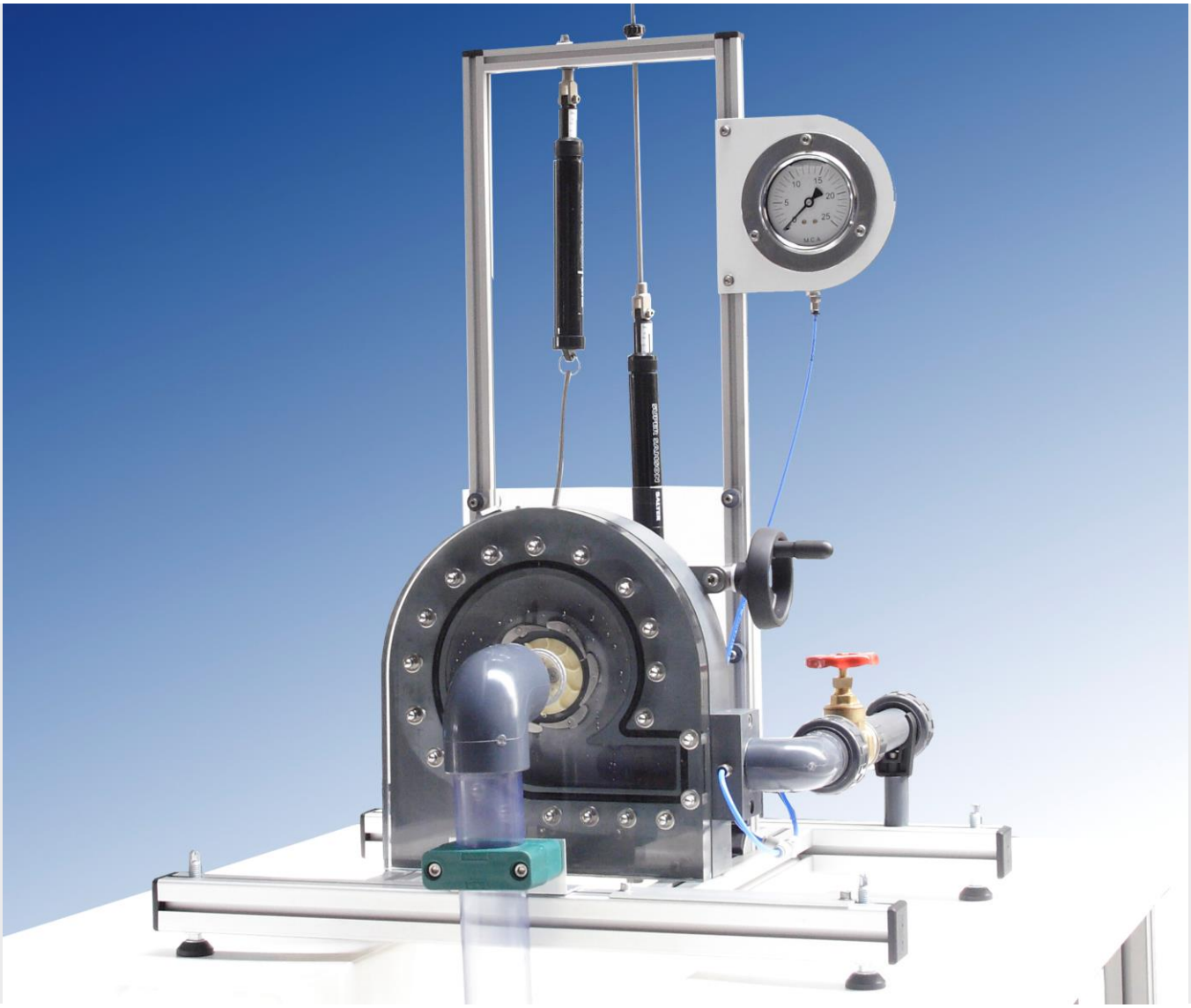
TH 01.2 - FRICTION BRAKE FRANCIS TURBINE



The TH 01.2 equipment simulates a small-scale installation with a Francis turbine. It is designed with an emphasis on teaching aspect of it, being able to observe at all time the operation of the system and the different components that constitute it.

Among its most notable features we might mention that the turbine housing is transparent so the aid you can see how the water flow turns the wheel. In this case, besides the rotation of the wheel, the movement of the fins guide the distributor with which the flow regulation turbine inlet is achieved is also observed. Additionally, the student can visualize the impact of the fluid on the blades, besides being able to make the necessary data gathering to perform the practices successfully.

It provides a regulating valve of water inlet, which allows working with different flows as required, making it possible to perform many tests as they are needed. The pressure at the inlet of the turbine is also known as measured by Bourdon gauge included in the team and whose management is specified in the manual itself not to lead to errors in the readings.

Furthermore, the braking system by dynamometers allows working at different speeds according to the braking force, which can be easily known through dynamometers that are incorporated in the teaching equipment.

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LEARNING OBJECTIVES

Some of the practices that can be performed are:

- Turbine characteristic curves with H and Q constant.
  - Torque - speed (M-n).
  - Brake power - speed (Pe- n).
  - Performance - speed (η- n).
- Iso-performance curves.

TECHNICAL DATA

Pressure gauges:

- Bourdon type with glycerin 0-25 m.c.a.

Braking type:

- Braking with Friction Brake.

Dynamometer:

- Dynamometer 2 kg x 10 g.

Turbine features:

- 60 mm impeller diameter.
- Material: Resin.
- Number of fixed blades 12.
- Number of guide vanes 6 (adjustable from 0 to 100%).
- Rated speed 2000 r.p.m.

Dimensions of the equipment:

- Width x length x height: 580 x 530 x 700 mm.

REQUIREMENTS

- Hydraulics Bench FL 01.4, 01.5 FL, FL 01.6.

* For the measurement of the rotation speed is required tachometer or stroboscope.

NOTE

The image shown is indicative.