DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING PERMIT

This is to certify that CONGREGATION, SHAAREY TPHILOHSHAAREY TPHILOH CONGREGATION

Located At 66 NOYES

CBL: 118 - - E - 003 - 001 - - - - -

Job ID: 2011-06-1341-HVAC

has permission to Install replacement heating system

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.	A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

7/8/11

Fire Prevention Officer **Code Enforcement Officer / Plan Reviewer**

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY

PENALTY FOR REMOVING THIS CARD

PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Director of Planning and Urban Development
Penny St. Louis

Job ID: 2011-06-1341-HVAC **Located At:** 66 NOYES **CBL:** 118 - - E - 003 - 001 - - - - -

Conditions of Approval:

Fire
Installation shall comply with City Code Chapter 10.

Installation shall comply with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*;

NFPA 54, *National Fuel Gas Code*,

Install shall follow the manufacturer's published instructions.

Capt. Gautreau

Fire: _____

Ele.: _____

Bldg.: _____

❑ See attached letter or requirement

_____ _____
Inspector's Signature Date Approved

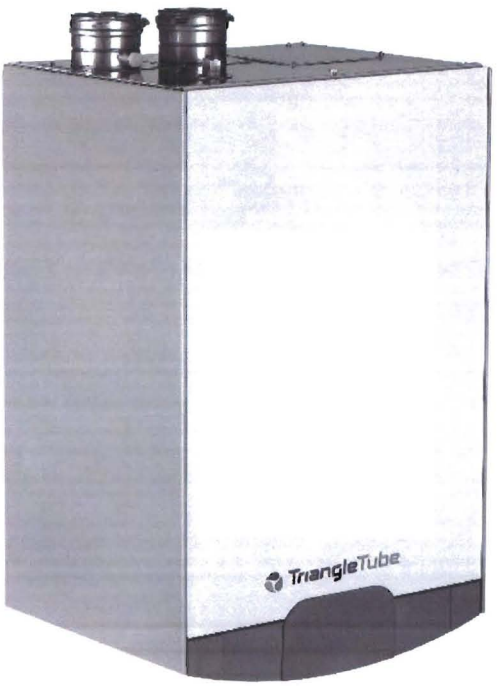
Signature of Installer _____

White - Inspection Yellow - File Pink - Applicant's Gold - Assessor's Copy

TriangleTube

prestige

PVC & CPVC Vent Supplement



⚠ WARNING This document is intended to be used by a qualified heating contractor or service technician. Read all instructions within this document and within the PRESTIGE Boiler Installation and Maintenance Manual, before proceeding with the installation. It is recommended to follow the procedures in the steps given, skipping or missing procedural steps could result in severe personal injury, death or substantial property damage.

NOTICE Installation of this boiler must comply with local requirements and codes and with the National Fuel Gas Code NFPA 54, ANSI Z223.1 for installations within the U.S. For installations in Canada the installation must comply with CSA B149.1 or B149.2

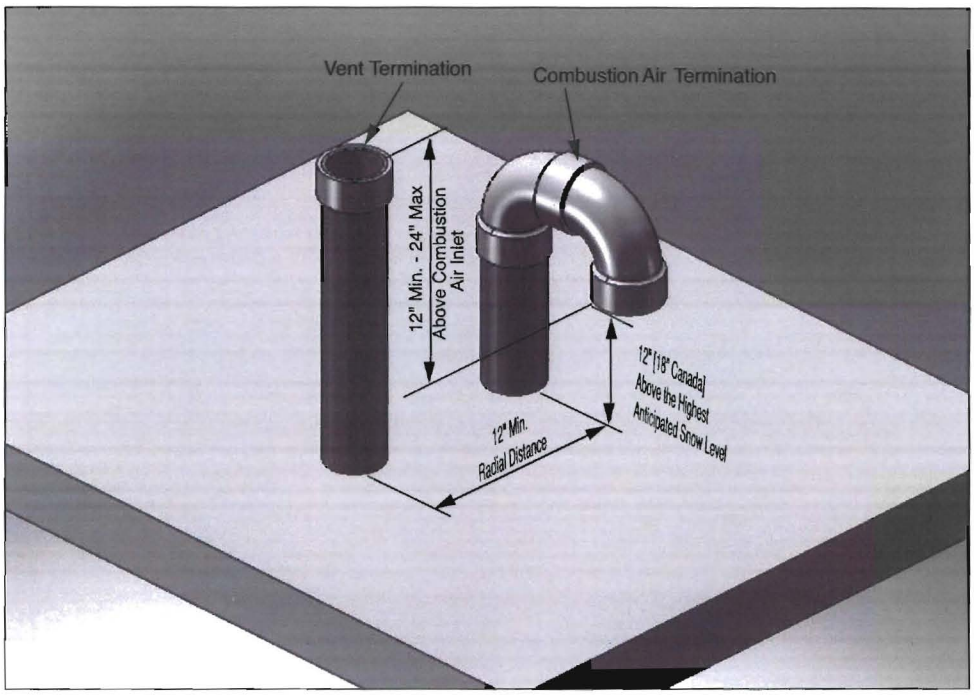


Fig. 1: **Direct Vent - Vertical Termination of Vent and Combustion Air Piping.**

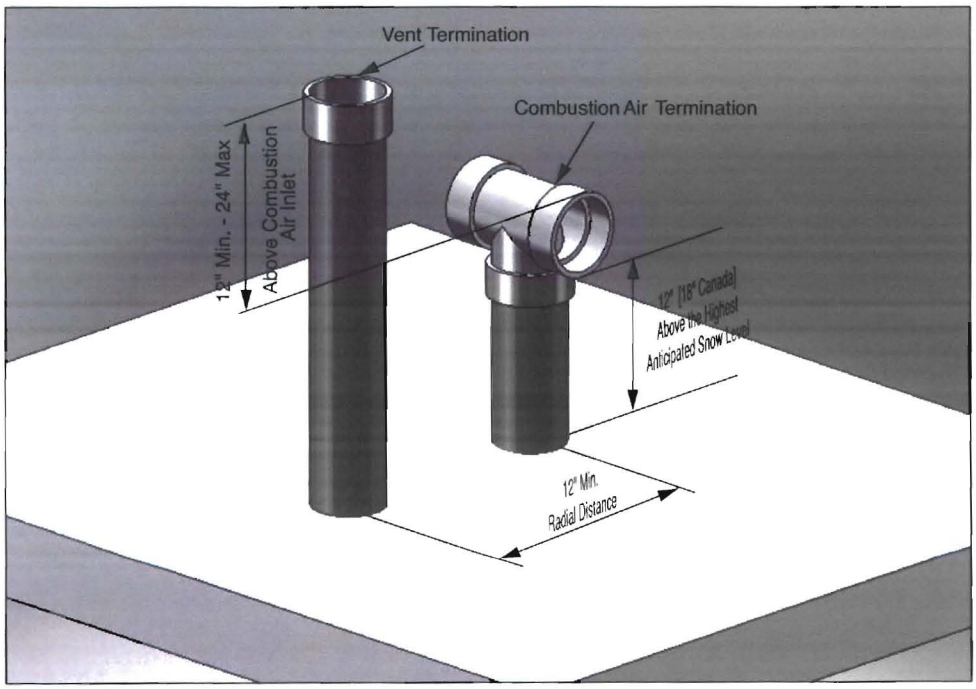


Fig. 2: **Direct Vent - Vertical Termination of Vent and Combustion Air Piping.**

f. Locate the vent termination to prevent possible condensate damage to exterior finishes.

g. Avoid locations of possible accidental contact of flue vapors with people or pets.

6. The vent termination must also maintain the following clearances; as shown in Fig.3.

   a. At least 3 feet from adjacent walls

   b. At least 3 feet below roof over hangs

   c. At least 7 feet above any public walkways

   d. At least 3 feet above any forced air intake within 10 feet (does not apply to the combustion air inlet of a direct vent appliance).

   e. No closer than 12" below or horizontally from any door or window or gravity air inlet.

   f. Must be at least 4 feet from any electric meters, gas meters-regulators, relief valves or other equipment. Never terminate the vent above or below any of these items within 4 feet horizontally.

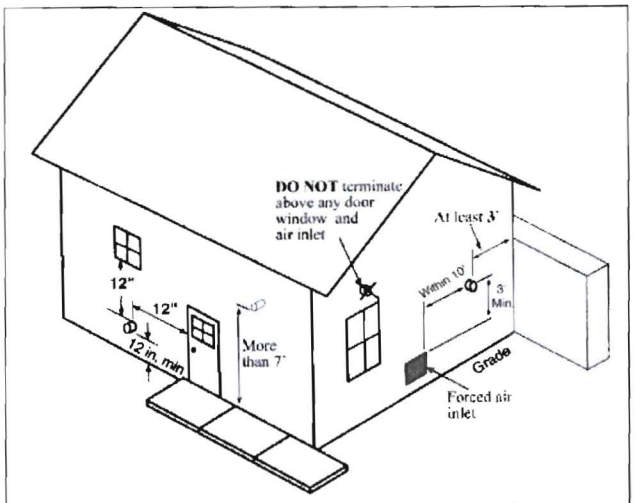


Fig. 3: Termination Clearances of Direct Vent System

7. Locate the vent and combustion air terminations in a manner to protect from damage by foreign objects, such as stones, balls, or buildup of leaves or sediment.

8. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

Direct Vent - Vent Installation - Through the Roof

1. Vent and Combustion Air Penetration

   - Vent pipe penetration through combustible or non-combustible wall material should maintain a minimum 1/4" clearance. The diameter of the penetration hole should be 4" minimum for 3" pipe or 5" minimum for 4" pipe.

   - Combustion air pipe penetration can maintain zero clearance. The diameter of the penetration hole should be 3 1/2" minimum for 3" pipe or 4-1/2" minimum for 4" pipe.

2. The installer must use a galvanized metal thimble for the vent pipe penetration.

3. Locate the vent and combustion air pipe penetrations to provide clearances as described in Fig. 1 & Fig. 2 on page 6.

4. The installer must comply with all local codes for isolating the vent and combustion air pipes as they pass through floors, ceilings and roofs.

5. The installer should provide adequate flashing and sealing boots sized for the vent pipe and combustion air pipe.

Termination Fittings - Through the Roof

1. The vent and combustion air terminations must include a factory supplied "bird screen" installed as shown in Figs. 4, 5 & 6 on page 8.

2. The combustion air piping must terminate in an upside down "U" shape fashion using two 90° elbows as shown in Fig. 1 page 6 or with a tee as shown in Fig. 2 on page 6.

