

Installation Manual



Vent (Flue) Terminal

Model Numbers:	FF-100-100 INT	VT4-TL-5
	FF-100-200 INT	VT4-TL-8
	FF-100-400 INT	VT4-TL-14
	FF-100-700 INT	VT4-TL-27

Icons warning of risk level:



WARNING

Denotes content that may result in personal injury or property damage if ignored.



Prohibited



CAUTION

This symbol warns of hazards which have the immediate potential to result in severe or lethal personal injury or fire.



Be sure to do

Directions for Installers



WARNING

- To operate the water heater properly and safely, comply with this installation manual and the installation manuals of any other relevant equipment.
- The Vent (Flue) Terminal must be installed in accordance with all applicable codes.

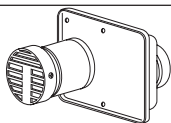
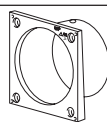
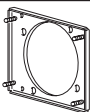


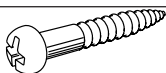


- The Vent (Flue) Terminal must be installed in accordance with all applicable codes.
- Failures and damage caused by erroneous work or work not outlined in this manual are not covered by the warranty.

VT4-TL-5 to 27 only

- Installation must conform with local codes, or in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54.

1. Included Accessories

The following accessories are included with the unit. Check for any missing items before starting installation. (They are all attached to the product body.)

Part	Shape	Q'ty	Part	Shape	Q'ty
Vent (Flue) Terminal		1	Sleeve		1
Wall Flange		1	Wing Nut		4
Tapping Screw		4	Rounded Wood Screw		Long: 2 Short: 2
Wall Anchor		4	Packing (only for products for wall thicknesses of 370mm (14.6") to 690mm (27"))		1

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2. Before Installation



Caution

Compatibility Check

- Make sure that the Vent (Flue) Terminal is compatible with the product it will be installed with. If an improper terminal is used, a fire hazard could be created.

Choosing Installation Site

- Maintain the proper clearances to combustibles
The condensation from the Water Heater may cause corrosion of aluminum materials.
- Install the Vent (Flue) Terminal so that it is easily accessible for maintenance from both the indoors and outdoors.
- Install the Vent (Flue) Terminal so that all exhaust is directed to, and all intake air is taken from, outside.
- Steam or condensed water may drip out of the Vent (Flue) Terminal. Dispose of this condensed water according to local codes, in order to prevent injury or property damage.

Check Wall Thickness

- This Vent (Flue) Terminal model has four different sizes. Choose the correct model to fit the thickness of the wall that the terminal will pass through.

Model name	Wall thickness
FF-100-100, VT4-TL-5	90mm (3.5") to 130mm (5")
FF-100-200, VT4-TL-8	130mm (5") to 210mm (8")
FF-100-400, VT4-TL-14	210mm (8") to 370mm (15")
FF-100-700, VT4-TL-27	370mm (15") to 690mm (27")

VT4-TL-5 to 27 only

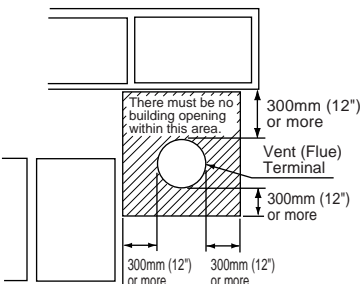
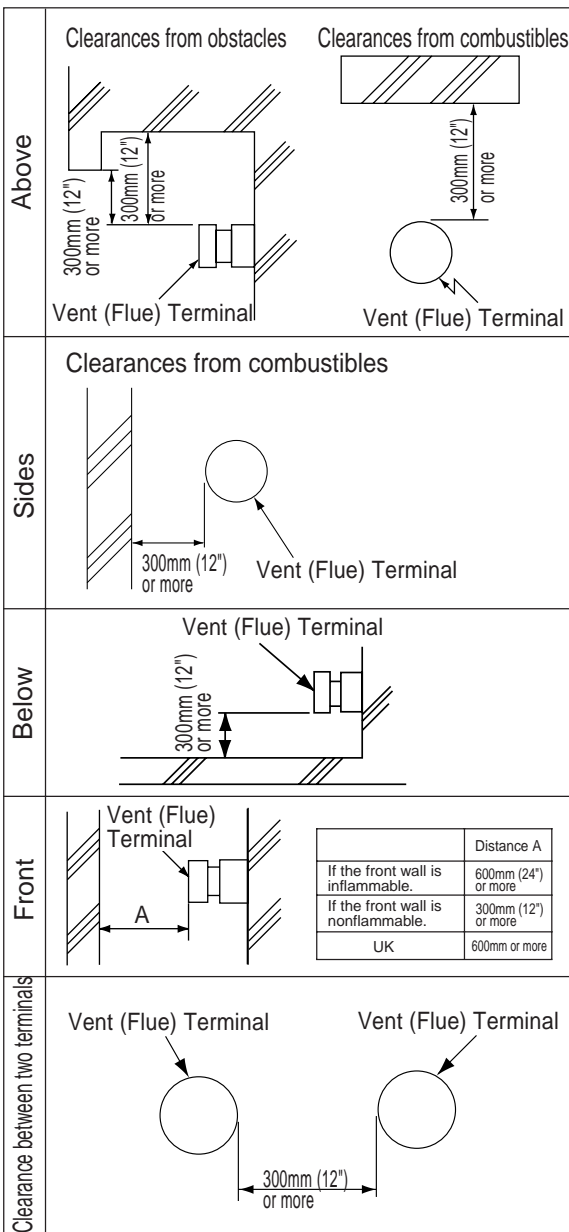
Vent (Flue) Pipe Replacement Precautions

