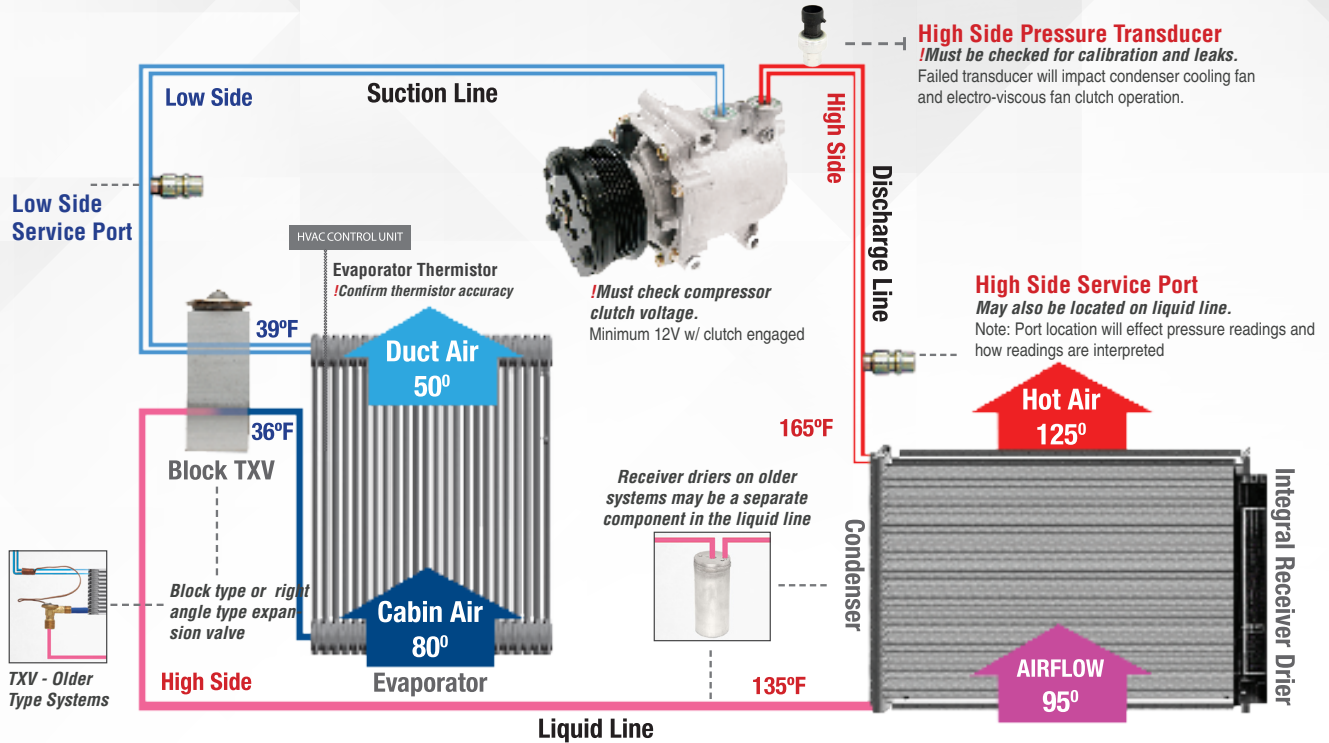


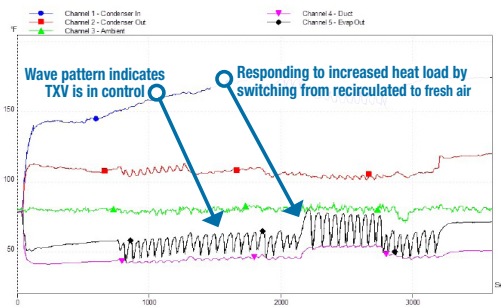
EXPANSION DEVICES

TYPICAL THERMAL EXPANSION VALVE SYSTEM

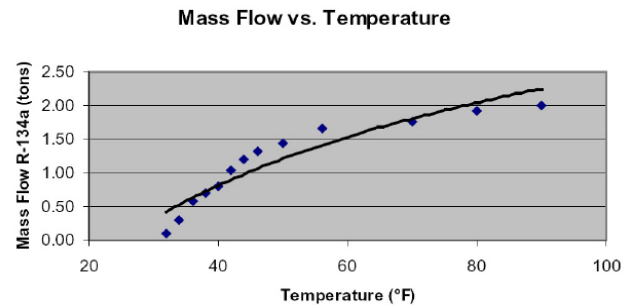


Four Seasons expansion valves are built to match O.E. design. After assembled, each valve is tested and calibrated to match it's O.E. specifications. Some competitors build multiple valves to just one specification setting which can lead to poor cooling performance.

