KGCNP5201VSP

Gas Conversion Kit Natural—to—Propane for Variable Speed, Condensing and Non—Condensing Gas Furnaces

Installation Instructions

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

SAFETY CONSIDERATION

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK, AND CARBON MONOXIDE POISONING HAZARD

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

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, explosion, or production of carbon monoxide could result causing property damage, personal injury, or loss of life. The qualified service agency is responsible for the proper installation of this furnace with this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

⚠ AVERTISSEMENT

LE FEU, L'EXPLOSION, CHOC ELECTRIQUE, ET MONOXYDE DE CARBONE EMPOISONNER

Cette trousse de conversion doit être installée par un servie d'entretien qualifié, selon les instructions du fabricant et selon toutes les exigences et tous les codes pertinents de l'autorité compétente. Assurezvous de bien suivre les instructions dans cette notice pour réduire au minimum le risque d'incendie, d'explosion ou la production de monoxyde de carbone pouvant causer des dommages matériels, de blessure ou la mort. Le service d'entretien qualifié est responsable de l'installation de cette trousse. L'installation n'est pas adéquate ni complète tant que le bon fonctionnement de l'appereil converti n'a pas été vérfié selon les instructions du fabricant fornies avec la trousse.

Installing and servicing heating equipment can be hazardous due to gas and electrical components. Only trained and qualified personnel should install, repair, or service heating equipment.

Untrained personnel can perform basic maintenance functions such as cleaning and replacing air filters. Trained service personnel must perform all other operations. When working on heating equipment, observe precautions in the literature, on tags, and on labels attached to or shipped with the unit, and other safety precautions that may apply.

Follow all safety codes. In the United States, follow all safety codes including the current edition of the National Fuel Gas Code (NFGC) NFPA No. 54/ANSI Z223.1. In Canada, refer to the current edition of the National Standard of Canada, Natural Gas and Propane Installation Codes (NSCNGPIC), CAN/CSA–B149.1 and .2. Wear safety glasses and work gloves. Have a fire extinguisher available during start–up, adjustment steps, and service calls.

Recognize safety information. This is the safety–alert symbol ⚠. When you see this symbol on the furnace and in instructions or manuals, be alert to the potential for personal injury. Understand the signal words DANGER, WARNING, CAUTION and NOTE. The words DANGER, WARNING, and CAUTION are used with the safety alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies a hazard 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.

INTRODUCTION

⚠ 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

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

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 disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

This instruction covers the installation of gas conversion kit to convert the following furnaces from natural gas usage to propane gas usage. See appropriate section for your furnace type.

Section 1—59MN7 & 987M 4-Way Multipoise, Hot Surface Ignition, Modulating Condensing Furnaces. 59TN6, 59TP6, 926T, 986T, PG96V_T, 4-Way Multipoise, Hot Surface Ignition, 2–Stage, Variable–Speed Condensing Furnaces. This kit applies to 40,000 to 120,000 Btuh gas input rates.

Section 2—58CTW, 58CTY, 58CVA, 58CVX, 314AAV, 314JAV 315AAV, , 315JAV, PG8MVA, PG8JVA, & PG8JVB 33.3–In. (846 mm) High, Induced–Combustion, Hot– Surface Ignition, 2-Stage, Variable-Speed, Non-Condensing Furnaces. This kit is designed for use in furnaces with 42,000 through 154,000 Btuh gas input rates.

DESCRIPTION AND USAGE

This kit is designed for use in the furnaces listed in **Table 2** and **Table 3**. See Table 1 for kit contents. To accommodate many different furnace models, more parts are shipped in kit than will be needed to complete conversion. When installation is complete, discard extra parts.

Table 1 Kit Contents

QTY.	PART NUMBER	DESCRIPTION
1	EF39ZW002	VALVE CVRSN KIT - W/R F92-102100
2	EF39ZW023	VALVE CVRSN KIT - W/R SPRING 92-0659
1	HK02LB008	SWITCH, LOW GAS PRES-SURE
1	323269-704	BAG ASSEMBLY Includes:
7	LH32DB201	ORIFICE - #55
1	323272-702	BAG ASSEMBLY Includes:
7	LH32DB206	ORIFICE - #56
1	323269-703	BAG ASSEMBLY Includes:
7	LH32DB209	ORIFICE - 1.25mm
1	323751-702	BAG ASSEMBLY Includes:
7	LH32DB210	ORIFICE - 1.30mm
1	337932-701	BAG ASSEMBLY Includes:
7	FAJ5812B	SCREW - SPOILER CONDNESING
1	328456-402	BIT, DRILL 7/64”
1	337932-702	BAG ASSEMBLY Includes:
7	327593-401	SCREW - SPOILER NON-CONDENSING
1	328456-401	BIT, DRILL 5/64”
1	337932-703	BAG ASSEMBLY Includes:
1	66175D55	CONNECTOR-1/4QC ME BOTH ENDS
1	CA01JZ001	CONNECTOR - BRASS 1/8” NPT X2”
1	CA15RA001	ELBOW, STREET - 150# 1/8” NPT
1	CA16JQ001	ELBOW, STREET - BRASS 1/8” NPT
1	CA21JQ001	TEE, STREET - MALE BRANCH (BRASS)
1	CA21JZ001	TEE - MALE BRANCH (BRASS)
1	CA52JZ103	NIPPLE - HEX (BRASS)
1	HY89SC047	CONNECTOR,SPLC - 3/16”
1	HY76TB125	WIRE TIE
1	W182X06--04--012	WIRE ASSY - ORANGE
1	W182X66--04--018	WIRE ASSY - ORANGE
1	340740-701	LABEL SHEET Includes:
1	340740-201	CONVERSION RATING PLATE
1	340740-202	GAS CONTROL CONVERSION LABEL
1	340740-203	GAS CONTROL ADJUSTMENT LABEL
1	340740-204	CONVERSION RATING PLATE
1	340740-205	CONVERSION RESPONSIBILITY LABEL
1	340740-702	LABEL SHEET Includes:
1	340740-206	CONVERSION RATING PLATE
1	340740-209	CONVERSION RATING PLATE
1	340740-703	LABEL SHEET Includes:
1	340740-211	CONVERSION RATING PLATE
1	340740-214	CONVERSION RATING PLATE
1	AG-KGB-NP5201VSP-XX	INSTALLATION INSTRUCTIONS

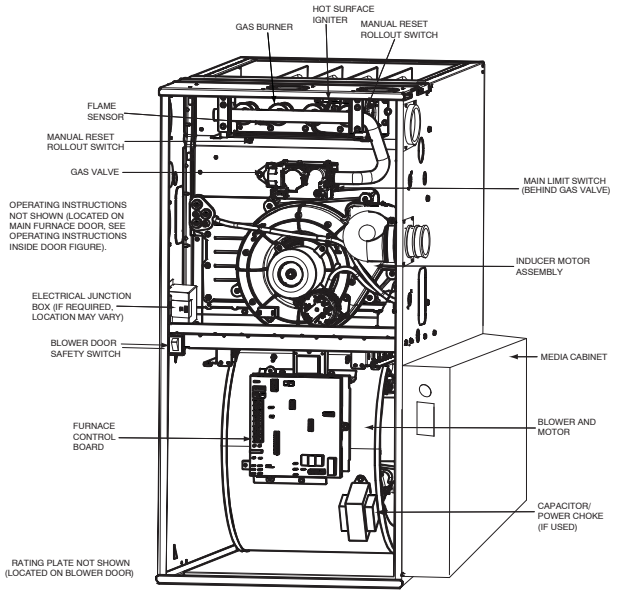
SECTION 1 CONDENSING FURNACES

Table 2	MODEL NUMBERS BEGINNING WITH:	
59MN7	987M	
59TP5	925T	PG95X_T
59TN6	986T	
59TP6	926T	PG96V_T

INSTALLATION

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.

Figure 1	Representative Furnace Drawing



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REPRESENTATIVE DRAWING ONLY, SOME MODELS MAY VARY IN APPEARANCE.

MANIFOLD/ORIFICE/BURNER REMOVAL

⚠ 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

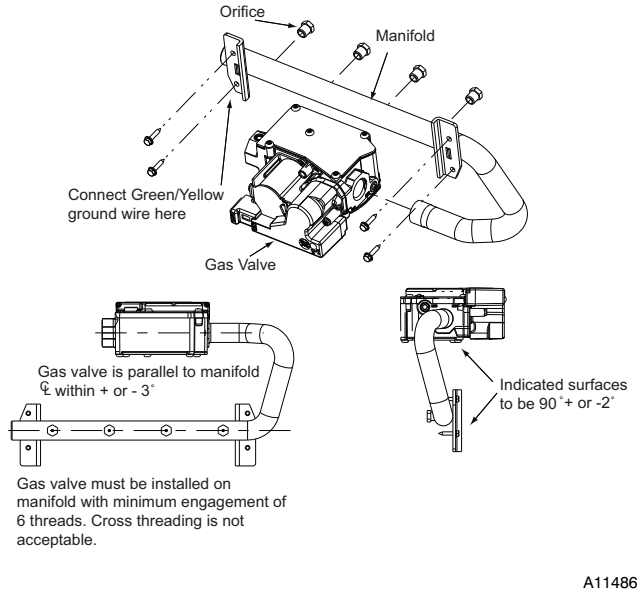
Toute erreur de câblage peut être une source de danger et de panne.

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. Disconnect wires from Hot Surface Igniter (HSI) and Flame Sensor.
3. Support the manifold and remove the four (4) screws that secure the manifold assembly to the burner box and set aside.
4. Note the location of the green/yellow wire ground wire for re-assembly later. (See **Figure 2**)
5. Slide one–piece burner assembly out of slots on sides of burner box. (See **Figure 3**)
6. Remove the flame sensor from the burner assembly.
7. Remove the orifices from the manifold and discard.

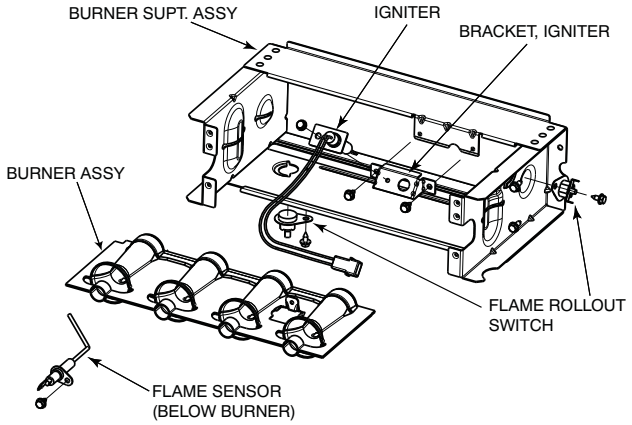
Figure 2	Gas Valve with Orifices



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REPRESENTATIVE DRAWING ONLY, SOME MODELS MAY VARY IN APPREARANCE.

Figure 3	Burner Assembly



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ORIFICE SELECTION/DERATE

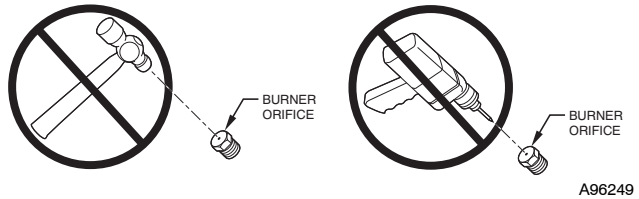
⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

DO NOT re–drill burner orifices. Improper drilling may result in burrs, out–of–round holes, etc. Obtain new orifices if orifice size must be changed. (See **Figure 4**)

Figure 4	Burner Orifice



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Refer to conversion kit rating plate 340740−201 or 340740−206 to determine main burner orifice size. (See **Figure 5**)
Furnace gas input rate on furnace rating plate is for installations at altitudes up to 2000 ft.
In the U.S.A.; the input rating for altitudes above 2000 ft. must be reduced by 2 percent for each 1000 ft. above sea level.

