Gas Hearth Appliances 101

1. The feel of Fire in the Home (Light, Heat, Comfort)
2. What products are available in the market
3. Standards for safety and installation
4. Proper products for the space
5. Use can affect indoor and outdoor air quality
6. Maintenance and trouble shooting
7. Advantage of qualified experts

Light – The flicker of the flame provides both light and ambiance

Heat – Heat draws us in and provides a sense of comfort and warmth

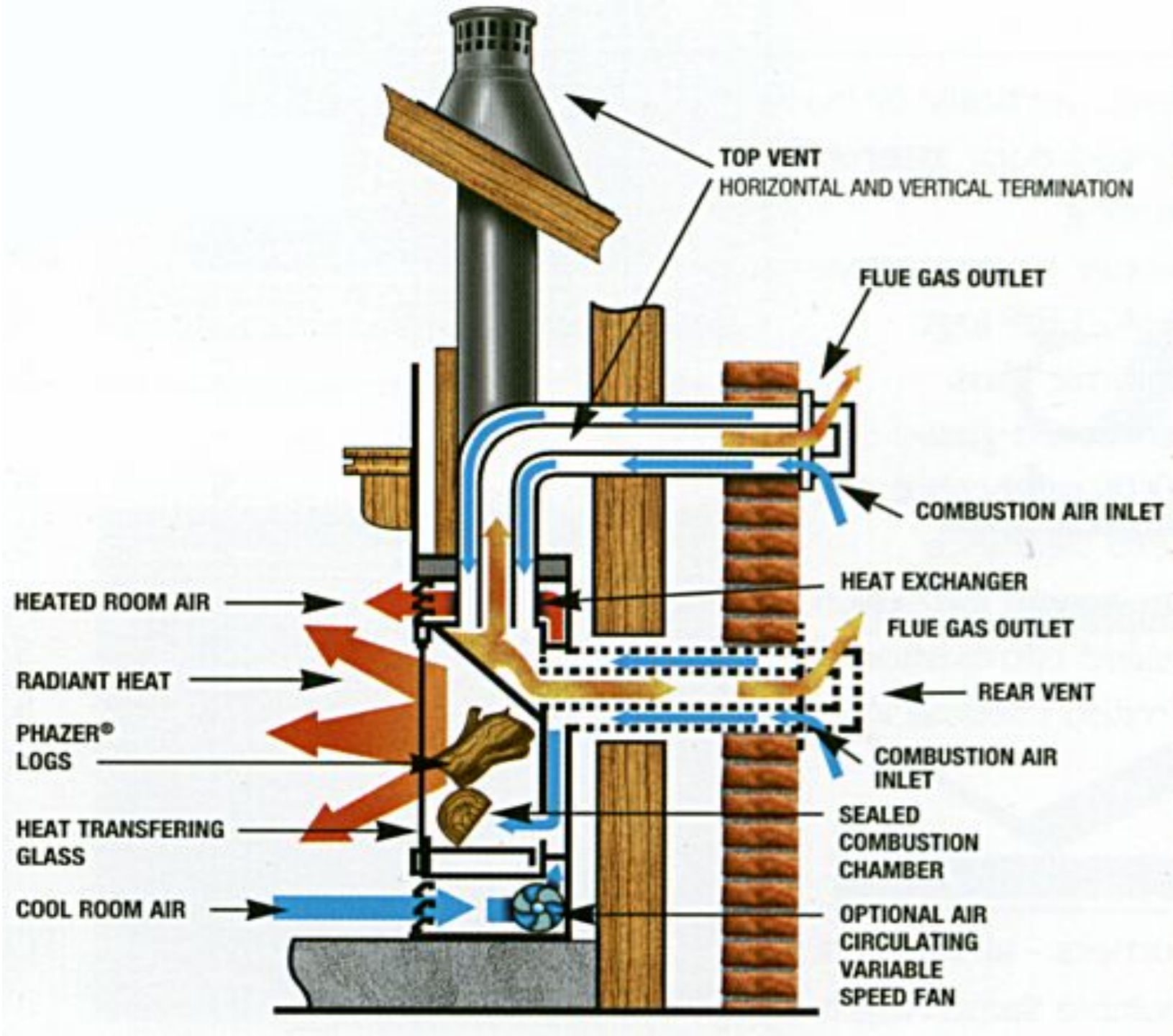
Comfort – Gas appliances work great as space heaters or can heat an entire home. Ease of operation makes them a sought after amenity in the home.

- Gas Hearth appliances provide both Radiant and Convective heat.

- Radiant heat is like the Sun. It warms objects in your home.

- Convective heat is transferred into the home by air passing through the convection chamber and heat exchanger.

- Convective heat is often assisted by a fan in the convection chamber.