- The vent system will most likely need to be replaced when this appliance is being installed. Use Vent (Flue) Pipe that is listed to UL 1738 for Category III appliances for the exhaust venting. Category III listed Vent (Flue) Pipe is recommended for the air supply also, but other materials may be acceptable. Consult local codes.
- * If Category III listed Vent (Flue) Pipe is already installed, check for punctures, cracks or blockages and consult with the Vent (Flue) Pipe manufacturer before reusing.
- * Make sure the Vent (Flue) Pipe is compatible with the Vent (Flue) Terminal before installation.

3. Installation Requirements



Vent (Flue) Terminal Clearance Requirements



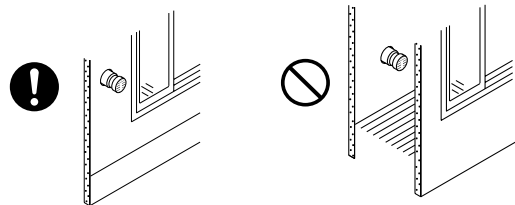
There must be a clearance of 600mm (24") or more in front of the Vent (Flue) Terminal.

- This restriction will not be applied to an area where an effective shield makes a clearance of 600mm (24") or more in front of the Exhaust Outlet.

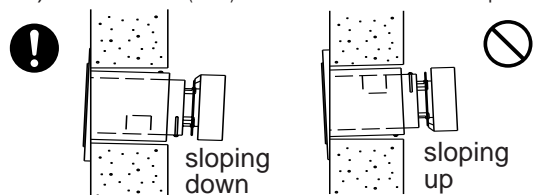
Vent (Flue) Terminal installation precautions

Note the following Vent (Flue) Terminal installation requirements.

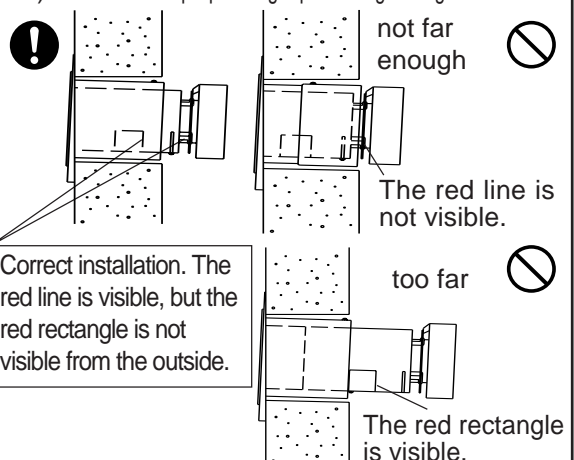
- 1) Do not install the Vent (Flue) Terminal indoors



