HF/TF/TRAE+ Power Assembly

SAFETY INSTRUCTIONS

Warning: Before opening any system, make sure the pressure in the system is brought to and remains at atmospheric pressure. Use approved refrigerant recovery methods when necessary. Failure to comply can result in system damage and/or **personal injury**.

1. Read all instructions thoroughly. Failure to follow instructions may result in valve failure, system damage, or personal injury.
2. Do not use on service conditions or fluids not specifically cataloged, without prior written approval of Emerson Climate Technologies Flow Controls Division Applications Engineering Department. Use of thermal expansion valves on applications not specifically cataloged can result in valve failure and/or system damage.
3. Protect against excessive vibration, it may cause a tubing break which will cause valve failure.
4. On valves with solder connections, **wrap wet cloths around valve**. Direct torch away from valve to avoid valve damage.
5. Use back-up wrench on all wrench flats. Over-torquing can result in valve body damage.
6. Do not exceed maximum working pressure of 450 psig, excess internal pressure could cause damage to diaphragm, resulting in valve malfunction.
9. Do not exceed maximum working temperature (see table 1) - excess temperatures could cause internal damage, resulting in valve malfunction.

POWER ASSEMBLY REPLACEMENT

Warning: Before removing any power assembly, the system must be brought to, and remain at atmospheric pressure. Failure to comply can result in system damage and/or personal injury.

1. To remove the power assembly, first ensure the valve is free of any moisture or ice. Do not heat valve with torch. Use "heat gun" or apply hot rags to valve to melt ice.
2. Remove the remote bulb from the suction line.
3. Turn power assembly counterclockwise with proper size wrench, being careful not to damage body.
4. With power assembly removed, care must be taken to prevent any foreign material from entering the valve.
5. Care must also be taken not to damage the threads or surface area.
6. Install new power assembly with no oil or thread compound, and torque to 300-360 in. lbs.
7. Leak check valve and system.

TABLE 1
Maximum Dehydration Temperature °F

	THERMOSTATIC CHARGE		
REFRIGERANT	**C**	**Z**	**WMOP/CA**
R134a	190	250	250
R22	160	185	250
R404A/R507	150	170	250

This Table refers to the maximum dehydration temperatures when the bulb and valve body are subjected to the same temperature. On L, C, and Z charges, 250°F maximum valve body temperature is permissible (**if the bulb temperature**) does not exceed those shown in the table.

MEASURING SUPERHEAT

1. Determine the suction pressure with an accurate gauge at the evaporator outlet (see P in figure 1). On self-contained systems, the suction pressure may be read at the compressor suction connections.
2. From refrigerant pressure-temperature tables, determine saturation temperature at observed suction pressure ($TEMP_P$).
3. Measure temperature of suction gas at thermal expansion valve remote bulb location ($TEMP_T$).
4. Subtract saturation temperature (read from tables in step 2) from temperature measured in step 3; the difference is the superheat of the suction gas.

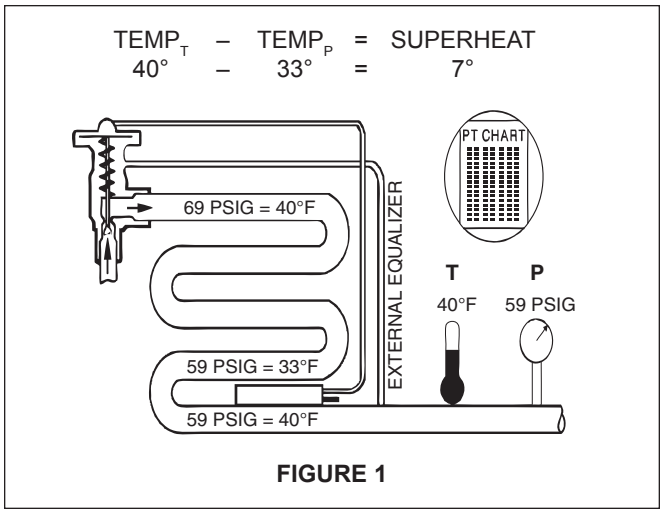

FIGURE 1

SUPERHEAT ADJUSTMENT

Emerson thermal expansion valves are factory set to a specific superheat - however, the superheat should be adjusted for the application. To adjust the valve to other superheat settings:

1. Remove the seal cap from bottom of valve.
2. Follow the instructions in the table below. As much as 30 minutes may be required for the system to stabilize after the adjustment is made.

TXV SUPERHEAT ADJUSTMENT

Valve Family	"Total Turns"	Degrees of SH Per Turn					
		R-22		R-134a	R-404A/507A		R-410A
		+20°F	-20°F	+20°F	+20°F	-20°F	+40°F
HF	10	2.2	4.2	3.8	1.8	3.2	N/A
TF	10	3.0	5.0	4.5	2.0	4.0	2.0

Turn adjustment clockwise to increase superheat, counterclockwise to decrease superheat. To return to approximate original factory setting, turn adjustment stem counterclockwise until the spring is completely unloaded (reaches stop or starts to "ratchet"). Then, turn it back in one half of the "Total Turns" shown on the chart.

3. Replace and hand-tighten seal cap.

Caution: There are 10 turns on the adjustment stem. When adjusting superheat setting - when stop is reached, any further turning adjustment will damage valve.