6. Installation Location

The installation location chosen must:

- Comply with all clearances listed below.
- Provide suitable location for the exhaust and intake venting.
- Not be installed in an unheated space.
- Comply with all local codes and standards.

Note: Dimensions shown are minimums. Greater clearances will simplify installation and service.

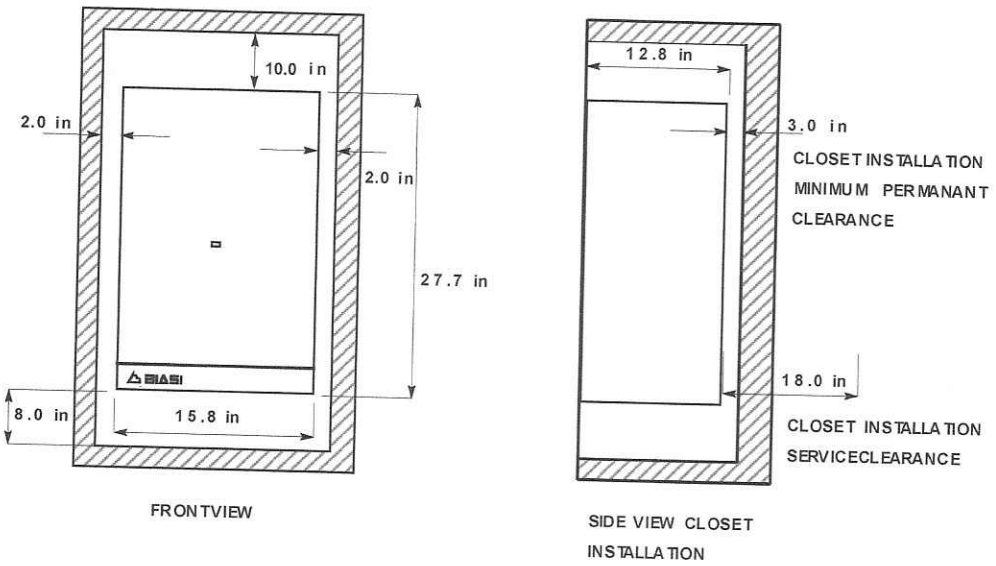


Figure 6.1

WARNING: Do not install the boiler on carpeting

If the boiler is to be installed in an enclosed room with no fresh air intake, the room must have proper vent louvers installed. There should be two louvers, place each within 12" of the ceiling and floor respectively. Each vent will have a free area of 54 square inches.

Note: For boilers in an enclosed space it is recommended to install a CO detector in the boiler room.

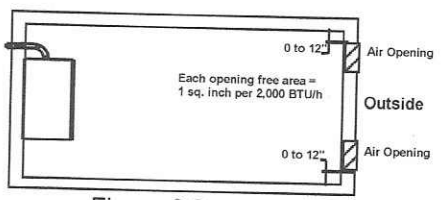


Figure 6.2

When choosing an installation location insure the exhaust and intake pipes comply with NFPA 54. The drawing on the next page illustrates the restrictions on exhaust locations.

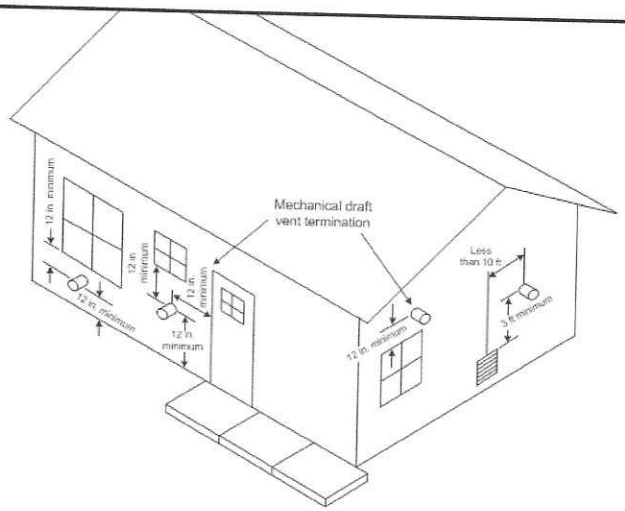
7. Exhaust Pipe Location

CAUTION

EXTERNAL VENT SURFACES ARE HOT.