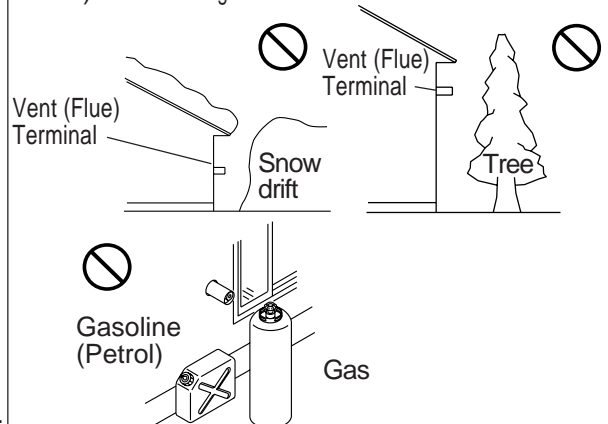
- 2) Install the Vent (Flue) Terminal with a downward slope



- 3) Install with the proper length protruding through the wall



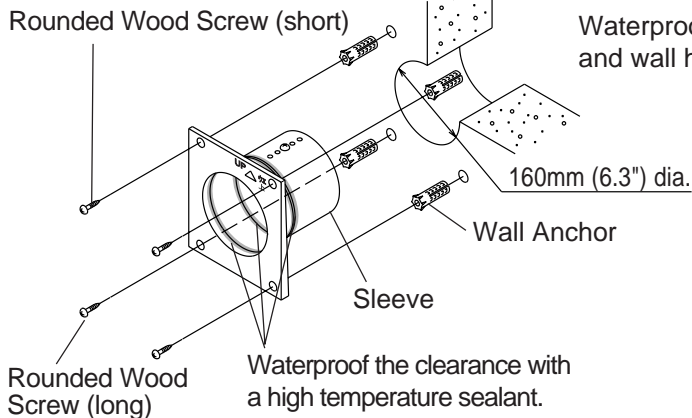
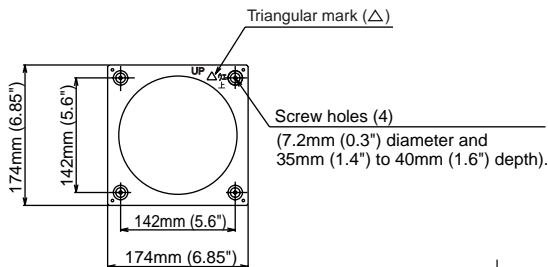
- 4) Avoid installing the terminal where obstacles will block it



4. Vent (Flue) Terminal Installation Procedure

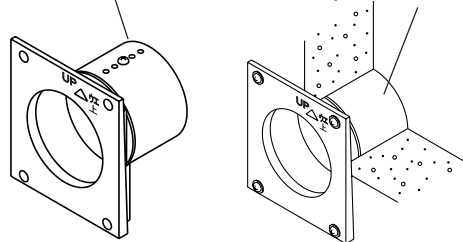
* When drilling, take care not to damage electric wiring, or gas and water piping in walls.

- 1) Determine the Vent (Flue) Terminal installation location and make a 160mm (6.3") diameter hole. Install the Sleeve into the hole with the triangular mark (△) pointing up. Use the Wall Anchors and Rounded Wood Screws.

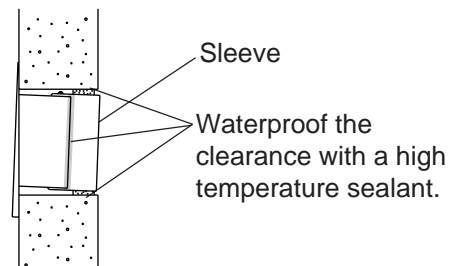


Before installing the Sleeve, adjust its length to suit the wall thickness.
(The length can be adjusted in increments of 10mm (0.4").)

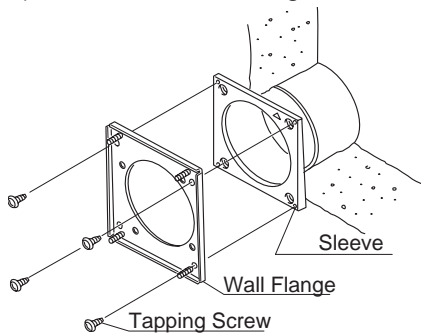
Remove this screw and slide out the External Cylinder until it is flush with the external wall and replace screw.



Waterproof the clearance between the Sleeve and wall hole with a high temperature sealant.



- 2) Attach the Wall Flange to the Sleeve.



* The proper Flange orientation depends on the desired orientation of the Vent (Flue) Terminal.

