

Product Name :
Astra Scientific Hydraulic Ram Test Bed

Product Code :
Fluid Mechanics Lab0018



Description :

Astra Scientific Hydraulic Ram Test Bed

Technical Specification :

DESCRIPTION:

The Hydraulic Ram comprises an acrylic base incorporating pulse and non-return valves and a supply reservoir on a stand, which is fed by the Hydraulics Bench. An air vessel above the valve chamber smooth's cyclic fluctuations from the ram delivery.

This apparatus is used to study the phenomenon and performance of hydraulic ram pump. Ram pump is a type of pump, which delivers water at high heads without any energy source except flowing liquid at some height. It uses the momentum of flowing water for its operation.

The weights supplied may be applied to the pulse valve to change the closing pressure and thus the operating characteristics.

If flowing water is suddenly brought to rest in a long pipe, a phenomena known as water hammer occurs, wherein a pressure wave travels along the pipe. This principle is used in the hydraulic ram to pump water.

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

FEATURES:

- Pump body manufactured from clear acrylic with stainless steel pulse and non-return valves
- Adjustable acrylic header tank with inlet and outlet hoses
- Outlet hose with variable head arrangement
- Quick-release fitting for easy connection to Hydraulics Bench
- Supplied with weights to load pulse valve
- Demonstration of the water hammer effect to produce a pumping action
- Educational software available as an option

SPECIFICATION:

- Supply head: 300-700mm variable
- Delivery head: 750-1500mm variable
- A supply pipe fitted with an inner and outer valve,
- An air vessel to reduce hydraulic shock, and a delivery section.



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