

Venting tankless

Installing the water heater.

The water heater must be installed with a Heat-Fab 9301PAL vent adapter or an approved equivalent.

⚠ DANGER: Failure to install the vent adapter and properly vent the water heater to the outdoors as outlined in the Venting section of this manual will result in unsafe operation of the water heater causing death, serious injury, explosion, or fire. To avoid the risk of fire, explosion, or asphyxiation from carbon monoxide, NEVER operate the water heater unless it is properly vented and has adequate air supply for proper operation as outlined in the Venting section of this manual.

⚠ WARNING: Use UL approved Category III vent material only. No other vent material is permitted.

⚠ WARNING: Refer to page 7 for clearances to combustible material.

Venting

The installation of venting must comply with national codes, local codes, and the vent manufacturer's instructions

The water heater must be vented to the outdoors as described in these instructions. **DO NOT** connect this water heater to an existing Vent or Chimney, it must be vented separately from all other appliances.

All vent components (adapters, pipe, elbows, terminals, etc.) should be UL1738 Certified Stainless Steel Venting Material (e.g. AL29-4C).

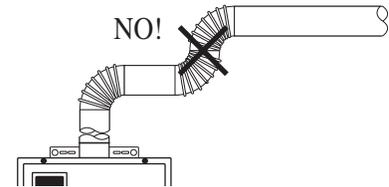
The specified vent termination must be used. The termination should be a 90° elbow type with screen. (Refer to page 15)

Use a vent pipe with an anti-disconnection structure.

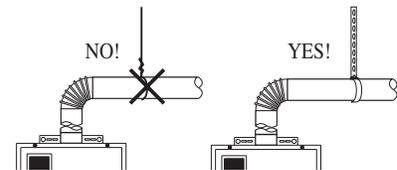
The use of a High Temperature Silicone (500°F) will be required to seal vent connections. To prevent accidental gas exhaust leakage, apply a 1/4" wide bead approximately 1/4" from the end and another bead against the joint side of the stop bead.

The unit can be vented either horizontally or vertically, but **MUST** terminate through a sidewall.

DO NOT create a vertical run after a horizontal run has begun.



Vent pipe runs must be adequately supported along both horizontal and vertical runs. The maximum recommended unsupported span should be no more than five (5) feet. Support isolation hanging bands should be used. **DO NOT** use wire. (See diagram below).



Venting Lengths

⚠ WARNING: For vent lengths over 27.8 feet (including elbows), an adjustment is required to the #3 Dip Switch. Please refer to page 30 for Dip Switch adjustments.

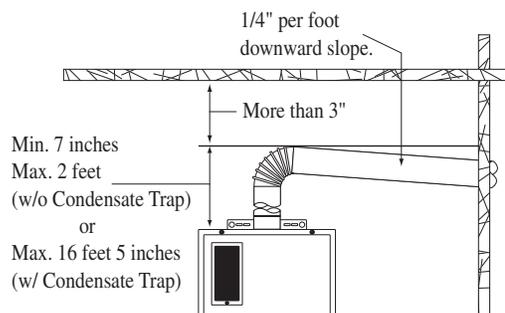
⚠ CAUTION: The maximum length of a vertical run in the venting system is 16 feet 5 inches (to include the 90° elbow) provided that a condensate trap is used (refer to page 14).

MAXIMUM VENT LENGTH - The system will not operate if there is excessive restriction (pressure drop) in the venting system. A maximum of 36 feet 2 inches of vent pipe may be used provided there is only one 90° elbow in the system. If additional elbows are required: two elbows can be used with 34 feet 6 inches, and three elbows can be used with 33 feet of vent pipe.

A 90° elbow is equivalent to 1.6 feet to straight pipe. A 45° elbow is equivalent to 0.8 feet of straight pipe.

The termination elbow does not count as an elbow when determining total vent lengths.

