

1184398, 1184353,
1184354, 1184355,
1184356, 1184777

**BURNER SERVICE KIT
FOR CONDENSING GAS FURNACES**
for use with 35-in. (889mm)
High Efficiency Gas Furnace

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes, the current editions of the National Fuel Gas Code (NFPA) NFPA 54/ANSI Z223.1 and the National Electrical Code (NEC) NFPA 70.

In Canada, refer to the current editions of the National Standards of Canada CAN/CSA-B149.1 and .2 Natural Gas and Propane Installation Codes, and Canadian Electrical Code CSA C22.1.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety-alert symbol. **DANGER** identifies the most serious hazards which **will** result in severe personal injury or death. **WARNING** signifies hazards which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.



WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury, death and/or property damage.

The ability to properly perform maintenance on this equipment requires certain knowledge, mechanical skills, tools, and equipment. If you do not possess these, do not attempt to perform any maintenance on this equipment other than those procedures recommended in the Home Owner's Information Manual.



WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK AND CARBON MONOXIDE POISONING HAZARD

Failure to follow instructions could result in personal injury, death or property damage.

Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, explosion, fire, electrical shock, or other conditions, which could result in personal injury or death. Consult your distributor or branch for information or assistance. The qualified installer or agency must use only factory-authorized kits or accessories when servicing this product.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one electrical supply to the furnace. Check accessories and cooling unit for additional electrical supplies that must be shut off during furnace servicing. Lockout and tag switch with a suitable warning label. Verify proper operation after servicing.



CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

INTRODUCTION

This instruction covers the burner replacement on condensing, 35-inch (889 mm) high, high efficiency hot surface igniter units. The burner should be replaced when the burner is corroded, blocked or warped.

There are five different burner assemblies to service all single stage, two-stage, Variable Speed and Modulating furnaces. Each burner assembly is matched to the number of Primary Heat Exchanger Cells on the furnace.

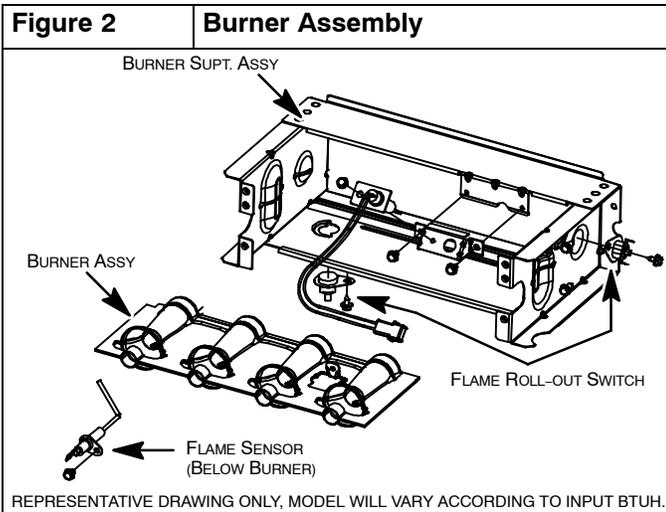
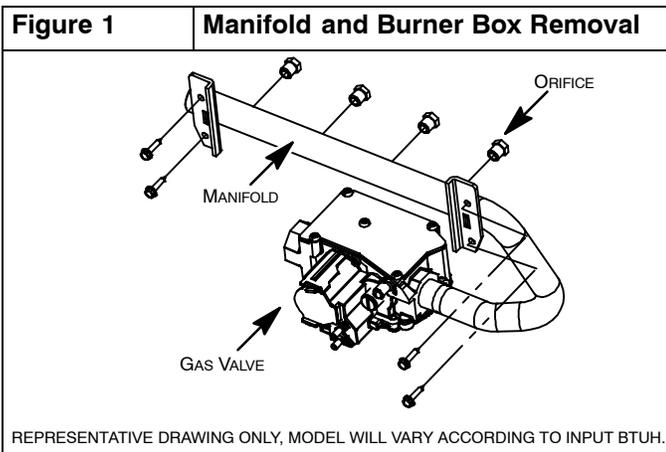
DESCRIPTION AND USAGE

The burners are ganged together as a one-piece assembly. There is one burner assembly in each kit. Refer to **Table 1** for the correct burner for the furnace.

