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 LabView™ 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

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

- Torque: 20 Nm
- Axis inertia, (no load): 0.09 kgm²
- Acceleration (no load): ±10'000 deg/s²
- 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/s²

**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.