

Conversion Package for SC Units Equipped with G13 or G33 Ignition Systems to G770 Ignition System, for Natural or Propane Gas - Package P/N 49807

Material List – Package P/N 49807

Item	Qty	P/N	Description
1	1	97547	Ignition Controller, Johnson #G77ONGC-4
2	1	49796	Time Delay Relay Assy (prewired)
3	1	61145	Natural Gas Pilot Burner, Penn #J992HWX-7221
4	1	37801	Propane Gas Pilot Orifice, #4209
5	1	9814	Patch Plate
2	90503		Sheetmetal Screws, Type-B, #6 x 1" long (for attaching controller)
1	90509		Flame Sensor Wire Assy, 150° C, 18 Ga. Red x 11" with two terminals (P/N 2461) and housing (P/N 19127)
1	44698		Blue Wire Assy, 105°C, 18 Ga. X 18" with two terminals (P/N 2461)
1	90501		Yellow Wire Assy 105°C, 18 Ga. X 19" with one terminal (P/N 2461)
2	95227		Red Wire Assy, 105°C, 18 Ga. X 18" with one terminal (P/N 2461)
1	42699		Yellow Wire Assy 105°C, 18 Ga. X 12" with two terminals (P/N 2461)
2	43984		Blue Wire Assy, 105°C, 18 Ga. X 18" with one terminal (P/N 2461)
1	60161		White Wire Assy 105°C, 18 Ga. X 22" with two terminals (P/N 2461)
1	40329		White Wire Assy, 105°C, 18 Ga. X 18" with one terminal (P/N 2461)
1	98419		Green Ground Wire Assy, 105°C, 18 Ga. X 3" with two terminals (P/N 1350 and 2461)

Figure 1 - Items 1-5 of Conversion Package, P/N 49807



WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment. Keep these instructions for future reference.

DANGER: This replacement ignition controller kit is to be installed by a qualified service agency in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. Failure to follow instructions could result in death, serious injury, and/or property damage. The qualified agency performing this work assumes responsibility for this installation.

Installation Instructions

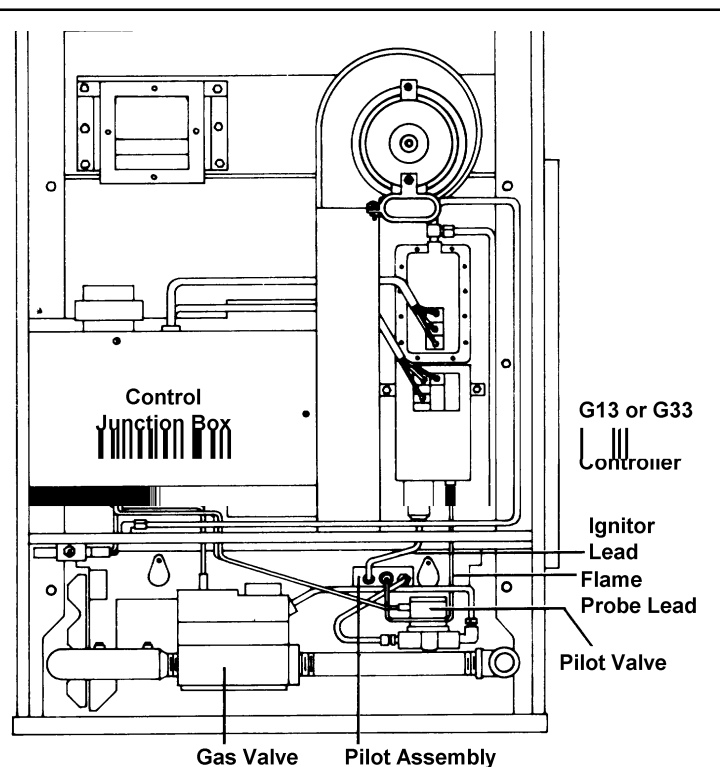
- Turn off the gas and power supply.
- Remove the lower and middle access panels on the control side of the unit. Refer to Figure 2 and locate the identified parts on the unit.
- Disconnect the flame probe and the ignitor lead from the ignition controller. Remove the pilot assembly with the leads attached by loosening the two screws that hold the pilot to the burner rack. Use these same screws when attaching the new pilot. Disconnect and remove the ignition controller.

4. Install the new pilot assembly:

Natural Gas Units – Install the new pilot assembly (Item 3) on the burner rack. (The propane pilot orifice, Item 4 included in the kit, will not be used.)

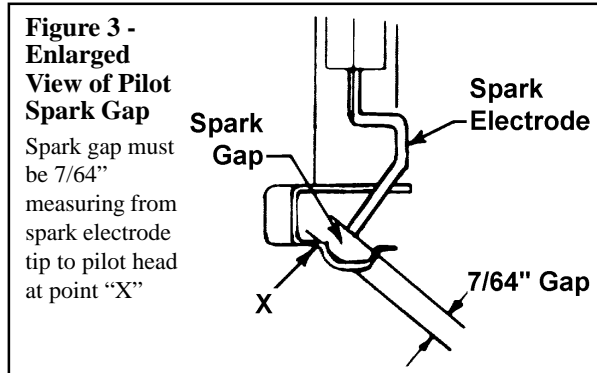
Propane Gas Units – Remove the pilot orifice from the new pilot assembly (Item 3). Replace it with the propane pilot orifice (Item 4) shipped loose in the kit. Install the new pilot assembly with the propane orifice. (The natural pilot orifice removed from the pilot assembly will not be used.)

Figure 2 - SC with a G13 or G33 Ignition System

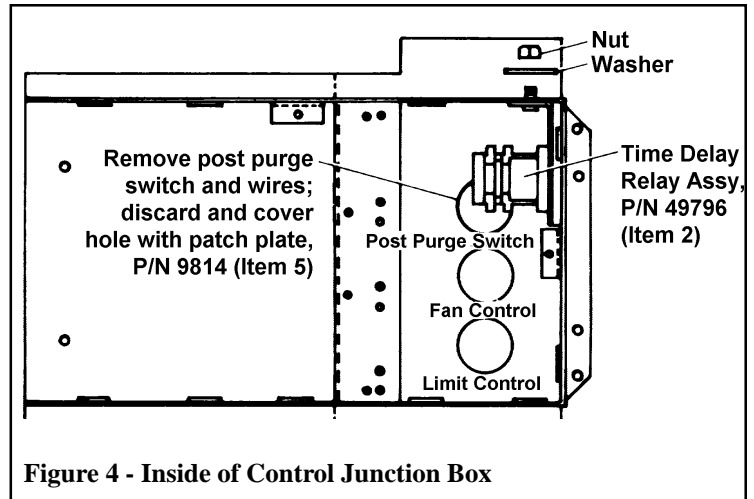


Installation Instructions (Cont'd.)

Check the spark gap of the pilot burner. Correct spark gap is 7/64". See Figure 3 for correct measurement.



5. Position the new G770 ignition controller (Item 1) in the same location as the ignition controller that was removed. Mark and drill two 7/64" holes. Using the 1" screws in the kit, attach the new ignition controller.
6. Remove the cover from the control junction box. Refer to Figure 4 and locate the post-purge switch. Remove the post-purge switch assembly and wires. Using the screws that held the switch, cover the opening with the patch plate (Item 5). Discard the post-purge switch assembly.
7. Knock out the 7/8" knockout on the top of the control junction box. Install the prewired time delay assembly (Item 2) using the 1/4" nut and washer. See Figure 4.
8. Rewire using the wires in the kit and the diagram on page 3 for single-stage or page 4 for two-stage. Connect the ignitor lead to the ignition controller, by pushing the ignitor wire directly onto the spike connector on the ignition controller. Be sure the spike is fully inserted and the wire secure.



9. Turn on the power and the gas supply. Bleed the pilot and main gas lines. Check for gas leaks using a leak-detecting solution.