Input	Kit Number	# of Burners Per Assembly
26,000	1184398	2
40,000	1184398	2
60,000	1184353	3
60,600	1184353	3
80,000	1184354	4
100,000	1184355	5
120,000	1184356	6
140,000	1184777	7

Kit Contents	
Quantity	Component Name
ALL KITS	
1	Burner Assembly
1	Instructions

Manifold Removal / Burner Box Removal



INSTALLATION

Unit Shut Down

⚠ WARNING

ELECTRICAL SHOCK AND FIRE HAZARD

Failure to follow this warning could result in personal injury, death, and/or property damage.

Turn off the gas and electrical supplies to the furnace and install lockout tag before performing any maintenance or service. Follow the operating instructions on the label attached to the furnace.

1. Set room thermostat to lowest setting or "OFF."
2. Disconnect power at external disconnect, fuse or circuit breaker.
3. Turn off gas at external shut-off or gas meter.
4. Remove outer doors and set aside.
5. Turn electric switch on gas valve to OFF.

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in unit damage or improper operation.

Label all wires prior to disconnection when servicing controls.

⚠ PRUDENCE

D'EQUIPEMENT D'OPERATION

Toute erreur de câblage peut être une source de danger et de panne.

Lors des opérations d'entretien des commandes, étiqueter tous les fils avant de les déconnecter.

NOTE: Use a back-up wrench on the gas valve to prevent the valve from rotating on the manifold or damaging the mounting to the burner box.

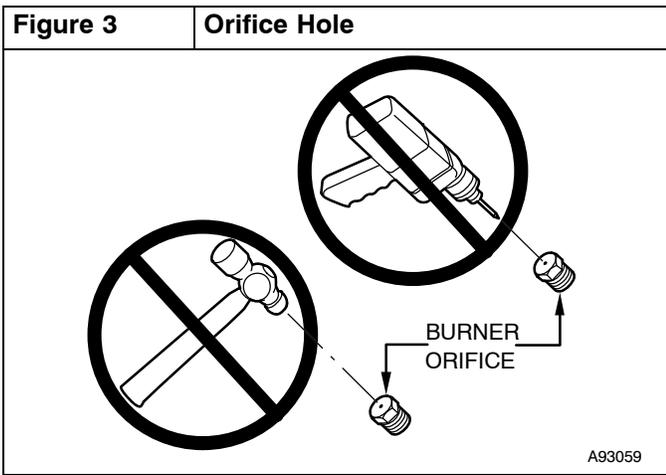
1. Disconnect the gas pipe from gas valve and remove pipe from the furnace casing.
2. Disconnect the connector harness from gas valve (Modulating only) or remove individual wires from terminals on gas valve (All other models).
3. Disconnect the wires from flame sensor and hot surface igniter.
4. Remove wires from both rollout switches.
5. Support the manifold and remove the four (4) screws that secure the manifold assembly to the burner box and set aside. Note the location of the green and yellow ground wire for reassembly later.
6. Support the burner box assembly and remove the screws that attach the burner box to the heat exchanger cell panel.
7. Set the burner box assembly aside.
8. Inspect the orifices for any obstructions or debris blocking the orifice. If blockage is noted, remove and clean or replace the orifice.

⚠ CAUTION

FURNACE DAMAGE HAZARD

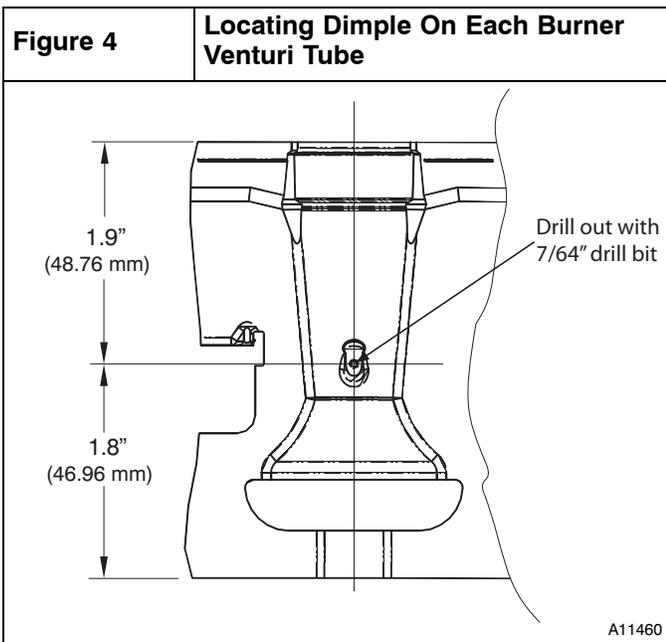
Failure to follow this caution may result in unit damage.

