

Standing Pilot to Hot Surface Ignition Conversion Kit

Installation Instructions

For Model Series M1G Furnaces

Read all instructions before installing the kit.

GENERAL

This kit is designed for use on the NORDYNE series M1G standing pilot (SP) furnaces to convert the unit to hot surface ignition (HSI). Please note that a combustion fan and pressure switch are already present in the 77,000 and 90,000 Btu/h input M1G series furnaces. Thus, the steps for installing the combustion fan and the pressure switch are to be skipped if converting those furnaces.

These instructions are intended for the use of qualified individuals specially trained and experienced in installation of this type equipment and related system components. Installation and service personnel are required by some governing bodies to be licensed. Persons not qualified should not attempt to install this equipment or interpret these instructions.

! WARNING:

Prior to installation, turn off all electrical power to the unit. Furthermore, turn gas valve to the "OFF" position, and shut off the fuel supply to the furnace.

INSTALLING THE KIT

A. Checking the Components of the Kit

The following components should be included in the conversion kit:

1. HSI Burner
2. High Temperature Tubing (2)
3. Combustion Air Pipe with Labels
4. Integrated Control Board
5. Control Box (Pre-Wired)
6. Pressure Switch with Fasteners
7. Control Box Cover
8. Combustion Fan Assembly with Fasteners
9. Several Loose Wires (red, gray, white (2), black)
10. 2-Pin Cap
11. Installation Instructions
12. Combustion Air Baffle

B. To Turn Off the Gas and the Electricity to the Appliance:

1. Set the thermostat to "OFF" or to its lowest setting.
2. Turn off all electrical power to the appliance.
3. Remove the furnace door.
4. Push in the gas control lever and move to "OFF". DO NOT FORCE LEVER.

C. Removing the Air Tube

(Note: Skip this section if converting a 77,000 or 90,000 Btu/h input M1G series furnace)

1. Follow the instructions "To Turn Off the Gas and Electricity to the Appliance".
2. Disconnect the wires from the vent switch on the air tube.
3. Remove the two fasteners from the base of the air tube that secure it to the divider panel, as shown in Figure 1.
4. Remove the air tube from the unit. Note that both the top and bottom joints were sealed using a silicone sealant. Once the air tube has been removed, clean the silicone sealant from the top and bottom of the unit where the air tube was removed.
5. Using permanent ink, copy the data from the original rating plate into the spaces provided on the blank rating plate secured to the replacement air tube. Be sure to copy the data exactly and double check the label after filling in the data.