In Canada, the input rating must be derated by 5 percent for altitudes of 2000 ft. to 4500 ft. above sea level.
The Conversion Kit Rating Plate accounts for high altitude derate.

Figure 5 **Conversion Kit Rating Plate**

59MN7A & 987MA

CONVERSION KIT RATING PLATE - CARRIER CORPORATION

THIS APPLIANCE HAS BEEN CONVERTED TO USE PROPANE GAS FOR FUEL. REFER TO KIT INSTRUCTIONS FOR CONVERSION PROCEDURES. USE PARTS SUPPLIED BY CARRIER CORPORATION AND INSTALLED BY QUALIFIED PERSONNEL.
SEE EXISTING RATING PLATE FOR APPLIANCE MODEL NO. AND INPUT RATING.

NOTE: Furnace gas input rate on rating plate is for installations up to 2000 ft. (610m) above sea level. In U.S.A. the input rating for altitudes above 2000 ft. (610m) must be derated by 2% for each 1000 ft. (305m) above sea level. In Canada the input rating must be derated by 5% for altitudes of 2000 ft. (610m) to 4500 ft. (1372m) above sea level.

KIT NO.: KGCNP5201VSP (SUPERSEDES: KGANP5201VSP, KGBNP5201VSP) FUEL USED: PROPANE GAS INLET PRESSURE (min - max): 12.0 - 13.6 in. wc

APPLIANCE MODELS		ALTITUDE OF INSTALLATION (FT. ABOVE SEA LEVEL) U.S.A. *								
		0 to 2000	2001 * to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000
59MN7 987M	Orifice No.	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm
		Manifold Pressure								
	MAX	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
	INT	5.8	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3
	MIN	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0

* For Canadian Installations from 2000 to 4500 ft. (610m to 1373m) use U.S.A. column 2001 to 3000 ft. (611m to 914m).

340740-201 REV. A

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Figure 5 (cont.) – Conversion Kit Rating Plate

59TN6, 59TP6, 986T, 926T, & PG96V_T

CONVERSION KIT RATING PLATE - CARRIER CORPORATION

THIS APPLIANCE HAS BEEN CONVERTED TO USE PROPANE GAS FOR FUEL. REFER TO KIT INSTRUCTIONS FOR CONVERSION PROCEDURES. USE PARTS SUPPLIED BY CARRIER CORPORATION AND INSTALLED BY QUALIFIED PERSONNEL.
SEE EXISTING RATING PLATE FOR APPLIANCE MODEL NO. AND INPUT RATING.

NOTE: Furnace gas input rate on rating plate is for installations up to 2000 ft. (610m) above sea level. In U.S.A. the input rating for altitudes above 2000 ft. (610m) must be derated by 2% for each 1000 ft. (305m) above sea level. In Canada the input rating must be derated by 5% for altitudes of 2000 ft. (610m) to 4500 ft. (1372m) above sea level.

KIT NO.: KGCNP5201VSP (SUPERSEDES: KGANP5201VSP, KGBNP5201VSP) FUEL USED: PROPANE GAS INLET PRESSURE (min - max): 12.0 - 13.6 in. wc

APPLIANCE MODELS		ALTITUDE OF INSTALLATION (FT. ABOVE SEA LEVEL) U.S.A. *								
		0 to 2000	2001 * to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000
59TP6, 59TN6 926T, 986T PG96V_T	Orifice No.	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm	1.25mm
		Manifold Pressure								
	HIGH	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
	LOW	5.8	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3

* For Canadian Installations from 2000 to 4500 ft. (610m to 1373m) use U.S.A. column 2001 to 3000 ft. (611m to 914m).

340740-206 REV. A

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INSTALL ORIFICES

1. Install main burner orifices. Do not use Teflon tape. Finger−tighten orifices at least one full turn to prevent cross−threading, then tighten with wrench.
2. There are enough orifices in each kit for largest furnace. Discard extra orifices.

NOTE: DO NOT reinstall the manifold at this time.

INSTALL MIXER SCREWS

NOTE: There are two sets of mixer screws. One set is for Condensing gas furnaces, the other set is for Non-condensing gas furnaces. Use only the parts in the bag marked **"REQUIRED FOR THE CONVERSION OF CONDENSING GAS FURNACES TO PROPANE GAS"**

See **Figure 6** to verify you have the correct set of mixer screws.

Figure 6 **Gas Conversion Kit**

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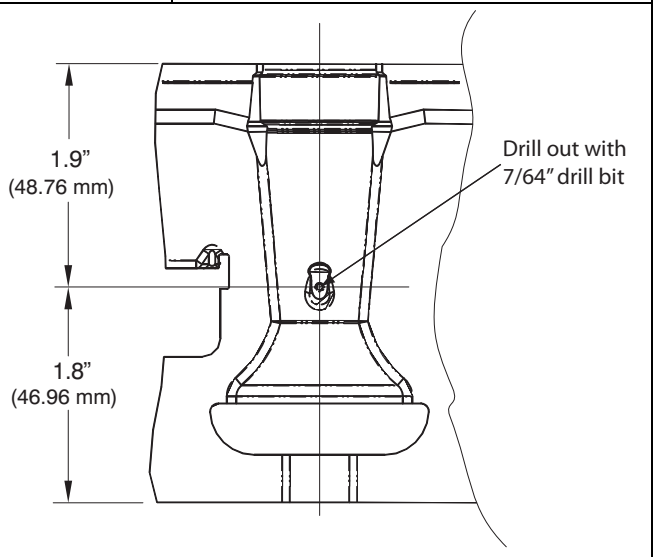
PART #	CONTAINS: DESCRIPTION	QTY
328456-402	BIT, DRILL	1
FAJ5812B	SCREW	7

REQUIRED FOR CONVERSION OF CONDENSING GAS FURNACE TO PROPANE GAS.

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1. Locate the dimple on each burner venturi tube. If you cannot locate the dimple, refer to **Figure 7** for location of the mixer screw.
2. Drill a 7/64−in. (2.8 mm) hole (supplied in kit) in each dimple.
3. Install a mixer screw in each drilled hole drilling as straight as possible. The screw head should be flush with the top of the burner venturi.

Figure 7 | **Mixer Screw Location**



REINSTALL BURNER ASSEMBLY

To reinstall burner assembly:

1. Attach flame sensor to burner assembly.
2. Insert one−piece burner in slot on sides of burner box and slide burner back in place.
3. Reattach HSI wires to HSI.
4. Verify igniter to burner alignment. See **Figure 8** and **Figure 9**.

Figure 8 | **Igniter Position − Back View**

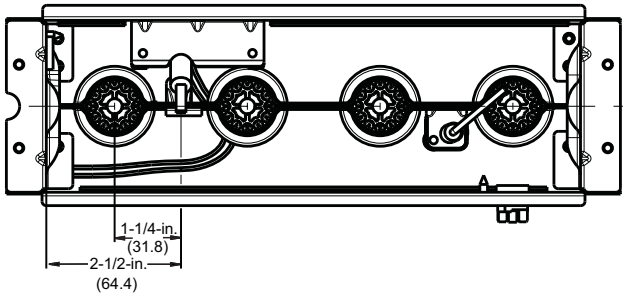
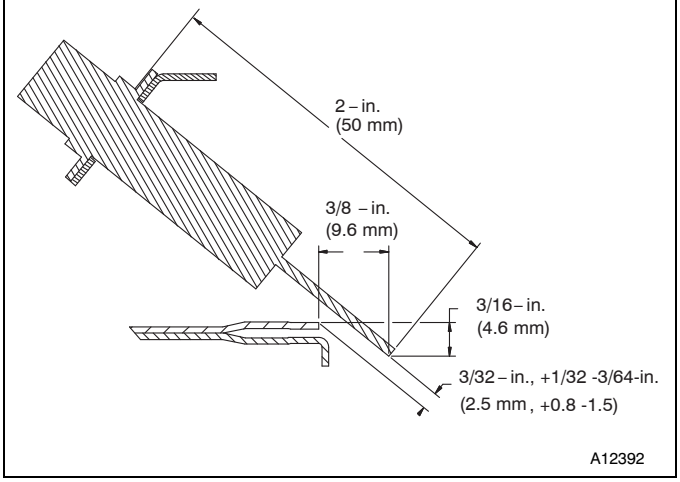


Figure 9 | **Igniter Position − Side View**



CONVERT GAS VALVES

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

The gas valve must be converted and pre−adjusted before operating on propane gas. If not converted and pre−adjusted, sooting and corrosion will occur leading to early heat exchanger failure.

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

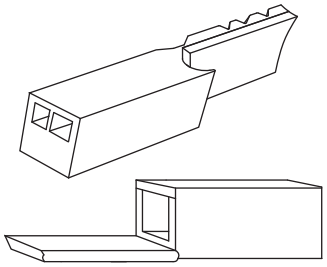
Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

Be sure gas and electrical supplies to furnace are off.

59MN7A & 987MA – Modulating Gas Valve

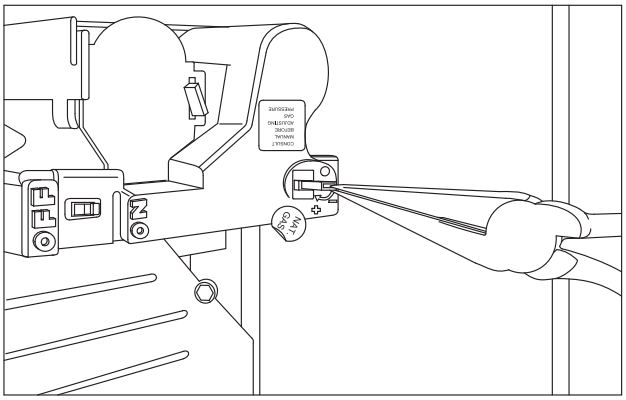
Refer to **Figure 10** and **Figure 11**.

Figure 10	Propane Jumper



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Figure 11	Installing Propane Jumper



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NOTE: The Propane jumper for the modulating gas valve is very small. Needle-nose pliers are required to insert the jumper into the valve. If the jumper is not installed, the valve will not operate properly on propane.

1. Locate the round **"NAT GAS"** sticker on the top of the gas valve.
2. Peel the sticker off and discard.
3. Note the small square opening in the top of the gas valve.
4. Note the two jumper pins inside the modulating gas valve.
5. Remove the small black plastic propane jumper from the envelope.
6. Use needle-nosed pliers to hold the jumper by the tab on the end.
7. Insert the jumper on the pins inside the gas valve.
8. Cover the opening in the gas valve with the label marked **"LP GAS"**

59TN6, 59TP6, 986T, 926T, & PG96V_T – Two Stage Gas Valve

Refer to **Figure 19**.

1. Remove caps that conceal adjustment screws for high heat and low heat gas–valve regulators. (See **Figure 19**)
2. Remove the high heat and low heat regulator adjustment screws.
3. Remove the high heat and low heat regulator springs (silver).
4. Install the high heat and low heat propane gas regulator springs (white).
5. Install the high heat and low heat regulator adjustment screws.
6. Turn high heat stage adjusting screw clockwise (in) 13.5 full turns. This will increase the manifold pressure closer to the propane set point.
7. Turn low heat stage adjusting screw clockwise (in) 9.5 full turns. This will increase the manifold pressure closer to the propane low heat set point.
8. Do not install regulator seal caps at this time.

INSTALL LOW GAS PRESSURE SWITCH

NOTE: Install the Low Gas Pressure Switch before installing the manifold on the burner assembly.

There are two ways to mount the Low Gas Pressure Switch.

