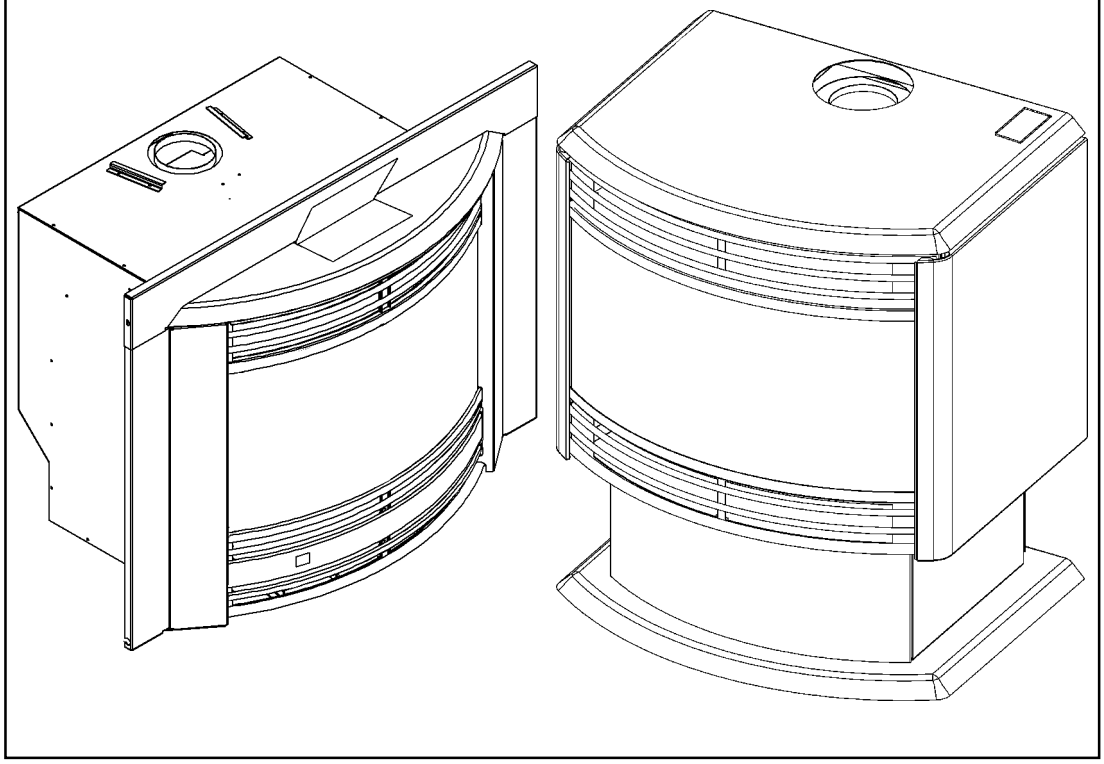
Rinnai

SERVICE MANUAL

FS 35ETR / IB 35ETR

Flame Fire ETR



Proudly a member of The Australian Gas Association.
All of our products are AGA tested and approved.

The Australian Gas Association

Quality Systems
Quality Endorsed Company
ISO 9002 Lic. 4983
Standards Australia

Distributed and serviced in Australia under a Quality System certified as complying with ISO 9002 by Quality Assurance Services.

Rinnai New Zealand has been certified to ISO 9001 Quality Assurance by Telarc.

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GAS ENERGY RATING

Comparative Energy Consumption tested to The Australian Gas Association requirements of Australian Gas Code AG102. An energy rating of 5 stars refers to an efficiency of approximately 80%, that is, 80% of gas consumed is converted to useful heat.

ISO 9001 *Model for Quality Assurance in design/development, production, installation and servicing, aimed primarily at achieving customer satifaction by preventing nonconformity at all stages from design through to servicing.*

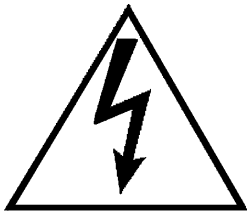
ISO 9002 *Same as ISO 9001 but excluding design.*

AG 103 *Approved requirements for gas heaters as set by The Australian Gas Association and Australian Liquefied Petroleum Gas Association Ltd, to ensure proper safety performance and quality levels are achieved.*

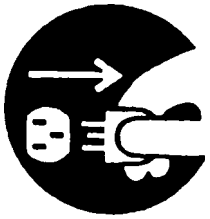
Produced by Technical Services
May 2001

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.



Remove the plug from the source when carrying out any of the following activites.

Read Fault Diagnosis and Wiring Diagram carefully to avoid incorrect wiring.

Do not disassemble. Parts not serviceable.

Please follow all 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 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 alternation at any time.

SRV ETR
Issue No. 1

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Glossary of Terms

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
kW	-	kilo Watts
mA	-	milliAmps
µA	-	microAmps
MJ/h	-	megajoule per hour
mm	-	millimetres
.	-	Ohms
OHS	-	overheat switch
PCB	-	printed circuit board
CPU	-	central processing unit
POT	-	potentiometer
rpm	-	revolutions per minute
SV	-	solenoid valve
ϕ	-	diameter
.° C	-	temperature rise above ambient
POV	-	modulating valve
TE	-	thermal efficiency
TH	-	thermistor

1. Introduction

Background

The ETR (Electronic Timer Remote) Flame Fire Freestanding and Inbuilt Royale range incorporates an improved four (4) flame burner setting modulating control system to provide comfortable heating and flame ambience. Other features of these appliances are improved operation, remote control, dual timers, installation and maintenance features.

The Freestanding and Inbuilt Flame Fire ETR versions have been specifically introduced for installation in freestanding, existing chimney and Zero Clearance installation applications.

Features

- Full Electronic Timer Remote control system
- Burner 1 - Ember flame
- Burner 2 - Medium Low flame setting
- Burner 2 - Medium High flame setting
- Burner 3 - High blue flame
- Independent flame settings
- Child lock
- Fuzzy logic
- Independent flame selection button
- Gas flow modulates in 4 steps between Hi, Med high, Med low, Low and Off, achieving comfortable and efficient heating and flame ambience.
- The ETR Flame Fire versions include a 24 hour intelligent digital clock and dual timer.
- The ETR Flame Fire incorporates remote control ON-OFF and temperature selection.
- All operation and temperature control is with easy-to-use push buttons.
- If a problem occurs and service required, an error code message appears on the LED display to lead the service technician to the cause of the problem.
- Information about any previous faults is stored in the PCB and can be recalled during servicing.

About the ETR Freestanding and Inbuilt

The inner bodywork is formed 0.8 mm aluminised steel sheet, which forms a box to which the components, heat exchangers, burners (3) and blower are incorporated. The whole assembly is covered by an outer metal case, which is constructed from 1.6mm cold roll steel sheet.

The heat exchanger is composed of two sub-heat exchangers sets. The lower set is constructed of 0.8 mm aluminised steel. The upper set is constructed of 0.8 mm stainless steel. The heat exchanger is connected to the flue by an intermediary draft diverter. The combustion air is drawn from the room atmosphere through the combustion chamber. Combustion by-products in the combustion chamber are drawn out into the 100mm flue spigot which is connected via the flue system to the outside atmosphere.

The flue system is connected with stainless steel pipe. Freestanding and Zero Clearance installation requires an inner flue pipe (100 mm dia.) outer heat shield flue pipe (150 mm dia.). Various flue lengths are available if inadequate flue draft is detected. For Inbuilt masonry chimney installation applications a (100 mm) flexi-liner is required. Ignition by a continuous spark in conjunction with an electrically operated solenoid monitored and control by the PCB. Gas passes through the inlet fitting, then via a gas regulator connection to the solenoid valves and delivered to the injectors for combustion

