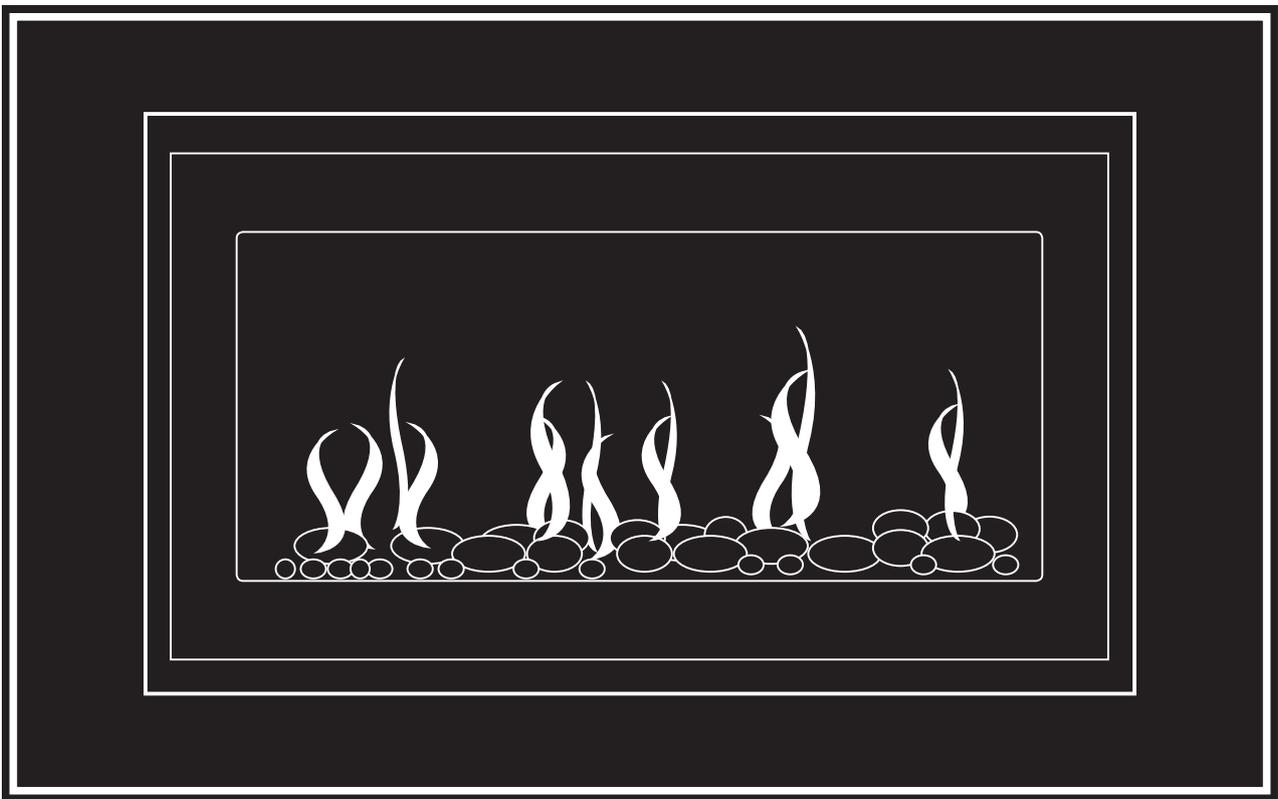


Rinnai

Installation guide

Evolve

Models: RHFE951ETRN/RHFE951ETRL
RHFE1250ETRN/RHFE1250ETRL



Important:

Appliance must be installed with a Rinnai approved flue system.

This appliance shall be installed in accordance with:

- Manufacturer's installation instructions
- AS/NZS 5601 Gas Installations
- Local regulations and municipal building codes

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

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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Before you start

Unpack the appliance and components and check for damage. DO NOT install any damaged items. Check all components have been supplied and that you have the correct gas type.

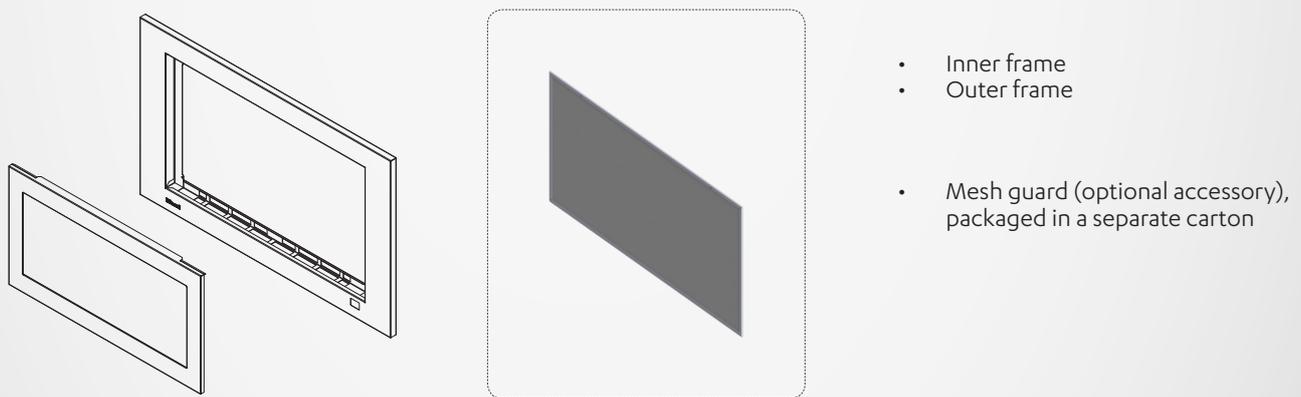
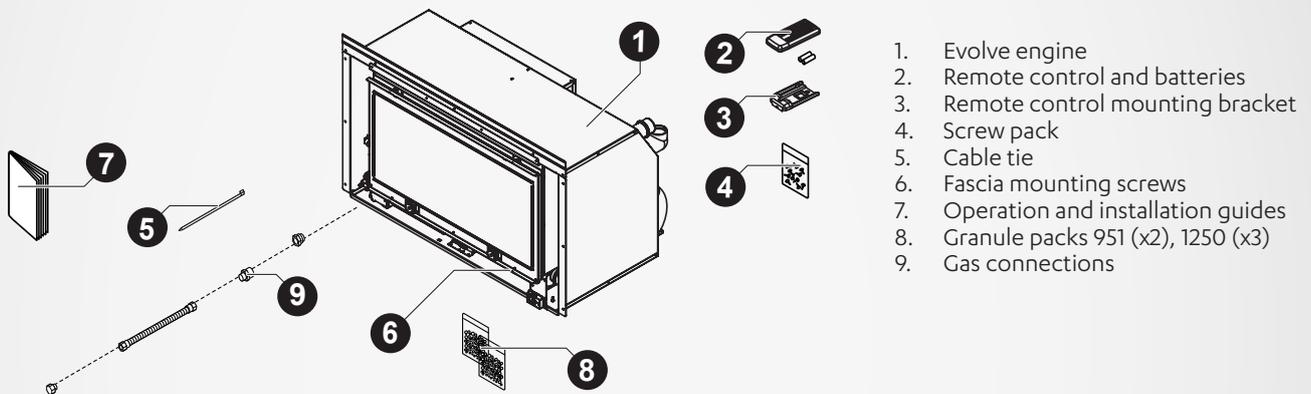
Read these instructions to get an overview of the steps required before starting the installation. Failure to follow these instructions could cause a malfunction of the appliance. This could result in serious injury and/or property damage.

Flue installation guide

These instructions are to be used in conjunction with the Rinnai Arriva and Evolve flue installation guide supplied with the flue kits.

Carton contents

The components for the Evolve are supplied in three separate cartons (four if a mesh guard is purchased). Ensure all the components are supplied before starting the installation.



Log set OR river stone set.

Images shown are for the 951 model. The Evolve 1250 log set has an extra two logs (10 in total), and the stone set contains an extra 10 stones (40 in total).

Specification

Evolve

Specification summary

Input	= 10-34 MJ/h
Output	= 2.4-8.13* kW
Efficiency	= 86% (on high)
Heating area	= 82-125 m ² **
Gas type	= NG or ULPG

Inbuilt exhaust balance flued convection flame fire with electronic temperature control, timer and remote.

Suitability

Ideal for living rooms and open plan areas. Versatile power flue system makes for easy installation in almost any living space, including bedrooms.

The Evolve is ideal for a new build installation into a false (mock) chimney.

Data plate

Located inside the appliance, upper right hand side.

Convection fan

2-speed centrifugal, double diameter 160 x 180 mm.

Gas connection

½ " BSP, the gas supply terminates inside the heater—lower left hand side of the appliance.

Ignition

Continuous spark electronic ignition.

Installation considerations

Room size—smaller rooms will heat up quickly, and due to the efficiency of the appliance, the heater (if auto off is selected) will turn to a low flame setting once the set temperature has been reached.

Noise level - 37-45 dB(A)

Power flue

Inner 50 mm, outer 70~80 mm. Appliance must be installed with a Rinnai flue system.

Power consumption/electrical supply

High = 90 W
Standby = <8 W

This heater has a 1.5 m power cord with a three pin plug supplied. The power cord passes through a slot in the back right hand corner of the appliance.

