



TWO HINGED PARABOLIC ARCH HST5



Year 3
study

Features

- Visual reality of an Arch
- Seven load points
- Loads can be applied at same time, not one at a time
- Horizontal thrust measured via load cell
- Model Analysis method studied
- Weights set supplied as standard
- Semi-circular Arch optionally available
- Dedicated e-book supplied

Description

The steel Parabolic Arch with uniform cross section has a span of 1.0metre and a rise of 0.2metre. One end is pinned in precision bearings set in a fixed springing attached to the HST1 Universal Frame and Stand (sold separately). The other end has bearings running on a track plate to which is attached an integral load cell for

measuring the horizontal thrust created when the arch is loaded. The horizontal thrust is created by applying loads on the arch via seven equi-spaced load chains and hangers vertically suspended from the arch.

For model analysis measurements, pins are set on the arch at each Load hanger. A dial gauge on a moveable stand is also provided for this work. The load cell and dial gauge output must be fed into the HDA200 Interface (sold separately).

Related laws

- Simpsons Rule.
- Influence Lines.
- Horizontal Thrust
- Model Analysis

Learning capabilities

- Examines relationship between applied loads and horizontal thrust
- Comparison of horizontal thrust at springing with simplified theory
- Verifies model analysis theory
- Uses influence line for horizontal thrust
- Derivation of influence line for horizontal thrust
- Model analysis evaluation of horizontal thrust

Technical Specification

- Steel arch of uniform cross section 40 x 8mm
- Span of 1.0 metre and rise of 0.2 metre
- Vertical loading from seven equi-spaced points across the arch (125mm intervals)
- Digital Dial Gauge: 12.7mm travel; 0.01mm resolution
- Load Cell: 0...500N
- Weights set: 1 x 0.1N, 2 x 0.2N, 1 x 1N, 2 x 2N
- Weights set: 10 x 5N, 8 x 10N, 3 x 20N, 1 x 50N

Essential Ancillaries

- HST1
- HDA200

Recommended Ancillaries

- HST5A

What's in the Box?

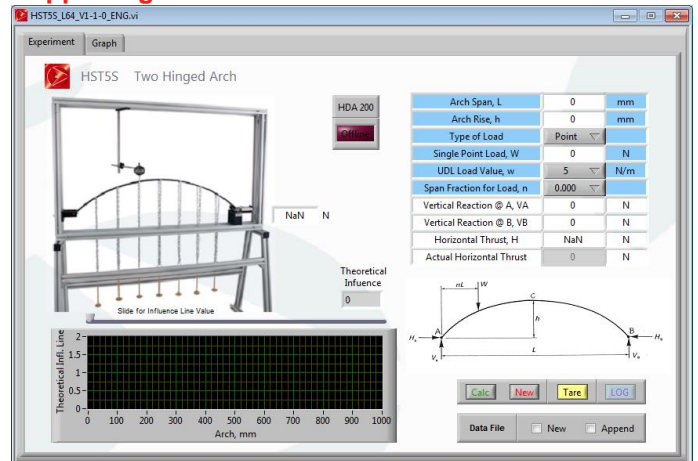
- 1 x Arch
- 1 x Load Cell Track Plate
- 1 x Digital Dial Gauge and Cable
- 7 x Hangers
- 1 x 0.1, 2 x 0.2N, 1 x 1N, 2 x 2N weights
- 10 x 5N, 8 x 10N, 3 x 20N, 1 x 50N weights
- 1 x flat anvil
- 1 x Tape measure
- Accessories container
- Hex wrench
- Instruction manual
- Software
- E-book
- Packing list

- Test sheet

You might also like

- HST2
- HST4
- HST18

Supporting Software



- HST55

Minimum System Requirements

- Computer or Laptop running WIN7 or above

Weights & Dimensions

- Weight: 36 kg
- Length: 1060mm
- Width: 100mm
- Height: 500mm

Essential Services

- 110/120V, 60Hz or 220/240V, 50Hz, single phase, live neutral and earth for HDA200

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

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Ordering information

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

HST5

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