



≡ AIR BEARING APPARATUS

VDAS® TE96

Benchtop, self-contained air bearing apparatus to demonstrate the performance of self-acting, gas-lubricated journal bearings, including the phenomenon of half-speed whirl.



SCREENSHOT OF THE OPTIONAL
VDAS® SOFTWARE

KEY FEATURES

- Demonstrates the performance of a self-acting, gas (air) lubricated journal bearing
- Self-contained and bench-mounting, includes all instrumentation needed for tests
- Fully guarded for safety
- Connects to TecEquipment's optional Versatile Data Acquisition System (VDAS®) for automatic data acquisition
- Variable bearing load and speed, for a range of tests
- Includes a multi-channel digital pressure display
- Demonstrates the onset of bearing 'whirl'



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TE96

DESCRIPTION

A self-contained product that shows how a self-acting gas lubricated journal bearing works. It also shows the onset of 'whirl'.

The main part has a variable-speed motor that turns a belt drive. The belt drive turns a precision bearing shaft. The shaft has a high-quality surface finish and spins inside a vertically loaded bush. A hand-operated load control and load cell allow the user to apply and measure the load on the bearing bush. The bush has pressure tapping equally spaced around its circumference. The tappings connect to a multichannel digital pressure display unit.

A motor drive module allows the user to vary the bearing speed. A speed sensor and the bearing bush load cell connect to the motor drivemodule. This module displays the bearing speed and the load measured at the load cell.

Both the motor drive module and the pressure display module fit into an instrument frame that has extra space for the optional frame-mounted VDAS-F. Both modules include sockets to connect to the optional VDAS-F.

For quick and reliable tests, TecQuipment can supply the optional VDAS® (Versatile Data Acquisition System). VDAS® gives accurate real-time data capture, monitoring and display, calculation and charting of all important readings on a computer. The computer is not supplied.

NOTE: TecQuipment's VDAS® software includes a bar chart display of pressures. This display works with this product to see the pressure distribution around the bearing as a real-time image – ideal for classroom demonstrations.

STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer

RECOMMENDED ANCILLARIES

- Versatile Data Acquisition System (VDAS-F) (frame-mounted version)

LEARNING OUTCOMES

- Demonstrate how a vertical load affects the pressure distribution around an air-lubricated journal bearing.
- Demonstrate how bearing speed and therefore compressibility number affects the pressure distribution in the bearing, and how this compares with theory.
- Demonstrate the onset of 'whirl'.

ESSENTIAL SERVICES

ELECTRICAL SUPPLY (SPECIFY ON ORDER):

Single or two phase, 220/240 VAC, 50 to 60 Hz, at 10A (specify on order)

BENCH SPACE NEEDED:

Solid, level bench top of 1100 mm x 700 mm.

Allow extra space for a computer if you are to use TecQuipment's VDAS®.

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory

STORAGE TEMPERATURE RANGE:

–25°C to +55°C (when packed for transport)

OPERATING TEMPERATURE RANGE:

+5°C to +40°C

OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C

SOUND LEVELS

Greater than 85dB(A) at certain speeds. You must wear ear defenders when you work near to this equipment.

SPECIFICATIONS

TecQuipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

TOTAL SIZE WHEN ASSEMBLED:

1100 mm long x 700 mm front to back x 600 mm high.

TOTAL NETT WEIGHT:

52.5 kg

PACKED DIMENSIONS AND WEIGHT:

Approximately 0.5 m³ and 60 kg