

Model EZGas Pro gas burner — Instruction manual

Where appliance instructions differ from this manual, follow the appliance instructions.

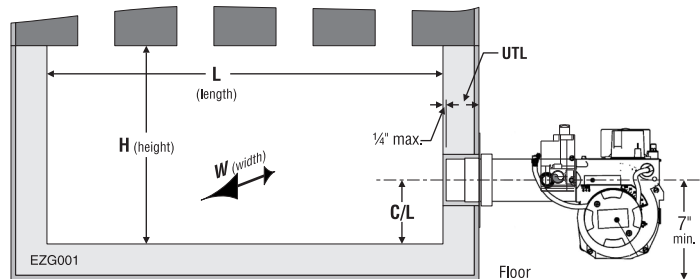
1. Prepare site • prepare burner • mount burner (continued)

Inspect burner and components

WARNING

Do not install or operate the burner if any component is damaged or if burner does not comply with the specifications or any other guidelines in this manual.

Figure 3 Combustion chamber dimensions (see Table 1)



Air tube insertion length (UTL)

- Usable air tube length (UTL) is the distance from mounting flange to end of air tube. Verify that the end of the air tube will be flush with, or no more than 1/4 inch short of, the inside of the appliance combustion chamber front wall when the burner is mounted. See Figure 3 and Table 1 below for further information.

Diffuser plate

- Verify correct diffuser plate (item 2, page 3). Compare diffuser plate listed on air tube label with diffuser plate listed in Table 1.

Gas orifice drill size

- The gas orifice is drilled through a plate in the end of the orifice nipple (see item 6, page 3). Read the factory-drilled orifice size on the label attached to the burner air tube (see item 1, page 3) near the blower housing end. If the gas orifice size is not correct for your application, or if the label is illegible for any reason, check the orifice size directly and redrill orifice or replace if necessary, as follows (next page).

Table 1 Burner specifications for EZGas Pro burners

Appliance Input BTU	Orifice Drill Size		Diffuser Plate	Air Band Type	Approx. Air Band Setting				Minimum Chamber Dimensions (in inches) (VC= min. diam. Of vertical cylinder chamber)				
	Nat Gas	Propane			C Diffuser	B Diffuser	A Diffuser	9-Slot Diff	C/L	L	W	H	VC
Note 1	Note 2		Note 3		Note 4				Notes 3, 4, 5				
50,000 - 75,000	5/32	1/8	C	1-Slot	5%				3	7	6	8	7
75,000 - 100,000	3/16	9/64	B or 9-Slot	1-Slot		10%		20%	3 1/2	8	7	9	8
100,000 - 125,000	7/32	11/64	B or 9-Slot	1-Slot		25%		35%	3 1/2	9	7	9	8 1/2
125,000 - 150,000	1/4	13/64	B or 9-Slot	1-Slot		35%		45%	4	11	8	10	9 1/2
150,000 - 175,000	9/32	7/32	B or 9-Slot	1-Slot		50%		75%	4	12	8	10	10
175,000 - 200,000	5/16	1/4	A or 9-Slot	2-Slot			35%	50%	4 1/2	14	8	11	12
200,000 - 225,000	5/16	1/4	A or 9-Slot	2-Slot			40%	65%	4 1/2	15	9	11	13
225,000 - 250,000	11/32	9/32	A	2-Slot			50%	80%	4 1/2	16	9	11	14
250,000 - 275,000	13/32	5/16	A	2-Slot			60%		4 1/2	17	9	11	15

Note 1	Firing rate should be within +/- 5% of rated input for the appliance. High altitude applications: The maximum burner input at sea level is 275,000 Btuh. Reduce this capacity by 4% per 1,000 feet above sea level. Example- max. capacity at 5,000 feet is 220,000 Btuh (20% reduction). Pressurized firing: Maximum burner input decreases with increasing overfire pressure. Assume a reduction in maximum burner input of approximately 5% at 0.1 w.c. and 10% at 0.2 inches w.c. You will have to increase the air band opening to compensate for the increased pressure. Follow the procedures given in this manual to check combustion with instruments to determine the correct air band setting. Do not fire into a chamber with pressure higher than 0.2 inches w.c. and never fire at a higher pressure than recommended by the appliance manufacturer.
Note 2	Once the orifice is drilled, minor adjustments to the firing rate can be achieved by adjusting the gas valve outlet pressure between 3.2" and 3.8" w.c. If the rate remains too low, re-drill the orifice with a 1/64" larger bit (for details, see Make Final Burner Adjustments in Section 4 of this manual.)
Note 3	For BTU ranges that are covered by both the 9-Slot Diffuser Plate and the A or B Diffuser Plate, it is likely that either diffuser will work, but one may provide better combustion. The 9-slot's short flame pattern favors appliances with shorter combustion chambers.
Note 4	Use this as the starting setting only. Adjust air band setting, if necessary, after performing combustion testing (see page 13).

