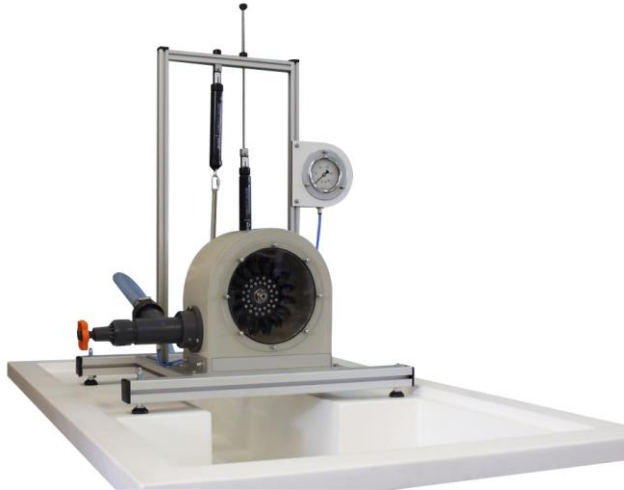




## PELTON TURBINE - BRAKE FRICTION



**DL DKH011**

This trainer can simulate a small scale Pelton turbine, especially designed for educational purposes. It grants the possibility to constantly observe the system operation and its main components.

The turbine housing is partially transparent so that students can see how the turbine uses the inertia transferred by a water jet. The water jet propels the turbine thanks to the recoil principle.

It includes several adjustable components that allow the changing of the parameters which can affect the mechanism. The system has a built-in regulating valve of the water inlet allowing the functioning with different flows, as required.

The braking system is composed of dynamometers that allow the running at different revolutions according to the braking force exerted.

### TRAINING OBJECTIVES

- Characteristic curves of the turbine:
  - Torque - speed ( $M-n$ )\*.
  - Brake power – rotational speed ( $P_e-n$ )\*.
  - Performance – rotational speed ( $\eta-n$ )\*.
  - Torque - U ( $M-U$ ).
  - Brake power - U ( $P_e-U$ ).
  - Performance - U ( $\eta-U$ ).
- Curves of Iso-yield.

For speed measure, a tachometer or stroboscope is required (not supplied)

### TECHNICAL DATA

Manometer:

- Bourdon with glycerin 0-25 M WC

Brake Type:

- Friction Brake.

Turbine

- Type: Pelton.
- Number of blades: 16.
- Impeller diameter 124 mm.
- Bucket depth 14 mm.
- Jet diameter 10 mm.
- Shaft diameter 16 mm.
- Rated speed 1.000 rpm

Dynamometers

- 2 x dynamometers: 5kg x 25g

Inner diameters:

- Discharge pipe: Outer  $\varnothing=32\text{mm}$
- Suction pipe: Inner  $\varnothing=10\text{mm}$



# FLUID MECHANICS

## **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 frame work on wheels, a set of valves and piping.