* Unless the Vent (Flue) Terminal is installed as in option (1) in the chart to the right, the outlet will need to be adjusted in order to ensure it is oriented correctly.

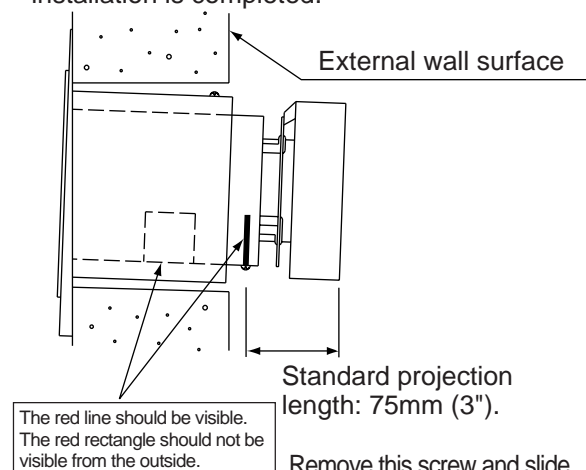
	Terminal Orientation	Flange Orientation	Outlet Orientation
(1)	Up Intake Exhaust Down	174mm (6.9") 210mm (8.3")	Top Bottom
(2)	Up Exhaust Intake Down	174mm (6.9") 210mm (8.3")	Incorrect Correct !
(3)	Up Exhaust Intake Down	174mm (6.9") 210mm (8.3")	Incorrect Correct !
(4)	Up Intake Exhaust Down	The terminal cannot be installed in this orientation.	

3) Adjusting the Vent (Flue) Terminal length

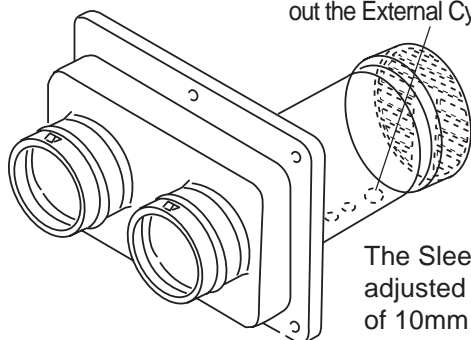
Make sure the Vent (Flue) Terminal has been set to the appropriate length and the outlet is oriented correctly to prevent combustion and operation problems.

The length of the Vent (Flue) Terminal must be adjusted to suit the wall thickness before installation is completed.

Note: If the Vent (Flue) Terminal is installed as in orientations (2) or (3) from the table on the previous page, the Outlet Cylinder will have to be rotated so that it is oriented correctly.



Remove this screw and slide out the External Cylinder.

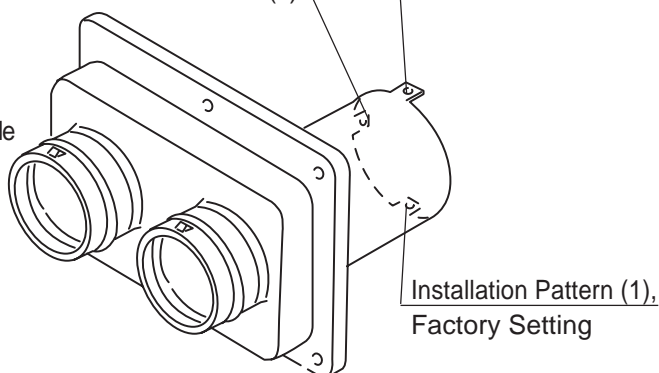


<Screw positions>

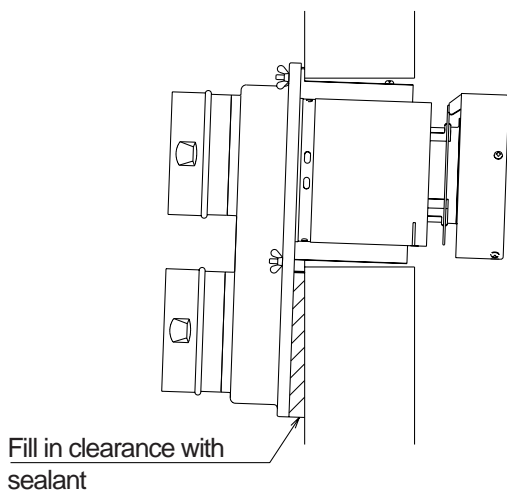
The following figure shows the points to screw the cylinder to for the different installation orientations.