D. Replacing the Control Box

1. Follow the instructions "To Turn Off the Gas and

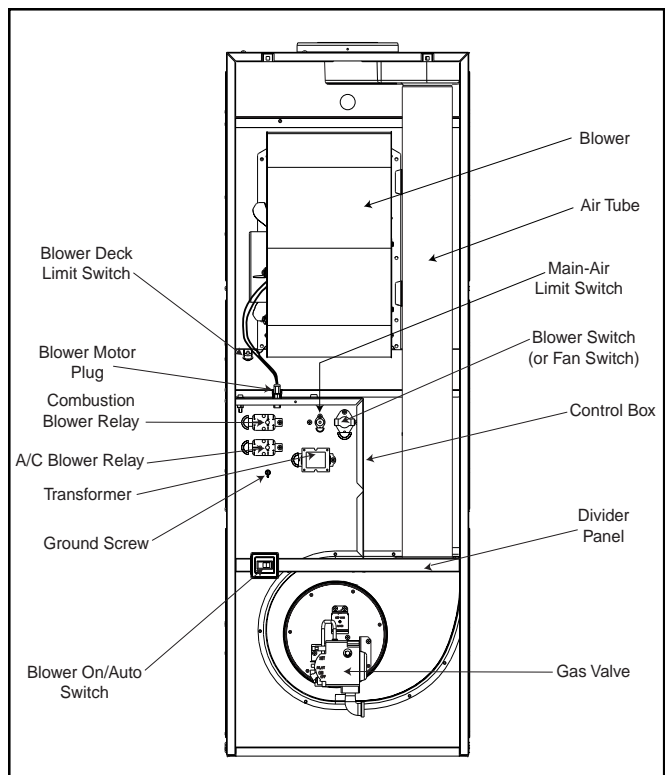


Figure 1. Typical M1G Series Furnace Without Combustion Fan

- Electricity to the Appliance”, if not already done.
2. Disconnect the blower motor plug from the control box.
 3. Disconnect the thermostat, L1, and Neutral wires from the control box.
 4. Disconnect all wires from the transformer (including the ground wire under transformer screw), the deck limit, the main-air limit, the blower switch, and the gas valve.
 5. If the following components are present in the unit, disconnect all wires from the blower on/auto switch, the A/C blower relay, and combustion blower relay.
 6. Remove the fasteners that secure the control box to the unit, and remove the control box. Be sure to keep any grommets that were removed.
 7. Remove the A/C blower relay, and combustion blower relay, if present.
 8. Install the control box from the kit using the fasteners that were removed earlier. Ensure that no wires are between the control box and the air casing.
 9. Insert the control board stand-offs into the mating holes in the air casing. Ensure that the control board is securely in place.
 10. Secure the transformer and the ground wire from the control board to the air casing using the fastener that was removed earlier.
 11. Attach the white wire from the “Neutral” terminal on the control board to the 3/16 inch “COM” terminal on the line voltage side of the transformer.
 12. Attach the black wire from the “L1” terminal on the control board to the 3/16 inch “120V” terminal on the line voltage side of the transformer.
 13. Attach the yellow wire from the “COM” terminal on the control board to the terminal opposite the high voltage “COM” terminal on the low voltage side of

the transformer.

14. Attach the red wire from the “24V” terminal on the control board to the terminal opposite the high voltage “120V” terminal on the low voltage side of the transformer.
15. Attach the two blue wires that exit at the top of the control box to the terminals of the blower deck limit.
16. Attach the blue wire that enters the control box from the top to a terminal on the main-air limit switch in the control box.
17. Attach the remaining blue wire from the 9-pin plug on the control board to the remaining terminal on the main-air limit.
18. Insert the two yellow wires terminated with 1/4 inch quick-connects from the 9-pin plug on the control board through the hole in the divider panel. Furthermore, insert the two black wires terminated with pin sockets from the 6-pin plug on the control board through the hole in the divider panel. Install the grommet that was removed earlier around the wires and into the divider panel.

E. Installing the Pressure Switch

(Note: Skip this section if converting a 77,000 or 90,000 Btu/h input M1G series furnace)

1. Using the fasteners included in the conversion kit, secure the pressure switch to the air casing of the furnace, as shown in Figure 2. The mounting holes for the pressure switch will be present in the air casing.
2. Attach the two orange wires that exit at the right hand side of the control box to the terminals on the pressure switch.

F. Removing the Burner Assembly:

1. Shut off the gas supply at the meter.
2. Disconnect the gas piping to the gas valve.
3. Remove the fasteners that hold the burner mounting plate to the combustion air box. Keep these fasteners for re-assembly.
4. Carefully remove the burner assembly from the unit.

G. Installing the Combustion Baffle

1. Remove the six top and left screws, #1,2,3,4,5, and 6 of air box as shown in Figure 3.
2. Put in the combustion air baffle through the air box burner mount hole, and then install it while pulling gently up through top hole in air box. Align the baffle mounting holes with the air box, the gasket, and the air casing holes using an awl.
3. Screw the two screws (#4 & 5). Tighten up the four screws (#1,2,3 & 6).
4. Ensure the left side of baffle is perpendicular with the air casing. Check that the baffle is uniformly bent through the top hole of the air box.
5. Apply silicon around the area where the two baffle