All 14 3/16-in Casings or Vent Passes Between Inducer Assembly and Burner Assembly

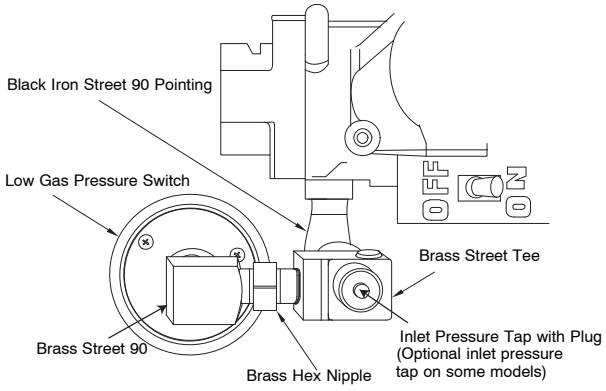
If the vent pipe passes between the inducer and burner assembly, or the furnace is a 14 3/16-in. wide casing. The switch may be installed as shown in **Figure 12**:

1. Remove the 1/8-in. (3 mm) NPT pipe plug from the gas valve inlet pressure tap.

NOTE: Use pipe dope approved for use with Propane Gas.

NOTE: Tighten all fittings and the Low Gas Pressure Switch with a small wrench. Do not over-tighten, check for gas leaks after gas supply has been turned on.

Figure 12	LGPS for 14–3/16 Casing or When Vent Passes Between Inducer and Burner Assembly



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2. Apply pipe dope sparingly to the male threads of the 1/8–in. (3 mm) Black iron street elbow. Install the street elbow into the gas valve inlet pressure tap. Point the open end of the street elbow toward you.
3. Apply pipe dope sparingly to the male threads of the 1/8–in. (3 mm) brass street tee. Install the male end of the street tee as shown in **Figure 12**. One opening on the street tee should face you. The other opening should be parallel with the inlet of the gas valve.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

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

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.

⚠ AVERTISSEMENT

RISQUE D'EXPLOSION ET D'INCENDIE

Le fait de ne pas suivre cet avertissement pourrait entraîner des dommages corporels et / ou la mort.

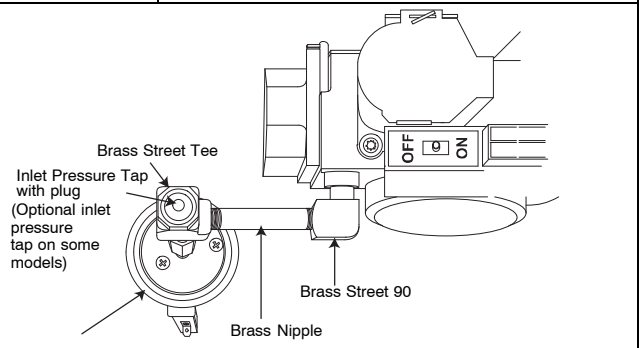
Ne jamais examiner pour les fuites de gaz avec une flamme vive. Utilisez plutôt un savon fait specifiquement pour la détection des fuites de gaz pour verifier tous les connections. Un incendie ou une explosion peut entrainer des dommages matériels, des blessures ou la mort.

4. Apply pipe dope sparingly to the male threads of the 1/8−in. (3 mm) brass hex nipple. Install the hex nipple into the open end of the brass street tee. See **Figure 12**. The hex nipple should be parallel with the boss on the gas valve.
5. Install the open end of the brass street elbow on the end of the hex nipple. Tighten the street elbow so the male threads of the elbow point away from you.
6. Apply pipe dope sparingly to the male threads of the 1/8−in. brass street elbow. Install the Low Gas Pressure Switch on the male threads of the 1/8−in. (3 mm) street elbow. Tighten switch at hex fitting at base of switch. Do not use switch body to tighten switch. Do not over-tighten switch.
7. The remaining opening on the brass street tee is the new gas valve inlet pressure tap (optional for some models). Apply pipe dope to inlet pressure plug from gas valve and install in open end of brass street tee.
8. Check all fittings for leaks after gas supply has been turned on.

Casings Wider Than 14 3/16-in./Vent Does Not Pass Between Inducer and Burner Assembly

1. If the vent pipe does not pass between the inducer and burner assembly, or the furnace is wider than a 14 3/16-in. wide casing. The switch may be installed as shown in **Figure 13**:

Figure 13	**LGPS for Casing Wider Than 14−3/16 and Vent Does Not Pass Between Inducer and Burner Assembly**



2. Remove the 1/8-in. (3 mm) NPT pipe plug from the gas valve inlet pressure tap.

NOTE: Use pipe dope approved for use with Propane Gas.

NOTE: Tighten all fittings and the Low Gas Pressure Switch with a small wrench. Do not over-tighten, check for gas leaks after gas supply has been turned on.

3. Apply pipe dope sparingly to the male threads of the brass street elbow.
4. Install the brass street elbow in inlet pressure tap of the gas valve
5. Tighten the brass street elbow with a small wrench so the outlet faces to your left.
6. Apply pipe dope sparingly to the male threads of the 2−in. brass nipple.
7. Install the brass nipple in the outlet of the brass street elbow.
8. Locate the brass street tee in the kit. Orient the tee so the male threads on the tee face away from you and the female threads face point to the male threads of the 2−in brass nipple.
9. With a small back−up wrench on the brass street elbow, tighten the brass street tee with a small wrench until the fittings are tight and the male portion of the threads point away from you.
10. Apply pipe dope sparingly to the male threads of the 1/8−in. brass street elbow. Install the Low Gas Pressure Switch on the male threads of the street elbow. Tighten switch at hex fitting at base of switch. Do not use switch body to tighten switch. Do not over−tighten switch.
11. The remaining opening on the brass street tee is the new gas valve inlet pressure tap (optional for some models). Apply pipe dope to inlet pressure plug from gas valve and install in open end of brass street tee.
12. Check all fittings for leaks after gas supply has been turned on.

INSTALL LOW GAS PRESSURE SWITCH WIRES

1. Locate the orange wire in the kit with an insulated straight female spade terminal and an insulated straight male terminal on the other end.
2. Connect the female terminal to a terminal on the Low Gas Pressure Switch.
3. Locate the orange wire in kit with an insulated straight female spade terminal and an insulated female flag terminal on the other end.
4. Connect both straight female terminals of the orange wires to the terminals on the Low Gas Pressure Switch.

INSTALL MANIFOLD

1. Align the orifices in the manifold assembly with the support rings on the end of the burner.
2. Insert the orifices in the support rings of the burners. Manifold mounting tabs should fit flush against the burner box

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.

3. Attach the green/yellow wire and ground terminal to one of the manifold mounting screws.
4. Install the remaining manifold mounting screws.
5. Connect the wires to the flame sensor and hot surface igniter.
6. Connect the connector harness to gas valve

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

7. Insert the gas pipe through the grommet in the casing. Apply a tin layer of pipe dope to the threads of the pipe and thread the pipe 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.

8. With a back-up wrench on the inlet boss of the gas valve, finish tightening the gas pipe to the gas valve.
9. Turn gas on at electric switch on gas valve.

MODIFY PRESSURE SWITCH WIRING

⚠ 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.

1. Disconnect orange wire from Low Pressure switch LPS on inducer housing.
2. Connect the orange wire from the Low Pressure Switch to the orange wire with the insulated male spade terminal.
3. Connect the orange wire from the Low Gas Pressure Switch to the terminal on the Low Pressure Switch.
4. Route orange wires along wire harness. If possible, secure with wire tie provided in kit.

CHECK INLET GAS PRESSURE

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

DO NOT operate furnace more than one minute to check inlet gas pressure, as conversion is not complete at this time.

NOTE: This kit is to be used only when inlet gas pressure is between 12.0–in. w.c. and 13.6–in. w.c.

1. On some models, remove the 1/8–in. (3 mm) plug from inlet the pressure tap and insert pressure tap (see **Figure 12** and **Figure 13**). Or, on some models, loosen the set screw on inlet tower pressure tap no more than on full turn with a 3/32–in. hex wrench. (See **Figure 17**)
2. Verify manometer is connected to inlet pressure tap on gas valve. (See **Figure 12** or **Figure 13**, or **Figure 17**)
3. Turn on furnace power supply.
4. Turn gas supply manual shutoff valve to ON position.
5. Turn furnace gas valve switch to ON position.

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

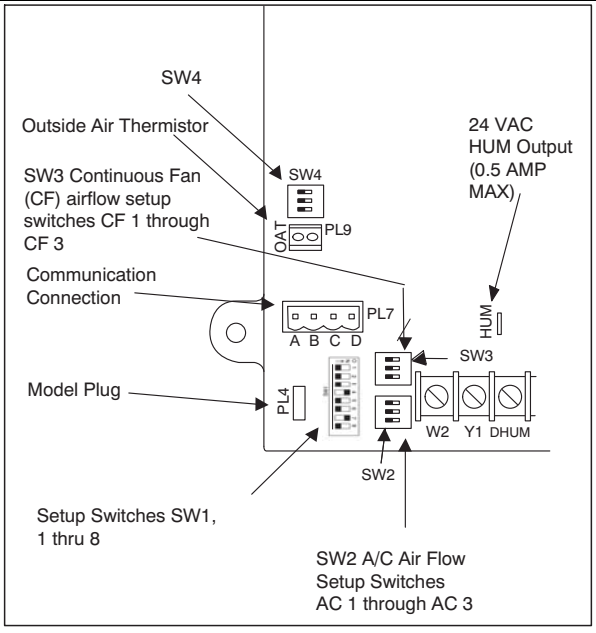
Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

59MN7A & 987MA – Modulating Gas Valve

1. Turn Setup Switch SW1–2 on furnace control ON (see **Figure 14**).
2. Jumper R–W/W1 and R–W2 thermostat connections on control.
3. When main burners ignite, confirm inlet gas pressure is between 12.0–in. w.c. and 13.6–in. w.c.
4. Remove jumper across R–W/W1 and R–W2 thermostat connections to terminate call for heat.
5. Turn furnace gas valve switch to OFF position.
6. Turn gas supply manual shutoff valve to OFF position.
7. Turn off furnace power supply.
8. Remove manometer and on some models remove pressure tap fitting.
9. On some models, apply pipe dope sparingly to the end of inlet gas pipe plug and install into unused end of 1/8–in. (3 mm) tee. Use a small back–up wrench on tee when tightening gas inlet pipe plug. Or, on some models, tighten set screw on inlet tower pressure tap with a 3/32–in. hex wrench. (See **Figure 12** or **Figure 13**, or **Figure 17**)

Figure 14	**Example of Modulating Furnace Control for ECM Blower Motor**

59MN7A & 987MA Example of Furnace Control



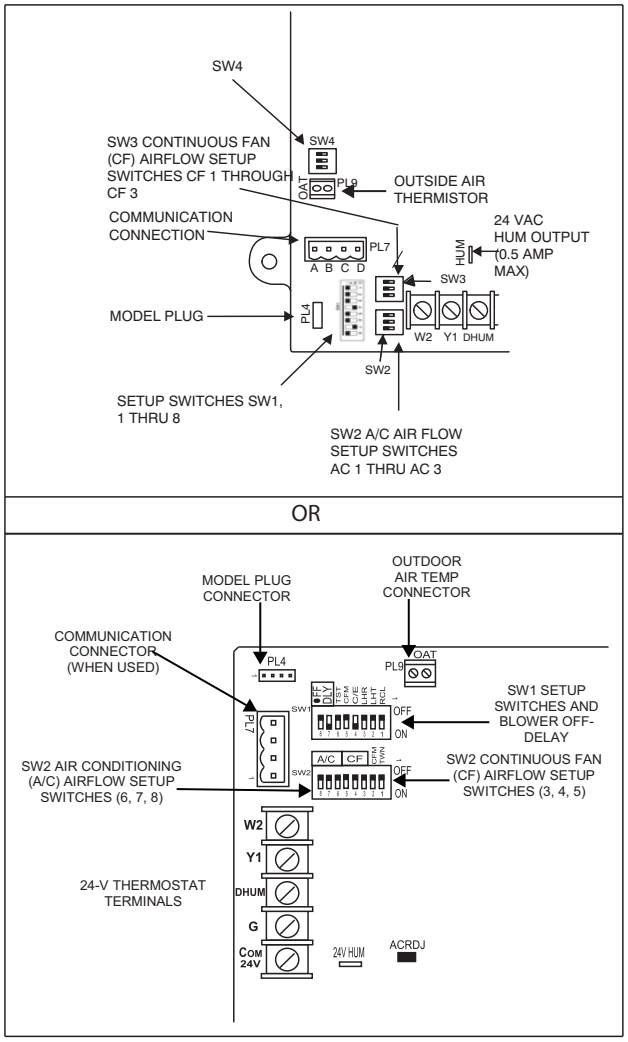
59TN6, 59TP6, 986T, 926T, & PG96V_T Variable Speed, Two–Stage Gas Valve

1. Turn Setup Switch SW1–2 on furnace control ON (See **Figure 15**).
2. Jumper R–W/W1 and R–W2 thermostat connections on control.
3. When main burners ignite, confirm inlet gas pressure is between 12.0–in. w.c. and 13.6–in. w.c.
4. Remove jumper across R–W/W1 and R–W2 thermostat connections to terminate call for heat.