Screw position for Installation Pattern (3)

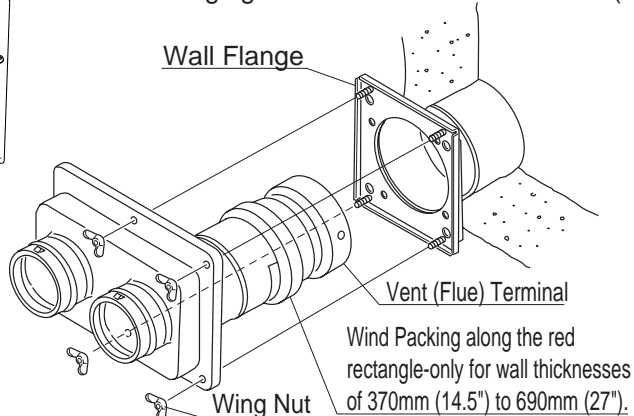
Screw position for Installation Pattern (2)



4) Attach the Vent (Flue) Terminal to the Wall Flange.



The following figure shows Installation Pattern (1).



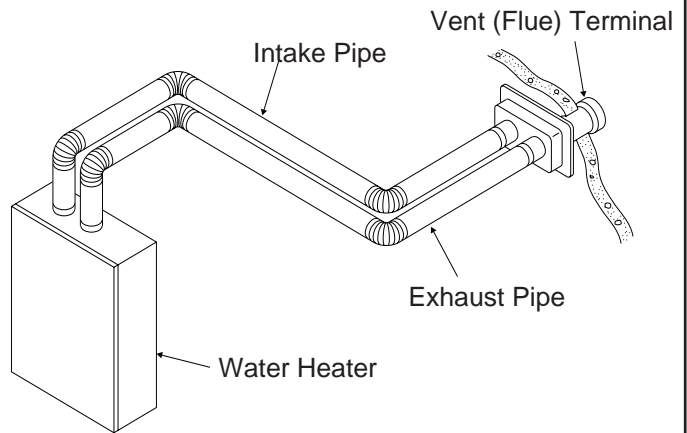
* Installation Pattern (3) creates a clearance between the Vent (Flue) Terminal and the wall surface. Fill this clearance with a high temperature sealant.

5) Connect the heater and Vent (Flue) Terminal using 100mm (4") diameter supply and Exhaust Pipes.

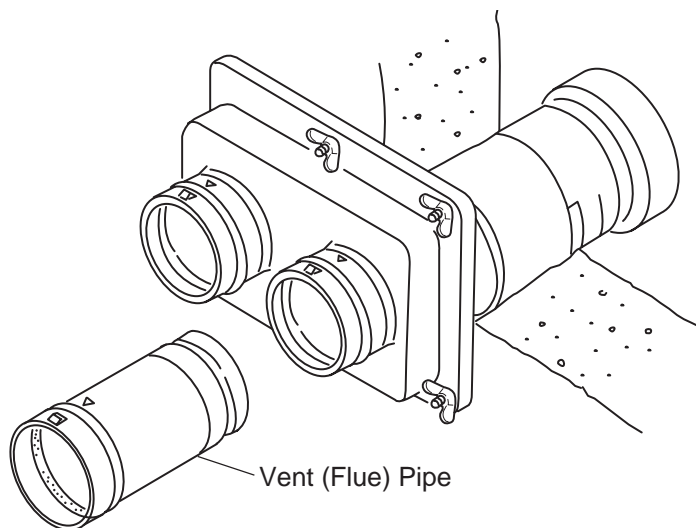
Make sure the connections are secure and take measures to prevent exhaust gas from leaking.

Seal any connections that are not gas tight using a high temperature silicone sealant.

VT4-TL-5 to 27 only
Use Category III
listed Vent (Flue) Pipe approved to
UL 1738.



