

Reversible heat pump

DESCRIPTION

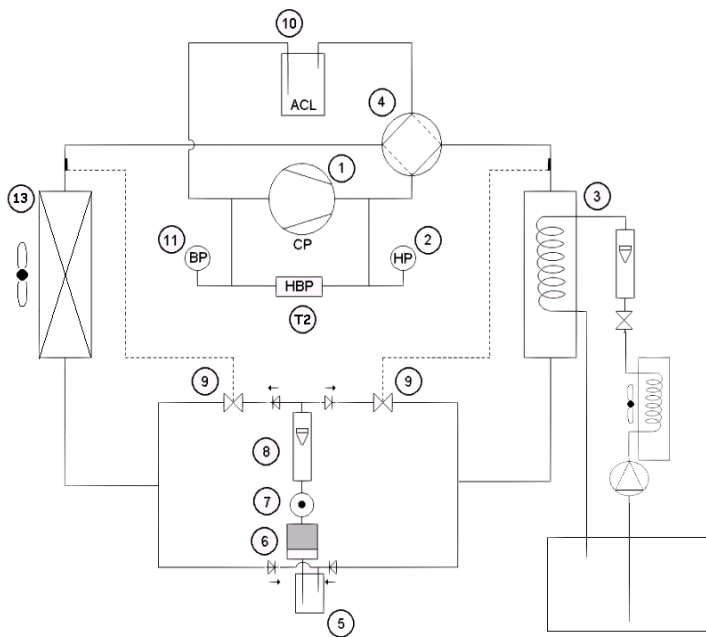
- The unit of reversible heat pump is delivered supplemented, instrumented, with technical handbook and practical work.
- Design, manufacture and industrial material.
- The didactic interest is directed towards various levels and fields of studies.
- Utilization of the refrigerant R134 has in accordance with the standards on the refrigerants.



TEACHING APPLICATIONS

- Study of the basic concept of a cold store in R134 A.
- Calculation of the coefficients of exchange.
Calculation of the heat balance
Calculation of the outputs
- Layout of the curves on enthalpic diagram.
Study of the thermodynamic cycle of a refrigerating machine with compression
- Performance evaluation of the unit:
 - Outputs
 - Energy Balances
- Study of the concept of reversibility of the cycle

CIRCUIT FRIGORIFIQUE



1. Hermetic compressor

- Commercial type
- Electric output 1/8CV
- Refrigerating power 402 W
 - Temperature of condensation: + 55°C
 - Temperature of evaporation: + 5°C

2. Compressing pressure gauge HP left

3. Exchanger with water

- Grill glass
- Serpentine coppers
- Arrival water network and evacuation
- Flow Measurement of water
- Measurement temperatures entry and left

4. Winnow inversion of the cycle

5. Tank of liquid

6. Dehydrator

7. Liquid indicator

8. Refrigerant flowmeter R134a

- A magnetic transmission
- Bill-poster with needle
- Stainless steel

9. Thermostatic pressure reducer

- An intern equalisation pressure
- Opening of calibration of flow

10. Bottle anti-blow of liquid

11. Pressure gauge LP

12. Instrument of safety

13. Exchanger with air

- A forced convection
- Tube coppers and aluminum wings
- Not wing: 4,2 mm
- Refrigerating Power: 325 W/Δ T 10°C
- Heat-transferring surface: 1,4 m²

INSTRUMENTATION

Sampling of temperature at each point of transformation

Voltmeter

Ammeter

Interfaces and connections for PC (in option)

UTILITIES

Electricity: 230 VAC mono - 50/60 Hz - 3 A

VOLUME of INSTALLATION

Length: 1050 mm

Width: 800 mm

Height: 1500 mm

Weight: 70 kg

EXCHANGING WATER CIRCUIT

- Tank cold water
- Circuit of exchange
- Pump of recirculation
- Control valve flow
- Flowmeter
- Convector with air