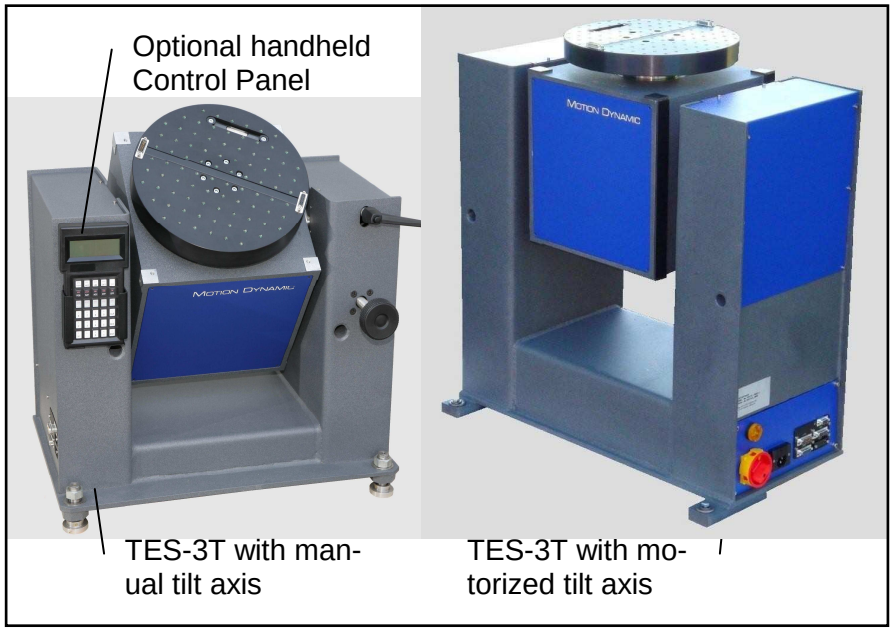
# Test Fixture Series TES-3T

## Features

- Single Axis Rate Table mounted in stand with horizontal tilt axis
- Rate range +/-1500 deg/s; good instantaneous rate stability; rate resolution of 0.001 deg/sec
- Accurate positioning with excellent repeatability
- Tilt axis with manual slow motion positioning or motorized positioning drive




## Description

The Test Fixture TES-3T is designed for angular positioning, precise uniform rate and angular motion profiling. They can accommodate a wide variety of payloads. The table top has a pattern of threaded holes to fasten the payload. There is a precision bubble level imbedded in the table top defining the vertical orientation of the table axis. The main drive assembly consists of a cast aluminum housing mounted in a welded tilt-stand.

The inner table axis is driven by a direct drive brushless servo motor delivering high torque and smooth rates over a wide speed range. Ripple and cogging torque are reduced by the skewed motor pole design. The table axis is furnished with a 30-line slipring capsule rated for two Amperes. The lines terminate in two D-sub connectors at the platen and corresponding connectors at the base. The controller and the power supplies are part of the drive cube. The controller is operated via a host computer. Its software is based on LabViewTM and comes along with the controller on a CD ROM.

The Tilt-stand features a horizontal axis positioned manually by opposing push spindles. Optional the tilt axis can be equipped with a motorized positioning drive. Large payloads must be balanced around the tilt axis by adding counterweights on the bottom side of the drive module

## Specification Summary

**General Configuration**

| | |
|---|---|
| Payload nominal | 245dia x 240mm cylinder, 20kg; |
| Sliprings to UUT | terminated in two pairs D-Sub connectors on table top and base |
| standard | 28 lines rated for 2A and 2 lines rated for 5Amp |
| optional | 36 lines rated for 2A and 4 lines rated for 5Amp |
| Mounting platen | 300mm dia., aluminum hard anodized with grid of threaded mounting holes, M5 with Heli-coil insert on 25mm spacing, |
| Platen flatness | ±0.05mm |
| Axis alignment | support point perpendicular or orthogonal to the drive axis within ±<3arc sec |
| Axis wobble | ±<2arcsec |

