

# At the epicentre of earthquake simulation: linear guides from THK

## The customer

One of fields researched and taught by the Institute of Geotechnical Engineering at the Department of Civil, Environmental and Geomatic Engineering of ETH Zurich is that of seismic engineering. Based on simulations, the geotechnical engineering team investigates the effects of earthquakes and other natural forces on buildings and infrastructure.

## The initial situation

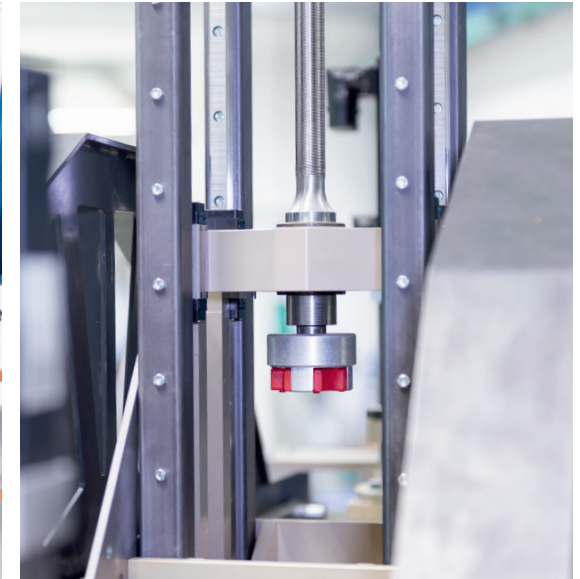
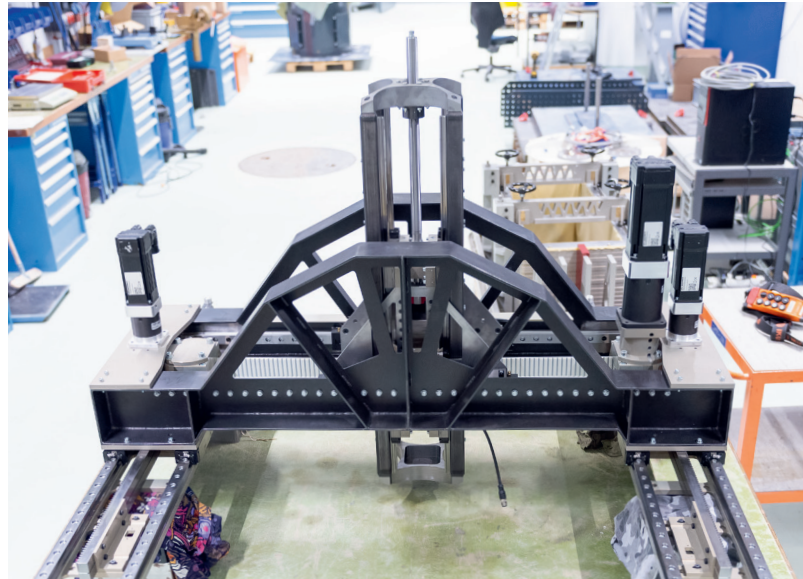
To simulate geotechnical structures and the effects of natural hazards, the institute has built Europe's largest research centrifuge at the Höggerberg campus in Zurich. It is capable of accelerating up to two tonnes of payload to 100 g (1 g is the gravity at the earth's surface). This extreme performance places great demands on the linear guides installed in the robotic operating equipment.

## Project requirements

- ▶ Strength and precision
- ▶ Stability and absolute reliability in an environment characterised by enormous forces

## Bachofen's solution

The researchers at the ETH Institute of Geotechnical Engineering were familiar with the linear guides from THK used in previous projects. They had very good experience with these precision components and Bachofen's advice. Therefore, it was clear that they would turn to Bachofen



*The robot equipped with precision linear guides from THK is integrated into the research centrifuge.*

for this demanding project. This time, the extremely demanding environment of the application made the evaluation very challenging. The guides had to ensure that the robot stopped exactly at the specified positions and

remained absolutely stationary despite the centrifugal forces. The linear guides with roller or ball chains from THK meet these conditions and reliably defy the simulated forces of nature.

***"We can absolutely rely on THK and Bachofen, and this important project has proved it once again."***

Jürg Giger, technician at the Institute of Geotechnical Engineering of ETH Zurich

Project technology partner

