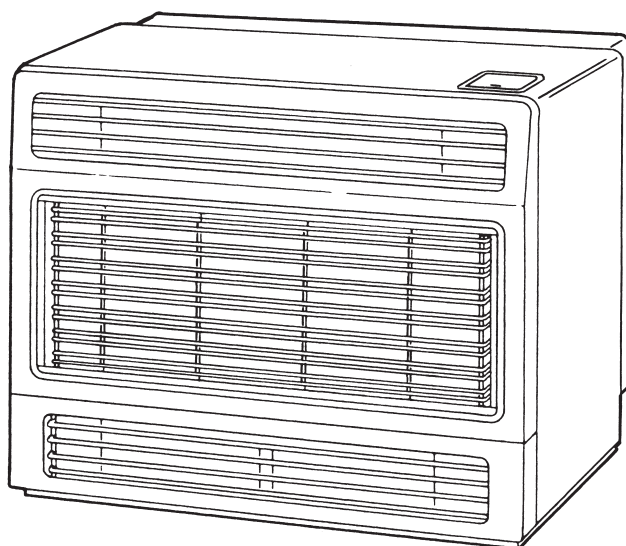


# **Rinnai**

## **SPECTRUM 28**

### **CUSTOMERS OPERATING INFORMATION AND INSTALLATION INSTRUCTIONS**



**This appliance shall be installed in accordance with:-**

**Manufacturer's Installation Instructions**

**Local Gas Fitting Regulations**

**Municipal Building Codes**

**A.G.A. Installation Code for Gas Burning Equipment**

**Any other relevant Statutory Regulation**

**This appliance must be installed, serviced and removed by an  
Authorised Person.**



**The Australian  
Gas Association**

Proudly a member of the AGA  
All of our gas products are AGA  
tested and approved.

# CONTENTS

Features . . . . .	2
Customers Operating Information . . . . .	3
Care of your Spectrum 28 . . . . .	5
Important Points . . . . .	6
Guarantee Information . . . . .	7
Pre-Service Check List and Fault Finding . . . . .	8
Safety Devices . . . . .	8
Installation Instructions General . . . . .	9
Installation Instructions Inbuilt into Fireplace . . . . .	10
Installation Instructions Console into Twin Skin . . . . .	13
Installation Instructions Console into Masonry Fireplace . . . . .	15
Installation Instructions for Insulated Box Installations . . . . .	16
<b>TESTING</b> . . . . .	17
Wiring Diagram . . . . .	18
Specifications . . . . .	Back Page
Service Contact Points . . . . .	Back Page

## RINNAI GUARANTEE OF QUALITY

As a purchaser of a high quality Rinnai product, we provide you with the following guarantee on your new Spectrum 28.

	<u>Free Labour</u>	<u>Free Parts</u>
Heat Exchanger	1 year	10 years pro rata*
Fan	1 year	2 years
All other parts	1 year	1 year
*Heat exchanger: Full replacement parts cost in the first year, reducing 10% per year thereafter.		

The benefits conferred by this guarantee are in the addition to all other rights and remedies in respect of the product which you have under the Trades Practices Act and other State and Territory Laws.

The guarantee does not cover cleaning and normal wear and tear.  
Calls of this nature may be chargeable.

## FEATURES OF YOUR SPECTRUM 28

1. 28 MJ/h fan assisted, radiant convection space heater.
2. 3 step push button top mounted control for easy operation.
3. Electronic automatic ignition.
4. Large capacity fan to circulate warm air effectively.
5. Automatic fan control to turn the fan on and off and match the fan speed to the heat output at all times.
6. Overheat switch to protect the unit should it become too hot.
7. Fan filter to protect the fan against dust and lint.
8. Flame failure device which cuts the gas off if the flame should be extinguished.
9. Glass rod and Jewel Plaque burner design for maximum efficiency and good looks.

## INSTALLATION

This heater must be installed correctly by an Authorised Person, and 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 a qualified person.

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

## APPROVAL

Your Spectrum 28 has been approved by the Australian Electrical Authorities and the Australian Gas Association.

A.G.A. Approval Number 4276.

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

Full Installation Instructions on page 10.

## SERVICE

Rinnai Australia has a service and spare parts network in all states. Our service network personnel are fully trained and equipped to give the best service on your Rinnai appliance. If your appliance needs service, please ring one of the service contact numbers on the back of this booklet.

Rinnai recommend that this appliance be serviced every 2 years.

# CUSTOMERS OPERATING INFORMATION

For trouble free operation, please read the following information carefully.

For your convenience the controls on your new Spectrum 28 are situated under the cover on the top right hand side of the heater.

All necessary adjustments to the operation of your Spectrum 28 can be made with these controls.

## IGNITION

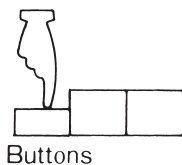
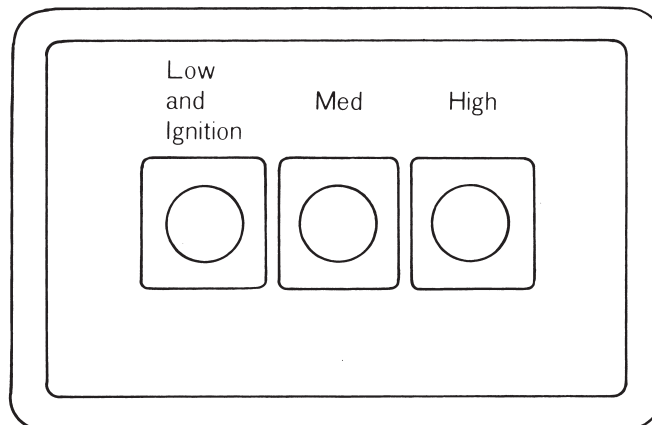
Press the front control button firmly, this operates the built in safety device and starts the electronic spark, the centre burner will ignite. Check that the burner has lit, continue to hold the button down for about 15 seconds. The spark will continue whilst the button is held down.

### Release the button.

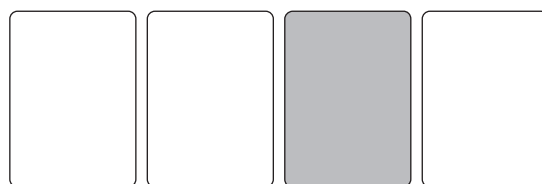
If the burner does not remain alight, push the button again and release it, this will return it to the "OFF" position. Wait 30 seconds, then repeat the ignition procedure.

(The ignition button must be in the "OFF" position before attempting re-ignition).

## CONTROL BOX



Buttons



Burner pattern  
after ignition

After ignition the heater is at its lowest setting with one burner alight.

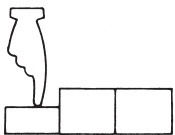




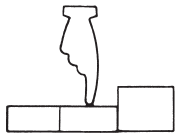




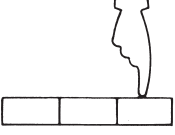



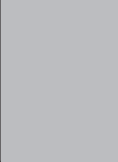


# CUSTOMERS OPERATING INFORMATION

## ■ TO INCREASE THE HEAT

Press the control buttons in order from left to right, this will ignite additional burners as shown in the diagram.

