KSATX0201PUR
KSATX0301PUR
KSATX0401PUR

Thermostatic Expansion Valve Kit
For Use on Puron® (R−410A) Refrigerant Systems Only

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 current editions of the National Electrical Code (NEC) NFPA 70. In Canada, refer to current editions of the Canadian electrical code CSA 22.1.

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 1 disconnect switch. Lock out and tag switch with a suitable warning label.

⚠ WARNING

UNIT OPERATION AND SAFETY HAZARD

Failure to follow this warning could result in personal injury or equipment 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, Air Conditioners, and Heat Pumps using Puron® (R-410a) refrigerant.

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

All valves in the Puron 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.

⚠ CAUTION

UNIT OPERATION AND SAFETY HAZARD

Failure to follow this caution may result in personal injury or equipment damage.

This kit may be used to convert an R-22 fan coil or furnace coil to Puron for rated combinations only.

Read and be familiar with the Installation Instructions of the particular unit with which you are working. Observe all warnings, cautions and notes in both indoor and outdoor product literature.

⚠ 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	QUANTITY INCLUDED IN KIT	FIG. 1 IDENTIFIER
Thermostatic Expansion Valve Assembly	1	A
Vapor Elbow with Equalizer Adapter	1*	B
Copper Bulb Straps	2	C
Swivel Flare Adapter	1	D
Bulb Insulation	1	E
Installation Instruction	1	—

* Two (2) included in KSATX0201PUR and KSATX0301PUR kits

Table 2 – Kit Part Numbers and Application

UNIT SIZE	SYSTEM NOMINAL CAPACITY (TONS)	TXV KIT	
		Part No.	Vapor Adapter Included (In. OD)
018, 024, 030,	1-1/2, 2, 2-1/2	KSATX0201PUR	5/8 and 3/4
036, 042	3, 3-1/2	KSATX0301PUR	3/4 and 7/8
048, 060	4 , 5	KSATX0401PUR	7/8

INSTALLATION

The Puron TXV can be mounted in any position and feed in any direction. Mounting the TXV exterior of the coil cabinet is acceptable.

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.

⚠ 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.

PROCEDURE 1 — 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 ring. Replace retainer ring if damaged.
3. Reinstall piston body assembly to original factory location.

⚠ 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.

4. Once piston has been removed, install TXV on indoor coil liquid line. Use Swivel Flare Adapter (see Fig. 1D), or field supplied adapter to sweat and attach TXV to inlet of indoor coil.

⚠ 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.

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

5. Install suction (or vapor) elbow with equalizer adapter to suction tube connection at indoor coil. This adapter contains a 1/4-in. male connector for attaching equalizer tube (see Fig. 1B).
6. Connect external equalizer tube of TXV to 1/4-in. equalizer adapter fitting on vapor/suction line.

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

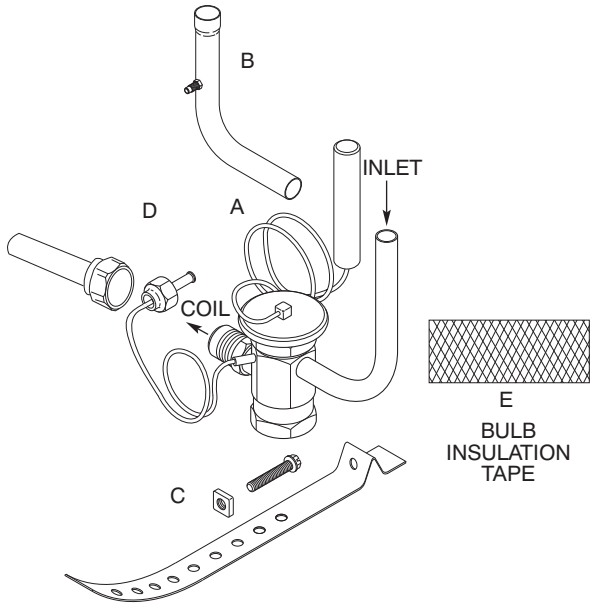


Fig. 1 - TXV Kit Contents

7. Attach and secure TXV sensing bulb to horizontal section of vapor/suction line using clamps provided (see Fig. 1C). Optimal positioning of sensing bulb can be noted in Fig. 2 Positioning of Sensing Bulb. Insulate bulb with provided insulation tape (see Fig. 1E).

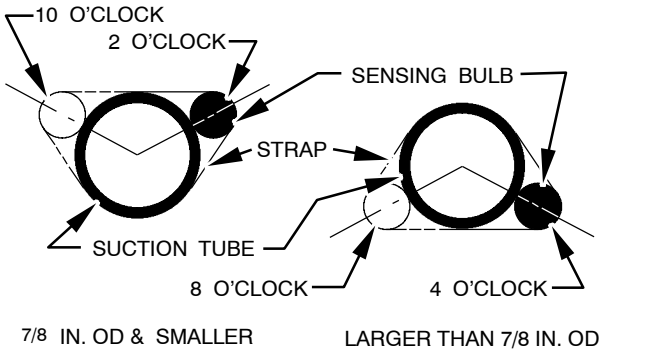


Fig. 2 - Position of Sensing Bulb

PROCEDURE 2 — INSTALLING TXV IN PLACE OF PISTON ON R-22 COILS, OR REPLACING TXV ON EXISTING INDOOR COILS

When replacing a Piston with TXV on R-22 indoor coils, or replacing a TXV on existing indoor coils - follow same procedures as 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. Use kit supplied Vapor Elbow with 1/4-in. equalizer adapter to attach equalizer tube. **Review all Notes and Cautions listed above.**

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

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