5. Turn furnace gas valve switch to OFF position.
6. Turn gas supply manual shutoff valve to OFF position.
7. Turn off furnace power supply.
8. Remove manometer and on some models remove pressure tap fitting.
9. On some models, apply pipe dope sparingly to the end of inlet gas pipe plug and install into unused end of 1/8−in. (3 mm) tee. Use a small back−up wrench on tee when tightening gas inlet pipe plug. Or, on some models, tighten set screw on inlet tower pressure tap with a 3/32−in. hex wrench. (See **Figure 19**)

Figure 15	**Example of Variable Speed Furnace Control for ECM Blower Motor**

59TPA, 59TP6, 986T, 926T, & PG96V_T Variable Speed ECM Blower Motor



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⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

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 disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

CHECK FURNACE AND MAKE ADJUSTMENTS

1. Be sure main gas and electric supplies to furnace are off.
2. On some models, remove 1/8-in. (3 mm) pipe plug from manifold pressure tap on the outlet end of gas valve and insert pressure tap. Or, on some models, loosen set screw on manifold tower pressure tap no more than one full turn with a 3/32−in. hex wrench.
3. Attach manometer to manifold pressure tap on gas valve. (see **Figure 17** or **Figure 19**)
4. Turn gas supply manual shutoff valve to ON position.
5. Turn furnace gas valve switch to ON position.
6. Check all threaded pipe connections for gas leaks.
7. Turn on furnace power supply.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

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

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.

⚠ AVERTISSEMENT

RISQUE D'EXPLOSION ET D'INCENDIE

Le fait de ne pas suivre cet avertissement pourrait entraîner des dommages corporels et / ou la mort.

Ne jamais examiner pour les fuites de gaz avec une flamme vive. Utilisez plutôt un savon fait specifiquement pour la détection des fuites de gaz pour verifier tous les connections. Un incendie ou une explosion peut entrainer des dommages matériels, des blessures ou la mort.

GAS INPUT RATE INFORMATION

The gas input rate for propane is the same as for natural gas. See furnace rating plate on blower door for input rate. The input rate for propane is determined by manifold pressure and orifice size.

The gas valve must be set for Maximum Heat first and then set for Minimum heat on Modulating furnaces. The gas valve must be set for High Heat first and then set for Low Heat on Two−Stage gas valve furnaces. Furnace gas input rate on rating plate is for installations at altitudes up to 2000 ft. (610 M).

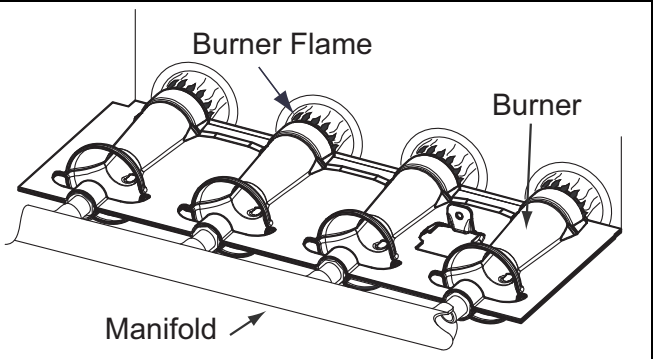
In the U.S.A., the input rating for altitudes above 2000 ft. (610M) must be reduced by 2 percent for each 1000 ft. (305 M) above sea level.

In Canada, the input rating must be derated by 5 percent for altitudes of 2000 ft. (610 M) to 4500 ft. (1372 M) above sea level.

The Conversion Kit Rating Plate accounts for high altitude derate.

SET GAS INPUT RATE

Figure 16	Burner Flame



59MN7A & 987MA – Modulating Gas Valve

Figure 17	Automatic Control Valve (Modulating) without Tower Pressure Ports

59MN7A & 987MA

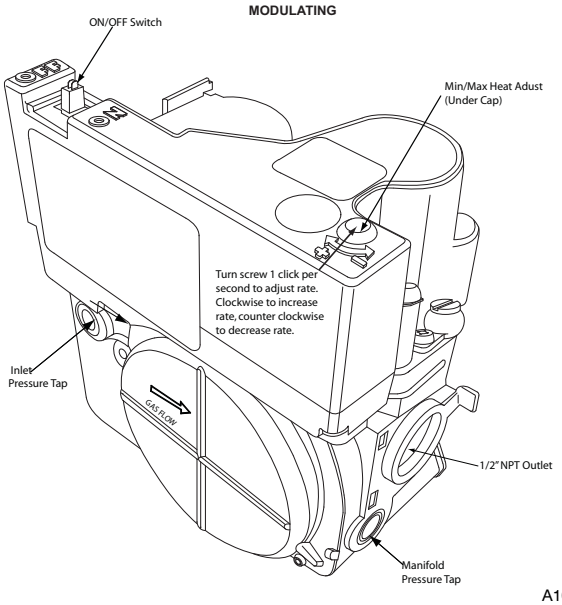
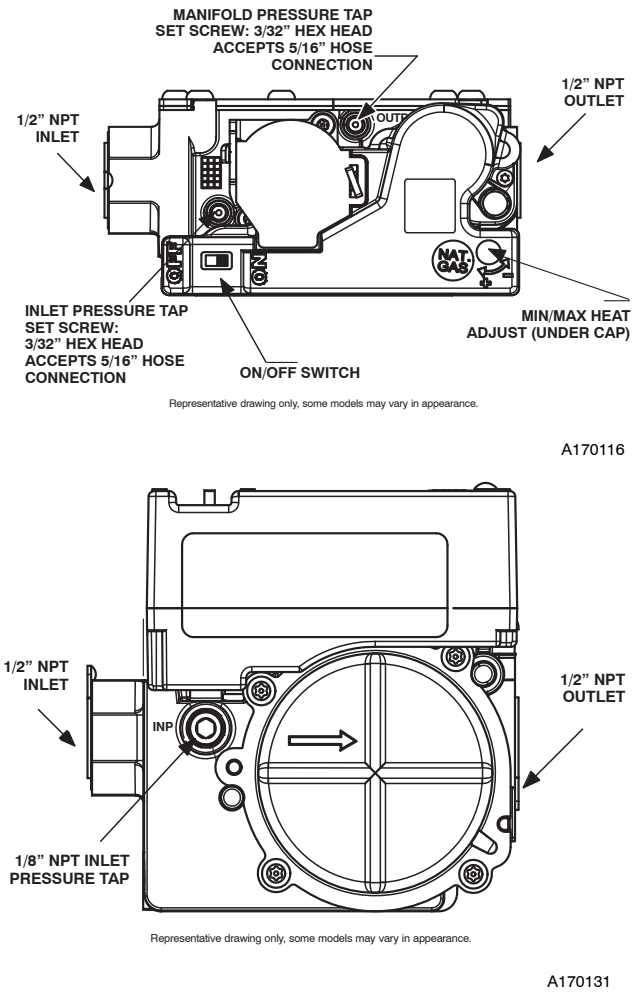


Figure 17 (cont.) – 59MN7A & 987MA – Automatic Control Valve (Modulating) with Tower Pressure Ports



⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in gas valve damage.

Do not force the rotary adjustment switch on the modulating gas valve. Do not turn the rotary adjustment switch faster than one click per second when adjusting manifold pressure. Gas valve will be damaged if excessive force is used on the rotary switch.

For proper operation and long term reliability, the manifold pressure must be adjusted as specified on the conversion kit rating plate.

The modulating furnace manifold pressure is set at two points. The first point is Maximum Heat. The second point is Minimum Heat. Do not adjust Intermediate Heat manifold pressure. Intermediate Heat manifold pressure can be checked as part of the temperature rise, but is not adjustable. Always adjust Maximum Heat first, then Minimum Heat.

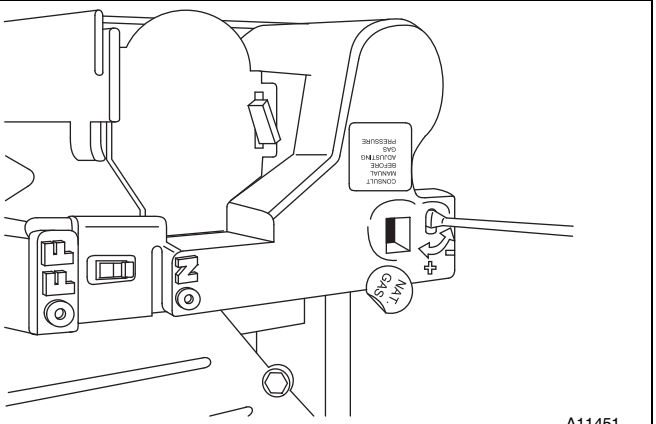
NOTE: DO NOT set Maximum Heat manifold pressure less than 10.5-in. w.c. or more than 11-in. w.c. for propane gas.

NOTE: Use care when performing adjustments. Gas valve adjustment is performed by turning a rotary adjustment switch inside the gas valve with a small straight blade screwdriver. Excessive force can break or bend the rotary adjustment switch making it non–adjustable.

To adjust manifold pressure to obtain input rate for Maximum Heat:

1. Turn Setup switch SW1-2 to ON.
2. Verify Set-up switch SW4-2 is turned OFF.
3. Jumper the R to W/W1 and W2 thermostat connections at the furnace control board.
4. After the main burners ignite and the blower starts, confirm Maximum Heat manifold pressure is correct, based on the manifold pressure table on the Conversion Kit Rating Plate.
5. To adjust the Maximum Heat manifold pressure, Slowly turn the rotary adjustment switch counterclockwise to decrease manifold pressure or clockwise to increase manifold pressure.
6. Turn rotary adjustment switch no more than one click per second until you obtain the required manifold pressure.

Figure 18	Modulating Gas Valve Adjustment



Main burner flame should be clear blue, almost transparent.

To adjust manifold pressure to obtain input rate for Minimum Heat:

1. Remove the jumper from W2 at the thermostat connections at the furnace control board control.
2. Wait until the burners and the blower transitions to Minimum Heat.
3. Verify the Minimum Heat manifold pressure is correct, based on the manifold pressure table on Conversion Kit Rating Plate.
4. To adjust the Minimum Heat manifold pressure, Slowly turn the rotary adjustment switch counterclockwise to decrease manifold pressure or clockwise to increase manifold pressure.
5. Turn rotary adjustment switch no more than one click per second until you obtain the required manifold pressure. This adjustment will not affect the previous Maximum Heat adjustment.

After adjusting the manifold pressure, allow the furnace to operate an additional 5 minutes before checking Minimum Heat Temperature rise.

Furnace must operate within ranges of temperature rise specified on the furnace rating plate. Determine air temperature rise as follows:

1. Place thermometers in return and supply ducts as near furnace as possible. Be sure thermometers do not see heat exchanger so that radiant heat does not affect readings. This practice is particularly important with straight-run ducts.
2. When thermometer readings stabilize, subtract return-air temperature from supply-air temperature to determine air temperature rise.
3. Allow the furnace to run for at least 10 minutes before checking Temperature Rise.

