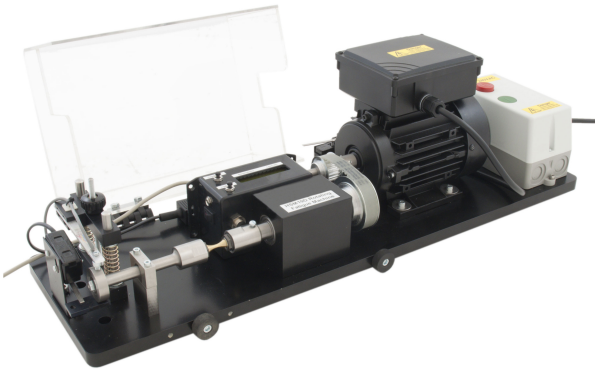
ROTATING FATIGUE MACHINE (DIGITAL VERSION)

HSM19D



Year 2
study

Features

- Fatigue testing based on Wohler
- Fully guarded system
- Variable speed
- Automatic motor cut-off following specimen fracture
- Digital Force sensor
- Digital interface supplied
- 'Keyless' chucks
- Set of specimens supplied with spares optionally available

Description

This unit has been designed to introduce students to the effects of material fatigue using a sinusoidal variation of bending stress. A 2800rpm motor rotates a specimen through a gear and pulley arrangement between 5600 or 1400 rpm. The specimens are held within ‘keyless’ chucks and loaded using a cantilever arrangement, with the load being applied through a screw jack mechanism with integral cantilever load cell. A digital interface displays the applied force and revolution count of the specimen. Both values can be reset and zeroed (tared) prior to the testing commencing. When specimen failure occurs, a micro switch stops the motor and the cycles to failure are registered on the digital display. The count remains when the motor is not running. A safety guard shields all rotating parts. The digital interface incorporates a USB socket, which allows a host computer (not supplied) to be connected to the HSM19D. Specially machined necked test specimens are provided in steel. These have a 4mm nominal neck diameter. All tooling is provided to allow the removal and fitting of these specimens. A full technical Instruction manual is supplied, which details full unit operation, experimental technique, example results and relevant theory.

Related Laws/Applications

- Fatigue
- Maximum Stress
- Proof, Yield Stress
- Fracture
- Tensile stress
- Endurance Limit stress
- Stress variation
- Localised
- Wohler Fatigue
- Sinusoidal stress

Learning capabilities

- To make an introductory study of fatigue using a Wohler rotating fatigue apparatus, including the time to failure caused by various stress levels and materials
- Introducing students to S-N curves
- Material specification on fatigue limits
- Specimen geometry on fatigue limit

Technical Specification

- Motor speeds: 5600 or 1400rpm (approximately)
- Motor speed: 2800rpm nominal
- On-board starter box
- Timing pulley and belt drive system: 20t and 40t
- 10 x Standard specimens: Ø4mm neck diameter x 65(L) mm, steel
- Cantilever loading arrangement
- Clear safety guard
- Safety: Motor will remain inactive with safety guard removed

Recommended Ancillaries

- HSM19a
- HSM19b
- HSM19c

What's in the Box?

- 1 x HSM19D
- 1 x Transformer (115V only)
- 1 x Interface
- 1 x USB lead
- 2 x Spanner
- 10 x Specimen
- 1 x Hex wrench set
- 1 x Spare belt
- 5 x Spare fuse
- Instruction manual
- Packing list
- Test sheet

You might also like

- HSM19

Weights & Dimensions

- Weight: 26 kg
- Weight: 30 kg (115V version)
- Length: 715mm
- Width: 260mm
- Height: 280mm

Essential Services

- 220-240 Volts, Single Phase, 50Hz, (With earth/ground). Line current up to 6A at 230v.
- 110-120 Volts, Single Phase, 60Hz (With earth/ground). Line current up to 10A at 110V

Ordering information

To order this product, please call PA Hilton quoting the following codes:
HSM19D/230
HSM19D/115

All brand and/or product names are trademarks of their respective owners. Specifications and external appearance are subject to change without notice. The colour of the actual product may vary from the colour shown in the brochure.
Copyright © 2018 P.A. Hilton Limited. All rights reserved. This technical leaflet, its contents and/or layout may not be modified and/or adapted, copied in part or in whole and/or incorporated into other works without the prior written permission of P. A. Hilton Limited. Hi-Tech Education is a registered trade mark of P. A. Hilton Limited.
COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS