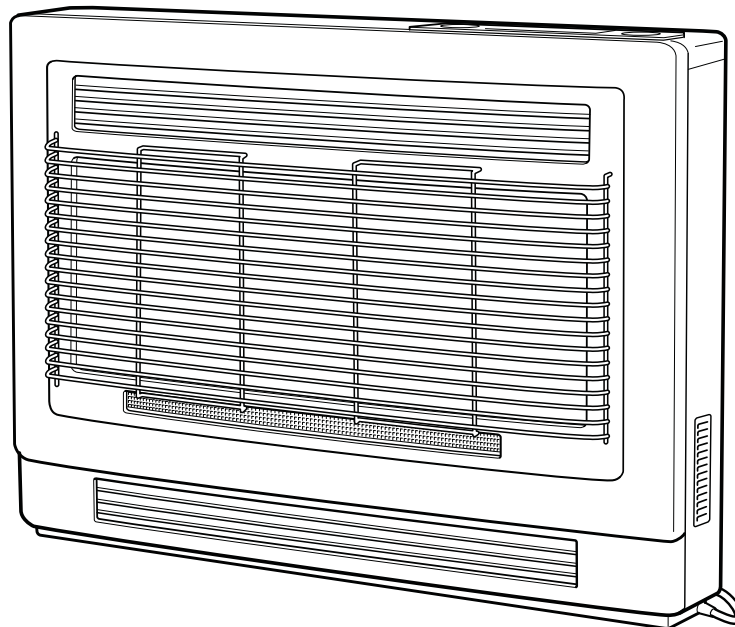


Rinnai

ULTIMA II

Flued Space Heater Operation / Installation Manual

MODEL REH-311FT(B) - Inbuilt
MODEL REH-311FT(C) - Console



This appliance shall be installed in accordance with:

- Manufacturer's Installation Instructions
- Current AS/NZS 3000 and AS/NZS 5601
- Local Regulations and Municipal Building Codes

This appliance must be installed, serviced and removed by an authorised person.



The Australian
Gas Association
All Rinnai gas products
are A.G.A. certified.



N10378



Quality System
Quality Endorsed Company
ISO 9001 Lic 4983
SAI Global
Head Office Certified

Distributed and serviced in Australia under a Quality System certified as complying with ISO 9001 by SAI Global

INSTALLATION REQUIREMENTS

This heater must be installed by an authorised person. The installation must conform to local regulations.

The installation must also comply with the instructions supplied by Rinnai.

Service and removal must be carried out by an authorised person.

CERTIFICATION

The Rinnai REH311FT has been certified by the Australian Gas Association.

The AGA Certification Number is shown on the appliance dataplate.

No parts or functions should be modified or permanently removed from the heater.

Please keep these instructions in a safe place for future reference.

OPERATION



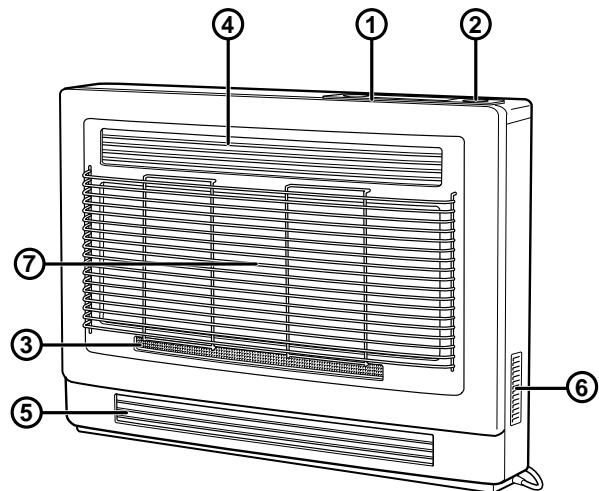
INSTALLER: Go to page 15 for Installation Instructions

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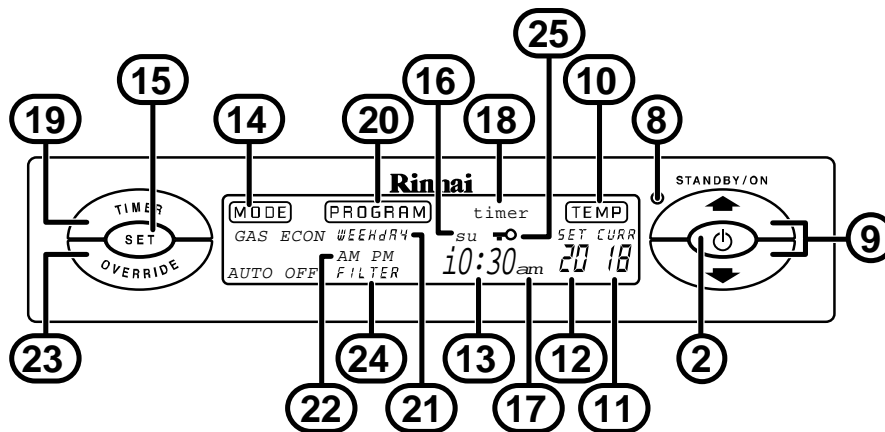
ABOUT YOUR ULTIMA II

DESIGN LAYOUT

- ① Control panel
- ② STANDBY/ON button
- ③ Burner filter
- ④ Air inlet louvre
- ⑤ Warm air discharge louvre
- ⑥ Thermistor grill cover
- ⑦ Dress guard



NAVIGATING THE CONTROL PANEL



- ② **STANDBY / ON button** - used to operate and stop the heater.
- ③ **Burner filter** - used to filter the gas entering the burner.
- ④ **Air inlet louvre** - allows fresh air to enter the heater.
- ⑤ **Warm air discharge louvre** - allows warm air to be discharged from the heater.
- ⑥ **Thermistor grill cover** - protects the thermistor sensor.
- ⑦ **Dress guard** - protects the heater from damage.
- ⑧ **ON / Combustion indicator** - when GREEN appliance is in standby, when RED the burner is operating and when flashing RED there is a fault.
- ⑨ **UP / DOWN button** - used to adjust the SET temperature, clock and timers and operate the lock function.
- ⑩ **TEMP display** -
 - ⑪ **CURR** - indicates the current room temperature.
 - ⑫ **SET** - indicates the desired room temperature programmed by the user.
- ⑬ **Clock display** - displays current time.
- ⑭ **MODE display** - indicates which mode the heater is operating in.
- ⑮ **SET button** - used to programme the heater operation.
- ⑯ **DAY display** - displays the current day.
- ⑰ **AM/PM indicator** - indicates AM or PM of clock or timer settings.
- ⑱ **TIMER display** - when the word 'TIMER' is shown the display panel will be showing current timer settings.
- ⑲ **TIMER button** - operates timer functions.
- ⑳ **PROGRAM display** - when the word 'PROGRAM' is shown the heater is in programming mode.
- ㉑ **WEEKDAY/WEEKEND display** - Indicates whether the weekday or weekend timers are being programmed.
- ㉒ **AM/PM display** - indicates whether AM and/or PM timer settings are being programmed.
- ㉓ **OVERRIDE button** - operates the manual override function.
- ㉔ **FILTER display** - when shown the filter(s) require cleaning.
- ㉕ **LOCK display** - when shown the lock function is activated.

FEATURES

- The Rinnai Ultima II is one of the most efficient gas space heaters available in Australia. This has been achieved by combining good design with the latest technology, making the heater both highly efficient and easy to use.
- Downflow Convection operation and large capacity fan ensures effective heating to all parts of the room and reduces stratification.
- 30 MJ/h input, large enough to suit most domestic applications.
- Ignition is fully automatic and the burner is continuously monitored by an electronic flame failure system. If the flame is extinguished during operation, the gas supply is shut off immediately.
- Electronic temperature controls ensure that the room stays at the temperature you have selected.
- Electronic dual ON and OFF timers.
- Filters to protect the burner from dust and lint.
- Automatic fan switch to turn the fan on and off and match the fan speed to the heat input at all times, increasing efficiency and comfort.
- Overheat switches avoid hazards should the appliance overheat.

SAFETY



CAUTION

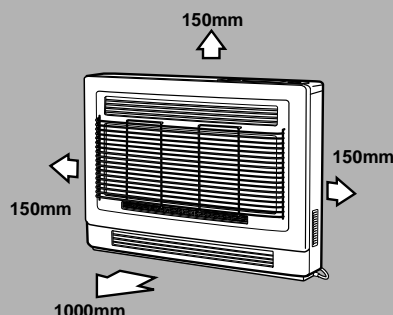
Failure to comply with these instructions could result in a fire or explosion, which could cause serious injury, death or property damage.

Improper installation, adjustments, service or maintenance can cause serious injury, death or property damage. Such work must be performed by an authorised person.



IMPORTANT

- The appliance must be installed in accordance with the local gas and electrical authority regulations.
- This appliance must not be installed where curtains or other combustible materials could come into contact with it. In some cases curtains may need restraining.
- This appliance discharges a large volume of warm air at low level to provided even heat distribution.
- Some nylon carpets contain dyes which may be affected by the warm air flow.
- Heat emanating from the front of this appliance may over time affect the appearance of some materials used for flooring such as carpet, vinyl, cork or timber. This effect may be amplified if the air in the room contains cooking vapours or cigarette smoke. To avoid this possibility, it is recommended that a mat be placed in front of the appliance, extending at least 750 mm in front of it.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Young children should be supervised to ensure they do not play with the appliance.
- If the supply cord is damaged or requires replacing, it must be replaced by the manufacturer or the manufacturer's agent or similarly qualified person in order to avoid a hazard.



The above diagram shows the clearances required around this heater whilst in operation

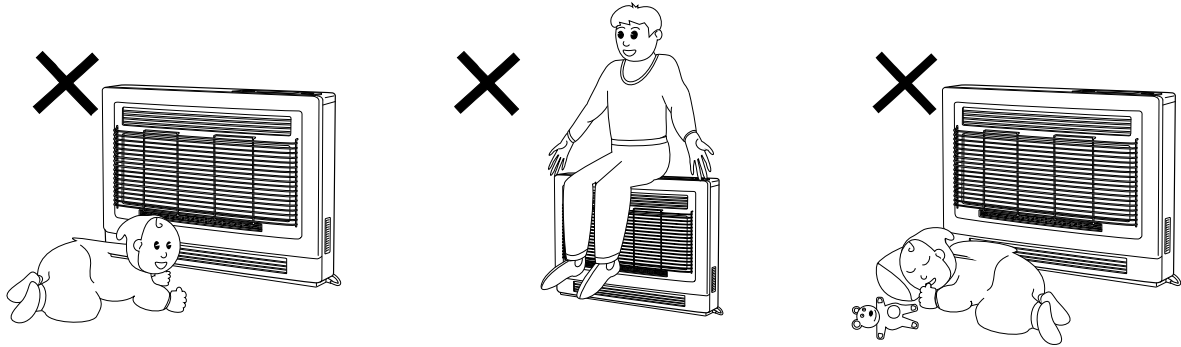
IMPORTANT POINTS

The appliance is not intended for use by young children or infirm persons without supervision.

Young children should always be supervised to ensure that they **DO NOT** play with the appliance.

DO NOT allow children or elderly persons to sleep in the warm air discharge from the heater.

