

**FM  
SERIES**

**Reaction Turbine – FM61**

A small-scale reaction turbine unit which is designed to be used in conjunction with the FM6X service unit. A reaction turbine uses the momentum transferred from the reaction of a jet of water leaving a nozzle to generate power.



**Description**

The FM61 consists of an inlet manifold which supplies water to a central hub. Water exits the hub radially through two square orifices.

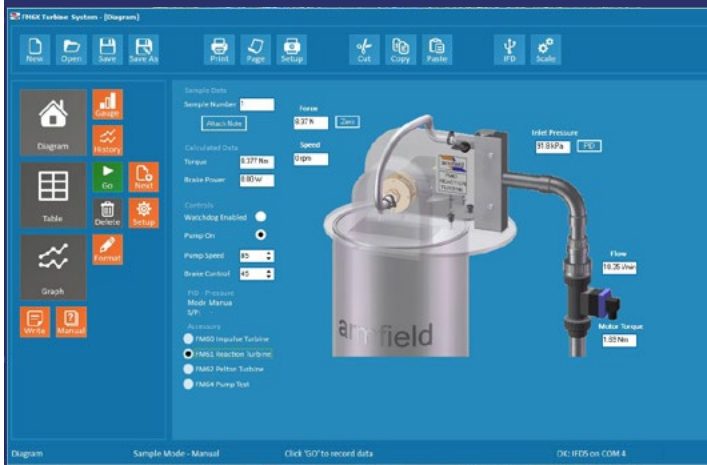
The hub is connected to the manifold using a graphite face seal. The turbine is mounted on a horizontal shaft with a clear acrylic splash guard to enable maximum visibility of the workings.

The unit incorporates a pressure sensor to measure the inlet condition of the water. This pressure can be accurately controlled using the software supplied with the service unit.

**Demonstration capabilities**

- ▶ Determining the characteristics of the Reaction Turbine, including the relationships of:
  - volume flow rate
  - head
  - torque produced
  - power output
  - efficiency to rotational speed

**Software screen shot**



**Software**

The ArmSOFT software enables the operator to control the pump speed 0 to 100%. Feedback from the sensors is then displayed in real time for the end user with simultaneous data logging.

The data trend is also displayed graphically in real time and can be exported to another platform such as Excel for further analysis.

**Requirements**

**Scale**



- ▶ FM6X
- ▶ Armfield IFD7
- ▶ Software requires a computer running Windows XP or above with a USB port (computer not supplied by Armfield)

**Technical specifications**

Maximum power:	25W
Maximum speed:	8,000rpm
Maximum torque:	0.12Nm
Pressure Sensor:	0 to 100psi
Inlet nozzle:	10mm

*Two year warranty on this product*

**Overall dimensions**

Length	0.56m
Width	0.18m
Height	0.29m

**Packed and crated shipping specifications**

Volume	0.20m <sup>3</sup>
Gross weight	20kg

**Ordering specification**

- ▶ Small scale hydropower unit designed to demonstrate the operating principles of a reaction turbine
- ▶ Horizontal shaft and transparent guarding enable excellent visibility
- ▶ Mounts on a dedicated service unit
- ▶ Connects to a PC via the service unit and a USB interface device
- ▶ Software compatible with Windows XP through to Windows 10

**Ordering codes**

- ▶ FM61
- ▶ FM6X
- ▶ IFD7-A: 220-240V / 1Ph / 50Hz
- ▶ IFD7-G: 220-240V / 1Ph / 60Hz