

GAS FURNACE CLEAN AND TUNE

I. HEAT EXCHANGER

1. Visually check the heat exchanger for any cracks or holes and provide written or photographic documentation of any cracks or holes.
2. Perform a test to verify heat exchanger integrity beyond a visual inspection (such as noting substantial increase in O₂ flue gas levels and evidence of flame impingement when blower fan turns on).
3. If the heat exchanger is cracked, **stop all work and immediately contact the weatherization provider.**
4. Document how you determined the heat exchanger was cracked. If visual cracks were found, document them with a photograph.

II. CLEAN

A. Combustion Area

1. Brush down all dirt, soot, and rust from heat exchanger sections.
2. Brush down and vacuum all flue passageways within the furnace.
3. Remove ribbon burners or burner tubes and brush down to remove dirt, soot, and loose rust. Clean all flame ports. Inspect tubes for cracks.
4. Clean gas orifices and ensure proper size.
5. Brush down and vacuum remainder of combustion chamber so that it is free of dirt, soot, and loose rust.
6. Clean pilot orifices and test thermocouple.

B. Air Handling

1. Clean and vacuum heat exchanger (excluding secondary heat exchangers).
2. Clean and vacuum blower, filter rack and the return cabinet so that they are free of dirt, grease, and foreign objects. (In most cases, removal of the blower fan assembly is required for effective cleaning).
3. For Manufactured Homes, verify that the return openings are the correct size.
4. For Manufactured Home furnaces, clean the fresh air filter.
5. Inspect filter. If permanent type, clean per manufacturer's recommendations. If disposable type, replace with new pleated filter. Mark air flow and filter size on ductwork.

III. TUNE

A. Combustion

1. Test for fuel leaks and fix any leaks that are present.
2. Adjust gas input to 3.5 inches of water column for natural gas or 10.5 inches of water column for liquid propane gas in the manifold. **NOTE:** If gas pressure is correct, and clocked input is more than 2% lower than rated input, check orifices for proper size. If furnace is overfiring and gas pressure is correct, then change orifice to a smaller size.
3. Adjust pilot flame just high enough to activate the thermocouple and ignite the burner without delay.
4. Furnaces with electronic pilots should ignite without delay.
5. For liquid propane furnaces, test the ignitor to ensure that it will lock out after first or second attempt to ignite pilot.
6. Adjust combustion as needed to meet BPI 1200 standard of <400 PPM air free for carbon monoxide or local code, whichever is more stringent.

B. Air Handling

1. Check blower and motor bearings. Lubricate as needed.
2. Check belt condition (replace if worn or cracked) and adjust for proper tension.
3. Set fan switch (if possible) so blower comes on at 110° F and goes off at 100° F.
4. Test fan and limit control for proper operation.
5. Test heat rise and make sure it is within manufacturer's specifications.