

ST-020-3T

Three-axis temperature-controlled chamber turntable

This three-axis temperature-controlled rotary stage comprises a base and a system of outer, middle and inner rings, and features a U-U-T configuration. Its primary function is to enable high-precision three-axis positioning and continuous angular movement of the load within a temperature-controlled chamber (-55°C to $+80^{\circ}\text{C}$).



Product Features

- Stable and reliable performance
- Simple and convenient operation
- Low purchase cost
- Load capacity of up to 50 kg
- High angular velocity accuracy
- Fast dual-axis synchronisation

Suitable scenarios

Suitable for the inertial navigation and aerospace testing industries, this equipment is used to test the angular position and rate accuracy of loads weighing up to 20 kg and with a diameter of up to 300 mm under high and low temperature conditions.

Technical Specifications

Parameter categories	Parameter items	Parameter values
Accuracy Performance	Angular Positioning Accuracy	$\leq \pm 5''$
	Speed Stability	5×10^{-5} (averaged over 360°) 5×10^{-4} (averaged over 10°) 5×10^{-3} (averaged over 1°)
Dynamic Performance	Maximum Angular Velocity	Inner frame: $400^\circ/\text{s}$ Middle frame: $300^\circ/\text{s}$ Outer frame: $200^\circ/\text{s}$ Three-axis synchronisation: $\pm 100^\circ/\text{s}$
	Maximum Angular Acceleration	Inner frame: $300^\circ/\text{s}^2$ Middle frame: $200^\circ/\text{s}^2$ Outer frame: $100^\circ/\text{s}^2$
	Range of motion	All three axes offer 360° continuous rotation
Mechanical Specifications	Load capacity	20 kg
	Table diameter/dimensions	Load dimensions: $\phi 300 \times 300 \text{ mm}$ (Internal chamber dimensions: $\geq 400 \times 400 \times 400 \text{ mm}$)
Environmental Protection	Operating temperature	Chamber temperature range: -55°C to $+80^\circ\text{C}$
Power and Communications	Power supply requirements	380 V/50 Hz, three-phase
	Control interface	EtherCAT, fibre-optic or PCIe motion control card