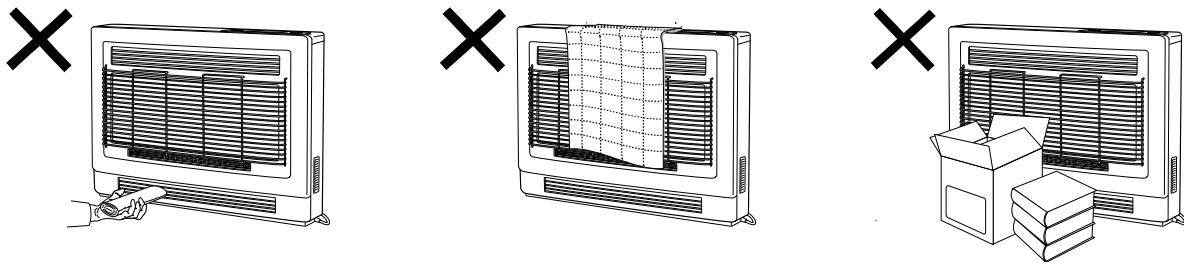
DO NOT sit on this heater.



DO NOT post or allow children to post articles into the louvres of the heater.

DO NOT cover or place articles on this heater.

DO NOT place articles in front of the louvres

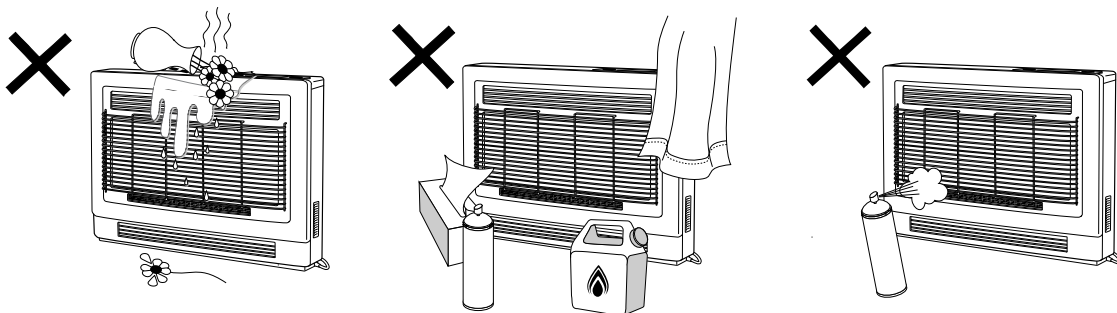


Keep heater away from flammable materials. Combustible materials must not be placed where the heater could ignite them.

DO NOT place containers of liquid on top of the heater. Water spillage can cause extensive damage to the appliance and create an electrocution hazard.

DO NOT spray aerosols near this heater while it is in use. Most aerosols contain butane gas which can be a fire hazard if used near this heater when it is in use.

Use of aerosols, paint, polishes etc. whilst this heater is in use may also cause unpleasant smells.



IMPORTANT POINTS

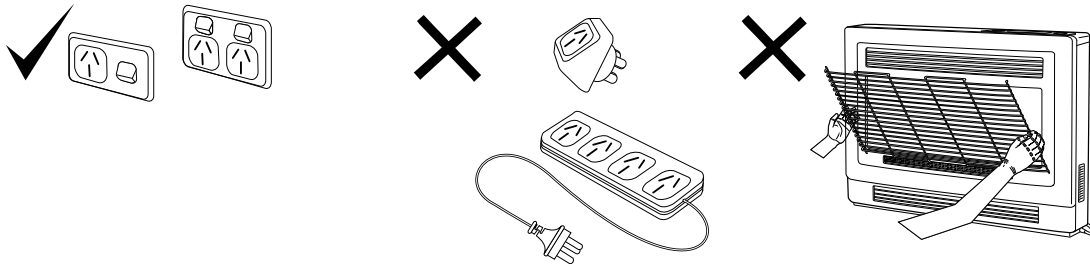
It is recommended that a dedicated 240V 10 Amp earthed power point be used with this appliance.

DO NOT use power boards or double adaptors to operate this appliance. Heater **MUST NOT** be located below a power socket-outlet.

DO NOT remove the Dress Guard.

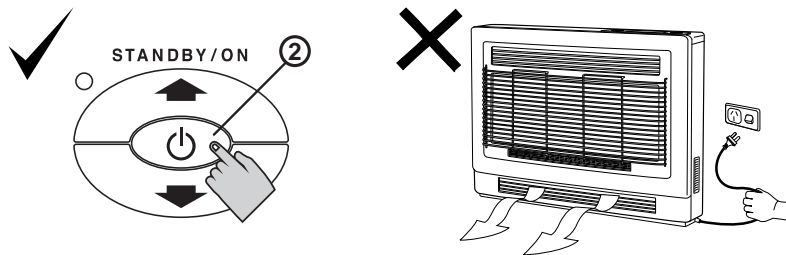
The dress guard is fitted to this appliance to reduce the risk of fire injury from burns and no part of it should be permanently removed. It does not give full protection to young children or the infirm.

For protection of children or the infirm, a secondary guard is recommended.



When the heater is unplugged for an extended period the clock will stop and will need to be reset. However programmed ON/OFF times will remain in the memory.

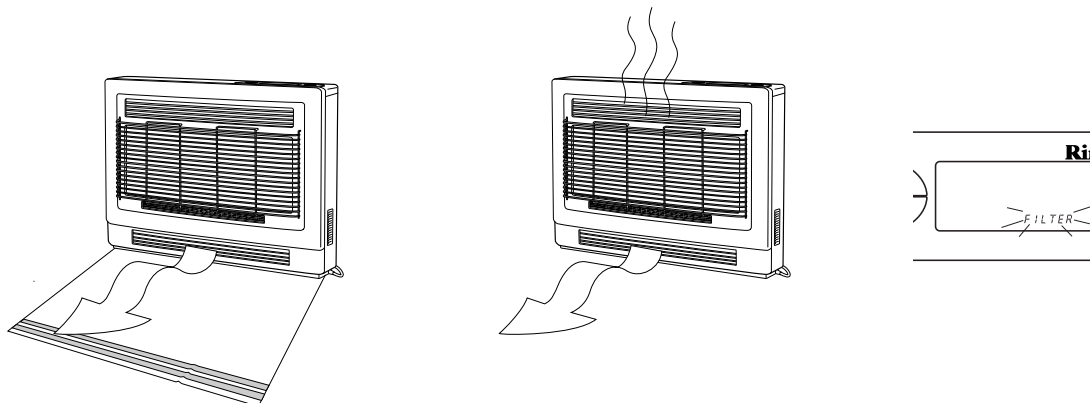
Turn the heater to Standby after use. **DO NOT** unplug the heater while it is in operation or while the fans are still cycling.



Heat emanating from the front of this appliance may over time affect the appearance of some materials used for flooring such as carpet, vinyl, cork or timber. This effect may be amplified if the air in the room contains cooking vapours or cigarette smoke. To avoid this possibility, it is recommended that a mat be placed in front of the appliance, extending at least 750 mm in front of it.

When the heater is operated for the first time or after long periods of non use a slight odour may be emitted, this is normal. However if odours persist switch off the appliance and contact Rinnai.

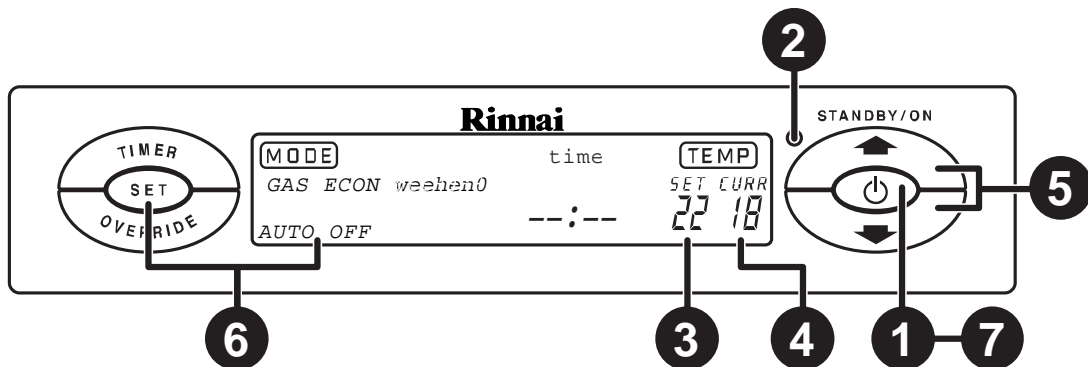
During periods of frequent operation periods the filters should be cleaned weekly, however if the Filter warning indicator illuminates, turn off the appliance immediately and clean filters before further use.



BASIC USER GUIDE



Below is a guide to the basic operation of the Ultima II heater. For details on how to use the advanced features of this appliance please read pages 6 to 11 of this manual.



- 1** To turn on the heater press the STANDBY/ON button, the On/Combustion indicator will illuminate Green (steady illumination) until the heater starts.

- 2** When the heater has started to heat the room the On/Combustion indicator will change from Green to Red (steady illumination) to confirm heater operation.

- 3** This number indicates the selected (SET) room temperature.
(The available SET temperatures are: L = low, 16°C to 30°C in [1°C steps], H = high)

- 4** This number indicates the current (CURR) room temperature.
(The SET temperature must be higher than this temperature for the heater to start)

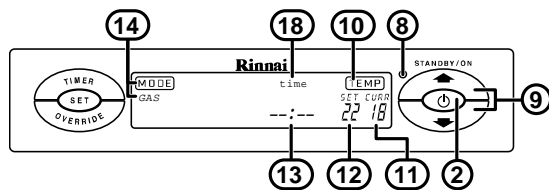
- 5** Use the up arrow ▲ to raise the room temperature and use the down arrow ▼ to lower it .

- 6** Press the SET button until the desired mode(s) are shown in the display.
(For best comfort and economy press the SET button until GAS, ECON & AUTO OFF are all shown. The last mode(s) selected become the default the next time the heater is used)

- 7** To turn off the heater press the STANDBY/ON button, the On/Combustion indicator will go out and the digital display will revert to a CLOCK display for 10 seconds and then go blank.
(The fan will continue to cycle for several minutes to cool the heater down)

HOW TO OPERATE THE HEATER

TO TURN THE HEATER ON



Before you begin ensure that the Gas and Power have been connected and turned on.

The combustion chamber of this appliance requires purging before gas flows and the burner sequence begins. As a result the combustion fan starts several seconds before there are any signs of ignition.

Press the STANDBY/ON button ② once to begin the ignition sequence. The On/Combustion indicator ⑧ will glow green and the combustion fan will cycle to purge the combustion chamber. Once purged burner ignition will take 5 ~ 10 seconds. The ON/Combustion indicator ⑧ will change to Red (steady) after ignition has been achieved.

After ignition the appliance will begin to operate in the following factory preset manner:

- The TIME ⑬/⑱ will display -- : --, to set the time see page 8.
- The temperature displays TEMP ⑩ and will show the current room temperature CURR ⑪. The default set temperature SET ⑫ will be 22°C. See below on how to adjust set temperature.
- The default operating mode is GAS ⑭, see page 7 for modes of operation.



