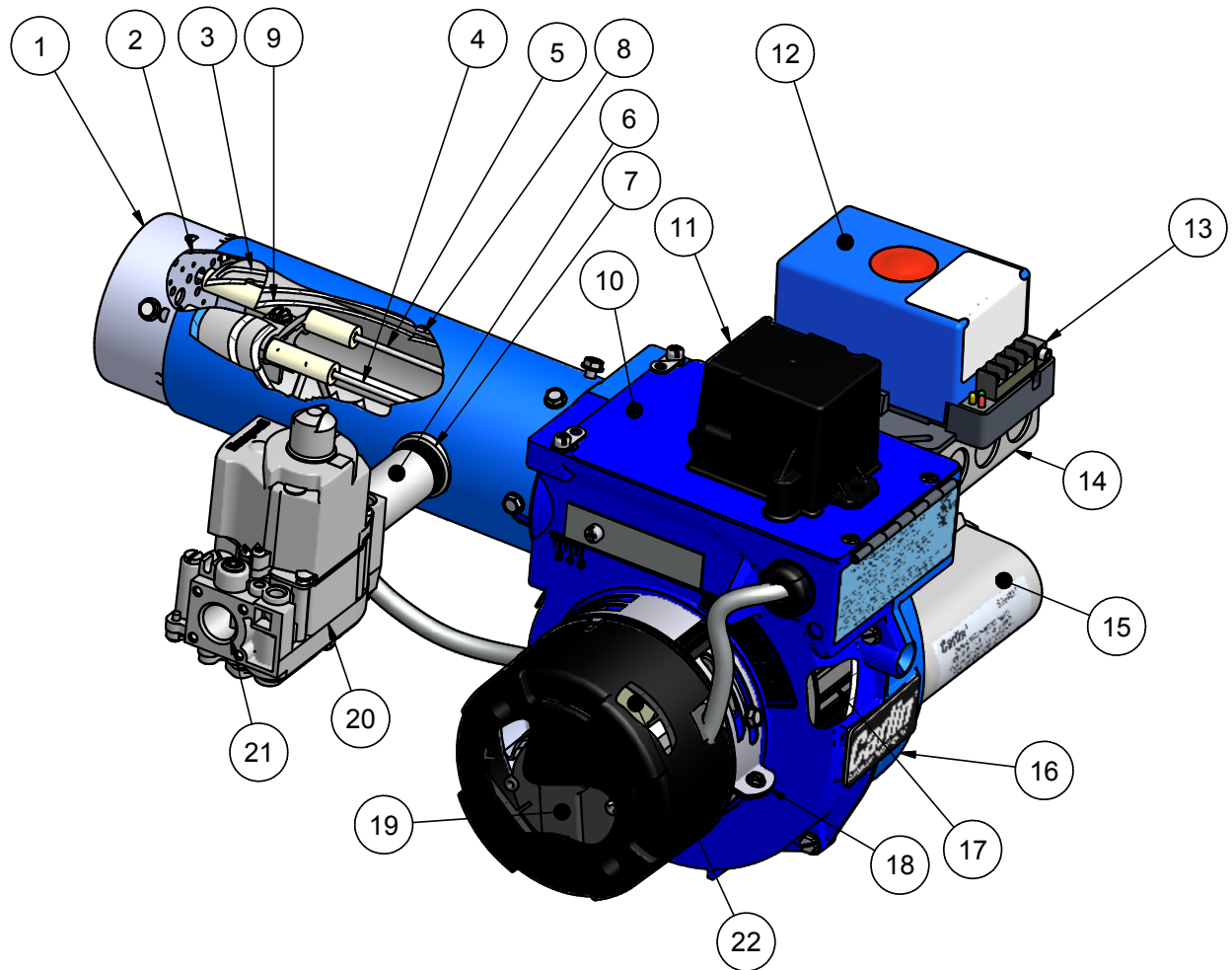


EZGas Pro burner at-a-glance



- | | |
|---|--|
| 1 Air tube (flange omitted for clarity), with powder coat paint finish | 12 Primary control (Carlin Model 60200FR microprocessor-based interrupted ignition flame supervisory control, for use with flame rod flame rectification) |
| 2 Diffuser plate (interchangeable hole or slot pattern) | 13 Flame current test jack |
| 3 Gas manifold (concentric cylinders swaged at ends) — Gas manifold delivers gas to gas openings on inner wall of manifold near the diffuser plate. | 14 Burner junction box |
| 4 Ignitor electrode | 15 Motor (Carlin PSC motor, with permanently-lubricated bearings and automatic thermal overload protection) |
| 5 Flame rod | 16 Blower housing (cast aluminum), with powder coat paint finish |
| 6 Gas orifice nipple — see pages 7 and 8 for orifice sizing requirements | 17 Blower wheel |
| 7 Gas inlet connection (gas entrance to gas manifold) | 18 Air band with indicator — Only a single adjustment required for setting combustion air; see page 7 for starting setting based on appliance model and input) |
| 8 Gas manifold outer wall | 19 Airflow proving switch — Prevents burner from firing if air is not moving |
| 9 Gas manifold inner wall | 20 Combination gas valve (with integral gas pressure regulation — set for 3½" w.c. outlet pressure) - 24V |
| 10 Hinged cover plate (for access to blower wheel & electrodes) | 21 Gas supply entrance — ¼" NPT; 5" w.c. min; 14" w.c. max |
