TORSIONAL OSCILLATION MODULE (FREE & FORCED)

HVT12B

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study

Features

- Allows for different conditions to be applied to all four wire specimens
- Two steel specimens, Ø3.175mm & Ø4.75mm
- Two brass specimens, Ø3.175mm, Ø4.75mm
- Upper and lower supports allow differing end conditions to be applied: Fixed/Fixed, Fixed/Free,

Description

The HVT12B allows a number of torsional experiments to be applied to rod specimens. A vertical backboard is fixed to the HVT12F (not supplied), and assists the securing of the top end of the rod. Along the length of the rod can be attached a solid disc. Additionally a solid ring and split ring are included, that fit onto the disc to increase the overall inertia. Different end conditions can be introduced by allowing the bottom end of the wire to be free or fixed.. The bottom end clamp allows length of the rod o be varied thus changing the frequency (Periodic Time). The protractor can measure deflection along the rod. A support frame, damping cylinder and tank enable controlled damping to be applied. Includes steel and brass rods complete with clamps and adaptors.

Related Laws/Applications

- Torsion
- Torsional stiffness
- Resonance
- Multi-mass torsional systems
- Rotational Machinery
- Dynamics
- Automotive

Learning capabilities

- To show periodic time is proportional to square root of rod length
- To show periodic time is proportional to square root of mass moment of inertia
- To show periodic time is inversely proportional to square root of rod diameter
- To show periodic time is inversely proportional to square root of modulus of rigidity
- Study the decay in amplitude of a damped oscillation

Technical Specification

- Two steel specimens, Ø3.175mm & Ø4.75mm; 1200(L)mm
- Solid Disk: Ø250 x 30(t)mm, steel, 11.5kg (approx)
- Ring: Ø250 O.D x Ø160 i.d x 30(t)mm, steel, 4.5kg (approx)
- Split ring: Ø250 O.D x Ø160 i.d x 40(t)mm, steel, 8.75kg (approx)
- Protractor scale: ±30°, 1 degree increments

Essential Ancillaries

- Requires HVT12F for operation

What's in the Box?

- 1 x Upper support
- 1 x lower support
- 1 x Rotational scale
- 4 x Specimen rods
- 1 x Solid disc
- 1 x Ring
- 1 x Split ring
- 1 x Damping Tank
- Stop watch
- 2 x Hanger
- 4 x 1N weight
- 2 x 5N weight
- Tape measure
- Instruction Manual
- Packing list
- Test Sheet

Weights & Dimensions

- Weight: 33Kg
- Length: 1310mm
- Width: 350mm
- Height: 380mm

Essential Services

- HVT12F

Ordering information

To order this product, please call PA Hilton quoting the following code:
HVT12B