Number of 90° elbows (bends)	Maximum Length of Straight Pipe
1	36' 2"
2	34' 6"
3	33'

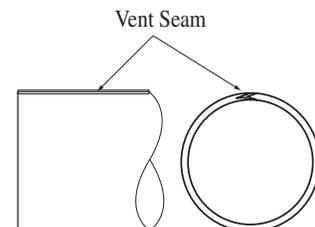


The vent **MUST** be installed with a slight downward slope of 1/4" per foot of horizontal run toward the vent terminal (see diagram below).

If using a vertical run more than 2 feet in length a factory authorized condensate trap **must** be installed between the water heater collar and the vent adapter. See page 14 for installation instruction of the condensate trap.

MINIMUM VENT LENGTH - The venting may be as short as necessary, provided the vent termination is outdoors through a sidewall, the 9301PAL adapter, and wall thimble are installed.

Notice: Make sure that the seam of the vent pipe in horizontal runs is toward the top of the installation (see illustration directly below).



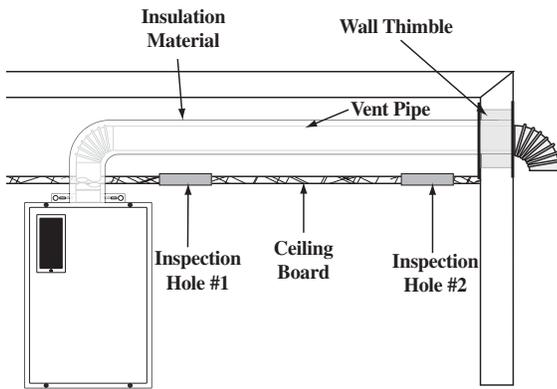
Venting Through Closed Spaces

If the vent piping passes through a closed space, wrap the vent pipe with inflammable insulation material that is at least 3/4" thick. DO NOT let the insulation material make contact with flammable materials. A minimum clearance of 3" between the vent pipe and ceiling should be maintained. Be sure to follow local codes.

For maintenance and inspection purposes, the following holes are required to be made.

- Two (2) inspection openings that allow access to venting. One (1) of these openings should be close to where the vent pipe enters the ceiling. The other opening should be near the vent termination.
- A ventilation hole with a 16 sq. in. opening should be made at least every 10 feet.

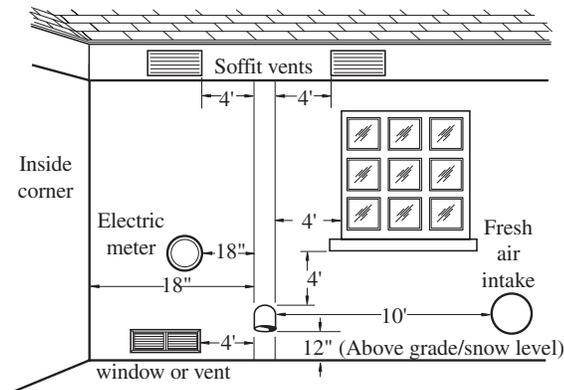
NOTICE: Vent pipes must be completely insulated with inflammable material when installed in alcoves, closets, and garages and must not touch any flammable material.



Horizontal Vent Terminal Location

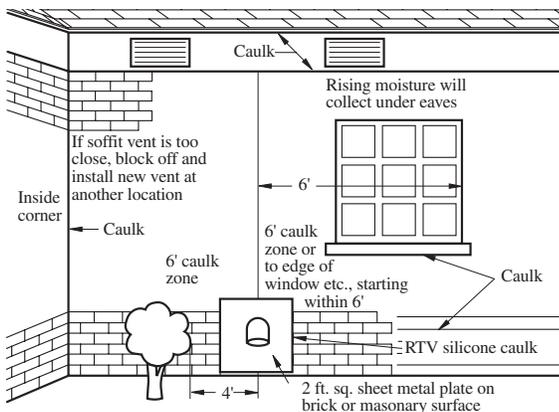
The location of the vent terminal depends on the following minimum clearances and considerations (see illustration):

- 1 Twelve (12) inches above grade level and above normal snow levels.
- 2 Four (4) feet below, or four (4) feet horizontally from any door, window, soffit, under eave vent or gravity air inlet to the building or other appliances, or from gas or electric meters. Do not locate vent above walkways, doors, windows, air inlets, gas or electric meters or other equipment.
- 3 Ten (10) feet from any forced air inlet to the building. Any fresh or make-up air inlet such as for a dryer or furnace area is considered to be a forced air inlet.
- 4 Eighteen (18) inches from an inside corner formed by two exterior walls.