| 11 Ignitor — Carlin Model 41800 solid state electronic ignitor — 9,000 volts, continuous duty rated) | 22 24V Transformer |

1. Prepare site • prepare burner • mount burner

Inspect installation site

Inspect, repair and/or replace vent system

WARNING

Do not install this burner unless you have verified the entire vent system and the appliance are in good condition and comply with all applicable codes.

The vent and chimney must be sized and constructed in accordance with all applicable codes. If intended for use with an oil burner as well, the vent system must comply with relevant codes for both gas and oil firing. Appliances equipped with a gas conversion burner are treated as fan-assisted appliances.

The vent system must not be pressurized unless the vent piping and vent system are designed accordingly. The vent must provide draft at all times (negative pressure in vent).

Do not install or use an existing manual damper in the vent connector or vent.

Do not connect the appliance vent connector to a chimney or vent serving a fireplace, incinerator or solid-fuel-burning apparatus.

In a cold climate, do not vent into a masonry chimney that has one or more sides exposed to the outside. Install a listed stainless steel liner to vent the flue products.

A defective vent system could result in severe personal injury, death or substantial property damage.

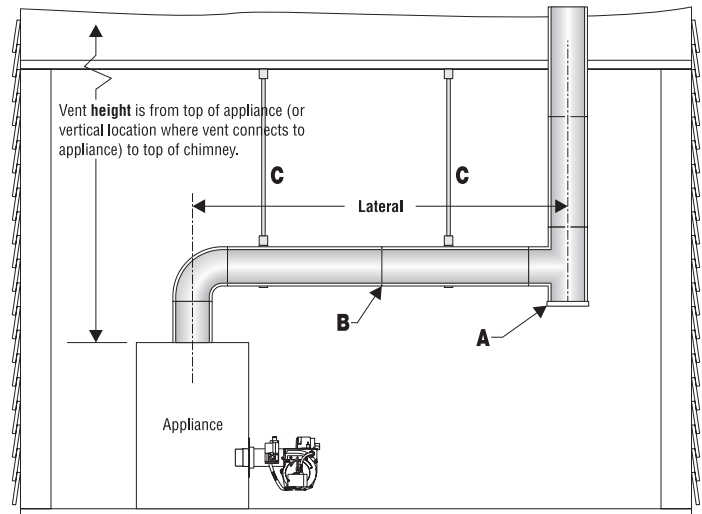
Vent/chimney sizing

- Follow all local codes when sizing the vent and chimney
- Refer to the appliance manufacturer’s manual, when available, for venting recommendations.

