



H31

HYDRAULIC RAM PUMP

Demonstrates the use of water hammer to create a pumping action



KEY FEATURES

- Uses water hammer effect to pump water
- Works with TecQuipment's Hydraulic Bench for easy installation
- Air vessel to reduce hydraulic shock
- Supplied with textbook 'Hydraulic Ram Pumps'
- Includes header tank and all necessary pipework
- Additional weights to adjust cycle times

LEARNING OUTCOMES

- Demonstration of the water hammer effect to produce a pumping action

KEY SPECIFICATIONS

- Air vessel
- Header tank and fittings
- Delivery pressure gauge
- Textbook
- Five valve weights

HYDRAULIC RAM PUMP

DESCRIPTION

The Hydraulic Ram Pump uses the water hammer effect, where the momentum of a column of moving water in a pipe causes the water hammer.

The ram pump is not a normal mechanically-operated pump. A column of water in the supply (drive) pipe from a header tank, moving at low velocity, is similar to a 'plunger'. The energy in the plunger forces water from the supply into a delivery pipe. This exchanges the momentum of a large amount of water into energy that pumps a smaller amount of water up a hill or gradient.

The Hydraulic Ram Pump fits onto and works with TecQuipment's Digital Hydraulic Bench (H1F)*. The pump also includes a textbook that introduces the reader to all aspects of ram pumps.

The apparatus has three main parts: the header tank, the pump and the interconnecting pipe work. The header tank mounts to a suitable wall.

The pump has:

- a supply pipe fitted with an inner and outer valve,
- an air vessel to reduce hydraulic shock, and
- a delivery section.

The outer valve has a weight platform, for loading with the weights provided. This changes the pump's cycle times.

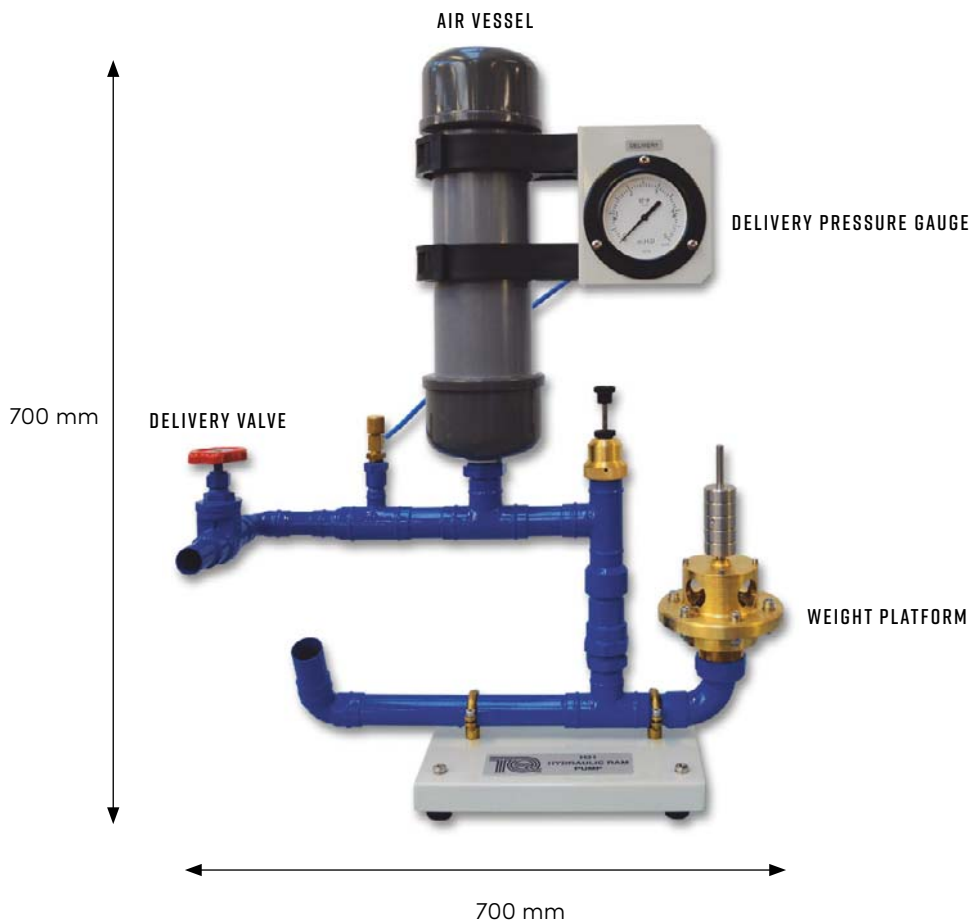
STANDARD FEATURES

- Supplied with a comprehensive user guide and textbook
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer

ESSENTIAL BASE UNIT

- Digital Hydraulic Bench (H1F)*

* This product will also work with an existing TecQuipment Volumetric Hydraulic Bench (H1D)



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HYDRAULIC RAM PUMP

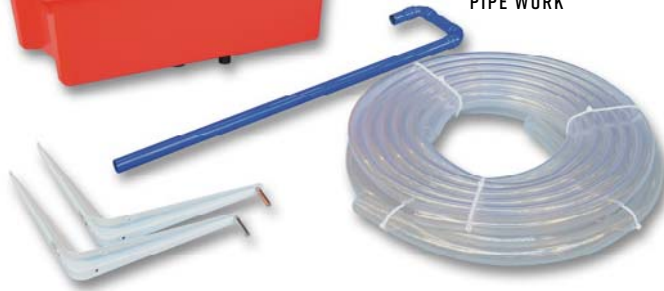


SHOWN WITH TECQUIPMENT'S DIGITAL HYDRAULIC BENCH (HIF)

HEADER TANK



PIPE WORK



WALL BRACKETS

HEADER TANK AND OTHER PARTS (INCLUDED)

HYDRAULIC RAM PUMP

DETAILED SPECIFICATIONS

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

NETT DIMENSIONS (ASSEMBLED):

Ram pump: 700 mm long x 700 mm high x 200 mm

NETT WEIGHT:

20 kg

APPROXIMATE PACKED DIMENSIONS:

0.3 m³ and 25 kg

VALVE WEIGHTS:

5 off

TEXTBOOK:

Hydraulic Ram Pumps: A Guide to Ram Pump Water Supply Systems by T Jeffrey

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

OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C