

# SERVICE AND APPLICATION NOTES

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H-13-05

## Annual Furnace Maintenance

We are frequently asked what should be done on a Fall maintenance check and what items should be inspected. We have assembled the following list. The following items should be inspected and maintained on an annual basis with the appropriate corrections made, if applicable.

### **⚠ WARNING**

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed HVAC professional installer (or equivalent) or a service agency.

### **IMPORTANT !**

This information is intended for experienced service personnel who must follow acceptable servicing practices and be familiar with national installation codes.

## SECTION 1 — FIELD-TECHNICIAN MAINTENANCE

### **⚠ CAUTION**

Before attempting to perform any service or maintenance, turn the electrical power to outdoor unit OFF at disconnect switch.

#### Annual Inspection

- Check wiring for loose connections, voltage at indoor unit and amperage of indoor motor.
- Check the condition of the belt and shaft bearings if applicable.
- Inspect all gas pipe and connections for leaks.
- Check the cleanliness of filters and change if necessary.
- Check the condition and cleanliness of burners and heat exchanger and clean if necessary.
- Check the cleanliness of blower assembly and clean the housing, blower wheel and blower motor if necessary.
- On induced draft furnaces inspect the combustion air inducer and clean if necessary.
- If the furnace is equipped with a condensate drain and trap, inspect for leaks and cracks. The drain and trap must also be cleaned and the trap must be primed with water. Inspect the rubber hoses connected to the pressure switches for cracks or loose connections, replace as necessary. Remove the rubber hoses from the cold end header box and inspect for any blockage, clean as needed. If strainers are installed in the hoses remember to remove and clean before re-installing the hoses.
- Evaluate the heat exchanger integrity by inspecting the heat exchanger per the AHRI heat exchanger inspection procedure. This procedure can be viewed at [www.ahrinet.org](http://www.ahrinet.org)
- Ensure sufficient combustion air is available to the furnace. Fresh air grilles and louvers (on the unit and in the room where the furnace is installed) must be properly sized, open and unobstructed to provide combustion air.
- On non-condensing furnaces, inspect the furnace venting system to make sure it is in place, structurally sound, and without holes, corrosion, or blockage. Vent system must be free and clear of obstructions and must slope upward away from the furnace. Vent system should be installed per the National Fuel Gas Code.



- On condensing furnaces, inspect the furnace intake and exhaust pipes to make sure they are in place, structurally sound, without holes, blockage or leakage and the exhaust pipe is sloped toward the furnace. Inspect terminations to ensure they are free of obstructions and are structurally sound.
- Inspect the furnace return air duct connection to ensure the duct is sealed to the furnace. Check for air leaks on supply and return ducts and seal where necessary.
- Check the condition of the furnace cabinet insulation and repair if necessary.
- Perform a complete combustion analysis during the furnace inspection to ensure proper combustion and operation. Consult Service Literature for proper combustion values.
- Verify operation of CO detectors and replace batteries as required.

### **PERFORMING A GENERAL SYSTEM TEST WITH SYSTEM OPERATING**

1. Perform a general system test. Turn on the furnace to check operating functions such as the start-up and shut-off operation.
2. Check the operation of the ignition system, inspect and clean flame sensor. Check microamps before and after. Check controls and safety devices (gas valve, flame sensor, temperature limits). Consult Service Manual for proper operating range. Thermal Limits should be checked by restricting airflow and not disconnecting the indoor blower. For additional details, please see Service and Application Note H-04-9.
3. Verify that system total static pressure and airflow settings are within specific operating parameters.
4. Clock gas meter to ensure that the unit is operating at the specified firing rate for each stage of operation. Check supply and manifold gas pressures. On two-stage gas furnaces check the manifold pressure on high fire and low fire. On variable capacity units, check the manifold and signal pressure as outlined in the Service literature. *For all units, if manifold pressure adjustment is necessary, consult the Service Literature for unit specific information on adjusting gas pressure.* Verify correct temperature rise.
5. Verify no gas leaks at furnace gas valve or manifold with system running.

### **ANNUAL / SEMI ANNUAL OUTDOOR UNIT (AIR CONDITIONER OR HEAT PUMP) INSPECTION CHECKLIST**

See Service and Application Note C-13-09 *System Maintenance Schedules.*

#### **SECTION 2 — HOMEOWNER MAINTENANCE**

#### **FURNACE UNIT MONTHLY MAINTENANCE IN THE HEATING SEASON**

Check the indoor filter each month, and replace it as soon as necessary.

If you have any questions or need additional information, please contact Lennox Technical Support at (800) 453-6669.