

Maintenance Helps Avoid Energy Waste & Repairs

Operations and maintenance issues should be addressed to avoid excessive energy use and costly repairs, as well as potential product loss. Additional maintenance issues can be reviewed in the Walk-in Cooler/Freezer Diagnostic Protocol table shown below.

Credit: Eric Borchardt, EIT, LEED AP, is an energy engineer for Michaels Energy,
<https://blog.uscooler.com/walk-in-cooler-freezer-problems/>

Diagnosing Problems

Malfunction	Possible Cause	Solution
Power is on, but control board does not display.	<ol style="list-style-type: none"> 1. Phase loss or fuse blown. 2. Power phase open or transformer shorted. 3. Control board failure. 	<ol style="list-style-type: none"> 1. Check wiring for breaks and replace fuse. 2. Check Transformer output voltage (12V) 3. Replace cold storage room control board.
Control board displays, but compressor does not run.	<ol style="list-style-type: none"> 1. Compressor relay tripped. 2. Hi-Lo pressure safety switch shut down. 3. Defective contactor or coil. 4. Cold room temperature is lower than operation setpoint. 5. Internal thermal overload tripped. 6. Compressor malfunction. 	<ol style="list-style-type: none"> 1. Determine reason and take correct action. 2. Determine type and cause of shutdown and correct it before resetting safety switch. 3. Repair or replace. 4. Reset operation temperature setpoint. 5. Wait until compressor cools down for reset. 6. Check compressor motor winding.
High discharge pressure	<ol style="list-style-type: none"> 1. Dirty Condenser coil. 2. Fan not running. 3. System overcharged with refrigerant. 	<ol style="list-style-type: none"> 1. Clean walk-in cooler and walk-in freezer condenser coils. 2. Check fan motor and its electrical circuit. 3. Reclaim excess refrigerant.
Low discharge pressure.	<ol style="list-style-type: none"> 1. Insufficient refrigerant in system. 2. Low suction pressure. 	<ol style="list-style-type: none"> 1. Check for leaks; repair and add charge. 2. See corrective steps for low suction pressure.
High suction pressure.	<ol style="list-style-type: none"> 1. Excessive load. 2. Expansion valve overfeeding. 	<ol style="list-style-type: none"> 1. Reduce load. 2. Regulate superheat.
Low suction pressure.	<ol style="list-style-type: none"> 1. Lack of refrigerant. 2. Plugged suction filter. 3. Evaporator dirty or iced. 4. Fan not operating. 5. Expansion valve underfeeding 	<ol style="list-style-type: none"> 1. Check for leaks. Repair and add charge. 2. Replace suction filter. 3. Clean and defrost. 4. Check fan motor and circuit control. 5. Regulate superheat.



Diagnosing Problems (cont)

Large difference between actual cold storage room temperature and set point on control panel	<ol style="list-style-type: none"> 1. Incorrect room temperature. 2. Sensor placement, wire too long. 3. Sensor contactor open. 	<ol style="list-style-type: none"> 1. Re-position sensing point of temperature sensor. 2. Enlarge wire section. 3. Reconnect sensor.
Heavy frost builds up on evaporator fins High temperature alarm.	<p>Too much time between defrost cycles or incomplete defrosts.</p> <ol style="list-style-type: none"> 1. Overload and door open excessively. 2. Bad refrigeration performance. 3. Heavy frost build-up on evaporator. 	<p>Manual defrost and adjust defrost cycle</p> <ol style="list-style-type: none"> 1. Reduce load and door opening. 2. See corrective steps for discharge and suction pressure malfunctions. 3. Manual defrost and adjust defrost cycle.
Coil not clearing off frost during defrost cycle.	<ol style="list-style-type: none"> 1. Heater malfunction. 2. Not enough defrost cycles per day. 	<ol style="list-style-type: none"> 1. Check heater operation. 2. Adjust defrost control.
Ice accumulating in drain pan	<ol style="list-style-type: none"> 1. Heater malfunction. 2. Not enough defrost cycles per day. 	<ol style="list-style-type: none"> 1. Check heater; replace if necessary. 2. Clean drain line.
Display screen flashes, unit emits humming noise.	Observe alarm indicator.	See alarm indicator for remedy.



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