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Product Name :

Friction Loss In Pipe

Product Code :

SLE/EFM/09



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Description :

The **Friction Loss In Pipe** apparatus (Product Code: SLE/EFM/09) measures the pressure lost as water flows along a test pipe, across both laminar and turbulent regimes. Static pressure tappings either side of the pipe feed a water manometer for small differentials and a hand-held digital pressure meter for larger ones, while a precision needle valve sets the flow. The apparatus stands on a hydraulic bench and is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, for fluid mechanics courses at engineering colleges and polytechnics.

Specifications

Parameter	Detail
Pressure tappings	Static tappings upstream and downstream of the test pipe
Low-range measurement	Water manometer for lower differential pressures in the laminar and lower turbulent regions
High-range measurement	Hand-held digital pressure meter for higher pressures in the turbulent region
Manometer mounting	Back panel with calibrated scales
Manometer datum	Air valve and hand-pump for adjusting the datum
Flow control	Precision needle valve downstream of the test pipe
Water supply	Stands on a hydraulic bench; a constant-head supply feeds the test pipe for low flow rate experiments

Typical Use

Students set the apparatus on the hydraulic bench and connect a constant-head supply for the low-flow runs. Starting with the needle valve nearly closed, they read the head loss on the water manometer, collect a timed volume to find the flow rate, then open the valve a little and repeat. At low flows the head loss rises in direct proportion to velocity; as the flow increases past transition the relationship steepens, and the class switches to the digital pressure meter to follow the higher differentials in the turbulent region.

Plotting friction factor against Reynolds number turns the readings into a small Moody-style chart and lets students compare their laminar results with the theoretical Poiseuille line. As mechanics lab equipment for India’s civil and mechanical engineering syllabi, the apparatus supports reports on pipe design, pump sizing and energy loss. Use the hand-pump to bring the manometer levels to a convenient datum before each series, and bleed air from the tappings so readings settle quickly.

Manufacturer

Jain Scientific Equipments Private Limited produces the Friction Loss In Pipe apparatus in Ambala, Haryana, marketing it under its ScienceLab trade name to colleges and training institutions. More about the company is on our company profile.

Rela

Other