3. The vent piping must terminate vertically with a coupling as shown in Figs. 1 & 2 page 6.

⚠ WARNING

Do not extend the vent pipe above the roof beyond the dimensions shown in Fig. 1 & Fig. 2 on page 6. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

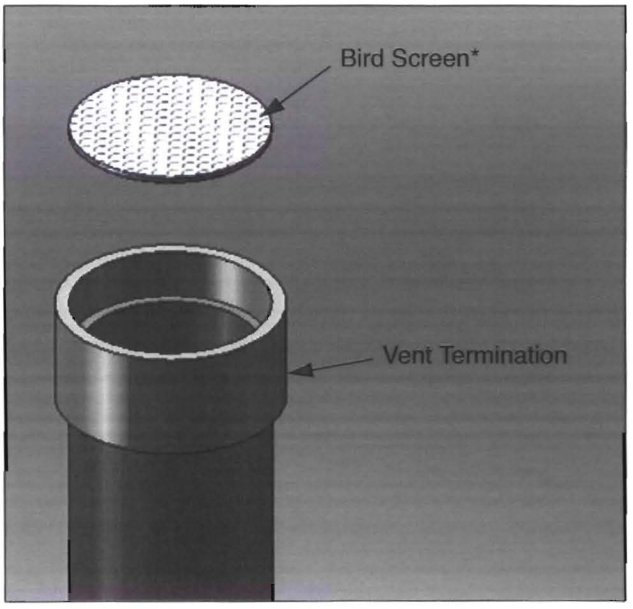


Fig. 4: Vertical Vent Bird Screen Installation

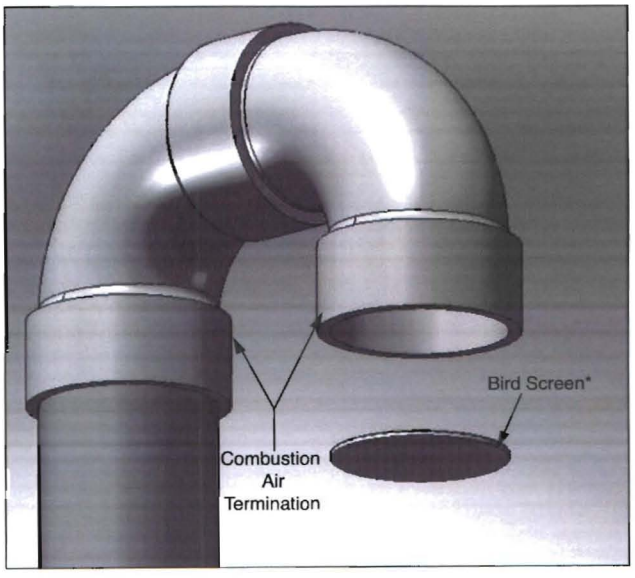


Fig. 5: Vertical Combustion Air Bird Screen Installation with 90° Elbow Termination

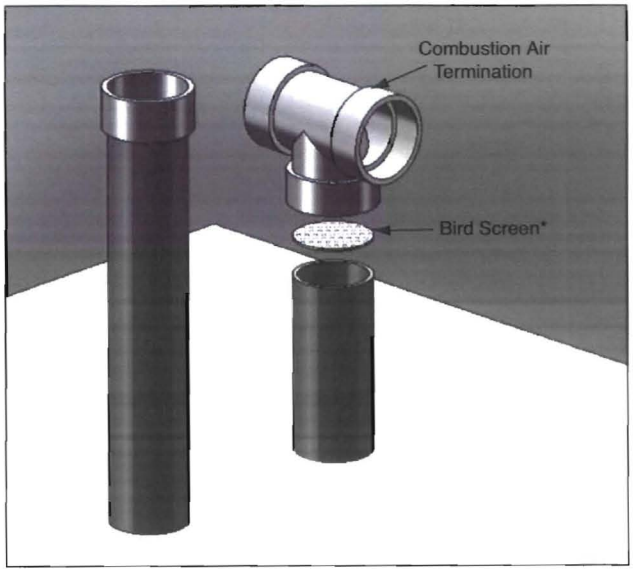


Fig. 6: Vertical Combustion Air Bird Screen Installation with Tee Termination

NOTICE

*** Installer must install the factory supplied "bird screens" on the vent and combustion air terminations.**

Direct Vent - Multiple Boiler Installation - Through the Roof

1. On installations of multiple PRESTIGE boilers, terminate the vent and combustion air piping as described in this manual.
2. The roof penetration of the vent and combustion air piping should be such that the combustion air inlet is a minimum 12" from the adjacent vent pipe of the other boiler for installations in the U.S. as shown in Fig. 7. For installations in Canada, provide clearances as required by CSA B149.1 or 149.2.

NOTICE

The combustion air inlet of the PRESTIGE is defined as being part of a direct vent system. It is not considered as a forced air intake. The required clearance of an adjacent boiler vent to a forced air inlet does not apply in a multiple installation of PRESTIGE boilers.

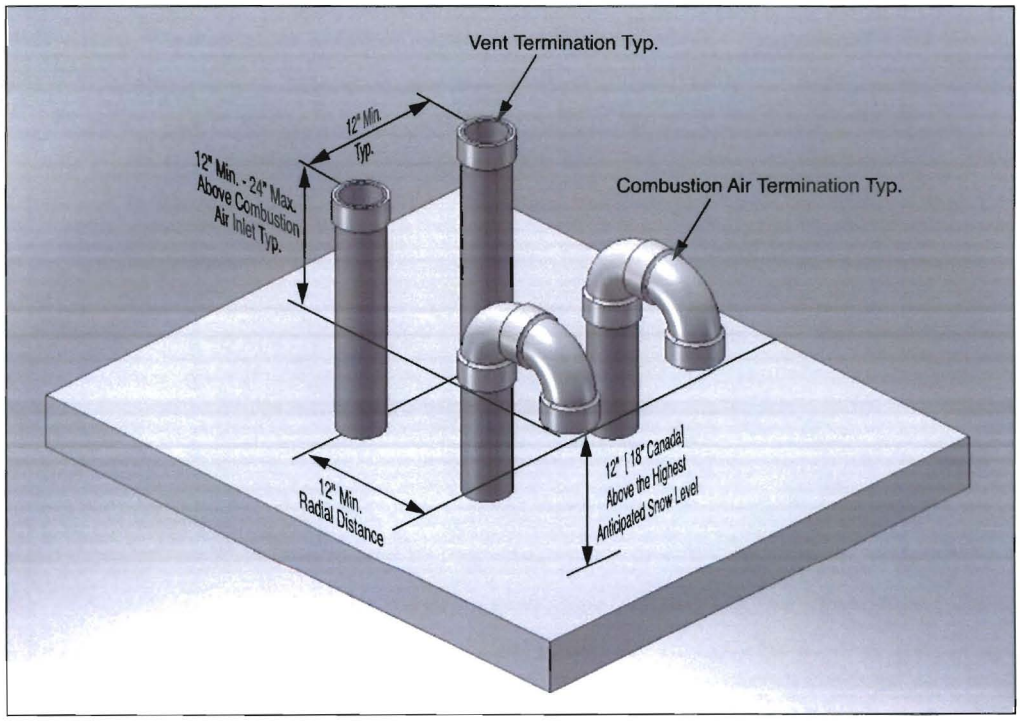


Fig. 7: Direct Vent - Vertical Termination of Multiple Boilers

Direct Vent - Horizontal - Sidewall

NOTICE

Installation of the vent and combustion air piping must comply with local codes and requirements and with the National Fuel Gas Code NFPA 54, ANSI Z223.1 for installations in the U.S. or CSA B149.1 or B149.2 for installations in Canada.

NOTICE

For direct vent (sidewall) installations in the Commonwealth of Massachusetts, the installer must comply with the additional requirements outlined on page 31 and 32.

⚠ WARNING

A gas vent extending through a sidewall should not terminate near an adjacent wall or below any building extensions such as roof eaves, balconies or decks. Failure to comply with the required clearances in this manual could result in severe personal injury, death or substantial property damage.

BEST PRACTICE

To reduce the potential of the combustion air inlet freezing up it is recommended to separate the vent and air terminations in both a horizontal and vertical plain as shown in figures 8 through 12 on pages 11 and 12.

BEST PRACTICE

If the vent is terminated on a sidewall which is subject to high winds it is recommended to terminate the vent using a 45° elbow or tee. A tee provides the best protection against wind but can expose the exterior of the house to condensate, while a 45° elbow provides improved protection from both wind and condensate.

Determine Termination Location

Locate the vent and combustion air termination using the following guidelines:

1. The total length of the vent or combustion air piping must not exceed the limits given in Table 1 on page 3.

NOTICE

DO NOT include the 45° or 90° elbows or tee used to terminate the combustion air inlet and vent exterior of the building when determining the total length of pipe.

2. The combustion air pipe must terminate using a 90° elbow directed away from the vent termination. The combustion air termination must be installed 12" minimum above grade / highest anticipated snow level and as shown in Figs. 8 through 15 page 11 & 12.

NOTICE

The combustion air termination can be placed on either side of the vent termination. The terminations must be a minimum 12" apart. The combustion air termination must be directed away from the vent see Figs. 10 through 15 page 11 & 12. The combustion air termination must be directed down for Figs. 8 and 9 pages 11 & 12.

3. The vent pipe can terminate:

- Using a 90° elbow as shown in Fig. 8 or 10, page 11.
- Using coupling as shown in Figs. 9 or 13, page 11 or 12.
- Using a tee as shown in Figs. 11 or 14, page 11 or 12.
- Using a 45° elbow as shown in Figs. 12 or 15, page 12.

The vent termination must be installed 12" minimum above grade / highest anticipated snow level.

⚠ WARNING

Do not extend the vent pipe outside the sidewall beyond the dimensions shown in Figs 8 through 15. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

4. The combustion air and vent pipe center lines must be a minimum of 12" apart as shown in Figs. 8 through 15 pages 11 & 12.

