Accessory Kit Installation Manual

Thermal expansion valve kits for Maxalloy™ coils with R-407C – (S1-1TVMCA1, S1-1TVMCB1, S1-1TVMCD1) OR R-410A – (S1-1TVMBA1, S1-1TVMBB1, S1-1TVMBC1, S1-1TVMBD1, S1-1TVMBE1, S1-1TVMBF1, S1-1TVMBG1, S1-1TVMBH1)

For use on coil models: CF, CM, CU, XAF, XAU, XAH
For use on air handler models: AP, AE, AVC, RFCX*P2, RFCX*E2, JHET, RFC, JHVT

General information

This thermal expansion valve (TXV) with internal check valve is for use with flex coils for the models listed above. This kit provides overall rated system performance improvement. The kit can be applied to the listed indoor (ID) coils and air handlers, both for heat pump and cooling applications.

The kit consists of a bolt-on TXV, 2.5 ft of thermal insulation, bulb straps or bulb clamps, PTFE washers, and this manual.

When installing a TXV kit, a hard start kit may be required. Consult the outdoor (OD) *Tabular Data Sheet*.

Refer to the *Tabular Data Sheet* for the specific Model/TXV match-up.

R-410A AC and HP compatible:

- S1-1TVMBA1, S1-1TVMBB1, S1-1TVMBC1, S1-1TVMBD1, S1-1TVMBE1, S1-1TVMBF1, S1-1TVMBG1, S1-1TVMBH1 series TXV kits

407C / R22 AC and HP compatible:

- S1-1TVMCA1 series kit - 1.5 ton to 2 ton models
- S1-1TVMCB1 series kit - 2.5 ton to 3 ton models
- S1-1TVMCD1 series kit - 3.5 ton to 5 ton models

Thermal expansion valve (TXV) installation

⚠ CAUTION

Outdoor unit model numbers ending with an H have a factory-installed hard start kit that is required when installing a TXV. Outdoor unit model numbers with no H ending do not require a hard start kit unless local regulations dictate it.

The following are basic steps for installation of the TXV kit:

Important: Refer to the OD unit *Technical Guide* to determine the proper TXV kit to use on this product.

1. Discharge the holding charge by depressing the Schrader valve core on the suction manifold stub out.
2. After completely discharging the holding charge, loosen and remove the Schrader valve core.
3. Place a backup wrench on the distributor, then loosen and remove the brass distributor nut. Retain the brass nut for use on the liquid line. Keep the PTFE washer in place and discard the clear disk.

⚠ CAUTION

Do not overtorque. Do not use slip joint pliers. This distorts the aluminum distributor and the brass fitting (potentially causing leaks).

4. Ensure the PTFE washer is seated in the distributor. Install the TXV into the distributor assembly with the supplied fittings. Hand tighten and turn an additional 1/4 turn to seal. Do not overtighten fittings. See **Figure 1**.

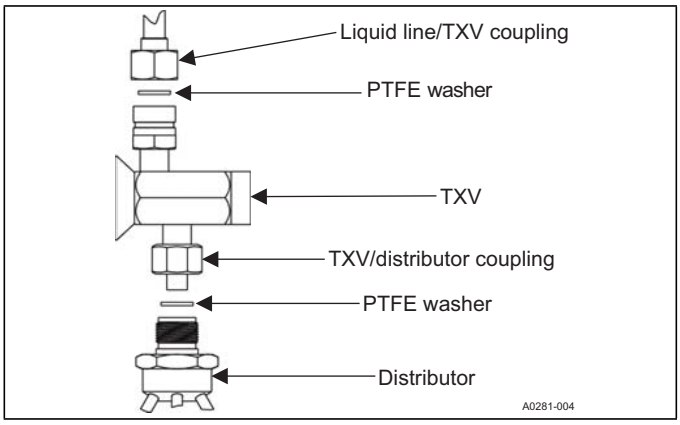

Figure 1: TXV installation

5. Slide the brass nut removed in Step 3 over the supplied liquid line. Place the supplied PTFE washer from the TXV kit in place onto the TXV and install the liquid line onto the top of the TXV. Adjust the assembly so the liquid line aligns with the hole in the access panel. See **Figure 2**. Hand tighten the liquid line and apply an additional 1/4 turn to seal.