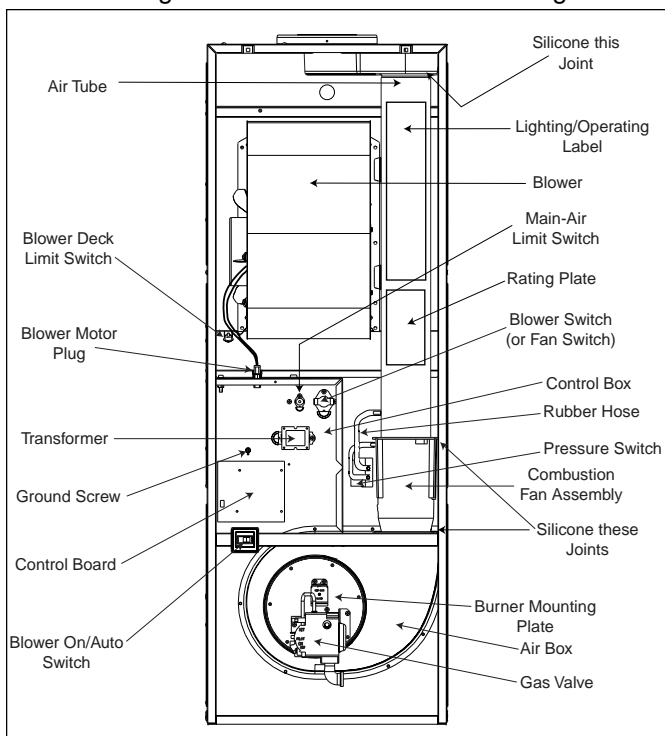


Figure 2. Typical Converted Furnace

taps are located.

H. Installing the Combustion Fan

(Note: Skip this section if converting a 77,000 or 90,000 Btu/h input M1G series furnace)

1. Using a silicone sealant (field supplied), secure the combustion fan to the 4 inch diameter air tube included in this kit. No additional fastener will be required to secure the air tube to the combustion fan. Ensure that the pressure tap in the 4 inch diameter is aligned with the pressure tap in the combustion fan, and that the taps are as close together as possible, as shown in Figure 2. The taps should point towards the pressure switch.
2. Install the combustion fan/air tube assembly into the unit using the fasteners supplied in the kit. Ensure that both labels on the air tube can be read after positioning the air tube. Both connections between the combustion fan/air tube assembly and the furnace are to be sealed air-tight using a silicone sealant. To ease the installation process, the following procedure is recommended for installing the combustion fan/air tube assembly into the unit. First, start the left-hand-side fastener into the mounting hole in the divider panel. Then, position the combustion fan/air tube assembly in the furnace with the flange of the combustion fan underneath the fastener. Install the fastener on the other side of the combustion tube. Finally, tighten both fasteners and ensure that the assembly is secure.
3. Plug the 2-pin male plug from the combustion fan motor into the 2-pin female cap from the control box.
4. Install the rubber hoses provided in the kit. The first hose should be connected from the tap on the combustion fan housing to the tap marked "V" on the pressure switch. The second hose should be connected from the tap on 4 inch diameter air tube to the tap marked "P" on the pressure switch.

I. Removing the Original Burner Orifice from the Standing Pilot Burner:

1. Disconnect the pilot tube from the gas valve of the SP burner.
2. Remove the fasteners from the gas valve bracket, and remove the gas valve from the burner.
3. Carefully remove the main burner orifice from the gas valve.

J. Replacing Burner Orifice in the HSI Burner:

1. Remove the fasteners from the gas valve bracket on the HSI burner, and remove the gas valve.
2. Carefully replace the orifice in the gas valve with the one removed from the SP burner in the previous section. Discard the orifice, which was removed from the HSI burner.
3. Reinstall the gas valve onto the HSI burner.

K. Replacing the Burner Assembly

1. Insert the burner back into the heat exchanger, as

shown in Figure 2.

2. Secure the burner plate with the fasteners that were removed earlier.
3. Connect the yellow wires from the control box to the terminals on the gas valve.

L. Connecting the Thermostat

1. Connect the red wire from the "R" terminal on the control board to the "R" lead from the thermostat.
2. Connect the white wire from the "W" terminal on the control board to the "W" lead from the thermostat.
3. If the unit converted was A/C ready, then connect the green wire from the "G" terminal on the control board to the "G" lead from the thermostat.
4. If the unit converted was A/C ready, then connect the yellow wire from the "Y" terminal on the control board to the "Y" lead from the thermostat.

