

## Refrigeration Demonstration Unit

### DESCRIPTION

- The refrigeration demonstration unit is delivered complete with instrumentation and includes technical and instruction manuals.
- Industrial design
- This unit can be used at different levels and in different fields of study.
- Utilizes refrigerant R 134 a as required by new European standards.



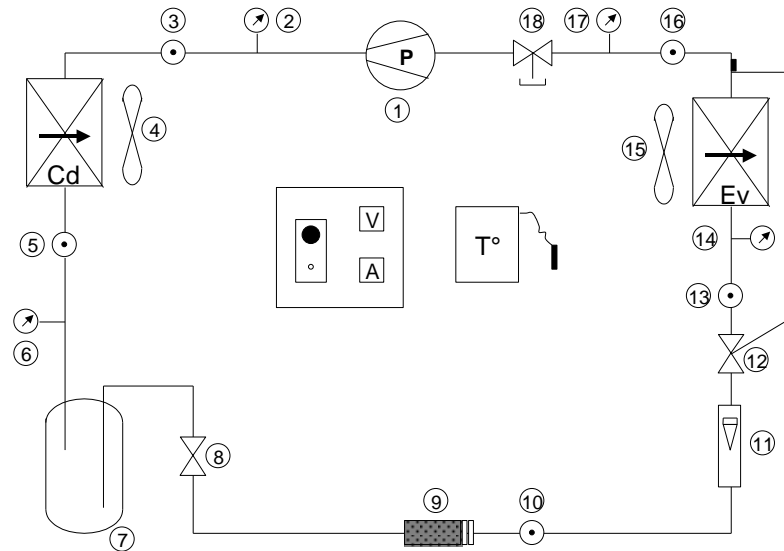
### Suggested Activities

Study of basic concepts involved in the process of refrigeration utilizing R134a .

Study of important phases of a compression - condensation - evaporation –expansion refrigeration cycle

Calculation of practical and theoretical efficiencies.

Construction of a refrigeration cycle showing states of matter present in various parts of the cycle.



1. Sealed motorcompressor
  - Commercial type
  - Electric power : 1/8 C
  - Refrigerating power : 402 W
    - Condensation temperature : + 55°C
    - Evaporation temperature : + 5 °C
2. HP manometer compressor exit - condenser entry
3. Fluid state indicator - high pressure steam
4. Air condenser
  - Forced convection
  - Copper tube and aluminium fins
  - Fan electric power : 33 W
5. Fluid state indicator - steam - liquid - high pressure
6. HP manometer - condenser exit - liquid tank entrance
7. Liquid tank
  - Vertical, steel, capacity : 0.9 L
8. Valve in service liquid departure valve
9. Dehydrator
  - Solid body  $\varnothing$  ¼
10. Fluid state indicator - high pressure liquid
11. Rotameter
  - With magnetic transmission
  - Needle display
  - Stainless steel construction
12. Thermostatic expansion valve
  - Internal equalisation of pressure
  - Interchangeable flow calibration orifice
13. Fluid state indicator - steam - low pressure liquid
14. BP manometer - expansion valve exit - evaporator entry
15. Air evaporator
  - Forced convection
  - Copper tube and aluminium fins
  - 1 fan : global electric power : 30 W
  - Refrigerating power : 523 W /  $\Delta T$  10°C
  - Exchange surface : 2 m<sup>2</sup>
16. Fluid state indicator - low pressure vapour
17. BP manometer - evaporator exit - aspiring compressor
18. Aspiring valve in service
19. Voltmeter 0 -250 VAC
20. Ammeter 0 -2 A AC
21. Circuit breaker 2 A
22. Temperature indicator and flying probe for measurement at characteristic points

## UTILITIES

Electricity : 230 V Single phased  
50 Hz

## DIMENSIONS

Length : 650 mm  
Width : 560 mm  
Height : 840 mm  
Weight : 84 kg