

Rinnai

Installation guide

Arriva 750

Models: RHFE750ETRN/RHFE750ETRL



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 5601.1
- 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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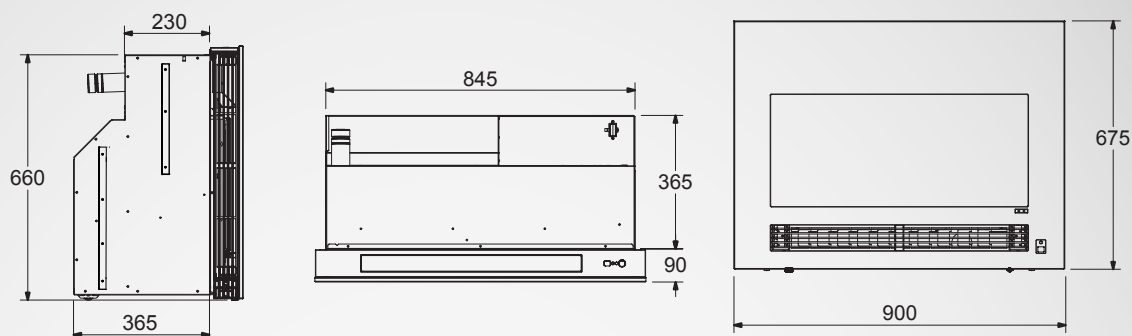
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Email: info@rinnai.co.nz

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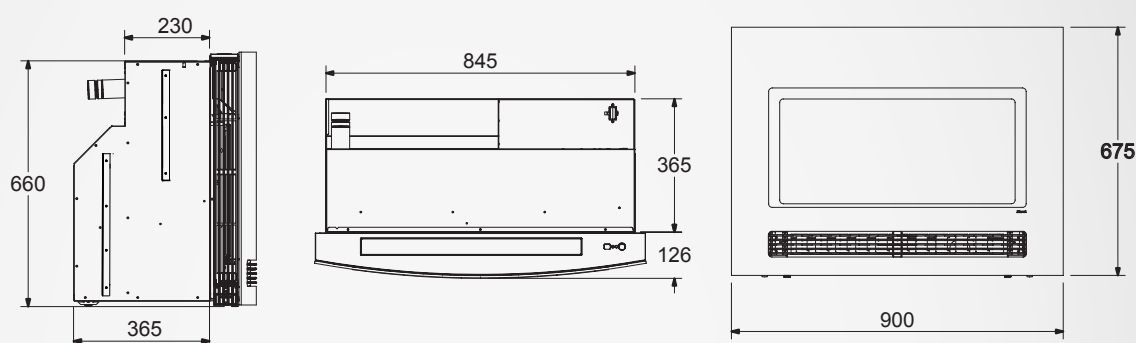
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Specification

Flat Front



Glass Front



Dimensions are in mm.

Arriva 750

Specification summary

| | |
|--------------|---------------------------|
| Input | = 8-31.5 MJ/h |
| Output | = 1.8-7.0* kW |
| Efficiency | = 80% (on high) |
| Heating area | = 70-95 m ² ** |
| Gas type | = NG or LPG |

Inbuilt convector ceramic log space heater with forced convection and power flue system.

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 Arriva is ideal for new build installation into a false (mock) chimney, but can be fitted into an existing masonry fireplace if it is big enough.

Dataplate

Inside appliance, upper right hand side (beside convection fan).

Fan type

3-speed (high, medium, and low) radial blower fan.

Flue

Power flue, inner - 50 mm, outer - 78-80 mm. Appliance must be installed with a Rinnai flue system.

Gas connection

½" BSP male flare to barrel union (lower right hand side of 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

33-41 dB(A)

Power consumption

High 90 W, low 60 W, and standby 10 W.

Standard electrical connection is to the right hand side 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.

Weight

70 kg

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

Clearances

The clearances listed below are minimum clearances unless otherwise stated.

Clearances around the heater

The appliance must not be installed where curtains or other combustible materials (coffee tables, couches etc.) could come into contact with the heater. In some cases curtains may need restraining.

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 the appliance.

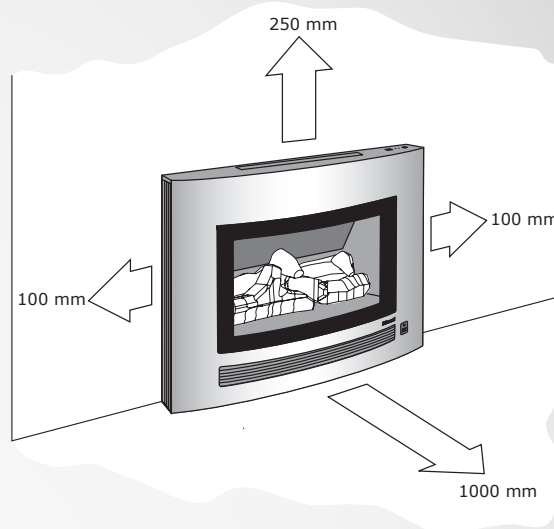
Mantels and surrounds

Mantels and surrounds are allowed providing they conform to the minimum clearances shown. These clearances are important as they:

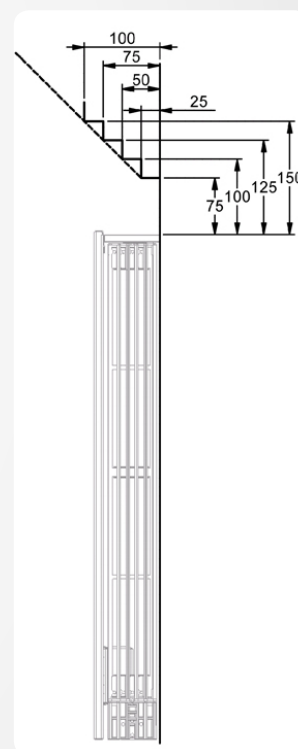
- allow heat to escape in the event of a power failure during operation
- allow optimum performance of the heater (room air return)
- allow access to the side mesh filters

Mantel clearance calculation example

At a 75 mm vertical clearance, the maximum mantel depth is 25 mm. For every 25 mm of added mantel depth, there must be an additional 25 mm of vertical clearance. For example a mantel depth of 100 mm requires a vertical clearance of 150 mm.