Additional Considerations

- 1 Do Not install vent terminal under any patio or deck.
- 2 To help prevent moisture from freezing on walls and under eaves, do not locate vent terminal on the side of a building with prevailing winter winds.
- 3 Do Not terminate vent pipe directly on brick or masonry surfaces. Use a rust-resistant sheet metal backing plate (2 x 2 feet) behind vent. (See illustration.)
- 4 Do Not locate vent terminal too close to shrubbery, as flue gasses may damage them.
- 5 Caulk all cracks, seams and joints within six (6) feet of vent terminal.
- 6 All painted surfaces should be primed to lessen the chance of physical damage. Painted surfaces will require maintenance.
- 7 Insulate vent pipe exposed to cold conditions (attics, crawl spaces, etc.) with inflammable material to help prevent moisture from accumulating in vent pipe.
- 8 Do Not extend exposed vent pipe outside of building.



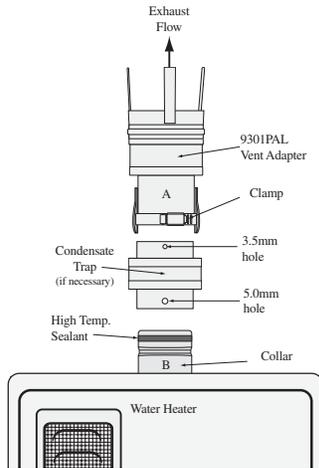
WARNING: Moisture in the flue gas will condense as it leaves the vent terminal. In cold weather this condensate can freeze on the exterior wall, under the eaves and on surrounding objects. Some discoloration to the exterior of the building is to be expected. However, improper location or installation can result in severe damage to the structure or exterior finish of the building

Installing the water heater.

Vent Adapter

A Heat-Fab 9301PAL vent adapter or equivalent approved vent adapter is required for vent connection.

Read the following instructions before installation.



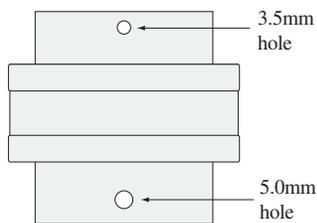
- Test fit the adapter over the water heater collar (or condensate trap collar) before proceeding. Adjust clamp as needed.
- With an alcohol wipe, clean inside surface "A" of adapter and outside surface of "B" of heater (or trap) collar.
- Apply 1/4" wide bead of high temperature silicone (500°F) around outside of heater (or trap) collar "B".

- Slide adapter end "A" down over heater (or trap) collar "B" as far as it will go.
- Tighten the clamp around the collar.
- Inspect the inside of the adapter to verify that the collar and adapter are sealed. If more sealant is required, apply sealant to a flat tool, then spread around the collar edge on inside of adapter.
- Ensure that the clamp does not interfere with the damper shaft.

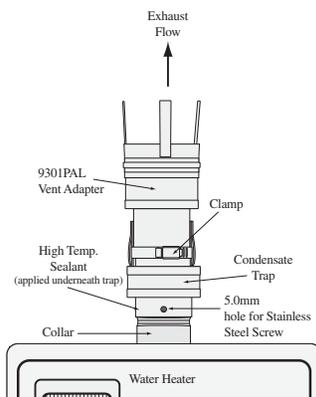
NOTICE: If a condensate trap is to be used, it **MUST** be installed before installing the adapter. For Condensate Trap installation, refer to instructions below.

Condensate Trap Installation

If your vertical run is more than 2 feet long, a factory authorized condensate trap for vertical venting is required and must be installed **between** the water heater collar and the 9301PAL Adapter. (The maximum length of the vertical run is limited to 16 feet 5 inches.)



Read the following instructions before installation.