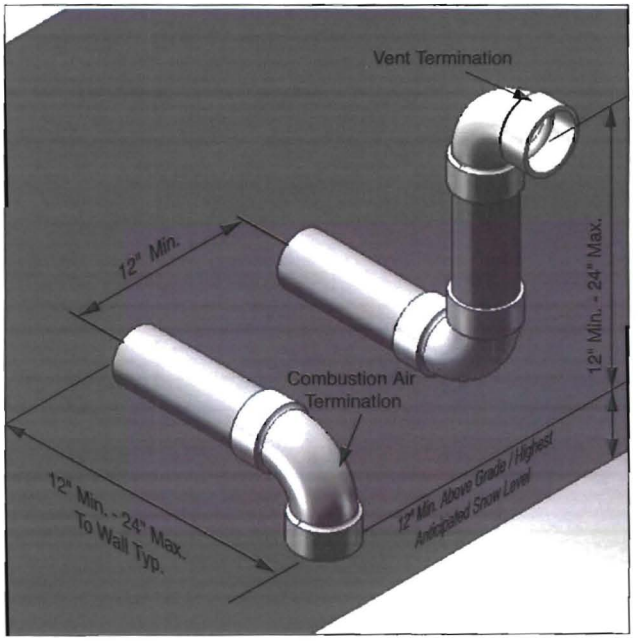


Fig. 8: **Direct Vent - Sidewall Termination of Vent and Combustion Air Piping**

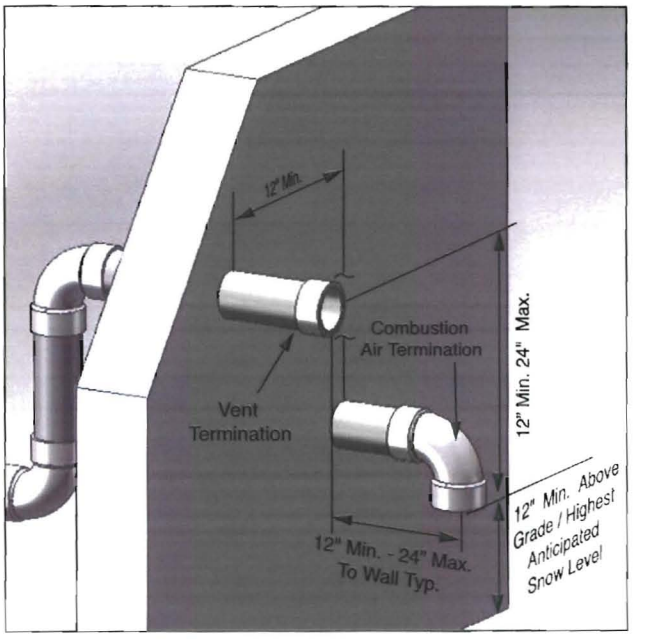


Fig. 9: **Direct Vent - Alternate Sidewall Termination of Vent and Combustion Air Piping**

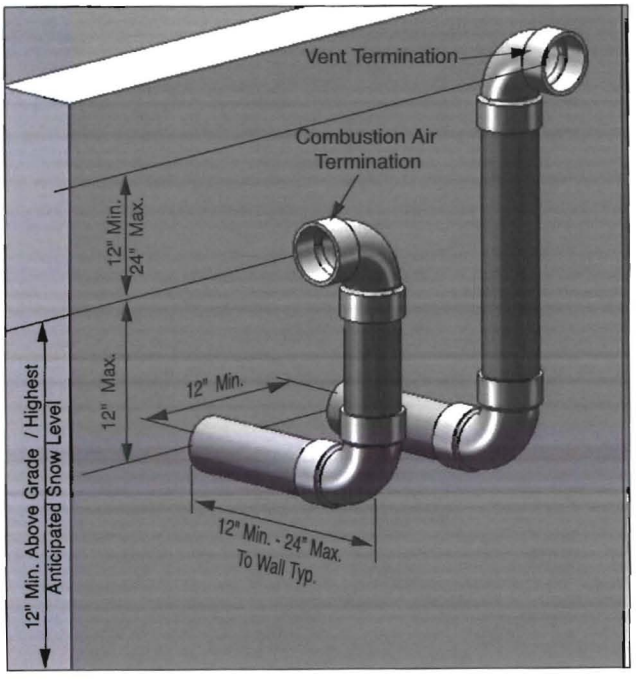


Fig. 10: **Direct Vent - Sidewall Snorkel Termination of Vent and Combustion Air Piping**

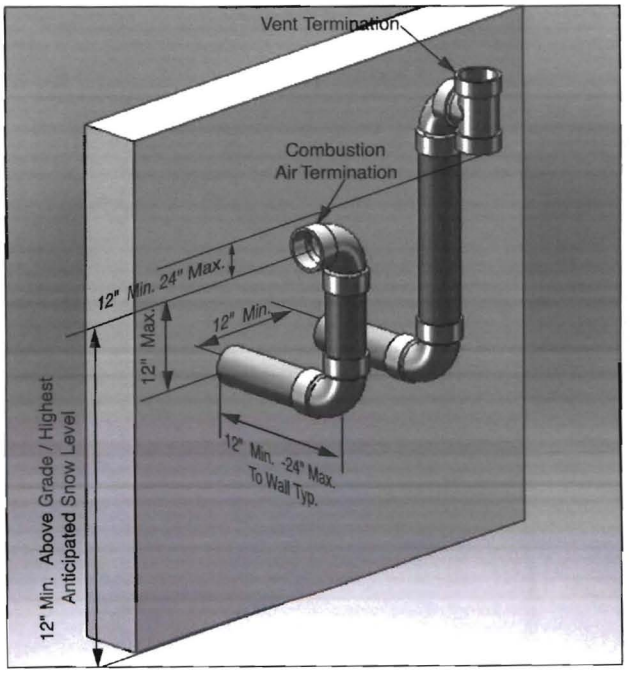


Fig. 11: **Direct Vent - Sidewall Snorkel Termination of Vent and Combustion Air Piping with Tee Vent Termination**

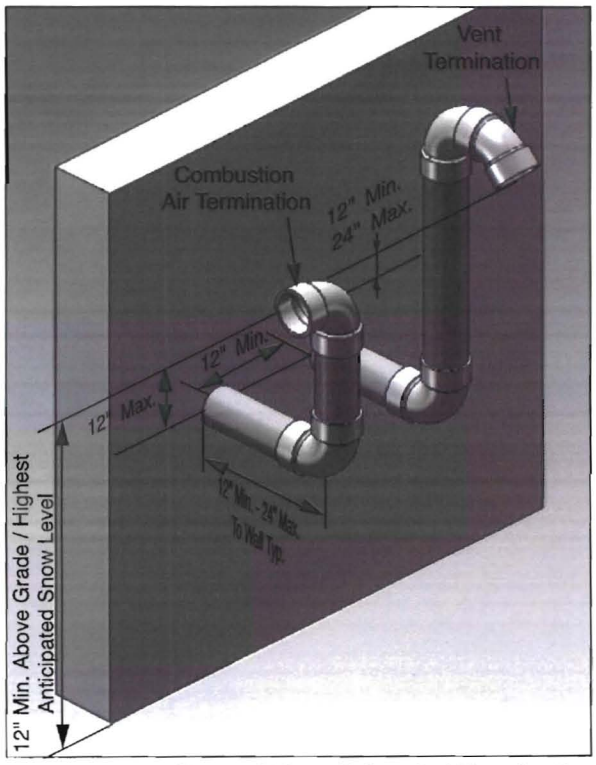


Fig. 12: Direct Vent - Sidewall Snorkel Termination of Vent and Combustion Air Piping with 45° Vent Termination

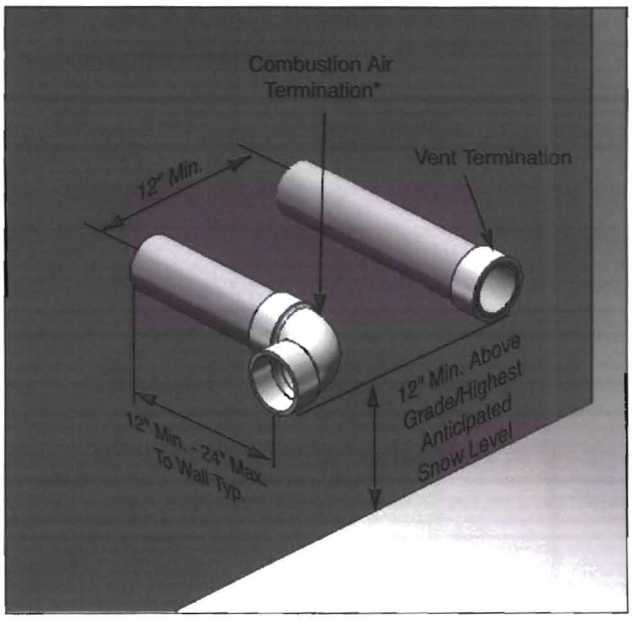


Fig. 13: Direct Vent - Sidewall Termination of Vent and Combustion Air Piping with Coupling Vent Termination

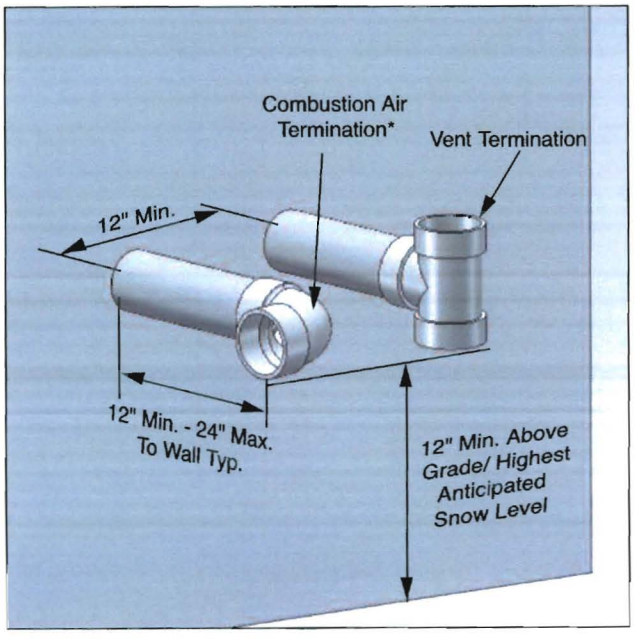


Fig. 14: Direct Vent - Sidewall Termination of Vent and Combustion Air Piping with Tee Vent Termination

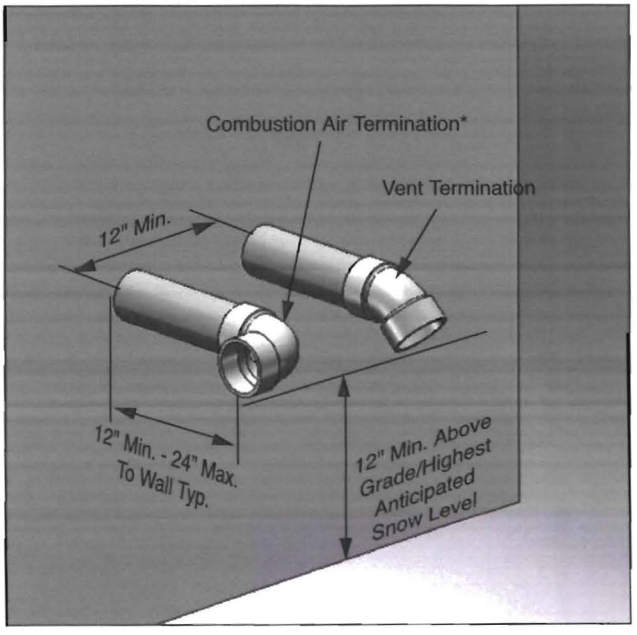


Fig. 15: Direct Vent - Sidewall Termination of Vent and Combustion Air Piping with 45° Vent Termination

