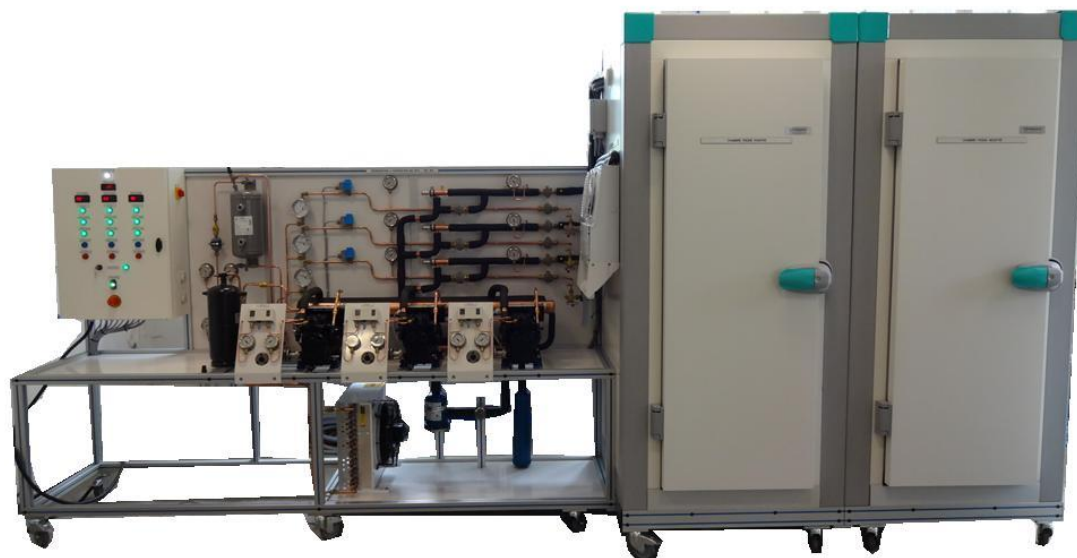


# CRE302



## COMPRESSOR RACK - 3 COMPRESSORS



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### Experimental capabilities

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- Identification of the components of a refrigerating system with two cold rooms
- Commissioning and verification of operation
- Study of the basic concept of a refrigeration installation R404A, with triple evaporation.
- Study of the thermodynamic cycle on enthalpic diagram.
- Control study neutral zone
- Calculation of cooling power to the condenser and evaporators.
- Overall efficiency of the unit.
- Preventive and curative maintenance
- Role and adjustment of constant pressure valves
- Study of oil circuit

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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 CRE302 bench allows the study of a compression plant with three stages. It is composed of a plant equipped with three semi-hermetic industrial compressors and three evaporation systems (negative cold room, positive cold room and evaporation into the atmosphere). The system includes all the standard components equipping the industrial plants (oil separator, dehydrator, constant pressure expansion valve ...). In addition to this the bench is instrumented in order to expand its pedagogical use.

Students will initially understand the system and identify the components of the installation. They can then do commissioning and the necessary settings (pressure switches, regulators, constant pressure expansion valve ...).

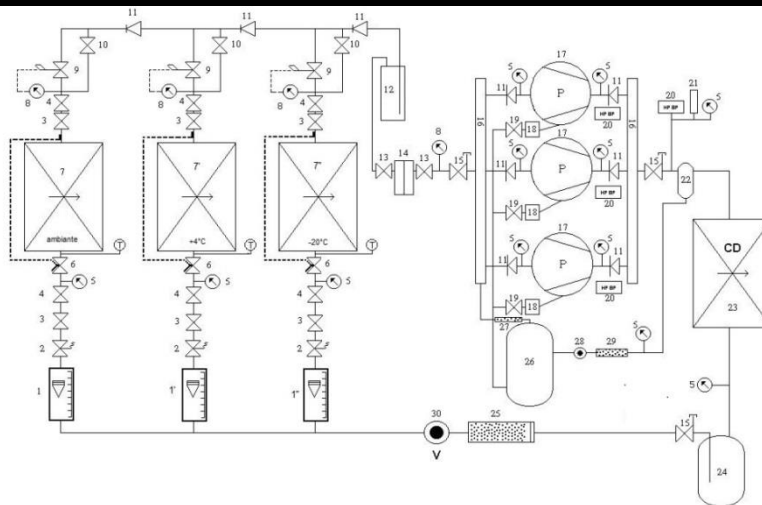
When the system is in operation then they can check the parameters (pressure, temperature, flow rate ...). They will calculate the efficiency and will draw the enthalpy diagram corresponding to each evaporation system.

In a later time, they can perform maintenance operations such as changing a filter, the change procedure of a compressor on a plant, the change of an evaporator, the manifold fitting.

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

Its anodized aluminum structure on feet gives it great robustness as well as great flexibility of integration into your premises. The manufacturing of this equipment meets the European machine directive

## Illustrations



## Technical specifications

1. A fluid flow meter R404a scale 0-100kg / h (x3)
2. Control magnetic valve (x3)
3. Manual valve of circuit isolation HP (x6)
4. Manual valve of evaporator isolation (x6)
5. High pressure manometer R404 scale -1 to 30bars , dual scale pressure temperature (x9)
6. Thermostatic expansion valve with external equalization (x3)
7. Simple evaporators flow with forced convection, power approx 1000W (x3)
8. High pressure manometer R404 scale -1 to 10 bars, dual scale pressure temperature (x7)
9. Constant pressure valve type KVP (control of the evaporation pressure) (x3)
10. Manual valve bypass of the constant pressure valve (x3)
11. Check valve (x9)
12. Suction line accumulator , volume 3.2L
13. Manual isolation valve of the filter with fluid recovery fitting (also used for vacuum operation)
14. Filter with interchangeable cartridge (for maintenance operation)
15. Service valve (x3)
16. Low pressure and high pressure collector
17. Compressor semi hermetic (x3) to R404a approx power 2.1KW for a range -20°C/ 30°C (evaporation / condensation)

18. Controller of refrigeration oil level (x3)
19. Isolation valve of the compressor oil circuit (x3)
20. HBP combined pressure switch (x4)
21. Safety valve
22. Oil separator
23. Condenser with forced convection approx power 7.5KW with pressostatic inverter
24. Liquid tank volume 7.2L
25. Filter dehydrator
26. Oil tank volume 7.4L
27. Filter dehydrator
28. Liquid sight glass
29. Filter dehydrator
30. Liquid sight glass

The bench also includes:

- two cold rooms with internal dimensions 83x83x200cm with door, decompression valve and electrical heating load simulation. The thickness of the rooms walls is 100mm
- an electric box including protective components (circuit breaker ..), control (switch-on button, main switch, emergency stop type mushroom), visualization (operating and fault indicators) and regulation (1 central general regulator and three regulators of temperature-regulator by evaporation system).

# CRE302



## Services required

- Power supply: 400Vac – 50 Hz – 25 A
- Power supply type: 3 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 5000 x 1000 x 2300
- weight (Kg): 600

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