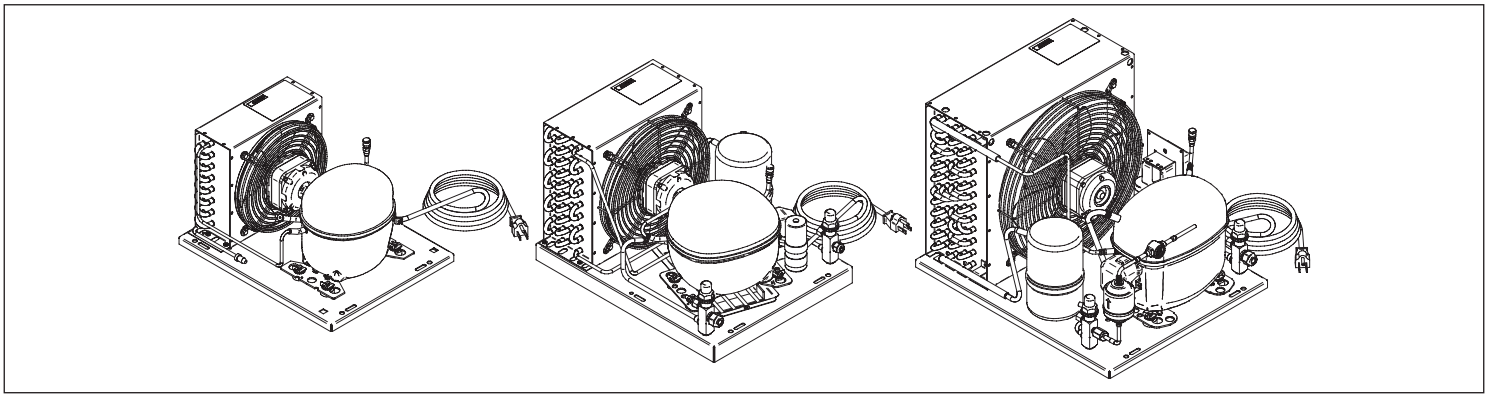
Instructions
Condensing Units, UL Recognized



ENGLISH

GENERAL INFORMATION

For a correct and safe utilization of the equipment, it is mandatory to comply with the requirements contained in this user guide, which contains instructions and information about:

- Installation method
- Use of the apparatus
- Maintenance
- Dismantling, recycling and disposal

The use of the condensing unit for different operations or the use of a different refrigerant gas from the stated ones may cause damages to people or the condensing unit itself and are therefore considered to be improper uses for which the Manufacturer shall not be held responsible. The Manufacturer is not liable for damages resulting from failures to observe the warnings and instruction contained in this manual.

REFRIGERANT CONNECTIONS

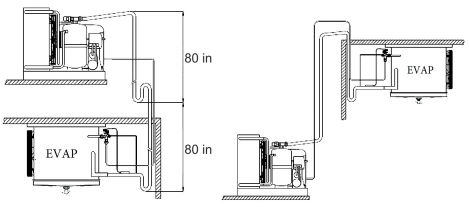
To make a refrigerant connection, contemplate the suction and discharge piping according to the most adequate pipe diameter to ensure a correct gas velocity, or contact the manufacturer's service.

SUCTION LINE INSULATION

Insulate the suction piping with anti-condensation pipe. If the evaporating temperature is lower than 50 °F the suction lines must be insulated with an anti-condensation pipe of at least 0.512 in thickness, to limit the heating.

OIL RETURN

All the systems must be designed to ensure, anyhow, the return of the oil to the compressor. If the condensing unit is placed above the evaporator it is important to contemplate siphons on suction line every 80 in difference in height, to guarantee the return of the oil to the compressor. Anyhow when some horizontal parts are present, it is important that the suction piping has a 3 % slope to the compressor.



In the majority of installations where all piping don't exceed 400 in, it is not necessary to add oil. Where piping is oversized from the normal conditions, or are longer than 400 in, a small amount of oil shall be added.

INTENDED USE

The condensing unit has been designed and manufactured exclusively for commercial refrigeration in permanent establishment. The condensing unit has not been designed and manufactured for household refrigeration appliances. The condensing unit cannot be installed in areas where there is a potentially explosive atmosphere. The condensing unit has not been designed and built to be installed outside. The condensing unit has not been designed and built to be installed in aggressive, humid or dusty environment.