WARNING: All components of gas supply system must be leak tested prior to placing equipment in service. NEVER TEST FOR LEAKS WITH AN OPEN FLAME. FAILURE TO COMPLY COULD RESULT IN PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

10. Replace the junction box cover. Adhere the new lighting instruction plate to the control box. Replace the access panels.
11. Check complete operation of the heater to ensure safe and reliable operation. **CHECK ALL SAFETY FEATURES FOR PROPER OPERATION.** Keep the wiring diagrams printed in this sheet for future reference.

FOR YOUR SAFETY

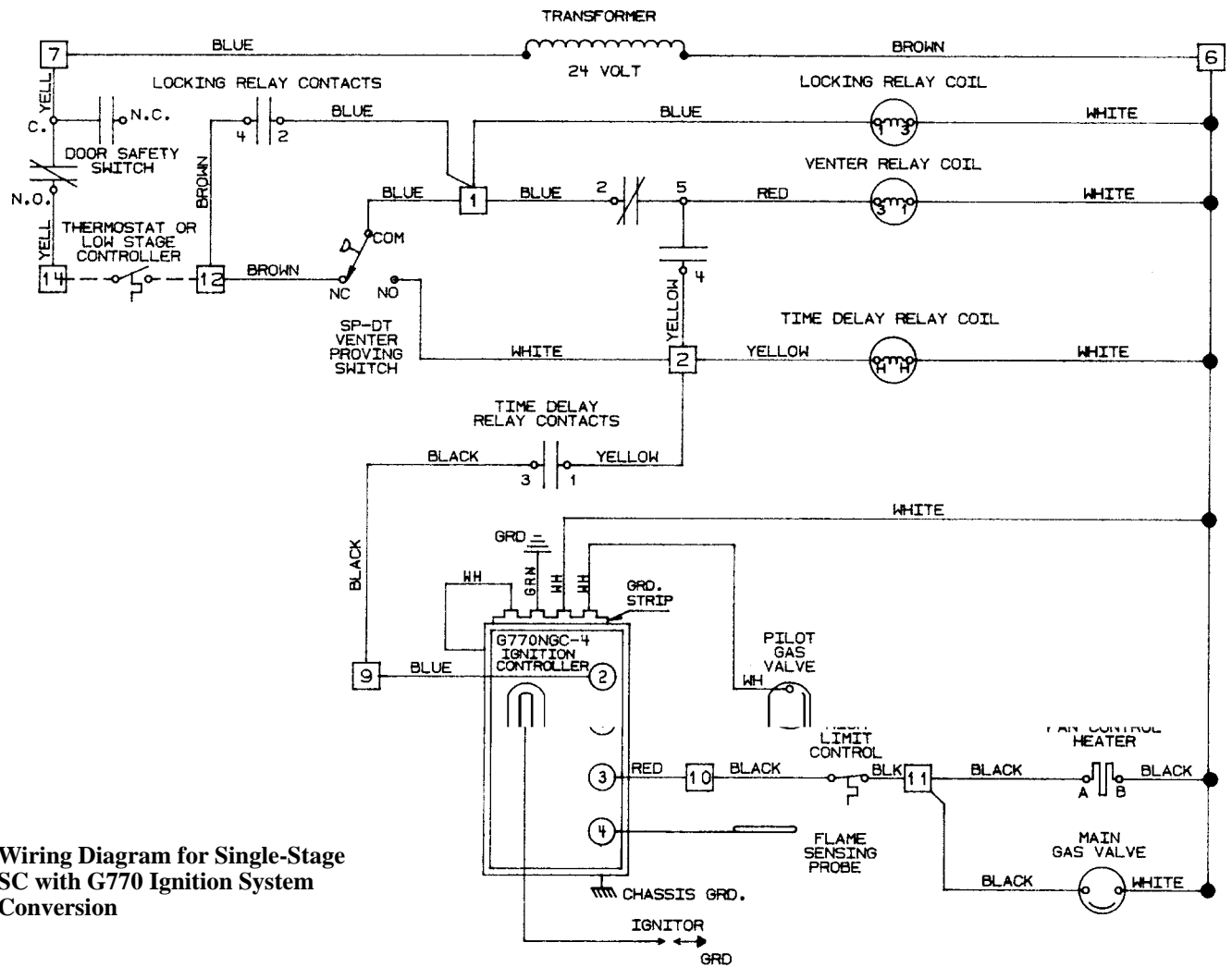
If you smell gas:

1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

The use and storage of gasoline or other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.

