

## ≡ METACENTRIC HEIGHT AND STABILITY

### H2 MKII

A benchtop apparatus to determine the stability of a pontoon with its centre of gravity, metacentric height and metacentre at various heights.



OPTIONAL VEE (HARD) CHINE AND HALF ROUND (ROUND BILGE) HULLS (H2A MKII)



H2 MKII HULL AND SAIL

### KEY FEATURES

- Full and accurate experimental analysis
- Ideal for classroom demonstrations
- No services required
- Compact and requires minimal storage space

### LEARNING OUTCOMES

Determination of the metacentric height, and thus the metacentre, of a floating pontoon. This is by graphic analysis of the angles of tilt of the pontoon with various centres of gravity.

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## H2 MKII

### DESCRIPTION

Determination and analysis of the stability of floating bodies, such as ships, rafts and pontoons, is important throughout many branches of engineering. This experiment allows students to determine the stability of a pontoon with its centre of gravity at various heights. They can then compare this to predictions calculated from theory.

The experiment consists of a rectangular pontoon floating in water. Plastic materials and corrosion-resistant finishes throughout the equipment give the fullest possible protection against corrosion.

The pontoon has a plastic sail with five rows of slots. These rows are at equally spaced heights on the sail. The slots are equally spaced around the centre line.

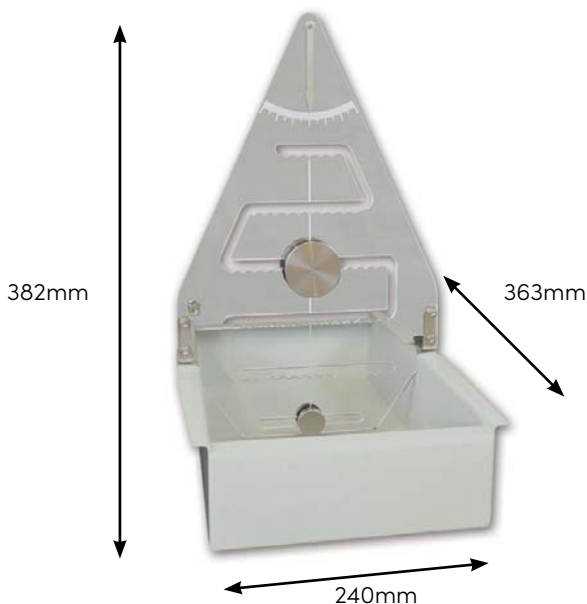
To change the centre of gravity and the tilt (list) angle of the pontoon, students fit an adjustable weight into one of the slots. A clinometer pointer hangs at the top of the sail where it can freely rotate. Along with an inclusive scale on the sail the tilt angle is clearly indicated. Students can easily trim the pontoon using a small weight attached to the sail.

### ANCILLARY PONTOONS H2A MKII

The H2 (mkII) has a pair of optional pontoons for further experimentation. Half-circle and Vee chine pontoons allow the student to compare the stability of different hulls. For reduced set-up times, the sail is easily moved from one pontoon to another.

### STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Made in accordance with the latest European Union directives
- An ISO 9001 certified company



### OPERATING CONDITIONS

#### OPERATING ENVIRONMENT:

Laboratory

#### STORAGE TEMPERATURE RANGE:

-25°C to +55°C (when packed for transport)

#### OPERATING TEMPERATURE RANGE:

+5°C to +40°C

### ESSENTIAL SERVICES

#### FLOOR SPACE NEEDED:

Approximately 700 mm x 500mm of solid, level bench worktop

### SPECIFICATIONS

TecEquipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

#### DIMENSIONS:

Net: 650 mm x 450 mm x 350 mm; packed: 0.11 m<sup>3</sup>

#### WEIGHT:

Nominally net: 5 kg; packed: 9 kg

#### WATER TANK:

Moulded plastic, nominally 600 mm x 400 mm x 120 mm

#### FLOATING PONTOON:

363 mm x 203 mm x 80 mm

#### CLINOMETER SCALE:

±30°

#### ANGULAR TILT OF PONTOON:

Nominally 8° each side of the vertical centre line

#### ADJUSTABLE SAIL WEIGHT:

394 g

#### TOTAL WEIGHT OF FLOATING ASSEMBLY:

Nominally 3.2 kg

### ANCILLARY PONTOONS H2A MKII

#### HALF ROUND FLOATING PONTOON:

363mm x 203mm x 124mm

#### VEE CHINE FLOATING PONTOON:

363mm x 203mm x 123mm