NOTICE

*** Combustion Air Termination should slope downward at 15° angle.**

5. The following should be considered when determining the location of the vent and combustion air termination:
   a. Locate the vent termination where flue vapors will not damage surrounding shrubs, plants, air conditioning equipment or be objectionable to the homeowner.
   b. The flue products will form a noticeable plume of water vapor as they condense in colder air. Avoid terminating the vent in areas where the plume could obstruct window views.
   c. Prevailing winds could cause freezing of flue gas condensation and a buildup of water / ice on surrounding plants, building surfaces or combustion air inlet.
   d. Avoid locations where prevailing winds could affect the performance of the boiler or cause recirculation of the flue gases, such as inside corners of buildings, near adjacent buildings, vertical surfaces, window wells, stairwells, alcoves, courtyards, or other recessed areas.
   e. Do not terminate the vent above doors or windows: flue condensate could freeze causing ice formations.
   f. Locate the vent termination to prevent possible condensate damage to exterior finishes.
   g. Avoid locations of possible accidental contact of flue vapors with people or pets.
6. The vent termination must also maintain the following clearances; as shown in Fig.3, page 7.
   a. At least 3 feet from adjacent walls
   b. At least 3 feet below roof overhangs
   c. At least 7 feet above any public walkways
   d. At least 3 feet above any forced air intake within 10 feet (does not apply to the combustion air inlet of a direct vent appliance).
   e. No closer than 12" below or horizontally from any door, window or gravity air inlet.
   f. Must be at least 4 feet from electric meters, gas meters-regulators, relief valves or other equipment. Never terminate the vent above or below any of these items or within 4 feet horizontally.
   g. A minimum of 12" or a maximum of 24" beyond the exterior wall.
7. The combustion air termination must extend a minimum of 12" beyond the exterior wall.
8. Locate the vent and combustion air terminations in a manner so as to protect from damage by foreign objects, such as stones, balls, buildup of leaves or sediment.
9. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

Direct Vent - Vent Installation - Sidewall

1. Vent and Combustion Air Penetration
   - Vent pipe penetration through combustible or non-combustible wall material should maintain a minimum 1/4" clearance. The diameter of the penetration hole should be 4" minimum for 3" pipe or 5" minimum for 4" pipe.
   - Combustion air pipe penetration can maintain zero clearance. The diameter of the penetration hole should be 3 1/2" minimum for 3" pipe or 4 1/2" minimum for 4" pipe.
2. The installer must use a galvanized metal thimble for the vent pipe penetration.
3. Locate the vent and combustion air pipe penetrations to provide clearances as described in Figs. 8 through 15 pages 11 and 12.
4. The installer must comply with all local codes for isolating the vent pipe as it passes through floors and walls.
5. The installer should seal all exterior openings around penetration with an exterior silicon caulk.

Termination Fittings - Sidewall

1. The vent and combustion air terminations must include a factory supplied "bird screen" installed as shown in Figs. 16 through 19 page 15.
2. The combustion air pipe must terminate using a 90° elbow as shown in Figs. 8 through 15 page 11 and 12.
3. The vent pipe can terminate:

- Using a 90° elbow as shown in Fig. 8 or 10 page 11.
- Using coupling as shown in Fig. 9 or 13 page 11 or 12.
- Using a tee as shown in Fig. 11 or 14 page 11 or 12.
- Using a 45° elbow as shown in Fig. 12 or 15 page 12.

The vent termination must be installed 12" minimum above grade / highest anticipated snow level.

⚠ WARNING

Do not extend the vent pipe outside the sidewall beyond the dimensions shown in Figs. 8 through 15. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

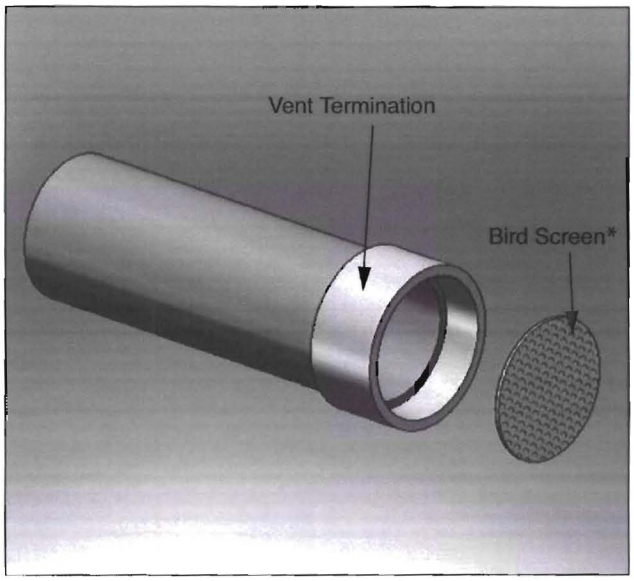


Fig. 16: Horizontal Vent Bird Screen Installation with Coupling Termination

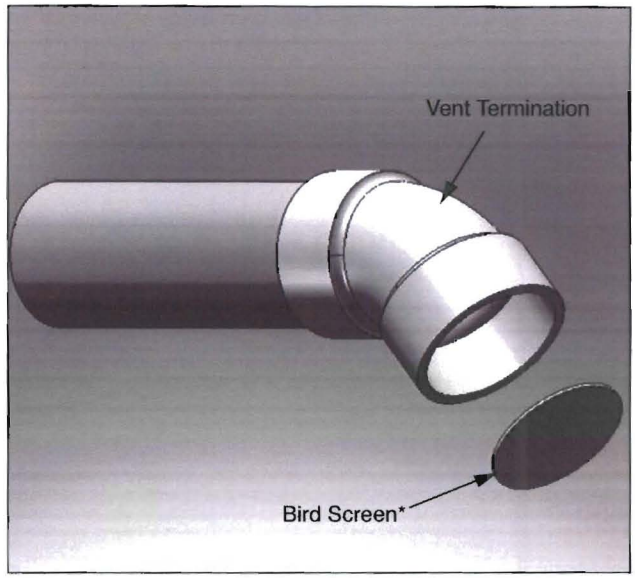


Fig. 17: Horizontal Vent Bird Screen Installation with 45° Elbow Termination

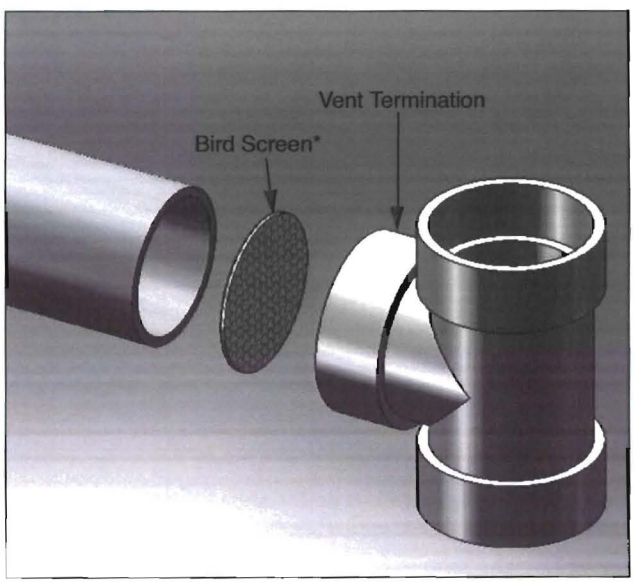


Fig. 18: Horizontal Vent Bird Screen Installation with Tee Termination

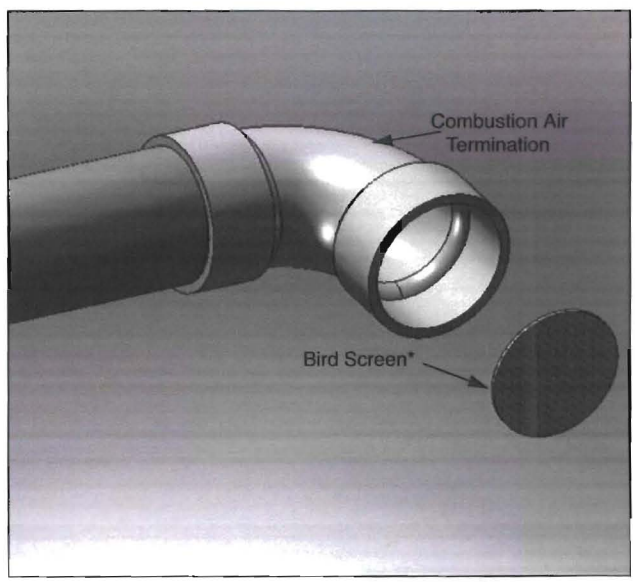


Fig. 19: Horizontal Combustion Air Bird Screen Installation with 90° Elbow Termination

NOTICE

*** Installer must install the factory supplied "bird screens" on the vent and combustion air inlet terminations.**

Direct Vent - Multiple Boiler Installation - Sidewall

1. On installations of multiple PRESTIGE boilers, terminate each vent and combustion air pipe as described in this manual.
2. The wall penetration of the vent and combustion air pipe should be such that the combustion air inlet is a minimum 12" from the adjacent vent pipe of the other boiler for installations in the U.S as shown in Fig. 20. For installations in Canada, provide clearances as required by CSA B149.1 or 149.2.

NOTICE

The combustion air inlet of the PRESTIGE is defined as being part of a direct vent system. It is not considered as a forced air intake. The required clearance of an adjacent boiler vent to a forced air inlet does not apply in a multiple installation of PRESTIGE boilers.

NOTICE

Fig. 20 shows one option for vent and combustion air terminations of multiple PRESTIGE boilers. Any termination option shown in Figs. 8 through 12 page 11 and 12 can be used for multiple PRESTIGE boilers. The 12" minimum distance between centerlines of the combustion air and vent piping must be maintained for any chosen option.

NOTICE

Reference Figs. 8 through 12 page 11 and 12 for the configuration dimensions for the vent and combustion air inlet terminations for each unit installed in a multiple installation.

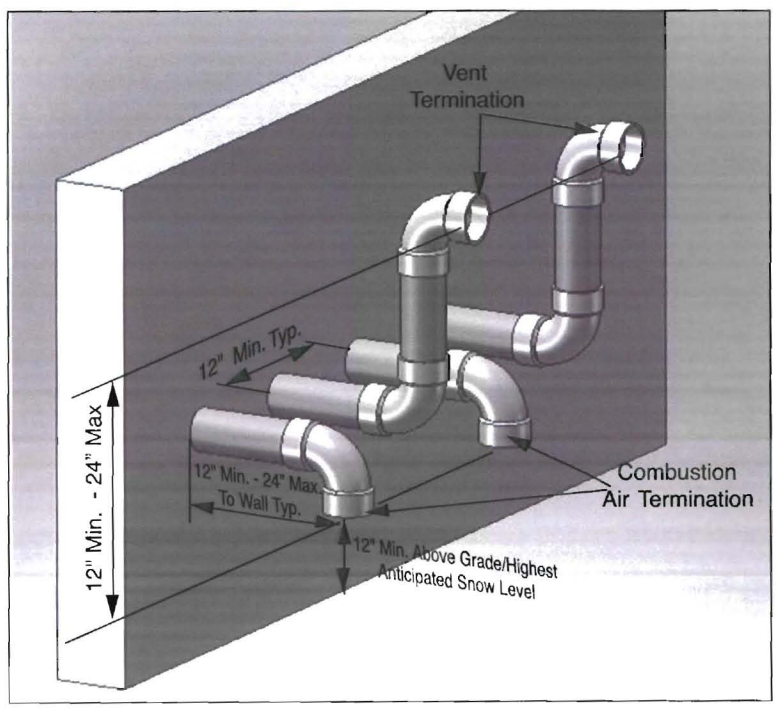


Fig. 20: Direct Vent - Horizontal Termination of Multiple Boilers

Direct Vent - Vertical Vent and Sidewall Combustion Air

NOTICE

Installation of the vent and combustion air piping must comply with local codes and requirements and with the National Fuel Gas Code NFPA 54, ANSI Z223.1 for installations in the U.S. or CSA B149.1 or B149.2 for installations in Canada.