Clearances required around the heater when operating



Arriva mantel clearances



Arriva surround clearances

Location

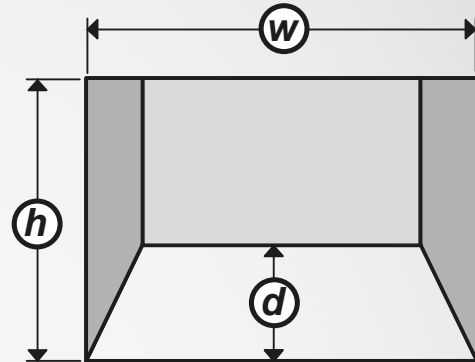
The main points governing location are flueing and warm air distribution. The Rinnai Arriva has a cool outer casing, it can be installed into an existing masonry, or decorative fireplace.

Enclosure dimensions

The heater must be positioned on a flat level surface that allows free movement of the appliance. A pair of wheels located at the rear of the heater allows the unit to slide in and out of the enclosure for commissioning and maintenance.

In a masonry fireplace use a slurry of sand and cement to level the base as required.

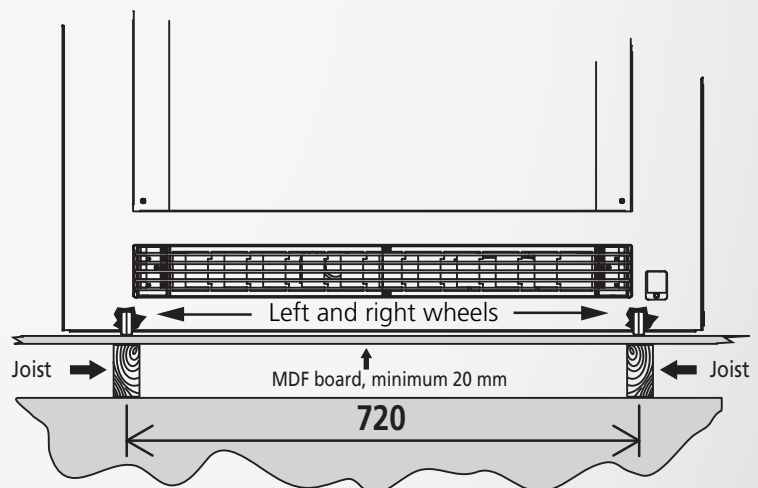
In a decorative fireplace, when the appliance is elevated from the ground, construct a base using a board with supporting joists as pictured.



Enclosure dimensions

| | |
|-----------------|--|
| W-width | 850-860 mm |
| H-height | 660-665 mm |
| D-depth | 380 mm direct flue 475 mm extended flue 500 mm underfloor flue |

All dimensions provided are critical to the installation of this appliance and must be strictly adhered to.



Elevated installation in a decorative fireplace

Gas connection

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 rear right hand side of the appliance.

To ensure correct positioning terminate the gas supply so it is 80 mm in from the front face of the enclosure opening.

Purging gas supply

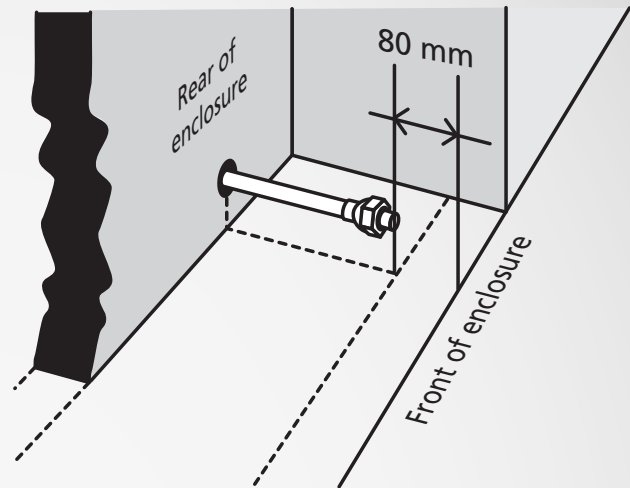
Foreign materials and debris such as swarf, filings etc. must be purged from the gas supply. Failure to do so may cause damage to the control valve causing it to malfunction.

Direct flue wall penetration requirements

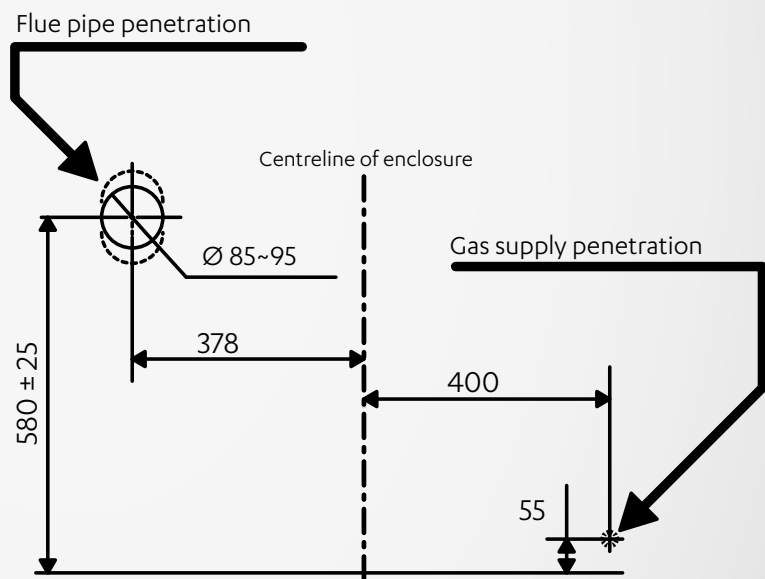
Use the guide pictured to mark the penetration points for the gas supply and flue transition locations. Consideration must be given to the position of any studs, noggins or other components of the wall structure on both sides of the wall.

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 to be terminated directly to the rear of the appliance.



Correct positioning of the gas supply

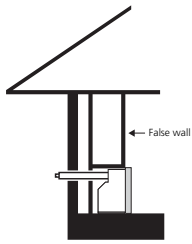


All dimensions are in mm.

