Rinnai

SERVICE MANUAL

SYMMETRY -
RDV-3610ETR
RDV-3611ETR

INBUILT GAS LOG FLAME FIRE

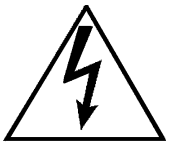
The Australian Gas Association	All Rinnai products are certified by the Australian Gas Association as compliant to relevant Australian Standards.
Quality System™ Quality Endorsed Company ISO 9001 Lic 4983 SAI Global	Rinnai Australia Head Office is certified as complying with ISO 9001 by SAI Global.
TELARC SAI registered ISO 9001	Rinnai New Zealand has been certified to ISO 9001 Quality Assurance by Telarc.
The Regulatory Compliance Mark (RCM) indicates compliance with electrical safety regulations in Australia & New Zealand Rinnai Australia Supplier Code 5109	All Rinnai products carry the “C Tick” symbol. This signifies compliance with the Electromagnetic Compatibility (EMC) requirements of the Australian Communications Authority (ACA) which aim to minimise electromagnetic interference. Rinnai Australia Supplier Code 5109.

Produced by Technical Services Department

2012 - Issue 2

Key to Warning Symbols

Failure to comply with the following instructions may result in serious personal injury or damage to the appliance.



Be careful of possible electric shock. Wiring inside this appliance may potentially be at 240 Volts.

Read Fault Diagnosis and Wiring Diagram carefully to avoid incorrect wiring

Please follow instructions carefully to ensure safe and appropriate service.
After completing the service and confirming that there are no gas leaks or incorrect wiring, test operation of unit according to the Customer Operating Instructions. After confirming normal operation, explain what was serviced to the customer and operation principles if necessary.

This manual has been compiled by Rinnai Australia Engineering & Technical Services. While many individuals have contributed to this publication, it will be successful only if you - the reader and customer - find it useful. We would like to extend an invitation to users of this manual to make contact with us, as your feedback and suggestions are valuable resources for us to include as improvements. Rinnai are constantly working toward supplying improved appliances as well as information, and specifications may be subject to alteration at any time.

RDV-3610ETR/RDV-3611ETR Flame Fire
Issue Nº2

DO NOT MODIFY THIS APPLIANCE.

SERVICING SHALL BE CARRIED OUT ONLY BY AUTHORISED PERSONNEL.

Table of Contents

Glossary of Terms and Symbols

This glossary of terms and symbols is provided to assist you in understanding some of the language used throughout this manual.

dB(A)	-	sound pressure level in decibels, “A” range
DC	-	direct current
AC	-	alternating current
Hz	-	Hertz
IC	-	integrated circuit
kcal/h	-	kilocalorie per hour
kPa	-	kilopascals
LED	-	light emitting diode
mA	-	milliamps
MJ/h	-	megajoule per hour
mm	-	millimetres
OHS	-	overheat switch
PCB	-	printed circuit board
CPU	-	central processing unit
POT	-	potentiometer
rpm	-	revolutions per minute
SV	-	solenoid valve
ø	-	diameter
$\Delta^\circ C$	-	temperature rise above ambient
POV	-	modulating valve
TH	-	thermistor

Introduction

- The Rinnai Symmetry RDV-3610ETR / RDV-3611 ETR Inbuilt Flame Fire consists of a glass-fronted combustion chamber and a heat exchanger system.
- It incorporates one ceramic topped multiport burner and log set.
- Controls are by electronic PCB / electronic ignition and modulating gas valve.
- A two-speed convection fan is incoporated in the base.

The log set is packed inside the combustion chamber for transportation.

Specifications

General Specifications

Models	RDV3610ETR / RDV3611ETR (N/L)
Model Name	Symmetry® Gas Log Flame Fire
Features	Balanced Flue Inbuilt Gas Space Heater Burning log effect Glass front Convection Fan, top warm air outlet Wireless Remote control/thermostat, 7 day programmable timer
Installation	Inbuilt only
Combustion Method	Ceramic top pan burner - bunsen burner type
Flue	Balanced Co-Axial Flue, Inner = 100 mm or 4”. Outer = 170 mm or 6 x 5/8”, for Flueing configuations refer to seperate flueing manual
Gas connection	15mm (1/2”) male flare
Gas types	Natural Gas / Universal LPG / Propane
Ignition	Continuous Spark Electronic Ignition
Input / Output	Refer data plate and energy rating label on appliance
Power Consumption	High 50 W, Standby < 0.3 W 1500 mm cord is supplied with a 3 pin plug on right hand side of appliance
Safety Devices	Overheat Switches Electrical Fuse Flame Failure Sensing System (FFD) Power Failure Protection
Temperature Control	Thermostatic, temperature control range 17 - 32°C
Weight	75 Kg - uncrated - Flue packaged seperately

For other appliance specifications refer to appliance data plate.

Technical Specifications

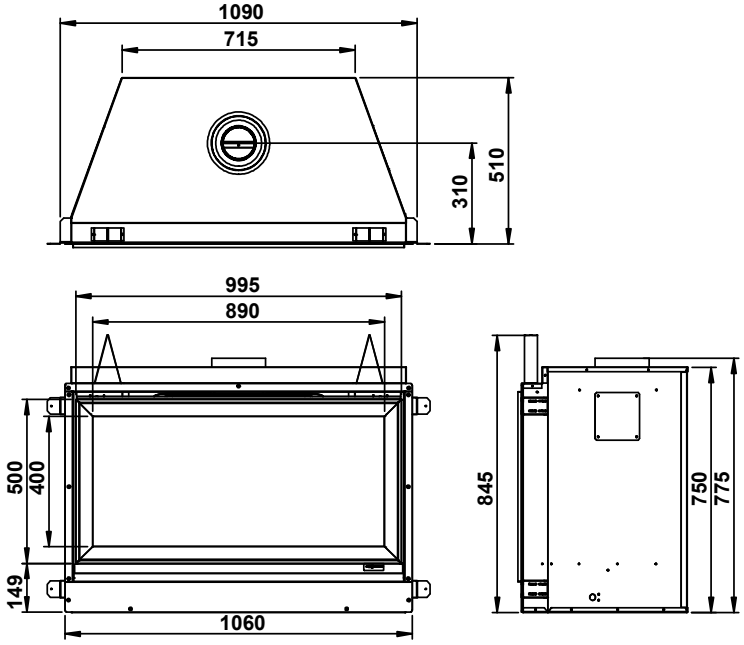
Item		Description		
		Natural Gas	ULPG	
Gas Input	High	33MJ/h	33MJ/h	
	Low	19MJ/h	19MJ/h	
kW Output		7.57 Pos#3 7.78 Pos#1 7.80 Pos#2		
ATPP Burner pressure	High	0.75kPa	1.75kPa	
	Low	0.24KPa	0.60kPa	
Main Burner Injector Ø		3.00mm (Threaded Hex Brass)	1.70mm (Threaded Hex Brass)	
Pilot injector Ø (SIT pilot number)		# 62	#35	
Appliance Inlet Pressure	Max	3.5 kPa	3.5 kPa	
	Min	1.13kPa	2.5 kPa	
Gas Control		SIT® Sigma 845 AGA Cert # 5733		
Ignition module assembly		SIT® Ignition pack 579 DBC AGA Cert # 7358		
Gas Connection		1/2" Flared		
Pilot assembly		Pilot – SIT 190 series		
Internal gas piping		Pilot - 6mmØ x 1.0mm aluminium Burner - 8mmØ x 1.0mm aluminium		
Remote control		Millennium Electronics® RF remote control		
Dimensions – (maximum limits)		Width	Height	Depth
		1110mm	845mm	545mm
Weight		75kgs		
Convection Fan		Fergass® 300mm x 60mm - 2 speed.		
Glass		Schott – ROBAX®		
Electrical connection		240V 50Hz 0.21Amps 3pin plug + ~2m Lead.		
Power Consumption		Less than 50W Normal Operation. Less than 3W on Standby.		
Fuse		3Amp 250V glass fuse		
Temperature range		7°C -32°C		
Decibel level		Hi ~ Lo=45 ~ 37dB(A		
Combustion Chamber lining		Ceramic – formed panels		
Flue		Co-Axial 4"ID x 6 5/8"OD Abey® - Simpson Duravent Direct Vent Pro®		
Flue Cowl	Horizontal	Duravent® horizontal terminal #0985		
	Vertical	Duravent® Vertical Hi-wind terminal #0991		

Energy Rating / Applicable Flue Configuration									
Configuration	Vert	Horz	Bend	Terminal	Baffle Position	Star Rating	Red Band Shading	AEC MJ/year	Out put Max kW
#1	600mm	300mm	1x 90°	Duravent horizontal terminal #0985	Not used	4.4	130.9°	13,076	7.78
#2	600mm	800mm	1x 90°	Duravent horizontal terminal #0985	Not used	4.5	134.0°	13,108	7.80
#3	5400mm	-	-	Duravent Vertical Hi-wind terminal #0991	Hole Position #2	4.2	125.4°	13,144	7.57

Combustion Stage / Flame setting	Fan Speed
ON - Pilot / Ignition	No Fan.
7, 6, 5.	High Speed After a time delay of 4 mins at 'ON' after ignition
4, 3, 2.	Low speed
1.	High speed
OFF	High Speed run on of 8 mins after shut down.

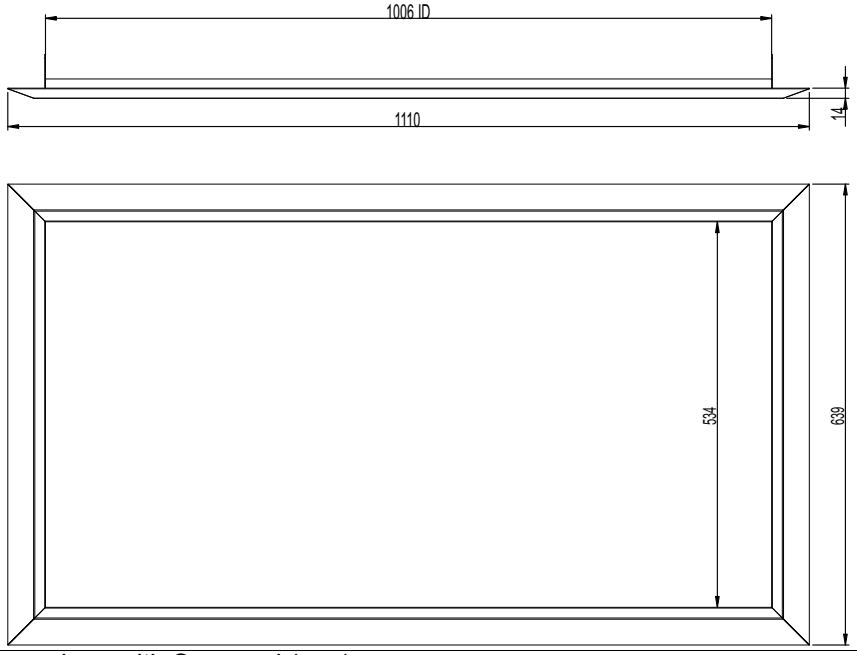
Dimensions

Main Body



Dimensions Without Surround (mm)				
	Body	**Glass**	**Front**	**Cavity**
Width:	1050	910	1110	1100
Height:	750	410	640	845
Depth:	520	5	13	600

Body with Surround Dimensions

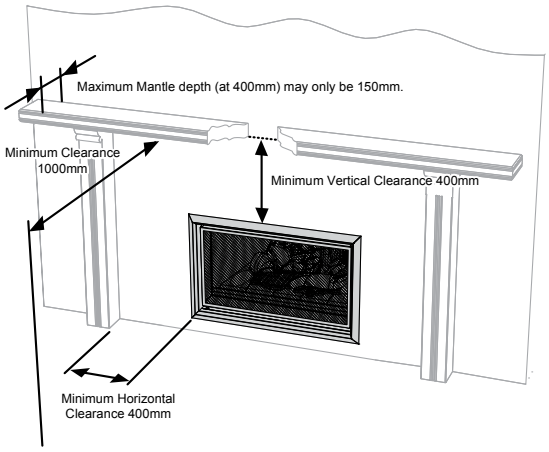


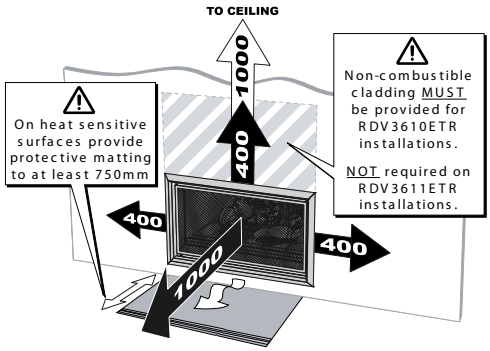
Dimensions with Surround (mm)			
	Body	**Glass**	**Front**
Width:	1110	910	1110
Height:	750	534	639
Depth: *	Minimum	536	
	Maximum	550	
NOTE	* Depth: Adjustable to allow for cladding material		

Heater Location

Location

- When positioning the heater, variables governing the location are Flueing and Warm Air Distribution.
- 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.
- Mantles and surrounds can be added to complement the design provided that they conform to the clearances shown in the drawings below.
- The minimum clearance from the mesh dress guard edge is 400 mm. The depth of the mantle/ surrounds at the minimum clearance may not exceed 150 mm.
- An additional 100 mm of clearance is required for every extra 50 mm of mantle depth, i.e. for a 200 mm deep mantle the clearance is 500 mm (as shown below).