Prepare vent/chimney

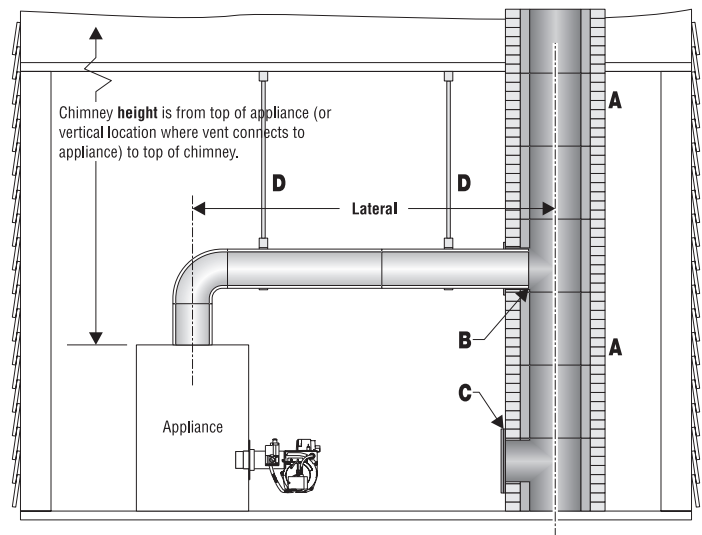
- Secure all metal vent joints with screws, following the vent manufacturer’s instructions. Seal all joints in the vent system and chimney. Repair masonry chimney lining and repair all mortar joints as needed.
- Where draft fluctuations are likely, install a double-acting barometric draft regulator in the vent piping. (The damper must be located in the same space as the appliance.) Install a manual reset spill switch in the top of the draft regulator outlet. Wire the switch into the appliance limit circuit to shut off the appliance/burner if sustained downdraft should occur. Refer to the appliance manufacturer’s instruction manual for recommendations regarding the need for a barometric draft regulator.
- Provide support for the vent piping. Do not rest the weight of any of the vent piping on the appliance flue outlet.

Figure 1 Vent and vent connector installation



Metal vent application

- A** Connect to vertical with tee, if possible, to provide inspection/cleanout opening in vent.
- B** Seal all joints and access openings tightly to prevent draft loss.
- C** Support vent pipe so no weight of vent connector rests on appliance.



Masonry chimney application

- A** Tile-lined interior masonry chimney only; with all tile and joints in good condition.
- B** Vent pipe should be almost flush, but **not extending into**, inside surface of liner.
- C** Seal all access openings tightly to prevent draft loss.
- D** Support vent pipe so no weight of vent connector rests on appliance.

EZG0102

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

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

Inspect installation site

Verify combustion/ventilation air openings

WARNING Installing the burner/appliance in a space that does not provide enough air for combustion and ventilation can result in severe personal injury, death or substantial property damage. Follow all applicable codes and guidelines below to ensure space has sufficient air openings.

Large spaces

For appliances located in basements, ventilated crawl spaces or other large areas, no additional air openings should be necessary. Exception: If the building construction is unusually tight (see National Fuel Gas Code for definition), you will need to provide air openings into the building if appliance air comes from inside. Provide one opening within 12 inches of the ceiling, and one opening within 12 inches of the floor. Size each opening to provide free area (after deduction for louvers) of 1 square inch per 1,000 Btuh input of all fuel-burning appliances in the building.

Confined spaces — air from inside building

If air openings connect to areas inside the building, provide two openings, one within 12 inches of the ceiling, the other within 12 inches of the floor. Each opening must have a free area (after deduction for louvers) of 1 square inch per 1,000 Btuh of all appliances in the space. If the building construction is unusually tight (see National Fuel Gas Code for definition), you will need to provide air openings into the building. Provide two openings sized and located as for the openings into the boiler space.

Confined spaces — air from outside

If air openings connect directly to outside, provide two openings, one within 12 inches of the ceiling, the other within 12 inches of the floor. Each opening must have a free area (after louver deduction) of:

- If directly through side wall: 1 square inch for each 4,000 Btuh of all appliances in the space.
- If through vertical ducts: 1 square inch for each 4,000 Btuh of all appliances in the space.
- If through horizontal ducts: 1 square inch for each 2,000 Btuh of all appliances in the space.