NOTICE

When using an inoperative chimney as a means of a chase for the vent, the surrounding space within the chimney cannot be used to draw combustion air or vent another appliance.

⚠ WARNING

A gas vent extending through a roof should not terminate near an adjacent wall or below any building extensions such as roof eaves, balconies or decks. Failure to comply with the required clearances in this manual could result in severe personal injury, death or substantial property damage.

Determine Termination Location

Locate the vent and combustion air termination using the following guidelines:

1. The total length of the vent or combustion air piping must not exceed the limits given in Table 1 on page 3.

NOTICE

Do not include the 90° elbow or coupling used to terminate the combustion air inlet or vent exterior of the building when determining the total length of pipe.

2. The combustion air piping must terminate with a 90° elbow. Fig. 21 shows a snorkel termination option. The combustion air pipe can also terminate using a 90° elbow directed down or to the left or right as shown in figures 8 or 13 page 11 or 12. The termination must be installed 12" minimum above grade / highest anticipated snow level and as shown in Fig. 8 page 11 or Fig. 13 page 12 or Fig. 21.
3. The vent must terminate vertically with a coupling to accept the bird screen and must be located 12" [18" Canada] above the highest anticipated snow level.

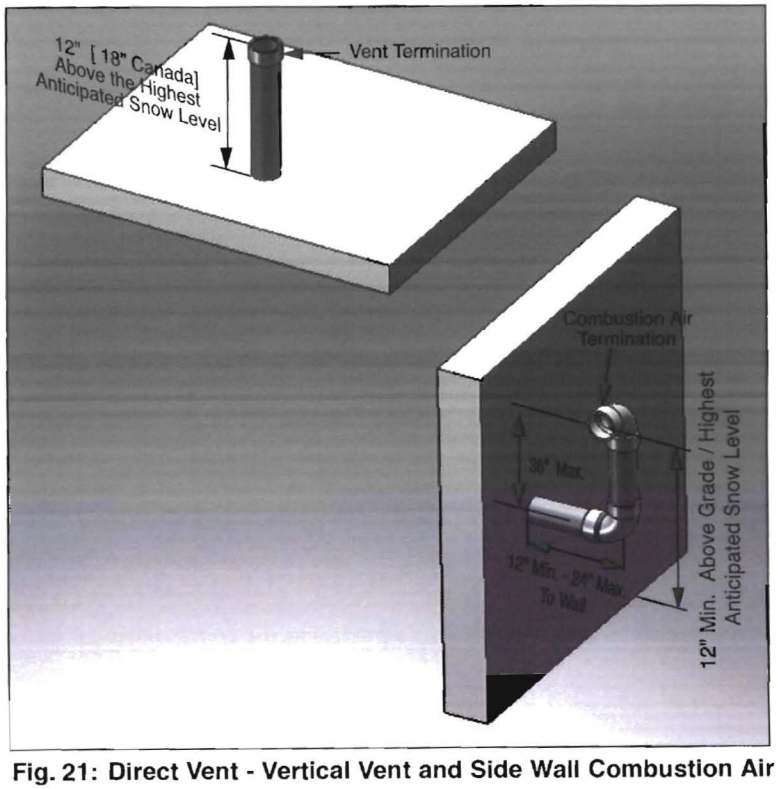


Fig. 21: Direct Vent - Vertical Vent and Side Wall Combustion Air

4. The following should be considered when determining the location of the vent and combustion air termination:
   a. Locate the vent termination where flue vapors will not damage surrounding shrubs, plants or air conditioning equipment or be objectionable to the homeowner.
   b. The flue products will form a noticeable plume of water vapor as they condense in colder air. Avoid terminating the vent in areas where the plume could obstruct window views.
   c. Prevailing winds could cause freezing of flue gas condensation and a buildup of water / ice on surrounding plants, building surfaces or combustion air inlet.
   d. Avoid locations where prevailing winds could affect the performance of the boiler or cause recirculation of the flue gases, such as inside corners of buildings, near adjacent buildings, vertical surfaces, window wells, stairwells, alcoves, courtyards, or other recessed areas.
   e. Do not terminate the vent above doors or windows: flue condensate could freeze causing ice formations.
   f. Locate the vent termination to prevent possible condensate damage to exterior finishes.
   g. Avoid locations of possible accidental contact of flue vapors with people or pets.
5. The vent termination must also maintain the following clearances; as shown in Fig.3, page 7.
   a. At least 3 feet from adjacent walls
   b. At least 3 feet below roof over hangs
   c. At least 7 feet above any public walkways
   d. At least 3 feet above any forced air intake within 10 feet (does not apply to the combustion air inlet of a direct vent appliance).
   e. No closer than 12" below or horizontally from any door or window or gravity air inlet.
   f. Must be at least 4 feet from any electric meters, gas meters-regulators, relief valves or other equipment. Never terminate the vent above or below any of these items within 4 feet horizontally.
6. The combustion air termination must extend a minimum of 12" beyond the exterior wall.
7. Locate the vent termination and combustion air inlet in a manner to protect from damage by foreign objects, such as stones, balls, or buildup of leaves or sediment.
8. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

Direct Vent - Vent Installation - Through the Roof

1. Vent pipe penetration through combustible or non-combustible wall material should maintain a minimum 1/4" clearance. The diameter of the penetration hole should be 4"minimum for 3" pipe or 5" minimum for 4" pipe.
2. The installer must use a galvanized metal thimble for the vent pipe penetration.
3. The vent must terminate 12" [18" Canada] above the highest anticipated snow level.
4. The installer must comply with all local codes for isolating the vent pipe as it passes through floors, ceilings and roofs.
5. The installer should provide adequate flashing and sealing boots sized for the vent pipe.

Direct Vent - Combustion Air installation - Sidewall

1. Combustion air pipe penetration can maintain zero clearance. The diameter of the penetration hole should be 3 1/2" minimum for 3" pipe or 4 1/2" minimum for 4" pipe.
2. The combustion air termination must be installed 12" minimum above grade / highest anticipated snow level and as shown in Fig. 8 or 10 or 13 pages 11 and 12.
3. The installer must comply with all local codes for isolating the combustion air pipe as it passes through floors and walls.
4. The installer should seal all exterior openings around penetration with an exterior silicon caulk.

Termination Fittings

1. The vent and combustion air terminations must include a factory supplied "bird screen" installed as shown in Fig. 4 page 8 & Fig. 19 page 15.
2. The combustion air piping must terminate through the sidewall using a 90° elbow as shown in Fig. 8 through 11, page 11 or Fig.12 through 15 page 12 .
3. The vent piping must terminate vertically through the roof with a coupling to accept the bird screen and must be located 12" [18" Canada] above the highest anticipated snow level.

⚠ WARNING

Do not extend the vent pipe above the roof beyond the dimension shown in Fig. 21 on page 17. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

Direct Vent - Multiple Boiler Installation - Vertical Vent and Sidewall Combustion Air

1. On installations of multiple PRESTIGE boilers, terminate each vent and combustion air piping as described in this manual.
2. Each vent and combustion air termination must be a minimum 12" from the adjacent termination for installations in the U.S. as shown in Fig. 22. For installations in Canada, provide clearances as required by CSA B149.1 or 149.2.

NOTICE

The combustion air inlet of the PRESTIGE is defined as being part of a direct vent system. It is not considered as a forced air intake. The required clearance of an adjacent boiler vent to a forced air inlet does not apply in a multiple installation of PRESTIGE boilers.

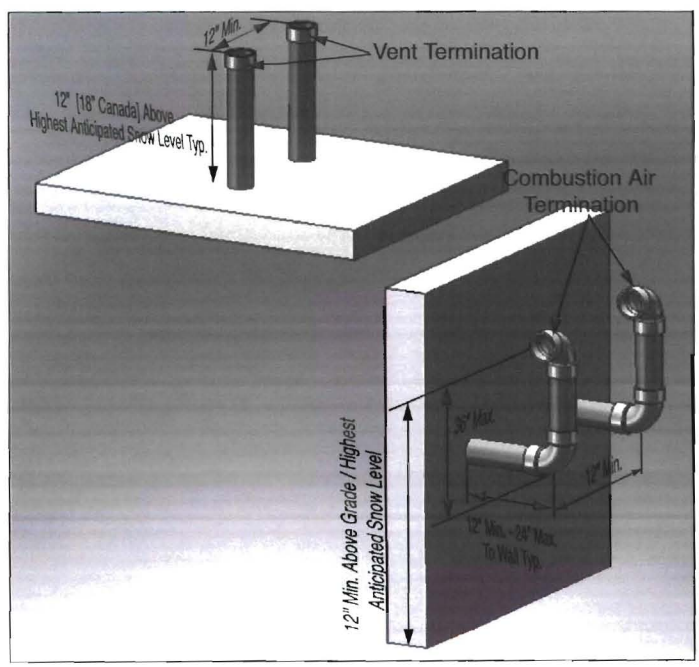


Fig. 22: Direct Vent - Vertical Termination of Vent and Sidewall Termination of Combustion Air of Multiple Boilers

3" to 4" Vent/Combustion Air Transition

NOTICE

This section outlines the installation of Venting and Combustion Air for the PRESTIGE 60, 110, 175, 250 and EXCELLENCE. When venting with 4" pipe, the vent system must transition from the 3" outlet of the boiler to the 4" vent system.

- The transition from 3" vent system to 4" vent system must occur within 5 feet of the boiler vent outlet.
- The transition from 3" vent to 4" vent must occur in a vertical run only.

⚠ WARNING

Transition of 3" vent to 4" vent in a horizontal run may result in pooling of the condensate and potential vent blockage. Failure to comply can result in death, serious injury or substantial property damage.

- The 4" vent should not transition back to 3" vent at any point in the vent system except when using Triangle Tube's optional concentric vent termination kit, see kit instructions for details.
- The total equivalent length of the 3" vent and 4" vent combined shall not exceed the length listed for a 4" vent system Table 1, page 3.
- The combustion air piping shall transition from 3" to 4" in the same manner as the vent system.
- The total equivalent length of 3" and 4" combustion air piping combined shall not exceed the length listed for combustion air in Table 1, page 3.

