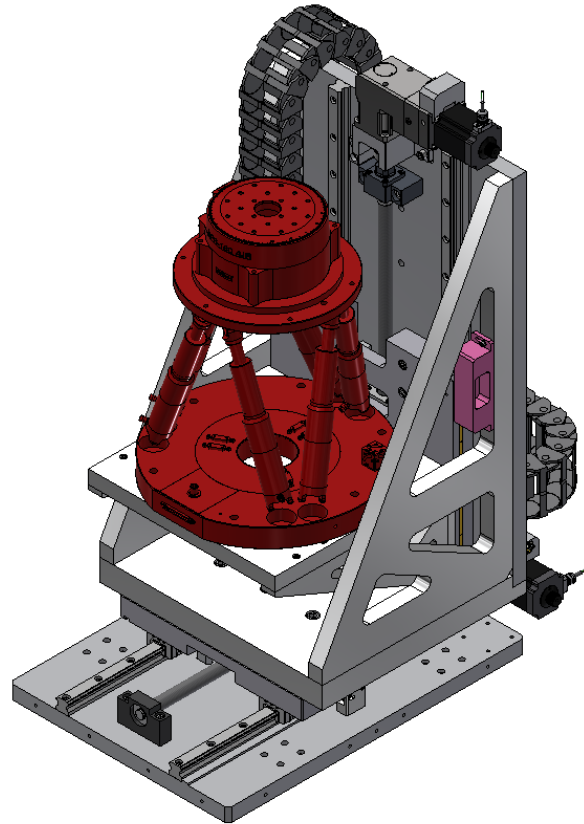


2-Axis System with Controller

Project 18-030 for Elettra



This pair of motion stages for the Elettra synchrotron in Trieste, Italy, was designed and built to hold a further set of stages (shown in red above) which manipulate a sample for X-ray experiments. The lift stage arrangement was select to produce a more compact total height than if a more conventional jack stage was placed directly under the hexapod. Both stages are positioned using ball screws driven by stepper motors, with right-angle gearboxes to keep the overall size as small as possible. Incremental linear encoders are installed to provide position feedback for the control system.

Key Specifications:

Overall System

Description	Value	Units
System Mass	143 [315]	kg [lb]
Min. Dynamic Load Capacity	50 [110]	kg [lb]

Horizontal Axis

Description	Value	Units
Range of Motion	150 [5.9]	mm [in]
Resolution (unit/step)	5 [~0.0002]	um [in] / step
Encoder Resolution	0.1	um

Vertical Axis

Description	Value	Units
Range of Motion	300 [11.8]	mm [in]
Resolution (unit/step)	2.5 [~0.0001]	um [in] / step
Encoder Resolution	0.1	um