Direct flue wall penetration points

Flueing options

Rear external wall

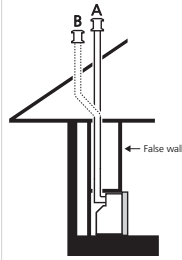


Flue components:

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

This flue configuration could be up to 8.5 m long (no bends).

Vertical



A flue components:

- Adaption flue (ASPKIT03)
- Coaxial pipe (ESPIPE900)
- Roof cowl (ESROOFCOWL)

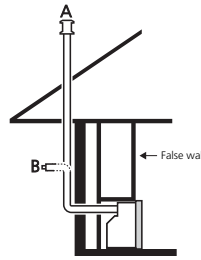
A flue configuration could have a flue length of 7 m and contain one 90° bend—the 90° bend would be the flue transition (ASPKIT03).

B flue components:

- Adaption flue kit (ASPKIT03)
- Coaxial pipe (ESPIPE900)
- Bend 2 x 45° (ESBEND x 1)
- Roof cowl (ESROOFCOWL)

B flue configuration could have a flue length of 6.5 m and contain two bends—the first 90° bend would be the flue transition (ASPKIT03), and the second 90° bend would be the two 45° bends (ESBEND).

Through wall



A flue components:

- Direct flue (ASPDFK)
- Coaxial pipe (ESPIPE900)
- Bend 1 x 90° (ESBEND x 1)
- Condensate trap (ESCONDK)
- Roof cowl (ESROOFCOWL)

A flue configuration could have a flue length of 7.5 m and contain one 90° bend—the 90° bend would be the 90° bend (ESBEND).

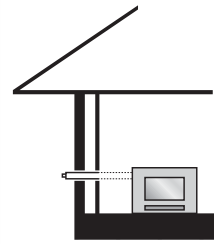
B flue components:

- Direct flue (ASPDFK)
- Coaxial pipe (ESPIPE900)
- Bends 2 x 90° (ESBEND x 2)
- Condensate trap (ESCONDK)

B flue configuration could have a flue length of 6.5 m and contain two 90° bends—the bends would be the two 90° bends (ESBEND).

ASPDFK, remove terminal and use on outside wall.

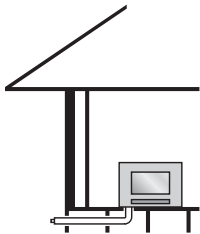
Sideways through wall



Flue components:

- Adaption flue (ASPKIT03)
- Coaxial pipe (ESPIPE900)
- Wall terminal (ESWTERM)

Down and out



Flue components:

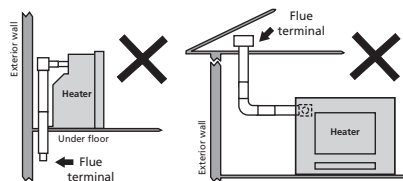
- Adaption flue (ASPKIT03)
- Coaxial pipe (ESPIPE900)
- Bend 2 x 45° (ESBEND x 1)
- Wall terminal (ESWTERM)

Flueing notes

For all installations an Arriva flue system **MUST BE** used. Detailed flue instructions are provided with Arriva flue kits.

Termination point

Flue is not to terminate under floors or in a roof space.



Condensate

A condensate trap is required for ALL vertical flue installations to ensure condensate generated during combustion is trapped and prevented from entering the chamber of the heater.

For horizontal, and down and out installations, there must be a continuous fall of at least 2°. This equates to approximately 20 mm per metre to the termination point to drain the condensate. For direct flueing, direct flue kits A and B have an inbuilt 2° fall.

Masonry

The Arriva must not be flued into natural draft cavities.

Down rating the appliance

For all Arriva flueing EXCEPT direct flueing, the appliance must be down rated (ensures optimum performance of the fan) as per the instructions on the commissioning sheet.

Maximum flue length and number of bends

- Max. flue length - 8.5 m
- Max. number of bends - three

One 90° bend equals 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 flue transition for all flueing installations, excluding direct horizontal flueing, is counted a 90° bend.

Flueing guidelines

Every gas fireplace requires a flue system that will draw effectively and clear flue products safely under all potential wind and climatic conditions.

It is the responsibility of the installer to ensure that the appliance is provided with an effective flue. Some guidelines to assist with flue design are listed below. These must be read and modified as necessary with reference to the particular installation.

The Rinnai Arriva must be installed with an approved Rinnai flue system. Approved flue components for this appliance are detailed in this guide.

Clearance to combustibles

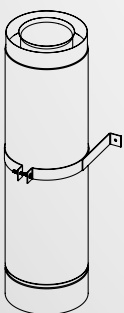
- Flue transition (p. 12) - 5 mm
- Elbow component of adaption flue kit (ASPKIT03) - 25 mm

All other Arriva flue components have zero clearance.

Flashings

Flashings to top of chimney structure do not form part of the flue kit and must be specified.

Flue support

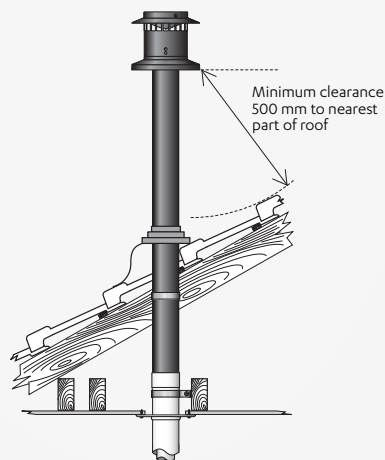


The weight of the flue system should not be supported by the appliance—it should be self-supporting. Supporting the flue is usually completed during the framing stage with flue supports or straps within the cavity.

Vertical terminations: Flue cowl clearance

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

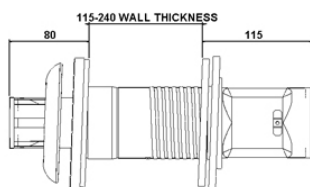
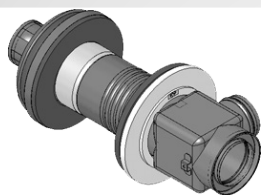
The flue cowl should have a 500 mm clearance from any part of the building. This also applies to steeped and pitched roofs which should be clear of the ridge line. Lesser clearances may provide perfectly adequate flue systems depending on the installation. Minimum clearances are shown in AS/NZS 5601.1.