There is no need to hold the buttons for 15 seconds when increasing the heat.

Setting	Fan	Input	Buttons	Burner Pattern			
1. Ignition	Low	7 MJ/h					
2. Medium	High	14 MJ/h					
3. High	High	28 MJ/h					

## FAN

The fan starts automatically when the heat exchanger has warmed up, this helps to prevent cold draughts.

The fan speed is also controlled automatically; when the heater is set at low setting the fan runs at low speed, at the medium and high settings the fan runs at high speed, when the heater is turned off the fan runs at low speed until the heat exchanger is cool. The fan stops automatically after the heater is turned off.

## ■ TO DECREASE THE HEAT

This is simply done by releasing the control buttons in order from right to left to the required setting.

### TO TURN THE UNIT OFF

Press and release the buttons in order from right to left until all 3 buttons are in the "OFF" (UP) position. The fan will stop when the heater cools off.

Ensure all burners are extinguished.

# CARE OF YOUR SPECTRUM 28

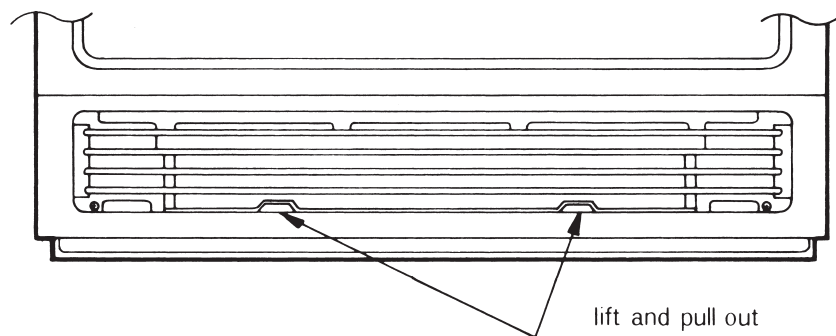
Your Spectrum 28 needs very little maintenance, but the following will help you to keep it looking good and working efficiently.

## ■ Fan Filter

To protect the fan from lint and dust, the Spectrum 28 is fitted with fan filter. It is located inside the bottom louvre opening just below the lowest louvre.

To remove the filter, lift the front edge slightly and pull it gently forward then out of the heater. Clean it with a soft brush or vacuum cleaner. To replace, simply slide filter back to its original position and make sure it is clipped into place.

Weekly cleaning is recommended during the heating season.



## ■ Outer Case

The outer case of the heater should be cleaned with a soft, damp cloth.

Do not use aerosol polishes to clean the casing whilst the heater is in operation.

Do not place articles on or against this appliance.

Do not use or store flammable materials near this appliance.

Do not spray aerosols in the vicinity of the appliance while it is in operation.

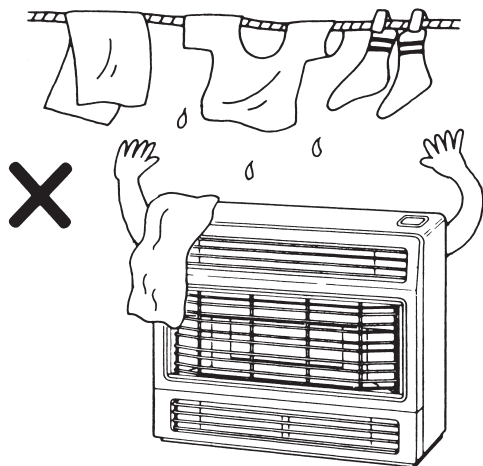
Do not clean plastic parts with solvents, use a soft, damp cloth.

The guard on this appliance conforms to A.G.A. requirements. It is designed to prevent risk of fire or injury from burns, and no part of it should be permanently removed.

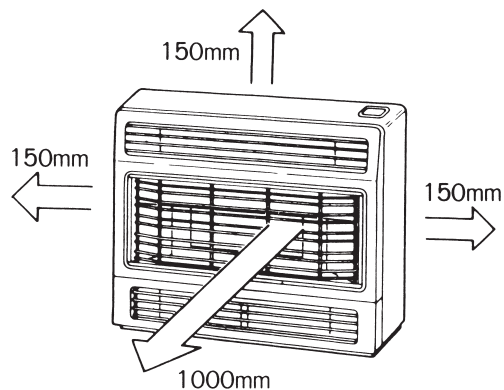
IT DOES NOT GIVE FULL PROTECTION TO YOUNG CHILDREN OR THE INFIRM.

# IMPORTANT POINTS

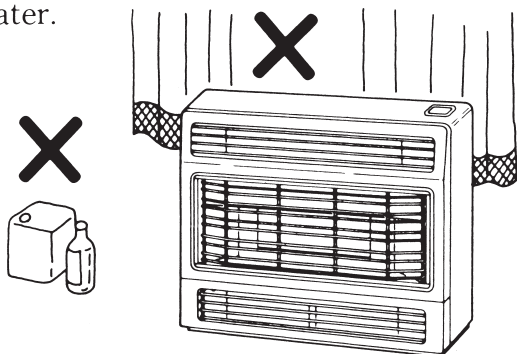
Do not use for any purpose other than heating.



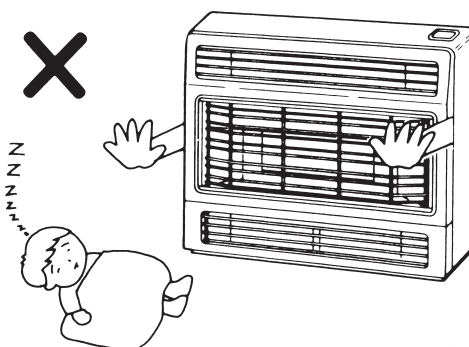
These clearances should be maintained at all times.



Do not allow curtains or other flammable materials to come into contact with the heater.



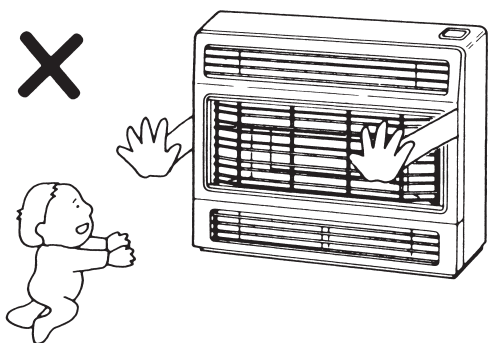
Do not allow young children or the infirm to sleep directly in front of the heater.