Safety devices

Flame failure sensing system, pressure relief, overheat safety switch, air temperature sensor, thermal fuse, overcurrent fuse, and spark detector.

Temperature control

Thermostatic, temperature control range 16-26 °C.

Weights

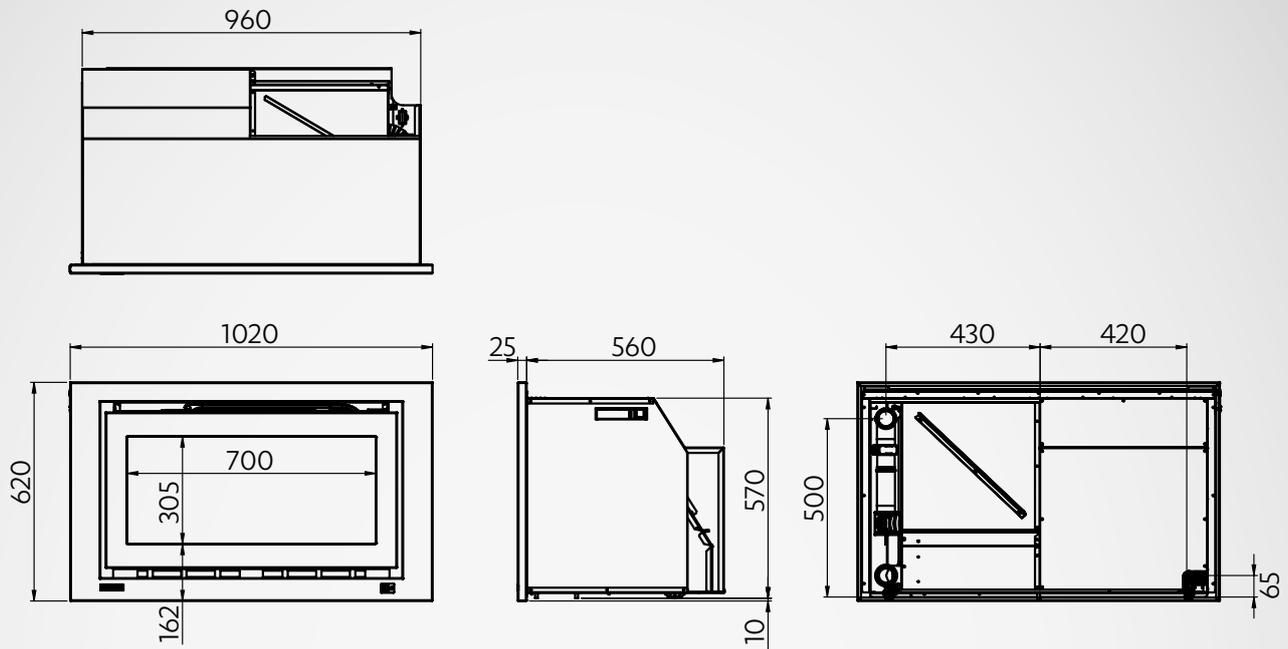
- Evolve 951: 75 kg
- Evolve 1250: 100 kg

* Will vary according to gas type and flue configuration ** Will vary depending on geographical location in NZ

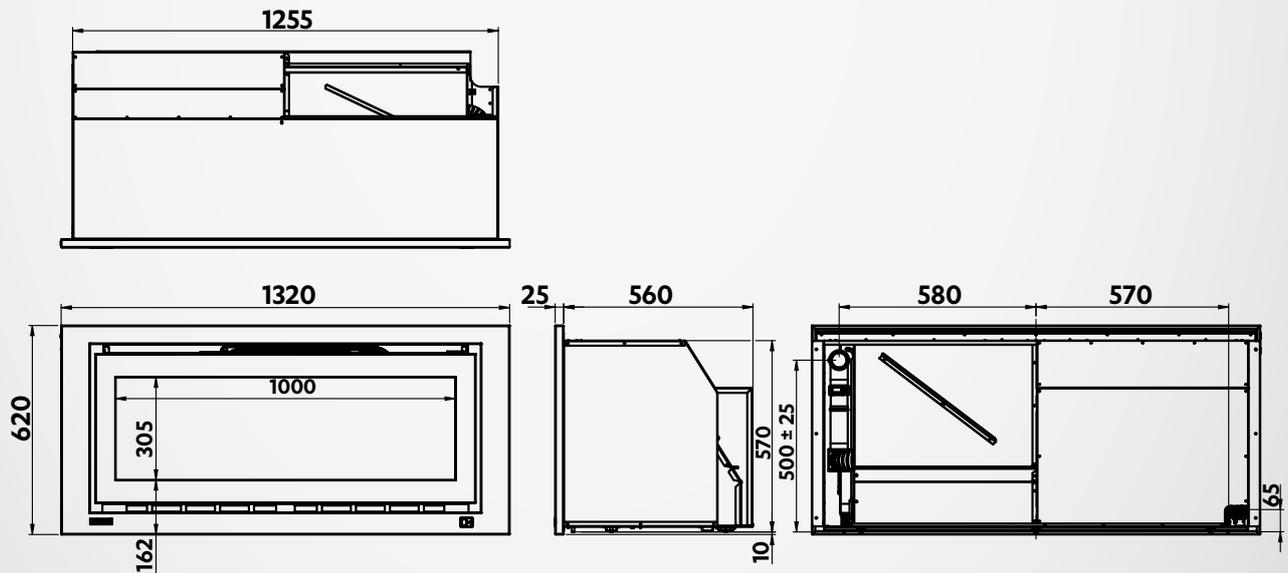
Dimensions

All dimensions are in mm.

Evolve 951



Evolve 1250



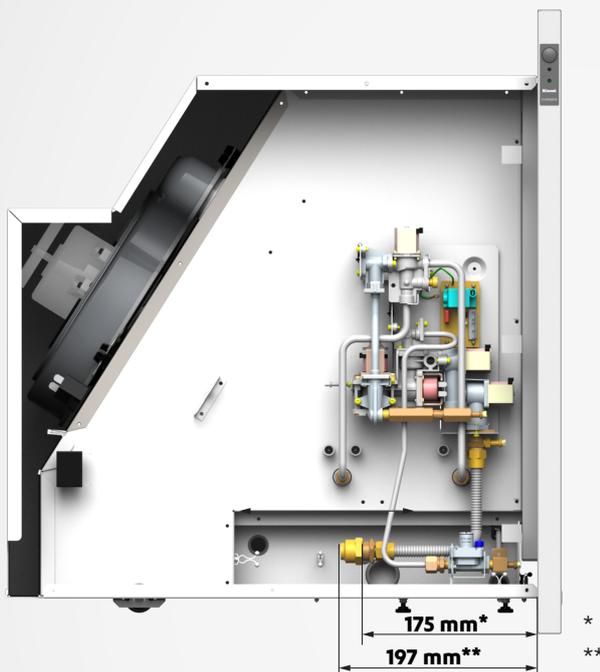
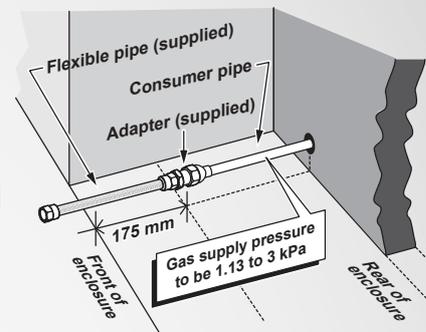
Gas supply

Gas pipe sizing must consider the gas input to this appliance, as well as other gas appliances in the premises. The gas supply termination is inside the heater, and enters from the lower left hand side of the appliance.

To ensure correct positioning terminate the gas supply so it is 175 mm in from the front face of the enclosure opening.

Purging the gas supply

Foreign materials and debris such as swarf, filings etc. must be purged from the gas supply. Failure to do so may cause damage to the control valve causing it to malfunction.

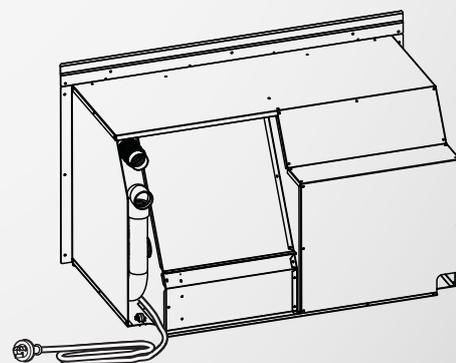


* Where copper pipe ends
** With RNZ supplied adaptor

Electrical supply

This heater has a 1.5 m power cord with a three pin plug supplied. The power cord passes through a slot in the back right hand corner of the appliance.

Rinnai recommend the heater be plugged into a 230 V, 10 A earthed power point. The power point must not be above the heater. Alternatively the appliance can be direct wired if the power supply is to be concealed. Consult a qualified electrician if direct wiring is required as it must comply with AS/NZS 5601.1 and AS/NZS 3000 and other relevant local regulations.



