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Product Name :

Pelton Wheel (Turbine)

Product Code :

SLE/EFM/05



Science Lab
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Description :

The **Pelton Wheel (Turbine)** (Product Code: SLE/EFM/05) is an impulse turbine with tangential flow: a jet of water from a variable spear nozzle strikes a ring of paired buckets and drives the wheel round. A clear viewing window on the side lets students see exactly how the jet andbuckets interact. Built by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, it isdesigned as lab equipment for college and polytechnic hydraulics courses studying high-pressure, low-flow machines.

Specifications

Parameter	Detail
Turbine type	Impulse turbine, tangential flow
Inlet	Variable spear jet
Buckets	Arranged in pairs to balance the wheel correctly and work efficiently
Viewing	Clear viewing window on the side of the turbine
Best suited to	Applications with high pressure and low flow

Typical Use

The variable spear jet is the key teaching control. Moving the spear changes the jet, and with itthe velocity of the water hitting the buckets, so students can explore how jet speed, wheel speed and power output relate. A standard exercise records output across a range of wheel speeds at a fixed spear setting and then repeats the run at another setting, revealing that the wheel performs best when its bucket speed is a particular fraction of the jet speed — a result students can compare with impulse-momentum theory.

Watching through the side window, the class sees the jet split by each pair of buckets and turned back on itself, which explains why the buckets are paired: the split keeps side forces balanced and allows the water to leave with little remaining energy. Pelton wheels suit mountain hydro schemes with high heads and modest flows, so for vocational training lab equipment in India this turbine connects classroom theory with real installations. Contrasting it with a Francis reaction turbine rounds off the topic.

Manufacturer

Jain Scientific Equipments Private Limited manufactures the Pelton Wheel at Ambala in Haryana and sells it under the ScienceLab trading name to engineering and science teaching institutions. Learn more on our company profile.

Related Fluid Mechanics Equipment

Apparatus that fits the same turbine and jet-flow lessons:

- Francis Turbine — a reaction turbine to contrast with the impulse principle