2. Specification

Model No.		FS35ETR / IFGLETR	FGL30ETR / IB35ETR
Name of Appliance		Freestanding Flame Fire	Inbuilt Flame Fire
Input (NG / LPG)	High	35 MJ/h	33 MJ/h
	Med (Hi)	25 MJ/h	25 MJ/h
	Med (Lo)	20 MJ/h	20 MJ/h
	Lo	8 MJ/h	8 MJ/h
	Flame Function	25 MJ/h	25 MJ/h
Power Consumption	High	100 W max	100 W max
	Standby	4 W	4 W
Output	LPG	7.7 kW	7.3 kW
	NG	7.7 kW	7.3 kW
Dimensions	Width	650 mm	910 mm
	Depth	553 mm	570 mm
	Height	750 mm	687 mm
Weight		64 kg	54 kg
Connections	Electrical	AC 240 V / 50Hz (NZ: AC 230 V)	
	Gas	R ½" BSP flared fitting	½" BSP male thread
Ignition		Electronic Spark	
Combustion Method		Bunsen Style	
Ignition Method		Electronic spark	
Ignition Activation		Electronic	
Temperature Control		Electronic Thermostat Hi ~ Lo / OFF	
Temperature Control Operation		Up / Down Buttons	
Temperature Control Range (°C)		L (Forced Low), 16 ~ 26, H (Forced High)	
Set Temperature		Celsius increments L, 16~26, H	
Room Temperature		Celsius increments L, 1~ 30, H	
Timer Operation	Timer	24 Hour Digital, Intelligent Dual Timer	
	Operation	24 Hour Up/Down Control	
	Display	AM/PM Digital Clock Display	
	Temp. Control	26°C Max. when timer is operating	
Convection Fan		Tangential 2 speed, watt rating 70W	
Warm Air discharge Fan Volume		Max: 4 m/s Min:1.8 m/s	
Display on Control Panel		7 Segment Display, AM/PM Indicator, Timer Setting Indicator, Time Setting Indicator, Lock Function Indicator, Timer 1 / 2 Indicator, Override Indicator, Flame Indicator, Auto-Off Indicator	
Control Panel		ON/OFF Button, Up Button, Down Button, Time Setting Button, Timer 1 / 2 Button, Override Button, Flame Button, Lock Button, Auto-Off Button.	
Lock Function		Press to Set. To Cancel press button for 3 seconds	
Memory device		EEPROM (clock set temp. maintenance information error history lock function)	
Error Coded messages		Two figures (7 segment LED)	
Safety Devices	Burner Safety device	Flame rod (rectification)	
	Fan lock detection	Overheat cut-off device (High-limit thermistor)	
	Flue blocked detection	Overheat cut-off device (High-limit thermistor)	
	Ignition and Ignition miss detection	Flame rod (2 units)	
	Overheat detection	Thermal fuse (one shot fuse)	
	Power failure circuit	After the power is restored, the appliance will begin to heat.	
Noise level		Hi: 53dB Lo: 42dB	

3. Combustion Specifications

Basic Combustion Specifications

Rinnai Model Reference		Inbuilt		Freestanding	
Gas type		NG	LPG/ Propane	NG	LPG/ Propane
Gas Consumption (MJ/h)	High	33	33	35	35
	Low	9	11	9	11
Injector size ¬ (mm)	Front injector	170M	95S	170M	95M
	Middle injector	480M	170M	480M	170M
	Rear injector	280S	120S	280S	120S
	Pilot	0.45	0.3	0.45	0.3
Bypass Orifice		A350	B105	A350	B105
Aeration Sleeve	Front burner	Long	-	Long	-
	Middle burner	Short	-	Short	-
Regulator Pressure (kPa)		0.95	2.40	0.93	2.35
Burner Marking		N	L	N	L
Burner Type		Surface combustion			
Solenoid Valve		Direct single seated valve type			
Log-set locating pin position		Rear position	Front position	Rear position	Front position

M = Bray multi port injector
S = Bray single port injector

Warm Air Discharge Velocity

(High Operation)

(unit m/sec)

LH							RH	
3.6	3.2	3.2	3.6	3.7	3.8	3.8	3.8	Average
4.0	3.5	3.6	3.7	3.5	3.2	3.3	3.4	3.67 m/sec

Warm Air Discharge

(High Operation)

(temp)

LH							RH	
70	75	70	76	110	115	124	130	Average
77	93	68	84	114	108	111	110	93.94°C

Warm Air Discharge Velocity

(Low Operation)

(unit m/sec)

LH							RH	
1.9	1.9	2.0	1.9	2.1	2.0	2.0	2.1	Average
2.1	1.9	2.6	2.1	1.9	1.8	1.8	1.9	2.00 m/sec

Warm Air Discharge

(Low Operation)

(temp)

LH							RH	
44	48	44	47	57	57	58	60	Average
48	50	44	46	56	53	58	57	51.69°C

Conditions

Convection Fan in free air RPM	High:	1322	.....	1340
	Low:	902	.....	1340
Convection Fan RPM	High:	1070	.....	1310
	Low:	700	.....	940

Measured at full combustion

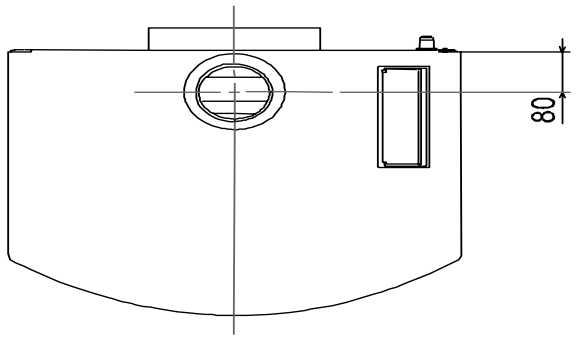
Average Air Velocity on High:	3.67 m/sec
Average Air Velocity on Low:	2.00 m/sec
Area of Louvre	0.0143 m^2

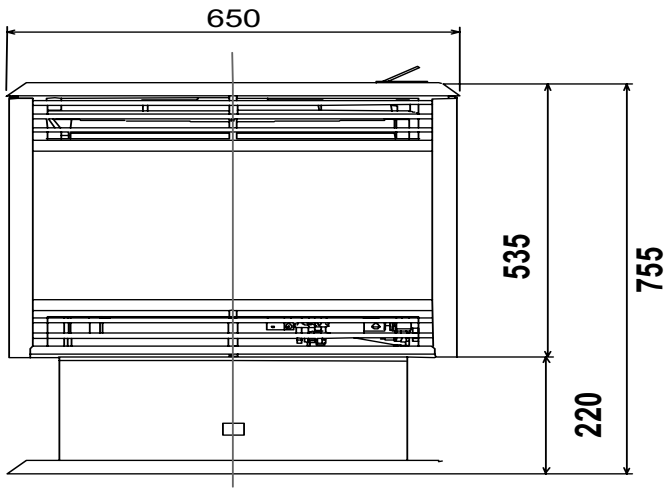
Noise Level

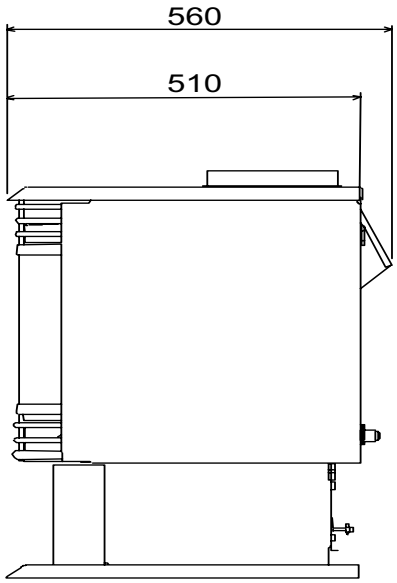
Operation Noise (dB (A))	
High: 53	Low: 42