To save energy, during standby the digital display will de-activate (go blank) after 10 seconds. Pressing the STANDBY/ON button ② overrides this feature and will initiate the ignition sequence, pressing any other button once re-activates the digital display.

When using the appliance for the first time or after long periods of non use, ignition may not occur the first time it is operated as there may be air within the pipes. If ignition does not occur after approximately 30 seconds the heater will cease operation automatically. If this occurs press the STANDBY/ON button ② twice to restart.

This heater may make noises after ignition/extinction. This is due to expansion and contraction of the heater components and is normal.

The heater will not immediately ignite if the STANDBY/ON button ② is pressed straight after extinction. After approximately 20 seconds has passed, the heater will automatically go into ignition mode.

TO ADJUST SET TEMPERATURE

The set temperature may be raised or lowered by use of the Up and Down buttons ⑨. The selected temperature will be displayed under the SET ⑫ icon of the TEMP display ⑱.

The following set temperatures can be selected.

- 'L' for continuous combustion on the lowest burner setting, without thermostatic control.
- Thermostatic control between 16°C to 30°C in 1°C steps
- 'H' for continuous combustion on the highest burner setting, without thermostatic control.

The current room temperature ⑪ will display temperatures between 1°C to 30°C.

Once the temperature is set it will be stored in the memory of the microcomputer. If the temperature is not adjusted further it will be the default setting when the appliance is next used.



Rooms may not arrive at the SET temperature due to the size and construction of the room, location of the appliance or external temperatures.

If the appliance does not ignite then the actual room temperature may already be higher than the pre-set temperature.

TO TURN THE HEATER OFF

To turn the heater off while it is in operation press the STANDBY/ON button ② located on the control panel. The On/Combustion indicator ⑧ will go out and the digital display will revert to the CLOCK display.



After the On/Combustion indicator ⑧ has gone out, the appliance fan will continue to cycle for several minutes. This is to lower the temperature within the appliance and is normal. DO NOT disconnect the power during this time.

HOW TO OPERATE THE HEATER

MODES TO DELIVER COMFORT AND ECONOMY

Your appliance has several MODE settings to choose from. The factory default mode is GAS. If the mode is not adjusted this will be the default setting the next time the appliance is used.

As a room is warmed, the walls and ceilings are also warmed, making one feel a little warmer than when the ceilings and walls were cold, even though the room temperature is the same. The economy mode prevents discomfort from overheating and saves energy.

GAS MODE

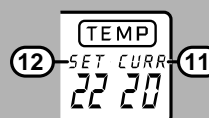
Gas combustion in this mode is continuous and will adjust automatically to maintain the set temperature. This is the factory default mode for the appliance.

GAS / ECON MODE (ECONOMY MODE)

In this mode, once the set temperature has been maintained for a period of 30 minutes, the comfort control system will progressively lower the set temperature by 2°C over a period of 60 minutes. When GAS / ECON mode is selected, gas combustion is continuous and will adjust automatically to maintain the set temperature minus 2°C.



During operation in GAS / ECON mode the current room temperature (CURR (11)) may be lower than the set temperature (SET (12)), however this is normal.

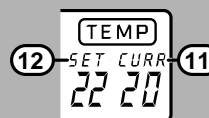


GAS / ECON / AUTO OFF MODE

In this mode, once the set temperature has been maintained for a period of 30 minutes, the comfort control system will progressively lower the set temperature by 2°C over a period of 60 minutes. When GAS / ECON / AUTO OFF mode is selected, gas combustion will start and stop automatically to maintain the set temperature minus 2°C.

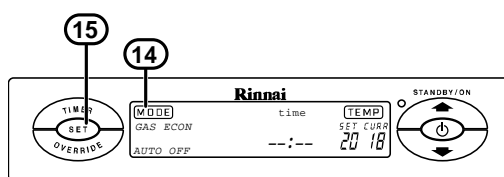


During operation in GAS / ECON / AUTO OFF mode the current room temperature (CURR (11)) may be lower than the set temperature (SET (12)), however this is normal.

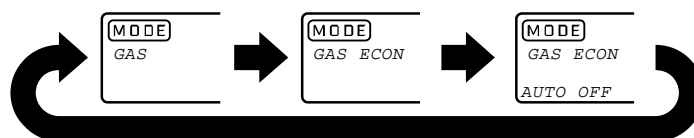


SELECTING MODES

The current operation mode is displayed on the digital display (14) and the SET button (15) is used to select which mode the heater will use during operation.



To select a different mode press the SET button (15) whilst the appliance is in operation, this will cycle the heater through the available modes as follows:



The MODE selected will be stored in the memory of the microcomputer. If the MODE is not changed further it will be available as the initial setting when the appliance is next used.

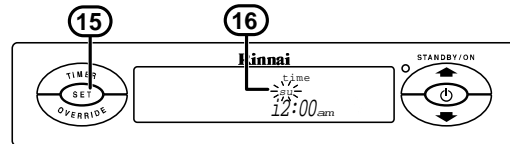
TIMER OPERATION

CLOCK AND DUAL TIMERS

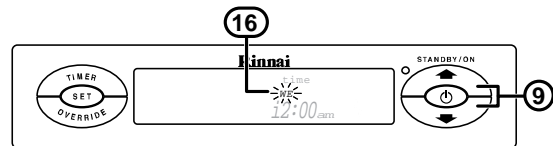
The setting of the Clock and programming of the Timers is done via the SET button (15). Each press of this button will cycle the appliance through the available clock setting and timer programming modes.

SETTING THE CLOCK

- With the heater in the STANDBY condition press the SET button (15) once (if the digital display is blank press the SET button (15) twice) to enter the TIME function. The factory default clock display is SU 12:00 AM. The day indicator (16) will be flashing.

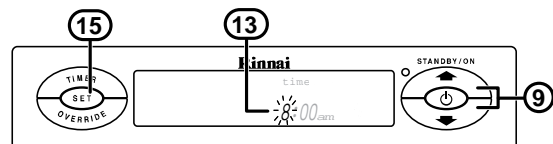


- Press up or down buttons (9) to scroll to the desired day of the week. For this example WE (Wednesday) is selected.



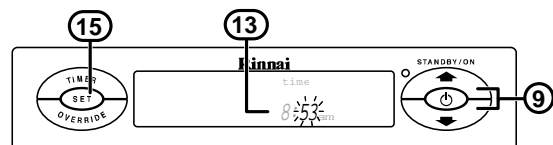
- After setting the day, press the SET button (15) once. The day indicator (16) will cease flashing and the hour digits (13) will begin to flash.

Press up or down buttons (9) to scroll the numbers to set the hour. For this example 8 is selected.



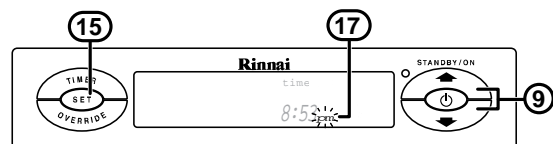
- After setting the hour, press the SET button (15) once. The hour digits (13) will cease flashing and the minute digits (13) will begin to flash.

Press up or down buttons (9) to scroll the numbers to set minutes. For this example 53 is selected.

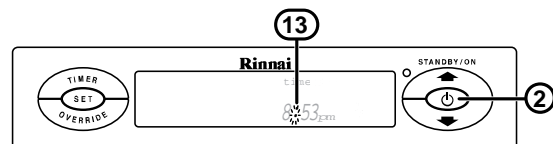


- After setting minutes, press the SET button (15) once. The minute digits (13) will cease flashing and the AM/PM indicators (17) will begin to flash.

Press up or down buttons (9) to set AM or PM. For this example PM is selected.



- After setting AM or PM, press the SET button (9) once and then press the STANDBY/ON button (2) twice to save the new time setting. The Hour/Minute delineator (13) will begin to flash to show that the clock is now in operation.



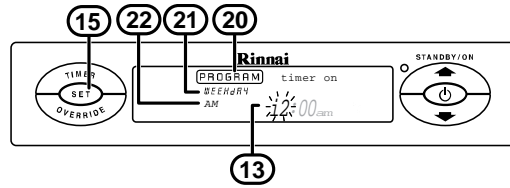
NOTE

It is recommended that the electric power supply to the heater is disconnected (unplugged) only if the heater is not going to be in use for an extended period. When the appliance is unplugged for an extended period the clock will stop and will need to be reset. However, timer programming will remain in the memory.

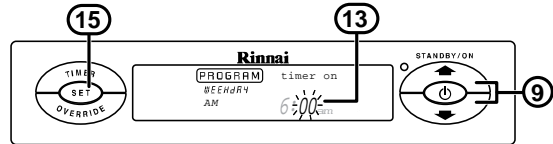
TIMER OPERATION

PROGRAMMING TIMERS

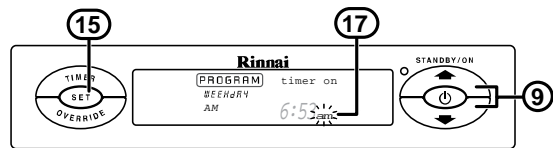
- With the heater in the STANDBY condition press the SET button (15) until the PROGRAM indicator (20) is shown in the display and the hour digits (13) are flashing. The WEEKDAY (21) AM (22) timer is the initial timer that is made available for programming.



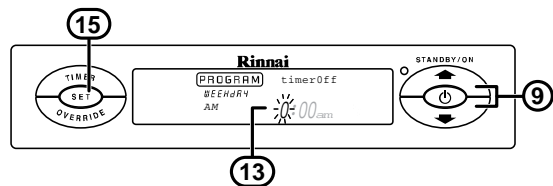
- TIMER ON - Hour. Press the up or down buttons (9) to scroll through and select the hour that the heater timer program will start. Press the SET button (15) once to lock in the hour. The minute digits (13) will begin to flash.



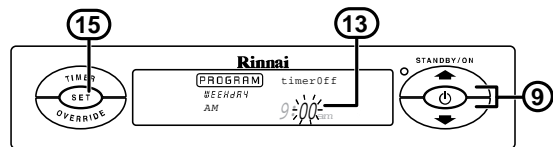
- TIMER ON - Minutes. Press the up or down buttons (9) to scroll through and select the minutes past the hour that the heater timer program will start. Press the SET button (15) once to lock in the minutes. The AM/PM digits (17) will begin to flash.



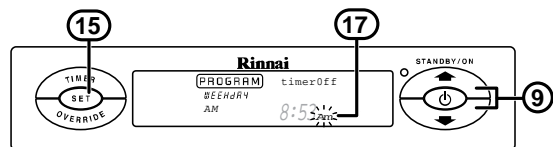
- TIMER ON - AM/PM. Press the up or down buttons (9) to select either AM or PM. Press the SET button (15) once to lock in the AM or PM setting. The hour digits (13) will begin to flash again.



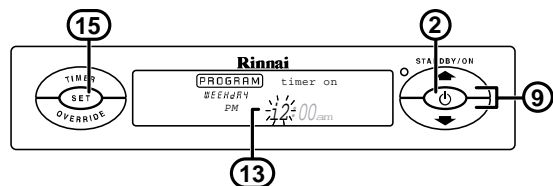
- TIMER OFF - Hour. Press the up or down buttons (9) to scroll through and select the hour that the heater timer program will finish. Press the SET button (15) once to lock in the hour. The minute digits (13) will begin to flash.



