



P6290 FRANCIS TURBINE SET

The power generated is absorbed by a disc brake system and measured by a 0-50N spring force balance. The flow of water to the turbine runner is contorted by a ring mechanism which operates guide vanes, the relative position of which determines the amount of water passing to the runner.

In addition to the plexiglass end cover of the turbine case, the turbine discharge bend and draft tube are also made of transparent plexiglass.

EXPERIMENTAL CAPABILITY

The following experiments may be carried out:

- ◆ Turbine power output versus speed and flow rate at various heads.
- ◆ Effect of guide vane setting on turbine performance.

DESCRIPTION

Cussons P6290 Francis Turbine test set comprises a sump tank and centrifugal pump driven by a close coupled electric motor mounted on a welded steel frame fitted with castors. The Francis (reaction) turbine assembly is mounted on the top of the frame together with a panel carrying a bourdon tube pressure gauge (0-2 bar) which measures the turbine inlet head and a push button starter for the pump motor.

Water is pumped from the tank to the turbine inlet via a variable area flowmeter (2-20m³/hr) and a hand valve is used to regulate the flow/turbine inlet head.

The spent water exhausted from the turbine is discharged back to the tank and a tank drain valve is provided.

The turbine case is made in bronze featuring a plexiglass, full diameter end cover providing an observation window through which the student can see the guide vane mechanism in operation.

SPECIFICATION

Speed (N) at maximum efficiency: 2400 rpm.

Head at maximum efficiency: 12 metres

Flow rate at maximum efficiency: 215 litres/min

Maximum efficiency: 65%

Power output:

0.26 kW (max. efficiency)

0.30 kW (max. power)

Motor/Pump Unit:

300 litres/min at 15m,

380/415V, 50Hz, 3 phase, 1.5 kW

Sump Tank Capacity: 305 litres

ADDITIONAL ACCESSORIES

P4740 Digital Tachometer

SERVICES REQUIRED

Suitable for 380/415V, 50Hz, 3 phase, other voltages on request

SHIPPING DETAILS

Case size: 130 x 107 x 170 cms

Weight: 200 Kg nett, 280 Kg gross