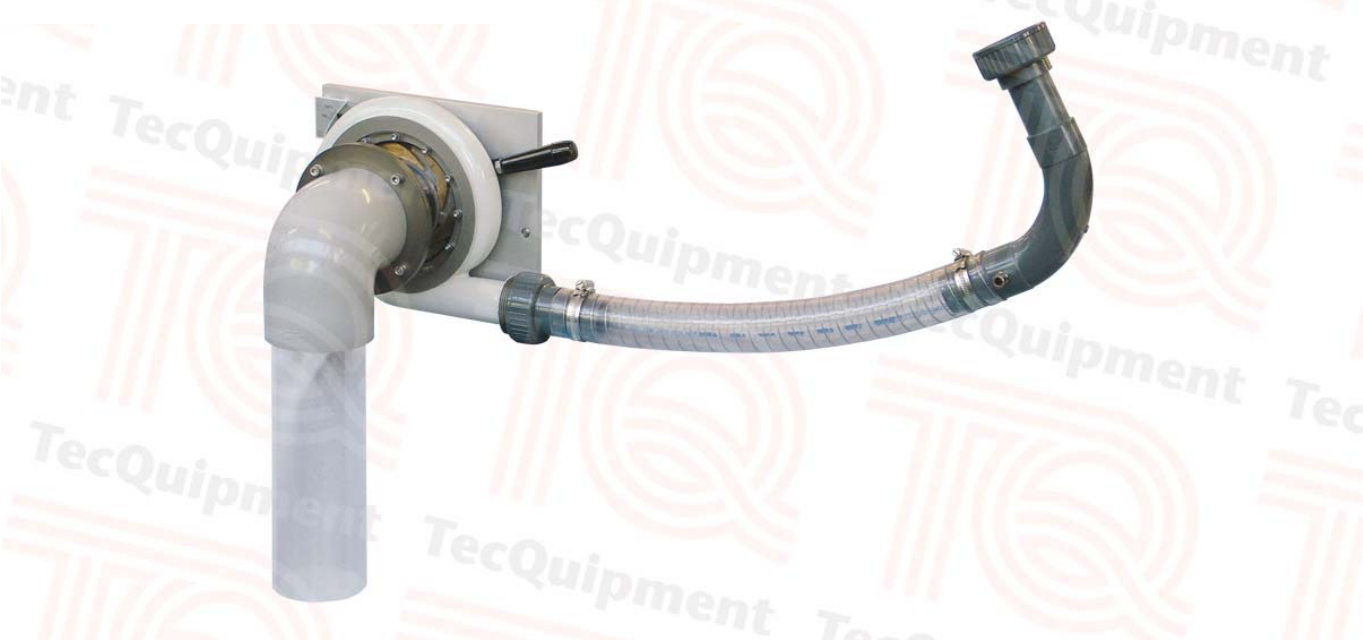
MFP101c

Propeller Turbine

Turbine for use with the Centrifugal Pump Module (MFP101)



- Optional turbine that fits on the Turbine Dynamometer (MFP101a) of the Centrifugal Pump Module (MFP101)
- Inward flow reaction turbine
- Four-blade propeller
- Fully adjustable guide vanes
- Clear viewing window around the guide vanes
- Flexible inlet pipe with inlet pressure tapping

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Description

The Propeller Turbine is an inward flow reaction turbine, similar to a Kaplan design, but with fixed blades. It is a very common turbine and works best with high flow rates. Its moving part (runner) is a propeller, similar to those that push ships and submarines through water.

The turbine has adjustable guide vanes that control the water flow in the turbine. They also direct the water at an angle to the back of the propeller. Students learn how the guide vane setting affects how the turbine works. The turbine has a clear viewing window around the guide vanes and a clear draft tube so that students can see the turbine working.

Standard Features

- Five-year warranty
- Made in accordance with the latest European Union directives

Experiments

- Variation of turbine performance with inlet pressure and flow rate
- Variation of turbine performance with speed
- Non-dimensional performance characteristics

Essential Base Unit

- Centrifugal Pump Module (MFP101) (with Universal Dynamometer MFP100)

Essential Ancillary

- Turbine Dynamometer (MFP101a)

Operating Conditions

Operating environment:
Laboratory

Storage temperature range:
–25°C to +55°C (when packed for transport)

Operating temperature range:
+5°C to +40°C

Operating relative humidity range:
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

Specifications

Nett dimensions and weight:
320 mm x 420 mm x 310 mm and 11 kg

Other features:

- 150 mm brake drum to fit in the Turbine Dynamometer
- Flexible inlet pipe with inlet pressure tapping.
- Four-blade propeller - 20 degree blade angle
- Six guide vanes - adjustable from 0 to 100%
- Maximum shaft power - Approximately 30 W