

## 3SAE PENTAPOD® MULTI-AXIS POSITIONER



3SAE's PentaPod® is a groundbreaking Kinematic Multi-Axis Positioning Stage. This innovative stage seamlessly merges the benefits of both a Parallel stage and a Serial stage, delivering an impressive 5/6 Degrees of Freedom (DOF). The PentaPod® features a genuine "parallel kinematic design," ensuring exceptional positional stiffness and minimal crosstalk across all motion axes. Experience unparalleled precision and versatility with the PentaPod® - setting a new standard in multi-axis positioning.

### Key Features: PentaPod®

- Uses unique, patented, 5-degree of freedom joints that facilitate sub-micron precision motion in 5 or 6 axes.
- Offers a simple system integration with a single USB connection and no external controller required.
- Parallel Kinematic design providing exceptional positioning accuracy and stiffness.
- Software adjustable point of rotation.
- Small size and low profile without compromising on stroke, precision, or crosstalk.
- A fraction of the cost and complexity of a comparable Hexapod.

### Standard Package

Part Number	Product	Includes
PPD-01-0100	PentaPod® (5-Axes)	Carriage platform with M3 threaded grid pattern, executable control software, USB Type A/C cable, power supply, electronic user's manual, manufacturer's 1-year parts and labor warranty
PPD-01-0105	PentaPod® (6-Axes)	

### Technical Specifications

Feature	Specification
Dimensions:	5-axes – 191.4 (W) x 91.7 (D) x 99.63 (H) mm 6 axes – 215.0 (W) x 117.1 (D) x 107.0 (H) mm
Weight:	5-axes – 3.25lbs 6-axes – 4.25lbs
Power Source:	(1) 12VDC, 4A
Control / Operation:	Included Executable Control Software
Travel Range X (mm)	9
Travel Range Y (mm)	11.5
Travel Range Z (mm) optional	11.5
Travel Range $\theta$ X, $\theta$ Y (deg)	17
Travel Range $\theta$ Z (deg)	8
Max centered Load (g)	2000

Feature	Specification
Minimum incremental motion X, Y ( $\mu$ m)	0.081
Minimum incremental motion Z ( $\mu$ m) optional	0.054
Minimum incremental motion $\theta$ X, $\theta$ Y (urad)	1.7
Minimum incremental motion $\theta$ Z (urad)	2.55
Maximum Velocity X, Y (mm/sec)	2
Unidirectional repeatability X,Y typical / worst case +/- ( $\mu$ m)	0.12 / 0.2
Unidirectional repeatability $\theta$ X, $\theta$ Y, $\theta$ Z typical / worst case +/- (urad)	3 / 4
Maximum Velocity Z (mm/sec)	2.7
Maximum Velocity $\theta$ X, $\theta$ Z (mrad/sec)	89
Maximum Velocity $\theta$ Y (mrad/sec)	133
Accuracy X, Y, Z typical / worst case ( $\mu$ m)	3 / 6
Accuracy $\theta$ X, $\theta$ Y, $\theta$ Z typical / worst case (urad)	100 / 150