- TIMER OFF - Minutes. Press the up or down buttons (9) to scroll through and select the minutes past the hour that the heater timer program will finish. Press the SET button (15) once to lock in the minutes. The AM/PM digits (17) will begin to flash.



- TIMER OFF - AM/PM. Press the up or down buttons (9) to select either AM or PM. Press the SET button (15) once to lock in the AM or PM setting. The hour digits (13) will begin to flash again.

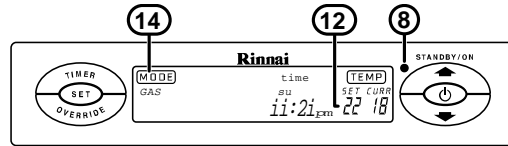


Repeat steps 2 through 7 above for the setting of the WEEKDAY PM, WEEKEND AM and WEEKEND PM timer programs as required or press the STANDBY/ON button (2) twice to exit.

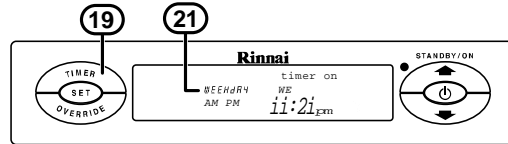
TIMER OPERATION

OPERATING TIMERS

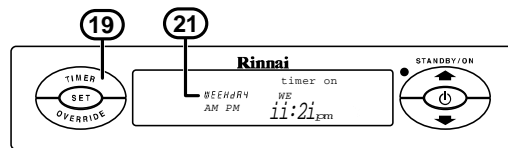
Before a timer program can be used the heater must be turned ON with the desired set temperature (12) and mode of operation (14) selected. To scroll through the available timers press the TIMER button (19). When the heater is awaiting timer operations to begin the Combustion indicator (8) is illuminated Green.



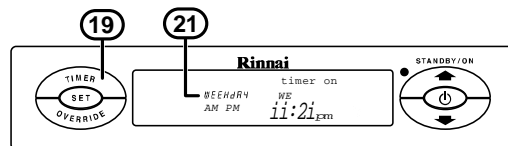
- To select the WEEKDAY Timer, press the TIMER button (19) until the WEEKDAY indicator (21) is shown. The programmed on and off times for the timer will then appear briefly, before the display reverts back to the clock.



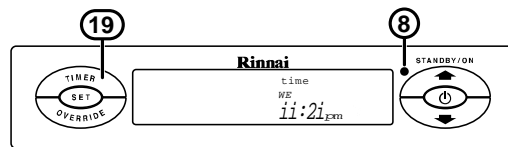
- To select the WEEKEND Timer, press the TIMER button (19) until the WEEKEND indicator (21) is shown. The programmed on and off times for the timer will then appear briefly, before the display reverts back to the clock.



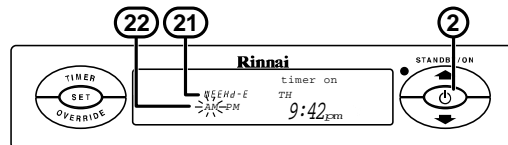
- To select both the WEEKDAY and WEEKEND Timers, press the TIMER button (19) until the WEEKDAY-END indicator (21) is shown. The programmed on and off times for the timers will then appear briefly, before the display reverts back to the clock.



- To return the appliance to the STANDBY condition, press the TIMER button (19) until no timer indicators are displayed, the On/Combustion indicator (8) will be extinguished and the clock will be displayed to confirm that the heater is now in the STANDBY condition and that no timer programs are selected.



- When the heater is operating under the control of a timer program, the timer (21) that is in use is displayed and the relevant AM or PM indicator (22) for the timer flashes. The clock is also displayed.



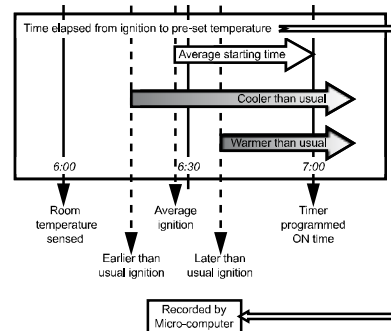
The heater continues to operate under control of the timers until timers are cancelled. If the STANDBY/ON button (2) is pressed whilst under control of the timers the heater will be turned off and the timer programs will not operate.

PREHEAT

This function operates automatically in conjunction with the Timers. When a Timer is selected, the heater may operate anywhere within an hour prior to the programmed starting time of a Timer.

This function is called Pre-heat since it ensures the room reaches the desired temperature by the On Time programmed into the Timer(s). The room temperature is sensed one hour before the programmed On Time.

The actual room temperature one hour prior to the programmed starting time of a timer combined with the data from previous operation governs exactly how long before the programmed On Time the micro-computer will ignite the burner.



LOCK AND OTHER SAFETY DEVICES

USING THE OVERRIDE FUNCTION

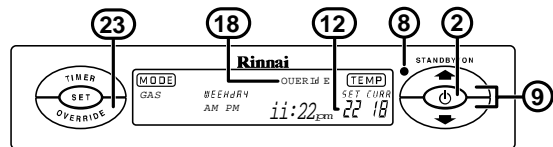
This function is used to manually override the current timer controlled operation of the heater.

For example:

If the heater is between the finishing and starting times of a timer program and the Override button is pressed (23) the OVERRIDE indicator (18) will illuminate (if the digital display is blank press the Override button (23) twice) and the heater will begin to operate and heat the room until the next timer off operation is reached.

If the heater is between the starting and finishing times of a timer program and the Override button is pressed (23) the OVERRIDE indicator (18) will illuminate and the heater will stop heating the room until the next timer on operation is reached.

To cancel override and to return to Timer operation press the Override button (23) again. The Override indicator (18) will go out.



If the STANDBY/ON button (2) is pressed the heater will be turned off and the timer programs will not operate.

USING THE LOCK FUNCTION

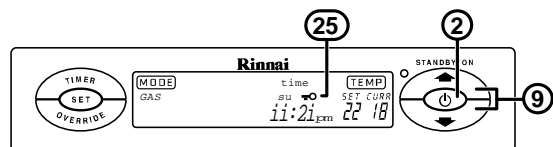
The Lock function avoids accidental operation and prevents small children from altering settings.

To Activate the Lock

To activate the Lock function press both the Up and Down buttons (9) simultaneously for 3 seconds. The function is activated immediately and the Lock indicator (25) will be illuminated.

To Deactivate the Lock

To deactivate the Lock function press both the Up and Down buttons (9) simultaneously for 3 seconds. The Lock indicator (25) will go out to show that the Lock function is no longer active. The Lock function can be deactivated at any time in this manner.



If the Lock function is activated whilst the heater is in operation or in Timer mode, all controls other than the ability to switch the appliance OFF with the STANDBY/ON button (2) will be locked until the Lock is deactivated. Timer operation will not be affected.

If the lock function is activated whilst the appliance is in the off position, all controls will be locked until the Lock function is de-activated.

If the appliance is switched off whilst the Lock function is activated, all controls will be locked until the Lock function is de-activated.

Lock programming (activated or de-activated) is stored in the appliance memory. Unplugging the appliance from the power supply has no effect on Lock programming.

SAFETY DEVICES

Overheat switches

If various critical components of the heater get too hot during operation these devices turn the gas off automatically.

Electrical fuse

The electrical circuits are protected by a fuse.

Flame failure sensor

This device automatically cuts off the gas supply to the heater in the event of a gas failure.

Power failure

In the event of a power failure or power cut, the gas valves will automatically close.

CARE AND MAINTENANCE

Your heater needs very little maintenance, but the following information will help you to keep it looking good and working efficiently.



Unplug before cleaning.

All parts of the heater can be cleaned using a soft, damp cloth.

DO NOT use solvents to clean any parts.

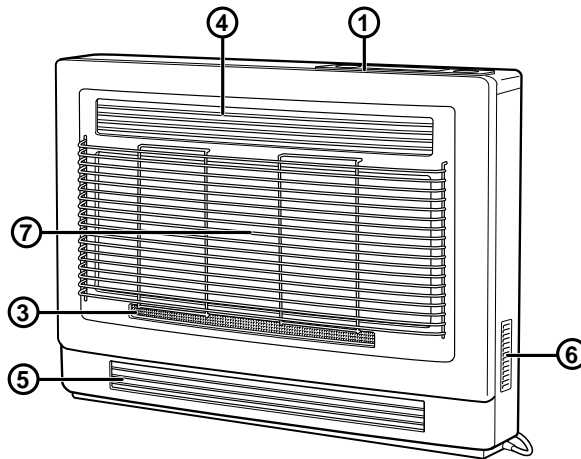
DO NOT spray aerosols in the vicinity of the heater whilst in operation.

DO NOT place articles on or against this heater.

DO NOT store flammable materials near this heater.

CLEANING FILTERS, GRILLES AND LOUVRES

The burner filter (3), air inlet louvre (4), warm air discharge louvre (5) and thermistor grill cover (6) must be kept clear of dust or other obstructions.

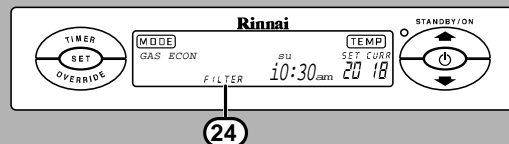


Dust contamination of these parts reduces the heating effectiveness of the appliance and may require cleaning at least once a week during the heating season to prevent blockages.



DO NOT wait for FILTER indicator (24) to illuminate on the display of the control panel (1) on before cleaning these areas.

DO NOT use the heater with the FILTER indicator (24) illuminated. This may cause the appliance to overheat.



SERVICE

Rinnai recommend that this appliance and installation be inspected and serviced every 2 years.

If the power supply cord or any other component of the heater are damaged, they must be replaced by Rinnai or a suitably qualified person.

Any service or repair work should only be carried out by an authorised person. Rinnai has service and spare parts departments nationally see back cover for contact details.



Service calls for general cleaning, maintenance and wear and tear are not necessarily covered under the warranty. Service calls of this nature may be chargeable.

CARE AND MAINTENANCE

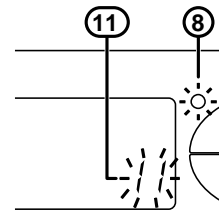
TROUBLE SHOOTING CHECKLIST

Use the following chart to help determine whether a service call is required, however if you are unsure about the way your heater is operating, contact Rinnai or your local agent.

Fault Condition	Probable Cause							Possible Remedy
		No Display	Burners fail to ignite	Filter Indicator is illuminated	Combustion stops during operation	Smell of gas	Takes a long time to warm the room	
Not plugged in or turned off.		●	●				●	Plug in power cord and turn power on.
Mains power failure.		●	●		●			Re-ignition, when power restored, page 5.
(Initial Install) Air in gas pipe.			●					Installer to purge air from gas supply.
Dust on air filters.				●				Clean the air filters (Weekly).
Room too large.							●	Check with retailer.
Air filter blocked.					●		●	Clean the air filters (Weekly).
Louvre obstructed.					●		●	Remove obstruction
Gas supply turned off.		●	●					Turn gas supply on at the meter or cylinder.
Gas escape.							●	Isolate gas supply, call Rinnai service.
On Timer is set.			●					Cancel timer by using the override page 11.
Lock set.			●					Cancel Lock as described on page 11.