IT IS RESPONSABILITY OF THE HOMEOWNER TO KEEP THE VENT TERMINAL CLEAR OF SNOW AND ICE

NOTE: USE ONLY LISTED COMPONENTS SUPPLIED WITH THE BOILER. SURFACE DISCOLORATION OF THE BUILDING MAY OCCUR DUE TO IMPROPER INSTALLATION. QHT WILL NOT ACCEPT RESPONSIBILITY OR LIABILITY FOR SUCH DISCOLORATION.



The **Exhaust Hood must be installed on the leeward side of house and conform to the following guidelines:**

1. The Vent hood shall not be less than 3 feet above any forced air inlet to the house.
2. The Vent hood shall not be less than 4 feet below, 4 feet horizontally, or 1 foot above any door, window or gravity inlet into any building.
3. The Vent hood shall not be less than 2 feet from an adjacent building.
4. The Vent hood shall be not less than 7 feet above grade when located adjacent to public walkway.
5. The Vent hood shall be located so that flue gasses are not directed to jeopardize people, overheat combustible structures, materials or enter buildings.
6. Minimum of 4 feet horizontal clearance from electric meters, gas meters, regulators and relief equipment.
7. **All joints in system are to be sealed to prevent leakage of products of combustion in the building.**
8. Avoid installing exhaust hood on the North, West, or the side of the house receiving the prevailing winds.

8. Mounting Bracket

After a suitable installation location is chosen, verify that the mounting wall is properly braced and strong enough to support the 80 pound weight of the unit when filled with water.

NOTE: The boiler shall be installed such that the gas ignition system components are protected from water and liquids in general (dripping,spraying, rain, etc) during the appliance operation and service.

Use the paper template provided with the boiler to determine the location of the mounting bracket. Securely mount the bracket to the wall using appropriate hardware for the particular wall construction.

Mounting Steps:

1. Tape the paper template to the wall in the chosen location. Be sure to level the template.
2. Pre-drill two holes in the center of the "oval" slots on the mounting bracket, sized for the hardware being used.
3. Mount the bracket to the wall. Be sure to level the bracket by adjusting the screw in the vertical slot.
4. Pre-drill the remaining hole in the mounting bracket and secure the final screw.
5. Mark and drill the exhaust/intake pipe holes through the house. If you are using a coaxial pipe system, drill the hole marked A (ø 4") in the drawing below and on the paper template. If you are using a separate pipe system drill holes marked B and C (ø 3.25") shown below as well as on the paper template.
6. Remove paper template and hang boiler on bracket.

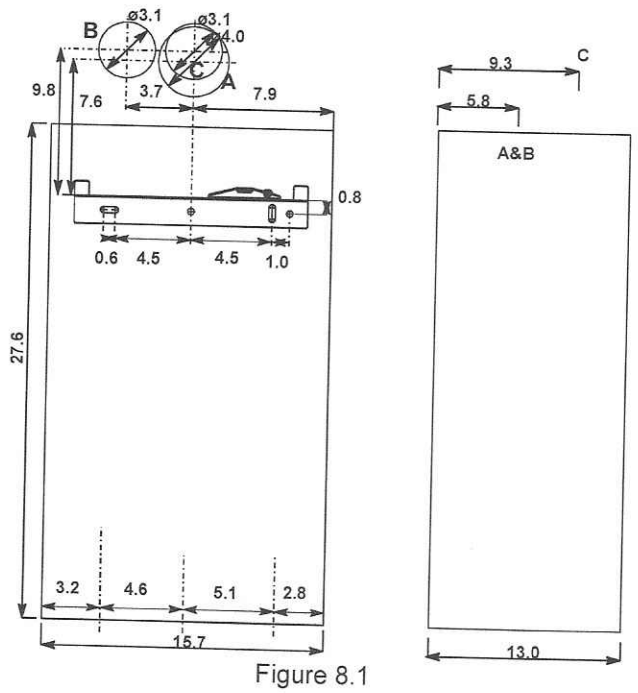


Figure 8.1

9. Venting

The Riva is a mechanical draft, side wall vented boiler. There are two side wall flue options available – separate and coaxial. The coaxial option has one configuration shown on the next page. The separate option has two possible configurations shown on the following pages. There is also a vertical roof venting option. Regardless of what vent kit is installed, they should all conform to the **Provisions for combustion and ventilation air in accordance with section 5.3, Air for Combustion and Ventilation, of the *National Fuel Gas Code, ANSI Z223.1*, or Sections 7.2, 7.3 or 7.4 of *CAN/CGA B149, Installation Codes*, or applicable provisions of the local building codes.**

