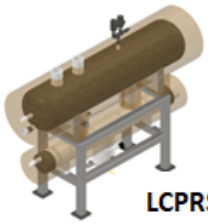

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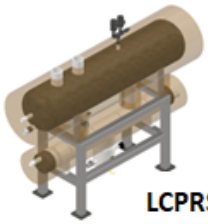
LOW CHARGE PRESSURE RECEIVER SYSTEMS

Trouble Shooting

Sympton	***Possible Cause***	***Action***
Abnormally low suction pressure	**1.** Expansion device stuck shut or other obstruction in liquid line.	Check position of obstruction and remove. Also check for moisture.
	2. Product temperature too low.	Check thermostat.
	3. Fluid flow through cooler obstructed.	Check defrosting of air cooler, product stacking in stores and freezers. Liquid flow and pumping in liquid coolers
	4. Loss of refrigerant.	Check liquid line sight glass. Also check refrigerant return temperature from cooler (should be wet return).
	5. Pump out valve open.	Check pump out valve.
Abnormally high suction pressure	**1.** Expansion device set too wide open.	Check liquid line sight glass and amount of L.L sub cooling.
	2. 4 way defrost valve leaking.	Check frost pattern on valve.
	3. Compressor not pumping.	Check amps, oil pressure, supply to unloading SV's , Cylinder head temperatures.
	4. Too much load.	Check amps, check for product temperatures and heat input to plant expecially latent heats eg soft butter or warm offal.



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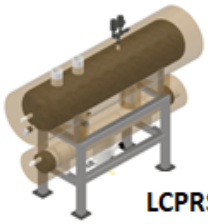
LOW CHARGE PRESSURE RECEIVER SYSTEMS

Sympton	***Possible Cause***	***Action***
Oil Pressure Faults.	**1.** Low oil level in compressor.	Check oil level and check refrigerant level in LP receiver. (Low refrigerant level will impair the effectiveness of oil recovery device in the LP receiver). Check that oil return from oil seperator is working Do not add significant quanities of oil until it is established that both oil return systems are working and the plant is properly charged with refrigerant. The most common cause of low oil level is loss of refrigerant.
	2. Refrigerant in oil sump causing foaming.	Look for foam in compressor sight especially after start up or during defrost. Check that crankcase heater is working and that enging room is not very cold or draughty. Check for possible condensation in discharge line. Check for over charge.
	3. Faulty oil pump or oil relief valve.	Replace if necessary.
	4. Worn bearings.	Check and replace if necessary.
	5. Wrong wiring of oil differential pressure cut out.	Check wiring and especially that cut out heater is not energised during compressor shut dwn (eg, when stopped on thermostat).



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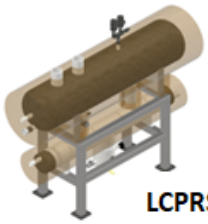
LOW CHARGE PRESSURE RECEIVER SYSTEMS

Sympton	***Possible Cause***	***Action***
Low discharge pressure	**1.** Loss of refrigerant.	Check liquid in LP receiver sight glass and liquid line sub cooling.
	2. Expansion device too wide open.	Check liquid iline sight glass, LP receiver sight glass and liquid line sub cooling.
	3. Pump out valve open.	Check pump out valve.
	4. Very low ambiant.	
	5. Compressor not pumping	Check amps and test by shutting suction valve briefly.
High discharge pressure	**1.** Condenser fan or pump failure	Check fan's and/or pump's.
	2. Water failure	Check pumps, strainers, water supply.
	3. Air blockage or recirculation.	Check for choking of fins or tubes with leaves, dirt or corrosion products. Check for possible re-circulation if sited near a wall or other condenser.
	4. Scale on tubes of evaporative condenser or tubes of S & T condenser.	Check for scale, remove scale mechanically or by disolving. Check water condition and that there is sufficient overflow.Treat water if necessary.
	5. Corrosion of fins of air cooled condenser.	Clean away corroded fins as much as possible. Replace condenser if necessary.



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LOW CHARGE PRESSURE RECEIVER SYSTEMS

Sympton	***Possible Cause***	***Action***
Cooler not defrosting properaly	**1.** Loss of refrigerant	Check charge.
	2. Defrost not being initiated	Check wiring and instruments.
	3. Defrost being terminated too soon.	Check setting of termination pressure stat and termination timer.
	4. 4 way valve not functioning correctly.	Check setting of micro-switches and condition of valve seats.
	5. Drain line choked or frozen.	Check drain line and drain line heaters.
High temperature trip	**1.** Broken discharge valve	Check cylinder head temperatures and examine valves as necessary.
Vibration	**1.** Coupling mis-alignment.	Check alignment is to within 0.005 inches (0.127 mm)
	2. Holding down bolts slack.	Check bolts.
	3. Condenser fan bearings or fan blabes.	Check for bearings which should be lubricated according to maker's instructions.
Frost on compressor crankcase	1. Overcharge	Check charge. Frost should not extend much beyond suction strainer of compressor. Crank case should be warm when running.