ERROR CODES

Your heater is also fitted with self diagnostic electronics that monitor the appliance during start-up and operation. Should a fault occur the heater will shut down and the cause fault will be indicated by a pair of flashing digits (11) in the Digital display and the On/Combustion indicator (8) will also flash Red. Refer to the table below for probable cause and the suggested remedy.



Code	Probable Cause	Suggested Remedy
--	Power Failure	Press the ON/OFF button 2 twice to reset the heater.
00	Power Outage	As above.
11	Ignition Failure	Check gas supply is turned on, turn the heater OFF and then ON again. If the heater fails to ignite after 4 attempts a Service Call will be required.
12	Flame Failure	As above.
14	Overheat	Clean air inlet. If error continues a Service Call will be required.
16	Room Overheat	Lower room temperature to below 40°C.
31	Room temperature Sensor Faulty	Service Call.
33	Overheat Temperature Sensor Faulty	Service Call.
35	Flue Temperature Sensor Faulty	Service Call.
53	Sparker Failure	Service Call.
61	Combustion Fan Failure	Service Call.
70	ON/OFF Switch Faulty	Service Call.
71	Solenoids Faulty	Service Call.
72	Flame Rod Faulty	Service Call.
90	Flue Blockage / Exhaust temperature high	Service Call.

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GENERAL - INSTALLATION

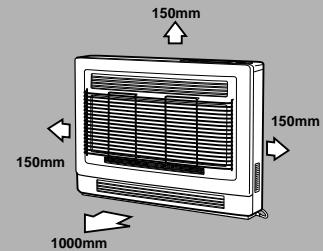


The following pages contain information relating to Installation and Service. Failure to comply with these instructions could result in a fire or explosion, which could cause serious injury, death or property damage.

Improper installation, adjustments, service or maintenance can cause serious injury, death or property damage. Such work must be performed by an authorised person.



- The appliance must be installed in accordance with the local gas and electrical authority regulations.
- This appliance must not be installed where curtains or other combustible materials could come into contact with it. In some cases curtains may need restraining.
- This appliance discharges a large volume of warm air at low level to provided even heat distribution.
- Some nylon carpets contain dyes which may be affected by the warm air flow.
- Heat emanating from the front of this appliance may over time affect the appearance of some materials used for flooring such as carpet, vinyl, cork or timber. This effect may be amplified if the air in the room contains cooking vapours or cigarette smoke. To avoid this possibility, it is recommended that a mat be placed in front of the appliance, extending at least 750 mm in front of it.
- If the supply cord is damaged or requires replacing, it must be replaced by the manufacturer or the manufacturer's agent or similarly qualified person in order to avoid a hazard.



The above diagram shows the clearances required around this heater whilst in operation

1. MAIN POINTS GOVERNING HEATER LOCATION

- Suitable Installation Type
 - Ultima II Inbuilt: Suitable for masonry fireplace installations **ONLY!**
 - Ultima II Console: Suitable for a masonry fireplace installation, or against a wall using a twin skin flue in the wall cavity.



Ultima II Console and Inbuilt models are NOT SUITABLE for 'built in' installations other than a masonry fireplace as described in this manual. They are not suitable for installation into non masonry or 'false' fireplaces, bookcases or shelves.

- Flue connection and cowl to comply with AS/NZS 5601.
- Warm air distribution.
- Ensure that the area in which the appliance is installed has adequate fixed ventilation, this fixed ventilation must be provided in accordance with AS/NZS 5601.

2. UNPACKING THE APPLIANCE

- Undo straps.
- Lift carton off heater, never lift heater out of carton by top louvres.
- Check for damage. If the heater is damaged, contact your supplier for advice.
- Before installing this appliance, check it is labelled for the correct gas type (see label on rear of heater). Refer to local gas authority for confirmation of gas type if you are in doubt.
- For the Ultima II Inbuilt model only, before installation, remove & discard the triangular packing brackets from rear top of the front casing.

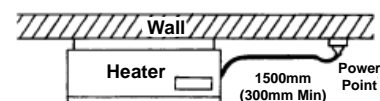
The following additional items should be included in the carton:

- Radiants (2 packs of 3)
- Foam sealing strip (Inbuilt only)
- Flue spigot and screws
- Rear Cover and screws with wall brackets (Console only).

3. ELECTRICAL SUPPLY

The heater has a power cord with a three pin plug supplied.

Rinnai recommends that the heater be plugged into a 240V, 10A earthed power point. The power point must be a minimum of 300mm to the side of the heater (it must not be above the heater).

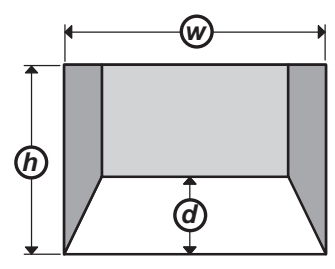


Alternatively - heater can be direct wired if the power supply is to be concealed. Consult a qualified electrician if direct wiring is required as it must comply to AS/NZS 5601 and AS/NZS 3000.

INBUILT INSTALLATION, MASONRY FIRE PLACE

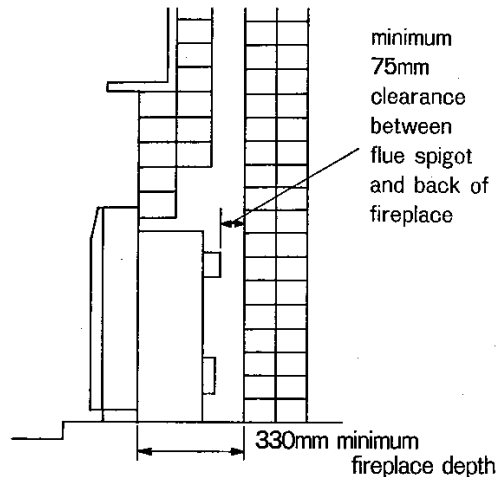
1. CHECK DIMENSIONS OF FIREPLACE

Masonry Fireplace Dimensions		
Ⓜ	Width	710 mm minimum 805 mm maximum
ⓗ	Height	605 mm minimum 635 mm maximum
ⓓ	Depth	330 mm minimum



2. CHECK FLUEWAY

- Remove damper plate/baffle - Any damper plate or baffle which has been installed in the chimney shall be removed.
- Check flueway is clear of obstructions.
- Check dimensions of fireplace and if necessary remove any protruding brickwork to give 75 mm minimum clearance from flue spigot.
- Provide a firm, flat and sealed base for heater. A rough base may cause rattles and affect performance.
- Check that there are no unwanted holes or openings in fireplace. If so these must be sealed.
- The chimney must be confirmed free of soot and creosote that may have built up if previously used for a solid fuel fire. Before installing the heater, inspect the chimney, flue piping and/or solid fuel burning fire place and remove any combustible materials.
- A gas appliance must not be connected to a chimney flue serving a separate solid-fuel burning appliance.
- Peel protective backing off the foam strips supplied with the heater.
- Attach strips supplied with the heater. The strip is intended to form a seal between the heater and fireplace. If an adequate seal cannot be formed with this strip another means of sealing must be used (e.g. fibreglass batts), between the fireplace and the heater body.

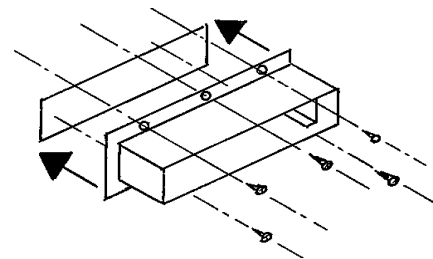
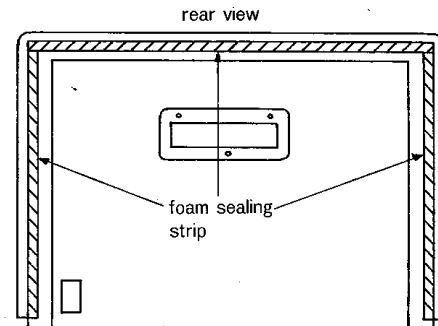


3. FIT FLUE SPIGOT

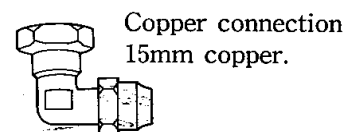
- The flue spigot is packed separately in the carton.
- It must be fitted to all models, inbuilt and console.

4. GAS INLET UNION

- For ease of connection a combined gas inlet union/copper elbow is provided with every heater. It is situated at the bottom right hand side below the control.



Union connection to heater



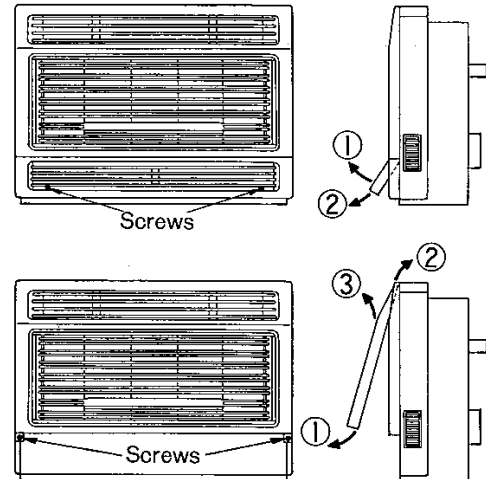
INBUILT INSTALLATION, MASONRY FIRE PLACE

5. REMOVE GAS INLET UNION FROM HEATER

- The inlet union/elbow should be fitted to the end of the copper supply tube before installing the heater in the fireplace opening.

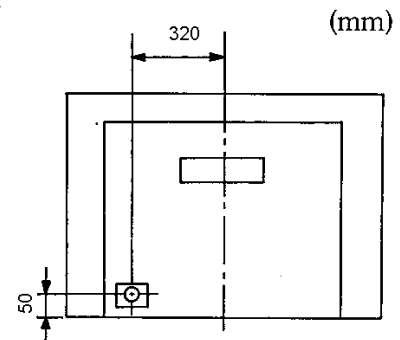
For access to union:

- Remove bottom louvre panel, 2 screws in the lower right and left hand corners of louvres.
- Remove upper front panel, 2 screws at the bottom right and left hand edges of the panel.
- Lift panel to disengage top and remove from heater.
- Do not lift the panel by the dress guard or top louvres.
- Remove union.
- Ensure that removal and replacement of the bottom panel is not obstructed by carpet etc.



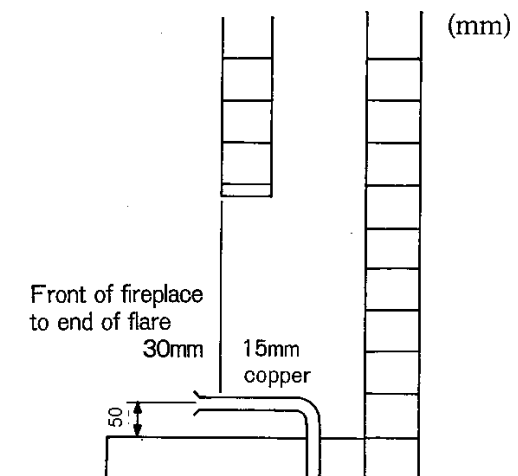
6. GAS CONNECTION POSITION

- Drawing is viewed from rear of heater.
- Actual connection is on right hand side when viewed from front.
- Dimensions are to the centre of the flare fitting on the inlet elbow/union. Flare fitting suits 15 mm copper tube.



