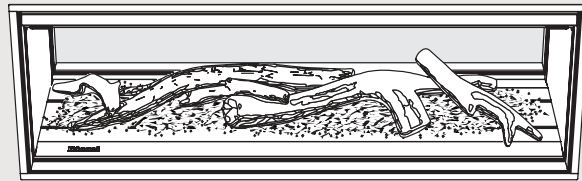
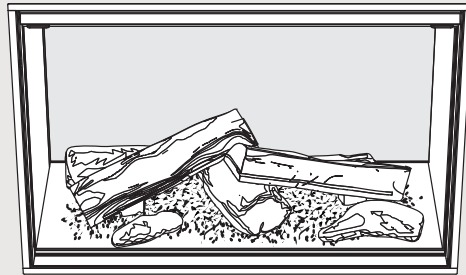


Models: RHFE0800, RHFE1000, RHFE1500



Linear collection gas fireplaces

Installation guide

Rinnai

Important

Appliance must be installed with a Rinnai approved flue system.

This appliance shall be installed in accordance with:

- Manufacturer's installation instructions

Current:

- AS/NZS 5601 Gas Installations
- AS/NZS 5263 Gas Appliances General Requirements
- AS/NZS 3000 Electrical Standards
- AS/NZS 3500 Plumbing and Drainage Standards

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).

Rinnai New Zealand Limited
105 Pavilion Drive, Mangere, Auckland
PO Box 53177, Auckland Airport, Auckland 2150

Phone: (09) 257 3800
Email: info@rinnai.co.nz
Web: www.rinnai.co.nz
www.youtube.com/rinnainz
www.facebook.com/rinnainz

Installer please note



When completing the installation it is ideal to have the homeowner present to test the Wi-Fi connectivity and correct operation of the fire.

Contents

Before you start	4
Specification	5
Unit dimensions (mm).....	6
Clearances from combustibles	7
Hearths	9
TV installation	10
Installation overview	11
Cavity ventilation	12
Framing dimensions	13
Gas supply.....	17
Room thermistor	17
Electrical supply.....	18
Flue terminal position	18
Installing the Linear into the cavity	19
Removing the glass front.....	20
Commissioning	21
Wiring diagram	25
Burn media installation	26
Test operation and lighting sequence	27
Check Wi-Fi connection.....	28
Installing the wall lining.....	29

Flueing

General flueing guidelines.....	36
Flueing options	38
Air hose connection	44
Linear flue components	45

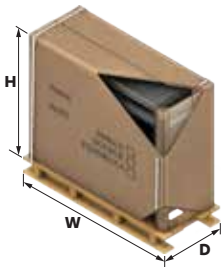
Before you start

Unpack the appliance and components and check for damage. DO NOT install any damaged items. Check all components have been supplied, refer table below, 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. There are also some sections in this guide that are critical to a successful installation, for example:

- Preline instructions regarding combustible and non-combustible materials pages 7, 9, 29-35
- Cavity ventilation considerations page 12
- Framing dimensions in order to centre the glass of the fire pages 13-16

Linear boxed dimensions



	Linear 800	Linear 1000	Linear 1500
Height	1156 mm	931 mm	931 mm
Width	1350 mm	1550 mm	2050 mm
Depth	530 mm	530 mm	530 mm
Weight	120 kg	125 kg	140 kg

With the Linear engine comes the:

- Glass front
- Remote control (batteries included)
- Flue lock bracket and truss screws (x2)
- Operation and Installation guides
- Burn media installation guide
- Colour burn media placement sheet (attached to the glass frame)
- Commissioning sheet (in a plastic pouch inside the unit)
- Reducing flare
- Linear 800 FlameTech or standard log set (inside the engine)



The burn media for the Linear 1000 and 1500 models will come packaged separately in one large box.



Flue components and accessory items are ordered separately.

Installer please note

The Linear carton has a unit protection cutout that can be fixed to the appliance to protect the fire from damage, debris, and dust, until final commissioning can be completed.

Specification

Inbuilt power flued convection fan fire operated by a simple infra-red remote, or by the Rinnai Wi-Fi app that allows full thermostatic control as well as other features such as timers. Different burn media options available.

Specification summary

	Input	Output*	Heating area**
800	15-35 MJ/h	3.1-7.5 kW	70-120 m ²
800FT	15-35 MJ/h	3.1-7.7 kW	71-123 m ²
1000	14-34 MJ/h	3.1-7.4 kW	69-118 m ²
1500	14-40 MJ/h	3.1-8.5 kW	79-135 m ²

Efficiency = > 75% (all models on high)
Gas type = NG or ULPG

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

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 Linear is ideal for a new build installation.

Installation considerations

Room size—smaller rooms will heat up quickly, and due to the efficiency of the appliance, if in thermostatic mode, will reduce to a low flame profile.

Installation of the Linear higher up the wall, in some room configurations, can create draughts due the convection air being pushed out from the top of the appliance.

For more accurate room temperature control and to prevent heat build-up inside the cavity, it is strongly recommended to ventilate the fireplace enclosure. Refer p.12 for more information.

Convection fan

2-speed fan. Heat is distributed from the top of the appliance.

Data plate

1500

Base of the combustion chamber towards the LHS, between the gas control and convection fan access panel.

800/1000

Base of the combustion chamber, LHS, on the convection fan access panel.

Gas connection

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

Ignition: Continuous spark electronic ignition.

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 = 50 W
Standby = <8 W

The Linear has a 1.5 m power cord with a three pin plug supplied. The power cord passes through a slot in 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 detection.

Temperature control

The Linear can be operated using the basic infra-red remote, or for more features, such as timers and thermostatic control, using Rinnai's Wi-Fi fireplace controller app.

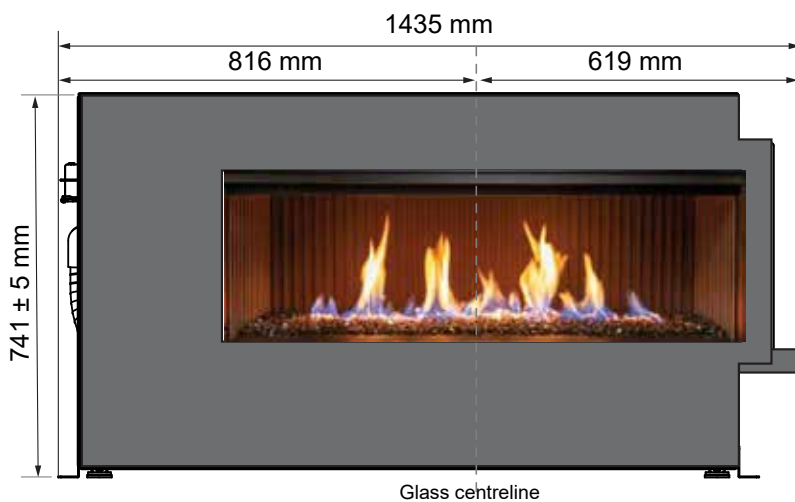
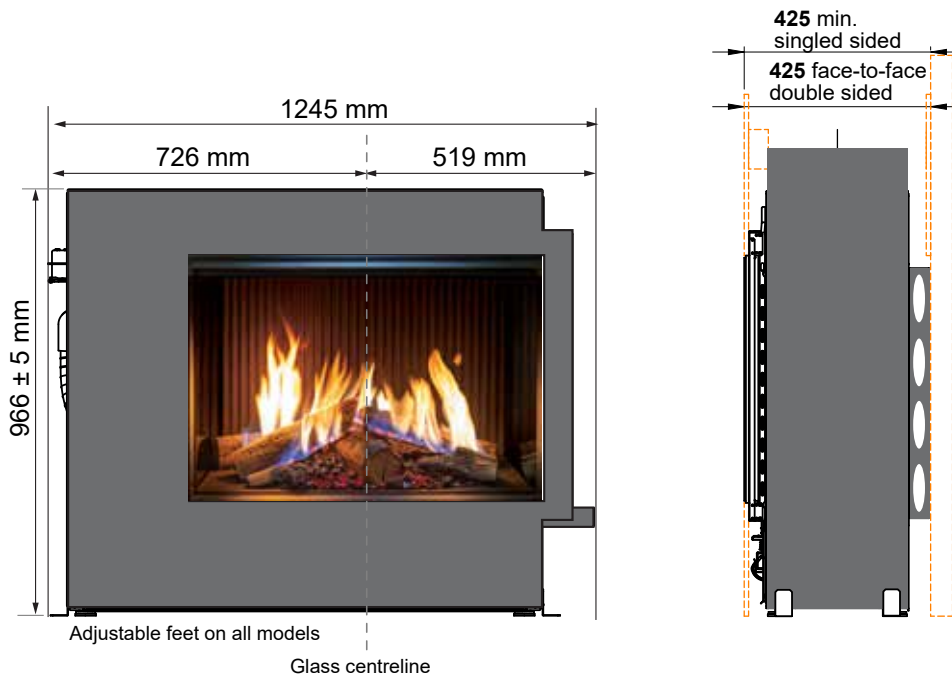
Weights

	Unit	Packaged
800	100 kg	120 kg
1000	100 kg	125 kg
1500	110 kg	140 kg

Unit dimensions (mm)

IMPORTANT

- These are the unit dimensions only, not the framing/cavity dimensions, refer p.14-16
- The centre of the glass is NOT the centre of the appliance
- Depth dimension is the same for all models

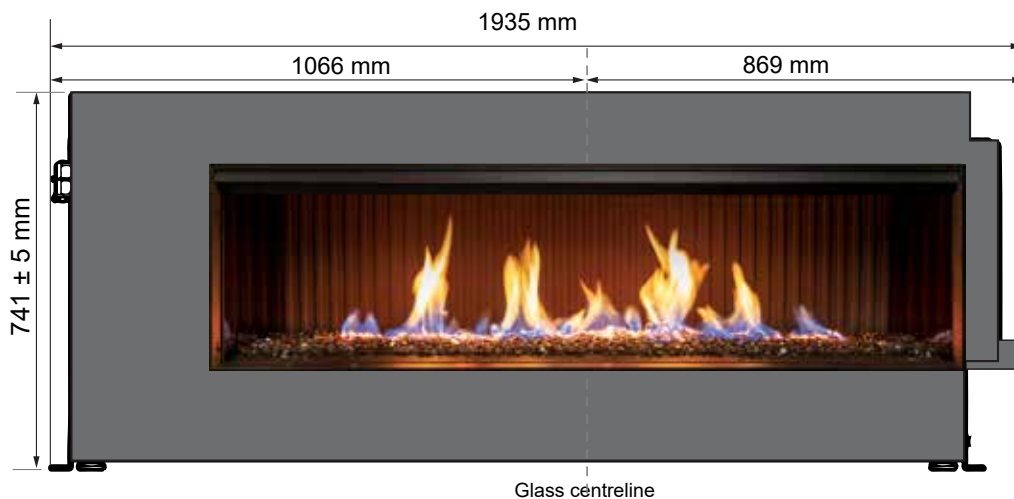


Glass dimensions

800 800 x 505 mm

1000 1000 x 280 mm

1500 1500 x 280 mm

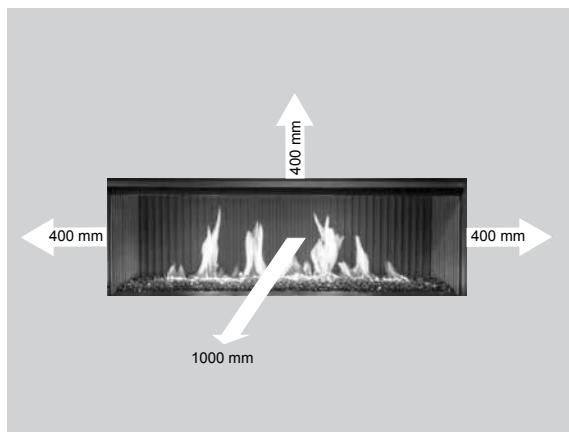


Clearances from combustibles

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 fire. The 400 mm side clearance includes side walls. The 1000 mm clearance is in front of the fire.



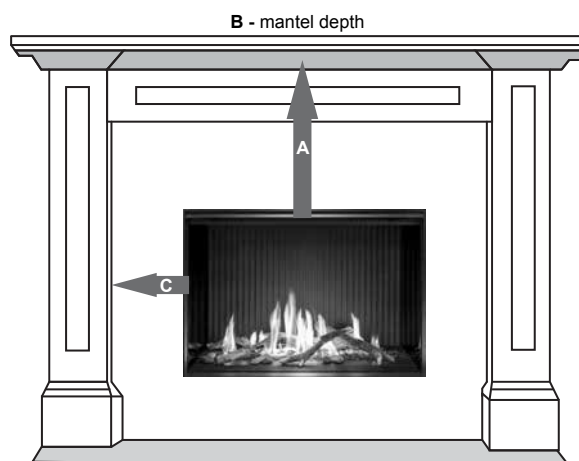
Floor protection

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 the appliance.

Mantels and surrounds

Combustible mantels and surrounds require clearance from the unit to minimise the risk of fire.

Mantels and surrounds, made of combustible material such as wood are allowed providing they are outside the minimum clearances shown below.



A	Mantel needs to be a minimum 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

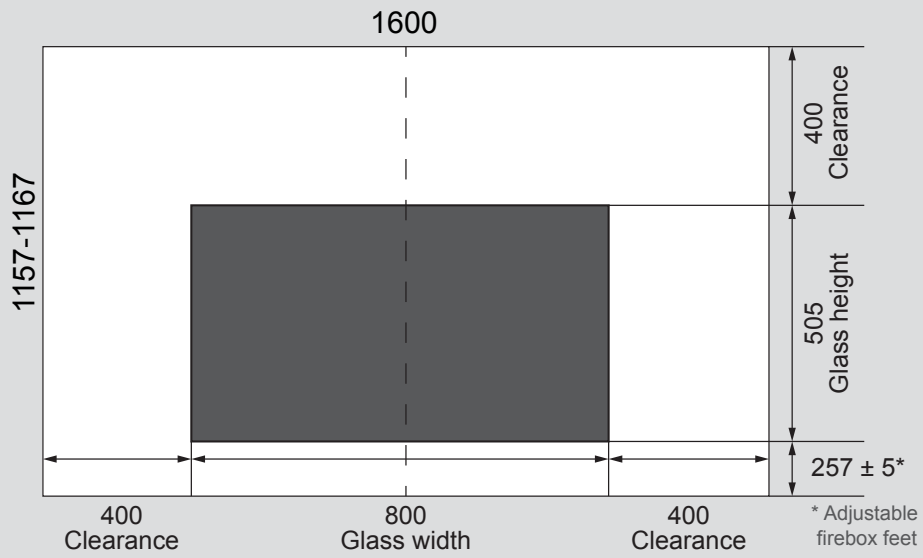
For every 50 mm of added mantel depth there must be an additional 100 mm of clearance from the edge of the glass. For example:

Mantel depth A: clearance required

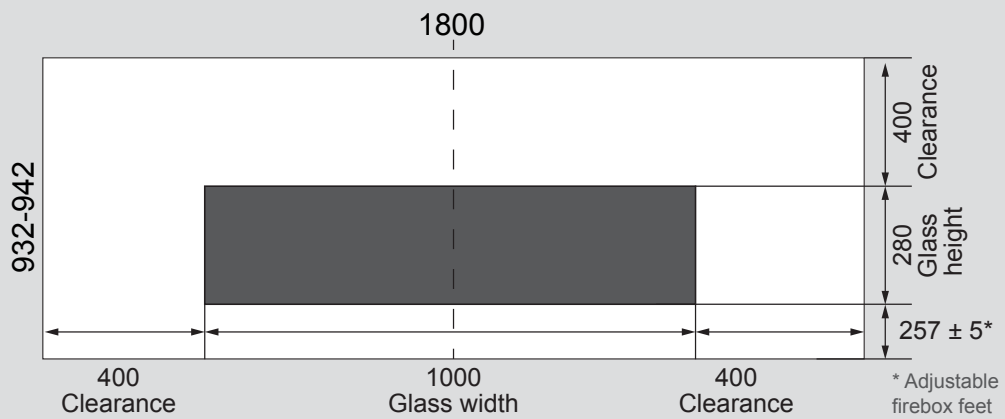
300 mm	500 mm
350 mm	600 mm
400 mm	700 mm

The below diagrams are to assist in determining the full clearance area around the Linear.

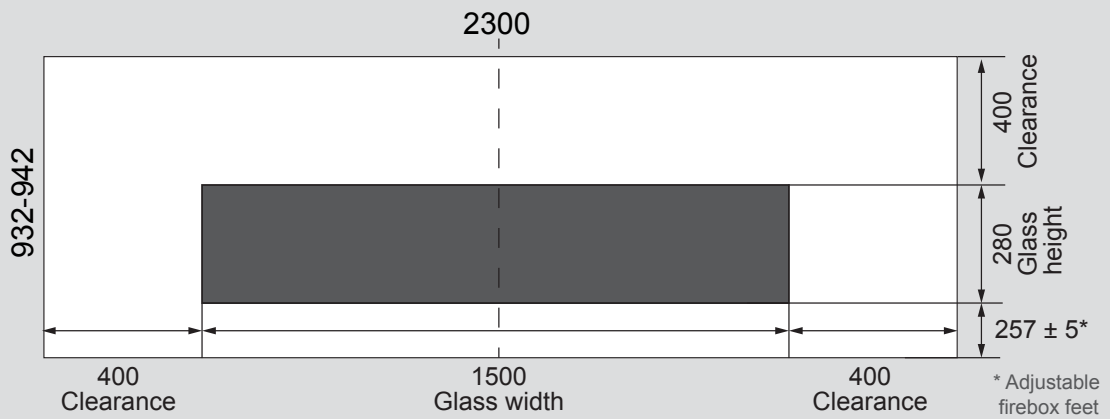
Linear 800



Linear 1000



Linear 1500

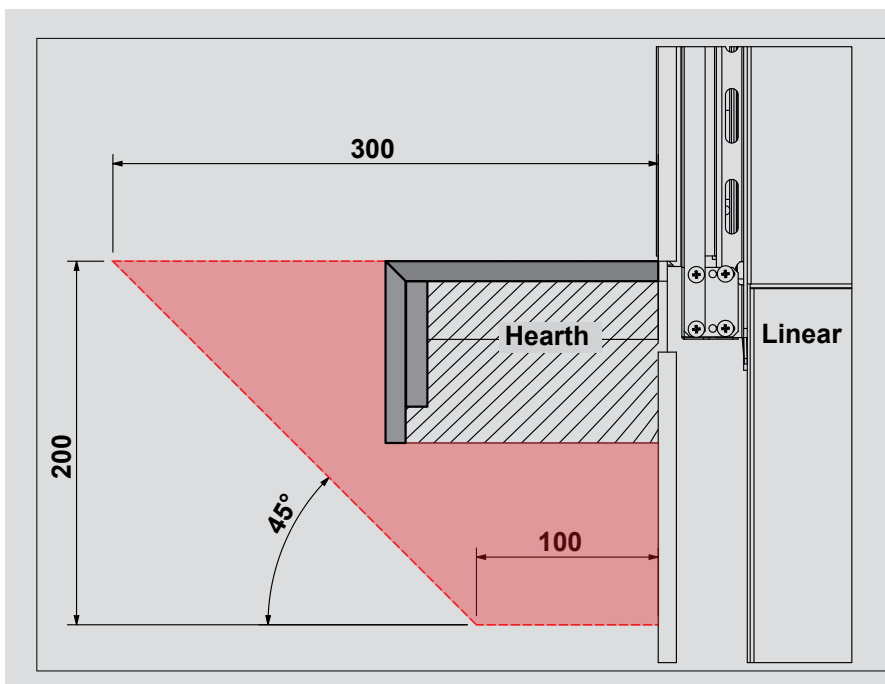


Hearths

Any hearth that is installed in the shaded area (shown below) must be capable of withstanding temperatures up to 100 °C. Some laminated materials may buckle or delaminate when exposed to high levels of heat.