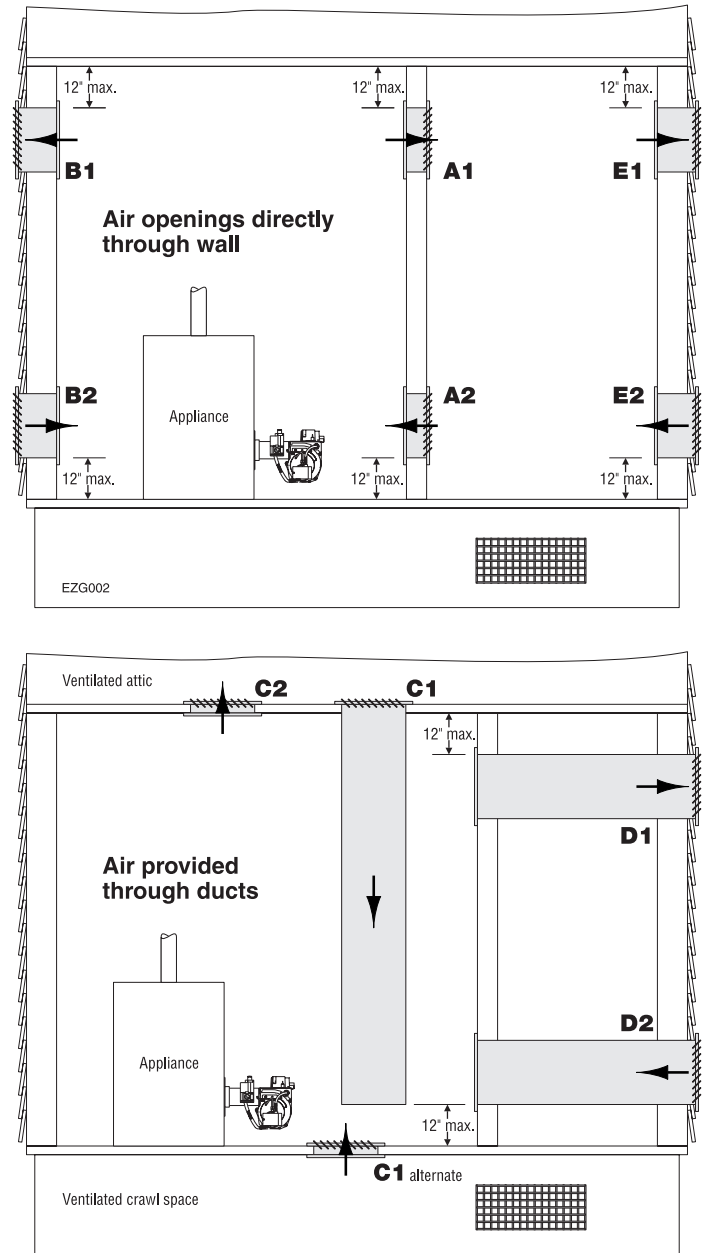
Optional outside air connection

For spaces not fitted with large enough air openings, you may be able to apply the optional burner cover kit (RESCVR5S) with Outside Air/Direct Vent kit (50433KIT) to provide outside combustion air to the burner. You must use a vent outlet/air inlet termination approved by the appliance manufacturer. Refer to the appliance and outside air kit manuals for instructions.

You will also have to apply this option if the appliance space may contain corrosive contaminants, such as laundry products, paints, varnishes or other chemicals.

WARNING Even when using the optional outside air kit, make sure the space provides enough ventilation to prevent overheating of the appliance, burner and controls. If there is risk of overheating, you must install ventilation air openings sized large enough to provide air for cooling the equipment. Failure to provide ventilation can result in severe personal injury, death or substantial property damage.

Figure 2 Locating & sizing air openings



Minimum grille free area per 1,000 Btuh input of all appliances in space

A1 & 2	Two openings through interior wall	1 sq. in.
B1 & 2	Two openings through outside wall	0.25 sq. in.
C1 & 2	Two vertical ducts (to attic and crawl space)	0.25 sq. in.
D1 & 2	Two horizontal ducts from outside	0.50 sq. in.
E1 & 2	If building construction is unusually tight, provide two air openings as shown if appliance air comes from inside.	1 sq. in.

