GENERAL TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Compressor will not run	Conditioning system OFF	Turn ON conditioning system
	No electrical power	Check fuses
	Wrong voltage to applied to unit	Check voltage and correct
	Compressor internal overload tripped	Will automatically reset when cooled
	High/Low Limit tripped Control alarm energized	Correct cause of limit condition, repair and reset
	Motor failure	Check winding resistance and lead to ground resistance
	Motor shorted	Replace compressor
	Fuse may need to be replaced	Refer to section on Replacing Fuse
Unit short cycles continuously	Restricted or improperly adjusted thermal expansion valve	Replace or adjust valve
	Time-out timer set too low	Increase "Time-out" time
	Gain setting too high Proportional band setting to low	Decrease gain setting Increase proportional band setting
	Compressor low on refrigerant	Check refrigerant and charge if necessary
Compressor difficult to start	Wrong voltage applied to unit	Connect correct voltage
	Defective run/start capacitor(s)	Replace capacitor(s)
	Defective start relay	Replace start relay
	Refrigeration overcharge	Recover and recharge
High load amps	Low voltage	Check supply circuit
	Electrical malfunctions	Check for proper wiring and correct compressor capacitor.
		Check for grounds and measure winding resistance
	Defective start relay	Check and replace
Low Amps	Low refrigerant	Check for leaks; charge system

Table 1. General Troubleshooting

GENERAL TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Insufficient cooling effect	Refrigerant shortage	Repair leak and recharge
	Frosted coil	Defrost and dry coil
	Low air circulation	Check fan blade and shaft. Blade may have come off
	Exceeding rated live load capacity (See data sheets)	Reduce live load
	Cooling coils obstructed	Remove obstruction or defrost
	TXV defective	Replace valve
	Solenoid coil burned out	Replace coil
	Solenoid valve bad	Replace valve
	Dirty condenser	Clean condenser
	R-404A compressor frosting	Possible leak in R-508B. Check ambient pressures
R-508B Head Pressure too high	Refrigerant overcharge	Recover excess refrigerant
	Humidity unit switch "on"	Turn switch "off" during low temperature operation or turn Humidity event "off" in program
	Exceeding rated live load capacity (See data sheets)	Reduce live load
	Air in system	Recover, evacuate and recharge. Add Pentane
	R-404A system short of gas	Repair leak and recharge
R-508B Head Pressure too low	Refrigerant shortage	Repair leak and recharge
R-404A Head Pressure too high	Condensing air too warm	Maximum condenser inlet air = 85°F
	Restricted air cooled condenser	Clean condenser
	Air in system	Recover, evacuate and recharge
	Condenser water too warm	Supply cooler water
Water Cooled Units	Differential pressure too low	Minimum water differential = 40 PSI
R-404A Head Pressure too low	Condensing air too cold	Location may need to be changed
	Condenser water too cold	Raise supply temperature
	Low refrigerant charge	Repair leak & recharge

Table 1. General Troubleshooting (Cont'd)

GENERAL TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Noisy unit	Insufficient compressor oil	Consult Cincinnati Sub Zero
	Fan	Check blades and bearing
	Tubing rattle	Bend tubes away from contact
	Compressor mounting	Tighten

Table 1. General Troubleshooting (Cont'd)

HUMIDITY TROUBLESHOOTING (Optional)

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Humidity not reaching desired level	Atomizing Nozzle Clogged	Remove & Clean Replace Demineralizer Filter if required
	Water is not connected to unit	Connect water
	Air pump is not functioning	Check air pump
	Water control solenoid not energized	Check coil - replace if burned
		Check solenoid circuit - repair circuit
	Chamber fan not functioning	Check fan circuit
		Check fan blade for tightness on shaft
	Filter/Strainer clogged	Remove & Clean
	Humidity switch not on	Turn switch ON
	Solid state sensor defective	Replace
	Water metering valve not adjusted properly	Adjust to 20.25 CCS
	Demineralizer cartridge clogged internally	Replace cartridge

Table 2. Humidity System Troubleshooting

DRY AIR PURGE TROUBLESHOOTING (Optional)

PROBLEM	PROBABLE CAUSE	CORRECTION ACTION
Unit delivers wet air.	Improper operating conditions	Change temperature and RH setpoint to be within recommended operating range for Dry Air Purge
Moisture indicator is pink.	Solenoid core spring broken	Remove solenoid valve Spring should be seated on core and not broken. Replace if necessary.
	Purge orifice plugged	Remove, inspect, and clean orifice. Use air gun to clean. Do not force wires through critically drilled holes.
	Solenoid coil burned out	Remove cover, place iron or steel material (screw driver or nail) on exposed end of solenoid base to feel the magnetic effect indicating proper operation. Each coil should be energized for 30 seconds. Depress switch lever by hand and listen for clicking contact. Switch should click when depressed and when released. Replace if necessary.
	Improper operation of cycle timer	Check the power supply . If the correct voltage is not present between L1 and both of the L2 terminals, check the wiring and protective device supply ing power to the dryer. Dryers with DC solenoid valves should alternately have DC voltage between L2 and DC1 and between L2 and DC2. Replace the timer if voltage is present at either DC terminal continuously or not at all. Timer Input 120VAC/Timer Output 53 VDC Timer Input 240 VAC/Timer Output 106 VDC Timers P-06521-F1 and F2 are the standard timers used on the HF200, HF300A and HF300B air driers. The timers permit simultaneous switching of the solenoid valves every 30 seconds.
	Desiccant attrition or contamination	Inspect outlet air line for indication of excessive oil. Check operation of dropout filter. Remove chamber from manifold and depress perforated disc at open end of chamber. If it can be depressed more than 1/4" from the retaining ring.
	Water in Customer air supply lines	Find and correct problem

Table 3. Dry Air Purge Troubleshooting

DRY AIR PURGE TROUBLESHOOTING CONT'D (Optional)

PROBLEM	PROBABLE CAUSE	CORRECTION ACTION
Excessive drop in outlet pressure	Improper operating conditions	Correct operating conditions
	Solenoid coil burned out	Remove cover, place iron or steel material (screwdriver or nail) on exposed end of solenoid base to feel the magnetic effect indicating proper operation. Each coil should be energized for 30 seconds. Depress switch level by hand and listen for clicking contact. Switch should click when depressed and when released. Replace if necessary.
	Improper operation of cycle timer	Check the power supply. If the correct voltage is not present between L1 and both of the L2 terminals, check the wiring and protective devices supplying power to the dryer. Dryers with DC solenoid valves should alternately have DC voltage between L2 and DC1 and between L2 and DC2. Replace the timer if voltage is present at either DC terminal continuously or not at all. Timer Input 120VAC/Timer Output 53 VDC Timer Input 240 VAC/Timer Output 106 VDC Timers P-06521-F1 and F2 are the standard timers used on the HF20, HF300A and HF300B air driers. The timers permit simultaneous switching of the solenoid valves every 30 seconds.
	Check valve balls seating	Remove check balls and springs and inspect for excessive wear or damage. Replace if necessary.
	Plugged air passages	Check inlet and outlet air passages and piping for blockage. Correct if necessary.
	Desiccant attrition or contamination	Inspect outlet air line for indication of excessive oil. Check operation of dropout filter. Remove chamber from manifold and depress perforated disc at open end of chamber. If it can be depressed more than 1/4 from retaining ring, replace chamber.
Solenoid valve chatter	Solenoid valve defective	Replace solenoid valve core assembly and solenoid base.

Table 3. Dry Air Purge Troubleshooting (Cont'd)

GN2 SYSTEM TROUBLESHOOTING (Optional)

PROBLEM	PROBABLE CAUSE	CORRECTION ACTION
Unit doesn't reach low humidity setpoint	Solenoid core spring broken	Remove solenoid valve and inspect core assembly. Spring should be seated on core and not broken. Replace if necessary.
	Solenoid coil burned out	Remove cover, place iron or steel material (screw driver or nail) on exposed end of the solenoid base to feel the magnetic effect that indicates proper operation. Each coil should be energized for 30 seconds. Depress switch lever by hand and listen for clicking contact. The switch should click when depressed and when released. Replace if necessary.
Excessive drop in outlet pressure	Solenoid coil burned out.	Remove cover, place iron or steel material (screw driver or nail) on exposed end of the solenoid base to feel the magnetic effect that indicates proper operation. Each coil should be energized for 30 seconds. Depress switch lever by hand and listen for clicking contact. The switch should click when depressed and when released. Replace if necessary.
Solenoid valve chatter	Solenoid valve defective	Replace solenoid valve core assembly and solenoid base.

Table 4. GN2 System Troubleshooting

LN2 SYSTEM TROUBLESHOOTING (Optional)

PROBLEM	PROBABLE CAUSE	CORRECTION ACTION
No LN2 Flow	Check LN2 Supply	Is LN2 Supply tank empty?
	Check Solenoid Valves	Are the solenoid valves opening?
		Do the solenoid coils have power? They should have 120 VAC applied to the coil.

Table 5. LN2 System Troubleshooting

FROZEN COIL TROUBLESHOOTING (Optional)

PROBLEM	PROBABLE CAUSE	CORRECTION ACTION
Coil not Freezing Water	Frozen Coil Mode Not Engaged	Dewpoint not low enough, let wet coil remove moisture before unit enters frozen coil mode
	Solenoid Valve Not Working	Check liquid line solenoid (Frozen Coil)
		Check EPR bypass solenoid. Do they have power?
	Frozen Coil T.E.V. out of Adjustment	Adjust T.E.V. to increase superheat
		Verify Frozen Coil is turned on by the event and/or switch on control panel

Table 6. Frozen Coil Troubleshooting