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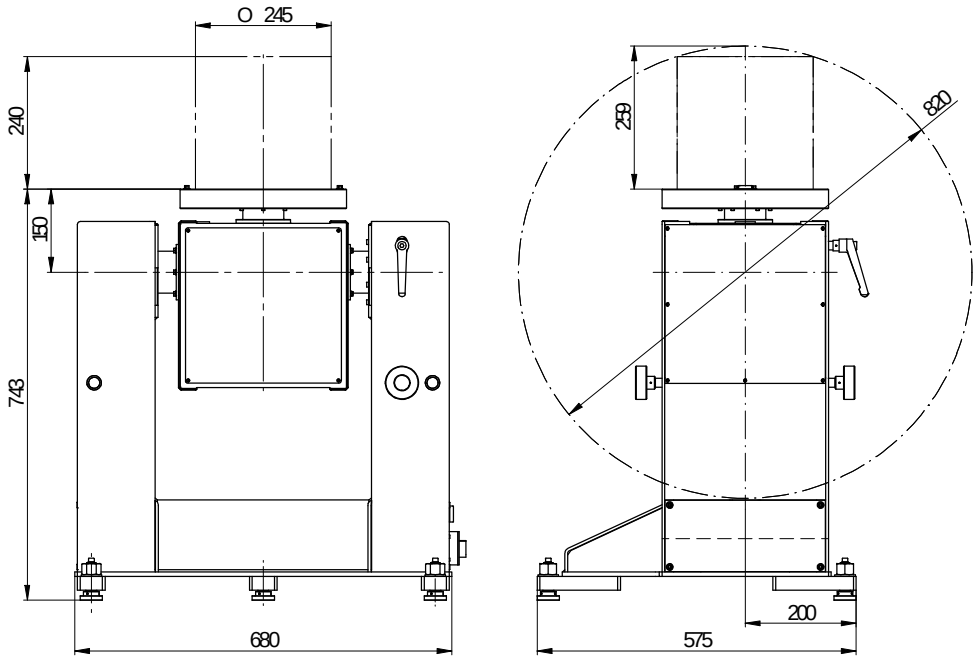
|---|---|---|
| **Table Axis** | Torque | 20 Nm |
| | Axis inertia, (no load) | 0.09 $kgm^2$ |
| | Acceleration (no load) | ±10'000 $deg/s^2$ |
| | Bandwidth (-3dB) | >60 Hz |
| **Position command** | Position transducer | SIN/COS high-resolution, absolute |
| | Position range | 0 to 359.9999 deg unlimited rotation |
| | Position slew | Profiling within rate and acceleration limits |
| | Position resolution | <0.04 arcsec |
| | Position accuracy | <4 arcsec RSS or ±<6 arcsec peak-peak |
| | Position repeatability | better ±2 arcsec |
| **Rate command** | Rate range | ±1500 deg/sec |
| | Rate slew | Profiling within acceleration and jerk limits Rate |
| | resolution | <1 arcsec/s |
| | Rate stability | 0.001% of commanded rate over one revolution |
| | Event pulse | 1/revolution |
| **Acceleration Control** | Rate changes can be performed with controlled acceleration. | |
| | Acceleration Limit | can be set within the dynamic range |
| | Command Resolution | <25 $arcsec/s^2$ |
| **Command** | Through RS-232 interface, at a baud rate of 115200, via optional handheld paddle or compatible input device or host computer | |
| **Tilt axis** | Actuation | manual, fine adjustment opposing push spindles |
| | Position transducer | SIN/COS high-resolution, absolute |
| | Position range | ±180 deg |
| | Position resolution | <2.0 arcsec |
| Optional tilt axis drive | Actuation | servo motor with anti backlash gear |
| | Position accuracy | <7 arcsec RSS or ±<10 arcsec peak-peak |
| | Position repeatability | better ±2 arcsec |
| | Tilt slew speed | < 20 deg/sec |

**Outline Dimensions**




All dimensions in mm and subject to change without notice.