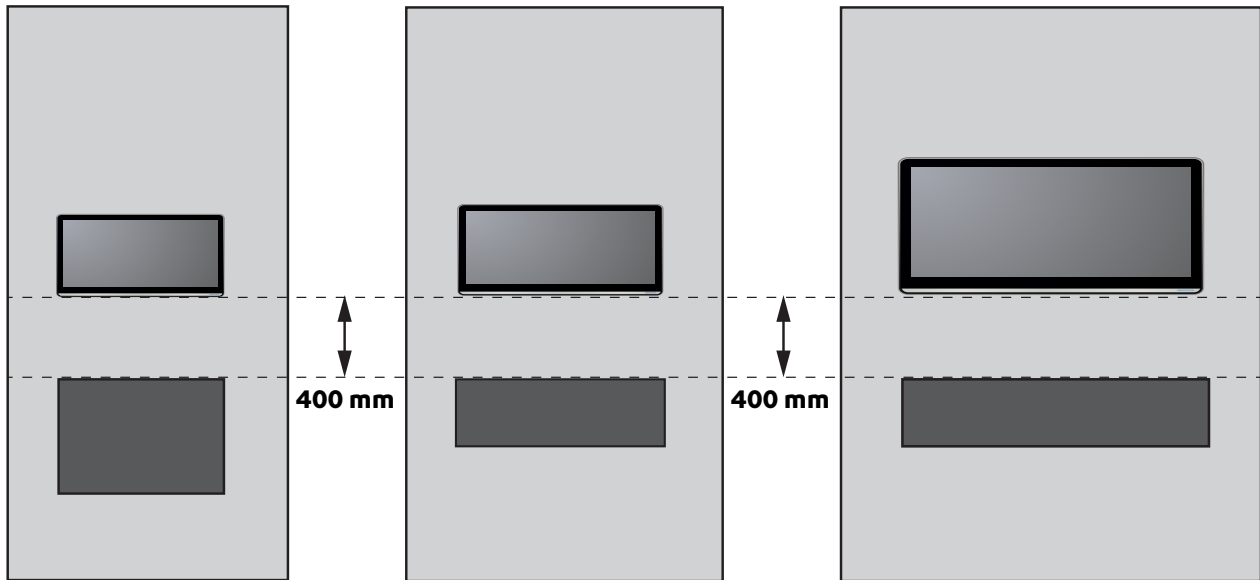
1. A 3 mm air gap between the hearth and lower fire lip is critical. This allows for air flow to critical components and for correct operation of the IR receiver.
2. The lower support rail is only required if the side rails are used, side rails are required for combustible wall linings.
3. The finishing trim latches are not needed if a hearth is installed, they can be snapped off if they are in the way.



Please note:
Shaded area
must be capable
of withstanding
temperatures up to
100 °C.

TV installation

The Linear has a fan that distributes warm air from the top of the appliance out into the room. As warm air is dispersed outwards and not directly upwards, installation of a TV may be an option.



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

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.

Installation overview

❶ Complete framing and base panel, p.12-16.

❷ Prepare gas and electrical connections, and cavity ventilation.

❸ Fit the Linear

Move the Linear into the cavity. Tip forward slightly to get the two back feet in first. To reduce the weight you can remove the glass first (p.20). The Linear has adjustable feet on all corners. Use these feet to level the fire. This is critical so the wall lining can be installed flush to the lips of the fire. Once level, secure the Linear to the base of the enclosure using the four brackets, which also act as seismic restraints (p.19).

❹ Complete the gas connection

To access the gas connection and gas control, remove the screws holding the Wi-Fi panel in place (refer image on p.28 for Wi-Fi assembly position). At this stage also check the flue configuration to see if a dip switch change is required. Check for gas leaks.

❺ Fit the flue, refer p.36-47 for more information.

❻ Commission with the glass off

Follow the commissioning instructions, p. 21-24.

❼ Install the burn media

Placement of the burn media is critical to the performance and safe operation of the appliance. Refer p.26 for more information.

❽ Install the glass front

Reinstall the glass front, check operation of the fire, check the remote and Wi-Fi module is working (p.28).

❾ Complete final framing and install the wall lining

Complete the final framing once you are satisfied the fire is working correctly—there will be limited access to the unit once final framing is completed.

Install the wall lining as one piece (so it doesn't crack), with a cutout for the glass, **up to** the lips of the unit. DO NOT go over the lips. There is an air gap of at least 3 mm around the lips of the fire, which is CRITICAL to safe operation, to ensure air flow in and around the unit.

Fix the wall lining in place. We recommend gluing as screws will transfer heat, and during installation there is the potential to damage some controls of the fire if screws are used, refer p. 29-35 for more information.

N.B: For new builds the final stage could be completed prior to commissioning.

Helpful tips

To level the unit and not affect where the feet go, the seismic brackets need to be elevated once the unit is off the pallet.

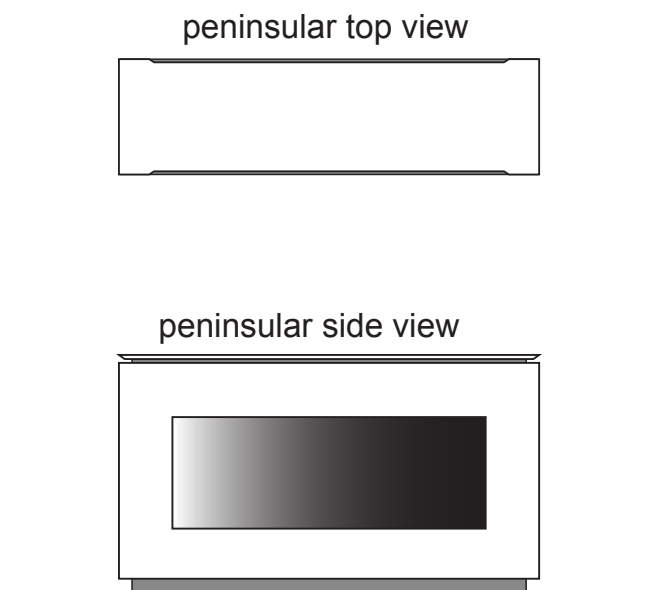
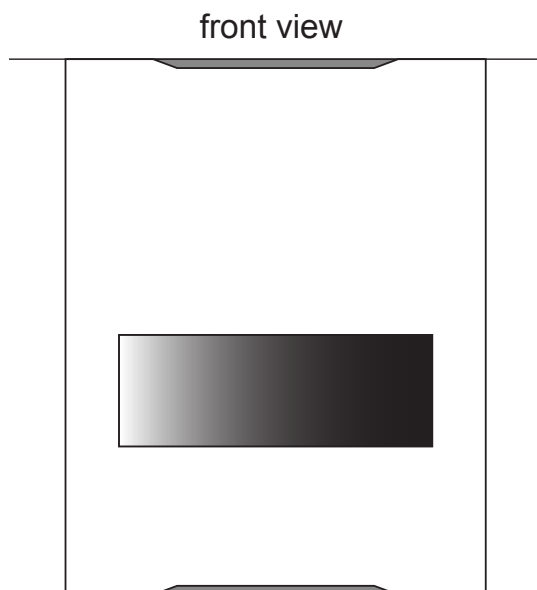
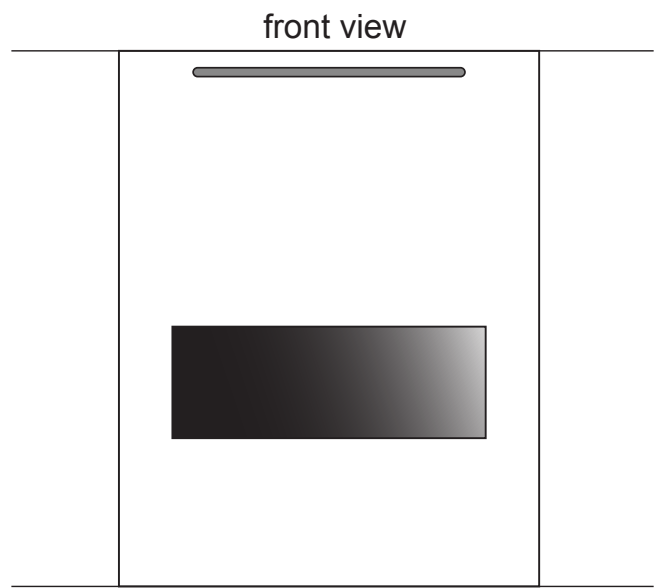
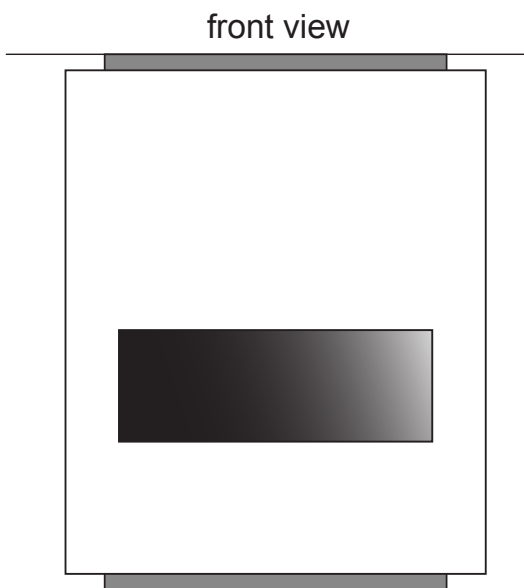
We STRONGLY recommend the gas is on to check the inlet pressure as access to controls after the wall lining is on is more difficult.

Cavity ventilation

Ventilation of at least 2000 mm² is recommended in the cavity, ideally below the base of the fire. This is to provide room air at ambient room temperature to the fire thermistor located in the base of the fire¹. Ventilation can be via a vent or an open toe kick at the base of the cavity—it must be in the same room as the fire.

Additionally the top of the cavity needs to be ventilated into the room or another space. This ventilation opening must also be at least 2000 mm². This opening prevents heat build up inside the cavity, which if left unvented could cause damage to wall surfaces or coverings and/or cause the fire to cut out.

Cavity ventilation design ideas



¹ Alternatively provide a way of moving the room temperature thermistor into the room, for example under the hearth—ensure it can be accessed/removed for service.

Framing dimensions

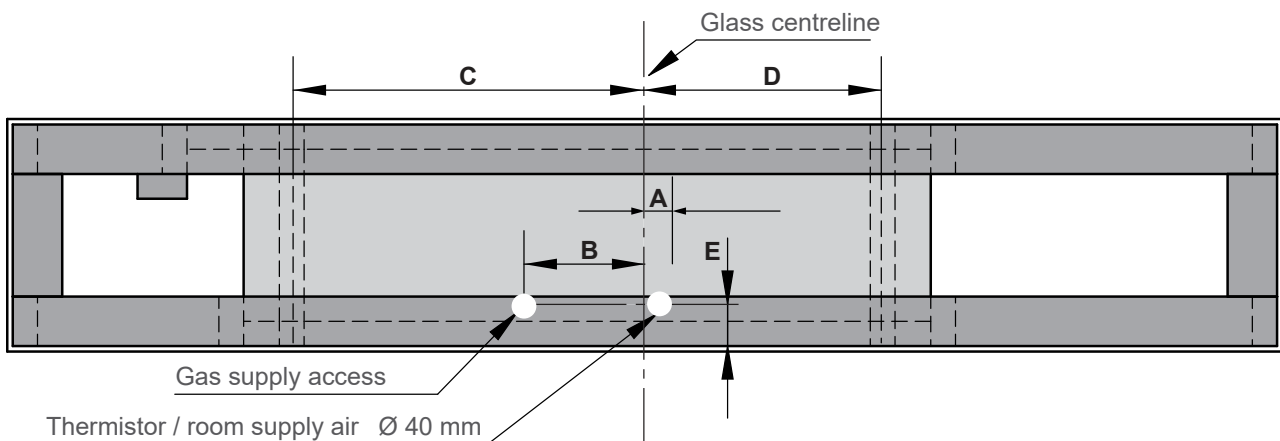
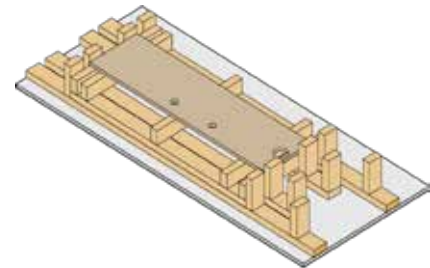


The framing dimensions have the studs offset. This is because the cavity needs to be framed based on the centreline of the Linear glass, **NOT** the opening size.

Where there is a requirement for a symmetrical installation, the cavity size will need to increase. To calculate a rough opening width, double the flue to centreline figure on the following pages.

Base board and connection cutouts

To ensure everything lines up and fits properly it's recommended that on the base the following dimensions are pencilled; glass centreline, unit depth centreline, feet position, gas and room thermistor cutouts.



	Linear 800	Linear 1000	Linear 1500
A (room supply air)	50 mm	50 mm	255 mm
B (gas supply)	220 mm	220 mm	220 mm
C (support feet centres)	640 mm	740 mm	990 mm
D (support feet centres)	360 mm	460 mm	710 mm
E* (from front of cavity)	77 mm	77 mm	77 mm

* E assumes 10 mm wall board

Additional framing notes

- Wallboard is set 1 mm back from the front edge of the lips to allow for a slim edge plaster finish.
- To ensure the appliance performs correctly, without rattling, the Linear **MUST BE** installed on a flat level support base. The joists must be capable of supporting a minimum of 1.5 times the weight of the appliance—base panel is also designed to take the weight of the wallboard.



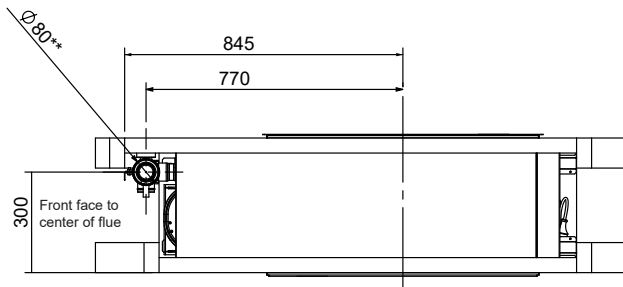
Issues caused by rattling fires not installed on a flat level base, as detailed in this guide, will not be covered by warranty.

Linear 800 minimum framing dimensions (mm)

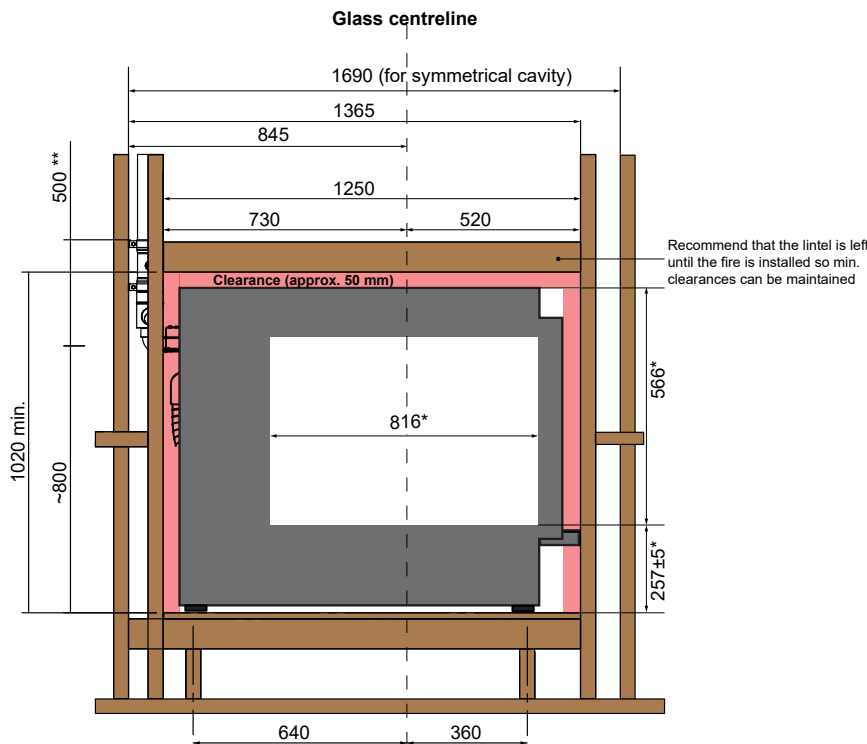
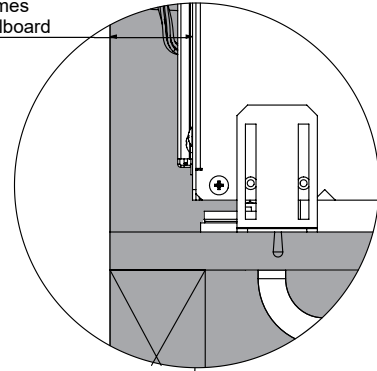


The framing dimensions have the studs offset. This is because the cavity needs to be framed based on the centreline of the Linear glass, **NOT** the opening size.

Where there is a requirement for a symmetrical installation, the cavity size will need to increase, refer diagram below.

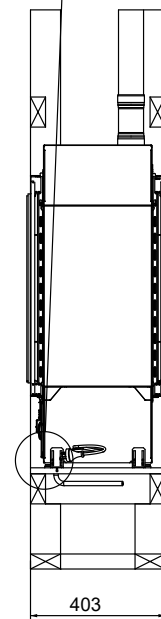


39 assumes 10 mm wallboard



Recommend that the lintel is left until the fire is installed so min. clearances can be maintained

Shaded area denotes a clearance around the fire of approx. 50 mm. On the RHS this is automatically achieved with the carry bar.



403 mm assumes a 10 mm wallboard on both sides of a double-sided unit.

415 mm is the min. for a single-sided unit to maintain 50 mm clearance to the back of the fire.

