

## BASIC HEAT PUMP WATER/WATER



### Experimental capabilities

- Identification of the components of a standard refrigeration circuit
- Visualization of the piping and assembly and of the components
- Installation, commissioning and settings
- Measurement of the parameters of the system (pressure, temperature..)
- Construction of the refrigeration cycle on the enthalpic diagram (H-log P)
- Calculation of the power exchanged and the efficiency of the system.

## Operating principle

The bench CRD100 allows the study of the refrigeration cycle. The circuit contains the most common components of a refrigeration installation (compressor, condenser, expansion valve, evaporator and accessories). The condenser and the evaporator are water exchanger.

The students should first start the compressor and then adjust the flow of water in the exchanger.

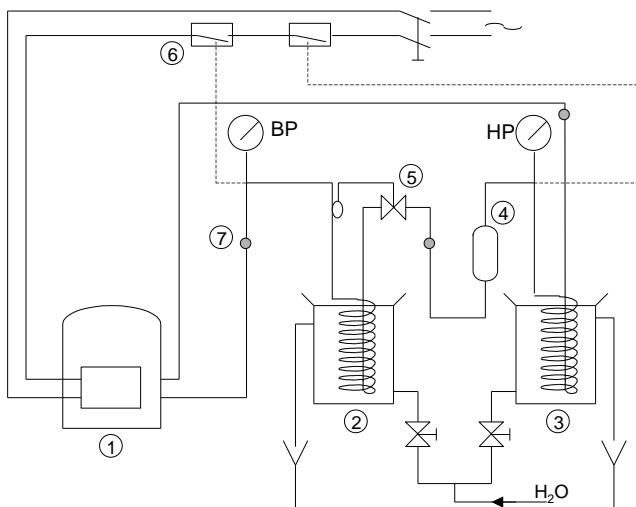
When the cycle is stabilized, the students can collect manually the data (pressure, temperature).

The teacher can request that the student change the flow of water to show the effect on the efficiency of the cycle. The robust design of this device makes it suitable for use in schools.

The equipment is set up on an Anodized aluminium frame on feet. 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

1. Hermetic compressor (408 W at 7.2°C evaporation temperature)
2. Condenser:  
Copper coil condenser  
water tank of 1.5 liter capacity  
valve to adjust the flow of water  
overflow pipe and drain valve
3. Evaporator:  
Copper coil condenser  
water tank of 1.5 liter capacity  
valve to adjust the flow of water  
overflow pipe and drain valve
4. Dehydrator filter
5. Expansion valve
6. Low and high pressure safety switch
7. Sight glass to show the condition of the fluid  
BP = Low pressure manometer  
HP = High pressure manometer  
Electrical box with on/off switch for the compressor  
Portable thermometer with the convenient sensor to measure the temperature of the pipes

## Services required

- Electrical supply : 230 Vac – 50 Hz – 4 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Water supply : 1 L/min – 1 bars
- Dimensions: (LxWxH mm): 700 x 450 x 600
- weight (Kg): 25

## Documentation

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

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