Wall penetration

Direct flue wall penetration requirements

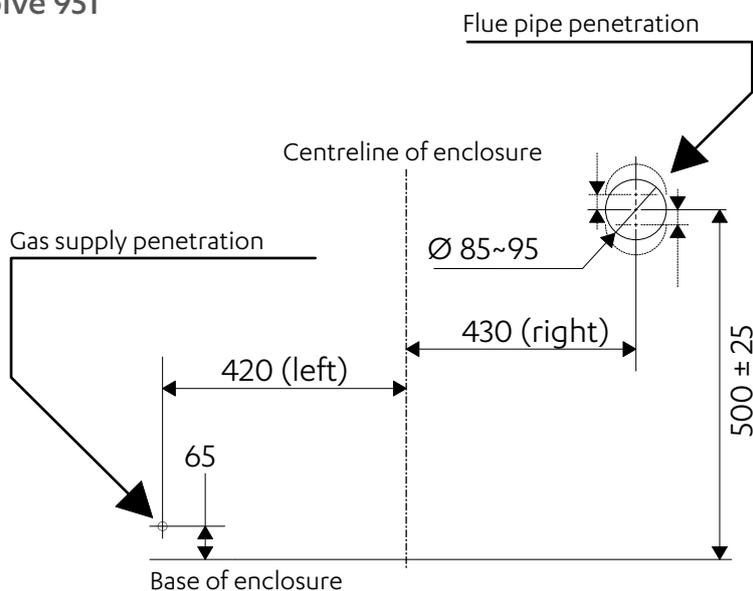
Use the guide pictured to mark the penetration points for the gas supply and flue transition locations. Consideration must be given to the position of any studs, noggins or other components of the wall structure on both sides of the wall. Mark these measurements accurately as this is critical to a successful installation.

The penetration for the flue transition only needs to be made for direct flue installations, where the terminal is directly to the rear of the appliance. If no flue pipe penetration is required the markings are still useful for indicating the correct position of the flue transition within the enclosure for other flue applications.

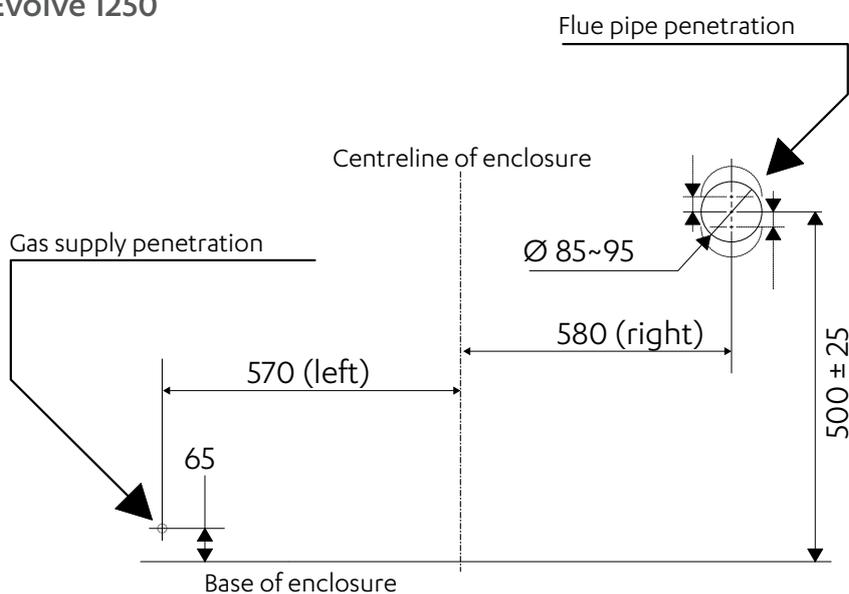
For weatherboard walls, drill through the centre of the weatherboard from the outside, then drill from the inside through the plaster board.

Dimensions are in mm.

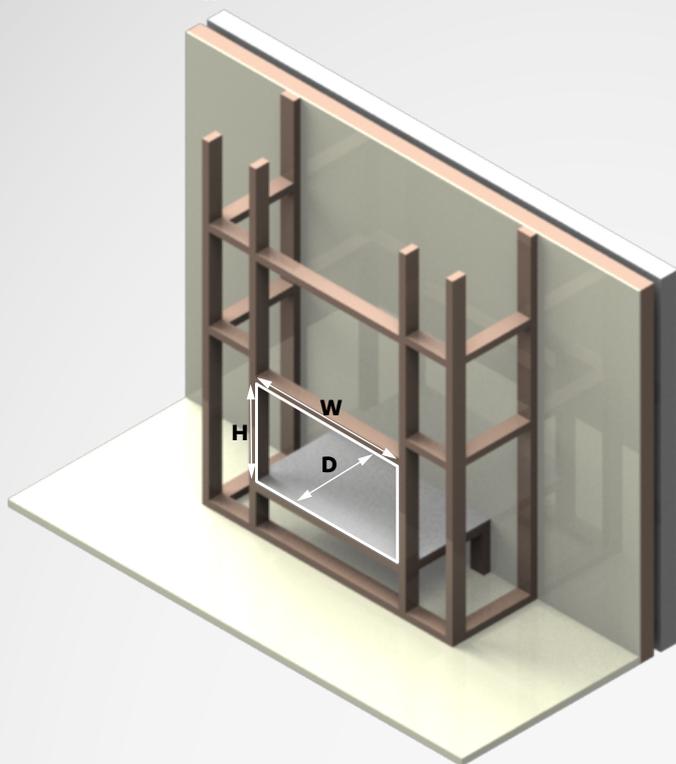
Evolve 951



Evolve 1250



Framing dimensions



Enclosure dimensions

	951	1250
W-width	965-980 mm	1265-1280 mm
H-height	570-580 mm	570-580 mm
D-depth	570 mm min.	570 mm min.

The main points governing location are flueing and warm air distribution. The Rinnai Evolve has an integrated zero clearance box that isolates the appliance from combustible materials. This means it can be installed directly into a decorative fireplace constructed from materials such as wood or plaster.

The heater must be positioned within the enclosure on a flat level surface that allows free movement of the appliance. The joists used to support the appliance off the ground must be capable of supporting a minimum of 1.5 times the weight of the appliance. Wheels located at the rear of the heater allows the unit to slide in and out of the enclosure for installation and maintenance.

Please note

Depending on the type of flue being installed additional nogs may be required so the wall straps in each flue kit can be securely attached. The additional bracing of the frame is normally completed by the gasfitter.

Clearances from combustibles

The clearances listed below, measured from the **edge of the glass**, are minimum clearances unless otherwise stated.

While the heater is operating

The appliance must not be installed where curtains or other combustible materials could come into contact with the heater.

The 1000 mm clearance above is the clearance to the ceiling.

Mantels and surrounds

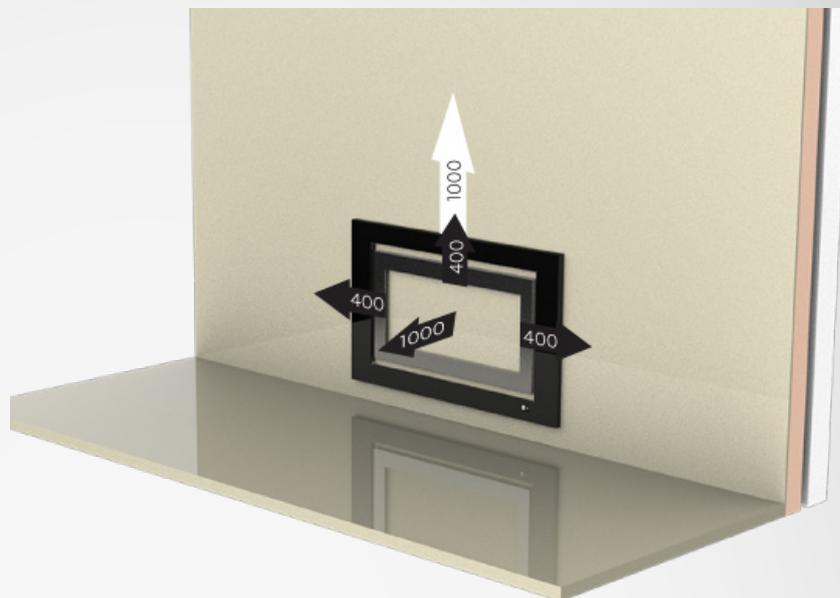
Combustible mantels and surrounds require clearance from the fire to minimise fire danger. Mantels and surrounds, made of combustible materials such as wood, are allowed providing they are outside the minimum clearances shown.

Hearths

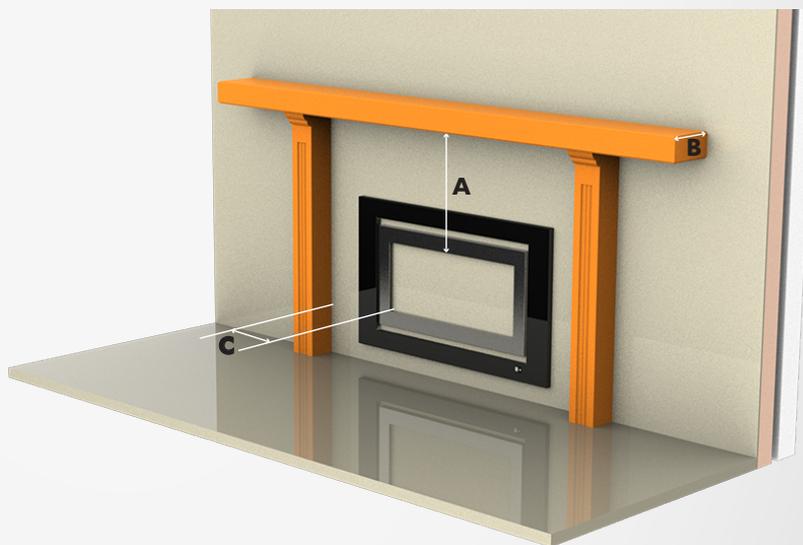
A hearth is not necessary but can be used for decorative purposes or protection of sensitive flooring. A hearth must not obscure the front of the fire.

