

Rinnai

Installation guide

INFINITY[®] gas hot water heater internal flueing



Important:

Rinnai INFINITY[®] gas hot water heater flueing shall be installed in accordance with:

- Manufacturer's installation instructions
- Local regulations and municipal building codes

Installation, servicing and repair shall be carried out only by authorised personnel.

Owner, please retain this guide for future reference.
Installer, please leave this guide with the owner.

Warning

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life.

For more information about buying, using, and servicing of Rinnai appliances call: 0800 RINNAI (0800 746 624)

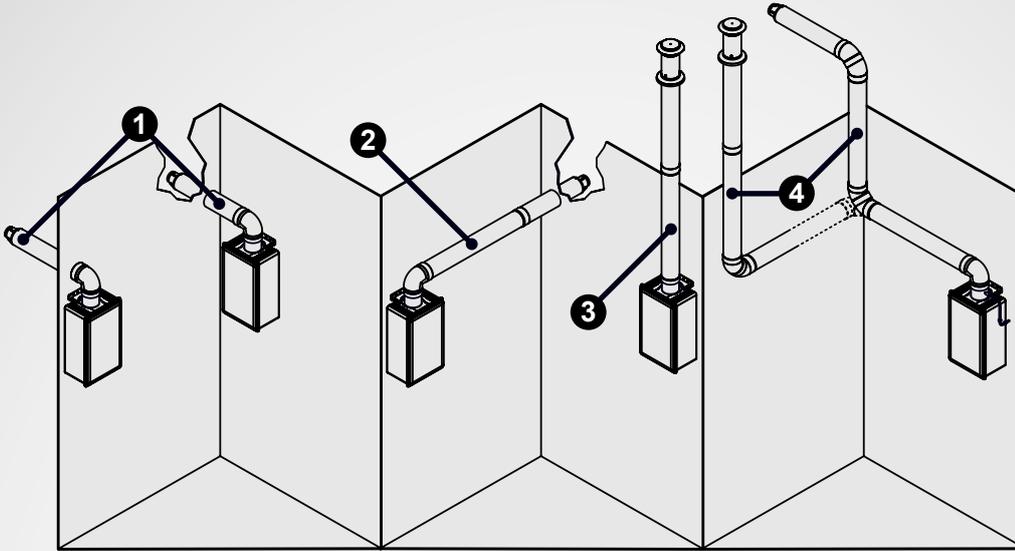
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Flueing options and suitability



- 1 **Direct flueing:** For installations where the internal continuous flow unit is mounted directly on the inside of an external wall with a maximum thickness of 430 mm (EF models) and 485 mm (XR/HD internal models).
- 2 **Horizontal extension flueing:** The same as direct flueing with additional pipe required due to the longer horizontal distance.
- 3 **Vertical straight flueing:** Installations where the internal unit is flued vertically through the roof.
- 4 **Combination vertical and horizontal flueing:** A combination of all the above.

Description

The flueing for internal water heaters is a coaxial design. It has a stainless steel inner pipe to discharge products of combustion and a thermoplastic outer pipe for air supply to the appliance.

The Rinnai INFINITY[®] internal gas hot water heaters are room sealed appliances—sealed from the room as it takes air for combustion from the outside, and expels products of combustion outside. No ventilation in the space where the water heater is installed is required.

Each Rinnai INFINITY[®] water heater is flued individually.

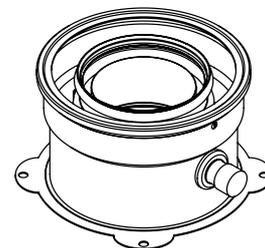
Suitability

The flueing components outlined in this guide are suitable for the following Rinnai INFINITY[®] models

EFi250	REU-KM3237FFUD
HDi200	REU-VR2632FFUG
HDi200	REU-VRM2632FFUG
HD200i	REU-VRM2632FFUG
HD200ia	REU-VRM2632FFUG
XR26i	REU-VR2632FFUG
XR26ia	REU-VR2632FFUG

Female flue spigot (4913)

All of the 'suitable' models have a female flue spigot at the top of the unit.



Flueing guidelines

Flue gases can reach temperatures up to 200 °C. The flue terminal is to terminate in a location so as not to cause a nuisance, in accordance with AS/NZS 5601.

Flue support

Ensure the flue is fully supported independently of the appliance by use of suitable clips or brackets, in accordance with AS/NZS 5601. Appropriate standoff brackets are supplied with each FFSSROOFCOWL and FFSSPIPE1000.

