Refrigeration Notes: Set-up Procedure for the Three Valve System:

Goal: To adjust the Thermostatic Expansion Valve (TX), the Primary and Secondary Hot Gas Valves, as well as the hand valve (which is adjacent to the Secondary Hot Gas Valve) to provide proper compressor crankcase temperatures and sufficient oil return under all load conditions.

***Preliminary: Dryer must be Off-Load (no air through dryer). Dryer refrigeration system suction and discharge pressures must be stabilized before using this procedure. Estimated oil charge for the unit must be added before starting this procedure.**

1.) For dryers using R-22; set the low (suction) side pressure to 60 psig by adjusting the Primary Hot Gas Valve. High (discharge) pressure should be at 210 psig. For dryers using R-12 low side should be set at 31 psig and the high side should be at 165 psig.

2.) Turn the Secondary Hot Gas Valve all the way in and turn back out 1 full turn.

3.) Set the Thermostatic Expansion valve to open at 42oF +/- 1 degree. Using an electronic temperature probe, monitor the TX bulb. Feel the heat exchanger inlet pipe to determine when the TX valve opens. When the inlet pipe starts to become cold; note the temperature. Make adjustments to TX valve in 1/2 turn increments. Adjustment is complete when after 3 open/close cycles, the opening temperature is within the 42oF +/- 1 degree limit.

4.) Open the hand valve by the Secondary Hot Gas Valve until you barely get heat. Begin monitoring for a temperature swing at the TX bulb. Initially the temp. swing will probably be between 42oF - 48oF.

**** The ideal temperature swing to adjust for is a swing of 12 degrees, with a range between 38oF - 52oF and last for a duration of 3 minutes.****

**** Monitor the temperature swing for at least 3 open/close cycles before adjusting the hand valve any further. The temperature swing will gradually change (40oF - 49oF; 42oF - 54oF; etc.). ****

**** Open the hand valve in increments of 1/16 turns. Allow for 3 open/close cycles between adjustments. Stop adjusting when you see a maximum swing of 12 degrees and very close to the range of 38oF - 52oF.****

5.) Continue monitoring TX opening point temperature (42oF); if the TX valve opening temperature moves out of tolerances; readjust TX. Double check steps 3 and 4.

THREE VALVE SET-UP (CONT.)

6.) Monitor compressor crankcase temperature; if crankcase temperature decreases rapidly; stop dryer and move TX bulb lower on the suction pipe. Start dryer again and check TX opening temperature and TX peak temperature for stabilization.

While continuing to monitor crankcase temperature; if the crankcase temperature stabilizes between 95oF - 110oF under "no load" conditions then the adjustment procedure is completed.

A minimum of 4 hours is needed to determine final crankcase temperature. If the crankcase temperature rises steadily above 110oF; stop the dryer and move TX bulb higher on the suction pipe. Start the dryer again and check the TX opening and peak temperatures. Monitor the crankcase temperature for stabilization in the 95oF - 110oF range.

7.) Now monitor compressor oil level. If the oil level drops; the addition of more oil may be necessary. Adding of oil may only be done out of necessity or after the system has stabilized for 4 hours.

Adequate oil has been added to system when compressor oil level stabilizes. A sightglass with an oil level between 1/8 to 3/8 is adequate. Continue monitoring TX opening and peak temperatures for drift or changes; adjust as needed. **Make adjustments judiciously; don't over adjust.**

