

SINGLE-STAGE AIR COMPRESSOR TRAINER



Experimental capabilities

- Study of a single-stage air compressor
- Calculation of power, efficiency, work
- Representation of compression on a T-S diagram, determination of the polytropic compression coefficient and isentropic efficiency of the compressor
- Measurement of flow rates and pressures
- Flow-pressure ratio

Operating principle

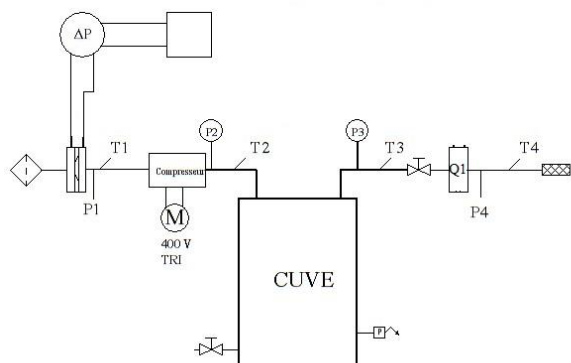
The PCB020 trainer is used to study the operating principle of a single-stage air compressor.

The robust design of this device makes it suitable for use in schools.

The equipment is set up on an Anodized aluminium frame on casters wheels. This gives it great strength and a flexibility of integration into your premises. The manufacture of this equipment complies with the European standard for machinery manufacturing.

Illustrations

Technical details



The bench is mounted on an aluminum profile frame equipped with four directional casters with brakes. It includes an electrical box with a main power disconnect switch and a 30mA residual current circuit breaker.

1. Air filter

2. Orifice plate with differential pressure measurement

3. Air compressor

- single-stage reciprocating compressor
- Construction according to CE standards
- Volume aspirated : 15 m³ / h
- Maximum pressure: 10 bars
- Electric motor with belt transmission
- Power: 1.5 kW
- Tank capacity 90L

4. Measurement of air flow by flow meter

- Automatic expansion valve for outlet pressure regulation (3 bars)
- Float flow meter
- Adjustment valve and exhaust silencer

5. Instrumentation

- 4 air temperature sensors at different points of the installation
- 4 pressure sensors
- 1 safety valves
- 1 float air flow meter
- 1 power meter
- 7 "color touch screen for temperatures, pressures and power meter measurements

Services required

Documentation

- Electrical supply : 230 Vac – 50 Hz – 16 A
- Electrical network : 1phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 1800 x 800 x 1900
- weight (Kg): 300

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

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Wiring diagram
- P&ID diagram
- Certificate of conformity CE

Options

- Data acquisition system

- Ref : PCB021