Description      | Order Code      |
|------------------|------------------|-----------------|
| <b>Poly bowl</b> |                  |                 |
| G1/8             | Manual drain     | <b>10F01ED1</b> |
| G1/8             | Auto drain       | <b>10F05ED1</b> |
| G1/4             | Manual drain     | <b>10F11ED1</b> |
| G1/4             | Auto drain       | <b>10F15ED1</b> |
|                  | Mounting bracket | <b>PS417BP</b>  |

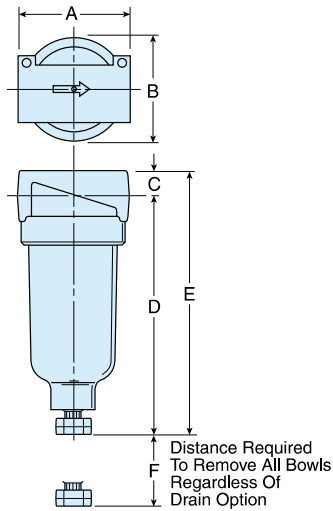
### Filter/Regulators

- transparent bowl - 2 and 4 bar and non relieving options available

| Port size | Description                                       | Order Code         |
|-----------|---|--------------------|
| G1/8      | 2 bar, manual drain                               | <b>14E01B10FC1</b> |
| G1/8      | 2 bar, auto drain                                 | <b>14E05B10FC1</b> |
| G1/4      | 2 bar, manual drain                               | <b>14E11B10FC1</b> |
| G1/4      | 2 bar, auto drain                                 | <b>14E15B10FC1</b> |
| G1/8      | 4 bar, manual drain                               | <b>14E01B11FC1</b> |
| G1/8      | 4 bar, auto drain                                 | <b>14E05B11FC1</b> |
| G1/4      | 4 bar, manual drain                               | <b>14E11B11FC1</b> |
| G1/4      | 4 bar, auto drain                                 | <b>14E15B11FC1</b> |
| G1/8      | 8 bar, manual drain                               | <b>14E01B13FC1</b> |
| G1/8      | 8 bar, auto drain                                 | <b>14E05B13FC1</b> |
| G1/4      | 8 bar, manual drain                               | <b>14E11B13FC1</b> |
| G1/4      | 8 bar, auto drain                                 | <b>14E15B13FC1</b> |
|           | Mounting bracket<br>(Includes panel mounting nut) | <b>PS417BP</b>     |

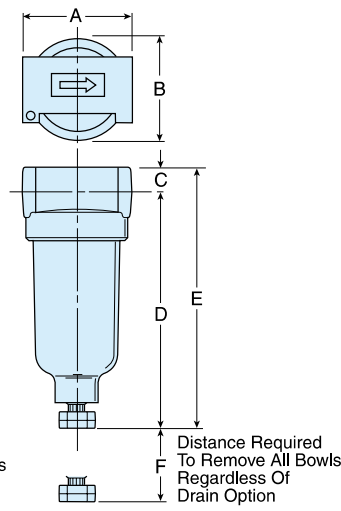
**Dimensions (mm)**

**Filters**



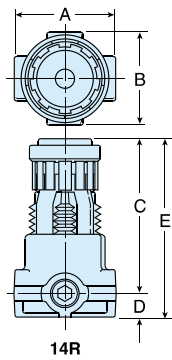
| A  | B  | C  | D  | D <sup>+</sup> | E   | E <sup>+</sup> | F  |
|----|----|----|----|----------------|-----|----------------|----|
| 43 | 39 | 10 | 97 | 99             | 107 | 108            | 41 |

**Coalescing Filters**



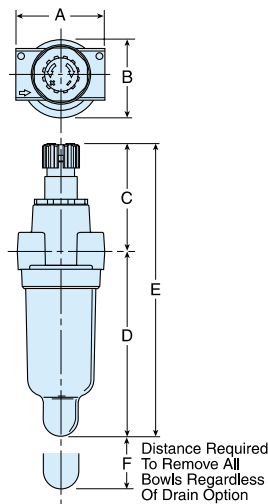
| A  | B    | C  | D  | D <sup>+</sup> | E   | E <sup>+</sup> | F  |
|----|------|----|----|----------------|-----|----------------|----|
| 43 | 39,6 | 10 | 97 | 93             | 107 | 103            | 41 |

**Regulators**



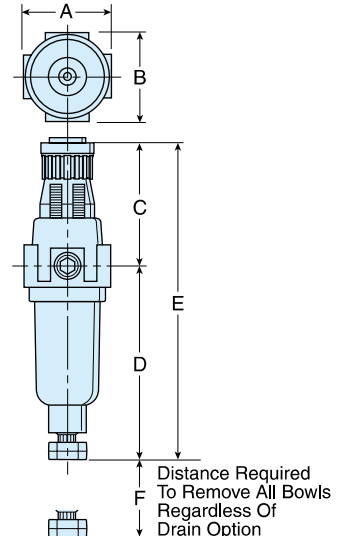
| 14R     | A  | B  | C    | D  | E   |    |    |   |    |
|---------|----|----|------|----|-----|----|----|---|----|
| 14R     | 42 | 40 | 63,5 | 10 | 731 |    |    |   |    |
| 14R**L* | A  | B  | C    | D  | E   |    |    |   |    |
| 14R**L* | 42 | 40 | 57,9 | 10 | 68  |    |    |   |    |
| 14RM    | A  | B  | C    | D  | E   | F  | G  | H | J  |
| 14RM    | 38 | 38 | 60   | 13 | 73  | 30 | 15 | 8 | 18 |

**Lubricators**



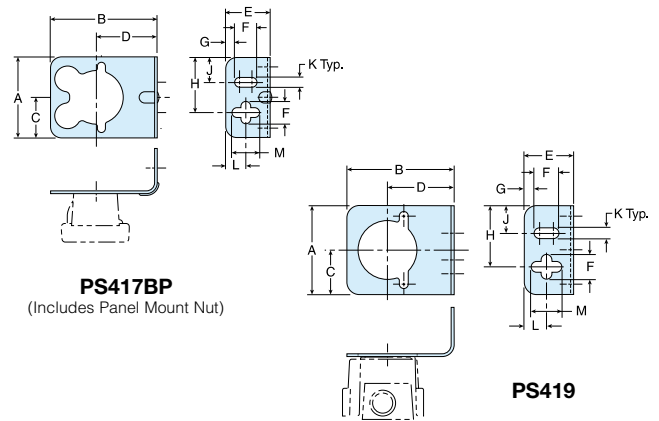
| A  | B  | C  | D  | D <sup>+</sup> | E   | E <sup>+</sup> | F  |
|----|----|----|----|----------------|-----|----------------|----|
| 44 | 40 | 55 | 92 | 96             | 147 | 151            | 41 |

**Filter/Regulators**



| A  | B  | C  | D  | D <sup>+</sup> | E   | E <sup>+</sup> | F  |
|----|----|----|----|----------------|-----|----------------|----|
| 41 | 40 | 61 | 96 | 92             | 158 | 154            | 41 |

**Mounting Bracket Kits**



**PS417BP - 10F, 14F, 14R, 14E**

| A  | B  | C  | D  | E  | F  | G | H  | J  | K | L  | M  |
|----|----|----|----|----|----|---|----|----|---|----|----|
| 46 | 60 | 23 | 34 | 25 | 13 | 5 | 31 | 14 | 6 | 11 | 16 |

**PS419 - 04L**

| A  | B  | C  | D  | E  | F  | G | H  | J  | K | L  | M  |
|----|----|----|----|----|----|---|----|----|---|----|----|
| 46 | 55 | 23 | 34 | 25 | 13 | 5 | 31 | 14 | 6 | 11 | 16 |

**Service kits**

| Description                    | Order Code     |
|--------------------------------|----------------|
| 5 micron particulate element   | <b>PS403P</b>  |
| 0.01 micron coalescing element | <b>PS446P</b>  |
| Poly bowl with manual drain    | <b>PS404P</b>  |
| Poly bowl with pulse drain     | <b>PS408BP</b> |
| Lubricator bowl                | <b>PS421P</b>  |
| <b>Regulator</b>               |                |
| Relieving type                 | <b>PS422P</b>  |
| Non-relieving type             | <b>PS428P</b>  |

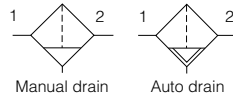
The range of Stainless Steel FRLs are ideal for use in the food industry, the petrochemical or process industries or any application in a particularly harsh or aggressive environment.

- Suitable for Marine & Offshore applications
- Chemical / Petroleum and process industries
- Coalescing filters are designed for removing oil and water aerosols down to 0.01µ
- Suitable for food industry applications



| Operating information   |  |
|---|--|
| Max operating pressure  | 20 bar<br>12 bar when fitted with auto-drain                                   |
| Max operating temperature   | Regulator 65°C<br>Filter + Regulator 80°C,<br>50°C when fitted with auto-drain |
| For more information see <a href="http://www.parker.com/euro_pneumatic">www.parker.com/euro_pneumatic</a> |  |

**Particulate Filter**



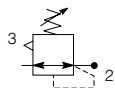
| Port size | Flow l/min @ 7 bar | Filter element | Order code with manual drain | Order code with auto drain |
|-----------|--------------------|----------------|------------------------------|----------------------------|
| G1/4      | 660                | 20µ            | <b>PF504G02DHSS</b>          |                            |
| G1/2      | 1800               | 40µ            | <b>PF10G04DJSS</b>           | <b>PF10G04DJRSS</b>        |

\* For 5µ filter element substitute **H** or **J** with **G**

**Coalescing Filter**

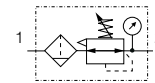
| Port size | Flow l/min @ 7 bar | Filter element | Order code with manual drain | Order code with auto drain |
|-----------|--------------------|----------------|------------------------------|----------------------------|
| G1/4      | 240                | 0.3µ           | <b>PF501G02DHSS</b>          |                            |
| G1/2      | 480                | 0.01µ          | <b>PF11G04DJSS</b>           | <b>PF11G04DJRSS</b>        |

**Regulator**



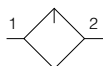
| Port size                                 | Flow l/min @ 7 bar | Order code fitted with 0-8.5 bar spring  |
|---|--------------------|--|
| G1/4 Plastic bonnet/knob Full S/S version | 450                | <b>PR364G02CSS</b><br><b>PR354G02CSS</b> |
| G1/2 Plastic bonnet/knob Full S/S version | 2820               | <b>PR10G04CSS</b><br><b>PR11G04CSS</b>   |

**Filter/Regulator**



| Port size                                 | Flow l/min @ 7 bar | Order code fitted with 0-8.5 bar spring      |
|---|--------------------|--|
| G1/4 Plastic bonnet/knob Full S/S version | 450                | <b>PB548G02DHCSS</b><br><b>PB558G02DHCSS</b> |
| G1/2 Plastic bonnet/knob Full S/S version | 1800               | <b>PB11G04DJCSS</b><br><b>PB12G04DJCSS</b>   |

**Lubricator**



| Port size | Flow l/min @ 7 bar | Order code        |
|-----------|--------------------|-------------------|
| G1/2      | 3000               | <b>PL10G04DSS</b> |

Panel mounting nut for G1/4: **PR05X51SS**  
G1/2: **PR10X51SS**

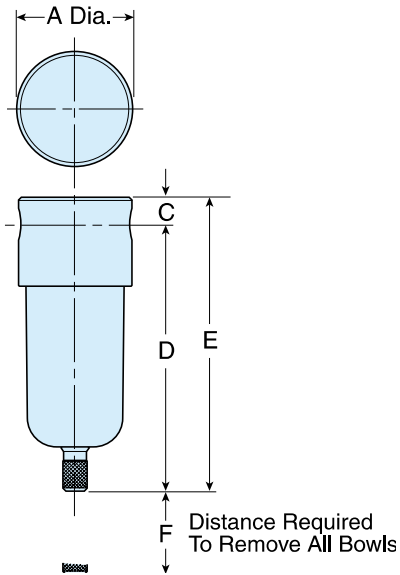
**Connectors**

| Port size | Order code    |
|-----------|---------------|
| G1/4      | <b>AC-2SS</b> |
| G1/2      | <b>AC-4SS</b> |

|                                       |                                  |
|---------------------------------------|----------------------------------|
| <b>Stainless steel pressure gauge</b> | <b>M1/4G40S-10 (0 to 10 bar)</b> |
|---------------------------------------|----------------------------------|

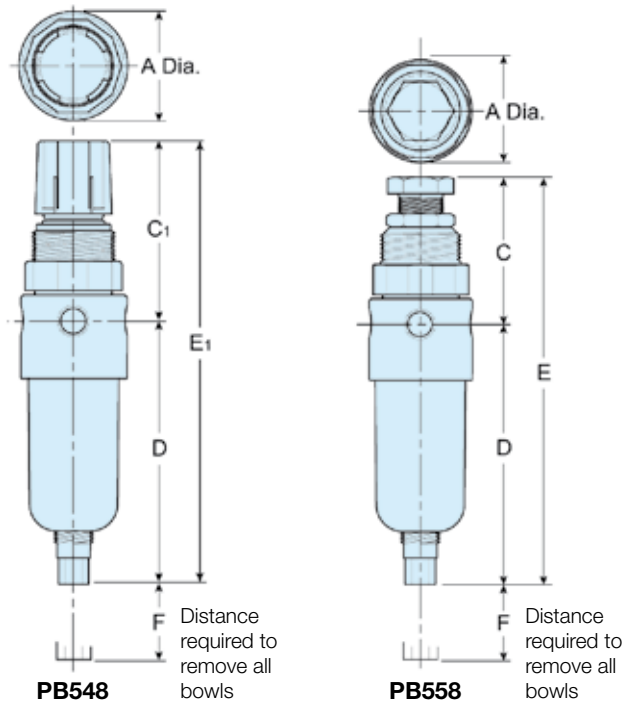
**Dimensions (mm) - 1/4"**

**Filters**  
**Coalescing Filters**



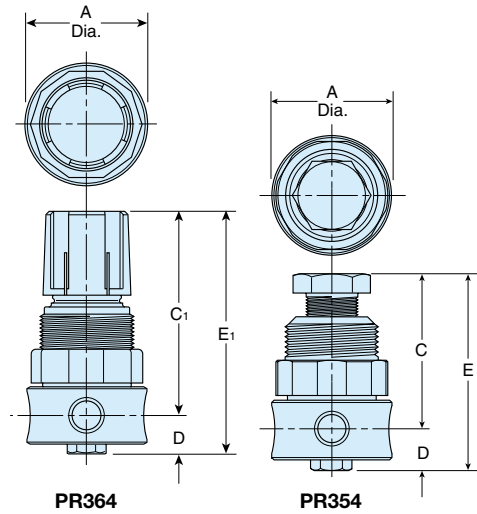
| A    | C   | D    | E     | F    |
|------|-----|------|-------|------|
| 40mm | 8mm | 94mm | 102mm | 40mm |

**Filter/Regulators**



| A    | C    | C <sub>1</sub> | D    | E    | E <sub>1</sub> | F    |
|------|------|----------------|------|------|----------------|------|
| 40mm | 55mm | 67mm           | 92mm | 78mm | 147mm          | 40mm |

**Regulators**



| A    | C    | C <sub>1</sub> | D    | E    | E <sub>1</sub> |
|------|------|----------------|------|------|----------------|
| 40mm | 51mm | 65mm           | 13mm | 64mm | 78mm           |

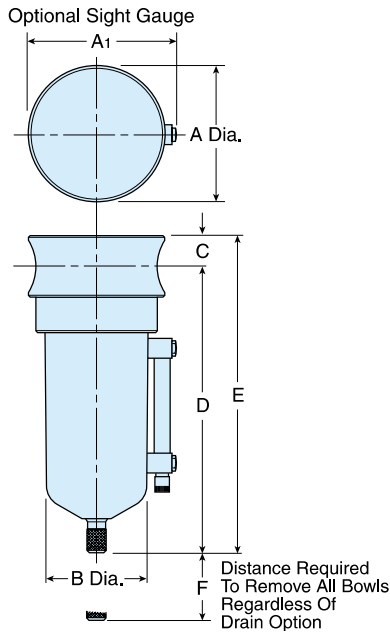
**Service kits**

| Port size                | Description                    | Order Code       |
|--------------------------|--------------------------------|------------------|
| <b>Filter</b>            |                                |                  |
| 1/4                      | 20 micron particulate element  | <b>EK504Y</b>    |
| 1/4                      | 5 micron particulate element   | <b>EK504VY</b>   |
| 1/2                      | 40 micron particulate element  | <b>EK55J</b>     |
| 1/2                      | 5 micron particulate element   | <b>EK55G</b>     |
| <b>Coalescing Filter</b> |                                |                  |
| 1/4                      | 0.3 micron coalescing element  | <b>EKF501H</b>   |
| 1/2                      | 0.01 micron coalescing element | <b>EKF71</b>     |
| <b>Regulator</b>         |                                |                  |
| 1/4                      | Relieving type                 | <b>RKR364YSS</b> |
| 1/4                      | Non-relieving type             | <b>RKR36KYSS</b> |
| 1/2                      | Relieving type                 | <b>RKR10YSS</b>  |
| 1/2                      | Non-relieving type             | <b>RKR10KYSS</b> |
| <b>Filter/Regulator</b>  |                                |                  |
| 1/4                      | 20 micron particulate element  | <b>EK504Y</b>    |
| 1/4                      | 5 micron particulate element   | <b>EK504VY</b>   |
| 1/2                      | 40 micron particulate element  | <b>EKF10Y</b>    |
| 1/2                      | 5 micron particulate element   | <b>EKF10VY</b>   |
| <b>Lubricator</b>        |                                |                  |
|                          | Sight dome kit                 | <b>RKL10SS</b>   |

Dimensions (mm) - 1/2"

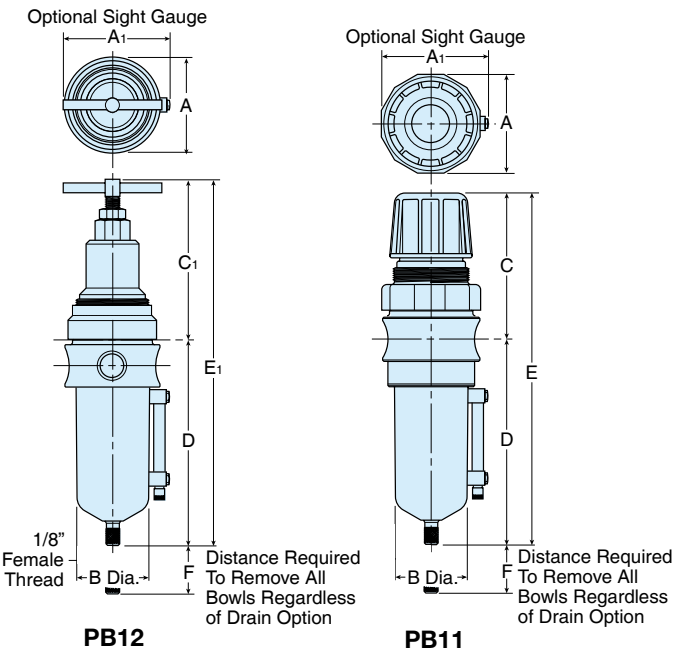
Filters

Coalescing Filters



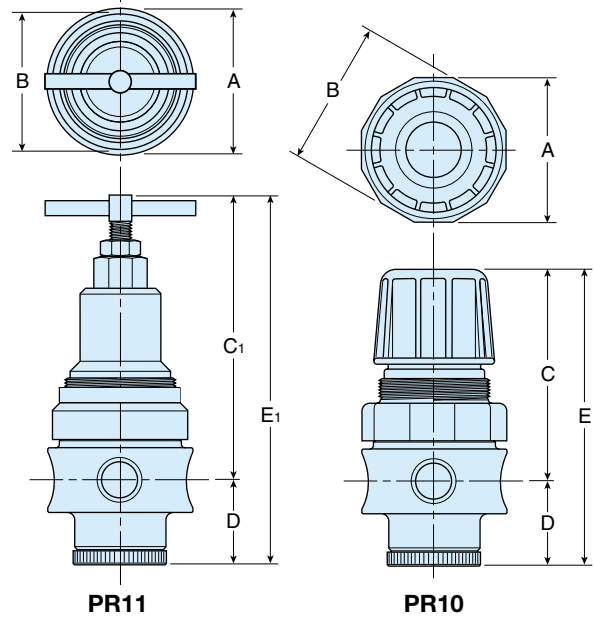
| A    | A <sub>1</sub> | B    | C    | D     | E     | F    |
|------|----------------|------|------|-------|-------|------|
| 60mm | 64mm           | 44mm | 14mm | 127mm | 141mm | 54mm |

Filter/Regulators



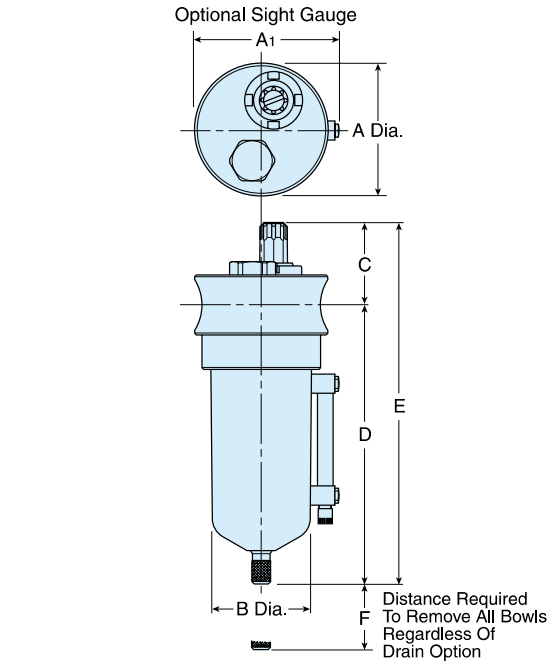
| A    | A <sub>1</sub> | B    | C    | C <sub>1</sub> | D     | E     | E <sub>1</sub> | F    |
|------|----------------|------|------|----------------|-------|-------|----------------|------|
| 60mm | 64mm           | 44mm | 91mm | 119mm          | 127mm | 218mm | 246mm          | 54mm |

Regulators



| A    | B    | C    | C <sub>1</sub> | D    | E     | E <sub>1</sub> |
|------|------|------|----------------|------|-------|----------------|
| 60mm | 62mm | 91mm | 119mm          | 35mm | 126mm | 154mm          |

Lubricators



| A    | A <sub>1</sub> | B    | C    | D     | E     | F    |
|------|----------------|------|------|-------|-------|------|
| 60mm | 64mm           | 44mm | 46mm | 127mm | 173mm | 89mm |

**High Efficiency 0.01 µm Filtration**

**Filtration Grade**

|  |   |
|--|---|
| <b>Filtration type</b>                                 | Coalescing                              |
| <b>Particle removal (inc water &amp; oil aerosols)</b> | Down to 0.01 micron                     |
| <b>Max remaining oil content at 21°C</b>               | 0.01 mg/m <sup>3</sup><br>0.01 ppm(w)   |
| <b>Filter efficiency</b>                               | 99.9999%                                |
| <b>Test methods used</b>                               | ISO 8573.2<br>ISO 8573.4<br>ISO 12500-1 |
| <b>ISO 12500-1 Inlet Challenge concentration</b>       | 10 mg/m <sup>3</sup>                    |
| <b>Initial dry differential pressure</b>               | <140 mbar (2psi)                        |
| <b>Initial saturated differential pressure</b>         | <200 mbar (3psi)                        |
| <b>Change element every</b>                            | 12 months                               |
| <b>Precede with filtration grade</b>                   | 1 micron<br>Moduflex Coalescer          |



**Product selection**

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

| Port Size BSPT | Part Number        | dm <sup>3</sup> /s | m <sup>3</sup> /hr | cfm  | 0.01 µm Replacement Element Kit |
|----------------|--------------------|--------------------|--------------------|------|---------------------------------|
| 1/4"           | <b>P3TFA22CAAN</b> | 10                 | 36                 | 21   | <b>P3TKA00ESCA</b>              |
| 3/8"           | <b>P3TFA23CBAN</b> | 20                 | 72                 | 42   | <b>P3TKA00ESCB</b>              |
| 1/2"           | <b>P3TFA24CCAN</b> | 30                 | 108                | 64   | <b>P3TKA00ESCC</b>              |
| 3/4"           | <b>P3TFA26CDAN</b> | 60                 | 216                | 127  | <b>P3TKA00ESCD</b>              |
| 1 "            | <b>P3TFA28CEAN</b> | 110                | 396                | 233  | <b>P3TKA00ESCE</b>              |
| 1.1/4"         | <b>P3TFA2ACEAN</b> | 110                | 396                | 233  | <b>P3TKA00ESCE</b>              |
| 1.1/2"         | <b>P3TFA2BCFAN</b> | 160                | 576                | 339  | <b>P3TKA00ESCF</b>              |
| 1.1/2"         | <b>P3TFA2BCGAN</b> | 220                | 792                | 466  | <b>P3TKA00ESCG</b>              |
| 2"             | <b>P3TFA2CCHAN</b> | 330                | 1188               | 699  | <b>P3TKA00ESCH</b>              |
| 2.1/2"         | <b>P3TFA2DCJAN</b> | 430                | 1548               | 911  | <b>P3TKA00ESCJ</b>              |
| 3"             | <b>P3TFA2ECJAN</b> | 430                | 1548               | 911  | <b>P3TKA00ESCJ</b>              |
| 2.1/2"         | <b>P3TFA2DCKAN</b> | 620                | 2232               | 1314 | <b>P3TKA00ESCK</b>              |
| 3"             | <b>P3TFA2ECKAN</b> | 620                | 2232               | 1314 | <b>P3TKA00ESCK</b>              |

**Correction factors**

| Line pressure bar g | psi g | Correction factor |
|---------------------|-------|-------------------|
| 1                   | 15    | 0.38              |
| 2                   | 29    | 0.53              |
| 3                   | 44    | 0.65              |
| 4                   | 58    | 0.76              |
| 5                   | 73    | 0.85              |
| 6                   | 87    | 0.93              |
| 7                   | 100   | 1.00              |
| 8                   | 116   | 1.07              |
| 9                   | 131   | 1.13              |
| 10                  | 145   | 1.19              |
| 11                  | 160   | 1.25              |
| 12                  | 174   | 1.31              |
| 13                  | 189   | 1.36              |
| 14                  | 203   | 1.41              |
| 15                  | 218   | 1.46              |
| 16                  | 232   | 1.51              |

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}} = \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

**Filter selection example**

Selecting a filter model to match a system flow rate and pressure.

**Example:** System flow 1050 m<sup>3</sup>/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m<sup>3</sup>/hr ÷ 1.10 = 955 m<sup>3</sup>/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m<sup>3</sup>/hr. Filter model selected : P3TFA2CCHAN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2CCHAN

**High Efficiency 0.01 µm Filtration**

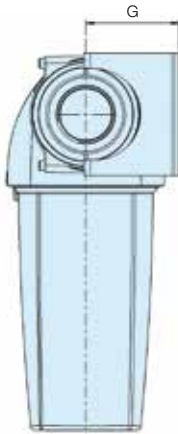
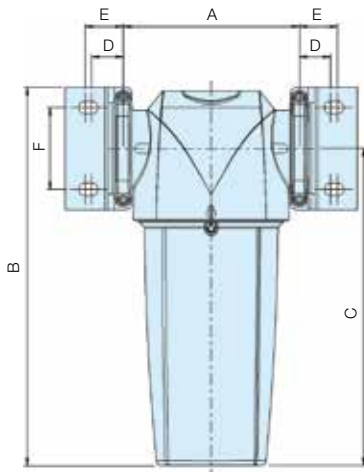
**Technical data**

| Filter Grade | Drain type | Max operating pressure |       | Max recommended operating temp. |       | Min recommended operating temp. |      |
|--------------|------------|------------------------|-------|---------------------------------|-------|---------------------------------|------|
|              |            | bar g                  | psi g |                                 |       |                                 |      |
| 0.01 micron  | Auto       | 16                     | 232   | 80°C                            | 176°F | 1.5°C                           | 35°F |

**Weights and dimensions**

**Optional Accessories**

| Port Size<br>BSPT | Part Number        | A     |     | B     |      | C     |      | D    |      | E    |      | F     |      | G     |      | Weight |      | Modular Connection Kit | Wall Mounting Bracket Kit |
|-------------------|--------------------|-------|-----|-------|------|-------|------|------|------|------|------|-------|------|-------|------|--------|------|------------------------|---------------------------|
|                   |                    | mm    | ins | mm    | ins  | mm    | ins  | mm   | ins  | mm   | ins  | mm    | ins  | mm    | ins  | kg     | lbs  |                        |                           |
| 1/4"              | <b>P3TFA22CAAN</b> | 76.0  | 3.0 | 181.5 | 7.2  | 153.0 | 6.0  | 18.0 | 0.71 | 24.5 | 0.96 | 30.0  | 1.18 | 52.0  | 2.05 | 0.4    | 0.9  | <b>P3TKA00CBA</b>      | <b>P3TKA00MWA</b>         |
| 3/8"              | <b>P3TFA23CBAN</b> | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | <b>P3TKA00CBB</b>      | <b>P3TKA00MWB</b>         |
| 1/2"              | <b>P3TFA24CCAN</b> | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | <b>P3TKA00CBB</b>      | <b>P3TKA00MWB</b>         |
| 3/4"              | <b>P3TFA26CDAN</b> | 129.0 | 5.1 | 275.0 | 10.8 | 232.5 | 9.2  | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.2    | 4.8  | <b>P3TKA00CBD</b>      | <b>P3TKA00MWD</b>         |
| 1"                | <b>P3TFA28CEAN</b> | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | <b>P3TKA00CBD</b>      | <b>P3TKA00MWD</b>         |
| 1.1/4"            | <b>P3TFA2ACEAN</b> | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | <b>P3TKA00CBD</b>      | <b>P3TKA00MWD</b>         |
| 1.1/2"            | <b>P3TFA2BCFAN</b> | 170.0 | 6.7 | 432.5 | 17.0 | 382.5 | 15.1 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 4.5    | 9.9  | <b>P3TKA00CBF</b>      | <b>P3TKA00MWF</b>         |
| 1.1/2"            | <b>P3TFA2BCGAN</b> | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | <b>P3TKA00CBF</b>      | <b>P3TKA00MWF</b>         |
| 2"                | <b>P3TFA2CCHAN</b> | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | <b>P3TKA00CBF</b>      | <b>P3TKA00MWF</b>         |
| 2.1/2"            | <b>P3TFA2DCJAN</b> | 205.0 | 8.1 | 641.5 | 25.3 | 581.5 | 22.9 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 10.0   | 22.0 | <b>P3TKA00CBJ</b>      | <b>P3TKA00MWJ</b>         |
| 3"                | <b>P3TFA2ECJAN</b> | 205.0 | 8.1 | 641.5 | 25.3 | 581.5 | 22.9 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 10.0   | 22.0 | <b>P3TKA00CBJ</b>      | <b>P3TKA00MWJ</b>         |
| 2.1/2"            | <b>P3TFA2DCKAN</b> | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | <b>P3TKA00CBJ</b>      | <b>P3TKA00MWJ</b>         |
| 3"                | <b>P3TFA2ECKAN</b> | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | <b>P3TKA00CBJ</b>      | <b>P3TKA00MWJ</b>         |



**DPI Kit**  
**P3TKA00RQ**  
**Incident Monitor**

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.



**Wall Mounting Bracket Kit**  
 Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.



**Modular Connection Kit**  
 Fixing clamp allows quick and simple connection of multiple filter housings.

**Drain Kits**

|              |                  |
|--------------|------------------|
| Auto drain   | <b>P3TKA00DA</b> |
| Manual drain | <b>P3TKA00DM</b> |



**1 µm Filtration**

**Filtration Grade**

|  |   |
|--|---|
| <b>Filtration type</b>                                 | Coalescing                              |
| <b>Particle removal (inc water &amp; oil aerosols)</b> | Down to 1 micron                        |
| <b>Max remaining oil content at 21°C</b>               | 0.06 mg/m <sup>3</sup><br>0.05 ppm(w)   |
| <b>Filter efficiency</b>                               | 99.925%                                 |
| <b>Test methods used</b>                               | ISO 8573.2<br>ISO 8573.4<br>ISO 12500-1 |
| <b>ISO 12500-1 Inlet Challenge concentration</b>       | 40 mg/m <sup>3</sup>                    |
| <b>Initial dry differential pressure</b>               | <70 mbar (2psi)                         |
| <b>Initial saturated differential pressure</b>         | <140 mbar (3psi)                        |
| <b>Change element every</b>                            | 12 months                               |
| <b>Precede with filtration grade</b>                   | 1 micron<br>Moduflex Coalescer          |



**Product selection**

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

| Port Size BSPT | Part Number        | dm <sup>3</sup> /s | m <sup>3</sup> /hr | cfm  | 1 µm Replacement Element Kit |
|----------------|--------------------|--------------------|--------------------|------|------------------------------|
| 1/4"           | <b>P3TFA229AAN</b> | 10                 | 36                 | 21   | <b>P3TKA00ES9A</b>           |
| 3/8"           | <b>P3TFA239BAN</b> | 20                 | 72                 | 42   | <b>P3TKA00ES9B</b>           |
| 1/2"           | <b>P3TFA249CAN</b> | 30                 | 108                | 64   | <b>P3TKA00ES9C</b>           |
| 3/4"           | <b>P3TFA269DAN</b> | 60                 | 216                | 127  | <b>P3TKA00ES9D</b>           |
| 1 "            | <b>P3TFA289EAN</b> | 110                | 396                | 233  | <b>P3TKA00ES9E</b>           |
| 1.1/4"         | <b>P3TFA2A9EAN</b> | 110                | 396                | 233  | <b>P3TKA00ES9E</b>           |
| 1.1/2"         | <b>P3TFA2B9FAN</b> | 160                | 576                | 339  | <b>P3TKA00ES9F</b>           |
| 1.1/2"         | <b>P3TFA2B9GAN</b> | 220                | 792                | 466  | <b>P3TKA00ES9G</b>           |
| 2"             | <b>P3TFA2C9HAN</b> | 330                | 1188               | 699  | <b>P3TKA00ES9H</b>           |
| 2.1/2"         | <b>P3TFA2D9JAN</b> | 430                | 1548               | 911  | <b>P3TKA00ES9J</b>           |
| 3"             | <b>P3TFA2E9JAN</b> | 430                | 1548               | 911  | <b>P3TKA00ES9J</b>           |
| 2.1/2"         | <b>P3TFA2D9KAN</b> | 620                | 2232               | 1314 | <b>P3TKA00ES9K</b>           |
| 3"             | <b>P3TFA2E9KAN</b> | 620                | 2232               | 1314 | <b>P3TKA00ES9K</b>           |

**Correction factors**

| Line pressure bar g | psi g | Correction factor |
|---------------------|-------|-------------------|
| 1                   | 15    | 0.38              |
| 2                   | 29    | 0.53              |
| 3                   | 44    | 0.65              |
| 4                   | 58    | 0.76              |
| 5                   | 73    | 0.85              |
| 6                   | 87    | 0.93              |
| 7                   | 100   | 1.00              |
| 8                   | 116   | 1.07              |
| 9                   | 131   | 1.13              |
| 10                  | 145   | 1.19              |
| 11                  | 160   | 1.25              |
| 12                  | 174   | 1.31              |
| 13                  | 189   | 1.36              |
| 14                  | 203   | 1.41              |
| 15                  | 218   | 1.46              |
| 16                  | 232   | 1.51              |

**Filter selection example**

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}} = \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Selecting a filter model to match a system flow rate and pressure.

**Example:** System flow 1050 m<sup>3</sup>/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m<sup>3</sup>/hr ÷ 1.10 = 955 m<sup>3</sup>/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m<sup>3</sup>/hr. Filter model selected : P3TFA2C9HAN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2C9HAN

1 µm Filtration

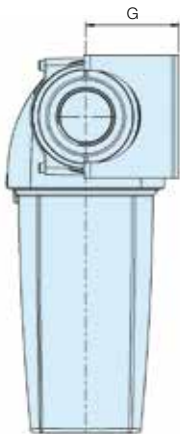
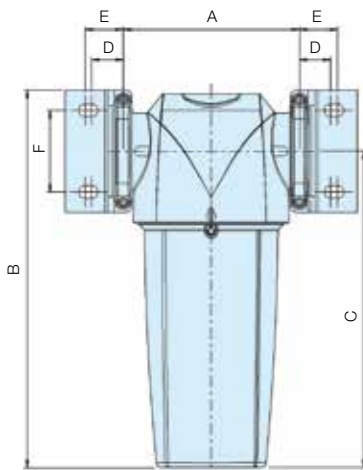
Technical data

| Filter Grade | Drain type | Max operating pressure |       | Max recommended operating temp. |       | Min recommended operating temp. |      |
|--------------|------------|------------------------|-------|---------------------------------|-------|---------------------------------|------|
|              |            | bar g                  | psi g | 80°C                            | 176°F | 1.5°C                           | 35°F |
| 1 micron     | Auto       | 16                     | 232   | 80°C                            | 176°F | 1.5°C                           | 35°F |

Weights and dimensions

Optional Accessories

| Port Size<br>BSPT | Part Number | A     |     | B     |      | C     |      | D    |      | E    |      | F     |      | G     |      | Weight |      | Modular Connection Kit | Wall Mounting Bracket Kit |
|-------------------|-------------|-------|-----|-------|------|-------|------|------|------|------|------|-------|------|-------|------|--------|------|------------------------|---------------------------|
|                   |             | mm    | ins | mm    | ins  | mm    | ins  | mm   | ins  | mm   | ins  | mm    | ins  | mm    | ins  | kg     | lbs  |                        |                           |
| 1/4"              | P3TFA229AAN | 76.0  | 3.0 | 181.5 | 7.2  | 153.0 | 6.0  | 18.0 | 0.71 | 24.5 | 0.96 | 30.0  | 1.18 | 52.0  | 2.05 | 0.4    | 0.9  | P3TKA00CBA             | P3TKA00MWA                |
| 3/8"              | P3TFA239BAN | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | P3TKA00CBB             | P3TKA00MWB                |
| 1/2"              | P3TFA249CAN | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | P3TKA00CBB             | P3TKA00MWB                |
| 3/4"              | P3TFA269DAN | 129.0 | 5.1 | 275.0 | 10.8 | 232.5 | 9.2  | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.2    | 4.8  | P3TKA00CBD             | P3TKA00MWD                |
| 1"                | P3TFA289EAN | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | P3TKA00CBD             | P3TKA00MWD                |
| 1.1/4"            | P3TFA2A9EAN | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | P3TKA00CBD             | P3TKA00MWD                |
| 1.1/2"            | P3TFA2B9FAN | 170.0 | 6.7 | 432.5 | 17.0 | 382.5 | 15.1 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 4.5    | 9.9  | P3TKA00CBF             | P3TKA00MWF                |
| 1.1/2"            | P3TFA2B9GAN | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | P3TKA00CBF             | P3TKA00MWF                |
| 2"                | P3TFA2C9HAN | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | P3TKA00CBF             | P3TKA00MWF                |
| 2.1/2"            | P3TFA2D9JAN | 205.0 | 8.1 | 641.5 | 25.3 | 581.5 | 22.9 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 10.0   | 22.0 | P3TKA00CBJ             | P3TKA00MWJ                |
| 3"                | P3TFA2E9JAN | 205.0 | 8.1 | 641.5 | 25.3 | 581.5 | 22.9 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 10.0   | 22.0 | P3TKA00CBJ             | P3TKA00MWJ                |
| 2.1/2"            | P3TFA2D9KAN | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | P3TKA00CBJ             | P3TKA00MWJ                |
| 3"                | P3TFA2E9KAN | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | P3TKA00CBJ             | P3TKA00MWJ                |



DPI Kit

P3TKA00RQ

Incident Monitor

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.



Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.



Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Drain Kits

Auto drain P3TKA00DA

Manual drain P3TKA00DM

**Oil Vapour Removal Filter**

**Filtration Grade**

|  |  |
|--|--|
| <b>Filtration type</b>                                 | Oil vapour removal                       |
| <b>Particle removal (inc water &amp; oil aerosols)</b> | N/A                                      |
| <b>Max remaining oil content at 21°C</b>               | 0.003 mg/m <sup>3</sup><br>0.003 ppm(w)  |
| <b>Filter efficiency</b>                               | N/A                                      |
| <b>Test methods used</b>                               | ISO                                      |
| <b>ISO 12500-1 Inlet Challenge concentration</b>       | N/A                                      |
| <b>Initial dry differential pressure</b>               | <200 mbar (3psi)                         |
| <b>Initial saturated differential pressure</b>         | N/A                                      |
| <b>Change element every</b>                            | When oil vapour is detected              |
| <b>Precede with filtration grade</b>                   | 0.01 micron<br>Moduflex Coalescer filter |



**Product selection**

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

| Port Size BSPT | Part Number        | dm <sup>3</sup> /s | m <sup>3</sup> /hr | cfm  | Oil vapour removal Replacement Element Kit |
|----------------|--------------------|--------------------|--------------------|------|--|
| 1/4"           | <b>P3TFA22AAMN</b> | 10                 | 36                 | 21   | <b>P3TKA00ESAA</b>                         |
| 3/8"           | <b>P3TFA23ABMN</b> | 20                 | 72                 | 42   | <b>P3TKA00ESAB</b>                         |
| 1/2"           | <b>P3TFA24ACMN</b> | 30                 | 108                | 64   | <b>P3TKA00ESAC</b>                         |
| 3/4"           | <b>P3TFA26ADMN</b> | 60                 | 216                | 127  | <b>P3TKA00ESAD</b>                         |
| 1 "            | <b>P3TFA28AEMN</b> | 110                | 396                | 233  | <b>P3TKA00ESAE</b>                         |
| 1.1/4"         | <b>P3TFA2AAEMN</b> | 110                | 396                | 233  | <b>P3TKA00ESAE</b>                         |
| 1.1/2"         | <b>P3TFA2BAFMN</b> | 160                | 576                | 339  | <b>P3TKA00ESAF</b>                         |
| 1.1/2"         | <b>P3TFA2BAGMN</b> | 220                | 792                | 466  | <b>P3TKA00ESAG</b>                         |
| 2"             | <b>P3TFA2CAHMN</b> | 330                | 1188               | 699  | <b>P3TKA00ESAH</b>                         |
| 2.1/2"         | <b>P3TFA2DAJMN</b> | 430                | 1548               | 911  | <b>P3TKA00ESAJ</b>                         |
| 3"             | <b>P3TFA2EAJMN</b> | 430                | 1548               | 911  | <b>P3TKA00ESAJ</b>                         |
| 2.1/2"         | <b>P3TFA2DAKMN</b> | 620                | 2232               | 1314 | <b>P3TKA00ESAK</b>                         |
| 3"             | <b>P3TFA2EAKMN</b> | 620                | 2232               | 1314 | <b>P3TKA00ESAK</b>                         |

**Correction factors**

| Line pressure bar g | psi g | Correction factor |
|---------------------|-------|-------------------|
| 1                   | 15    | 0.38              |
| 2                   | 29    | 0.53              |
| 3                   | 44    | 0.65              |
| 4                   | 58    | 0.76              |
| 5                   | 73    | 0.85              |
| 6                   | 87    | 0.93              |
| 7                   | 100   | 1.00              |
| 8                   | 116   | 1.07              |
| 9                   | 131   | 1.13              |
| 10                  | 145   | 1.19              |
| 11                  | 160   | 1.25              |
| 12                  | 174   | 1.31              |
| 13                  | 189   | 1.36              |
| 14                  | 203   | 1.41              |
| 15                  | 218   | 1.46              |
| 16                  | 232   | 1.51              |
| 17                  | 247   | 1.56              |
| 18                  | 261   | 1.60              |
| 19                  | 275   | 1.65              |
| 20                  | 290   | 1.70              |

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}} = \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

**Filter selection example**

Selecting a filter model to match a system flow rate and pressure.

**Example:** System flow 1050 m<sup>3</sup>/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g  
1050m<sup>3</sup>/hr ÷ 1.10 = 955 m<sup>3</sup>/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m<sup>3</sup>/hr. Filter model selected : P3TFA2CAHMN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2CAHMN

**Oil Vapour Removal Filter**

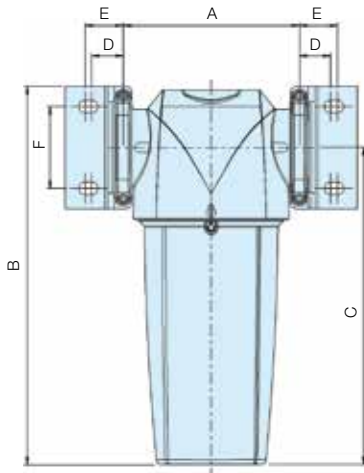
**Technical data**

| Filter Grade       | Drain type | Max operating pressure |       | Max recommended operating temp. |       | Min recommended operating temp. |      |
|--------------------|------------|------------------------|-------|---------------------------------|-------|---------------------------------|------|
|                    |            | bar g                  | psi g |                                 |       |                                 |      |
| Oil vapour removal | Manual     | 20                     | 290   | 100°C                           | 212°F | 1.5°C                           | 35°F |

**Weights and dimensions**

**Optional Accessories**

| Port Size<br>BSPT | Part Number | A     |     | B     |      | C     |      | D    |      | E    |      | F     |      | G     |      | Weight |      | Modular Connection Kit | Wall Mounting Bracket Kit |
|-------------------|-------------|-------|-----|-------|------|-------|------|------|------|------|------|-------|------|-------|------|--------|------|------------------------|---------------------------|
|                   |             | mm    | ins | mm    | ins  | mm    | ins  | mm   | ins  | mm   | ins  | mm    | ins  | mm    | ins  | kg     | lbs  |                        |                           |
| 1/4"              | P3TFA22AAMN | 76.0  | 3.0 | 181.5 | 7.2  | 153.0 | 6.0  | 18.0 | 0.71 | 24.5 | 0.96 | 30.0  | 1.18 | 52.0  | 2.05 | 0.4    | 0.9  | P3TKA00CBA             | P3TKA00MWA                |
| 3/8"              | P3TFA23ABMN | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | P3TKA00CBB             | P3TKA00MWB                |
| 1/2"              | P3TFA24ACMN | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | P3TKA00CBB             | P3TKA00MWB                |
| 3/4"              | P3TFA26ADMN | 129.0 | 5.1 | 275.0 | 10.8 | 232.5 | 9.2  | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.2    | 4.8  | P3TKA00CBD             | P3TKA00MWD                |
| 1"                | P3TFA28AEMN | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | P3TKA00CBD             | P3TKA00MWD                |
| 1.1/4"            | P3TFA2AAEMN | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | P3TKA00CBD             | P3TKA00MWD                |
| 1.1/2"            | P3TFA2BAFMN | 170.0 | 6.7 | 432.5 | 17.0 | 382.5 | 15.1 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 4.5    | 9.9  | P3TKA00CBF             | P3TKA00MWF                |
| 1.1/2"            | P3TFA2BAGMN | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | P3TKA00CBF             | P3TKA00MWF                |
| 2"                | P3TFA2CAHMN | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | P3TKA00CBF             | P3TKA00MWF                |
| 2.1/2"            | P3TFA2DAJMN | 205.0 | 8.1 | 641.5 | 25.3 | 581.5 | 22.9 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 10.0   | 22.0 | P3TKA00CBJ             | P3TKA00MWJ                |
| 3"                | P3TFA2EAJMN | 205.0 | 8.1 | 641.5 | 25.3 | 581.5 | 22.9 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 10.0   | 22.0 | P3TKA00CBJ             | P3TKA00MWJ                |
| 2.1/2"            | P3TFA2DAKMN | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | P3TKA00CBJ             | P3TKA00MWJ                |
| 3"                | P3TFA2EAKMN | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | P3TKA00CBJ             | P3TKA00MWJ                |



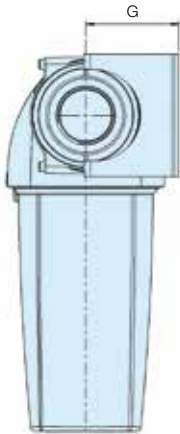
**Modular Connection Kit**

Fixing clamp allows quick and simple connection of multiple filter housings.



**Wall Mounting Bracket Kit**

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.



**Drain Kits**

|              |                  |
|--------------|------------------|
| Auto drain   | <b>P3TKA00DA</b> |
| Manual drain | <b>P3TKA00DM</b> |

**High Efficiency Bulk Liquid Removal**

- Tested in accordance with ISO 8573.9
- Performance independently verified by Lloyds Register
- High liquid removal efficiencies at all flow conditions
- Low pressure losses for low operational costs
- Multiple port sizes for a given flow rate provides increased flexibility during installation
- Suitable for variable flow compressors
- Works with all types of compressor and compressor condensate
- Low maintenance
- 10 Year Housing Guarantee



**Typical Applications**

- Bulk liquid removal at any point in a compressed air system
- Protection of refrigeration and adsorption dryer pre-filtration
- Liquid removal from compressor inter-coolers / after-coolers
- Liquid separation within refrigeration dryers

**Product selection**

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure.

**Correction factors**

| Port Size | Part Number        | dm <sup>3</sup> /s | m <sup>3</sup> /hr | cfm  | Max operating pressure |       | Max Operating temperature | Min Operating temperature | Line pressure |       |                   |      |      |     |
|-----------|--------------------|--------------------|--------------------|------|------------------------|-------|---------------------------|---------------------------|---------------|-------|-------------------|------|------|-----|
|           |                    |                    |                    |      | bar g                  | psi g |                           |                           | bar g         | psi g | Correction factor |      |      |     |
| 1/4"      | <b>P3TFA22WAAN</b> | 10                 | 36                 | 21   | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1                 | 15   | 0.25 |     |
| 3/8"      | <b>P3TFA23WBAN</b> | 40                 | 144                | 85   | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 2                 | 29   | 0.38 |     |
| 1/2"      | <b>P3TFA24WCAN</b> | 40                 | 144                | 85   | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 440.50            | 0.63 | 5    | 73  |
| 3/4"      | <b>P3TFA26WDAN</b> | 110                | 396                | 233  | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 0.75              | 0.88 | 6    | 87  |
| 1"        | <b>P3TFA28WEAN</b> | 110                | 396                | 233  | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1.00              | 1.06 | 7    | 100 |
| 1.1/4"    | <b>P3TFA2AWFAN</b> | 350                | 1260               | 742  | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1.12              | 1.17 | 8    | 116 |
| 1.1/2"    | <b>P3TFA2BWGAN</b> | 350                | 1260               | 742  | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1.17              | 1.22 | 9    | 131 |
| 2"        | <b>P3TFA2CWHAN</b> | 350                | 1260               | 742  | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1.22              | 1.27 | 10   | 145 |
| 2.1/2"    | <b>P3TFA2DWKAN</b> | 800                | 2880               | 1695 | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1.27              | 1.32 | 13   | 189 |
| 3"        | <b>P3TFA2EWKAN</b> | 800                | 2880               | 1695 | 16                     | 232   | 80 C                      | 176 F                     | 1.5 C         | 35 F  | 1.32              | 1.37 | 14   | 203 |
|           |                    |                    |                    |      |                        |       |                           |                           |               |       | 1.41              | 1.46 | 15   | 218 |
|           |                    |                    |                    |      |                        |       |                           |                           |               |       |                   |      | 16   | 232 |

**Filter selection example**

Selecting a Water Separator model to match a system flow rate and pressure.

**Example:** System flow 1050 m<sup>3</sup>/hr at a pressure of 8 bar g

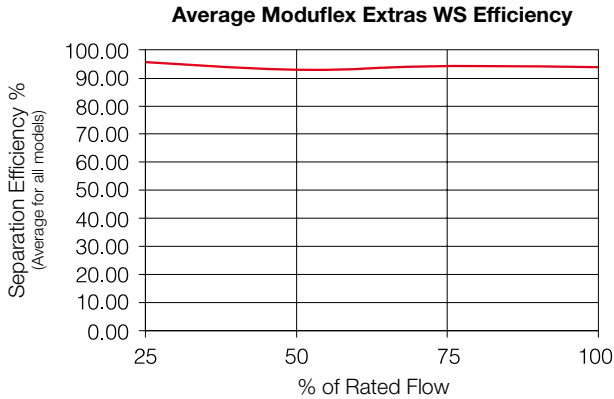
1. Obtain pressure correction factor from table.  
Correction factor for 8 bar g = 1.06
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g  
1050m<sup>3</sup>/hr ÷ 1.06 = 984 m<sup>3</sup>/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 984 m<sup>3</sup>/hr. Suitable Water Separator models : P3TFA2AWFAN  
P3TFA2AWGAN  
P3TFA2AWHAN
4. Select pipe connection & Thread type  
System uses 1.1/2" piping and BSP threads: Model P3TFA2BWGAN

To find the correction factor for 8 bar g =

$$\begin{aligned}
 & \sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}} \\
 & = \sqrt{\frac{8 \text{ bar g}}{7 \text{ bar g}}} = 1.06
 \end{aligned}$$

High Efficiency Bulk Liquid Removal

Separation Efficiency

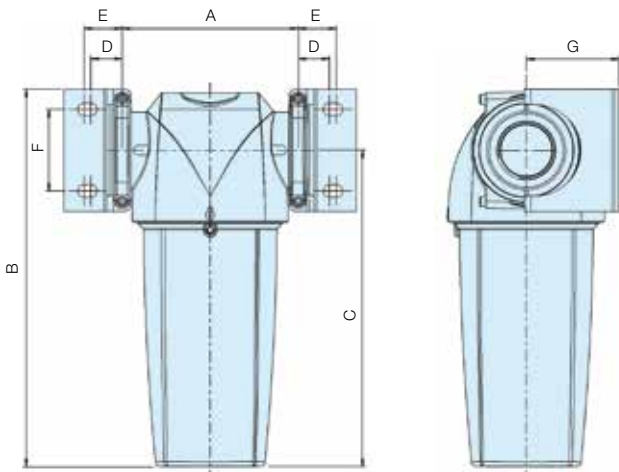


Tested with an inlet challenge concentration of 33ml/m<sup>3</sup>hr and in accordance with ISO 8573.9. Performance shown is an average for all models in range. Individual model performance available on request.

Weights and dimensions

Optional Accessories

| Port Size | Part Number | A     |     | B     |      | C     |      | D    |      | E    |      | F     |      | G     |      | Weight |      | Modular Connection Kit | Wall Mounting Bracket Kit |
|-----------|-------------|-------|-----|-------|------|-------|------|------|------|------|------|-------|------|-------|------|--------|------|------------------------|---------------------------|
|           |             | mm    | ins | mm    | ins  | mm    | ins  | mm   | ins  | mm   | ins  | mm    | ins  | mm    | ins  | kg     | lbs  |                        |                           |
| 1/4"      | P3TFA22WAAN | 76.0  | 3.0 | 181.5 | 7.2  | 153.0 | 6.0  | 18.0 | 0.71 | 24.5 | 0.96 | 30.0  | 1.18 | 52.0  | 2.05 | 0.4    | 0.9  | P3TKA00CBA             | P3TKA00MWA                |
| 3/8"      | P3TFA23WBAN | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | P3TKA00CBB             | P3TKA00MWB                |
| 1/2"      | P3TFA24WCAN | 97.5  | 3.8 | 235.0 | 9.3  | 201.0 | 7.9  | 20.5 | 0.81 | 25.5 | 1.00 | 40.0  | 1.57 | 60.0  | 2.36 | 1.0    | 2.2  | P3TKA00CBB             | P3TKA00MWB                |
| 3/4"      | P3TFA26WDAN | 129.0 | 5.1 | 275.0 | 10.8 | 232.5 | 9.2  | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.2    | 4.8  | P3TKA00CBD             | P3TKA00MWD                |
| 1"        | P3TFA28WEAN | 129.0 | 5.1 | 364.5 | 14.3 | 322.0 | 12.7 | 23.0 | 0.91 | 28.0 | 1.10 | 60.0  | 2.36 | 68.0  | 2.68 | 2.6    | 5.7  | P3TKA00CBD             | P3TKA00MWD                |
| 1.1/4"    | P3TFA2BWFAN | 170.0 | 6.7 | 432.5 | 17.0 | 382.5 | 15.1 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 4.5    | 9.9  | P3TKA00CBF             | P3TKA00MWF                |
| 1.1/2"    | P3TFA2BWGAN | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | P3TKA00CBF             | P3TKA00MWF                |
| 2"        | P3TFA2CWHAN | 170.0 | 6.7 | 524.5 | 20.6 | 474.5 | 18.7 | 32.0 | 1.26 | 39.0 | 1.54 | 84.0  | 3.31 | 92.0  | 3.62 | 5.3    | 11.6 | P3TKA00CBF             | P3TKA00MWF                |
| 2.1/2"    | P3TFA2DWKAN | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | P3TKA00CBJ             | P3TKA00MWJ                |
| 3"        | P3TFA2EWKAN | 205.0 | 8.1 | 832.0 | 32.8 | 772.0 | 30.4 | 35.5 | 1.40 | 42.5 | 1.67 | 100.0 | 3.94 | 135.0 | 5.31 | 12.0   | 26.4 | P3TKA00CBJ             | P3TKA00MWJ                |



Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.



Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

### Selection Criteria

To correctly select the dryer best suited for your application, the following details are required to ensure optimum performance and trouble free operation.

- **Maximum Inlet Flow.**
- **Minimum Inlet Pressure.**
- **Maximum Inlet Temperature.**

Once these operating parameters have been established, you can select the most economical Dry Air System for your application.



### Technical Specifications

|                                       |  |
|---------------------------------------|--|
| <b>Flow Range:</b>                    | 85 L/min to 567 L/min at 7 bar                                       |
| <b>Minimum Operating Pressure:</b>    | 4 bar  |
| <b>Maximum Operating Pressure:</b>    | 12 bar   |
| <b>Minimum Operating Temperature:</b> | 1.5°C  |
| <b>Maximum Inlet Temperature:</b>     | 50°C   |
| <b>Noise Level (Average):</b>         | ≤ 70dB(A)  |
| <b>Pressure Dewpoint (Standard):</b>  | -40°C pdp  |
| <b>(Optional):</b>                    | -70°C pdp  |
| <b>Standard Electrical Supply:</b>    | 230/1ph/50Hz (Tolerance +/- 10%)<br>115/1ph/60Hz (Tolerance +/- 10%) |
| <b>Controls:</b>                      | Electronic Control Timer   |
| <b>Inlet Connections:</b>             | G3/8   |
| <b>Outlet Connections:</b>            | G3/8   |

### Ordering Information

P3

T

J

A

3

A

N

**Thread type**

|          |      |
|----------|------|
| <b>1</b> | BSPP |
| 9        | NPT  |

**Size**

|          |
|----------|
| <b>1</b> |
| <b>2</b> |
| <b>3</b> |
| 4        |
| 5        |
| 6        |
| 7        |

**Supply Voltage**

|          |            |
|----------|------------|
| <b>A</b> | (230 V AC) |
| C        | (24 V AC)  |
| J        | (110 V AC) |

**Note: Bold options are standard**

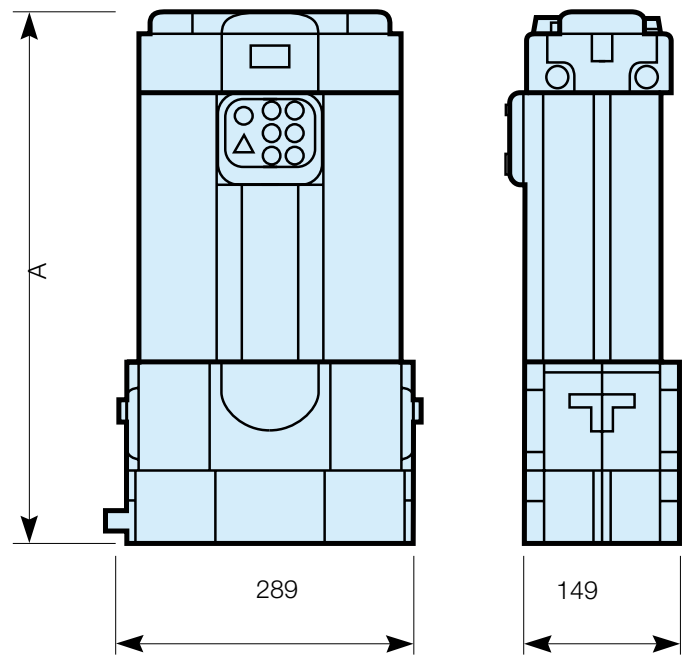
Standard nominal flow rate qnN (NL/min) at pressure dew point -40°C

| Model              | Port Size | Max inlet temperature | Inlet Pressure (bar) |     |     |     |     |     |     |     |      |
|--------------------|-----------|-----------------------|----------------------|-----|-----|-----|-----|-----|-----|-----|------|
|                    |           |                       | 4                    | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12   |
| <b>P3TJA13A1AN</b> | 3/8"      | 20°C                  | 53                   | 63  | 75  | 85  | 82  | 92  | 100 | 110 | 118  |
|                    | 3/8"      | 35°C                  | 33                   | 47  | 66  | 85  | 80  | 99  | 118 | 142 | 165  |
|                    | 3/8"      | 40°C                  | 32                   | 46  | 64  | 82  | 77  | 97  | 114 | 138 | 160  |
|                    | 3/8"      | 45°C                  | 29                   | 42  | 58  | 75  | 70  | 87  | 104 | 125 | 145  |
|                    | 3/8"      | 50°C                  | 24                   | 35  | 48  | 62  | 58  | 73  | 86  | 103 | 142  |
| <b>P3TJA13A2AN</b> | 3/8"      | 20°C                  | 90                   | 107 | 125 | 142 | 137 | 153 | 167 | 183 | 198  |
|                    | 3/8"      | 35°C                  | 57                   | 80  | 110 | 142 | 133 | 165 | 197 | 236 | 277  |
|                    | 3/8"      | 40°C                  | 55                   | 78  | 106 | 138 | 129 | 161 | 190 | 229 | 269  |
|                    | 3/8"      | 45°C                  | 50                   | 71  | 96  | 125 | 116 | 145 | 174 | 209 | 244  |
|                    | 3/8"      | 50°C                  | 41                   | 59  | 80  | 104 | 97  | 121 | 144 | 172 | 238  |
| <b>P3TJA13A3AN</b> | 3/8"      | 20°C                  | 143                  | 170 | 200 | 277 | 220 | 245 | 267 | 292 | 317  |
|                    | 3/8"      | 35°C                  | 90                   | 128 | 176 | 227 | 213 | 265 | 315 | 377 | 444  |
|                    | 3/8"      | 40°C                  | 87                   | 124 | 170 | 220 | 207 | 257 | 304 | 365 | 431  |
|                    | 3/8"      | 45°C                  | 79                   | 112 | 154 | 200 | 187 | 233 | 278 | 333 | 390  |
|                    | 3/8"      | 50°C                  | 66                   | 94  | 128 | 166 | 156 | 194 | 230 | 274 | 380  |
| <b>P3TJA13A4AN</b> | 3/8"      | 20°C                  | 178                  | 213 | 250 | 283 | 275 | 307 | 335 | 365 | 397  |
|                    | 3/8"      | 35°C                  | 112                  | 160 | 220 | 283 | 267 | 332 | 395 | 471 | 556  |
|                    | 3/8"      | 40°C                  | 109                  | 155 | 213 | 275 | 259 | 322 | 382 | 456 | 540  |
|                    | 3/8"      | 45°C                  | 98                   | 141 | 193 | 249 | 234 | 292 | 348 | 416 | 488  |
|                    | 3/8"      | 50°C                  | 82                   | 117 | 160 | 207 | 195 | 243 | 288 | 343 | 476  |
| <b>P3TJA13A5AN</b> | 3/8"      | 20°C                  | 232                  | 277 | 323 | 368 | 357 | 398 | 435 | 475 | 515  |
|                    | 3/8"      | 35°C                  | 146                  | 208 | 284 | 368 | 346 | 430 | 513 | 613 | 721  |
|                    | 3/8"      | 40°C                  | 142                  | 202 | 275 | 357 | 336 | 418 | 496 | 594 | 700  |
|                    | 3/8"      | 45°C                  | 128                  | 183 | 249 | 324 | 303 | 378 | 452 | 542 | 633  |
|                    | 3/8"      | 50°C                  | 107                  | 152 | 207 | 269 | 253 | 314 | 374 | 447 | 618  |
| <b>P3TJA13A6AN</b> | 3/8"      | 20°C                  | 268                  | 318 | 373 | 425 | 412 | 458 | 502 | 548 | 595  |
|                    | 3/8"      | 35°C                  | 169                  | 239 | 328 | 425 | 400 | 495 | 592 | 707 | 833  |
|                    | 3/8"      | 40°C                  | 163                  | 232 | 317 | 412 | 387 | 481 | 572 | 685 | 809  |
|                    | 3/8"      | 45°C                  | 147                  | 210 | 287 | 374 | 350 | 435 | 522 | 625 | 732  |
|                    | 3/8"      | 50°C                  | 123                  | 175 | 239 | 310 | 293 | 362 | 432 | 515 | 714  |
| <b>P3TJA13A7AN</b> | 3/8"      | 20°C                  | 357                  | 425 | 498 | 567 | 550 | 612 | 668 | 732 | 793  |
|                    | 3/8"      | 35°C                  | 225                  | 319 | 438 | 567 | 534 | 661 | 788 | 944 | 1110 |
|                    | 3/8"      | 40°C                  | 218                  | 310 | 423 | 550 | 517 | 643 | 762 | 915 | 1078 |
|                    | 3/8"      | 45°C                  | 196                  | 281 | 383 | 499 | 468 | 581 | 695 | 834 | 975  |
|                    | 3/8"      | 50°C                  | 164                  | 234 | 319 | 414 | 391 | 483 | 574 | 688 | 952  |



**Weights and Dimensions**

| Model              | Dimensions<br>mm (ins)<br>A | Weight<br>kg (lbs) |
|--------------------|-----------------------------|--------------------|
| <b>P3TJA13A1AN</b> | 422 (16.6)                  | 11 (24.2)          |
| <b>P3TJA13A2AN</b> | 500 (19.7)                  | 13 (28.7)          |
| <b>P3TJA13A3AN</b> | 616 (24.2)                  | 16 (35.3)          |
| <b>P3TJA13A4AN</b> | 692 (27.2)                  | 18 (39.7)          |
| <b>P3TJA13A5AN</b> | 847 (33.3)                  | 20 (44.1)          |
| <b>P3TJA13A6AN</b> | 906 (35.7)                  | 23 (50.7)          |
| <b>P3TJA13A7AN</b> | 1098 (43.2)                 | 28 (61.7)          |



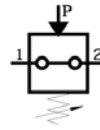
**Service Kits**

| Model       | Service Kit       |
|-------------|-------------------|
| P3TJA13A1AN | <b>P3TKA00JA1</b> |
| P3TJA13A2AN | <b>P3TKA00JA2</b> |
| P3TJA13A3AN | <b>P3TKA00JA3</b> |
| P3TJA13A4AN | <b>P3TKA00JA4</b> |
| P3TJA13A5AN | <b>P3TKA00JA5</b> |
| P3TJA13A6AN | <b>P3TKA00JA6</b> |
| P3TJA13A7AN | <b>P3TKA00JA7</b> |

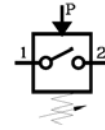
**Mounting Kits**

| Description                    | Kit              |
|--------------------------------|------------------|
| Fixed Wall Mounting Bracket    | <b>P3TKA00MJ</b> |
| 45° Tilt Wall Mounting Bracket | <b>P3TKA00MK</b> |

**Pressure Switches G1/8", G1/4"**



Break contact



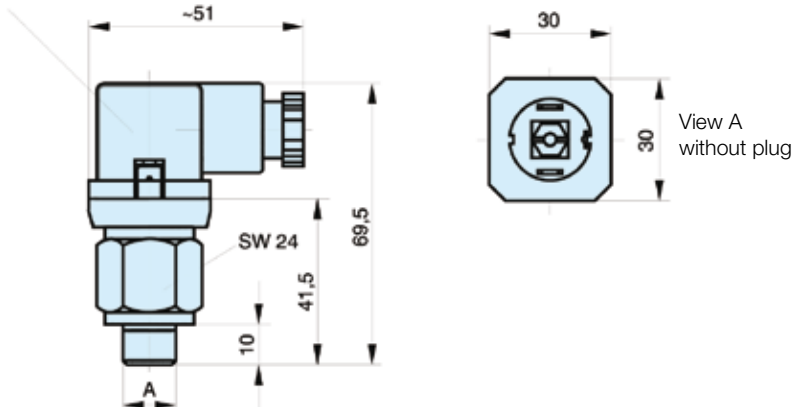
Make contact

| Characteristics                                       |                     | Material                  |   |
|---|---------------------|---------------------------|---|
| Safety pressure relief P <sub>max</sub>               | 300 bar             | Housing                   | Passivated steel  |
| Port size   | G1/8, G1/4          | Diaphragm                 | Buna N  |
| Weight (mass)   | 0.090 kg            | <b>Switching function</b> |   |
| Medium and ambient T <sub>max</sub> temperature range | +100 °C             | Make contact              | Closes the circuit when the set pressure is reached     |
| Switch back difference                                | Max. 5 - 15%        | Break contact             | Interrupts the circuit when the set pressure is reached |
| Voltage   | Max. 48 V           |                           |   |
| Current   | 0.5 A               |                           |   |
| Electrical connection                                 | Plug contacts, plug |                           |   |
| Degree of protection                                  | IP 65 with plug     |                           |   |
| Switching frequency                                   | Max. 200 s/min      |                           |   |

**Dimensions and order instructions**

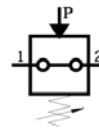
| Order instructions      | Port size (bar) | Function      | Setting range | Order code    | Type | A |
|-------------------------|-----------------|---------------|---------------|---------------|------|---|
| PR / 0.1-1 NC ST 1/4 48 | G1/4            | Break contact | 0.1-1         | <b>KL3439</b> |      |   |
| PR / 0.1-1 NO ST 1/4 48 | G1/4            | Make contact  | 0.1-1         | <b>KL3440</b> |      |   |
| PR / 1-10 NC ST 1/8 48  | G1/8            | Break contact | 1-10          | <b>KL3437</b> |      |   |
| PR / 1-10 NC ST 1/4 48  | G1/4            | Break contact | 1-10          | <b>KL3436</b> |      |   |
| PR / 1-10 NO ST 1/8 48  | G1/8            | Make contact  | 1-10          | <b>KL3438</b> |      |   |
| PR / 1-10 NO ST 1/4 48  | G1/4            | Make contact  | 1-10          | <b>KL3435</b> |      |   |

Plug can be turned 90°

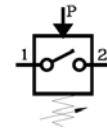


Dimensions in mm

**Pressure Switches G1/8", G1/4"**



Break contact

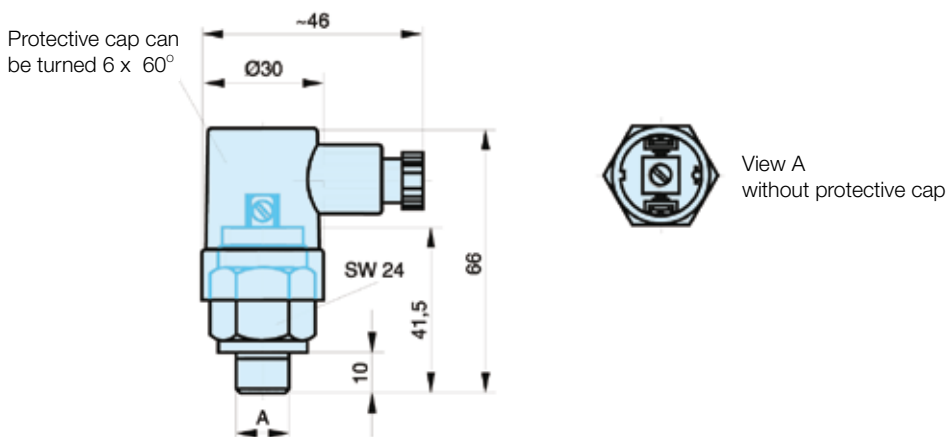


Make contact

| Characteristics                                       |                               | Material                  |   |
|---|-------------------------------|---------------------------|---|
| Safety pressure relief P <sub>max</sub>               | 300 bar                       | Housing                   | Passivated steel  |
| Port size   | G1/8, G1/4                    | Diaphragm                 | Buna N  |
| Weight (mass)   | 0.075 kg                      | <b>Switching function</b> |   |
| Medium and ambient T <sub>max</sub> temperature range | +100 °C                       | Make contact              | Closes the circuit when the set pressure is reached     |
| Switch back difference                                | Max. 5 - 15%                  | Break contact             | Interrupts the circuit when the set pressure is reached |
| Voltage   | Max. 48 V                     |                           |   |
| Current   | 0.5 A                         |                           |   |
| Electrical connection                                 | Flat pin plug. protective cap |                           |   |
| Degree of protection                                  | IP 65 with protective cap     |                           |   |
| Switching frequency                                   | 200 s/min                     |                           |   |

**Dimensions and order instructions**

| Order instructions      | Port size (bar) | Function      | Setting range | Order code    | Type | A |
|-------------------------|-----------------|---------------|---------------|---------------|------|---|
| PR / 0.2-1 NO SR 1/4 48 | G1/4            | Make contact  | 0.2-1         | <b>KL3445</b> |      |   |
| PR / 0.1-1 NC SR 1/4 48 | G1/4            | Break contact | 0.1-1         | <b>KL3454</b> |      |   |
| PR / 0.1-1 NO SR 1/4 48 | G1/4            | Make contact  | 0.1-1         | <b>KL3455</b> |      |   |
| PR / 1-10 NC SR 1/8 48  | G1/8            | Break contact | 1-10          | <b>KL3452</b> |      |   |
| PR / 1-10 NC SR 1/4 48  | G1/4            | Break contact | 1-10          | <b>KL3451</b> |      |   |
| PR / 1-10 NO SR 1/8 48  | G1/8            | Make contact  | 1-10          | <b>KL3453</b> |      |   |
| PR / 1-10 NO SR 1/4 48  | G1/4            | Make contact  | 1-10          | <b>KL3450</b> |      |   |



Dimensions in mm

**Pressure Switches G1/8", G1/4"  
Series G1/4-..I / ..P**

- Suited for intrinsically safe operation
- Especially compact design
- High switching frequency
- Attractive design
- Shock proof up to 30 g



| Characteristics                           |   |         |         |          |                       |  |
|---|---|---------|---------|----------|-----------------------|--|
| Type - thread version                     | G1/4-0I*  | G1/4-2I | G1/4-8I | G1/4-16I | Voltage type          | AC and DC  |
| Type - flange version                     | G1/4-0P*  | G1/4-2P | G1/4-8P | G1/4-16P | Operating current and | AC12 to VDE0660 4A at 250 VAC<br>AC14 to VDE0660 1A at 250 VAC<br>DC12 to VDE0660 3A at 28 VDC<br>DC13 to VDE0660 1A at 28 VDC |
| Setting range P <sub>min</sub> /max (bar) | -1 to 0   | 0.2-2   | 0.5-8   | 1-16     | CE marking            | To EC Directive 73/23/EWG  |
| Safety pressure relief P <sub>max</sub>   | 80  | 80      | 80      | 80       | Electrical connection | Plug to DIN EN 175301-803, Form A,<br>ISO4400 or M12x1 - 4-pin   |
| Port size                                 | Type I: G1/4 internal thread, Type P: flange                  |         |         |          | Degree of protection  | IP65   |
| Mounting                                  | 2 through holes Ø 5.2   |         |         |          | Switching element     | Pole changing switch with catch spring as<br>switching element, with self-cleaning<br>contacts                                 |
| Installation                              | In any position   |         |         |          | Switching frequency   | Max. 200 s/min   |
| Weight (mass)                             | 0.275 kg  |         |         |          |                       | * for vacuum operation   |
| Medium                                    | Filtered compressed air (10µm),<br>lubricated or unlubricated |         |         |          | <b>Material</b>       |  |
| Medium and ambient T <sub>min</sub>       | -10 °C  |         |         |          | Housing               | Special aluminium die casting,   |
| temperature range T <sub>max</sub>        | +80 °C  |         |         |          | powder coated         |  |
| Consistency                               | ±2 in relation to end-of-range value                          |         |         |          | Diaphragm, seals      | Buna N   |
| Hysteresis, vaccum version                | <15%  |         |         |          |                       |  |
| Vibration resistance                      | 10 g (10 ... 2000 Hz)   |         |         |          |                       |  |
| Shock resistance                          | 30 g  |         |         |          |                       |  |
| Voltage                                   | Max. 250 V  |         |         |          |                       |  |

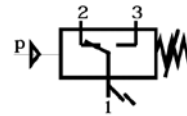
**Selection and Mounting:**

**Range selection:**

Selection is optimal when the switching points are in the middle of the switching range.

**Electrical connection:**

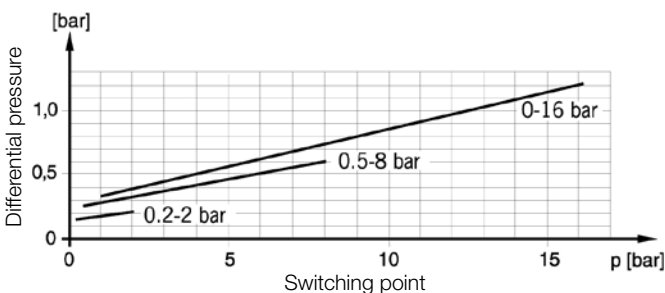
Wiring according to VDE regulations.  
Tightening torque for plug: 0.7 ± 0.1 Nm  
Outdoor use only with sufficient protection against critical environmental conditions (e.g. aggressive atmosphere, salty environments, high temperature changes).



**Pin 1 - 3:**  
Rising pressure makes contact.

**Pin 1 - 2:**  
Rising pressure breaks contact.

**Switch back difference**



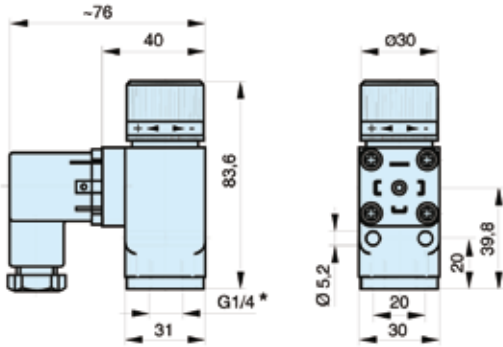
**Delivery includes:**

The flange version (surface roughness of flange surface 12µm) is supplied with an O-ring 5 x 1.5mm and 2 screws 5 x 35 DIN 912. Minimum thread length to be used: 4mm.

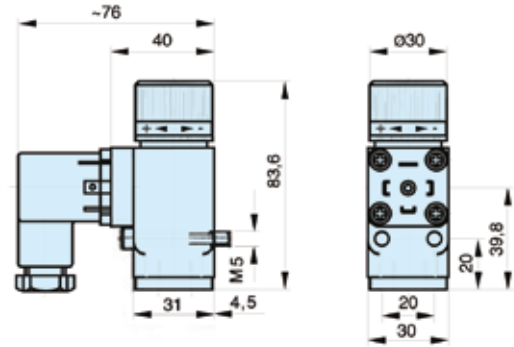
Max. diameter of the pressure opening 3mm.

