

Installation Instructions

Thermostatic Expansion Valve Kit

KAATX
KHATX

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 this product. Refer to the individual instructions packaged with the kits or accessories when installing.

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 warning or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

It is important to 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 the signal word--DANGER, WARNING, or 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 that **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.

 **WARNING:** Before beginning any installation or modification, be sure the main electrical disconnect switch 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 valve (TXV) in all current split-system air conditioners and heat pumps. Refer to Table 1 for kit contents and Table 2 for kit part numbers.

The types of TXVs most commonly used in split-system air conditioning and heat pump systems are as follows:

Rapid Pressure Balance—The RPB-type TXV has a special bleedport that allows rapid bleed-through of pressure after system shutdown until pressure equalization occurs, usually within 1 to 2 minutes.

Hard Shut-off—The hard shut-off-type TXV has no bleedport and allows no bleed-through after system shutdown. No pressure equalization occurs. Due to unequalized system pressure, a start capacitor and relay must be installed on single-phase units equipped with reciprocating compressors. A start capacitor and relay is not required in scroll compressor applications.

The TXV should be mounted as close to indoor coil as possible, and mounted in vertical, upright position.

For proper operation, the factory-installed or factory-shipped indoor piston must be removed. The TXV size should be determined based on the nominal capacity of the outdoor unit. Downsizing is permitted to a maximum of 1/2 ton of the nominal capacity. If TXV is factory shipped with the outdoor unit, the TXV may be downsized from 1/2 ton to 1 ton of the unit's nominal capacity.

Table 1—TXV Kit Contents

PART NAME	IDENTIFIER IN FIGURE CALLOUT	QUANTITY
Thermostatic Expansion Valve assembly	A	1
Equalizer adapter	B	1
Bulb clamps	C	2
Straight flare	D	1
Swivel flare or male flare*	E	1
Installation Instructions	—	1

*Included in TXV kits for heat pump applications only.

INSTALLATION

PROCEDURE 1—SPLIT-SYSTEM AIR CONDITIONING UNITS

A. Metering Device Located Outside Unit Casing.

1. Remove piston retainer, being careful not to damage seating surface or O-ring.
2. Remove and discard factory-installed piston.
3. Reinstall piston retainer in piston body.

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

4. On units where the piston body is located inside the casing, reinstall the liquid tube. Install male flare into liquid tube and braze. (See Fig. 1E.)
5. Install TXV on indoor coil liquid line. (See Fig. 1A.) Use backup wrench to avoid damage to tubing. Follow flow arrow on valve.
6. Install TXV equalizer adapter on indoor coil suction line. Adapter has a 1/4-in. male flare connection attached to it. (See Fig. 1B.)
7. Connect free end of equalizer tube of TXV to 1/4-in. equalizer fitting on suction line adapter.
8. Attach TXV bulb to horizontal section of suction line using clamps provided. (See Fig. 1C.) Insulate bulb with field-supplied insulation tape. See Fig. 3 for positioning of sensing bulb.
9. Attach straight flare to inlet side of TXV. (See Fig. 1D.) Braze field-supplied tubing to belled ends of liquid and vapor connections.
10. Insulate liquid line between TXV assembly and coil connection with field-supplied installation tape to prevent sweating.
11. Proceed with unit installation.