INSTALLATION

Installation, maintenance and commissioning must be carried out by qualified specialists only. All connections, i.e. soldering and flare joints, are to be made professionally. Protect the surroundings against admittance of unauthorized persons. Pay attention to sufficient ventilation. Remove transport safety devices if any. Mount the condensing unit horizontally. Prevent any vibration. Avoid smoking and open fire.

CONDENSING UNIT ASSEMBLY

Prepare the tube connections from the evaporators. Use only dry components to avoid moisture entering the system.

VACUUMING

Vacuuming must be carried out after the complete connection to the refrigerating system. Plan sufficient time to vacuuming as it takes place from the low pressure side only, unless additional measures were taken to speed up the evacuation.

ELECTRICAL WIRING

Prepare the electrical wiring while vacuuming is in place. Do not start the compressor until a vacuum break has been carried out. Remove the cover over the terminal board. Connect the leads. It is forbidden to start the unit without a thermostat being connected between line and compressor. Keep flammable materials away from electric equipment.

REFRIGERANT GAS CHARGE

When a vacuum of 7 psig or lower is reached, close the connections to the vacuum pump. Repeat the vacuum process once or twice if needed. Refrigerant should always be charged in liquid state from the discharge valve, to avoid liquid hammer when the unit is started. If this rule cannot be followed, the compressor must not be started until refrigerant pressure and temperature are equalized. Refer to the unit label for the refrigerant gas to be used.

LEAK DETECTION

Perform leak detection on brazing with adequate methods and equipment for the gas in use.

MAXIMUM REFRIGERANT CHARGE

It is recommended to use only the correct refrigerant quantity for the correct functionality of the refrigerant system. For system with capillary pipe the charge must be adapted to satisfy the system kind. The working charge must never exceed the maximum capacity of the condenser and receiver.

COLD START

After unit installation or long shut-off periods, the compressor must be allowed to reach a temperature higher than 59° F before being started. This will prevent possible problems on starting due to too high oil viscosity.

CHECKING THE WINDING PROTECTOR

In the event of a compressor failure a check must be made by resistance measurement direct on the current lead-in to find out whether the fault is due to motor damage or simply a winding protector trip. If the resistance measure show continuity up to the protector but not after it, this means that the protector cut out. Wait for the protector to reset, it may takes up to. 45 min.

STORAGE

It is recommended to adequately protect the condensing unit and to store it in a suitable environment, repaired from weathering, with good ventilation, between -4 °F and 122 °F in a dry and not dusty room.

IMPORTANT SERVICE AND SAFETY TIPS

The filter dryer must always be replaced when the system is opened. Blow nitrogen or dry air through the system before brazing. When a faulty system is emptied, the refrigerant must be collected without mixing it with other refrigerants, and must not be leaked in the environment. See also "installation". The condenser and the full condensing unit must be cleaned with regularity, observing specified maintenance and cleaning plans. Working on components under pressure is dangerous. Pay attention to the hot and extremely cold parts. Pay attention to parts in movement (as motorfans). Pay attention to sufficient ventilation. Check the perfect functionality of the fans. The application limits set by the Manufacturer must be respected. If pressure control systems are indicated, these must be installed professionally. Working conditions must be monitored to ensure the perfect operation. Check that the valves (suction and discharge side) are fully open. If forced ventilation is necessary, this must be shown (i.e. with a label).

MAINTENANCE

Register on the plant maintenance book, according to the timings set by laws, controls for gas leaks, refrigerant flow, oil level, noise from compressor and motorfan, Checking for abnormal vibrations and ticking.

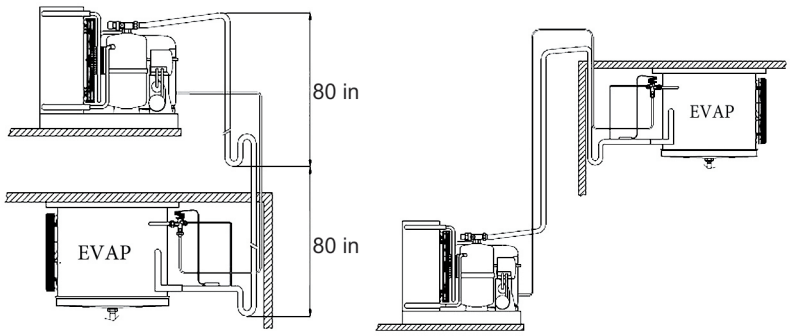
DISASSEMBLY

Isolate the unit from the electrical supply and proceed to follow on reverse order the installation procedure.