M. Finishing the Conversion

1. Reconnect the 6-pin blower plug into the top of the control box.
2. Insert the sockets of the two black wires exiting from the control box through the divider panel into the provided 2-pin female cap.
3. Plug the 2-pin male plug from the ignitor into the 2-pin female cap from the control box.
4. Reconnect the gas piping.
5. Ensure that gas connections are secure and tight. Leak check the gas connections using a mild soap solution or other approved method. DO NOT check for leaks using a lighted match or other flame.
6. Using the wiring diagram from these instructions, check all electrical connections. Ensure that the electrical connections are secure and tight.
7. Reconnect the electrical supply to the furnace. The line voltage common wire should be connected to the white wire from the "Neutral" terminal on the control board. The line voltage wire should be connected to the black wire from the "L1" terminal on the control board.
8. Replace the control access cover with the cover included in the kit.

N. Operating the Furnace.

1. Follow the lighting procedure outlined in the Installation Instructions, the Home Owner's Manual, and on the furnace labels.
2. Purge the air from the gas line as done in an initial set-up.
3. For troubleshooting, refer to status light flash code on the wiring diagram in these instructions.
4. Run the furnace through a complete cycle to assure proper operation. Refer to the installation instructions provided with the furnace for the proper operating sequence with an integrated control board.