If the Biasi Riva replaces a boiler that was attached to a common vent system, the common venting system is likely to be too large for proper venting of the appliances remaining connected to it. To ensure the remaining appliances will function properly, the test procedure below should be followed:

At the time of removal of an existing boiler, the following steps shall be followed with each appliance remaining connected to the common venting system placed in operation, while the other appliances remaining connected to the common venting system are not in operation.

A. Seal any unused openings in the common venting system.
B. Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.
C. insofar as is practical, close all building doors and windows and all doors between the space in which the appliances remaining connected to the common venting system are located and other spaces of the building. Turn on clothes dryers and any appliance not connected to the common venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers.
D. Place in operation the appliance being inspected. Follow the lighting instructions. Adjust thermostat so appliance will operate continuously.
E. Test for spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle, or smoke from a cigarette, cigar or pipe.
F. After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-burning appliance to their previous condition of use." (g) Any improper operation of the common venting system should be corrected so the installation conforms with the *National Fuel Gas Code, ANSI Z223.1* and/or *CAN/CGA B149, Installation Codes*. When resizing any portion of the common venting system, the common venting system should be resized to approach the minimum size as determined using the appropriate tables in Part 11 of the *National Fuel Gas Code, ANSI Z223.1* and/or *CAN/CGA B149, Installation Codes*.

9. Venting Cont.

The Riva is a mechanical draft, side wall vented boiler. There are two flue options available - separate and coaxial. The coaxial option has one configuration shown on the next page. The separate option has two possible configurations shown on the following pages.

9.1 Restrictor Sizing:

Each exhaust option is shipped standard with 3 feet of exhaust pipe, 3 feet of intake air pipe. There is also a restrictor kit in which there are some restrictors that must be placed in exhaust breech of fan on the top of the boiler (Fig. 9.1) according to the flue configuration used.

If additional flue piping is need for a particular application, it can be ordered separately in 3 feet increments. Depending on the final flue pipe length, an alternative restrictor may be required. Refer to the tables 9.1 for proper restrictor ring sizing

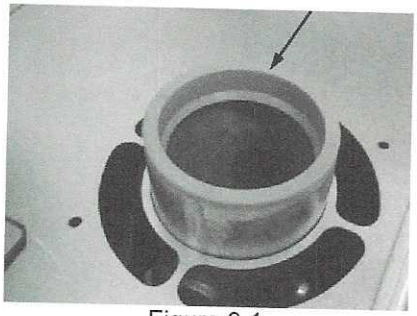


Figure 9.1

Coaxial 2.5/4.0	Restrictor Size
From 1.65 to 3.30 (ft)	41
From 3.30 to 8.86 (ft)	44
Separate 3.25/3.25	**Restrictor Size**
For 1.65 (in) and 1.65 (out)	38
From 3.30 to 39.40 (in+out)	41

Table 9.1

9.2 Fitting the flue system:

In general, it has to be taken in consideration that the horizontal sections of the flue pipe must have an horizontal sloping not less than 1.5 degree (0.3 in per ft) away from the boiler.

In the standard horizontal flue kit the flue pipe is angled within the air duct therefore the air duct must be horizontally installed.

If one or more exstensions have to be used they must be adequately supported so that there is no sag in the flue pipe and a minimum fall of 1.5 degree (0.3 in per ft) over the whole lenght towards the boiler is ensured.