B. Metering Device Located Inside Unit Casing

1. Loosen and remove hex nut and liquid tube from piston body. Take care not to damage or lose the teflon ring seal.
2. Remove and discard factory-installed piston.
3. Reinstall hex nut, liquid tube, and teflon ring seal onto piston body.
4. Braze male flare to liquid tube. (See Fig. 1E.)
5. On units where the piston body is located inside the casing, reinstall the liquid tube. Install male flare into liquid tube and braze. (See Fig. 1E.)
6. Install TXV on indoor coil liquid line. (See Fig. 1A.) Use backup wrench to avoid damage to tubing. Follow flow arrow on valve.
7. Install TXV equalizer adapter on indoor coil suction line. Adapter has a 1/4-in. male flare connection attached to it. (See Fig. 1B.)
8. Connect free end of equalizer tube of TXV to 1/4-in. equalizer fitting on suction line adapter.
9. Attach TXV bulb to horizontal section of suction line using clamps provided. (See Fig. 1C.) Insulate bulb with field-supplied insulation tape. See Fig. 3 for positioning of sensing bulb.
10. Attach straight flare to inlet side of TXV. (See Fig. 1D.) Braze field-supplied tubing to belled ends of liquid and vapor connections.
11. Insulate liquid line between TXV assembly and coil connection with field-supplied installation tape to prevent sweating.
12. Proceed with unit installation.

PROCEDURE 2—HEAT PUMP UNITS

A. Metering Device Located Outside Unit Casing

1. Remove piston retainer, being careful not to damage seating surface or O-ring.
2. Remove and discard factory-installed piston.
3. Reinstall piston retainer in piston body.

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

4. Attach 3/8 in. swivel flare to indoor coil liquid line. (See Fig. 2E.)
5. Install TXV on indoor coil liquid line. (See Fig. 2A.) Use backup wrench to avoid damage to tubing. Follow flow arrow on valve.
6. On units with piston located inside casing, remove flare nut from one end and braze tube end into liquid line.
7. Install TXV equalizer adapter on indoor coil suction line. Adapter has a 1/4-in. male flare connection attached to it. (See Fig. 2B.)
8. Connect free end of equalizer tube of TXV to 1/4-in. equalizer fitting on suction line adapter.
9. Attach TXV bulb to horizontal section of suction line using clamps provided. (See Fig. 2C.) Insulate bulb with field-supplied insulation tape. See Fig. 3 for positioning of sensing bulb.
10. Attach straight flare to inlet side of TXV. (See Fig. 2D.) Braze field-supplied tubing to belled ends of liquid and vapor connections.
11. Use field-supplied insulation tape to insulate liquid line between TXV assembly and coil connection to prevent sweating.
12. Proceed with remainder of unit installation.

Table 2—Kit Part Numbers

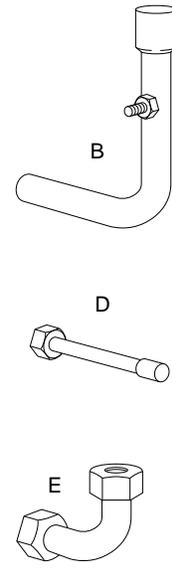
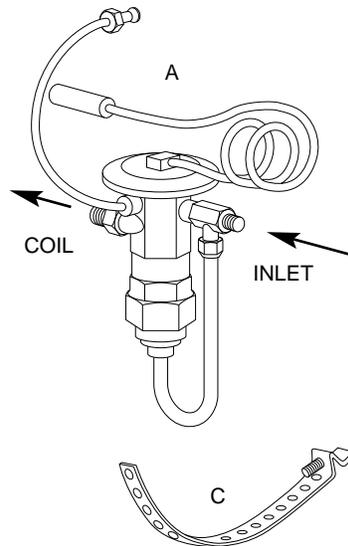
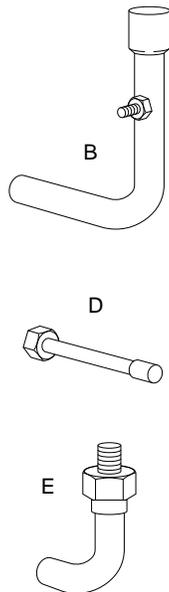
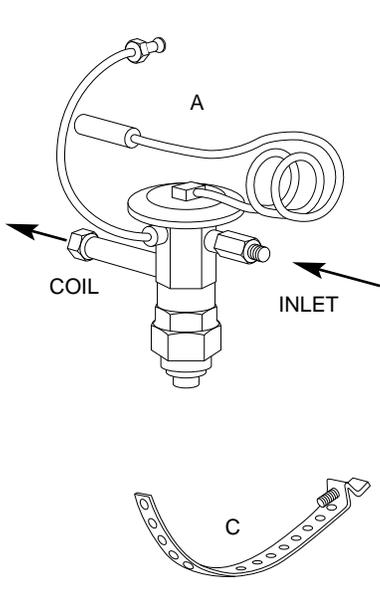
THERMOSTATIC EXPANSION VALVE			
Split-System Air Conditioning			
Nominal Capacity	Vapor Adapter (in. OD)	RPB	Hard Shutoff
1	5/8	KAATX0101RPB	KAATX0801HSO
1.5	5/8	KAATX0201RPB	KAATX0901HSO
2	3/4	KAATX0301RPB	KAATX1001HSO
2.5	3/4 & 7/8	KAATX0401RPB	KAATX1101HSO
3	3/4 & 7/8	KAATX0501RPB	KAATX1201HSO
4	7/8	KAATX0601RPB	KAATX1301HSO
5	7/8	KAATX0701RPB	KAATX1401HSO
Heat Pump/Bi-flow Capability			
1	5/8	KHATX0101RPB	KHATX0801HSO
1.5	5/8	KHATX0201RPB	KHATX0901HSO
2	3/4	KHATX0301RPB	KHATX1001HSO
2.5	3/4 & 7/8	KHATX0401RPB	KHATX1101HSO
3	3/4 & 7/8	KHATX0501RPB	KHATX1201HSO
4	7/8	KHATX0601RPB	KHATX1301HSO
5	7/8	KHATX0701RPB	KHATX1401HSO
3,4,5	7/8	—	KHATX1501HSO

