

# HEXAPOD

## Six Degrees of Freedom Motion Platform for Advanced Research

The Hexapod is a research-grade six degrees of freedom (DOF) parallel robotic motion platform capable of achieving high accelerations. The Hexapod is an open architecture platform which can be programmed through QUARC software for Simulink. Unlike most commercially available Stewart platforms, the Hexapod is comprised of a six high quality linear ball-screw actuators and driven by six superior DC motors, which makes it precise, responsive, and low maintenance. With the payload of up to 100 kg and its safety features, Hexapod is an ideal motion simulator for any research lab focused on vibration isolation, structural dynamics, immersive simulation, or rehabilitation.

### Features



#### Ready to Use

A turnkey system with built-in DAQ and amplifier, and software for fast deployment of advanced research applications.



#### Customizable

Easy integration of sensors, actuators, user-built or Quanser test structures.



#### Precise and Robust

High precision ball screw mechanism, motor, sensors. Precise, stiff, and heavy-duty machined components.



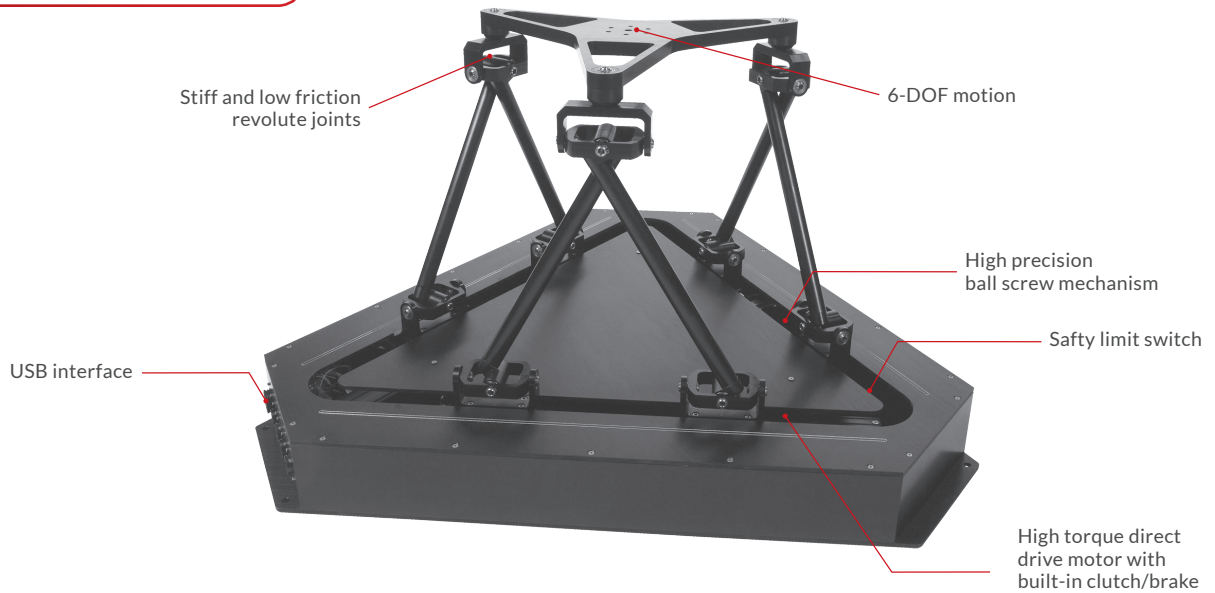
#### High Capacity

Capable of moving payloads up to 100kg, and achieve high accelerations for lower payloads.

### Workstation Components

Motion simulator	Hexapod
Data acquisition devices	Quanser Q8-USB (built-in)
Amplifier	Built-in
Control design environment	Quanser QUARC® for MATLAB®/Simulink® - Integration license

## Product Details



## Device Specifications

Dimension	1.1 m x 1.1 m x 0.75 m
Mass	100 kg
Mounting platform radius	25 cm
Arm length	37.5 cm
Maximum payload	100 kg
Workspace <sup>1</sup>	+/-7.4 cm (x), +/-11.0 cm (y), +/-5.4 cm (z) +/-17 deg (roll), +/-15 deg (pitch), +/-27 deg (yaw)
Maximum Cartesian speed <sup>2</sup>	0.67 m/s
Maximum Cartesian acceleration <sup>2</sup>	1 g
Operational bandwidth <sup>2</sup>	0 - 10 Hz
Lead screw pitch	1 cm/rev
Actuator maximum force	403 N
Actuator travel	± 15 cm
Encoder resolution (in quadrature)	10,000 counts/rev
Joint resolution	0.1 μm

<sup>1</sup> Assuming other five DOFs held at home position

<sup>2</sup> Please contact Quanser for full operational

### About Quanser:

For 30 years, Quanser has been the world leader in innovative technology for engineering education and research. With roots in control, mechatronics, and robotics, Quanser has advanced to the forefront of the global movement in engineering education transformation in the face of unprecedented opportunities and challenges triggered by autonomous robotics, IoT, Industry 4.0, and cyber-physical systems. Quanser is unique in its approach. Deploying an extensive portfolio of advanced technology and IP, Quanser has distinguished itself as the only commercial organization that offers a comprehensive, academically sound platform for delivering programs in these emerging fields in a timely and rational way. Increasingly Quanser is playing a leadership role within the global community of engineering Deans, and the progressive education leadership as our academic achievements have positioned the company as true colleagues as opposed to conventional vendors.

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