

ID-450-3P

Three-axis electric rotary table

This three-axis electric rotary stage consists primarily of a three-axis (inner/middle/outer ring) mechanical stage, a drive and control system, and a measurement unit. Its core function is to provide high-precision positioning and motion at high rates, for use in attitude motion simulation and the testing and calibration of inertial devices (such as inertial measurement units).



Product Features

- Load capacity up to 30 kg, table diameter $\Phi 450$ mm
- Three-axis rotational accuracy up to $\pm 5''$
- Positioning accuracy up to $\pm 2''$ (outer/inner frame)
- Wide speed range: from $\pm 0.001^\circ/\text{s}$
- Inner frame acceleration greater than $200^\circ/\text{s}^2$
- The three axes intersect within a sphere of $\Phi 0.5$ mm

Suitable scenarios

Suitable for the aerospace, inertial navigation and defence testing sectors, it is primarily used for the performance testing and calibration of high-precision components such as inertial measurement units (IMUs), gyroscopes and accelerometers.

Technical Specifications

Parameter categories	Parameter items	Parameter values
Accuracy Performance	Range of movement (lateral/vertical)	Outer frame/middle frame: $\pm 2''$ Inner frame: $\pm 3''$
	Load capacity	$\pm 1''$ to $\pm 2''$
	Table diameter/dimensions	$\pm 2''$ to $\pm 3''$
	Operating temperature	$\omega \leq 1^\circ/\text{s}$: 2×10^{-3} $1-10^\circ/\text{s}$: 2×10^{-4} $\geq 10^\circ/\text{s}$: 2×10^{-5}
Dynamic Performance	Power supply requirements	Inner frame: $\pm 300^\circ/\text{s}$ Middle frame/Outer frame: $\pm 200^\circ/\text{s}$
	Control interface	Inner frame $> 200^\circ/\text{s}^2$ Middle frame/outer frame $> 100^\circ/\text{s}^2$
Range of motion	Range of movement (lateral/vertical)	All compartments are continuous and infinite
Mechanical Specifications	Load capacity	30 kg
	Table diameter/dimensions	$\Phi 450$ mm
Environmental Protection	Operating temperature	10°C to 40°C
Power and Communications	Power supply requirements	AC 220 V $\pm 10\%$, 50 Hz
	Control interface	Ethernet, RS422, fibre optic, etc.