TROUBLESHOOTING HOT GAS BYPASS (NON DDC CONTROLLED)

Step 1:
Check the piping ahead of and downstream of the hot gas valve/solenoid/regulator for temperature differential to see if hot gas is moving through the piping.

Step 2:
Check to make sure that the hot gas hand valve is open.

Step 3:
Check to see if the hot gas solenoid is energized.
   a. Check at the solenoid itself for magnetic pull.
   b. Check the wiring diagrams for terminal number and voltage.
   c. Check the wiring circuit to see if the hot gas is supposed to be active. Are there any lockouts preventing its operation.
   d. On multiple circuit units check to see if the correct hot gas solenoid is operating on the correct circuit.

Step 4:
Check to see if the regulator is regulating properly.
   a. Check the wiring diagrams for the factory setting shown to the right of the solenoid.
   b. Check gauges to make sure that the suction pressure is low enough for the regulator to be operating.
   c. Adjust valve as necessary to see if it is regulating anywhere in its range.

Step 5:
Check the pressure line from the regulator to the suction line for signs of damage.
Check the main piping for signs of damage.
TROUBLESHOOTING HOT GAS BYPASS (DDC CONTROLLED)

Step 1:
Check the piping ahead of and downstream of the hot gas valve/solenoid/regulator for temperature differential to see if hot gas is moving through the piping.

Step 2:
Check to make sure that the hot gas hand valve is open.

Step 3:
Check to see if the hot gas solenoid is energized.
   e. Check at the solenoid itself for magnetic pull.
   f. Check the wiring diagrams for terminal number and voltage.
   g. Check the wiring circuit to see if the hot gas is supposed to be active. Are there any lockouts preventing its operation.
   h. On multiple circuit units check to see if the correct hot gas solenoid is operating on the correct circuit.

Step 4:
Check the controller output;
   a. Log into the controller under the service password and navigate to the parameters screen for the compressor circuit that is operating.
   b. Read the hot gas output value. This is almost always a 0-10 VDC signal. 50% output is equal to 5 volts, 75% is equal to 7.5 volts and so on.
   c. If the value is 0 then the controller is not calling for hot gas bypass.
   d. Check the sequence of operations for the hot gas bypass settings. These values can also been seen and adjusted through the controller’s parameters menu. Note that the hot gas bypass and suction limit setpoints both operate off of suction pressure and
must be moved together to keep their orientation correct and to keep them from overlapping. If this is not followed they will fight against each other causing erratic operation.

e. Check the voltage at the controller analog output to make sure it is corresponding to the controller’s output value.

f. Remove the wires from the controller AO to the hot gas control board and check voltage.

Step 5:

a. If voltage is present and corresponds to the controller output hook the wires back up and check the signal voltage at the hot gas control board.

b. If the voltage was present at the controller but not at the board disconnect the wires at the board and check the signal. If it is present on the wire leads without being hooked to the board proceed to the next step.

c. Check the jumpers on the board against the jumpers shown for the board on the wiring diagrams.

d. Check the 24V power to the board.

e. If it is not present check for damaged control wiring from the controller to the board.

f. If the signal is present at the wire leads and the board proceed to the next step.

g. Check the wiring on the board against that shown in the wiring diagrams.

h. Check for loose wires and for wires that have their insulation pinched under the contact terminal.

i. Check for damaged wiring from the board to the valve.

j. Refer to Sporlan literature for troubleshooting the valve stepper motor.