DANGER: The gas burner in Reznor gas-fired equipment is designed and equipped to provide safe and economically controlled complete combustion. However, if the installation does not permit the burner to receive the proper supply of combustion air, complete combustion may not occur. The result is incomplete combustion which produces carbon monoxide, a poisonous gas that can cause death. Safe operation of indirect-fired gas burning equipment requires a properly operating vent system which vents all flue products to the outside atmosphere. **FAILURE TO PROVIDE PROPER VENTING WILL RESULT IN A HEALTH HAZARD WHICH COULD CAUSE SERIOUS PERSONAL INJURY OR DEATH.**

Always comply with the combustion air requirements in the installation codes and instructions. Combustion air at the burner should be regulated only by manufacturer-provided equipment. **NEVER RESTRICT OR OTHERWISE ALTER THE SUPPLY OF COMBUSTION AIR TO ANY HEATER.** Indoor units installed in a confined space must be supplied with air for combustion as required by Code and in the heater installation manual. **MAINTAIN THE VENT SYSTEM IN STRUCTURALLY SOUND AND PROPERLY OPERATING CONDITION.**



Wiring Diagram for Single-Stage SC with G770 Ignition System Conversion

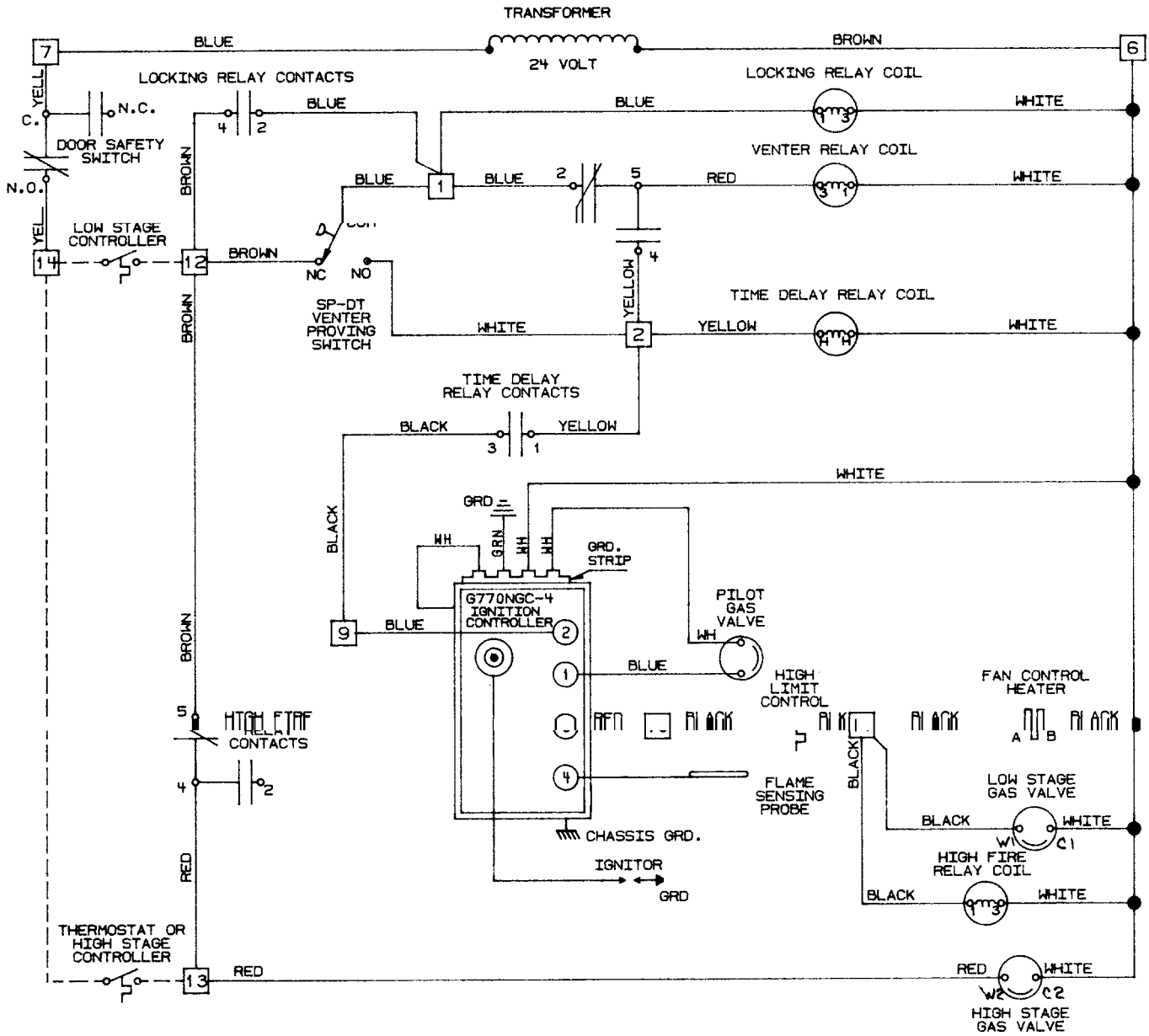
OPERATING SEQUENCE

1. Set thermostat at lowest level setting.
2. Turn on power to unit.
3. Turn on main and pilot manual gas valves.
4. Set thermostat at desired setting.
5. Thermostat calls for heat.
 - (a) Energizing the venter motor.
 - (b) Powering the post-purge relay coil.
6. Venter flow switch changes position, powering the ignition controller.
7. With power supplied to the ignition controller, the pilot gas valve is energized and pilot lights from ignitor.
8. The sensing probe proves the presence of pilot flame.
 - (a) De-energizing the ignitor.
 - (b) Energizing the gas valve.