Flue length

The chart highlights the maximum flue length and number of bends. It also shows the difference between a short and long flue.

For flues over 2 m there is a DIP switch change required—refer commissioning checklist supplied with the appliance. This increases the combustion speed to overcome the additional friction losses.

Vertical terminations.

To ensure products of combustion are cleared, adequate clearance from the building is required.

The flue cowl should have a 500 mm clearance from any part of the building. This also applies to steeped and pitched roofs, which should be clear of the ridge line.

Lesser clearances may provide perfectly adequate flue systems depending on the installation. Minimum clearances are shown in AS/NZS 5601.

Multiple flues

Ensure minimum distances, as shown are maintained.

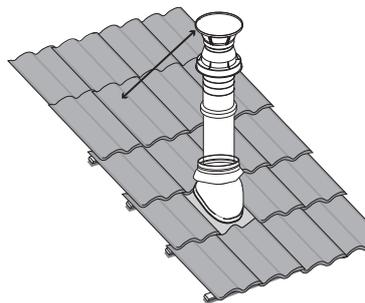
Each terminal is to be terminated at the same vertical height.

		Number of 90° Bends				
		0	1	2	3	4
Flue Length (m)	1	Short flue setting				
	2	Short flue setting				
	3					
	4					
	5					
	6					
	7					
	9					
	11					
	13					
	15					

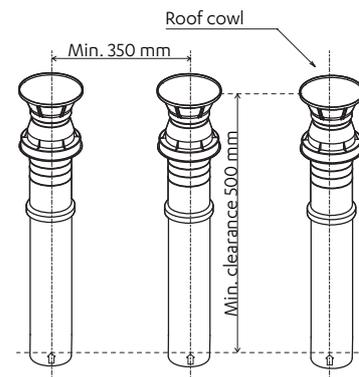
Max. flue length

Flue length table

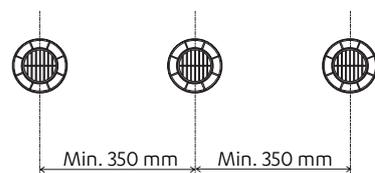
Min. clearance 500 mm to nearest part of roof



Vertical terminal clearance



Multiple flues - vertical flue clearance



Multiple flues - horizontal flue clearance

Flue spigots and condensate

Flue spigots

The newer range of Rinnai INFINITY® internal water heaters all have the female flue spigot attached to the top of the unit.

The older units have a male spigot attached, refer image.

If for some reason old flueing has been installed, but a new unit (refer REU numbers on p. 4) has been purchased, OR an old unit with older flueing needs to be replaced with a newer Rinnai INFINITY® internal water heater, a retrofit male spigot will need to be ordered.

Appliance spigot centres

The wall mounting brackets on internal water heaters are adjustable—refer image.

Condensate

The condensate trap collects any condensate from the flue system and prevents condensate from entering the water heater and causing damage.

Condensate is a by-product of gas combustion and is mildly acidic. For this reason copper tube and fittings **MUST NOT** be used as it will corrode. Instead Rinnai recommend plastic pipes and fittings such as UPVC or PE.

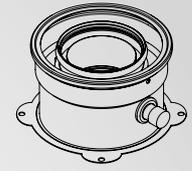
Condensate XR/HD units

A condensate trap kit (FFSSCOND) is required for flue lengths over 1.5 m. If flueing is less than 1.5 m, the spigot on top of the unit is capped using the drain tube cap supplied with the unit. It is only to be removed if the condensate kit is connected.

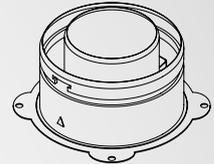
Condensate: EFi250 units

The EFi250 model already has a system to drain condensate, so no additional components are required.

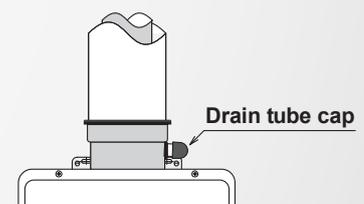
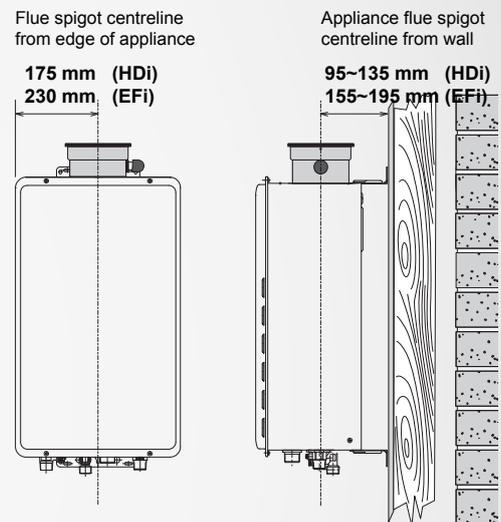
Further information on the condensate drain are detailed in the installation guide of the Rinnai INFINITY® unit.