* Minimum wallboard cutout, refer table on p.29

** Maintain 25 mm clearance to combustibles for the first 500 mm of flue

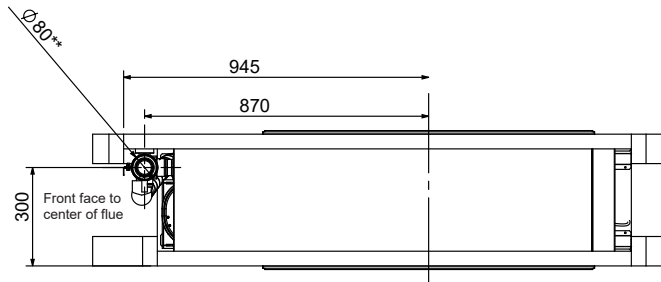
- All dimensions are assuming a 10 mm wallboard
- Studs and joist are required directly below the support feet of the fire
- Framing shown is 90 x 45 mm
- Fire platform shown is 18 mm plywood
- Allow room underneath the appliance for the gas supply to enter the fire cavity (min. 100 mm)

Linear 1000 minimum framing dimensions (mm)

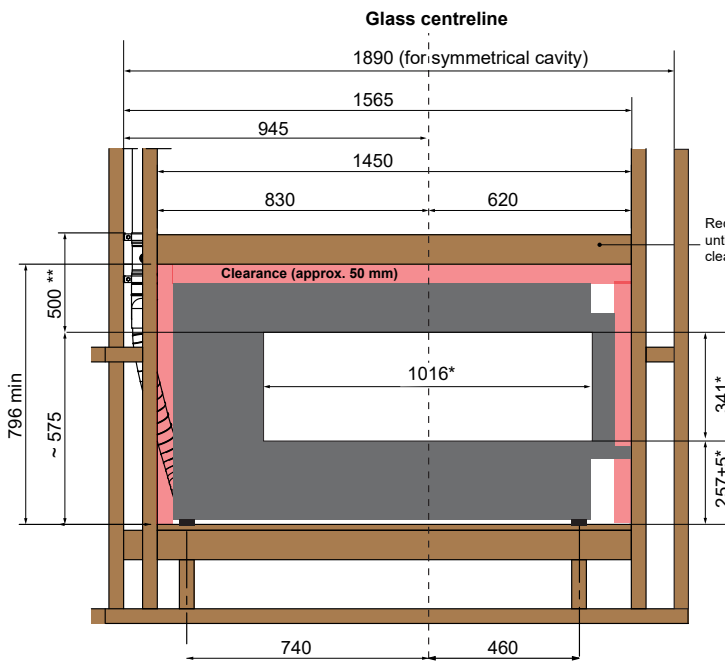
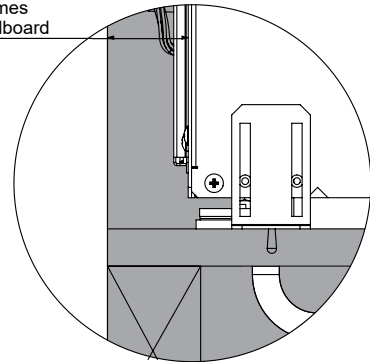


The framing dimensions have the studs offset. This is because the cavity needs to be framed based on the centreline of the Linear glass, **NOT** the opening size.

Where there is a requirement for a symmetrical installation, the cavity size will need to increase, refer diagram below.

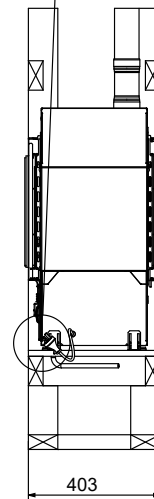


39 assumes 10 mm wallboard



Recommend that the lintel is left until the fire is installed so min. clearances can be maintained

Shaded area denotes a clearance around the fire of approx. 50 mm. On the RHS this is automatically achieved with the carry bar.



403 mm assumes a 10 mm wallboard on both sides of a double-sided unit.

415 mm is the min. for a single-sided unit to maintain 50 mm clearance to the back of the fire.

* Minimum wallboard cutout, refer table on p.29

** Maintain 25 mm clearance to combustibles for the first 500 mm of flue

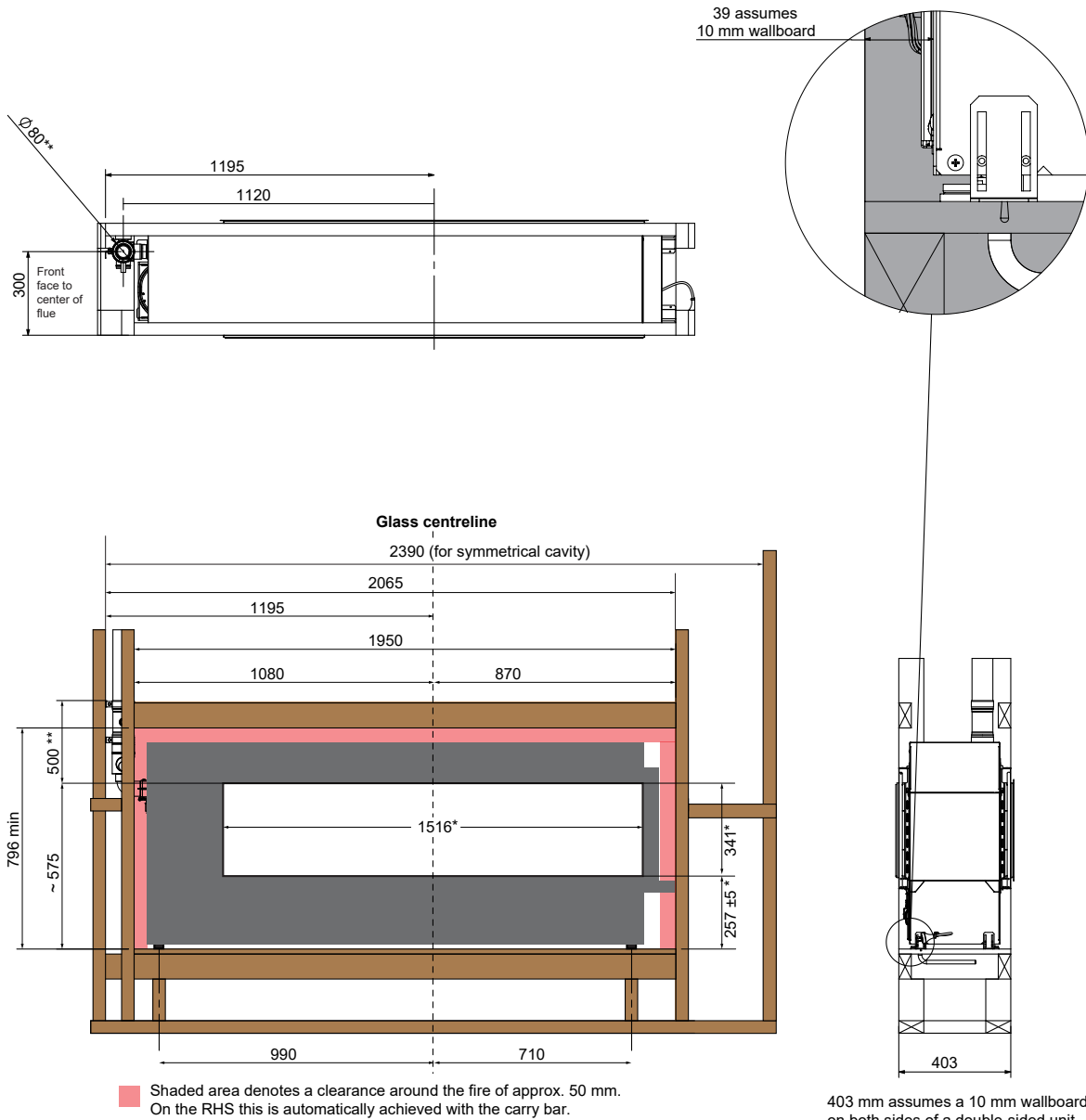
- All dimensions are assuming a 10 mm wallboard
- Studs and joist are required directly below the support feet of the fire
- Framing shown is 90 x 45 mm
- Fire platform shown is 18 mm plywood
- Allow room underneath the appliance for the gas supply to enter the fire cavity (min. 100 mm)

Linear 1500 minimum framing dimensions (mm)



The framing dimensions have the studs offset. This is because the cavity needs to be framed based on the centreline of the Linear glass, NOT the opening size.

Where there is a requirement for a symmetrical installation, the cavity size will need to increase, refer diagram below.



403 mm assumes a 10 mm wallboard on both sides of a double-sided unit.

415 mm is the min. for a single-sided unit to maintain 50 mm clearance to the back of the fire.

* Minimum wallboard cutout, refer table on p.29

** Maintain 25 mm clearance to combustibles for the first 500 mm of flue

- All dimensions are assuming a 10 mm wallboard
- Studs and joist are required directly below the support feet of the fire
- Framing shown is 90 x 45 mm
- Fire platform shown is 18 mm plywood
- Allow room underneath the appliance for the gas supply to enter the fire cavity (min. 100 mm)

Gas supply

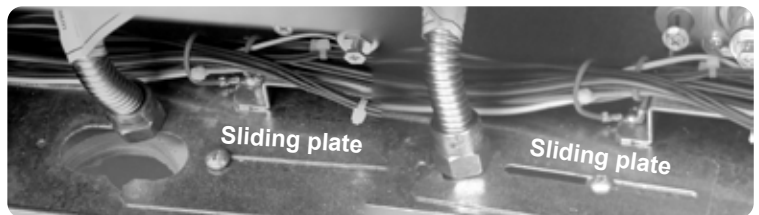
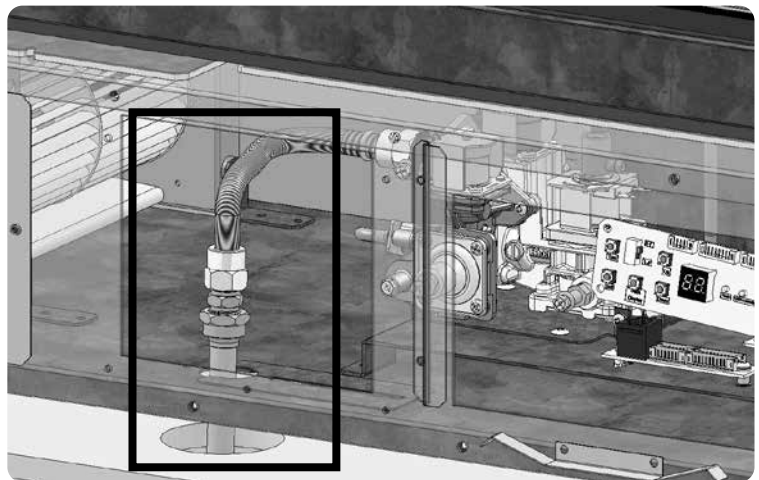
Gas pipe sizing must consider the gas input to this appliance, as well as other gas appliances in the premises. The gas supply termination is inside the heater, and enters from the lower left hand side of the appliance.

Once the gas connection is completed and checked for gas leaks lock the sliding plate in place to stop the connection rattling, refer image below.

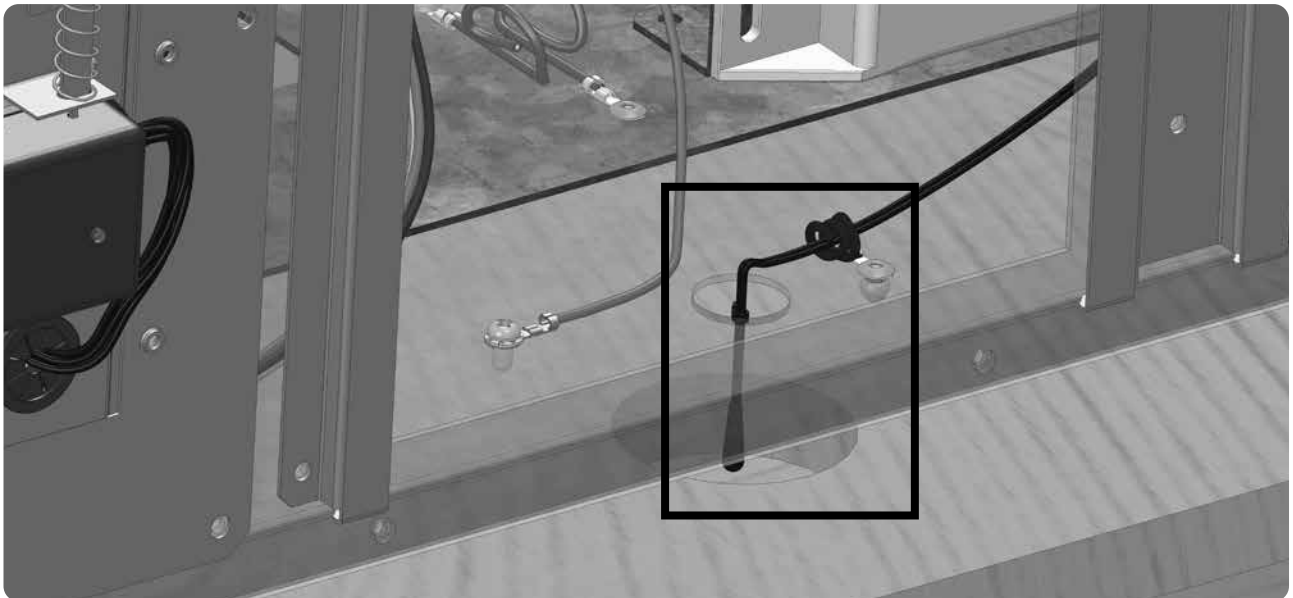
Purging the gas supply

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.

The use of rubber hose for any gas connection to a fixed appliance is NOT authorised by the manufacturer.



Room thermistor

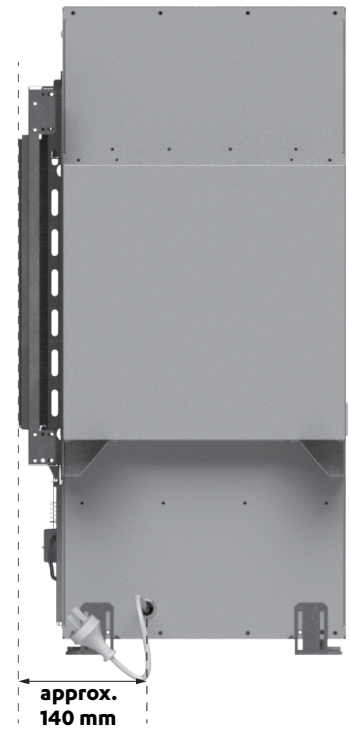


Once installed the room temperature thermistor (supplied on a 1m cable) should be set so the bulb on the end is outside of the fire box and into an area where room air will be drawn over it, refer image above. Make sure it will still be accessible for service when the wall linings have been installed.

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 front right hand side of the appliance, approximately 140 mm from the front of the unit.

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

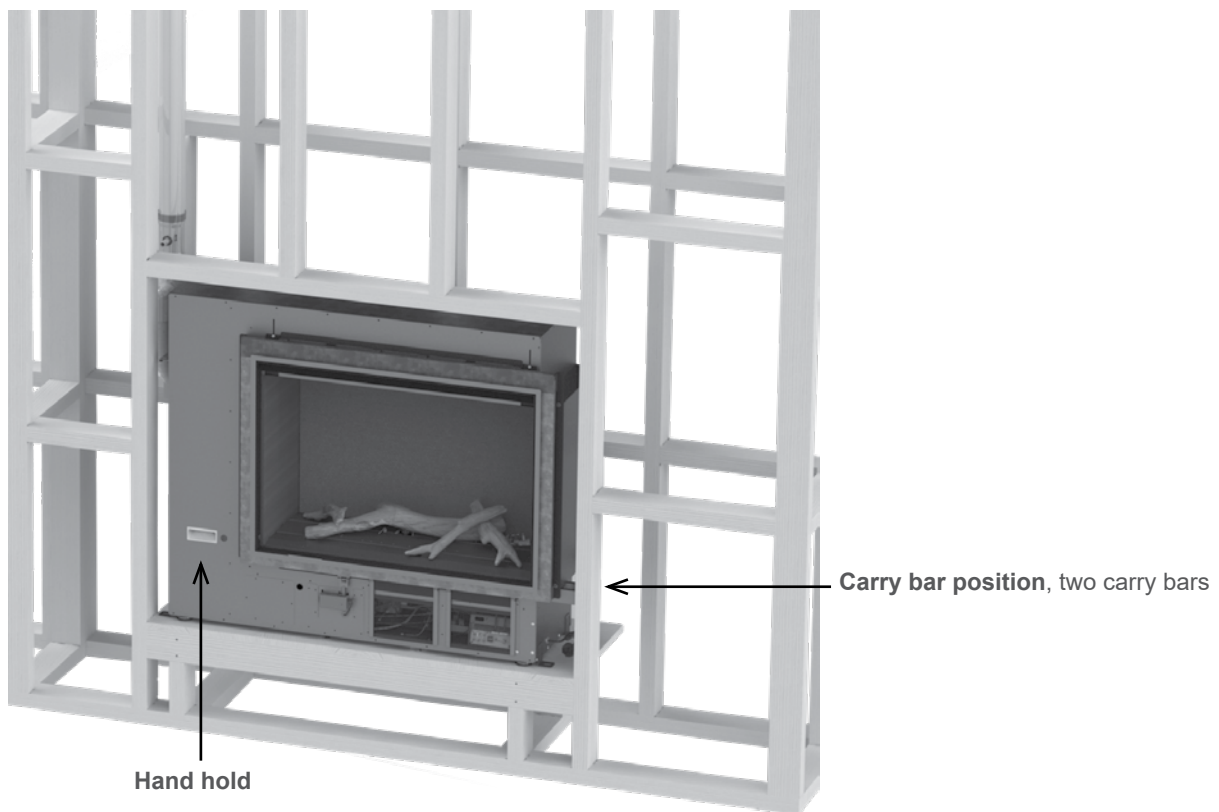


Flue terminal position

The below diagram highlights the position of the flue terminal in relation to the glass centreline.

	Linear 800	Linear 1000	Linear 1500
A	655 mm	755 mm	1005 mm
B	800 mm	575 mm	575 mm

Installing the Linear into the cavity

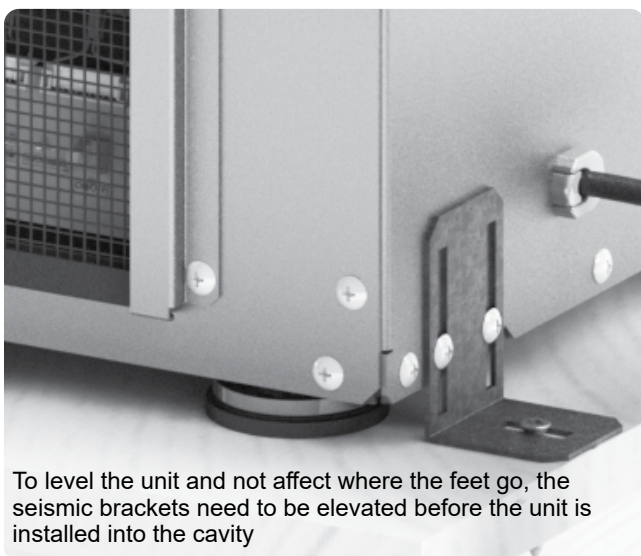


Using the handholds (white slots LHS and carry bars RHS), carefully lift and slide the Linear into the enclosure and position in place.