Floor protection

Heat emanating from this fire may over time affect the appearance of some materials used for flooring, such as, carpet, vinyl, cork or timber. This may be amplified if the air contains cooking vapours or cigarette smoke. To avoid this occurring, it is recommended that a mat be placed in front of this appliance.



Note: Measurements are taken from the edge of the glass. The 400 mm side clearance includes side walls.

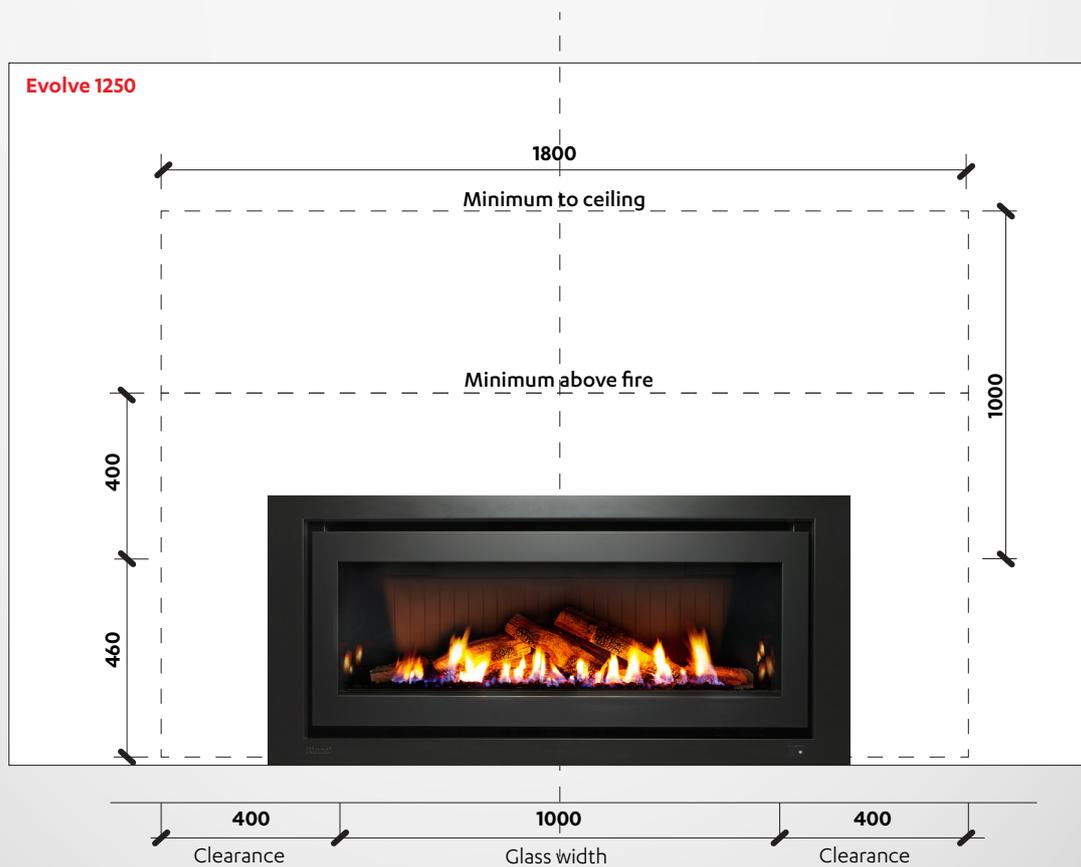
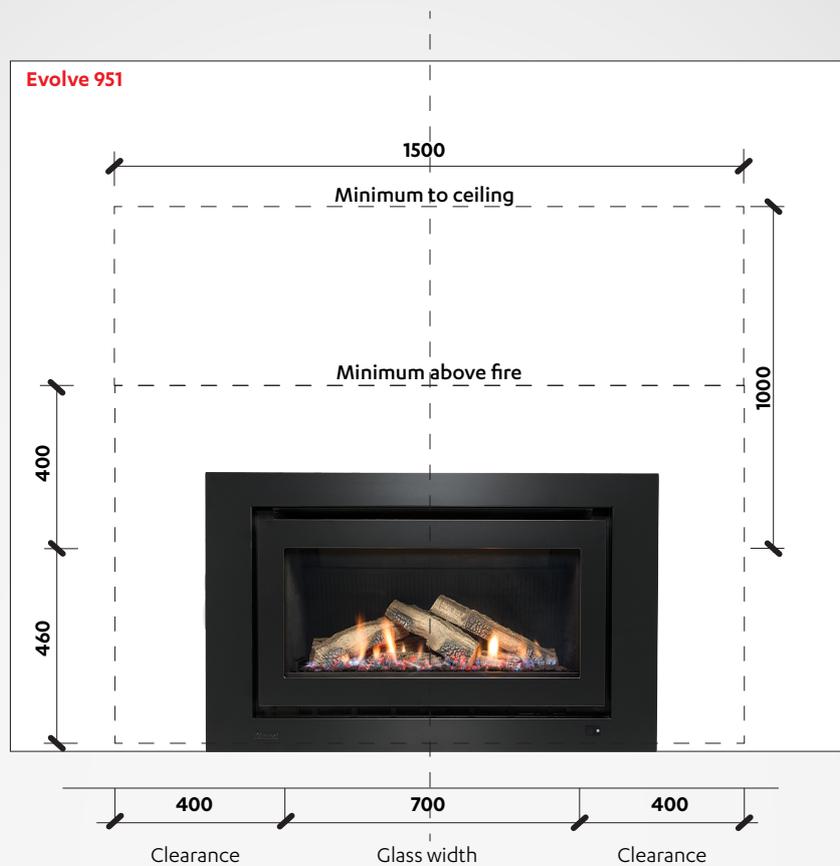


- A** Mantel needs to be a min. of 400 mm away from the edge of the glass.
- B** Maximum mantel depth at 400 mm (A) is 250 mm maximum.
- C** Surround needs to be a minimum of 400 mm away from the edge of the glass.

For every 50 mm of added mantel depth there must be an additional 100 mm of clearance from the edge of the glass. For example:

MANTEL DEPTH	A: CLEARANCE REQUIRED
300 mm	500 mm
350 mm	600 mm
400 mm	700 mm

The below diagrams are to assist people who are determining the clearance area around the Evolve without having the unit on site.



TV installation

The Evolve has a fan that distributes warm air from the top of the appliance out into the room. As warm air is dispersed outwards, as opposed to directly upwards, installation of a TV may be an option.

The diagram shows recommended clearances when installing a TV directly above the Evolve, or into a recess. All dimensions are in millimetres.

400 mm dimension

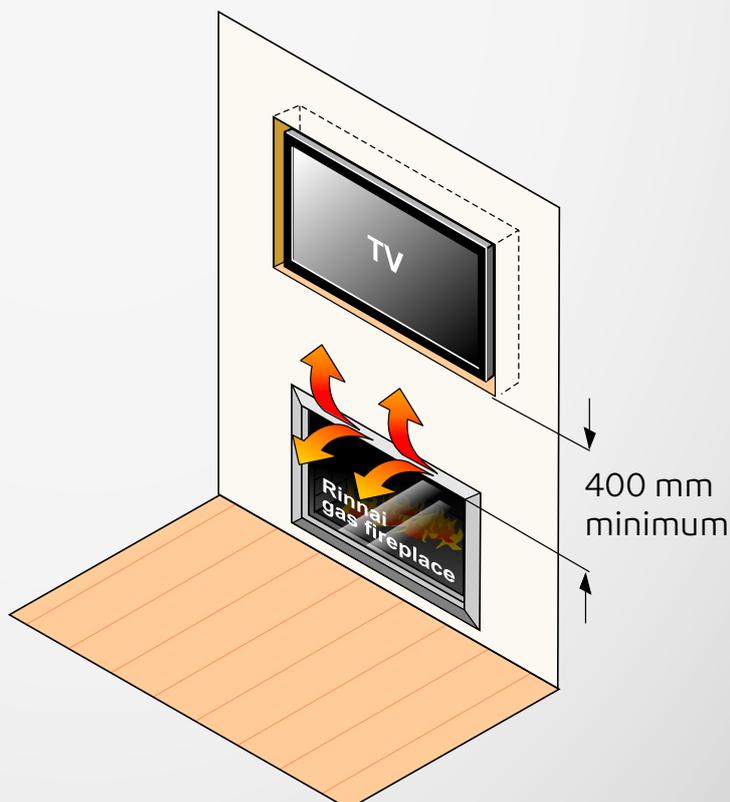
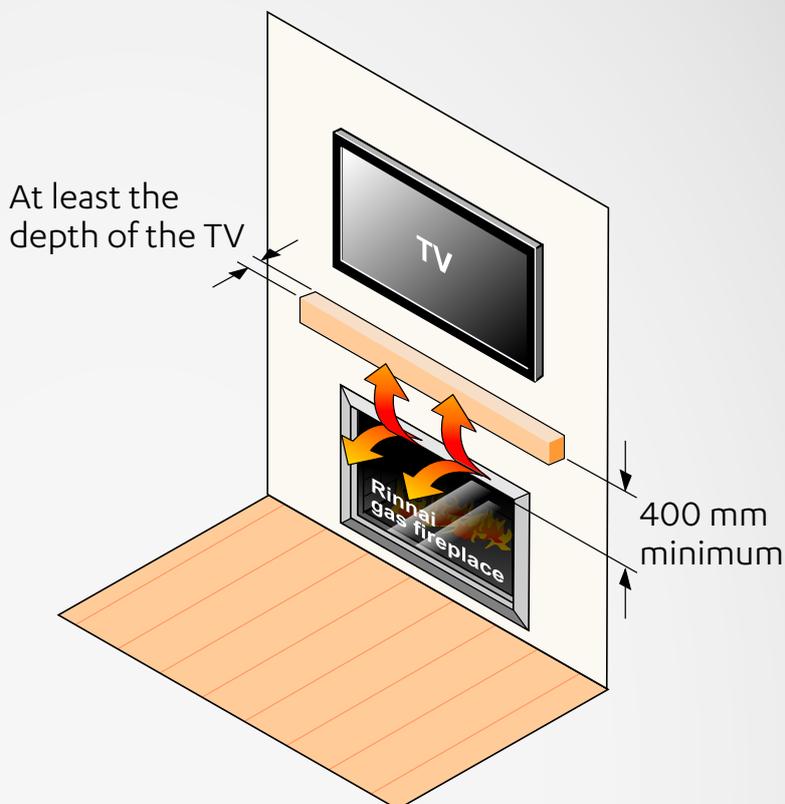
The 400 mm dimension is the minimum clearance required to a mantel. The image adjacent shows the dimension from the edge of the frame, in the case of the Evolve the 400 mm dimension can be taken from the edge of the glass.