4. Dimensions

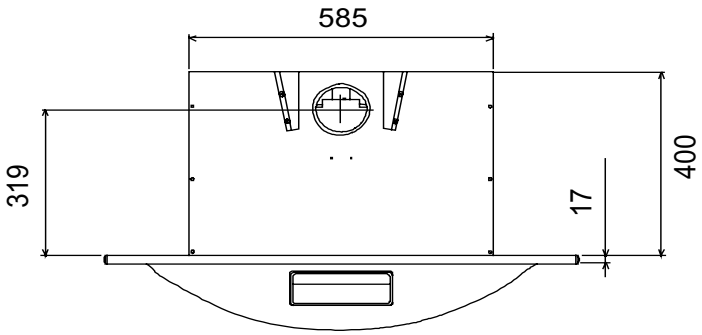
Freestanding Flame Fire

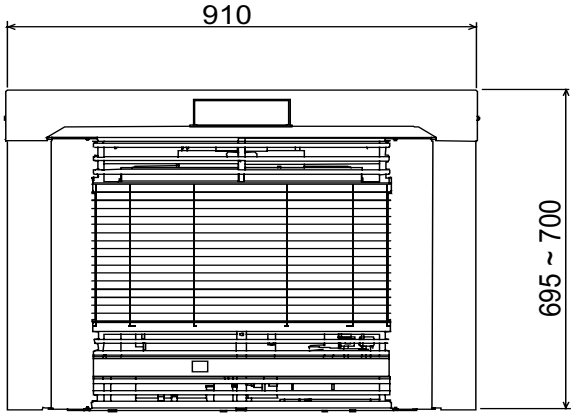


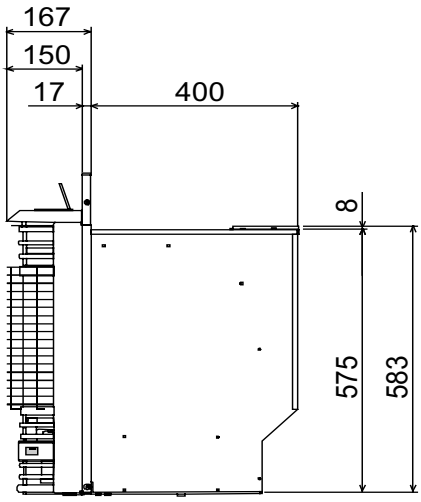




Inbuilt Flame Fire







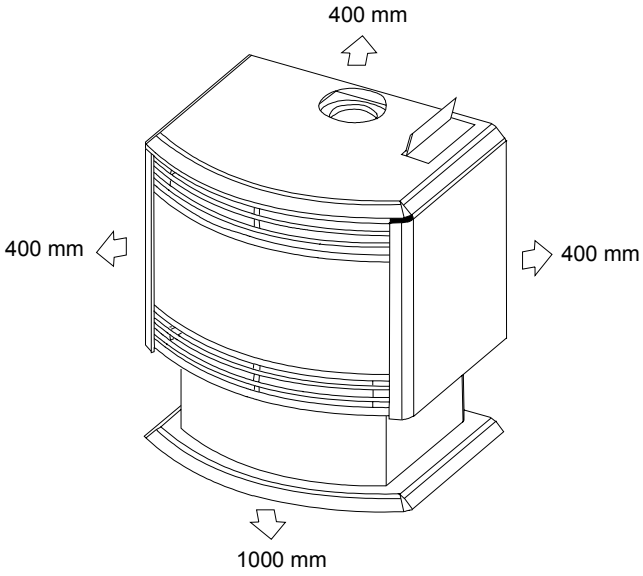
5. Installation

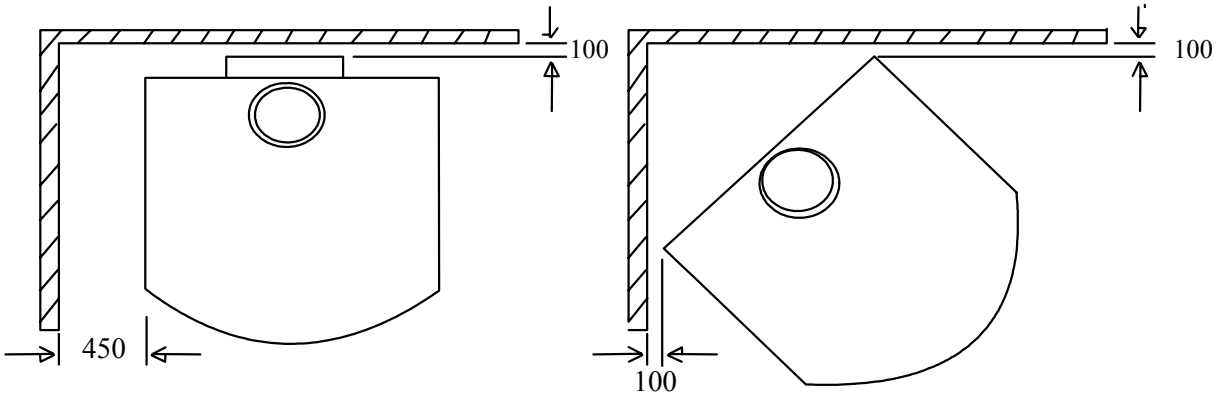
Freestanding

When positioning the appliance, the main points governing the locations are:

- Flueing
- Warm air distribution
- The appliance must not be installed where curtains or other combustible materials could come into contact with it. In some cases, curtains may need restraining.

The following clearances are recommened for installation (minimum clearances required).





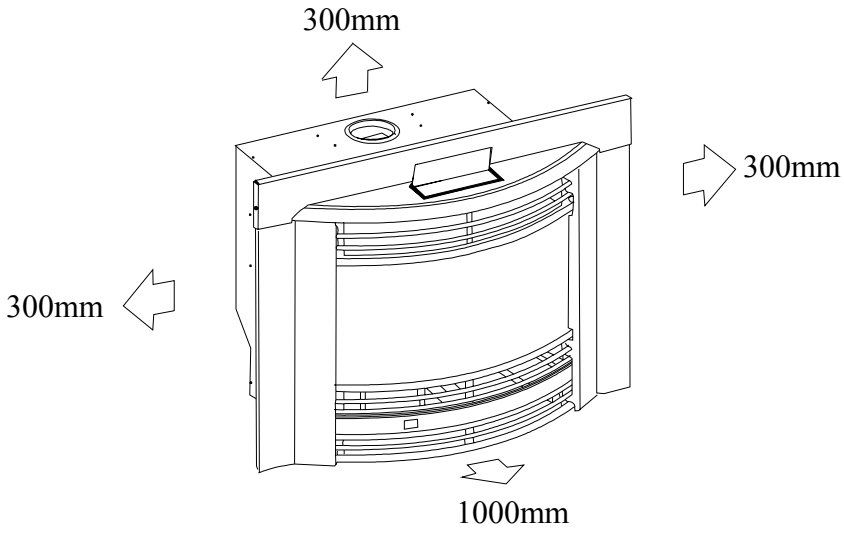
- The appliance is not designed to be built into bookcases or shelves or any combustible opening.
- Check that room ventilation complies with local regulations.
- Check that an earthed power point is within 1500mm of the right hand side of the appliance.
- The appliance does not require any additional earth or floor protection.

Inbuilt

When positioning the appliance, the main points governing the locations are:

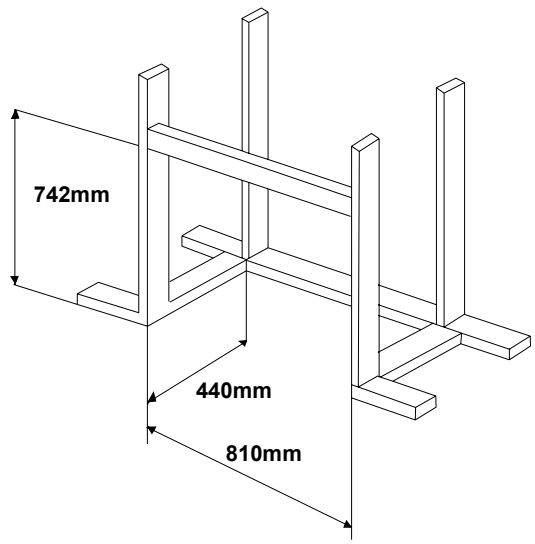
- Flueing
- Warm air distribution
- Adeqaute air supply
- The appliance must not be installed where curtains or other combustible materials could come into contact with it. In some cases, curtains may need restraining.

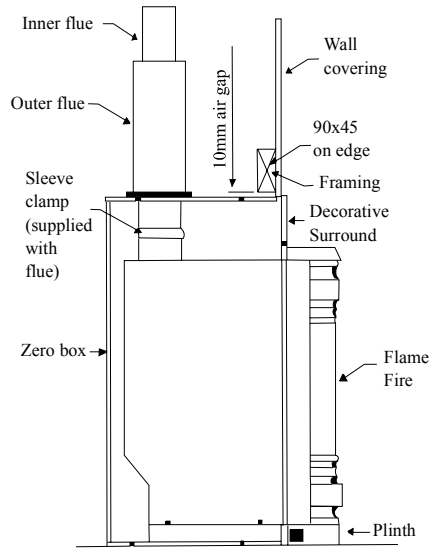
The following clearances are recommened for installation (minimum clearances required).



- The appliance is not designed to be built into bookcases or shelves or any combustible opening. However, mantles are allowable providing they are outside the minimum clearance and protrude no further than 150mm from the wall.
- Check that room ventilation complies with local regulations.
- Check that an earthed power point is within 1500mm of the right hand side of the appliance.
- The appliance must be mounted on a hearth no less than 50mm high and the width and depth of the appliance.
- Under no circumstances must combustible materials be present on the inside of the fireplace recess or flueway. For combustible opening installations, a Rinnai Zero Clearance Kit is available.