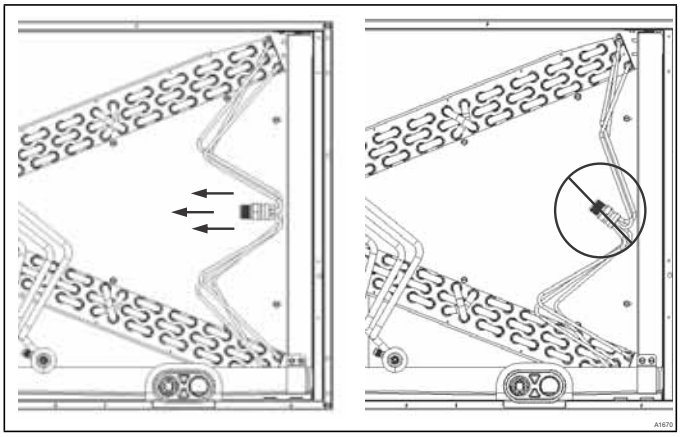

Figure 2: Recommended distributor adjustment

⚠ WARNING

*The Schrader valve core **must not** be installed with TXV installation. Poor system performance or system failure could result.*

6. Install the TXV equalizer line onto the vapor line by hand tightening the 1/4 in. SAE coupling nut to the equalizer fitting and apply an additional 1/3 turn to seal. See **Figure 3**.

⚠ CAUTION

In all cases, mount the TXV temperature sensing bulb after the vapor line is brazed and has sufficiently cooled. Failure to use a suction line split grommet may result in TXV failure.

For N-coil applications:

7. Pass the temperature sensing bulb tube for the TXV through the tube opening in the split grommet of the access panel.

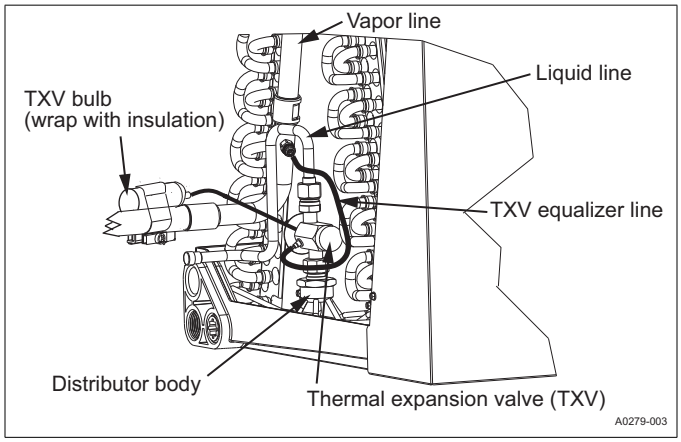

Figure 3: TXV bulb and equalizer line installation (N-coil)

8. Install the TXV bulb onto the vapor line near the cabinet, using the bulb clamps furnished with the TXV assembly. Ensure the bulb makes maximum contact. See **Figure 3** and **Figure 5**, and adhere to the following:
   a. If possible, install the temperature bulb on a horizontal run of the vapor line. Ensure to install the bulb at a 10 o'clock or 2 o'clock position.
   b. If installing the bulb on a vertical run, ensure the bulb is a minimum of 8 in. (20.32 cm) away from the elbow coming out of the coil. Position the bulb with the tail of the bulb at the top, so that the bulb acts as a reservoir. See **Figure 6**.
   c. Insulate the bulb using the thermal insulation provided to protect it from the effect of the surrounding ambient temperature. Cover the bulb completely to insulate it.

For A-coil applications:

7. Route the temperature sensing bulb tube for the TXV toward the vapor line header and the TXV equalizer tube connection port on the vapor line header. See **Figure 4**.

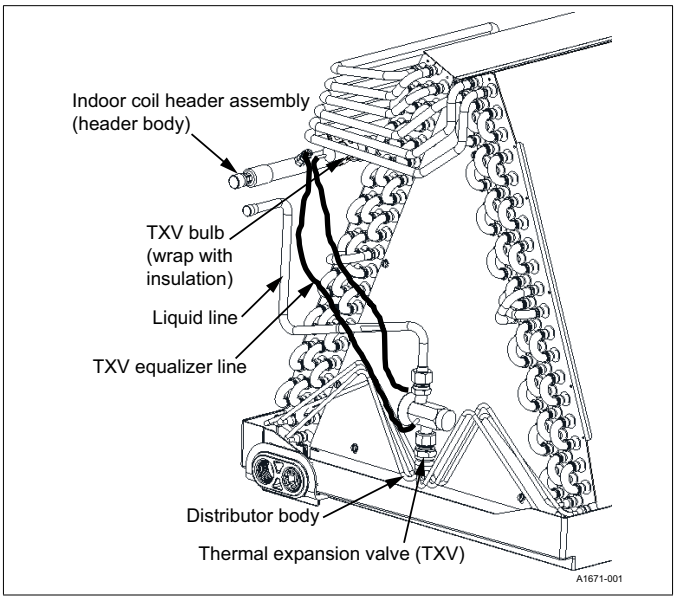

Figure 4: TXV bulb and equalizer line installation (A-coil)