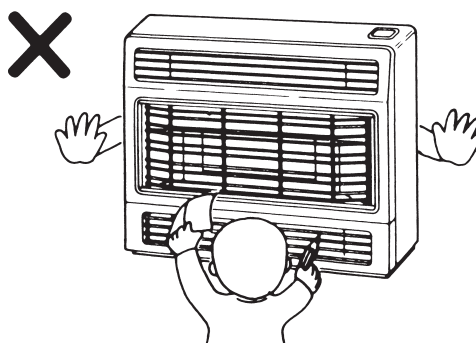
Do not store flammable products near the heater. Combustible materials must not be placed where the heater could ignite them.



Supervise children near heater.

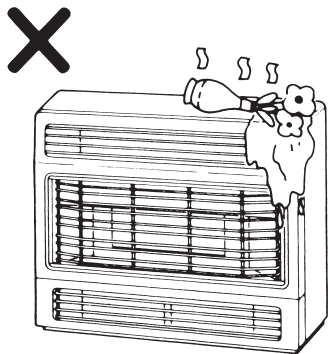


Don't allow children to "post" articles in the louvres.

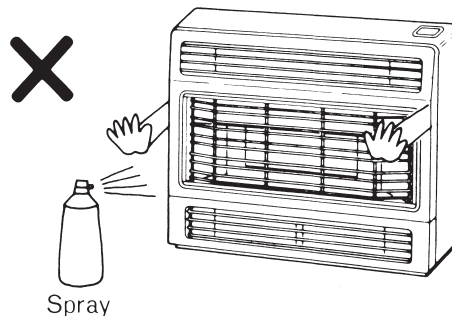


## IMPORTANT POINTS

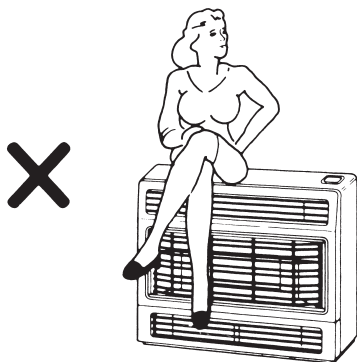
Do not place any articles containing liquid on top of the heater.



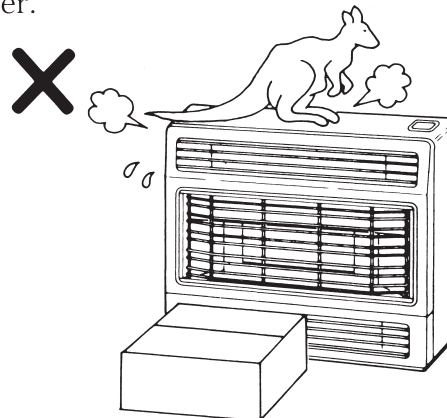
Don't spray aerosols on the unit whilst it is in operation. Most aerosols contain butane gas, and can be a fire hazard if used near this heater when it is in use.



Do not sit on this heater.



Do not place articles on or against the heater.



## GUARANTEE INFORMATION

Please record below:

Your Retailer:

Phone:

Address:

Date of Purchase:

Your Installer:

Phone:

Address:

Date of Installation:

Licence Number:

The installer is responsible for your heater's correct installation.

There is no need to post this guarantee back to Rinnai. Simply keep it in a safe place as your record.

# PRE-SERVICE CHECK LIST AND FAULT FINDING

Please check this fault finding chart before asking for a service call.

You may be able to overcome the problem without a service call, or the unit may be operating normally.

Service calls to a unit which is operating normally may be chargeable, even when the unit is under guarantee.

Problem Cause	Unit won't ignite	Unit cuts off soon after ignition	Fan keeps running after unit is turned off	Takes too long to warm room	Smell of gas	Unit goes out when ign. button is released.	Unit cuts off at all settings	Remedy
Not plugged in	●	●						Plug in
Power Cut	●	●					●	Allow to cool, re-ignite when power is restored.
Air in gas pipe Initial installation	●							Purge air (installer)
Gas Filter blocked	●			●				Service Call
Not pushing ignition button firmly enough	●					●		Push button firmly
Louvre obstructed							●	Remove obstruction
Gas Escape					●			Service Call
Room too large				●				Check with retailer
Fan Filter blocked		●		●			●	Clean filter (weekly)
Faulty fan		●		●			●	Service Call
Auto fan switch operating			●					Normal Operation
Gas turned Off at meter	●							Turn gas on

## SAFETY DEVICES

### ■ Overheat Switch

This device automatically cuts off the gas if the heater exceeds a pre-determined temperature.

This could be caused by an obstruction in front of the louvres, a blocked fan filter, or a power cut, etc. If this switch operates, turn the unit off, remove the obstruction (clean filter), let the unit cool, then relight. If the cause is a power cut, relight when the power is restored.

### ■ Flame Failure Device

If the flame goes out during operation, the flame failure device cuts the gas off. To restore the gas supply, turn the heater off, wait 30 seconds, then follow the ignition instructions.

### ■ Fan Switch

Turns the fan on automatically when the heat exchanger warms up and off when it cools off. This helps to prevent cold draughts and adds to the units efficiency.

# INSTALLATION INSTRUCTIONS

Specifications: See back cover

## ■ Unpacking

Undo straps, lift carton off heater.

Never lift the heater out of the carton by the top louvres. Check for damage.

If unit is damaged, contact Supplier or Rinnai for advice BEFORE INSTALLATION.

Check unit supplied is correct for gas type in your area.

Refer to local gas authority for confirmation of gas type if in doubt.

Data plate is inside heater on left hand side.

## ■ Included In Carton

Instructions

Back spacer and screws with wall brackets (console only)

Foam sealing strips (inbuilt only)

## INSTALLATION-GENERAL

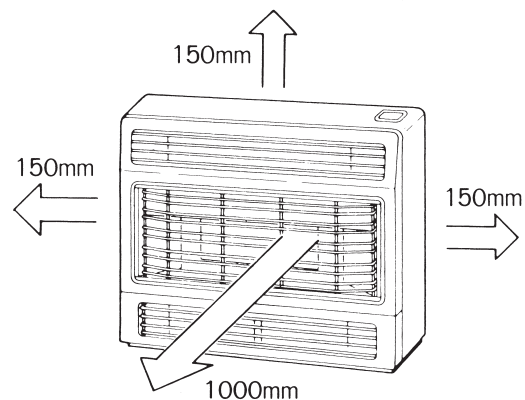
This heater must not be installed where curtains or other combustible materials could come into contact with it.

In some cases curtains may need restraining.

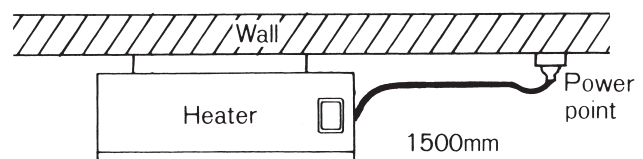
Other clearances are show in the diagram.

This heater is NOT designed to be built in to book cases or shelves.

Check that ventilation complies with local regulations.



Check that an EARTHED power point is within 1500mm of the right hand side of the unit.