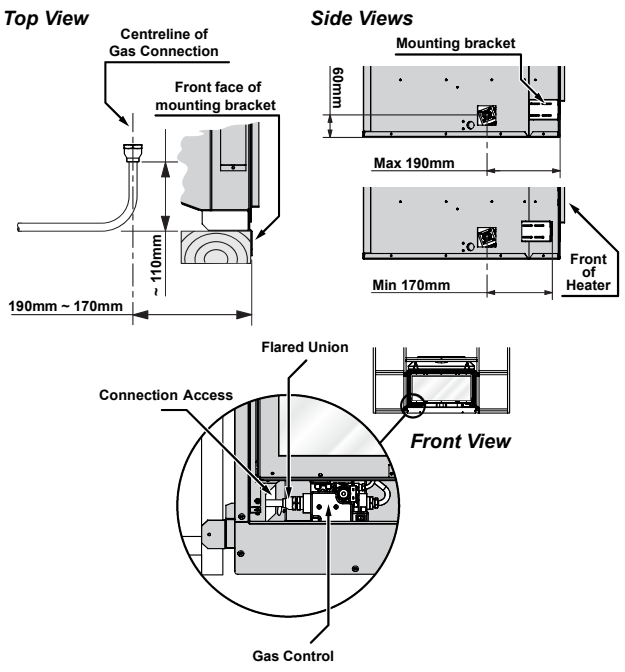
WARNING

For all installations. Only as specified Abey® Co-Axial Flue components MUST be used.
The Rinnai Symmetry® MUST NOT be flued into 'natural draft' flue system or terminate into a chimney.

Gas Supply

The gas supply terminates inside the heater at the front lower left hand side of the appliance. Locate the gas supply pipe to suit position as per the heater gas inlet. Refer to the dimensional drawings on page 5 for appliance gas inlet location.
The gas inlet connection is located at the bottom front left of the appliance,

1. Remove the brass nut from the 1/2" flared threaded gas inlet located at the bottom left side of the appliance. Refer to 'front view' in drawing below, ensure the brass nut supplied is used.
2. Attach the gas supply pipe to the appliance gas inlet and tighten.
3. Leak test the connection.



WARNING

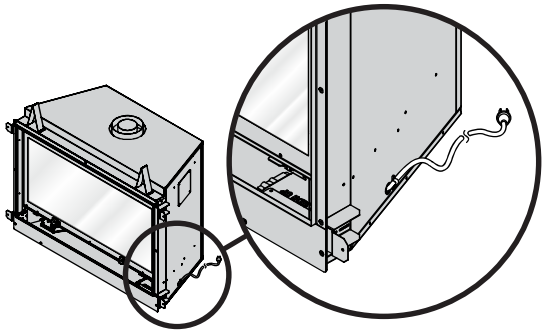
Gas pipe sizing must consider the gas input to this appliance as well as all other gas appliances in the premises. The gas meter and regulator must be specified for the total gas rate. Suitable sizing chart such as the one in AS/NZS 5601 should be used.

Purging the Gas Supply

- All foreign materials such as filings must be purged from the gas supply, before connecting to the appliance as they may cause the gas control valve to malfunction.

Electrical Supply

- This heater is supplied with a power cord (length 1500 mm) and three pin plug. The power cord passes through the right hand side panel as shown. Rinnai recommend the heater be plugged into a 240V, 10A earthed power point. The power point must not be above the heater.
  A suitable means of electric isolation must be provided which is adjacent to the appliance and accessible with the appliance installed, in accordance with AS/NZS 5601.
- The appliance can be direct wired if the power supply is to be concealed. An isolator switch MUST be used in accordance with AS/NZS 5601 & AS/NZ3000.



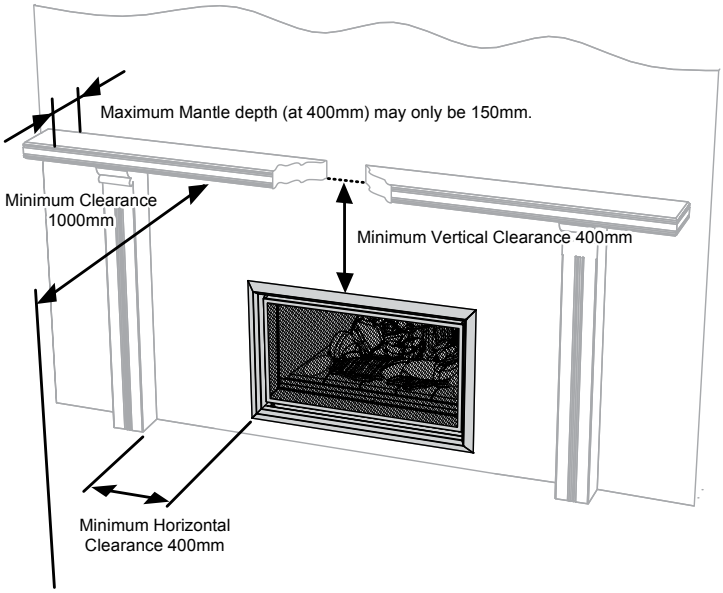
IMPORTANT

- **Consult a qualified electrician if direct wiring is required as it must comply with the requirements of AS/NZS 5601 & AS/NZS 3000 and any other relevant local regulations.**
- **The electrical cord must not come into direct contact with the heated parts of the appliance or flue system.**
- **If the power cord is damaged and requires replacing, it must be replaced by a licensed tradesperson. It must be a genuine replacement part available from Rinnai.**

Installation of TV or ornamention above the heater

CAUTION

- **The temperature of the wall surface directly above the appliance is elevated and may discolour paint finishes or distort vinyl wall coverings. For durability of surfaces you should contact the relevant manufacturer for their specification.**
- **The installation of electrical appliances above and in the vicinity of the heater such as, but not limited to, Plasma TV, LCD TV, Home Theatre Screens, Speakers, etc must comply with their manufacturers' instructions.**
- **It is the responsibility of the installer/end-user to check the installation instructions of these items and to ensure the location is suitable.**
- **This caution also extends to, but is not limited to, ornaments such as: Paintings, Prints, Photographs, Tapestries, Mirrors, Stuffed Animals, etc.**
- **Please note the recommended clearances in the image below.**



IDEA

Use either a shelf or mantle below the TV or ornament or alternately you can construct a recess to mount TV or ornament on.

Check the manufacturers installation instructions for these items and ensure the recess is suitable.

NOTE

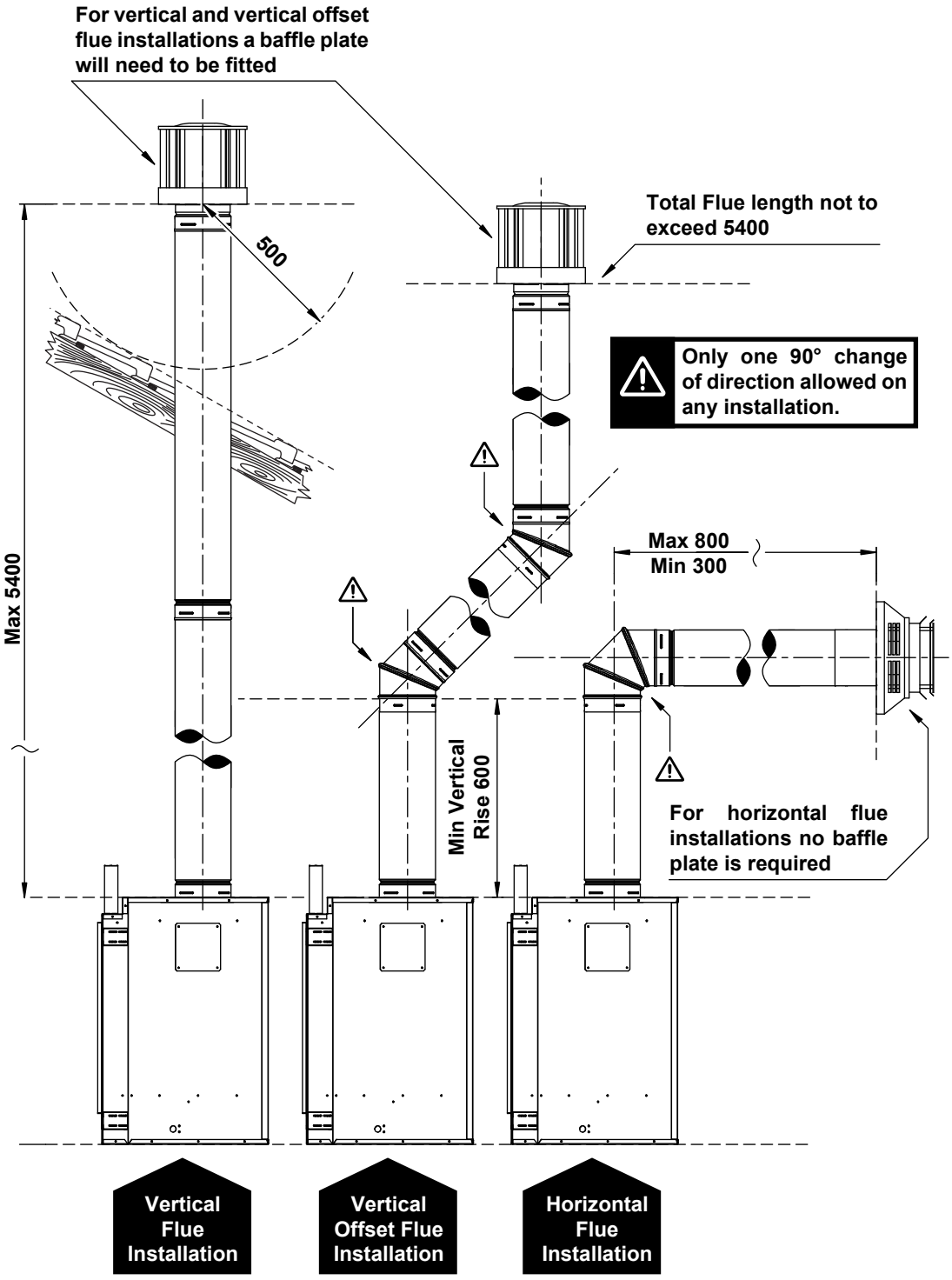
Rinnai does not take any responsibility for any damage occurring to any items installed above and in the vicinity of the heater.

