

## HP 405B COMPACT MULTI PUMP TEST SET, Inverter Speed Control



### GENERAL DESCRIPTION:

This is a compact self-contained bench top set for studying the characteristics for various types of pumps.

The unit consists of four different types of pump namely-centrifugal, turbine, reciprocating and axial flow pumps and a common storage tank, measuring instruments. Speed control is by an advanced inverter. By manipulating flow control valves and a selector switch, each pump can be operated individually.

Instruction manual is also included.

### EXPERIMENT CAPABILITIES:

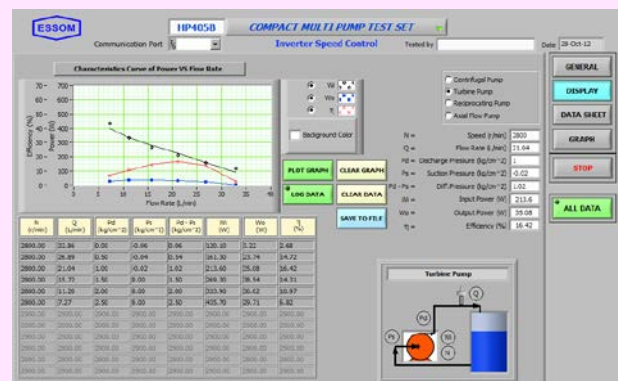
- Flow rate vs head at various speeds.
- Pump input, output, and overall efficiency at various speeds.
- Effect of flow chamber for reciprocating pump.

### TECHNICAL DATA:

- Pumps ratings:
  - Centrifugal pump and motor with maximum flow rate 80 Lpm and maximum head 18 m water
  - Turbine pump and motor with maximum flow rate 30 Lpm and maximum head 30 m water
  - Reciprocating pump and motor with reduction gear, maximum flow rate 15 Lpm at 300 rpm and maximum head 30 m water
  - 69 mm in axial flow pump and motor with metal impeller, guide vanes, shaft and casing, maximum flow rate 400 Lpm and maximum differential head 1.5 m water
- Reciprocating pump accessories : Pulse chambers with discharge isolating valve  
: Pressure relief valve
- Speed control : Advanced inverter for controlling and indicating pump speed as well as for calculating motor input power alternatively by selector switches.
- Motor for all pumps
- Selector switch : For operations of each pump alternatively
- Measuring instruments
  - Flow rates : Water meter and stop watch for centrifugal, turbine and reciprocating pumps
  - Pressures : Pressure gauge for centrifugal, turbine and reciprocating pumps at common suction and outlet  
: Differential pressure gauge for axial flow pump
  - Pump speed and motor input power : Advanced inverter
  - Sensors with digital display : Flow rate for axial flow pump
- 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:

- HF 032A Differential pressure digital display instead of differential pressure gauge
- Mercury manometer for axial flow pump instead of differential pressure gauge  
**Note:** Due to transport laws, mercury cannot be supplied. Buyer must source it locally.
- HP 010A Flow digital display instead of water meter and stop watch
- HP 011 Pressure digital display
- HP 405-011 Additional pressure gauges for individual pump
- HP 405-030 Additional centrifugal pump, a pressure gauge, and other accessories for series and parallel pumps operation.
- HP 405B-050 Computer Interface  
Sensors with computer interface unit for key data acquisition instead of analog data measuring instruments.  
This includes computer interface unit with a flow sensor instead of a water meter, differential pressure sensor and pressure sensors instead of pressure gauges.
- Two stage centrifugal pump or other pump combinations can be arranged on request.
- Other optional equipment, please contact manufacturer (essom@essom.com)



**Net (unpacked) shipping dimensions WxLxH**  
**Net weight**

: 85 x 145 x 93 cm  
: Approx. 160 kg