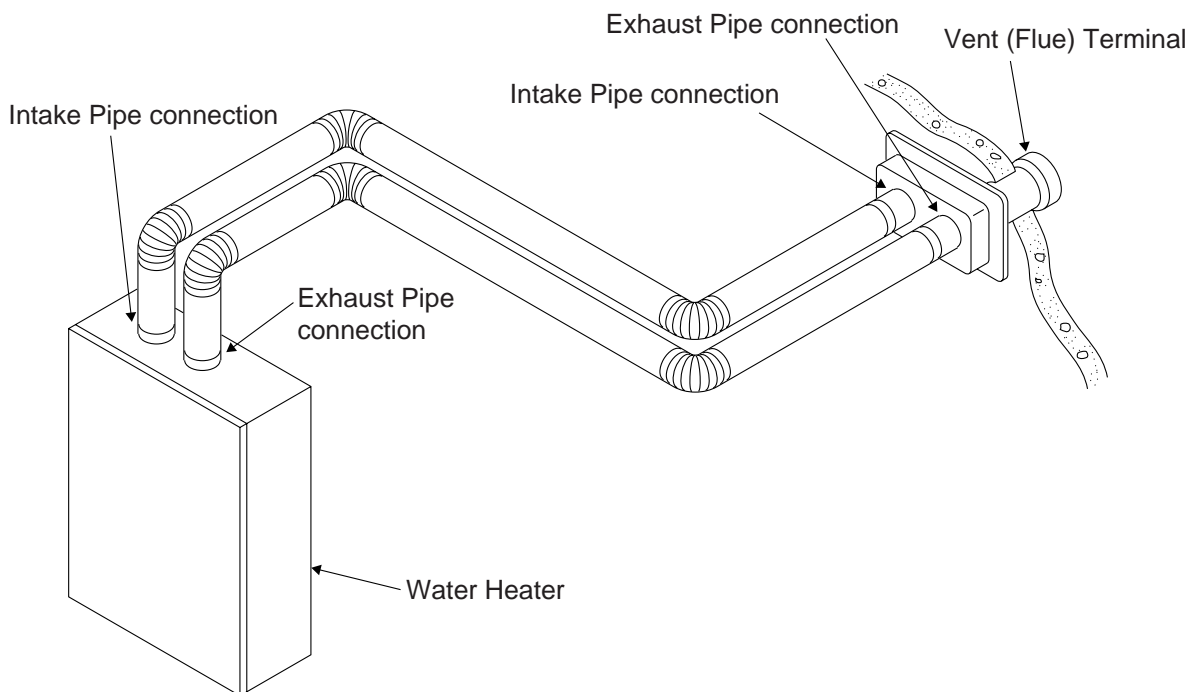
Connect the Vent (Flue) Pipe to the Vent (Flue) Terminal as follows:



Insert the Vent (Flue) Pipe into the Socket on the Vent (Flue) Terminal (about 40mm (1.6")) and then seal with Aluminum Tape.

Caution: ensure the O-ring is not damaged during this process.

5. Installation Overview



Vent (Flue) Pipe installation precautions

- Do not extend the Vent (Flue) Pipe longer than the maximum limits as stated in the installation manual. Vent (Flue) Lengths longer than the stated maximum are dangerous and may cause a fire or explosion.
- Avoid installing the Vent (Flue) Pipe in an enclosure if possible.
- Do not install a damper on the Intake or Exhaust Pipe.
- Do not install the Vent (Flue) Terminal indoors.
- Use 100mm (4") diameter Vent (Flue) Pipe from the Water Heater to the Vent (Flue) Terminal.
- Make sure that the Vent (Flue) Pipe is sealed gas tight and is securely connected so that it cannot be easily dislodged.
- Make the vertical section of the Vent (Flue) Pipe as short as possible (1m (3 ft.) or less is recommended.)
- Support the Vent (Flue) Pipe at appropriate intervals with hangers. The installer must prepare the hanger for 100mm (4") diameter Vent (Flue) Pipe, where necessary. Refer to the Vent (Flue) Pipe manufacturer's installation instructions for the proper dimensions.
- Steam or condensed water may drip out of the Vent (Flue) Terminal. Dispose of this condensed water according to local codes in order to prevent injury or property damage.

VT4-TL-5 to 27 only

- Use only UL 1738 listed Category III Vent (Flue) Pipe.