**Dimensions (mm)**

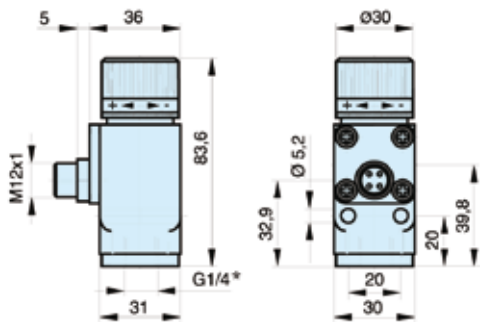
**Version with internal thread and plug**



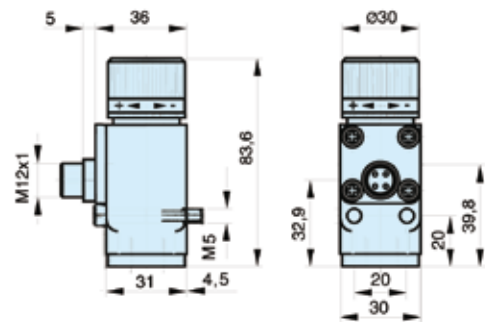
**Flange version and plug**



**with M12 connector**



**with M12 connector**



\* Thread 11mm deep

| Setting range (bar) | Type         | Order code    |
|---------------------|--------------|---------------|
| -1 to 0             | G1/4-0I-DIN  | <b>KL3200</b> |
| -1 to 0             | G1/4-0I-M12  | <b>KL3208</b> |
| 0.2 to 2            | G1/4-2I-DIN  | <b>KL3201</b> |
| 0.2 to 2            | G1/4-2I-M12  | <b>KL3209</b> |
| 0.5 to 8            | G1/4-8I-DIN  | <b>KL3202</b> |
| 0.5 to 8            | G1/4-8I-M12  | <b>KL3210</b> |
| 1.0 to 16           | G1/4-16I-DIN | <b>KL3203</b> |
| 1.0 to 16           | G1/4-16I-M12 | <b>KL3211</b> |

| Setting range (bar) | Type         | Order code    |
|---------------------|--------------|---------------|
| -1 to 0             | G1/4-0P-DIN  | <b>KL3204</b> |
| -1 to 0             | G1/4-0P-M12  | <b>KL3212</b> |
| 0.2 to 2            | G1/4-2P-DIN  | <b>KL3205</b> |
| 0.2 to 2            | G1/4-2P-M12  | <b>KL3213</b> |
| 0.5 to 8            | G1/4-8P-DIN  | <b>KL3206</b> |
| 0.5 to 8            | G1/4-8P-M12  | <b>KL3214</b> |
| 1.0 to 16           | G1/4-16P-DIN | <b>KL3207</b> |
| 1.0 to 16           | G1/4-16P-M12 | <b>KL3215</b> |

**Plugs to DIN EN 175301-803, Form A, ISO 4400**

**Standard version**



**Version with LEDs**



**Plugs to DIN EN 175301-803, Form A, ISO 4400**

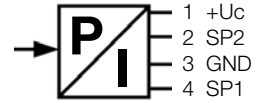
| Description             | Type          | Order code    |
|-------------------------|---------------|---------------|
| Standard version        | GSD-30DS      | <b>KL3349</b> |
| Version with LEDs 24 V  | GSD-30DSL24V  | <b>KL3350</b> |
| Version with LEDs 230 V | GSD-30DSL230V | <b>KL3351</b> |

**Pressure Switches Electronic  
Series EDP**

The EDP electronically actuated pressure switches are used to convert pneumatic signals into electrical signals. The pressure range 0-16 bar can be adjusted individually, in either bar or psi. The pressure switches can be used as threshold value comparators with one hysteresis or as window comparators with two hystereses. A robust ceramic measuring cell acts as a measured value transducer.

- Simple, menu-driven programming via 3 membrane keys
- 3-digit red LED display (pressure gauge function)
- Electronic locking
- Versions for specific applications on request

**Symbol**

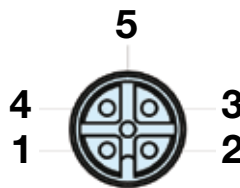


| Characteristics                           |  |         |                       |   |
|---|--|---------|-----------------------|---|
| Type - flange version                     | EDP-V  | EDP     | Voltage               | 18 - 32 V   |
| Setting range P <sub>min</sub> /max (bar) | -1 to 0  | 0-16    | Voltage type          | Direct current  |
| Safety pressure relief P <sub>max</sub>   | 100 bar  | 100 bar | Power consumption     | < 80 mA without switching outlet                      |
| Port size                                 | Flange connection  |         | Switching current     | SP1 max. 1.3 A (PIN4)<br>SP2 / ERROR max. 0.3A (PIN2) |
| Display                                   | 3 digit, red 7-Segment LED-Display, programmable 0°/180°                                     |         | Switching logic       | NO / NC programmable                                  |
| Display for operating status              | LED red/green  |         | Switching outlet      | Short circuit proof                                   |
| Linearity %                               | <± 0.2 to 1.5 p <sub>N</sub>   |         | Electrical connection | Plug M12x1  |
| TK zero point %                           | <± 0.2 p <sub>N</sub>  |         | Degree of protection  | IP67 to EN 60529                                      |
| Installation                              | In any position  |         |                       |   |
| Weight (mass)                             | 0.100 kg   |         |                       |   |
| Medium                                    | Filtered compressed air, lubricated or unlubricated, weakly acidic or weakly alkaline fluids |         | <b>Material</b>       |   |
| Ambient T <sub>min</sub>                  | -20 °C   |         | Housing               | PA, part in contact with medium: Al                   |
| temperature range T <sub>max</sub>        | +70 °C   |         | Measuring cell        | Ceramic   |
| Medium T <sub>min</sub>                   | -20 °C   |         | Seals                 | Buna N, part in contact with medium: FKM              |
| temperature range T <sub>max</sub>        | +70 °C   |         |                       |   |

**Applications**

- Pneumatic control systems
- Pressing technology
- Welding technology
- Packing machines and filling systems
- Test systems
- Clamping systems
- Plastic blow-moulding machinery
- Robotics and handling industry

**Connection diagram**



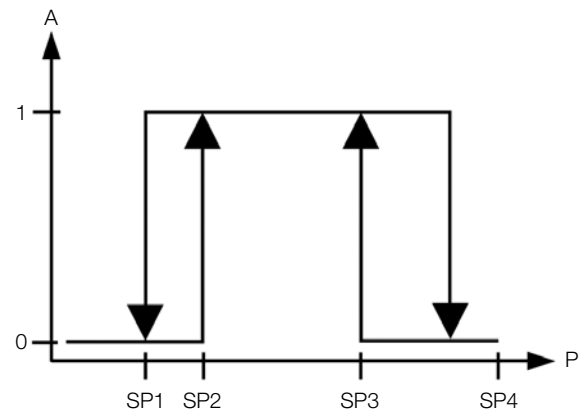
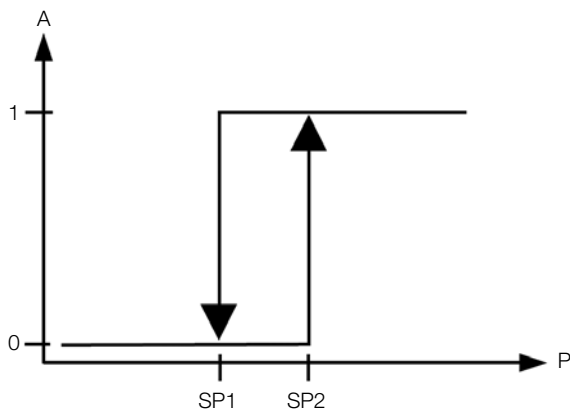
**Electrical connection**

- 1 = bn (brown) +Uc
- 2 = ws (white) SP2
- 3 = bl (blue) GND
- 4 = sw (black) SP1

**Threshold value comparator / window value comparator functions**

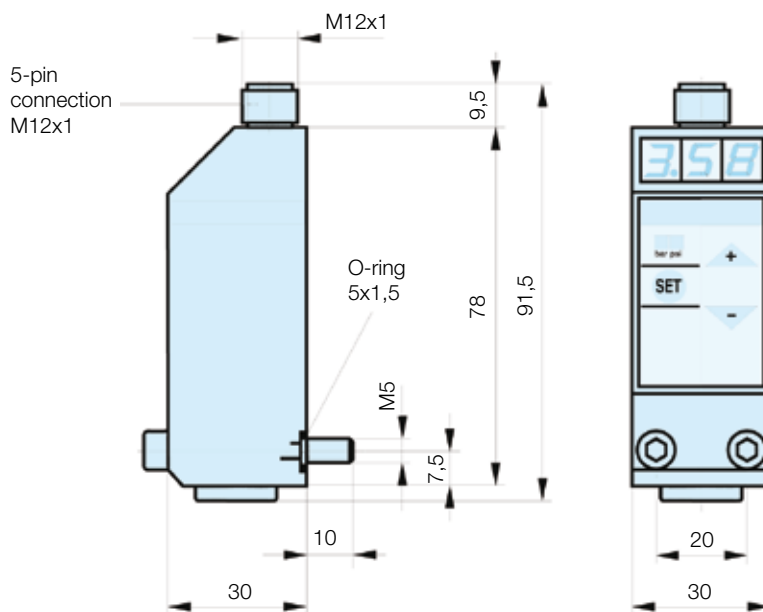
**Threshold value comparator with hysteresis**

**Window comparator with 2 hystereses**



The illustrations show the NO (normally open) presetting.  
 For the NC (normally closed) presetting, the diagrams are horizontally mirror-imaged, so that the start value is at 1.

**Dimensions - Flange version with M12x1 connector**



| Setting range (bar) | Type  | Order code    |
|---------------------|-------|---------------|
| -1 to 1             | EDP-V | <b>KL3385</b> |
| 0 to 16             | EDP   | <b>KL3384</b> |

Dimensions in mm.

**Protect your most important assets: your employees and their equipment!**

The AirGuard offers simple but efficient protection to pneumatic systems in the event of a broken compressed-air hose or pipe. The air supply is immediately shut off by the AirGuard, should the volume of air exceed a set value. This "value" is factory preset and is set to allow normal air consumption when using air tools.

Should the air consumption exceeds the set value, e.g. the air line is severed, then the internal piston instantly shuts off the main flow. An integral bleed hole allows some air to flow through. This enables the line pressure to automatically reset the AirGuard once the main line break is repaired.

**Management Responsibility:**

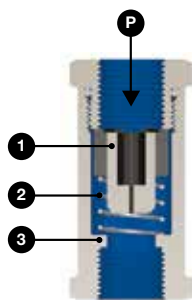
It is the duty of management to ensure a safe working environment for their employees and that the equipment complies with **ISO 4414** or "**PUWER**" (the Provision and Use of Work Equipment Regulations)

**Complies with the 2010 ISO4414 (5.4.5.11.1)**

"When failure of a hose assembly or plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means. In addition, an air fuse for compressed air should be mounted."

**Function:**

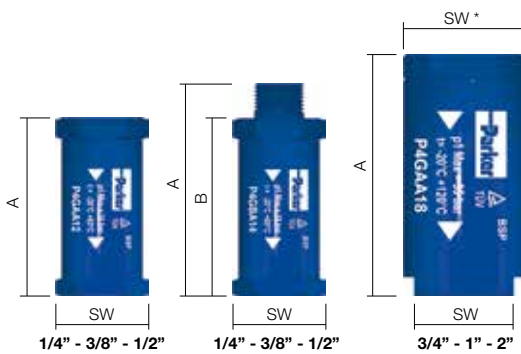
(P) is the inlet. The air flows over piston (1) and continues through seat (3). The flow of air over the piston is slowed down by several longitudinal grooves on the exterior of the piston. If the flow becomes excessive, the current of air cannot flow over the piston quickly enough. The piston is then pressed against spring (2) beneath it, and towards the seat. If the flow is exceeded, for example, if the hose suddenly breaks, the air supply is automatically shut off.



**Special Applications**

Stainless Steel AirGuard available in 1/2" size

Some branches of industry with a high hazard potential, such as chemical and pharmaceutical as well as clean room and offshore technologies place extremely high demands on both the safety of their employees and the protection of their facilities. Compressed air is typically used as an energy transfer medium in these industries and is no means without its dangers: compressed air hoses can rupture or burst, as can fixed pipes. This may expose personnel working in such areas to extreme hazards as well as potential damage to expensive facilities and costly production downtime.



**Technical Data and Ordering Information**

| Thread connection BSP | dimensions (mm) |    |          | Weight (g) | Maximum inlet pressure | Temperature range                 | Material   | P1 inlet thread | P2 outlet thread | Order Code     |
|-----------------------|-----------------|----|----------|------------|------------------------|-----------------------------------|--|-----------------|------------------|----------------|
|                       | A               | B  | SW       |            |                        |                                   |  |                 |                  |                |
| 1/4"                  | 48              | -  | 22       | 30         | 18 bar<br>(255 PSIG)   | -20°C to 80°C<br>(-4°F to 176°F)  | Housing:<br>aluminium<br><br>Piston:<br>polyoxy-<br>methylene  | female          | female           | <b>P4GAA12</b> |
| 1/4"                  | 58              | 49 | 22       | 36         |                        |                                   |  | male            | female           | <b>P4GBA12</b> |
| 3/8"                  | 59              | -  | 27       | 58         |                        |                                   |  | female          | female           | <b>P4GAA13</b> |
| 3/8"                  | 71              | 59 | 27       | 62         |                        |                                   |  | male            | female           | <b>P4GBA13</b> |
| 1/2"                  | 65              | -  | 30       | 78         |                        |                                   |  | female          | female           | <b>P4GAA14</b> |
| 1/2"                  | 80              | 65 | 30       | 85         |                        |                                   |  | male            | female           | <b>P4GBA14</b> |
| 1/2"                  | 62              | -  | 28       | 132        | 35 bar<br>(500 PSIG)   | -20°C to 120°C<br>(-4°F to 248°F) | Housing:<br>stainless steel<br>Piston:<br>polyoxy<br>methylene | female          | female           | <b>P4GCA14</b> |
| 3/4"                  | 76              | -  | 30 / 36* | 107        |                        |                                   | Housing:<br>aluminium<br>Piston:<br>aluminium                  | female          | female           | <b>P4GAA16</b> |
| 1"                    | 100             | -  | 41 / 50* | 300        |                        |                                   | female   | female          | <b>P4GAA18</b>   |                |
| 2"                    | 130             | -  | 70 / 80* | 775        | female                 | female                            | <b>P4GAA1C</b>   |                 |                  |                |

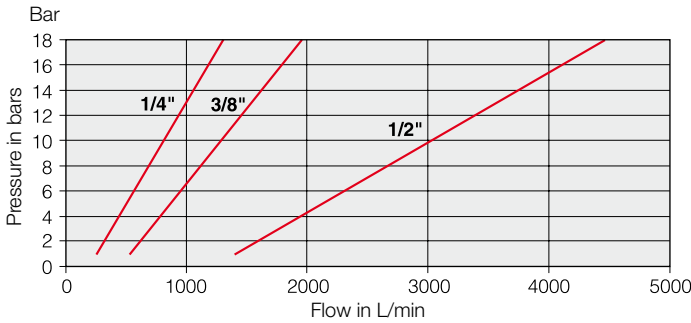
Note: NPT version available on request - 1/4" high flow version available on request.



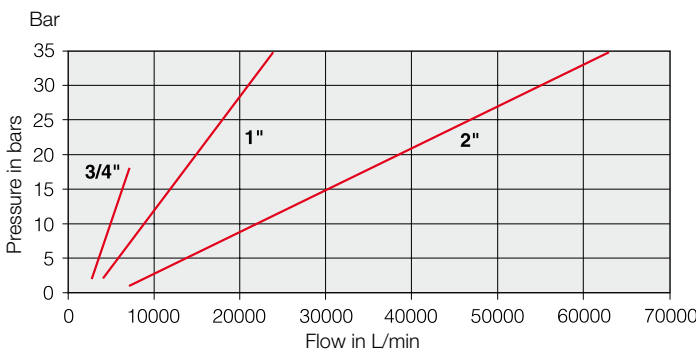


**Closing Flow Graphs**

**1/4", 3/8" and 1/2" flow rates**



**3/4", 1" and 2" flow rates**



**Dimensioning of compressed air hoses and equipment**

| Connection Size | Hose length 0 to 10 meters |                      |                     | Hose length 10 to 20 meters |                      |                     |
|-----------------|----------------------------|----------------------|---------------------|-----------------------------|----------------------|---------------------|
|                 | Inner diameter Minimum mm  | Minimum pressure bar | Flow at 6 bar l/min | Inner diameter minimum      | Minimum pressure bar | Flow at 6 bar l/min |
| 1/4"            | 7                          | 4                    | 480                 | 8                           | 4                    | 480                 |
| 3/8"            | 10                         | 4                    | 1100                | 12                          | 4                    | 1100                |
| 1/2"            | 12                         | 4                    | 2000                | 14                          | 4                    | 2000                |
| 3/4"            | 18                         | 4                    | 3800                | 20                          | 4                    | 3800                |
| 1"              | 24                         | 4                    | 6500                | 26                          | 4                    | 6500                |
| 2"              | 45                         | 4                    | 16000               | 50                          | 4                    | 16000               |

If the pressure is lower than stated in the table, a hose with a larger internal diameter must be used.

To select the correct size AirGuard, the pneumatic tool or equipment must have a maximum flow requirement to the left of the red line.

e.g.: 15 bar @20000 L/m = 2" size AirGuard  
 8 bar @1000 L/m = 3/8" size AirGuard



**TÜV Approval: 01-02-0145**



**ATEX**

These products are out of scope of the ATEX Directive 94/9/EC; however they can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Maximum working temperature to be as stated on product label.
- Product cleaning must be undertaken using a method complying with the specification of the ATEX Zone, preferably by aspiration and/or utilization of Antistatic Products.
- Deposits of dust on the product must not exceed 5mm thickness.
- Installation and Maintenance of the product must be done by a qualified personnel.
- Do not mount products in an area where Impact may occur.

**AirGuard - P4G for zone 1, 21**

Complies with: ISO 4414 5.4.5.11

Failure of hose assemblies and plastic piping 5.4.5.11.1

"When failure of a hose assembly of plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means. In addition, **an air fuse for compressed air should be mounted**"

**Table 1: Dimensioning of compressed air hoses and equipment**

| Thread | Hose length 0 to 10 meters |                      |                     | Hose length 10 to 20 meters |                      |                     |
|--------|----------------------------|----------------------|---------------------|-----------------------------|----------------------|---------------------|
|        | Inner diameter Minimum mm  | Minimum pressure bar | Flow at 6 bar l/min | Inner diameter minimum      | Minimum pressure bar | Flow at 6 bar l/min |
| 1/4"   | 7                          | 4                    | 480                 | 8                           | 4                    | 480                 |
| 3/8"   | 10                         | 4                    | 1100                | 12                          | 4                    | 1100                |
| 1/2"   | 12                         | 4                    | 2000                | 14                          | 4                    | 2000                |
| 3/4"   | 18                         | 4                    | 3800                | 20                          | 4                    | 3800                |
| 1"     | 24                         | 4                    | 6500                | 26                          | 4                    | 6500                |
| 2"     | 45                         | 4                    | 16000               | 50                          | 4                    | 16000               |

If the pressure is lower than stated in the table, a hose with a larger internal diameter must be used.

A range of speed controls, flow controls and back pressure sensors designed to be mounted directly onto the cylinder in the optimum position for maximum performance.

- "Push-in" or threaded connection
- Multifunction options
- Fit directly to cylinder ports
- Swivelling pilot banjo
- Pneumatic, Electric or Electronic back pressure sensor

 **For ATEX specific products contact Sales Office**



### Operating information

#### Working pressure;

|                               |            |
|-------------------------------|------------|
| PWR-L, PWR-H, PWR-A,<br>PWR-B | 1-10 bar   |
| PWB-A, PWS-M,<br>PWS-E, PWS-P | 0-10 bar   |
| PWA-L                         | 0,2-10 bar |


|                     |                  |
|---------------------|------------------|
| Working temperature | : -15°C to +60°C |
| PWR-L               | -15°C to +70°C   |

#### Pilot pressure at 6 bar supply;

|                   |                          |           |
|-------------------|--------------------------|-----------|
| PWB-A and PWR-HB  | (1/8", 1/4" versions)    | : 4 bar   |
|                   | (1/2" and 3/8" versions) | : 2,9 bar |
| PWS-P111          |                          | : 4,4 bar |
| PWS-M1012         |                          | : 1,5 bar |
| PWS-E101 and E111 |                          | : 0,7 bar |


For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

## 2/2 Blockers


| Symbol   | Connection for pilot port | Thread for cylinder connection | Connection for tube Ø, mm | Tightening torque Nm | Qmax input at 6 bar, l/min* | Order code       |
|--|---------------------------|--------------------------------|---------------------------|----------------------|-----------------------------|------------------|
|  | Push-in *, Ø4 mm          | <b>G1/8</b>                    | G1/4                      | 8                    | 500                         | <b>PWB-A1898</b> |
|  |                           | <b>G1/4</b>                    | G1/4                      | 12                   | 650                         | <b>PWB-A1899</b> |
|  |                           | <b>G3/8</b>                    | G3/8                      | 30                   | 1750                        | <b>PWB-A1833</b> |
|  |                           | <b>G1/2</b>                    | G1/2                      | 35                   | 2050                        | <b>PWB-A1822</b> |

\* M5 without banjo

## Flow control valves with by-pass


| Symbol   | Thread      | Number of turns | Qmax input at 6 bar, l/min | Order code         |
|--|-------------|-----------------|----------------------------|--------------------|
|  | <b>G1/8</b> | 13              | 240                        | <b>VQB12-Q-O-5</b> |
|  | <b>G1/4</b> | 13              | 1320                       | <b>VQB22-Q-O-5</b> |
|  | <b>G1/2</b> | 13              | 3600                       | <b>VQB42-Q-O-5</b> |

**Flow control valves with by-directional control**

| Symbol  | Thread | Number of turns | Qmax input at 6 bar, l/min | Order code          |
|---|--------|-----------------|----------------------------|---------------------|
|  | G1/8   | 13              | 72                         | <b>VQB12-OX-5 *</b> |
|   | G1/8   | 13              | 240                        | <b>VQB12-O-5</b>    |
|   | G1/4   | 13              | 1320                       | <b>VQB22-O-5</b>    |
|   | G1/2   | 13              | 3600                       | <b>VQB42-O-5 **</b> |

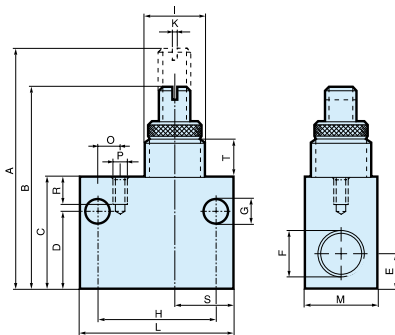
\* Extra fine adjustment  
 \*\* Low operating temp -40°C

**Knob and nut for panel mounting**

| To suit  | Order code        |
|--|-------------------|
|  <b>VQB12</b> | <b>9128177212</b> |
| <b>VQB22</b>   | <b>9128177222</b> |
| <b>VQB42</b>   | <b>9128177242</b> |

**Dimensions (mm)**

**Flow Control Valves**



| Order code            | A  | B  | C  | D  | E    | F    | G   | H  | I       |
|-----------------------|----|----|----|----|------|------|-----|----|---------|
| <b>VQB12-(Q)-OX-5</b> | 49 | 42 | 22 | 15 | 6,5  | G1/8 | 5,8 | 24 | M12x1   |
| <b>VQB12-(Q)-O-5</b>  | 49 | 42 | 22 | 15 | 6,5  | G1/8 | 5,8 | 24 | M12x1   |
| <b>VQB22-(Q)-O-5</b>  | 64 | 53 | 30 | 21 | 8,5  | G1/4 | 7,0 | 32 | M16x1   |
| <b>VQB42-(Q)-O-5</b>  | 99 | 85 | 50 | 36 | 16,5 | G1/2 | 7,0 | 50 | M24x1,5 |

| Order code            | K   | L  | M  | O    | P  | R | S    | T    |
|-----------------------|-----|----|----|------|----|---|------|------|
| <b>VQB12-(Q)-OX-5</b> | 1,2 | 32 | 15 | -    | -  | - | 13,5 | 8,8  |
| <b>VQB12-(Q)-O-5</b>  | 1,2 | 32 | 15 | -    | -  | - | 13,5 | 8,8  |
| <b>VQB22-(Q)-O-5</b>  | 1,2 | 42 | 20 | 6,0  | M4 | 7 | 16,0 | 10,0 |
| <b>VQB42-(Q)-O-5</b>  | 1,8 | 62 | 30 | 19,5 | M4 | 7 | 20,5 | 15,2 |

- Micrometer type adjustment
- Fine control
- Non-return and needle valves



- Screw driver adjustment
- Rugged bodies
- High flow rate
- High flow by-pass
- Wide range of sizes



**Operating and additional information**

**Micrometer flow control valves**

Operating pressure: 0 to 17 bar  
 Operating temperature: -40°C to +80°C  
 Body material: Brass  
 Control knob: Aluminium  
 Adjustment mode: Knurled knob

**Heavy duty inline flow control valves**

Operating pressure: 0 to 17 bar for air or oil  
 Operating temperature: -18°C to +82°C  
 Body material: Brass  
 Control knob: Brass  
 Adjustment mode: Screw driver adjustment

**Flow Control with By-pass**



Symbol



| Thread | Number of turns | Qmax input at 6 bar, l/min | Weight g | Order code  |
|--------|-----------------|----------------------------|----------|-------------|
| G1/8   | 5               | 300                        | 76       | <b>337A</b> |
| G1/4   | 6               | 780                        | 134      | <b>337B</b> |

**Flow Control with By-directional Control**

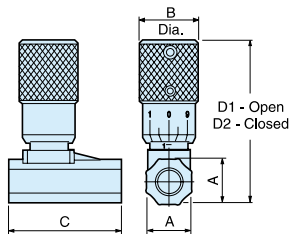


Symbol



| Thread | Number of turns | Qmax input at 6 bar, l/min | Weight g | Order code  |
|--------|-----------------|----------------------------|----------|-------------|
| G1/8   | 5               | 300                        | 78       | <b>338A</b> |
| G1/4   | 6               | 780                        | 132      | <b>338B</b> |

**Micrometer Flow Control Valves - Dimensions**

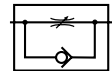


| Order code  | Port size | Dimensions (mm) |    |      |         |           |
|-------------|-----------|-----------------|----|------|---------|-----------|
|             |           | A               | B  | C    | D1 open | D2 closed |
| <b>337A</b> | G1/8      | 14,5            | 19 | 37,5 | 51,5    | 46        |
| <b>337B</b> | G1/4      | 17,5            | 19 | 37,5 | 58      | 51        |
| <b>338A</b> | G1/8      | 14,5            | 19 | 37,5 | 51,5    | 46        |
| <b>338B</b> | G1/4      | 17,5            | 19 | 37,5 | 58      | 51        |

**Standard type**

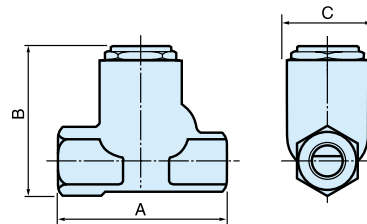


Symbol



| Thread | Number of turns | Qmax input at 6 bar, l/min | Weight g | Order code     |
|--------|-----------------|----------------------------|----------|----------------|
| G1/8   | 6               | 1320                       | 114      | <b>B3250X</b>  |
| G1/4   | 5               | 2880                       | 224      | <b>B3250AB</b> |
| G3/8   | 5               | 6300                       | 378      | <b>B3250BB</b> |
| G1/2   | 5               | 7680                       | 792      | <b>B3250CB</b> |
| G3/4   | 4,5             | 10680                      | 1300     | <b>B3250DB</b> |

**Flow Control Valves, Standard Type**



| Order code       | Port size | Dimensions (mm) |    |    |
|------------------|-----------|-----------------|----|----|
|                  |           | A               | B  | C  |
| <b>B3250X</b>    | G1/8      | 44              | 40 | 21 |
| <b>B3250AB</b>   | G1/4      | 57              | 51 | 28 |
| <b>B3250BB</b>   | G3/8      | 68              | 64 | 35 |
| * <b>B3250CB</b> | G1/2      | 79              | 78 | 41 |
| <b>B3250DB</b>   | G3/4      | 90              | 92 | 51 |

\* Low operating temperature -40°C @ 10 bar

**Quick Exhaust Valves**

- Increases piston speeds, super sensitive diaphragm.
- May be used as differential shuttle valve.

**Shuttle Valves**

- Allows two separate signals to be applied to the air pilot.
- 0,6 bar differential, Viton seals as standard.

**Non Return Valves**

- Aluminium or polymer bodies
- Compact



**Operating information**

**Shuttle valve •••005**

Working pressure 1,3 - 17 bar  
 Working temperature; Standard -10 °C to +180 °C

**Quick exhaust valve P4Q**

Working pressure: 0,2 - 10 bar  
 Working temperature; Standard: -10 °C to +80 °C

**VB**

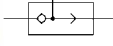
Working pressure Max 10 bar  
 Working temperature -20 °C to +70 °C

**PWA-L**

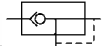
Working pressure 0,2 - 10 bar  
 Working temperature; -15 °C to +60 °C

For more information see [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic)

**Shuttle Valves**


| Symbol  | Port size | Order code                        |
|---|-----------|-----------------------------------|
|  | M5        | <b>M33005</b>                     |
|   | G1/8      | <b>B43005B</b>                    |
|   | G1/4      | <b>B53005A</b>                    |
|   | G1/4      | <b>B53005BS5</b> (-40°C to +80°C) |

**Quick Exhaust Valves P4Q Series**


| Symbol  | Port size   | Order code      |
|---|---|-----------------|
|  | <b>Standard Version</b>                                     |                 |
|   | G1/4  | <b>P4Q-BA12</b> |
|   | G3/8  | <b>P4Q-BA13</b> |
|   | G1/2  | <b>P4Q-CA14</b> |
|   | G3/4  | <b>P4Q-CA16</b> |
|   | <b>High Temperature Version</b><br>(Fluorocarbon diaphragm) |                 |
|   | G3/8  | <b>P4Q-BV13</b> |
|   | G1/2  | <b>P4Q-CV14</b> |
|   | G3/4  | <b>P4Q-CV16</b> |

**Non Return Valves**

**Aluminium VB Series**

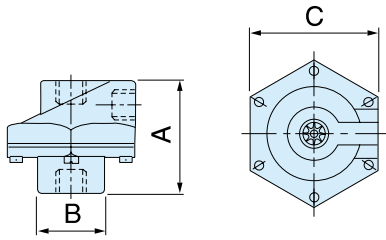
| Symbol   | Port size | Order code                                   |
|--|-----------|--|
|  | G1/8      | <b>VB12-Q-NQ-5</b>                           |
|  | G1/4      | <b>VB22-Q-NQ-5</b>                           |
|  | G1/2      | <b>VB42-Q-NQ-5</b>                           |
|  | G1/2      | <b>VB42-S50897</b><br>(Viton - dry assembly) |

**In-Line Equal Non-Return Valve**

| Symbol   | Push-in connection<br>Ø, mm | Flow rate<br>6 bar,<br>NI/min | Order code        |
|--|-----------------------------|-------------------------------|-------------------|
|  | 4                           | 350                           | <b>7996 04 00</b> |
|  | 6                           | 670                           | <b>7996 06 00</b> |
|  | 8                           | 1080                          | <b>7996 08 00</b> |

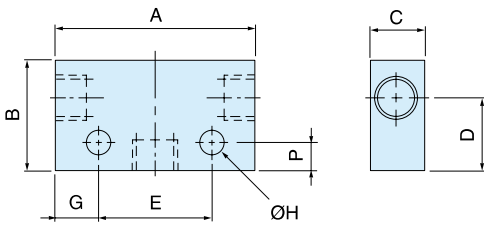
## Dimensions (mm)

## Quick Exhaust Valves



| Order code      | Port Size | A  | B  | C  |
|-----------------|-----------|----|----|----|
| <b>P4Q-B*12</b> | G1/4      | 52 | 25 | 62 |
| <b>P4Q-B*13</b> | G3/8      | 52 | 25 | 62 |
| <b>P4Q-B*14</b> | G1/2      | 73 | 38 | 86 |
| <b>P4Q-B*16</b> | G3/4      | 73 | 38 | 86 |

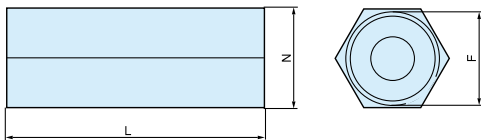
## Shuttle Valves



| Order code       | Port Size | A    | B  | C  | D    | E  | F  | G   | H   |
|------------------|-----------|------|----|----|------|----|----|-----|-----|
| <b>M33005</b>    | M5        | 27,5 | 24 | 15 | 16,0 | 15 | 6  | 6,3 | 3,2 |
| <b>B43005B</b>   | G1/8      | 44,0 | 24 | 15 | 16,0 | 25 | 6  | 9,5 | 4,5 |
| * <b>B53005A</b> | G1/4      | 52,0 | 30 | 22 | 20,5 | 35 | 10 | 8,5 | 5,5 |

\* Dimensions as **B53005BS5**

## Non Return Valves - VB - Female



| Order code           | F    | L  | N  |
|----------------------|------|----|----|
| <b>VB12-Q-NQ-5</b>   | G1/8 | 31 | 14 |
| <b>VB22-Q-NQ-5</b>   | G1/4 | 40 | 17 |
| * <b>VB42-Q-NQ-5</b> | G1/2 | 59 | 27 |

\* Dimensions as **VB42 / S50897**

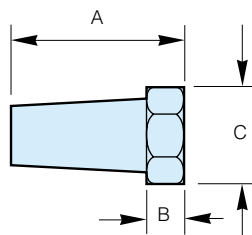
- All plastic ultra light weight versions
- Sintered metal
- All metal versions for heavy duty applications
- Versions with push-in connections
- High noise level reduction
- Low back pressure generation



**Operating and additional information**

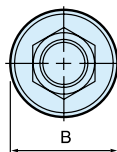
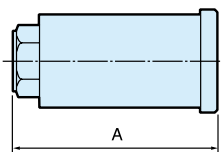
|         |                                     |                  |              |  |
|---------|-------------------------------------|------------------|--------------|--|
| Plastic | Working temperature: -10°C to +80°C |                  |              |  |
|         | Efficiency 92%                      |                  |              |  |
| Metal   | Working temperature: -10°C to +74°C | Working pressure | up to 17 bar |  |

**Sintered Bronze Series (female)**



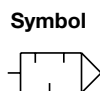
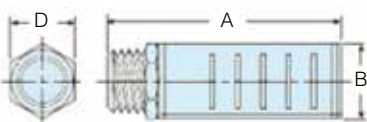
| Port mm | A  | Ø B | A/F C | Weight g | Order code        |
|---------|----|-----|-------|----------|-------------------|
| G1/8    | 15 | 8   | 13    | 0,060    | <b>9721900404</b> |

**Heavy Duty Series**



| Port Female | A   | Ø B | Weight g | Order code      |
|-------------|-----|-----|----------|-----------------|
| G3/8        | 83  | 37  | 0,124    | <b>P6M-MA13</b> |
| G1/2        | 105 | 51  | 0,362    | <b>P6M-MA14</b> |
| G3/4        | 143 | 73  | 0,670    | <b>P6M-MA16</b> |
| G1          | 143 | 73  | 0,666    | <b>P6M-MA18</b> |

**Self Cleaning, 48 Series**



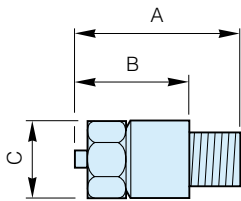
| Port thread | A   | Ø B  | A/F E         | Order code      |
|-------------|-----|------|---------------|-----------------|
| R1/8        | 47  | 21   | 16 (5/8")     | <b>ESB12MC</b>  |
| R1/4        | 47  | 21   | 16 (5/8")     | <b>ESB25MC</b>  |
| R3/8        | 84  | 32   | 25.4 (1")     | <b>ESB37MC</b>  |
| R1/2        | 84  | 32   | 25.4 (1")     | <b>ESB50MC</b>  |
| R3/4        | 116 | 52   | 41.2 (1-5/8") | <b>ESB75MC</b>  |
| R1          | 116 | 52   | 41.2 (1-5/8") | <b>ESB100MC</b> |
| R1-1/4      | 145 | 73.5 | -             | <b>ESB125MC</b> |
| R1-1/2      | 145 | 73.5 | -             | <b>ESB150MC</b> |

## Restrictors - Silencers

- Stainless steel or plastic versions
- Screwdriver adjustment
- Simple control of cylinder speeds
- High noise level reduction



## Sintered Stainless Steel Series



Symbol



| Port thread | Overall length | Ø  | A/F  | Order code        |
|-------------|----------------|----|------|-------------------|
| G1/8        | 33             | 16 | 13,0 | <b>9126900195</b> |
| G1/4        | 36             | 20 | 17,0 | <b>9126900196</b> |



**Reclassifier - Silencers  
Metal Series, Repairable and  
Disposable versions**

- Removes oil mist from exhaust airs
- Efficiently silences exhaust air
- Improves working conditions



**Operating and additional information**

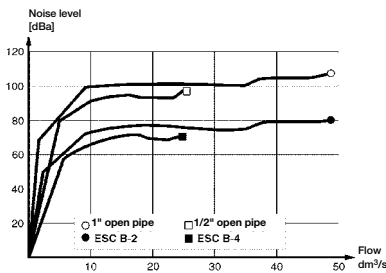
**Metal repairable version**

|                     |  |
|---------------------|--|
| Working temperature | 0 °C to 66 °C max.   |
| Working pressure    | Max 7 bar  |
| Efficiency          | Better than 99%  |
| Maximum flow rate   | G1/2, G3/4 small unit 27,8 dm³/s<br>G3/4, G1 large unit 50 dm³/s |

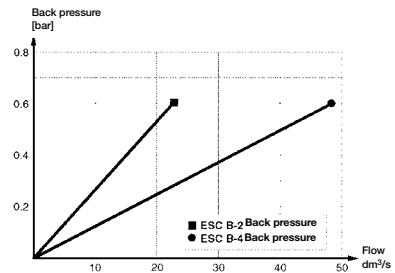
**Disposable version**

|                     |                    |
|---------------------|--------------------|
| Working temperature | 0° C to 52 °C max. |
| Working pressure    | Max 7 bar          |
| Efficiency          | Better than 99%    |
| Maximum flow rate   | See graph          |

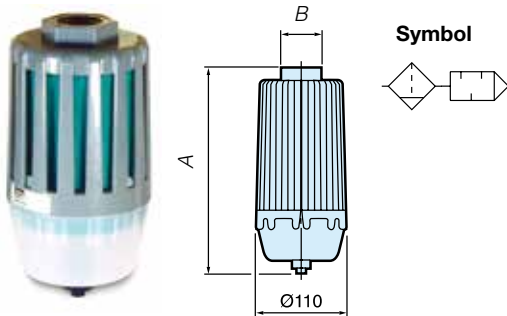
**Disposable version  
Flow vs. Noise level**



**Flow vs. Back pressure**



**Metal Repairable Series**



| Port thread | Type  | A   | Ø   | A/F B | Weight kg | Order code   |
|-------------|-------|-----|-----|-------|-----------|--------------|
| G1/2        | Small | 182 | 110 | 50    | 0,572     | <b>3514S</b> |
| G3/4        | Small | 182 | 110 | 50    | 0,592     | <b>3516S</b> |
| G3/4        | Large | 297 | 110 | 55    | 1,100     | <b>3516</b>  |
| G1          | Large | 297 | 110 | 55    | 1,100     | <b>3518</b>  |

| Replacement Element | Weight kg | Order code     |
|---------------------|-----------|----------------|
| Small               | 0,200     | <b>3514S-2</b> |
| Large               | 0,200     | <b>3516-2</b>  |

**Manifold for Metal Repairable version**



| Number of ports | Weight kg | Order code      |
|-----------------|-----------|-----------------|
| 5               | 0,270     | <b>M3516-5</b>  |
| 7               | 0,432     | <b>M3516-7</b>  |
| 9               | 0,574     | <b>M3516-9</b>  |
| 13              | 0,870     | <b>M3516-13</b> |

The manifold is available for G3/4 sizes only.





# Fittings, tubing and couplers

## LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

## 3101 Male Stud Fitting BSPP &amp; M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3101 04 19</b> |
| 4  | G1/8     | <b>3101 04 10</b> |
| 4  | G1/4     | <b>3101 04 13</b> |
| 6  | M5 x 0.8 | <b>3101 06 19</b> |
| 6  | G1/8     | <b>3101 06 10</b> |
| 6  | G1/4     | <b>3101 06 13</b> |
| 6  | G3/8     | <b>3101 06 17</b> |
| 8  | G1/8     | <b>3101 08 10</b> |
| 8  | G1/4     | <b>3101 08 13</b> |
| 8  | G3/8     | <b>3101 08 17</b> |
| 10 | G1/4     | <b>3101 10 13</b> |
| 10 | G3/8     | <b>3101 10 17</b> |
| 10 | G1/2     | <b>3101 10 21</b> |
| 12 | G3/8     | <b>3101 12 17</b> |
| 12 | G1/2     | <b>3101 12 21</b> |
| 14 | G3/8     | <b>3101 14 17</b> |
| 14 | G1/2     | <b>3101 14 21</b> |
| 16 | G3/8     | <b>3101 16 17</b> |
| 16 | G1/2     | <b>3101 16 21</b> |

## 3199 Male Stud Elbow, BSPP &amp; M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3199 04 19</b> |
| 4  | G1/8     | <b>3199 04 10</b> |
| 4  | G1/4     | <b>3199 04 13</b> |
| 6  | M5 x 0.8 | <b>3199 06 19</b> |
| 6  | G1/8     | <b>3199 06 10</b> |
| 6  | G1/4     | <b>3199 06 13</b> |
| 6  | G3/8     | <b>3199 06 17</b> |
| 8  | G1/8     | <b>3199 08 10</b> |
| 8  | G1/4     | <b>3199 08 13</b> |
| 8  | G3/8     | <b>3199 08 17</b> |
| 8  | G1/2     | <b>3199 08 21</b> |
| 10 | G1/4     | <b>3199 10 13</b> |
| 10 | G3/8     | <b>3199 10 17</b> |
| 10 | G1/2     | <b>3199 10 21</b> |
| 12 | G1/4     | <b>3199 12 13</b> |
| 12 | G3/8     | <b>3199 12 17</b> |
| 12 | G1/2     | <b>3199 12 21</b> |
| 14 | G3/8     | <b>3199 14 17</b> |
| 14 | G1/2     | <b>3199 14 21</b> |
| 16 | G3/8     | <b>3199 16 17</b> |
| 16 | G1/2     | <b>3199 16 21</b> |

## 3175 Male Stud Fitting BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3175 04 10</b> |
| 4  | R1/4 | <b>3175 04 13</b> |
| 6  | R1/8 | <b>3175 06 10</b> |
| 6  | R1/4 | <b>3175 06 13</b> |
| 6  | R3/8 | <b>3175 06 17</b> |
| 6  | R1/2 | <b>3175 06 21</b> |
| 8  | R1/8 | <b>3175 08 10</b> |
| 8  | R1/4 | <b>3175 08 13</b> |
| 8  | R3/8 | <b>3175 08 17</b> |
| 10 | R1/4 | <b>3175 10 13</b> |
| 10 | R3/8 | <b>3175 10 17</b> |
| 10 | R1/2 | <b>3175 10 21</b> |
| 12 | R3/8 | <b>3175 12 17</b> |
| 12 | R1/2 | <b>3175 12 21</b> |
| 14 | R3/8 | <b>3175 14 17</b> |
| 14 | R1/2 | <b>3175 14 21</b> |
| 16 | R3/8 | <b>3175 16 17</b> |
| 16 | R1/2 | <b>3175 16 21</b> |

## 3169 Extended Male Stud Elbow, BSPP &amp; M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3169 04 19</b> |
| 4  | G1/8     | <b>3169 04 10</b> |
| 4  | G1/4     | <b>3169 04 13</b> |
| 6  | M5 x 0.8 | <b>3169 06 19</b> |
| 6  | G1/8     | <b>3169 06 10</b> |
| 6  | G1/4     | <b>3169 06 13</b> |
| 8  | G1/8     | <b>3169 08 10</b> |
| 8  | G1/4     | <b>3169 08 13</b> |
| 8  | G3/8     | <b>3169 08 17</b> |
| 10 | G1/4     | <b>3169 10 13</b> |
| 10 | G3/8     | <b>3169 10 17</b> |
| 10 | G1/2     | <b>3169 10 21</b> |
| 12 | G1/4     | <b>3169 12 13</b> |
| 12 | G3/8     | <b>3169 12 17</b> |
| 12 | G1/2     | <b>3169 12 21</b> |
| 14 | G3/8     | <b>3169 14 17</b> |
| 14 | G1/2     | <b>3169 14 21</b> |
| 16 | G3/8     | <b>3169 16 17</b> |
| 16 | G1/2     | <b>3169 16 21</b> |

## 3114 Female Stud Fitting BSPP &amp; M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3114 04 19</b> |
| 4  | G1/8     | <b>3114 04 10</b> |
| 4  | G1/4     | <b>3114 04 13</b> |
| 6  | G1/8     | <b>3114 06 10</b> |
| 6  | G1/4     | <b>3114 06 13</b> |
| 8  | G1/8     | <b>3114 08 10</b> |
| 8  | G1/4     | <b>3114 08 13</b> |
| 10 | G1/4     | <b>3114 10 13</b> |
| 10 | G3/8     | <b>3114 10 17</b> |
| 10 | G1/2     | <b>3114 10 21</b> |
| 12 | G3/8     | <b>3114 12 17</b> |
| 12 | G1/2     | <b>3114 12 21</b> |
| 14 | G3/8     | <b>3114 14 17</b> |
| 16 | G1/2     | <b>3114 16 21</b> |

## LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

### 3129 Extended Male Stud Elbow, BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3129 04 10</b> |
| 4  | R1/4 | <b>3129 04 13</b> |
| 6  | R1/8 | <b>3129 06 10</b> |
| 6  | R1/4 | <b>3129 06 13</b> |
| 8  | R1/8 | <b>3129 08 10</b> |
| 8  | R1/4 | <b>3129 08 13</b> |
| 8  | R3/8 | <b>3129 08 17</b> |
| 10 | R1/4 | <b>3129 10 13</b> |
| 10 | R3/8 | <b>3129 10 17</b> |
| 10 | R1/2 | <b>3129 10 21</b> |
| 12 | R1/4 | <b>3129 12 13</b> |
| 12 | R3/8 | <b>3129 12 17</b> |
| 12 | R1/2 | <b>3129 12 21</b> |
| 14 | R3/8 | <b>3129 14 17</b> |
| 14 | R1/2 | <b>3129 14 21</b> |

### 3108 Male Stud Branch Tee, BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3108 04 10</b> |
| 4  | R1/4 | <b>3108 04 13</b> |
| 6  | R1/8 | <b>3108 06 10</b> |
| 6  | R1/4 | <b>3108 06 13</b> |
| 8  | R1/8 | <b>3108 08 10</b> |
| 8  | R1/4 | <b>3108 08 13</b> |
| 8  | R3/8 | <b>3108 08 17</b> |
| 10 | R1/4 | <b>3108 10 13</b> |
| 10 | R3/8 | <b>3108 10 17</b> |
| 10 | R1/2 | <b>3108 10 21</b> |
| 12 | R1/4 | <b>3108 12 13</b> |
| 12 | R3/8 | <b>3108 12 17</b> |
| 12 | R1/2 | <b>3108 12 21</b> |
| 14 | R3/8 | <b>3108 14 17</b> |
| 14 | R1/2 | <b>3108 14 21</b> |
| 16 | R3/8 | <b>3108 16 17</b> |
| 16 | R1/2 | <b>3108 16 21</b> |

### 3109 Male Stud Elbow, BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3109 04 10</b> |
| 4  | R1/4 | <b>3109 04 13</b> |
| 4  | R3/8 | <b>3109 04 17</b> |
| 6  | R1/8 | <b>3109 06 10</b> |
| 6  | R1/4 | <b>3109 06 13</b> |
| 6  | R3/8 | <b>3109 06 17</b> |
| 8  | R1/8 | <b>3109 08 10</b> |
| 8  | R1/4 | <b>3109 08 13</b> |
| 8  | R3/8 | <b>3109 08 17</b> |
| 8  | R1/2 | <b>3109 08 21</b> |
| 10 | R1/8 | <b>3109 10 10</b> |
| 10 | R1/4 | <b>3109 10 13</b> |
| 10 | R3/8 | <b>3109 10 17</b> |
| 10 | R1/2 | <b>3109 10 21</b> |
| 12 | R1/4 | <b>3109 12 13</b> |
| 12 | R3/8 | <b>3109 12 17</b> |
| 12 | R1/2 | <b>3109 12 21</b> |
| 14 | R3/8 | <b>3109 14 17</b> |
| 14 | R1/2 | <b>3109 14 21</b> |
| 16 | R3/8 | <b>3109 16 17</b> |
| 16 | R1/2 | <b>3109 16 21</b> |

### 3198 Male Stud Branch Tee BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3198 04 19</b> |
| 4  | G1/8     | <b>3198 04 10</b> |
| 4  | G1/4     | <b>3198 04 13</b> |
| 6  | M5 x 0.8 | <b>3198 06 19</b> |
| 6  | G1/8     | <b>3198 06 10</b> |
| 6  | G1/4     | <b>3198 06 13</b> |
| 8  | G1/8     | <b>3198 08 10</b> |
| 8  | G1/4     | <b>3198 08 13</b> |
| 8  | G3/8     | <b>3198 08 17</b> |
| 10 | G1/4     | <b>3198 10 13</b> |
| 10 | G3/8     | <b>3198 10 17</b> |
| 10 | G1/2     | <b>3198 10 21</b> |
| 12 | G1/4     | <b>3198 12 13</b> |
| 12 | G3/8     | <b>3198 12 17</b> |
| 12 | G1/2     | <b>3198 12 21</b> |
| 14 | G3/8     | <b>3198 14 17</b> |
| 14 | G1/2     | <b>3198 14 21</b> |
| 16 | G3/8     | <b>3198 16 17</b> |
| 16 | G1/2     | <b>3198 16 21</b> |

### 3192 Female Stud Elbow BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3192 04 10</b> |
| 4  | G1/4 | <b>3192 04 13</b> |
| 6  | G1/8 | <b>3192 06 10</b> |
| 6  | G1/4 | <b>3192 06 13</b> |
| 8  | G1/8 | <b>3192 08 10</b> |
| 8  | G1/4 | <b>3192 08 13</b> |
| 8  | G3/8 | <b>3192 08 17</b> |
| 10 | G1/4 | <b>3192 10 13</b> |
| 10 | G3/8 | <b>3192 10 17</b> |
| 10 | G1/2 | <b>3192 10 21</b> |
| 12 | G1/2 | <b>3192 12 21</b> |

## LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

## 3133 45° Male Elbow, BSPP &amp; M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3133 04 19</b> |
| 4  | G1/8     | <b>3133 04 10</b> |
| 6  | M5 x 0.8 | <b>3133 06 19</b> |
| 6  | G1/8     | <b>3133 06 10</b> |
| 6  | G1/4     | <b>3133 06 13</b> |
| 8  | G1/8     | <b>3133 08 10</b> |
| 8  | G1/4     | <b>3133 08 13</b> |
| 8  | G3/8     | <b>3133 08 17</b> |
| 10 | G1/4     | <b>3133 10 13</b> |
| 10 | G3/8     | <b>3133 10 17</b> |
| 10 | G1/2     | <b>3133 10 21</b> |
| 12 | G1/4     | <b>3133 12 13</b> |
| 12 | G3/8     | <b>3133 12 17</b> |
| 12 | G1/2     | <b>3133 12 21</b> |

## 3103 Male Stud Run Tee, BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3103 04 10</b> |
| 4  | R1/4 | <b>3103 04 13</b> |
| 6  | R1/8 | <b>3103 06 10</b> |
| 6  | R1/4 | <b>3103 06 13</b> |
| 8  | R1/8 | <b>3103 08 10</b> |
| 8  | R1/4 | <b>3103 08 13</b> |
| 8  | R3/8 | <b>3103 08 17</b> |
| 10 | R1/4 | <b>3103 10 13</b> |
| 10 | R3/8 | <b>3103 10 17</b> |
| 10 | R1/2 | <b>3103 10 21</b> |
| 12 | R1/4 | <b>3103 12 13</b> |
| 12 | R3/8 | <b>3103 12 17</b> |
| 12 | R1/2 | <b>3103 12 21</b> |
| 14 | R3/8 | <b>3103 14 17</b> |
| 14 | R1/2 | <b>3103 14 21</b> |
| 16 | R3/8 | <b>3103 16 17</b> |
| 16 | R1/2 | <b>3103 16 21</b> |

## 3113 45° Male Elbow, BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3113 04 10</b> |
| 6  | R1/8 | <b>3113 06 10</b> |
| 6  | R1/4 | <b>3113 06 13</b> |
| 8  | R1/8 | <b>3113 08 10</b> |
| 8  | R1/4 | <b>3113 08 13</b> |
| 8  | R3/8 | <b>3113 08 17</b> |
| 10 | R1/4 | <b>3113 10 13</b> |
| 10 | R3/8 | <b>3113 10 17</b> |
| 10 | R1/2 | <b>3113 10 21</b> |
| 12 | R1/4 | <b>3113 12 13</b> |
| 12 | R3/8 | <b>3113 12 17</b> |
| 12 | R1/2 | <b>3113 12 21</b> |

## 3121 Male Standpipe BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3121 04 10</b> |
| 4  | R1/4 | <b>3121 04 13</b> |
| 6  | R1/8 | <b>3121 06 10</b> |
| 6  | R1/4 | <b>3121 06 13</b> |
| 8  | R1/8 | <b>3121 08 10</b> |
| 8  | R1/4 | <b>3121 08 13</b> |
| 8  | R3/8 | <b>3121 08 17</b> |
| 10 | R1/4 | <b>3121 10 13</b> |
| 10 | R3/8 | <b>3121 10 17</b> |
| 10 | R1/2 | <b>3121 10 21</b> |
| 12 | R3/8 | <b>3121 12 17</b> |
| 12 | R1/2 | <b>3121 12 21</b> |
| 14 | R1/2 | <b>3121 14 21</b> |

## 3193 Male Stud Run Tee, BSPP &amp; M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3193 04 19</b> |
| 4  | G1/8     | <b>3193 04 10</b> |
| 4  | G1/4     | <b>3193 04 13</b> |
| 6  | M5 x 0.8 | <b>3193 06 19</b> |
| 6  | G1/8     | <b>3193 06 10</b> |
| 6  | G1/4     | <b>3193 06 13</b> |
| 8  | G1/8     | <b>3193 08 10</b> |
| 8  | G1/4     | <b>3193 08 13</b> |
| 8  | G3/8     | <b>3193 08 17</b> |
| 10 | G1/4     | <b>3193 10 13</b> |
| 10 | G3/8     | <b>3193 10 17</b> |
| 10 | G1/2     | <b>3193 10 21</b> |
| 12 | G1/4     | <b>3193 12 13</b> |
| 12 | G3/8     | <b>3193 12 17</b> |
| 12 | G1/2     | <b>3193 12 21</b> |
| 14 | G3/8     | <b>3193 14 17</b> |
| 14 | G1/2     | <b>3193 14 21</b> |
| 16 | G3/8     | <b>3193 16 17</b> |
| 16 | G1/2     | <b>3193 16 21</b> |

## 3131 Male Standpipe BSPP



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3131 04 19</b> |
| 4  | G1/8     | <b>3131 04 10</b> |
| 4  | G1/4     | <b>3131 04 13</b> |
| 6  | G1/8     | <b>3131 06 10</b> |
| 6  | G1/4     | <b>3131 06 13</b> |
| 8  | G1/8     | <b>3131 08 10</b> |
| 8  | G1/4     | <b>3131 08 13</b> |
| 8  | G3/8     | <b>3131 08 17</b> |
| 10 | G1/4     | <b>3131 10 13</b> |
| 10 | G3/8     | <b>3131 10 17</b> |
| 10 | G1/2     | <b>3131 10 21</b> |
| 12 | G3/8     | <b>3131 12 17</b> |
| 12 | G1/2     | <b>3131 12 21</b> |
| 14 | G3/8     | <b>3131 14 17</b> |
| 14 | G1/2     | <b>3131 14 21</b> |

## LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

### 3158 "Y" piece, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3158 04 19</b> |
| 4  | G1/8     | <b>3158 04 10</b> |
| 4  | G1/4     | <b>3158 04 13</b> |
| 6  | M5 x 0.8 | <b>3158 06 19</b> |
| 6  | G1/8     | <b>3158 06 10</b> |
| 6  | G1/4     | <b>3158 06 13</b> |
| 8  | G1/8     | <b>3158 08 10</b> |
| 8  | G1/4     | <b>3158 08 13</b> |
| 8  | G3/8     | <b>3158 08 17</b> |
| 10 | G1/4     | <b>3158 10 13</b> |
| 10 | G3/8     | <b>3158 10 17</b> |
| 10 | G1/2     | <b>3158 10 21</b> |
| 12 | G3/8     | <b>3158 12 17</b> |
| 12 | G1/2     | <b>3158 12 21</b> |

### 3119 Double banjo, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3119 04 19</b> |
| 4  | G1/8     | <b>3119 04 10</b> |
| 6  | G1/8     | <b>3119 06 10</b> |
| 6  | G1/4     | <b>3119 06 13</b> |
| 8  | G1/4     | <b>3119 08 13</b> |
| 8  | G3/8     | <b>3119 08 17</b> |
| 10 | G3/8     | <b>3119 10 17</b> |

### 3132 Male Double "Y" BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3132 04 10</b> |
| 4  | G1/4 | <b>3132 04 13</b> |
| 6  | G1/8 | <b>3132 06 10</b> |
| 6  | G1/4 | <b>3132 06 13</b> |

### 3124 Single Banjo with Female, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3124 04 19</b> |
| 4  | G1/8     | <b>3124 04 10</b> |
| 6  | G1/4     | <b>3124 06 13</b> |
| 8  | G3/8     | <b>3124 08 17</b> |

### 3118 Single Banjo, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3118 04 19</b> |
| 4  | G1/8     | <b>3118 04 10</b> |
| 6  | M5 x 0.8 | <b>3118 06 19</b> |
| 6  | G1/8     | <b>3118 06 10</b> |
| 6  | G1/4     | <b>3118 06 13</b> |
| 8  | G1/8     | <b>3118 08 10</b> |
| 8  | G1/4     | <b>3118 08 13</b> |
| 8  | G3/8     | <b>3118 08 17</b> |
| 10 | G1/4     | <b>3118 10 13</b> |
| 10 | G3/8     | <b>3118 10 17</b> |
| 10 | G1/2     | <b>3118 10 21</b> |
| 12 | G3/8     | <b>3118 12 17</b> |
| 12 | G1/2     | <b>3118 12 21</b> |

### 3189 Oscillating Compact Elbow, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3189 04 10</b> |
| 6  | G1/8 | <b>3189 06 10</b> |
| 6  | G1/4 | <b>3189 06 13</b> |
| 8  | G1/8 | <b>3189 08 10</b> |
| 8  | G1/4 | <b>3189 08 13</b> |
| 8  | G3/8 | <b>3189 08 17</b> |
| 10 | G1/4 | <b>3189 10 13</b> |
| 10 | G3/8 | <b>3189 10 17</b> |
| 12 | G1/4 | <b>3189 12 13</b> |
| 12 | G3/8 | <b>3189 12 17</b> |

### 3149 Double Banjo, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3149 04 19</b> |
| 4  | G1/8     | <b>3149 04 10</b> |
| 4  | G1/4     | <b>3149 04 13</b> |
| 6  | G1/8     | <b>3149 06 10</b> |
| 6  | G1/4     | <b>3149 06 13</b> |
| 6  | G3/8     | <b>3149 06 17</b> |
| 8  | G1/4     | <b>3149 08 13</b> |
| 8  | G3/8     | <b>3149 08 17</b> |
| 10 | G3/8     | <b>3149 10 17</b> |

### 3391 Self-Sealing Male Stud Fitting, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3391 04 10</b> |
| 6  | G1/8 | <b>3391 06 10</b> |
| 8  | G1/8 | <b>3391 08 10</b> |
| 8  | G1/4 | <b>3391 08 13</b> |
| 10 | G3/8 | <b>3391 10 17</b> |

## LF 3000: Polymer Push-In Fittings - Union

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

### 3102 Equal Elbow



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3102 04 00</b> |
| 6  | <b>3102 06 00</b> |
| 8  | <b>3102 08 00</b> |
| 10 | <b>3102 10 00</b> |
| 12 | <b>3102 12 00</b> |
| 14 | <b>3102 14 00</b> |
| 16 | <b>3102 16 00</b> |

### 3140 Single "Y" piece - Equal & Unequal



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3140 04 00</b> |
| 4   | 6   | <b>3140 04 06</b> |
| 6   | 6   | <b>3140 06 00</b> |
| 6   | 8   | <b>3140 06 08</b> |
| 8   | 8   | <b>3140 08 00</b> |
| 10  | 10  | <b>3140 10 00</b> |
| 12  | 12  | <b>3140 12 00</b> |

### 3104 Tee - Equal & Unequal



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3104 04 00</b> |
| 4   | 6   | <b>3104 04 06</b> |
| 6   | 4   | <b>3104 06 04</b> |
| 6   | 6   | <b>3104 06 00</b> |
| 6   | 8   | <b>3104 06 08</b> |
| 8   | 6   | <b>3104 08 06</b> |
| 8   | 8   | <b>3104 08 00</b> |
| 8   | 10  | <b>3104 08 10</b> |
| 10  | 8   | <b>3104 10 08</b> |
| 10  | 10  | <b>3104 10 00</b> |
| 10  | 12  | <b>3104 10 12</b> |
| 12  | 10  | <b>3104 12 10</b> |
| 12  | 12  | <b>3104 12 00</b> |
| 14  | 8   | <b>3104 14 08</b> |
| 14  | 14  | <b>3104 14 00</b> |
| 16  | 16  | <b>3104 16 00</b> |
| 16  | 12  | <b>3104 16 12</b> |

### 3144 Multiple "Y" piece - Equal & Unequal



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3144 04 04</b> |
| 4   | 6   | <b>3144 04 06</b> |
| 6   | 6   | <b>3144 06 06</b> |
| 6   | 8   | <b>3144 06 08</b> |

### 3304 Unequal Multiple Tee



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 6   | 4   | <b>3304 06 04</b> |
| 8   | 4   | <b>3304 08 04</b> |
| 8   | 6   | <b>3304 08 06</b> |
| 10  | 6   | <b>3304 10 06</b> |
| 10  | 8   | <b>3304 10 08</b> |

### 3106 Tube/Tube Connector - Equal & Unequal



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3106 04 00</b> |
| 4   | 6   | <b>3106 04 06</b> |
| 4   | 8   | <b>3106 04 08</b> |
| 6   | 6   | <b>3106 06 00</b> |
| 6   | 8   | <b>3106 06 08</b> |
| 6   | 10  | <b>3106 06 10</b> |
| 8   | 8   | <b>3106 08 00</b> |
| 8   | 10  | <b>3106 08 10</b> |
| 8   | 12  | <b>3106 08 12</b> |
| 10  | 10  | <b>3106 10 00</b> |
| 10  | 12  | <b>3106 10 12</b> |
| 12  | 12  | <b>3106 12 00</b> |
| 12  | 14  | <b>3106 12 14</b> |
| 14  | 14  | <b>3106 14 00</b> |
| 16  | 16  | <b>3106 16 00</b> |
| 16  | 12  | <b>3106 16 12</b> |

### 3306 Unequal Multiple Elbow



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 6   | 4   | <b>3306 06 04</b> |
| 8   | 4   | <b>3306 08 04</b> |
| 8   | 6   | <b>3306 08 06</b> |
| 10  | 6   | <b>3306 10 06</b> |
| 10  | 8   | <b>3306 10 08</b> |

### 3107 Cross - Equal & Unequal



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3107 04 00</b> |
| 4   | 6   | <b>3107 04 06</b> |
| 6   | 6   | <b>3107 06 00</b> |
| 6   | 8   | <b>3107 06 08</b> |
| 8   | 8   | <b>3107 08 00</b> |



## LF 3000: Polymer Push-In Fittings - Union

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

### 3310 Manifold with LF3000



| ØD1 | ØD2  | Order code        |
|-----|------|-------------------|
| 4   | G1/4 | <b>3310 04 13</b> |
| 6   | G1/4 | <b>3310 06 13</b> |
| 8   | G3/8 | <b>3310 08 17</b> |
| 10  | G1/2 | <b>3310 10 21</b> |
| 12  | G1/2 | <b>3310 12 21</b> |

### 3182 Plug-In Equal Compact Elbow



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3182 04 00</b> |
| 6   | 6   | <b>3182 06 00</b> |
| 8   | 8   | <b>3182 08 00</b> |
| 10  | 10  | <b>3182 10 00</b> |
| 12  | 12  | <b>3182 12 00</b> |

### 3151 End Cap with Push-In Connection



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3151 04 00</b> |
| 6  | <b>3151 06 00</b> |
| 8  | <b>3151 08 00</b> |
| 10 | <b>3151 10 00</b> |
| 12 | <b>3151 12 00</b> |
| 14 | <b>3151 14 00</b> |

### 3188 Plug-In Equal Compact Tee



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3188 04 00</b> |
| 6   | 6   | <b>3188 06 00</b> |
| 8   | 8   | <b>3188 08 00</b> |
| 10  | 10  | <b>3188 10 00</b> |
| 12  | 12  | <b>3188 12 00</b> |

### 3116 Equal Bulkhead Connector



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3116 04 00</b> |
| 6  | <b>3116 06 00</b> |
| 8  | <b>3116 08 00</b> |
| 10 | <b>3116 10 00</b> |
| 12 | <b>3116 12 00</b> |
| 14 | <b>3116 14 00</b> |

### 3183 Plug-In Equal Run Tee



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 4   | <b>3183 04 00</b> |
| 6   | 6   | <b>3183 06 00</b> |
| 8   | 8   | <b>3183 08 00</b> |
| 10  | 10  | <b>3183 10 00</b> |
| 12  | 12  | <b>3183 12 00</b> |

### 3136 Female Bulkhead Connector



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3136 04 10</b> |
| 4  | G1/4 | <b>3136 04 13</b> |
| 6  | G1/8 | <b>3136 06 10</b> |
| 6  | G1/4 | <b>3136 06 13</b> |
| 6  | G3/8 | <b>3136 06 17</b> |
| 8  | G1/8 | <b>3136 08 10</b> |
| 8  | G1/4 | <b>3136 08 13</b> |
| 10 | G3/8 | <b>3136 10 17</b> |
| 12 | G3/8 | <b>3136 12 17</b> |
| 12 | G1/2 | <b>3136 12 21</b> |
| 16 | G3/8 | <b>3136 16 17</b> |
| 16 | G1/2 | <b>3136 16 21</b> |

### 3166 Reducer



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 6   | <b>3166 04 06</b> |
| 4   | 8   | <b>3166 04 08</b> |
| 4   | 10  | <b>3166 04 10</b> |
| 6   | 8   | <b>3166 06 08</b> |
| 6   | 10  | <b>3166 06 10</b> |
| 6   | 12  | <b>3166 06 12</b> |
| 6   | 14  | <b>3166 06 14</b> |
| 8   | 10  | <b>3166 08 10</b> |
| 8   | 12  | <b>3166 08 12</b> |
| 8   | 14  | <b>3166 08 14</b> |
| 10  | 12  | <b>3166 10 12</b> |
| 10  | 14  | <b>3166 10 14</b> |
| 12  | 14  | <b>3166 12 14</b> |

### 3139 Equal Bulkhead Elbow



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3139 04 00</b> |
| 6  | <b>3139 06 00</b> |
| 8  | <b>3139 08 00</b> |
| 10 | <b>3139 10 00</b> |
| 12 | <b>3139 12 00</b> |
| 14 | <b>3139 14 00</b> |

### 3168 Increaser



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 6   | 4   | <b>3168 06 04</b> |
| 8   | 6   | <b>3168 08 06</b> |
| 10  | 8   | <b>3168 10 08</b> |
| 12  | 10  | <b>3168 12 10</b> |

## LF 3000: Polymer Push-In Fittings - Union

-20°C to +80°C  
20 bar max. (vacuum 755 mmHg)

### 3126 Blanking Plugs



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3126 04 00</b> |
| 6  | <b>3126 06 00</b> |
| 8  | <b>3126 08 00</b> |
| 10 | <b>3126 10 00</b> |
| 12 | <b>3126 12 00</b> |
| 14 | <b>3126 14 00</b> |
| 16 | <b>3126 16 00</b> |

### 3320 Multi-Connector Male Screw Body



| o.d. tube | Number of outlets | Order code           |
|-----------|-------------------|----------------------|
| 4         | 2                 | <b>3320 04 00 02</b> |
| 4         | 4                 | <b>3320 04 00 04</b> |
| 4         | 7                 | <b>3320 04 00 07</b> |
| 4         | 12                | <b>3320 04 00 12</b> |
| 6         | 2                 | <b>3320 06 00 02</b> |
| 6         | 4                 | <b>3320 06 00 04</b> |
| 6         | 7                 | <b>3320 06 00 07</b> |
| 8         | 2                 | <b>3320 08 00 02</b> |

### Clip Strips for Tubes



| ØD | Order code        |
|----|-------------------|
| 4  | <b>Clip 04 00</b> |
| 6  | <b>Clip 06 00</b> |
| 8  | <b>Clip 08 00</b> |
| 10 | <b>Clip 10 00</b> |
| 12 | <b>Clip 12 00</b> |
| 14 | <b>Clip 14 00</b> |

### 3321 Multi-Connector Female Screw Body



| o.d. tube | Number of outlets | Order code           |
|-----------|-------------------|----------------------|
| 4         | 2                 | <b>3321 04 00 02</b> |
| 4         | 4                 | <b>3321 04 00 04</b> |
| 4         | 7                 | <b>3321 04 00 07</b> |
| 4         | 12                | <b>3321 04 00 12</b> |
| 6         | 4                 | <b>3321 06 00 04</b> |
| 6         | 7                 | <b>3321 06 00 07</b> |
| 8         | 2                 | <b>3321 08 00 02</b> |

### 3100 Carstick



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3100 04 00</b> |
| 6  | <b>3100 06 00</b> |
| 8  | <b>3100 08 00</b> |
| 10 | <b>3100 10 00</b> |
| 12 | <b>3100 12 00</b> |
| 14 | <b>3100 14 00</b> |

### 3329 Multi-Connector Screw Cap



| Number of outlets | Order code        |
|-------------------|-------------------|
| 2                 | <b>3329 00 01</b> |
| 4 - 7             | <b>3329 00 02</b> |
| 12                | <b>3329 00 03</b> |

### 3379 DIN Rail Connector for 2 tubes in line



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3379 04 00</b> |
| 6  | <b>3379 06 00</b> |
| 8  | <b>3379 08 00</b> |

### 3381 DIN Rail Connector for 3 Tubes



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3381 04 00</b> |
| 6  | <b>3381 06 00</b> |
| 8  | <b>3381 08 00</b> |

### Multi-Connector Assembly Photo



## Function Fittings: 3 mm Push-In Fittings

-15°C to +70°C  
 from 18 bar max.

### 3281 Male Stud Fitting, M3 and M5 Thread



| ØD | C      | Order code        |
|----|--------|-------------------|
| 3  | M3x0.5 | <b>3281 03 09</b> |
| 3  | M5x0.8 | <b>3281 03 19</b> |

### 3202 Equal Elbow



| ØD | Order code        |
|----|-------------------|
| 3  | <b>3202 03 00</b> |

### 3299 Compact Male Stud Elbow, M3 and M5 Thread



| ØD | C      | Order code        |
|----|--------|-------------------|
| 3  | M3x0.5 | <b>3299 03 09</b> |
| 3  | M5x0.8 | <b>3299 03 19</b> |

### 3204 Equal Tee



| ØD | Order code        |
|----|-------------------|
| 3  | <b>3204 03 00</b> |

### 3229 Extended Male Stud Elbow, M3 and M5 Thread



| ØD | C      | Order code        |
|----|--------|-------------------|
| 3  | M3x0.5 | <b>3229 03 09</b> |
| 3  | M5x0.8 | <b>3229 03 19</b> |

### 3266 4 mm to 3 mm Reducer



| ØD | Order code        |
|----|-------------------|
| 3  | <b>3266 03 04</b> |

### 3298 Male Stud Branch Tee, M3 and M5 Thread



| ØD | C      | Order code        |
|----|--------|-------------------|
| 3  | M3x0.5 | <b>3298 03 09</b> |
| 3  | M5x0.8 | <b>3298 03 19</b> |

### 3226 Blanking Plug



| ØD | Order code        |
|----|-------------------|
| 3  | <b>3226 03 00</b> |

### 3293 Male Stud Run Tee, M3 and M5 Thread



| ØD | C      | Order code        |
|----|--------|-------------------|
| 3  | M3x0.5 | <b>3293 03 09</b> |
| 3  | M5x0.8 | <b>3293 03 19</b> |

### 3218 Single Banjo, M3 and M5 Thread



| ØD | C      | Order code        |
|----|--------|-------------------|
| 3  | M3x0.5 | <b>3218 03 09</b> |
| 3  | M5x0.8 | <b>3218 03 19</b> |

### 3206 Equal Tube/Tube Connector



| ØD | Order code        |
|----|-------------------|
| 3  | <b>3206 03 00</b> |

## Function Fittings: Flow Control Regulators

0°C to +70°C  
from 1 to 10 bar max.

## 7060 Compact BSPP - exhaust (A)



| ØD | C    | Order code |
|----|------|------------|
| 4  | G1/8 | 7060 04 10 |
| 6  | G1/8 | 7060 06 10 |
| 6  | G1/4 | 7060 06 13 |
| 8  | G1/8 | 7060 08 10 |
| 8  | G1/4 | 7060 08 13 |
| 8  | G3/8 | 7060 08 17 |
| 10 | G1/4 | 7060 10 13 |
| 10 | G3/8 | 7060 10 17 |
| 12 | G3/8 | 7060 12 17 |
| 12 | G1/2 | 7060 12 21 |

## 7669 Miniature BSPP &amp; M5 - supply (B)



| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0.8 | 7669 04 19 |
| 4  | G1/8     | 7669 04 10 |
| 6  | M5 x 0.8 | 7669 06 19 |
| 6  | G1/8     | 7669 06 10 |
| 6  | G1/4     | 7669 06 13 |
| 8  | G1/8     | 7669 08 10 |
| 8  | G1/4     | 7669 08 13 |
| 8  | G3/8     | 7669 08 17 |

## 7061 Compact BSPP - supply (B)



| ØD | C    | Order code |
|----|------|------------|
| 4  | G1/8 | 7061 04 10 |
| 6  | G1/8 | 7061 06 10 |
| 6  | G1/4 | 7061 06 13 |
| 8  | G1/8 | 7061 08 10 |
| 8  | G1/4 | 7061 08 13 |
| 8  | G3/8 | 7061 08 17 |
| 10 | G1/4 | 7061 10 13 |
| 10 | G3/8 | 7061 10 17 |
| 12 | G1/2 | 7061 12 21 |

7010 Recessed Adjust.Screw,  
BSPP & M5 - exhaust (A)

| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0.8 | 7010 04 19 |
| 4  | G1/8     | 7010 04 10 |
| 6  | M5 x 0.8 | 7010 06 19 |
| 6  | G1/8     | 7010 06 10 |
| 6  | G1/4     | 7010 06 13 |
| 8  | G1/8     | 7010 08 10 |
| 8  | G1/4     | 7010 08 13 |
| 8  | G3/8     | 7010 08 17 |
| 10 | G1/4     | 7010 10 13 |
| 10 | G3/8     | 7010 10 17 |
| 10 | G1/2     | 7010 10 21 |
| 12 | G3/8     | 7010 12 17 |
| 12 | G1/2     | 7010 12 21 |

## 7062 Compact BSPP - bi-directional (C)



| ØD | C    | Order code |
|----|------|------------|
| 4  | G1/8 | 7062 04 10 |
| 6  | G1/8 | 7062 06 10 |
| 6  | G1/4 | 7062 06 13 |
| 8  | G1/8 | 7062 08 10 |
| 8  | G1/4 | 7062 08 13 |
| 8  | G3/8 | 7062 08 17 |

7011 Recessed Adjust.Screw,  
BSPP & M5 - supply (B)

| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0.8 | 7011 04 19 |
| 4  | G1/8     | 7011 04 10 |
| 6  | M5 x 0.8 | 7011 06 19 |
| 6  | G1/8     | 7011 06 10 |
| 6  | G1/4     | 7011 06 13 |
| 8  | G1/8     | 7011 08 10 |
| 8  | G1/4     | 7011 08 13 |
| 8  | G3/8     | 7011 08 17 |
| 10 | G1/4     | 7011 10 13 |
| 10 | G3/8     | 7011 10 17 |

## 7660 Miniature BSPP &amp; M5 - exhaust (A)



| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0.8 | 7660 04 19 |
| 4  | G1/8     | 7660 04 10 |
| 6  | M5 x 0.8 | 7660 06 19 |
| 6  | G1/8     | 7660 06 10 |
| 6  | G1/4     | 7660 06 13 |
| 8  | G1/8     | 7660 08 10 |
| 8  | G1/4     | 7660 08 13 |
| 8  | G3/8     | 7660 08 17 |

7012 Recessed Adjust.Screw,  
BSPP & M5 - bi-directional (C)

| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0.8 | 7012 04 19 |
| 4  | G1/8     | 7012 04 10 |
| 6  | M5 x 0.8 | 7012 06 19 |
| 6  | G1/8     | 7012 06 10 |
| 6  | G1/4     | 7012 06 13 |
| 8  | G1/8     | 7012 08 10 |
| 8  | G1/4     | 7012 08 13 |
| 8  | G3/8     | 7012 08 17 |

## 7662 Miniature BSPP &amp; M5 - bi-directional (C)



| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0.8 | 7662 04 19 |
| 4  | G1/8     | 7662 04 10 |
| 6  | M5 x 0.8 | 7662 06 19 |
| 6  | G1/8     | 7662 06 10 |
| 6  | G1/4     | 7662 06 13 |

## Function Fittings: Flow Control Regulators

0°C to +70°C  
from 1 to 10 bar max.

### 7040 Compact Swivel Elbow, BSPP - exhaust (A)



| ØD | C    | Order code |
|----|------|------------|
| 6  | G1/8 | 7040 06 10 |
| 6  | G1/4 | 7040 06 13 |
| 8  | G1/8 | 7040 08 10 |
| 8  | G1/4 | 7040 08 13 |
| 8  | G3/8 | 7040 08 17 |
| 10 | G1/4 | 7040 10 13 |
| 10 | G3/8 | 7040 10 17 |
| 12 | G3/8 | 7040 12 17 |
| 12 | G1/2 | 7040 12 21 |

### 7041 Compact Swivel Elbow, BSPP - supply (B)



| ØD | C    | Order code |
|----|------|------------|
| 6  | G1/4 | 7041 06 13 |
| 8  | G1/8 | 7041 08 10 |
| 8  | G1/4 | 7041 08 13 |

### 7640 Miniature BSPP & Metric - exhaust (A)



| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0,8 | 7640 04 19 |
| 4  | G1/8     | 7640 04 10 |
| 6  | M5 x 0,8 | 7640 06 19 |
| 6  | G1/8     | 7640 06 10 |

### 7649 Miniature BSPP & Metric - supply (B)



| ØD | C        | Order code |
|----|----------|------------|
| 4  | M5 x 0,8 | 7649 04 19 |
| 4  | G1/8     | 7649 04 10 |
| 6  | M5 x 0,8 | 7649 06 19 |
| 6  | G1/8     | 7649 06 10 |

### 7770 - In-line with push-in connection, One-Way Adjust (A)



| ØD | Order code |
|----|------------|
| 4  | 7770 04 00 |
| 6  | 7770 06 00 |
| 8  | 7770 08 00 |
| 10 | 7770 10 00 |
| 12 | 7770 12 00 |

### 7772 - In-line with push-in connection, Bi-directional (C)



| ØD | Order code |
|----|------------|
| 4  | 7772 04 00 |
| 6  | 7772 06 00 |
| 8  | 7772 08 00 |

### 7771 In-line with Threaded Connections, BSPP, One-Way Adjust (A)



| C    | Order code |
|------|------------|
| G1/8 | 7771 10 10 |
| G1/4 | 7771 13 13 |
| G3/8 | 7771 17 17 |
| G1/2 | 7771 21 21 |

### 7776 - In-line with push-in connection, One-Way Adjust (A), Panel Mountable



| ØD | Order code |
|----|------------|
| 4  | 7776 04 00 |
| 6  | 7776 06 00 |
| 8  | 7776 08 00 |
| 10 | 7776 10 00 |
| 12 | 7776 12 00 |

### 7100 Compact with push-in connection, BSPP - exhaust (A)



| ØD | C    | Order code |
|----|------|------------|
| 4  | G1/8 | 7100 04 10 |
| 6  | G1/8 | 7100 06 10 |
| 6  | G1/4 | 7100 06 13 |
| 8  | G1/8 | 7100 08 10 |
| 8  | G1/4 | 7100 08 13 |
| 8  | G3/8 | 7100 08 17 |
| 10 | G1/4 | 7100 10 13 |
| 10 | G3/8 | 7100 10 17 |
| 12 | G3/8 | 7100 12 17 |
| 12 | G1/2 | 7100 12 21 |
| 14 | G1/2 | 7100 14 21 |

### 7101 Compact with push-in connection, BSPP - supply (B)



| ØD | C    | Order code |
|----|------|------------|
| 4  | G1/8 | 7101 04 10 |
| 6  | G1/8 | 7101 06 10 |
| 6  | G1/4 | 7101 06 13 |
| 8  | G1/8 | 7101 08 10 |
| 8  | G1/4 | 7101 08 13 |
| 8  | G3/8 | 7101 08 17 |

### 7110 Compact with Threaded Fitting, BSPP - exhaust (A)



| C    | Order code |
|------|------------|
| G1/8 | 7110 10 10 |
| G1/4 | 7110 13 13 |
| G3/8 | 7110 17 17 |
| G1/2 | 7110 21 21 |

## Function Fittings: Flow Control Regulators

0°C to +70°C  
from 1 to 10 bar max.