B. Metering Device Located Inside Unit Casing

1. Remove piston retainer, being careful not to damage seating surface or O-ring.
2. Remove and discard factory-installed piston.
3. Reinstall piston retainer in piston body.

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

4. Cut off one of the flare nuts from the swivel flare. (See Fig. 2E.)
5. Braze the swivel flare to liquid tube.
6. Install TXV on indoor coil liquid line. (See Fig. 2A.) Use backup wrench to avoid damage to tubing. Follow flow arrow on valve.
7. On units with piston located inside casing, remove flare nut from one end and braze tube end into liquid line.
8. Install TXV equalizer adapter on indoor coil suction line. Adapter has a 1/4-in. male flare connection attached to it. (See Fig. 2B.)
9. Connect free end of equalizer tube of TXV to 1/4-in. equalizer fitting on suction line adapter.
10. Attach TXV bulb to horizontal section of suction line using clamps provided. (See Fig. 2C.) Insulate bulb with field-supplied insulation tape. See Fig. 3 for positioning of sensing bulb.
11. Attach straight flare to inlet side of TXV. (See Fig. 2D.) Braze field-supplied tubing to belled ends of liquid and vapor connections.
12. Use field-supplied insulation tape to insulate liquid line between TXV assembly and coil connection to prevent sweating.
13. Proceed with unit installation.



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Fig. 1—TXV Kit Contents for Air Conditioners

Fig. 2—TXV Kit Contents for Heat Pumps

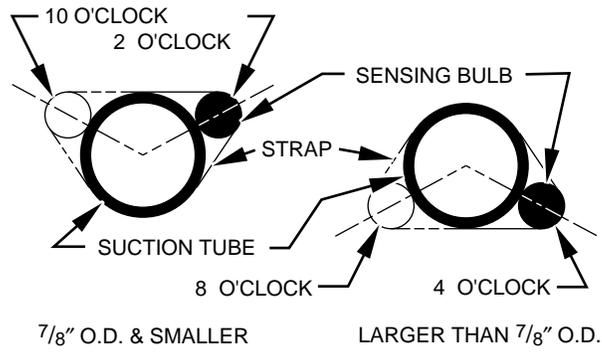


Fig. 3—Positioning of Sensing Bulb

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