Flue Installation Configuration

Flue Installation

For all installations, only "Abey®" Flue components shown in these instructions MUST BE used. This appliance **MUST NOT** be flued into 'natural draft' flue system or terminate into a chimney.

All measurements are in (mm)



CAUTION **Correct baffle must be used for vertical installations**

Connect Flue and Installing the Flue Restrictor

Connect the Abey® Flue to the flue outlet at the top of the appliance.

A flue restrictor is required for Vertical and Vertical Off-set installations.

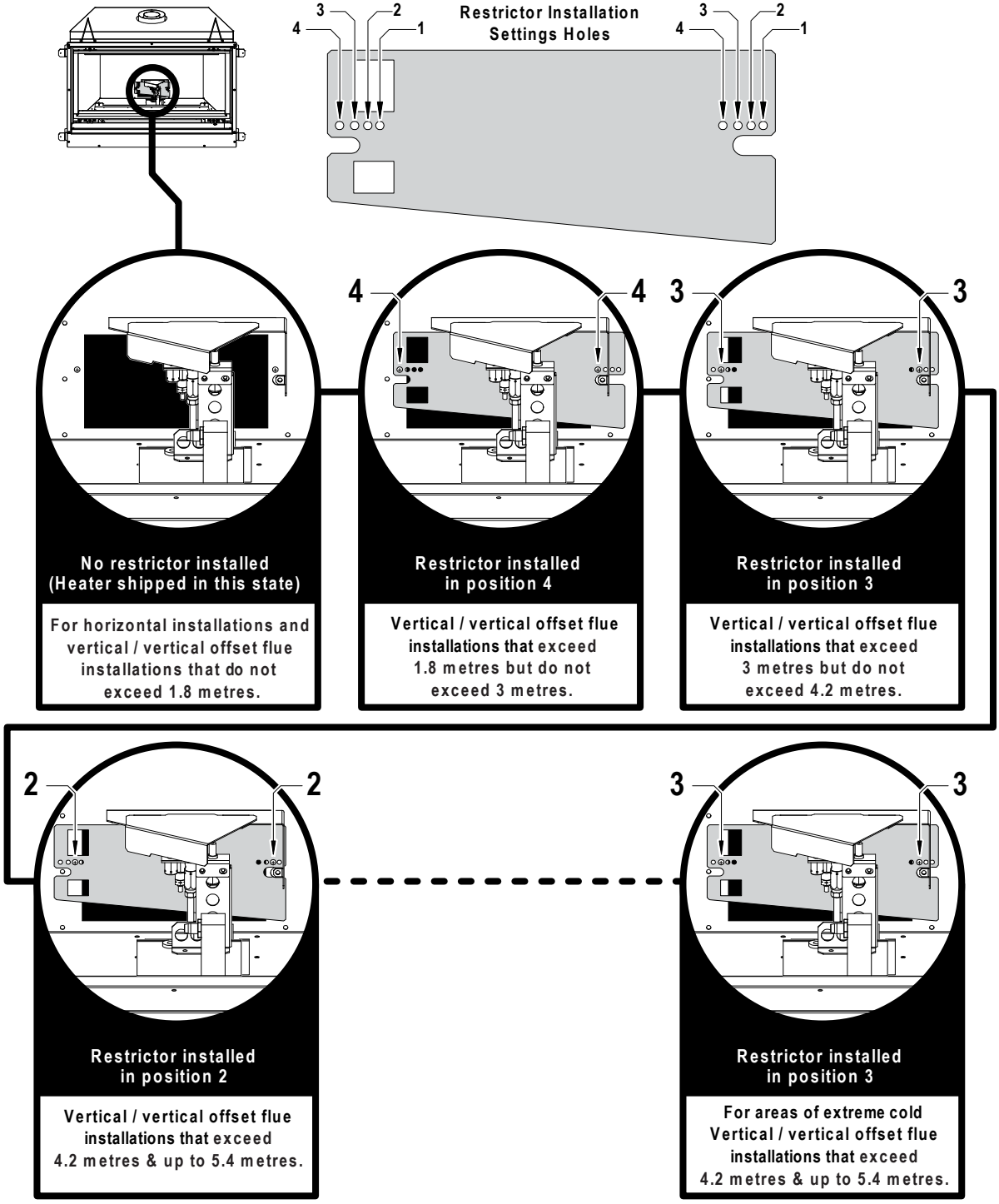
If a flue restrictor is required install as follows:

Step 1). Remove the pilot cover panel by tilting up and back and lifting out from its location slots.

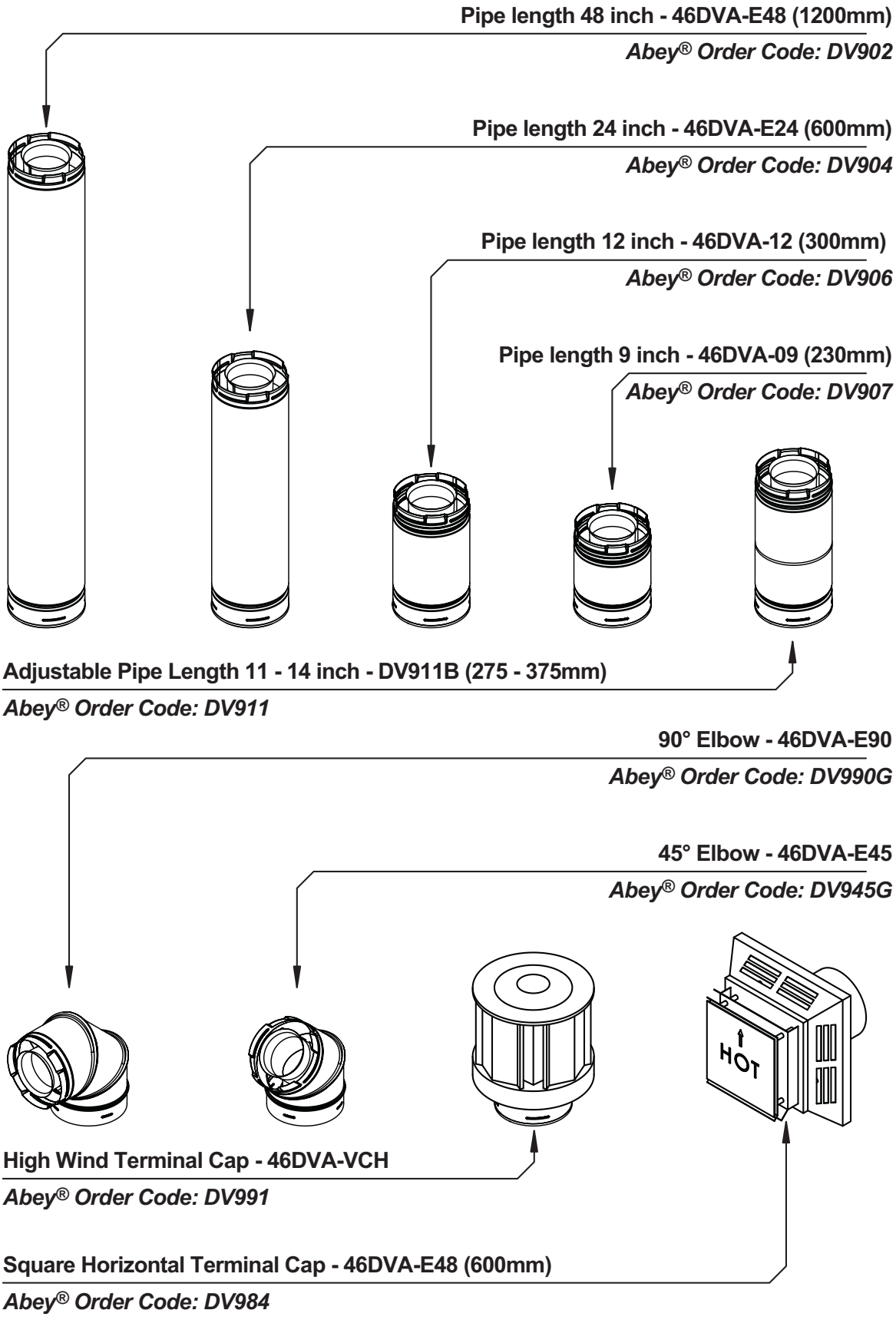
Step 2). Carefully remove the burner pad assembly by carefully but firmly grasping the burner and lifting in an upward and forward motion.

Step 3). Fit the flue restrictor choosing the appropriate baffle position. See images below.

Step 4). Carefully replace the burner pad assembly ensuring it locates correctly over the locating tabs fixed to the base of the burner box.



Flue Information - Abey® Flue System *

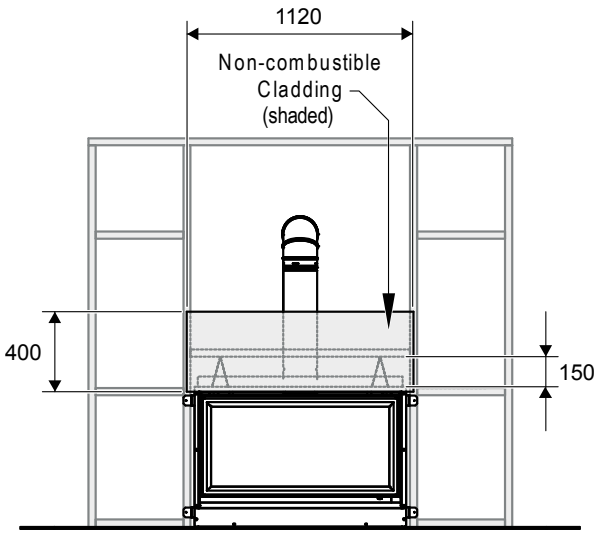


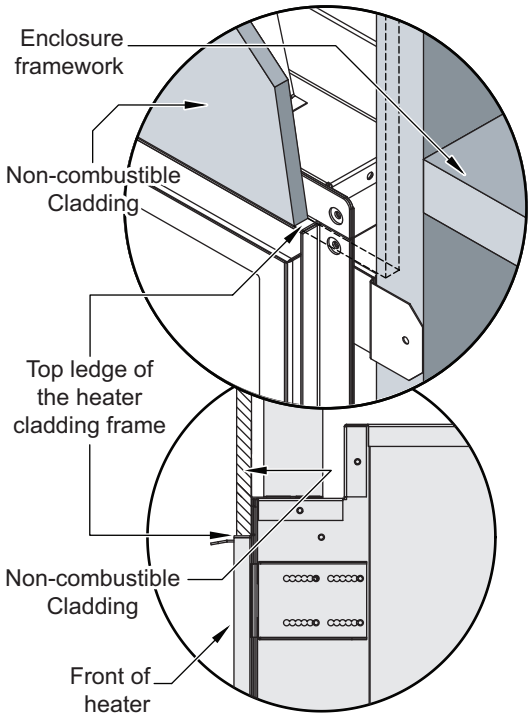
*** Also available in 900mm Pipe Length. Abey® Order Code: DV903G**

Cladding

Model: RDV3610ETR

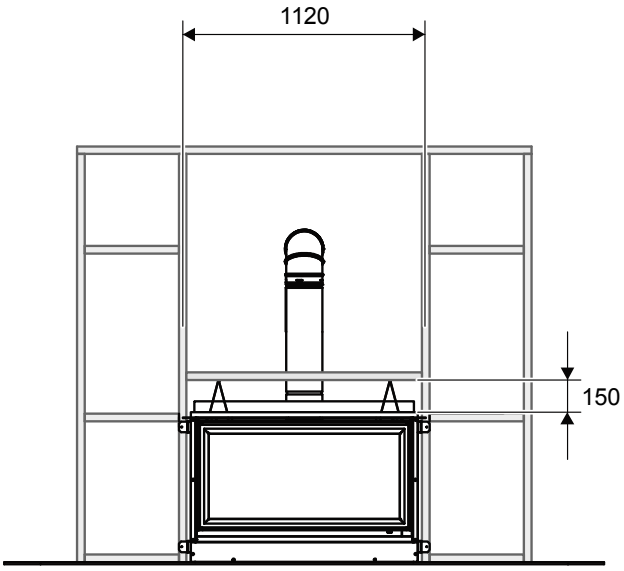
WARNING **Non-combustible cladding dimensions marked below are minimum size requirements only, the non-combustible cladding may extend beyond the dimensions stipulated.**