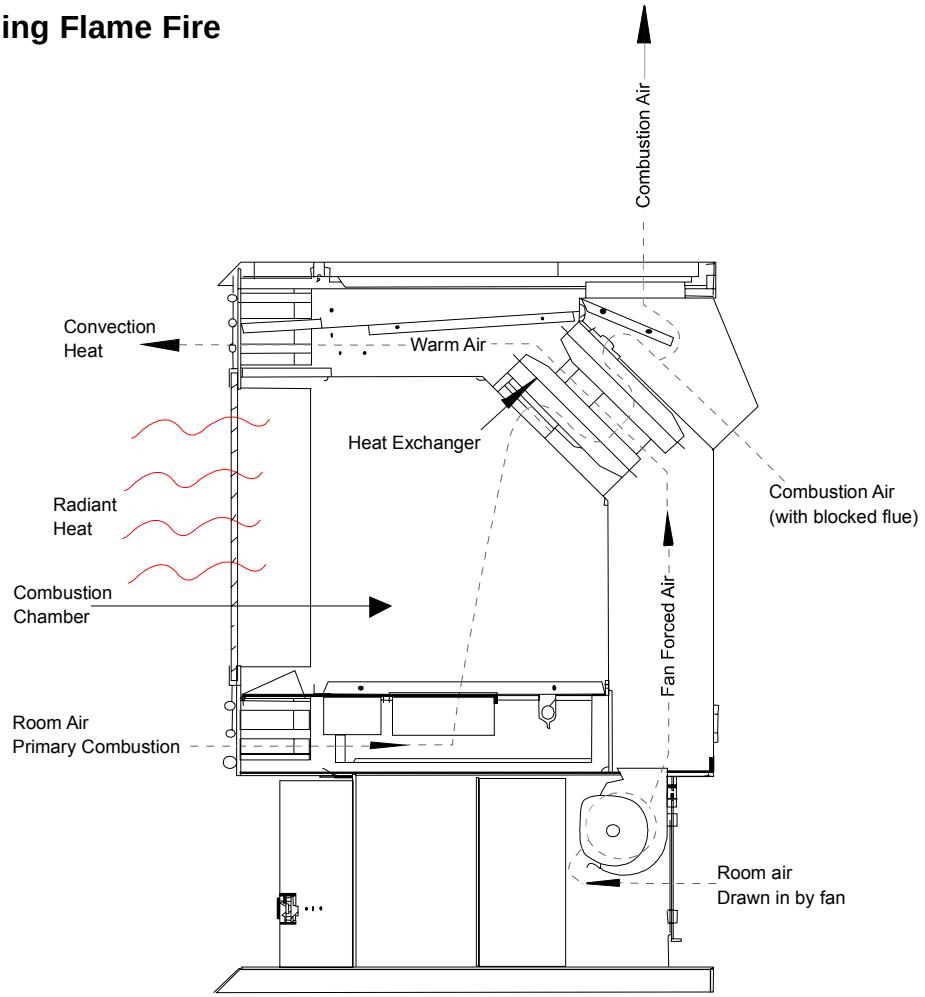
Zero Clearance Box Framing Dimensions



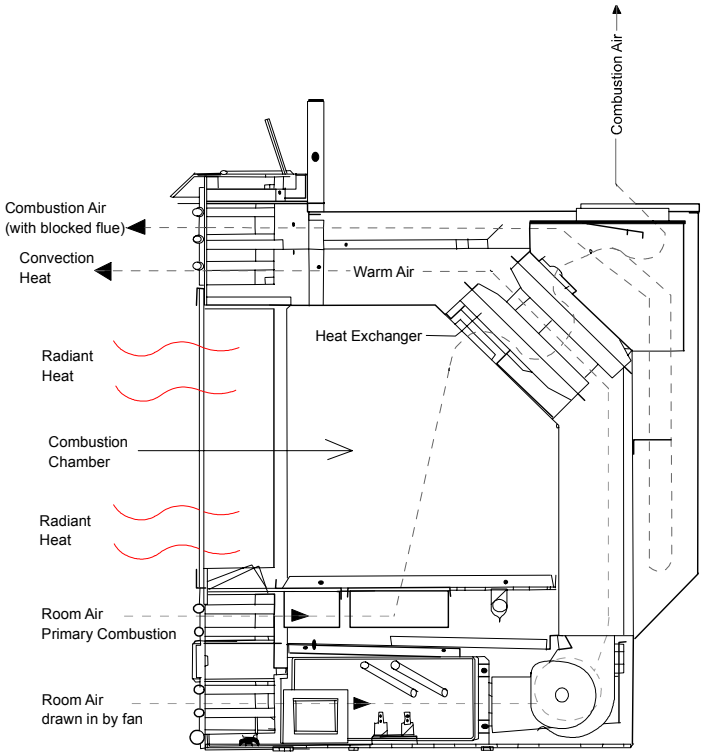


6. Schematic Diagram

Freestanding Flame Fire

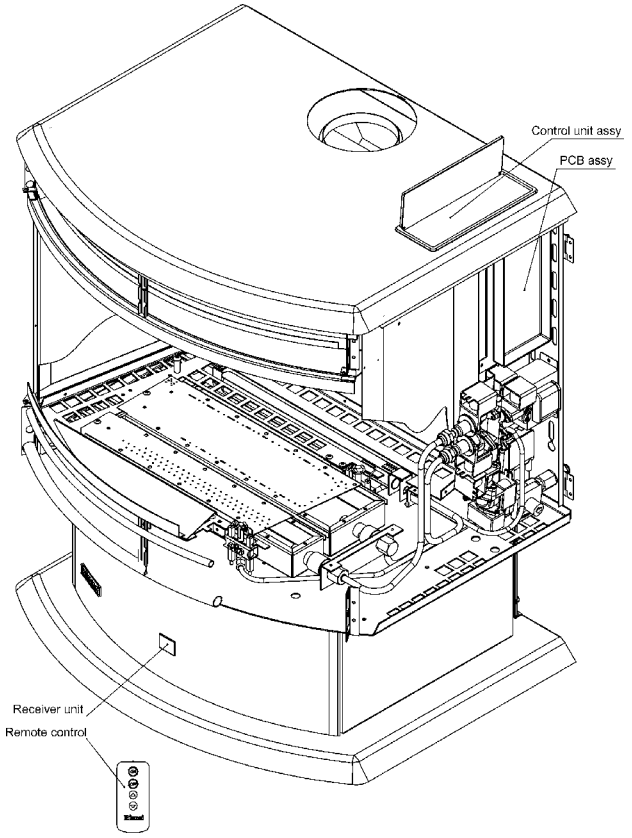


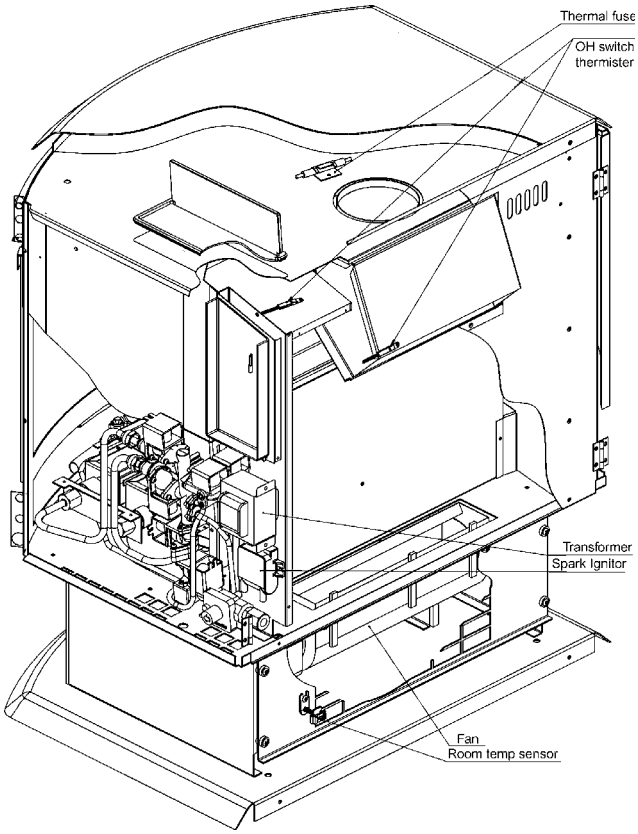
Inbuilt Flame Fire



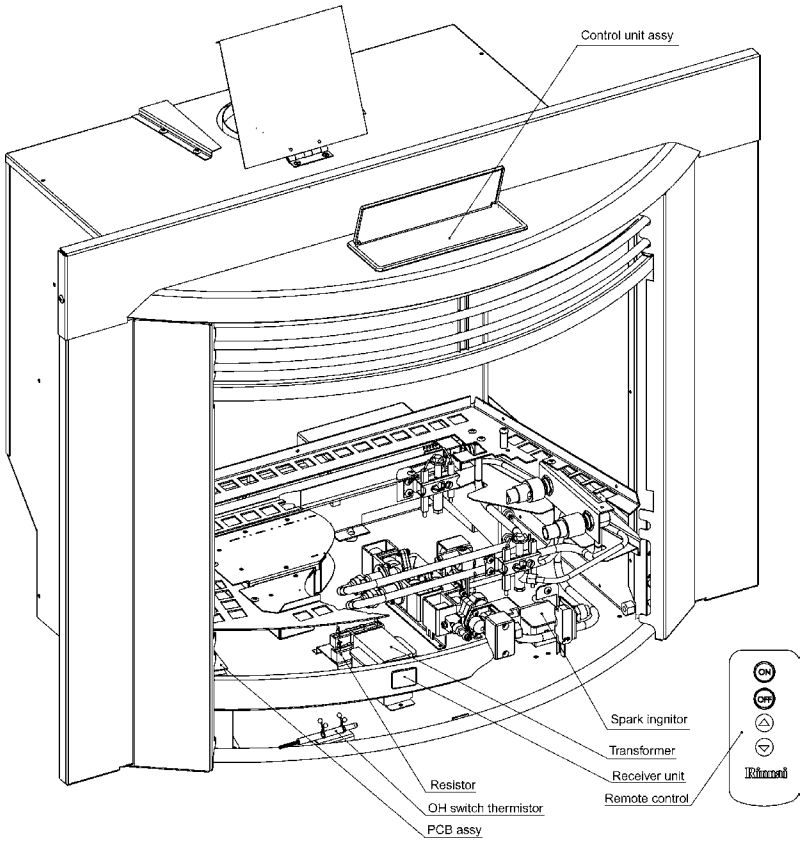
7. Cut-Away Diagram

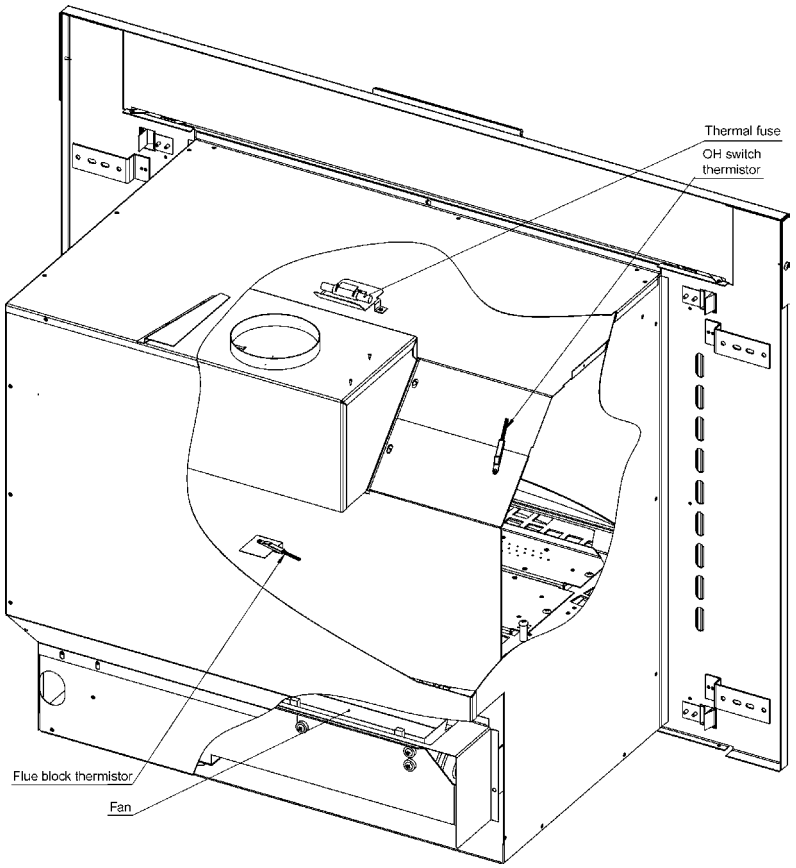
Freestanding Flame Fire



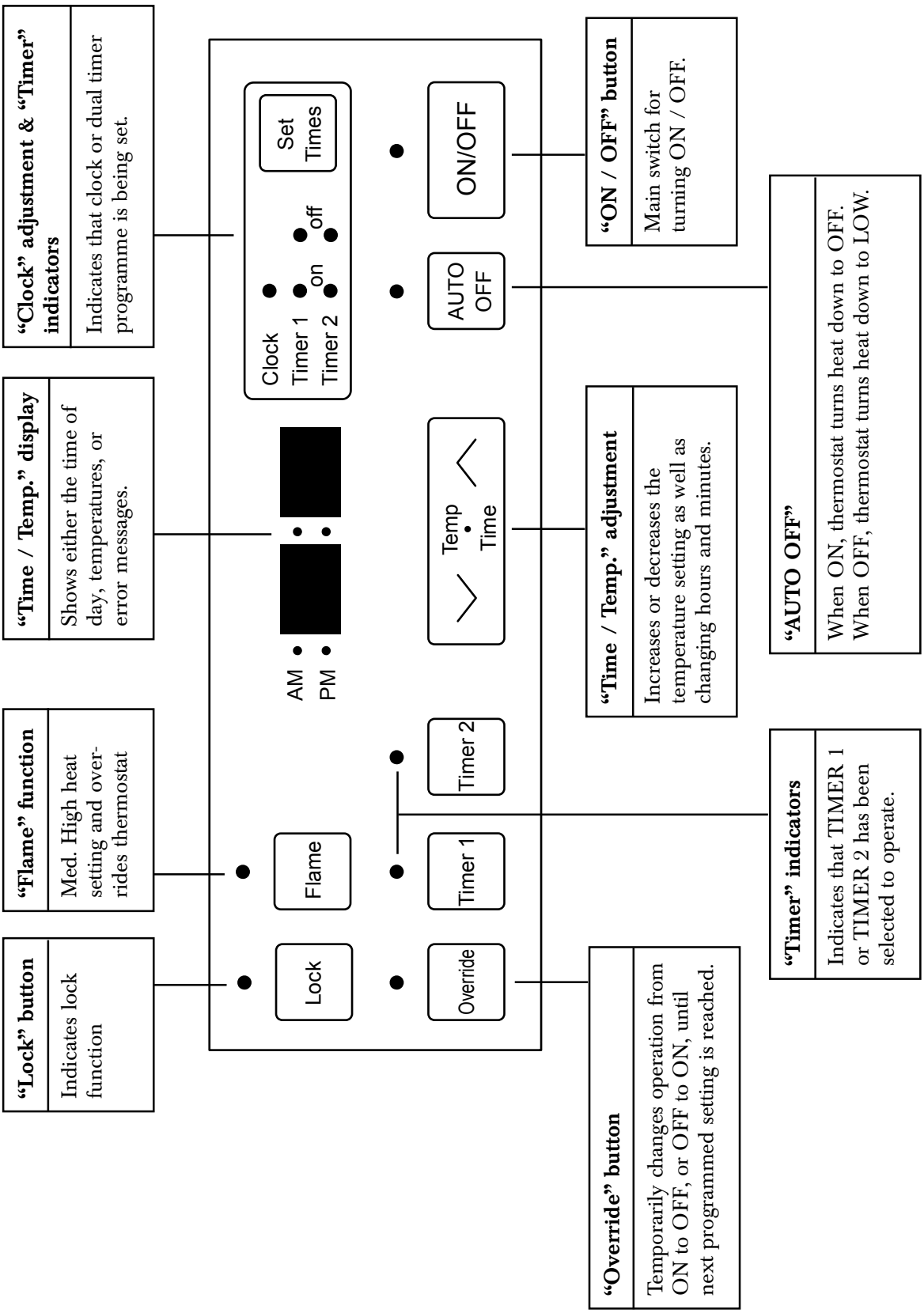


Inbuilt Flame Fire





8. Control Panel



9. Operating Principles

Normal Operation

Press the ON/OFF button to operate the appliance. The ON indicator will glow green. The spark generator will be heard before the burner ignites and the ON indicator glows red, indicating that the appliance is alight. When the appliance warms up the fan will automatically start.

The burners within the combustion chamber are lit by either one of two pilots. Air for combustion is induced by natural draft and follows a completely separate path to the air for convection heating. Products of combustion pass through a heat exchanger before passing to atmosphere. The convection fan draws air from the room through the bottom front louvre which is passed up the back of the combustion chamber, through the heat exchanger, across the top of the combustion chamber and out through the top louvre air discharge.