For a TV mounted directly above the unit, the mantel must be at least the depth of the TV to deflect heat away.

Always check with the TV manufacturer

It is up to the owner to check the TV installation with the TV manufacturer—some have warranty conditions that state a TV is not to be installed above a fireplace.

Rinnai does not accept any responsibility for damage to a TV resulting from the use of this information.



Flueing options

The below options detail the most common types of flue installations. If you have an installation that varies from those below, please contact Rinnai. For further detail on each of the options refer to the Arriva and Evolve flue installation guide.



Direct and direct extended flueing

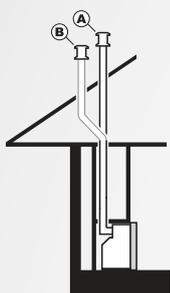
Direct through-the-wall flueing for walls up to 385 mm thick. Flue can be extended if the wall thickness is greater than 385 mm by using the ASPDFK flue kit and additional lengths of ESPIPE900.

Arriva flue components

- Direct A flue (R2731), or
- Direct B flue (R2732), or
- Direct flue (ASPDK)

Evolve flue components

- Direct flue (ASPDK)



In-wall vertical flueing

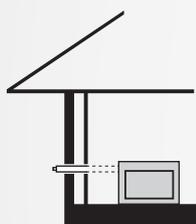
The vertical in-wall flue installation is installed against an internal wall within a false fireplace or other suitable cavity, and is run vertically upwards to a termination point.

Vertical in-wall direct (A)

- Adaption flue kit*
- Flue pipe (ESPIPE900)
- Roof cowl (ESROOFCOWL)

Vertical in-wall offset (B)

- Adaption flue kit*
- Flue pipe (ESPIPE900)
- 45 ° bends (ESBEND)
- Roof cowl (ESROOFCOWL)



Sideways flueing

The sideways flue installation can run along the left or right hand side of the internal wall behind the heater. When considering the location of the fire ensure the flue path is free from obstructions such as studs, noggins, wiring, joists etc.

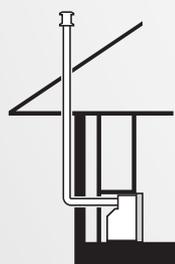
- Adaption flue kit*
- Flue pipe (ESPIPE900)
- Wall terminal (ESWTERM)



Down-and-out flueing

The down-and-out flue option allows for the adaption flue kit to face downwards and for the flue to run vertically through a hole in the floor, and then terminate horizontally outside (must be 300 mm above ground).

- Adaption flue kit*
- Flue pipe (ESPIPE900)
- Wall plate (ESPLATE)
- 45 ° bends (ESBEND)
- Wall terminal (ESWTERM)



Through-wall vertical flueing

For the small number of instances where the appliance cannot be directly flued or flued via an internal wall. In some cases a large portion of the flue may be visible from the outside.

- Direct flue (ASPDK)
- 45 ° bends (ESBEND)
- Flue pipe (ESPIPE900)
- Condensate trap (ESCONDK)
- Roof cowl (ESROOFCOWL)

* Adaption flue kit: Arriva use ASPKIT03, Evolve use EVOKIT03

Maximum flue length - 8.5 m

Maximum number of bends - three

One 90 ° bend = 1 m

For every 90 ° bend the overall length must be reduced by 1 m. For example, if an installation has three 90 ° bends, the maximum flue length can be 5.5 m. The ASPKIT03/EVOKIT03 is counted as one 90 ° bend.

Evolve installation overview



1. Construct frame as per enclosure dimensions on p. 9.



2. Line wall—could also plaster at this stage.



3. Complete the gas connection refer p. 7. Electrical supply can also be completed at this point.



4. Connect flue system.



5. Install heater into enclosure*, screw to frame, and complete gas, air hose, and flue connection p. 16.



6. Install burn media, refer p 18-23.



7. Commission unit, refer p. 24.



8. Install outer frame, mesh guard (if purchased), and inner frame refer p. 25.



9. Test operation and lighting sequence, refer p. 26.

Installation checklist

The installer must complete the installation checklist below and make sure this guide is left with you. They must also instruct you about the use and care of the appliance, and ensure you understand the safety instructions.

Checklist

- Appliance positioned in a suitable location (clearances, mantels, surrounds etc.).
- Rinse flue system installed and tested to ensure effective draw.
- Gas pressure checked, set, and down rated (if applicable) according to data plate instructions.
- Burn media installed as per instructions.
- Appliance tested for correct operation and to ensure no gas leaks.
- Customer instructed on operating procedure and safety requirements.
- Customer advised to service the heater every two years.

11. Complete installation checklist in operation guide and complete customer handover—add a touch of magic!

* Two hand-holds, either side of the unit, have been added to help move and lift the fire into place.



Connect flue system

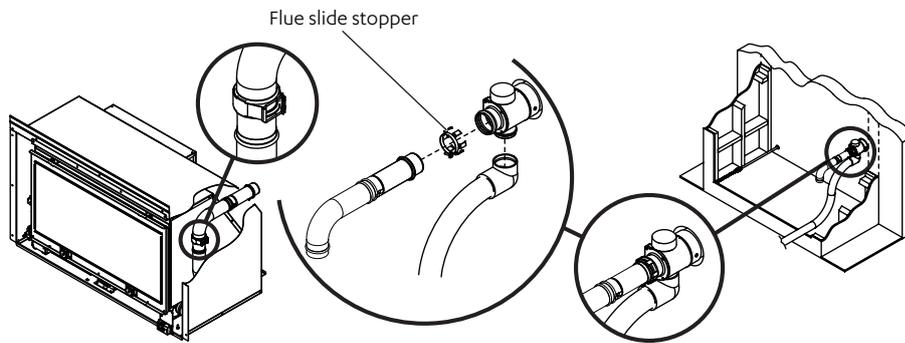
Consult the Rinnai Arriva and Evolve flue installation guide supplied with the Arriva/Evolve flue kits for detailed flue installation instructions. For connection of the flue to the heater refer information below.

Removing the pipe clamp, extension tube and exhaust pipe

Before installing the heater into the enclosure the pipe clamp, telescopic extension tube, and exhaust pipe need to be removed so there is room to connect the flue system.

1. Undo the pipe clamp and remove the telescopic extension tube from the exhaust pipe.
2. Secure the telescopic extension tube to the flue system with the exhaust pipe lock.
3. Attach the air hose to the flue transition and secure with the cable tie provided.

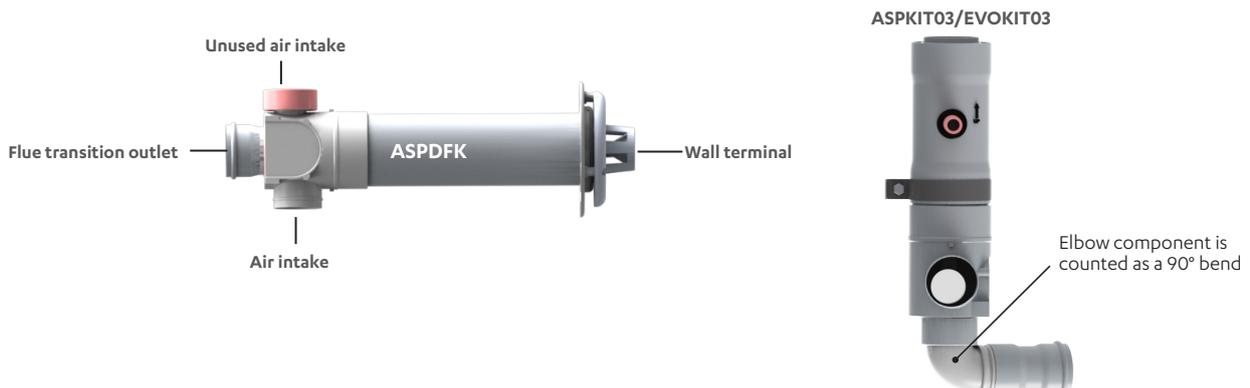
Please note that in the adjacent image in step 4 the air hose is already connected to the flue. It is much easier to connect the air hose to the unit than to connect the air hose to the flue once the heater is in place. Ensure the air intake hose of the heater is properly secured to the air connection on the flue system using the cable tie provided, and that the rubber seal is placed on the unused air intake connection.



