GOVERNOR APPARATUS
HTM71

Year 2
study

Features

- Self-contained bench top unit
- Three classic governors supplied; Porter, Proell, Hartnell
- Easily interchanged
- Speed controlled and digitally displayed
- Additional sleeve weights supplied

Description

Compact, bench top apparatus to demonstrate the principle of operation of various centrifugal force governors. A motor driven vertical shaft has a chuck mounting which allows the easy attachment of the three governor mechanisms supplied. The shaft is speed controlled and the speed displayed on the front panel. Three governors are supplied: Porter, Proell and Hartnell. Each governor is fully assembled, ready for testing. The Porter and Proell governors incorporate governor masses that can be removed to vary the rotating mass. Sleeve weights can also be added to these two governors using the slotted weights provided. The slotted weights are profiled not to come off during testing. The Hartnell governor incorporates a compression spring. This controls the movement of the central sleeve, by adjusting the spring tension using the adjustment knob on the vertical shaft. The vertical stroke of each governor can be measured using the increments on each of the governor shafts.
A transparent safety cover keeps rotating parts away from the students. A cut-off micro switch ensures the power to the motor is removed if the safety cover is not present.

Related laws

- Centrifugal Force
- rotational Motion of a Body
- Geometry

- Characteristic Curves
- Lift off speed
- Stability
- Speed control

Learning capabilities

- Geometry and operation of a Porter, Proell and Hartnell governor
- To observe the lift off speed of the three different types of governor
- To observe the affect of varying sleeve weight or spring force on the operation of a governor
- To observe the stability of a governor
- To compare actual results with calculated theoretical values

Technical Specification

- Porter Governor radial travel range: 80….100mm (approximately)
- Proell Governor radial travel range: 75….100mm (approximately)
- Hartnell Spring rates: 0.39N/mm and 0.97N/mm (approximately)
- Porter and Proell Sleeve masses: 58g (approximately)
- Porter and Proell masses: 157g (approximately)
- Hartnell masses: 118g (approximately)
- Hartnell mass adjustment range: 20mm (approximately)
- 3mm increment indications on vertical shafts

What’s in the Box?

- 1 x HTM71 Assembly
- 1 x Protective Dome
- 1 x Proell Governor
- 1 x Porter Governor
- 1 x Hartnell Governor
- 8 x Hartnell Mass
- 1 x Power Supply
- 1 x alternative Hartnell Spring
- Locking Handle
- Instruction manual
- Hex wrench
- Packing list
- Test sheet

You might also like

- HFC21

Weights & Dimensions

- Weight: 20 kg
- Length: 500mm
- Width: 500mm
- Height: 460mm

Essential Services

- 110/120V, 60Hz or 220/240V, 50Hz, single phase, live neutral and earth
- Sturdy Bench top

Operational Conditions

- Storage temperature: -10°C to +70°C
- Operating temperature range: +10°C to +50°C
- Operating relative humidity range: 0 to 95%, non condensing

Ordering information

To order this product, please call PA Hilton quoting the following code:
HTM71