



TXV Tips Part 3 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.

Troubleshooting TXV Problems

SYMPTOM	LOOK FOR . . .
HIGH OPERATING SUPERHEAT	Load temperature (air or fluid) too high.
	Low refrigerant charge
	Insufficient Subcooling (bubbles in liquid line)
	Improperly adjusted TXV
	Excessive pressure drop w/ internally equalized TXV
	Contamination blocking valve
	Leaking thermal bulb charge or dead charge
	Valve not sized properly – too small a valve.
	Restricted, plugged or capped equalizer line.
LOW OPERATING SUPERHEAT	Poor bulb mounting / contact (bulb senses too high temp.)
	Improperly adjusted TXV
	Incorrect thermostatic charge
	Contamination in valve not allowing it to close fully
	An oversized valve
	Oil logging in the evaporator
	Poor distribution or unequal circuit loading
	An inefficient compressor
EXCESSIVE HUNTING	Oversized expansion valve (valve overcompensates)
	Incorrect type bulb charge (“X” charges have best stability)
	Uneven heat loading in multi-circuit evaporator (flooding circuit(s) affects suction line temperature)
	Poor distribution or unequal circuit loading
	The thermal bulb is located improperly, possibly in a trap where oil can pool.
	Valve superheat not set properly.