Usable Tube Length for Insertion Depth		
Burners with welded flange have fixed insertion depths. Verify the insertion depth is correct for the appliance. On burners with adjustable flanges, the Usable Tube Length (UTL) available for setting the insertion depth varies with air tube length:		
Tube Length	UTL min.	UTL max.
10"	1 3/4"	3 1/2"
12	1 3/4"	5 1/2"
14	1 3/4"	7 1/2"

Note 3	Some tested appliances may operate satisfactorily with dimensions less than those noted in the table.
Note 4	Horizontal cylindrical chambers - diameter must be no less than column W.
	Horizontal stainless steel cylindrical chambers - diameter at least 1 to 4 inches larger than column "W" above.
Note 5	A corbel may help heat transfer in a larger boiler of furnace, provided it is recommended by the appliance manufacturer.

1. Prepare site • prepare burner • mount burner (continued)

Verify and install diffuser plate

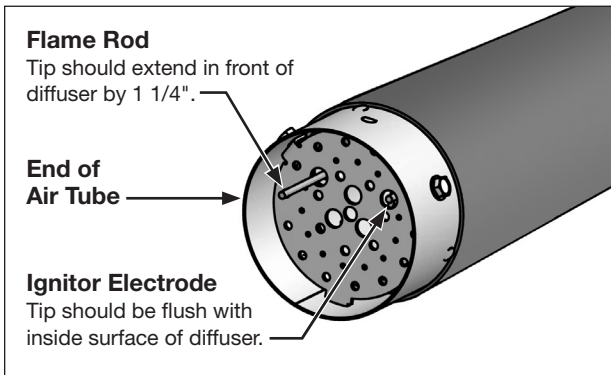
Each plate will be stamped on the face of the diffuser with a letter designating the diffuser type (Example A, B, C, 9S).

1. Install the diffuser on the air tube by placing the wide tab into the slot at the end of the air tube with the 90° bent tabs of the diffuser plate facing into the air tube.
2. Fasten diffuser plate to the air tube with the two screws provided.
3. Make sure the flame rod and electrode are not touching the diffuser plate.
4. If flame rod or electrode is making contact with the diffuser plate the burner will not prove flame and will enter a lockout condition

Flame rod and ignitor electrode

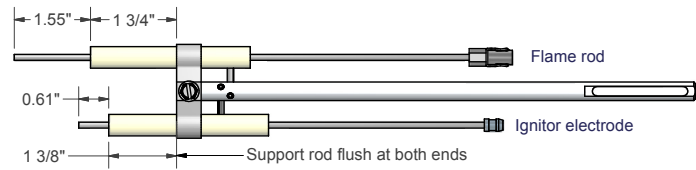
- Inspect the burner from air tube end. Flame rod should extend through the diffuser plate as shown in Figure 4. Ignitor electrode should be flush with inner face of diffuser plate as shown.
- Push rod completely forward.

Figure 4 Flame rod and ignitor placement



- The flame rod and ignitor electrode must not touch the diffuser or any grounded metal surface at any point. The flame rod and electrode should be as close as possible to the centers of the diffuser holes. If either the flame rod or electrode is closer than 1/16" to the diffuser, remove assembly (see page 15 for removal instructions and verify dimensions per Figure 5). Bend the end of the flame rod or ignitor electrode as required. Replace assembly and check spacing again. Continue adjusting as necessary until neither flame rod nor electrode is closer than 1/16" to the diffuser.

Figure 5 Flame rod/ ignitor electrode assembly



Inspect/redrill gas orifice when required

- Turn off power to the burner/appliance before proceeding.
- Close main manual gas valve in gas line to burner. Then disconnect the ground joint union to allow rotating burner combination gas valve.

WARNING

You must disconnect power to burner and close main manual gas valve before proceeding. Failure to do so could result in severe personal injury, death or substantial property damage.

- Unplug wire harness from combination gas valve.
- Remove the combination gas valve (item 20, page 3) and the orifice nipple (item 6, page 3). Remove the orifice nipple from the gas valve.
- Read the correct orifice drill size from Table 1, page 7. Then check actual orifice size using that size twist drill bit.
- **If gas orifice is smaller than required**, redrill the orifice to the correct size, if necessary.
- **If gas orifice is larger than required**, obtain a replacement orifice nipple from Carlin. If necessary, drill the orifice hole in the replacement orifice nipple to the correct size.

WARNING

Drill the orifice carefully, avoiding drill wobble. Wobble will cause the orifice to be over-sized. The orifice nipple should be secured in a vise, if possible, to ensure it is steady during the drilling process.

- Write the orifice size on the orifice nipple label (or on the French label attached to the burner for Canadian installations).

Install gas valve on burner

1. Read WARNING's on page 9 before installing gas valve.
2. Apply a small amount of pipe dope (suitable for propane gas) to all gas piping connections per Figure 6. The orifice nipple is installed between the gas valve and the burner connection. Make sure the arrow on the orifice nipple label points in the direction of gas flow.

WARNING

To avoid damage to gas valve, do not hold valve with a pipe wrench or over-tighten. Use only a crescent wrench or other means. Failure to comply could result in severe personal injury, death or substantial property damage.

3. Connect wire harness to valve.

NOTICE

LP gas conversion kit not required when installing LP gas. Manifold gas pressure required for both natural gas and LP is 3.5" WC unless specified.

Inspect components and wiring

- Visually inspect all burner components and wiring.
- Verify that wiring is intact and connectors are securely connected.
- Verify that all burner components are in good condition.

Mount burner in appliance

- Verify appliance burner front plate dimensions per page 19.
- Slide gasket supplied with burner over end of air tube.
- Insert burner into appliance opening and bolt in place