Shared flues

Gas appliances must not be connected to a chimney or flue serving a separate fuel burning appliance.

Arriva flue components

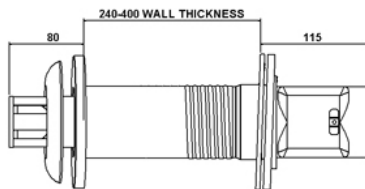
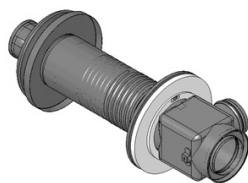


Direct A flue kit

Code = R2731

For use in walls 115-240 mm thick—typically weatherboard construction (can be cut to size). This is a complete kit, no other components are required.

- Stainless steel
- Inbuilt 2° fall to drain condensate

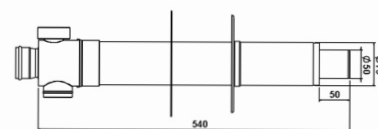
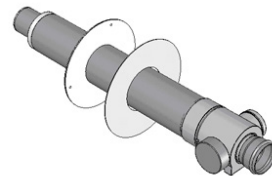


Direct B flue kit

Code = R2732

For use in walls 240-400 mm thick—typically block construction (can be cut to size). This is a complete kit, no other components required.

- Stainless steel
- Inbuilt 2° fall to drain condensate

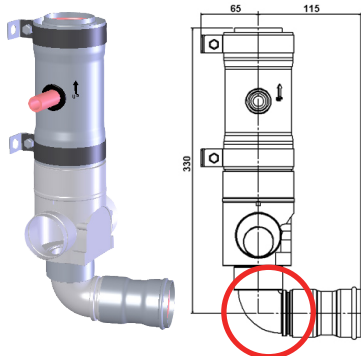


Direct flue kit

Code = ASPDFK

For use in walls greater than 400 mm (can be cut to size). Can be used in combination with ESPIPE900 for longer flueing. Kit includes flue slide stopper (part 4822).

Flue terminal section is reusable when making flue longer. Flue is aluminium, collars are PVC, and spacers are PBT plastic.

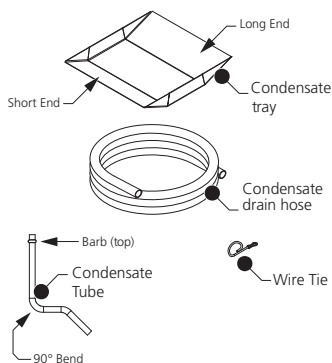


Arriva adaption flue kit

Code = ASPKIT03

Used for all flueing configurations EXCEPT standard direct flueing.

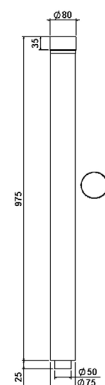
Elbow section of this component (circled) requires a 25 mm clearance from combustibles, the rest is zero clearance. This kit also contains a sub-kit called the condensate drain kit (shown in next panel), and the flue slide stopper (part 4822).



Condensate drain kit

Code = R1970

The condensate drain kit is provided with ASPKIT03. It is used for internal wall flue installations, or other vertical flue installations that will require draining of condensate back into the heater.

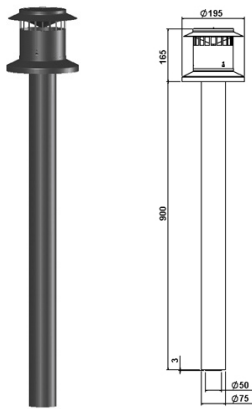


Coaxial flue pipe 900 mm

Code = ESPIPE900

Extension pipe (960 mm installed) used to construct horizontal, vertical, and downwards flueing. Can be cut to size. Inner is aluminium, and outer is PVC plastic. Comes with one wall bracket.

- O-ring for ESPIPE (4350)
- Spacer for ESPIPE (4351)

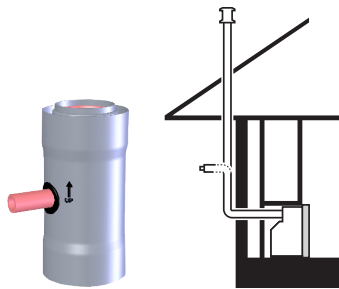


Vertical terminal

Code = ESROOFCOWL

Roof cowl and connecting pipe (960 mm installed) for termination of flue—can be cut to size.

Powder coated (black) galvanised steel construction.

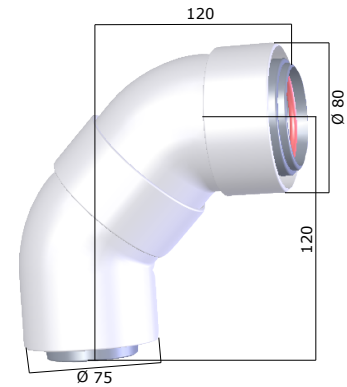


Condensate trap

Code = ESCONDK

For the small number of vertical through-wall flue installations, where the Arriva is installed against a solid brick wall, or where the direct flue terminal cannot be used.

Used in conjunction with; ASPDFK, ESBEND, ESPIPE900, and ESROOFCOWL.

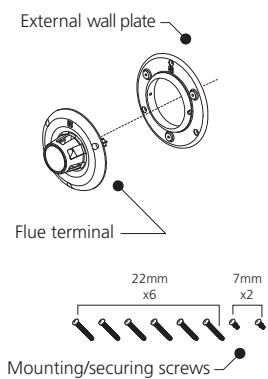


45° flue bends x 2

Code = ESBEND

Two 45° bends used to facilitate between horizontal, vertical, and downwards flueing. Can be used separately, or together as one 90° bend.

Two spacers included.



Wall terminal kit

Code = ESWTERM

Used to terminate the flue pipe (ESPIPE900) in horizontal flue installations when used in conjunction with ASPKIT03.

Contains:

- External wall plate (PVC)
- End cap (aluminium)

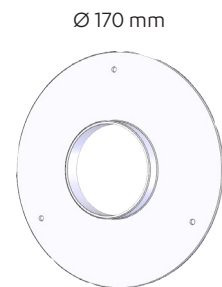


Flue guard

Code = R1370

Protection against hot flue gases when the flue terminates low to the ground.

