

HT 703 MULTI TURBINE TEST SET

GENERAL DESCRIPTION

This is a self contained set of three different types of turbine namely-Pelton, Francis, Cross Flow, designed for studying the turbine characteristics under various flow rates and heads.

The unit consists of a pump and a storage tank, turbine units connected in parallel, a dynamometer for each turbine, and measuring instruments. The unit is on wheels.

Instruction manual is also included.



Photograph includes optional equipment

EXPERIMENT CAPABILITIES

Each turbine can be tested on the following:

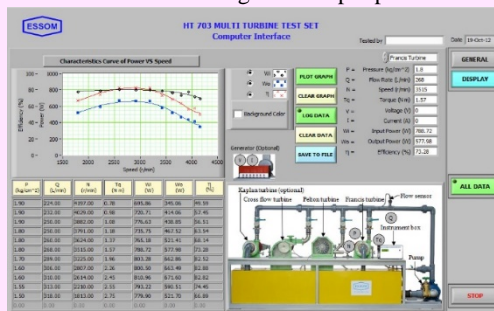
- Torque vs speed at various heads and flow rates.
- Power output vs speed for various heads and flow rates.
- Efficiency vs speed for a given head and flow rate.
- Racing characteristics.

TECHNICAL DATA

- Pelton turbine:
 - Construction : Stainless steel runner, nozzle
 - : Stainless steel casing with transparent window to observe hydraulic action.
 - Ratings : Over 400 W of brake power
- Francis turbine:
 - Construction : Bronze runner
 - : Non corrosion metal casing with adjustable guide vanes and transparent window to observe guide vane position.
 - Ratings : Over 400 W of brake power.
- Cross Flow turbine:
 - Construction : Stainless steel runner and nozzle
 - : Stainless steel casing with transparent window
 - Ratings : Over 400 W of brake power
- Pump ratings
 - Motor : 2.2 kW
- Dynamometer : Water cooled mechanical brake absorber with anti splashing system.
- Measuring instruments
 - Torques : Spring balances
 - Pressures : Pressure gauges at turbine inlets
 - Sensors with digital display : Speed for each turbine
 - : Flow rate
- Software for data display and analysis by computer (separately supplied).
- Power supply : 220 V, 1 Ph, 50 Hz. Other power supply is available on request.

OPTIONAL EQUIPMENT

- HD160SA Water brake absorber instead of mechanical brake absorber.
- HP 003 Advanced inverter for controlling and indicating motor speed as well as for calculating motor input power. Hence pump efficiency at various speeds can be determined.
- HP 011 Pressure digital display.
- HP 012A Torque digital display instead of spring balance.
- HT 011 Electric generator with voltage and current digital display and lamp loads.
- HT 703-050 Computer Interface
 - Sensors with computer interface unit for key data acquisition instead of analog data measuring instruments.
 - This includes computer interface unit with torque and pressure sensors instead of spring balances and pressure gauges.
- HT 703-603 Kaplan turbine unit capable of generating over 400 W of brake power, metal runner, non- corrosion metal casing with adjustable guide vanes, transparent window and runner section, water brake absorber, spring balance, speed sensor and pressure gauge.
- Other optional equipment, please contact manufacturer (essom@essom.com)



Net (unpacked) Shipping Dimensions WxLxH : 96 x 280 x 150 cm
Net Weight : Approx. 380 kg