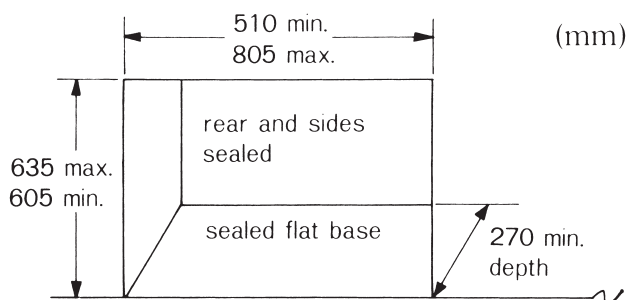




# INSTALLATION OF INBUILT INTO A FIREPLACE

## ■ Check Dimensions of Fireplace

Check dimensions of fireplace and if necessary bring them to dimensions shown.



## ■ Check Flueway

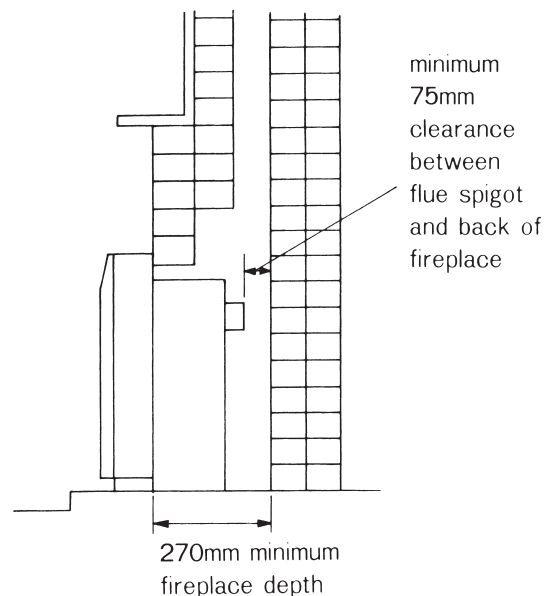
Check flueway is clear of obstructions.

Remove any protruding brickwork to give 75mm minimum clearance from flue spigot.

PROVIDE A FIRM, FLAT, SEALED BASE FOR UNIT.

SEALED MEANS NO HOLES OR OPENINGS IN FIREPLACE.

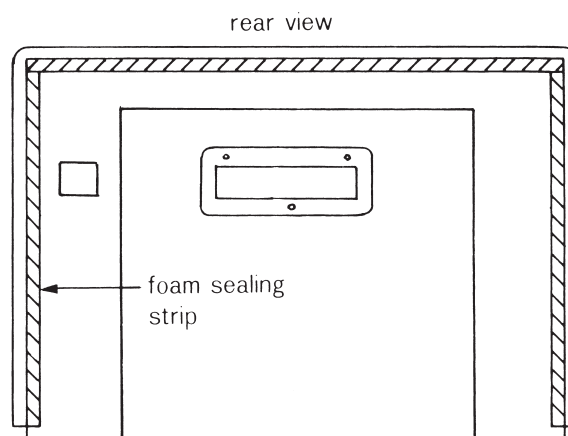
A ROUGH BASE MAY AFFECT THE PERFORMANCE OF THIS UNIT.



## INBUILT ONLY

Peel protective backing off the foam strips supplied with the heater. Attach strips to rear of casing as shown.

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.

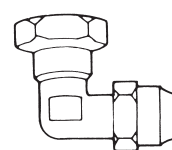


## ■ Inlet Union

For ease of connection a combined inlet union/copper elbow is provided with every heater.

It is situated below the control.

Union connection to heater



Copper connection  
15mm copper.

# INSTALLATION OF INBUILT INTO FIREPLACE

## ■ Remove Inlet Union from unit.

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

For access to union:

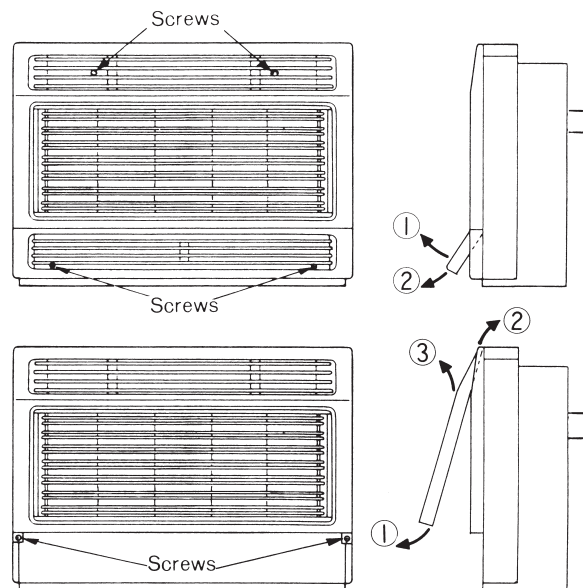
Remove Fan Filter-see page 5.

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 and 2 screws inside the top louvres. Lift panel to disengage top and remove from heater.

DON'T lift the panel by the dress guard or top louvres.

Remove union.



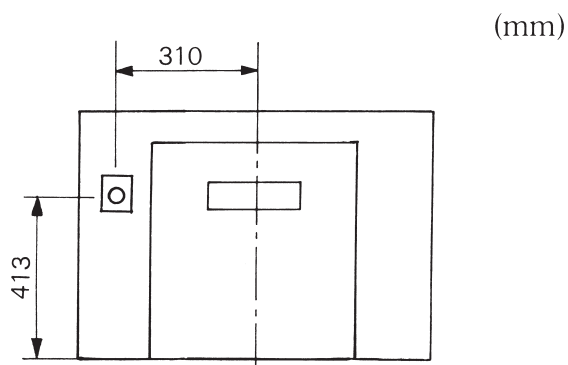
ENSURE THAT REMOVAL AND REPLACEMENT OF THE BOTTOM PANEL IS NOT OBSTRUCTED BY CARPET ETC.

## ■ Gas Connection Position

Drawing is viewed from rear of heater. Actual connection is on Right Hand Side from front.

Dimensions are to the centre of the flare fitting on the inlet elbow/union.

FLARE FITTING SUITS 15mm COPPER.



## ■ Run Gas Supply

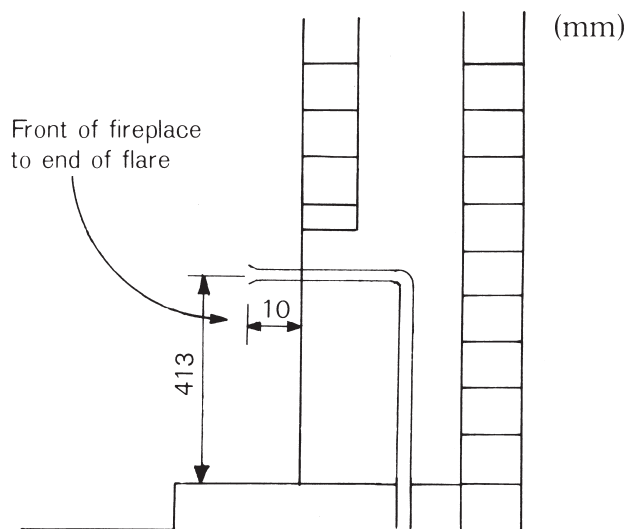
Refer to A.G.A. Pipe sizing chart if in doubt about size of gas line.