Colour - warm white.



Universal wall plate

Code = ESPLATE

Used if an extra wall cover plate is required to tidy any installation work through the wall, ceiling, or floor.

Flue transition

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 gap from combustibles. This clearance is provided automatically when the supplied standoff brackets are used. All other flue components, except the elbow section of the adaption flue kit are designed for zero clearance and can be placed hard against timber or plasterboard.

In all cases when positioned correctly the flue transition connection must protrude 110 mm from the rear of the enclosure.

Horizontal direct flue transition

When installed as a horizontal direct flue, the flue transition is pushed hard against the internal wall plate, which is pushed hard against the rear wall of the enclosure as shown.

Vertical flue transition

When installed as a vertical direct flue, the flue transition is fastened to the rear wall by standoff brackets supplied.

Elbow component of the adaption flue kit requires a 25 mm clearance to combustibles.

Appliance needs to be down rated—refer data plate.

Offset flue transition

When installed as a vertical or horizontal offset flue, the flue transition is fastened to the rear of the wall by standoff brackets supplied.

Appliance needs to be down rated—refer data plate.

Down and out flue transition

When installed as a down and out flue, the flue transition is fastened to the rear wall by standoff brackets supplied.

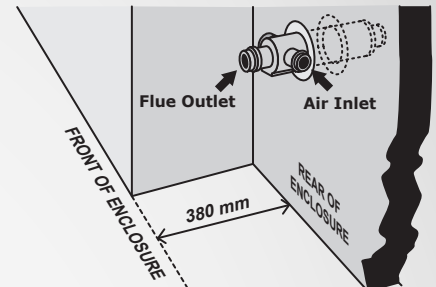
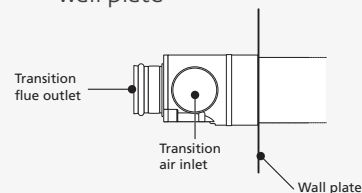
The enclosure depth for a down and out installation is 500 mm to allow the flue pipe to clear the base of the appliance.

Appliance needs to be down rated—refer data plate.

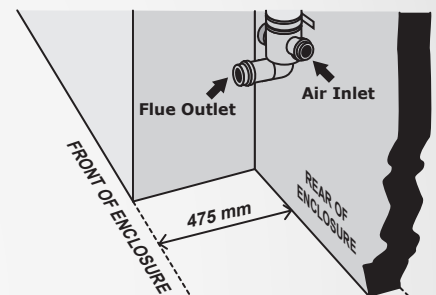
Flue transition components

The flue transition is comprised of:

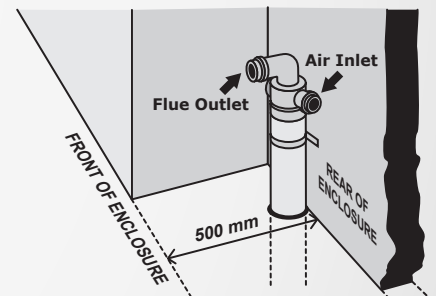
- transition flue outlet
- transition air inlet
- wall plate



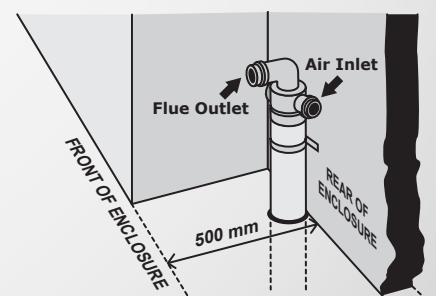
Horizontal direct flue transition



Vertical flue transition



Offset flue transition



Down and out flue transition

Arriva 750 installation



Isolate the electrical supply before removing any panels.

Installation overview

1. Connect to gas pipe
2. Open flue & air hose access
3. Connect flue pipe
4. Install heater engine
5. Secure heater
6. Check all connections

1. Connect to gas pipe

- a. Remove the right hand side access panel by removing the four retaining screws.
- b. Extend flexible gas connection through the gas fitting access point to the outside of the heater body.
- c. Position the appliance in front of the enclosure so the end of the gas pipe aligns with the gas fitting access point.
- d. Securely connect flexible gas connection to the gas pipe, testing all connections for gas leaks.
- e. Replace right hand panel and secure screws in place.

2. Open flue & air hose access

- a. Unscrew the flue access panel.
- b. Remove the clamp that secures the telescopic vertical flue pipe to the telescopic horizontal flue pipe.
- c. Clamp the horizontal flue pipe to the flue transition box using either the flue retainer bracket (supplied in the plastic bag with the remote control), or the flue slide stopper (provided with the ASPDFK and ASPKIT03 flue kits). The clamping component will

differ depending on the flue configuration.

- d. Fasten air inlet hose to transition box using cable tie supplied in accessory pack with the remote.
- e. Push appliance into position. Adjust horizontal and vertical telescopic flue pipe, and connect using clamp.
- f. Replace flue access panel.

3. Connect flue pipe

Connect flue pipe to flue and hold in place using appropriate clamp. Failure to secure the flue system using the supplied clamps may result in a dangerous situation.

4. Install heater engine

Carefully move the heater into the enclosure cavity ensuring the gas pipe and flue transition are aligned with their access openings.

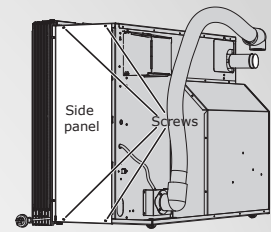
As the appliance is pushed into place ensure the flexible gas connection coils freely inside the appliance, and that the gas pipe penetrates through the centre of the gas access point.

5. Secure heater

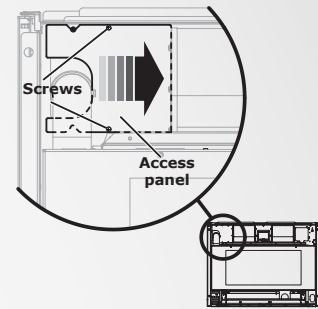
Secure the heater, using appropriate fixings, through the four appliance mounting points—two upper and two lower (on each side of the appliance).