9. Venting Cont.

9.3 Choice of flue:

The following flue kits are available for connecting to the boiler:

A Standard coaxial horizontal flue kit (Exhaust & intake outside)

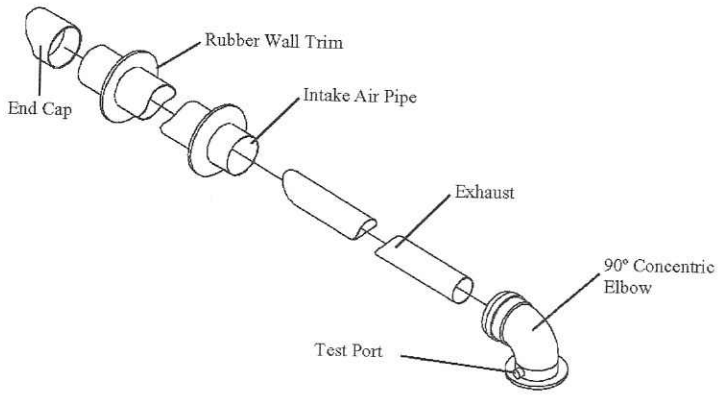


Figure 9.3 (Coaxial 2.4/4.0 inches – nominal lenght 3.3 ft)

It can be fitted to allow discharge to the rear or either side of the boiler via the flanged boiler adapter elbow. Minimum lenght required is 1 ft. Maximum equivalent lenght of 32.8 ft can be achieved utilising extensions. This flue system can only be used to discharge horizontally; it is not designed to enable termination in the vertical plane.

Installation:

- Drill hole A (on the wall template) through the outside wall that is less than 18" thick.
- Cut the pipes as necessary so that a no more than 6" protrudes from the house.
- Slide the intake and exhaust pipes through the hole.
- Slide one rubber wall trim piece on the pipe from inside and one from outside.
- Connect exhaust (inner) pipe to concentric elbow.
- Connect intake (outer) pipe to concentric elbow.
- Secure elbow to boiler using gasket and four screws provided.
- Secure end cap on the intake pipe outside the house.

9. Venting Cont.

B Standard separate horizontal flue kit (Exhaust & intake outside)

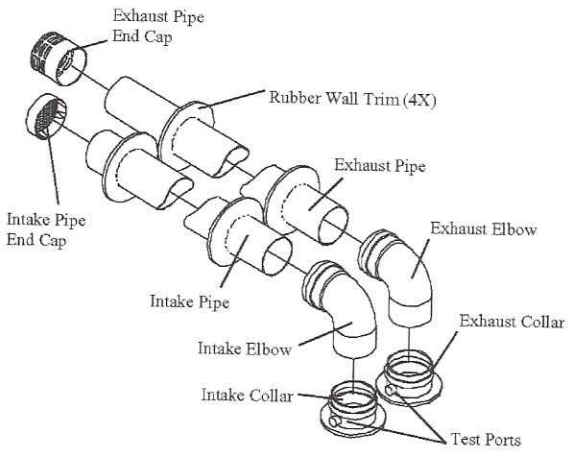


Figure 9.4 (Twin pipe ϕ 3.25 in)

Various twin (split) pipes kits and optional accessories (elbows) are available to assist in the termination of the flue where the boiler is installed in a location remote to an outside wall. These kits allow for separation of the air supply pipe from the pipe that discharges the exhaust gasses. Consequently it is possible to extend the flue system to a greater distance than that provided by the standard coaxial horizontal flue.
If either an additional 45° or 90° accessory elbow is used then the maximum permissible lenght of either pipe must be reduced by 3.0 ft or 5.4 ft respectively.
The sum of the lenghts of the two horizontal part must be less than 131 ft.

Installation:

- Drill holes B & C (on the wall template) through the outside wall that is less than 18" thick.
- Cut the pipes as necessary so that no more than 6" of intake pipe protrudes from the house and the exhaust pipe is a minimum of 4 inches longer than the intake pipe.
- Slide the Intake and exhaust pipes through the respective holes.
- Slide one rubber wall trim piece on each pipe from inside and one from outside.
- Attach each collar to the boiler with the gasket and screws provided.
- Insert each elbow into its corresponding collar.
- Connect each pipe to its corresponding elbow (as shown in the diagram).
- Secure end cap on the intake and exhaust pipe outside the house.

