KSBTX0601HSO
KSBTX0701HSO
KSBTX1001HSO
KSBTX0201PUR
KSBTX0301PUR
KSBTX0401PUR

Thermostatic Expansion Valve Kit
For Existing Piston & TXV Assemblies

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol ⚠ When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words; DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label.

⚠ CAUTION

UNIT OPERATION AND SAFETY HAZARD

Failure to follow this caution may result in property damage.

Systems containing R-410A refrigerant operate at higher pressures than systems containing R-22 refrigerant. Do not use R-22 refrigerant service equipment or components on systems containing R-410A.

INTRODUCTION

This instruction covers the installation of thermostatic expansion valves (TXV) for all split-system Fan Coils using R-410A or R-22 refrigerant.

Refer to Table 1 for kit contents, and Table 2 for kit part numbers and application.

All valves in the R-410A or R-22 TXV kits are bi-flow, balanced port, non-adjustable and hard shutoff design. The hard shutoff design has no bleed port and allows no bleed-through after system shutdown.

⚠ WARNING

PERSONAL INJURY AND ENVIRONMENTAL HAZARD

Failure to follow this warning could result in personal injury or death.

Relieve pressure and recover all refrigerant before system repair or final unit disposal. Use all service ports and open all flow-control devices, including solenoid valves.

Federal regulations require that you do not vent refrigerant to the atmosphere. Recover during system repair or final unit disposal.

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in improper unit operation.

For proper operation, the factory-installed or factory-shipped indoor Fan Coil or Furnace Coil piston must be removed from the indoor coil. The TXV should be sized based on the nominal capacity of the outdoor unit per Table 2.

Table 1 – Kit Contents

PART DESCRIPTION	R–410A Qty	R–22 Qty
Installation Instructions	1	1
Thermostatic Expansion Valve Assembly	1	1
R–410A Service Label	1	N/A
Drop–In Strainer	N/A	1
Neoprene Tape	2	2
Teflon Washer	1	1
Copper Bulb Strap	1	1

Table 2 – Kit Part Numbers and Application

UNIT SIZE	SYSTEM NOMINAL CAPACITY (TONS)	TXV KIT Part No.
R–410A		
18, 24, 30	1-1/2, 2, 2-1/2	KSBTX0201PUR
36, 42	3, 3-1/2	KSBTX0301PUR
48, 60	4 , 5	KSBTX0401PUR
R–22		
18, 24, 30, 36, 42	1-1/2, 2, 2-1/2, 3, 3-1/2	KSBTX0601HSO
48	4	KSBTX0701HSO
60	5	KSBTX1001HSO

INSTALLATION

The R-410A or R-22 TXV can be mounted in any position and feed in any direction.

NOTE: Always mount as close to the indoor coil as possible.

NOTE: Mounting the TXV in the upright position is preferred. Mounting TXV upside down may increase the chance that debris could deposit on the internal check valve and hold the check valve open during cooling and act as a bleed port.

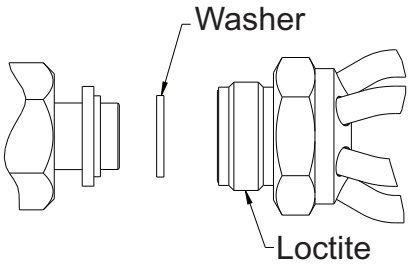

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Fig. 1 - TXV Thread (Sealer) Location

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in improper unit operation.

The External Equalizer Tube should always be mounted on top, or side of suction/vapor line to prevent oil from tapping inside the equalizer tube. Never mount equalizer tube on bottom of suction/vapor line.

INSTALLING TXV IN PLACE OF PISTON

1. Pump system down and recover refrigerant.
2. Remove and discard the indoor piston, being careful not to damage the piston body assembly or the sealing of the Teflon retainer washer. Replace retainer washer if damaged. (See Fig. 1)

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in improper unit operation.

If the actual Piston itself is not removed – adding the TXV will improperly meter refrigerant at the indoor coil and the system will not function properly.

3. Once piston has been removed, install TXV on indoor coil liquid line.
   a. The TXV attaches to the distributor with 13/16" chatleff nut. The threads contain Loctite anti-seize that can be reused. (See Fig. 1)
   b. Tighten the nut finger tight plus 1/2 turn.
   c. Drill and 1/8" (approx.) hole in the horizontal copper section of suction tube to create an attachment point for the equalizer tube.
   d. Insert TXV equalizer tube into the drilled hole and braze together. Caution must be taken to avoid braze splatter from aluminum surfaces.

NOTE: Do not mount the External Equalizer Tube on bottom of suction/vapor line. See Caution Notes.

4. Attach and secure TXV sensing bulb to horizontal section of vapor/suction line using clamps provided (see Fig. 2). Optimal positioning of sensing bulb can be noted in Fig. 3 and Fig. 4 positioning of sensing bulb. Insulate bulb with insulation tape and wrap with wire tie provided.
5. Isolate equalizer tube from aluminum coil by wrapping with insulation tape and secure with wire tie.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Always use a backup wrench to avoid damage to tubing or the valve body itself. Always sweat inlet of TXV, marked "IN," to liquid line.

TXV valves must be wrapped in a heat-sinking material such as a wet cloth while brazing.

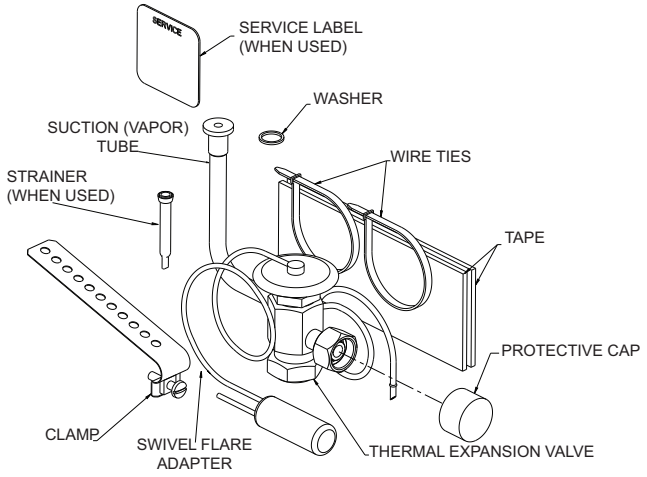

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Fig. 2 - R-410A TXV Kit Contents

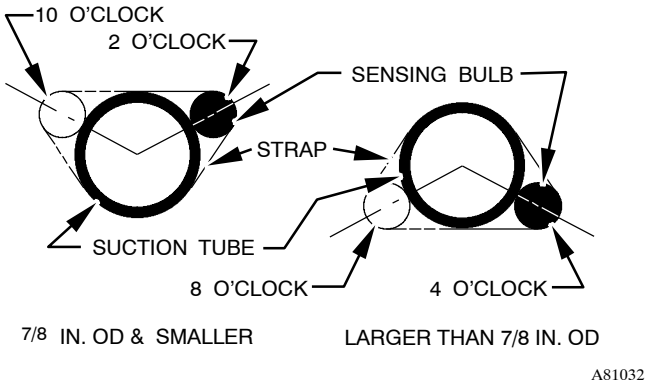

Fig. 3 - Position of Sensing Bulb

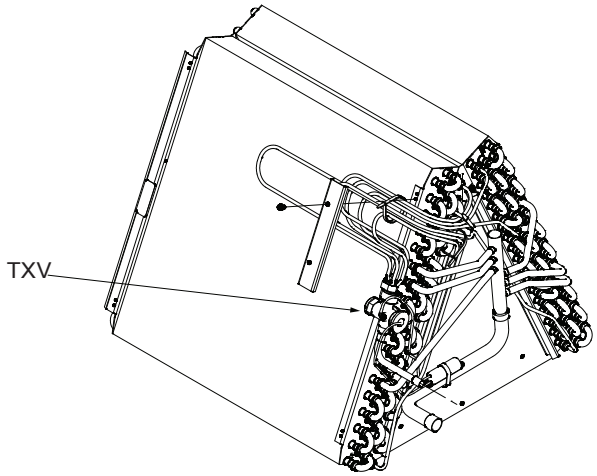

Fig. 4 - TXV Installation

INSTALLING TXV IN PLACE OF PISTON ON COILS, OR REPLACING TXV ON EXISTING INDOOR COILS

When replacing a Piston with TXV on R-410A or R-22 indoor coils, or replacing a TXV on existing indoor coils - follow the procedures above taking in consideration any differences and exercising good field judgment, as well as using best practices.

If replacing an existing TXV assembly, removal of the external equalizer tube may require cutting off and brazing the equalizer tube closed at the vapor/suction line. **Review all Notes and Cautions listed above.**

Always check for refrigerant leaks, and pull system vacuum to 500 microns.

Edition Date: 09/14

Catalog No: IIK–KSBTX–01

Replaces: New