6. Check all connections

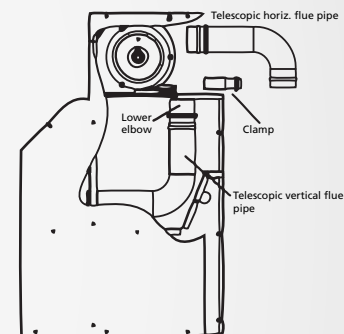
Check all connections are properly engaged and are inserted beyond the O-ring seal.



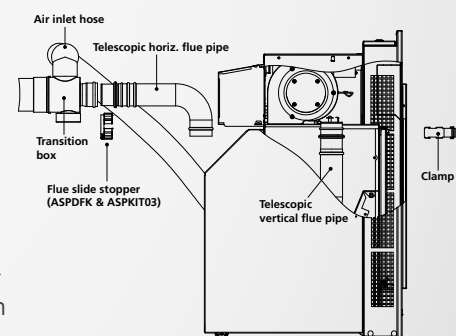
1a: Remove right hand access panel



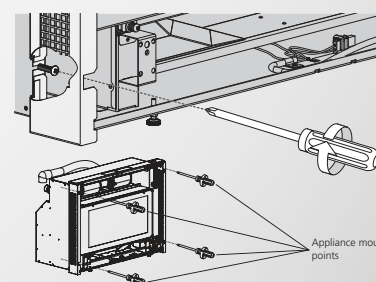
2a: Unscrew flue access panel



2b: Remove clamp from flue pipe



2c/d: Fasten horiz. flue pipe and air inlet hose

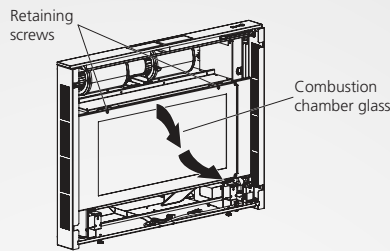


5: Secure heater

Installing the log set

Before the log set can be installed the combustion chamber glass panel needs to be removed.

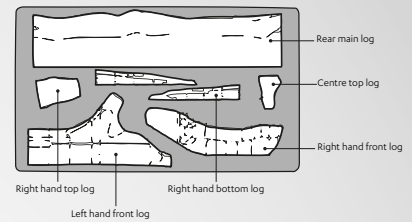
1. Remove the two retaining screws that secure the combustion chamber glass panel to the heater engine.



1. Removing combustion chamber glass

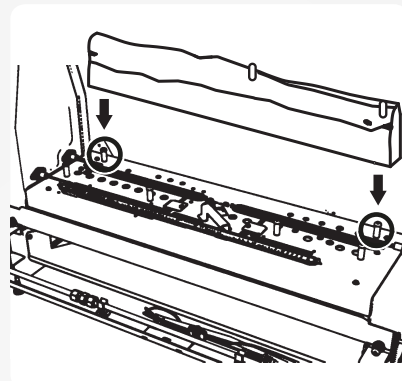
Rotate and lift the combustion chamber glass clear of the combustion chamber and place in a safe location until required.

2. Remove the log set—made up of seven pieces:
 - rear main log
 - right hand front log
 - right hand top log
 - right hand bottom log
 - left hand front log
 - centre top log
 - left hand bottom log

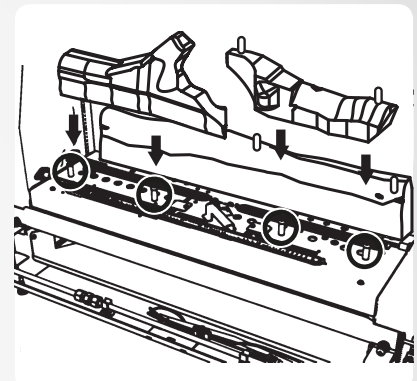


2. Arriva 750 log set assembly

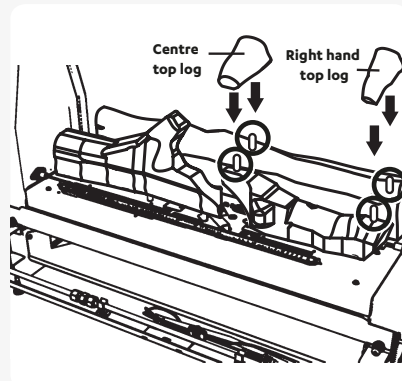
3. Place the rear main log into the combustion chamber on the rear location pins.
4. Place the left hand and front hand logs into the combustion chamber on the locating pins.
5. Place the centre top log over the main log and right hand front log. Secure on the central locating pin of each log. Repeat step with the right hand top log, securing the log in the locating pins on the right hand side.



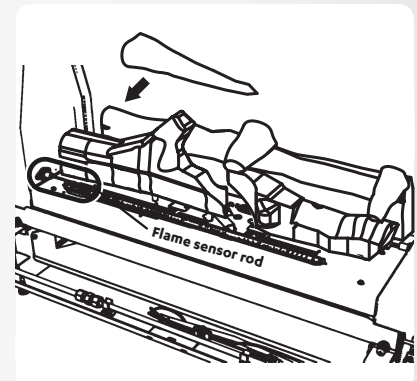
3. Placing the rear main log



4. Placing the left and right hand front logs

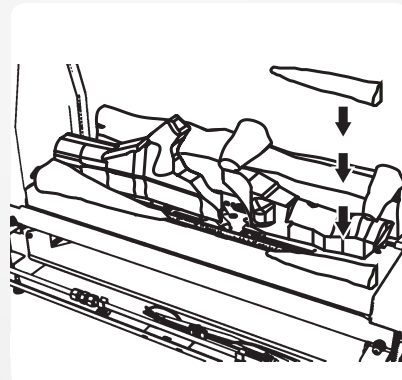


5. Placing the top logs



6. Placing the left hand bottom log

6. Place the left hand bottom log onto the combustion chamber so that it hides the flame sensor rod from view. Place the right hand bottom log on the opposite side.



6. Placing the right hand bottom log

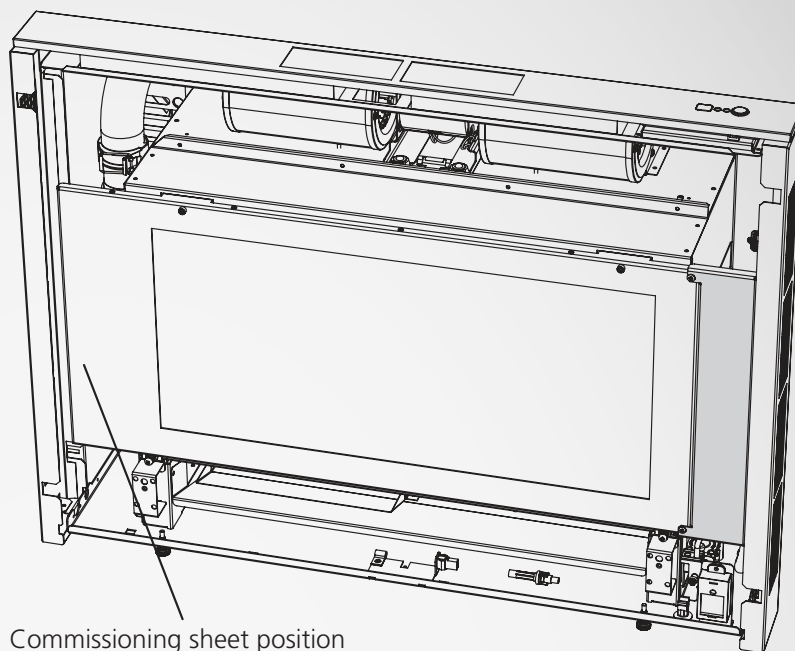
7. Replace the combustion chamber glass panel and secure in place with the two retaining screws.

Commissioning

The gas pressures of the appliance are factory preset for direct flue installations and will normally not require adjustment.

For all Arriva flueing EXCEPT direct flueing, the appliance must be down rated as per the instructions on the commissioning sheet. The commissioning sheet is located in a plastic pouch behind the removable access panel on the right edge of the combustion chamber glass panel.

Follow the commissioning instructions to complete the gas pressure adjustments, and ensure correct operation of the appliance.

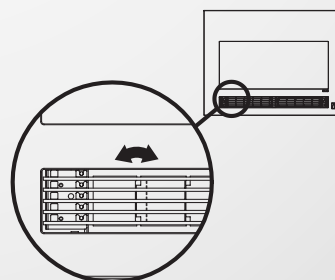
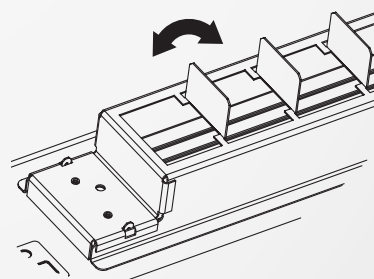
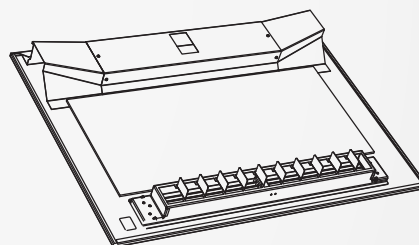


Setting the air guide vanes

The air guide vanes allow the installer to set and adjust the horizontal air flow distribution of the appliance. These are not to be confused with the horizontal louvres that determine the direction of the vertical flow—these are fixed and cannot be adjusted.

The air guide vanes can be adjusted by carefully bending to the left or right using a screwdriver.

- Do not adjust the vanes more than five times as this may cause the metal to fracture and/or break.
- Do not attempt to adjust the air flow direction while the appliance is operating or still hot as this could result in a burn injury.



Panel installation

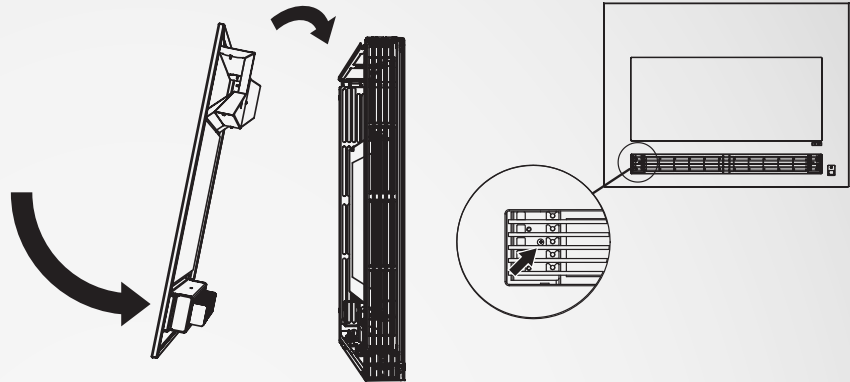
Always inspect the glass for any chip or obvious sign of damage before installation. Care is required when handling the front fascia—no sudden impact or excess force should be applied.

Glass panels

Always wear gloves and safety glasses when handling glass.

Installing the front panel

Install the fascia panel by hooking the top to the body and rotating the bottom in towards the appliance body.

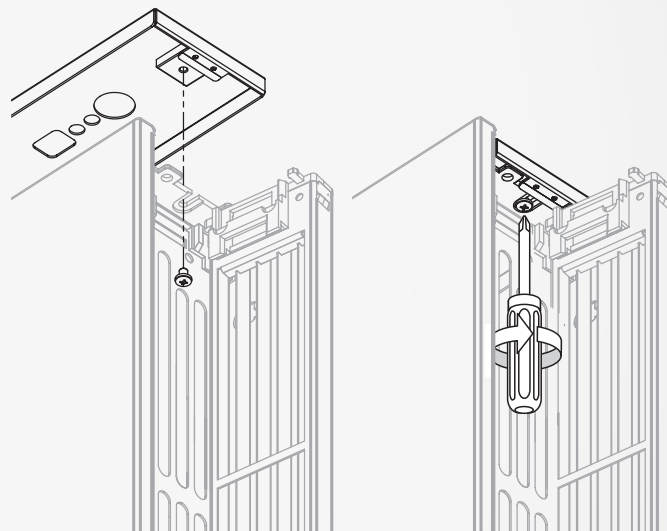


Installing the front panel

Secure the fascia to the appliance body, with the two retaining screws, through the front of the warm air discharge louvre.

Installing the top panel

Push the top panel down into place and secure with the screws provided.



