CRN300

NEGATIVE COLDROOM

Experimental capabilities

- **Identifying the components of a negative refrigeration system**
- **Commissioning and functional verification**
- **Study of the basic concept of a refrigeration system.**
- **Operation of equipment at a compression level, hermetic piston compressor, heat exchanges, powers, performance coefficients**
- **Study of the thermodynamic cycle on enthalpy diagram.**
- **Study of regulation**
- **The system has an industrial rendering**

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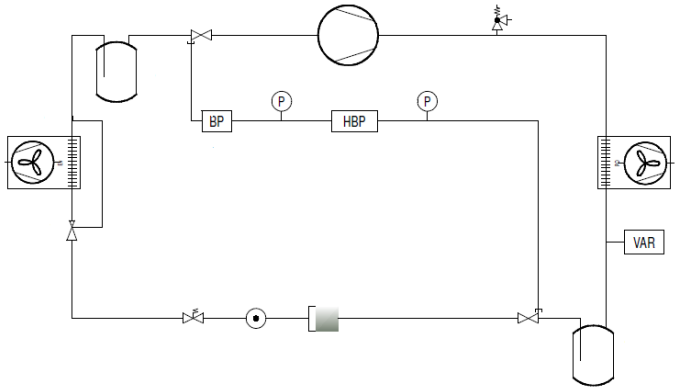
version : FT-CRN300-STD-A

CRN300

Operating principle

The negative refrigeration bench allows the study of a negative refrigeration system. The system includes all the standard components such as compressor, condenser, expansion valve, evaporator, cylinders, pressure switches.
The bench is delivered complete, assembled and functional. Students will be able to work on component identification, commissioning, adjustment and verification of proper operation. They will also be able to recover the fluid and charge (requires tools not supplied with the bench).
The rugged design of this equipment makes it perfectly suited for use in a school setting.
Its anodized aluminum structure on wheels gives it a very high robustness as well as great flexibility of integration into your premises.
The manufacture of this equipment complies with the European Machinery Directive

Illustrations



1. Hermetic compressor
Type commercial
Cooling capacity: approx. 500 W
Evaporation temperature -20°C
Maximum pressure: 32 bar

2. Air Condenser
Forced convection
Mounted on the same chassis as the compressor

3. Liquid Tank
Vertical-steel
outlet valve Ø1/4"
Capacity: 1.5 L

4. Fluid Recovery Valve
Has a seat
1/4" ∅ straight passage
Mounted on the bottle

5. Dewatering Station
Solid cartridge dehydrator Ø1/4"
Humidity indicator light Ø1/4"

Technical details

6. Solenoid Valve
Normally closed
Straight passage Ø1/4"

7. Thermostatic expansion valve
Internal pressure equalization

8. Air evaporator
Forced convection
Fridge power: about 500W
Electric defrost

9. Accumulator
Steel
Capacity: 1.5L

10. Regulation and safety system
High pressure gauge
Low pressure gauge
Temperature controller with chamber temperature display, operation management (evaporator, compressor), room thermostat and defrost management.

The electrical part is composed of:
- a steel power supply box
- the standard safety elements (master disconnect switch, emergency stop button, RCD, ground connection, white light)
- a thermal magneto circuit breaker for each element
- the relay of the main elements of the installation (evaporator, solenoid valve, compressor, condenser, defrost resistor)
- Indicator lights for each element
- a refrigeration temperature controller with two temperature sensors for the management of all the elements. (Defrosting, evaporator ventilation, etc.)

Services required

- Electrical supply : 230 Vac – 50 Hz – 10 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 2000 x 800 x 1800
- weight (Kg): 168

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
- Wiring diagram
- Fluidic diagram
- Enthalpic diagram
- Certificate of conformity CE

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