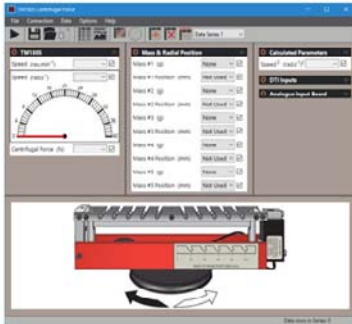




VDAS® TM1005

CENTRIFUGAL FORCE

For experiments in centrifugal force and angular velocity.



SCREENSHOT OF THE VDAS® SOFTWARE



KEY FEATURES

- Demonstrates the relationship between centrifugal force, mass of a rotating body, its distance from the axis, and its angular velocity
- Balanced arm mechanism for accurate readings
- Portable, self-contained bench-top unit, suitable for classroom demonstrations and use by small groups of students
- Interlocked, transparent dome allows students to see the mechanism spinning in safety
- Unique multifunction control for coarse and fine adjustment of velocity and direction
- Includes a set of weights for different experiments
- Works with TecQuipment's Versatile Data Acquisition System (VDAS®)

CENTRIFUGAL FORCE

DESCRIPTION

A base unit supports a mechanism that rotates under a clear dome. An electric motor turns a belt that turns a turntable under the mechanism. The motor works in clockwise and anticlockwise rotation and with variable velocity. A sensor measures the rotational velocity of the mechanism.

The mechanism has three balance arms. Two (the outside) arms hold any of a selection of masses (supplied) at any of five radial positions. A sensor measures the centrifugal force due to the selected mass as it rotates about the given radii. The other (central) arm holds equal and radially opposite masses to balance the first mass. This prevents unwanted vibrations, which would also affect measurement accuracy.

The clear dome includes an interlock that shuts off power to the motor. This allows students to see the mechanism rotating and use it in safety while still giving them access to change the masses and their positions.

The base unit includes the motor control and a multiline display. The motor control includes unique direction, coarse and fine velocity adjustment and "press to stop" functions. The display shows velocity (speed) in units of revolutions per minute and radians per second. It also shows centrifugal force.

The equipment works with TecQuipment's Versatile Data Acquisition System (VDAS® available separately). Using VDAS® enables accurate real-time data capture, monitoring and display, calculation and charting of all relevant parameters on a computer (not supplied) making tests quick and reliable.

STANDARD FEATURES

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

LEARNING OUTCOMES

Finding the relationship between centrifugal force, the mass of a rotating body, its distance from the axis of rotation (radial position) and the speed of rotation.

RECOMMENDED ANCILLARIES

- Versatile Data Acquisition System – bench-mounted version (VDAS-B)

ESSENTIAL SERVICES

BENCH SPACE NEEDED:

600 mm x 600 mm (plus space for the optional VDAS-B and a computer if needed).

ELECTRICAL SUPPLY:

Single-phase 90 VAC to 250 VAC

50 Hz to 60 Hz and 0.2 A

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory environment

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

Less than 70 dB(A)

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.

NETT DIMENSIONS AND WEIGHTS:

600 mm wide x 600 mm front to back x 370 mm high and 18.5 kg (including 0.5 kg set of weights)

APPROXIMATE PACKED VOLUME AND WEIGHT:

0.23 m³ and 26 kg