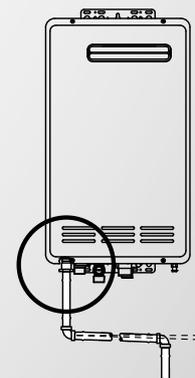
Female flue spigot - part 4913



Male flue spigot - part 4914



Only removed if a condensate kit trap is connected



Condensate EFi250 units

UV roof protectors

The roof cowl comes with two black UV injection moulded pipe sections for covering and protecting the white flue pipe from UV damage.

To install, click together and if required cut to length. If for some reason any remaining white pipe is exposed to UV, this should be painted with a suitable UV resistant coating.

Important

When installing the UV protectors it is critical that the protector sits outside the decktite, not inside. Weathertightness will be an issue if the protector is installed inside the decktite.

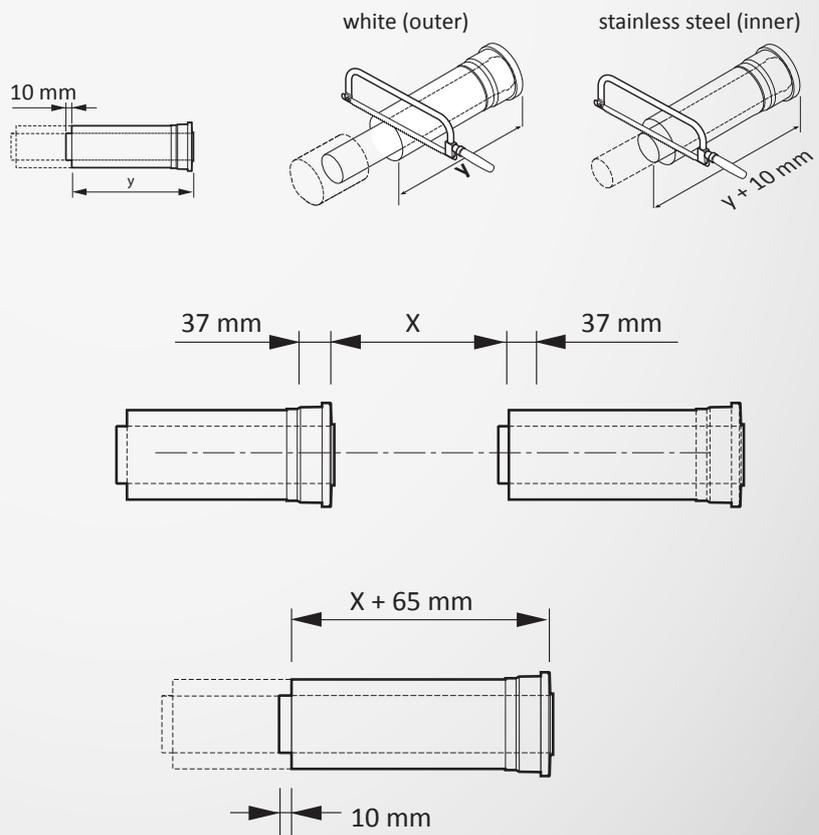


Cutting to size

Pipes overlap by approximately 37 mm. Once joined the effective length reduces by 37 mm. This needs to be factored when cutting to size. Add 2 x 37 mm to extension pipe X.

The inner pipe must always extend 10 mm beyond the outer pipe in the male end of the flue. Always cut the male end of the flue and not the female end.

Deburr sharp edges as this could damage the gasket resulting in a system that is no longer air-tight.



Direct flueing using FFSSKIT

For installations where the Rinnai INFINITY[®] gas hot water heater is mounted directly on the inside of an external wall with a minimum wall thickness of 430 mm (EFi model) and 485 mm (XR/HD internal models).

FFSSKIT contains

- 90° bend
- horizontal flue terminal
- internal rubber white wall trim
- external rubber black wall trim

Horizontal flues **MUST SLOPE** 20 mm per metre to the termination point. Ensure condensate drains appropriately.

Horizontal extension flueing

For installations where the Rinnai INFINITY[®] gas hot water heater is mounted against an internal wall and the flueing needs to be extended for a longer distance horizontally to exit an external wall.

