

# ID-320-3T

## Compact benchtop three-axis motorised turntable

This compact, benchtop three-axis electric gimbal is a high-precision three-axis electric gimbal, comprising primarily a work surface, a three-axis frame and a drive and control system. It is designed to perform positional and velocity movements, and is used for attitude motion simulation, as well as for the testing and calibration of inertial devices (such as inertial measurement units).



### Product Features

- Rated load: 15 kg
- Table runout: 0.02 mm
- Three-axis accuracy:  $\pm 5''$
- Three-axis intersection accuracy:  $\Phi 0.5$  mm
- Wide speed range (up to  $300^\circ/\text{s}$ )
- Maximum acceleration: over  $200^\circ/\text{s}^2$

### Suitable scenarios

Suitable for the aerospace and inertial navigation industries. Specifically used for performance testing, calibration and attitude motion simulation testing of devices such as inertial measurement units (IMUs), gyroscopes and accelerometers.

## Technical Specifications

| Parameter categories      | Parameter items                     | Parameter values                                                                                                                                            |
|---------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy Performance      | 1 Angular position accuracy         | $\pm 5''$ (same on all three axes)                                                                                                                          |
|                           | Angular position repeatability      | Better than $\pm 3''$                                                                                                                                       |
|                           | Tracking/pointing accuracy          | $\pm 5''$                                                                                                                                                   |
|                           | 4. Rate stability                   | $\omega \leq 1^\circ/\text{s}: 2 \times 10^{-3}$<br>$1 < \omega < 10^\circ/\text{s}: 2 \times 10^{-4}$<br>$\omega \geq 10^\circ/\text{s}: 2 \times 10^{-5}$ |
| Dynamic Performance       | Maximum angular velocity            | Inner frame: $\pm 300^\circ/\text{s}$ Middle and outer frames: $\pm 200^\circ/\text{s}$                                                                     |
|                           | Maximum angular acceleration        | Inner frame: $> 200^\circ/\text{s}^2$ Middle and outer frames: $> 100^\circ/\text{s}^2$                                                                     |
| Range of Motion           | Range of azimuth/elevation movement | All three axes are infinite (continuous)                                                                                                                    |
| Mechanical Specifications | Load capacity                       | 15 kg                                                                                                                                                       |
|                           | Table diameter/dimensions           | $\Phi 320$ mm                                                                                                                                               |
| Environmental Protection  | Protection rating                   | Ip20                                                                                                                                                        |
|                           | Operating temperature               | $0^\circ\text{C}$ to $+40^\circ\text{C}$                                                                                                                    |
| Power and Communications  | Power supply requirements           | AC 220 V $\pm 10\%$ , 50 Hz, $\leq 1.5$ kW                                                                                                                  |
|                           | Control interface                   | Ethernet / Rs232                                                                                                                                            |