### 7111 Compact with Threaded Fitting, BSPP - supply (B)



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>7111 10 10</b> |
| G1/4 | <b>7111 13 13</b> |

### 7160 with Universal Brass Compression Fitting, Recessed Adjust. Screw, BSP - exhaust (A)



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>7160 04 10</b> |
| 6  | G1/8 | <b>7160 06 10</b> |
| 6  | G1/4 | <b>7160 06 13</b> |
| 8  | G1/8 | <b>7160 08 10</b> |
| 8  | G1/4 | <b>7160 08 13</b> |
| 10 | G1/4 | <b>7160 10 13</b> |
| 10 | G3/8 | <b>7160 10 17</b> |
| 10 | G1/2 | <b>7160 10 21</b> |
| 12 | G3/8 | <b>7160 12 17</b> |
| 12 | G1/2 | <b>7160 12 21</b> |

### 7170 In-line Flow Regulator, BSPP & M5



Body in aluminium

| C    | Order code        |
|------|-------------------|
| M5   | <b>7170 19 19</b> |
| G1/8 | <b>7170 10 10</b> |
| G1/4 | <b>7170 13 13</b> |
| G3/8 | <b>7170 17 17</b> |
| G1/2 | <b>7170 21 21</b> |

### 7762 with Universal Brass Compression Fitting, external adjust, BSPP - exhaust (A)



| ØD | C    | Order code        |
|----|------|-------------------|
| 8  | G1/8 | <b>7762 08 10</b> |
| 10 | G1/4 | <b>7762 10 13</b> |
| 14 | G3/8 | <b>7762 14 17</b> |
| 18 | G1/2 | <b>7762 18 21</b> |

### 7130 Recessed Adjust.Screw, BSPP & M5 - exhaust (A)



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | G1/8     | <b>7130 04 10</b> |
| 4  | M5 x 0.8 | <b>7130 04 19</b> |
| 6  | G1/8     | <b>7130 06 10</b> |
| 6  | G1/4     | <b>7130 06 13</b> |
| 6  | M5 x 0.8 | <b>7130 06 19</b> |
| 8  | G1/8     | <b>7130 08 10</b> |
| 8  | G1/4     | <b>7130 08 13</b> |
| 8  | G3/8     | <b>7130 08 17</b> |
| 10 | G1/4     | <b>7130 10 13</b> |
| 10 | G3/8     | <b>7130 10 17</b> |
| 10 | G1/2     | <b>7130 10 21</b> |
| 12 | G3/8     | <b>7130 12 17</b> |
| 12 | G1/2     | <b>7130 12 21</b> |

### 7140 Threaded Recessed Adjust.Screw, BSPP & M5 - exhaust (A)



| C        | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>7140 19 19</b> |
| G1/8     | <b>7140 10 10</b> |
| G1/4     | <b>7140 13 13</b> |
| G3/8     | <b>7140 17 17</b> |
| G1/2     | <b>7140 21 21</b> |

## Function Fittings: Non-Return Valves

0°C to +70°C  
from 1 to 10 bar max.

### 7996 Non-Return Valve with push-in connection



| ØD | Order code        |
|----|-------------------|
| 4  | <b>7996 04 00</b> |
| 6  | <b>7996 06 00</b> |
| 8  | <b>7996 08 00</b> |
| 10 | <b>7996 10 00</b> |
| 12 | <b>7996 12 00</b> |

### 7994 Non-Return Valve with push-in connection, BSPP & M5 -exhaust (A)



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>7994 04 19</b> |
| 4  | G1/8     | <b>7994 04 10</b> |
| 6  | G1/8     | <b>7994 06 10</b> |
| 6  | G1/4     | <b>7994 06 13</b> |
| 8  | G1/8     | <b>7994 08 10</b> |
| 8  | G1/4     | <b>7994 08 13</b> |
| 10 | G3/8     | <b>7994 10 17</b> |
| 12 | G3/8     | <b>7994 12 17</b> |
| 12 | G1/2     | <b>7994 12 21</b> |

### 7984 Non-Return Valve with push-in connection, BSPP & M5 -supply (B)



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0,8 | <b>7984 04 19</b> |
| 4  | G1/8     | <b>7984 04 10</b> |
| 6  | G1/8     | <b>7984 06 10</b> |
| 6  | G1/4     | <b>7984 06 13</b> |
| 8  | G1/8     | <b>7984 08 10</b> |
| 8  | G1/4     | <b>7984 08 13</b> |
| 10 | G3/8     | <b>7984 10 17</b> |
| 12 | G3/8     | <b>7984 12 17</b> |
| 12 | G1/2     | <b>7984 12 21</b> |

### 7930 Adjustable Check Valve, Double Female and BSPP and Metric Thread



| ØC       | Order code        |
|----------|-------------------|
| M5 X 0.8 | <b>7930 19 19</b> |
| G1/8     | <b>7930 10 10</b> |
| G1/4     | <b>7930 13 13</b> |
| G3/8     | <b>7930 17 17</b> |
| G1/2     | <b>7930 21 21</b> |

### 7931 Adjustable Check Valve Supply, Male/Female BSPP Thread



| ØC   | Order code        |
|------|-------------------|
| G1/8 | <b>7931 10 10</b> |
| G1/4 | <b>7931 13 13</b> |
| G3/8 | <b>7931 17 17</b> |
| G1/2 | <b>7931 21 21</b> |

### 7932 Adjustable Check Valve Exhaust, Male/Female BSPP Thread



| ØC   | Order code        |
|------|-------------------|
| G1/8 | <b>7932 10 10</b> |
| G1/4 | <b>7932 13 13</b> |
| G3/8 | <b>7932 17 17</b> |
| G1/2 | <b>7932 21 21</b> |

## Function Fittings

-5°C to +60°C  
from 1 to 10 bar max.

## 7892 Piloted Non-Return Valve, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 6  | G1/8 | <b>7892 06 10</b> |
| 6  | G1/4 | <b>7892 06 13</b> |
| 8  | G1/8 | <b>7892 08 10</b> |
| 8  | G1/4 | <b>7892 08 13</b> |
| 8  | G3/8 | <b>7892 08 17</b> |
| 10 | G3/8 | <b>7892 10 17</b> |
| 10 | G1/2 | <b>7892 10 21</b> |
| 12 | G1/2 | <b>7892 12 21</b> |

## 7894 Piloted Non-Return Valve with Flow Regulator and Exhaust, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 6  | G1/8 | <b>7894 06 10</b> |
| 6  | G1/4 | <b>7894 06 13</b> |
| 8  | G1/8 | <b>7894 08 10</b> |
| 8  | G1/4 | <b>7894 08 13</b> |
| 8  | G3/8 | <b>7894 08 17</b> |
| 10 | G3/8 | <b>7894 10 17</b> |
| 10 | G1/2 | <b>7894 10 21</b> |
| 12 | G1/2 | <b>7894 12 21</b> |

## 7880 Blocking Fitting, Male Thread BSPP, with push-in connection



| ØD | C    | Order code        |
|----|------|-------------------|
| 6  | G1/8 | <b>7880 06 10</b> |
| 6  | G1/4 | <b>7880 06 13</b> |
| 8  | G1/4 | <b>7880 08 13</b> |
| 8  | G3/8 | <b>7880 08 17</b> |
| 10 | G3/8 | <b>7880 10 17</b> |
| 12 | G1/2 | <b>7880 12 21</b> |

## 7881 Blocking Fitting, Male, Threaded Port, BSPP



| C1   | C2   | Order code        |
|------|------|-------------------|
| G1/8 | G1/4 | <b>7881 13 10</b> |
| G1/4 | G1/4 | <b>7881 13 13</b> |
| G3/8 | G3/8 | <b>7881 17 17</b> |
| G1/2 | G1/2 | <b>7881 21 21</b> |

## 7883 Blocking Fitting, Male Thread BSPP, with push-in connection &amp; flow regulator



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>7883 04 10</b> |
| 6  | G1/8 | <b>7883 06 10</b> |
| 6  | G1/4 | <b>7883 06 13</b> |
| 8  | G1/4 | <b>7883 08 13</b> |
| 8  | G3/8 | <b>7883 08 17</b> |

## 7818 Sensor Fitting with push-in connection, pneumatic, BSPP &amp; M5



| C        | Order code        |
|----------|-------------------|
| M5 x 0,8 | <b>7818 04 19</b> |
| G1/8     | <b>7818 04 10</b> |
| G1/4     | <b>7818 04 13</b> |
| G3/8     | <b>7818 04 17</b> |
| G1/2     | <b>7818 04 21</b> |

## 7818 Sensor Fitting, Threaded Fittings, pneumatic, BSPP &amp; M5



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>7818 19 10</b> |
| G1/4 | <b>7818 19 13</b> |

## 7828 Sensor Fitting, Pneumatic/Electric BSPP &amp; M5



| C        | Order code        |
|----------|-------------------|
| M5 x 0,8 | <b>7828 00 19</b> |
| G1/8     | <b>7828 00 10</b> |
| G1/4     | <b>7828 00 13</b> |
| G3/8     | <b>7828 00 17</b> |
| G1/2     | <b>7828 00 21</b> |



## Function Fittings

-15°C to +60°C  
from 1 to 10 bar max.

### 7300 Pressure Regulator Fitting with push-in connection, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>7300 04 10</b> |
| 6  | G1/8 | <b>7300 06 10</b> |
| 6  | G1/4 | <b>7300 06 13</b> |
| 8  | G1/8 | <b>7300 08 10</b> |
| 8  | G1/4 | <b>7300 08 13</b> |
| 8  | G3/8 | <b>7300 08 17</b> |
| 10 | G1/4 | <b>7300 10 13</b> |
| 10 | G3/8 | <b>7300 10 17</b> |

### 7861 Soft Start Valve with Threaded Fitting, BSPP - for system isolating valve



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>7861 13 13</b> |
| G3/8 | <b>7861 17 17</b> |
| G1/2 | <b>7861 21 21</b> |

### 7318 Pressure Reducer, with push-in connection, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 6  | G1/8 | <b>7318 06 10</b> |
| 6  | G1/4 | <b>7318 06 13</b> |
| 8  | G1/4 | <b>7318 08 13</b> |
| 10 | G1/4 | <b>7318 10 13</b> |
| 10 | G3/8 | <b>7318 10 17</b> |

### 7800 3/2 Manual Switch Operated Valve, with push-in connection BSPP & M5 (supply)



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>7800 04 19</b> |
| 4  | G1/8     | <b>7800 04 10</b> |
| 6  | M5 x 0.8 | <b>7800 06 19</b> |
| 6  | G1/8     | <b>7800 06 10</b> |
| 6  | G1/4     | <b>7800 06 13</b> |
| 8  | G1/8     | <b>7800 08 10</b> |
| 8  | G1/4     | <b>7800 08 13</b> |
| 10 | G1/4     | <b>7800 10 13</b> |

### 7316 Pressure Reducer, In-Line with push-in connection



| ØD | Order code        |
|----|-------------------|
| 6  | <b>7316 06 00</b> |
| 8  | <b>7316 08 00</b> |
| 10 | <b>7316 10 00</b> |

### 7801 3/2 Manual Switch Operated Valve, with push-in connection BSPP & M5 (control)



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>7801 04 10</b> |
| 6  | G1/8 | <b>7801 06 10</b> |
| 6  | G1/4 | <b>7801 06 13</b> |
| 8  | G1/8 | <b>7801 08 10</b> |
| 8  | G1/4 | <b>7801 08 13</b> |
| 10 | G1/4 | <b>7801 10 13</b> |

### 7860 Soft Start Valve with push-in connection, BSPP - for System isolating valve



| ØD | C    | Order code        |
|----|------|-------------------|
| 8  | G1/4 | <b>7860 08 13</b> |
| 10 | G1/4 | <b>7860 10 13</b> |
| 10 | G3/8 | <b>7860 10 17</b> |
| 12 | G3/8 | <b>7860 12 17</b> |
| 12 | G1/2 | <b>7860 12 21</b> |

### 7970 Elbow Quick Exhaust Valve, BSPP



| C    | Order code        |
|------|-------------------|
| M5   | <b>7970 19 19</b> |
| G1/8 | <b>7970 10 10</b> |
| G1/4 | <b>7970 13 13</b> |
| G3/8 | <b>7970 17 17</b> |
| G1/2 | <b>7970 21 21</b> |
| G3/4 | <b>7970 27 27</b> |
| G1"  | <b>7970 34 34</b> |

### 7870 Soft Start Valve with push-in connection, BSPP - for Control valve



| ØD | C    | Order code        |
|----|------|-------------------|
| 8  | G1/4 | <b>7870 08 13</b> |
| 10 | G1/4 | <b>7870 10 13</b> |
| 10 | G3/8 | <b>7870 10 17</b> |

### 7971 In-Line Quick Exhaust Valve male BSPT, female BSPP



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>7971 10 10</b> |
| G1/4 | <b>7971 13 13</b> |
| G3/8 | <b>7971 17 17</b> |
| G1/2 | <b>7971 21 21</b> |

## Universal Compression Fittings

-60°C to +250°C / 550 bar max.  
(depending on the tubing material)

### 0105 Male Stud Coupling, BSPT



| ØD | C    | Order code |
|----|------|------------|
| 6  | R1/8 | 0105 06 10 |
| 6  | R1/4 | 0105 06 13 |
| 8  | R1/8 | 0105 08 10 |
| 8  | R1/4 | 0105 08 13 |
| 8  | R3/8 | 0105 08 17 |
| 10 | R1/4 | 0105 10 13 |
| 10 | R3/8 | 0105 10 17 |
| 12 | R3/8 | 0105 12 17 |
| 12 | R1/2 | 0105 12 21 |
| 16 | R1/4 | 0105 16 13 |
| 18 | R1/2 | 0105 18 21 |

### 0106 Equal Straight Coupling



| ØD | Order code |
|----|------------|
| 4  | 0106 04 00 |
| 5  | 0106 05 00 |
| 6  | 0106 06 00 |
| 8  | 0106 08 00 |
| 10 | 0106 10 00 |
| 12 | 0106 12 00 |
| 14 | 0106 14 00 |
| 16 | 0106 16 00 |
| 18 | 0106 18 00 |
| 22 | 0106 22 00 |
| 25 | 0106 25 00 |
| 28 | 0106 28 00 |

### 0109 Male Stud Elbow, BSPT



| ØD | C    | Order code |
|----|------|------------|
| 6  | R1/8 | 0109 06 10 |
| 6  | R1/4 | 0109 06 13 |
| 8  | R1/8 | 0109 08 10 |
| 8  | R1/4 | 0109 08 13 |
| 10 | R1/4 | 0109 10 13 |
| 10 | R3/8 | 0109 10 17 |
| 12 | R1/4 | 0109 12 13 |
| 12 | R1/2 | 0109 12 21 |
| 16 | R1/4 | 0109 16 21 |

### 0104 Equal Tee



| ØD | Order code |
|----|------------|
| 4  | 0104 04 00 |
| 6  | 0104 06 00 |
| 8  | 0104 08 00 |
| 10 | 0104 10 00 |
| 12 | 0104 12 00 |
| 14 | 0104 14 00 |
| 15 | 0104 15 00 |
| 16 | 0104 16 00 |
| 18 | 0104 18 00 |
| 22 | 0104 22 00 |
| 25 | 0104 25 00 |
| 28 | 0104 28 00 |

### 0101 Male Stud Coupling, BSPP and Metric Thread



| ØD | C    | Order code |
|----|------|------------|
| 6  | G1/8 | 0101 06 10 |
| 6  | G1/4 | 0101 06 13 |
| 8  | G1/8 | 0101 08 10 |
| 8  | G1/4 | 0101 08 13 |
| 10 | G1/4 | 0101 10 13 |
| 10 | G3/8 | 0101 10 17 |
| 12 | G3/8 | 0101 12 17 |
| 16 | G1/2 | 0101 16 21 |

### 0102 Equal Elbow



| ØD | Order code |
|----|------------|
| 6  | 0102 06 00 |
| 8  | 0102 08 00 |
| 10 | 0102 10 00 |
| 12 | 0102 12 00 |
| 14 | 0102 14 00 |
| 15 | 0102 15 00 |
| 16 | 0102 16 00 |
| 18 | 0102 18 00 |
| 20 | 0102 20 00 |
| 22 | 0102 22 00 |

### 0118 Single Banjo, BSPP



| ØD | C    | Order code |
|----|------|------------|
| 6  | G1/8 | 0118 06 10 |
| 6  | G1/4 | 0118 06 13 |
| 8  | G1/8 | 0118 08 10 |
| 8  | G1/4 | 0118 08 13 |
| 10 | G1/4 | 0118 10 13 |
| 10 | G3/8 | 0118 10 17 |
| 12 | G3/8 | 0118 12 17 |
| 16 | G1/2 | 0118 16 21 |

### 0122 Tailpiece Adaptor for Rubber Hose



| ØD1 | ØD2 | Order code |
|-----|-----|------------|
| 4   | 4   | 0122 04 04 |
| 5   | 4   | 0122 05 04 |
| 6   | 4   | 0122 06 04 |
| 8   | 6   | 0122 08 06 |
| 10  | 7   | 0122 10 07 |
| 12  | 10  | 0122 12 10 |
| 14  | 13  | 0122 14 13 |
| 15  | 13  | 0122 15 13 |
| 16  | 13  | 0122 16 13 |
| 18  | 16  | 0122 18 16 |

## LF 3600: Chemical Nickel-Plated Brass Push-In Fittings

-25°C to +150°C  
30 bar max.

### 3601 Male Stud, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0,8 | <b>3601 04 19</b> |
| 4  | G1/8     | <b>3601 04 10</b> |
| 4  | G1/4     | <b>3601 04 13</b> |
| 6  | M5 x 0,8 | <b>3601 06 19</b> |
| 6  | G1/8     | <b>3601 06 10</b> |
| 6  | G1/4     | <b>3601 06 13</b> |
| 8  | G1/8     | <b>3601 08 10</b> |
| 8  | G1/4     | <b>3601 08 13</b> |
| 8  | G3/8     | <b>3601 08 17</b> |
| 10 | G1/4     | <b>3601 10 13</b> |
| 10 | G3/8     | <b>3601 10 17</b> |
| 10 | G1/2     | <b>3601 10 21</b> |
| 12 | G1/4     | <b>3601 12 13</b> |
| 12 | G3/8     | <b>3601 12 17</b> |
| 12 | G1/2     | <b>3601 12 21</b> |
| 14 | G3/8     | <b>3601 14 17</b> |
| 14 | G1/2     | <b>3601 14 21</b> |

### 3699 Male Stud Elbow, BSPP & M5



20 bar max.

| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3699 04 19</b> |
| 4  | G1/8     | <b>3699 04 10</b> |
| 4  | G1/4     | <b>3699 04 13</b> |
| 6  | G1/8     | <b>3699 06 10</b> |
| 6  | G1/4     | <b>3699 06 13</b> |
| 8  | G1/8     | <b>3699 08 10</b> |
| 8  | G1/4     | <b>3699 08 13</b> |
| 8  | G3/8     | <b>3699 08 17</b> |
| 10 | G1/4     | <b>3699 10 13</b> |
| 10 | G3/8     | <b>3699 10 17</b> |
| 12 | G1/4     | <b>3699 12 13</b> |
| 12 | G3/8     | <b>3699 12 17</b> |
| 12 | G1/2     | <b>3699 12 21</b> |
| 14 | G3/8     | <b>3699 14 17</b> |
| 14 | G1/2     | <b>3699 14 21</b> |

### 3675 Male Stud, BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3675 04 10</b> |
| 4  | R1/4 | <b>3675 04 13</b> |
| 6  | R1/8 | <b>3675 06 10</b> |
| 6  | R1/4 | <b>3675 06 13</b> |
| 8  | R1/8 | <b>3675 08 10</b> |
| 8  | R1/4 | <b>3675 08 13</b> |
| 8  | R3/8 | <b>3675 08 17</b> |
| 10 | R1/4 | <b>3675 10 13</b> |
| 10 | R3/8 | <b>3675 10 17</b> |
| 10 | R1/2 | <b>3675 10 21</b> |
| 12 | R1/4 | <b>3675 12 13</b> |
| 12 | R3/8 | <b>3675 12 17</b> |
| 12 | R1/2 | <b>3675 12 21</b> |
| 14 | R3/8 | <b>3675 14 17</b> |
| 14 | R1/2 | <b>3675 14 21</b> |

### 3609 Male Stud Elbow, BSPT



20 bar max.

| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3609 04 10</b> |
| 4  | R1/4 | <b>3609 04 13</b> |
| 6  | R1/8 | <b>3609 06 10</b> |
| 6  | R1/4 | <b>3609 06 13</b> |
| 8  | R1/8 | <b>3609 08 10</b> |
| 8  | R1/4 | <b>3609 08 13</b> |
| 8  | R3/8 | <b>3609 08 17</b> |
| 10 | R1/4 | <b>3609 10 13</b> |
| 10 | R3/8 | <b>3609 10 17</b> |
| 12 | R1/4 | <b>3609 12 13</b> |
| 12 | R3/8 | <b>3609 12 17</b> |
| 12 | R1/2 | <b>3609 12 21</b> |
| 14 | R3/8 | <b>3609 14 17</b> |
| 14 | R1/2 | <b>3609 14 21</b> |

### 3614 Female Stud, BSPP & Metric



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0,8 | <b>3614 04 19</b> |
| 4  | G1/8     | <b>3614 04 10</b> |
| 4  | G1/4     | <b>3614 04 13</b> |
| 6  | G1/8     | <b>3614 06 10</b> |
| 6  | G1/4     | <b>3614 06 13</b> |
| 8  | G1/8     | <b>3614 08 10</b> |
| 8  | G1/4     | <b>3614 08 13</b> |
| 10 | G3/8     | <b>3614 10 17</b> |
| 12 | G3/8     | <b>3614 12 17</b> |
| 12 | G1/2     | <b>3614 12 21</b> |

### 3669 Extended Male Stud Elbow, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3669 04 19</b> |
| 4  | G1/8     | <b>3669 04 10</b> |
| 6  | G1/8     | <b>3669 06 10</b> |
| 6  | G1/4     | <b>3669 06 13</b> |
| 8  | G1/8     | <b>3669 08 10</b> |
| 8  | G1/4     | <b>3669 08 13</b> |
| 10 | G1/4     | <b>3669 10 13</b> |
| 10 | G3/8     | <b>3669 10 17</b> |
| 12 | G1/4     | <b>3669 12 13</b> |
| 12 | G3/8     | <b>3669 12 17</b> |
| 14 | G1/2     | <b>3669 14 21</b> |

## LF 3600: Chemical Nickel-Plated Brass Push-In Fittings

-25°C to +150°C  
30 bar max.

### 3698 Male Stud Branch Tee, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3698 04 19</b> |
| 4  | G1/8     | <b>3698 04 10</b> |
| 6  | G1/8     | <b>3698 06 10</b> |
| 6  | G1/4     | <b>3698 06 13</b> |
| 8  | G1/8     | <b>3698 08 10</b> |
| 8  | G1/4     | <b>3698 08 13</b> |
| 10 | G1/4     | <b>3698 10 13</b> |
| 12 | G3/8     | <b>3698 12 17</b> |
| 14 | G1/2     | <b>3698 14 21</b> |

### 3606 Equal Tube to Tube Connector



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3606 04 00</b> |
| 6  | <b>3606 06 00</b> |
| 8  | <b>3606 08 00</b> |
| 10 | <b>3606 10 00</b> |
| 12 | <b>3606 12 00</b> |
| 14 | <b>3606 14 00</b> |

### 3693 Male Stud Run Tee, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0,8 | <b>3693 04 19</b> |
| 4  | G1/8     | <b>3693 04 10</b> |
| 6  | G1/8     | <b>3693 06 10</b> |
| 6  | G1/4     | <b>3693 06 13</b> |
| 8  | G1/8     | <b>3693 08 10</b> |
| 8  | G1/4     | <b>3693 08 13</b> |
| 10 | G1/4     | <b>3693 10 13</b> |
| 12 | G3/8     | <b>3693 12 17</b> |
| 14 | G1/2     | <b>3693 14 21</b> |

### 3616 Equal Bulkhead Connector



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3616 04 00</b> |
| 6  | <b>3616 06 00</b> |
| 8  | <b>3616 08 00</b> |
| 10 | <b>3616 10 00</b> |
| 12 | <b>3616 12 00</b> |
| 14 | <b>3616 14 00</b> |

### 3636 Female Bulkhead Connector, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3636 04 10</b> |
| 6  | G1/8 | <b>3636 06 10</b> |
| 6  | G1/4 | <b>3636 06 13</b> |
| 8  | G1/8 | <b>3636 08 10</b> |
| 8  | G1/4 | <b>3636 08 13</b> |
| 10 | G3/8 | <b>3636 10 17</b> |
| 12 | G3/8 | <b>3636 12 17</b> |
| 12 | G1/2 | <b>3636 12 21</b> |

### 3618 Single Banjo, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3618 04 19</b> |
| 4  | G1/8     | <b>3618 04 10</b> |
| 6  | M5 x 0.8 | <b>3618 06 19</b> |
| 6  | G1/8     | <b>3618 06 10</b> |
| 6  | G1/4     | <b>3618 06 13</b> |
| 8  | G1/8     | <b>3618 08 10</b> |
| 8  | G1/4     | <b>3618 08 13</b> |
| 10 | G3/8     | <b>3618 10 17</b> |

### 3639 Equal Bulkhead Elbow



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3639 04 00</b> |
| 6  | <b>3639 06 00</b> |
| 8  | <b>3639 08 00</b> |
| 10 | <b>3639 10 00</b> |
| 12 | <b>3639 12 00</b> |
| 14 | <b>3639 14 00</b> |

### 3602 Equal Elbow



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3602 04 00</b> |
| 6  | <b>3602 06 00</b> |
| 8  | <b>3602 08 00</b> |
| 10 | <b>3602 10 00</b> |
| 12 | <b>3602 12 00</b> |
| 14 | <b>3602 14 00</b> |

### 3604 Equal Tee



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3604 04 00</b> |
| 6  | <b>3604 06 00</b> |
| 8  | <b>3604 08 00</b> |
| 10 | <b>3604 10 00</b> |
| 12 | <b>3604 12 00</b> |
| 14 | <b>3604 14 00</b> |

## LF 3600: Chemical Nickel-Plated Brass Push-In Fittings

-25°C to +150°C  
 30 bar max.

### 3666 Plug-In Reducer




Diagram of a 3666 Plug-In Reducer showing dimensions  $\varnothing D1$  and  $\varnothing D2$ .

| $\varnothing D1$ | $\varnothing D2$ | Order code        |
|------------------|------------------|-------------------|
| 4                | 6                | <b>3666 04 06</b> |
| 4                | 8                | <b>3666 04 08</b> |
| 6                | 8                | <b>3666 06 08</b> |
| 6                | 10               | <b>3666 06 10</b> |
| 6                | 12               | <b>3666 06 12</b> |
| 8                | 10               | <b>3666 08 10</b> |
| 8                | 12               | <b>3666 08 12</b> |
| 8                | 14               | <b>3666 08 14</b> |
| 10               | 12               | <b>3666 10 12</b> |
| 10               | 14               | <b>3666 10 14</b> |
| 12               | 14               | <b>3666 12 14</b> |

### 3668 Plug-In Increaser




Diagram of a 3668 Plug-In Increaser showing dimension  $\varnothing D1$ .

| $\varnothing D1$ | $\varnothing D2$ | Order code        |
|------------------|------------------|-------------------|
| 6                | 4                | <b>3668 06 04</b> |

### 3626 Blanking Plug




Diagram of a 3626 Blanking Plug showing dimension  $\varnothing D$ .

| $\varnothing D$ | Order code        |
|-----------------|-------------------|
| 4               | <b>3626 04 00</b> |
| 6               | <b>3626 06 00</b> |
| 8               | <b>3626 08 00</b> |
| 10              | <b>3626 10 00</b> |
| 12              | <b>3626 12 00</b> |
| 14              | <b>3626 14 00</b> |

**Pneumatic Accessories in Nickel-Plated Brass**


-10°C to +80°C  
60 bar max.

**0900 Straight Male, Unequal Adaptor, BSPT**




| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/8 | R1/8 | <b>0900 00 10</b> |
|      | R1/4 | <b>0900 10 13</b> |
|      | R3/8 | <b>0900 10 17</b> |
| R1/4 | R1/4 | <b>0900 00 13</b> |
|      | R3/8 | <b>0900 13 17</b> |
|      | R1/2 | <b>0900 13 21</b> |
| R3/8 | R3/8 | <b>0900 00 17</b> |
|      | R1/2 | <b>0900 17 21</b> |
| R1/2 | R1/2 | <b>0900 00 21</b> |
|      | R3/4 | <b>0900 21 27</b> |
| R3/4 | R3/4 | <b>0900 00 27</b> |
|      | R1   | <b>0900 27 34</b> |
| R1   | R1   | <b>0900 00 34</b> |

**0905 Reducer Male to Female BSPP & M5**




| C1   | C2       | Order code        |
|------|----------|-------------------|
| G1/8 | M5 x 0.8 | <b>0905 19 10</b> |
|      | G1/8     | <b>0905 10 13</b> |
| G3/8 | G1/8     | <b>0905 10 17</b> |
|      | G1/4     | <b>0905 13 17</b> |
| G1/2 | G1/4     | <b>0905 13 21</b> |
|      | G3/8     | <b>0905 17 21</b> |
| G3/4 | G3/8     | <b>0905 17 27</b> |
|      | G1/2     | <b>0905 21 27</b> |

**0901 Equal/Unequal Adaptor, BSPP & M5**




| C1     | C2     | Order code        |
|--------|--------|-------------------|
| M5x0.8 | M5x0.8 | <b>0901 00 19</b> |
|        | G1/8   | <b>0901 19 10</b> |
| G1/8   | G1/8   | <b>0901 00 10</b> |
|        | G1/4   | <b>0901 10 13</b> |
|        | G3/8   | <b>0901 10 17</b> |
| G1/4   | G1/4   | <b>0901 00 13</b> |
|        | G3/8   | <b>0901 13 17</b> |
|        | G1/2   | <b>0901 13 21</b> |
| G3/8   | G3/8   | <b>0901 00 17</b> |
|        | G1/2   | <b>0901 17 21</b> |
| G1/2   | G1/2   | <b>0901 00 21</b> |
|        | G3/4   | <b>0901 21 27</b> |

**0906 Increaser Male to Female BSPP & M5**




| C1     | C2   | Order code        |
|--------|------|-------------------|
| M5x0.8 | G1/8 | <b>0906 10 19</b> |
|        | G1/8 | <b>0906 00 10</b> |
| G1/8   | G1/4 | <b>0906 10 13</b> |
|        | G3/8 | <b>0906 10 17</b> |
|        | G1/4 | <b>0906 00 13</b> |
| G1/4   | G3/8 | <b>0906 13 17</b> |
|        | G1/2 | <b>0906 13 21</b> |
|        | G3/8 | <b>0906 00 17</b> |
| G3/8   | G1/2 | <b>0906 17 21</b> |
|        | G1/2 | <b>0906 00 21</b> |

**0902 Straight Female, Equal/Unequal Adaptor, BSPP & M5**




| C1     | C2     | Order code        |
|--------|--------|-------------------|
| M5x0.8 | M5x0.8 | <b>0902 00 19</b> |
|        | G1/8   | <b>0902 19 10</b> |
|        | G1/8   | <b>0902 00 10</b> |
| G1/8   | G1/4   | <b>0902 10 13</b> |
|        | G3/8   | <b>0902 10 17</b> |
|        | G1/2   | <b>0902 10 21</b> |
| G1/4   | G1/4   | <b>0902 00 13</b> |
|        | G3/8   | <b>0902 13 17</b> |
|        | G1/2   | <b>0902 13 21</b> |
| G3/8   | G3/8   | <b>0902 00 17</b> |
|        | G1/2   | <b>0902 17 21</b> |
|        | G1/2   | <b>0902 00 21</b> |
| G1/2   | G3/4   | <b>0902 21 27</b> |
|        | G1     | <b>0902 21 34</b> |
| G3/4   | G3/4   | <b>0902 00 27</b> |
|        | G1     | <b>0902 27 34</b> |

**0907 Female Extended Adaptor Male/Female BSPP**




| C    | Order code           |
|------|----------------------|
| G1/8 | <b>0907 00 10</b>    |
|      | <b>0907 00 10 01</b> |
| G1/4 | <b>0907 00 13</b>    |
|      | <b>0907 00 13 01</b> |

**0912 Equal Female Stud Elbow, BSPP & M5**




| C        | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>0912 00 19</b> |
| G1/8     | <b>0912 00 10</b> |
| G1/4     | <b>0912 00 13</b> |
| G3/8     | <b>0912 00 17</b> |
| G1/2     | <b>0912 00 21</b> |
| G3/4     | <b>0912 00 27</b> |
| G1       | <b>0912 00 34</b> |

**0904 Reducer Male BSPT to Female BSPP**



| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/4 | G1/8 | <b>0904 10 13</b> |
|      | G1/8 | <b>0904 10 17</b> |
| R1/2 | G1/8 | <b>0904 10 21</b> |
|      | G1/4 | <b>0904 13 17</b> |
| R3/8 | G1/4 | <b>0904 13 21</b> |
|      | G3/8 | <b>0904 17 21</b> |
| R1/2 | G3/8 | <b>0904 17 27</b> |
|      | G1/2 | <b>0904 21 27</b> |
| R3/4 | G1/2 | <b>0904 21 34</b> |
|      | G1/2 | <b>0904 21 34</b> |
| R1   | G1/2 | <b>0904 21 34</b> |
|      | G3/4 | <b>0904 27 34</b> |

**0913 Equal Female Stud Elbow BSPP, Male BSPT**



| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/8 | G1/8 | <b>0913 00 10</b> |
| R1/4 | G1/4 | <b>0913 00 13</b> |
| R3/8 | G3/8 | <b>0913 00 17</b> |
| R1/2 | G1/2 | <b>0913 00 21</b> |
| R3/4 | G3/4 | <b>0913 00 27</b> |
| R1   | G1   | <b>0913 00 34</b> |

## Pneumatic Accessories in Nickel-Plated Brass

-10°C to +80°C  
60 bar max.\*

### 0914 Equal Male Stud Elbow, BSPT



| C    | Order code        |
|------|-------------------|
| R1/8 | <b>0914 00 10</b> |
| R1/4 | <b>0914 00 13</b> |
| R3/8 | <b>0914 00 17</b> |
| R1/2 | <b>0914 00 21</b> |
| R3/4 | <b>0914 00 27</b> |
| R1   | <b>0914 00 34</b> |

### 0931 Tailpiece Adaptor for Rubber Hose, Male BSPP



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0,8 | <b>0931 04 19</b> |
| 6  | G1/8     | <b>0931 06 10</b> |
| 6  | G1/4     | <b>0931 06 13</b> |
| 7  | G1/8     | <b>0931 07 10</b> |
| 7  | G1/4     | <b>0931 07 13</b> |
| 7  | G3/8     | <b>0931 07 17</b> |
| 8  | G1/8     | <b>0931 08 10</b> |
| 8  | G1/4     | <b>0931 08 13</b> |
| 8  | G3/8     | <b>0931 08 17</b> |
| 10 | G1/4     | <b>0931 10 13</b> |
| 10 | G3/8     | <b>0931 10 17</b> |
| 10 | G1/2     | <b>0931 10 21</b> |
| 15 | G3/8     | <b>0931 15 17</b> |
| 15 | G1/2     | <b>0931 15 21</b> |
| 18 | G1/2     | <b>0931 18 21</b> |

### 0915 Equal Female Tee, BSPP & M5



| C        | Order code        |
|----------|-------------------|
| M5 x 0,8 | <b>0915 00 19</b> |
| G1/8     | <b>0915 00 10</b> |
| G1/4     | <b>0915 00 13</b> |
| G3/8     | <b>0915 00 17</b> |
| G1/2     | <b>0915 00 21</b> |
| G3/4     | <b>0915 00 27</b> |
| G1       | <b>0915 00 34</b> |

### 0916 Male Stud Branch Tee, Female BSPP & Male BSPT



| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/8 | G1/8 | <b>0916 00 10</b> |
| R1/4 | G1/4 | <b>0916 00 13</b> |
| R3/8 | G3/8 | <b>0916 00 17</b> |
| R1/2 | G1/2 | <b>0916 00 21</b> |
| R3/4 | G3/4 | <b>0916 00 27</b> |
| R1   | G1   | <b>0916 00 34</b> |

### 0919 Internal Hexagon Head Plug, BSPP & M5



| C        | Order code        |
|----------|-------------------|
| M5 x 0,8 | <b>0919 00 19</b> |
| G1/8     | <b>0919 00 10</b> |
| G1/4     | <b>0919 00 13</b> |
| G3/8     | <b>0919 00 17</b> |
| G1/2     | <b>0919 00 21</b> |
| G3/4     | <b>0919 00 27</b> |
| G1       | <b>0919 00 34</b> |

### 0908 Equal Female Cross, BSPP



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>0908 00 10</b> |
| G1/4 | <b>0908 00 13</b> |
| G3/8 | <b>0908 00 17</b> |
| G1/2 | <b>0908 00 21</b> |

### 0220 Brass Hexagon Headed Plug, BSPP & M5



| C        | Order code        |
|----------|-------------------|
| M5 x 0,8 | <b>0220 19 00</b> |
| G1/8     | <b>0220 10 00</b> |
| G1/4     | <b>0220 13 00</b> |
| G3/8     | <b>0220 17 00</b> |
| G1/2     | <b>0220 21 00</b> |

### 0909 Equal Cross, Female BSPP, Male BSPT



| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/8 | G1/8 | <b>0909 00 10</b> |
| R1/4 | G1/4 | <b>0909 00 13</b> |
| R3/8 | G3/8 | <b>0909 00 17</b> |
| R1/2 | G1/2 | <b>0909 00 21</b> |

### 0138 Sealing Copper Washers



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>0138 10 00</b> |
| G1/4 | <b>0138 13 00</b> |
| G3/8 | <b>0138 17 00</b> |
| G1/2 | <b>0138 21 00</b> |
| G3/4 | <b>0138 27 00</b> |
| G1   | <b>0138 33 00</b> |

### 0920 Female Bulkhead Connector - BSPP & M5



| C1       | C2        | Order code        |
|----------|-----------|-------------------|
| M5 x 0,8 | M10 x 1   | <b>0920 00 19</b> |
| G1/8     | M16 x 1,5 | <b>0920 00 10</b> |
| G1/4     | M20 x 1,5 | <b>0920 00 13</b> |
| G3/8     | M26 x 1,5 | <b>0920 00 17</b> |
| G1/2     | M28 x 1,5 | <b>0920 00 21</b> |

\* Technical specifications of nickel-plated brass accessories

## Pneumatic Accessories

### 0670 Threaded Silencer, BSPP



-20° to +150°C  
12 bar

| C    | Order code        |
|------|-------------------|
| G1/8 | <b>0670 00 10</b> |
| G1/4 | <b>0670 00 13</b> |
| G3/8 | <b>0670 00 17</b> |
| G1/2 | <b>0670 00 21</b> |
| G3/4 | <b>0670 00 27</b> |
| G1   | <b>0670 00 34</b> |

### 0673 Threaded Silencer, Male BSPP & M5



-20° to +150°C  
12 bar

| C        | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>0673 00 19</b> |
| G1/8     | <b>0673 00 10</b> |
| G1/4     | <b>0673 00 13</b> |
| G3/8     | <b>0673 00 17</b> |
| G1/2     | <b>0673 00 21</b> |

### 0672 Flow-Control Silencer, Male BSPP



-20° to +150°C  
12 bar

| C    | Order code        |
|------|-------------------|
| G1/8 | <b>0672 00 10</b> |
| G1/4 | <b>0672 00 13</b> |
| G3/8 | <b>0672 00 17</b> |
| G1/2 | <b>0672 00 21</b> |

### 0674 Threaded Silencer, Male BSPP & M5



-10° to +80°C  
10 bar

| C        | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>0674 00 19</b> |
| G1/8     | <b>0674 00 10</b> |
| G1/4     | <b>0674 00 13</b> |
| G3/8     | <b>0674 00 17</b> |
| G1/2     | <b>0674 00 21</b> |
| G3/4     | <b>0674 00 27</b> |
| G1       | <b>0674 00 34</b> |

### 0677 Silencer, Miniature, BSPP



-20° to +150°C  
12 bar

| C    | Order code        |
|------|-------------------|
| G1/8 | <b>0677 00 10</b> |
| G1/4 | <b>0677 00 13</b> |
| G3/8 | <b>0677 00 17</b> |
| G1/2 | <b>0677 00 21</b> |
| G3/4 | <b>0677 00 27</b> |
| G1   | <b>0677 00 34</b> |

Technical specifications of aluminium anodised manifolds

-10°C to +80°C  
20 bar max.

### 0605 Fluoropolymer Tape



-250° to +260°C

| Order code        |
|-------------------|
| <b>0605 12 12</b> |

### 3311 Female Manifold BSPP & M5



| C1   | C2       | Number of Outlets | Order code           |
|------|----------|-------------------|----------------------|
| G1/8 | M5 x 0.8 | 7                 | <b>3311 19 10 07</b> |
| G1/4 | G1/8     | 2                 | <b>3311 10 13 02</b> |
| G1/4 | G1/8     | 3                 | <b>3311 10 13 03</b> |
| G1/4 | G1/8     | 4                 | <b>3311 10 13 04</b> |
| G1/4 | G1/8     | 5                 | <b>3311 10 13 05</b> |
| G1/4 | G1/8     | 6                 | <b>3311 10 13 06</b> |
| G3/8 | G1/4     | 2                 | <b>3311 13 17 02</b> |
| G3/8 | G1/4     | 3                 | <b>3311 13 17 03</b> |
| G3/8 | G1/4     | 4                 | <b>3311 13 17 04</b> |
| G3/8 | G1/4     | 5                 | <b>3311 13 17 05</b> |
| G3/8 | G1/4     | 6                 | <b>3311 13 17 06</b> |

### 3313 Double Female Manifold BSPP



| C1   | C2   | Number of Outlets | Order code        |
|------|------|-------------------|-------------------|
| G1/4 | G1/8 | 2                 | <b>3313101302</b> |
| G1/4 | G1/8 | 3                 | <b>3313101303</b> |
| G1/4 | G1/8 | 4                 | <b>3313101304</b> |
| G1/4 | G1/8 | 5                 | <b>3313101305</b> |
| G3/8 | G1/4 | 2                 | <b>3313131702</b> |
| G3/8 | G1/4 | 3                 | <b>3313131703</b> |
| G3/8 | G1/4 | 4                 | <b>3313131704</b> |
| G3/8 | G1/4 | 5                 | <b>3313131705</b> |
| G1/2 | G1/4 | 3                 | <b>3313132103</b> |
| G1/2 | G1/4 | 4                 | <b>3313132104</b> |
| G1/2 | G1/4 | 5                 | <b>3313132105</b> |

### 3312 Female Cross Manifold BSPP & M5



| C        | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>3312 00 19</b> |
| G1/8     | <b>3312 00 10</b> |
| G1/4     | <b>3312 00 13</b> |
| G3/8     | <b>3312 00 17</b> |
| G1/2     | <b>3312 00 21</b> |



## LF 3800: Stainless Steel Push-In Fittings

-25°C to +150°C  
30 bar max.

### 3805 Male Stud, BSPT & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3805 04 19</b> |
| 4  | R1/8     | <b>3805 04 10</b> |
| 4  | R1/4     | <b>3805 04 13</b> |
| 6  | R1/8     | <b>3805 06 10</b> |
| 6  | R1/4     | <b>3805 06 13</b> |
| 8  | R1/8     | <b>3805 08 10</b> |
| 8  | R1/4     | <b>3805 08 13</b> |
| 8  | R3/8     | <b>3805 08 17</b> |
| 10 | R1/4     | <b>3805 10 13</b> |
| 10 | R3/8     | <b>3805 10 17</b> |
| 12 | R1/4     | <b>3805 12 13</b> |
| 12 | R3/8     | <b>3805 12 17</b> |
| 12 | R1/2     | <b>3805 12 21</b> |

### 3801 Male Stud, BSPP & M5



| ØD | C        | Order code        |
|----|----------|-------------------|
| 4  | M5 x 0.8 | <b>3801 04 19</b> |
| 4  | G1/8     | <b>3801 04 10</b> |
| 6  | M5 x 0.8 | <b>3801 06 19</b> |
| 6  | G1/8     | <b>3801 06 10</b> |
| 6  | G1/4     | <b>3801 06 13</b> |
| 8  | G1/8     | <b>3801 08 10</b> |
| 8  | G1/4     | <b>3801 08 13</b> |
| 8  | G3/8     | <b>3801 08 17</b> |
| 10 | G1/4     | <b>3801 10 13</b> |
| 10 | G3/8     | <b>3801 10 17</b> |
| 12 | G1/4     | <b>3801 12 13</b> |
| 12 | G3/8     | <b>3801 12 17</b> |

### 3879 Male Stud Elbow, BSPP



20 bar max.

| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>3879 04 10</b> |
| 4  | G1/4 | <b>3879 04 13</b> |
| 6  | G1/8 | <b>3879 06 10</b> |
| 6  | G1/4 | <b>3879 06 13</b> |
| 8  | G1/8 | <b>3879 08 10</b> |
| 8  | G1/4 | <b>3879 08 13</b> |
| 8  | G3/8 | <b>3879 08 17</b> |
| 10 | G1/4 | <b>3879 10 13</b> |
| 10 | G3/8 | <b>3879 10 17</b> |
| 12 | G1/4 | <b>3879 12 13</b> |
| 12 | G3/8 | <b>3879 12 17</b> |
| 12 | G1/2 | <b>3879 12 21</b> |

### 3816 Equal Bulkhead Union



IP55

| ØD | Order code        |
|----|-------------------|
| 4  | <b>3816 04 00</b> |
| 6  | <b>3816 06 00</b> |
| 8  | <b>3816 08 00</b> |
| 10 | <b>3816 10 00</b> |
| 12 | <b>3816 12 00</b> |

### 3889 Male Stud Elbow, BSPT



20 bar max.

| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | R1/8 | <b>3889 04 10</b> |
| 4  | R1/4 | <b>3889 04 13</b> |
| 6  | R1/8 | <b>3889 06 10</b> |
| 6  | R1/4 | <b>3889 06 13</b> |
| 8  | R1/8 | <b>3889 08 10</b> |
| 8  | R1/4 | <b>3889 08 13</b> |
| 8  | R3/8 | <b>3889 08 17</b> |
| 10 | R1/4 | <b>3889 10 13</b> |
| 10 | R3/8 | <b>3889 10 17</b> |
| 12 | R1/4 | <b>3889 12 13</b> |
| 12 | R3/8 | <b>3889 12 17</b> |
| 12 | R1/2 | <b>3889 12 21</b> |

### 3802 Equal Elbow



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3802 04 00</b> |
| 6  | <b>3802 06 00</b> |
| 8  | <b>3802 08 00</b> |
| 10 | <b>3802 10 00</b> |
| 12 | <b>3802 12 00</b> |

### 3804 Equal Tee



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3804 04 00</b> |
| 6  | <b>3804 06 00</b> |
| 8  | <b>3804 08 00</b> |
| 10 | <b>3804 10 00</b> |
| 12 | <b>3804 12 00</b> |

### 3806 Equal Straight Union



| ØD | Order code        |
|----|-------------------|
| 4  | <b>3806 04 00</b> |
| 6  | <b>3806 06 00</b> |
| 8  | <b>3806 08 00</b> |
| 10 | <b>3806 10 00</b> |
| 12 | <b>3806 12 00</b> |

### 3866 Plug-In Reducer



| ØD1 | ØD2 | Order code        |
|-----|-----|-------------------|
| 4   | 6   | <b>3866 04 06</b> |
| 4   | 8   | <b>3866 04 08</b> |
| 6   | 8   | <b>3866 06 08</b> |
| 6   | 10  | <b>3866 06 10</b> |
| 8   | 10  | <b>3866 08 10</b> |
| 8   | 12  | <b>3866 08 12</b> |
| 10  | 12  | <b>3866 10 12</b> |

## Stainless Steel Function Fittings

### 7810 Flow Regulator, threaded, BSPP - exhaust (A)



0° to +70°C  
1 to 10 bar

| C1       | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>7810 19 19</b> |
| G1/8     | <b>7810 10 10</b> |
| G1/4     | <b>7810 13 13</b> |
| G3/8     | <b>7810 17 17</b> |
| G1/2     | <b>7810 21 21</b> |

### 7899 Quick Exhaust Valve, Double Female, BSPP



-10° to +120°C (1/8,1/4)  
-20° to +180°C (3/8,1")  
2 to 10 bar

| C    |    | Order code        |
|------|----|-------------------|
| G1/8 | 7  | <b>7899 00 10</b> |
| G1/4 | 7  | <b>7899 00 13</b> |
| G3/8 | 9  | <b>7899 00 17</b> |
| G1/2 | 12 | <b>7899 00 21</b> |
| G3/4 | 18 | <b>7899 00 27</b> |
| G1   | 18 | <b>7899 00 34</b> |

### 7812 Flow Regulator, threaded, BSPP - bi-directional (C)



0° to +70°C  
1 to 10 bar

| C1       | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>7812 19 19</b> |
| G1/8     | <b>7812 10 10</b> |
| G1/4     | <b>7812 13 13</b> |
| G3/8     | <b>7812 17 17</b> |
| G1/2     | <b>7812 21 21</b> |

### 0682 Threaded Silencer, Male BSPP



-20° to +180°C  
12 bar max.

| C    | Order code        |
|------|-------------------|
| G1/8 | <b>0682 00 10</b> |
| G1/4 | <b>0682 00 13</b> |
| G3/8 | <b>0682 00 17</b> |
| G1/2 | <b>0682 00 21</b> |
| G3/4 | <b>0682 00 27</b> |
| G1   | <b>0682 00 34</b> |

### 7820 Flow Regulator, In-line, threaded connections BSPP, one way adjust (A)



-15° to +120°C  
1 to 16 bar

| C    |    | Order code        |
|------|----|-------------------|
| G1/8 | 7  | <b>7820 00 10</b> |
| G1/4 | 7  | <b>7820 00 13</b> |
| G3/8 | 9  | <b>7820 00 17</b> |
| G1/2 | 12 | <b>7820 00 21</b> |

### 7822 Flow Regulator, In-line, threaded connections BSPP, bi-directional (C)



-15° to +120°C  
1 to 40 bar

| C    |    | Order code        |
|------|----|-------------------|
| G1/8 | 7  | <b>7822 00 10</b> |
| G1/4 | 7  | <b>7822 00 13</b> |
| G3/8 | 9  | <b>7822 00 17</b> |
| G1/2 | 12 | <b>7822 00 21</b> |

### 4890 Non-Return Valve, Female-Female, BSPP



-20° to +180°C  
0,5 to 40 bar

| C    |    | Order code        |
|------|----|-------------------|
| G1/8 | 10 | <b>4890 10 10</b> |
| G1/4 | 10 | <b>4890 13 13</b> |
| G3/8 | 15 | <b>4890 17 17</b> |
| G1/2 | 15 | <b>4890 21 21</b> |
| G3/4 | 20 | <b>4890 27 27</b> |
| G1"  | 25 | <b>4890 34 34</b> |

## Stainless Steel Accessories

-20°C to +180°C  
150 bar max.

### 1843 Equal Elbow, Female BSPP



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>1843 10 10</b> |
| G1/4 | <b>1843 13 13</b> |
| G3/8 | <b>1843 17 17</b> |
| G1/2 | <b>1843 21 21</b> |
| G3/4 | <b>1843 27 27</b> |
| G1   | <b>1843 34 34</b> |

### 1864 Male NPT to Female BSPP Adaptor



| C1  | C2   | Order code        |
|-----|------|-------------------|
| 1/8 | G1/8 | <b>1864 11 10</b> |
| 1/4 | G1/4 | <b>1864 14 13</b> |
| 3/8 | G3/8 | <b>1864 18 17</b> |
| 1/2 | G1/2 | <b>1864 22 21</b> |

### 1844 Equal Male Stud Elbow, BSPT, female BSPP



| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/8 | G1/8 | <b>1844 10 10</b> |
| R1/4 | G1/4 | <b>1844 13 13</b> |
| R3/8 | G3/8 | <b>1844 17 17</b> |
| R1/2 | G1/2 | <b>1844 21 21</b> |
| R3/4 | G3/4 | <b>1844 27 27</b> |
| R1   | G1   | <b>1844 34 34</b> |

### 1867 Male BSPT to Female NPT Adaptor



| C1   | C2  | Order code        |
|------|-----|-------------------|
| R1/8 | 1/8 | <b>1867 10 11</b> |
| R1/4 | 1/4 | <b>1867 13 14</b> |
| R3/8 | 3/8 | <b>1867 17 18</b> |
| R1/2 | 1/2 | <b>1867 21 22</b> |

### 1845 Equal Tee, Triple Female, BSPP



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>1845 10 10</b> |
| G1/4 | <b>1845 13 13</b> |
| G3/8 | <b>1845 17 17</b> |
| G1/2 | <b>1845 21 21</b> |
| G3/4 | <b>1845 27 27</b> |
| G1   | <b>1845 34 34</b> |

### 1863 Reducer BSPT to Female BSPP



| C1   | C2   | Order code        |
|------|------|-------------------|
| R1/4 | G1/8 | <b>1863 13 10</b> |
| R3/8 | G1/8 | <b>1863 17 10</b> |
| R3/8 | G1/4 | <b>1863 17 13</b> |
| R1/2 | G1/4 | <b>1863 21 13</b> |
| R1/2 | G3/8 | <b>1863 21 17</b> |
| R3/4 | G1/2 | <b>1863 27 21</b> |
| R1   | G3/4 | <b>1863 34 27</b> |

### 1855 Double Female Sleeve, BSPP



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>1855 10 10</b> |
| G1/4 | <b>1855 13 13</b> |
| G3/8 | <b>1855 17 17</b> |
| G1/2 | <b>1855 21 21</b> |
| G3/4 | <b>1855 27 27</b> |
| G1   | <b>1855 34 34</b> |

### 1823 Tailpiece Adaptor for Rubber Hose, Male BSPT



| ØD | C    | Order code        |
|----|------|-------------------|
| 7  | R1/8 | <b>1823 07 10</b> |
| 7  | R1/4 | <b>1823 07 13</b> |
| 10 | R1/4 | <b>1823 10 13</b> |
| 10 | R3/8 | <b>1823 10 17</b> |
| 13 | R3/8 | <b>1823 13 17</b> |
| 16 | R1/2 | <b>1823 16 21</b> |

### 1817 Bulkhead Adaptor, BSPP



| C    | Order code        |
|------|-------------------|
| G1/8 | <b>1817 00 10</b> |
| G1/4 | <b>1817 00 13</b> |
| G3/8 | <b>1817 00 17</b> |
| G1/2 | <b>1817 00 21</b> |
| G3/4 | <b>1817 00 27</b> |
| G1   | <b>1817 00 34</b> |

### 0285 Plug, Internal Hexagon Headed, BSPT



| C    | Order code        |
|------|-------------------|
| R1/8 | <b>0285 10 00</b> |
| R1/4 | <b>0285 13 00</b> |
| R3/8 | <b>0285 17 00</b> |
| R1/2 | <b>0285 21 00</b> |
| R3/4 | <b>0285 27 00</b> |
| R1   | <b>0285 34 00</b> |

## Pneumatic Tubing

-40°C to +100°C  
50 bar max.

### 1025P Semi-Rigid Polyamide Tubing, 25 m Rolls



| o.d. tubing mm | i.d. tubing mm | R minimum bend radius for tube at ambient temp. in mm | Order code      |
|----------------|----------------|---|-----------------|
| 3              | 1.8            | 6   | 1025P03 00 18 □ |
| 4              | 2.7            | 10  | 1025P04 00 27 □ |
| 4              | 2.7            | 10  | 1025P04 01 27 ■ |
| 4              | 2.7            | 10  | 1025P04 02 27 ■ |
| 4              | 2.7            | 10  | 1025P04 03 27 ■ |
| 4              | 2.7            | 10  | 1025P04 04 27 ■ |
| 4              | 2.7            | 10  | 1025P04 05 27 ■ |
| 4              | 2.7            | 10  | 1025P04 06 27 ■ |
| 6              | 4              | 15  | 1025P06 00 □    |
| 6              | 4              | 15  | 1025P06 01 ■    |
| 6              | 4              | 15  | 1025P06 02 ■    |
| 6              | 4              | 15  | 1025P06 03 ■    |
| 6              | 4              | 15  | 1025P06 04 ■    |
| 6              | 4              | 15  | 1025P06 05 ■    |
| 6              | 4              | 15  | 1025P06 06 ■    |
| 8              | 6              | 25  | 1025P08 00 □    |
| 8              | 6              | 25  | 1025P08 01 ■    |
| 8              | 6              | 25  | 1025P08 02 ■    |
| 8              | 6              | 25  | 1025P08 03 ■    |
| 8              | 6              | 25  | 1025P08 04 ■    |
| 8              | 6              | 25  | 1025P08 05 ■    |
| 8              | 6              | 25  | 1025P08 06 ■    |
| 10             | 7.5            | 42  | 1025P10 00 75 □ |
| 10             | 7.5            | 42  | 1025P10 01 75 ■ |
| 10             | 7.5            | 42  | 1025P10 04 75 ■ |
| 12             | 9              | 47  | 1025P12 00 09 □ |
| 12             | 9              | 47  | 1025P12 01 09 ■ |
| 12             | 9              | 47  | 1025P12 04 09 ■ |
| 14             | 11             | 80  | 1025P14 00 11 □ |
| 14             | 11             | 80  | 1025P14 01 11 ■ |
| 14             | 11             | 80  | 1025P14 04 11 ■ |
| 16             | 13             | 90  | 1025P16 04 13 ■ |

### 2005P-2010P Semi-rigid Polyamide, 500m & 1000m Reels



| o.d. tubing mm | i.d. tubing mm | R minimum bend radius for tube at ambient temp. in mm | Order code      |
|----------------|----------------|---|-----------------|
| 4              | 2.7            | 10  | 2010P04 00 27 □ |
| 4              | 2.7            | 10  | 2010P04 01 27 ■ |
| 4              | 2.7            | 10  | 2010P04 04 27 ■ |
| 6              | 4              | 15  | 2010P06 00 □    |
| 6              | 4              | 15  | 2010P06 01 ■    |
| 6              | 4              | 15  | 2010P06 04 ■    |
| 8              | 6              | 25  | 2005P08 00 □    |
| 8              | 6              | 25  | 2005P08 01 ■    |
| 8              | 6              | 25  | 2005P08 04 ■    |
| 10             | 8              | 50  | 2005P10 00 □    |
| 10             | 8              | 50  | 2005P10 01 ■    |
| 10             | 8              | 50  | 2005P10 04 ■    |

### 1010P Multitube Semi-Rigid Polyamide



| o.d. PVC sheath mm | o.d. x i.d. semi rigid nylon mm | R minimum bend radius at 20°C mm | Number of tubes | Order code      |
|--------------------|---------------------------------|----------------------------------|-----------------|-----------------|
| 13.5               | 4 x 2.7                         | 35                               | 4               | 1010P04 00M04 ■ |
| 16                 | 4 x 2.7                         | 45                               | 7               | 1010P04 00M07 ■ |
| 18.5               | 6 x 4                           | 55                               | 4               | 1010P06 00M04 ■ |
| 22                 | 6 x 4                           | 60                               | 7               | 1010P06 00M07 ■ |
| 19.2               | 8 x 6                           | 45                               | 2               | 1010P08 00M02 ■ |

### 1100P Semi-Rigid Polyamide Tubing, 100 m Rolls



| o.d. tubing mm | i.d. tubing mm | R minimum bend radius for tube at ambient temp. in mm | Order code      |
|----------------|----------------|---|-----------------|
| 4              | 2.7            | 10  | 1100P04 00 27 □ |
| 4              | 2.7            | 10  | 1100P04 01 27 ■ |
| 4              | 2.7            | 10  | 1100P04 02 27 ■ |
| 4              | 2.7            | 10  | 1100P04 03 27 ■ |
| 4              | 2.7            | 10  | 1100P04 04 27 ■ |
| 4              | 2.7            | 10  | 1100P04 05 27 ■ |
| 4              | 2.7            | 10  | 1100P04 06 27 ■ |
| 6              | 4              | 15  | 1100P06 00 □    |
| 6              | 4              | 15  | 1100P06 01 ■    |
| 6              | 4              | 15  | 1100P06 02 ■    |
| 6              | 4              | 15  | 1100P06 03 ■    |
| 6              | 4              | 15  | 1100P06 04 ■    |
| 6              | 4              | 15  | 1100P06 05 ■    |
| 6              | 4              | 15  | 1100P06 06 ■    |
| 8              | 6              | 15  | 1100P08 00 □    |
| 8              | 6              | 15  | 1100P08 01 ■    |
| 8              | 6              | 15  | 1100P08 02 ■    |
| 8              | 6              | 15  | 1100P08 03 ■    |
| 8              | 6              | 15  | 1100P08 04 ■    |
| 8              | 6              | 15  | 1100P08 05 ■    |
| 8              | 6              | 15  | 1100P08 06 ■    |
| 10             | 7.5            | 42  | 1100P10 00 75 □ |
| 10             | 7.5            | 42  | 1100P10 01 75 ■ |
| 10             | 7.5            | 42  | 1100P10 04 75 ■ |
| 12             | 9              | 42  | 1100P12 00 09 □ |
| 12             | 9              | 47  | 1100P12 01 09 ■ |
| 12             | 9              | 47  | 1100P12 04 09 ■ |
| 14             | 12             | 116   | 1100P14 00 □    |
| 14             | 12             | 116   | 1100P14 01 ■    |
| 14             | 12             | 116   | 1100P14 04 ■    |

## Pneumatic Tubing

-40°C to +100°C  
50 bar max. (vacuum 755mHg)

### Fireproof High Resistant Polyamide Tubing



| o.d. tubing<br>mm | i.d. tubing<br>mm | R minimum bend<br>radius for tube at<br>ambient temp.<br>in mm | Order code |
|-------------------|-------------------|--|------------|
|-------------------|-------------------|--|------------|

Length: 100 m

|    |    |    |                     |
|----|----|----|---------------------|
| 4  | 2  | 17 | <b>1100P04R00</b> □ |
| 4  | 2  | 17 | <b>1100P04R01</b> ■ |
| 4  | 2  | 17 | <b>1100P04R04</b> ■ |
| 6  | 4  | 29 | <b>1100P06R00</b> □ |
| 6  | 4  | 29 | <b>1100P06R03</b> ■ |
| 6  | 4  | 29 | <b>1100P06R04</b> ■ |
| 8  | 6  | 40 | <b>1100P08R00</b> □ |
| 8  | 6  | 40 | <b>1100P08R01</b> ■ |
| 8  | 6  | 40 | <b>1100P08R04</b> ■ |
| 10 | 8  | 77 | <b>1100P10R00</b> □ |
| 10 | 8  | 77 | <b>1100P10R01</b> ■ |
| 10 | 8  | 77 | <b>1100P10R04</b> ■ |
| 12 | 10 | 92 | <b>1100P12R00</b> □ |
| 12 | 10 | 92 | <b>1100P12R01</b> ■ |
| 12 | 10 | 92 | <b>1100P12R04</b> ■ |

### 1025U Anti-Spark Single Layer Polyurethane Tubing, 25 m Rolls



| o.d. tubing<br>mm | i.d. tubing<br>mm | R minimum<br>bend radius for<br>tube at 20°C<br>in mm | Order code          |
|-------------------|-------------------|---|---------------------|
| 4                 | 2.5               | 12  | <b>1025U04K01</b> ■ |
| 6                 | 4                 | 15  | <b>1025U06K01</b> ■ |
| 8                 | 5.5               | 20  | <b>1025U08K01</b> ■ |
| 10                | 7                 | 25  | <b>1025U10K01</b> ■ |
| 12                | 8                 | 35  | <b>1025U12K01</b> ■ |

### 2005U-2010U Polyurethane Tubing, 500m & 1000m Reels



| o.d. tubing<br>mm | i.d. tubing<br>mm | Minimum bend<br>radius for tube<br>at ambient temp.<br>in mm | Order code          |
|-------------------|-------------------|--|---------------------|
|                   |                   | Polyester  | Polyether           |
| 4                 | 2.5               | 12   | <b>1010U04R08</b> □ |
| 4                 | 2.7               | 12   | <b>2010U04 01</b> ■ |
| 4                 | 2.7               | 12   | <b>2010U04 04</b> ■ |
| 6                 | 4                 | 15   | <b>2010U06R08</b> □ |
| 6                 | 4                 | 15   | <b>2010U06 01</b> ■ |
| 6                 | 4                 | 15   | <b>2010U06 04</b> ■ |
| 8                 | 5.5               | 20   | <b>2005U08R08</b> □ |
| 8                 | 5.5               | 20   | <b>2005U08 01</b> ■ |
| 8                 | 5.5               | 20   | <b>2005U08 04</b> ■ |

Pneumatic Tubing

-20°C to +70°C  
12 bar max.

1025U Flexible Polyurethane Tubing, 25 m Rolls

1100U Flexible Polyurethane Tubing, 100m Rolls



| o.d. tubing<br>mm | i.d. tubing<br>mm | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm |           | Order code    |   |
|-------------------|-------------------|--|-----------|---------------|---|
|                   |                   | Polyester  | Polyether |               |   |
| 4                 | 2.5               | 10   |           | 1025U04 01    | ■ |
| 4                 | 2.5               | 10   |           | 1025U04 02    | ■ |
| 4                 | 2.5               | 10   |           | 1025U04 03    | ■ |
| 4                 | 2.5               | 10   |           | 1025U04 04    | ■ |
| 4                 | 2.5               | 10   |           | 1025U04 05    | ■ |
| 4                 | 2.5               | 10   |           | 1025U04 06    | ■ |
| 4                 | 2.5               |  | 12        | 1025U04R08    | ■ |
| 6                 | 4                 | 15   |           | 1025U06 01    | ■ |
| 6                 | 4                 | 15   |           | 1025U06 02    | ■ |
| 6                 | 4                 | 15   |           | 1025U06 03    | ■ |
| 6                 | 4                 | 15   |           | 1025U06 04    | ■ |
| 6                 | 4                 | 15   |           | 1025U06 05    | ■ |
| 6                 | 4                 | 15   |           | 1025U06 06    | ■ |
| 6                 | 4                 |  | 15        | 1025U06R08    | ■ |
| 8                 | 5.5               | 20   |           | 1025U08 01    | ■ |
| 8                 | 5.5               | 20   |           | 1025U08 02    | ■ |
| 8                 | 5.5               | 20   |           | 1025U08 03    | ■ |
| 8                 | 5.5               | 20   |           | 1025U08 04    | ■ |
| 8                 | 5.5               | 20   |           | 1025U08 05    | ■ |
| 8                 | 5.5               | 20   |           | 1025U08 06    | ■ |
| 8                 | 5.5               |  | 20        | 1025U08 R08   | ■ |
| 10                | 7                 | 25   |           | 1025U10 01    | ■ |
| 10                | 7                 | 25   |           | 1025U10 04    | ■ |
| 10                | 7                 |  | 25        | 1025U10 R08   | ■ |
| 12                | 8                 | 35   |           | 1025U12 01    | ■ |
| 12                | 8                 | 35   |           | 1025U12 04    | ■ |
| 12                | 8                 |  | 35        | 1025U12R08    | ■ |
| 14                | 9.5               | 45   |           | 1025U14 01 95 | ■ |
| 14                | 9.5               | 45   |           | 1025U14 04 95 | ■ |
| 14                | 9.5               |  | 45        | 1025U14R08 95 | ■ |
| 16                | 11                | 45   |           | 1025U16R08 11 | ■ |
| 16                | 11                | 45   |           | 1025U16 01 11 | ■ |
| 16                | 11                | 45   |           | 1025U16 02 11 | ■ |
| 16                | 11                | 45   |           | 1025U16 03 11 | ■ |
| 16                | 11                | 45   |           | 1025U16 04 11 | ■ |

| o.d. tubing<br>mm | i.d. tubing<br>mm | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm |           | Order code    |   |
|-------------------|-------------------|--|-----------|---------------|---|
|                   |                   | Polyester  | Polyether |               |   |
| 4                 | 2.5               | 10   |           | 1100U04 01    | ■ |
| 4                 | 2.5               | 10   |           | 1100U04 02    | ■ |
| 4                 | 2.5               | 10   |           | 1100U04 03    | ■ |
| 4                 | 2.5               | 10   |           | 1100U04 04    | ■ |
| 4                 | 2.5               | 10   |           | 1100U04 05    | ■ |
| 4                 | 2.5               | 10   |           | 1100U04 06    | ■ |
| 4                 | 2.5               |  | 12        | 1100U04R08    | ■ |
| 6                 | 4                 | 15   |           | 1100U06 01    | ■ |
| 6                 | 4                 | 15   |           | 1100U06 02    | ■ |
| 6                 | 4                 | 15   |           | 1100U06 03    | ■ |
| 6                 | 4                 | 15   |           | 1100U06 04    | ■ |
| 6                 | 4                 | 15   |           | 1100U06 05    | ■ |
| 6                 | 4                 | 15   |           | 1100U06 06    | ■ |
| 6                 | 4                 |  | 15        | 1100U06R08    | ■ |
| 8                 | 5.5               | 20   |           | 1100U08 01    | ■ |
| 8                 | 5.5               | 20   |           | 1100U08 02    | ■ |
| 8                 | 5.5               | 20   |           | 1100U08 03    | ■ |
| 8                 | 5.5               | 20   |           | 1100U08 04    | ■ |
| 8                 | 5.5               | 20   |           | 1100U08 05    | ■ |
| 8                 | 5.5               | 20   |           | 1100U08 06    | ■ |
| 8                 | 5.5               |  | 20        | 1100U08R08    | ■ |
| 10                | 7                 | 25   |           | 1100U10 01    | ■ |
| 10                | 7                 | 25   |           | 1100U10 04    | ■ |
| 10                | 7                 |  | 25        | 1100U10R08    | ■ |
| 12                | 8                 | 35   |           | 1100U12 01    | ■ |
| 12                | 8                 | 35   |           | 1100U12 04    | ■ |
| 12                | 8                 |  | 35        | 1100U12R08    | ■ |
| 14                | 9.5               | 45   |           | 1100U14 01 95 | ■ |
| 14                | 9.5               | 45   |           | 1100U14 04 95 | ■ |
| 14                | 9.5               |  | 45        | 1100U14R08 95 | ■ |
| 16                | 11                | 45   |           | 1100U16R08 11 | ■ |
| 16                | 11                | 45   |           | 1100U16 01 11 | ■ |
| 16                | 11                | 45   |           | 1100U16 02 11 | ■ |
| 16                | 11                | 45   |           | 1100U16 03 11 | ■ |
| 16                | 11                | 45   |           | 1100U16 04 11 | ■ |

## Pneumatic Tubing

-40°C to +95°C  
 16 bar max.

### 1100U Anti-Static Polyurethane Tubing



Resistivity:  $10^3$  to  $10^6 \Omega$

| o.d. tubing<br>mm | i.d. tubing<br>mm | R minimum<br>bend radius for<br>tube at 20°C<br>in mm | Order code          |
|-------------------|-------------------|---|---------------------|
| 3                 | 1.8               | 10  | <b>1100U03A01</b> ■ |
| 4                 | 2.5               | 12  | <b>1100U04A01</b> ■ |
| 6                 | 4                 | 15  | <b>1100U06A01</b> ■ |
| 8                 | 5.5               | 25  | <b>1100U08A01</b> ■ |
| 10                | 7                 | 35  | <b>1100U10A01</b> ■ |
| 12                | 8                 | 45  | <b>1100U12A01</b> ■ |

### 1420U Flexible Polyurethane Twin Tubing



| o.d. tubing<br>mm | i.d. tubing<br>mm | R minimum<br>bend radius for<br>tube at 20°C<br>in mm | Order code           |
|-------------------|-------------------|---|----------------------|
| 4                 | 2.5               | 12  | <b>1420U04 11</b> ■■ |
| 4                 | 2.5               | 12  | <b>1420U04 44</b> ■■ |
| 4                 | 2.5               | 12  | <b>1420U04 41</b> ■■ |
| 6                 | 4                 | 15  | <b>1420U06 11</b> ■■ |
| 6                 | 4                 | 15  | <b>1420U06 44</b> ■■ |
| 6                 | 4                 | 15  | <b>1420U06 41</b> ■■ |
| 8                 | 5.5               | 20  | <b>1420U08 11</b> ■■ |
| 8                 | 5.5               | 20  | <b>1420U08 44</b> ■■ |
| 8                 | 5.5               | 20  | <b>1420U08 41</b> ■■ |

### 1015Y..F Advanced Polyethylene (APE) Tubing



Drum 150 m

| o.d. tubing<br>mm | i.d. tubing<br>mm | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm<br>Polyethylene | Order code          |
|-------------------|-------------------|--|---------------------|
| 4                 | 2.5               | 16   | <b>1015Y04F00</b>   |
| 4                 | 2.5               | 16   | <b>1015Y04F01</b> ■ |
| 4                 | 2.5               | 16   | <b>1015Y04F02</b> ■ |
| 4                 | 2.5               | 16   | <b>1015Y04F03</b> ■ |
| 4                 | 2.5               | 16   | <b>1015Y04F04</b> ■ |
| 4                 | 2.5               | 16   | <b>1015Y04F05</b> ■ |
| 4                 | 2.5               | 16   | <b>1015Y04F10</b> ■ |
| 6                 | 4                 | 32   | <b>1015Y06F00</b>   |
| 6                 | 4                 | 32   | <b>1015Y06F01</b> ■ |
| 6                 | 4                 | 32   | <b>1015Y06F02</b> ■ |
| 6                 | 4                 | 32   | <b>1015Y06F03</b> ■ |
| 6                 | 4                 | 32   | <b>1015Y06F04</b> ■ |
| 6                 | 4                 | 32   | <b>1015Y06F05</b> ■ |
| 6                 | 4                 | 32   | <b>1015Y06F10</b> ■ |
| 8                 | 5.75              | 40   | <b>1015Y08F00</b>   |
| 8                 | 5.75              | 40   | <b>1015Y08F01</b> ■ |
| 8                 | 5.75              | 40   | <b>1015Y08F02</b> ■ |
| 8                 | 5.75              | 40   | <b>1015Y08F03</b> ■ |
| 8                 | 5.75              | 40   | <b>1015Y08F04</b> ■ |
| 8                 | 5.75              | 40   | <b>1015Y08F05</b> ■ |
| 8                 | 5.75              | 40   | <b>1015Y08F10</b> ■ |
| 10                | 7                 | 40   | <b>1015Y10F00</b>   |
| 10                | 7                 | 40   | <b>1015Y10F01</b> ■ |
| 10                | 7                 | 40   | <b>1015Y10F02</b> ■ |
| 10                | 7                 | 40   | <b>1015Y10F03</b> ■ |
| 10                | 7                 | 40   | <b>1015Y10F04</b> ■ |
| 10                | 7                 | 40   | <b>1015Y10F05</b> ■ |
| 10                | 7                 | 40   | <b>1015Y10F10</b> ■ |

1030Y..F Advanced Polyethylene (APE) Tubing



Drum 300 m

| o.d. tubing<br>mm | i.d. tubing<br>mm | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm<br>Polyethylene | Order code |
|-------------------|-------------------|--|------------|
| 4                 | 2.5               | 16   | 1030Y04F00 |
| 4                 | 2.5               | 16   | 1030Y04F01 |
| 4                 | 2.5               | 16   | 1030Y04F02 |
| 4                 | 2.5               | 16   | 1030Y04F03 |
| 4                 | 2.5               | 16   | 1030Y04F04 |
| 4                 | 2.5               | 16   | 1030Y04F05 |
| 4                 | 2.5               | 16   | 1030Y04F10 |
| 6                 | 4                 | 32   | 1030Y06F00 |
| 6                 | 4                 | 32   | 1030Y06F01 |
| 6                 | 4                 | 32   | 1030Y06F02 |
| 6                 | 4                 | 32   | 1030Y06F03 |
| 6                 | 4                 | 32   | 1030Y06F04 |
| 6                 | 4                 | 32   | 1030Y06F05 |
| 6                 | 4                 | 32   | 1030Y06F10 |

1096Y..F Advanced Polyethylene (APE) Tubing



Drum 250 m

| o.d. tubing<br>inch | i.d. tubing<br>inch | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm<br>Polyethylene | Order code |
|---------------------|---------------------|--|------------|
| 1/2                 | 0.375               | 1.96   | 1096Y62F00 |
| 1/2                 | 0.375               | 1.96   | 1096Y62F01 |
| 1/2                 | 0.375               | 1.96   | 1096Y62F02 |
| 1/2                 | 0.375               | 1.96   | 1096Y62F03 |
| 1/2                 | 0.375               | 1.96   | 1096Y62F04 |
| 1/2                 | 0.375               | 1.96   | 1096Y62F05 |
| 1/2                 | 0.375               | 1.96   | 1096Y62F10 |

1075Y..F Advanced Polyethylene (APE) Tubing



Drum 75 m

| o.d. tubing<br>mm | i.d. tubing<br>mm | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm<br>Polyethylene | Order code |
|-------------------|-------------------|--|------------|
| 12                | 9                 | 55   | 1075Y12F00 |
| 12                | 9                 | 55   | 1075Y12F01 |
| 12                | 9                 | 55   | 1075Y12F02 |
| 12                | 9                 | 55   | 1075Y12F03 |
| 12                | 9                 | 55   | 1075Y12F04 |
| 12                | 9                 | 55   | 1075Y12F05 |
| 12                | 9                 | 55   | 1075Y12F10 |
| 14                | 11                | 75   | 1075Y14F00 |
| 16                | 13                | 95   | 1075Y16F00 |

1098Y..F Advanced Polyethylene (APE) Tubing



Drum 500 m

| o.d. tubing<br>inch | i.d. tubing<br>inch | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm<br>Polyethylene | Order code |
|---------------------|---------------------|--|------------|
| 1/4                 | 0.170               | 0.78   | 1098Y56F00 |
| 1/4                 | 0.170               | 0.78   | 1098Y56F01 |
| 1/4                 | 0.170               | 0.78   | 1098Y56F02 |
| 1/4                 | 0.170               | 0.78   | 1098Y56F03 |
| 1/4                 | 0.170               | 0.78   | 1098Y56F04 |
| 1/4                 | 0.170               | 0.78   | 1098Y56F05 |
| 1/4                 | 0.170               | 0.78   | 1098Y56F10 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F00 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F01 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F02 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F03 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F04 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F05 |
| 3/8                 | 0.250               | 1.18   | 1098Y60F10 |

1099Y..F Advanced Polyethylene (APE) Tubing



Drum 1000 m

| o.d. tubing<br>inch | i.d. tubing<br>inch | Minimum bend<br>radius for tube at<br>ambient temp.<br>in mm<br>Polyethylene | Order code |
|---------------------|---------------------|--|------------|
| 1/4                 | 0.170               | 0.78   | 1099Y56F00 |
| 1/4                 | 0.170               | 0.78   | 1099Y56F01 |
| 1/4                 | 0.170               | 0.78   | 1099Y56F02 |
| 1/4                 | 0.170               | 0.78   | 1099Y56F03 |
| 1/4                 | 0.170               | 0.78   | 1099Y56F04 |
| 1/4                 | 0.170               | 0.78   | 1099Y56F05 |
| 1/4                 | 0.170               | 0.78   | 1099Y56F10 |



## Pneumatic Tubing

### PFA Tubing



-196°C to +260°C  
36 bar max. (vacuum 755mHg)

| o.d. tubing<br>mm | i.d. tubing<br>mm | R minimum bend<br>radius for tube at<br>ambient temp.<br>in mm | Order code                                     |
|-------------------|-------------------|--|--|
| Length: 10 m      |                   |  |  |
| 4                 | 2                 | 12   | 1010T04P00 <input type="checkbox"/>            |
| 4                 | 2                 | 12   | 1010T04A01 <input checked="" type="checkbox"/> |
| 4                 | 2                 | 12   | 1010T04P12 <input checked="" type="checkbox"/> |
| 4                 | 2                 | 12   | 1010T04P13 <input checked="" type="checkbox"/> |
| 4                 | 2                 | 12   | 1010T04P14 <input checked="" type="checkbox"/> |
| 6                 | 4                 | 34   | 1010T06P00 <input type="checkbox"/>            |
| 6                 | 4                 | 34   | 1010T06A01 <input checked="" type="checkbox"/> |
| 6                 | 4                 | 34   | 1010T06P12 <input checked="" type="checkbox"/> |
| 6                 | 4                 | 34   | 1010T06P13 <input checked="" type="checkbox"/> |
| 6                 | 4                 | 34   | 1010T06P14 <input checked="" type="checkbox"/> |
| 8                 | 6                 | 60   | 1010T08P00 <input type="checkbox"/>            |
| 8                 | 6                 | 60   | 1010T08A01 <input checked="" type="checkbox"/> |
| 8                 | 6                 | 60   | 1010T08P12 <input checked="" type="checkbox"/> |
| 8                 | 6                 | 60   | 1010T08P13 <input checked="" type="checkbox"/> |
| 8                 | 6                 | 60   | 1010T08P14 <input checked="" type="checkbox"/> |
| 10                | 8                 | 95   | 1010T10P00 <input type="checkbox"/>            |
| 12                | 9                 | 120  | 1010T12P00 <input type="checkbox"/>            |

|              |   |     |  |
|--------------|---|-----|--|
| Length: 50 m |   |     |  |
| 4            | 2 | 12  | 1050T04P00 <input type="checkbox"/>            |
| 4            | 2 | 12  | 1050T04A01 <input checked="" type="checkbox"/> |
| 4            | 2 | 12  | 1050T04P12 <input checked="" type="checkbox"/> |
| 4            | 2 | 12  | 1050T04P13 <input checked="" type="checkbox"/> |
| 4            | 2 | 12  | 1050T04P14 <input checked="" type="checkbox"/> |
| 6            | 4 | 34  | 1050T06P00 <input type="checkbox"/>            |
| 6            | 4 | 34  | 1050T06A01 <input checked="" type="checkbox"/> |
| 6            | 4 | 34  | 1050T06P12 <input checked="" type="checkbox"/> |
| 6            | 4 | 34  | 1050T06P13 <input checked="" type="checkbox"/> |
| 6            | 4 | 34  | 1050T06P14 <input checked="" type="checkbox"/> |
| 8            | 6 | 60  | 1050T08P00 <input type="checkbox"/>            |
| 8            | 6 | 60  | 1050T08A01 <input checked="" type="checkbox"/> |
| 8            | 6 | 60  | 1050T08P12 <input checked="" type="checkbox"/> |
| 8            | 6 | 60  | 1050T08P13 <input checked="" type="checkbox"/> |
| 8            | 6 | 60  | 1050T08P14 <input checked="" type="checkbox"/> |
| 10           | 8 | 95  | 1050T10P00 <input type="checkbox"/>            |
| 12           | 9 | 120 | 1050T12P00 <input type="checkbox"/>            |

### PFA Tubing



Length: 100 m

|    |   |     |                                     |
|----|---|-----|-------------------------------------|
| 4  | 2 | 12  | 1100T04P00 <input type="checkbox"/> |
| 6  | 4 | 34  | 1100T06P00 <input type="checkbox"/> |
| 8  | 6 | 60  | 1100T08P00 <input type="checkbox"/> |
| 10 | 8 | 95  | 1100T10P00 <input type="checkbox"/> |
| 12 | 9 | 120 | 1100T12P00 <input type="checkbox"/> |

## Pneumatic Tubing

-20°C to +70°C  
10 bar max.