Three categories of Gas Appliances

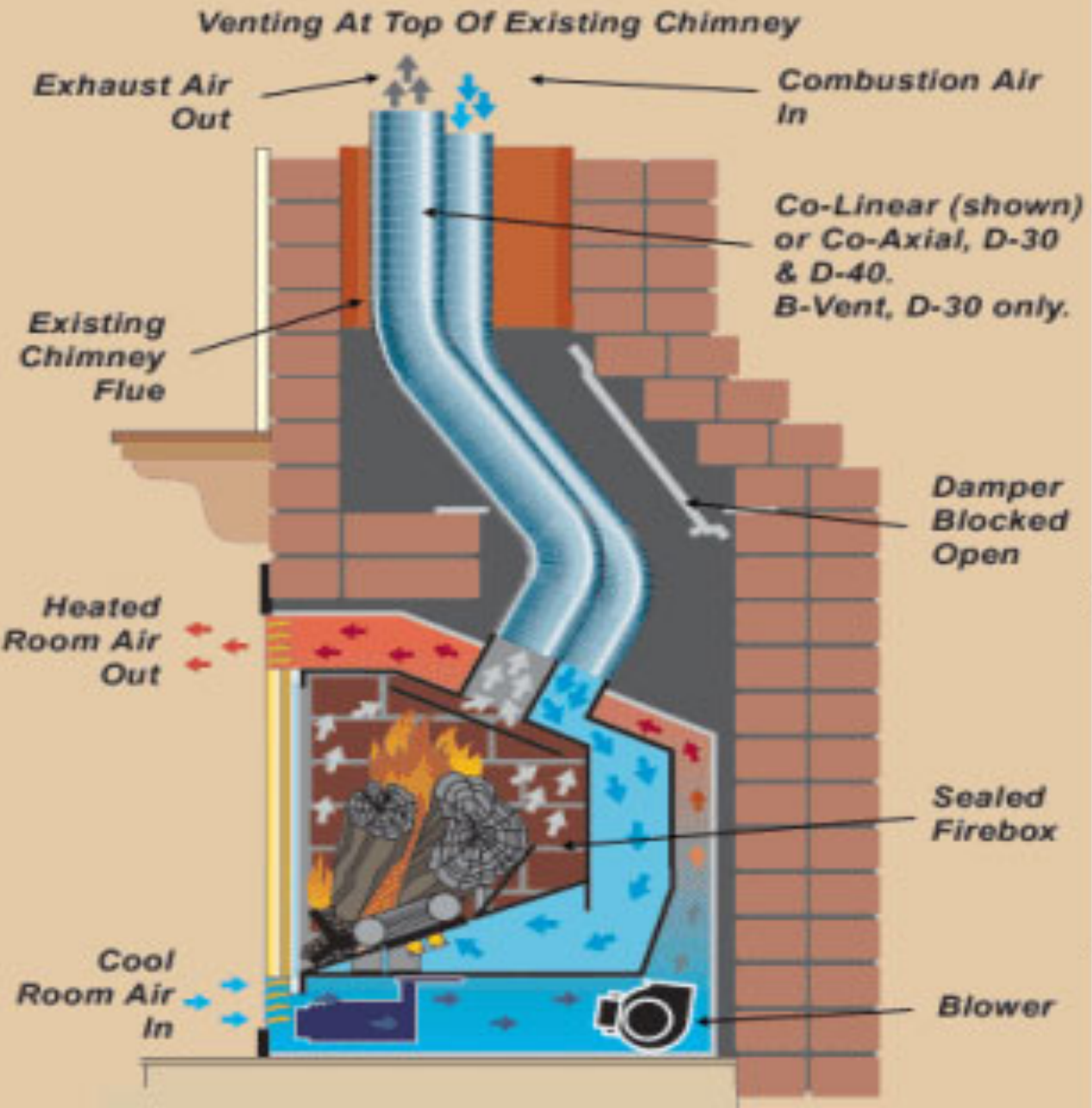
What Products are available in the Market