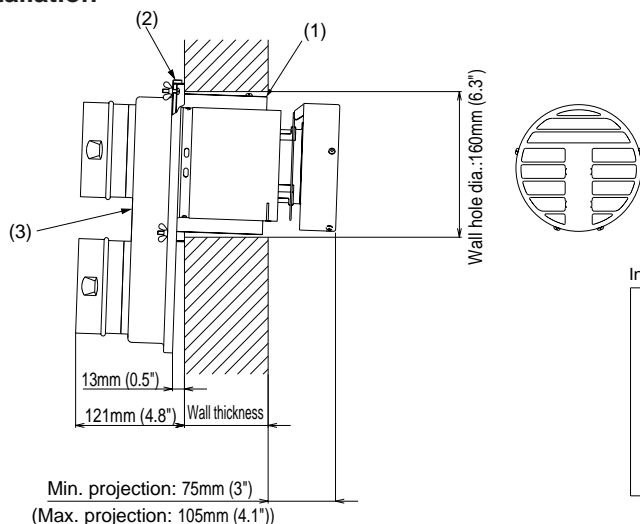
Protection from condensed water accumulation

- Slope the Intake and Exhaust Pipes at a 1/50 grade down towards the Vent (Flue) Termination.
- Avoid sags or slack in the Vent (Flue) Pipe.
- If the Vent (Flue) Terminal is as be installed higher than the Water Heater, ensure the vertical section directly above the Water Heater is as short as possible, and slopes down to the terminal. Do not have another vertical section after the horizontal section begins.

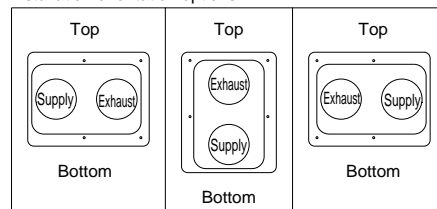
6. Dimensions

After installation

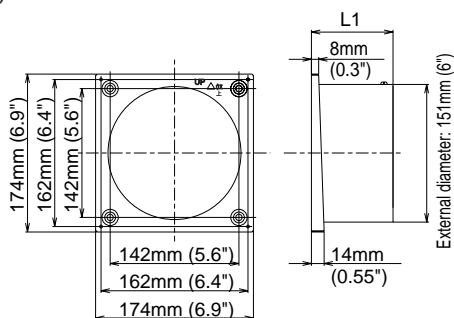
(Unit: mm (inch))



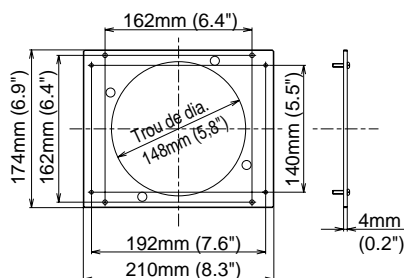
Installation orientation options



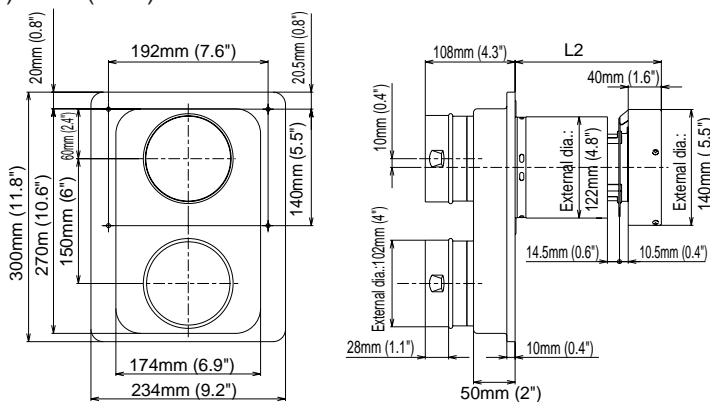
(1) Sleeve



(2) Wall Flange



(3) Vent (Flue) Terminal



Dimension Table

(mm)

Model Numbers	Wall Thickness	L1	L2
FF-100-100	90 to 130	90 to 130	176 to 216
FF-100-200	130 to 210	130 to 210	216 to 296
FF-100-400	210 to 370	210 to 370	296 to 456
FF-100-700	270 to 690	270 to 690	456 to 776

Note: L1 and L2 can be adjusted in increments of 10mm.

Dimension Table

(inch)

Model Numbers	Wall Thickness	L1	L2
VT4-TL-5	3.5 to 5	3.5 to 5	7 to 8.5
VT4-TL-8	5 to 8	5 to 8	8.5 to 12
VT4-TL-14	8 to 15	8 to 15	12 to 18
VT4-TL-27	15 to 27	15 to 27	18 to 30.5

Note: L1 and L2 can be adjusted in increments of 0.4 inch.