

<b>Checklist 5.4 Gas Furnace</b>		
<b>#</b>	<b>Inspection Task</b>	<b>Recommended Corrective Actions</b>
<b>Cabinet</b>		
<b>a.</b>	Inspect cabinet, cabinet fasteners, and cabinet panels.	Repair or replace insulation to ensure proper operation. Replace lost fasteners as needed to ensure proper integrity and of equipment (as applicable). Seal air leaks.
<b>b.</b>	Inspect the required clearance (e.g., combustion and service) around cabinet.	Record and report instances where the cabinet does not meet requirements.
<b>Electrical</b>		
<b>c.</b>	Inspect electrical disconnect box.	Ensure electrical connections are clean and tight. Ensure fused disconnects use the proper fuse size and are not bypassed. Ensure case is intact and complete. Replace as necessary.
<b>d.</b>	Ensure proper equipment grounding.	Tighten, correct and repair as necessary.
<b>e.</b>	Measure and record line voltage.	Compare to OEM specifications or equipment nameplate data. Notify homeowner and/or utility.
<b>f.</b>	Inspect and test contactors and relays.	Look for pitting or other signs of damage. Replace contactors and relays demonstrating evidence of excessive contact arcing and pitting.
<b>g.</b>	Inspect electrical connections and wire.	Ensure wire size and type match the load conditions. Tighten all loose connections, replace heat discolored connections, and repair or replace any damaged electrical wiring.
<b>h.</b>	Inspect motor capacitors.	Replace those that are bulged, split, incorrectly sized, or do not meet OEM specifications.
<b>i.</b>	Measure and record amperage draw to motor/nameplate data (FLA) as available.	If outside OEM rating or specification, inspect for cause and repair as necessary.
<b>Blower Assembly</b>		
<b>j.</b>	Determine and record airflow across heat exchanger.	Verify all grilles, registers, and balancing dampers are open and free of obstruction and operating properly. Adjust, clean, replace, and repair as necessary to ensure to proper airflow.
<b>k.</b>	Test variable frequency drive (e.g., ECM) for proper operation.	Replace if necessary to ensure proper operation.
<b>l.</b>	Inspect fan belt tension. Inspect belt and pulleys for wear and tear.	Repair or replace as necessary to ensure proper operation (if applicable).
<b>m.</b>	Confirm the fan blade or blower wheel has a tight connection to the blower motor shaft. Inspect fan for free rotation and minimal endplay. Measure and record amp draw.	Lubricate bearings as needed, only if recommended by OEM. If amp draw exceeds OEM specifications then adjust motor speed or otherwise remedy the cause. If due to motor failure recommend replacement of blower motor.
<b>Condensate Removal</b>		
<b>n.</b>	Inspect condensate drain piping (and traps) for proper operation.	Clean, insulate, repair, or replace as necessary.

<b>Gas Combustion</b>		
<b>o.</b>	Inspect burner and flue for signs of water, corrosion, and blockage.	Identify cause and clean, repair, or replace as necessary.
<b>p.</b>	Test inducer fan motor and blower assembly.	Correct as needed.
<b>q.</b>	Inspect heat exchanger for signs of corrosion, fouling, structural problems (e.g., cracks, perforations, and bulges), and erratic flame operation during blower operation.	Identify cause and clean, repair, or replace as necessary.
<b>r.</b>	Visually inspect burners for signs of contamination.	Clean, repair or replace as necessary.
<b>s.</b>	Inspect the burner blower wheel	Clean as needed to ensure proper operation.
<b>t.</b>	Inspect hot surface igniter for cracks (white spots when energized or check cold with ohmmeter and proper supply voltage).	Replace if outside OEM's specifications.
<b>u.</b>	Measure and record inlet gas pressure at inlet pressure tap.	If the inlet gas pressure is insufficient for OEM operation specifications, contact the gas supplier.
<b>v.</b>	Measure, record, and adjust manifold pressure as necessary.	Adjust the gas valve to provide proper manifold pressure.
<b>w.</b>	Inspect ceramic insulator, flame probe, and associated wiring for any cracks or abnormalities.	Clean according to OEM recommended procedures. Replace as needed.
<b>x.</b>	Test main burner ignition sequence and flame safety; verify proper operation.	Record micro-amps for comparison with OEM specifications. If outside of OEM operational range, correct combustion problem or replace components as needed.
<b>y.</b>	Test burners.	Fire unit and adjust air shutters (if used) for OEM specification compliance.
<b>z.</b>	Inspect the spark igniter and associated wiring. Verify that spark gap complies with OEM specifications.	If cracking of ceramic insulator or deterioration of spark electrodes is noted, igniter assembly shall be replaced. If cracking or deterioration of ignition wiring is observed, wiring shall be replaced.
<b>aa.</b>	Test inducer fan motor and blower assembly.	Correct as needed.
<b>bb.</b>	Ensure combustion air volume or provision is correct.	Ensure air volume is correct per OEM instructions and local code <sup>4</sup> .
<b>cc.</b>	Perform combustion analysis test. Measure and record test results.	Adjust as needed.
<b>dd.</b>	Measure and record TD across the heat exchanger.	If TD is outside OEM's specifications, identify cause and then clean, repair, or replace as necessary.
<b>Venting</b>		
<b>ee.</b>	Inspect vent exhaust system (e.g., chimney, chimney liner, flue, inlet and exhaust vent) for signs of improper condensation, water corrosion, cracks, fractures, and blockages.	Clean, remove blockages, repair, or replace as necessary.

<sup>4</sup> Direct vent, non-direct vent, and natural draft appliances have differing code requirements for combustion air.

<b>Venting (Continued)</b>		
<b>ff.</b>	Inspect all vent connectors for rust discoloration, or signs of condensate.	Ensure they are securely fastened. Repair or replace as necessary.
<b>gg.</b>	Inspect inlet and exhaust vent pipe for proper support, slope, and termination.	Repair or replace as necessary.
<b>hh.</b>	Inspect for combustible materials placed too close to vent or pipe.	Relocate to safe place or provide approved clearance reduction.