

WHY DID THE COMPRESSOR FAIL?

Compressors typically fail because of a system problem or other component. It is imperative that the problem be diagnosed and corrective measures put in place, or the replacement compressor will also fail. Field examination of a failed semi-hermetic compressor will usually reveal the cause of failure and will point to the system problem.

Inspection Shows	Cause	Remedy
Worn pistons and cylinders with no evidence of overheating (air cooled compressors). Center and rear bearings worn or seized, dragging rotor/shorted stator, progressively scored crankshaft, worn or broken rods (suction cooled compressors).	Refrigeration Floodback	Correct low load conditions; check for proper superheat at the compressor; install an accumulator to protect the compressor against uncontrollable liquid return.
Worn or scored rods/bearings. Broken Rods from seizure. Crankshaft worn erratically.	Flooded Starts	Crankcase heater operation; install pumpdown solenoid.
Broken rods, reed valves or crankshaft, loose or broken valve backer bolts, blown head gasket.	Liquid and/or Oil Slugging	Check of proper superheat at the compressor; correct low load conditions; install an accumulator; install a pumpdown solenoid. Check for crankcase oil overcharge.
Discolored valve plate, burned valve reeds, worn pistons, rings and cylinders, stator spot burn from metal debris.	High Discharge Temperature	Correct low load conditions; correct high discharge pressure conditions; insulate suction lines; provide correct compressor cooling.
All rods and bearings worn or scored, crankshaft uniformly scored, rods broken from seizure, little or no oil in crankcase.	Loss of Oil	Check oil failure switch operation; check refrigerant charge; correct low load condition/short cycling; check pipe sizing and/or oil traps; check for inadequate defrosts.
All windings are uniformly burned.	General Burn	Check for proper voltage; check for unbalanced voltage; check for inadequate motor cooling.
Two phases or a three phase motor overheated or burned.	Single Phase Burn	Check for proper and operational motor protection, replace contractor.
Only the start winding of a single phase motor is uniformly overheated or burned.	Start Winding Burn	Check for proper wiring; check start capacitor and/or start relay; check for compressor overloading.
A localized burn within a winding, between windings, or from windings to ground.	Spot Burn	If not caused by mechanical problems, check for spikes of high current flows.
Breakdown or insulation between terminals and compressor body.	Shorted Terminals	Check for over torquing of terminals.