7. RUN GAS SUPPLY

- Refer to AS/NZS 5601 or other approved pipe sizing chart if in doubt about size of gas line.
- Copper supply should be run leaving a flare connection the position shown.
- Connect the union/elbow fitting to the copper supply with the union nut facing upwards.
- Purge supply of air and swarf.
- All foreign materials such as filings must be purged from the gas supply, as they could cause the gas valve to malfunction.



NOTE

Don't forget to put flare nut on tube before flaring.



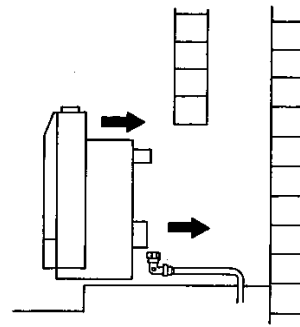
IMPORTANT

Gas pipe sizing must consider the gas input to this appliance as well as all other gas appliances in the premises. The gas meter and regulator must be specified for the total gas rate. Suitable sizing chart such as the one in AS/NZS 5601 should be used.

INBUILT INSTALLATION, MASONRY FIRE PLACE

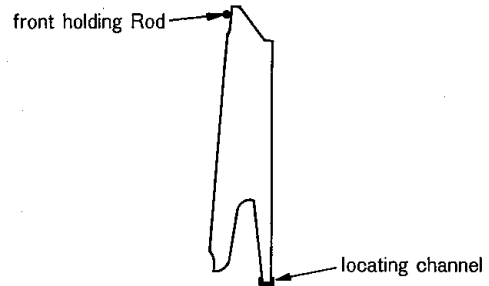
8. INSTALL THE HEATER

- Feed the copper tube through the supply access opening.
- Connect and tighten gas supply union.
- Secure heater to fireplace, there are pre-drilled holes in the heater flanges.
- Drill additional holes if the existing ones are not in suitable positions.



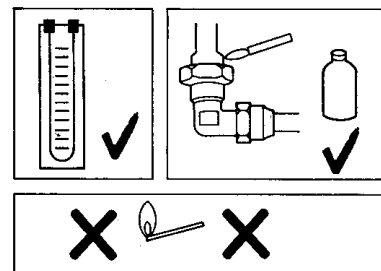
9. INSTALL RADIANTS

- Remove glass panel, install radiants as shown.
- Replace glass panel.



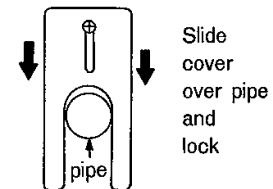
10. CHECK FOR GAS ESCAPES

- Use a manometer or soapy water.
- **DO NOT USE A NAKED FLAME.**



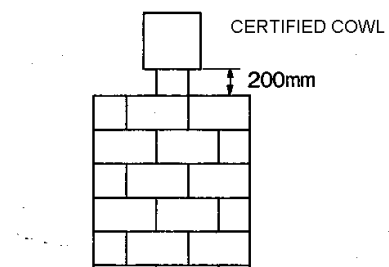
11. CLOSE GAS SUPPLY COVER

- This seals the heater from the chimney and prevents chimney draughts affecting the performance of the heater, as well as preventing the entry of debris from the chimney.



12. INSTALL COWL

- A cowl certified for gas appliances must be installed on all chimneys.
- Clearances to conform with AS/NZS 5601. The minimum clearance between top of chimney and the lowest opening in the flue cowl is 200 mm as shown.
- Size:100 mm.



13. TEST APPLIANCE

- See page 26.

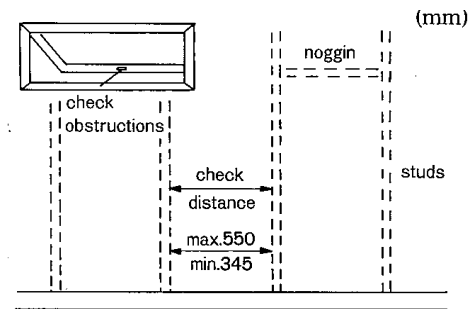
14. INSTRUCT CUSTOMER

- Instruct customer on operation and servicing of the appliance.
- Remind customer of dress guard requirements.

CONSOLE INSTALLATION, CAVITY TWIN SKIN FLUE

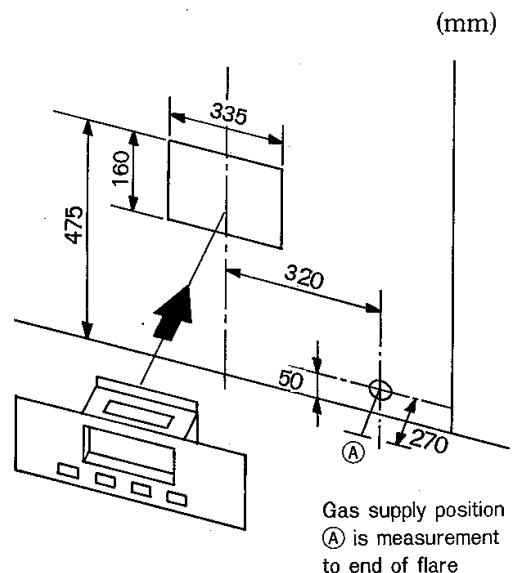
1. GENERAL

- Depth of cavity wall must be at least 75 mm.
- Select position of heater and locate studs. There must be a minimum distance of 345 mm and a maximum distance of 550 mm between studs.
- Ensure ceiling and roof structure will not obstruct flue.



2. CUT OPENING IN WALL

- The wall box measures 330 mm x 100 mm but the opening required is 335 mm x 160 mm. This is to allow for ventilation around the wall box.
- Failure to cut the correct sized hole may lead to excessively high wall temperatures.



3. RUN GAS SUPPLY

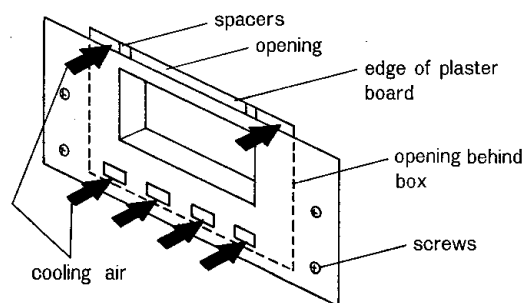
- The gas supply should be run before installing the heater. The easiest way is to run the supply, leaving the end of the copper flare as shown in the diagrams, then attach the elbow / union to the copper supply when the heater is installed.
- Refer to an approved pipe sizing chart such as the one in AS/NZS 5601 'Gas Installations' if in doubt about size of supply pipe.

4. CUT AWAY THE TOP PLATE AND ANY NOGGINS BETWEEN STUDS

Fit flue housing into prepared opening:

- Tabs should be fitted tightly against the plaster board.
- Drill through flanges at stud centres and fix to wall with 4 screws.
- The housing must be secured to the studs to allow the outlet to protrude back into the cavity, giving the twin skin flue a minimum clearance from plaster board of 10 mm, excluding spacers.

Housing fitted to opening



5. LOWER TWIN SKIN FLUE DOWN CAVITY

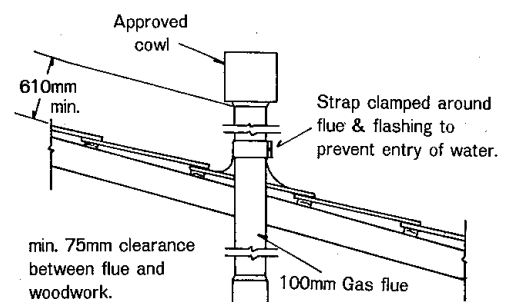
- Straighten tabs at bottom of twin skin flue assembly and lower down wall cavity to housing.
- Insert tabs in slots in housing then bend tabs to secure flue to housing.

6. INSTALL FLUE SUPPORT

- Drop top plate flue support over top of flue, position centrally in space between studs and secure support in position.

7. FIT SEALING PLATE

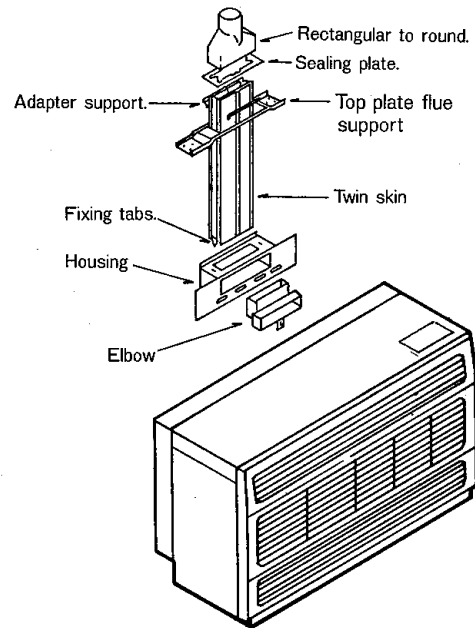
- If flue protrudes more than 65 mm above top plate, adaptor supports must be screwed to the flue, and positioned so that when the sealing plate is fitted it is 50 mm from the top of the flue.



CONSOLE INSTALLATION, CAVITY TWIN SKIN FLUE

8. FIT RECTANGULAR TO ROUND ADAPTOR

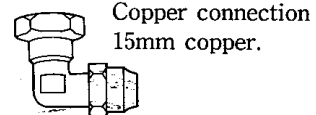
- Fit adaptor to top of twin skin.
- Fit 100 mm flue and approved cowl.
- Flue termination above the roof must comply with AS/NZS 5601.
- Locate the longer end inside the aluminium liner of twin skin.
- Position elbow into housing.
- The flue must be supported independently of the heater to comply with AS/NZS 5601.
- Attach loosely to housing with screw provided.
- Measure distance from floor to flue outlet.
- Adjust elbow to these dimensions, tighten screw.
- Fit right and left hand rear covers to Heater.
- Place top spacer (cover) in position temporarily for wall marking.
- Remove front cover and inlet union.



9. GAS INLET UNION

- For ease of connection a combined gas inlet union/copper elbow is provided with every heater. It is situated at the bottom right hand side below the control.

Union connection to heater

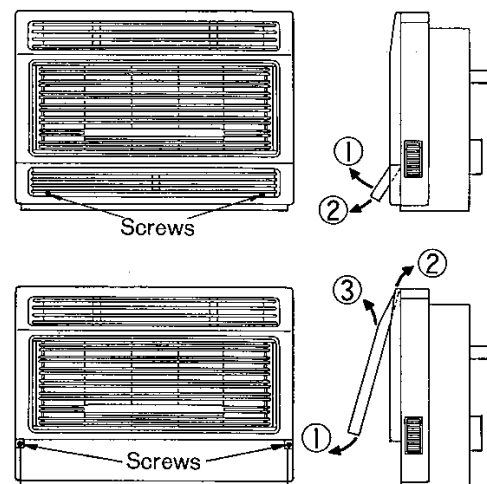


10. REMOVE GAS INLET UNION FROM HEATER

- The inlet union/elbow should be fitted to the end of the copper supply tube fore installing the heater in the fireplace opening.

