Preventative Maintenance Procedures

MAINTENANCE ITEMS	QUARTERLY	HEATING SEASON	COOLING SEASON
STANDARD EVAPORATIVE COOLERS			
Evap/filter media	Check and clean.	Check and clean.	Check and clean. Replace if necessary. Replace every 5 yrs.
Evap pump/basket			Clean before start of season. Check for operation.
Evaporator pan	Check and clean.	Drain and clean.	Clean and fill.
Float valve assembly	Check operation.	Turn off water supply.	Turn on water and check for proper adjustment, 2" in pan.
Bleed off valve	Check for clogging.		Assure proper placement in drain overflow pipe.
Belt adjustment	Check tension, wear and adjustment.	Adjust as needed.	Adjust as needed.
Water distribution manifold	Clean and flush.	Be sure to turn off water supply & drain water from system.	Clean & flush. Make sure all distribution points are free of any obstructions.
Blower motor	Check amp draw, belt tension & wear.	Check amp draw and oil bearings.	Check amp draw & oil bearings.
Drives, bearings & pulleys	Check alignment & bearing wear.	Check alignment & bearing wear.	Check alignment & bearing wear.
Fill & drain kits	Check corrosion & leaks.	Ensure drain valve opens, draining pan.	Ensure fill valve opens, filling pan.
DUCT FURNACES			
Burner tray assembly		Remove & clean burners before start of heating season.	
Gas train assembly	Check for leaks.	Check for leaks. Check for proper gas pressures.	
Discharge t-stat		Check for desired discharge setting.	
Power ventor		Oil with SAE oil as prescribed, check to ensure centrifigle switch is operational.	
Remote control panel	Cycle all modes.	Cycle heat mode.	Cycle cool mode.

Trouble Shooting Chart

Heating Operation Blower Motor Runs		
Unit Fails to Ignite For Heat	Insufficient Inlet Gas Pressure	Check Pressure & Pressure Tap On Gas Valve
	Combustion Blower Fails to Prove Combustion	Check Centrifugal Switch Located I the Combustion Blower Housing
	Pressure Switch not in Closed Position	Check Power Vent and Sensor Tube
	Gas Valve in Closed Position (or modulating valve)	Check Gas Valve in ARES Unit, if open, Check Inlet Supply Valves
Unit Fails To Ignite Upon Call For Heat	Defective HIS Control	Check Control Using Flowchart In Maintenance Section
	Thermostat not Calling for Heat	Check T-State Setting
	Defective High Limit Switch	Take Continuity Reading Across Switch Replace if Defective
	Defective Time Delay	Replace Solid State Time Delay
	Defective Combustion Blower Motor	Check and Replace if Defective
	Defective Combustion Blower Relay	Check and Replace if Defective
	Defective Proportional Control (if required)	Obtain OHM Reading from R-W, Replace if Open
	Defective Room Override Switch	OHM Switch out-Replace if Defective
	Defective Hot Surface Ignitor Preventing Ignition	Replace Defective Hot Surface Ignitor. Check with OHM meter.
	Defective Flame Sensor	Replace Defective Flame Sensor
	Flame Sensor Shorting to Ground	Reposition or Replace Flame Sensor
	Moisture on Air In Gas Line	Bleed and Retry
Unit Fails to Maintain Adequate Discharge Temperature	Check Thermostat Adjustment	Increase as Necessary
	Defective Proportional Control	Replace Defective Control
	Defective Gas or Modulating Valve	Replace as Necessary
	Defective Room Override Control	Replace as Necessary
	Unit Too Small	Add Additional Units
	High Limit Switch Cycling @ Low Temperature	Replace High Limit Switch
	Too Much Air Flow Across heat Exchanger	Reduce Air volume
	Defective or Shorted Flame Sensor	Correct or Replace
	Improper Gas Pressure	Verify and Correct
	Incorrectly Sized Burner Orifices	Identify and Correct
Unit Fails to Control Discharge Temperature (Too Hot)	Defective Thermostat	Replace T-Stat
	Thermostat Sensing Element Positioned Incorrectly	Place Element in Proper Position
	Unit Incorrectly Wired	Check Wiring, Correct as Necessary

Trouble Shooting Chart (cont.)

Unit Fails to Control Discharge Temperature (Too Hot)	Shorted Wiring or T-Stat	Identify and Correct
	Defective Gas Valve	Replace Valve
	Incorrect Thermostat Setting	Adjust T-Stat
	Air Volume Too Low for Thermostat Setting	Increase Air Volume
	Manifold Pressure Too High	Adjust to Specs.
IMPROPER FLAME CHARACTERISTICS		
Burner Flashback @ Valve De- Energization	Incorrectly Positioned or Damaged Burner Assembly	Replace Defective Burners
Burner Flashback at Time of Ignition	Defective Burner Ribbon	Replace Defective Burner
	Damaged carry-over Strip	Replace Damaged carry-over Strip
Yellow-Tipped Abnormal Flame (Too High)	Lack of Combustion Air	Check Combustion Blower Motor and Collector Box for Obstruction or Defects
	Improper Burner Orifices	Install Correct Orifices
	Obstructed Burner Ribbons	Change Defective Burner
	Improper Burner fit or Alignment	Adjust Burners for Proper Operation
Lifting or Wafting Flame Characteristic	Incorrect Gas Pressure (Too High)	Check Gas Pressure Adjust to Recommendations
Fuel Odors or Burning Eyes @ Discharge Areas	Gas Leak	Shut Unit Down and Correct Immediately (Soap Check)
	Defective Burner Assembly	Replace Defective Assembly
	Cracked heat Exchanger	Check and Replace if Necessary
	Damaged Gas Valve	Replace Defective Valve
	Paint and Oil Burn-Off on Start-Up	Allow Unit to Burn Until Oil Has Cleared