



Chiller Troubleshooting Checklist

Compressor Will Not Run

Main switch open. Circuit breakers open. Fuse is blown	Assure all breakers and switches are on. Check circuits and motor winding for shorts or grounds. Investigate for possible overloading. Replace fuse or reset breakers after fault is corrected.
Thermal overloads tripped or fuses blown	Overloads are Auto-Reset. Monitor to assure the overload does not re-occur.
Defective contactor or coil	Repair or replace
System shut down by safety devices safety.	Determine type and cause. Correct fault before resetting
Liquid line solenoid will not open	Repair or replace coil
Motor electrical trouble	Check motor for open circuit, short circuit, or motor burnout
Loose wiring	Check all wire junctions. Tighten all terminal screws.

Compressor has Excessive Noise or Vibrations

Flooding of refrigerant into crankcase	Check setting of expansion valve
Improper discharge piping support	Relocate, add, or remove supports
Improper or worn compressor supports	Replace supports
Worn compressor	Replace or rebuild compressor

High Refrigerant Discharge Pressure

Condenser water insufficient or too warm	Adjust condenser water regulating valve. Increase supply
Fouled water cooled condenser tubes	Clean with light solvent or acid solution overnight
Clogged spray nozzles (evaporative condenser)	Remove and clean nozzles
Dirty tube and fin surface (air cooled condenser)	Clean with compressed air or water spray, Use fin comb if fins bent
Non-condensibles in system	Purge the non-condensibles
System overcharged with refrigerant	Remove excess refrigerant
Discharge shut off valve partially dosed	Open valve
Condenser is undersized	Check condenser rating tables with operating parameters
High ambient conditions exist	Check condenser rating tables with operating parameters

Low Refrigerant Discharge Pressure

Faulty condenser temperature regulator	Check condenser control operation. Assure proper flow and temp.
Suction shut-off valve partially closed	Open valve
Insufficient refrigerant in system	Check for leaks. Repair and add charge as needed
Low suction pressure	See low suction pressure below
Compressor operating unloaded	See failure of compressor to unload or load up below
Condenser too large	Check condenser rating tables
Low ambient conditions	Check condenser rating tables

Low Suction Pressure

Lack of refrigerant	Check for leaks. Repair and add charge
Evaporator dirty	Clean chemically
Clogged liquid line filter-drier	Replace cartridge(s)
Clogged suction line or suction gas strainers	Clean strainers
Expansion valve malfunctioning	Check and reset for proper superheat. Replace if necessary
Condensing temperature too low	Check condensing temperature regulation system
Compressor will not unload	See Corrective Steps for failure of compressor to unload
Insufficient chilled water flow	Adjust flow rate across evaporator



Compressor Will Not Unload Or Load Up

Defective capacity control	Repair or replace module
Unloader mechanism defective	Replace unloader
Faulty thermostat stage or broken capillary tube	Replace thermostat assy
Stages not properly set for application	Reset thermostat setting for operating requirements

Compressor Loading/Unloading Cycles Too Short

Erratic water thermostat device	Replace thermostat assy
Insufficient evaporator water flow	Adjust flow rate or remove flow restrictions. Check pump head loss

Low Oil Pressure

Clogged suction oil strainer	Clean strainer
Excessive liquid in crankcase	Check crankcase heater. Reset expansion valve for low superheat. Check liquid line solenoid valve for operation
Oil pressure gauge defective	Repair or replace. Keep valve closed except when taking readings
Low-oil pressure safety switch defective	Replace switch
Worn oil pump	Replace oil pump assy. Clean system to assure any metal is purged
Oil pump reversing gear stuck in position	Reverse direction of compressor rotation to free gear
Worn bearings	Replace or rebuild compressor
Low oil level	Add oil to proper level. Assure oil carry through in system piping
Loose fitting on oil lines	Check and tighten system
Pump housing gasket leaks	Replace gasket
Flooding of refrigerant into crankcase	Adjust thermal expansion valve

Compressor Loses Oil

Low Refrigerant Charge	Check for leaks and repair. Add refrigerant to proper charge
Gas Velocity in risers too low	Check riser sizes against compressor gas flow
Oil trapped in line	Check pitch of lines and refrigerant velocities
Excessive compression ring blow-by	Replace or rebuild compressor

Motor Overload Relays or Circuit Breakers Open

Low voltage during high load conditions	Check supply voltage for excessive line drop
Grounded wiring in motor or power circuits	Replace compressor motor. Correct circuit wiring
Loose power wiring	Check all connections and tighten
High condensing temperature	See Corrective Steps for high refrigerant discharge pressure
Power line fault causing unbalanced voltage	Check voltage. Notify power company. Do not start until corrected
High ambient temperature at overload relay	Provide ventilation to reduce heat
Failure of second starter on part-winding start	Repair or replace starter or time delay mechanism

Compressor Thermal Protector Switch Open

Operating beyond design conditions	Allocate chiller for use within operating capacity. Add equipment.
Discharge valve partially shut	Open valve
Blown valve plate gasket	Replace gasket

Freeze Protection Safety Activated

Thermostat set too low	Reset above freezing temperature at evaporator discharge
Low water flow	Adjust chilled water flow rate. Remove restrictions. Increase HP.
Low suction pressure	See "Low Suction Pressure"