Direct Vent

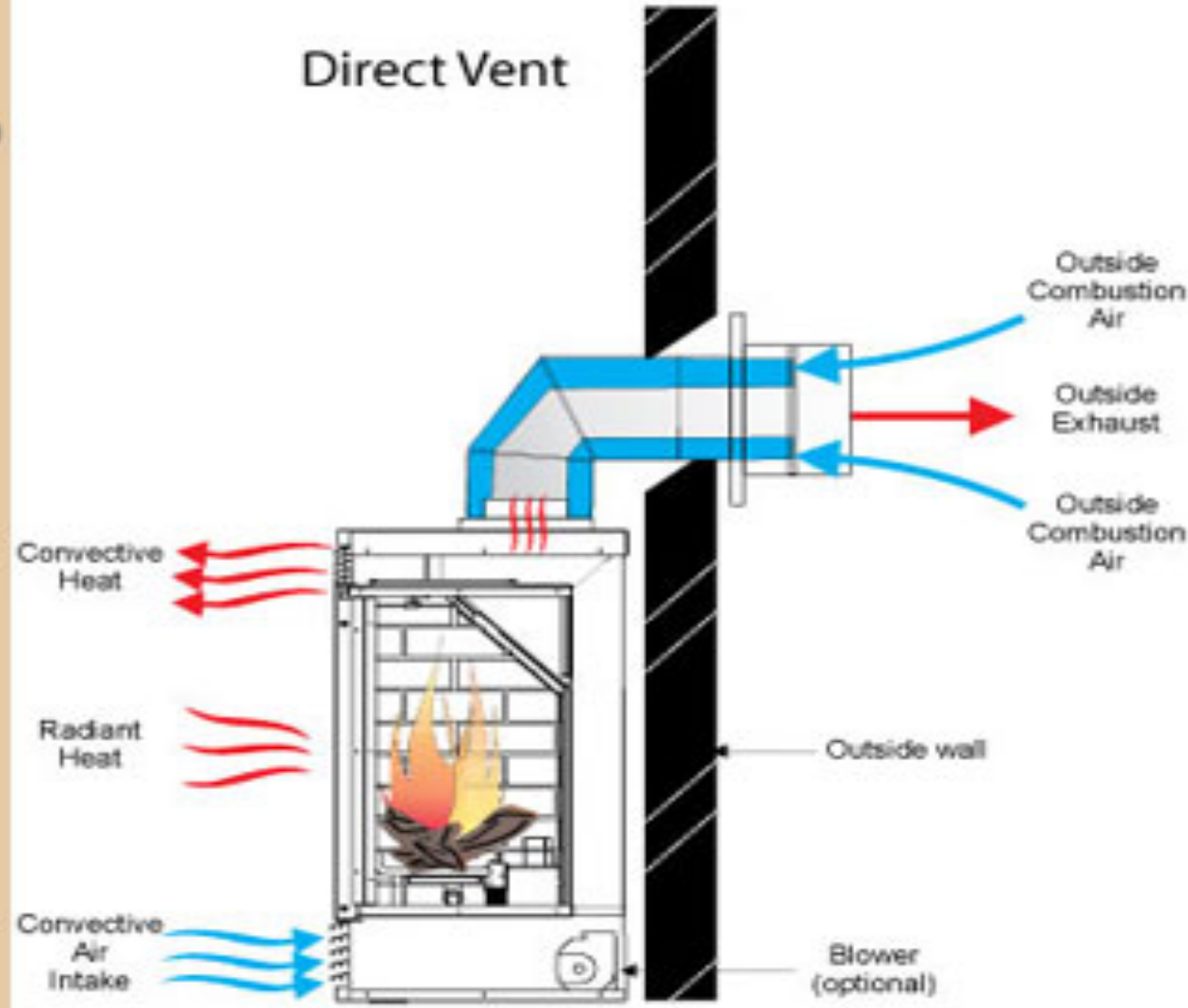
- Coaxial – A pipe within a pipe. Can be horizontally or vertically terminated.
  - Exhaust through the center pipe, intake air through the outer pipe
  - Used with Gas Fireplaces and Gas Stoves

- Collinear – Side by side venting. Always vertically terminated.
  - Exhaust through one, intake air through the other
  - Used with Gas Inserts
  - Must be installed in an existing chimney