Copper supply should be run leaving a flared 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.



# INSTALLATION OF INBUILT INTO FIREPLACE

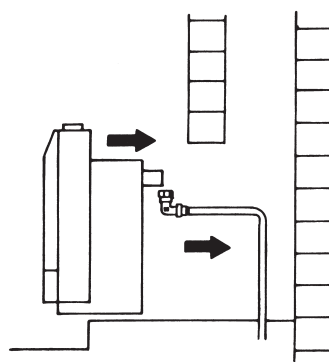
## SLIDE HEATER INTO FIREPLACE

Feed the copper tube through the supply access opening.

Connect and tighten union.

Secure heater to fireplace, there are pre-drilled holes in the heater flanges.

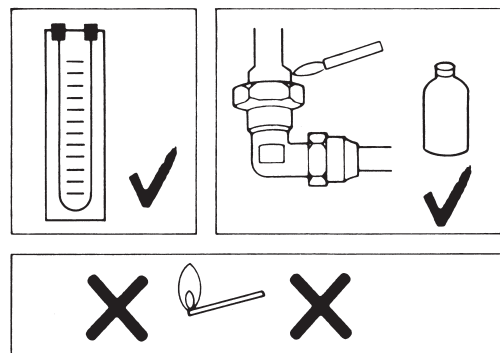
Drill additional holes if the existing ones are not in suitable positions.



## CHECK FOR ESCAPES

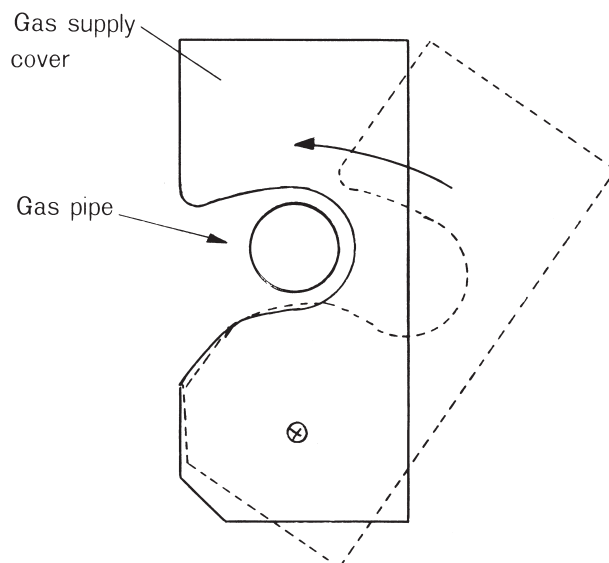
Use a manometer or soapy water.

DON'T USE A NAKED FLAME.



## CLOSE GAS SUPPLY COVER

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



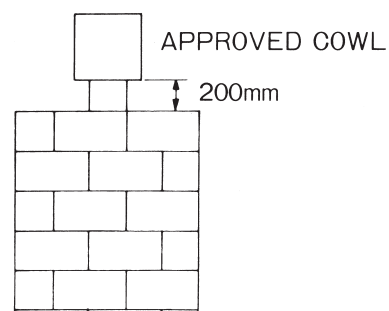
## ■TEST OPERATION

See page 17.

## COWL

An approved cowl must be installed on all chimneys.

Size: 100mm.

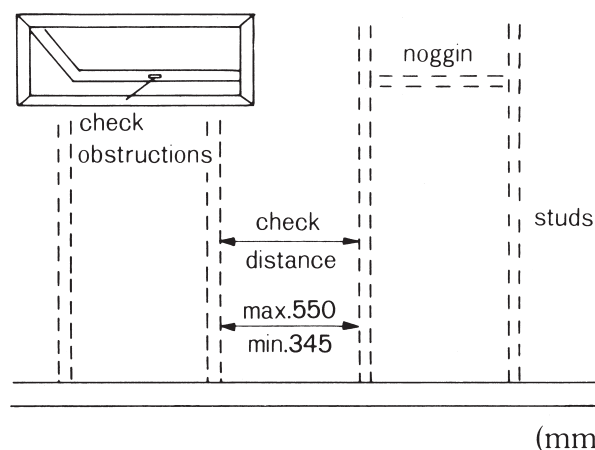


## INSTALLATION OF CONSOLE INTO TWIN SKIN FLUE

### Instructions for installation into a 75mm cavity wall using twin skin flue.

Select position for heater and locate studs, there must be a minimum distance of 345mm and a maximum of 550mm between studs.

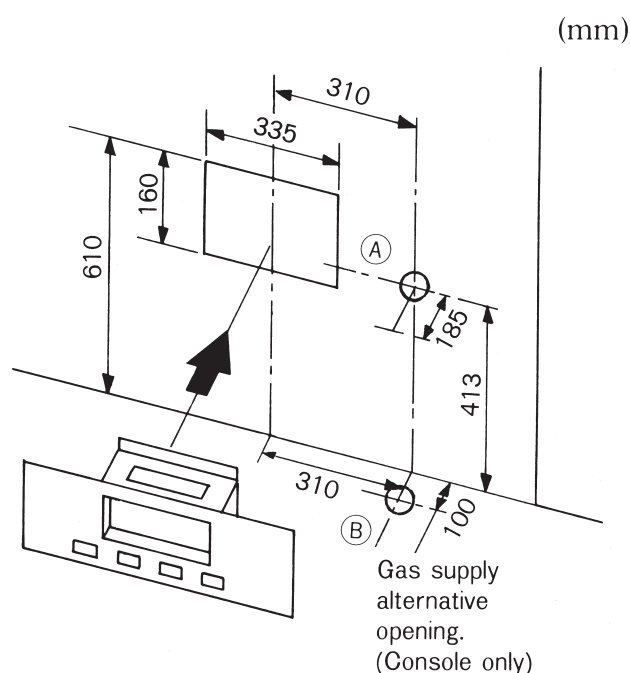
Check to make sure ceiling and roof structure will not obstruct flue.



## CUT OPENING IN WALL

Wall box measures 330mm  $\times$  100mm, but opening required is 335mm  $\times$  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.



When using supply alternative ⑥ the pipe is fed from underneath, through the opening in the base.

## GAS SUPPLY POSITION

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 diagram, then attach the elbow/union to the copper supply.

