

# Theory of Machines (HTM)



# ELASTIC SHAFT MODULE HTM90E



# **Features**

- Two different lengths of shafts
- Two weights for inducing eccentricity
- · Accessory sits within the safety guard

#### Description

This optional module (at extra cost) to the HTM90 base unit is designed to show and analyse faults that can occur with a shaft in a rotating system. This vibration apparatus is designed to show how to diagnose problems and to identify the differences between various types of fault. This equipment requires rearrangement of the HTM90 base unit setup and also an understanding of the HTM90A vibration analysis module. This elastic shaft module comprises an extra shaft of a different material (Aluminium) and two rotor weights. These are used with the base unit to demonstrate how a loaded shaft with a weight added to the setup can produce vibrations and degrade the performance of a unit. The experiment can be expanded to include variations of the distances the weights are placed along the shaft and the use of other rotors to simulate other exaggerated faults on the various shafts, such as eccentric masses. Other materials of shaft could be used in the set-up to allow for comparison perhaps.

# Learning capabilities

- Familiarisation with the terms 'critical speed' and resonance
- Study of the orbit in the subcritical and supercritical range
- Influence of unbalanced excitation
- Influence of alignment errors and natural forces on long shafts in industrial applications

# **Technical Specification**

- 1 x Aluminium shaft: length: 381mm (15") and nominal length between bearings 250mm
- Aluminium shaft: dia 12.7mm
- Two weight discs, able to be adjusted along length of shaft
- 8 x Grub screws (installed in rotors)

#### **Essential Ancillaries**

· HTM90 Base Unt

#### **Recommended Ancillaries**

• HTM90G - Belt, Brake and Crank Module

#### What's in the Box?

- 1 x Flight case
- 2 x Aluminium shafts
- 2 x Steel rotors

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## **Weights & Dimensions**

• Net dimensions: 400mm (L) x 100 (W) x 50mm (H)

· Net weight: approx. 5Kg

## **Ordering information**

To order this product, please call PA Hilton quoting the following code: HTM90E - Elastic Shaft Module

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