Co-linear venting



Co-axial venting



Power Vent

- System relies on an In Line or End of Line Exhaust Fan

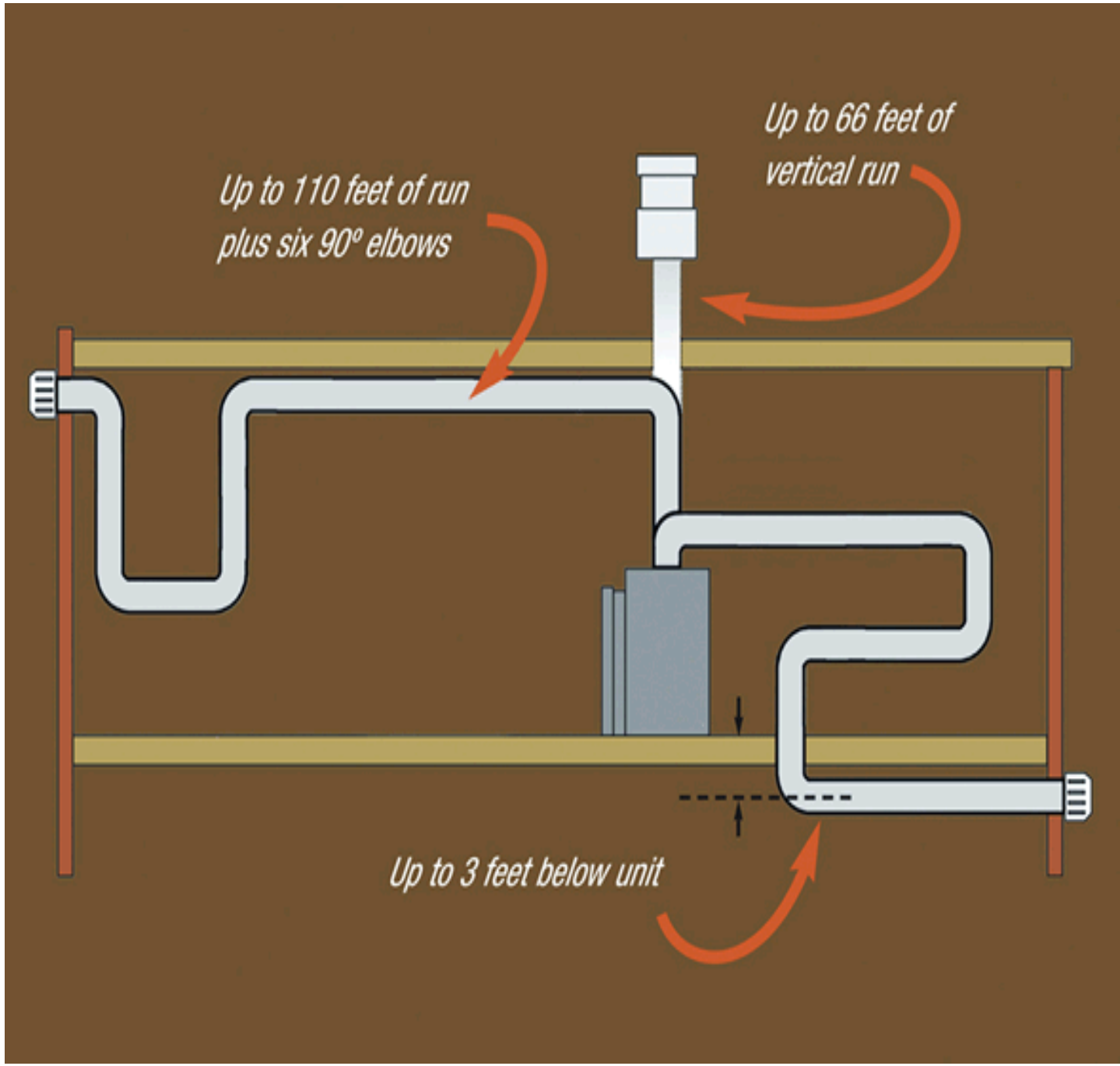
- System is dependent on electricity

- Power Vent allows very flexible venting configurations

- Uses 3/5 Coaxial venting with gasket seal

- Length of run varies by model and manufacture

- Becoming more common in Commercial and high end residential applications

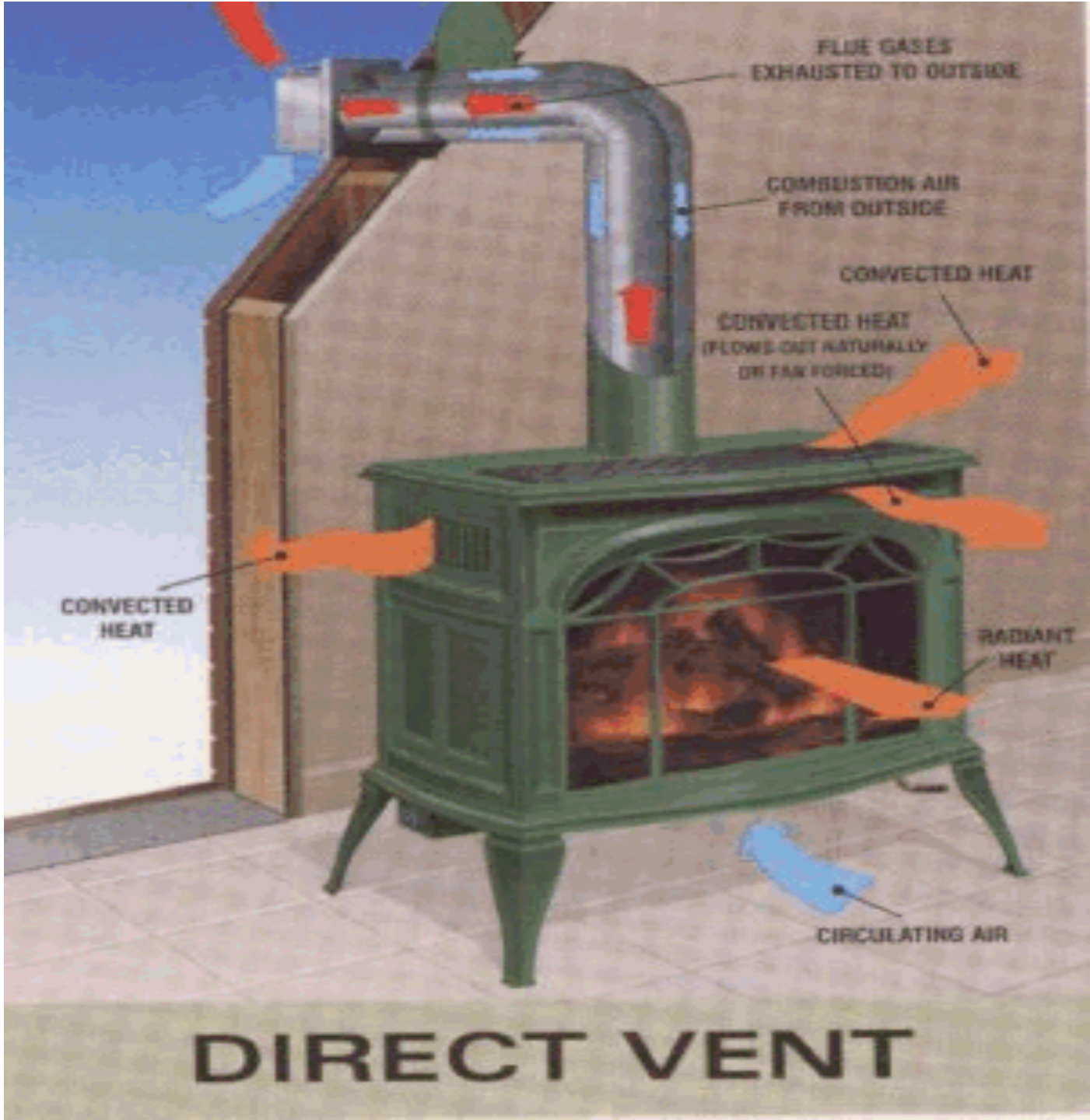


Freestanding Gas Stove

