

PELTON WHEEL TURBINE TEST RIG (EE-1547)

The present set-up consists of a runner. The buckets are mounted on the runner. The water is fed to the turbine, through brass nozzle with a SS spear, by means of Centrifugal Pump, tangentially to the runner. Flow of water into turbine is regulated by adjusting the spear position by the help of a given hand wheel. The runner is directly mounted on one end of a central SS shaft and other end is connected to a brake arrangement. The circular window of the turbine casing is provided with a transparent acrylic sheet for observation of flow on to the buckets. This runner assembly is supported by rigid MS structure. Load is applied to the turbine with the help of this brake dynamometer so that the efficiency of the turbine can be calculated. Pressure gauge is fitted at the inlet of the turbine to measure the total supply head to the turbine.

EXPERIMENTATIONS:

- To study the operation of Pelton Wheel Turbine.
- To determine the Output Power of Pelton Wheel Turbine.
- To determine the Turbine Efficiency.

UTILITIES REQUIRED:

- Water Supply and Drain.
- Electricity 440V AC, Three Phase.
- Floor Area 1.5 x 0.75m.



TECHNICAL DETAILS:

- Output Power : 1 HP
- Discharge : 300, LPM(Approx)
- Speed : 1200
- Supply Head : 30 meters
- Impeller : Bucket type (12 Nos.)
- Nozzle : Material Stainless Steel.
- Spear : Material Stainless Steel.
- Dynamometer : Rope Brake type, Dia 200 mm (CI drum)
- Sump Tank : Capacity 200 Ltrs.
- Water Circulation : Centrifugal Pump, Capacity 5 HP, Three Phase.
- Discharge Measurement : Orificemeter with pressure gauge
- Control panel Comprises of:
 - L&T make DOL Starter, Mains Indicator, etc.
- An ENGLISH instruction manual will be provided along with the apparatus
- The whole set-up is well designed and arranged in a good quality painted structure.