Insert Piping to PRESTIGE Adapters

1. The installer must clean, deburr and chamfer the pipe ends.

⚠ WARNING

The pipe ends must be smooth, free of sharp edges chamfer and wiped clean to prevent possible damage to the sealing gasket in the vent and combustion air adapters. Failure to comply with this requirement could result in leakage of flue products causing possible severe personal injury or death.

2. Prior to inserting the pipe, inspect the vent and combustion air adapters to verify there are no obstructions or packing material inside the adapters and the gaskets are in place.
3. Ensure the adapter banding strap is loose prior to inserting the pipe.
4. Apply a small amount of silicon grease or water to the insertion end of the pipe to ease insertion into the adapter.
5. Insert the pipe into the adapter until it is fully seated.

⚠ WARNING

Do not apply excessive force, twist or bend the adapter or vent / combustion air pipe when inserting. The adapter gasket could be damaged resulting in possible flue gas leakage.

6. Secure the vent and combustion air pipe by tightening the adapter banding strap. Do not over tighten the strap. The seal is made with gasket inside the adapter.

Vent and Combustion Air Piping Installation Guidelines

1. The installer should install the vent / combustion air piping working from the boiler to the piping termination. The piping should not exceed the lengths given in Table 1 page 3 for either the vent or combustion air.
2. The installer should cut the pipe to the required lengths and deburr the inside and outside of both ends.
3. The installer should chamfer the outside of the pipe ends to allow even distribution of cement when joining.

4. The installer should dry assemble the vent or combustion air system prior to assembling any joints to ensure proper fit.
5. The pipe ends and fittings should be cleaned and dried thoroughly prior to assembly of the joint.
6. When assembling a joint the installer should:
   a. Handle fitting and pipes carefully to prevent contamination of surfaces
   b. Apply a liberal amount of primer to both surfaces - the end of the pipe and the insert socket of the fitting.
   c. Apply a light uniform coating of approved cement to both surfaces - the end of the pipe and the insert socket of the fitting, while the primer is still wet.
   d. A second coat of approved cement should be applied to the mating surfaces. The installer should avoid, however, using too much cement on the socket of the fitting to prevent a buildup of cement on the inside.
   e. With the cement still wet, the pipe end should be inserted into the socket of the fitting and twisted 1/4 of a full turn. Ensure the pipe end is inserted fully into the socket of the fitting.
   f. Any excess cement should be wiped clean from the joint. Inspect the joint to ensure a smooth bead of cement is noticed around the entire joint seam.
7. The installer should use perforated metal strap hangers or equivalent pipe hangers suitable for plastic pipe to support the piping. The hangers must be spaced at a maximum of every 5 feet of horizontal and vertical run of piping. A support must be placed near the boiler and every change in direction vertical or horizontal (i.e elbow). Do not penetrate any part of the piping or vent system with fastener.

NOTICE

Pipe hangers should not be tightly clamped to pipe to allow for thermal expansion/contraction movement. Pipe clamps or hangers should not contain any sharp edges which can damage the pipe.

8. The vent and combustion air piping should be sloped continuously from the termination back to the boiler with at least 1/4" drop per foot of run. Do not allow any sags in the run of piping.

⚠ WARNING

Do not pitch the vent or combustion air piping downward away from the boiler. Potential condensate damage to the building exterior or to the surrounding landscape and/or potential risks of icing and blockage of the vent piping could occur.

9. Maintain a minimum clearance of 1/4" between the vent pipe and all materials, combustible or non-combustible. The installer must seal any wall, floor or ceiling penetrations as per local code requirements.

BEST PRACTICE

It is recommended that the installer uses the same number of elbows and length of piping on the venting and the combustion air inlet systems.

NOTICE

Do noy insulate any vent pipe runs that pass through uncondition areas.

SECTION III - CATEGORY IV INSTALLATION OF VENT/AIR PIPING

A Category IV appliance utilizes uncontaminated indoor or outdoor air (surrounding the appliance) for combustion.

Category IV - Vertical - Through the Roof or Unused Chimney

NOTICE

Installation of the vent and combustion air piping must comply with local codes and requirements and with the National Fuel Gas Code NFPA 54, ANSI Z223.1 for installations in the U.S. or CSA B149.1 or B149.2 for installations in Canada.

NOTICE

When using an inoperative chimney as a means of a chase for the vent, the surrounding space within the chimney cannot be used to draw combustion air or vent another appliance.

⚠ WARNING

A gas vent extending through a roof should not terminate near an adjacent wall or below any building extensions such as roof eaves, balconies or decks. Failure to comply with the required clearances in this manual could result in severe personal injury, death or substantial property damage.

Determine Termination Location

Locate the vent and combustion air termination using the following guidelines:

1. The total length of the vent must not exceed the limits given in Table 1 on page 3.

NOTICE

Do not include the coupling used to terminate the vent exterior of the building when determining the total length of pipe.

2. The combustion air piping must terminate at the boiler with a 90° elbow.
3. The vent must terminate vertically with a coupling and must be located 12" [18 Canada] above the highest anticipated snow level as shown in Fig. 23.
4. The following should be considered when determining the location of the vent termination:
   a. Locate the vent termination where flue vapors will not damage surrounding shrubs, plants or air conditioning equipment or be objectionable to the homeowner.
   b. The flue products will form a noticeable plume as they condense in colder air. Avoid terminating the vent in areas where the plume could obstruct window views.
   c. Prevailing winds could cause freezing of flue condensation and a buildup of water / ice on surrounding plants or building surfaces.

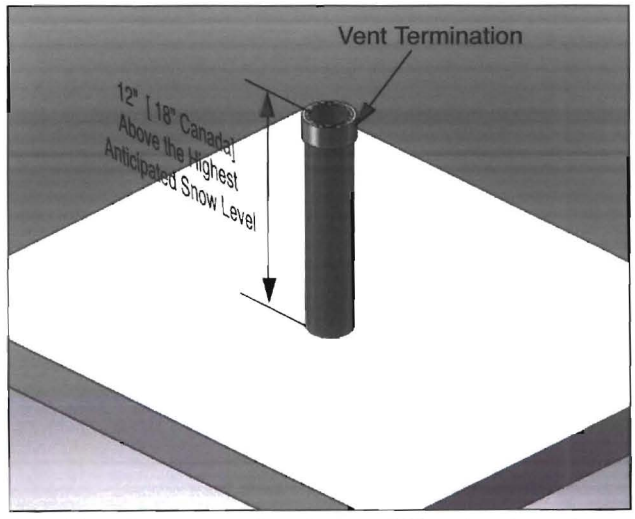


Fig. 23: Category - IV - Vertical Termination of Vent Pipe

d. Avoid locations where prevailing winds could affect the performance of the boiler or cause recirculation of the flue gases, such as inside corners of buildings or near adjacent buildings or vertical surfaces, window wells, stairwells, alcoves, courtyards, or other recessed areas.

e. Do not terminate the vent above any doors or windows: flue condensate could freeze causing ice formations.

f. Locate the vent termination to prevent possible condensate damage to exterior finishes.

g. Avoid locations of possible accidental contact of flue vapors with people or pets.

5. The vent termination must also maintain the following clearances; as shown in Fig.24.

   a. At least 3 feet from adjacent walls

   b. At least 3 feet below roof over hangs

   c. At least 7 feet above any public walkways

   d. At least 3 feet above any forced air intake within 10 feet.

   e. No closer than 4 feet below or horizontally from any door or window or gravity air inlet.

6. Locate the vent termination in a manner to protect from damage by foreign objects, such as stones, balls, or to buildup of leaves and sediment.

7. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

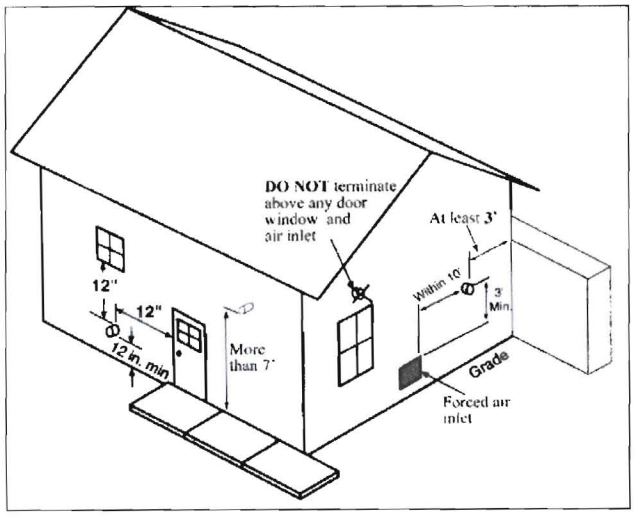


Fig. 24: Termination Clearances of Category IV System

Category IV - Vent Installation - Through the Roof

1. Vent Penetration

   - Vent pipe penetration through combustible or non-combustible wall material should maintain a minimum 1/4" clearance. The diameter of the penetration hole should be 4" minimum for 3" pipe or 5" minimum for 4" pipe.

2. The installer must use a galvanized metal thimble for the vent pipe penetration.

3. Locate the vent pipe penetration to provide clearances as described in Fig. 23 page 22.

4. The installer must comply with all local codes for isolating the vent pipe as it passes through floors, ceilings and roofs.

5. The installer should provide adequate flashing and a sealing boot sized for the vent pipe.

Termination Fittings - Through the Roof

1. The vent pipe and combustion air pipe terminations must include a factory supplied "bird screen" installed as shown in Fig.s 4. & 5 page 8.

2. The combustion air piping must terminate at the boiler with a 90° elbow.

3. The vent piping must terminate vertically with a coupling as shown in Fig. 23 page 22.

⚠ WARNING

Do not extend the vent pipe above the roof beyond the given dimensions shown in Fig. 23 page 22. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

Category IV - Multiple Boiler Installation - Through the Roof

1. On installations of multiple PRESTIGE boilers, terminate each vent pipe as described in this manual.
2. Each vent termination must be a minimum 12" from the adjacent termination for installations in the U.S. as shown in Fig. 25. For installations in Canada, provide clearances as required by CSA B149.1 or 149.2.

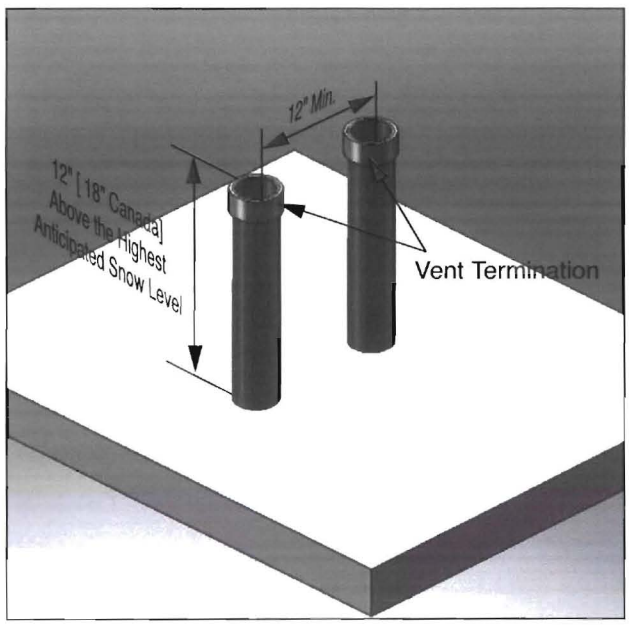


Fig. 25: Category IV- Vertical Termination of Multiple Boilers

Category IV - Horizontal - Sidewall

NOTICE

Installation of the vent and combustion air piping must comply with local codes and requirements and with the National Fuel Gas Code NFPA 54, ANSI Z223.1 for installations in the U.S. or CSA B149.1 or B149.2 for installations in Canada.