When the "ON/OFF" button is pressed on the control panel, or when one of the timers activates the unit, gas is then passed to two pilot burners. Once the flames to the two pilots is confirmed, depending on the difference between the 'set' and 'actual' room temperatures as sensed by the room temperature thermistor, gas may be passed to a combination of one to three burners (front, middle and rear) as determined by the Printed Circuit Board Software. The PCB will activate the convection fan after a set time period of 4 minutes has elapsed since starting. The fan will continue to run for 4 minutes after shutdown.

Thermostat Control

The selected temperature and room temperature are displayed on the digital display (on the left and right hand side, respectively). Time and temperature are displayed alternately depending on whether the heater is running or not. The selected temperature is altered by pressing the time/ temperature adjustment buttons (i.e. the up and down buttons).

Turning OFF

Press the ON/OFF button to switch off. The ON indicator light will go out. The fan will continue to operate for up to 4 minutes after the burner has gone out in order to cool the appliance.

Lock Function

To activate the Lock function press the Lock button once, it is immediately activated and the Lock indicator will glow.

To deactivate the Lock press the Lock button for 3 seconds and the Lock indicator will go out.

- The Lock function will help to prevent accidental operation as well as small children from altering the controls.

- The Lock function can be operated either when the appliance is running, or in the "stand-by" mode, by pressing the Lock button.

- During normal operation the Lock may be activated and all controls, other than the OFF switch, will be locked. Deactivating the Lock releases the controls. If the Lock is activated whilst the appliance is turned OFF, then all functions will be locked. If the appliance is turned OFF while the Lock is activated, it cannot be turned ON again until the Lock is deactivated.

Auto OFF Function

To operate the Auto-Off function, press the Auto-Off button while the appliance is in operation.

To cancel the Auto-Off function, press the Auto-Off button.

- When the Auto-Off function is ON, the thermostat will turn the burners down to the OFF heat setting when the selected temperature is reached (combustion will modulate from Lo, Med-Lo, Med-Hi, to Hi).

- While the Auto-Off function is ON, the Auto-Off function display will flash.

- When the Auto-Off function is OFF, the indicator light will go OFF and the thermostat will turn the burners down to the LOW heat setting when the selected temperature is reached (combustion will modulate from Hi to Lo).

Flame Function

The Flame function is used for a full visual flame effect.

Press the Flame button to operate the function, the indicator will flash. The Flame function will not operate while the appliance is turned off or while the Timer(s) are being used.

To deactivate the Flame function, press the Flame button. Flame function indicator will go out.

The Flame function will automatically override the thermostat and set the appliance to a default of Medium High heat setting (25MJ/h).

Remote Controls

The remote control is used while the appliance is in operation.

To manually operate remote control when the Timer(s) are not selected, press the ON or OFF button.

To alter the temperature while the appliance is operating, press the ". " or ". " buttons. If the Timer(s) have been selected, and the appliance is in stand-by mode, and the OFF button on the remote control is pressed, the Timer(s) will deactivate.

Override Function

The override function is used to manually override the current operation of the appliance. Example; if the appliance is in stand-by mode (i.e.. between finishing time and starting time of a Timer), and the override button is selected, then the appliance will begin to operate and heat the room.

To operate the Override function simply press the override button. The Override indicator will flash.

To deactivate the Override function, press override button. The Override indicator will go out, and the appliance will return to the stand-by mode.

Clock / Timer Setting and Operation

To set the Clock, press the Set Times button once. The clock indicator will flash. Press and hold the up button. The minutes will begin to change first, then the time will change by whole hours. Release the button when the desired hour shows on the digital display. Confirm that you have selected AM, a small indicator on the left hand side of the digital display indicates the AM setting.

Press and hold the up button again to select the minutes. If desired time is passed, the down button can be used to change the time to the desired time. Press the Set Times button five times to lock in and complete setting the time. The Clock and Timer indicators will go out. A small indicator on the digital display will flash to show that the clock is operating.

Before programming the Timer(s) you must ensure that the clock has been set to the correct time.

To set Timer 1, press the Set Times button twice. The digital display will show AM 6:00, when first used or the last setting, Timer 1 indicator will flash.

Press the up or down button until the desired ON time appears, release the button. Press the Set Times button again, the Timer 1 OFF indicator will flash. Press the up or down button until the desired OFF time appears. Press the Set Times button three times to lock in the programmed time. The digital display will show current time. A small indicator will flash, returning to clock display.

Timer 2 is programmed in the same way, remember to ensure that the Timer 2 indicator is flashing. The Timers can be programmed to operate for any two periods in any 24 hours.

To activate the timers, press the ON/OFF button to operate the appliance. The ON indicator will glow green and the appliance will begin to operate. Select the desired temperature setting. Press the Timer 1 and/or Timer 2 button(s). The Timer indicator(s) will glow and the appliance will remain on stand-by until one hour prior to the time selected. When this time is reached, the Timer indicator will flash and the appliance will operate. The ON indicator glows red when the appliance commences operation.

Preheat Function

This function operates automatically in conjunction with either of the timers. When a timer is selected, the appliance may operate anywhere within an hour prior to the programmed starting time of the timer. The room temperature is sensed one hour before reaching the programmed time of either timer.

The preheat function will attempt to preheat the room by the programmed ON time.

10. Main Componentry

Safety Devices

Overheat Thermistor

If the air outlet becomes blocked or the fan fails, the overheat thermistor causes the solenoid valves to close and operation to stop and an error code to be displayed. The appliance can be relit when it has cooled.

Blocked Flue Thermistor

If the flue becomes blocked or prolonged excessive downdraft occurs the flue block thermistor will close the solenoids and an error code will be displayed. The appliance can be relit when it has cooled.

Thermal Fuse

If the overheat thermistor or the blocked flue thermistor fails, the thermal fuse will blow, causing the solenoid valve to close, operation to stop and an error code to be displayed . This is a “one-shot” fuse; therefore the appliance cannot be restarted until this fuse has been replaced.

Device	Activation temperature	
	FSETR	IBETR
Overheat Thermistor	115°C	130°C
Blocked Flue Thermistor	95°C	140°C
Thermal Fuse	150°C	150°C

Surge Protection

Glass fuse 3 Amp

Electrical

Solenoids

		Solenoids 1~6
Single seated valve	Voltage	DC 90V
	Power consumption	< 5 W

Fan

Type	Diameter	Width	Air speed	
			High	Low
MVL	65mm	400mm	4 m/s	1.8 m/s

Room Temperature Control Device

	Set Temperature Range	Room Temperature Display Range	Differential
Thermistor	L, 16~26°C, H	1~30°C	Approx 1.5°C

Combustion

Burners

Type	Combustion Type	Burner Port Shape	Qty	Material
Front	Bunsen	Holes	1	Heat resistant stainless steel
Main	Bunsen	Slots	1	
Rear	Bunsen	Holes	1	

Construction

Glass

Schott Ceramic

Heat Exchanger

Type	Material	Thickness	Dmension		
			Width	Height	depth
Chamber (x 2)	Aluminised steel	0.6mm	440mm	33mm	160mm
Transfer tubes (x 3)	Aluminised steel	0.6mm	Ø65mm	30mm	
Draft Diverter	Aluminised steel	0.8mm	240mm		100mm

Combustion Chamber

Type	Material	Thickness	Volume
3 Sided	Aluminised Steel	0.8mm	0.05m³

11. Error Codes

The Error Codes are displayed as a flashing numbers on the clock. The combustion indicator will also flash red at the same time.

Error Code	Cause	Comments	Check
11	Ignition Failure	Flame current does not reach 0.1*u*A within the given time, after solenoid valve opens.	Check gas is on. Check sparker* Check solenoids*
12	Flame Failure	Flame rod current remains below 0.1*u*A for 3 seconds during normal operation.	Check gas supply. Check flame rod* Check flame rod lead*
14	Overheat	High-limit temperature thermistor or thermal fuse has activated.	Check fuse for open circuit Check thermistor values*
16	Room overheat	Room temperature is sensed as being above 40 for longer than 10 minutes.	Lower room temperature to less than 40°C
31	Room temperature Sensor faulty	Room temperature thermistor open circuit.	Check thermistor values*
31	Room temperature thermistor short	Room temperature thermistor wire trapped, touching bare metal.	Check thermistor values*
32	High-limit Sensor faulty	High-limit thermistor open circuit for over 2 seconds.	Check thermistor values*
33	Overheat temperature Sensor faulty	High-limit thermistor open circuit for over 2 seconds	Check thermistor values*
70	Faulty ON/OFF switch	ON/OFF switch on continuously for more than 15 seconds.	Change control panel
71	Faulty Solenoids	Solenoid valve(s) (SV1~ SV6) signal and response signal are different.	Check solenoid values*
72	Faulty Flame rod	Flame rod current should not go below 0.1*u*A within 20 seconds of starting.	Check flame rod circuit* Replace PCB
73	Communication error	Data transfer between CPU and E^2PROM	Turn heater OFF, then ON again
99	Flue block	Check around flue terminal	Service Call
- : -	Power failure	When power failure is sensed operation stops.	Turn heater OFF, then ON again

* See Section 12 page 19 for Diagnostic Points

* When the unit is off, press the ". " and ". " buttons simultaneously for at least 2.5 seconds to display the following at 1.9 second intervals in this order:

1. Error History (displays the five most recent error codes)

2. Total Combustion Time H (counts the alight time -from ignition to extinction.)
   H 001 = 100 hours.

3. Number of Operations L (counts the number ignition detections.)
   L 001 = 100 ignitions

*When the unit is off, press the ". "and ". " buttons simultaneously for 2.5 seconds to reset Error History.