DISMANTLING, RECYCLING AND DISPOSAL

At the end of unit lifecycle , proceed to separate and store the parts with environment impact, separating parts that may be cause of pollution and separate material earmarking them to separate disposal. Refrigerant gas must not be leaked in the environment but must be recovered by qualified operators. Compressor oil is subject to separate collection, so dispose the unit on specialized disposal centers following regulations in force.

Oil Return



Legend

a1: PTC starting device

a2: Starting relay

a3: Starting device

b: Cover

c: Starting capacitor

d: Cord relief

e: Run capacitor

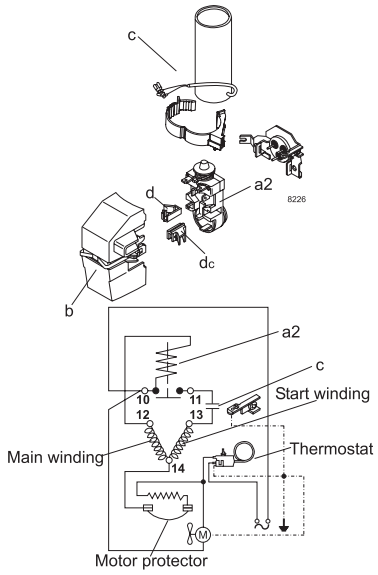
f: Protector

g: Protection screen for PTC

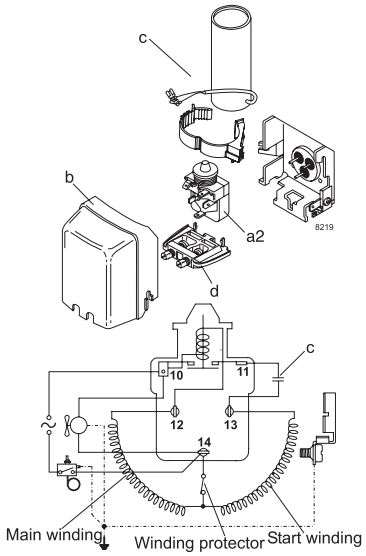
h: Holder

HST - CSIR

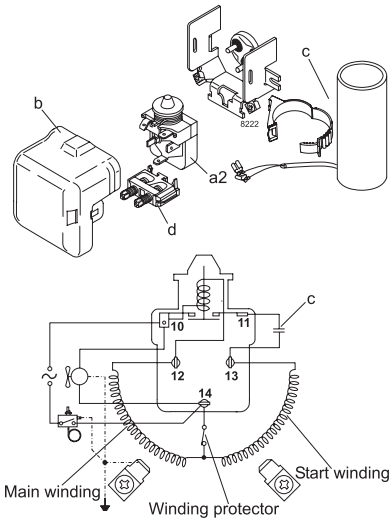
TF-NF (external protector)



TL-NL-FR



SC



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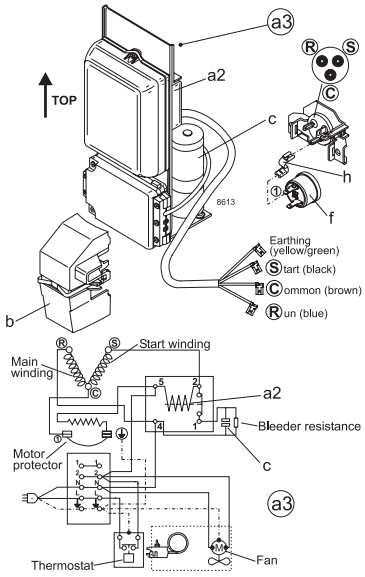

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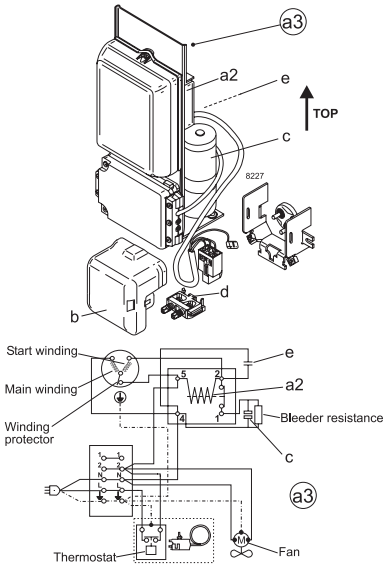

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