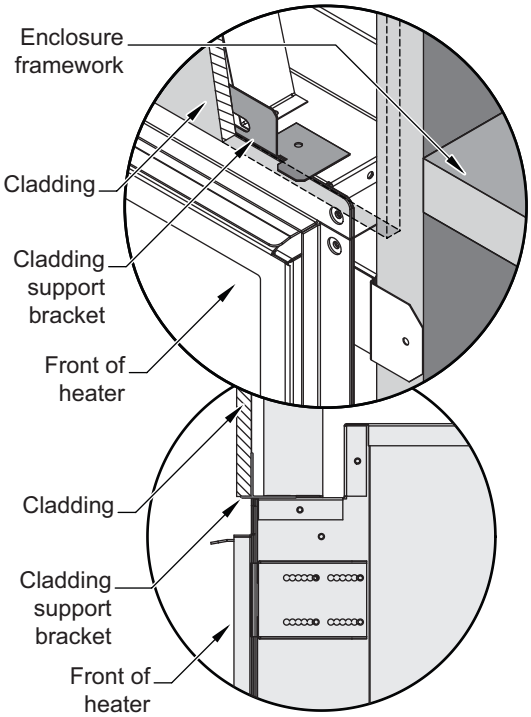




Model: RDV3611ETR

WARNING **Cladding MUST NOT extend lower than the cladding support bracket.**





Log Set Location

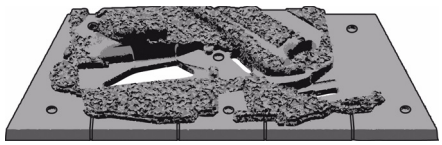
NOTE

For clarity the drawings are displayed without showing the entire heater.

DO NOT remove the burner from heater to install the log set.

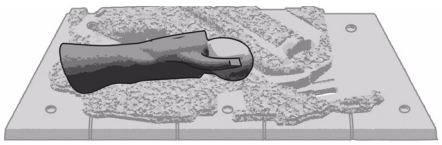
Use extreme care when handling the Log Set components, they are made from a very fragile high temperature material and will damage if handled roughly. Only remove the components from their packaging as required.

The log set must be installed in the precise order below. Ensure main burner is clean and free from particles and all packaging material.



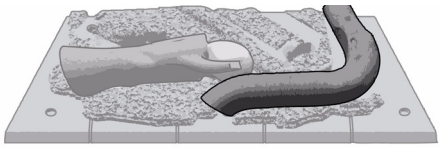
Piece 1. Log with rock attached.

Rock end and left hand bottom edge into burner body to locate this piece.



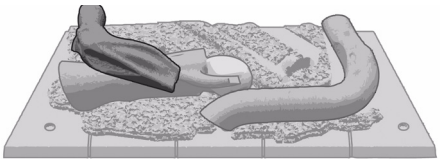
Piece 2. Long curved log.

Location on the front left bottom edge and the rear end bottom edge into the burner body recess.



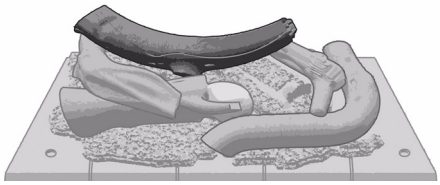
Piece 3. Stocky chipped log.

Location is flat on the rear bottom edge into the burner and nestles on the top of 'Piece 1'.



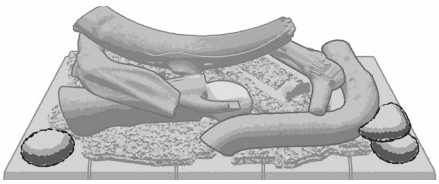
Piece 4. Branching Segment.

Nestles in 'U' shaped groove with a keyed section into the burner, the front rests on 'Piece 2'



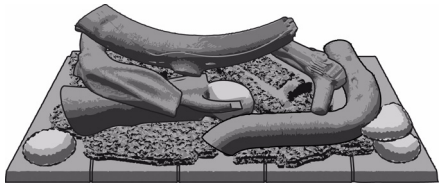
Piece 5. Bowed log.

Right and left ends locates in recesses in pieces 3 & 4 respecutively. The middle of this piece has a 'knot' which has point contact with the tip of 'Piece1'.



Piece 6 & 7.Stones.

The stones are to be placed over the burner assembly visible at left and right of the burner pad. One over each hole.



Final layout.

Complete.

Fault Analysis

NOTE: *Before proceeding with dismantling, be sure to follow the CAUTION instructions before each explanation.*

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

Nature of fault	Examination point	Diagnostic point	Values	Y/N	Action
(a) Appliance does not operate	1) Is the voltage correct?	1) Check power point and check voltage inside PCB (Brown and outer Blue wire) see wiring diagram.	1) AC 216-264V	Yes	Go to 3
				No	Check fuse
	2) Is there resistance across fuse	Check across fuse	< 1 Ω	yes	Go to 3
				No	Replace fuse
	3) Is there voltage to ignition pack? Black-Blue Terminals 4-11	With the appliance switched on check for voltage at ignition pack	AC 216-264V	Yes	Go to 4
				No	Replace PCB
	4) Is there spark does the pilot burner light up	Visual	Visual	Yes	Go to (c)
				No	Go to 5
	5) Check over heat switch	Terminals 2-1	<1Ω	Yes	go to 6
				No	Replace over heat switch
(b) No spark at ignition probe	6) Loose high tension lead or cracked /damaged ignition probe	Check by visual observation. for loose high tension lead or damaged ignition probe	Installation normal. Spark gap 3.5mm ± 0.5	Yes	Correct loose connection or replace ignition probe
				No	Replace igintion pack
(c) Spark ignition occurs but pilot does not light	7) Check gas pressure at test point	Check gas pressure with digital manometer at outlet of gas valve	**N.G.** 0.24 – 0.75 kPa **LPG** 0.60 – 1.75 kPa	Yes	Recheck igniter gap. Purge system if required
				No	Go to 8
	8) Check voltage at POV	Yellow-Yellow POV terminals	DC 12V	Yes	Go to 9
				No	Replace PCB
	9) Check resistance across modulating valve	Check resistance across solenoid valve	75-80 Ω	Yes	Replace ignition pack
				No	Replace gas valve
(d) Pilot lights but goes out after 1 minute	10) Check flame rod current	Check between flame rod lead and flame sensor terminal on ignition pack	>15mV	Yes	Replace ignition pack
				No	Go to 6. Check gas supply pressure, check flame rod <1Ω for damage. Replace if required.
(e) Burner ignites but flame does not modulate with remote control	11) Check voltage at POV and observe flame	Yellow-Yellow POV terminals and observe flame	Variable up to DC 12V Visual	Yes	Replace gas valve
				No	Check remote settings
(f) Fan does not come on	12) Check voltage at fan motor connection	Fan wiring connector inside PCB	Red -White ~ 130V Yellow – White ~ 120V Blue – White ~ 95V	Yes	Go to 14
				No	Go to 13
	13) Check transformer incoming voltage	Connector inside PCB Red-Red	240V	Yes	Go to 14
				No	Check for loose connections at PCB if no replace PCB
	14) check transformer output voltage	Connector inside PCB Brown – Brown	110V	Yes	Go to 15
				No	Replace transformer
	15) Check resistance of fan motor windings at connector inside PCB	Hi-Fan: Red – White Medium Fan: Yellow-White Low-Fan: Blue -White	Hi 275 Ω Med 246 Ω Low 185 Ω	Yes	Check fan for obstructions
				No	Replace fan motor.

Fault Finding

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.

Probable Cause ↓ / Fault Condition →	Burners fail to ignite	Smell of gas	Fan Not Working	Minor soot deposits	Severe sooting	Glass, Condensating	Glass, Streaky lines	Remote not working	Fault Condition ← / Simplest Possible Remedy ↓
Not plugged in or turned off	●								Plug in power cord and turn power 'ON'.
Mains power failure	●								Re-ignition, when power restored.
(Initial Install) Air in gas pipe	●								Installer to purge air from gas supply.
Air in hose	●								Repeat Ignition procedure.
Ignition failure	●								Repeat Ignition procedure.
Flat battery for remote control	●							●	Replace remote control battery.
Gas supply turned off	●								Turn gas supply on at the meter or cylinder.
Gas escape		●							Isolate gas supply, call Rinnai.
Inadequate flue system	●				●				Service Call
Insufficient gas pressure	●				●				Service Call
Log Misalignment					●				Call Rinnai.
Normal operation				●					No action is required.
Normal operation							●		Fan not working - fan automatically comes on after 4 minutes not heat switch activated.
Normal operation						●			Allow heater to warm up.
Heat switch not activated			●						Allow heater to run on high for 4 minutes.
Possible fan fault			●						Call Rinnai.
Controller display blank	●							●	Replace batteries.
Manual Switch Mode select	●							●	Refer to Customer Operation/Installation Manual

Rinnai recommends that this appliance be serviced every 2 years, including inspection of the flue system.

If the power supply cord, gas supply hose or any other component of the heater is 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.

Do not remove any panels or attempt to carry out any service work other than that mentioned in the trouble shooting chart.

The user shall be advised that appliances incorporating a solid fuel effect, and designed to operate with luminous flames, may exhibit slight carbon deposits.
If you are unsure about the way your heater is operating, contact Rinnai.

Commissioning the Appliance

1. After re-checking the pressures, turn the appliance 'OFF', remove manometer and tighten the test point sealing screw and check for gas leaks.
2. Turn the appliance 'ON' and 'OFF' a few times to confirm correct ignition and operation.
3. During the initial burn in period, some smoke and smell may be emitted. The appliance should be run on the high position in a well ventilated room until these dissipate.
4. Check the flame pattern, see 'Abnormal Flame Pattern'.

WARNING

240 VOLTS, RISK OF ELECTRICAL SHOCK!

When performing the commissioning, the appliance electrical power will need to be connected. Exercise CAUTION as there is potential for electric shock from the exposed wiring and circuitry. DO NOT leave the appliance unattended when power is connected and the panels are removed.

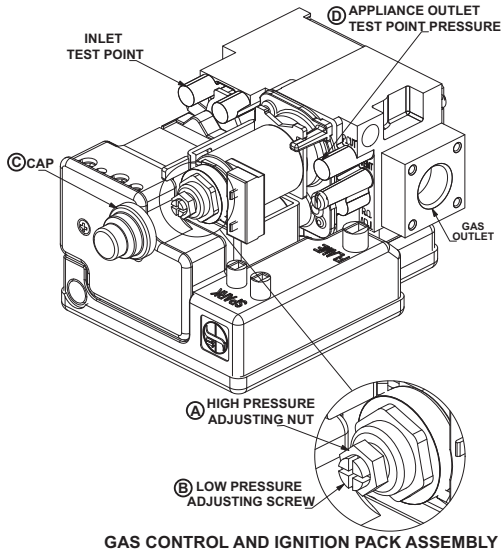
Installation and commissioning must be carried out by an authorised person.

Wiring inside this appliance may be at 240V potential.

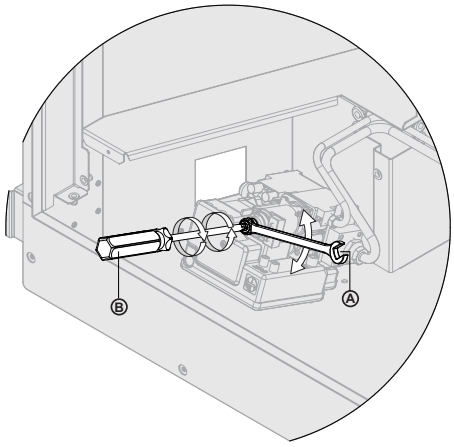
DO NOT test for gas escapes with an open flame.