E^2PROM

E^2PROM data will not be erased during a power failure. Below is a list of recorded data

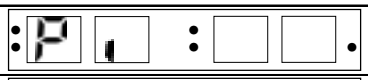
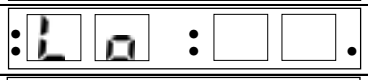
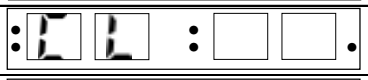
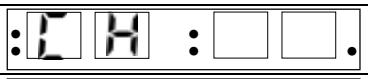
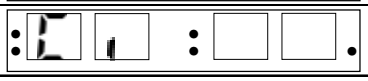
- Model
- Clock
- Lock function
- Set temperature
- Estimated combustion time
- Gas type
- Timer
- AUTO-OFF function
- Error history (15)
- Estimated number of operations
- Room Thermistor temperature correction data for Freestanding Flame Fire.
- Room Thermistor temperature correction data for Inbuilt Flame Fire.

Resetting

While the unit if OFF, press ". ", ". " and "LOCK" buttons simultaneously for 0.5 seconds. The digital display displays "88:88" for 0.5 seconds when the data is deleted completely.

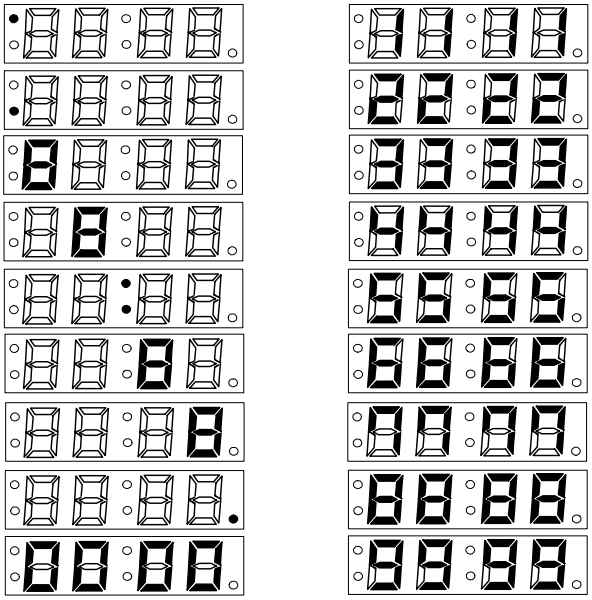
Test Mode

To select test mode, press the TEST switch on the PCB while the appliance is operating. Each time the ". " or ". " is pressed, the display will change to the following modes:

Combustion	Illuminated Indicators	Press ". "	Press ". "
Pilot			
Lo			
Med(Lo)			
Med(Hi)			
Hi			

Control Panel Indicators Test Mode

To test the control panel indicators, do the following. With the unit ON, press the "TEST" button on the PCB followed by pressing the "LOCK" button on the control panel. The control panel indicators will be consecutively displayed for 0.3 seconds each (see example below).



To turn the test mode to OFF, press the "ON/OFF" button on the contol panel.

12. Diagnostic Points

Flow Chart №	C/N	Wire Colour №	Measurement Value	Part
1	A	Brown-Blue	Ac216V~264V	Power Cord
2	F/F1	Black-Black	<DC1V <1.	Overheat Thermistor
	F/F1	Black-Black	<DC1V <1.	Flue Block Thermistor
	F	Black-Black	<DC1V <1.	Thermal Fuse
3	G	Black-Black	12ºC:58~74. , 28ºC:37~45Ω	Room Temp. Thermistor
4	B1	Black-FR Terminal	<DC0.1uA ·	Flame Rod
	B2	Black-FR Terminal	<DC0.1uA	Flame Rod
5	C	Grey-Grey	DC78~100V	Sparker
6	C1	Black-White - Blue - Yellow - Brown	DC78~100V	SV5 SV4 SV6
7	C2	Black-White - Red-White - White - Red	DC78~100V	SV1 SV2 SV3
8	B1	Black-FR Terminal	>DC0.1uA	Flame Rod 1
	B2	Black-FR Terminal	>DC0.1uA	Flame Rod 2
9	D	White – Red	AC220~240V 50~60Hz	Fan Motor
10*	H	Blue Resistor	<240V FS 400. IB 500.	

* Models using resistor/s for secondary speed control

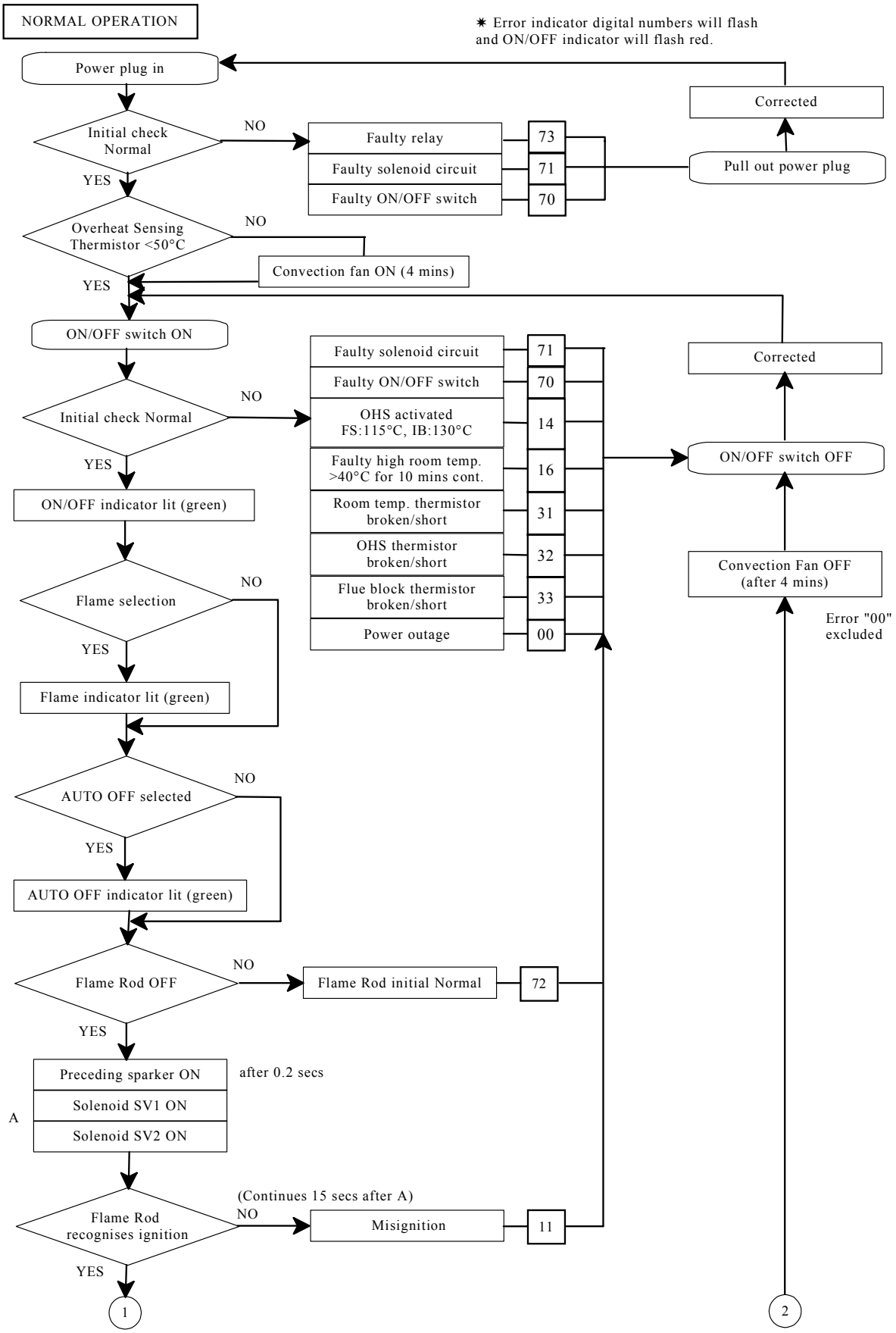
Transformer Terminal Voltages/Coil Resistances

