

ST-040-1T

Single-axis temperature-controlled rate and position rotary stage

The single-axis precision test turntable consists of a mechanical base and a control system; it is capable of performing movements such as position, velocity, oscillation and angular acceleration, and is used for sensor calibration and performance testing.



Product Features

- Table diameter 450 mm, load capacity 40 kg
- Angular position accuracy of ± 10 arcseconds
- Speed range from $0.001^\circ/\text{s}$ to $1000^\circ/\text{s}$
- Capable of $\pm 45^\circ$ oscillation with a period of 1–20 s
- Speed stability up to 5×10^{-5} (averaged over 360°)
- Angular acceleration range: $1\text{--}300^\circ/\text{s}^2$

Suitable scenarios

Suitable for use in industries such as inertial navigation and aerospace, for the precision testing and calibration of inertial components such as gyroscopes and accelerometers.

Technical Specifications

Parameter categories	Parameter items	Parameter values
Accuracy Performance	Angular position accuracy	$\pm 10''$
	Angular position repeatability	$\pm 5''$
	Speed smoothness	$\omega < 1^\circ/\text{s}$: 5×10^{-3} (averaged over 1°) $1^\circ/\text{s} \leq \omega < 10^\circ/\text{s}$: 5×10^{-4} (averaged over 10°) $\omega \geq 10^\circ/\text{s}$: 5×10^{-5} (averaged over 360°)
Dynamic Performance	Maximum angular velocity	$1000^\circ/\text{s}$
	Maximum angular acceleration	$300^\circ/\text{s}^2$
Range of Motion	Range of azimuth/elevation movement	Angular position: continuous, infinite; swing: 0° to $\pm 45^\circ$
Mechanical Specifications	Load capacity	40 kg
	Table diameter/dimensions	$\phi 450$ mm
Environmental Protection	Protection rating	Ip20
	Operating temperature	0°C to $+40^\circ\text{C}$
Power and Communications	Power supply requirements	AC 220V $\pm 10\%$, 50Hz
	Control interface	Ethernet/RS422