To check and set burner pressures:

1. Refer to the appliance data plate located inside the appliance on the front of the base panel for correct gas pressure settings.
2. Using a suitable screw driver loosen the captive **A**ppliance **T**est **P**oint **P**ressure screw (ATPP) Ⓓ and fit the manometer, (an electronic manometer is recommended). Refer images for ATPP location.
3. Remove the dust cap Ⓒ from the regulator adjusting screws.
4. **High Pressure Setting:**
   Turn the appliance 'ON' and adjust to the highest setting, refer to the 'Operational Installation Manual'. Use a 10 mm spanner to turn nut Ⓐ, lock screw Ⓑ with appropriate screw driver to prevent it turning. Turning nut Ⓐ clockwise increases the outlet pressure whilst turning anti-clockwise decreases the outlet pressure.
5. **Low Pressure Setting:**
   Turn 'OFF' the power to the POV by seperating the connector of the two yellow wires that power the POV. The POV will automatically default to 'Low Pressure' operation. Keep the high pressure adjusting nut stationary using a 10 mm spanner. Use an appropriate screwdriver for setting screw Ⓑ. Turning clockwise increases the outlet pressure whilst turning anticlockwise decreases the outlet pressure.
6. Replace the dust cap Ⓒ after pressure adjustments.
7. Reconnect the POV Yellow wires power connection.



GAS CONTROL AND IGNITION PACK ASSEMBLY



WARNING

To ensure the correct operation of the modulating valve (POV) it is necessary that the dust Cap C is returned to its original location.

Dismantling for Servicing

NOTE: Before proceeding with dismantling, be sure to follow the CAUTION instructions before each explanation.

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.

All work should be carried out by qualified service technician

Unless otherwise stated, re-assembly is the reverse of dismantling.

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

1) Removal of Front Panel

a. Remove Mesh Guard by lifting bottom section forward and up (Refer to Image 1). Place Mesh Guard away from heater in a safe place.

Image 1

b. Remove fascia Surround by removing 4 x screws, two on either side of Fascia. (Refer to Image 2).

Image 2

2) Accessing / Removal of PCB, Transformer, Ignition System & Gas Adjustment

a. Remove Mesh Guard (Refer to Step 1).

b. Remove front service panel by removing 2 x threaded screws one either side of panel (Refer to Image 3).

c. Remove rear service panel by removing 2 x threaded screws one either side of panel (Refer to Image 3).

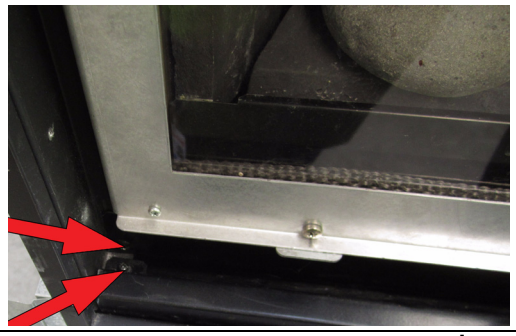


Image 3

d. Disconnect RJ45 connector from Rear Service Panel manual control switch before pulling panel away (Refer to Image 4).

Image 4

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

3) Removal / Disconnection of Main PCB

a. Main PCB is located on RHS of unit. Lift Main PCB Assembly off Velcro tabs (Refer to Image 5).

b. Undo cover screw on LHS of Main PCB Assembly (Refer to Image 5) and gently pull cover off.

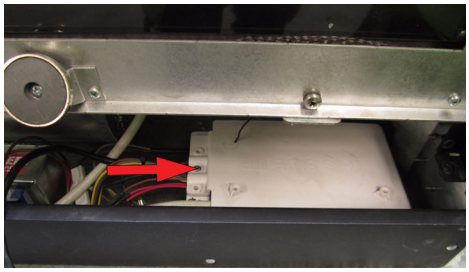


Image 5

NOTE: Ensure care is taken not to damage aerial receiver wire when removing cover.

c. Disconnect 4 x quick connectors and 1 x RJ45 connector (Image 6). Reverse order when reconnecting Main PCB.

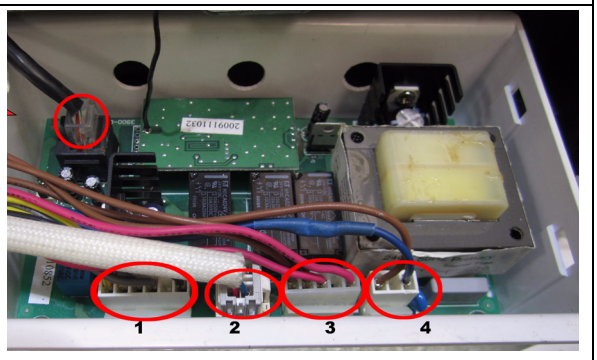


Image 6

4) Removal / Replacement of Transformer

a. Remove Mesh Guard, Front and Rear Service Panels and RJ45 Connector (Refer to Steps 1 & 2).

b. Remove 2 x screws, one on either side of Transformer (Refer to Image 7).

c. Disconnect connector number 3 on Main PCB (Refer to Image 6). Reverse order when re-installing.

Image 7

5) Removal / Replacement of Ignition System

a. Remove Mesh Guard, Front and Rear Service Panels and RJ45 connector (Refer to Steps 1 & 2).

b. Remove 2 x screws on face of Ignition Pack (Refer to Image 8).

NOTE: RHS screw is a long-threaded type; LHS screw is a shorter self-tapping screw.

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

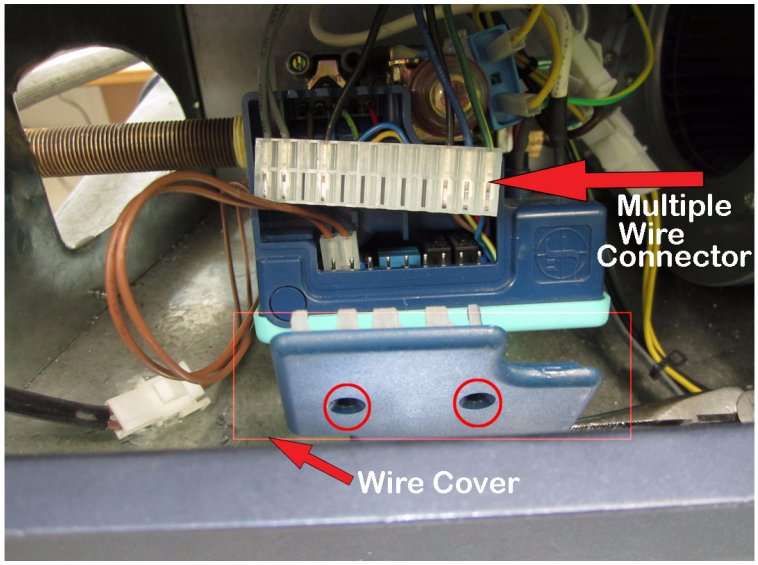


Image 8

c. Pull wire cover off front to access wiring (Refer to Image 8).
d. Remove multipe wire connectors by gently pulling upwards and until clear of connector pins (2 x brown wires). (Refer to Image 8).
e. Remove two-pin overheat connector (2 x brown wires) in the same manner. (Refer to Image 8).

f. Pull Ignition Pack forward from Gas Valve (Refer to Image 9).
g. Disconnect high tension spark lead, earth lead and flame sensor lead (Refer to Image 9). Ignitor Box can now be removed.

- Reverse order when replacing Ignition Pack.

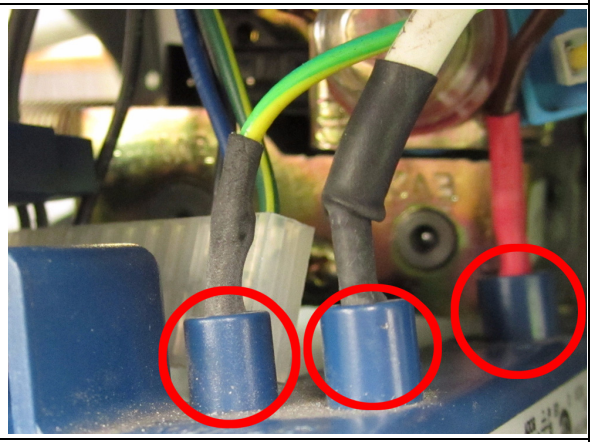


Image 9

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

REMOVAL OF GLASS PANEL, ACCESSING LOG SET, BURNER, PILOT & FAN ASSEMBLY, GAS VALVE, PILOT/GAS SUPPLY TUBE, FLUE RESTRICTOR PLATE AND MAIN INJECTOR.

6) Removal of Glass Panel

a. Remove Mesh Guard (Refer to Step 1a)

b. Remove Glass Panel by removing 4 x screws (Refer to Image 10). Place Glass Panel away from heater in a safe location.

Image 10

7) Removal / Replacement of Log Set

a. Remove Glass Panel (Refer to Step 6).

b. Remove Log Set. Take note of Log Set position. For reassembly, refer to Log Set Installation Instructions found in the Customer Operation and Installation Manual.

8) Removal / Replacement of Burner Assembly

a. Remove Glass Panel (Refer to Step 6) and Log Set (Refer to Step 7).

b. Remove Pilot Cover (Refer to Image 11).

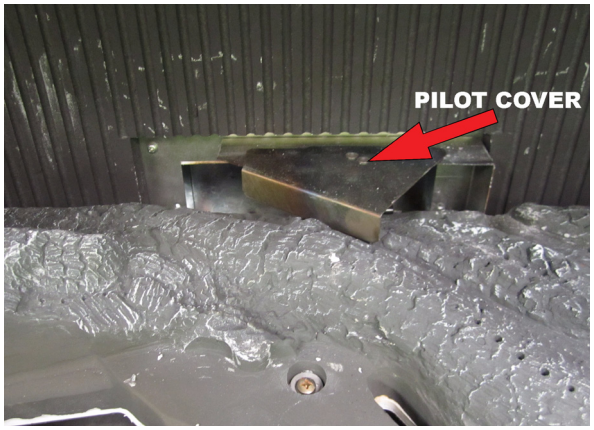


Image 11

c. Remove Burner Assembly by placing hands as shown in Image 12.

d. Lift Burner Assembly upwards and forwards. Ensure Burner Assembly is placed away from heater in a safe location to avoid damage.

- Reverse order to reassemble.

Image 12

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

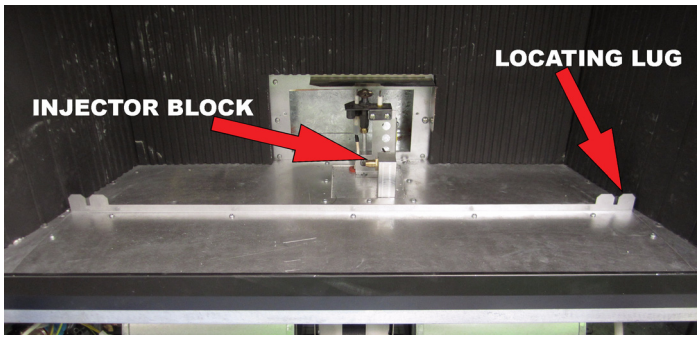


Image 13

NOTE: Make sure Burner Assembly is correctly located over Injector Block and Locating Lugs (Refer to Image 13).

9) Accessing Flue Restrictor Plate

a. Remove Burner Assembly (Refer to Step 8).

b. For adjustment of Flue Restrictor Plate, refer to Flue Installation Section in the Customer Operating and Installation Manual.

10) Removal / Replacement of Main Injector

c. Remove Burner Assembly (Refer to Step 8).

d. Injector is now accessible for removal/replacement (Refer to Image 13).

11) Removal / Servicing of Pilot Assembly

a. Remove Burner Assembly (Refer to Step 8).

For Servicing:

b. Pull Securing Clip to the right (Refer to Image 14).

c. Lift off Pilot Head (Refer to Image 14).

d. Remove Pilot Injector using a 5/32 Allen Key.