If the temperature rise is too high or too low in Minimum Heat:

1. Remove jumpers from R and W/W1.
2. Wait until the blower off delay is completed.
3. Turn 115 VAC power off.
4. Check the position of Heat Rise Adjustment Switch SW1-3. When set to ON, airflow is raised 18% higher for Minimum Heat and Intermediate Heat. Factory default position is OFF.
5. Turn 115 VAC power on.
6. Jumper R to W/W1 and W2.
7. After burners ignite and blower starts allow the furnace to run for at least 10 minutes before checking Temperature Rise.

Maximum Heat Temperature Rise

If the temperature rise is too high or too low in Maximum Heat:

1. Remove jumpers from R, W1 and W2.
2. Wait until the blower off delay is completed.
3. Turn 115 VAC power off.
4. Check the position of the Efficiency/Comfort Adjustment switch SW1-4. When set to OFF (Efficiency Mode), airflow is 10% higher for Minimum, 7.5% for Intermediate Heat, and 17.5% for Maximum Heat. Factory default position is ON (Comfort Mode).
5. Turn 115 VAC power on.
6. Re-check Minimum Heat Temperature Rise.
7. Remove jumpers across thermostat connections to terminate the call for heat. Wait until the blower off delay is completed.
8. Turn gas supply manual shutoff valve to OFF position.
9. Turn off furnace power supply. Turn setup switch SW1−2 to OFF.
10. Remove manometer from the manifold pressure tap of the gas valve.
11. On some models, apply pipe dope sparingly to end of 1/8−in. (3 mm) pipe plug and install in the manifold pressure tap opening (see **Figure 17**). Or, on some models, tighten set screw on manifold tower pressure tap with a 3/32−in. hex wrench. (See **Figure 18**)
12. Re-install plastic cap over rotary adjustment switch on the top of the gas valve.

⚠ WARNING

FIRE HAZARD

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

Manifold pressure tap set screw must be tightened or 1/8−in. (3 mm) NPT pipe plug must be installed to prevent gas leaks.

13. Turn furnace gas valve switch to ON position.
14. Turn on furnace power supply.
15. Set room thermostat to call for heat.
16. Check pressure tap plug for gas leaks when main burners ignite.
17. Check for correct burner flame.

59TN6, 59TP6, 986T, 926T, & PG96V_T Variable Speed, Two−Stage Gas Valve

1. Verify SW1-2 on furnace control is turned “ON”.
2. Jumper R and W/W1 thermostat connections to call for heat.
3. Check manifold orifices for gas leaks when main burners ignite.
4. Adjust gas manifold pressure. Refer to Conversion Kit Rating Plate 340740−206.
5. Remove caps that conceal adjustment screws for gas valve regulators. See **Figure 19**.
6. Adjust low−heat manifold pressure for propane gas. See **Figure 19**.
7. Turn low−heat adjusting screw counterclockwise (out) to decrease input rate or clockwise (in) to increase input rate.

NOTE: When correct input is obtained, main burner flame should be clear blue, almost transparent (see **Figure 16**).

8. Jumper R, W/W1 and W2 on control center thermostat connections. This keeps furnace locked in high−heat operation.
9. Adjust high−heat manifold pressure for propane gas.
10. Turn high−heat adjusting screw counterclockwise (out) to decrease input rate or clockwise (in) to increase input rate.
11. Replace caps that conceal gas valve regulator adjustment screws.

NOTE: When correct input is obtained, main burner flame should be clear blue, almost transparent (see **Figure 16**).

12. Remove jumper across R, W1, and W2 after high−heat adjustment to terminate call for heat.
13. Turn setup switch SW1-2 on furnace control to OFF position.
14. Turn furnace gas valve switch to OFF position.
15. Turn off furnace power supply.
16. Remove manometer from the manifold pressure tap of the gas valve.
17. On some models, apply pipe dope sparingly to end of 1/8−in. (3 mm) pipe plug and install in the manifold pressure tap opening. Or, on some models, tighten set screw on manifold tower pressure tap with a 3/32−in. hex wrench. (See **Figure 19**)
18. Turn furnace gas valve switch to ON position.
19. Turn on furnace power supply.
20. Set room thermostat to call for heat.
21. Check pressure tap plug for gas leaks when main burners ignite.
22. Check for correct burner flame.
23. Observe unit operation through two complete heating cycles.
24. See Sequence of Operation in furnace Installation, Start−up, and Operating Instructions.
25. Set room thermostat to desired temperature.
26. After making the required manifold pressure adjustments, check and adjust the furnace temperature rise per the furnace installation instructions.

Figure 19 | **Gas Valve (Two−Stage)**

59TN6, 59TP6, 986T, 926T, & PG96V_T − Automatic Gas Valve (Two−Stage) without Tower Pressure Ports

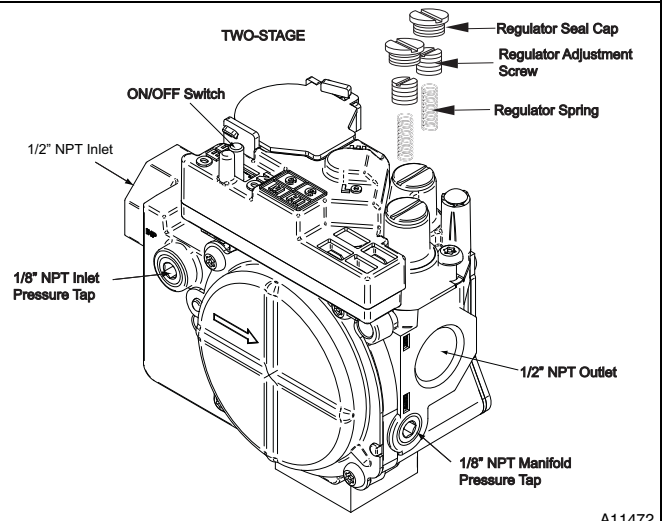
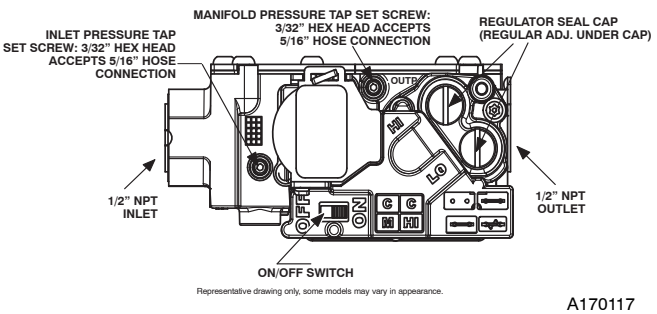
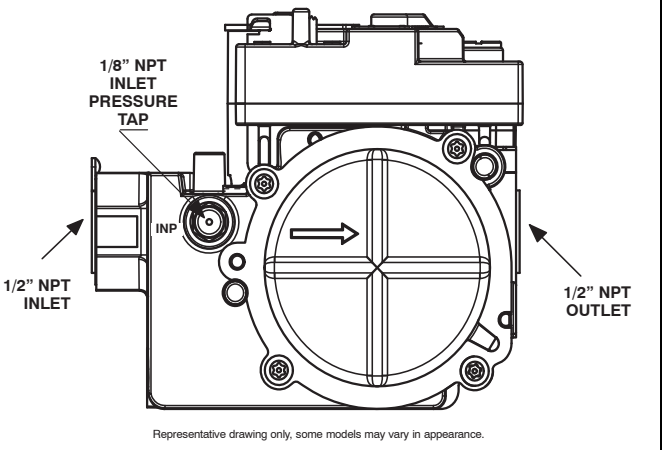


Figure 19 (cont.) − Automatic Gas Valve (Two−Stage) with Tower Pressure Ports





CHECK LOW GAS PRESSURE SWITCH

The newly installed low gas pressure switch is a safety device used to guard against adverse burner operating characteristics that can result from low gas supply pressure. Switch opens at not less than 7.2 in. w.c. and closes at not greater than 10.2 in. w.c.

This switch also prevents operation when the propane tank level is low which can result in gas with a high concentration of impurities, additives, and residues that have settled to the bottom of the tank. Operation under these conditions can cause harm to the heat exchanger system. This normally open switch closes when gas is supplied to gas valve under normal operating pressure. The closed switch completes control circuit. Should an interruption or reduction in gas supply occur, the gas pressure at switch drops below low gas pressure switch setting, and switch opens. Any interruption in control circuit (in which low gas pressure switch is wired) quickly closes gas valve and stops gas flow to burners. When normal gas pressure is restored, the system must be electrically reset to re-establish normal heating operation.

Before leaving installation, observe unit operation through two complete heating cycles. During this time, turn gas supply to gas valve off just long enough to completely extinguish burner flame, then instantly restore full gas supply. To ensure proper low gas pressure switch operation, observe that there is no gas supply to burners until after hot surface igniter begins glowing.

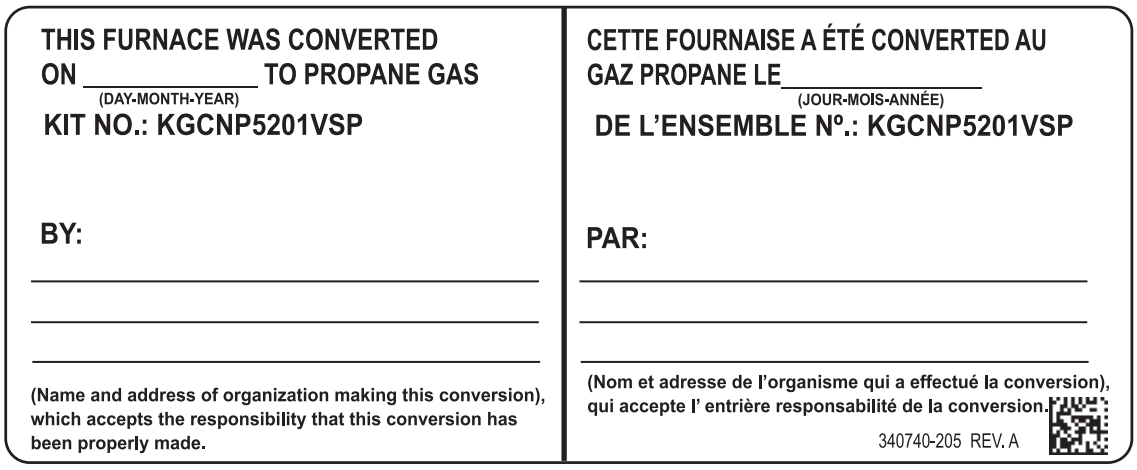
LABEL APPLICATION

1. Fill in Conversion Responsibility Label 340740−205 and apply to Blower Access Door of furnace. Date, name, and address of organization making this conversion are required. (See **Figure 20**)
2. Attach Conversion Rating Plate Label 340740−201 or 340740−206 to outer door of furnace. (See **Figure 5**)
3. Attach Gas Control Conversion Label 340740−202 to gas valve. Do not use 340740−203, which is similar.

CHECKOUT

1. Observe unit operation through two complete heating cycles.
2. See Sequence of Operation in furnace Installation, Start−Up, and Operating Instructions.
3. Set room thermostat to desired temperature.

Figure 20	**Conversion Responsibility Label**
59MN7, 987MA, 59TN6A, 59TP6, 986T, 926T, & PG86V_T	



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SECTION 2
NON CONDENSING FURNACES

Table 3	MODEL NUMBERS BEGINNING WITH:
58CTW	314AAV
58CTY	314JAV
58CVA	315AAV
58CVX	315JAV
PG8MV	PG8JV

INSTALLATION

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK, AND CARBON MONOXIDE POISONING HAZARD

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

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, explosion, or production of carbon monoxide could result causing property damage, personal injury, or loss of life. The qualified service agency is responsible for the proper installation of this furnace with this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

⚠

LE FEU, L'EXPLOSION, CHOC ELECTRIQUE, ET MONOXYDE DE CARBONE EMPOISONNER

Cette trousse de conversion doit être installée par un servie d'entretien qualifié, selon les instructions du fabricant et selon toutes les exigences et tous les codes pertinents de l'autorité compétente. Assurezvous de bien suivre les instructions dans cette notice pour réduire au minimum le risque d'incendie, d'explosion ou la production de monoxyde de carbone pouvant causer des dommages matériels, de blessure ou la mort. Le service d'entretien qualifié est responsable de l'installation de cette trousse. L'installation n'est pas adéquate ni complète tant que le bon fonctionnement de l'appereil converti n'a pas été vérfié selon les instructions du fabricant fornies avec la trousse.