DO NOT redrill burner orifices. Improper drilling may result in burrs, out-of-round holes, etc. Obtain new orifices if orifice size must be changed. (See **Figure 3**)



Burner Removal

1. Slide one-piece burner assembly out of slots on sides of burner box.
2. Remove the flame sensor from the burner assembly.
3. (Optional) Remove the Hot Surface Igniter (HSI) and bracket from the burner assembly.
4. Clean the flame sensor with fine steel wool (0000 grade). Do not use sand paper or emery cloth.
5. If this is a propane installation, remove the mixer (spoiler) screws from each burner venturi. The screws will be re-installed in the new burner.
6. Discard the old burner assembly.



Install Mixer (Spoiler) Screws

NOTE: If this is a propane installation, the burner requires mixer (spoiler) screws to be installed in the burner venturi. Natural gas installations DO NOT require mixer (spoiler) screws.

To install mixer (spoiler) screws:

1. Locate the dimple on each burner venturi tube. If you cannot locate the dimple, refer to **Figure 4** for location of the mixer (spoiler) screw.
2. Drill a 7/64-in. (2.8mm) hole in each dimple.

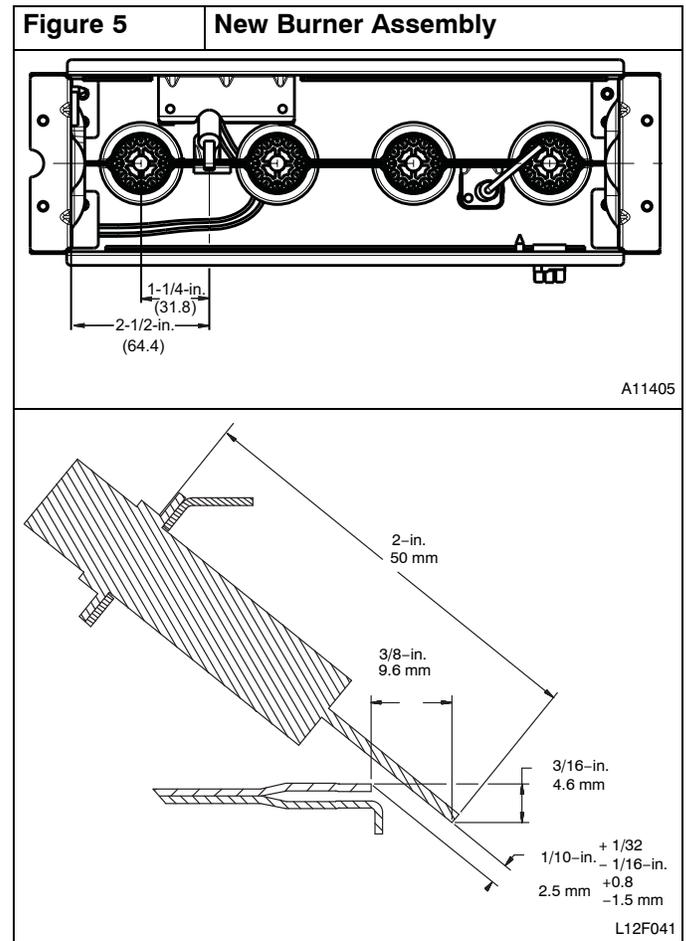
3. Install a mixer (spoiler) screw in each drilled hole drilling as straight as possible. (i.e. in center of the gas flow stream as well as perpendicular to the gas flow stream).
4. The screw head should be flush with the top of the burner venturi.

New Burner Assembly Installation

1. Install the Hot Surface Igniter (HSI) and bracket in burner box assembly.
2. Install flame sensor on burner assembly.
3. Align the edges of the one-piece burner assembly with the slots in the burner box and slide the burners forward until they are fully seated in the burner box assembly.
4. Align the orifices in the manifold assembly with the support rings on the end of the burner. Manifold mounting tabs should fit flush against the burner box.
5. Insert the orifices in the support rings of the burners.