For Replacement/Removal:

a. Remove 4 x self-tapper screws (Refer to Image 14).

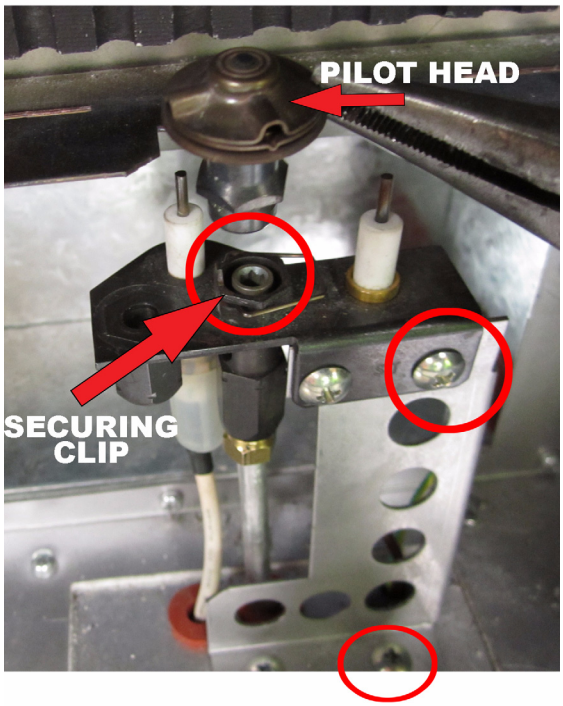


Image 14

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

b. Undo Pilot Supply Tube, Ignition and Sensor Leads (Refer to Image 15).

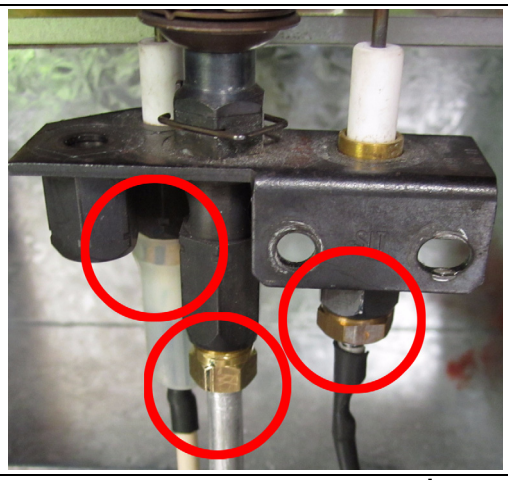


Image 15

12) Removal of Fan Assembly

a. Remove Ignition System (Refer to Step 2) and Refer to Step 3 (Removal/Disconnection of PCB) and Burner Assembly (Refer to Step 8).

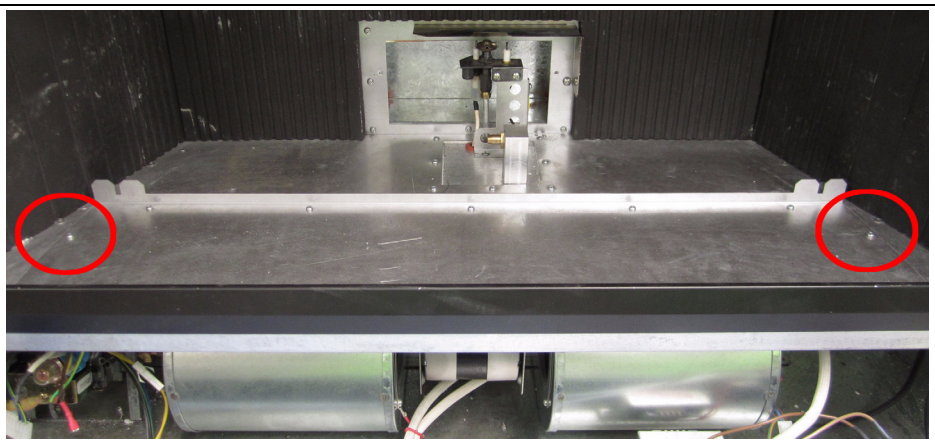


Image 16

b. Remove 14 x screws (Refer to Image 16). Lift off Fan Access Panel, ensuring Air Seal is not damaged.

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

c. Remove 2 x screws on either side of Fan Mounting Panel (Refer to Image 17).

d. Disconnect wire connector 2 from main PCB (Refer to Image 6).

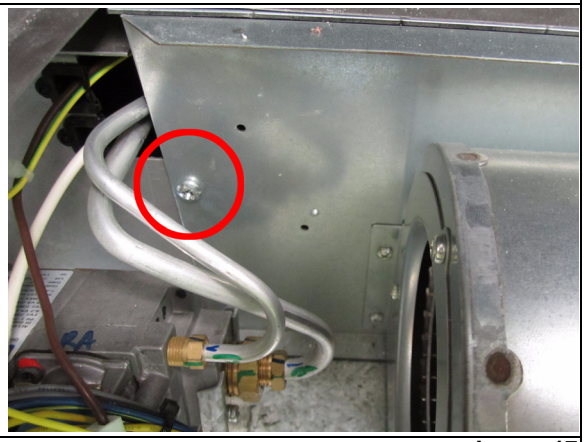


Image 17

e. Lift Fan Assembly out (Refer to Image 18).

- Reverse order for reassembly of Fan Assembly.

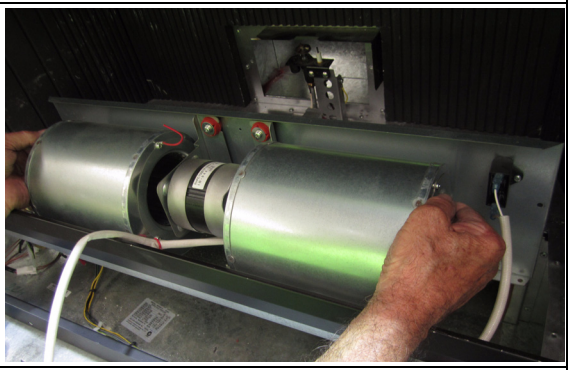


Image 18

13) Removal / Replacement of Ignition/Spark and Earth Leads

a. Remove Fan Assembly (Refer to Step 12).

b. Disconnect leads from Ignition Pack and Pilot Assembly (Refer to Images 15 and 19).

- Reverse order for reassembly of leads.

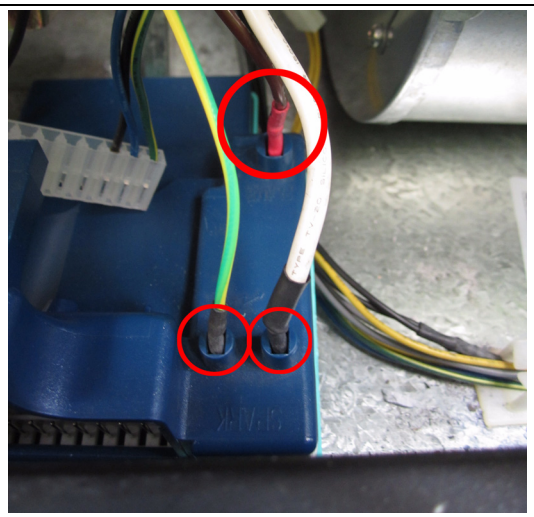


Image 19

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

14) Replacement of Pilot Tube

a. Remove Ignition / Spark and Earth Leads (Refer to Step 13) and Ignition System (Refer to Step 5).

b. Disconnect Pilot Tube from Gas Valve (Refer to Image 20).

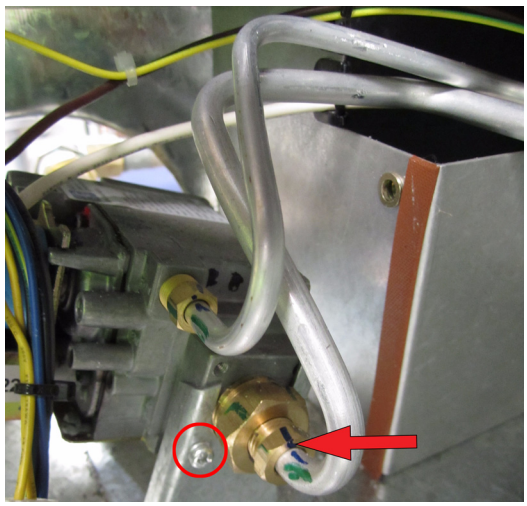


Image 20

c. Disconnect Pilot Tube from Pilot Assembly.

d. Cut and remove olive and nut from tube end.

e. Gently pull pilot Tube down through rubber grommet.

f. Insert new tube through rubber grommet, fit olive and nut and re-fit to pilot.

15) Removal / Replacement of Main Gas Supply Tube

a. Remove Ignition/Spark and Earth Leads (Refer Step 13) & Ignition System (Refer Step 5).

b. Disconnect tube from Gas Valve (Refer to Image 20).

c. Disconnect tube from Injector Block.

- Reverse order for reinstall.

16) Removal / Replacement of Gas Valve

a. Remove Main Gas Supply Tube (Refer to Step 15).

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

b. Disconnect incoming Gas Supply Pipe located on LHS of valve (Refer to Image 21).
c. Disconnect Pilot Tube and Burner Gas Supply Tube. (Refer to Image 21).
d. Remove 2 x screws on RHS of Valve Mounting Bracket (Refer to Image 20).
f. Disconnect two yellow wires from Modulating Valve (Refer to Image 21).
g. Lift off Gas Valve.

- Reverse order for re-installation.

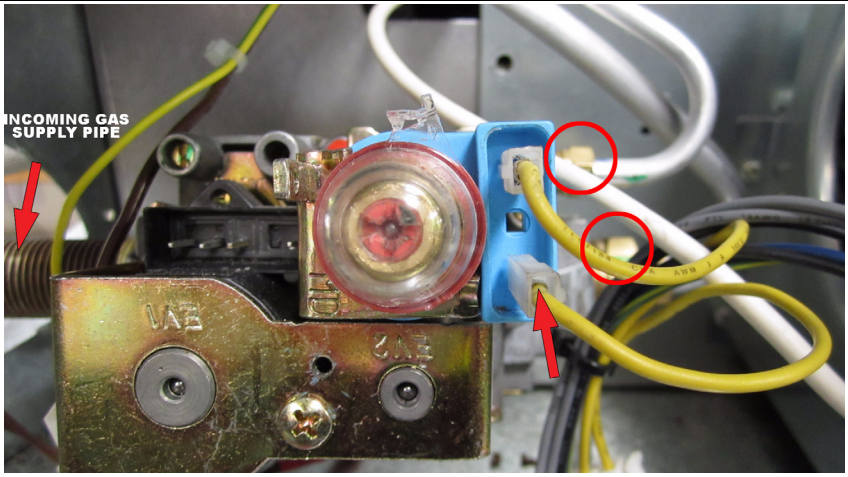


Image 21

17) Removal / Replacement of Overheat Switch

a. Remove Front Panel (Refer to Step 1) and Glass Panel (Refer to Step 6).
b. Remove 4 x screws at top of unit (Refer to Image 22).

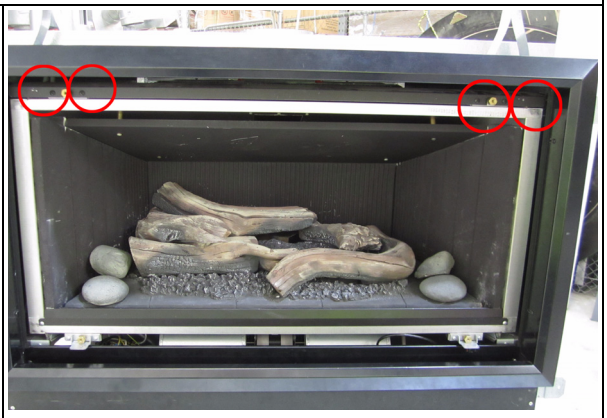


Image 22

c. Lift panel up and slide forward and downwards careful not to damage electrical tabs on switch.
d. Disconnect wires and remove switch (Refer to image 23).