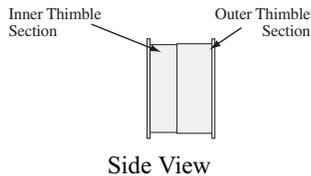


- Test fit the condensate trap over the water heater collar before proceeding. The smaller hole (3.5mm) must be upwards and the larger (5.0mm) hole must be downward. **DO NOT** install upside down.
- With an alcohol wipe, clean the inside surface of the condensate trap and outside surface of the heater collar.
- Apply 1/4" wide bead of high temperature silicone (500°F) around outside of heater collar.

- Insert the condensate trap with 5.0 mm hole end over the heater collar. Fix the **stainless steel** screw (supplied with the trap) to **ONLY** the bottom (5.0mm) hole of the trap to connect to the water heater collar and apply high temperature silicone sealant around the screw.
- Ensure the condensate trap is secure and the hole has been sealed properly.
- Inspect the inside of the condensate trap to verify that the collar and condensate trap are sealed. If more sealant is required, apply sealant to a flat tool, then spread around the collar edge on inside of the condensate trap.
- Install the vent adapter as instructed above.

⚠ WARNING: Use **ONLY** a stainless steel or corrosion resistant screw to connect the condensate trap to the water heater collar.

Vent Horizontal Wall Thimble Installation



An approved 3 inch Vent Horizontal Wall Thimble (Round Type) must be used.

The Wall Thimble requires mechanical support from the wall sufficient to support any incidental loads on the system. If the wall is not sufficient enough to support the Wall Thimble, then appropriate additional framing and/or blocking is required.

INSTALLATION PROCEDURE:

Prepare an opening for the Wall Thimble in the wall. The opening must be 6-1/2 inches in diameter for a 3 inch vent system. The opening should be round.

If there are not sufficient support members to secure the Wall Thimble or if there is a semirigid foam insulation layer under the sheathing, appropriate fasteners must be used to secure the Wall Thimble to the support members.

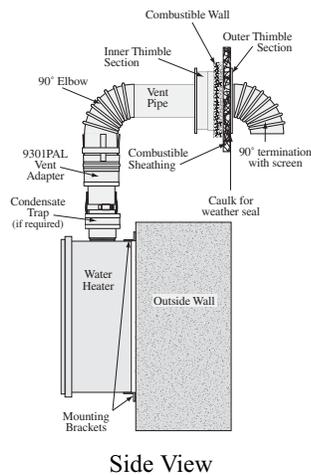
The Wall Thimble is designed to adapt to any wall thickness from 3-1/2" to 6" thick. If the wall is thicker than 6" the Wall Thimble may be extended using a piece of 6" diameter snaplock or welded seam galvanized pipe up to 6" long.

Select the larger diameter half of the Wall Thimble for the outside of the wall.

- Apply a continuous bead of high quality silicone or silicone/latex caulk on the inside of the outer flange. This will be the only weather seal to keep moisture outside the building. Ensure a sufficient seal is made.
- Position this portion of the Wall Thimble into the prepared hole from the outside. Secure the assembly into the prepared opening using fasteners as indicated by sheathing or structural members, sealing the screw heads with more caulking.

Use 4 hollow wall anchors, at least 1/8" in diameter and of appropriate length for the thickness of the sheathing, if sheathing is particle board or other composite material. Use 4 #10x1-1/4" wood screws for plywood, solid wood sheathing or members. Use suitable masonry anchors when passing through solid masonry walls. Reinstall the decorative sheathing around the Wall Thimble. This assembly may be painted to match the exterior decor.

- Attach a screened 3 inch termination fitting to the female end of a vent section or slip connector. Use the method described in the Venting installation instructions (page 12). Slide the vent in through the outside of the Thimble and seal the annular space with a thick bead of caulk.
- Slide the interior portion of the Thimble into the inside hole. Be certain the interior and exterior Thimble halves overlap at least 1". If insufficient overlap exists, extend the interior portion with single wall galvanized pipe.
- Secure the Wall Thimble to the interior sheathing using suitable fasteners.
- Secure the vent section or slip connector that protrudes through the Wall Thimble to the rest of the vent system as described in the Venting installation instructions (page 12).



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