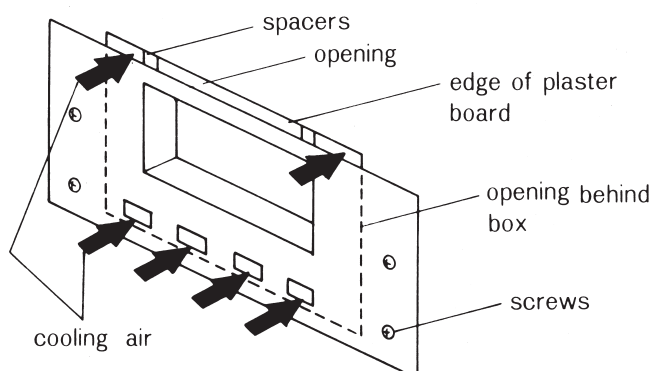
Refer to A.G.A. pipe sizing chart if in doubt about size of supply pipe.

## CUT AWAY TOP PLATE AND ANY NOGGINS BETWEEN STUDS

## FIT 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 so as to allow the outlet to protrude back into the cavity, giving the twin skin flue a minimum clearance from the plaster board of 10mm, excluding spacers.

Housing fitted to opening



# INSTALLATION OF CONSOLE INTO TWIN SKIN FLUE

## 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.

## INSTALL FLUE SUPPORT

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

## FIT SEALING PLATE

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

## FIT RECTANGULAR TO ROUND ADAPTER

Fit adapter to top of twin skin.

Fit 100mm flue and approved cowl.

MINIMUM DISTANCE FROM COWL TO NEAREST PART OF ROOF IS 610mm.

POSITION ELBOW INTO HOUSING.

Locate the longer end inside the aluminium liner of twin skin.

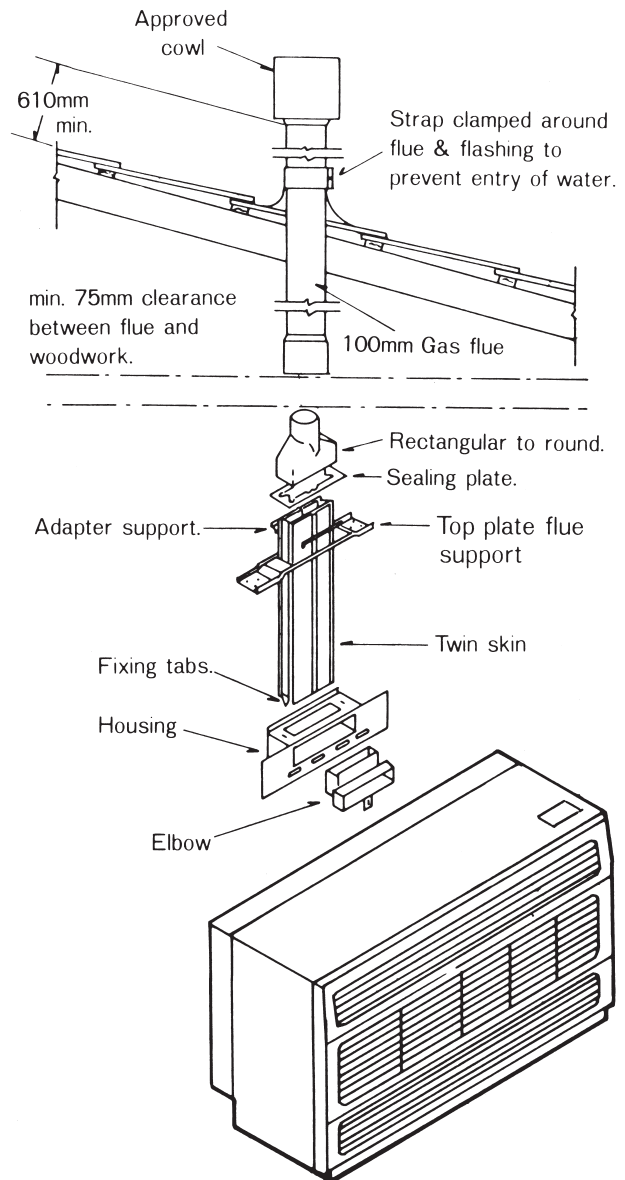
Attach loosely to housing with screw provided.

Measure distance from floor to flue outlet.

Adjust elbow to these dimensions, tighten screw.

Fit right and left hand rear spacers to Heater.

Place top spacer in position temporarily for wall marking.



REMOVE FRONT COVER AND INLET UNION.

## ATTACH ELBOW/UNION TO GAS SUPPLY POSITION HEATER

Mark position of top of spacer on wall.

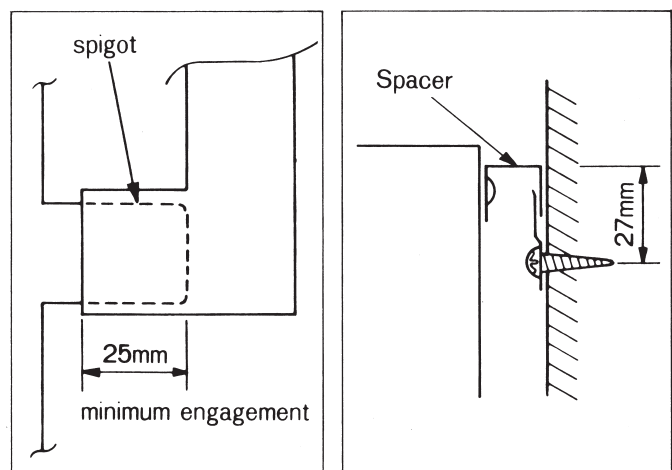
Remove Heater and fit wall clips.

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 two screws provided.

THE HEATER IS NOW SECURED TO THE WALL.



CONNECT GAS and CHECK FOR ESCAPES: See page 11 and 12.

TEST UNIT and INSTRUCT CUSTOMER: See page 17.

# INSTALLATION INTO A MASONRY FIREPLACE

CLOSE OFF FIREPLACE WITH FIREPROOF MATERIAL.

DO NOT INSTALL UNDER A LOW WOODEN SHELF.

Brick Flues shall be completely sealed from cavities and shall be free from mortar droppings or any other debris.

In this type of installation the spigot must have an extension added which is to extend beyond overhead brickwork. The extension shall be constructed so that it prevents falling debris entering the flue spigot.

The spigot extension shall not be extended so far into the chimney so as to cause any obstruction to the discharge of flue gas.

Minimum clearance from end of spigot extension to any obstruction: 75mm.

## REMOVE DAMPER PLATE/BAFFLE

Any damper plate or baffle which has been installed in the chimney shall be removed.

Fit flue cowl.

An approved cowl shall be fitted to the chimney, with a minimum clearance of 200mm between top of chimney and the lowest opening in the flue cowl.

## PREPARATION OF FIREPLACE

Provide a firm, flat base for unit, fireplace must be sealed, no holes or openings. Seal all openings in back, base or sides of fireplace.