Use FFSSKIT as a starting point and customise with flue pipe (FFSSPIPE1000). More than one flue pipe (can be cut to size) may be required. Total flue length can be up to 13 m.

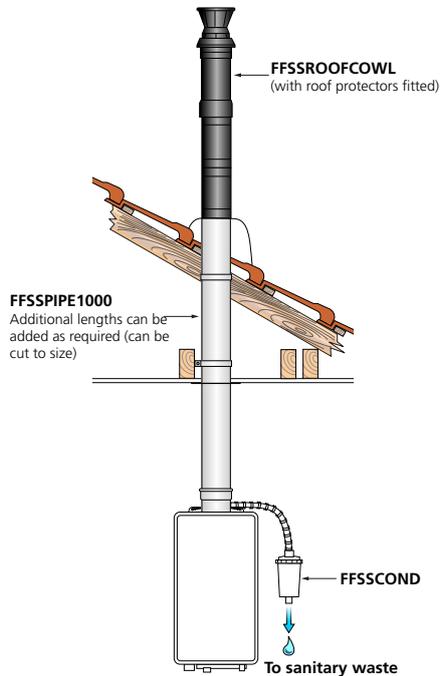
For flues over 2 m there is a DIP switch change required, refer Commissioning Checklist supplied with the appliance.

Condensate can be handled in two ways:

1. 2° fall to the termination point (20 mm per metre), ensure condensate drips will not cause damage.
2. Condensate drains back to the unit that includes a condensate trap kit (FFSSCOND). **Note:** EFi models already have a mechanism for draining condensate so the FFSSCOND is not required.

Vertical straight flueing

For installations where the Rinnai INFINITY[®] gas hot water heater needs to be flued vertically through the roof.

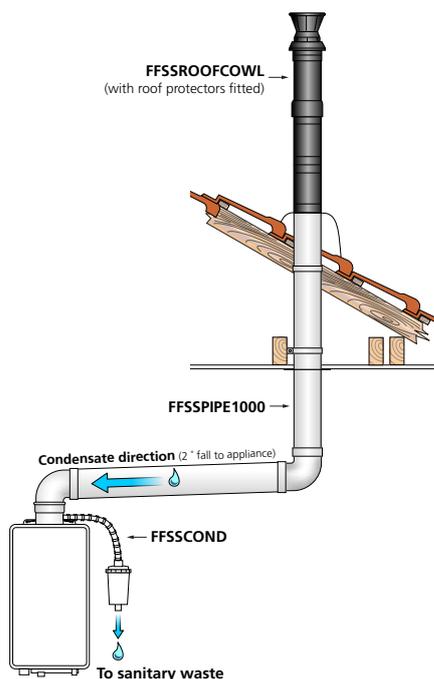


For XR/HD internal units, a condensate trap is required for flue lengths over 1.5 m. Total flue length can be 15 m.

For flues over 2 m there is a DIP switch change required, refer Commissioning Checklist supplied with the appliance.

Combination flueing

Combination of both vertical and horizontal flueing. For XR and HD internal units, a condensate trap is required for flue lengths over 1.5 m.



If starting horizontally and finishing horizontally, use FFSSKIT as a starting point and customise.

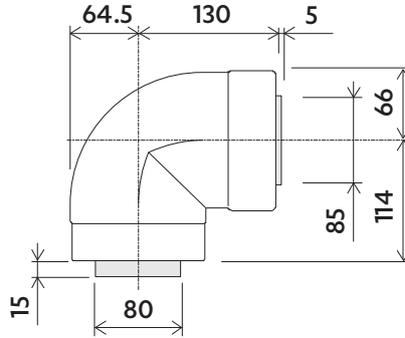
If starting horizontally and ending vertically or vice versa, individual flue components will need to be ordered. Flueing must start with a FFSSBEND90 or FFSSPIPE1000 (can be cut to size).

For flues over 2 m there is a DIP switch change required, refer Commissioning Checklist supplied with the appliance.

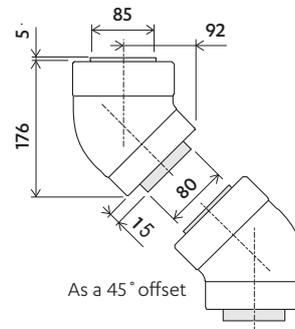
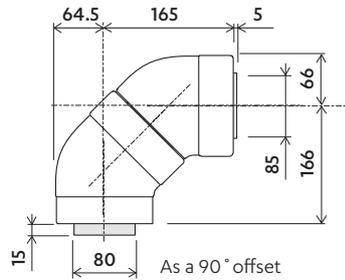
Flue components

All the major flue components are constructed of a PVC outer and a stainless steel inner. These have a zero clearance from combustibles. Flue components with the code SS (stainless steel) cannot be used with older flue components.