Example A space contains two fuel-burning appliances. The combined input is 120,000 Btuh. Air comes in through horizontal ducts from outside. This is case **D**. So multiply 0.50 sq. in. times 120 to get 60 sq. in. free area per opening. If louvers reduce free area to 70%, then divide minimum free area by 0.7 for actual grille area, or $60 \div 0.7 = 85.7$ sq. in.

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

Inspect installation site

Verify combustion/ventilation air openings (continued)

WARNING When sizing air openings for combustion and ventilation, include air required for exhaust fans and other appliances, such as clothes driers, that require air for operation.

Check appliance manual and applicable codes for required sizing of combustion and ventilation air openings.

- Verify that openings are unobstructed.
- Verify that appliance space and air source spaces are free of:
 - Gasoline or other flammable liquids or vapors.
 - Combustible materials.
 - Air contaminants, such as laundry products, paint, thinner, varnish, etc.
- Confirm with user that the area will be kept free of these materials at all times.

Prepare the appliance

WARNING **Burner input:** Install a gas burner sized for the normal input rating of the appliance. Do not install a burner with a higher firing rate than the appliance rating. Do not install a burner with a firing rate more than 10% lower than the appliance rating. The appliance and vent system could be damaged due to condensation.

Seal the appliance: Seal all flue-gas containing joints. Seal all connections to the vent piping for breeching.

Clean the appliance: Clean the appliance thoroughly and seal all joints. Test all electrical components and verify the relief valve works (boilers only).

Verify combustion chamber dimensions comply with the minimum dimensions shown in Figure 3, page 7. Install or replace combustion chamber liner if required by the appliance manufacturer. The burner must not extend into the combustion chamber. The end of the burner air tube must be within ¼” of the inside face of the combustion chamber. If the space around the burner air tube is more than ¼”, wrap the burner air tube with minimum 2300-°F-rated ceramic fiber blanket to seal off the gap.

Repair or replace damaged appliance components. Inspect the appliance thoroughly. Follow appliance manufacturer’s guidelines for repair or replacement of any component found defective.

When cleaning the appliance or working with **ceramic fiber refractories or fiberglass insulation**, see **WARNING** on this page. Failure to comply with the above could result in severe personal injury, death or substantial property damage.

Verify clearances

- Verify that the burner/appliance will maintain all clearances to combustible walls or floor and all clearances required for service/maintenance as required in the appliance manual and applicable codes.

Ceramic fiber or Fiberglass insulation

WARNING Ceramic fiber materials, such as chamber liners, may contain carcinogenic particles (chrysothalites) after exposure to heat. Airborne particles from fiberglass or ceramic fiber components have been listed as potentially carcinogenic by the State of California. Take the following precautions when removing, replacing and handling these items.

Avoid breathing dust and avoid contact with skin or eyes. Wear long-sleeved, loose-fitting clothing, gloves and eye protection. Use a NIOSH N95 certified respirator. This respirator meets requirements for protection from chrysothalites. Actual job requirements or NIOSH regulations may require other or additional protection. For information, refer to the NIOSH website, <http://www.cdc.gov/niosh/homepage.html>.

Ceramic fiber removal: To prevent airborne dust, thoroughly wet ceramic fiber with water before handling. Place ceramic fiber materials in a plastic bag and seal to dispose.

Avoid blowing, tearing, sawing or spraying fiberglass or ceramic fiber materials. If such operations are necessary, wear extra protection to prevent breathing dust.

Wash work clothes separately from other laundry. Rinse clothes washer thoroughly afterwards to prevent contamination of other clothing.

NIOSH First aid procedures:

Eye exposure — irrigate immediately

Breathing — fresh air.

Prepare appliance for burner mounting

WARNING The universal flange supplied with EZGas Pro burners is for firing chambers with negative or positive over-fire pressure. The flange should be sealed with high temperature silicone. Failure to comply could result in severe personal injury, death or substantial property damage.

See page 19 for required dimensions and bolt locations.