- Uses Coaxial Direct Vent Pipe

- Desirable for Ease of installation

- Designed to be heating appliances

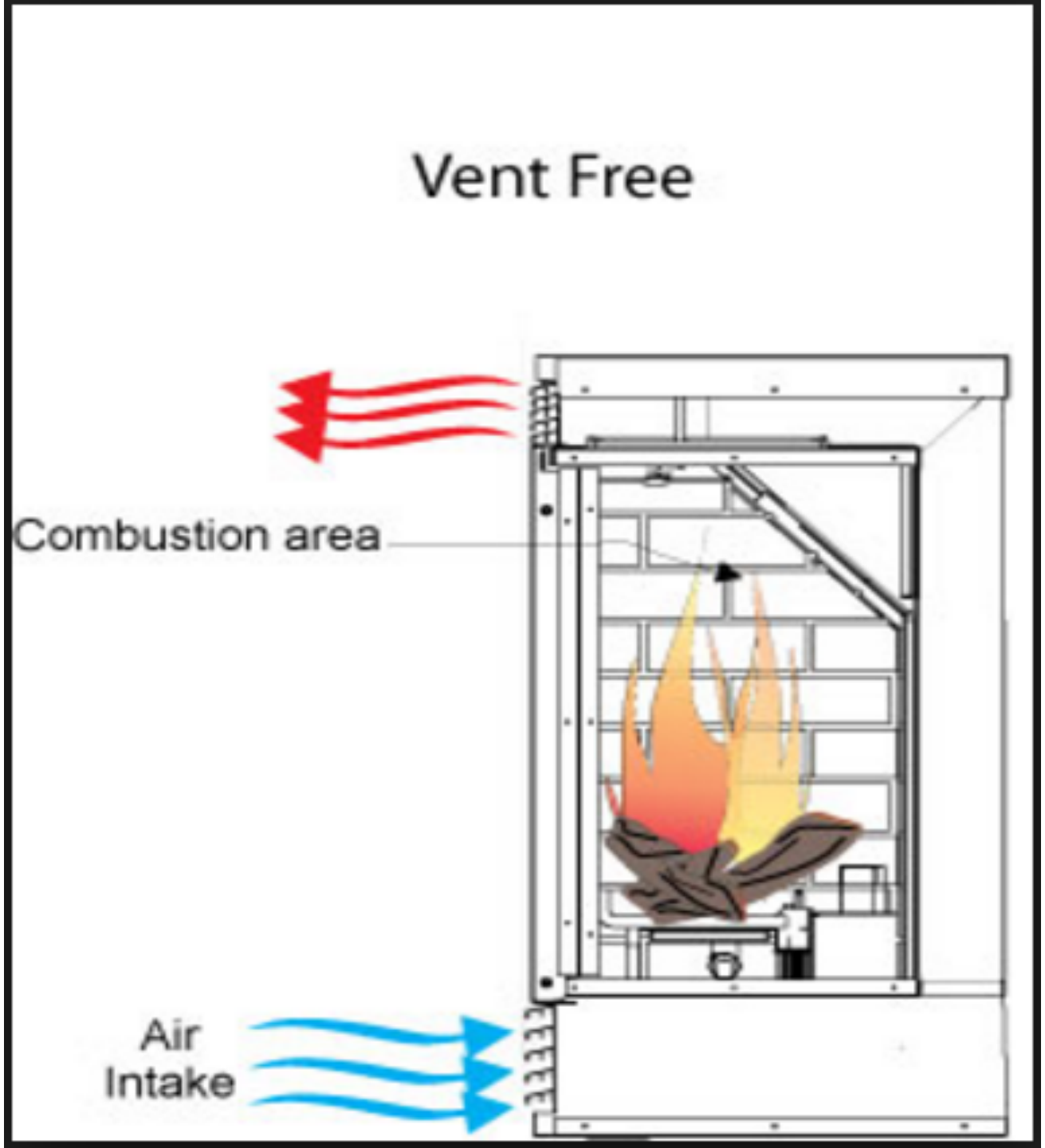


Vent Free Gas Appliances

- Ease of installation contributes to popularity

- Releases combustion by products and moisture into living space

-Not recommended for Northern Climates or tight sealed homes without proper air exchange



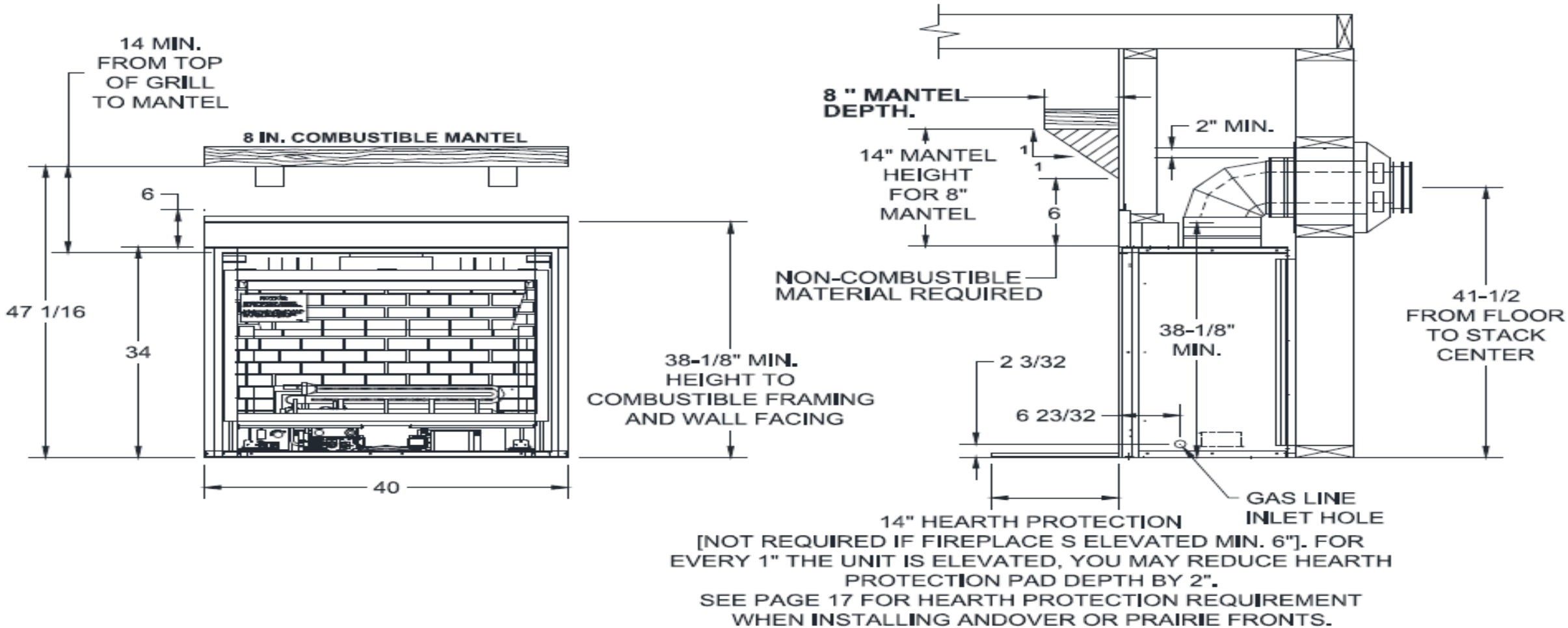
Standards for Safety and installation

- Gas appliances can be tested to ANSI Z21.50 Decorative appliance standards or to ANSI Z21.88 Heater rated appliances standards.

- All appliances require multiple test for heat transmission into surrounding combustible materials and to ensure the appliance has a combustion relief system.

- 2015 Safety Barrier standard requires a safety barrier be installed on Gas hearth appliances to prevent burns from touching hot glass and metal surfaces. Must maintain less than 172 degrees.