90 degree bend (FFSSBEND90)



45 degree bend (FFSSBEND45) - sold as a pair



Black UV roof protectors



Comes with the roof cowl.

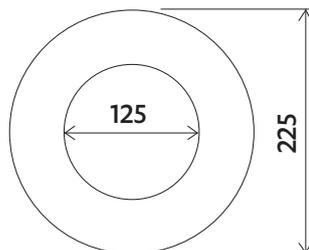
Dimensions:
Length approx. 197 mm
Joined length approx. 347 mm
Diameter 140 mm

Condensate trap kit (FFSSCOND)

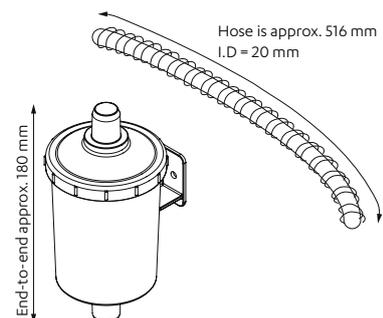
Required for vertical lengths over 1.5 m—HD and XR internal installations only.



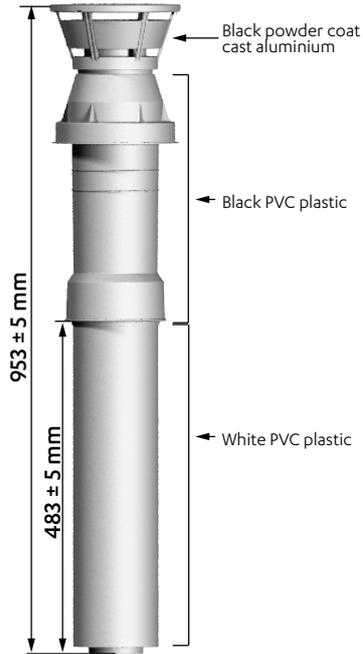
White and black wall trims - comes with the FFSSKIT



Thickness 1 mm



Roof cowl for vertical installations (FFSSROOFCOWL)

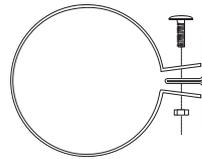


Can be cut to size.

Includes two black injection UV roof protectors for covering and protecting the white flue pipe from UV damage. Also includes a flue pipe clamp (pictured below) to support the flue.

Inner = 80 mm
Outer = 125 mm

Stainless steel inner protrudes from base of roof cowl by approx. 10 mm



Direct flue kit for horizontal installations (FFSSKIT)



Can be cut to size.

Includes a Munzing ring (not pictured) to support the flue.

Dimensions:

Inner = 80 mm
Outer = 125 mm
End to end dimension = approx. 778 ± 10 mm
Wall trim to wall trim = approx. 480 ± 5 mm
Terminal centre to base = approx. 120 ± 5 mm



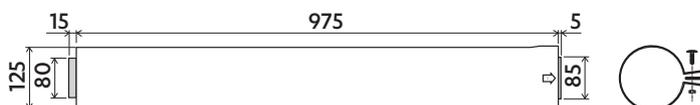
Terminal protrudes approximately 150 mm from the wall.

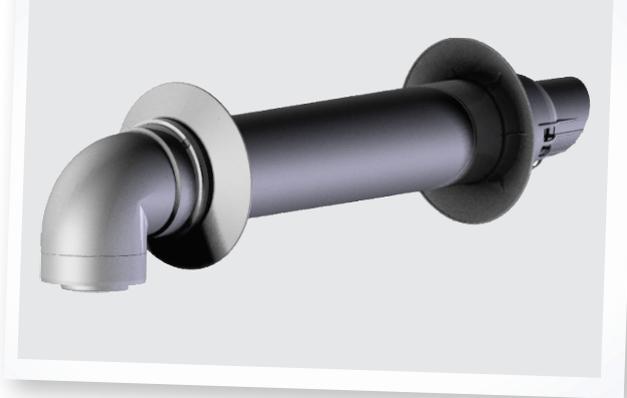
Flue pipe (FFSSPIPE1000)



Can be cut to size.

Includes a Munzing ring to support the flue.





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