Product Code . LSK-FM-10470

Jet Trajectory and Orifice Flow

Description

Jet Trajectory and Flow Through an Orifice apparatus allows students to measure:

Decrease in flow

Energy loss

Contraction of the stream

It also allows students to study the trajectory profiles of water jets from the nozzles when mounted horizontally. The equipment is for use with a hydraulic bench and stands on the hydraulic bench worktop. The apparatus has a transparent cylindrical tank, with a mounting in the base for the nozzles. The nozzles either fit to the unit to discharge water vertically (down) or horizontally dependent on the experiment taking place. They are easily interchangeable.

They make these measurements as water discharges from four vertically mounted, interchangeable nozzles with different throat (orifice) designs.

To measure trajectory of jets, the base of the tank includes a horizontal mounting for the nozzles. Students use a bung to seal the base of the unit. They then use the plotting board and depth gauge pins to plot the jet trajectory onto graph paper.

Water flows into the tank from the hydraulic bench through an adjustable diffuser. The flow rate and an overflow pipe set the water level. To change the level in the tank (and so the head on the orifice), students adjust the flow to the diffuser. Water leaves the tank through the nozzles. The jet that leaves

the orifice discharges into the hydraulic bench measuring tank.

Manometers measure the total head on the orifice and under the jet. A traverse assembly allows students to position a Pitot tube anywhere in the jet. A sharp blade accurately measures the jet diameter. This allows students to find the contraction coefficient.