⚠ 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.

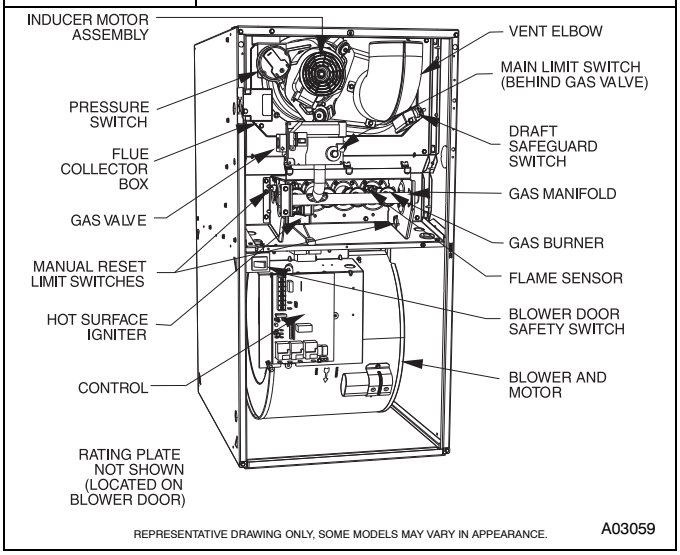
⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

Figure 21 Representative Furnace Drawing



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.

MANIFOLD/ORIFICE/BURNER REMOVAL

⚠ 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. See **Figure 22** and **Figure 23**.

1. Disconnect the gas pipe from gas valve and remove pipe from the furnace casing.
2. Disconnect the connector harness from gas valve. Disconnect wires from Hot Surface Igniter (HSI) and Flame Sensor.
3. Support the manifold and remove the 4 screws that secure the manifold assembly to the burner box and set aside.
4. Note the location of the green/yellow wire ground wire for re-assembly later.
5. Remove wires from both rollout switches.
6. Slide one−piece burner assembly out of slots on sides of burner box.
7. Remove the flame sensor from the burner assembly.
8. Remove the orifices from the manifold and discard.

Figure 22 **80% Burner**

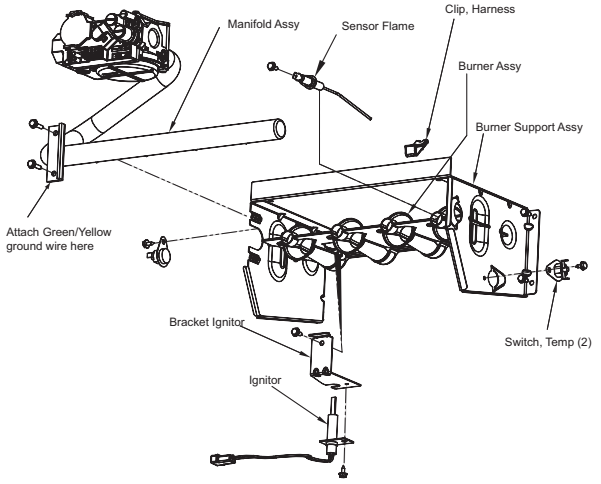
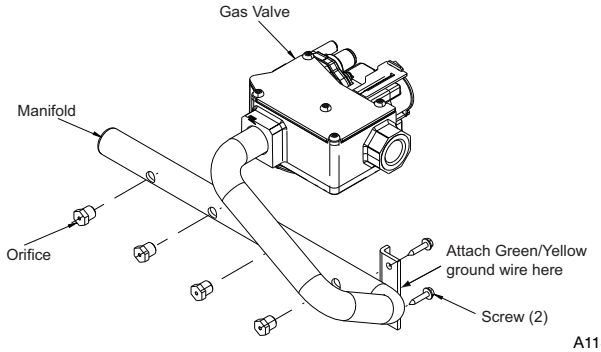


Figure 23 **80% Manifold**



NOx DEVICE REMOVAL

⚠ CAUTION

UNIT DAMAGE HAZARD

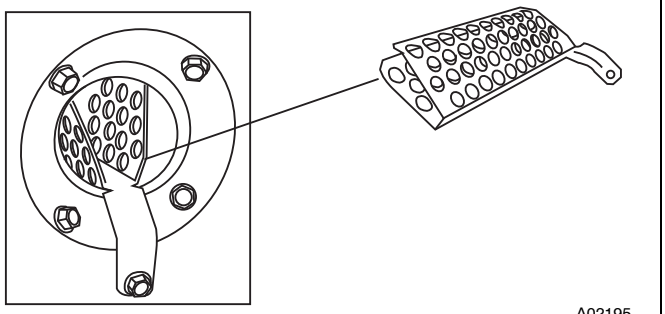
Failure to follow this caution may result in unit damage.

Furnace MUST have low NOx devices removed prior to operating furnace on propane gas.

For NOx device removal, follow these additional steps:

1. Remove the screw underneath the heat exchanger inlet that secures the NOx device in the heat exchanger. (See **Figure 24**)

Figure 24 **NOx Device Removal**



2. Use a pair of needle nose pliers to remove the NOx device.
3. Squeeze the sides of the device, if necessary, to remove from the heat exchanger.
4. Re-install screw in hole underneath heat exchanger inlet.

NOTE: It is very IMPORTANT to reinstall the NOx bracket mounting screw.

5. Repeat steps for each heat exchanger.

ORIFICE SELECTION/DERATE

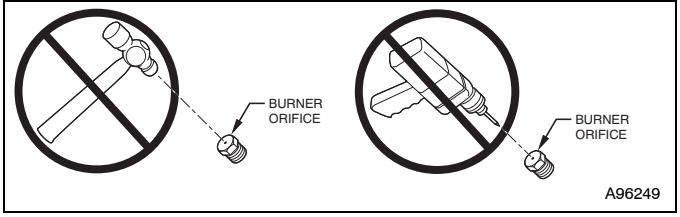
⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

DO NOT re−drill burner orifices. Improper drilling may result in burrs, out−of−round holes, etc. Obtain new orifices if orifice size must be changed. (See **Figure 25**)

Figure 25 **Burner Orifice**



Refer to conversion kit rating plate 340740−204 to determine main burner orifice size. (See **Figure 26**)

Furnace gas input rate on furnace rating plate is for installations at altitudes up to 2000 ft.

In the U.S.A.; the input rating for altitudes above 2000 ft. must be reduced by 4 percent for each 1000 ft. above sea level.

In Canada, the input rating must be derated by 10 percent for altitudes of 2000 ft. to 4500 ft. above sea level.

The Conversion Kit Rating Plate accounts for high altitude derate.

Install main burner orifices. Do not use Teflon tape. Finger-tighten orifices at least one full turn to prevent cross-threading, then tighten with wrench. There are enough orifices in each kit for largest furnace. Discard extra orifices.

Figure 26 | **Conversion Kit Rating Plate**

Conversion Kit Rating Plate – 58CTW, 59CTY, 58CVA, 59CVX, 314AAV, 314JAV, 315AAV, 315JAV, PG8MV, PG8JV

CONVERSION KIT RATING PLATE - CARRIER CORPORATION

THIS APPLIANCE HAS BEEN CONVERTED TO USE PROPANE GAS FOR FUEL. REFER TO KIT INSTRUCTIONS FOR CONVERSION PROCEDURES. USE PARTS SUPPLIED BY CARRIER CORPORATION AND INSTALLED BY QUALIFIED PERSONNEL. SEE EXISTING RATING PLATE FOR APPLIANCE MODEL NO. AND INPUT RATING.

NOTE: Furnace gas input rate on rating plate is for installations up to 2000 ft. (610m) above sea level. In U.S.A. the input rating for altitudes above 2000 ft. (610m) must be derated by 4% for each 1000 ft. (305m) above sea level. In Canada the input rating must be derated by 10% for altitudes of 2000 ft. (610m) to 4500 ft. (1372m) above sea level.

KIT NO.: KGCNP5201VSP FUEL USED: PROPANE GAS INLET PRESSURE (min - max): 12.0 - 13.6 in. wc

(SUPERSEDES: KGANP4601ALL, KGANP4101ALL, KGANP4001ALL, KGANP3001ALL, KGANP2901ALL, KGANP5201VSP, KGBNP5201VSP)

APPLIANCE MODELS		ALTITUDE OF INSTALLATION (FT. ABOVE SEA LEVEL) U.S.A. *								
		0 to 2000	2001 * to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000
58CVA, 58CVX, 58CTW, 58CTY, 315AAV, 315JAV, 314AAV, 314JAV, PG8MV, PG8JV	Orifice No.	55	1.30mm	1.30mm	1.25mm	1.25mm	1.25mm	56	56	56
		Manifold Pressure								
	HIGH	11.0	11.0	10.5	11.0	11.0	10.5	11.0	11.0	10.5
	LOW	5.8	5.3	5.0	5.5	5.2	4.9	5.7	5.2	4.8

* For Canadian Installations from 2000 to 4500 ft. (610m to 1373m) use U.S.A. column 2001 to 3000 ft. (611m to 914m).

340740-204 REV. A

A14334

INSTALL ORIFICES

1. Install main burner orifices. Do not use Teflon tape. Finger-tighten orifices at least one full turn to prevent cross-threading, then tighten with wrench.
2. There are enough orifices in each kit for largest furnace. Discard extra orifices.

NOTE: DO NOT reinstall the manifold at this time.

INSTALL MIXER SCREWS

NOTE: There are two sets of mixer screws. One set is for Condensing gas furnaces, the other set is for Non-condensing gas furnaces. Use only the parts in the bag marked **"REQUIRED FOR THE CONVERSION OF NON–CONDENSING GAS FURNACES TO PROPANE GAS"**

See **Figure 27** to verify you have the correct set of mixer screws.

1. Locate the dimple on each burner venturi tube. If you cannot locate the dimple, refer to **Figure 28** for location of the mixer screw.
2. Drill a 5/64-in. (2.8 mm) hole (supplied in kit) in each dimple.
3. Install a mixer screw in each drilled hole drilling as straight as possible. The screw head should be flush with the top of the burner venturi.

Figure 27 | **Gas Conversion Kit**

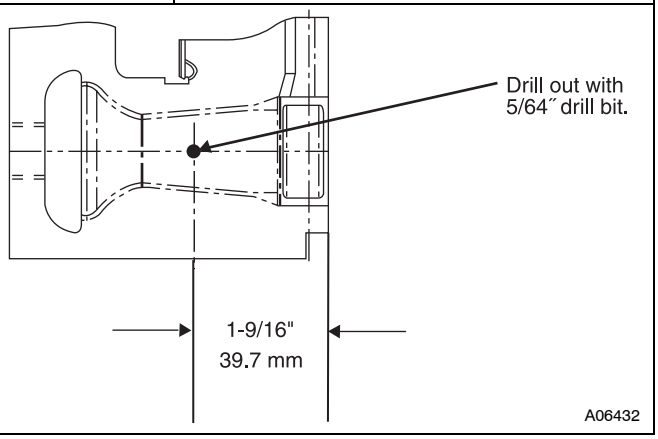
337932-702

PART #	CONTAINS: DESCRIPTION	QTY
328456-401	BIT, DRILL	1
327593-401	SCREW	7

REQUIRED FOR CONVERSION OF NON CONDENSING GAS FURNACE TO PROPANE GAS.

