

## VARIABLE SPEED SERIES AND PARALLEL PUMPS



### Experimental capabilities

- Study of 2 centrifugal pumps with identical characteristics
- Study of the QH curves of the pumps
- Study of serial coupling
- Study of parallel coupling
- Study of network curves
- NPSH study
- Plot of the characteristic curve at different rotational speeds
- Determination of the efficiency of electricity consumption / hydraulic power
- Study of the efficiency of a pump

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As part of the continuous improvement of our products, this technical specification may be modified without previous notifying

## Operating principle

The BCP204 bench allows the study of centrifugal pumps of the same characteristics.

It is equipped with two pumps; the latter can be studied alone, coupled in series or in parallel. Students will select different couplings and measure the following characteristics: flow rate, suction pressure, discharge pressure, rotational speed electrical power for different operating points.

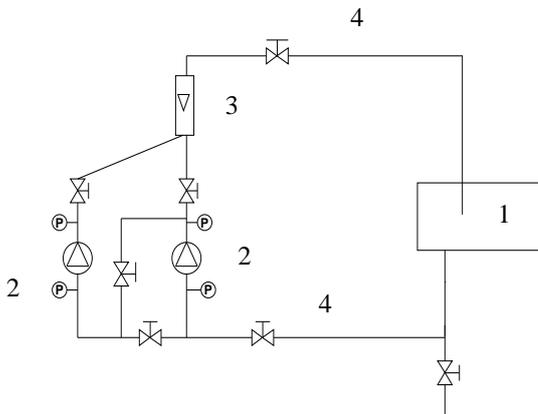
The bench comprises a vessel to permit work load and the pumps allowing for circulating of water in the circuit.

The robust design of this equipment makes it perfectly suited for school use.

Its anodized aluminum structure on wheels makes it very robust as well as a great flexibility of integration into your premises.

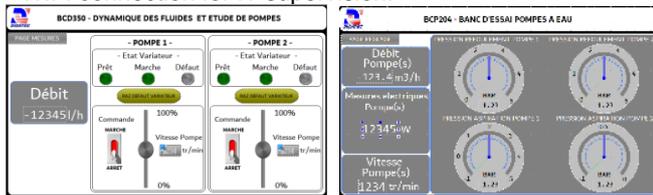
The manufacture of this equipment meets the European machine directive

## Illustrations



### Control panel

- With the elements necessary for the proper functioning and safety of the equipment.
- Mushroom stop, differential 30 mA ...
- Pump rotation speed adjustment potentiometer on the control touch screen.
- Electric power and pump rotation speed indicators on the touch screen.
- 7 "supervision screen with synoptic, pressure gauge page and real-time measurement history recording.
- WIFI connection for IT supervision.



## Technical details

### 1- Beige plastic feed tank

- Volume: 100 L
- Lateral indication of the emptying level

### 2- Pumps

- Stainless steel cast body
- Stainless steel axle
- Stainless steel impeller
- 7.2m<sup>3</sup> / h, Hmt 24m, 2900 rpm, 0.55 kW

### 3- Electromagnetic flowmeter

- Scale: 0-300L / min

### 4- Circuits

- PVC pipes and valves
- Diaphragm flow adjustment valve on delivery
- Graduated butterfly type adjustment valve on suction
- A set of valves for series / parallel coupling

### P: Measurement of pump pressures

- 4 pressure sensors
- 2 at aspiration
- 2 at discharge

### Inverters

- Electronic speed controller
- Instructions via the touch screen

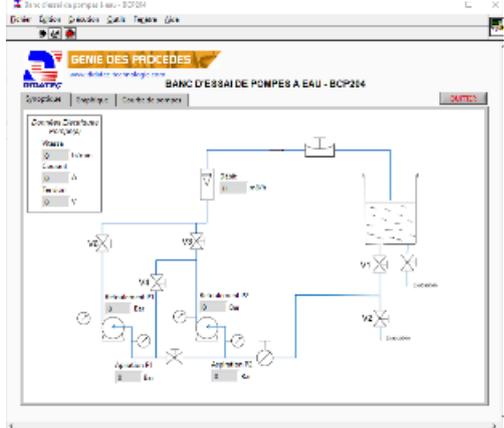
### Rotation speed

- Pump rotation speed indicator on the touch screen

### Electric power

- Power indicator used by the pump (s) in operation on the touch screen

## Options (not included)

<p>BCP205</p>	<p>Transparent plastic flange for visualization of the phenomenon of cavitation on a pump This option involves changing the original pump with the following characteristics:</p> <ul style="list-style-type: none"><li>- Flow rate of 10 m<sup>3</sup> / h</li><li>- Height of 12m</li><li>- Speed of 2900 rpm</li><li>- Power 0.75 kW</li></ul>	
<p>BCP206</p>	<p>Data acquisition software</p> <ul style="list-style-type: none"><li>-communication by WIFI</li><li>-Main window with diagram and display of the data</li><li>-second window with real time graph of the data</li><li>-measurement displayed : 4 pressures, 1 flow, 2 rotational speed, 2 electrical power</li><li>-data can be saved to an excel file</li></ul>	

## Services required

## Documentation

- Electrical supply: 230 VAC – 50 Hz – 20 A
- Electrical supply type : 1 phase + Neutral + Earth
- Water supply : 100L filling of the tank
- Water drain: at ground level
- Dimensions (L x W x H mm) : 1450 x 800 x 1850
- Weight (Kg): 120

- User's manual
- Pedagogic manual
- Technical file of the components
- Lab exercises
- Wiring diagram
- Fluidic diagram
- Certificate of conformity CE

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine