

10. TROUBLESHOOTING

Problem	Possible Cause	Repair	Comments	
Dryer is switched on, indicator light is lit but the refrigerant compressor does not turn on.	The connection has inverted phases	Invert two phases	3-phase dryers are equipped with a phase controller to avoid the fans from turning in the opposite direction.	
	Refrigeration unit is not functioning	Check refrigeration compressor	Several factors can cause compressor failure. A qualified refrigeration technician needs to check all the electrical and refrigerant circuit and controls.	
	The refrigerant high pressure protection has tripped	The refrigerant safety high pressure switch has tripped.	In case of water cooled condensers, check the water control valve	The dryer is protected against excessively high refrigerant pressure. If the condenser efficiency has reduced, the switch will trip. Manually reset the switch.
		Excessive ambient temperature		
Dryer is switched on, but the refrigerant compressor does not turn on.	Excessive temperature on crankcase of compressor.	Allow time to compressor to cool down. Reason may be a possible incorrect adjustment of hot gas bypass valve or shortage of refrigerant	Compressor is protected against overly high temperatures of the crankcase by a thermal switch.	
	Excessive compressed air inlet temperature.	Be sure that dryer is working in temperatures lower than design conditions.	The dryer is designed for working in calculated conditions (see description in this manual). If conditions are exceeded, the dryer will be overflowed, dew point will go up and protecting devices can switch off.	
	Clogged condenser fins or clogged water condenser. Possible high crankcase temperature Possible loss of phase Possible low voltage causing overload trip Possible failed compressor	Clear fins or water condenser of all obstructions.	The clogged fins in the condenser will restrict the air passage and reduce the refrigeration capacity, causing high temperature in the evaporator. Same will occur if water condenser is clogged with mud or dirt. Air condenser and water condenser should be periodically checked and cleaned. Protect water circuit by an adapted filter.	
	Too much compressed air flow.	Check actual flow through the dryer.	This dryer is designed for a maximum air flow at design conditions. If too much air is pumped into the dryer, water removal capacity may not be sufficient, resulting in liquid carryover down stream. Check the rated output the air compressor.	
	Faulty electrical wiring	Inspect the circuit	The compressor-on light should be wired into the refrigerant compressor circuit. See wiring diagrams in this manual.	
	One electrical protection has tripped.	Reset the protection or replace the blown fuse.	The dryer is protected against high amp draw by fuse and/or overload relay that can trip in case of need. Reset or replace fuse once, but do not persist if it trips again, request assistance from a qualified refrigeration contractor.	
Dryer is switched on but fan is not running.	Fan has to run if refrigerant high pressure reaches upper set point.	Check that compressed air flows through the dryer. Check that fan blades are free to move. Check the fan pressure switch.	Fan operates automatically to keep refrigerant pressure below the maximum value. The fan can stop if pressure is under the recommended setting.	
When compressor starts, it vibrates a lot and makes mechanical noise.	Compressor is slugging liquid refrigerant at start up.	Be sure the pre-heating period of at least 2 hours is respected	Refrigerant may move between receivers when refrigerant compressor is stopped and not heated, especially if stopped for a long time. This migration may cause liquid shock (slugging) in valves specially on large dryers containing more refrigerant	

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Water in system	Compressed Air Inlet and outlet connections are reversed.	Check inlet and outlet connections.	This dryer is designed for air flow in one direction only. Inlet and outlet directions are identified on the dryer.
	Drain system is clogged or inoperative.	Restore a free flow of water condensate. Check water evacuation.	Drain system is timed solenoid valve, pneumatically assisted which has to be adjusted in accordance with values listed in this manual. The Solenoid valve includes a strainer that has to be periodically checked and cleaned. Membranes of pneumatically assisted drain have to be checked or replaced every 6 months.
	Bypass system is open	Check the valves	Important: Bypass piping should be installed around the dryer so the dryer can be isolated for service without shutting down the air supply. During dryer operation, valves must be set so all air goes into the system. Check tightness of the bypass system.
	Free moisture remains in pipe lines.	Blow out the system	Before the dryer is first started all free moisture should be blown out of the system.
	Excessive air flow	Check actual flow through the dryer.	This dryer is designed for a maximum air flow. If too much air is pumped into the dryer, water removal capacity may not be sufficient, resulting in liquid carry over downstream. Check the rated flow of the air compressor.
	Excessive free moisture	Check the separator and drain system and compressor after cooler ahead of the dryer.	In some system there may be an accumulation of free moisture in the line ahead of the dryer. If this moisture is pumped into the dryer intermittently, the water removal capacity may not be sufficient. A water separator should be installed in the line before the dryer.
	Excessive compressed air inlet temperature.	Be sure that dryer is working lower than design conditions	The dryer is designed to work for calculated design conditions. Should the conditions be exceeded, the dryer will be overflowed, dew point will go up and protecting devices can switch off.
	Clogged condenser fins	Clear fins of all obstructions	The clogged fins in the condenser will restrict air passage and reduce refrigerant capacity causing water downstream. Fins should be periodically checked and cleaned.
	Shortage of refrigerant	Fix the leak and add a charge of refrigerant.	Loss of refrigerant will cause improper functioning. A qualified, refrigeration specialist should perform the necessary repairs, or factory should be contacted if the unit is in warranty.
	Refrigeration system is not functioning	Check to be certain refrigerant compressor is running	To check if the compressor is running, check compressor-on light. It is possible for the fan to be operating but not the compressor. Compressor not running can be caused by several factors. A qualified refrigeration technician should check all refrigerant and electrical controls
	Excessive pressure dew point	Readjust refrigerant evaporating pressure	The refrigerant pressure adjustment should be done by a qualified refrigeration engineer. This is a very sensitive device and incorrect settings may create other failures.
High pressure drop	Excessive compressed air flow or too low air inlet pressure.	Check actual pressure and flow through the dryer.	This dryer is designed for a maximum air flow. If too much air is pumped into the dryer, water removal capacity may not be sufficient, resulting in liquid carry-over downstream. Check the rated flow of the air compressor.
	Freeze up	Check that compressor room ambient,	Frosting of the lines is an indication that controls are set too low. The following should be done by an experienced refrigeration technician.
Fan switch could have failed in closed position keeping fan on.		Controls may be adjusted in the field by means of the hot gas bypass valve. This is to be done by a qualified refrigerant technician.	
The unit will not run or cycles off and on.	Clogged heat exchanger	Clean heat exchanger with a reverse air flow.	Dryer are supposed to be used with compressed air free of any aggressive contaminants. Some contamination may require extra maintenance of the heat exchanger.
	Line disconnect switch is open.	Close the start or disconnect switch.	If the dryer is not operating, check the disconnect switch or circuit breaker to be certain it is on.
	Fuse or breaker is open	Replace fuse or reset breaker.	The fuse to the power line should be checked and replaced if needed. Never replace a burnt fuse with an oversized fuse.
	Faulty refrigerant compressor or controls.	Determine the cause and make correction	Failure of compressor to run may be caused by several factors. A qualified refrigeration specialist should check all electrical and refrigeration controls, or factory should be contacted if unit is in warranty.
	Excessive compressed air inlet temperature.	Design conditions and correction factors are described in this manual. Be sure that dryer is working in ambient temperatures below design conditions.	The dryer is designed for working into calculated design conditions. Should the conditions be exceeded, the dryer will be overflowed, dew point will go up and protecting devices may trip.

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The unit will not run or cycles off and on.	Excessive ambient temperature	Designed conditions and correction factors are described in dryer . Be sure that dryer is working lower than design conditions.	A high ambient temperature may cause the refrigerant system to operate at higher than normal pressures. Results will be a higher than normal evaporator temperature. Important: there should be adequate air circulation around the dryer, and proper ventilation in the equipment room should guarantee a low enough ambient temperature.
	Clogged condenser fins	Clear fins of all obstructions.	The clogged fins in the condenser will restrict the air passage and reduce the refrigeration capacity, causing high temperature in the evaporator. Fins should be periodically checked and cleaned.
	Shortage of refrigerant	Fix the leak and add a charge of refrigerant.	Loss of refrigerant will cause improper functioning. Dryers are equipped with a temperature switch which maintains the amount of refrigerant to maintain proper cooling of the compressor. A shortage of refrigerant may cause suction line to become very hot, causing the temperature switch to trip. A qualified refrigeration specialist should perform the necessary repairs.
Error sign occurs on digital temperature control device	The dew point is too low or too high.	Check refrigerant gas and make sure that the working conditions are within the correct range.	If there is not enough refrigerant gas or if the working temperature and inlet temperatures are very high, the dew point will increase.



Refrigerated Dryer WARRANTY POLICY

When used under the conditions recommended the heat exchanger will be warranted for five (5) years. This warranty is limited to the replacement of the heat exchangers,

Some restrictions as outlined below concerning misuse, abuse or accident. The standard equipment external float drain and automatic drain carry a 90-day warranty.

This warranty will apply to equipment installed, operated and maintained in accordance with the procedures and recommendations as outlined in the owner's manual published by Emax During the life of this warranty, Emax will repair or replace (at Polar air's option) any defective part or assembly free of charge if such defect occurred in normal service and was not due to apparent misuse, abuse or accident.. Customer is responsible for shipping charges.

This Warranty is not transferable.

Any warranty service performed in the field must be authorized by EMAX air Unauthorized service voids the warranty and any resulting charges will not be paid by Emax

Polar air makes no other warranties or guarantees, expressed or implied. Polar air assumes no liability for indirect or consequential damages.