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START-UP FORM: AIR HANDLER

Customer:		Date:	
Technician:		Model Number:	
Start-Up Co.:		Serial Number:	

Field start-up should be performed by a qualified technician. The technician is responsible for assuring that all of the items on this checklist are properly installed and operating. Complete and return start up form to factory e-mail address waparts@specifiedair.com. All of the checks below may not apply depending on unit model type and unit specific options and accessories. If check is not applicable to unit being commisioned, write n/a.

A. General Inspection- Fan Section

- ☐ Fan and motor sheaves secured tightly to fan and motor shafts.
- ☐ Sheaves are properly aligned.
- ☐ Belts are tensioned properly.
- ☐ Fan set bolts are tight.
- ☐ Bearing mounting bolts are tight.
- ☐ Bearings are secured to fan shaft (set screws or locking collar)
- ☐ Lubricate bearings as needed (add if no grease visible exiting bearing seals)
- ☐ Wire to motor connected, connections are complete and tight.

Comments

B. General Inspection- Burner / mixed air / filter section

- ☐ No obstructions to the burner.
- ☐ Pilot gas line, spark igniter, flame rod, and component wiring are connected and secure to burner pilot assembly.
- ☐ If UV scanner is equipped, scanner is secured and finger tightened to burner pilot assembly.
- ☐ Wiring connections at shipping splits are connected and tight.
- ☐ Clogged filter switch tubing connected.
- ☐ Clogged filter switch set point _____ " w.c. (recommended .75 - 1.0" w.c)

Comments

⚠ WARNING

Explosion Hazard

Leak test all components of air handler gas piping before operation.

Gas can leak if piping is not installed properly.

Do not high pressure test gas piping with air handler connected.

Falling Hazard

Use proper safety equipment and practices to avoid falling.

Do not use any part of air handler as support.

Burn Hazard

Allow air handler to cool before service or maintenance.

Internal components of air handler may still be hot after operation.

Failure to follow these instructions can result in death, injury or property damage.

⚠ DANGER

Electrical Shock Hazard

Disconnect electric before service or maintenance.

More than one disconnect switch may be required to disconnect electric from air handler.

Air handler must be connected to a properly grounded electrical source.

Protect electric system from water.

Severe Injury Hazard

Do not enter air handler while in operation.

Air handler may start automatically.

Do not operate with door open.

Installation, operation and service must be done by a trained technician only.

Failure to follow these instructions can result in death, electrical shock or injury.

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C. General Inspection- Gas and electric control cabinet(s)

- ☐ Control voltage wires at terminal strips, relays, circuit breakers, and other electrical devices are tight.
- ☐ All high voltage wire connections are tight. Example: Disconnect, motor contactor, overload relay, variable frequency drive.
- ☐ The gas piping has been purged of debris.
- ☐ Fuel is: (circle one) Natural Gas Propane
- ☐ For indoor air handlers only, the vent lines are piped outdoors. All vent caps are installed.

Comments

D. General Inspection- Temperature sensor and remote wiring

- ☐ For conventional controls, temp sensor wiring is shielded cable or standard wiring in a separate conduit from control wiring.
- ☐ For DDC controls, temp sensor and remote wires are terminated per electrical print specifications.

Cable Type

E. General Inspection- Miscellaneous Items (Visually inspect air handler and note any relevant observations.)

- ☐ Unit properly weather-sealed. Unit shipping splits are caulked. If horizontal unit, zip tape is installed over roof shipping splits.
- ☐ If vertical unit installed outdoors, rain skirts are installed. If horizontal unit, inlet hood is installed and caulked.
- ☐ All hardware / damper linkage is tight and secure.
- ☐ Filters are installed properly. (Pleated or Aluminum w/arrow in the direction of airflow. Pleats are perpendicular to filter rails.)
- ☐ If outdoor unit, the pressure sensor "high" tap tubing is run indoors. If indoor unit, the pressure sensor "low" tap tubing is run outdoors.

Comments

F. Operational Checks- General Information

Design CFM from unit data tag | Design ESP from unit data tag

Motor HP from motor name plate | Motor FLA from motor name plate

G. Operational Checks- Fan Operation and Burner air flow

☐ Check and record the following: Design Voltage

Volts (Fan Off) Phase 1-2 | Phase 2-3 | Phase 1-3

☐ Fan rotation is correct. (See rotation sticker in the unit.)

Volts (Fan On) Phase 1-2 | Phase 2-3 | Phase 1-3

Motor running amps Phase 1 | Phase 2 | Phase 3

Air pressure differential across burner measured at AFS tubing test ports. (***Target is .7 - 1.0" w.c)*** 20% OA | 100% OA

Comments

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H. Operational Checks: Temperature Control Operation, DDC Controls

☐ Check and record the following:

Room Sensor	Measured Temperature		Actual Temperature	
Outdoor Air	Measured Temperature		Actual Temperature	
Discharge Air	Measured Temperature		Actual Temperature	

Minimum discharge air temp setpoint (°F)
55°F Recommended

Maximum discharge air temp setpoint (°F)
95°F Recommended

Comments

I. Operational Checks: Damper Control (Check options which apply.)

☐ Burner supply air damper operates properly.

☐ Building pressure control set point is at (factory-recommended) .01" w.c. positive.

☐ Outside air / return mixed air dampers respond properly to pressure controls or manual damper controls.

☐ Discharge dampers

☐ Exhaust dampers

☐ Burner profile dampers respond to pressure change

☐ Photohelic / pressure transducer for burner profile dampers setpoint 0.75" w.c. / 1.0" w.c.

Comments

J. Operational Checks: Burner Operation

Inlet Standing Gas Pressure (in. w.c.)

☐ Pilot flame is approximately the size of a baseball.

Pilot Line Gas Pressure (in. w.c.)

Flame Signal (6-18 vdc - flame rod) or (0-5 vdc - UV scanner)

Differential High Fire Gas Pressure (in. w.c.) from unit data tag

Burner Negative (measured w/ fan on only)

Actual Burner High Fire Gas pressure (in. w.c.)

Inlet Gas Pressure in forced high fire

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High Fire Burner Flame Length (in.) and flame color

Temperature rise measured in High Fire and 100% outside air

- ☐ Low fire gas pressure produces a minimum continuous ribbon of flame.
- ☐ Low airflow switch opens on pressure drop. (Setpoint at .2" w.c.)
- ☐ High airflow switch opens on pressure rise. (Setpoint at 1.35" w.c.)
- ☐ High temperature limit switch opens on temperature rise. (Setpoint at 160° F)
- ☐ Low gas pressure limit switch opens on pressure fall. (Setpoint is 50% of inlet gas pressure minimum from unit data tag)
- ☐ High gas pressure limit switch opens on pressure rise. (Setpoint is actual Burner high fire gas pressure + 1.5" w.c.)
- ☐ Manifold gas leak test.
- ☐ Burner modulates properly to temperature control type and set points. (See operation manual for control description)

K. Operational Checks: Special Controls (List any other special controls specific to this air handler.)

Comments

L. Operational Checks: Miscellaneous

- ☐ Documentation (Installation, Operation and Service Manual and electrical prints) inside the main control panel.
- ☐ There is no noticeable vibration.
- ☐ Remote Control Station(s) operate(s) properly.
- ☐ Building management system / WebCTRL network hardware and software operate properly.
- ☐ Explain the unit operation, location of reset buttons and remote control to customer.

Mounting Method (i.e. Legs, Stand, Curb, Suspended, Rails)

M. Follow-Up (Describe any follow-work to completed by the technician.)

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