

Action Turbine Experimental Model

Overview

The action turbine is an additional unit which is attached to the base Unit for Turbines trainer. The unit allows the study of the operating behavior of an action turbine and deriving its characteristic variables.



Specifications

- The educational unit is placed on the base unit for turbines and the two units together provide the basic experiments to determine the operating behavior and the most important characteristic variables of action turbines.
- The educational unit consists of a rotor, mounted in a transparent housing, a distributor with four nozzles and a loading device outside of the housing.
- The water jets are discharged at high velocity from the four nozzles of the distributor.
- The eddy current brake generates a defined load. The eddy current brake is specially developed by Bedo. It is wearfree and can be finely adjusted.
- The torque delivered by the turbine is determined via an electronic force sensor.
- The speed is measured with an optical speed sensor.

- The measuring values are transferred to the base unit for turbines.
- The water supply and the flow rate measurement are realized with the base unit for turbines.

- The pressure sensor included in the base unit for turbines enables the recording of characteristics at a constant head

Experiments

- Principle of operation of an action turbine
- Characteristic curves at constant head
 - » Relationship between torque and speed
 - » Efficiency dependent on speed
 - » Flow rate dependent on speed

- » Hydraulic power and mechanical power depending on speed
- Evaluation of measuring values and characteristics based on the theory
- Partial load behavior with controlling the number of nozzles in comparison to throttle control

Technical Data

- Diameter : 120 mm
- Torque: 05Nm
- Speed : 0.....3000 min-1

Scope of Delivery

- Action Turbine Experimental Model (FR - 004)
- Hard copy user manual

Options

- Digital Content (BI-01)

Required for operation

- Turbines Main Unit (FR - 001)