



#### Features:

- Francis runner surrounded by 6 guide vanes inside PVC volute with clear acrylic front panel for visualization
- Guide vanes adjustable when a turbine is running with scale to indicate the degree of opening and clamp to prevent movement
- Francis runner 60 mm diameter with 12 blades
- Brake force determined using Prony type brake dynamometer
- Inlet pressure gauge with range 0 to 2 bar
- Educational software as an option

Tesca Demonstration Francis Turbine is a tapering, spiral-shaped volute that conveys water to the runner via a ring of guide vanes that are adjustable in angle to vary the flow through the turbine. Water enters the runner tangentially at the periphery, flows radially inwards through the blades towards the hub then exits axially via a draft tube.

The power generated by the turbine is absorbed by a Prony friction brake consisting of a pair of spring balances attached to a brake belt that is wrapped around a pulley wheel driven by the

runner. The load on the turbine is varied by tensioning both spring balances which increases the friction on the pulley wheel. Brake force is determined from the difference in the readings on the two spring balances and the torque calculated from the product of this force and the pulley radius.

The head of water entering the turbine is indicated on a Bourdon gauge and the speed of rotation is measured using a non-contacting tachometer (not supplied).

#### Specifications:

**Speed range:** 0 to 100

**The diameter of Francis runner:** 60 mm

**A number of blades on runner:** 12

**A number of guide vanes:** 6 (adjustable from fully open to fully closed)

**Range of spring balances:** 0 to 10 N x 0.1N

**Range of Bourdon gauge:** 0 to 2 bar

#### Services Required:

Mains power supply: 220-240V, 1Ph, 50Hz

Note: Specifications are subject to change.

#### **Tesca Technologies Pvt. Ltd.**

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