

FLUID DYNAMICS UNIT AND STUDY OF PUMPS



Experimental capabilities

- Study of pressure losses in the standard line elements
- Study of regular and singular pressure losses
- Study of the serial coupling of two pumps
- Study of the coupling of two parallel pumps
- Study of the relation Flow rate / Pressure for a centrifugal pump
- Test pressure of completion student

SAB100



Operating principle

The SAB 100 bench allows the study of pressure losses on different piping components (different \varnothing of lines, elbows ...) connectable on the bench.

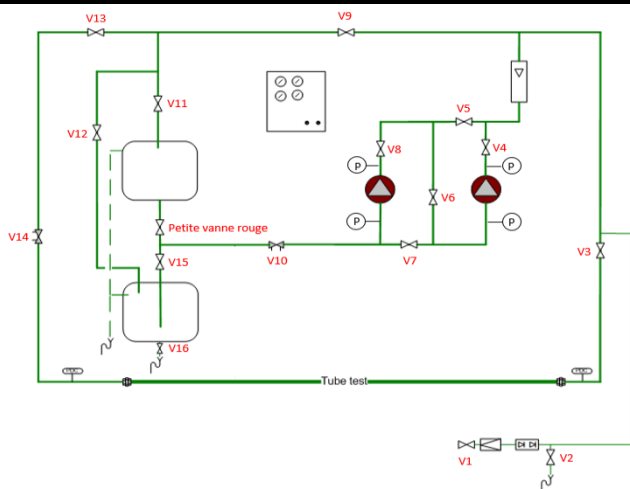
Two pumps suck the water contained in a tray in charge or in suction and sends it in the closed hydraulic circuit comprising all the components. It is equipped with two electronic pressure sensors located upstream and downstream of the line to be studied. The bench is equipped with a precision flow meter that allows to study the relation between flow rate and pressure losses on each element.

It also allows the study of pumps of the same characteristics that can be studied alone, coupled in series or in parallel. Users should select different couplings and measure the following characteristics: flow rate, suction pressure, and discharge pressure for various operating points.

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

Its anodized aluminum frame on 4 directional wheels of 100 mm diameter gives it great strength as well as great flexibility of integration into your premises. The manufacturing of this equipment meets the European machine directive

Illustrations



Technical details

Two water tanks in polyethylene

Volume: 45 liters with drain system
Lateral level indicator

Circuit

Pipes made of copper and valves in stainless steel

Two circulators

Body, stainless steel wheel and axle
Q = 1.6 m³/h, Hmt = 4.5 mCE
Set of valves for association in series or parallel

Study of pressure losses on different test tubes:

- A line with pipe diameter $\varnothing = 22$
- A line with pipe diameter $\varnothing = 18$
- A line with a pipe diameter $\varnothing = 15$
- A line with balancing valve TA
- A line with pressure reducer
- A line with strainer filter
- A line with backflow preventer
- A line with 90° elbow
- A line with a 45° elbow
- A line with straight tapping
- A line with faulty straight tapping

Float flowmeter

160 – 1600 L/h

P : Manometer

4 manometers of BOURDON type
2 at suction and 2 at discharge of the circulator
Scale : (-1 / 0 bar) ; (0 / +0,6 bars) ;
(-1 / 1,5 bars) ; (0 / +1,6 bars)

Two electronic pressure sensors

Two pressure sensors are positioned in upstream and downstream of the line to be tested
Reading made on local digital display

Services required

- Power supply: 230 VAC – 50 Hz
- Water supply: 15 L/min – 3 bar (tank filling)
- Dimensions: (LxWxH mm): 1400 x 800 x 1840
- weight (Kg): 130

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

Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE

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version : FT-SAB100-STD-B