Installation Instructions

Thermostatic Expansion Valve Kit

KSATX----PUR

For Use on Puron® (R-410A) Systems Only

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 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 products.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions 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, in instructions, or in manuals, be alert to the potential for personal injury. Understand the 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: Before beginning any installation or modification, be sure the main electrical disconnect is in the OFF position. TAG THE DISCONNECT SWITCH WITH A SUITABLE WARNING LABEL. Electrical shock can cause personal injury or death.

INTRODUCTION

This instruction covers the installation of thermostatic expansion valves (TXV) for all split-system air conditioners and heat pumps using Puron. Refer to Table 1 for kit contents and Table 2 for kit part numbers.

All valves in the Puron TXV kits are hard shutoff type. The hard shutoff type TXV has no bleedport and allows no bleed-through after system shutdown.

⚠ CAUTION: 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: Ensure all components are approved or rated for the working pressure of Puron systems. Relieve pressure and recover all refrigerant before system repair or final unit disposal to avoid personal injury or death. Use all service ports and open all flow-control devices, including solenoid valves. Consult your distributor or service advisor if any doubt exists. Relieve pressure and recover all refrigerant before system repair or final unit disposal to avoid personal injury or death. Use all service ports and open all flow-control devices, including solenoid valves.

⚠ CAUTION: For proper operation, the factory-installed or factory-shipped indoor 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.

⚠ CAUTION: This kit may be used to convert an R-22 fan coil or furnace coil to Puron for rated combinations only. Follow all instructions in Installation Instructions supplied with OD unit. Improper application may result in personal injury or product and property damage.

Form: AG-SATX-06 Cancels: AG-SATX-05 Printed in U.S.A. 3-02 Catalog No. 63SA-TX5

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 included in KSATX0201PUR and KSATX0301PUR kits.

Table 2—Kit Part Numbers

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	4	KSATX0401PUR	7/8
060	5	KSATX0501PUR	7/8

INSTALLATION

IMPORTANT: The TXV should be mounted as close to the indoor coil as possible and in a vertical, upright position. Avoid mounting the inlet tube vertically down. Valve is more susceptible to malfunction due to debris if inlet tube is facing down. A factory-approved filter drier must be installed in the liquid line.

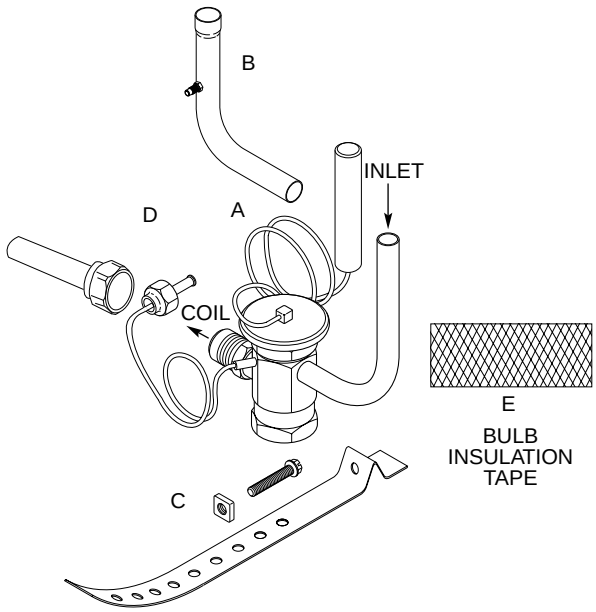
PROCEDURE 1—INSTALLING TXV IN PLACE OF PISTON

1. Pump system down to 2 psig and recover refrigerant.
2. Remove piston retainer, being careful not to damage sealing surface or O-ring.
3. Remove and discard factory-installed piston. Replace retainer if O-ring is damaged.
4. Reinstall piston retainer in piston body.

NOTE: If the piston is not removed from the body, TXV will not function properly.

⚠ **CAUTION: To prevent damage to the unit, use a brazing shield and wrap TXV with wet cloth or use heat sink material.**

5. Install TXV (Fig. 1A) on indoor coil liquid line. Sweat swivel adapter (Fig. 1D) to inlet of indoor coil and attach to TXV outlet. Use backup wrench to avoid damage to tubing or valve. Sweat inlet of TXV, marked "IN," to liquid line. Avoid excessive heat which could damage valve.
6. Install vapor elbow with equalizer adapter to suction tube of line set and suction connection to indoor coil. Adapter has a 1/4-in. male connector for attaching equalizer tube. (See Fig. 1B.)

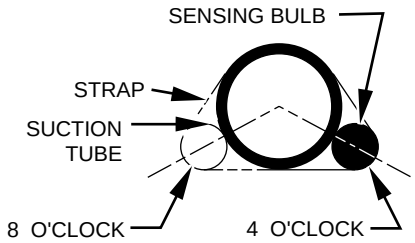


A01418

Fig. 1—TXV Kit Contents

NOTE: Do not mount equalizer on bottom of suction/vapor line.

7. Connect equalizer tube of TXV to 1/4-in. equalizer fitting on vapor line adapter.
8. Attach TXV bulb to horizontal section of suction line using clamps provided. (See Fig. 1C.) Insulate bulb with provided insulation tape (see Fig. 1E). See Fig. 2 for correct positioning of sensing bulb.
9. Proceed with remainder of unit installation.



A02000

Fig. 2—Positioning of Sensing Bulb

PROCEDURE 2—REPLACING TXV ON R-22 INDOOR COIL

1. Pump system down to 2 psig and recover refrigerant.
2. Remove coil access panel and fitting door from cabinet.
3. Remove and save TXV support clamp using a 5/16-in. nut driver.
4. Remove R-22 TXV using a backup wrench on flare connections to prevent damage to tubing.
5. Using wire cutters, cut equalizer tube off flush with vapor tube inside cabinet.
6. Remove bulb from vapor tube inside cabinet.
7. Braze equalizer stub-tube closed. Use protective barrier as necessary to prevent damage to drain pan.

IMPORTANT: Route the equalizer tube of Puron TXV through suction line connection opening in fitting panel prior to replacing fitting panel around tubing.

8. Install TXV (Fig. 1A) with 3/8-in. copper through small hole in service panel. Use wrench and backup wrench, to avoid damage to tubing or valve, to attach TXV to distributor.
9. Reinstall TXV support clamp (removed in item 3).
10. Attach TXV bulb to vapor tube inside cabinet in same location as original was removed using supplied bulb clamps. Insulate bulb with provided insulation tape (see Fig. 1E). See Fig. 2 for correct positioning of sensing bulb.
11. Route equalizer tube through suction connection opening (large hole) in fitting panel and install fitting panel in place.
12. Sweat inlet of TXV, marked "IN," to liquid line. Avoid excessive heat which could damage valve.
13. Install vapor elbow with equalizer adapter to vapor line of line set and vapor connection to indoor coil. Adapter has a 1/4-in. male connector for attaching equalizer tube. (See Fig. 1B.)

NOTE: Do not mount equalizer on bottom of suction/vapor line.

14. Connect equalizer tube of TXV to 1/4-in. equalizer fitting on vapor line adapter. Use backup wrench to prevent damage to equalizer fitting.
15. Proceed with remainder of unit installation.

SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

A large selection of product, theory, and skills programs is available, using popular video-based formats and materials. All include video and/or slides, plus companion book.

Classroom Service Training plus "hands-on" the products in our labs can mean increased confidence that really pays dividends in faster troubleshooting, fewer callbacks. Course descriptions and schedules are in our catalog.

CALL FOR FREE CATALOG 1-800-962-9212

[ ] Packaged Service Training [ ] Classroom Service Training

A94328