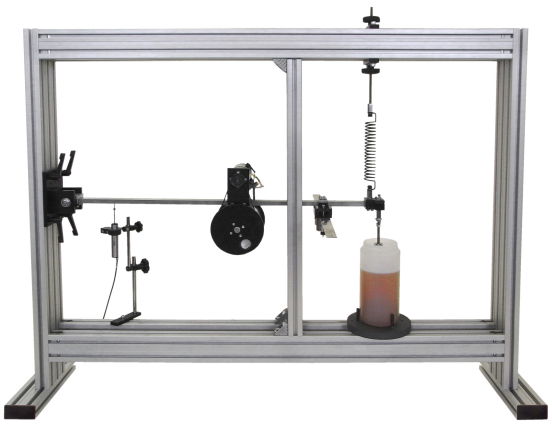
UNIVERSAL VIBRATION APPARATUS

HVT12



1
study

Features

- A comprehensive unit allowing for the study of both free and forced vibration,
- Resonance and Damping
- Excellent visual demonstrator
- Vibration absorber
- Non-contact technology for beam displacement
- Motor exciter for "Forced" vibration
- Data Acquisition System
- Four displacement springs supplied
- Adjustable damping
- Additional options available

Description

This system contains all the necessary parts to undertake free and forced vibration, resonance and damping. A beam pivots at one end from a bracket and bearing attached to the HVT12F Vibration Frame. A spring is attached to the free end of the beam to enable the beam to vibrate. The horizontal position of the spring can be adjusted using the integral adjustment system, and vibration travel is restricted via factory set "stops". The beam can vibrate freely by displacing the free end by a known amount, or alternatively the beam can be forced to vibrate using the supplied Motor Exciter. The motor exciter has integral imbalanced masses, which when rotated excites the beam to vibrate. The excitation frequency of the beam is controlled and displayed with the HAC90 Tachometer. The excitation frequency and beam displacement are both fed into the HVT12K Data Acquisition System. Damping can be introduced into the system by using the set of damping discs, damping tank and damping media provided. The damping discs have adjustment which allows the amount of damping to be altered. A damping absorber is also supplied that attaches to the beam, and can be adjusted to offset the resonance frequency of the system. A set of calibrated weights is supplied to vary the weight of the vibrating system.

Related Laws/Applications

- Characteristics of Vibration
- Single Degree of Freedom
- Natural Frequency
- Resonance
- Newton's Second Law
- Conservation of Energy
- Hook's Law
- Mechanical engineering
- Aeronautical engineering
- Structural engineering

Learning capabilities

- Spring stiffness
- Resonance frequency
- Active and inactive damping absorber
- Free vibration
- Forced vibration
- Damped vibration
- Damping ratio
- Tuning of damping absorber
- Amplitude response and phase response

Technical Specification

- Frame measures 1380mm (L) x 1080mm (H) x 310mm (W) Approx.
- Beam: 25.4(W) x 12.7(H) x 840(L)mm, coated steel
- Beam: 2.1kg (approx)
- 4 x Springs: spring rates 2.5, 0.75, 1.5, 3.0N/mm
- HAC120 Motor Exciter: Mass 5.1kg (approx)
- HVT12k: Two channel digital oscilloscope with data acquisition software
- 8 x 5N weights
- HVT12D: Spring steel beam: 590(L) x 25.4(W) x 1.6(H)mm

Recommended Ancillaries

- HVT12A
- HVT12B
- HVT12C

What's in the Box?

- 1 x Tachometer (HAC90)
- 1 x Motor Exciter (HAC120)
- 1 x Vibration Absorber (HVT12D)
- 1 x Vibrations Frame (HVT12F)
- 1 x Free & Forced Vibrations module (HVT12G)
- Data Acquisitions System (HVT12K)
- 4 x springs
- 8 x 5N weights
- Damping accessory and media
- Tools set
- Instruction manual
- Packing list
- Test sheet

Supporting Software



- HVT12K

Minimum System Requirements

- MS Windows 10 and above
- Processor 1Ghz
- Memory 512Mb
- Free disc space 2GB
- Ports: USB 1.1 and/or USB 2.0

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS

Weights & Dimensions

- Shipping Specification: Net Weight: 59Kg
- Length:1580mm
- Height:1270mm
- Width: 940mm

Essential Services

- Single phase earthed electrical supply 220/240V 50Hz, 110/120V 60Hz
- Bench top: 1500(L) x 450(W)mm (approx)

Ordering information

To order this product, please call PA Hilton quoting the following code: HVT12

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