Adjustable feet and seismic brackets

Use the feet on all corners of the unit to adjust the fire so that it is level. The feet are adjustable. Having the unit level is critical to the installation, so the wall lining can be installed flush with the lips of the appliance.

Once level secure the Linear to the bottom of the cavity using the four seismic brackets.



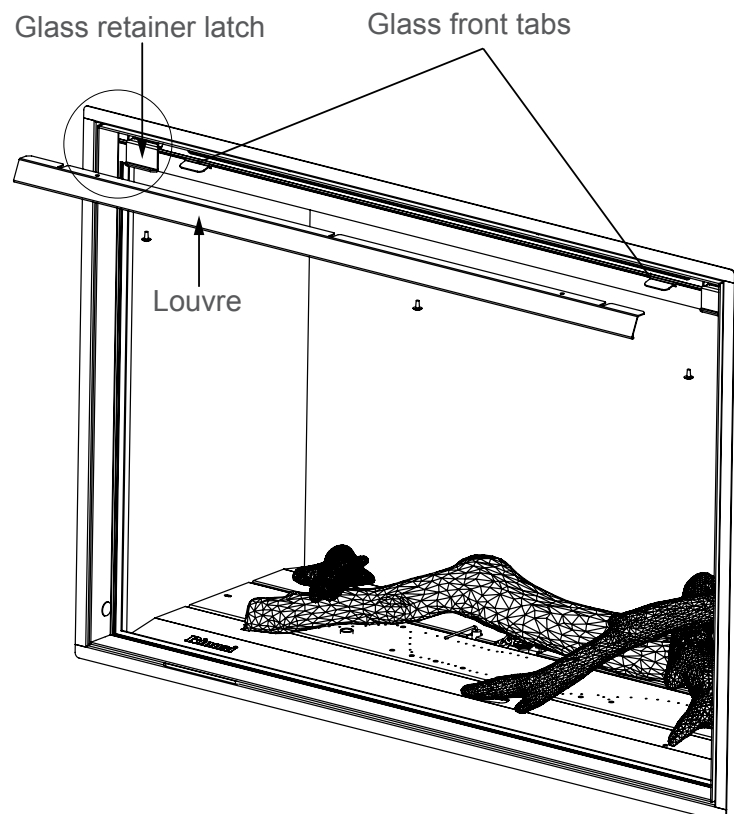
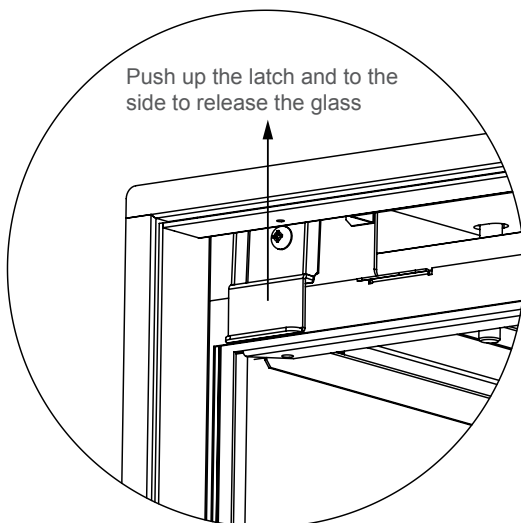
Removing the glass front

The glass front sits in a narrow channel at the bottom of the fire and is held in place by glass retainer latches positioned at the top, either side of the unit (the 1500 model has an extra glass retainer latch in the center).

- 1500 glass front weighs 6.8 kg

To remove the glass:

1. Using a screwdriver, loosen the three screws holding the louvre in place, remove the louvre, and then remove the screws (so the glass can come out)—put the louvre to one side.
2. Push the top glass retainer latches up and slightly to one side to release the top section of the glass.
3. Using the frame tabs at the top of the glass front, lift up and gently slide to the right and rotate the glass until the left section comes free, then move the glass front to the left to remove the right section.



Commissioning

Accessing the commissioning instructions installed in the bottom of the unit will not normally occur during installation, which is why the instructions are detailed in this guide.

For servicing and maintenance the commissioning sheet is installed in a pouch inside the base panel of the appliance:

- 1500 right hand side of the gas control
- 800/1000 tucked in behind the Wi-Fi

The Linear comes with the high and low operating pressures factory preset. Under normal circumstances the operating pressures do not require adjustment during installation. Make adjustments **ONLY** if the unit is not operating correctly and all other possible causes for incorrect operation have been eliminated.

Inlet supply pressure to the appliance **MUST BE** checked and set within the operating parameters of the appliance in all instances. If the appliance cannot be adjusted to perform correctly call 0800 746 624.



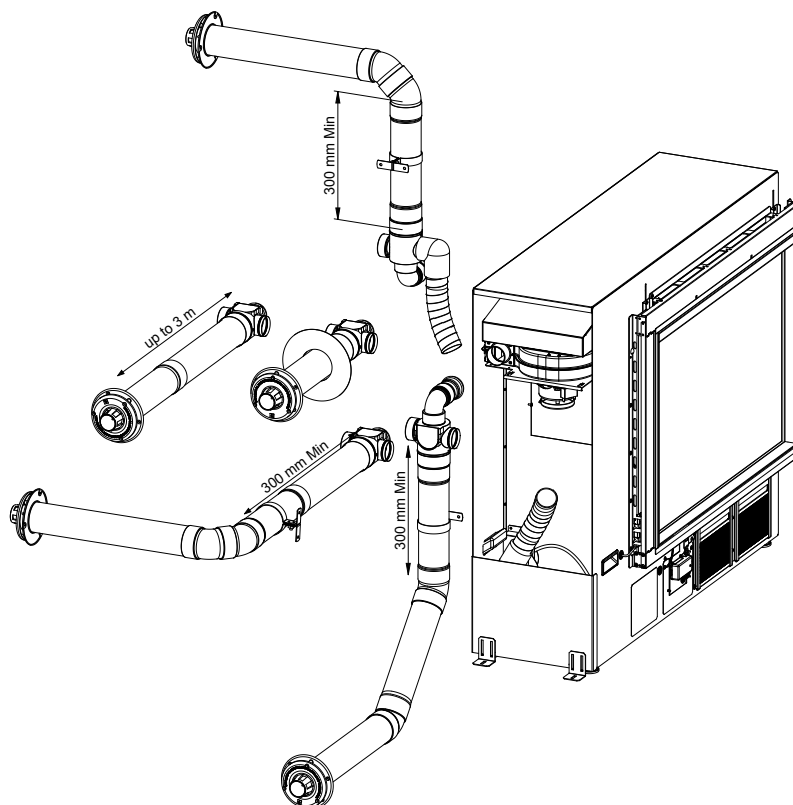
240 V, risk of electrical shock

Before attempting to remove any panels ensure the fire is isolated from the mains supply.

DO NOT leave the appliance unattended when the power is connected and the panels are removed.

Commissioning requires the plastic buttons on the PCB are pushed. We do not recommend using a screwdriver as breakage can occur, a blunt item or finger is best.

The gas pressures of the Linear are factory set for **short flue** (S-F) installations, as pictured below. All other installations, greater than 3 m in length, are long flue (L-F) installations and will require a dip switch change.





Commissioning and setting the gas pressures for the Linear is done with the glass off and before the burn media is added. The exception is the 800 FlameTech. The burners and the two FlameTech logs need to be temporarily positioned on the aeration sleeves for commissioning.

The pressures can be checked by operating the buttons on the control panel PCB through the front access panels on the Linear before the wall lining has been installed, or by pulling out the control panel PCB and accessing the buttons through the opening from the front of the appliance (as shown).



Check the pressures against those printed on the data plate of the appliance. If the data plate is not easily accessible the pressures are also detailed on the next page. If no adjustment is required during some stages of the gas pressure setting process, the 'SET' button will still need to be pushed to go to the next setting.

Commissioning the PCB

Steps required to commission the PCB—ONLY done if the PCB is being replaced or after a gas conversion

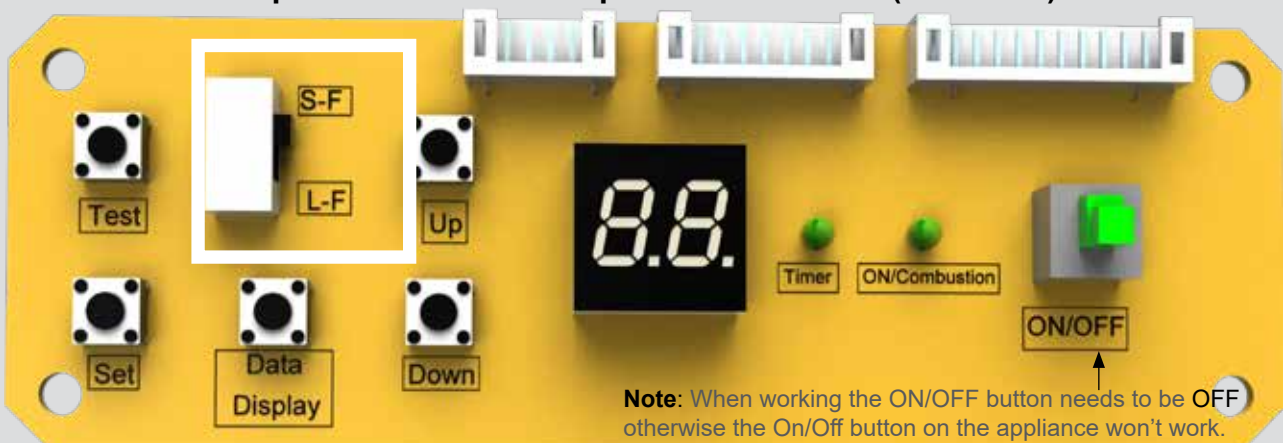
1. Turn on the gas and power supply.
2. Press the 'Test' button, the display will now show the gas code. Press the 'Up' and 'Down' buttons to obtain the gas code for the unit, and press 'Set' to lock in the code.
A1 = NG
L1 = LPG

The gas pressures can now be checked.

Room thermistor offset

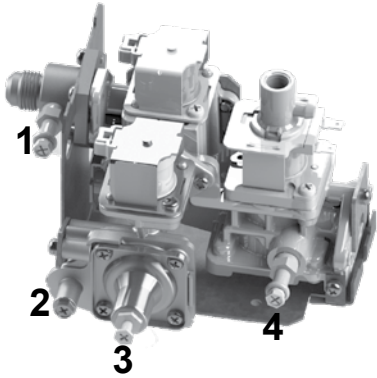
The Linear PCB has an additional LED display, a room thermistor offset. This will display after the gas code and will be factory preset to 0 (range 0 ± 5)¹. It will only need adjustment if there is significant variation in the thermistor reading and the actual temperature reading of the room.

Linear control panel PCB with the dip switch set to S-F (short flue)

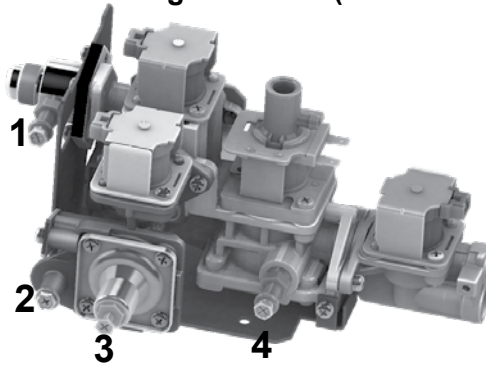


¹ 0 ± 5 °C in 15 stages, each stage (up/down button press) represents a $\frac{1}{3}$ of a degree change, e.g. six 'Up' presses (stages) equates to a 2° offset.

Linear 800 and 1000 gas control



Linear 1500 gas control (with the extra solenoid)



1	Inlet pressure test point screw
2	Pilot pressure test point screw
3	Pilot pressure adjustment screw (manometer position)
4	Main burner pressure test point screw

Check the pressures against those printed on the data plate. If the data plate is not easily accessible use the figures in the tables below.

RHFE800SF RHFE800DF	NG		ULPG	
Gas rate Hi SF/LF MJ/hr	35	32	31	28
Gas rate Lo MJ/hr	15		14	
LH RH injector Ø mm	2.0		1.20	
Aeration sleeve LH RH mm	4.5 x 1		9 x 2	
Pilot kPa	0.98		2.0	
PL kPa	0.20		0.35	
PH SF/LF kPa	0.95	0.79	1.95	1.65

RHFE800S RHFE800D	NG		ULPG	
Gas rate Hi SF/LF MJ/hr	35	32	31	28
Gas rate Lo MJ/hr	16		15	
Main injector Ø mm	2.8		1.70	
Aeration sleeve centre mm	21.5		N/A	
Pilot kPa	0.98		2.0	
PL kPa	0.19		0.40	
PH SF/LF kPa	0.95	0.78	1.70	1.44

RHFE1000S RHFE1000D	NG		ULPG	
Gas rate Hi SF/LF MJ/hr	34	31	32	29
Gas rate Lo MJ/hr	15		14	
Main injector Ø mm	2.8		1.70	
Aeration sleeve centre mm	22		N/A	
Pilot kPa	0.98		2.0	
PL kPa	0.19		0.40	
PH SF/LF kPa	0.80	0.65	1.85	1.57

RHFE1500S RHFE1500D	NG		ULPG	
Gas rate Hi SF/LF MJ/hr	40	37	37	35
Gas rate Lo MJ/hr	14		14	
Main injector Ø mm	2.3		1.4	
LH RH injector Ø mm	1.6		0.95	
Aeration sleeve centre mm	22.5		N/A	
Aeration sleeve LH RH mm	21		17	
Pilot kPa	0.98		2.0	
PL kPa	0.3		0.74	
PF kPa	0.87		1.90	
PA kPa	0.59		0.95	
PH SF/LF kPa	0.80	0.67	1.70	1.38

Gas pressure setting

PL	= main burner on low
PF	= main burner on high
PA	= all burners on low
PH	= all burners on high

Sequence will vary slightly depending on the model:

Linear 800, 1000: PL > PH

Linear 1500: PL > PF > PA > PH

Checking the supply pressure

1. Remove the inlet test point screw and connect the manometer hose.
2. Press the heater On/Off button to start the ignition sequence, ensuring the correct inlet pressure is available with all other gas appliances operating on high.
3. Press the heater On/Off button to stop the heater operation.
4. Disconnect the manometer hose and replace the inlet test point screw.

Before commencing with the setting of the burner pressures the correct flue length must be set. The appliance is factory set for short flue installations (refer image on p.21), with the dip switch set to S-F (short flue). For a long flue installation, set the dip switch to L-F (long flue).

Setting the pilot pressure

1. Remove the pilot test point screw and connect the manometer hose.
2. Press the heater On/Off button to start the ignition sequence, ensuring the correct inlet pressure is available with all other gas appliances operating on high.
3. Press the test button twice, the heater will light to main burner on its lowest setting (stage 1) and the display will show PL.
4. Adjust the pilot pressure as required by manually adjusting the pilot pressure adjustment screw. Press the On/Off button to stop the heater operation.
5. Disconnect the manometer hose and replace the pilot test point screw.

Setting the operating pressure

1. Remove the main burner test point screw and connect the positive manometer hose.
2. Press the heater On/Off button to start the heater.
3. Press the test button twice, the heater will light to the main burner on its lowest setting (stage 1) and the digital display will show PL.
4. Press the up or down buttons to set the pressure for the appropriate gas type. Press the set button once to save the setting.

1500 only

5. The display will now show PF (main burner stage 3). Press the up or down buttons to set the pressure for the appropriate gas type. Press the set button once to save the setting.
6. The display will show PA (main burner stage 4). Press the up and down buttons to set the pressure for the appropriate gas type. Press the set button once to save the setting. It can take several seconds for the solenoid to open and the pressure to stabilise.
7. The display will show PH (main burner stage 7). Press the up or down buttons to set the differential for the appropriate gas type. Press the set button once to save the setting.
8. The display will show 7 and two dashes (800, 1000) or 7 and six dashes (1500). If the display does not change, then there is a commissioning error—repeat steps.
9. Press the on/off button to stop the unit.

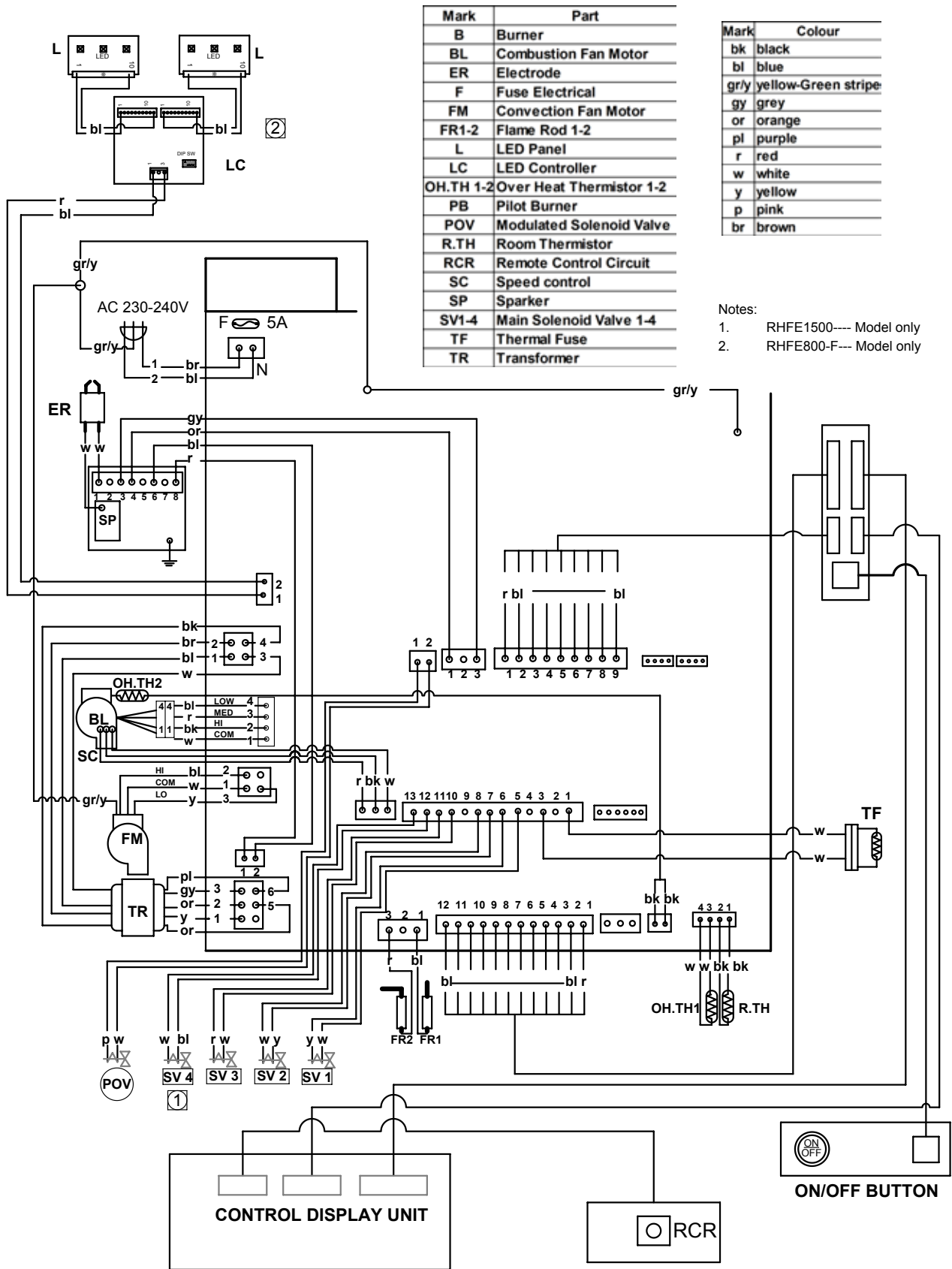


Remove the manometer hose and replace the gas control test point screw. Commissioning is now complete.