NOTICE

For direct vent (sidewall) installations in the Commonwealth of Massachusetts, the installer must comply with the additional requirements outlined on pages 31 and 32.

⚠ WARNING

A gas vent extending through a sidewall should not terminate near an adjacent wall or below any building extensions such as roof eaves, balconies or decks. Failure to comply with the required clearances in this manual could result in severe personal injury, death or substantial property damage.

BEST PRACTICE

If the vent is terminated on a sidewall which is subject to high winds it is recommended to terminate the vent using a 45° elbow or tee. A tee provides the best protection against wind but can expose the exterior of the house to condensate, while a 45° elbow provides improved protection from both wind and condensate.

Determine Termination Location

Locate the vent and combustion air termination using the following guidelines:

1. The total length of the vent must not exceed the limits given in Table 1 on page 3.

NOTICE

DO NOT include the 45° or 90° elbow or tee used to terminate the vent exterior of the building when determining the total length of pipe.

2. The combustion air piping must terminate at the boiler with a 90° elbow.
3. The vent pipe can terminate:

- Using a 90° elbow as shown in Fig. 29 page 26.
- Using a coupling as shown in Fig. 26 page 26.
- Using a tee as shown in Fig. 27 page 26 or Fig. 30 page 27 .
- Using a 45° elbow as shown in Fig. 28 page 26 or Fig. 31 page 27.

The vent termination must be installed 12" minimum above grade / highest anticipated snow level.

⚠ WARNING

Do not extend the vent pipe outside the sidewall beyond the dimensions shown in Figs. 26 through 31 pages 26 and 27. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

4. The following should be considered when determining the location of the vent termination:
   a. Locate the vent termination where flue vapors will not damage surrounding shrubs, plants or air conditioning equipment or be objectionable to the homeowner.
   b. The flue products will form a noticeable plume as they condense in colder air. Avoid terminating the vent in areas where the plume could obstruct window views.
   c. Prevailing winds could cause freezing of flue condensation and a buildup of water / ice on surrounding plants or building surfaces.
   d. Avoid locations where prevailing winds could affect the performance of the boiler or cause recirculation of the flue gases, such as inside corners of buildings or near adjacent buildings or vertical surfaces, window wells, stairwells, alcoves, courtyards, or other recessed areas.
   e. Do not terminate the vent above any doors or windows: flue condensate could freeze causing ice formations.
   f. Locate the vent termination to prevent possible condensate damage to exterior finishes.
   g. Avoid locations of possible accidental contact of flue vapors with persons or pets.
5. The vent termination must also maintain the following clearances; as shown in Fig.24, page 23.
   a. At least 3 feet from adjacent walls
   b. At least 3 feet below roof overhangs
   c. At least 7 feet above any public walkways
   d. At least 3 feet above any forced air intake within 10 feet.
   e. No closer than 4 feet below or horizontally from any door or window or gravity air inlet.
   f. Must be at least 4 feet from any electric meters, gas meters-regulators, relief valves or other equipment. Never terminate the vent above or below any of these items within 4 feet horizontally.
   g. A minimum 12" or a maximum 24" beyond the exterior wall.
6. The combustion air must terminate at the boiler with a 90° elbow.
7. Locate the vent termination in a matter to protect from damage by foreign objects, such as stones or balls or subject to buildup of leaves or sediment.
8. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

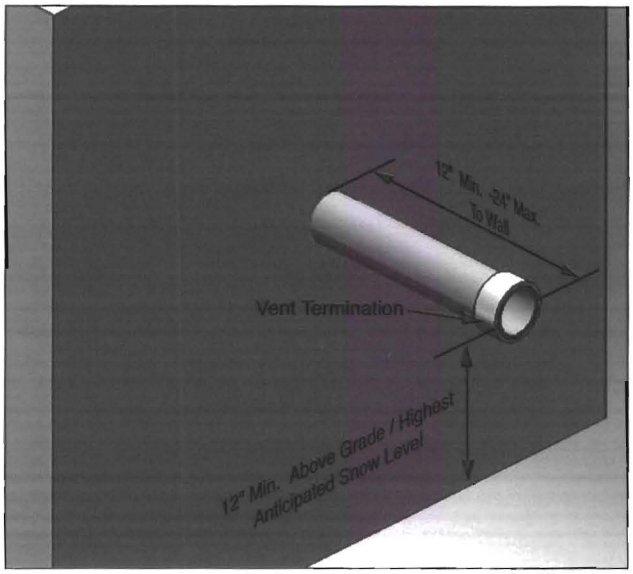


Fig. 26: Category IV - Sidewall Termination of Vent Pipe with Coupling Termination

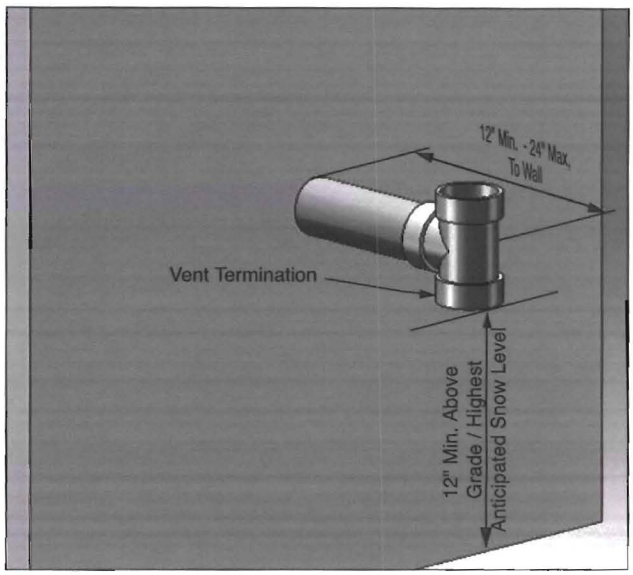


Fig. 27: Category IV - Sidewall Termination of Vent Pipe with Tee Termination

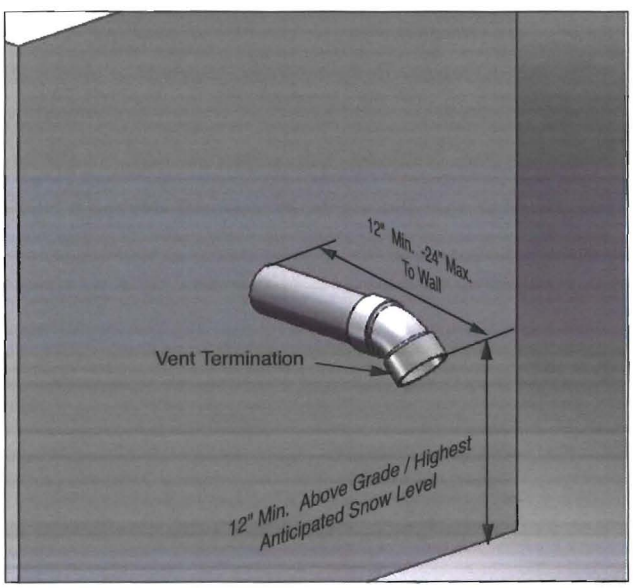


Fig. 28: Category IV - Sidewall Termination of Vent Pipe with 45° Termination

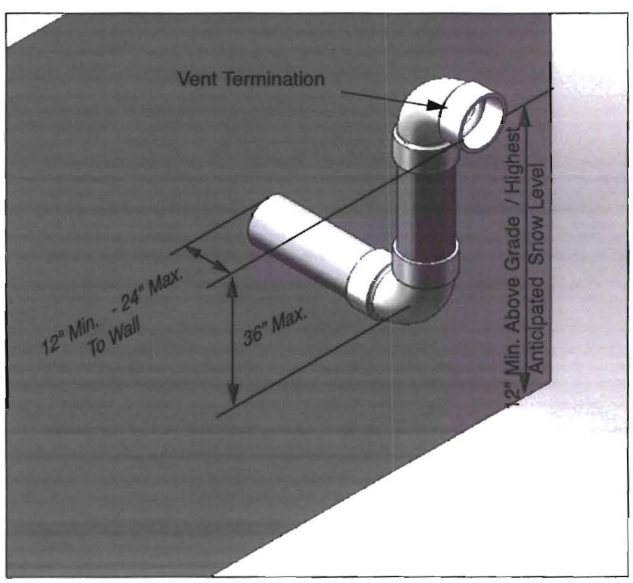


Fig. 29: Category IV - Sidewall Snorkel Termination of Vent Pipe with 90° Elbow Termination

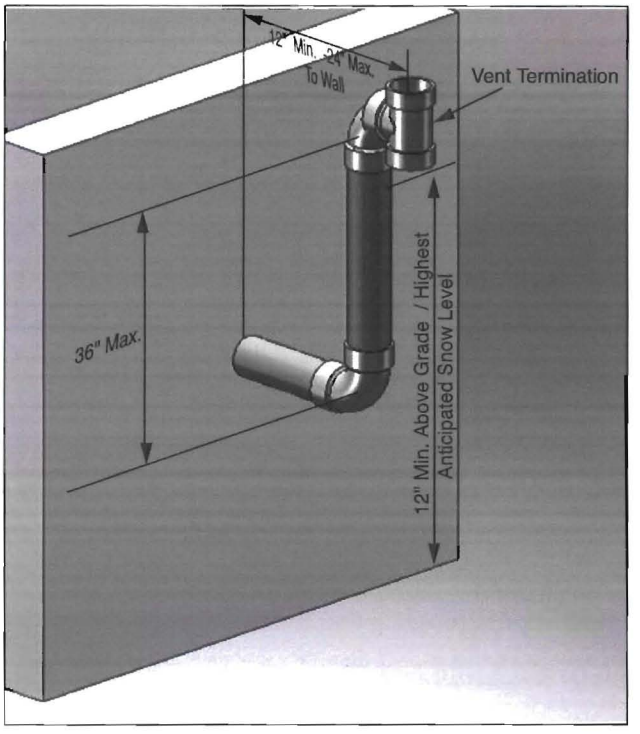


Fig. 30: Category IV - Sidewall Snorkel Termination of Vent Pipe with Tee Termination

