

Air Conditioner and Heat Pump

Installation Instructions

Thermo Expansion Valve Kit **918125 (1.5 - 3.0 ton AC or HP)**

918126 (3.5 - 5.0 ton AC or HP)

INTRODUCTION

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of heating and/or air conditioning appliances. Before beginning the installation, read these instructions thoroughly and follow all warnings and cautions in the instructions and on the unit. Improper installation, service, adjustment, or maintenance can cause explosion, fire, electrical shock, or other conditions which may result in personal injury or property damage.

The Thermo Expansion Valve Kit is designed for use in air conditioner and heat pump products. The kit consists of a thermo expansion valve with an external equalizer, copper tubing for the external equalizer, and miscellaneous parts for mounting. The kit is intended to replace the fixed orifice in the refrigeration system. The thermo expansion valve will then adjust the refrigerant flow by monitoring the superheat of the system.

INSTALLATION SEQUENCE

 **WARNING:**

Ensure all electrical power to the unit is off prior to installing or servicing the equipment. Failure to do so may cause personal injury or death.

 **WARNING:**

To avoid risk of electric shock, personal injury, or death, disconnect electrical power to the unit before performing any maintenance or service. The unit may have more than one electric power supply.

See the manufacturer's instructions for more installation information.

The installation sequence is as follows:

- 1) Read these installation instructions completely before proceeding.
- 2) Disconnect all power to the unit.
- 3) **Recover refrigerant:** Before the components can be added to the system, all refrigerant in the system must be recovered.

4) **Remove cover panel from indoor unit:** This will expose the 'A' coil and the copper refrigerant tubing.

5) **Remove fixed orifice:** After the refrigerant has been recovered the fixed orifice needs to be removed from the header of the distributor. Unscrew the swivel cap and remove the orifice. Screw the swivel cap and the distributor back together.

6) **Install thermo expansion valve:** Add the thermo expansion valve to the 3/8" liquid line. It can be in any position but should be located as close to the evaporator inlet (distributor) as possible. To attach the valve, first cut the liquid line so that a 1" gap exists in the line to put the valve in place. Be sure that the flow direction of the valve is correct. The inlet of the valve should attach to the liquid line from the condenser coil and the outlet of the valve should lead to the distributor of the evaporator. Braze each side of the valve into place.

Notes: While brazing takes place the line should be pressurized with an inert gas (such as nitrogen) and a wet cloth should be wrapped around the valve for protection from the heat.

The 3/8" liquid line from the valve outlet to the coil box should be insulated to prevent condensation.

- 7) **Install sensing bulb:** Attach the sensing bulb to the suction line with the mounting strip provided with the valve. Be sure that the sensing bulb is flush against the suction line for optimum heat transfer. The bulb location should not be at 12 or 6 o'clock on the suction line. The best location is at 4 or 8 o'clock. The sensing bulb should be located upstream from the external equalizer. (See the manufacturer's instructions for more information.)
- 8) **Install external equalizer:** Add the external equalizer to the suction line. First the suction line will need to be cut so a 1" gap exists in the line for the external equalizer to fit into. Depending on the suction line diameter install either the 3/4" or 7/8" copper T assembly in the suction line.
- NOTE:** Position the copper T assembly so that the external equalizer (the 1/4" access fitting) will not siphon oil from the suction line.

Braze each side of the valve into place. Screw the external equalizer fitting from the thermo expansion valve into the 1/4" fitting in the copper Tee assembly.

- 9) **Leak check:** Leak check the system to ensure that the lineset and the brazed joints are free from leaks.
- 10) **Evacuation:** Evacuate the system of moisture and non-condensables to prevent low-efficiency operation and/or damage to the unit.
- 11) **Charge refrigerant:** The best method for charging a unit with this thermo expansion valve is by measuring the temperature and pressure of the refrigerant after it goes through the compressor. The temperature/pressure numbers should be at least 8 to 10 degrees F below the saturation point of the refrigerant, this is the subcooling of the system.
- 12) Install the cover panel and apply power to the unit. The system is now ready for operation.