Please note: After the gas code is displayed the LED will show \square . This is the room thermistor offset that is preset to \square (range $0\pm 5^\circ\text{C}$)¹. This is typically only adjusted in troubleshooting scenarios, and is not part of commissioning.

¹ $0\pm 5^\circ\text{C}$ in 15 stages, each stage (up/down button press) represents a $\frac{1}{3}$ of a degree change, e.g. six 'Up' presses (stages) equates to a 2° offset.

Linear collection wiring diagram



Mark	Part
B	Burner
BL	Combustion Fan Motor
ER	Electrode
F	Fuse Electrical
FM	Convection Fan Motor
FR1-2	Flame Rod 1-2
L	LED Panel
LC	LED Controller
OH.TH 1-2	Over Heat Thermistor 1-2
PB	Pilot Burner
POV	Modulated Solenoid Valve
R.TH	Room Thermistor
RCR	Remote Control Circuit
SC	Speed control
SP	Sparker
SV1-4	Main Solenoid Valve 1-4
TF	Thermal Fuse
TR	Transformer

Mark	Colour
bk	black
bl	blue
gr/y	yellow-Green stripe
gy	grey
or	orange
pl	purple
r	red
w	white
y	yellow
p	pink
br	brown







- Notes:
1. RHFE1500---- Model only
 2. RHFE800-F---- Model only

WIRING DIAGRAM UNI CONTROL MODEL 2
 Linear Collection
 2 Burners and Combustion Fan and LED's
 Issue A

Burn media installation

Experience has shown that the majority of performance problems are caused by burn media being installed incorrectly. Please take the time to read and follow the instructions as malfunctioning due to incorrect burn media placement is not covered by warranty.

- The Linear MUST NEVER be used with other burn media or burn media that is damaged.
- The Linear burn media sets are different and cannot be interchanged, please ensure you have ordered the correct set before installation

Model	Burn media kit number	Additional video resource	
Linear 800 traditional log set	R2901	[placeholder ¹ URL]	
Linear 800 FlameTech log set	R2900	[placeholder ¹ URL]	
Linear 1000 traditional log set	R2902	[placeholder ¹ URL]	
Linear 1000 crushed glass	R2904	[placeholder ¹ URL]	
Linear 1500 traditional log set	R2903	[placeholder ¹ URL]	
Linear 1500 crushed glass	R2905	[placeholder ¹ URL]	

Separate burn media installation instructions

For the safe operation of the fire, placement of the burn media is a critical step in the installation process. Due to the number of steps involved, separate instructions (too many pages to incorporate into this guide) have been developed. There is also a colour burn media placement sheet attached to the glass frame. Make sure you have these before starting.

¹ We will be updating this guide a month or two after the Linear launch to include links to installation videos via Rinnai's YouTube channel.

Correct placement

It is important to place the burn media in the correct position. Incorrect placement can create carbon build-up and affect performance. Malfunctioning due to improper placement is not covered by warranty.

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 a 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 the fire, such as blocked gas injectors, flame rod obstruction, or that the burn media has shifted. Some warning signs that could indicate a problem:

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

Flame pattern should look like this (may vary slightly depending on gas type)

Linear 800 FlameTech log set



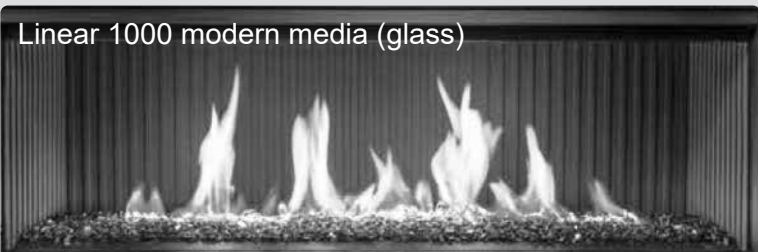
Linear 800 standard log set



Linear 1000 log set



Linear 1000 modern media (glass)



Linear 1500 log set



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.

Linear 1500 crushed glass is not shown, the flame pattern will be the same as the 1000 model shown.

Check the Wi-Fi connection

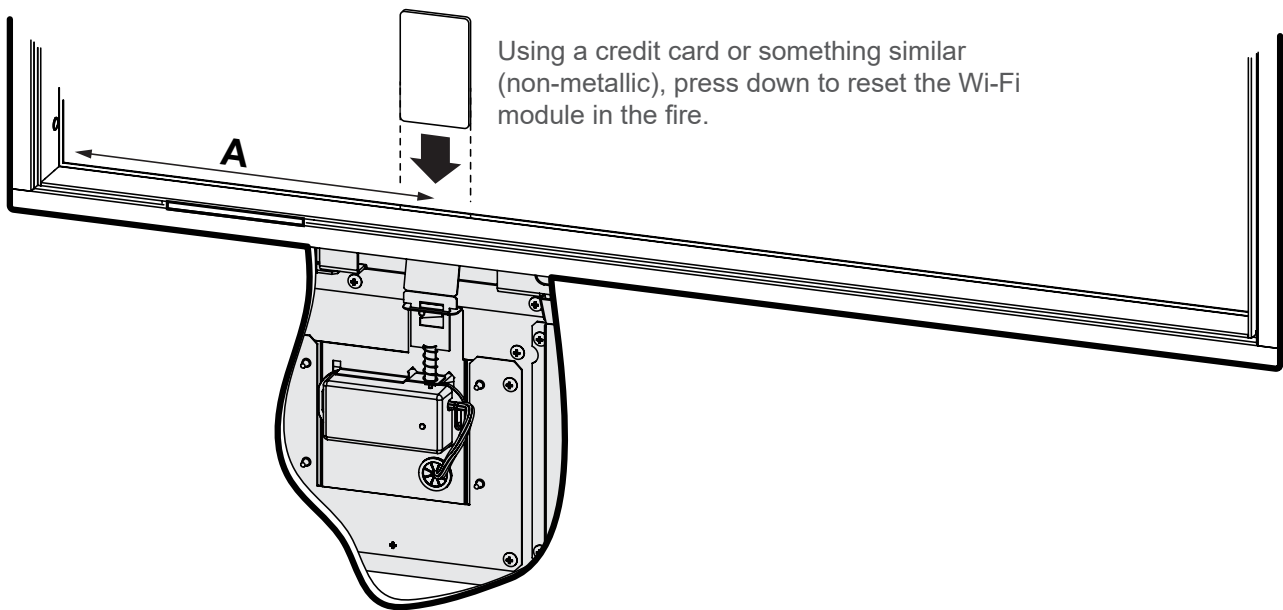
When the power is on the Wi-Fi LED should flash and then turn a solid red to indicate everything is ready for setup via a smart device¹. Go through the app sequence with the homeowner, if they are available, as part of the installation process is testing the Wi-Fi connectivity and correct operation of the fire with the homeowner. The Wi-Fi app is available on:

- Google Play > search Rinnai fire app
- Apple app store > search Rinnai fire app

Summary of how the app works

1. Wi-Fi module in the fire, once installed and has power connected, is on.
2. Homeowner downloads the Rinnai Wi-Fi app on their smart device.
3. Through the app, the Wi-Fi in the fire links (pairs) to the homeowners smart device.
4. Homeowner, through the app setup process, then links the Wi-Fi in the fire to the Wi-Fi router in the home—this essentially makes the smart device the fireplace controller.

If unable to connect, the Wi-Fi board must be reset by pressing down on the metal tab above the Wi-Fi assembly on the unit. The image below highlights where the Wi-Fi assembly is positioned. If this doesn't work switch the power off and then back on again to reset the fire—try a couple of times if it doesn't work the first time.



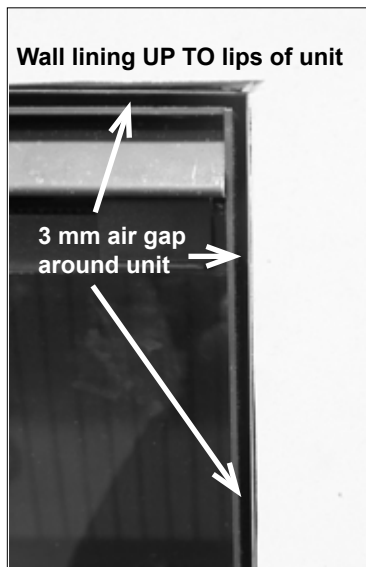
Approximate position of the Wi-Fi module from the left hand side of the fire—where the On/Off button is.

Wi-Fi reset position - A	
800	265 mm
1000	350 mm
1500	650 mm

¹ On initial startup the Wi-Fi module in the fire scans the Wi-Fi network, if at first it doesn't work it will only scan again after ten minutes.

Installing the wall lining

There are some aspects of the wall lining installation that are critical to the safe operation of the appliance. An air gap of at least 3 mm around the fire is critical to the safe operation of the Linear to ensure air flow in and around the unit.



Avoid getting plaster in the air gap around the fire lips

Additional notes

While the fire is safe when installed with combustible wall linings in accordance with these instructions, please be aware that the wall will go through hot and cold cycles and can reach temperatures of up to 80 °C. This could impact the durability of timber or wallpaper finishes.

The wallboard support rails are used as a fixing point for the wall lining, it is recommended that screws are not used as a permanent fixing along the top edge of the fire—use a suitable adhesive instead.



If screws are used (maximum length 25 mm) around the edge, ensure they do not interfere with the working parts of the fire (latches, IR receiver, On/Off button).

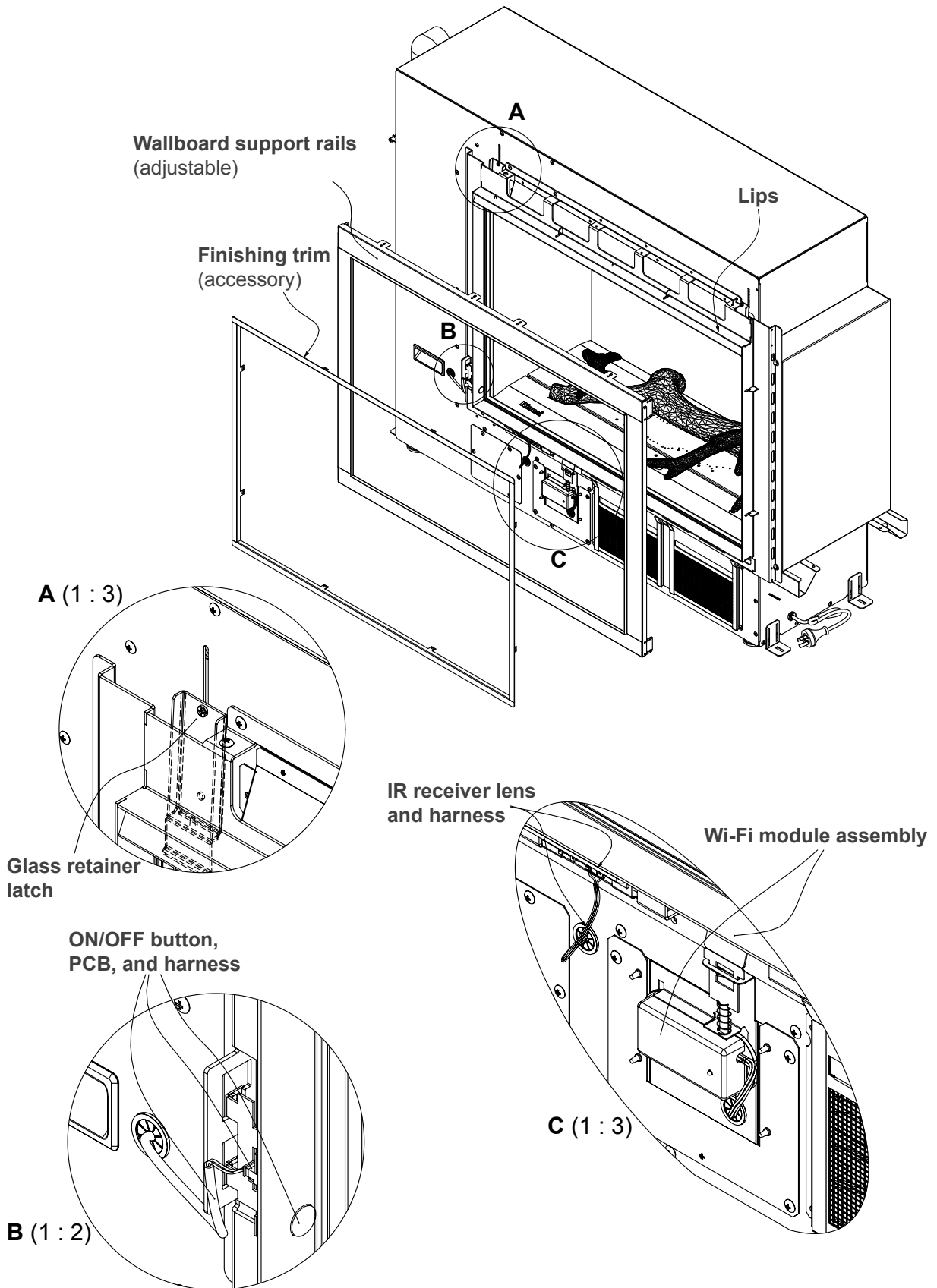
Cutout reference		800	1000	1500
A	Minimum	816 x 566	1016 x 341	1516 x 341
	Maximum	830 x 580	1030 x 355	1530 x 355
B		816 x 566	1016 x 341	1516 x 341
C		810 x 560	1010 x 335	1515 x 335

Please note: A, B, and C relate to the drawings on pages 30-35.

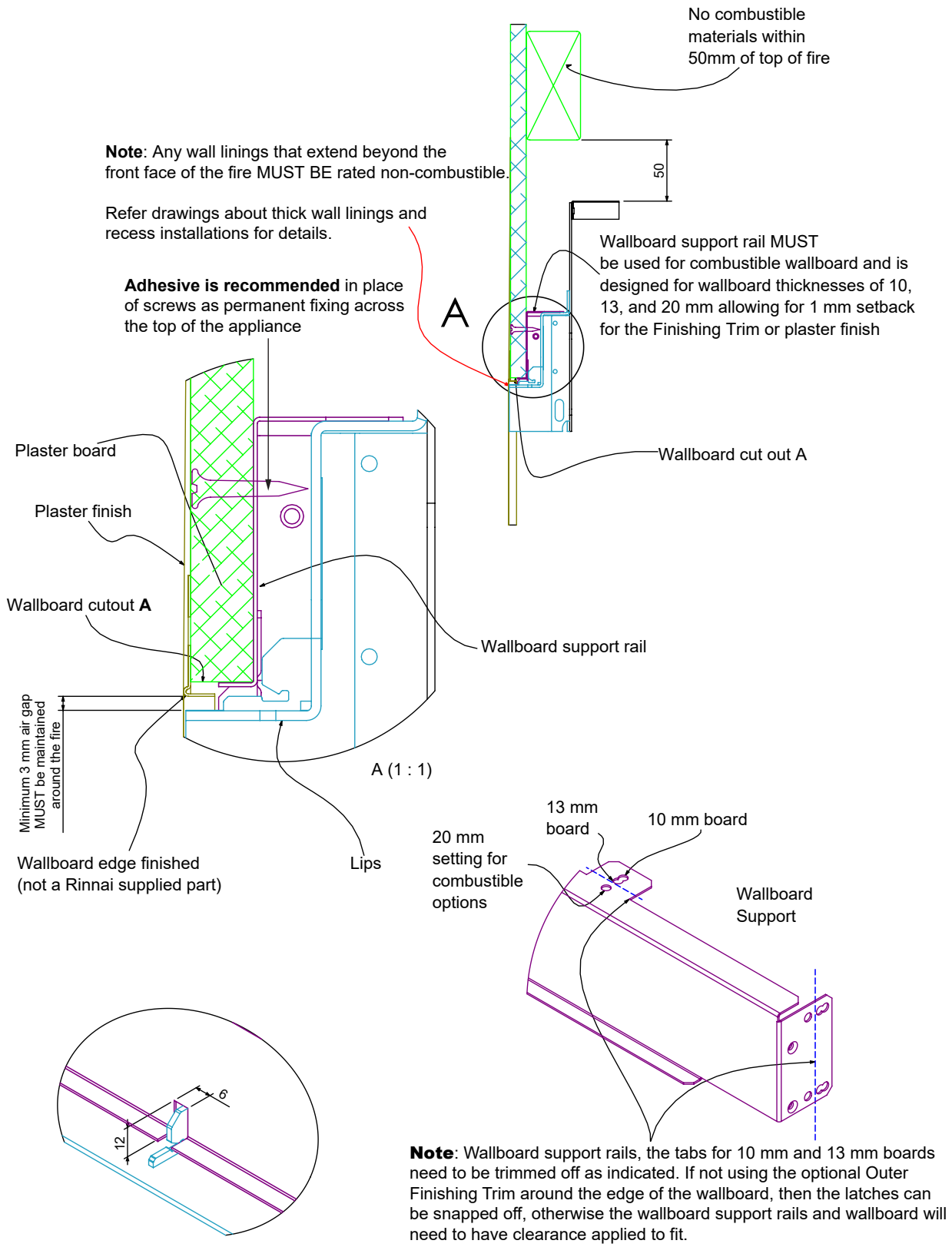
Do not paint over the IR receiver lens

Do not be tempted to paint over the clear plastic IR receiver lens that peeps through in the bottom left of the fire. This will severely restrict the distance at which the simple remote will operate.

Below is an image to highlight the position and names of the different linear framing components. Adapt as necessary, depending on the wall lining being installed.