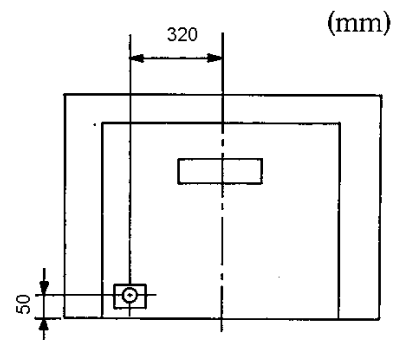
For access to union:

- Remove bottom louvre panel, 2 screws in the lower right and left hand corners of louvres.
- Remove upper front panel, 2 screws at the bottom right and left hand edges of the panel.
- Lift panel to disengage top and remove from heater.
- Do not lift the panel by the dress guard or top louvres.
- Remove union.
- Ensure that removal and replacement of the bottom panel is not obstructed by carpet etc.



11. GAS CONNECTION POSITION

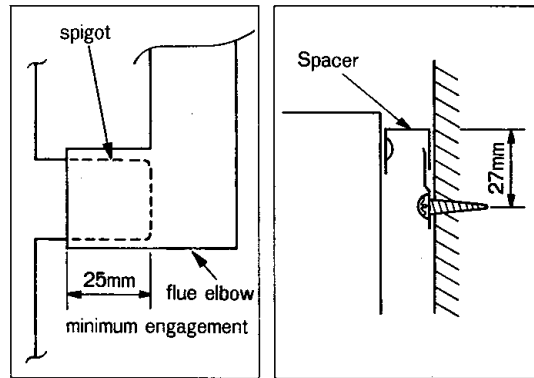
- Drawing is viewed from rear of heater.
- Actual connection is on right hand side when viewed from front.
- Dimensions are to the centre of the flare fitting on the inlet elbow/union. Flare fitting suits 15 mm copper tube.



CONSOLE INSTALLATION, CAVITY TWIN SKIN FLUE

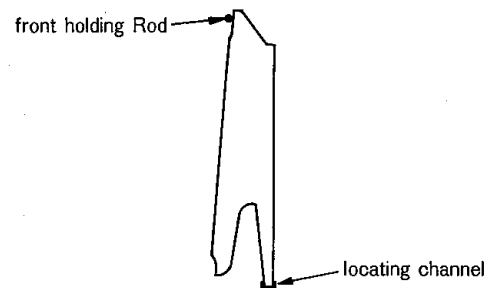
12. INSTALL HEATER

- Mark position of top of spacer on wall.
- Fit wall clips.
- Feed the copper tube through the supply access opening.
- Install heater, ensure spigot is correctly engaged into elbow.
- Replace top spacer, clipping the spacer into the wall brackets at the same time as attaching it to the heater.
- Secure top spacer with the four screws provided.
- The heater is now secured to the wall.



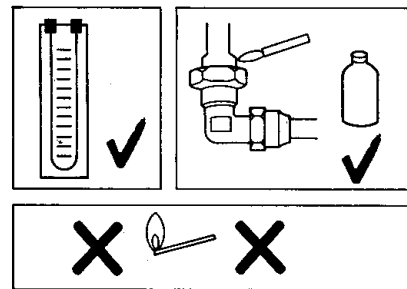
13. INSTALL RADIANTS

- Remove glass panel, install radiants as shown.
- Replace glass panel.



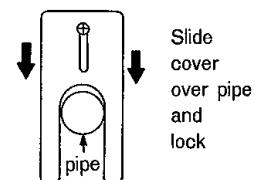
14. CHECK FOR GAS ESCAPES

- Use a manometer or soapy water.
- **DO NOT USE A NAKED FLAME.**



15. CLOSE GAS SUPPLY COVER

- This seals the heater from the chimney and prevents chimney draughts affecting the performance of the heater, as well as preventing the entry of debris from the chimney.



16. TEST APPLIANCE

- See page 26.

17. INSTRUCT CUSTOMER

- Instruct customer on operation and servicing of the appliance.
- Remind customer of dress guard requirements.

CONSOLE INSTALLATION, MASONRY FIRE PLACE

1. GENERAL

- In this type of installation the fireplace is closed off with fireproof material. The heater is placed against the fireproof material and a hole is cut for penetration of the flue spigot into the fireplace.
- The flue spigot must have an extension added to extend beyond overhead brickwork. The extension must be constructed so that it prevents falling debris entering the flue spigot. Cutting the end of the spigot at a 45 degree angle facing downwards will achieve this.
- The spigot extension must not be extended so far into the chimney as to cause an obstruction to the discharge of flue gases. The minimum clearance from the end of the spigot extension to any obstruction is 75 mm.
- Do not install heater below a wooden shelf.

2. PREPARE FIREPLACE

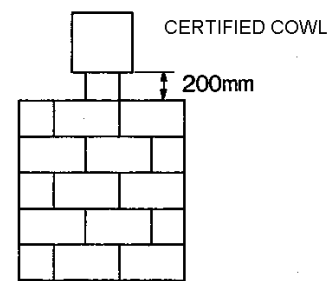
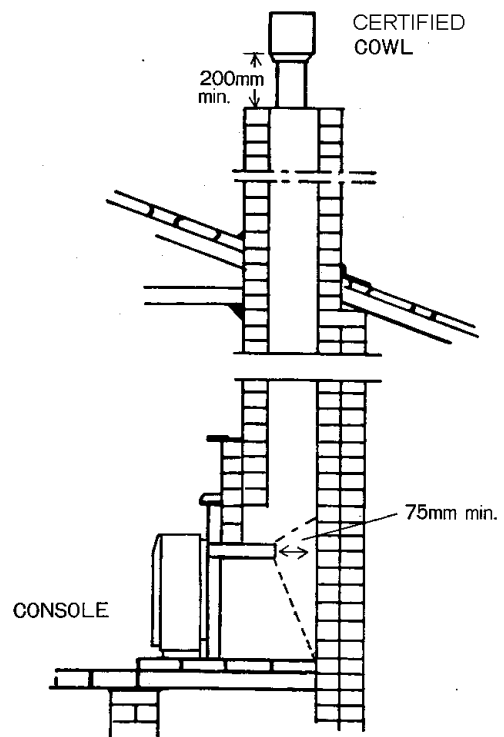
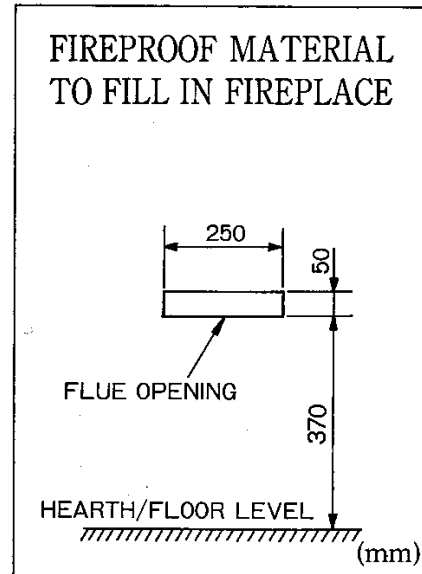
- Remove any damper plates or baffles.
- Check flueway is clear of obstructions.
- Check fireplace dimensions and, if necessary, remove any brickwork to provide 75mm clearance between the end of the spigot extension and any obstruction.
- Check there are no unwanted holes or openings in the fireplace. If so these must be sealed, so that the fireplace is in a sound condition.
- The chimney shall be confirmed free of soot and creosote that may have built up if previously used for a solid fuel fire. Remove combustible materials or substances before installing the heater.
- A gas appliance must not be connected to a chimney serving a separate solid fuel burning appliance.
- Provide a firm, flat and sealed base for the heater. A rough or uneven base may cause rattles and affect performance.
- Close off the fireplace with a fireproof material and cut hole for flue spigot as shown.

3. INSTALL COWL

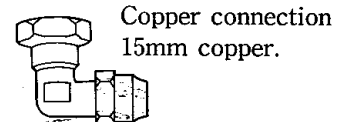
- A cowl certified for gas appliances must be installed on all chimneys.
- Clearances to conform with AS/NZS 5601. The minimum clearance between top of chimney and the lowest opening in the flue cowl is 200 mm as shown.
- Size: 100 mm.

4. GAS INLET UNION

- For ease of connection a combined gas inlet union/ copper elbow is provided with every heater. It is situated at the bottom right hand side below the control.



Union connection to heater



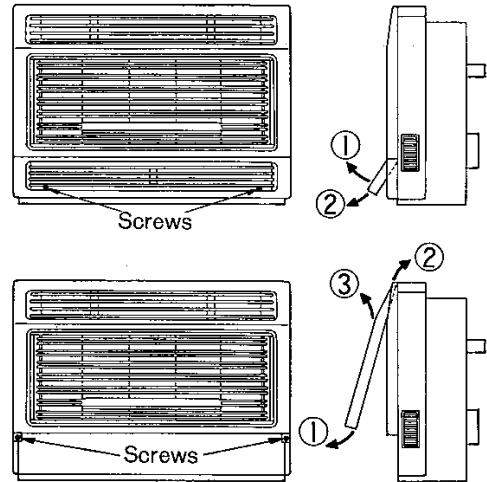
CONSOLE INSTALLATION, MASONRY FIRE PLACE

5. REMOVE GAS INLET UNION FROM HEATER

- The inlet union/elbow should be fitted to the end of the copper supply tube fore installing the heater in the fireplace opening.

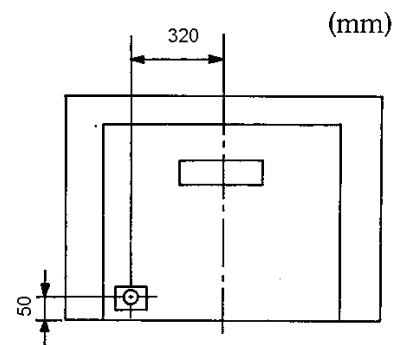
For access to union:

- Remove bottom louvre panel, 2 screws in the lower right and left hand corners of louvres.
- Remove upper front panel, 2 screws at the bottom right and left hand edges of the panel.
- Lift panel to disengage top and remove from heater.
- Do not lift the panel by the dress guard or top louvres.
- Remove union.
- Ensure that removal and replacement of the bottom panel is not obstructed by carpet etc.



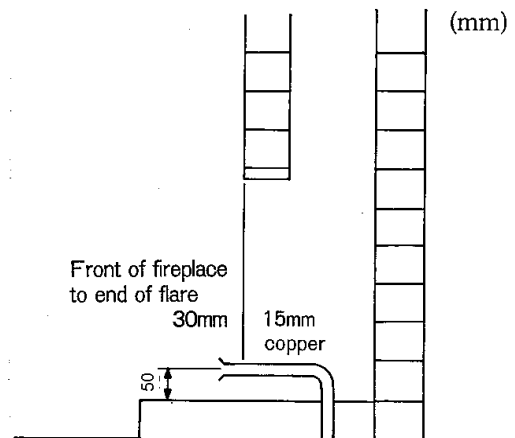
6. GAS CONNECTION POSITION

- Drawing is viewed from rear of heater.
- Actual connection is on right hand side when viewed from front.
- Dimensions are to the centre of the flare fitting on the inlet elbow/union. Flare fitting suits 15 mm copper tube.



