



HYDROELECTRIC POWER TRAINER



DL HYDRO-EL

TRAINING OBJECTIVES

- characteristic curves of the turbine (torque-speed, brake power-speed, performance-speed, torque-voltage, brake power-voltage, efficiency-voltage)
- curves of iso-efficiency
- efficiency of the turbine-electric generator system

The system is designed for the study and display of both the behavior and the characteristics of a Pelton turbine.

The turbine housing is transparent so as to show how the turbine uses the inertia produced by a water jet.

Through the different indicators of the system, it is possible to visualize all the variables related to the transformation of energy. The braking device by means of an electric brake allows working at different speeds in a simple and effective way.

TECHNICAL DATA

Diameters:

- Impulse piping $\varnothing_{\text{external}} = 32 \text{ mm}$.
- Inlet piping $\varnothing_{\text{internal}} = 10 \text{ mm}$.

Manometers:

- Bourdon type with glycerine 0 to 25 m.w.c.

Characteristics of the electric brake:

- DC generator
- Rated speed: 3000 rpm
- Rated power: 1000 W

Characteristics of the turbine:

- Number of blades: 16.
- Diameter of the rotor: 124 mm.
- Depth of the buckets: 14 mm.
- Diameter of the jet flow: 10 mm.
- Diameter of the axis: 16 mm.
- Rated speed: 1000 rpm

More data:

- Speed sensor
- Load cell
- Electronic displays



Necessary accessory:

DL DKL014 – Hydraulic bench

The basic hydraulic bench is a simple, mobile, self-contained module that allows a supply of "hydraulic energy", i.e., an accurately controlled and measurable flow of water.

It includes two collecting tanks, a centrifugal pump, a flowmeter, a mobile framework on wheels, a set of valves and piping.