The exhaust pipe lock is provided with the ASPDFK and EVOKIT03 flue kits

Flue transition (ASPDFK, EVOKIT03)

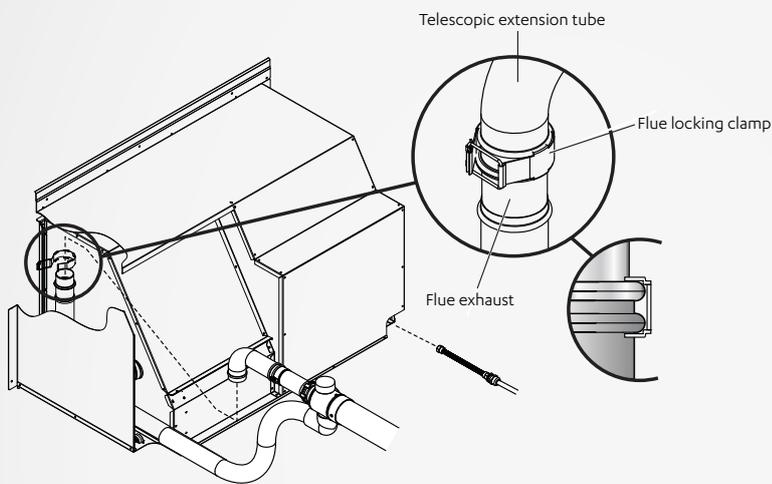
The flue transition provides a connection between the flue system and the heater's flue spigot and air intake. For all flueing installations, except horizontal direct flueing, the flue transition is counted as a 90° bend. The flue transition requires a 5 mm clearance from combustibles. This clearance is provided automatically when the supplied standoff brackets are used. All other flue components, except the elbow section of the EVOKIT03, are designed for zero clearance and can be placed hard against timber or plasterboard.



Install heater into enclosure

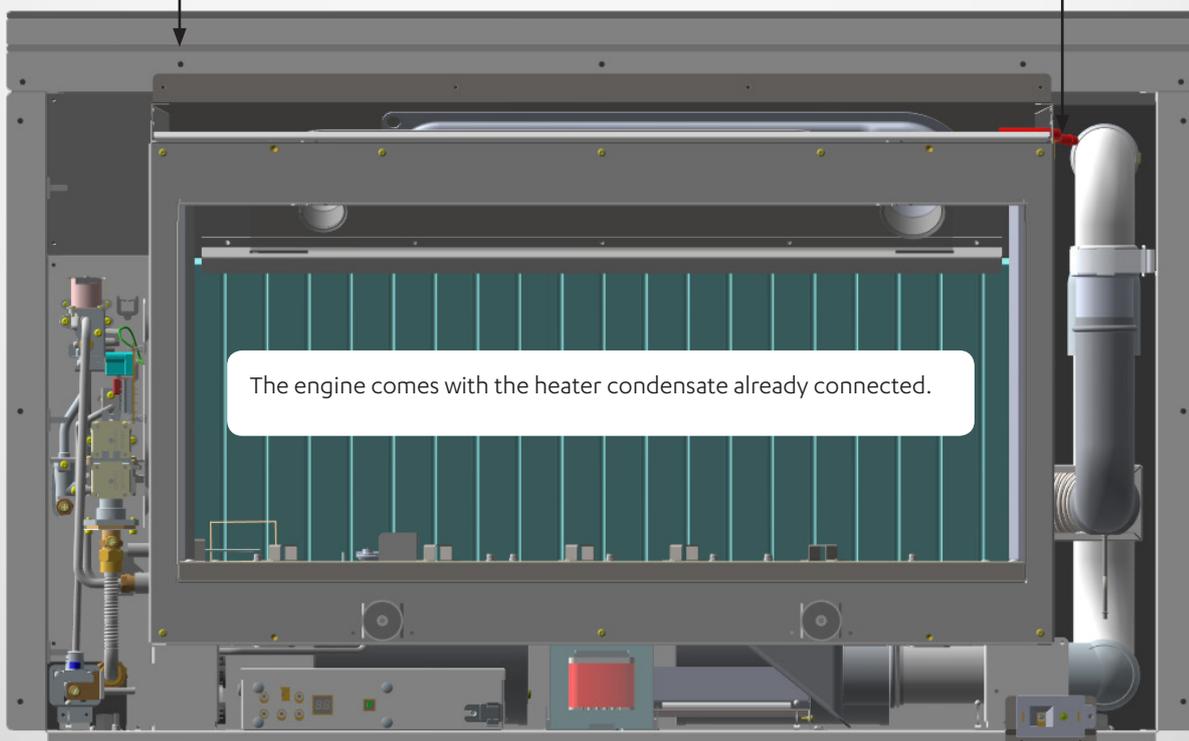
1. Carefully move the heater into the enclosure, guiding the piping, flexible gas connection, and telescopic extension tube into the access openings and through the appliance. Ensure that the air hose is not in a position where it could get caught or crushed by the unit.
2. Once the engine is in place reconnect the flue exhaust to the telescopic extension tube and secure together with the pipe clamp.
3. Secure the heater flange in place using 11 screws (seismic constraint).
4. Complete gas, air hose, and flue connection. If vertically flueing ensure condensate tube, provided with the EVOKIT03 flue kit, is attached to the condensate pipe on the heater—refer images below.

Please note: The unit is supplied with the heater condensate already connected.



Flange screw position—11 in total

Flue condensate pipe connection



Removing and replacing the glass panel

Before the burn media can be installed into the combustion chamber, the glass panel needs to be removed. Remove the four retaining screws—two at the top and two at the bottom. When replacing tighten all four screws and then back off by quarter of a turn. If the glass panel is screwed too tight, the panel will bow and the spring release mechanism won't work properly.

The glass panel needs to be replaced after installing the burn media and before commissioning.



Front panel of the Evolve showing the four screw positions for removing and replacing the glass panel

Install burn media - log set

The glass retainer will need to be removed before installing the log set and granules. Use extreme care when handling the log pieces, they are made from a fragile material and will damage easily.



Use these instructions in conjunction with the burn media guide sheet, which is attached to the engine. Experience has shown that the majority of performance problems has been caused by the burn media being installed incorrectly.

Evolve 951

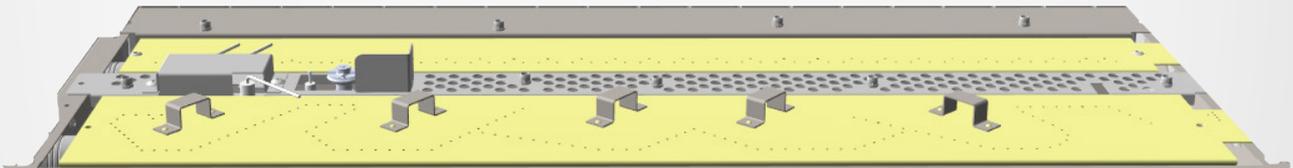


Evolve 1250



It is important to place the pieces in the correct position. Incorrect placement can create carbon build-up and affect performance. Malfunctioning due to improper log/granule placement is not covered by warranty. The unit must never be used with broken logs or other burn media (except those specifically designed for the Evolve).

Evolve 951 burner bed

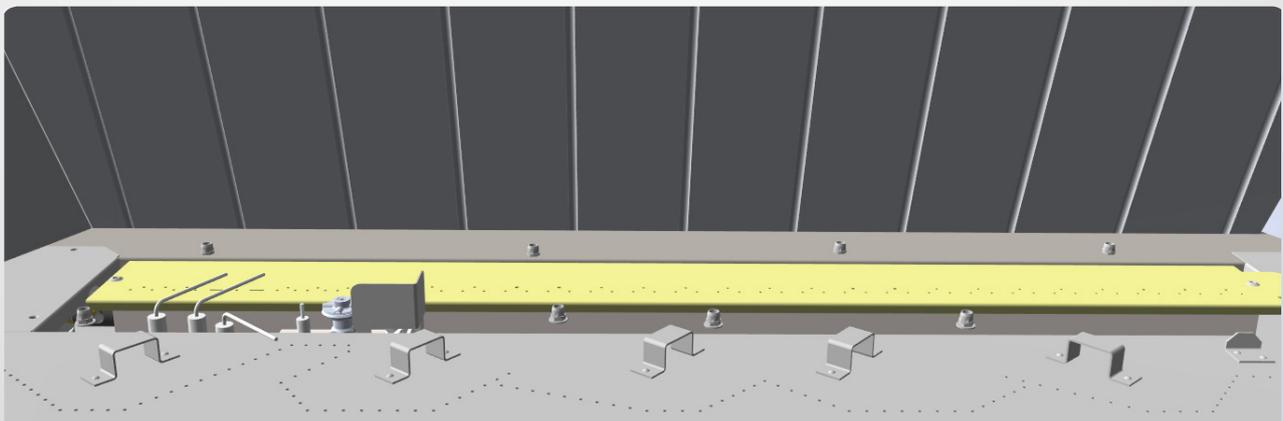


- locating pin



- locating bracket

Evolve 1250 burner bed



The installation procedure for both models is the same. The only difference is the position of log eight and the addition of logs 9 and 10—the Evolve 1250 has an extra two logs.

