HFF300

REFRIGERANT FLUID HANDLING BENCH - ADVANCED

Experimental capabilities

- **Identification of the components of a refrigeration plant with semi-hermetic air-to-air compressor**
- **Commissioning and adjustments (regulator, regulator) of a refrigeration system**
- **Refrigerant recovery and charging procedure (requires OUT100 add-on tooling)**
- **Control of control components (evaporative pressure control valve (KVP), condensing pressure valve (KVR) and suction pressure valve (KVL), low-pressure pressure switch, safety pressure switch**
- **Maintenance operations on a refrigeration installation, replacement of the dehydrator, replacement of a piece of LP line, replacement of the compressor oil, etc. (Requires OUT100 add-on tooling)**
- **Plot the refrigeration cycle on an enthalpy diagram to check the operation of the installation**
- **Using R1234yf**

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version : FT-HFF300-STD-C

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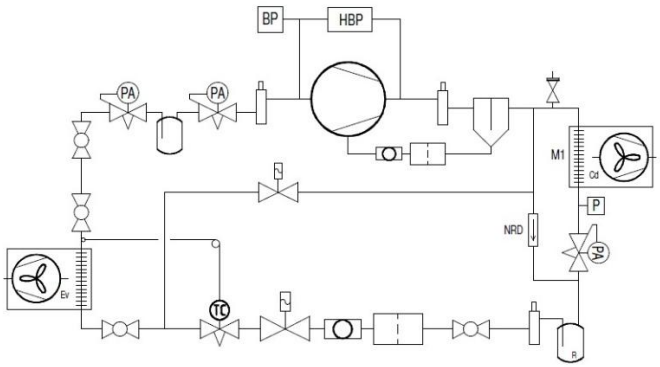
Operating principle

The HFF300 bench is designed to train learners in the handling of refrigerants. The installation is based on a refrigeration cycle running on R1234yf. It includes the main components of a positive installation, a compressor, a condenser, a liquid tank, an oil separator, a solenoid control valve, a pressure regulator, an evaporator and an anti-liquid shock bottle. Schrader service valves and fittings allow learners to connect a manifold for loading, retrieval and functional verification operations.
The cold room part is simulated by a cabinet. The cabinet door is equipped with an enthalpy diagram with erasable surface (A3 format). A thermostatic control box will control the operation of the solenoid valve (pump-down regulation). Two switches placed on the box are used to stop the operation of the solenoid valve and condenser (this makes it easier to adjust the pressure switches) and a button allows the pressure switches to be bipassed to facilitate the removal of the manifolds.
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. In the lower part, the bench has a storage area equipped with two doors with key locking (tool storage).
The manufacture of this equipment complies with the European Machine Directive. This equipment can be used alone or in combination with other compatible equipment in our range (see last part of this document).

Illustrations



The bench is installed on an aluminium profile structure equipped with four braked-directional castors.

1. Semi-hermetic compressor with service valves power about 2000W
2. Safety valve on the HP line
3. Forced Ventilation Air Condenser
4. Pressure inverter for condensation pressure control
5. KVR Type Condensing Pressure Control Valve
6. Steel liquid tank with service valve
7. Oil separator with compressor return line
8. HBP Safety Pressure Switch
9. LP control pressure switch for pump-down
10. Plug valve with Schrader fitting to isolate pipe sections and allow fluid recovery

Technical details

11. Filter drier
12. Fluid status light
13. Solenoid Control Valve
14. Thermostatic expansion valve with internal equalization
15. Forced convection evaporator with power 1200W approx.
16. Evaporative Pressure Control Valve Type KVP
17. Anti liquid blow bottle
18. Suction pressure control valve KVL
19. A hot gas defrost circuit with solenoid valve

The bench also features:
- an electrical power supply box with differential circuit breaker, punch stop, master disconnect and a 2P+T socket to connect accessories (pump, recovery station, etc.)
- a digital thermostatic controller with probe in the chamber. The box controls the solenoid valve (pump-down regulation).
-Two switches stop the operation of the condenser and the solenoid valve (pressure switch adjustment).
-a push button allows you to bipass the pressure switches to facilitate the removal of the manifold
- a cold room simulated by a cabinet. The cabinet door is equipped with an enthalpy diagram with erasable surface (A3 size)
- a storage area in the lower part of the chassis with access through two doors. A key lock helps secure storage.

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Basic tool kit provided

- Large format wrench
- Small format wrench
- Flat screwdriver
- Phillips screwdriver
- Screwdriver tom thumb flat
- Tom Phillips thumb screwdriver
- Flat key of 10
- Flat key of 11
- Tape measure
- Refrigeration ratchet wrench

Spare parts kit provided

- Filter drier
- Liquid indicator
- Thermostatic expansion valve with internal pressure equalization and orifice
- Solenoid valve magnetic coil
- Maintenance cloths
- Cleaner
- Presto bubble leak detector
- A batch of nuts

Services required

- Electrical supply : 230 Vac – 50 Hz – 10 A
- Electrical network : 1 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 1670 x 700 x 1900
- weight (Kg): 160

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

Options

- Refrigeration tool kit for HFO/HFC fluids
- PPE kit for handling refrigerants
- Electrical tool kit for lockout
- Ref : OUT100
- Ref : OUT EPI
- Ref: OUT ELE

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