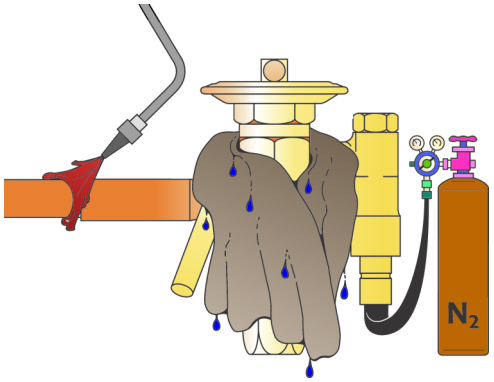
ENGINEERING YOUR SUCCESS

Parker Refrigeration Tech Tips December 2012

TXV Tips Part 2 of 3

The thermostatic expansion valve (TXV) is a metering device designed to regulate the flow of liquid refrigerant into the evaporator at a rate equal to the evaporation of the liquid in the evaporator. The TXV responds to both the temperature and the pressure of the refrigerant exiting the evaporator to maintain a constant superheat at the evaporator outlet. Positive superheat at the evaporator outlet in the suction line will help ensure that only refrigerant vapor returns to the compressor. Here are some tips to ensure maximum TXV performance.

Brazing tips



- Limit body temperature to 250°F (120°C) due to internal seals used for balanced port construction.
- Always direct the flame away from the valve body.
- Do not disassemble the TXV valve for installation. Instead, wrap the valve body with a wet rag or use a good thermal conductive paste or other substance on the market today to limit heat to the valve body.
- For copper to copper connections, use any of the commonly used types of solders such as Sil-Fos, Easy-Flo, Phos-Copper, Stay Brite, or equivalents.
- If soldering valve directly to a brass distributor, use appropriate solders such as Easy-Flo, or Stay Brite.

Valve Orientation Tips

Parker TXV valves are not position sensitive; however, optimal operation is achieved with the power element UP to avoid oil accumulation near diaphragm cavity.

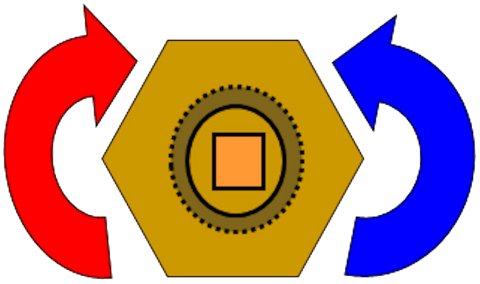
External Equalizer Use Tips

- Use external equalized valves for evaporator/distributor pressure drops over three (3) psi
- The external equalizer line can be mounted upstream or downstream of the thermal bulb for Parker valves due to balanced port construction.
- Keep the external equalizer connection toward the top of the suction line to prevent oil draining into the valve.

Superheat Adjustment Tips

Most expansion valves have an adjustment stem to vary the superheat. This is sometimes necessary because of the varied evaporators and load conditions any particular model valve may be used in. When making superheat adjustments, turn the stem no more than ¼ to ½ rotation at one time. Let the system operate after an adjustment at least 15 minutes before checking the actual evaporator superheat.

- Turning the adjustment stem clockwise decreases refrigerant flow / increases superheat .
- Turning the adjustment stem counter clockwise increases refrigerant flow /decreases superheat .



View of Adjustment Stem