FLOODED EVAPORATOR APPLICATIONS

Application

All Unico evaporator coils include a thermal expansion valve (TXV) and a refrigerant distributor. The TXV is an automatic valve that adjusts the refrigerant flow through the evaporator so that all of the refrigerant is boiled off before exiting the evaporator. It adjusts the flow based on exiting pressure and temperature. In a flooded evaporator system, the TXV is replaced with a flow control valve that accomplishes the same thing, except it is adjusted manually or is based on liquid level controls.

The refrigerant distributor divides the flow evenly to each of the refrigerant circuits. Sometimes it includes an orifice that creates a pressure drop creating turbulence which helps to evenly distribute the refrigerant. The orifice is not needed for a flooded evaporator system and will need to be removed. All the modular Unico evaporators have the orifice built into the TXV. The smallest Unico system, the M1218, has an orifice inside the distributor.

Installation Instructions

Caution

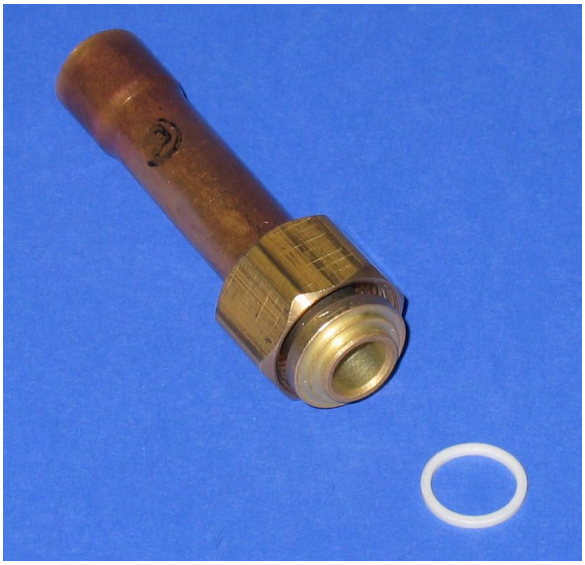
To avoid injury due to rapidly escaping gas, release the nitrogen gas charge before disconnecting valve.

All Unico refrigerant coils ship with a small nitrogen gas charge. Be sure to release the charge before attempting removal of the thermal expansion valve.

Instructions for Modular Coils (coils with Chatleff style distributor)

For all modular coils (sizes 2430, 3642, 4860) which use a threaded connection with gasket between the TXV and distributor, the TXV must be replaced with an adapter fitting to allow the refrigerant line to connect to the coil. The adapter is part of the Unico System flooded evaporator kit. This kit is only required for the modular refrigerant cooling modules; it is not required for the M1218 (see next section).

The flooded evaporator kit includes an adapter fitting and gasket. The adapter has a swaged socket end for brazing to the copper liquid refrigerant line. The other end is a mechanical thread connection that mates to the Chatleff style refrigerant distributor.



Each kit ships with the following items:

- (1) Adapter Fitting for 1/2-inch (12.7 mm) O.D. tube (Part No. A00909-001)
- (1) Adapter Fitting for 3/8-inch (9.5 mm) O.D. tube (Part No. A00909-002)
- (2) Gasket Seal (Part no. A00809-001)

Once the charge is release, simply remove the expansion valve using two wrenches: one to hold the valve body; the other to loosen the nut.

Bend a soft copper tube so that it extends from the refrigerant distributor to the door panel. Then braze the adapter to the end of the copper tube. Be sure to use a nitrogen gas purge to prevent the formation of oxides during brazing. Insert the gasket then tighten the nut. The last step is to check for any leaks at the gasket connection and braze joint.

Instructions for the M1218 Coil (coils with brazed distributor)

The M1218, uses a TXV with a flare connection to the distributor. As in the modular units, release the nitrogen gas charge and unbraze the TXV. Then, enlarge the orifice inside the refrigerant distributor using a drill bit. Use the largest drill bit that will fit inside the distributor. Be sure to clean the shavings from the distributor. Then connect your liquid line to the distributor using a common 3/8-inch flare fitting between the liquid line and the distributor. Lastly, be sure to check for leaks before charging the system.