Meeting proper clearance requirements

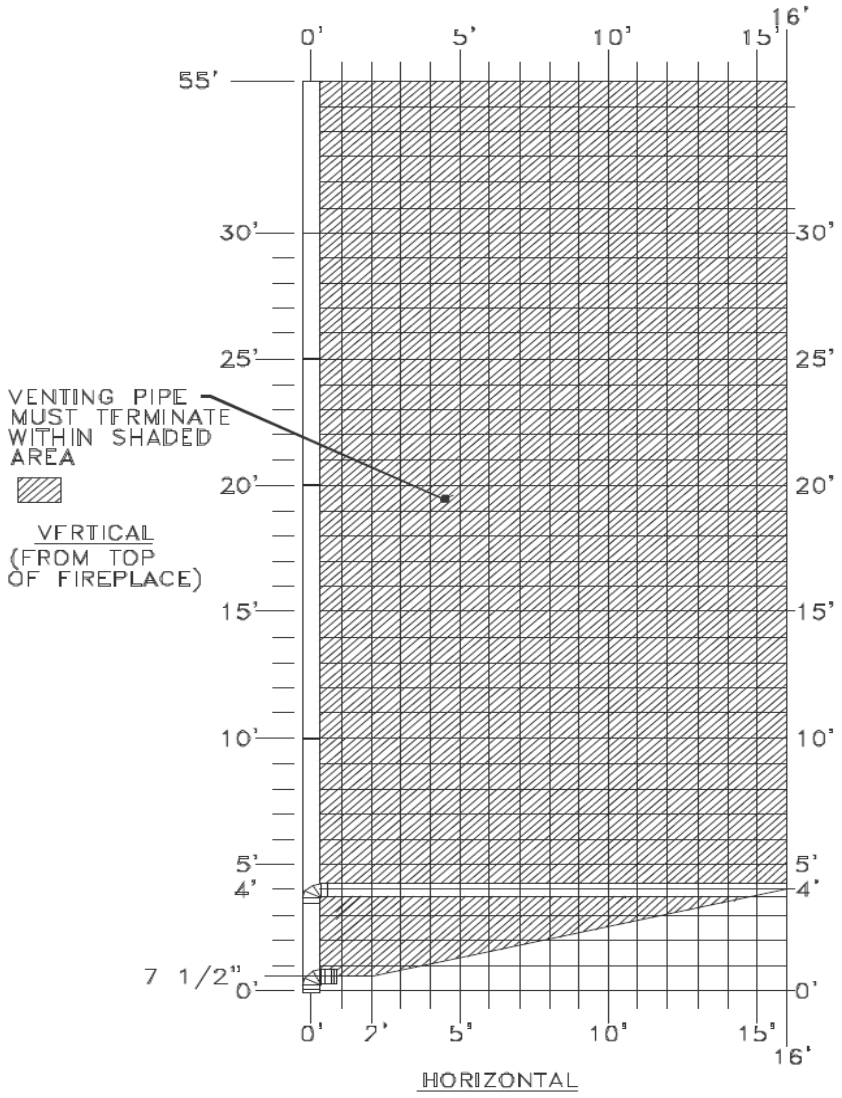


- The appliance installation manual requires strict attention when doing the installation

- Never take for granted that all appliances have the same specifications.

- Attention to detail in both what materials are being used and how they are being used is important.

FLUE VENTING REQUIREMENTS FOR NG AND LPG



NOTE: IF A 90° ELBOW IS CONNECTED DIRECTLY TO THE FLUE OULET, THE MAXIMUM HORIZONTAL DISTANCE FROM THE FLUE OUTLET CENTERLINE TO THE OUTSIDE WALL IS 24".

A maximum of three (3) 90° elbows are allowed per installation.

Each 90° elbow USED, after the first 90° elbow, reduces the maximum horizontal distance by 3'. Each 45° elbow USED, after the first 90° elbow, reduces the maximum horizontal distance by 1-1/2'.

HIGH ALTITUDE INSTALLATION INFORMATION: Prior to installing at altitudes higher than 7500, please contact the Mendota technical service department for specific venting requirements and venting restrictions.

-Vent location is important not only from a clearance standpoint, but also from a performance standpoint.