9. Venting Cont.

C Alternative separate kit (Exhaust outside & intake inside)

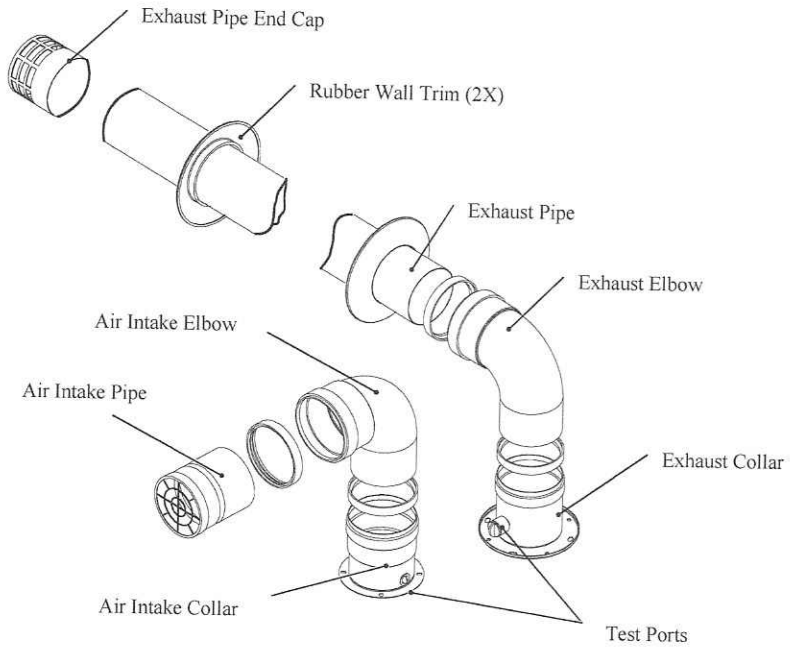


Figure 9.5 (Twin Pipe Φ 3.25 in)

This configuration of the twin pipe kit allows to discharge the exhaust gasses outside. The air supply is obtained with an air intake pipe. This allows to take air from the room where the boiler is installed.
If either an additional 45° or 90° accessory elbow is used then the maximum permissible lenght of either pipe must be reduced by 3.0 ft or 5.4 ft respectively.

Note: When utilizing this option, see page 14 for room ventilation details.

Installation:

- Drill holes B & C (on the wall template) through the outside wall that is less than 18" thick.
- Cut the pipe as necessary so that no more than 6" protrudes from the house.
- Slide the exhaust pipe through the hole.
- Slide one rubber wall trim piece on the pipe from inside and one from outside.
- Attach each collar to the boiler with the gasket and screws provided.
- Insert each elbow into its corresponding collar.
- Connect each pipe to its corresponding elbow.

9. Venting Cont.

D Alternative separate kit (Exhaust outside & intake inside)

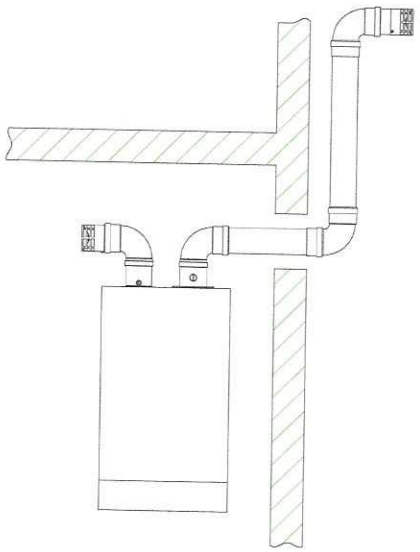


Figure 9.6 (Twin Pipe Φ 3.25 in)

This configuration of the twin pipe kit allows the boiler to discharge the exhaust gasses outside. The air supply is obtained with an air intake pipe. This allows the boiler to take air from the room where the boiler is installed.
If either an additional 45° or 90° accessory elbow is used then the maximum permissible length of either pipe must be reduced by 3.0 ft or 5.4 ft respectively.

Note: When utilizing this option, see page 14 for room ventilation details.

Installation:

- Drill hole C (on the wall template) through the outside wall that is less than 18" thick.
- Cut the pipe as necessary so that no more than 6" protrudes from the house.
- Slide the exhaust pipe through the hole.
- Slide one rubber wall trim piece on the pipe from inside and one from outside.
- Attach each collar to the boiler with the gasket and screws provided.
- Insert each elbow into its corresponding collar.
- Connect each pipe to its corresponding elbow.

