

Optimal Performance for your Chambers & Rooms

Convion plant growth chambers and rooms are built to last. Many are in operation in excess 20 years. Extending the life of your chambers and rooms is often a high priority of our clients to ensure that they remain running efficiently and effectively for their research and product development objectives for years to come.

Get GroGuardian today!

Should your Convion fleet be aging or soon to be off warranty, consider our **GroGuardian** preventative maintenance program. **GroGuardian** can make it easy for you to stay on top of regular service and maintenance and give you additional peace of mind knowing that your chambers and rooms will run smoothly.

If you do not opt for Convion's comprehensive preventative maintenance program and prefer to service your fleet independently, below are a number of common areas for your team to monitor and address proactively to ensure your chambers and rooms remain in top working condition in the coming years.



Refrigeration

Symptoms	Common Issues
Slight shift in controlling temperature	<ul style="list-style-type: none"> Worn proportional valve
Wide cycling incorrect level	<ul style="list-style-type: none"> Compressor cutting out on overload, low pressure, or high-pressure cutout Control setting issues Compressor cycling at incorrect level Portable aspirator fan not running or blocked Loosened or disconnected aspirator piping Air not passing properly over sensing element Location of aspirator body Sensor element not facing air stream at inlet next to aspirator body
Chamber temperature too high (above setpoint)	<ul style="list-style-type: none"> Insufficient refrigerant in system Restricted filter/drier Restricted strainer or expansion valve Dirty evaporator Fans not working Frosted evaporator Compressor malfunctioning Proportional valve malfunctioning
Chamber shuts off on low temperature limit	<ul style="list-style-type: none"> Proportional valve/stepper valve sticking Control voltage issues
Compressor noisy or vibrating - high discharge pressure	<ul style="list-style-type: none"> System overcharged with refrigerant Non-condensable in system - purge, evacuate, and recharge Restriction in discharge line (before receiver only) Condenser fan(s) not running Air-cooled condenser dirty Water-cooled condenser fouled Insufficient water or condenser water too warm – the condenser fan has failed Faulty solenoid valve
Compressor noisy or vibrating - low discharge pressure	<ul style="list-style-type: none"> Insufficient refrigerant in system Low ambient temperature (air-cooled condenser without discharge pressure regulation) and/or improperly adjusted head pressure control Low airflow across evaporator - frosted coil - defective fan motor Damaged compressor internals
Compressor noisy or vibrating - high suction pressure	<ul style="list-style-type: none"> Incorrect crankcase pressure regulator setting Faulty crankcase regulator pressure

Compressor noisy or vibrating - low suction pressure	<ul style="list-style-type: none"> • Insufficient refrigerant in system • Expansion valve malfunctioning • Dirty liquid line filter/drier 	<ul style="list-style-type: none"> • Dirty evaporator • Failed circulating fan motor • Defective coil
Little or no oil pressure (semi-hermetic compressors)	<ul style="list-style-type: none"> • Excessive liquid in crankcase - reset the expansion valve for higher superheat. Check the liquid line solenoid valve operation. 	<ul style="list-style-type: none"> • Pump housing gasket leaks • Worn oil pump • Defective low oil pressure safety switch • Worn bearings
Compressor loses oil	<ul style="list-style-type: none"> • Shortages of refrigerant • Excessive compression ring blow-by 	
Refrigeration direct coolant central chiller system - chamber temperature above setpoint	<ul style="list-style-type: none"> • Chiller fluid temperature is too warm • Air lock in circulating pump • Dirty cooling coil • Frosted evaporator 	<ul style="list-style-type: none"> • Circulating pump malfunctioning • Proportional valve malfunctioning • Loss of glycol in system
Refrigeration direct coolant central chiller system – temperature wide cycling incorrect level	<ul style="list-style-type: none"> • Temperature wide cycling incorrect level 	



Humidity

Symptoms	Common Issues
Air spray nozzle humidification intermittent, no spray, or poor/low water spray with constant compressed airflow	<ul style="list-style-type: none"> • Partial blockage of the center water orifice
Air spray nozzle humidification intermittent spray, no spray, or air bubbles in the water reservoir:	<ul style="list-style-type: none"> • Leakage of the compressed air from the outer body cavity into the center water cavity • Rubber gasket inadequate



Lighting

Symptoms	Common Issues
Lamps not working	<ul style="list-style-type: none"> • Defective lamp, ballast, or relay
Lamps output decline	<ul style="list-style-type: none"> • Lamp nearing end of life



Electrical

Symptoms	Common Issues
Unit shut off on low limit	<ul style="list-style-type: none"> • Proportional valve - loose electrical connections at the valve • Replace the proportional valve • Replace defective temperature sensor

Unit shut off on high limit	Proportional valve - program the control system so that it is in a full cooling mode.	<ul style="list-style-type: none"> • Reprogram required • System hardware • Defective circulating fan motor • Compressor malfunction
Compressor will not run	<ul style="list-style-type: none"> • Defective transformers in control panel, or compressor electrical box – line side and load side for voltage • Defective contactor coil, relay or transformer 	<ul style="list-style-type: none"> • Broken wire between control panel and condensing unit • Loose wiring • Control issues
Compressor is energized, but will not start	<ul style="list-style-type: none"> • Low line voltages • Defective run or start capacitor • Defective start relay 	<ul style="list-style-type: none"> • Shorted or grounded motor windings • Internal compressor mechanical damage
Compressor starts, but trips on overload protection	<ul style="list-style-type: none"> • Low line voltages • Excessive suction or discharge pressure • Mechanical damage in the compressor • Shorted or grounded motor windings 	<ul style="list-style-type: none"> • Defective run or start capacitor • Defective start relay • Defective overload protector
Starting relay burns out	<ul style="list-style-type: none"> • Low or high line voltage • Incorrect running capacitor • Incorrect relay 	
Starting capacitor burn out	<ul style="list-style-type: none"> • Relay contacts sticking • Incorrect capacitor 	
Running capacitor burn out	<ul style="list-style-type: none"> • Excessive high line voltage • Capacitor voltage rating too low 	
Load off (lights, heaters, fans)	<ul style="list-style-type: none"> • Loose connections on the control system hardware and terminal blocks • Relays or contactors load 	
Direct coolant central chiller systems - unit shuts off on low/high limit	<ul style="list-style-type: none"> • Defective control system hardware • Defective temperature sensor 	<ul style="list-style-type: none"> • Defective circulating fan motor • Defective triac(s) or relays
Electrical - direct coolant central chiller systems - circulating pump not running	<ul style="list-style-type: none"> • Electrical circuits and motor windings for short or open circuits • Stuck pump – correct fault and reset circuit breaker • Low or high line voltage • Defective motor, check for open or shorted windings • Defective capacitor (depending on pump model) • Loose wiring - check all wire junctions and tighten all screws • Glycol supply 	