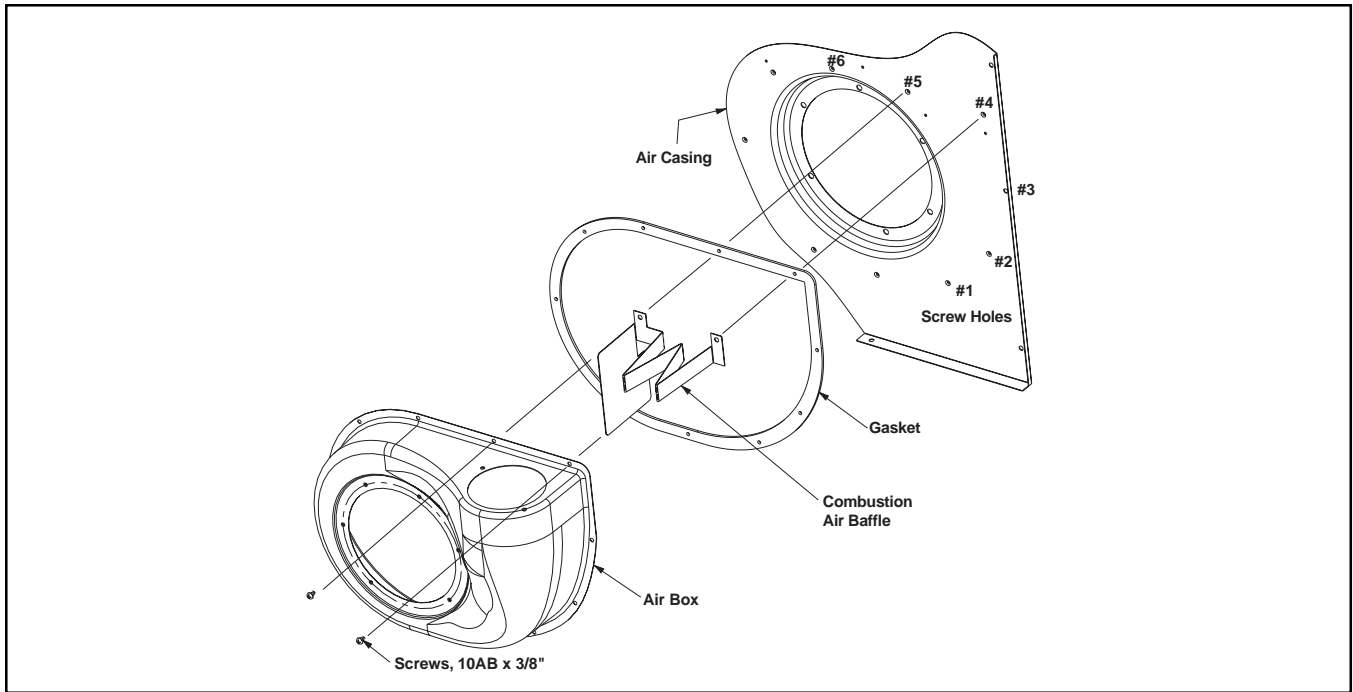


Figure 3. Combustion Air Baffle Assembly

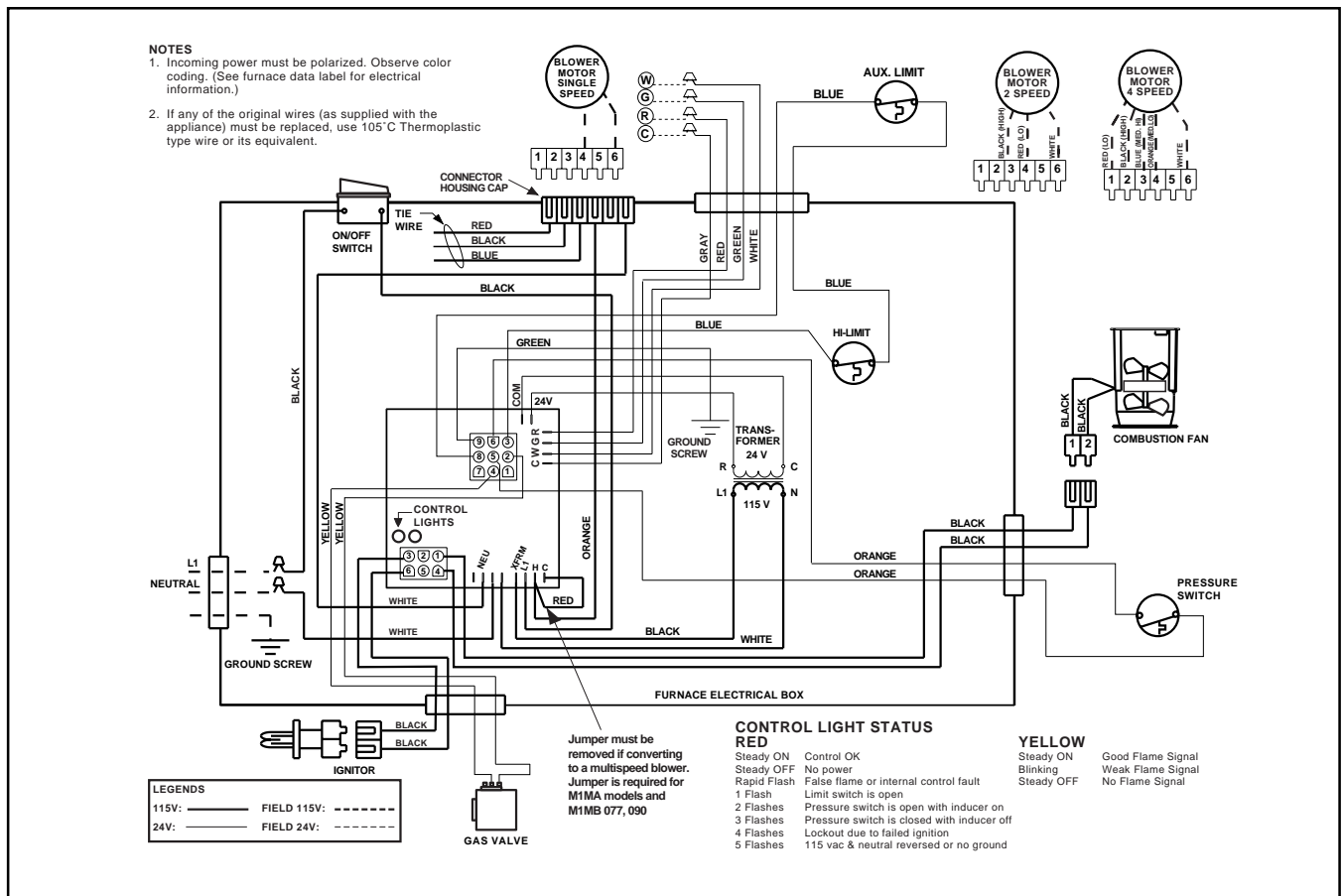


Figure 4. Gas Hot Surface Ignition Furnace, Heating & A/C Ready

