

STRESS AND STRAIN IN THIN-WALLED CYLINDERS

RS 042

Description:

Pipes, pressure vessels, steam boilers etc. are considered as thin-walled vessels during design. The principal stresses are key variables in calculating and designing these vessels. The stresses and strains occurring in a vessel are not directly measured but are determined by measuring the strains on the surface using strain gauges. To be able to conduct experiments in both open-end and closed-end conditions, a piston is embedded inside the cylinder which can be adjusted by a manual crank. In open-end condition, only the environmental (uniaxial) stresses and in closed-end condition, both environmental and axial (biaxial) stresses can be investigated. This machine allows comprehensive analysis of stress and strain in a thin-walled cylinder under internal pressure, demonstration of stress and strain and their practical measurement and analyzing techniques, testing in both open-end and closed-end conditions to examine environmental and axial stresses, strain measurement. To measure strain, sensors have been installed at different angles on the surface of the cylinder.

Specifications:

- Pressure gauge
- Cylinder and piston
- Manual power-applying system to move the piston
- Manual pump
- Strain sensors
- Suitable mechanical or electronic data acquisition system
- Installation and training video included
- Instructions manual included
- 10-year warranty

Note: Direct contact with the sales department is required to confirm the last updated technical specifications and pictures.

Applications:

1. Investigating the longitudinal, environmental and biaxial stress
2. Investigating the behavior of the cylinder in both closed and open end conditions

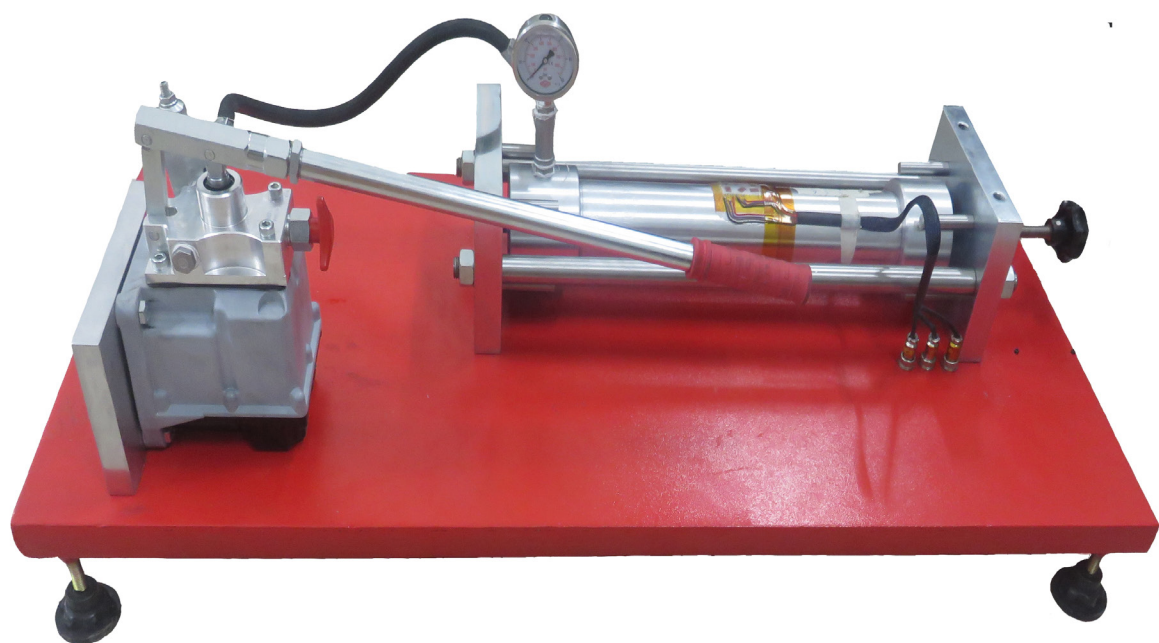
Required For Operation:

- 220 v Single Phase Electricity
- Desirable Temperature (°C): 10-30
- Relative Humidity: 15% - 80%
- Computer system to display data (if data logger is used)



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Dimensions (L*W*H) mm: 1000 x 400 x 1000

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