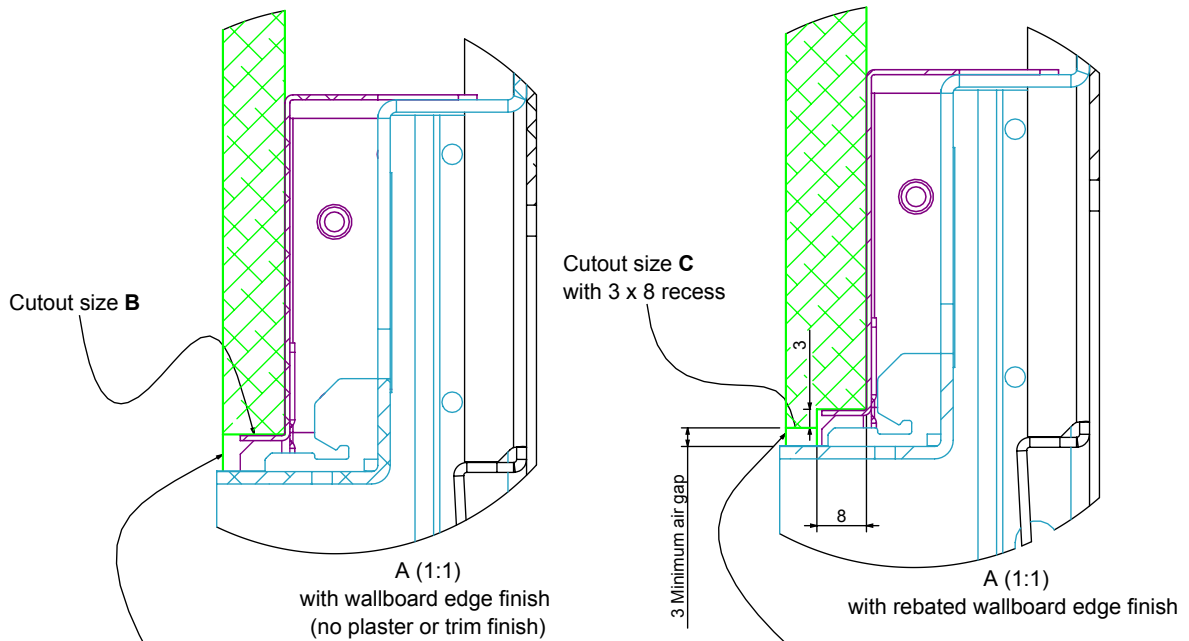
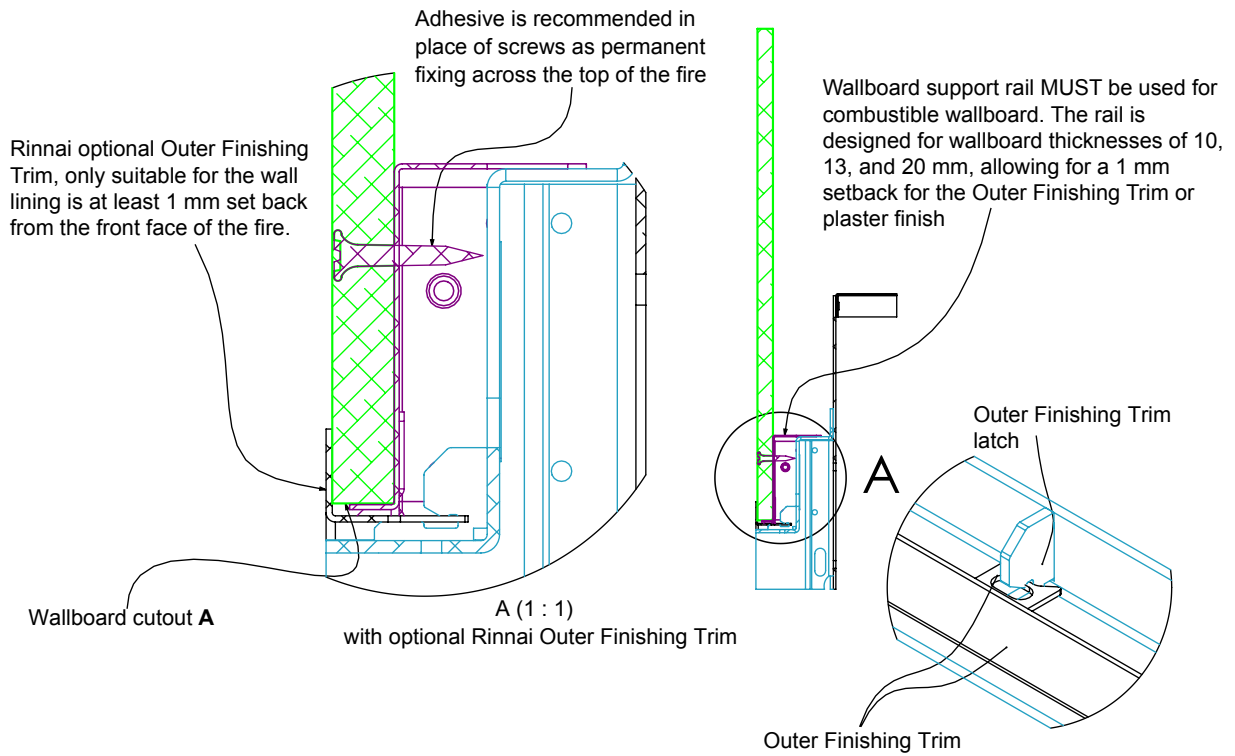


Plasterboard wall with plastered finish (wall flush with front of fire only)



Edge finishing options

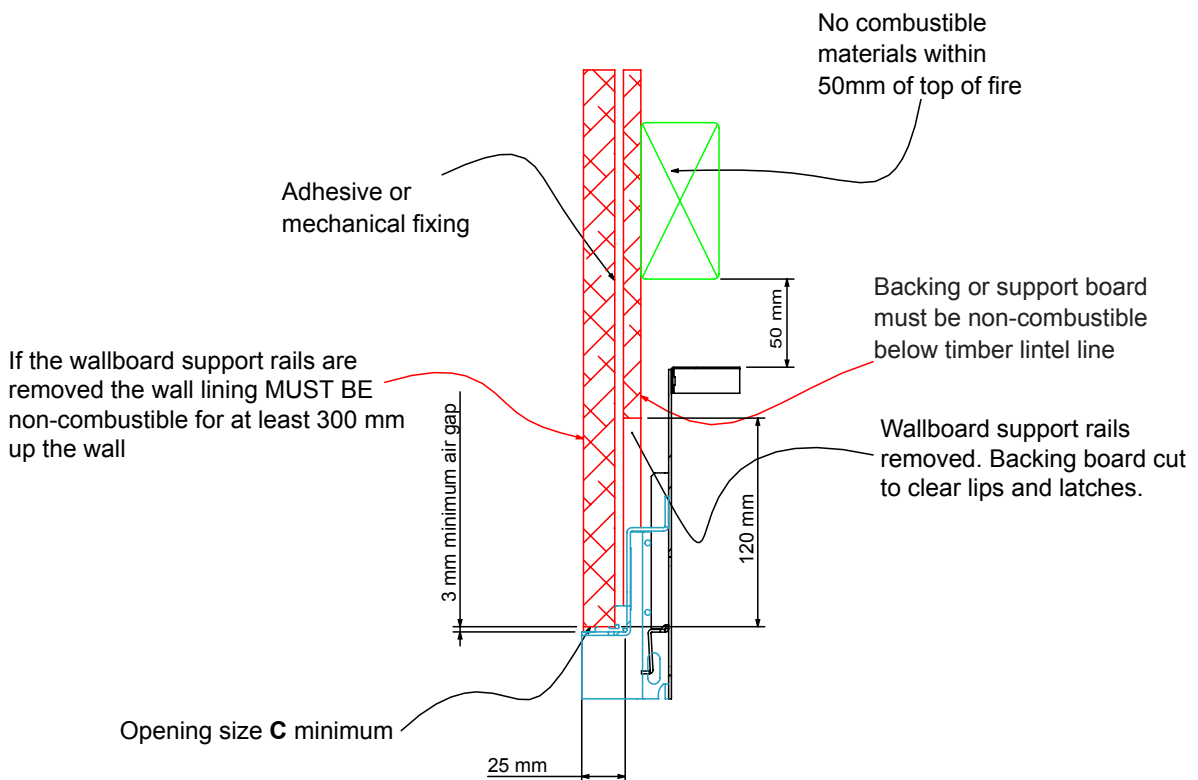
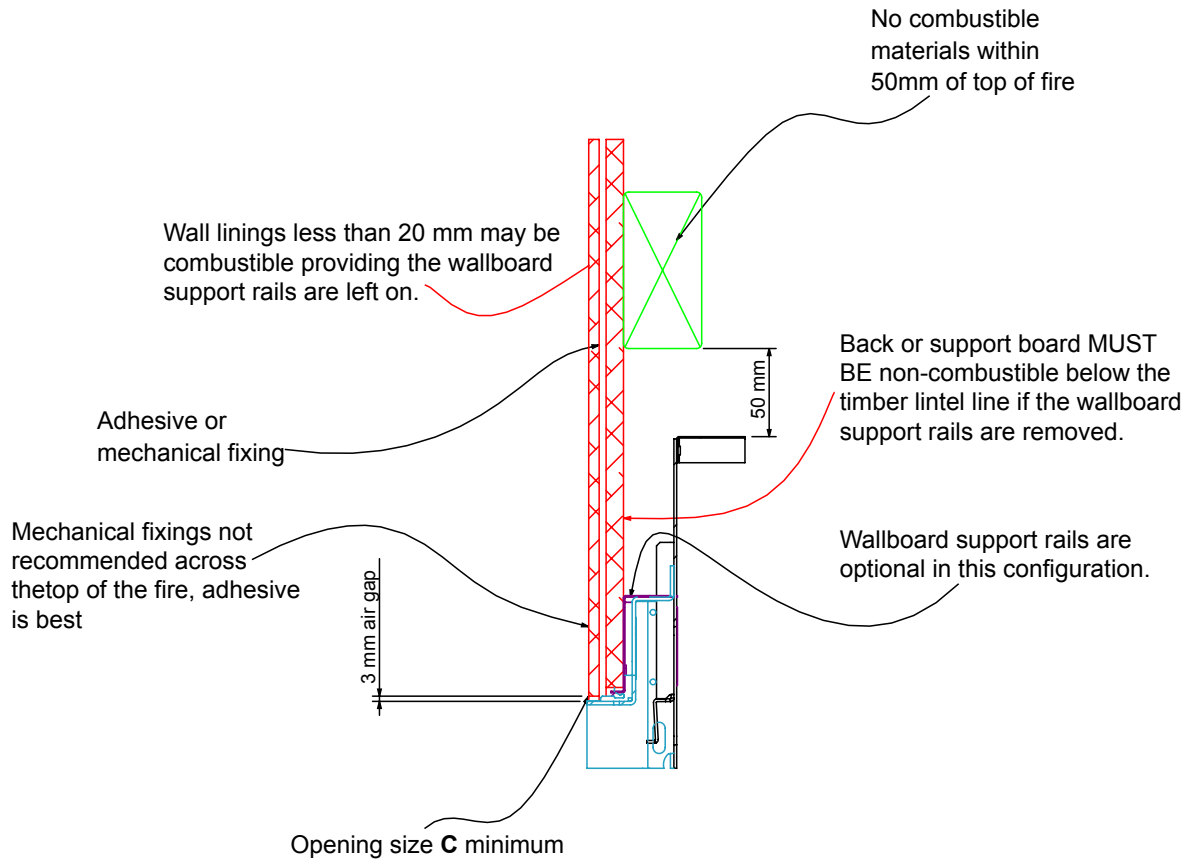
(applicable to any installation method)



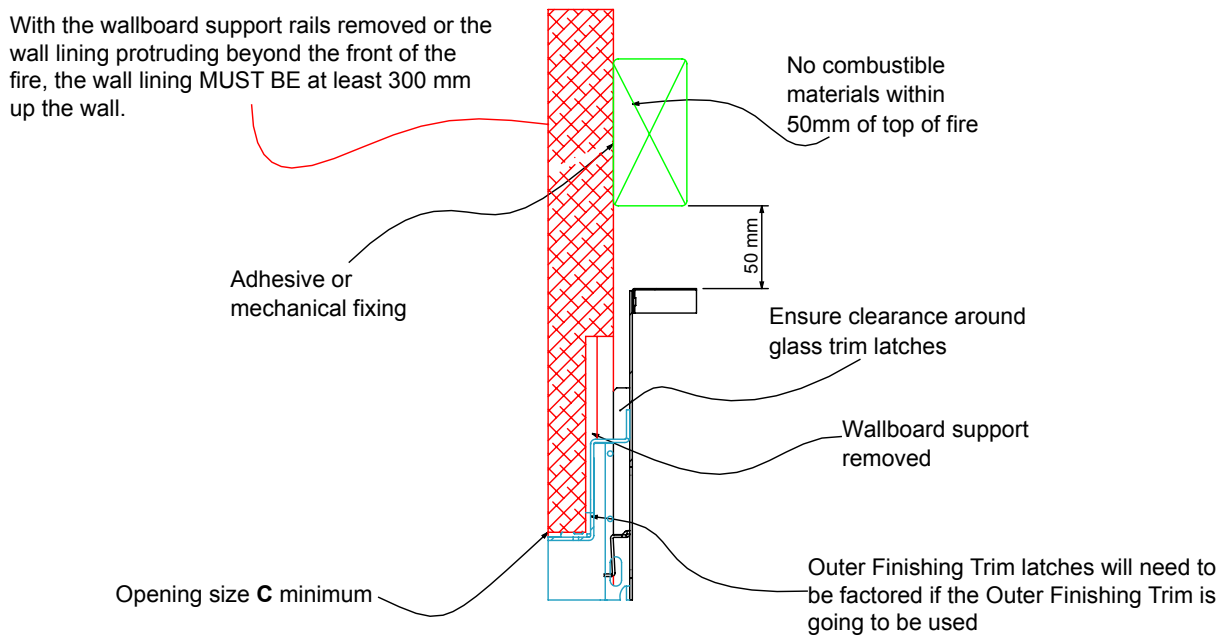
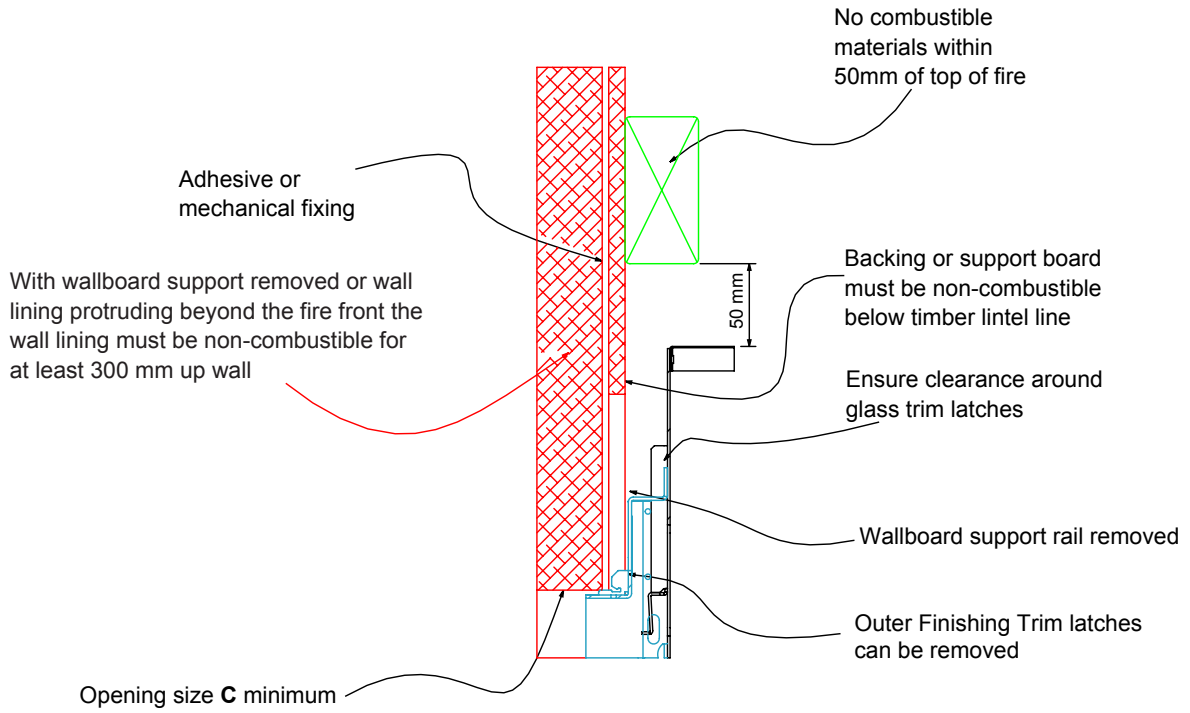
With this bigger gap there is a risk that the wallboard support panel and the Outer Finishing Trim clips will be visible. Consider this before utilising this method.