1. Back left log

Align bottom locating holes with the locating pins at the back of the burner—the log will sit up against the back of the combustion chamber.



2. Back right log

Align bottom locating holes with the locating pins at the back of the burner—the log will sit up against the back of the combustion chamber, and there will be a gap between the back two logs.



3. Front left small log

Refer fully assembled image for reference. Place onto the middle left locating pin and left front locator bracket.



4. Front right small log

Refer fully assembled image for reference. Place onto the middle right locating pin and right front locator bracket.



5. Front middle small log

Refer fully assembled image for reference. Place onto the middle locating pin and central front locator bracket.



6. Front large left log

Place onto the locating pin of the first log and slot onto the left front locating bracket.



7. Front large middle log

Place onto the locating pin of log four and slot onto the right front locating bracket.



8. Top upper right large log

Place onto the locating pin of log seven and swivel OVER log 4. For the 951 the end rests into the burner slot. For the 1250 the end will rest in FRONT of the locator tab.



9. Far LHS small log (1250 model only)

Fit the far small left hand log onto the two locator brackets.



10. Far RHS small log (1250 model only)

Fit the far small right hand log onto the two locator brackets.



Adding the granules

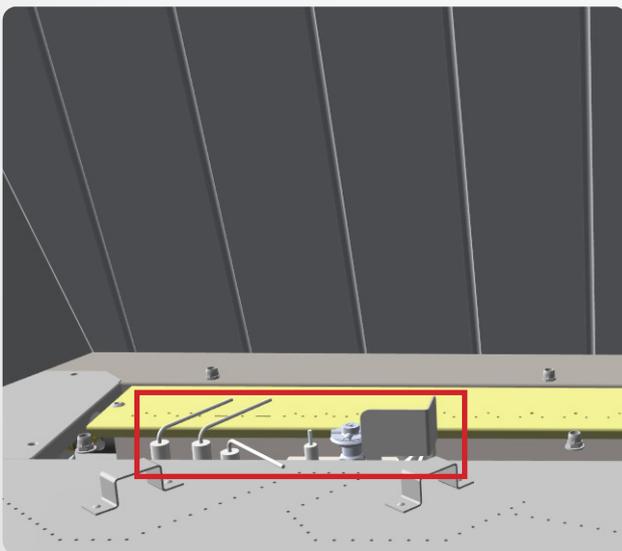
- Evolve 951: Two granule packs
- Evolve 1250: Three granule packs

Adding the granules

The granules as well as being added to create a more realistic log flame affect (by diffusing the gas flames through the burner ports) also assist in soot prevention and are **CRITICAL** to the performance of the heater. **Never pour** the granules directly from the pack as dust particles from the plastic bag may block the ports.

DO NOT place the granules near the flame rods or the pilot (areas highlighted in the image below) as this will cause a blockage and the unit will not start.

Place the granules **evenly** (do not stack) around the logs in the front part of the burner and on the middle section of the burner (in the gaps between the logs)—refer fully assembled image.



Install burn media - stones

The glass retainer will need to be removed before installing the stone set and granules. Use extreme care when handling the stones, they are made from a fragile material and will damage easily.

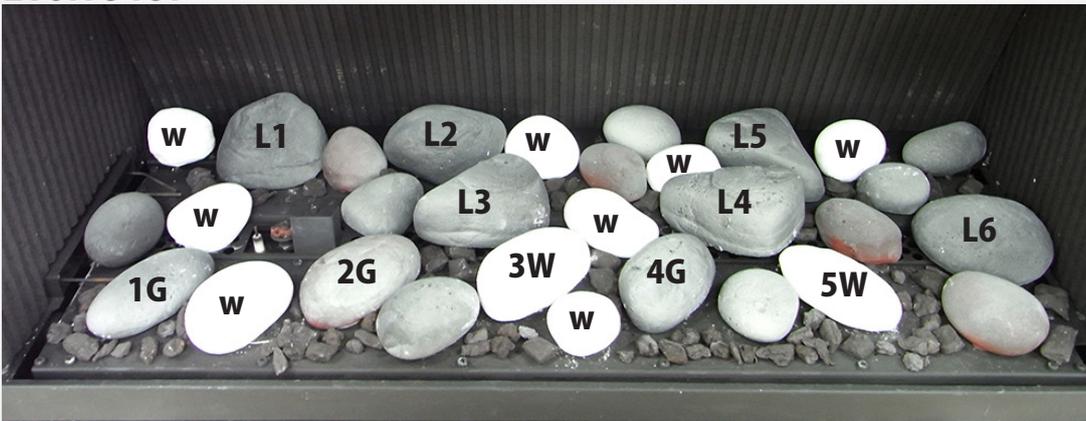


Use these instructions in conjunction with the burn media guide sheet, which is attached to the engine. Experience has shown that the majority of performance problems has been caused by the burn media being installed incorrectly.

It is important to place the pieces in the correct position. Incorrect placement can create carbon build-up and affect performance. Malfunctioning due to improper stone/granule placement is not covered by warranty. The unit must never be used with broken stones or other burn media (except those specifically designed for the Evolve).

Before commencing installation ensure you have the correct stone set. The Evolve 951 stone set contains 30 stones, the Evolve 1250 stone set contains 40 stones. The installation between the two models varies slightly.

Evolve 951



1G, 2G, 4G = front grey cut out stones
L1-L6 = large grey stones

3W, 5W = front white cut out stones
w = small to medium white stones

N.B: The flame rod and pilot position has changed, these photos depict an older model.

1. Place first grey cut out stone (1G)

The five stones with the bottom cut outs need to be placed first on the front burner brackets. Place the first grey cut out stone on the far left burner bracket.



2. Place the second grey cut out stone (2G)

Place the second grey cut out stone on the left burner bracket.



3. Place first white cut out stone (3W)

Place the first white cut out stone on the middle burner bracket. The white stones are designed to be interspersed to add contrast and provide a good visual picture—make sure they are not all placed together.



4. Place the fourth grey cut out stone (4G)

Place the fourth grey cut out stone on the next burner bracket.



5. Place the fifth white cut out stone (5W)

Place the fifth white cut out stone on the far right burner bracket.



6. Place back three large grey stones

Place the three large grey stones (L1, L2, L5) at the back of the burner as shown—they can be positioned over the locating pins.



7. Place middle three large grey stones

Place the remaining three large grey stones (L3, L4, L6) in the middle of the burner as shown.



8. Place smaller grey and white stones front and back

Place the smaller grey (g) and white (w) stones at the back and front of the burner.



9. Place smaller grey and white stones in the middle

Place remaining smaller grey (g) and white (w) stones in the middle section of the burner



Evolve 1250



1. Place the five skinny stones (S)

The five skinny stones (two dark grey, two light grey, one white) with the bottom cut outs need to be placed first, these are positioned on the front burner brackets. The stones are all the same shape and size.



2. Place the eight large stones (L)

Place the eight large stones evenly throughout the burner bed.



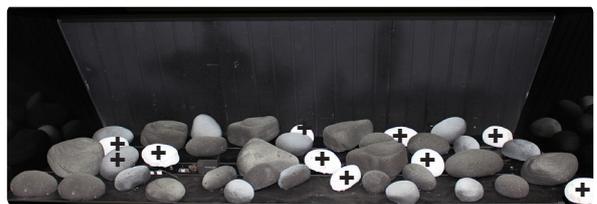
3. Place remaining dark grey stones (*)

Place the remaining dark grey stones (approx. 17) throughout the burner bed. Place a large portion of them in the front as the darker stones create a greater glow and will improve the flame picture.



4. Place the light grey and white stones (+)

The five skinny stones (two dark grey, two light grey, one white) with the bottom cut outs need to be placed first, these are positioned on the front burner brackets. The stones are all the same shape and size.



Adding the granules

Refer p. 20 for important information about placement of the granules. The only difference in installation are the granules will be placed evenly around the stones with particular attention to the front section—refer fully assembled image on previous page.

Commissioning

The gas pressures of the appliance are factory preset for direct flue installations (most common type of installation) and will normally not require adjustment. The combustion chamber glass must be on when checking the operating pressures.

The commissioning sheet is located in a plastic pouch inside the unit on the right hand side.

For all Evolve flueing EXCEPT direct flueing, the appliance must be down rated as per the instructions on the commissioning sheet.

Follow the commissioning instructions to complete the gas pressure adjustments. When commissioning is complete check for full and correct operation of the appliance, and return the commissioning sheet to its plastic pouch.