NOTE: If manifold does not fit flush against the burner box, the burners are not fully seated forward. Remove the manifold and check burner positioning in the burner box assembly.

6. Remove one manifold mounting screw. Attach the green/yellow wire and ground terminal to one of the manifold mounting screws.
7. Install the manifold mounting screws.
8. Check the igniter alignment. See **Figure 5**.



9. Align the burner box assembly with the openings in the primary cell inlet panel and attach the burner box assembly to the cell panel.
10. Attach the wires to the roll-out switches.
11. Connect the wire for the flame sensor and Hot Surface Igniter.

NOTE: Use only propane-resistant pipe dope. Do not use Teflon tape.

12. Insert the gas pipe through the grommet in the casing. Apply a thin layer of pipe dope to the threads of the pipe and thread the pipe by into the gas valve.

NOTE: Use a back-up wrench on the gas valve to prevent the valve from rotating on the manifold or damaging the mounting to the burner box.

13. With a back-up wrench on the inlet boss of the gas valve, finish tightening the gas pipe to the gas valve.
14. Turn gas on at electric switch on gas valve.
15. Turn power on at external disconnect, fuse or circuit breaker.

Unit Checkout



WARNING

FIRE OR EXPLOSION HAZARD

Failure to follow this warning could result in personal injury, death, and/or property damage.

Never purge a gas line into a combustion chamber. Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury or loss of life.



WARNING

RISQUE D'EXPLOSION ET D'INCENDIE

Le non-respect des avertissements de sécurité pourrait d'entraîner des blessures graves, la mort ou des dommages matériels.

Ne jamais utiliser une flamme nue pour vérifier la présence des fuites de gaz. Pour la vérification de tous les joints, utiliser plutôt une solution savonneuse commerciale fabriquée spécifiquement pour la détection des fuites de gaz. Un incendie ou une explosion peut entraîner des dommages matériels, des blessures ou la mort.

1. Set thermostat to "OFF."
2. Turn on power at external disconnect, fuse or circuit breaker.
3. Turn on gas at external shut-off or gas meter.
4. Check for gas leaks with a commercially available soap solution made specifically for the detection of leaks.
5. Manually close blower door switch.
6. Initiate component test through circuit board by referring to "**Component Test**" on status code label on blower access door for complete test sequence information.
7. Visually verify the Hot Surface Igniter turns ON.
8. If any status codes are flashed, refer to status code label on unit blower door.

9. Turn thermostat fan switch to "ON", "Continuous" or jumper R to G terminals at furnace control board.
10. Check for air leakage around cell panel.
11. Remove jumper(s) or set thermostat fan to "Auto" or "OFF."
12. Release blower door switch.
13. Install blower access door.
14. Set thermostat to call for heat.
15. Allow unit to initiate a complete call for heat cycle.
16. Check for air leakage around collector box. A whistling noise may indicate air leak in collector box seal.

NOTE: If there is a severe air leak in the collector box seal, pressure switch may not close or will re-open, resulting in no ignition or erratic burner operation.

NOTE: As part of the system check-out, verify that the following conditions are not affecting the operation of the furnace:

- Short Cycling-Defective thermostat: Incorrect thermostat anticipator setting, dirty filter or over-sized furnace.
- Under firing/low btu input: Set manifold pressure and verify firing rate as shown on rating plate by clocking the gas meter.
- Overfiring/high btu input: Set manifold pressure and verify firing rate as shown on rating plate by clocking the gas meter.
- Low temperature rise: Set unit for correct temperature rise range as shown on unit rating plate.
- Contaminated combustion air: Remove contaminants or provide ample fresh air for combustion.
- Excessive amounts of outside ventilation air: Return air temperature cannot be below 60 degrees F for extended periods of time.
- Incorrect venting or termination: Recirculation of products of combustion into the combustion air pipe can damage the furnace. Verify proper venting and vent termination per installation instructions. For additional information, and a complete sequence of furnace operation, refer to furnace Installation, Start-Up and Operating Instructions.

Installation, Start-Up and Operating Instructions

1. After System Check-out is complete, set thermostat below room temperature.
2. Verify that burner shuts down and blower completes selected off delay time.
3. Verify furnace operates properly and set thermostat to desired room temperature.
4. Re-install outer door.