7. RUN GAS SUPPLY

- Refer to AS/NZS 5601 or other approved pipe sizing chart if in doubt about size of gas line.
- Copper supply should be run leaving a flare connection the position shown.
- Connect the union/elbow fitting to the copper supply with the union nut facing upwards.
- Purge supply of air and swarf.
- All foreign materials such as filings must be purged from the gas supply, as they could cause the gas valve to malfunction.



Don't forget to put flare nut on tube before flaring.



Gas pipe sizing must consider the gas input to this appliance as well as all other gas appliances in the premises. The gas meter and regulator must be specified for the total gas rate. Suitable sizing chart such as the one in AS/NZS 5601 should be used.

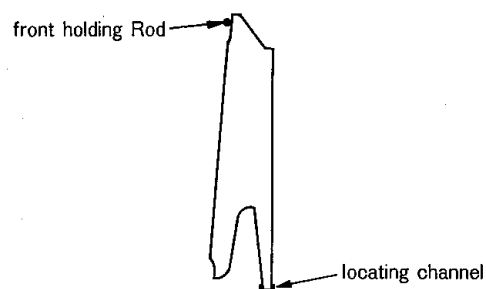
CONSOLE INSTALLATION, MASONRY FIRE PLACE

8. INSTALL HEATER

- Fit right and left rear covers to heater.
- Place top spacer (covers) in position temporarily for wall marking.
- Attach flue spigot extension to heater.
- Feed the copper tube through the supply access opening.
- Secure heater to the fireproof material using the clips in the top spacer (covers).
- Connect and tighten the gas supply.

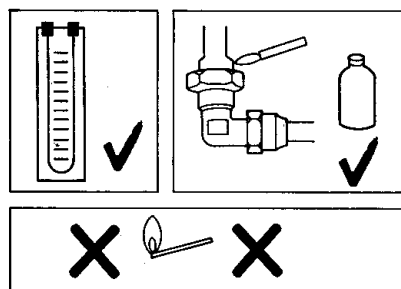
9. INSTALL RADIANTS

- Remove glass panel, install radiants as shown.
- Replace glass panel.



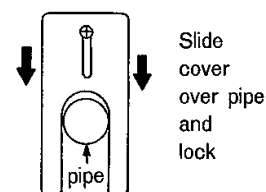
10. CHECK FOR GAS ESCAPES

- Use a manometer or soapy water.
- **DO NOT USE A NAKED FLAME.**



11. CLOSE GAS SUPPLY COVER

- This seals the heater from the chimney and prevents chimney draughts affecting the performance of the heater, as well as preventing the entry of debris from the chimney.



12. TEST APPLIANCE

- See page 26.

13. INSTRUCT CUSTOMER

- Instruct customer on operation and servicing of the appliance.
- Remind customer of dress guard requirements.

INBUILT / CONSOLE COMMISSIONING



240V inside heater, risk of electrical shock.

Commissioning

1. After purging and clearing supply, connecting gas and testing for escapes, plug the heater into the power point.
2. Remove test point screw, situated just above the barrel union on the inlet gas connection.
3. Attach manometer to test point.
4. Light the burner (See Customers Instructions page 6).
5. Check the appearance of the flame on high and low settings, there should be no flame lift or yellow flames.
6. With the appliance operating on high confirm that incoming pressure is a least 1.13 kPa for Natural gas or 2.75 kPa for Propane Gas.
7. Turn the heater off.
8. Remove manometer to test point and replace test point screw.
9. Carefully check for gas escapes around the test point screw.
10. Re-assemble front panels.
11. It is the responsibility of the installer to check that under normal operating 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. Please refer to AS/NZS 5601.
12. If you are unable to get the heater to work correctly, contact Rinnai or your agent. Check "ERROR CODES" on page 13.
13. Explain the operation and features of this appliance to the customer.
14. Explain the requirement to have the secondary guard fitted at all times to minimise the risk of injury from burns.
15. Also explain that a secondary guard is recommended for additional protection to the young or the infirm.
16. Explain the requirement for regular cleaning of air filters and regular servicing by an authorised person in accordance with these instructions.

INBUILT / CONSOLE BURNER PRESSURE SETTING

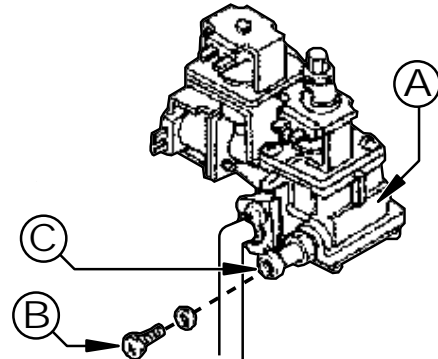


240V inside heater, caution must be taken to avoid the risk of electrical shock.



The gas regulator is factory pre-set. Before making any adjustments to the appliance regulator, check the supply pressure.

1. With the heater Turned OFF.
2. Remove test point screw (B), of the gas control (A).
3. Attach manometer to test point (C).
4. Operate the appliance. (Start combustion).
5. Push red test button located on the top right hand side of printed circuit board (PCB) three times. This will force the burner to the maximum gas rate.
6. Display window should display "PH" (Forced High)



Wait for 70 seconds before proceeding as this will allow time for the combustion of the appliance to stabilise.

7. Check high burner pressure on manometer, for **Natural Gas 0.98 kPa** and for **Propane Gas 2.15 kPa**.
8. If burner pressure requires adjustment, alter burner pressure by pressing the "UP" button on the display panel to increase the gas pressure, or press the "DOWN" button on the control panel to decrease the gas pressure.
9. Push the red test button on the PCB twice.
10. Burner will modulate down to a forced low pressure (Low setting mode. 'PL' will be indicated on the display panel)
11. Check low burner pressure on manometer, for **Natural Gas 0.26 kPa** and for **Propane Gas 0.56 kPa**.
12. If burner pressure requires adjustment, alter burner pressure by pressing the "UP" button on the display panel to increase the gas pressure, or press the "DOWN" button on the control panel to decrease the gas pressure.
13. After checking pressure, turn the heater OFF, remove manometer and replace test point screw.
14. Carefully check for gas escapes around the test point screw.
15. Re-assemble front panels.
16. It is the responsibility of the installer to check that under normal operating 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. Please refer to AS/NZS 5601.
17. If you are unable to get the heater to work correctly, contact Rinnai or your agent. Check "ERROR CODES" on page 13.
18. Explain the operation and features of this appliance to the customer.
19. Explain the requirement to have the secondary guard fitted at all times to minimise the risk of injury from burns.
20. Also explain that a secondary guard is recommended for additional protection to the young or the infirm.
21. Explain the requirement for regular cleaning of air filters and regular servicing by an authorised person in accordance with these instructions.

SPECIFICATIONS

PRODUCT SPECIFICATIONS

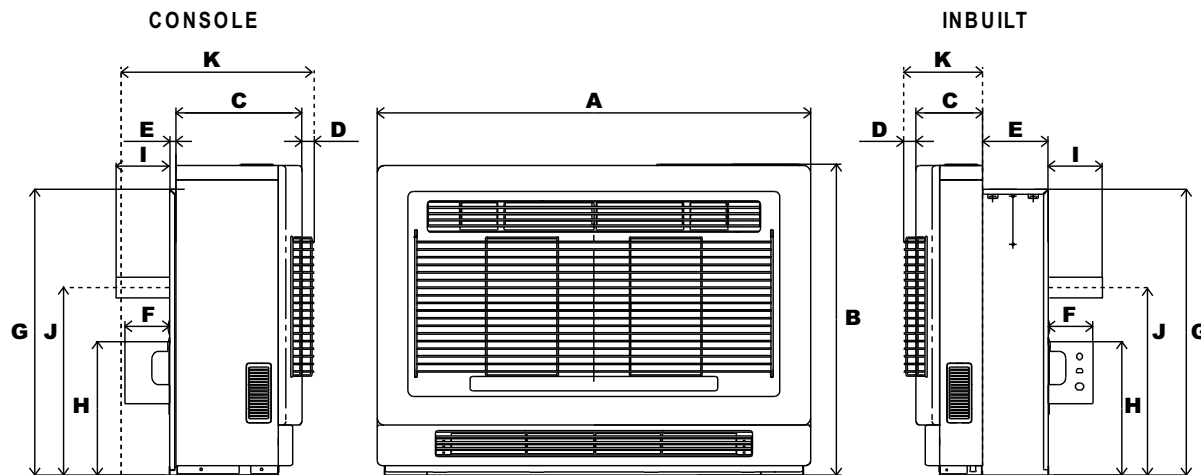
Model: REH-311FTB INBUILT / REH-311FTC CONSOLE

Name: Ultima II INBUILT / CONSOLE

General description:	Rinnai Ultima II Radiant / Convector, Forced Exhaust, Fully Automatic Space Heater.		
Gas input rate:		Natural Gas	Propane
	High (MJ/hr):	30	30
	Low (MJ/hr):	15	15
Gas control:	Rinnai Electronic control with Rinnai Solenoid Valves		
Burners	Stainless Steel Ribbon Type		
Gas Inlet:	Barrel Union / Flare Fitting (15 mm flare connection)		
Test Point Pressure:	High (kPa)	0.98	2.15
	Low (kPa)	0.26	0.56
Flue System:	Forced exhaust, for twin skin flue or fireplace installation		
Fan:	Tangential 3 speed 32 Watt rating		
Flue Termination:	An approved 100 mm cowl must be fitted to all installations.		
Combustion Fan:	2 - pole shaded pole induction motor (with revolution detection) Sirocco fan (240 V)		
Ignition system:	Electronic automatic ignition		
Power Supply:	240 V / 50 Hz. Heater is fitted with a supply lead and 3 pin plug. Replace only with Rinnai Part Number 90192303.		
Data Plate:	Bottom left hand side, behind front panel.		
Installation type:	Console or Inbuilt		
Weight:	Console: 41 Kg. / Inbuilt: 38 Kg.		

Rinnai reserves the right to change or modify specifications without notice.

DIMENSIONS



Legend

CONSOLE

A	910 mm	C	265 mm	E	13.6 mm	G	600 mm	I	114 mm	K	Total Installed Depth*
B	653 mm	D	24 mm	F	93 mm	H	280 mm	J	393 mm		404 mm

INBUILT

A	910 mm	C	140 mm	E	138.6 mm	G	600 mm	I	114 mm	K	Total Installed Depth*
B	653 mm	D	24 mm	F	93 mm	H	280 mm	J	393 mm		164 mm

*The total installation depth includes the dress guard and where applicable the rear cover kit.

Rinnai

Rinnai Australia Pty. Ltd. ABN 74 005 138 769

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Fax: (03) 9271 6622

Rinnai has a Service and Spare Parts network with personnel who are fully trained and equipped to give the best service on your Rinnai appliance. If your appliance requires service, please call Rinnai. Rinnai recommends that this appliance be serviced every 3 years.

Internet: www.rinnai.com.au E-mail: enquiry@rinnai.com.au

National Help Line

Tel: 1300 555 545* Fax: 1300 555 655*

**Cost of a local call Higher from mobile or public phones.*



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