

Product Name :
Demonstration Francis Turbine

Product Code :
CHINAELABC2590009



Description :

Demonstration Francis Turbine

Technical Specification :

The experimental unit consists of the Francis wheel, the control device with adjustable guide vanes, a band brake for loading the turbine and a housing with a transparent front panel. The transparent cover enables you to observe the water flow, the wheel and the guide vanes during operation. Operating Principle of a Francis Turbines the model of a Francis turbine demonstrating the function of a reaction turbine.

Adjusting the guide vanes modifies the angle of incidence and thus the speed of the impeller.

Water turbines are turbo machines utilizing waterpower.

The Francis turbine is part of the reaction turbines, which convert the pressure energy of the water into kinetic energy in the control device and in the impeller.

The water is fed in the control device by means of a spiral housing.

The flowing water is accelerated in the control device by the adjustable guide vanes and directed onto the vanes of the impeller.

The redirection and further acceleration of the water in the impeller generates an impulse, which is transmitted to the Francis wheel.

The turbine torque is determined by force measurement on a band brake and is read on spring balances.

For measuring the rotational speed, a non-contact speed sensor, A manometer shows the water pressure at the turbine inlet.

FEATURES:

Design and function of a Francis turbine

Determination of torque, power and efficiency

Graphical representation of characteristic curves for torque, power and efficiency
Determination of mechanical output
Determination of efficiency
Recording of characteristic curves
Investigation of the influence of the guide vane position on the power output
Velocity triangles

SPECIFICATION:

Turbine:

Output: approx. 350W at 1500min⁻¹, 270L/min, H=15m

Max. Speed: 3000min⁻¹

Rotor:

11 blades

Medium diameter: 60mm

Measuring ranges:

Torque: 0...9,81Nm

Pressure: 0...4bar abs.

Speed: 0...4000min

Distributor:

7 vanes

Angle of attack: 0...20°



Engineering Lab China