TXV IN CONTROL



Graph illustrates TXV responding to changes in superheat. Evaporator outlet temperature modulates up & down.

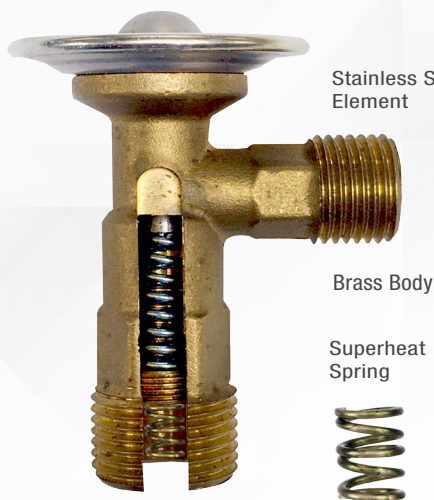


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EXPANSION DEVICES

TYPICAL THERMAL EXPANSION VALVE SYSTEM



Stainless Steel Power Element

Brass Body

Superheat Spring



RIGHT ANGLE TYPE EXPANSION VALVE

The 90° right angled thermostatic expansion valve has been used on vehicles since the early days of mobile air conditioning. There are two basic designs: internally and externally equalized valves. Both of which have seen very few variations over the years. Although a reliable valve, the capillary tubes used for the temperature sensing bulb and the external equalizer can become kinked or broken. Damaged capillary tubes will make the valve inoperable. Many OE manufacturers have moved away from capillary tubed 90° valves and replaced them with H-type block valves or orifice tubes. However, the 90° valve is still used today on some automotive rear units and some heavy duty and agricultural vehicles.

RIGHT ANGLE DESIGNS

- May require internally equalized design with one capillary tube or externally equalized with two capillary tubes



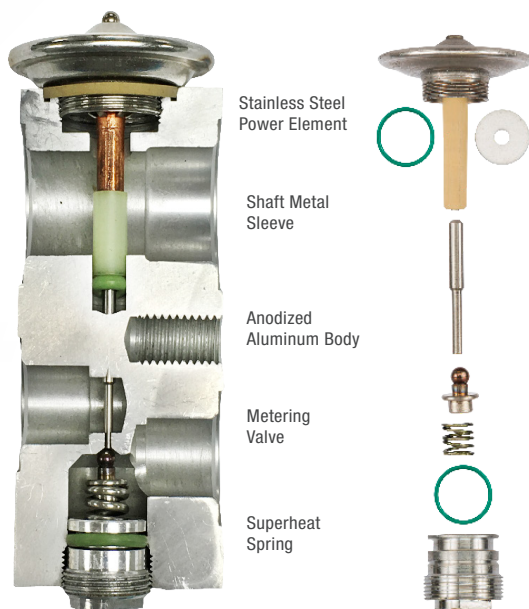
Forward Flow



Reverse Flow

BLOCK TYPE EXPANSION VALVE

- Block valves are aluminum construction; all internal parts are designed O.E. specifications.
- Designed to meet or exceed O.E. specifications
- Tonnage and Superheat are matched to O.E. specifications
- Power valve is seasoned for 30 days, assembled and 100% function tested prior to shipping
- Has no capillary tubes that can be damaged and prevent proper operation



Stainless Steel Power Element

Shaft Metal Sleeve

Anodized Aluminum Body

Metering Valve

Superheat Spring

BLOCK TYPE DESIGNS

- Mini-blocks, threaded blocks & other combinations - Port configurations include tube-o, flange mounts, slimline seals & other combinations.
- The bulbless expansion valve provides superheat control by using a 4-port configuration, eliminating the bulb and the external equalizer lines.



Tube-0



Flange Mount



Slimline Seal



Threaded Tube Connections



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