- Reverse order for re-installation.

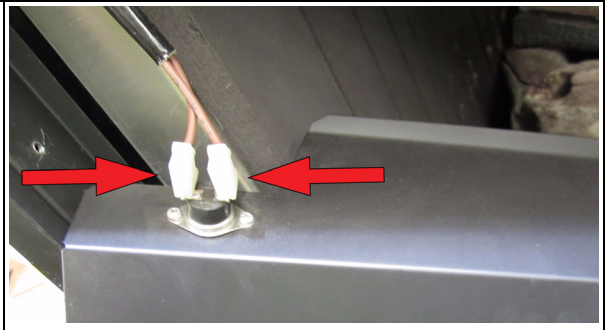


Image 23

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

18) Removal / Replacement of Inner Top Heat Shield

a. Remove Mesh Guard (Refer to Step1a) and Glass Panel (Refer to Step 6).

b. Remove 4 x threaded screws and remove Heat Shield taking care not to damage side heat shields (Refer to Image 24).

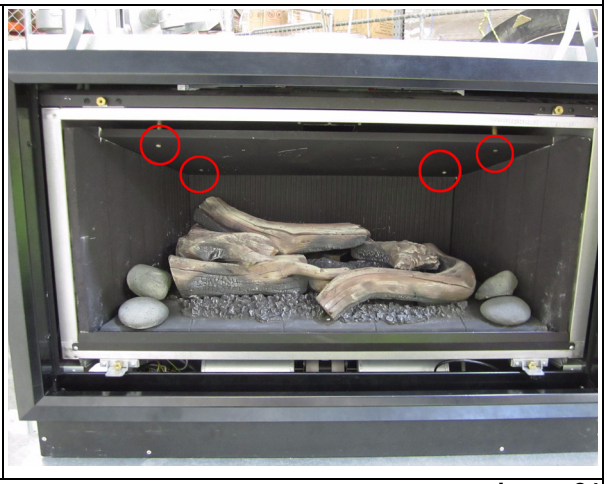


Image 24

19) Removal of Burner Box

a. Remove Main Gas Supply Tube (Refer Step 15) & Inner Top Heat Shield (Refer to Step 18).

b. Remove 8 x screws from top of Heat Box (Refer to Image 25) and 9 x screws from rear of Heat Box (Refer to Image 25).

Image 25

c. Remove 2 x screws either side of bottom edge of Burner Box Assembly (Refer to Image 26).

d. Remove Fan Access Panel (Refer to Step 12b).

e. Undo Gas and Pilot Supply Tubes from Gas Valve (Refer to Steps 14a, 15a).

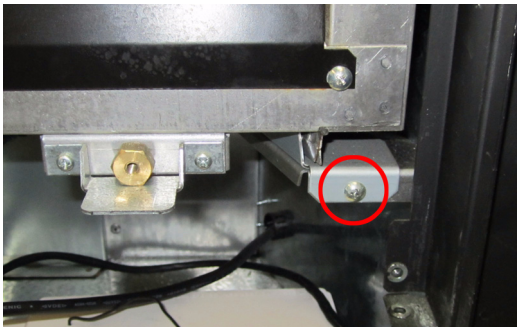


Image 26

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

f. Disconnect Flame Sensing Lead, Spark & Earth Leads from Ignition Box (Refer to Step 5g).

g. Gently slide Heat Box forward and out.

Reverse order for re-installation. (**Note: new gaskets between Heat Exchanger, Air Duct and Heat Box MUST be used).**

20) Removal of Heat Exchanger

Please Note: This can only be performed when unit is removed from wall installation.

a. Remove Burner Box (Refer to Step 19).

b. Drill out 1 x pop rivet at centre front of top panel and remove 11 x screws along edge of Top Panel (Refer to Image 27).

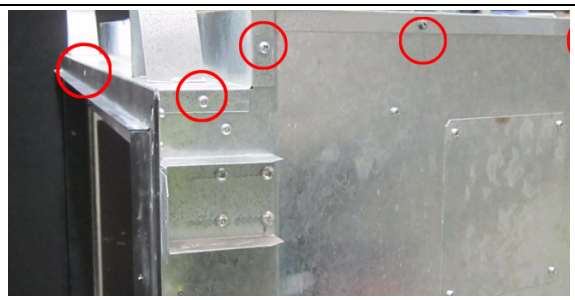


Image 27

a. Remove Air Chamber Adaptor 10 x screws (Refer to Image 28).

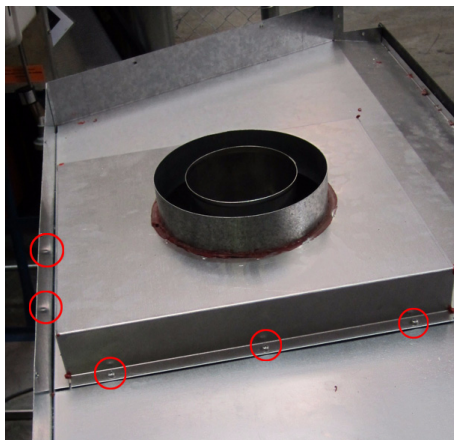


Image 28

b. Remove 4 x screws from top of Air Duct and 6 x screws from Flue Spigot (Refer to Image 29).

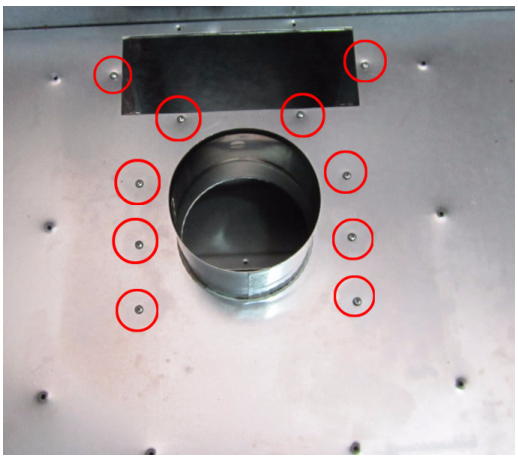


Image 29

CAUTION

240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with the neon screwdriver or multimeter. Disconnect gas supply.
All work should be carried out by qualified service technician

c. Remove 9 x screws from Back Panel (Refer to Image 30).

d. Drop down Heat Exchanger and Air Baffle Assembly.

- Reverse order for re-assembly.

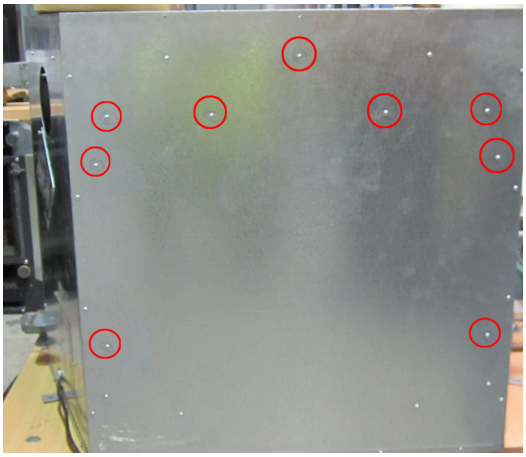
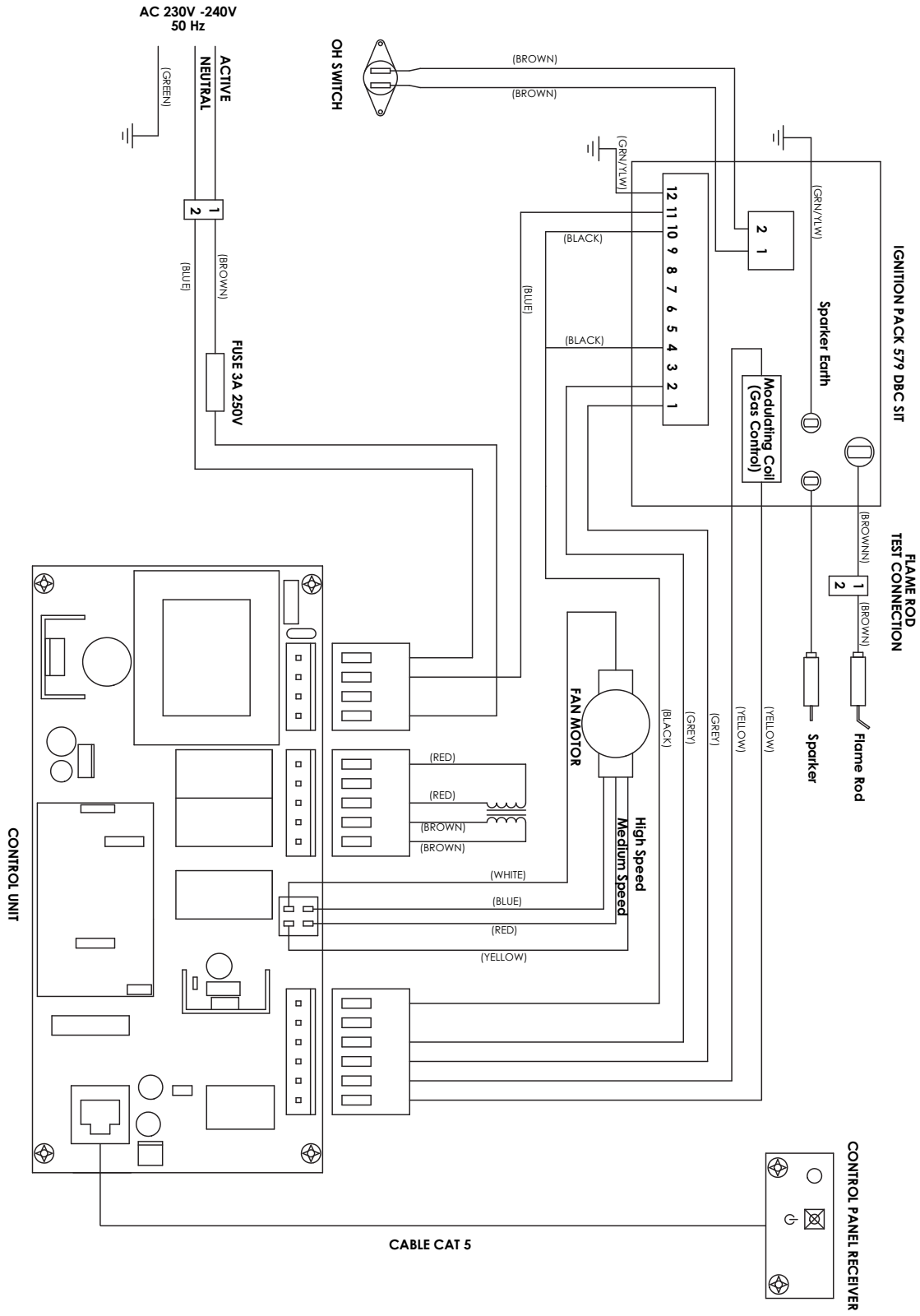


Image 30

Wiring Diagram



WARNING

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 supply cord must only be replaced with a genuine Rinnai spare part.