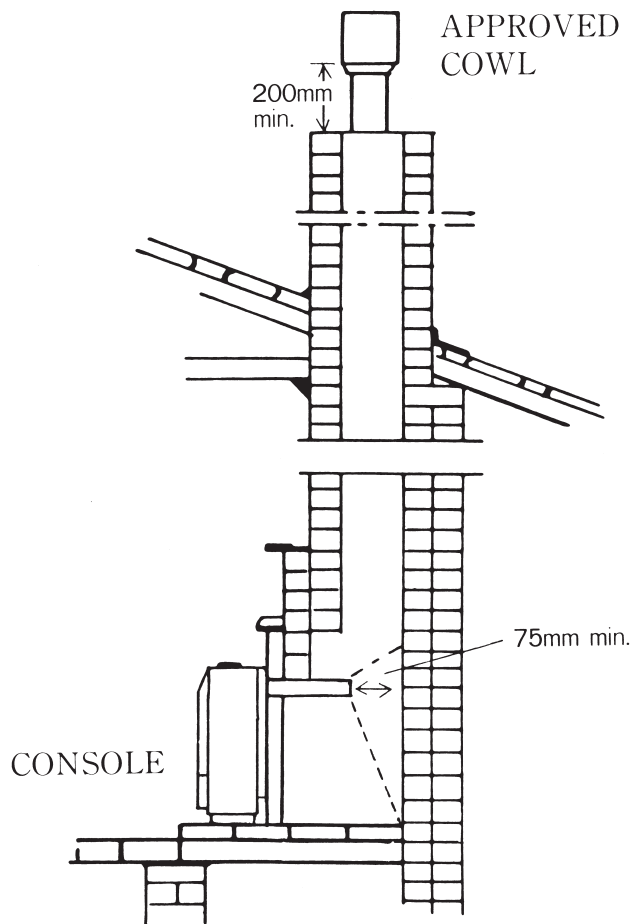
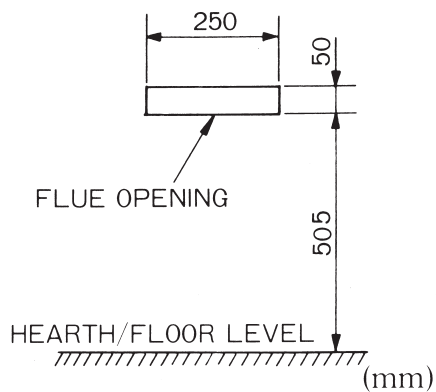
A rough base or unsealed fireplace may affect the performance of this heater.

FIT BACK SPACER AND WALL CLIPS:  
See page 14.

CONNECT GAS and CHECK FOR  
ESCAPES: See page 11 and 12.

TEST UNIT and INSTRUCT  
CUSTOMER: See page 17.

## FIREPROOF MATERIAL TO FILL IN FIREPLACE



## INSTALLATION USING TWIN SKIN FLUE AND INSULATED BOX FOR TIMBER FRAME OPENINGS

Spacer kit must be fitted to sides of heater firebox. Kit is available from Rinnai.

This installation method uses an inbuilt appliance connected to a twin skin flue system.

Dimensions of opening should be as shown in diagram on page 10.

Install twin skin flue and run gas supply as described on page 13 & 14.

Inbuilt units do not have a rear spacer. After installing twin skin flue, continue installation following instructions for inbuilt units, starting on page 10.

Clearance must be provided around flue spigot. Flammable materials must be kept at least 100mm clear of the flue spigot.



# TESTING Applies to all Installations, Twin Skin and Fireplace

## TESTING PROCEDURE

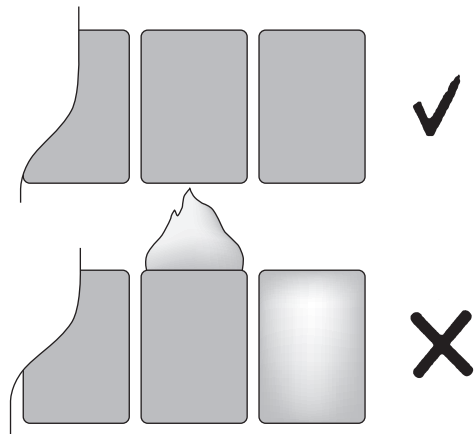
After purging and clearing supply, connecting gas and checking for escapes, plug the unit into the power point and light the burner. (Caution: 240V inside unit).

See customers instructions Page 3.

Check appearance of flame and that controls operate correctly.

The tiles should glow evenly (it will take a few minutes of operation for them to reach full, even brightness).

There should be no abnormal after burning or yellow flames.



## ■ TO CHECK BURNER PRESSURE

See Specification back page.

Turn control to "OFF" position. Remove test point screw, attach manometer to test point, light heater, turn to high, and check pressure. Test point is on the side of the gas valve.

The regulator has been factory pre-set; before making any adjustments to the appliance regulator, check the supply pressure.

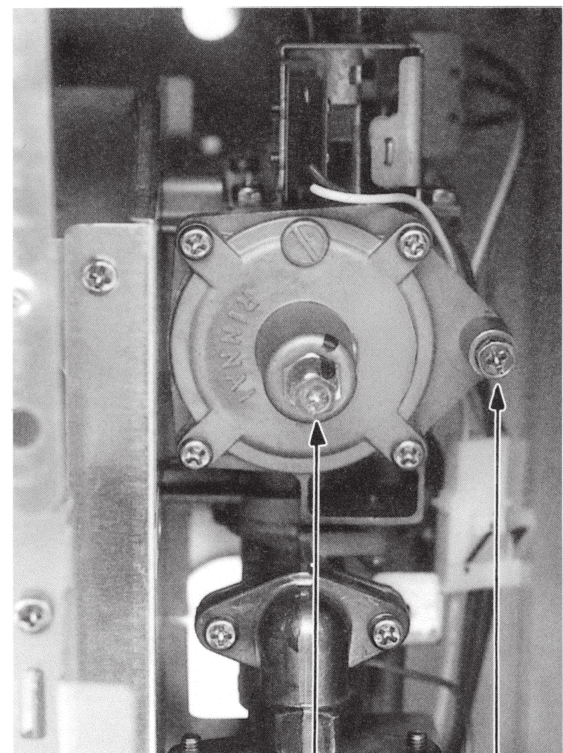
If adjustments are necessary, regulator is situated on the left hand side of the gas control.

### PILOT CANNOT BE ADJUSTED.

After checking pressure, turn the unit off, remove manometer and replace test point screw.

Turn the heater on and off a few times to check ignition.

When you are satisfied that the heater is working correctly, re-assemble front panels, refit Fan Filter.



Regulator Adjusting Screw      Test Point

If you are unable to get the unit to operate correctly, contact your agent or Rinnai for advice.

Check Page 8 "Fault Finding" first.