 - (c) Energizing the high stage relay (two-stage only).
9. Fan control senses heat exchanger temperature, energizing the blower motor.
10. Thermostat is satisfied.
 - (a) Solenoid gas valve de-energizes.
 - (b) Pilot gas valve de-energizes.
 - (c) Ignition controller de-energizes.
 - (d) Post-purge relay keeps venter motor on for approximately three minutes (post purge).
 - (e) Fan control keeps blower or fan on while unit is hot.
11. If the flame is extinguished during main burner operation, the safety switch closes the main valve and recycles the spark gap. If pilot is not established within 120 seconds (approx.), unit locks out and must be reset by interrupting power to the control circuit (see Lighting Instructions).

WIRING NOTES

1. **CAUTION:** If any of the original wiring as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105°C, except for sensor lead wire, ECO wires, and limit wiring which must be 150°C.
2. Use 14 gauge wire for line and motor wiring on unit.
3. Use 18 gauge wire for control wiring on unit.
4. Dotted wiring supplied and installed by others.
5. Thermostat supplied as optional equipment.
6. **On 208/230V the control transformer has a dual voltage primary.**
 For 208V units, use black and red leads (cap yellow).
 For 230V units, use black and yellow leads (cap red).
 Secondary side of transformer (24V), use blue and brown leads.
On 120V units the control transformer is single voltage primary.
 Use black and yellow leads for 120V.
 Secondary side of transformer (24V), use blue and brown leads.
7. Fan or blower motor supplied and installed by others.

FIELD CONTROL WIRING (Length and Gauge)		
Total Wire Length	Distance from Unit to Control	Minimum Recommended Wire Gauge
150'	75'	#18 Ga.
250'	125'	#16 Ga.
350'	175'	#14 Ga.



Wiring Diagram for Two-Stage SC with G770 Ignition System Conversion

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