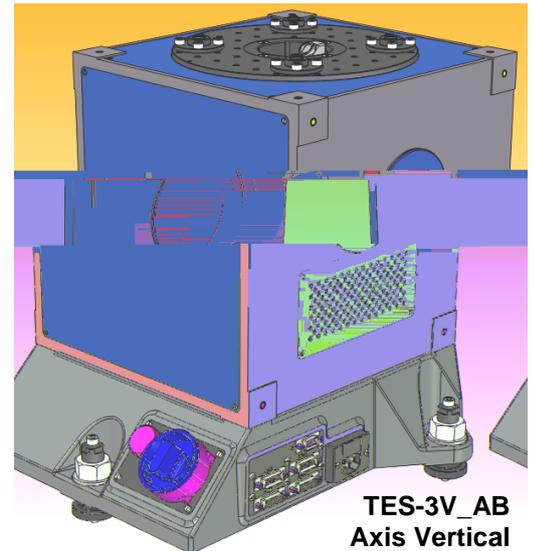


Test Fixture Series TES-3 _AB with Air Bearing

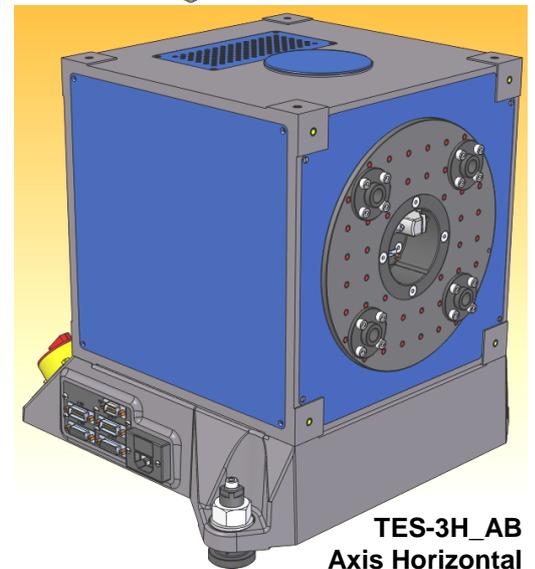
Features

- Orifice controlled externally pressurized air bearing
- Direct drive brushless torquer, optimized for minimum torque ripple and cogging effects.
- Aluminum rotor for minimal inertia for vibratory applications up to 100Hz (optional 200Hz)
- Uniform rates even at fraction of Earth Rates due to just viscous friction; no sticking caused by differences in static to dynamic friction



Modes of Operation

- Positioning: absolute with a resolution better than 1×10^{-6} deg.
- Rate: No drift, good instantaneous rate stability with a resolution better than 2×10^{-5} deg/sec
- Oscillation: of DC to 100Hz (optional 200Hz)
- Analog: command and optional analog readout of position and rate fully scalable



Description

The Test-Fixture is tailored for low rate applications. The air bearing offers very low and strictly viscous friction. There is no slip stick effect often experienced at low rates.

The fixture accommodates a wide variety of payloads. The upper thrust bearing serves as table top platen and has a pattern of threaded holes to fasten the payload. There are 4 stainless steel mounting pads. The top face of the mounting define a plane perpendicular to the axis of rotation

The drive assembly consists of a cast aluminum housing and separate base. The Test-Fixture can be ordered with the rotational axis vertical or horizontal. The TES-3_AB stands on three adjustable leveling screws. High dynamic applications and large payload require the fixture to be bolted to a rigid support surface.

The air bearing is designed for high stiffness and good load capacity. The axial bearing is preloaded for high moment stiffness. A direct drive brushless servo motor delivers high torque and smooth rates over a wide speed range. Ripple and cogging torque are minimized by the skewed motor stator design.

The fixture is furnished with a 30-line slip ring capsule rated for two and five Amperes. The lines terminate in two D-sub connectors at the platen and the corresponding connectors at the base. Larger slipping capsules with either 40 or 60 lines for customer use are optional available.