### 1005T Fluoropolymer FEP 140 Tubing, 5m Rolls



-40°C to +150°C  
28 bar max.

| o.d. tubing mm | i.d. tubing mm | R minimum bend radius for tube at ambient temp. in mm | Order code           |
|----------------|----------------|---|----------------------|
| 4              | 2.5            | 40  | <b>1005T04 00 25</b> |
| 6              | 4              | 50  | <b>1005T06 00</b>    |
| 8              | 6              | 70  | <b>1005T08 00</b>    |
| 10             | 8              | 120   | <b>1005T10 00</b>    |
| 12             | 10             | 180   | <b>1005T12 00</b>    |

### 1025T Fluoropolymer FEP 140 Tubing, 25m Rolls



-40°C to +150°C  
28 bar max.

| o.d. tubing mm | i.d. tubing mm | R minimum bend radius for tube at ambient temp. in mm | Order code           |
|----------------|----------------|---|----------------------|
| 4              | 2.5            | 40  | <b>1025T04 00 25</b> |
| 6              | 4              | 50  | <b>1025T06 00</b>    |
| 8              | 6              | 70  | <b>1025T08 00</b>    |
| 10             | 8              | 120   | <b>1025T10 00</b>    |
| 12             | 10             | 180   | <b>1025T12 00</b>    |

### 1460U Polyurethane Recoil Tubing, without connectors, 2 m long



| o.d. tubing mm | i.d. tubing mm | Order code        |
|----------------|----------------|-------------------|
| 8              | 5              | <b>1460U08 04</b> |
| 10             | 7              | <b>1460U10 04</b> |
| 12             | 8              | <b>1460U12 04</b> |

### 1461U Polyurethane Recoil Tubing, without connectors, 4 m long



| o.d. tubing mm | i.d. tubing mm | Order code        |
|----------------|----------------|-------------------|
| 8              | 5              | <b>1461U08 04</b> |
| 10             | 7              | <b>1461U10 04</b> |
| 12             | 8              | <b>1461U12 04</b> |

### 1462U Polyurethane Recoil Tubing, without connectors 6 m long



| o.d. tubing mm | i.d. tubing mm | Order code        |
|----------------|----------------|-------------------|
| 8              | 5              | <b>1462U08 04</b> |
| 10             | 7              | <b>1462U10 04</b> |
| 12             | 8              | <b>1462U12 04</b> |

### 0694 Instant Fitting, with protection spring, BSPP



| ØD | C    | Order code        |
|----|------|-------------------|
| 8  | G1/4 | <b>0694 08 13</b> |
| 10 | G1/4 | <b>0694 10 13</b> |
| 12 | G3/8 | <b>0694 12 17</b> |

### 1470U Polyurethane Recoil Tubing, 2 m long, with Threaded Stem BSPT Thread



| o.d. tubing mm | i.d. tubing mm | BSPT thread | Order code             |
|----------------|----------------|-------------|------------------------|
| 8              | 5              | R1/4        | <b>1470U08 03 13</b> ■ |
| 8              | 5              | R1/4        | <b>1470U08 04 13</b> ■ |
| 8              | 5              | R1/4        | <b>1470U08 05 13</b> ■ |

### 1471U Polyurethane Recoil Tubing, 4 m long, with Threaded Stem BSPT Thread



| o.d. tubing mm | i.d. tubing mm | BSPT thread | Order code             |
|----------------|----------------|-------------|------------------------|
| 8              | 5              | R1/4        | <b>1471U08 03 13</b> ■ |
| 8              | 5              | R1/4        | <b>1471U08 04 13</b> ■ |
| 8              | 5              | R1/4        | <b>1471U08 05 13</b> ■ |

### 1472U Polyurethane Recoil Tubing, 6 m long, with Threaded Stem BSPT Thread



| o.d. tubing mm | i.d. tubing mm | BSPT thread | Order code             |
|----------------|----------------|-------------|------------------------|
| 8              | 5              | R1/4        | <b>1472U08 03 13</b> ■ |
| 8              | 5              | R1/4        | <b>1472U08 04 13</b> ■ |
| 8              | 5              | R1/4        | <b>1472U08 05 13</b> ■ |

## Pneumatic Tubing

### 1040H Self-Fastening Hose, in 40m rolls



-20°C to +100°C  
16 bar max.

| DN  | i.d. tubing mm | R minimum bend radius at 20°C (mm) | Order code   |
|-----|----------------|------------------------------------|--|
| 1/4 | 6.3            | 60                                 | <b>1040H56 02</b> <span style="color: green;">■</span> |
| 1/4 | 6.3            | 60                                 | <b>1040H56 03</b> <span style="color: red;">■</span>   |
| 3/8 | 9.5            | 70                                 | <b>1040H60 02</b> <span style="color: green;">■</span> |
| 3/8 | 9.5            | 70                                 | <b>1040H60 03</b> <span style="color: red;">■</span>   |
| 1/2 | 12.7           | 120                                | <b>1040H62 02</b> <span style="color: green;">■</span> |
| 1/2 | 12.7           | 120                                | <b>1040H62 03</b> <span style="color: red;">■</span>   |
| 5/8 | 15.9           | 140                                | <b>1040H66 02</b> <span style="color: green;">■</span> |
| 5/8 | 15.9           | 140                                | <b>1040H66 03</b> <span style="color: red;">■</span>   |
| 3/4 | 19.1           | 170                                | <b>1040H69 02</b> <span style="color: green;">■</span> |
| 3/4 | 19.1           | 170                                | <b>1040H69 03</b> <span style="color: red;">■</span>   |

### 1080H Self-Fastening Hose, in 80m rolls



-20°C to +100°C  
16 bars max.

| DN  | i.d. tubing mm | R minimum bend radius at 20°C (mm) | Order code   |
|-----|----------------|------------------------------------|--|
| 5/8 | 15.9           | 140                                | <b>1080H66 02</b> <span style="color: green;">■</span> |
| 5/8 | 15.9           | 140                                | <b>1080H66 03</b> <span style="color: red;">■</span>   |
| 3/4 | 19.1           | 170                                | <b>1080H69 02</b> <span style="color: green;">■</span> |
| 3/4 | 19.1           | 170                                | <b>1080H69 03</b> <span style="color: red;">■</span>   |

### 1100H Self-Fastening Hose, in 100m rolls



-20°C to +100°C  
16 bar max.

| DN  | i.d. tubing mm | R minimum bend radius at 20°C (mm) | Order code   |
|-----|----------------|------------------------------------|--|
| 1/4 | 6.3            | 60                                 | <b>1100H56 02</b> <span style="color: green;">■</span> |
| 1/4 | 6.3            | 60                                 | <b>1100H56 03</b> <span style="color: red;">■</span>   |
| 3/8 | 9.5            | 70                                 | <b>1100H60 02</b> <span style="color: green;">■</span> |
| 3/8 | 9.5            | 70                                 | <b>1100H60 03</b> <span style="color: red;">■</span>   |
| 1/2 | 12.7           | 120                                | <b>1100H62 02</b> <span style="color: green;">■</span> |
| 1/2 | 12.7           | 120                                | <b>1100H62 03</b> <span style="color: red;">■</span>   |

### 1025V Braided PVC Hose, 25 m Rolls



-20° to +70°C  
15 bar

| o.d. tubing mm | i.d. tubing mm | R minimum bend radius for tube at 20°C in mm | Order code           |
|----------------|----------------|--|----------------------|
| 8              | 4              | 10   | <b>1025V08 00 04</b> |
| 11             | 6              | 12   | <b>1025V11 00 06</b> |
| 13             | 7              | 14   | <b>1025V13 00 07</b> |
| 14             | 8              | 16   | <b>1025V14 00 08</b> |
| 16             | 10             | 25   | <b>1025V16 00 10</b> |
| 18             | 12             | 30   | <b>1025V18 00 12</b> |
| 23             | 15             | 40   | <b>1025V23 00 15</b> |
| 26             | 19             | 60   | <b>1025V26 00 19</b> |

### 3000 Tube Cutter



Order code

**3000 71 00**

### 3000 71 11 Tube Cutter



Order code

**3000 71 11**

### Clip Strips for Tubes



| ØD | Order code        |
|----|-------------------|
| 4  | <b>CLIP 04 00</b> |
| 6  | <b>CLIP 06 00</b> |
| 8  | <b>CLIP 08 00</b> |
| 10 | <b>CLIP 10 00</b> |
| 12 | <b>CLIP 12 00</b> |
| 14 | <b>CLIP 14 00</b> |

## Safety Couplers & Probes

### Passage 5,5mm - ISO B6 profile

-20°C to +60°C  
16 bar max.  
ISO 4414

#### 9405U Male Body, BSPP



| C    | Order code        |
|------|-------------------|
| R1/4 | <b>9405U06 13</b> |
| R3/8 | <b>9405U06 17</b> |
| R1/2 | <b>9405U06 21</b> |

#### 9087U Male Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9087U06 13</b> |
| G1/8 | <b>9087U06 17</b> |
| G1/2 | <b>9087U06 21</b> |

#### 9414U Female Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9414U06 13</b> |
| G3/8 | <b>9414U06 17</b> |
| G1/2 | <b>9414U06 21</b> |

#### 9086 Female Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9086 22 13</b> |
| G3/8 | <b>9086 23 17</b> |
| G1/2 | <b>9086 23 21</b> |

#### 9421U with Hosetail



| ØD | Order code        |
|----|-------------------|
| 6  | <b>9421U06 06</b> |
| 8  | <b>9421U06 08</b> |
| 10 | <b>9421U06 10</b> |

#### 9094U with Hosetail



| ØD | Order code        |
|----|-------------------|
| 6  | <b>9094U06 06</b> |
| 8  | <b>9094U06 08</b> |
| 10 | <b>9094U06 10</b> |

#### 9416U Female Body, Panel Mountable, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9416U06 13</b> |

#### 9080U with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9080U06 08</b> |
| 10 | <b>9080U06 10</b> |

#### 9410U with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9410U06 08</b> |
| 10 | <b>9410U06 10</b> |

#### 9440U Female Y Body, BSPP



| C    | Order code        |
|------|-------------------|
| G3/8 | <b>9440U06 17</b> |

## Safety Couplers & Probes Passage 8mm - ISO B8 profile

-20°C to +60°C  
16 bar max.  
ISO 4414

### 9405U Male Body, BSPT



| C    | Order code        |
|------|-------------------|
| R1/4 | <b>9405U08 13</b> |
| R3/8 | <b>9405U08 17</b> |
| R1/2 | <b>9405U08 21</b> |

### 9087U Male Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9087U08 13</b> |
| G3/8 | <b>9087U08 17</b> |
| G1/2 | <b>9087U08 21</b> |

### 9414U Female Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9414U08 13</b> |
| G3/8 | <b>9414U08 17</b> |
| G1/2 | <b>9414U08 21</b> |

### 9086 Female Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9086 30 13</b> |
| G3/8 | <b>9086 30 17</b> |
| G1/2 | <b>9086 30 21</b> |

### 9421U with Hosetail



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9421U08 08</b> |
| 10 | <b>9421U08 10</b> |
| 13 | <b>9421U08 13</b> |

### 9094U with Hosetail



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9094U08 08</b> |
| 10 | <b>9094U08 10</b> |
| 13 | <b>9094U08 13</b> |

### 9416U Female Body, Panel Mountable, BSPP



| C    | Order code        |
|------|-------------------|
| G3/8 | <b>9416U08 17</b> |

### 9080U with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 10 | <b>9080U08 10</b> |
| 12 | <b>9080U08 12</b> |

### 9410U with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 10 | <b>9410U08 10</b> |
| 12 | <b>9410U08 12</b> |

### 9440U Female Y Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/2 | <b>9440U08 21</b> |

## Safety Couplers & Probes Passage 7,2mm - EURO Interchange

-20°C to +60°C  
16 bar max.  
ISO 4414

### 9401E Male Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9401E07 13</b> |
| G3/8 | <b>9401E07 17</b> |
| G1/2 | <b>9401E07 21</b> |

### 9087E Male Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9087E07 13</b> |
| G3/8 | <b>9087E07 17</b> |
| G1/2 | <b>9087E07 21</b> |

### 9414E Female Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9414E07 13</b> |
| G3/8 | <b>9414E07 17</b> |
| G1/2 | <b>9414E07 21</b> |

### 9086 Female Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9086 25 13</b> |
| G3/8 | <b>9086 25 17</b> |
| G1/2 | <b>9086 25 21</b> |

### 9421E with Hosetail



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9421E07 08</b> |
| 10 | <b>9421E07 10</b> |
| 13 | <b>9421E07 13</b> |

### 9094E with Hosetail



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9094E07 08</b> |
| 10 | <b>9094E07 10</b> |
| 13 | <b>9094E07 13</b> |

### 9416E Female Body, Panel Mountable, BSPP



| C    | Order code        |
|------|-------------------|
| G3/8 | <b>9416E07 17</b> |

### 9080E with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 10 | <b>9080E07 10</b> |
| 12 | <b>9080E07 12</b> |

### 9410E with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 10 | <b>9410E07 10</b> |
| 12 | <b>9410E07 12</b> |

### 9440E Female Y Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/2 | <b>9440E07 21</b> |

## Safety Couplers & Probes Passage 5,5mm - ARO Interchange

-20°C to +60°C  
16 bar max.  
ISO 4414

### 9401A Male Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9401A06 13</b> |
| G3/8 | <b>9401A06 17</b> |
| G1/2 | <b>9401A06 21</b> |

### 9087A Male Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9087A06 13</b> |
| G3/8 | <b>9087A06 17</b> |
| G1/2 | <b>9087A06 21</b> |

### 9414A Female Body, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9414A06 13</b> |
| G3/8 | <b>9414A06 17</b> |
| G1/2 | <b>9414A06 21</b> |

### 9086 Female Thread, BSPP



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>9086 22 13</b> |
| G3/8 | <b>9086 22 17</b> |
| G1/2 | <b>9086 22 21</b> |

### 9421A with Hosetail



| ØD | Order code        |
|----|-------------------|
| 6  | <b>9421A06 06</b> |
| 8  | <b>9421A06 08</b> |
| 10 | <b>9421A06 10</b> |

### 9094A with Hosetail



| ØD | Order code        |
|----|-------------------|
| 6  | <b>9094A06 06</b> |
| 8  | <b>9094A06 08</b> |
| 10 | <b>9094A06 10</b> |

### 9416A Female Body, Panel Mountable, BSPP



| C    | Order code         |
|------|--------------------|
| G1/4 | <b>9416A 06 13</b> |

### 9080A with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9080A06 08</b> |
| 10 | <b>9080A06 10</b> |

### 9410A with LF3000 Outlet & Protection Spring



| ØD | Order code        |
|----|-------------------|
| 8  | <b>9410A06 08</b> |
| 10 | <b>9410A06 10</b> |

### 9440A Female Y Body, BSPP



| C    | Order code        |
|------|-------------------|
| G3/8 | <b>9440A06 17</b> |

## Blowguns & Nozzles

-15°C to +50°C  
10 bar max.  
OSHA & CE

### 0653 Flow Reducer «Energy Saving» Blowgun, lower connection



| C    | Order code |
|------|------------|
| G1/4 | 0653 66 13 |

### 0659 Standard Blowgun, with angled nozzle, BSPP



| C    | Order code |
|------|------------|
| G1/4 | 0659 00 13 |

### 0656 Progressive Control, lower connection, BSPP



| C    | Order code |
|------|------------|
| G1/4 | 0656 66 13 |

### 0652 Progressive Control, lower connection, BSPP



| C    | Order code |
|------|------------|
| G1/4 | 0652 66 13 |

### 0654 Safety Blowgun, with angled nozzle, BSPP



| C    | Order code |
|------|------------|
| G1/4 | 0654 00 13 |

### 0657 Progressive Control, upper connection, BSPP



| C    | Order code |
|------|------------|
| G1/4 | 0657 66 13 |

### 0655 Progressive Control, upper connection, BSPP



| C    | Order code |
|------|------------|
| G1/4 | 0655 66 13 |

### 0690 Standard Nozzle



| ØD  | C          | Order code |
|-----|------------|------------|
| 2.5 | M12 x 1,25 | 0690 01 00 |

### 0690 Long Straight Tube Nozzle



| ØD  | C          | Order code |
|-----|------------|------------|
| 2.5 | M12 x 1,25 | 0690 03 00 |

### 0690 Air Screen Nozzle



| ØD | C          | Order code |
|----|------------|------------|
| 2  | M12 x 1,25 | 0690 09 00 |

### 0623 Lever Operated Air Gun with Removable Nozzle



| ØD | C    | Order code |
|----|------|------------|
| 2  | G1/4 | 0623 10 35 |

### 0690 Long-Angled Tube Nozzle



| ØD  | C          | Order code |
|-----|------------|------------|
| 2.5 | M12 x 1,25 | 0690 05 00 |

### 0690 Coanda Effect Nozzle



| C          | Order code |
|------------|------------|
| M12 x 1,25 | 0690 08 00 |

### 0690 Booster Nozzle



| ØD  | C          | Order code |
|-----|------------|------------|
| 2.5 | M12 x 1,25 | 0690 10 00 |



## Blowgun Kits

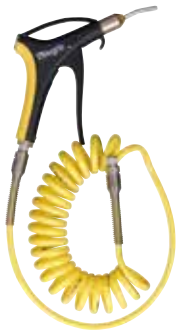
Includes:

- A blowgun
- Recoil tubing (4 m long), external Ø 8 mm
- G1/4" male thread connector adapted to coupler

Kits are packaged in individual plastic bags.



### 0631 00 01 Safety Blowgun Kit, lower connection



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>0631 00 01</b> |

### 0631 00 07 Interchangeable Nozzle Blowgun Kit, lower connection



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>0631 00 07</b> |

### 0631 00 23 Flow Reducer «Energy Saving» Blowgun Kit, lower connection



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>0631 00 23</b> |

### 0631 00 05 Angled Nozzle Blowgun Kit, lower connection



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>0631 00 05</b> |

### 0631 00 03 Short Nozzle Blowgun Kit, lower connection



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>0631 00 03</b> |

### 0631 00 09 Standard Blowgun Kit, lower connection



| C    | Order code        |
|------|-------------------|
| G1/4 | <b>0631 00 09</b> |

## Pneumatic Ball Valves & Action Valves

### 7913 Mini Ball Valves, 3/2 version, with vent, with push-in connection



| ØD | Order code        |
|----|-------------------|
| 4  | <b>7913 04 00</b> |
| 6  | <b>7913 06 00</b> |
| 8  | <b>7913 08 00</b> |
| 10 | <b>7913 10 00</b> |
| 12 | <b>7913 12 00</b> |

### 7914 Mini Ball Valves 3/2 version, with vent, with BSPP thread & push-in connection



| ØD | C    | Order code        |
|----|------|-------------------|
| 6  | G1/8 | <b>7914 06 10</b> |
| 8  | G1/4 | <b>7914 08 13</b> |
| 10 | G3/8 | <b>7914 10 17</b> |
| 12 | G1/2 | <b>7914 12 21</b> |

### 7910 Mini Ball Valves, 2/2 version, with push-in connection



| ØD | Order code        |
|----|-------------------|
| 4  | <b>7910 04 00</b> |
| 6  | <b>7910 06 00</b> |
| 8  | <b>7910 08 00</b> |
| 10 | <b>7910 10 00</b> |
| 12 | <b>7910 12 00</b> |

### 7911 Mini Ball Valves, 2/2 Version with BSPP thread & push-in connection



| ØD | C    | Order code        |
|----|------|-------------------|
| 6  | G1/8 | <b>7911 06 10</b> |
| 8  | G1/4 | <b>7911 08 13</b> |
| 10 | G3/8 | <b>7911 10 17</b> |
| 12 | G1/2 | <b>7911 12 21</b> |

### 0492 Double Female



-20° to +80°C  
12 bar

| C    | DN | Order code           |
|------|----|----------------------|
| G1/4 | 4  | <b>0492 04 13</b>    |
| G1/4 | 4  | <b>0492 04 13 64</b> |
| G3/8 | 7  | <b>0492 07 17</b>    |
| G1/2 | 10 | <b>0492 10 21</b>    |
| G3/4 | 13 | <b>0492 13 27</b>    |

### 0491 Male & Female, BSPP



-20° to +80°C  
12 bar

| C    | DN | Order code           |
|------|----|----------------------|
| G1/4 | 4  | <b>0491 04 13</b>    |
| G1/4 | 4  | <b>0491 04 13 64</b> |
| G3/8 | 7  | <b>0491 07 17</b>    |
| G1/2 | 10 | <b>0491 10 21</b>    |
| G3/4 | 13 | <b>0491 13 27</b>    |

### 0402 Standard In-Line Ball Valve - Double Female, BSPP



-20° to +80°C  
40 bar

| C    | DN | Order code        |
|------|----|-------------------|
| G1/8 | 4  | <b>0402 04 10</b> |
| G1/8 | 7  | <b>0402 07 10</b> |
| G1/4 | 7  | <b>0402 07 13</b> |
| G3/4 | 10 | <b>0402 10 17</b> |
| G1/2 | 13 | <b>0402 13 21</b> |
| G3/4 | 20 | <b>0402 20 27</b> |
| G1"  | 23 | <b>0402 23 34</b> |

### 0401 Standard In-Line Ball Valve, Male Female BSPP



-20° to +80°C  
40 bar

| ØD | C    | Order code        |
|----|------|-------------------|
| 4  | G1/8 | <b>0401 04 10</b> |
| 7  | G1/4 | <b>0401 07 13</b> |
| 10 | G3/8 | <b>0401 10 17</b> |
| 13 | G1/2 | <b>0401 13 21</b> |
| 18 | G3/4 | <b>0401 18 27</b> |
| 23 | G1"  | <b>0401 23 34</b> |

### 4902 In-Line Ball Valves, Fluoropolymer Series, BSPP




-20° to +130°C  
30 bar


| C      | DN  | PN | Order code        |
|--------|-----|----|-------------------|
| G1/4   | 10  | 30 | <b>4902 10 13</b> |
| G3/8   | 10  | 30 | <b>4902 10 17</b> |
| G1/2   | 15  | 30 | <b>4902 15 21</b> |
| G3/4   | 20  | 30 | <b>4902 20 27</b> |
| G2.1/2 | 25  | 30 | <b>4902 25 34</b> |
| G2.1/2 | 32  | 30 | <b>4902 32 42</b> |
| G2.1/2 | 40  | 30 | <b>4902 40 49</b> |
| G2.1/2 | 50  | 30 | <b>4902 50 48</b> |
| G2.1/2 | 65  | 30 | <b>4902 65 47</b> |
| G3"    | 80  | 30 | <b>4902 80 46</b> |
| G4"    | 100 | 30 | <b>4902 01 45</b> |

## Pneumatic Ball Valves & Action Valves


### 0439 Lockable Ball Valves, Double Female with vent, BSPP

|   |    |      |                   |
|---|----|------|-------------------|
|  <p>-20° to +80°C<br/>40 bar</p> | ØD | C    | Order code        |
|   | 4  | G1/8 | <b>0439 04 10</b> |
|   | 7  | G1/4 | <b>0439 07 13</b> |
|   | 10 | G3/8 | <b>0439 10 17</b> |
|   | 13 | G1/2 | <b>0439 13 21</b> |
|   | 18 | G3/4 | <b>0439 18 27</b> |
|   | 23 | G1"  | <b>0439 23 34</b> |


### 0469 Double Female Vented Ball Valves BSPP

|  |    |      |                   |
|--|----|------|-------------------|
|  <p>-20° to +80°C<br/>40 bar</p> | ØD | C    | Order code        |
|  | 4  | G1/8 | <b>0469 04 10</b> |
|  | 7  | G1/4 | <b>0469 07 13</b> |
|  | 10 | G3/8 | <b>0469 10 17</b> |
|  | 13 | G1/2 | <b>0469 13 21</b> |
|  | 18 | G3/4 | <b>0469 18 27</b> |
|  | 23 | G1"  | <b>0469 23 34</b> |


### 0448 Panel Mountable Female, BSPP, right angle porting

|   |    |      |                   |
|---|----|------|-------------------|
|  <p>-20° to +80°C<br/>40 bar</p> | ØD | C    | Order code        |
|   | 4  | G1/8 | <b>0448 04 10</b> |
|   | 6  | G1/4 | <b>0448 06 13</b> |
|   | 9  | G3/8 | <b>0448 09 17</b> |
|   | 12 | G1/2 | <b>0448 12 21</b> |

### 4810 Ball Valve, Double Female BSPP


|  |      |    |    |                   |
|--|------|----|----|-------------------|
|  | C    | DN | PN | Order code        |
|  | G1/4 | 8  | 64 | <b>4810 08 13</b> |
|  | G3/8 | 10 | 64 | <b>4810 10 17</b> |
|  | G1/2 | 15 | 64 | <b>4810 15 21</b> |
|  | G3/4 | 20 | 40 | <b>4810 20 27</b> |
|  | G1"  | 25 | 40 | <b>4810 25 34</b> |

### 0438 Female, 3 port 2 way Lockable Ball Valve, BSPP


|   |    |      |                   |
|---|----|------|-------------------|
|  <p>-20° to +80°C<br/>40 bar</p> | ØD | C    | Order code        |
|   | 9  | G3/8 | <b>0438 09 17</b> |
|   | 12 | G1/2 | <b>0438 12 21</b> |
|   | 18 | G3/4 | <b>0438 18 27</b> |
|   | 23 | G1"  | <b>0438 23 34</b> |

The Ball Valves, Universal Series, can be adapted to various applications in semi-standard versions.

### 0489 In-Line Vented Ball Valves, BSPP, with threaded exhaust

|   |    |      |                   |
|---|----|------|-------------------|
|  <p>-20° to +80°C<br/>40 bar</p> | ØD | C    | Order code        |
|   | 7  | G1/4 | <b>0489 07 13</b> |
|   | 10 | G3/8 | <b>0489 10 17</b> |
|   | 13 | G1/2 | <b>0489 13 21</b> |
|   | 18 | G3/4 | <b>0489 18 27</b> |
|   | 23 | G1"  | <b>0489 23 34</b> |

### 0449 In-Line Vented Ball Valves, BSPP, panel mountable

|   |    |      |                   |
|---|----|------|-------------------|
|  <p>-20° to +80°C<br/>40 bar</p> | ØD | C    | Order code        |
|   | 7  | G1/4 | <b>0449 07 13</b> |
|   | 10 | G3/8 | <b>0449 10 17</b> |
|   | 13 | G1/2 | <b>0449 13 21</b> |

## Axial Valves

### 4202 Axial Valve, normally closed, double female, BSPP, FKM Seal



-20° to +135°C  
10 bar

| C      | DN | Order code           |
|--------|----|----------------------|
| G3/8   | 10 | <b>4202 10 17 20</b> |
| G1/2   | 15 | <b>4202 15 21 20</b> |
| G3/4   | 20 | <b>4202 20 27 20</b> |
| G1"    | 25 | <b>4202 25 34 20</b> |
| G1"1/4 | 32 | <b>4202 32 42 20</b> |
| G1"1/2 | 40 | <b>4202 40 49 20</b> |
| G2"    | 50 | <b>4202 50 48 20</b> |

### 4298 Namur Sub-Base for Solenoid Pilot Valve



| C        | Order code        |
|----------|-------------------|
| M5 x 0.8 | <b>4298 00 01</b> |

### 4212 Axial Valve, normally open, double female, BSPP, FKM Seal



-20° to +135°C  
8 bar

| C      | DN | Order code           |
|--------|----|----------------------|
| G3/8   | 10 | <b>4212 10 17 20</b> |
| G1/2   | 15 | <b>4212 15 21 20</b> |
| G3/4   | 20 | <b>4212 20 27 20</b> |
| G1"    | 25 | <b>4212 25 34 20</b> |
| G1"1/4 | 32 | <b>4212 32 42 20</b> |
| G1"1/2 | 40 | <b>4212 40 49 20</b> |
| G2"    | 50 | <b>4212 50 48 20</b> |

### 0669 Sleeve Valve, Double Female, BSPP & M5



| C        | DN | Order code        |
|----------|----|-------------------|
| M5 x 0.8 | 2  | <b>0669 02 19</b> |
| G1/8     | 4  | <b>0669 04 10</b> |
| G1/4     | 7  | <b>0669 07 13</b> |
| G3/8     | 10 | <b>0669 10 17</b> |
| G1/2     | 14 | <b>0669 14 21</b> |
| G3/4     | 19 | <b>0669 19 27</b> |

### 4222 Axial Valve, double acting, double female, BSPP, FKM Seal



-20° to +135°C  
10 bar

| ØD | C       | Order code           |
|----|---------|----------------------|
| 10 | G3/8    | <b>4222 10 17 20</b> |
| 15 | G1/2    | <b>4222 15 21 20</b> |
| 20 | G3/4    | <b>4222 20 27 20</b> |
| 25 | G1"     | <b>4222 25 34 20</b> |
| 32 | G1.1/4" | <b>4222 32 42 20</b> |
| 40 | G1.1/2" | <b>4222 40 49 20</b> |
| 50 | G2"     | <b>4222 50 48 20</b> |

### 4298 Mini-Solenoid Valve, 1W/ 1,2VA

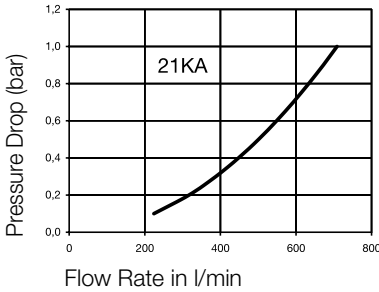


| Voltage | Order code        |
|---------|-------------------|
| 24V --- | <b>4298 01 01</b> |
| 24V ~   | <b>4298 01 02</b> |
| 110V ~  | <b>4298 02 01</b> |
| 220V ~  | <b>4298 02 02</b> |

## Rectus Series 21KA - DN 5.0

Mini industrial coupling, the world's most commonly used profile. Above average flow performance for liquid and gaseous media. Large band width in materials and valve variants.

### Chart / Air



### Advantages

- Single handed operation
- Small dimensions
- All versions interchangeable



**Working Pressure**  
 PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

**Working Temperature\***  
 -20°C up to +100°C (NBR) depending on the medium.  
 \*At a temperature below -20°C and above +100°C special seals are available on request.

**Material**

|                         |          |
|-------------------------|----------|
| <b>Coupling</b>         |          |
| Back Body               | Brass    |
| Valve Body              | Brass    |
| Sleeve                  | Brass    |
| Valve                   | Brass    |
| Spring and Locking Ring | AISI 301 |
| Locking Balls           | AISI 420 |
| Seals                   | NBR      |
| <b>Plug</b>             | Brass    |

### Coupling - Male Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/8"     | <b>21KAAW10MPX</b> | 20      |
| 1/4"     | <b>21KAAW13MPX</b> | 20      |

### Plug - Male Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/8"     | <b>21SFAW10MXX</b> | 20      |
| 1/4"     | <b>21SFAW13MXX</b> | 20      |

### Coupling - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/8"     | <b>21KAIW10MPX</b> | 20      |
| 1/4"     | <b>21KAIW13MPX</b> | 20      |

### Plug - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/8"     | <b>21SFIW10MXX</b> | 20      |

### Coupling - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>21KATF06MPX</b> | 20      |
| 8 mm     | <b>21KATF08MPX</b> | 20      |

### Plug - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>21SFTF06MXX</b> | 20      |
| 8 mm     | <b>21SFTF08MXX</b> | 20      |

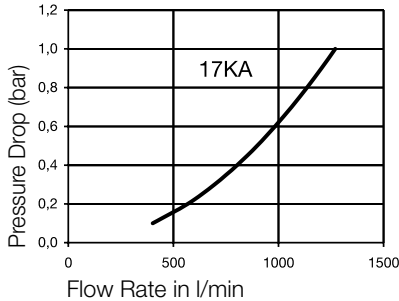
### Plug - Plastic Hose Connection

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 4x6 mm   | <b>21SFKO06MXX</b> | 20      |
| 6x8 mm   | <b>21SFKO08MXX</b> | 20      |

## Rectus Series 17KA - DN 5.0

English profile industrial coupling. Specially suited to compressed air applications. Brass/steel design developed for industry. Schrader (DN 5.0) Interchange.

### Chart / Air



### Advantages

- Single handed operation
- Small dimensions, light weight
- UltraFlo technology with high flow valve



#### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.  
\*At a temperature below -20°C and above +100°C special seals are available on request.

#### Material

##### Coupling

|                         |                            |
|-------------------------|----------------------------|
| Back Body               | Brass, Nickel Plated       |
| Valve Body              | Steel Hardened, Zinc Pl.   |
| Sleeve                  | Steel Hardened, Nickel Pl. |
| Valve                   | Brass                      |
| Inner Sleeve            | Brass                      |
| Spring Plate            | Brass                      |
| Spring and Locking Ring | AISI 303                   |
| Locking Balls           | AISI 420                   |
| Seals                   | NBR                        |

##### Plug

Steel Hardened, Nickel Pl.

### Coupling - Male Thread BSPT



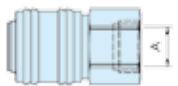
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>17KAAK13SPN</b> | 10      |
| 3/8"     | <b>17KAAK17SPN</b> | 10      |
| 1/2"     | <b>17KAAK21SPN</b> | 10      |

### Plug - Male Thread BSPT



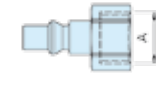
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/8"     | <b>17SFAK10SXN</b> | 20      |
| 1/4"     | <b>17SFAK13SXN</b> | 20      |

### Coupling - Female Thread BSPP



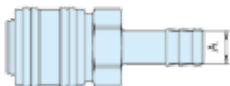
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>17KAIW13SPN</b> | 10      |
| 1/2"     | <b>17KAIW21SPN</b> | 10      |

### Plug - Female Thread BSPP



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/8"     | <b>17SFIW10SXN</b> | 20      |
| 1/4"     | <b>17SFIW13SXN</b> | 20      |

### Coupling - Hose Barb



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>17KATF08SPN</b> | 10      |
| 10 mm    | <b>17KATF10SPN</b> | 10      |

### Plug - Hose Barb

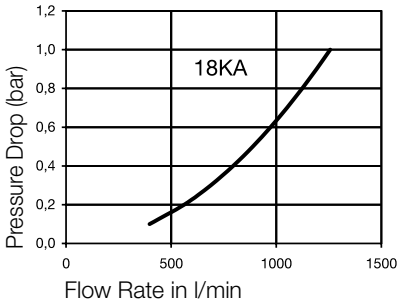


| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>17SFTF08SXN</b> | 20      |
| 10 mm    | <b>17SFTF10SXN</b> | 20      |

## Rectus Series 18KA - DN 5.5

ISO 6150 C industrial coupling with UltraFlo technology. Robust design. The steel sleeve counters oscillating forces. System has limited use for liquids (steel sleeve/ zinc die cast valve).

### Chart / Air



### Advantages

- Single handed operation
- Plug design optimised through greater insert depth
- Innovative valve technology with high flow valve



**Working Pressure**  
 PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

**Working Temperature\***  
 -20°C up to +100°C (NBR) depending on the medium.  
 \*At a temperature below -20°C and above +100°C special seals are available on request.

