SERVICE COMMUNICATOR

Subject: Danfoss Expansion Valve Brazing Procedures

Several models of current production ice machines use a Danfoss expansion valve. The following procedures must be followed before and during installation of a Danfoss expansion valve.

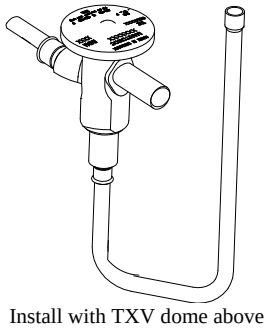
- Danfoss expansion valves can not be used on B or G model ice machines.
- Current replacement valves on some models will change from Alco to Danfoss.
  Refer to online parts manual for correct application.

Before Replacing TXV Verify the Following:

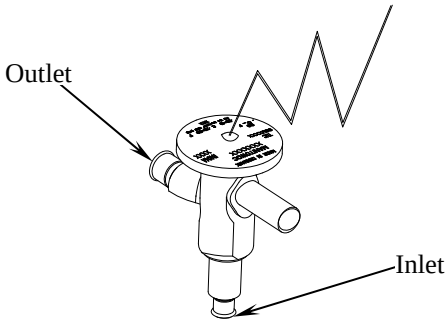
- TXV sensing bulb insulation is secure, airtight and sealed on all sides.
- TXV sensing bulb is in contact with the suction line, securely mounted and correctly positioned.
  Position on suction line @ 10 or 2 o'clock.
  (Shine a flashlight between the suction line and the bulb. If light is visible, secure the bulb and recheck operation).
- Low refrigerant charge symptoms will resemble a starving TXV (Thin on top). Add refrigerant charge in 2 to 4 oz. increments as a diagnostic procedure to verify a low charge. If the problem is corrected, the ice machine is low on charge. Locate the refrigerant leak, repair and weigh in the correct refrigerant amount.

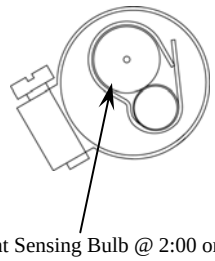
Overview of Valve Replacement

- Danfoss stainless steel expansion valves (TXV) require a slightly different brazing technique than brass-bodied valves.
  Copper clad stainless steel does not require as much flame contact as copper tubing.
  Heat will need to be applied to the copper tubing first then the TXV socket.
- Use 15% silver solder.
- Flux is not needed.
- A J tube must be installed on any machine that has the expansion valve dome under the valve body or in a horizontal position. (Replacement valves on all ice machines must be installed with the TXV dome above the valve body).



Install with TXV dome above valve body





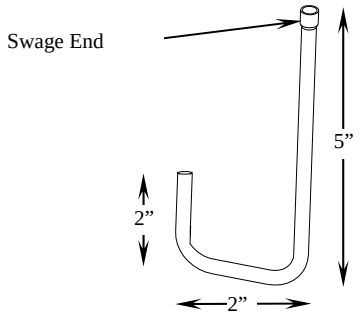
Mount Sensing Bulb @ 2:00 or 10:00
Secure With Copper Strap and Stainless Steel Hose Clamp

- Valve is preset at the factory and is non-adjustable.
- Some expansion valves are supplied with 2 copper straps,
  one for Q Model ice machines
  one for the QuietQube® Model ice machines
- Insulated boots are available for the TXV and Sensing Bulb.
  Expansion Valve Body Insulation (P/N 40-0036-3)
  Expansion Valve Sensing Bulb Insulation (P/N 40-0720-3)

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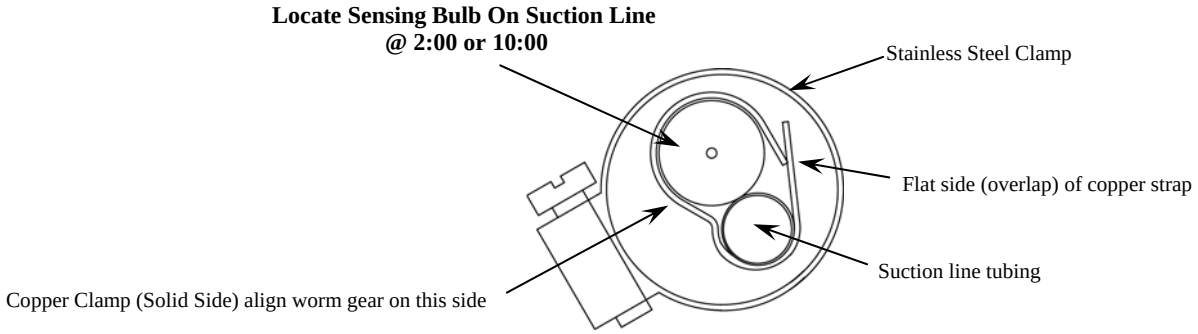
Brazing Procedure

1. Fabricate and install J tube when necessary. Install valve with the TXV dome in an upright position above the valve body



J Tube Dimensions

2. Purge nitrogen through system while brazing to prevent oxidation of copper tubing.
3. Apply heat to copper tubing first and move flame toward valve socket.
   A. Heat copper tubing for approximately 10 to 15 seconds then direct the heat to the TXV socket
   B. Heat the TXV socket for 2 to 5 seconds and apply silver solder to joint.
   C. Do not attempt to fill TXV flange with solder. Solder will draw into socket.
5. Install new liquid line drier.
6. Pressure test system with 150-psig nitrogen.
7. Mount sensing bulb at the 2 o’clock or 10 o’clock position. Mount sensing bulb with convex side touching suction line. Use the enclosed copper bulb-mounting strap and secure with the existing stainless steel hose clamp. Align stainless steel clamp worm gear on the flat side of copper strap. Tighten until the bulb will not twist on the suction line. Do not over tighten and deform suction tubing.



8. Insulate bulb and seal airtight. Condenser air must not be allowed to contact the bulb, over feeding of the TXV will result.
9. Insulate expansion valve to prevent condensation.
10. Verify system operation; refer to service manual for complete specifications.