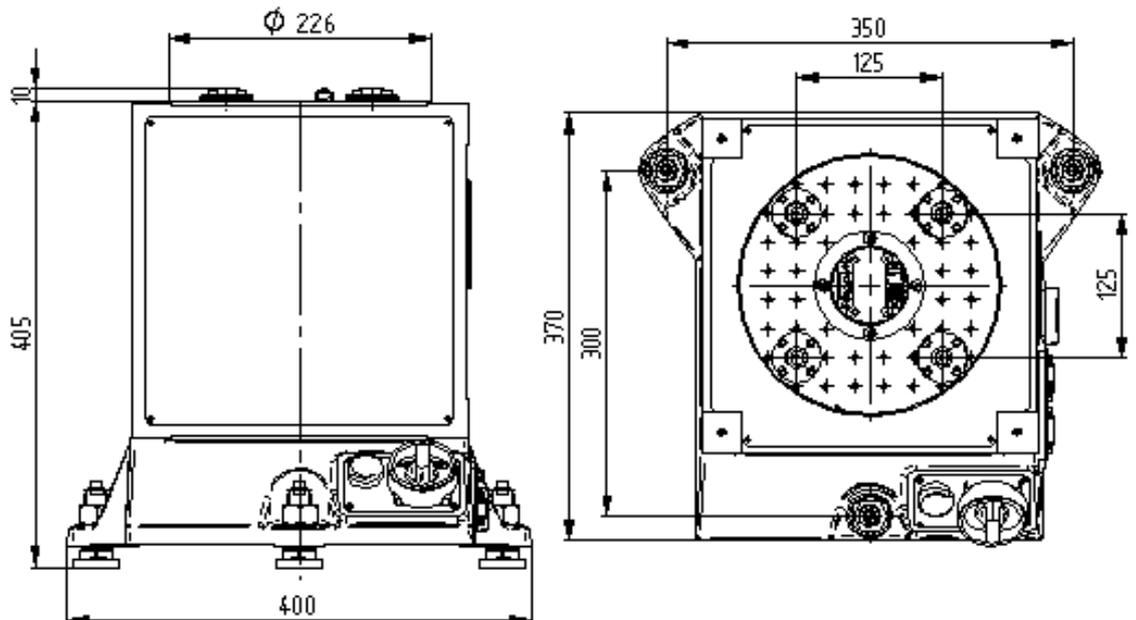
The controller and the power supplies are part of the drive cube. There is no separate control cabinet or chassis required.

Specification Summary

| | | |
|------------------------------|--------------------------------------|--|
| General Configuration | Payload nominal Slip rings to UUT | 245dia x 250mm high, 20kg; (40kg max.) 28 lines @ 2A and 2 lines rated for 5Amp; 2 pairs D-Sub connectors on table top and base |
|------------------------------|--------------------------------------|--|

Series TES-3 _AB

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|-----------------------------|---|--|
| | Mounting platen | 225mm dia., aluminum hard anodized with grid of threaded mounting holes, M5 with Heli-coil insert on 25mm spacing; 4 mounting pads, plane $\pm 0.05\text{mm}$ TIR |
| | Axis wobble | $\pm 0.5\text{arcsec}$ |
| Dynamic | Torque | 18Nm nominal, 36 Nm peak |
| | Axis inertia, (no load) | 0.09kgm^2 |
| | Acceleration (no load) | $6'000\text{deg/s}^2$ |
| | Bandwidth (-3dB) | $>100\text{Hz}$ small signal |
| Position command | Position transducer | SIN/COS high-resolution, absolute |
| | Position range | 0 to 359.9999deg unlimited rotation |
| | Position resolution | $<0.02\text{arcsec}$ |
| | Position accuracy | $<0.5\text{arcsec}_{\text{CRSS}}$ or $\pm 0.8\text{arcsec}_{\text{peak-peak}}$ |
| | Position repeatability | better $\pm 0.5\text{arcsec}$ |
| Rate command | Rate Range | $\pm 1000\text{ deg/s}$ |
| | Rate resolution | $<0.000'05\text{deg/s}$ equivalent to 0.01 ERU |
| | Rate stability | 0.001% of commanded rate over 360 deg |
| | Event pulse | 1/revolution |
| Acceleration Control | Rate changes can be performed with controlled acceleration. | |
| Command | Through RS-232/484 interface, at a baud rate of 115200, or optional high-speed data interface or via handheld | |
| Supply | <u>Power</u> | 230VAC, 50Hz, 10A fused |
| | <u>Air</u> | Clean oil free, filtered dry air, 8 bar, 1.3 l/s |



Options

Table-Top: of different Sizes
Sliprings: 40Way- or 60 Way
Interfaces: High-Speed Data Interface or Handheld terminal