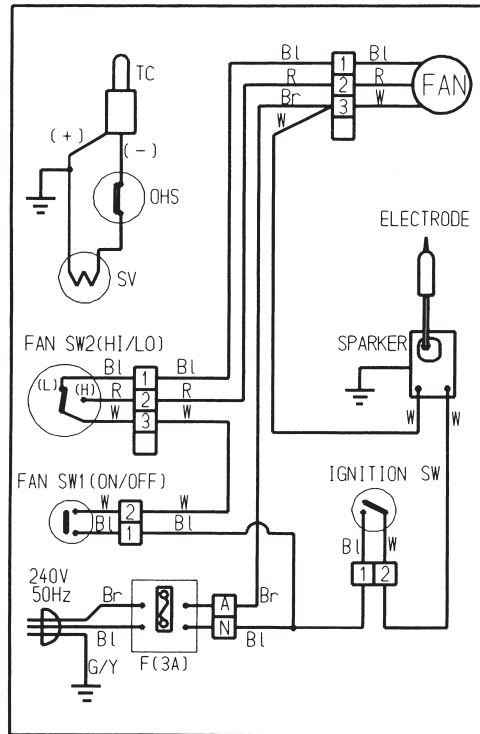
## INSTRUCT CUSTOMER ON USE OF UNIT.

Explain to customer about use and care of unit, make sure customer understands the instructions.

### Explain :

Ignition, Fan Delay Switch, Adjusting heat level, Turning "OFF", Removal and replacement of Fan Filter.

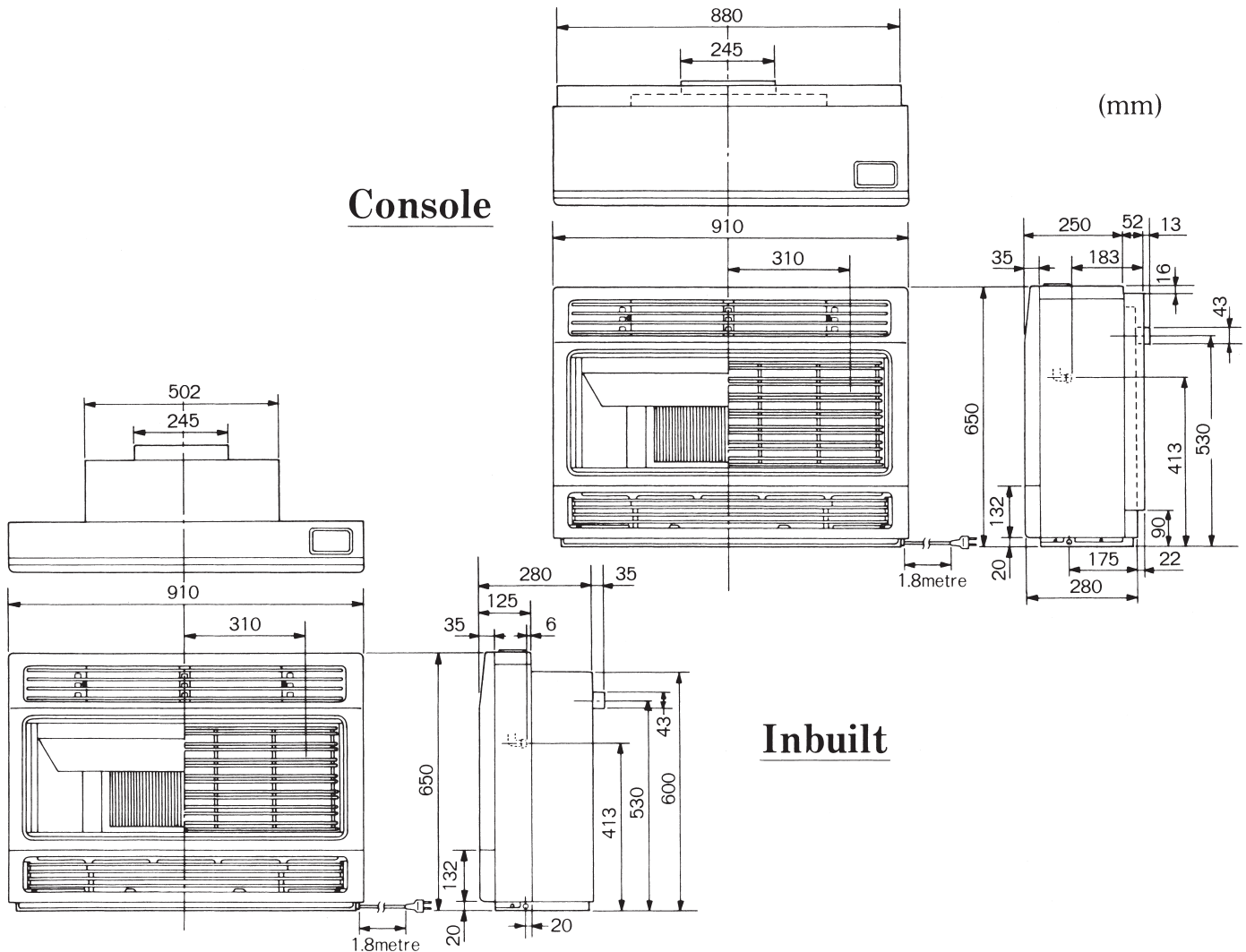
# WIRING DIAGRAM



\* Supply lead must only be replaced with Rinnai part number 548206.

BL: Blue                      R: Red  
Br: Brown                    W: White  
G/Y: Green/Yellow

# DIMENSIONS



# SPECIFICATIONS

Description:	REH281EB (Inbuilt) REH281EC (Console) Rinnai Spectrum 28, Radiant/Convactor, open fronted, surface combustion space heater with forced convection and natural draught flue system.
Input:	28 MJ/h Natural Gas, Propane.
Gas Control:	Rinnai Push Button Combination Control.
Burner:	Rinnai Jewel Cut Plaque.
Gas Inlet:	Barrel Union/Elbow with Flare Fitting (15mm Copper Flare Connection).
Test Point Pressure:	Natural Gas 0.91 kPa; Propane 2.48 kPa.
Flue:	Natural Draught for twin skin or fireplace installation.
Flue Termination:	An approved 100mm cowl must be fitted to all installations.
Ignition:	Electronic.
Power Supply:	240V 50Hz, unit is fitted 3 pin plug and supply lead, replace only with Rinnai part number 548206.
Fan:	Tangential 2 speed, 40 Watt Rating.
Data Plate:	Bottom right hand side behind front panel.

Rinnai are continually updating and improving products, therefore specifications are subject to change without prior notice.

# SERVICE CONTACT POINTS

# Rinnai

Rinnai Australia Pty. Ltd.  
ABN 74 005 138 769

## Head Office

100 Atlantic Drive  
Keysborough, Victoria 3173  
P.O. Box 460  
Braeside, Victoria 3195  
Tel: (03) 9271 6625  
Fax: (03) 9271 6622

## National Help Line

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

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

Internet : [www.rinnai.com.au](http://www.rinnai.com.au)

email : [enquiry@rinnai.com.au](mailto:enquiry@rinnai.com.au)

Rinnai Australia Pty. Ltd. Reserves the right to make modifications and change specifications without notice.



107272

Printed in Japan  
REH280-115X07(00)  
2014.11 ©