Exploded Diagrams & Spare Parts List

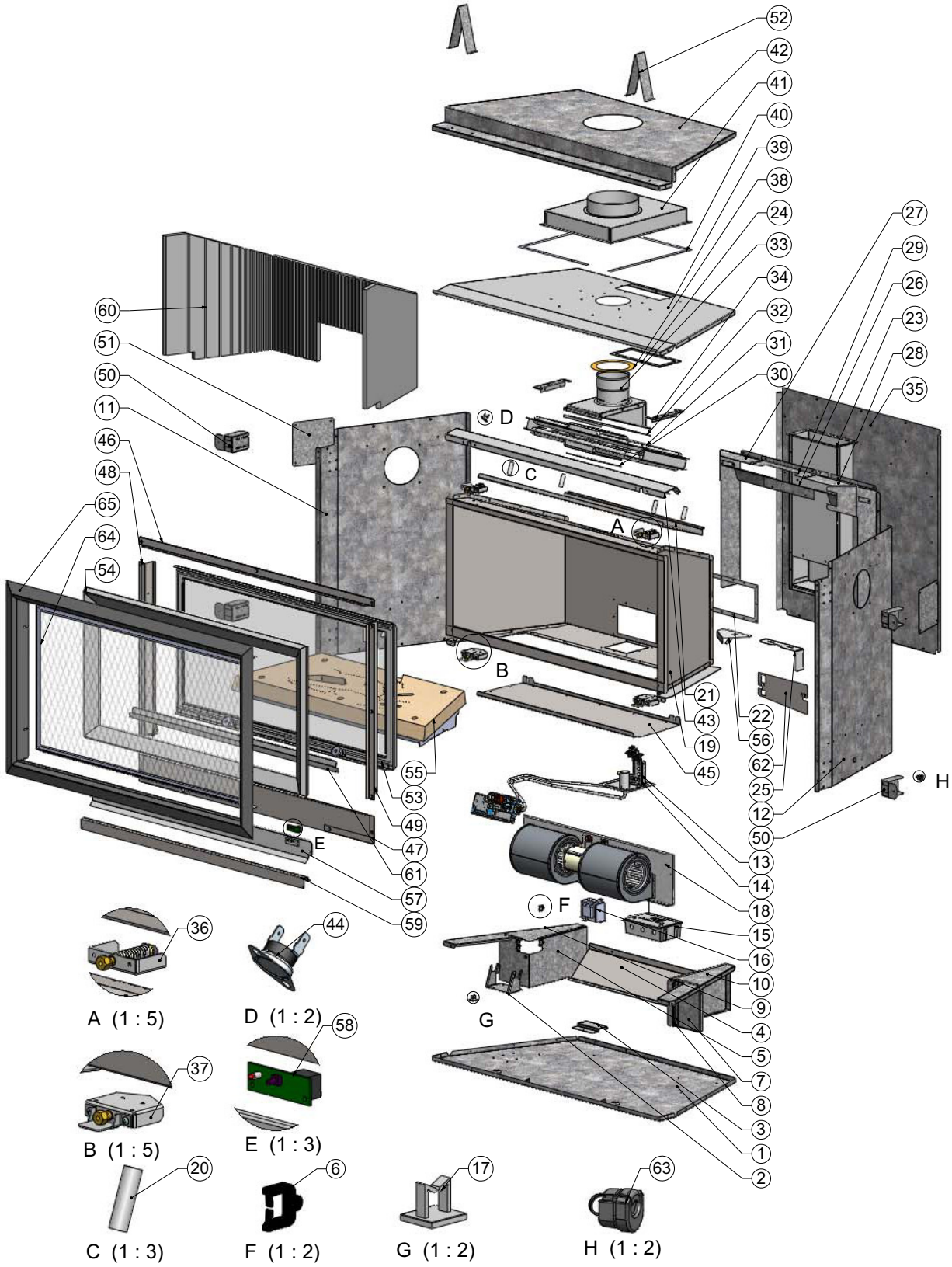
Effective: 15/10/10

SYMMETRY			
ITEM NO.	**Description**	**RA Item**	**Supplier Code**
1	PANEL BOTTOM		11500
2	GAS CONTROL BRKT		11501
3	TRANSFORMER BRKT		11503
4	AIR GUIDE BOTTOM		11505
5	FAN BRKT LH ASSY		11506
6	PROTECTOR EDGE PLASTIC	90199717	1880
7	FAN BRACKET RH		11507
8	FAN SUPPORT ASSY		11624
9	COMB CHAMBER SUPPORT SIDE LH		11510
10	COMB CHAMBER SUPPORT SIDE RH		11511
11	PANEL SIDE LH		11512
12	PANEL SIDE RH		11513
13	GAS CONTROL ASSY NG	Refer Line 75	11517
14	GAS CONTROL ASSY LPG	Refer Line 75	11518
15	PCB ASSY	90199721	11671
16	TRANS	90199723	11538
17	CABLE CLIP		10309
18	FAN CONV ASSY	90199725	11661
19	COMBUSTION CHAMBER ASSY		11550
20	COMBUSTION TOP SPACER		11551
21	DEFLECTOR HEAT TOP BLK	90199727	11552F
22	SEAL AIR DUCT OUT	90199729	11554
23	AIR DUCT ASSY		11555
24	AIR DUCT INLET GASKET		11631
25	PILOTCOVER		11514
26	HEAT EXCHANGER AIR GUIDE		11556
27	AIRGUIDE SIDE LH		11557
28	AIRGUIDE SIDE RH		11558
29	AIR GUIDE CENTER		11559
30	GASKET HEAT EX SQUARE		10926
31	HEAT EXCHANGER ASSY		11664
32	FLUE DISCHARGE GASKET		11644
33	FLUE DISCH&GASKET		11665
34	DISCHARGE HOOD BRACKET		11509
35	PANEL REAR BETTER		11561
36	EXP RELIEF TOP ASSY	90199731	11662
37	EXP RELIEF BTM ASSY	90199733	11663
38	CERAMIC Ø GASKET 140X17X3		11625
39	AIR GUIDE TOP		11563
40	AIRDUCT INLET TOP GASKET		11642
41	AIR INTAKE TOP ASSY		11565
42	PANEL TOP		11564
43	PANEL COVER RELIEF	90199735	11572F
44	OHS	90199662	10637
45	COMB CHAM ACC COVR ASSY		11667
46	RETAINER GLASS TOP BLK	90199737	11575B
47	RETAINER GLASS BTM BLK	90199739	11576B
48	RETAINER GLASS LH BLK	90199741	11577B
49	RETAINER GLASS RH BLK	90199743	11578B
50	BRACKET MOUNTING	90199745	11582

ITEM NO.	Description	RA Item	Supplier Code
51	COVER PLATE		11583
52	SPACER BRACKET TOP		11584
53	PANEL GLASS ASSY	90199747	11668
54	FRAME INNER	90199749	11590GL
55	BURNER ASSY	90199751	11611
56	COVER BURNER ASSEMBLY		11669
57	PANEL SERVICE REAR	90199755	11670
58	SWITCH MNL CONTROL	90199757	11628
59	PANEL SERVICE FRONT	90199759	11580GL
60	LINERS CERAMIC PINSTRIPE		R3615
61	PANEL BURNER COVER	90199763	11581F
62	FLUE RESTRICTOR	90189924	11516
63	POWER CORD HOLDER		7845
64	DRESS GUARD ASSY	90199765	R3610GL
65	OUTER FRAME BLK		R3600GL
NOT DRAWN	LOG SET	90199771	11600
NOT DRAWN	HARNESS WIRING	90199769	11595
NOT DRAWN	ELEC CORD	90199688	6765B
NOT DRAWN	HARNESS PCB TO CTRL CAT5	90188035	10631
NOT DRAWN	HARNESS OHS	90195111	10654
NOT DRAWN	HARNESS OHS	90199767	11594
NOT DRAWN	REMOTE	90199773	11674

GAS CONTROL

ITEM NO.	Description	RA Item	Supplier Code
1	GAS CONTROL LP/NG	90199761	10600
2	SPARKER	90199597	10601
3	ADAPTOR 1/2" BSPT	90199701	11589
4	FLARE CON. 1/2" MALE BSPT-1/2"BSP		11633
5	TUBE PILOT	90199703	11525
6	TUBE MAIN GAS ASSY	90199705	11527
7	PILOT BASE		11529
8	GASKET HEAT EX SQUARE		10926
9	INJECTOR BLOCK		11530
10	PILOT BRACKET		11531
11	GROMMET SILICON 2Ø1.8 HOLE		10294
12	GROMMET SILICONE Ø4 HOLE		10293
13	INJECTOR 3.0 NG	90199707	11532
13	INJECTOR 1.7 LP	90199709	11534
14	PILOT BODY TOP CONVERTIBLE		7870
15	PILOT HEAD	90199803	7871
16	ELECTRODE	90199746	7875
17	ELECTRODE NUT		7876
18	INJ PILOT NG	90199955	7795
18	INJ PILOT LP	90199956	7873
19	SPACER ELECTRODE PILOT		7902
20	ELECTRODE NUT ETR		7900
21	OLIVE 6mm	90197377	7519
22	SILICONE TUBE 25x9.5x6.4		11641
23	NUT 1/2 COMPRESSION		5064
24	HT LEAD	90199711	11596
25	LEAD SENSOR	90199715	11598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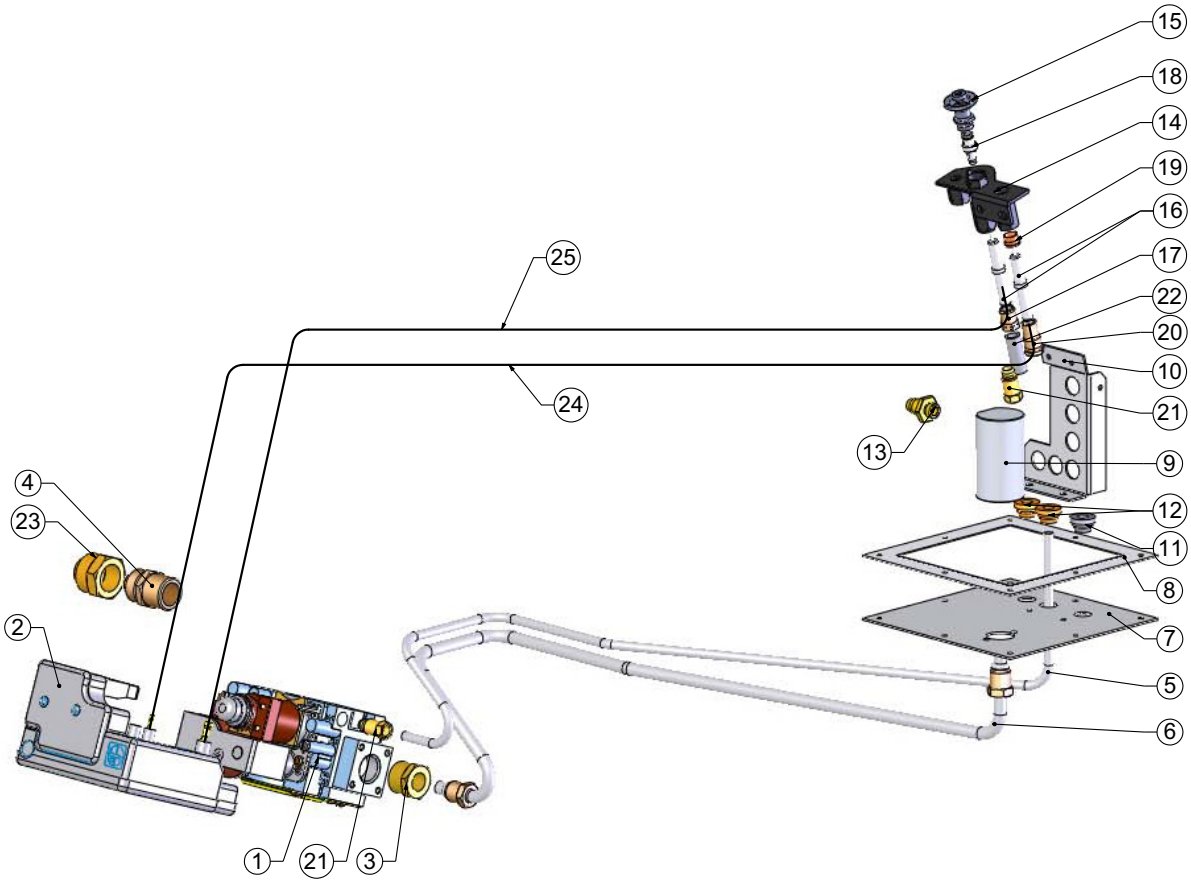
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Cost of a local call. Higher from mobile or public phones.

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 our Help Line. Rinnai recommends that this appliance be serviced every 2 years.