8. Install the TXV bulb to the vapor line near the TXV equalizer tube connection port, using the bulb clamps supplied with the TXV assembly. Ensure the bulb makes maximum contact. See **Figure 7** and adhere to the following:
   a. Install the TXV bulb on the vapor line suction header near the TXV equalizer tube connection port. Ensure to install the bulb at a 10 o'clock or 2 o'clock position.
   b. Insulate the TXV bulb using the thermal insulation provided to protect it from the effect of the surrounding ambient temperature. Cover the bulb completely to insulate it.
9. After installing the refrigeration piping, leak test the system.

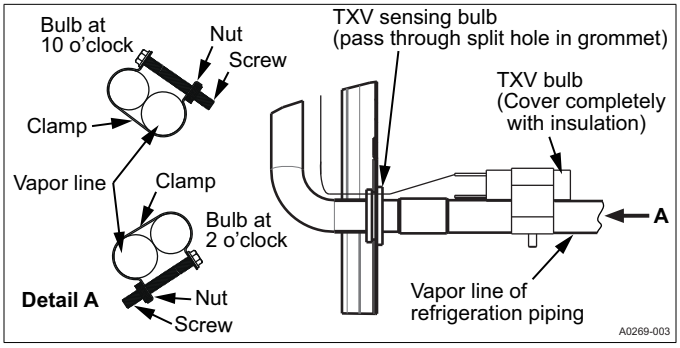

Figure 5: Correct bulb location (N-coil)

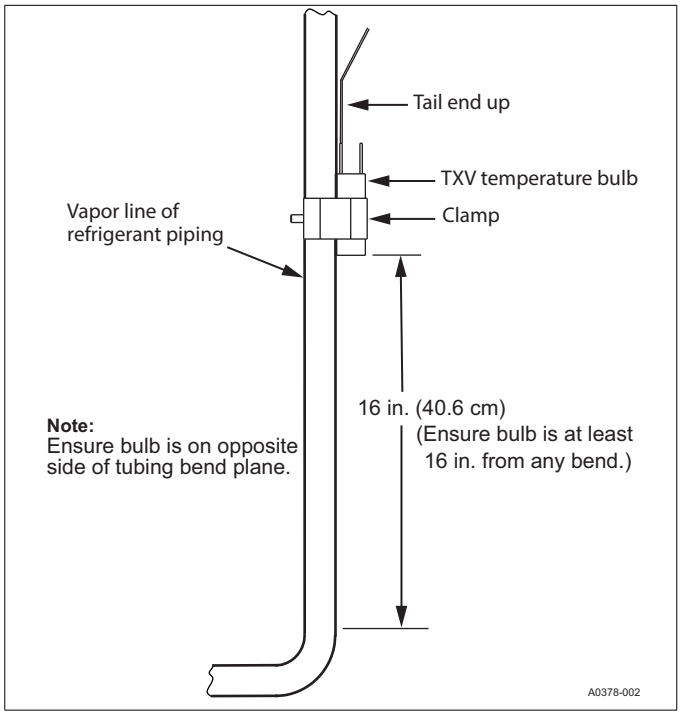

Figure 6: Vertical temperature bulb orientation

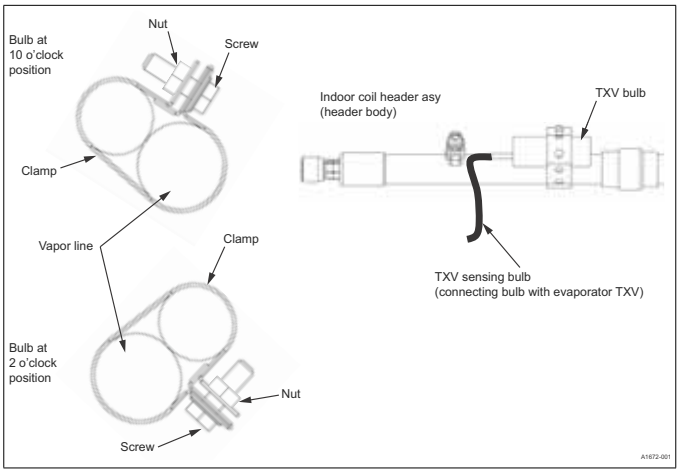

Figure 7: Correct bulb location (A-coil)

Notes

Subject to change without notice. Printed in U.S.A.
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