9. Venting Cont.

E Alternative separate kit (Exhaust & intake outside)

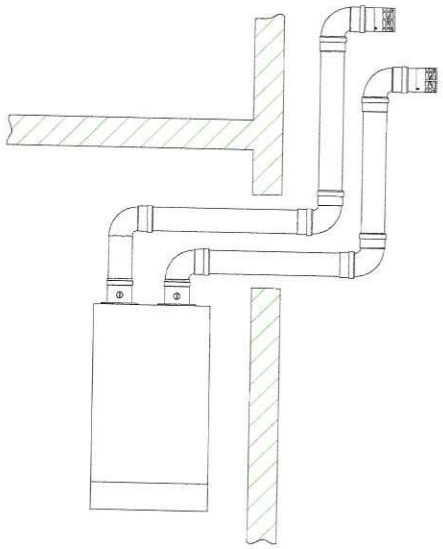


Figure 9.7 (Twin Pipe Φ 3.25 in)

These kits allow for separation of the air supply pipe from the pipe that discharges the exhaust gasses. Consequently it is possible to extend the flue system to a greater distance than that provided by the standard coaxial horizontal flue.
If either an additional 45° or 90° accessory elbow is used then the maximum permissible length of either pipe must be reduced by 3.0 ft or 5.4 ft respectively. The sum of the lengths of the two horizontal parts must be less than 49 feet.

Installation:

- Drill holes B & C (on the wall template) through the outside wall that is less than 18" thick.
- Cut the pipes as necessary so that no more than 6" of intake pipe protrudes from the house and the exhaust pipe is a minimum of 4 inches longer than the intake pipe.
- Slide the Intake and exhaust pipes through the respective holes.
- Slide one rubber wall trim piece on each pipe from inside and one from outside.
- Attach each collar to the boiler with the gasket and screws provided.
- Insert each elbow into its corresponding collar.
- Connect each pipe to its corresponding elbow (as shown in the diagram).
- Secure end cap on the intake and exhaust pipe outside the house.

9. Venting Cont.

F Standard Vertical-roof kit (Exhaust & intake outside)

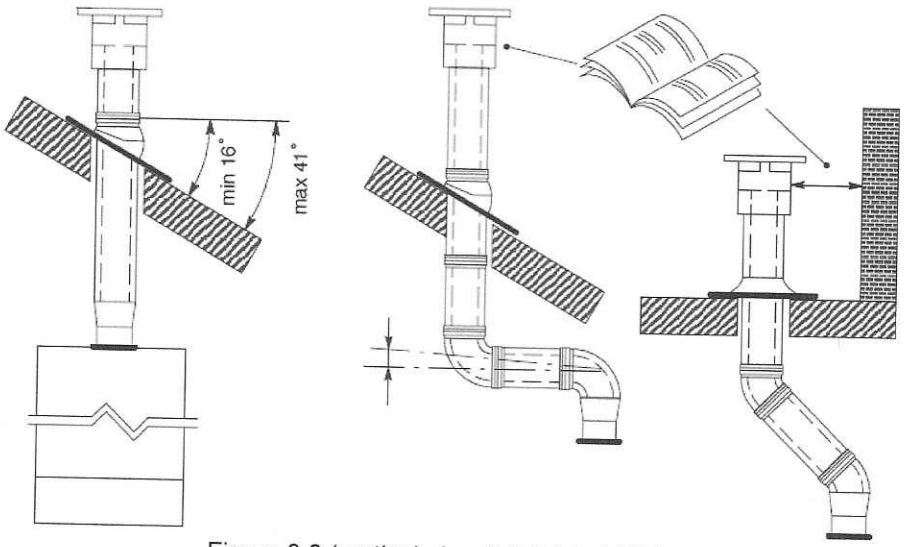


Figure 9.8 (vertical pipe Φ 3.1 / Φ 4.9 in)

This kit allows vertical termination of the flue pipe through the roof. The kit is 1.2 min length. Extension pieces (Co--axial) are also available which allows the flue system to be extended to a total overall maximum permissible length.
Optional 45° and 90° elbows can be used to offset the flue route.
Each additional elbow reduces the overall acceptable length of the flue system as follows:
45° reduce length by 1.6 ft.
90° reduce length by 3.2 ft.

Installation:

- Drill hole through the outside roof.
- Cut the pipe as necessary.
- Slide the intake and exhaust pipes through the hole.
- Slide one rubber wall trim piece on the pipe from inside and one from outside.
- Connect exhaust (inner) pipe to concentric elbow.
- Connect intake (outer) pipe to concentric elbow.
- Secure elbow to boiler using gasket and four screws provided.
- Secure end cap on the intake pipe outside the house.