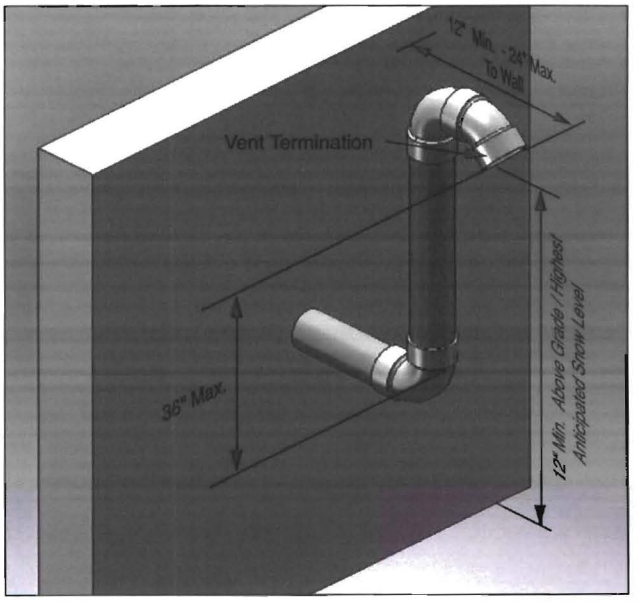


Fig. 31: Category IV - Sidewall Snorkel Termination of Vent Pipe with 45° Elbow Termination

Category IV - Vent Installation - Sidewall

1. Vent Penetration
   - Vent pipe penetration through combustible or non-combustible wall material should maintain a minimum 1/4" clearance. The diameter of the penetration hole should be 4" minimum for 3" pipe or 5" minimum for 4" pipe.
2. The installer must use a galvanized metal thimble for the vent pipe penetration.
3. Locate the vent pipe penetration to provide minimum clearances as described in Figs. 26 through 31 pages 26 and 27.
4. The installer must comply with all local codes for isolating the vent pipe as it passes through floors and walls.
5. The installer should seal all exterior openings around penetrations with an exterior silicon caulk.

Termination Fittings - Sidewall

1. The vent and combustion air terminations must include a factory supplied "bird screen" installed as shown in Figs: 16 through 19 page 15.
2. The combustion air piping must terminate at the boiler with a 90° elbow.
3. The vent pipe can terminate:

- Using a 90° elbow as shown in Fig. 29 page 26.
- Using a coupling as shown in Fig. 26 page 26.
- Using a tee as shown in Fig. 27 page 26 or Fig. 30 page 27 .
- Using a 45° elbow as shown in Fig. 28 page 26 or Fig. 31 page 27.

The vent termination must be installed 12" minimum above grade / highest anticipated snow level.

⚠ WARNING

Do not extend the vent pipe outside the sidewall beyond the dimensions shown in Figs. 26 through 31 pages 26 and 27. Extended exposure of the vent pipe could cause condensate to freeze and block the vent pipe.

Category IV - Multiple Boiler Installation - Sidewall

1. On installations of multiple PRESTIGE boilers, terminate each vent pipe as described in this manual.
2. The wall penetration of the vent should be a minimum 12" from the adjacent vent pipe of another boiler for installations in the U.S as shown Fig. 32. For installations in Canada, provide clearances as required by CSA B149.1 or 149.2.

NOTICE

Fig. 32 shows one option for vent terminations of multiple PRESTIGE boilers. Any vent termination option shown in Figs. 26 through 31 pages 26 and 27 can be used for multiple PRESTIGE boilers. The 12" minimum distance between centerlines of the vent piping must be maintained for any chosen option.

NOTICE

Reference Figs. 26 through 31 pages 26 and 27 for the configuration dimensions of the vent for each unit installed in a multiple installation.

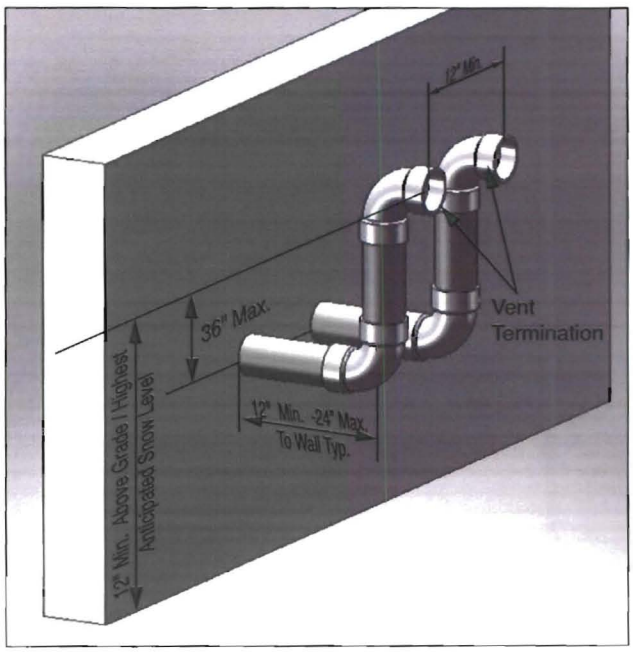


Fig. 32: Category IV - Multiple Boiler Sidewall Vent Terminations

3" to 4" Vent Transition

NOTICE

This section outlines the installation of Vent Piping for the PRESTIGE 60, 110, 175, 250 and EXCELLENCE. When venting with 4" pipe, the vent system must transition from the 3" outlet of the boiler to the 4" vent system.

- The transition from 3" vent system to 4" vent system must occur within 5 feet of the boiler vent outlet.
- The transition from 3" vent to 4" vent must occur in a vertical run only.

⚠ WARNING

Transition of 3" vent to 4" vent in a horizontal run may result in pooling of the condensate resulting in potential vent blockage. Failure to comply can result in death, serious injury or property damage.

- The 4" vent should not transition back to 3" vent at any point in the vent system except when using Triangle Tube's optional concentric vent termination kit, see kit instructions for details.
- The total equivalent length of the 3" vent and 4" vent combined shall not exceed the length listed for a 4" vent system Table 1, page 3.

Insert Piping to PRESTIGE Adapters

1. The installer must clean, deburr and chamfer the pipe ends.

⚠ WARNING

The pipe ends must be smooth, free of sharp edges chamfer and wiped clean to prevent possible damage to the sealing gasket in the vent and combustion air adapters. Failure to comply with this requirement could result in leakage of flue products causing possible severe personal injury or death.

2. Prior to inserting the pipe, inspect the vent and combustion air adapters to verify there are no obstructions or packing material inside the adapters and the gaskets are in place.
3. Ensure the adapter banding strap is loose prior to inserting the piping.
4. Apply a small amount of silicon grease or water to the insertion end of the pipe to ease insertion into the adapter.
5. Insert the pipe into the adapter until it is fully seated.

⚠ WARNING

Do not apply excessive force, twist or bend the adapter or vent / combustion air pipe when inserting. The adapter gasket could be damaged resulting in possible flue gas leakage.

6. Secure the vent or combustion air pipe by tightening the adapter banding strap. Do not over tighten the strap as the seal is made with gasket inside the adapter.

Vent and Combustion Air Piping Installation Guidelines

1. The installer should install the vent / combustion air piping working from the boiler to the piping termination. The piping should not exceed the lengths given in Table 1 page 3 for either the vent or combustion air.
2. The installer should cut the pipe to the required length and deburr the inside and outside of both ends.
3. The installer should chamfer the outside of the pipe ends to allow even distribution of cement when joining.

CITY OF PORTLAND, MAINE

Department of Building Inspections

Original Receipt

6-7- 20 11

Received from Revision Heat-

Location of Work 76 Hayes St

Cost of Construction $_____ Building Fee:_____

Permit Fee $_____ Site Fee: _____

Certificate of Occupancy Fee: _____

Total: 40

Building (IL) ___ Plumbing (I5) ___ Electrical (I2) ___ Site Plan (U2) ___

Other HVAC

CBL: 118-E-3

Check #: 1482 **Total Collected $** 40

No work is to be started until permit issued.
Please keep original receipt for your records.

Taken by: _____

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCU0PIED.

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No:	Date Applied:	CBL:	
2011-06-1341-HVAC	**6/7/2011**	**118 - - E - 003 - 001 - - - - -**	
Location of Construction: **66 NOYES ST**	Owner Name: **SHAAREY TPHILOH CONGREGATION**	Owner Address: **76 NOYES ST PORTLAND, ME - MAINE 04103**	Phone:
Business Name:	Contractor Name: **Revision Heat**	Contractor Address: **109 Fox St, Portland, ME**	Phone: **221-5677**
Lessee/Buyer's Name:	Phone:	Permit Type: **HVAC - HVAC**	Zone: **R-5**
Past Use: **Synagogue & Daycare**	Proposed Use: **Same: Synagogue & Daycare – To install replacement heating system – Prestige Solo 399**	Cost of Work: **$42,000.00**	CEO District:
		Fire Dept: ✓ Approved w/Conditions; ___ Denied; ___ N/A. Signature: CAPT. K. Gautreau	Inspection: Use Group: V Type: HVAC Signature:
Proposed Project Description: **hvac – repalcement heating**		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Gayle			

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building Permits do not include plumbing, septic or electrial work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
___ Shoreland	___ Variance	✓ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	___ Approved
___ Site Plan	___ Approved	___ Approved w/Conditions
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: 6/13/11	Date:	Date:

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHON

6/8/11 66

#2011 06 134

FILL IN AND SIGN WITH INK

APPLICATION FOR PERMIT
HEATING OR POWER EQUIPMENT

Plans are in PDF entered

R-5

To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Location / CBL 118 E-3 Use of Building public Date 5/10/11

Name and address of owner of appliance Congregation Shaarey Tphiloh

76 Noyes St, Portland ME 04103

Installer's name and address revision heat 109 Fox St Portland ME

Telephone 221-5677

Location of appliance:

- ☐ Basement
- ☑ Floor
- ☐ Attic
- ☐ Roof

Type of Fuel:

- ☑ Gas
- ☐ Oil
- ☐ Solid

Appliance Name: Prestiege Solo 399

U.L. Approved ☑ Yes ☐ No

Will appliance be installed in accordance with the manufacture's installation instructions? ☑ Yes ☐ No

IF NO Explain: _____

The Type of License of Installer:

- ☐ Master Plumber # _____
- ☐ Solid Fuel # _____
- ☐ Oil # _____
- ☑ Gas # PNT 1785
- ☐ Other _____

Type of Chimney: PVC as Per Spec.

- ☐ Masonry Lined
  Factory built _____
- ☐ Metal
  Factory Built U.L. Listing # _____
- ☐ Direct Vent
  Type _____ UL# _____

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Type of Fuel Tank

- ☐ Oil
- ☐ Gas

Size of Tank N/A

Number of Tanks N/A

Distance from Tank to Center of Flame N/A **feet.**

Cost of Work: $ 42,000

Permit Fee: $ _____

Approved

Fire: _____

Ele.: _____

Bldg.: _____

Approved with Conditions

☐ See attached letter or requirement

_____ Inspector's Signature

_____ Date Approved

Signature of Installer _____

White - Inspection Yellow - File Pink - Applicant's Gold - Assessor's Copy