A11397

Figure 28 | **Mixer Screw Location**



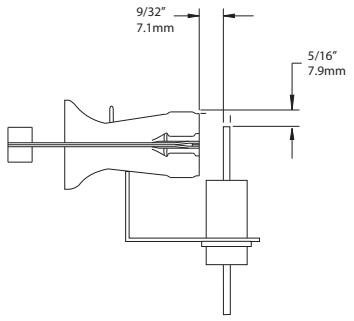
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REINSTALL BURNER ASSEMBLY

To reinstall burner assembly:

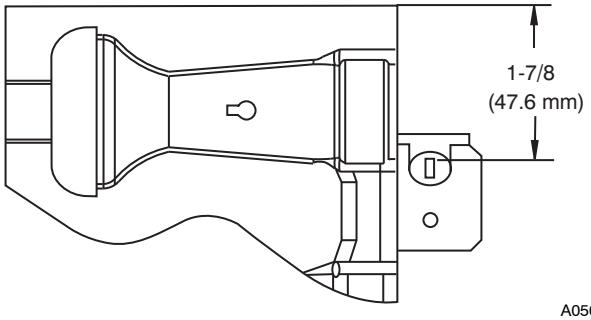
1. Attach flame sensor to burner assembly.
2. Install HSI and bracket to burner assembly.
3. Insert one-piece burner in slot on sides of burner box and slide burner back in place.
4. Reattach HSI wires to HSI.
5. Verify igniter to burner alignment.
6. For Silicon Nitride igniters, see **Figure 29** and **Figure 30**.
7. Re-attach Flame sensor wire to Flame Sensor.

Figure 29 | **Igniter Position – Side View**

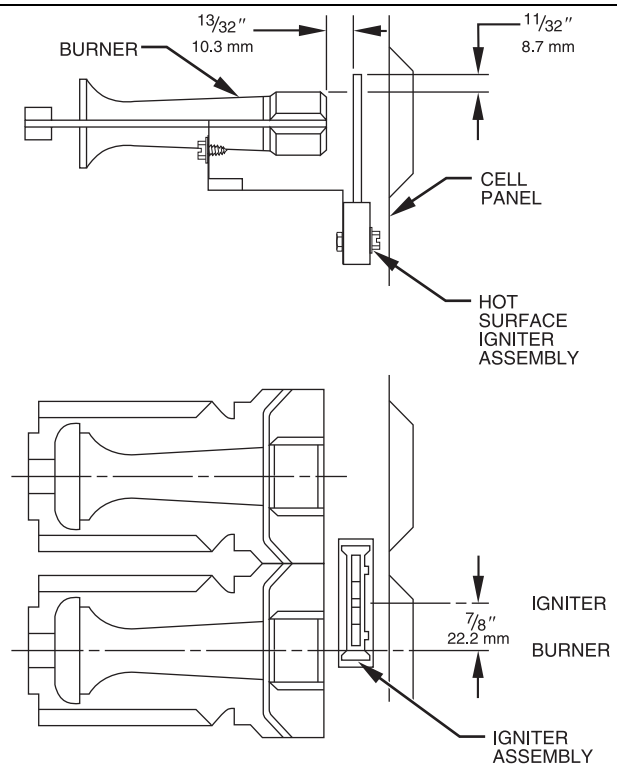


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Figure 30	Igniter Position – Top View



Silicon Carbide Igniters



CONVERT GAS VALVE

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage

The gas valve must be converted and pre−adjusted before operating on propane gas. If not converted and pre−adjusted, sooting and corrosion will occur leading to early heat exchanger failure.

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

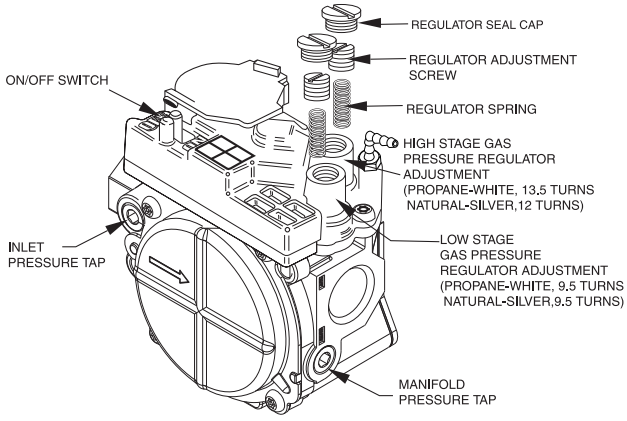
ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

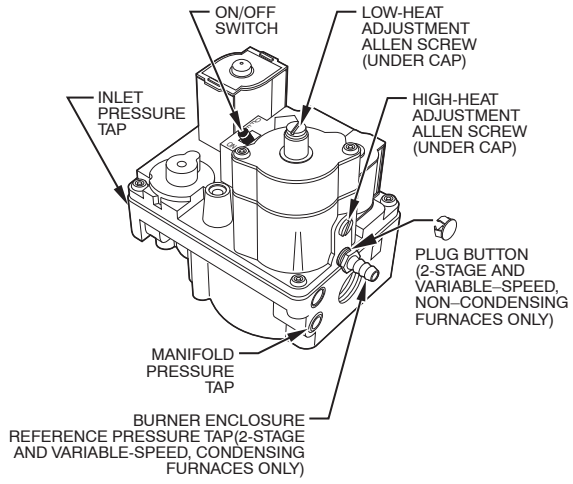
Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

Figure 31	Gas Valve (Two−Stage)

Two−Stage J or G Valve



Two−Stage E Valve



NOTE: For the two−stage furnaces with a Series J gas valve (see **Figure 31**), **they MUST have both regulator springs replaced and the gas valve MUST be pre−adjusted.**

NOTE: For older model 2−stage furnaces with a Series E gas valve (see **Figure 31**), they DO NOT need to have the regulator springs replaced in the gas valve, but the regulators in the gas valve must be pre−adjusted for propane applications.

For J and G valves See Figure 31.

1. Be sure main gas and electrical supplies are turned OFF.
2. Remove both regulator seal caps. (See **Figure 31**)
3. Remove both regulator adjustment screws.
4. Remove both natural gas regulator springs (silver).
5. Install propane gas regulator springs (white).
6. Install regulator adjustment screws.
7. Turn low−heat stage adjusting screw clockwise (inwards) 9.5 turns. This will increase the manifold pressure closer to the low−heat set point.
8. Turn high−heat stage adjusting screw clockwise (inwards) 13.5 turns. This will increase the manifold pressure closer to the high−heat set point.
9. Do not install regulator seal caps at this time.

For E valves see Figure 31.

1. Be sure gas and electrical supplies to furnace are off.
2. Remove caps that conceal adjustment screws for high− and low−heat stage gas valve regulators. See **Figure 31**.
3. Turn low−heat stage adjusting screw (3/32−in. [2 mm] hex Allen screw) clockwise (in) 1 full turn. This will increase the manifold pressure closer to the propane low−heat set point.
4. Turn high−heat stage adjusting screw (3/32−in. [2 mm] hex Allen screw) clockwise (in) 2 full turns. This will increase the manifold pressure closer to the propane high−heat set point.
5. Do not install regulator seal caps at this time.

INSTALL MANIFOLD

1. Align the orifices in the manifold assembly with the support rings on the end of the burner.
2. Insert the orifices in the support rings of the burners. Manifold mounting tabs should fit flush against the burner box.

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.

3. Attach the green/yellow wire and ground terminal to one of the manifold mounting screws.
4. Install the remaining manifold mounting screws.
5. Connect the wires to the flame sensor and hot surface igniter.
6. Connect the wires to both rollout switches.
7. Connect the connector harness to gas valve.

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

8. 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 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.

9. With a back-up wrench on the inlet boss of the gas valve, finish tightening the gas pipe to the gas valve.
10. Turn gas on at electric switch on gas valve.

INSTALL LOW GAS PRESSURE SWITCH

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

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 disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

NOTE: Use propane−resistant pipe dope on all connections to prevent gas leaks. DO NOT use Teflon tape.

1. Be sure main gas and electric supplies to furnace are off.
2. Remove 1/8−in. (3 mm) pipe plug from inlet pressure tap on gas valve. DO NOT DISCARD 1/8-in. (3 mm) PLUG.
3. Apply pipe dope sparingly to the 1/8−in. (3 mm) x 2−in. (50.8 mm) brass nipple and install the doped end in 1/8−in. (3 mm) tapped opening in gas valve inlet pressure-tap. Tighten fitting with a small wrench.
4. Apply pipe dope sparingly to the opposite end of the 1/8−in. (3 mm) x 2−in. (50.8 mm) brass coupling. Install the female end of the female x female x male tee on the brass coupling.
5. Tighten tee finger tight. Use a small open-end wrench for final tightening. The male end of the tee should be facing you.
6. Apply pipe dope sparingly to the end of brass tee.
7. Install propane low gas pressure switch on male end of the female x female x male tee.
8. Tighten switch finger tight.
9. Use a small open-end wrench on base of pressure switch for final tightening. The contacts of the LGPS should be pointing toward the inducer motor when complete.
10. The remaining opening on the brass street tee is the new gas valve inlet pressure tap
11. Install manometer fitting to the open end of the brass street tee. Or if installation is to be completed later, apply pipe dope to inlet pressure plug from gas valve install in open end of brass street tee.
12. Check all fittings for leaks after gas supply has been turned on.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

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

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.

⚠ AVERTISSEMENT

RISQUE D'EXPLOSION ET D'INCENDIE

Le fait de ne pas suivre cet avertissement pourrait entraîner des dommages corporels et / ou la mort.

Ne jamais examiner pour les fuites de gaz avec une flamme vive. Utilisez plutôt un savon fait specifiquement pour la détection des fuites de gaz pour verifier tous les connections. Un incendie ou une explosion peut entrainer des dommages matériels, des blessures ou la mort.

MODIFY PRESSURE SWITCH WIRING

⚠ 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.

1. Locate the orange wire in the kit with an insulated straight female spade terminal and an insulated straight male terminal on the other end.
2. Connect the female terminal to a terminal on the Low Gas Pressure Switch.
3. Locate the orange wire in the kit with an insulated straight female spade terminal and an insulated female flag terminal on the other end.
4. Connect both straight female terminals of the orange wires to the terminals on the Low Gas Pressure Switch.
5. Disconnect orange wire from low–heat pressure switch LPS on inducer housing.
6. Connect the orange wire from the Low Heat Pressure Switch to the orange wire with the insulated male spade terminal.
7. Connect the orange wire from the Low Gas Pressure Switch to the terminal on the Low Heat Pressure Switch.
8. Route orange wires along wire harness. If possible, secure with wire tie provided in kit.

