

## **FRANCIS TURBINE TEST RIG**

The present set up consists of a runner. The water is fed to the turbine by means of Centrifugal pump, radially to the runner. The runner is directly mounted on one end of a central S.S. shaft and the other end 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 runner. The runner assembly is supported by thick cast iron pedestal. Load is applied to the turbine with the help of brake arrangement so that the efficiency of the turbine can be calculated. A draught tube is fitted on the outlet of the turbine. The test set up is complete with guide mechanism. Pressure and Vacuum gauges are fitted at the inlet and outlet of the turbine to measure the total supply head of the turbine.

### **SCOPE OF EXPERIMENTATION :**

- ) To study the operation of a Francis Turbine
- ) To determine the output power of the Francis Turbine
- ) To determine the Turbine efficiency

### **UTILITIES REQUIRED**

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



### **TECHNICAL DETAILS**

- ) Output Power : 1HP/ 0.75 kW
- ) Discharge : 1200, LPM(Approx)
- ) Runner : Having Curved Vanes.
- ) Dynamometer : Rope Brake type, Dia 200mm.
- ) Sump Tank : Capacity 200 Ltrs.
- ) Water Circulation : Centrifugal Pump, Capacity 3 HP, Three Phase
- ) Discharge Measurement : Pitot Tube with Manometer.
- ) Control panel Comprises of:  
Standard make star/delta Starter, Mains Indicator, MCB for overload protection.
- ) Tanks will be made of Stainless Steel.
- ) The whole set-up is well designed and arranged in a good quality painted structure.