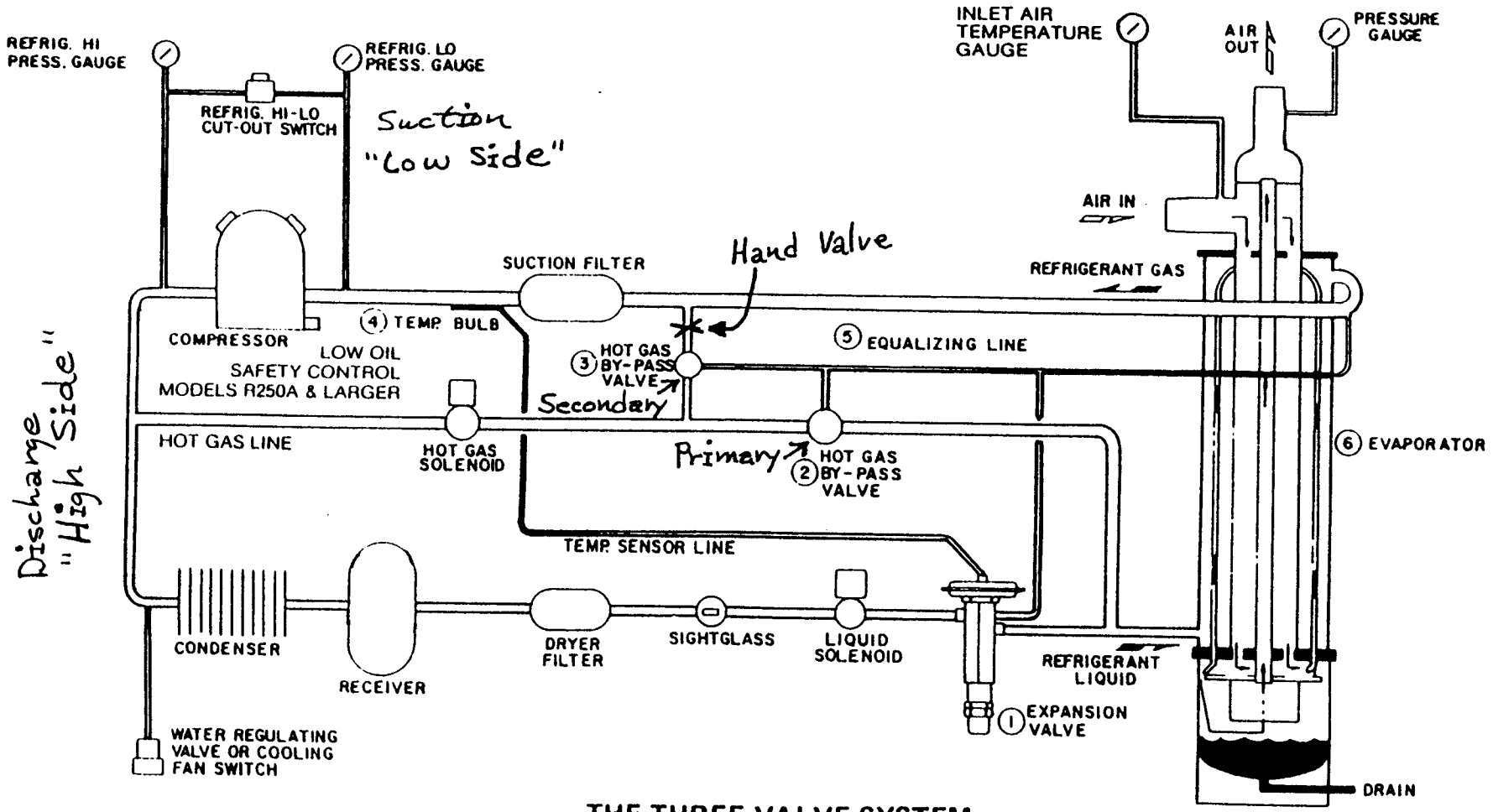
8.) Once return of oil is observed, pump the unit down until the compressor stops. Then start unit again and observe if the system returns to previous settings. Wait 30 minutes before pumping unit down again. If unit fails to return to the original settings then redo the procedure.

****REMEMBER**:**

A.) Adjusting the Primary Hot Gas Valve sets the low side pressure.

B.) The Thermostatic Expansion Valve (TX) should be set to open at 42oF. Feel the evaporator inlet pipe for when it begins to get cool.

C.) Adjustments to the hand valve located before the Secondary Hot Gas Valve controls the 10oF - 12oF swing .



THE THREE VALVE SYSTEM
Models R200A and Larger