Installing the top panel

Flame pattern

It may take approximately two hours of operation for the logs 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

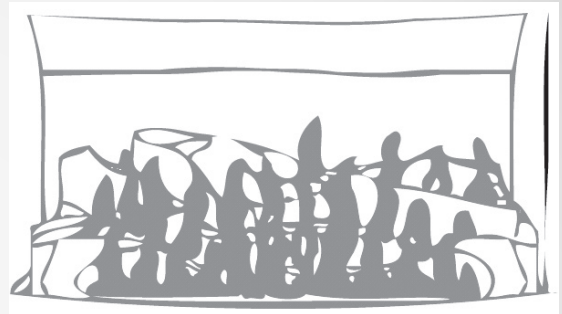
Abnormal flame performance and/or pattern can indicate a problem with your fire, such as blocked gas injectors, or that the burn media has shifted from when the fire was first installed. There are some warning signs that could indicate a problem.

- 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

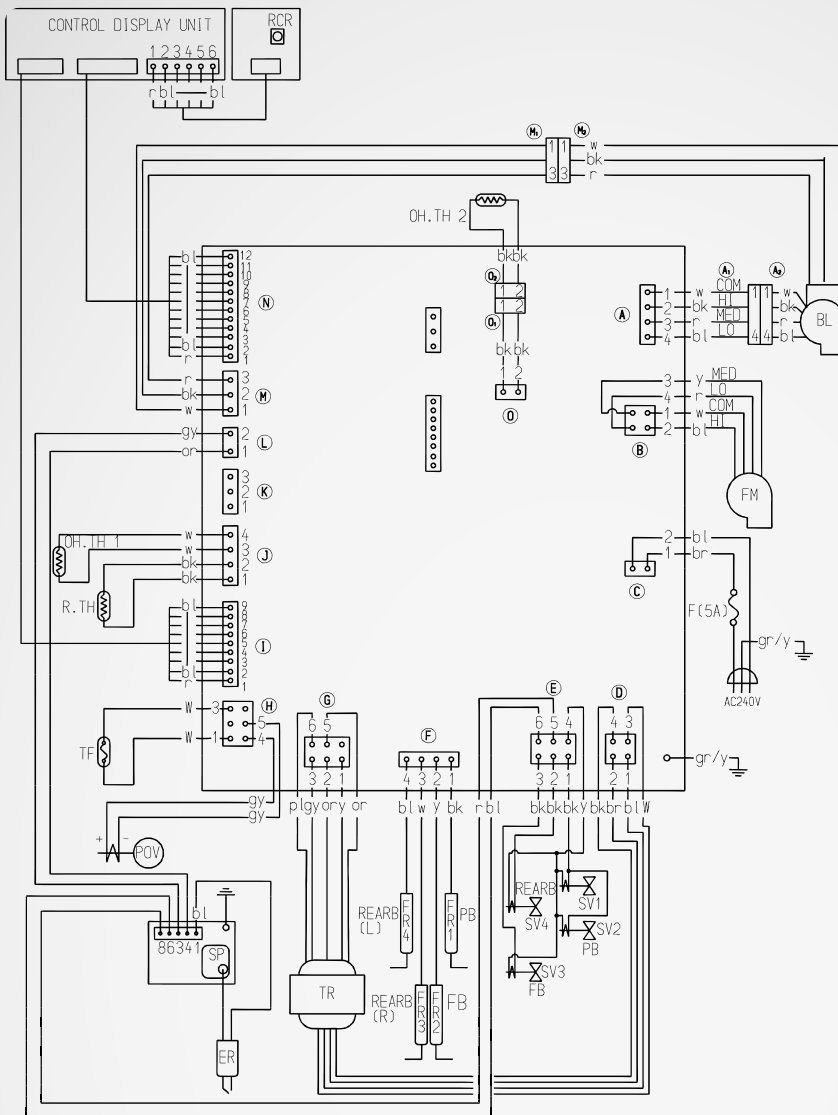


Abnormal flame pattern

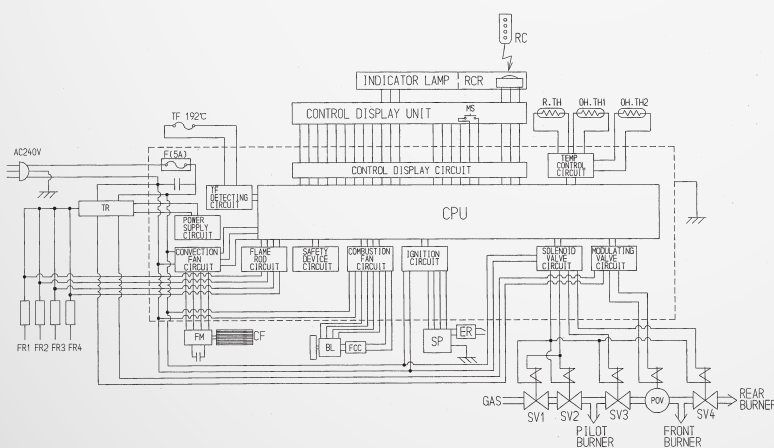
Installation checklist

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 sheet)



| Mark | Colour |
|------|-----------------------|
| bk | Black |
| bl | Blue |
| gr/y | Yellow - Green Stripe |
| gy | Grey |
| or | Orange |
| pl | Purple |
| r | Red |
| w | White |
| y | Yellow |



| Mark | Part | Mark | Part |
|-------|---------------------------|-----------|---------------------------|
| MS | Main Switch | OH.TH1,2 | Over Heat Thermistor 1, 2 |
| R.TH | Thermistor | SV1-4 | Main Solenoid Valve 1-4 |
| TF | Thermal Fuse | BL | Combustion Fan Motor |
| F | Fuse | FCC | Fan Control Circuit |
| ER | Electrode | RCR | Remote Control Circuit |
| POV | Modulating Solenoid Valve | CPU | Central Processing Unit |
| TR | Transformer | PB | Pilot Burner |
| FR1-4 | Flame Rods 1-4 | FB | Front Burner |
| RC | Remote Controller | REARB | Rear Burner |
| CF | Convection Fan | REARB (L) | Rear Burner Left |
| FM | Convection Fan Motor | REARB(R) | Rear Burner Right |
| SP | Sparker | | |



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