This method will produce a closer fit to the fire but does make the front edge vulnerable to damage

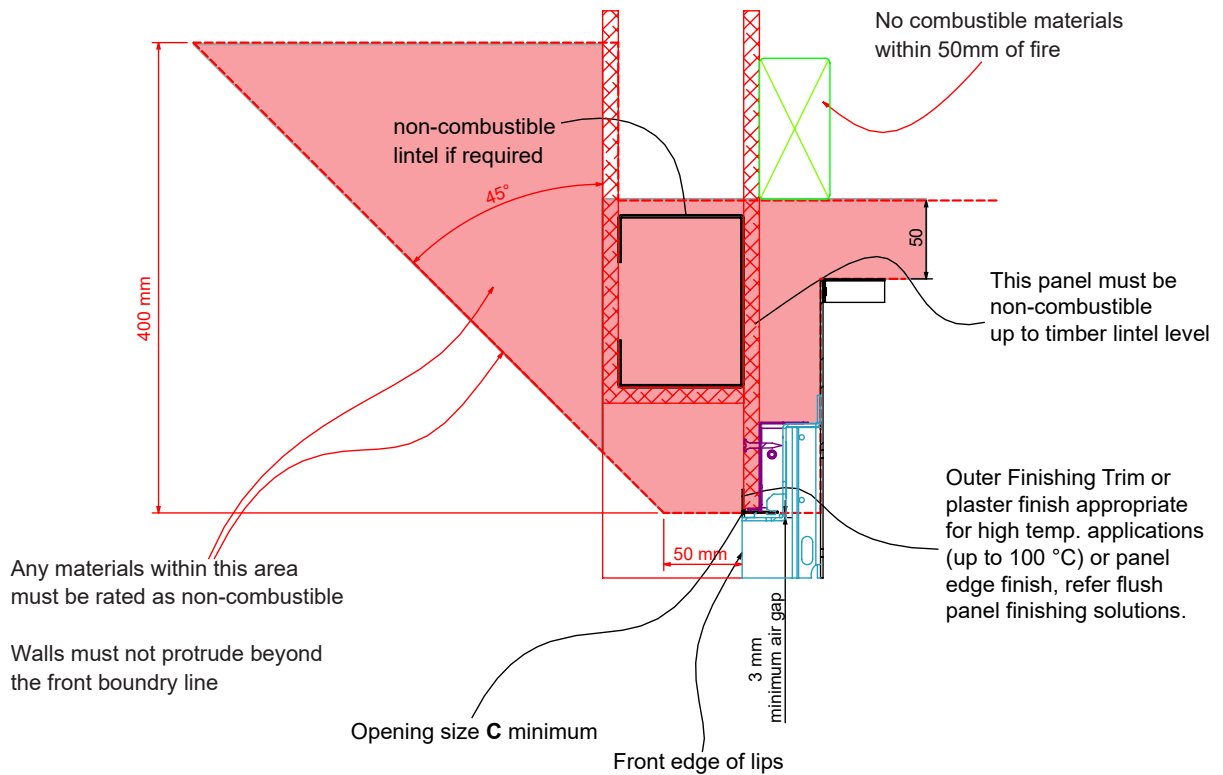
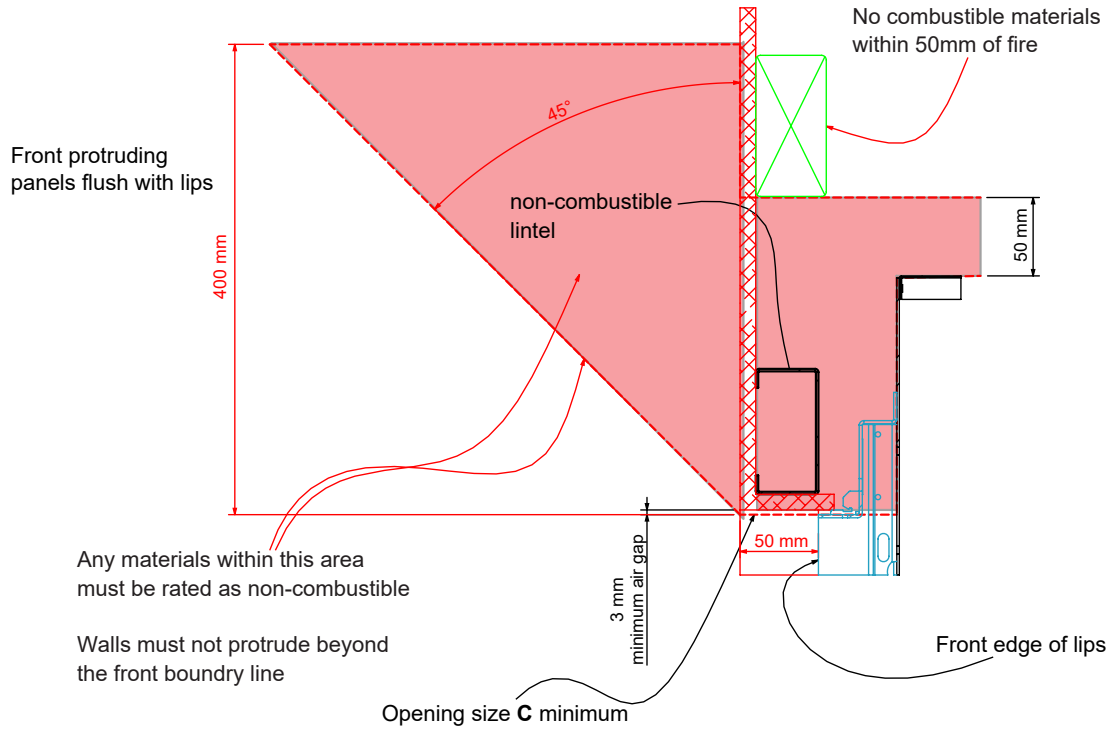
Tiled or second skin wall linings (combustible and non-combustible options)



Non-combustible thick wall linings



Non-combustible recess installations



General flueing guidelines

Every gas fire 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 the appliance is provided with an effective flue.

Some guidelines to assist with flue design are detailed below. These must be read and modified as necessary depending on the installation.

The Linear must be installed with an approved flue system, approved components are shown in this guide.

Flue clearances to combustibles

The flue transition, the bit that connects the flue to the Linear (refer image), and the first 500 mm of the flue require a 25 mm clearance to combustibles.

Flashings

Flashings are not included with the flue kits, these 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. Wall straps are included with some Rinnai flue components.

Flue terminal locations

Flue terminals must be compliant with the flue terminal locations shown in AS/NZS 5601.1. The flue cannot terminate under a floor or in a roof space.

Shared flues

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

Flue must be secure

To prevent the flue from moving or coming apart the:

- Joints between the flue components MUST be secured by screws (easier to undo if necessary) through the outer pipes.
- Flue components MUST BE secured to the wall using the wall straps provided in each flue kit.

Connecting the flue components

The inner pipe joints are sealed with an o-ring seal lubricant. A small plastic tub of silicone grease is provided with the main flue kits. Use this silicone grease to lubricate the o-rings on the inner pipes prior to assembly. This is important as the o-rings can dry out and break, and replacing o-rings is difficult. DO NOT use petroleum based lubricants as these will cause deterioration of the o-ring seals.

Vertical flue cowl clearance

To ensure products of combustion are cleared, adequate clearance from the building is required. The vertical flue cowl should have a 500 mm clearance from any part of the building, refer image below. This also applies to steeped and pitched roofs, where the flue cowl should be 500 mm clear of the ridge line. An adequate flow of fresh air must exist around the flue cowl following installation.

Minimum clearances are shown in AS/NZS 5601.1.

2° fall to the horizontal wall terminal

For direct sideways, back, forward, up-and-over, and down-and-out flue installations, there MUST BE a continuous fall of at least 2° to the horizontal wall termination point, so any rain water exits the flue naturally, refer image below.

ESBEND installation and connection

If installed incorrectly there is potential for the outer bend to overheat. A separate installation sheet is provided with each ESBEND kit to ensure correct alignment of the bend component.

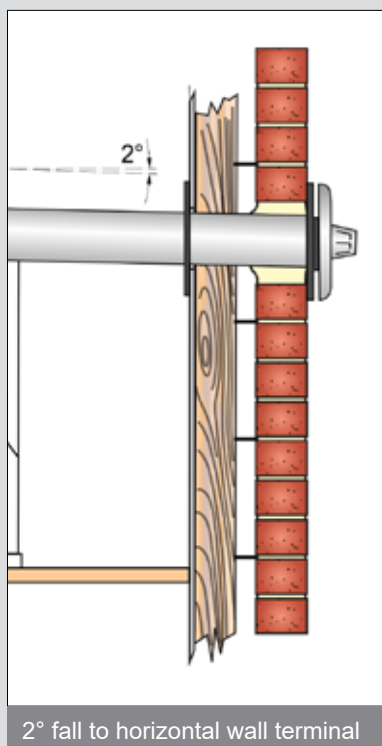
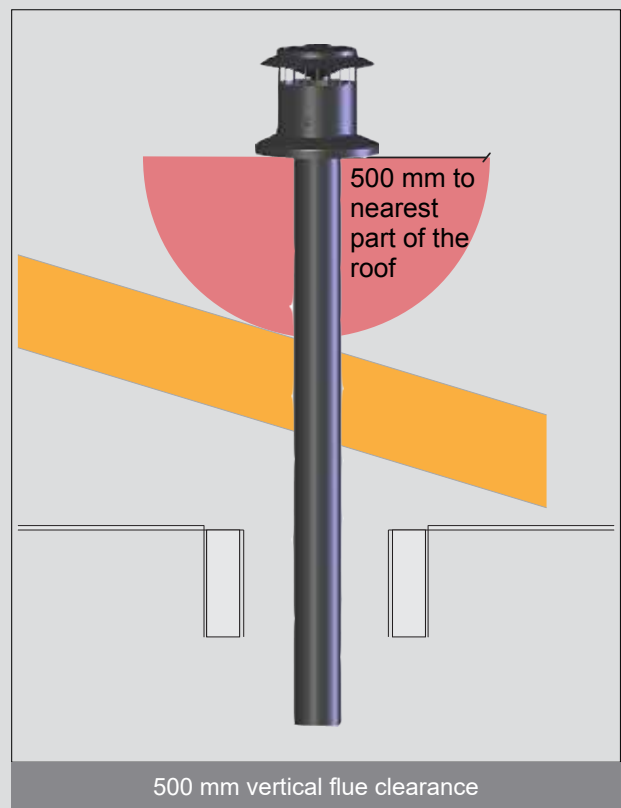
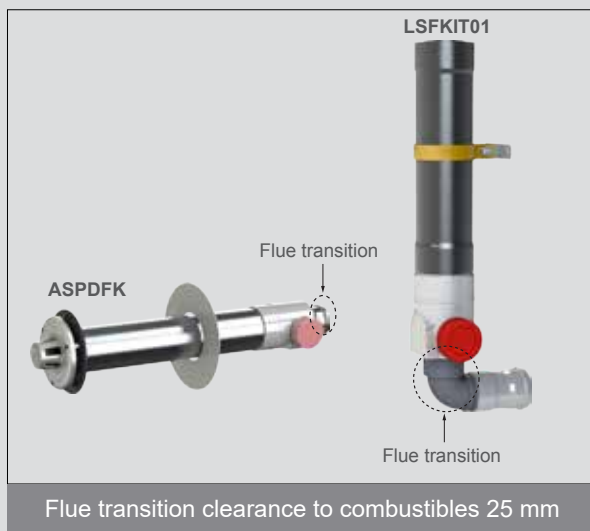
Flue sections located outside

Sections of the flue located outside require the following precautions:

- Only use PVC cement between the joints of the outer PVC pipes to secure and seal the joints against ingress of dust and water.
- Only use non-acidic silicone sealant between the joints of the outer PVC pipe and any mating aluminium components to secure and seal these joints against ingress of dust and water. Silicone containing acetic acid or other acids as the curing agent may cause the aluminium to corrode.

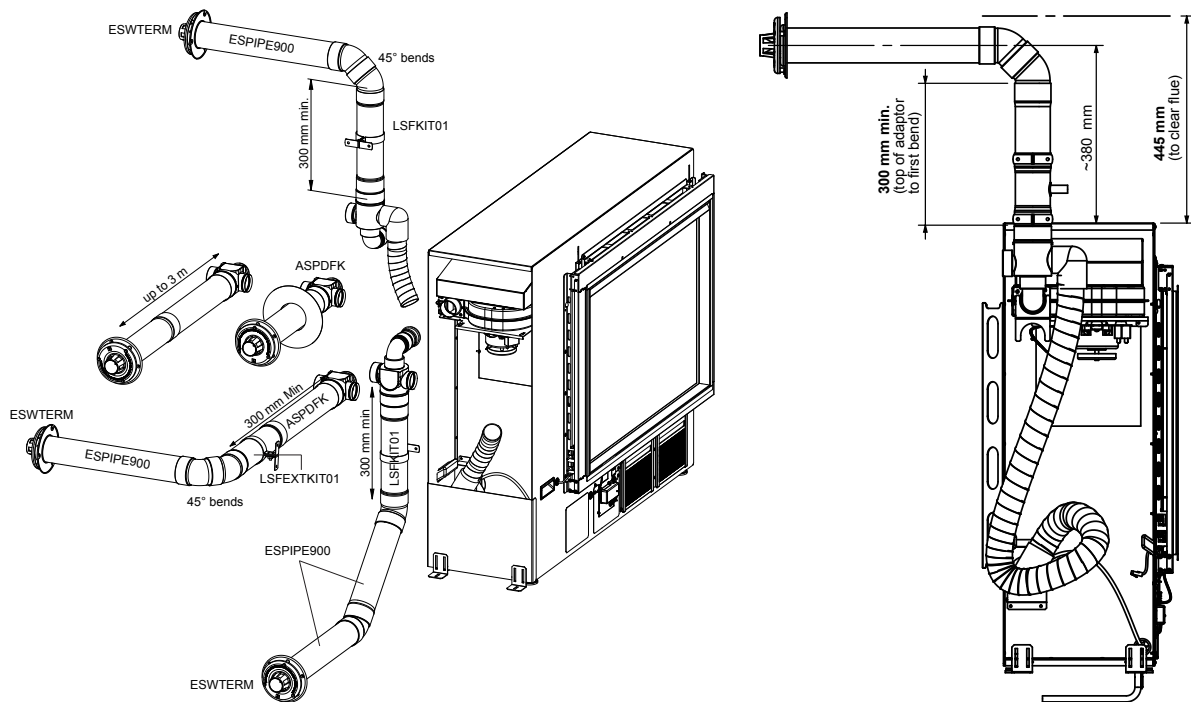
Condensate

A condensate is not required. Little or no condensate is produced because the flue runs hotter in Linear installations



Flueing options

The gas pressures of the Linear are factory set for short flue installations, as pictured below. All other installations, greater than 3 m in length, are long flue installations and will require a dip switch change, refer commissioning sheet.



For lowest cost, optimal performance, ease of installation and servicing, Rinnai recommend short flue installations are considered before all other options.

Maximum flue length and number of bends

- Maximum flue length = 8.5 m
- Maximum number of 90 ° bends = three

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 Linear flue installation differs to Arriva and Evolve power flue installations as the elbow component of the flue adapter (LSFKIT01) **is not** counted a 90 ° bend.

300 mm of straight flue before any bends

300 mm minimum of straight flue is required before any bends. This is required due to heat produced from the initial section of the flue. The LSFKIT01 has this built in, and the LSFEXTKIT01 (flue transition extension) is used after the ASPDFK before any bends.

Side direct, side extended, side and back flueing

Side 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 additional lengths of flue pipe, and flue can be directed behind using the flue transition extension and bend kit. Refer to p.40 for more information.

Flue components used:

- Direct flue kit (ASPDFK)¹
- Flue transition extension (LSFEXTKIT01)²
- Flue pipes (ESPIPE900)
- 45° bends (ESBEND) to change direction

¹ Flue terminal section is reusable when making the flue longer.

² Required to be added to the ASDFK before any bends



Back direct and back extended flueing

By changing the direction of the adaption flue position and connection, back direct and back direct extended flueing is possible.

Flue components used:

- Adaption flue (LSFKIT01)
- Flue pipes (ESPIPE900) for extended flueing
- Wall terminal (ESWTERM)



Up and back, and up and over flueing

Up and back 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 additional lengths of flue pipe. Change of direction achieved using the bend kit.

Flue components used:

- Adaption flue (LSFKIT01)
- 45° bends (ESBEND) to change direction
- Flue pipes (ESPIPE900)
- Wall terminal (ESWTERM)



Down and out flueing

The down and out flue allows for the adaption flue component to face downwards, and for the flue to run vertically through a hole in the floor, and then terminate horizontally outside. Refer to p.41 for more information.

Flue components used:

- Adaption flue (LSFKIT01)
- 45° bends (ESBEND) to change direction
- Flue pipes (ESPIPE900)
- Wall terminal (ESWTERM)



Vertical flueing

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

Flue components used:

- Adaption flue (LSFKIT01)
- 45° bends (ESBEND) to change direction
- Flue pipes (ESPIPE900) to extend flue length
- Vertical terminal (ESROOFCOWL)



Flueing options

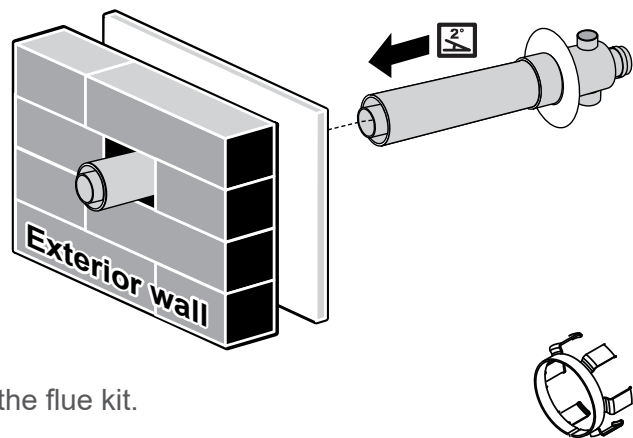
side direct, side extended, side and back flueing



300 mm minimum of straight flue is required before any bends (achieved with the ASPDFK and the flue transition extension—LSFEXTKIT01). This is required due to heat produced from the initial section of the flue. The first 500 mm of flue requires a 25 mm clearance to combustibles.

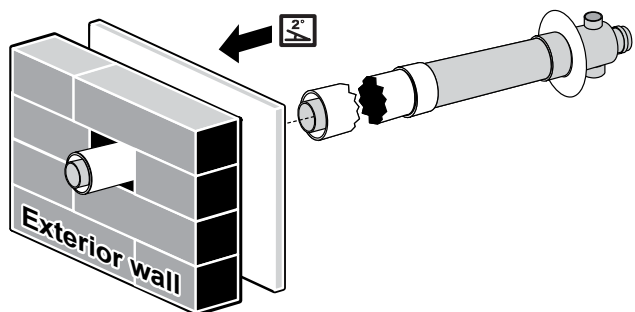
Creating a direct flue installation for wall less than 385 mm

1. Create the wall penetration. Allow for a continuous 2 ° fall from the heater connection point to the wall terminal.
2. Slide the internal wall plate over the terminal end of the ASPDFK pipe until it is nested on the raised ring of the transition. Pass the ASPDFK through the internal wall penetration until the internal wall plate is flush with the wall.
3. Create the wall terminal, refer p.43.
4. Move the Linear into place and connect the heater flue pipe to the flue. This is done with the flue slide stopper provided with the flue kit.



Creating a direct extended flue installation for a wall greater than 385 mm

1. Create the wall penetration. Allow for a continuous 2 ° fall from the heater connection point to the wall terminal.
2. Join the flue pipe to the ASPDFK, cutting is not required. The joints between ASPDFK and the flue pipe MUST BE secured by screws through the outer pipes to prevent disconnection.
3. Follow steps 2-4 as outlined in the previous section for creating a direct flue installation.



