

EQUIPMENT TROUBLESHOOTING

Operational Issue(s)

Low suction pressure
 Low head pressure
 High suction pressure
 High head pressure
 System will not start
 Compressor will not start
 Comp. and Cond. Fan will not start
 Evaporator fan will not start
 Condenser fan will not start
 Compressor fan will not start
 Compressor runs - goes off on overload
 System runs continuously - little cooling/htg
 Too cool and then too warm
 Not cool enough on warm days
 Certain areas too cool, others too warm
 Compressor is noisy
 System runs - blows cold, air in heating
 Unit will not defrost

ORIGIN or BASIS of FAILURE	Pressure			No Cooling			Cooling/Heating Issue(s)			TEST and REPAIR or REPLACE	
	•	•	•	•	•	•	•	•	•		
Power Failure				•							Test Voltage
Blown Fuse				•	•	•					Inspect Fuse Size & Type
Unbalanced Power, 3phase				•			•	•			Test Voltage
Loose Connection				•		•	•				Inspect Connection - Tighten
Shorted or Broken Wires				•	•	•	•	•	•		Test Circuits With OhmMeter
Open Fan Overload						•	•				Test Continuity of Overload
Faulty Thermostat				•	•	•			•		Test Continuity of Thermostat & Wiring
Faulty Transformer				•	•						Check Control Circuit with Voltmeter
Shorted or Open Capacitor			•	•	•	•	•	•			Test Capacitor
Capacitor Wired Wrong (Dual Caps)			•								Verify Ground/Power Connections
Internal Compressor Overload Open				•						x	Test Continuity of Overload
Shorted or Grounded Compressor				•			•				Test Motor Windings
Compressor Stuck				•			•	•		x	Use Test Cord
Faulty Compressor Contactor					•	•	•				Test Continuity of Coil & Contacts
Faulty Fan Relay					•						Test Continuity of Coil And Contacts
Open Control Circuit					•						Test Control Circuit with Voltmeter
Low Voltage				•			•	•			Test Voltage
Faulty Evap. Fan Motor	•		x		•						Repair or Replace
Shorted or Grounded Fan Motor			•			•					Test Motor Windings
Improper Cooling Anticipator							•	•			Check Resistance of Anticipator
Shortage of Refrigerant	•	•					•	•		x	Test For Leaks, Add Refrigerant
Restricted Liquid Line	•	•	•				•	•			Remove Restriction, Replace Restricted Part
Open Element or Limit on Elec. Heater								x		x	Test Heater Element and Controls
Dirty Air Filter	•		x				•	•	•		Inspect Filter-Clean or Replace
Dirty Indoor Coil	•		x				•	•	•		Inspect Coil - Clean
Not enough air across Indoor Coil	•		x				•	•	•		Check Blower Speed, Duct Static Press, Filter
Too much air across Indoor Coil	x	•					•	•	•		Reduce Blower Speed
Overcharge of Refrigerant		•	•				•	•		•	Recover Part of Charge
Dirty Outdoor Coil	x		•				•	•	•		Inspect Coil - Clean
Noncondensibles			•				•	•		x	Recover Charge, Evacuate, Recharge
Recirculation of Condensing Air			•				•	•			Remove Obstruction to Air Flow
Infiltration of Outdoor Air							•	•	•		Check Windows, Doors, Vent Fans Etc.
Improperly Located Thermostat						•	•	•			Relocate Thermostat
Air Flow Unbalanced							•	•	•		Readjust Air Volume Dampers
System Undersized							•	•			Refigure Cooling Load
Broken Internal Parts									•	x	Replace Compressor
Broken Valves	•	•					•			•	Test Compressor Efficiency
Inefficient Compressor	•	•					•			x	Test Compressor Efficiency
Wrong Type Expansion Valve	•	•	x				•	•	•	•	Replace Valve
Expansion Device Restricted	•	•	•				•	•	•	•	Clear Blockage or Replace Expansion Device
Oversized Expansion Valve			•				•				Replace Valve
Undersized Expansion Valve	•						•	•	•		Replace Valve
Expansion Valve Bulb Loose			•						•		Tighten Bulb Bracket
Inoperative Expansion Valve	•						•	•			Check Valve Operation
Loose Hold-down Bolts									•		Tighten Bolts/Nuts
Faulty Reversing Valve	x	x	x			•				x	Replace Valve or Solenoid
Faulty Defrost Control	x	x	x			•				x	Test Control
Faulty Defrost Thermostat	x	x	x	x						x	Test Defrost Thermostat
Flowrator Not Seating Properly		•	•					•			Check Flowrator & Seat/Replace Flowrator
Condenser Access Panel Not In Place			•								Install Access Panel - Recheck Pressures

• cooling or heating cycle (heat pump)

x heating cycle only (heat pump)