EXTERIOR VENT LOCATIONS AND RESTRICTIONS

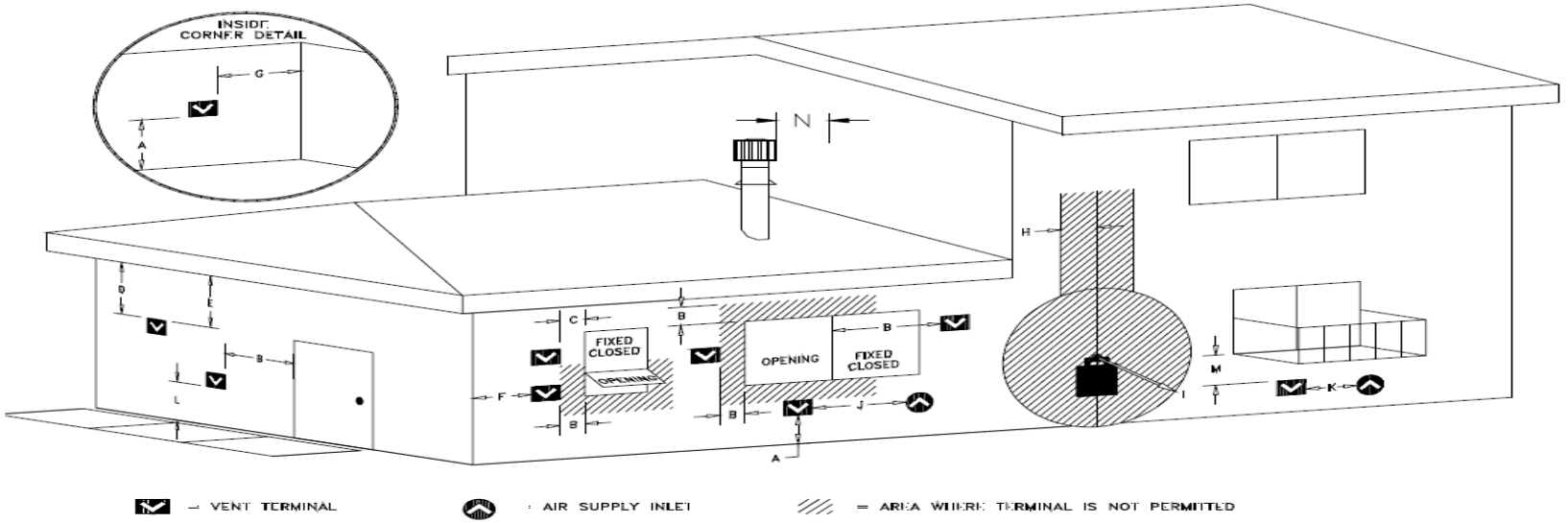


Figure 3: Exterior Vent Locations

NOTE: ALL MEASUREMENTS TO BE TAKEN FROM CENTER LINE OF VENT CAP

∨ - Vent Terminal ∧ - Air Supply Inlet ≡ - Area where terminal is not permitted

A =	Clearance above grade, veranda, porch, deck, or balcony (*12 inches (30 cm) minimum). Vinyl surfaces require 24" min.	H =	*Not to be installed above a meter/regulator assembly within 3 feet (90 cm) horizontally from the center-line of the regulator
B =	Clearance to window or door that may be opened (*12 inches (30 cm) minimum.	I =	Clearance to service regulator vent outlet (*6 feet (1.8m) minimum)
C =	Clearance to permanently closed window (minimum 12 inches (30 cm) recommended to prevent condensation on window)	J =	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance. *12 inches (30 cm) minimum.
D =	Vertical clearance to ventilated soffit located above the terminal from the center-line of the terminal (12 inches (30 cm) minimum) Vinyl surfaces require 24" min.	K =	Clearance to a mechanical air supply inlet (*6 feet (1.8 m) minimum)
E =	Clearance to unventilated soffit (18 inches (46 cm) minimum) Vinyl surfaces require 24" min.	L =	† Clearance above paved side-walk or a paved driveway located on public property (*7 feet (2.1 m) minimum)
F =	Clearance to outside corner - 6 inches (15 cm).	M =	Clearance under veranda, porch, deck, or balcony (*18 inches (30 cm) minimum ‡)
G =	Clearance to inside corner - 12 inches (30 cm). Vinyl surfaces require 24" min.	N=	Minimum 24" horizontal clearance to any surface, such as an exterior surface, for vertical terminations.

† A vent shall not terminate directly above a sidewalk or paved driveway, which is located between two single-family dwellings and serves both dwellings.

‡ Only permitted if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

* As specified in CGA B1:19 Installation Codes (1991). **Note**: Local codes or regulations may require different clearances.

Maintenance and Troubleshooting

- Gas appliances require periodic maintenance Manufactures recommend an annual maintenance check on the appliances and cleaning of the glass and circulation chamber as a minimum once a year.

- Unmaintained appliances will fail at some point and by performing a few simple maintenance items will save money and avoid disappointment from a poorly performing appliance.

Excessive White build up on Glass

Avoid sooting through proper log placement

Front Edge of Coal Bed “A” shall touch back edge of Front Burner

Left Edge of Coal Bed “A” shall touch right edge of T- Propagation tube.

- Identifying when your appliance is having issues

- Delays in lighting

- excessive black soot inside unit and around vent cap.

- Unit won’t stay lit, or won’t light at all.

Advantages of hiring a qualified Expert

- Manufactures of hearth appliances recommend the use of a National Fireplace institute (NFI) trained professionals to install their product.

- NFI certification is attained through the hearth Education Foundation which is the education wing of the Hearth Patio and BBQ Association.

- Certification is divided by fuel type into Gas, Wood and Pellet appliances.

- An Online directory is available for NFI certified installers at www.nficertified.org

- Hearth Patio & BBQ Association www.hpba.org


F-Plc Box
TO BE FLUS
WITH S-R


GAS
KNOCKOUT