Flueing options

down-and-out flueing



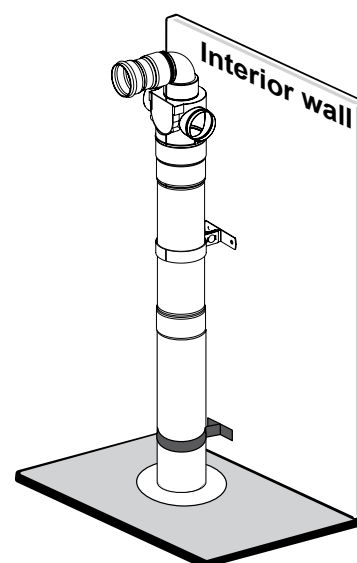
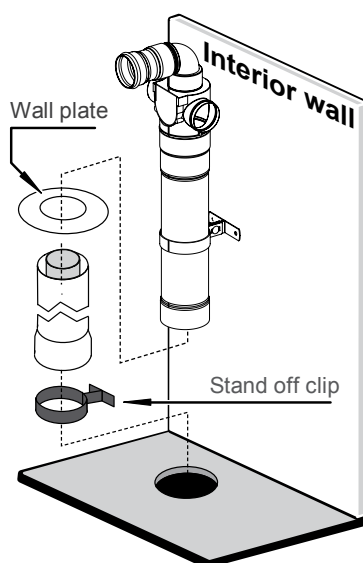
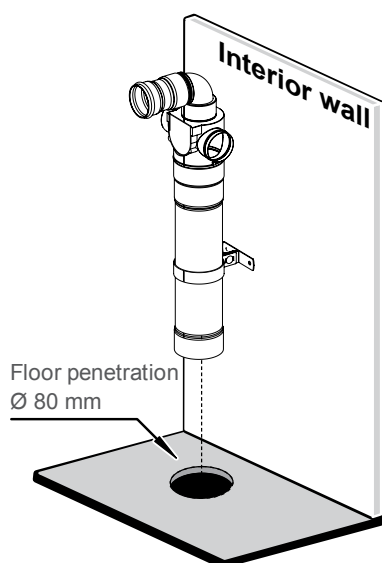
The down and out flue allows for the adaption flue component to face downwards, and for the flue to run vertically through a hole in the floor, and then terminate horizontally outside—flue must terminate 300 mm above the ground.



300 mm minimum of straight flue is required before any bends. This is required due to heat produced from the initial section of the flue. The first 500 mm of flue requires a 25 mm clearance to combustibles.

Overview of installation steps

1. Lubricate all inner pipe o-rings with the silicone grease provided.
2. Fit the flue components and lengths of flue pipe as required.
3. The flue penetration should have made at the same time as the cutout for the gas connection. Floor penetration should be a 80 mm diameter hole—ensure edges are smooth.
4. Pass the flue pipe through the wall plate and through the floor penetration, and secure the wall plate in place to seal the floor.
5. Prepare the horizontal section of the flue system under the floor by connecting the flue pipe and bends as required. Allow for a 2° continuous fall from the first section of the horizontal flue pipe to the wall penetration.
6. Create the wall terminal, refer p.43, ensuring a 300 mm clearance between the flue terminal and ground level.
7. Secure joints between the flue components through the outer pipes with screws and secure the entire flue system using the wall straps supplied.



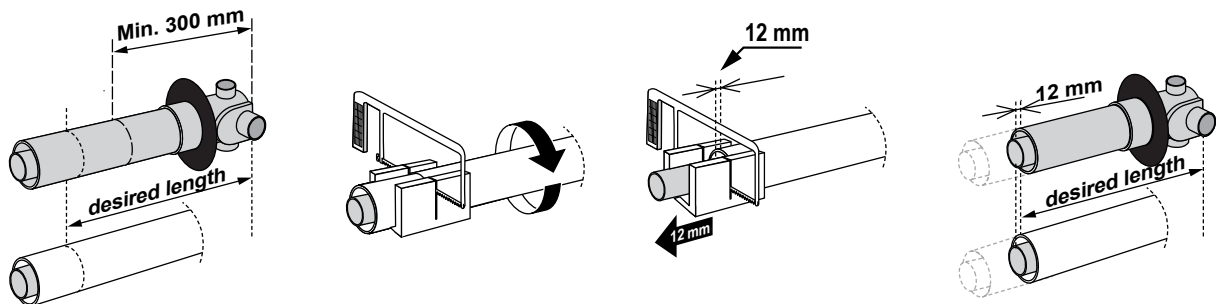
Cutting the ASPDFK and ESPIPE900 to length

Cutting the last component in the flue assembly may be required to achieve the required length. Cutting is also required at a wall penetration, refer next page.



- The minimum length of the ASPDFK when measured from the back plate of the transition casting **MUST NOT** be less than 300 mm when joining to other components.
- Ensure all burrs and swarf are removed from any cut ends.
- ESPIPE900 can be cut to size at the male end (do not cut the female end).

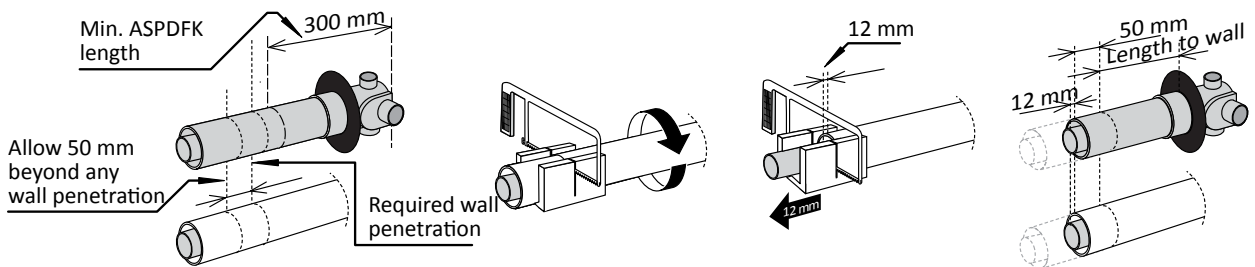
Cutting components to receive the desired flue length



1. Measure and mark off the outer pipe at the desired length.
2. Cut the outer pipe to the required length. Take care not to cut the inner pipe.
3. From the new end of the outer pipe measure and mark off an additional 12 mm¹ on the inner pipe. Cut the inner pipe at this mark. Take care to keep the cut parallel to the outer pipe.

¹ The additional 12 mm on the inner pipe is needed to connect to the wall terminal.

Cutting components at a wall penetration

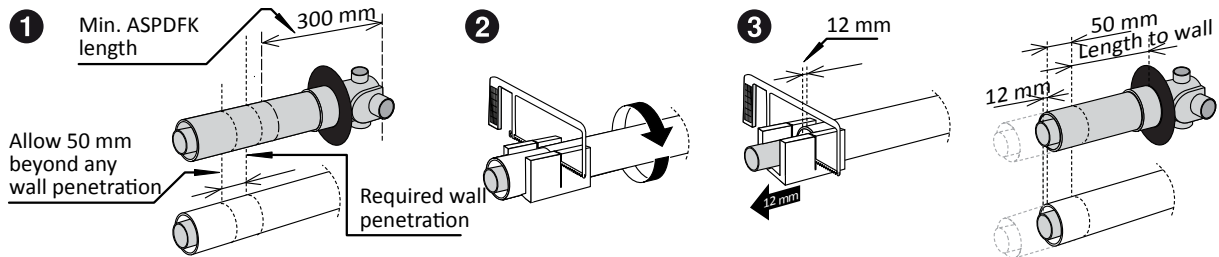


1. Measure and mark the outer pipe at a point flush with the surface of the wall penetrated PLUS an additional 50 mm.
2. Cut the outer pipe to the required length, take care not to cut the inner pipe.
3. Refer step 3 above.

Wall terminal assembly

Only the ASPDFK, and the ESPIPE900/ESWTERM can be used to create a wall terminal

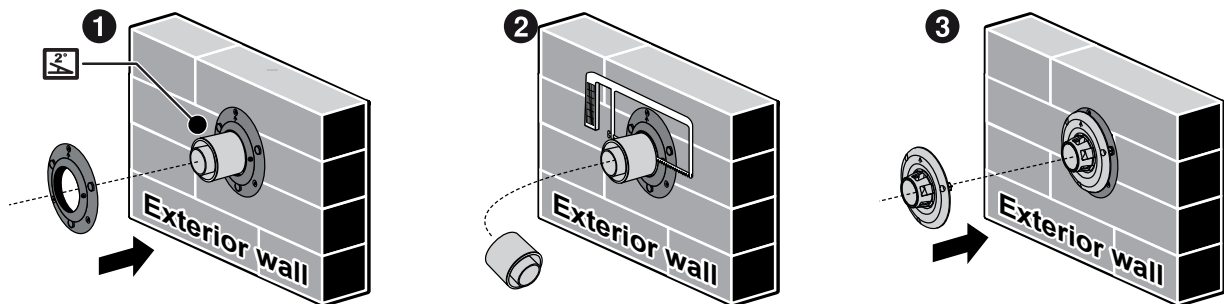
Cutting components at a wall penetration



1. Measure and mark the outer pipe at a point flush with the surface of the wall penetration PLUS an additional 50 mm.
2. Cut the outer pipe to the required length. Take care not to cut the inner pipe.
3. From the 'new' end of the outer pipe measure and mark off an additional 12 mm¹ on the inner pipe. Cut the inner pipe at this mark. Take care to keep the cut parallel to the outer pipe.

¹ The additional 12 mm on the inner pipe is needed to connect to the wall terminal.

Steps to create a wall terminal



1. Fit the supplied external wall plate over the outer pipe of the flue protrusion (arrow points up)

Once the external wall plate is in the correct position secure it to the wall using the three 22 mm screws into the wall plate holes. Secure the wall plate to the outer pipe using the two horizontal holes and the two 7 mm screws provided.

2. Carefully cut through the outer and inner pipes (refer previous page). Take care to avoid cutting the external wall plate, and keep the cuts of the internal and external pipes as parallel as possible. Remove all burrs and swarf from the cut ends.
3. Align the arrows of the metal flue terminal and wall plate to point in the same direction (must always point up) and screw the terminal to the external wall plate using the 22 mm screws into the holes provided.



2° fall to the outside—arrow points up

Air hose connection

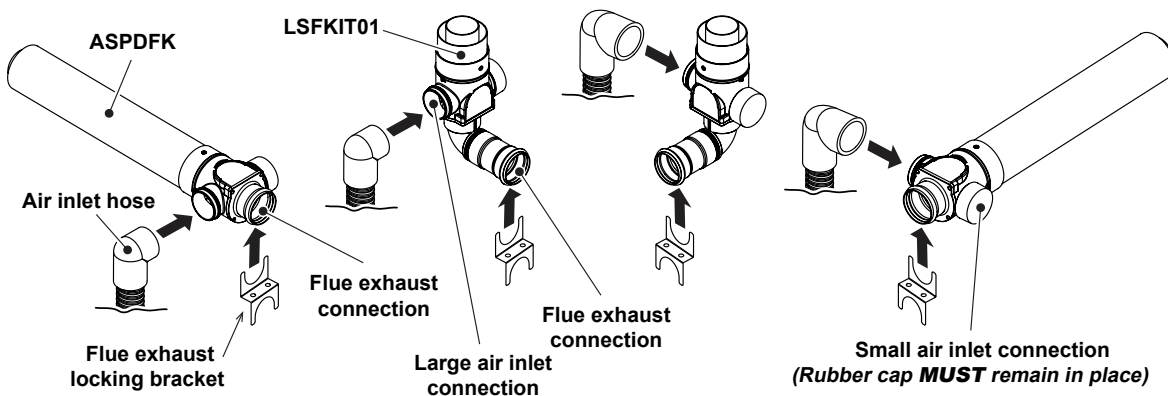
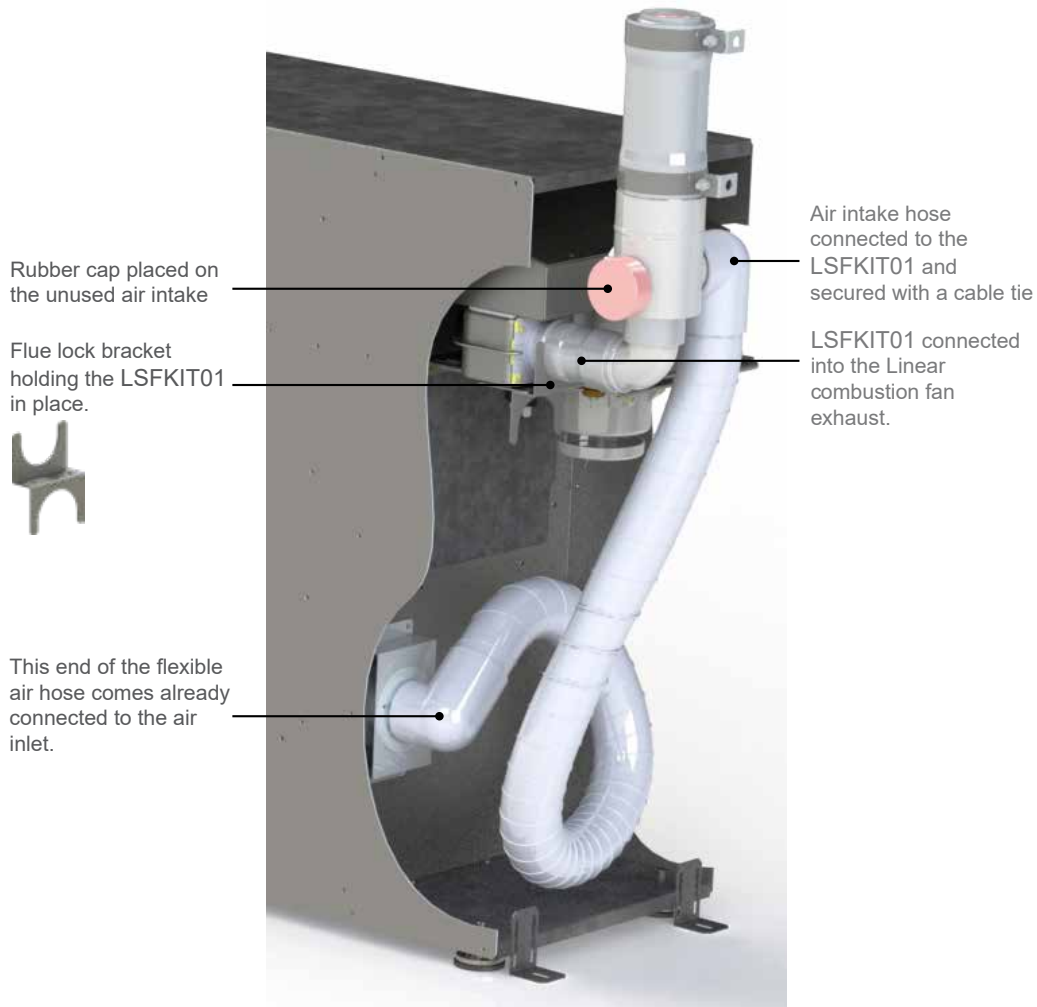


This step in the installation is critical. If the connections are not secured properly, products of combustion could disperse into the room being heated.

The Linear comes with one end of the flexible air hose already connected to the Linear air inlet. Attach the other end of the air intake hose to the connection on the flue, either the ASPDFK or the LSFKIT01.

Connect the flue into the Linear combustion fan exhaust, and secure in place (two screws) with the flue lock bracket (supplied in the plastic bag with the remote control).

Secure the air intake hose on the flue with the cable tie (supplied in the plastic bag with the remote control), and ensure the rubber cap is in place on the unused air intake.



Linear flue components



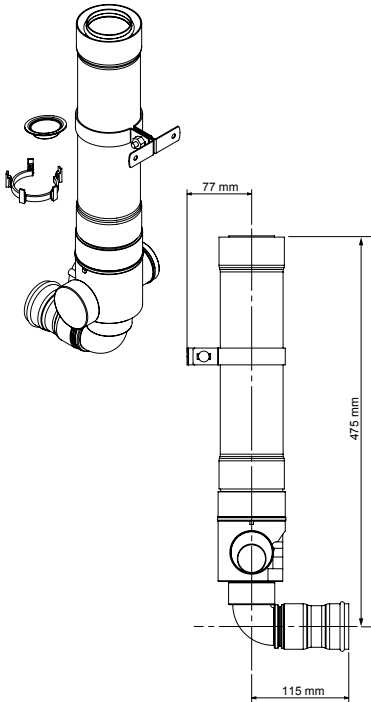
Linear flue components

Adaption flue kit Linear

Code: LSFKIT01

Includes:

- flue adaptor
- flue extension
- flue standoff bracket
- flue slide stopper (4822)
- O-ring silicone grease.

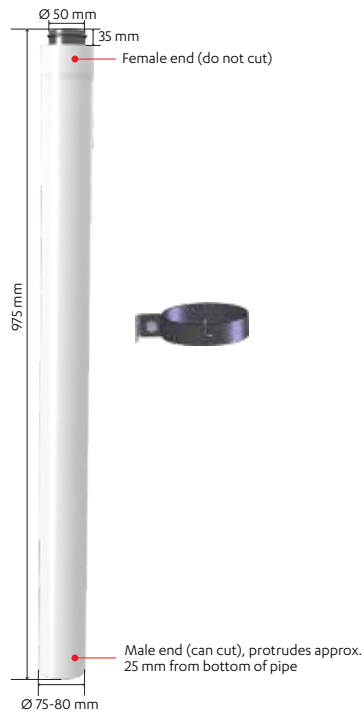


Coaxial flue pipe 900 mm

Code: ESPIPE900

Extension pipe used to construct horizontal, vertical, and downwards flueing. Can be cut to size.

Inner is aluminium, outer white PVC plastic. Comes with; wall bracket (x1), o-ring (4350), spacer (4351).



Vertical roof terminal

Code: ESROOFCOWL

Roof cowl and connecting pipe for termination of a vertical flue—can be cut to size. 500 mm clearance required from any part of the building, refer p.37.

Galvanised steel, powder coated black.



Direct flue kit

Code: ASPDFK (aluminium)

- Suitable for walls up to 385 mm (can be cut to length)
- Can also be used with ESPIPE900 for longer flueing
- Flue terminal is reusable when making the flue longer

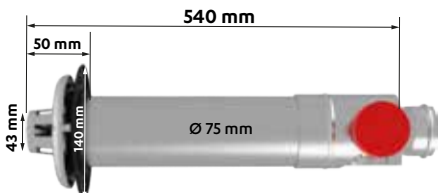


Photo showing what the wall terminal of the ASPDFK looks like coming out of a wall

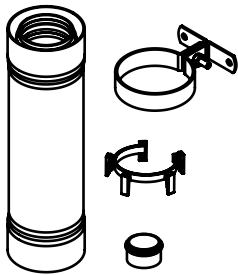


Flue transition extension

Code: LSFEXTKIT01

Flue transition extension, approx. 300 mm. When connected reduces 45 mm each end (approx). **MUST BE** used with the ASPDFK before any bends, for example in side and back flueing.

Includes; flue extension, flue standoff bracket, flue slide stopper (4822), O-ring silicone grease.



45° flue bends (two bends in a kit)

Code: ESBEND

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



Steel flue guard

Code: R1370

Protection against hot flue gases when the termination is low to the ground. Colour - warm white.

- 220 x 220 mm
- Ø 146 mm



Wall terminal kit

Code: ESWTERM

Used to terminate the ESPIPE900 in horizontal flue installations when used in conjunction with LSFKIT01.

Contains:

- External wall plate (black PVC)
- Flue terminal (aluminium)



Wall plate

Code: ESPLATE

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

Outer diameter 170 mm.



Rinnai.co.nz

Tel: 0800 746 624
<http://www.youtube.com/rinnainz>
<http://facebook.com.rinnainz>

Linear installation guide 13563-I