**Material**

|                       |                             |
|-----------------------|-----------------------------|
| <b>Coupling</b>       |                             |
| Back Body             | Brass, Nickel Plated        |
| Valve Body            | Brass, Nickel Plated        |
| Sleeve                | Steel Hardened, Nickel Pl.  |
| Valve                 | Zinc Diecasting, Nickel Pl. |
| Inner Sleeve          | Brass                       |
| Spring Plate          | Brass                       |
| Spring / Locking Ring | AISI 301                    |
| Locking Balls         | AISI 420                    |
| Seals                 | NBR                         |
| <b>Plug</b>           | Steel Hardened, Nickel Pl.  |

### Coupling - Male Thread BSPT

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>18KAAK13MPN</b> | 5       |
| 3/8"     | <b>18KAAK17MPN</b> | 5       |

### Plug - Male Thread BSPT

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>18SFAK13SXN</b> | 20      |
| 3/8"     | <b>18SFAK17SXN</b> | 5       |

### Coupling - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>18KAIW13MPN</b> | 5       |
| 3/8"     | <b>18KAIW17MPN</b> | 5       |
| 1/2"     | <b>18KAIW21MPN</b> | 5       |

### Plug - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>18SFIW13SXN</b> | 20      |
| 3/8"     | <b>18SFIW17SXN</b> | 20      |

### Coupling - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>18KATF08MPN</b> | 5       |
| 10 mm    | <b>18KATF10MPN</b> | 5       |

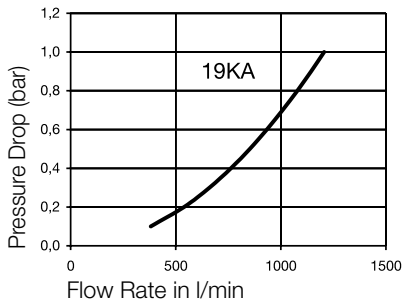
### Plug - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>18SFTF06SXN</b> | 20      |
| 8 mm     | <b>18SFTF08SXN</b> | 20      |
| 10 mm    | <b>18SFTF10SXN</b> | 20      |

## Rectus Series 19KA - DN 5.5

English industrial profile with UltraFlo technology. Compact dimensions. Robust coupling for compressed air applications. The steel sleeve counters oscillating forces.

### Chart / Air



### Advantages

- Single handed operation
- Plug design optimised through greater insert depth
- UltraFlo technology with high flow valve



### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +100°C special seals are available on request.

### Material

#### Coupling

|                       |                             |
|-----------------------|-----------------------------|
| Back Body             | Brass, Nickel Plated        |
| Valve Body            | Brass, Nickel Plated        |
| Sleeve                | Steel Hardened, Nickel Pl.  |
| Valve                 | Zinc Diecasting, Nickel Pl. |
| Inner Sleeve          | Brass                       |
| Spring Plate          | Brass                       |
| Spring / Locking Ring | AISI 301                    |
| Locking Balls         | AISI 420                    |
| Seals                 | NBR                         |

#### Plug

Steel Hardened, Nickel Pl.

### Coupling - Male Thread BSPT



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>19KAAK13MPN</b> | 10      |
| 3/8"     | <b>19KAAK17MPN</b> | 10      |
| 1/2"     | <b>19KAAK21MPN</b> | 10      |

### Plug - Male Thread BSPT



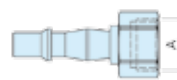
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>19SFAK13SXN</b> | 20      |
| 3/8"     | <b>19SFAK17SXN</b> | 20      |

### Coupling - Female Thread BSPP



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>19KAIW13MPN</b> | 10      |
| 1/2"     | <b>19KAIW21MPN</b> | 10      |

### Plug - Female Thread BSPP



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>19SFIW13SXN</b> | 20      |
| 3/8"     | <b>19SFIW17SXN</b> | 20      |

### Coupling - Hose Barb



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>19KATF08MPN</b> | 10      |
| 10 mm    | <b>19KATF10MPN</b> | 10      |

### Plug - Hose Barb



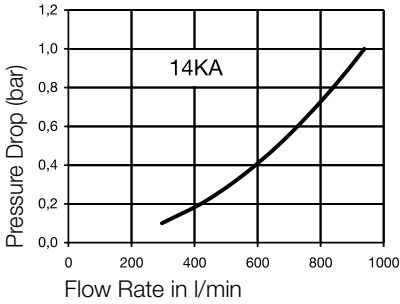
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>19SFTF06SXN</b> | 20      |
| 8 mm     | <b>19SFTF08SXN</b> | 20      |
| 10 mm    | <b>19SFTF10SXN</b> | 20      |



## Rectus Series 14KA - DN 5.5

Robust brass coupling. Numerous connection options. Preferred application: compressed air technology and water connections. ARO 210 Interchangeable.

### Chart / Air



### Advantages

- Single handed operation
- Optimised plug design through greater insert depth



**Working Pressure**  
 PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

**Working Temperature\***  
 -20°C up to +100°C (NBR) depending on the medium.  
 \*At a temperature below -20°C and above +100°C special seals are available on request.

**Material**

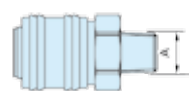
**Coupling**

|                         |          |
|-------------------------|----------|
| Back Body               | Brass    |
| Valve Body              | Brass    |
| Sleeve                  | Brass    |
| Valve                   | Brass    |
| Spring and Locking Ring | AISI 301 |

**Plug**


|             |                               |
|-------------|-------------------------------|
| Pins        | AISI 420                      |
| Seals       | NBR                           |
| <b>Plug</b> | Steel Hardened, Nickel Plated |

### Coupling - Male Thread BSPP



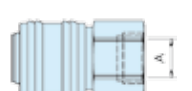
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>14KAAW13MPX</b> | 20      |
| 3/8"     | <b>14KAAW17MPX</b> | 20      |
| 1/2"     | <b>14KAAW21MPX</b> | 20      |

### Plug - Male Thread BSPT



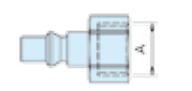
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>22SFAK13SXN</b> | 20      |
| 3/8"     | <b>22SFAK17SXN</b> | 20      |
| 1/2"     | <b>22SFAK21SXN</b> | 10      |

### Coupling - Female Thread BSPP




| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>14KAIW13MPX</b> | 20      |
| 1/2"     | <b>14KAIW21MPX</b> | 20      |

### Plug - Female Thread BSPP




| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>22SFIW13SXN</b> | 20      |
| 3/8"     | <b>22SFIW17SXN</b> | 20      |

### Coupling - Hose Barb



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>14KATF08MPX</b> | 20      |
| 10 mm    | <b>14KATF10MPX</b> | 20      |

### Plug - Hose Barb

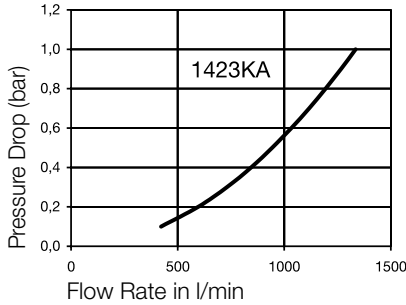


| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>22SFTF06SXN</b> | 20      |
| 8 mm     | <b>22SFTF08SXN</b> | 20      |
| 10 mm    | <b>22SFTF10SXN</b> | 20      |

## Rectus Series 1423KA - DN 5.5

Rectus Tema premium 1/4" industrial coupling - the know-how from both brands combined in one system. Conforming to ISO 6150 B. High grade valve technology for optimum flow performance. Especially robust 2-component plastic sleeve.

### Chart / Air



### Advantages

- Single handed operation
- High flow valve
- Minimum coupling forces



### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

### Working Temperature\*

-20°C up to +40°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +40°C special seals are available on request.

### Material

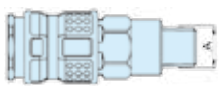
#### Coupling

|                  |                      |
|------------------|----------------------|
| Back Body        | Brass, Nickel Plated |
| Valve Body       | Steel, QPQ treated   |
| Sleeve           | PA6 + TPE            |
| Valve            | Brass                |
| Spring           | AISI 301             |
| Locking Ring and | AISI 420             |
| Locking Balls    |                      |
| Seals            | NBR                  |

#### Plug

Steel Hardened,  
Nickel Plated

### Coupling - Male Thread BSPT



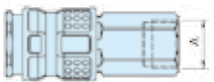
| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 3/8"     | <b>1423KAAK17SPN</b> | 10      |
| 1/2"     | <b>1423KAAK21SPN</b> | 10      |

### Plug - Male Thread BSPT



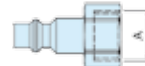
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>23SFAK13SXN</b> | 20      |
| 3/8"     | <b>23SFAK17SXN</b> | 20      |

### Coupling - Female Thread BSPP



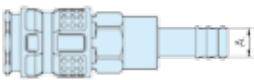
| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 1/2"     | <b>1423KAIW21SPN</b> | 10      |

### Plug - Female Thread BSPP



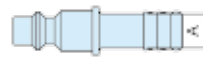
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>23SFIW13SXN</b> | 20      |
| 3/8"     | <b>23SFIW17SXN</b> | 20      |

### Coupling - Hose Barb



| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 9 mm     | <b>1423KATF09SPN</b> | 10      |
| 13 mm    | <b>1423KATF13SPN</b> | 10      |

### Plug - Hose Barb

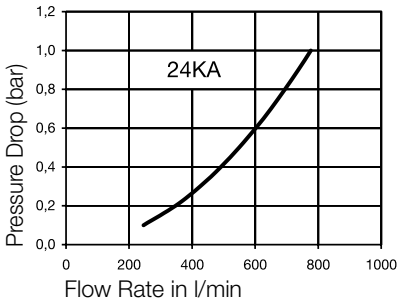


| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>23SFTF06SXN</b> | 20      |
| 8 mm     | <b>23SFTF08SXN</b> | 20      |
| 10 mm    | <b>23SFTF10SXN</b> | 20      |

## Rectus Series 24KA - DN 5.5

1/4" Industrial brass coupling conforming to ISO 6150B and US Mil. Spec 4109. Notable for brass mass design and corresponding sleeve design. Hardened steel plug counters vibrations and effects of external forces.

### Chart / Air



### Advantages

- Single handed operation



#### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.  
\*At a temperature below -20°C and above +100°C special seals are available on request.

#### Material

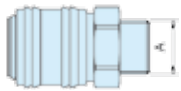
##### Coupling

Back Body Brass  
Valve Body Brass  
Sleeve Brass  
Valve Brass  
Spring and Locking Ring AISI 301  
Pins AISI 420  
Seals NBR

##### Plug

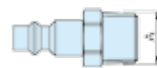
Steel Hardened,  
Nickel Plated

### Coupling - Male Thread BSPP



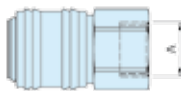
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>24KAAW13MPX</b> | 20      |
| 3/8"     | <b>24KAAW17MPX</b> | 20      |
| 1/2"     | <b>24KAAW21MPX</b> | 20      |

### Plug - Male Thread BSPT



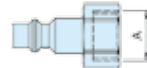
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>23SFAK13SXN</b> | 20      |
| 3/8"     | <b>23SFAK17SXN</b> | 20      |

### Coupling - Female Thread BSPP



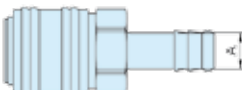
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>24KAIW13MPX</b> | 20      |
| 3/8"     | <b>24KAIW17MPX</b> | 20      |
| 1/2"     | <b>24KAIW21MPX</b> | 20      |

### Plug - Female Thread BSPP



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>23SFIW13SXN</b> | 20      |
| 3/8"     | <b>23SFIW17SXN</b> | 20      |

### Coupling - Hose Barb



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>24KATF08MPX</b> | 20      |
| 10 mm    | <b>24KATF10MPX</b> | 20      |

### Plug - Hose Barb

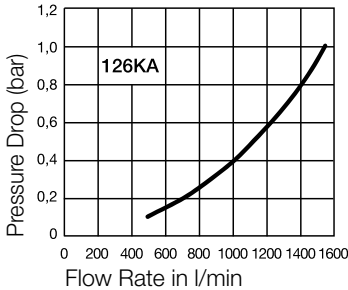


| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>23SFTF06SXN</b> | 20      |
| 8 mm     | <b>23SFTF08SXN</b> | 20      |
| 10 mm    | <b>23SFTF10SXN</b> | 20      |

## Rectus Series 126KA - DN 7.2

Universal brass coupling with European standard industrial profile. Coupling system with single-handed operation and standard-valve. Series 26 plugs in brass. Series 25 steel plugs recommended for oscillating forces.

### Chart / Air



### Advantages

- Compact outer dimension
- High working pressure
- Optimized flow rate



### Working Pressure

PB = 40 bar, maximum static working pressure with safety factor of 4 to 1.

### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +100°C special seals are available on request.

### Material

#### Coupling

|                         |          |
|-------------------------|----------|
| Back Body               | Brass    |
| Valve Body              | Brass    |
| Sleeve                  | Brass    |
| Valve                   | Brass    |
| Spring and Locking Ring | AISI 303 |
| Locking Balls           | AISI 420 |
| Seals                   | NBR      |

#### Plug

Brass

### Coupling - Male Thread BSPT

| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 1/4"     | <b>126KAAW13MPX</b> | 20      |
| 3/8"     | <b>126KAAW17MPX</b> | 20      |
| 1/2"     | <b>126KAAW21MPX</b> | 20      |

### Plug - Male Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>26SFAW13MXX</b> | 20      |
| 3/8"     | <b>26SFAW17MXX</b> | 20      |
| 1/2"     | <b>26SFAW21MXX</b> | 20      |

### Coupling - Female Thread BSPP

| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 1/4"     | <b>126KAIW13MPX</b> | 20      |
| 3/8"     | <b>126KAIW17MPX</b> | 20      |
| 1/2"     | <b>126KAIW21MPX</b> | 20      |

### Plug - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>26SFIW13MXX</b> | 20      |
| 3/8"     | <b>26SFIW17MXX</b> | 20      |
| 1/2"     | <b>26SFIW21MXX</b> | 20      |

### Coupling - Hose Barb

| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 6 mm     | <b>126KATF06MPX</b> | 20      |
| 8 mm     | <b>126KATF08MPX</b> | 20      |
| 9 mm     | <b>126KATF09MPX</b> | 20      |
| 10 mm    | <b>126KATF10MPX</b> | 20      |
| 13 mm    | <b>126KATF13MPX</b> | 20      |

### Plug - Hose Barb

| Thread A | Order code        | Box Qty |
|----------|-------------------|---------|
| 6 mm     | <b>26FTF06MXX</b> | 20      |
| 8 mm     | <b>26FTF08MXX</b> | 20      |
| 9 mm     | <b>26FTF09MXX</b> | 20      |
| 10 mm    | <b>26FTF10MXX</b> | 20      |
| 13 mm    | <b>26FTF13MXX</b> | 20      |

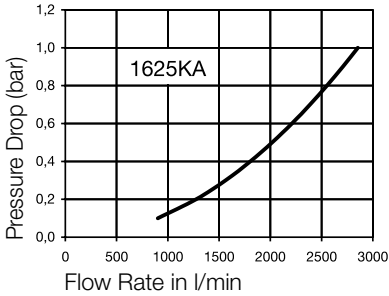
## Rectus Series 1625KA - DN 7.8

Rectus Tema premium European standard industrial coupling – the know-how from both brands combined in one system. Extremely robust 2-component plastic sleeve. Suitable for compressed air applications with above average air consumption.

### Advantages

- Single handed operation
- High grade valve technology with optimum flow performance
- Minimum coupling forces

### Chart / Air



### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

### Working Temperature\*

-20°C up to +40°C (NBR) depending on the medium.  
\*At a temperature below -20°C and above +40°C special seals are available on request.

### Material

#### Coupling

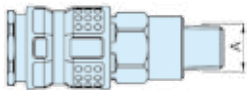
Back Body Brass, Nickel Plated  
Valve Body Steel, QPQ treated  
Sleeve PA6 + TPE  
Valve Brass

Spring and Locking Ring AISI 301  
Locking Balls AISI 420  
Seals NBR

#### Plug

Steel Hardened, Zinc Plated

### Coupling - Male Thread BSPT



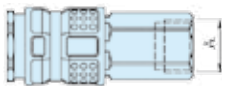
| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 3/8"     | <b>1625KAAK17SPN</b> | 10      |
| 1/2"     | <b>1625KAAK21SPN</b> | 10      |

### Plug - Male Thread BSPT



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>25SFAK13SXZ</b> | 20      |
| 3/8"     | <b>25SFAK17SXZ</b> | 20      |
| 1/2"     | <b>25SFAK21SXZ</b> | 10      |

### Coupling - Female Thread BSPP



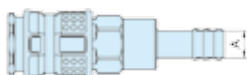
| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 1/2"     | <b>1625KAIW21SPN</b> | 10      |

### Plug - Female Thread BSPP



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>25SFIW13SXZ</b> | 20      |
| 3/8"     | <b>25SFIW17SXZ</b> | 20      |

### Coupling - Hose Barb



| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 9 mm     | <b>1625KATF09SPN</b> | 10      |
| 13 mm    | <b>1625KATF13SPN</b> | 10      |

### Plug - Hose Barb

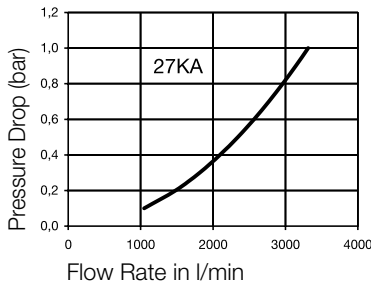


| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 9 mm     | <b>25SFTF09SXZ</b> | 20      |
| 13 mm    | <b>25SFTF13SXZ</b> | 20      |

## Rectus Series 27KA - DN 10

1/2" European industrial profile with UltraFlo technology. High flow performance. Notable for robust design with steel sleeve in use with large pneumatic consumers. Also available in brass.

### Chart / Air



### Advantages

- Single handed operation
- High flow valve - low pressure drop
- No damage to the valve body from binding design



#### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +100°C special seals are available on request.

#### Material

##### Coupling

|                         |                            |
|-------------------------|----------------------------|
| Back Body               | Brass, Nickel Plated       |
| Valve Body              | Brass, Nickel Plated       |
| Sleeve                  | Steel Hardened, Nickel Pl. |
| Valve                   | Brass                      |
| Inner Sleeve            | Brass                      |
| Spring Plate            | Brass                      |
| Spring and Locking Ring | AISI 301                   |
| Locking Balls           | AISI 420                   |
| Seals                   | NBR                        |

##### Plug

Steel Hardened, Nickel Pl.

### Coupling - Male Thread BSPT

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 3/8"     | <b>27KAAK17MPN</b> | 2       |
| 1/2"     | <b>27KAAK21MPN</b> | 2       |

### Plug - Male Thread BSPT

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>27SFAK13SXN</b> | 10      |
| 3/8"     | <b>27SFAK17SXN</b> | 10      |
| 1/2"     | <b>27SFAK21SXN</b> | 10      |

### Coupling - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 3/8"     | <b>27KAIW17MPN</b> | 5       |
| 1/2"     | <b>27KAIW21MPN</b> | 5       |

### Plug - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 3/8"     | <b>27SFIW17SXN</b> | 10      |
| 1/2"     | <b>27SFIW21SXN</b> | 10      |

### Coupling - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 10 mm    | <b>27KATF10MPN</b> | 2       |
| 13 mm    | <b>27KATF13MPN</b> | 2       |

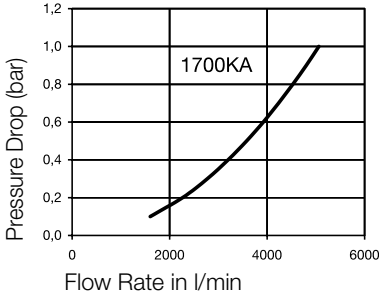
### Plug - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 8 mm     | <b>27SFTF08SXN</b> | 20      |
| 10 mm    | <b>27SFTF10SXN</b> | 20      |
| 13 mm    | <b>27SFTF13SXN</b> | 10      |

## Rectus Series 1700KA - DN 10

Premium industrial coupling in nominal diameter 10 with high grade valve technology and unprecedented flow values and minimum coupling forces. Especially suited to compressed air applications with above average air consumption.

### Chart / Air



### Advantages

- Single handed operation
- High flow valve
- Minimum coupling forces



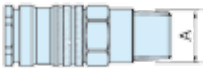
**Working Pressure**  
 PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

**Working Temperature\***  
 -20°C up to +100°C (NBR) depending on the medium.  
 \*At a temperature below -20°C and above +100°C special seals are available on request.


**Material**

|                         |                             |
|-------------------------|-----------------------------|
| <b>Coupling</b>         |                             |
| Back Body               | Brass, Nickel Plated        |
| Valve Body              | Steel, QPQ treated          |
| Sleeve                  | Brass, Nickel Plated        |
| Valve                   | Brass                       |
| Spring and Locking Ring | AISI 301                    |
| Locking Balls           | AISI 420                    |
| Seals                   | NBR                         |
| <b>Plug</b>             | Steel Hardened, Zinc Plated |


### Coupling - Male Thread BSPT

|   | Thread A | Order code           | Box Qty |
|---|----------|----------------------|---------|
|  | 3/8"     | <b>1700KAAK17SPN</b> | 5       |
|   | 1/2"     | <b>1700KAAK21SPN</b> | 5       |
|   | 3/4"     | <b>1700KAAK26SPN</b> | 5       |

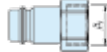
### Plug - Male Thread BSPT

|  | Thread A | Order code         | Box Qty |
|--|----------|--------------------|---------|
|  | 1/4"     | <b>27SFAK13SXN</b> | 10      |
|  | 3/8"     | <b>27SFAK17SXN</b> | 10      |
|  | 1/2"     | <b>27SFAK21SXN</b> | 10      |


### Coupling - Female Thread BSPP

|   | Thread A | Order code           | Box Qty |
|---|----------|----------------------|---------|
|  | 3/8"     | <b>1700KAIW17SPN</b> | 5       |
|   | 1/2"     | <b>1700KAIW21SPN</b> | 5       |
|   | 3/4"     | <b>1700KAIW26SPN</b> | 5       |


### Plug - Female Thread BSPP

|  | Thread A | Order code         | Box Qty |
|--|----------|--------------------|---------|
|  | 3/8"     | <b>27SFIW17SXN</b> | 10      |
|  | 1/2"     | <b>27SFIW21SXN</b> | 10      |

### Coupling - Hose Barb

|   | Thread A | Order code           | Box Qty |
|---|----------|----------------------|---------|
|  | 10 mm    | <b>1700KATF10SPN</b> | 5       |
|   | 13 mm    | <b>1700KATF13SPN</b> | 5       |
|   | 16 mm    | <b>1700KATF16SPN</b> | 5       |

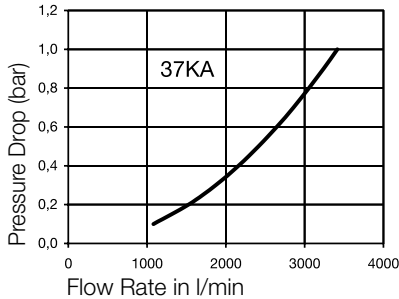
### Plug - Hose Barb

|  | Thread A | Order code         | Box Qty |
|--|----------|--------------------|---------|
|  | 8 mm     | <b>27SFTF08SXN</b> | 20      |
|  | 10 mm    | <b>27SFTF10SXN</b> | 20      |
|  | 13 mm    | <b>27SFTF13SXN</b> | 10      |

## Rectus Series 37KA - DN 11

1/2" Coupling-system according to US-MIL-Spec. C-4109 made of brass. Plug design optimised through greater insert depth.

### Chart / Air



### Advantages

- Single handed operation
- Tough construction



### Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to 1.

### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +100°C special seals are available on request.

### Material

#### Coupling

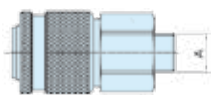
Back Body Brass  
 Valve Body Brass  
 Sleeve Brass  
 Valve Brass  
 Spring and Locking Ring AISI 301

Locking Balls AISI 420  
 Seals NBR

#### Plug

Steel Hardened,  
 Nickel Plated

### Coupling - Male Thread BSPP



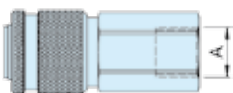
| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 3/8"     | <b>37KAAW17MPX</b> | 2       |
| 1/2"     | <b>37KAAW21MPX</b> | 2       |
| 3/4"     | <b>37KAAW26MPX</b> | 2       |

### Plug - Male Thread BSPT



| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 1/2"     | <b>37SFAK21SXXN</b> | 10      |
| 3/4"     | <b>37SFAK26SXXN</b> | 5       |

### Coupling - Female Thread BSPP



| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 3/8"     | <b>37KAIW17MPX</b> | 2       |
| 1/2"     | <b>37KAIW21MPX</b> | 2       |
| 3/4"     | <b>37KAIW26MPX</b> | 2       |

### Plug - Female Thread BSPP



| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 1/2"     | <b>37SFIW21SXXN</b> | 5       |
| 3/4"     | <b>37SFIW26SXXN</b> | 5       |

### Plug - Hose Barb



| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 13 mm    | <b>37SFTF13SXXN</b> | 10      |
| 16 mm    | <b>37SFTF16SXXN</b> | 10      |
| 19 mm    | <b>37SFTF19SXXN</b> | 5       |



## Rectus Self-Venting Series 14KE - DN 5.5

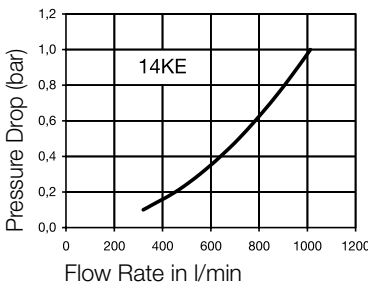
The connection is made the same way as with all other quick connect coupling series, by simply pushing the plug in the coupling. The audible latching when the plug is securely in place signifies that the coupling is locked. The sleeve must be pulled back to release the first locking system before it can be disconnected. This closes the coupling valve. The compressed downstream air can now escape from the plug (hose). Pulling the sleeve back a second time releases the second locking system. The connection can now be safely undone. This self-venting coupling is designed for bleeding off trapped air.

### Advantages

- The system fulfils the requirements of ISO 4414
- increased safety standards in the work place
  - the plastic sleeve does not scratch working surfaces



### Chart / Air



### Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Rectus plugs made of steel.

#### Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +60°C (NBR) depending on the medium.  
\*At a temperature below -20°C and above +60°C special seals are available on request.

#### Material

##### Coupling

Back Body Brass, Nickel Plated  
Valve Body Brass, Nickel Plated  
Sleeve Thermoplastic  
Valve Brass  
Spring AISI 301  
Locking Balls AISI 420  
Seals NBR  
Pins AISI 420

##### Plug

Steel Hardened, Nickel Pl.

### Coupling - Male Thread BSPT

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>14KEAK13MPN</b> | 10      |
| 1/2"     | <b>14KEAK21MPN</b> | 10      |

### Plug - Male Thread BSPT

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>22SFAK13SXN</b> | 20      |
| 3/8"     | <b>22SFAK17SXN</b> | 20      |
| 1/2"     | <b>22SFAK21SXN</b> | 10      |

### Coupling - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>14KEIW13MPN</b> | 10      |
| 1/2"     | <b>14KEIW21MPN</b> | 10      |

### Plug - Female Thread BSPP

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 1/4"     | <b>22SFIW13SXN</b> | 20      |
| 3/8"     | <b>22SFIW17SXN</b> | 20      |

### Plug - Hose Barb

| Thread A | Order code         | Box Qty |
|----------|--------------------|---------|
| 6 mm     | <b>22SFTF06SXN</b> | 20      |
| 8 mm     | <b>22SFTF08SXN</b> | 20      |
| 10 mm    | <b>22SFTF10SXN</b> | 20      |

## Rectus Self-Venting Series 24KE - DN 5.5

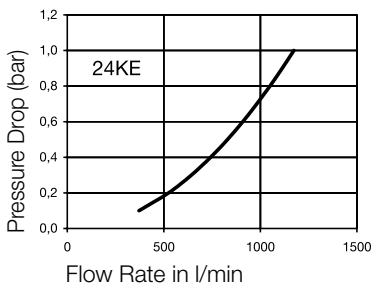
The connection is made the same way as with all other quick connect coupling series, by simply pushing the plug in the coupling. The audible latching when the plug is securely in place signifies that the coupling is locked. The sleeve must be pulled back to release the first locking system before it can be disconnected. This closes the coupling valve. The compressed downstream air can now escape from the plug (hose). Pulling the sleeve back a second time releases the second locking system. The connection can now be safely undone. This self-venting coupling is designed for bleeding off trapped air.

### Advantages

- The system fulfils the requirements of ISO 4414
- increased safety standards in the work place
  - the plastic sleeve does not scratch working surfaces



### Chart / Air



### Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Rectus plugs made of steel.

#### Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +60°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +60°C special seals are available on request.

#### Material

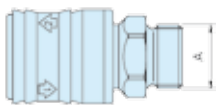
##### Coupling

|                         |                      |
|-------------------------|----------------------|
| Back Body               | Brass, Nickel Plated |
| Valve Body              | Brass, Nickel Plated |
| Sleeve                  | Thermoplastic        |
| Valve                   | Brass                |
| Spring and Locking Ring | AISI 301             |
| Locking Balls           | AISI 420             |
| Seals                   | NBR                  |
| Pins                    | AISI 420             |

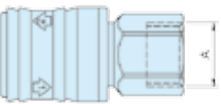
##### Plug

Steel Hardened, Nickel Pl.


### Coupling - Male Thread BSPT

|  | Thread A           | Order code         | Box Qty |
|---|--------------------|--------------------|---------|
|   | 1/4"               | <b>24KEAK13MPN</b> | 10      |
| 1/2"  | <b>24KEAK21MPN</b> | 10                 |         |


### Coupling - Female Thread BSPP

|  | Thread A           | Order code         | Box Qty |
|--|--------------------|--------------------|---------|
|  | 1/4"               | <b>24KEIW13MPN</b> | 10      |
| 1/2"   | <b>24KEIW21MPN</b> | 10                 |         |


### Plug - Male Thread BSPT

|  | Thread A           | Order code         | Box Qty |
|---|--------------------|--------------------|---------|
|   | 1/4"               | <b>23SFAK13SXN</b> | 20      |
| 3/8"  | <b>23SFAK17SXN</b> | 20                 |         |

### Plug - Female Thread BSPP

|  | Thread A           | Order code         | Box Qty |
|---|--------------------|--------------------|---------|
|   | 1/4"               | <b>23SFIW13SXN</b> | 20      |
| 3/8"  | <b>23SFIW17SXN</b> | 20                 |         |

### Plug - Hose Barb

|  | Thread A           | Order code         | Box Qty |
|--|--------------------|--------------------|---------|
|  | 6 mm               | <b>23SFTF06SXN</b> | 20      |
| 8 mm   | <b>23SFTF08SXN</b> | 20                 |         |
| 10 mm  | <b>23SFTF10SXN</b> | 20                 |         |

## Rectus Self-Venting Series 26KE - DN 7.4

The connection is made the same way as with all other quick connect coupling series, by simply pushing the plug in the coupling. The audible latching when the plug is securely in place signifies that the coupling is locked. The sleeve must be pulled back to release the first locking system before it can be disconnected. This closes the coupling valve. The compressed downstream air can now escape from the plug (hose). Pulling the sleeve back a second time releases the second locking system. The connection can now be safely undone. This self-venting coupling is designed for bleeding off trapped air.

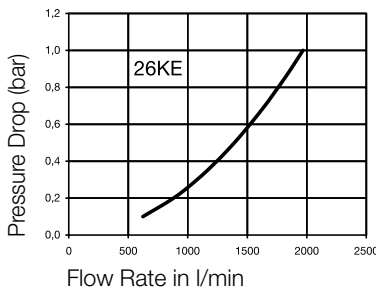
### Advantages

The system fulfils the requirements of ISO 4414

- increased safety standards in the work place
- the plastic sleeve does not scratch working surfaces



### Chart / Air



#### Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +60°C (NBR)

depending on the medium.

\*At a temperature below -20°C and above +60°C special seals are available on request.

#### Material


##### Coupling

|               |                      |
|---------------|----------------------|
| Back Body     | Brass, Nickel Plated |
| Valve Body    | Brass, Nickel Plated |
| Sleeve        | Thermoplastic        |
| Valve         | Brass                |
| Spring        | AISI 301             |
| Locking Balls | AISI 420             |
| Seals         | NBR                  |
| Pin           | AISI 420             |


##### Plug

Steel Hardened, Nickel Pl.

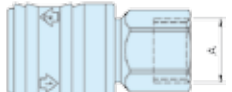
### Coupling - Male Thread BSPP

|   | Thread A | Order code         | Box Qty |
|---|----------|--------------------|---------|
|  | 1/4"     | <b>26KEAW13MPN</b> | 10      |
|   | 1/2"     | <b>26KEAW21MPN</b> | 10      |

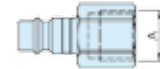
### Plug - Male Thread BSPT

|  | Thread A | Order code         | Box Qty |
|--|----------|--------------------|---------|
|  | 1/4"     | <b>25SFAK13SXZ</b> | 20      |
|  | 3/8"     | <b>25SFAK17SXZ</b> | 20      |
|  | 1/2"     | <b>25SFAK21SXZ</b> | 10      |


### Coupling - Female Thread BSPP

|   | Thread A | Order code         | Box Qty |
|---|----------|--------------------|---------|
|  | 1/4"     | <b>26KEIW13MPN</b> | 5       |
|   | 3/8"     | <b>26KEIW17MPN</b> | 5       |

### Plug - Female Thread BSPP

|  | Thread A | Order code         | Box Qty |
|--|----------|--------------------|---------|
|  | 1/4"     | <b>25SFIW13SXZ</b> | 20      |
|  | 3/8"     | <b>25SFIW17SXZ</b> | 20      |

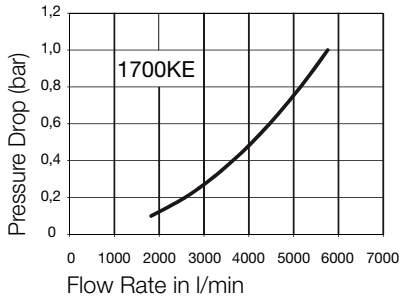
### Plug - Hose Barb

|  | Thread A | Order code         | Box Qty |
|--|----------|--------------------|---------|
|  | 9 mm     | <b>25SFTF09SXZ</b> | 20      |
|  | 13 mm    | <b>25SFTF13SXZ</b> | 20      |

## Rectus Self-Venting Series 1700KE - DN 10

The 1700KE series is a safety coupling with a self-venting system. When the sleeve is pulled back, the plug is released yet remains locked in. The coupling valve closes. The compressed air can now escape from the plug (hose). By operating the sleeve again in the direction of the plug, the second locking system is released. Only now can the connection be disengaged.

### Chart / Air



#### Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to 1.

#### Working Temperature\*

-20°C up to +100°C (NBR) depending on the medium.

\*At a temperature below -20°C and above +100°C special seals are available on request.

### Advantages

The system fulfils the requirements of ISO 4414

- increased safety standards in the work place
- robust, all-metal structure
- high-flow-valve



### Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Parker Rectus plugs made of steel.

### Material

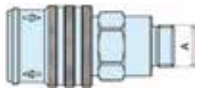
#### Coupling

|               |   |
|---------------|---|
| Back Body     | Brass, Nickel Plated                      |
| Valve Body    | Steel, Zinc plated, Thick-film passivated |
| Sleeve        | Steel, Hardened, Nickel Pl.               |
| Valve         | Brass                                     |
| Spring        | AISI 301                                  |
| Locking Balls | AISI 420                                  |
| Seals         | NBR                                       |

#### Plug

Steel Hardened, Nickel Pl.

### Coupling - Male Thread BSPT



| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 3/8"     | <b>1700KEAW17SPN</b> | 5       |
| 1/2"     | <b>1700KEAW21SPN</b> | 5       |
| 3/4"     | <b>1700KEAW26SPN</b> | 5       |

### Plug - Male Thread BSPT



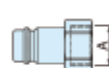
| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 1/4"     | <b>27SFAK13SXXN</b> | 10      |
| 3/8"     | <b>27SFAK17SXXN</b> | 10      |
| 1/2"     | <b>27SFAK21SXXN</b> | 10      |

### Coupling - Female Thread BSPP



| Thread A | Order code           | Box Qty |
|----------|----------------------|---------|
| 3/8"     | <b>1700KEIW17SPN</b> | 5       |
| 1/2"     | <b>1700KEIW21SPN</b> | 5       |
| 3/4"     | <b>1700KEIW26SPN</b> | 5       |

### Plug - Female Thread BSPP



| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 3/8"     | <b>27SFIW17SXXN</b> | 10      |
| 1/2"     | <b>27SFIW21SXXN</b> | 10      |


### Plug - Hose Barb




| Thread A | Order code          | Box Qty |
|----------|---------------------|---------|
| 8 mm     | <b>27SFTF08SXXN</b> | 10      |
| 10 mm    | <b>27SFTF10SXXN</b> | 10      |
| 13 mm    | <b>27SFTF13SXXN</b> | 10      |

## Blow Guns


### Plastic - with Aluminium Extension Nozzle

|   | Thread | Order code  | Box Qty |
|---|--------|-------------|---------|
|  | 1/4"   | <b>AK13</b> | 20      |


### Aluminium with Standard Nozzle

|  | Thread | Order code  | Box Qty |
|--|--------|-------------|---------|
|  | 1/4"   | <b>AA13</b> | 20      |

### Plastic, Aluminium Nozzle, Plug 26SF Series


|   | Thread | Order code    | Box Qty |
|---|--------|---------------|---------|
|  | 26SF   | <b>AK26SF</b> | 20      |

### Aluminium, Standard Nozzle, Plug 26SF Series

|  | Thread | Order code    | Box Qty |
|--|--------|---------------|---------|
|  | 26SF   | <b>AA26SF</b> | 20      |


## Hose Tail Barb, Brass

### Male Thread

|   | Connection   | Order code     | Box Qty |
|---|--------------|----------------|---------|
|  | G 1/4, 8 mm  | <b>GT13/08</b> | 20      |
|   | G 3/8, 13 mm | <b>GT17/13</b> | 20      |
|   | G 1/2, 9 mm  | <b>GT21/09</b> | 20      |
|   | G 1/2, 13 mm | <b>GT21/13</b> | 20      |


## 3 Way Manifold Assembly

### Brass, with Couplings 26KA Series

|  | Connection | Order code   | Box Qty |
|--|------------|--------------|---------|
|  | G 1/4 i.   | <b>DM13I</b> | 20      |
|  | G 3/8 i.   | <b>DM17I</b> | 20      |
|  | G 1/2 i.   | <b>DM21I</b> | 20      |


## PA12 Tubing

### 26 Series Coupling and Plug with Spring Guard

|   | Connection /mm | Length | Order code          | Box Qty |
|---|----------------|--------|---------------------|---------|
|  | 6,3 x 7,9      | 5,0 m  | <b>SP08/050/K+S</b> | 1       |
|   | 9,5 x 11,8     | 7,5 m  | <b>SP12/075/K+S</b> | 1       |

## PU Tubing

### with Straight Extensions 508 mm and 127 mm

|   | Connection /mm | Length | Order code         | Box Qty |
|---|----------------|--------|--------------------|---------|
|  | 6,3 x 9,5      | 6,0 m  | <b>PU10/060/DV</b> | 1       |
|   | 8,0 x 12,0     | 7,5 m  | <b>PU12/075/DV</b> | 1       |































**At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.**



**AEROSPACE**

**Key Markets**

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

**Key Products**

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



**CLIMATE CONTROL**

**Key Markets**

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

**Key Products**

- CO<sub>2</sub> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



**ELECTROMECHANICAL**

**Key Markets**

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

**Key Products**

- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



**FILTRATION**

**Key Markets**

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

**Key Products**

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



**FLUID & GAS HANDLING**

**Key Markets**

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

**Key Products**

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



**HYDRAULICS**

**Key Markets**

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

**Key Products**

- Diagnostic equipment
- Hydraulic cylinders
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



**PNEUMATICS**

**Key Markets**

- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

**Key Products**

- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors



**PROCESS CONTROL**

**Key Markets**

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

**Key Products**

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



**SEALING & SHIELDING**

**Key Markets**

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

**Key Products**

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

**ENGINEERING YOUR SUCCESS.**

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