Figure 32 | **80% Pressure Switch Wiring**

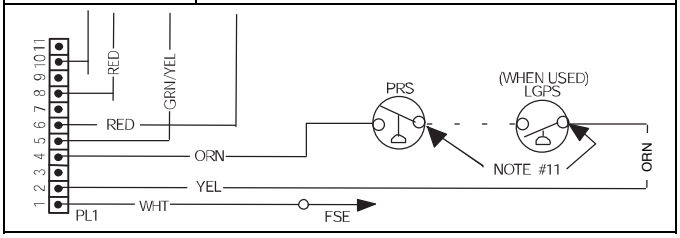
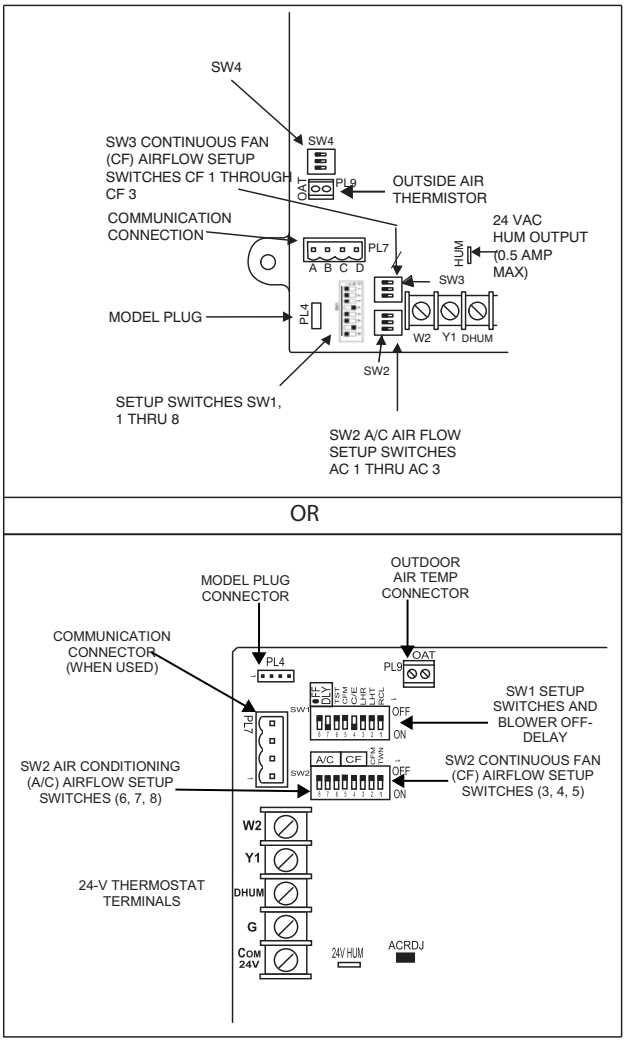


Figure 33	80% Furnace Control

58CTW, 59CTY, 58CVA, 59CVX, 314AAV, 314JAV, 315AAV, 315JAV, PG8MV, PG8JV – Example of Furnace Control



CHECK INLET GAS PRESSURE

⚠ CAUTION

UNIT DAMAGE HAZARD

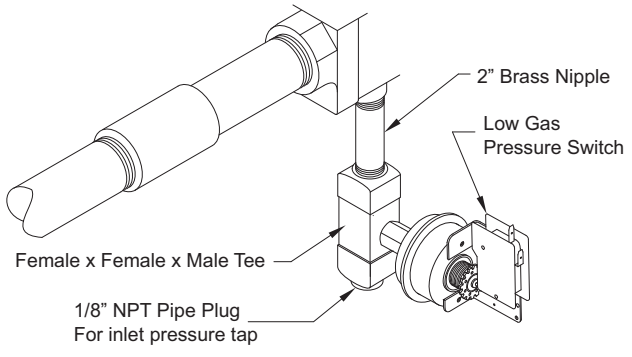
Failure to follow this caution may result in unit damage.

DO NOT operate furnace more than one minute to check inlet gas pressure, as conversion is not complete at this time.

NOTE: This kit is to be used only when inlet gas pressure is between 12.0-in. w.c. and 13.6-in. w.c.

1. Verify manometer is connected to inlet pressure tap on gas valve.
2. Turn on furnace power supply.
3. Turn gas supply manual shutoff valve to ON position.
4. Turn furnace gas valve switch to ON position.
5. Turn Setup Switch SW1–2 on furnace control ON (see **Figure 33**).
6. Jumper R–W/W1 and R–W2 thermostat connections on control.
7. When main burners ignite, confirm inlet gas pressure is between 12.0-in. w.c. and 13.6-in. w.c.
8. Remove jumper across R-W/W1 and R-W2 thermostat connections to terminate call for heat.
9. Turn furnace gas valve switch to OFF position.
10. Turn gas supply manual shutoff valve to OFF position.
11. Turn off furnace power supply.
12. Remove manometer.
13. Apply pipe dope sparingly to the end of inlet gas pipe plug and install into unused end of 1/8–in. (3 mm) tee. Use a small back–up wrench on tee when tightening gas inlet pipe plug. (See **Figure 34**)

Figure 34	80% Low Gas Pressure Switch



CHECK FURNACE AND MAKE ADJUSTMENTS

⚠ WARNING

FIRE AND EXPLOSION HAZARD

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

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.

⚠ AVERTISSEMENT

RISQUE D'EXPLOSION ET D'INCENDIE

Le fait de ne pas suivre cet avertissement pourrait entraîner des dommages corporels et / ou la mort.

Ne jamais examiner pour les fuites de gaz avec une flamme vive. Utilisez plutôt un savon fait specifiquement pour la détection des fuites de gaz pour verifier tous les connections. Un incendie ou une explosion peut entrainer des dommages matériels, des blessures ou la mort.

⚠ WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

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

Gas supply MUST be shut off before disconnecting electrical power and proceeding with conversion.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

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 disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

1. Be sure main gas and electric supplies to furnace are off.
2. Remove 1/8–in. (3 mm) pipe plug from manifold pressure tap on downstream side of gas valve.
3. Attach manometer to manifold pressure tap on gas valve.
4. Turn gas supply manual shutoff valve to ON position.
5. Turn furnace gas valve switch to ON position.
6. Check all threaded pipe connections for gas leaks.
7. Turn on furnace power supply.

GAS INPUT RATE INFORMATION

The gas input rate for propane is the same as for natural gas. See furnace rating plate for input rate. The input rate for propane is determined by manifold pressure and orifice size.

The gas valve must be set for Low Heat first and then set for High Heat on two-stage and variable-speed furnaces. Furnace gas input rate on rating plate is for installations at altitudes up to 2000 ft. (610 M).

In the U.S.A., the input rating for altitudes above 2000 ft. (610 M) must be reduced by 4 percent for each 1000 ft. (305 M) above sea level.

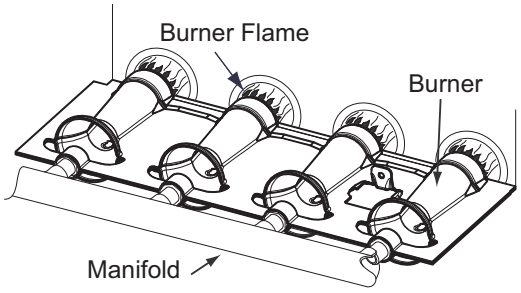
In Canada, the input rating must be derated by 10 percent for altitudes of 2000 ft. (610 M) to 4500 ft. (1372 M) above sea level.

The Conversion Kit Rating Plate accounts for high altitude derate.

SET GAS INPUT RATE

1. Verify SW1-2 on furnace control is turned "ON". (See **Figure 33**)
2. Jumper R and W/W1 thermostat connections to call for heat.
3. Check manifold orifices for gas leaks when main burners ignite.
4. Adjust gas manifold pressure. (Refer to conversion kit rating plate 340740–204 .
5. Remove caps that conceal adjustment screws for gas valve regulators. (See **Figure 31**)

Figure 35 **Burner Flame**



6. Adjust low–heat manifold pressure for propane gas. (See **Figure 31**)
7. Turn low–heat adjusting screw counterclockwise (out) to decrease input rate or clockwise (in) to increase input rate.

NOTE: When correct input is obtained, main burner flame should be clear blue, almost transparent (see **Figure 35**).

8. Jumper R, W/W1 and W2 on control center thermostat connections. This keeps furnace locked in high–heat operation.
9. Adjust high–heat manifold pressure for propane gas.
10. Turn high–heat adjusting screw counterclockwise (out) to decrease input rate or clockwise (in) to increase input rate.
11. Replace caps that conceal gas valve regulator adjustment screws.

NOTE: When correct input is obtained, main burner flame should be clear blue, almost transparent. (See **Figure 35**).

12. Remove jumper across R, W1, and W2 after high–heat adjustment to terminate call for heat.
13. Turn setup switch SW1-2 on furnace control to OFF position.
14. Turn furnace gas valve switch to OFF position.
15. Turn off furnace power supply.
16. Remove manometer and re-install manifold pressure tap plug.
17. Turn furnace gas valve switch to ON position.
18. Turn on furnace power supply.
19. Set room thermostat to call for heat.
20. Check pressure tap plug for gas leaks when main burners ignite.
21. Check for correct burner flame.
22. Observe unit operation through two complete heating cycles.
23. See Sequence of Operation in furnace Installation, Start–Up, and Operating Instructions.
24. Set room thermostat to desired temperature.

After making the required manifold pressure adjustments, check and adjust the furnace temperature rise per the furnace installation instructions.

CHECK LOW GAS PRESSURE SWITCH

The newly installed low gas pressure switch is a safety device used to guard against adverse burner operating characteristics that can result from low gas supply pressure. Switch opens at not less than 6.5 in. w.c. and closes at not greater than 10.2 in. w.c.

This switch also prevents operation when the propane tank level is low which can result in gas with a high concentration of impurities, additives, and residues that have settled to the bottom of the tank. Operation under these conditions can cause harm to the heat exchanger system. This normally open switch closes when gas is supplied to gas valve under normal operating pressure. The closed switch completes control circuit. Should an interruption or reduction in gas supply occur, the gas pressure at switch drops below low gas pressure switch setting, and switch opens. Any interruption in control circuit (in which low gas pressure switch is wired) quickly closes gas valve and stops gas flow to burners. When normal gas pressure is restored, the system must be electrically reset to re−establish normal heating operation.

Before leaving installation, observe unit operation through two complete heating cycles. During this time, turn gas supply to gas valve off just long enough to completely extinguish burner flame, then instantly restore full gas supply. To ensure proper low gas pressure switch operation, observe that there is no gas supply to burners until after hot surface igniter begins glowing.

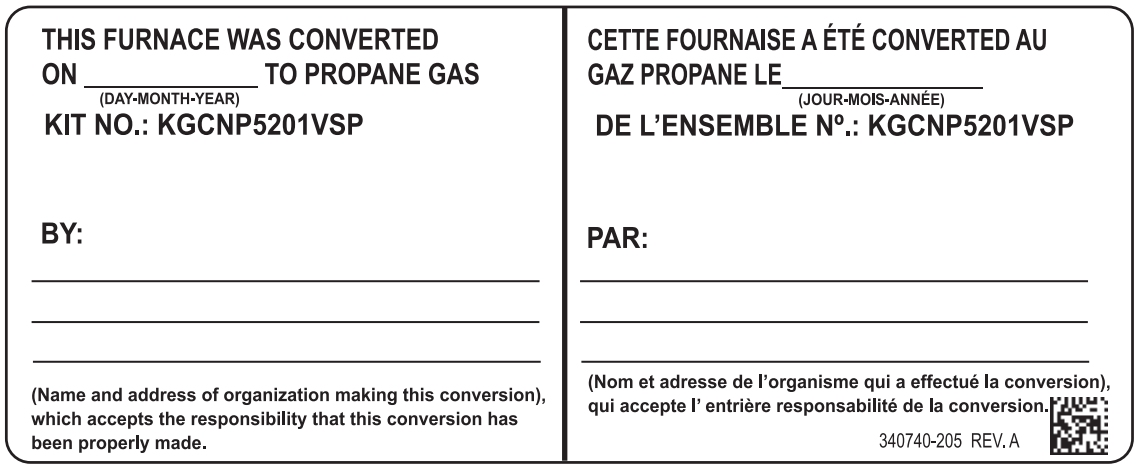
LABEL APPLICATION

1. Fill in Conversion Responsibility Label 340740−205 and apply to Blower Access Door of furnace. Date, name, and address of organization making this conversion are required. (See **Figure 36**)
2. Attach Conversion Rating Plate Label 340740−204 to outer door of furnace. (See **Figure 36**)
3. Apply Gas Control Conversion Label: For 2−stage J and G gas valves, use Gas Control Conversion Label 340740−202. (Do not use 340740−203, which is similar.) For 2−stage E gas valve, use Gas Control Adjustment Label 340740−203. (Do not use 340740−202, which is similar.)
4. Replace control access door, blower access door and outer door of furnace.

CHECKOUT

1. Observe unit operation through two complete heating cycles.
2. See Sequence of Operation in furnace Installation, Start−Up, and Operating Instructions.
3. Set room thermostat to desired temperature.

Figure 36 **Gas Control Conversion Label**



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