

**Product Code . JL-HM-10034**

## Kaplan Turbine Test Setup



### Description

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#### Kaplan Turbine Test Setup

##### **Description:-**

This turbine is suitable for low head.

The power produced by a turbine is proportional to  $QH$ . As the head ( $H$ ) decreases the discharge ( $Q$ ) must increase to produce the same power.

The present Set-up consists of a scroll casing housing a runner.

Water enters the turbine through the stationary guide vanes and passes through the runner axially.

The runner has a hub and airfoil vanes, which are mounted on it.

The water is fed to the turbine by means of Centrifugal Pump.

The runner is directly mounted on one end of a central SS shaft and other end is connected to a brake arrangement.

A transparent hollow cylinder made of acrylic is fitted in between the draught tube and the casing for observation of flow on to the airfoil vanes.

This runner assembly is supported by thick cast iron pedestal.

Load is applied to the turbine with the help of this brake arrangement so that the efficiency of the turbine can be calculated.

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The Set-up is supplied with control panel. A draught tube is fitted on the Outlet of the turbine.

The Set-up is complete with guide mechanism.

Pressure and Vacuum Gauge are fitted at the Inlet & Outlet of the turbine to measure the total supply head on the turbine.

### **Experiment:-**

To study the operation of a Kaplan Turbine

To determine the Output Power of Kaplan Turbine

To determine the Turbine Efficiency

Utilities Required:-

Water Supply and Drain.

Electricity 15 kW, 440V AC, Three Phase.

### **Technical Specifications:-**

<b>MODEL</b>	<b>HM 109 (1.33 HP)</b>	<b>HM 109 (5 HP)</b>
Output Power	1.33 HP / 1 Kw	5 HP / 3.75 Kw
Discharge	1500 LPM (Approx.)	5000 LPM (Approx.)
Supply Head	5 m	5 m
Rope Brake Dynamometer	Dia 200 mm	Dia 300 mm
Sump Tank	Capacity 300 Ltrs.	Capacity 600 Ltrs.
Water Circulation Centrifugal Pump	Capacity 7 HP, Three Phase	Capacity 20 HP, Three Phase
Speed	1500 RPM (approx.)	
Runner	With adjustable Curved Vanes	
Discharge Measurement	Pitot Tube with Manometer	
Control Panel	Star/Delta Starter, Mains Indicator, MCB for overload protection	