Commissioning sheet—located inside a plastic pouch inside the unit (right hand side)

Install the inner and outer frames

Installing the outer frame

1. Remove, but don't discard, the two black screws installed in the lower bracket of the heater engine.
2. Position the outer frame close to the heater engine and connect the RJ45 plug into the socket on the inside top left of the heater. This connects the push button control panel via a communications cable to the engine control box.
3. Mount the outer frame to the heater by hooking the top over the two tabs on the top lip of the engine body, then push in until the frame sits flush with the wall. Secure with the two black retaining screws removed in step 1.



Black screw in lower bracket



RJ45 plug inside top left of heater



Top and side view of tab on top lip of engine body

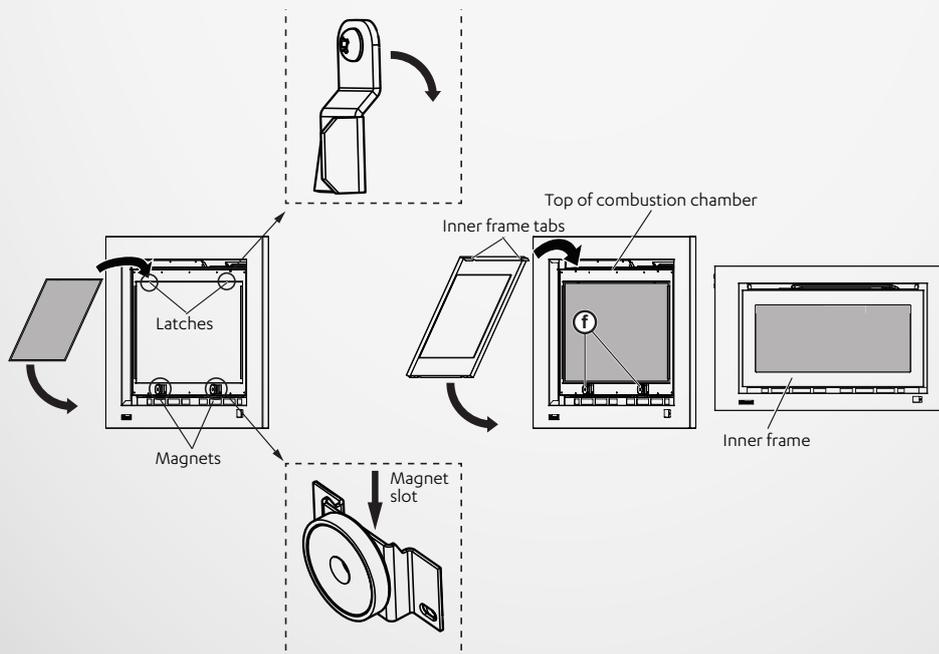


Outer frame mounted on tabs

Installing the optional mesh guard and inner frame

The optional mesh guard, if purchased, needs to be installed before the inner frame as the inner frame holds it in place.

1. Insert the bottom of the mesh guard into the magnet slots and secure in place using the latches.
2. Mount the inner frame to the engine by hooking the tabs on the inside to the top lip of the combustion chamber.
3. Rotate the bottom of the inner frame in towards the engine body allowing the magnets to secure the inner frame to the engine.



Test operation and lighting sequence

It may take approximately two hours of operation for the burn media to achieve their full flame pattern and glow. During the initial burning in period, some smoke and smell may be experienced. The appliance should run on the high setting in a well ventilated room until these dissipate. It is important to check the flame pattern during this time.

Abnormal flame pattern

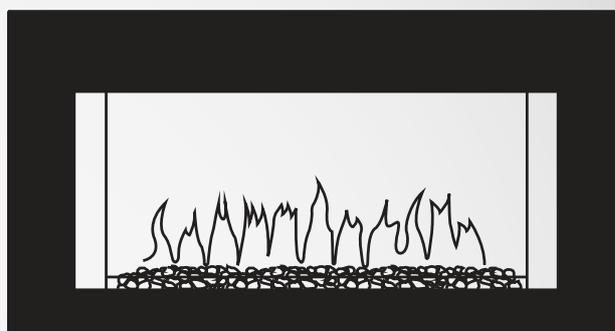
Abnormal flame performance and/or pattern can indicate a problem with your fire, such as blocked gas injectors, or that the burn media has shifted. There are some warning signs that could indicate a problem.

- Unusual smell from the appliance
- Continued difficulty or delay in establishing a flame
- Flame appears either very short or very long
- Flame only burns part way across the burner
- Severe soot building up on the inside of the glass door

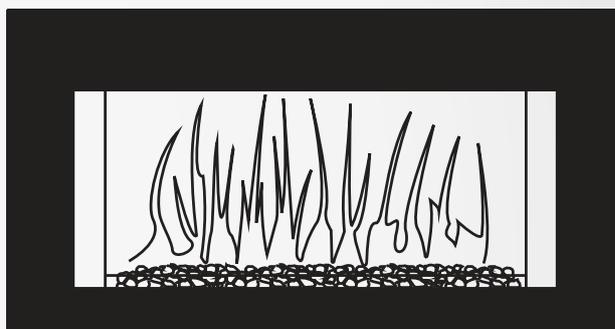
Important

It is the responsibility of the installer to check that under normal conditions of the appliance, all flue gases are exhausted to the outside atmosphere, and that there is no spillage of combustion gases into the room.

If the appliance cannot be made to perform correctly please contact Rinnai.



Normal flame pattern

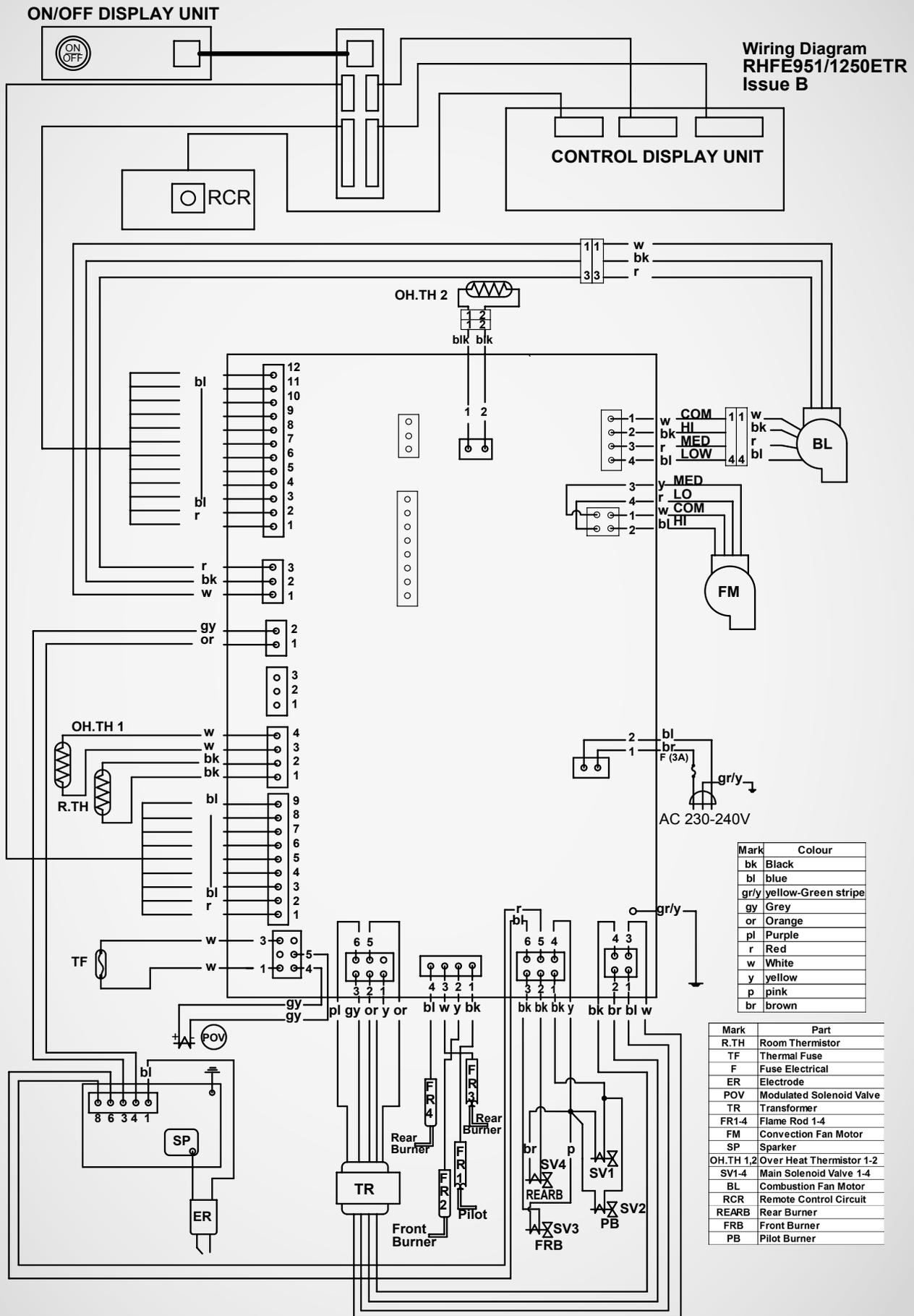


Abnormal flame pattern

Installation checklist and customer handover

Complete the installation checklist in the customer operation guide, and make sure you leave the guide with the customer. Explain to the customer about the use and care of the unit, and ensure they understand the instructions and operation of the appliance.

Wiring diagram (part of commissioning)





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