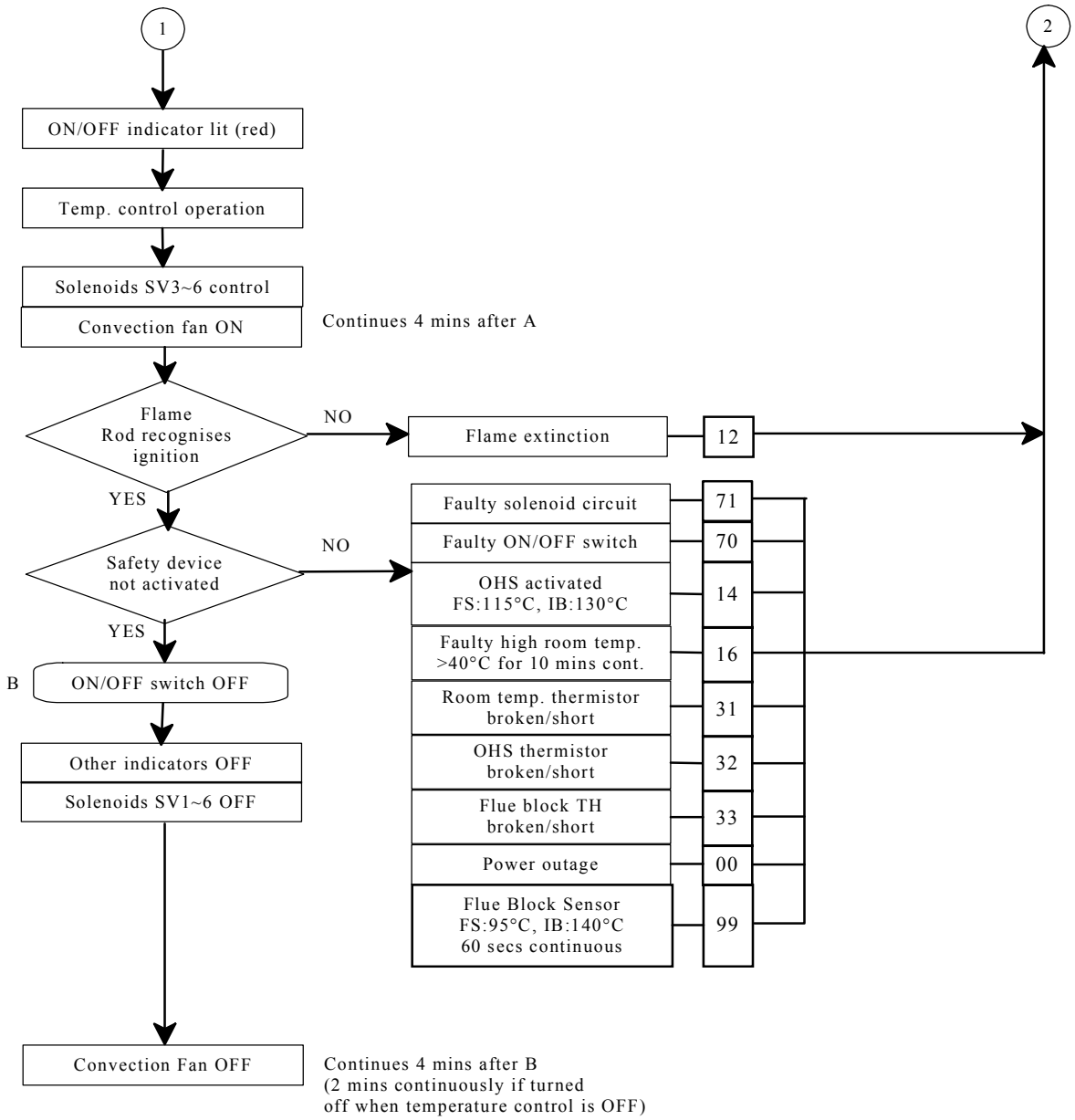
	Measurement Value
Orange / White	AC 90~110 V 10~25.
Blue / Yellow	AC 180~200V 80~100.
Blue / Red	AC 10~15V 1~5.
Yellow / Red	AC190~220V 80~100.
Black / Grey	AC230~240V 40~60.
Brown / Black	AC220~230V 40~60.

Convection Fan

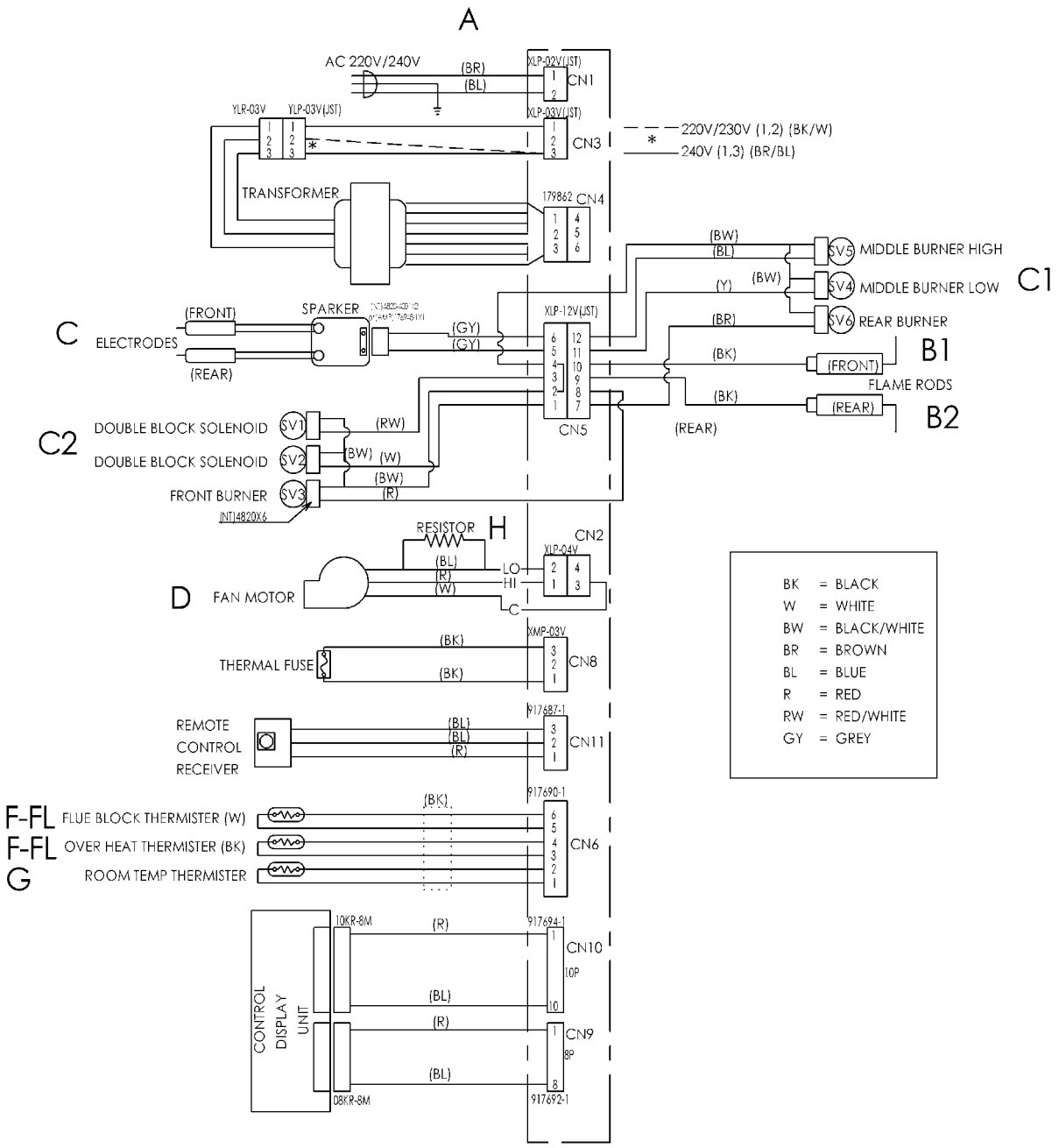
Gas Type	High	Low
NG	1340 ±40	940 ± 50
LP-Propane	1349 ±40	940 ± 50

13. Operational Flow Chart

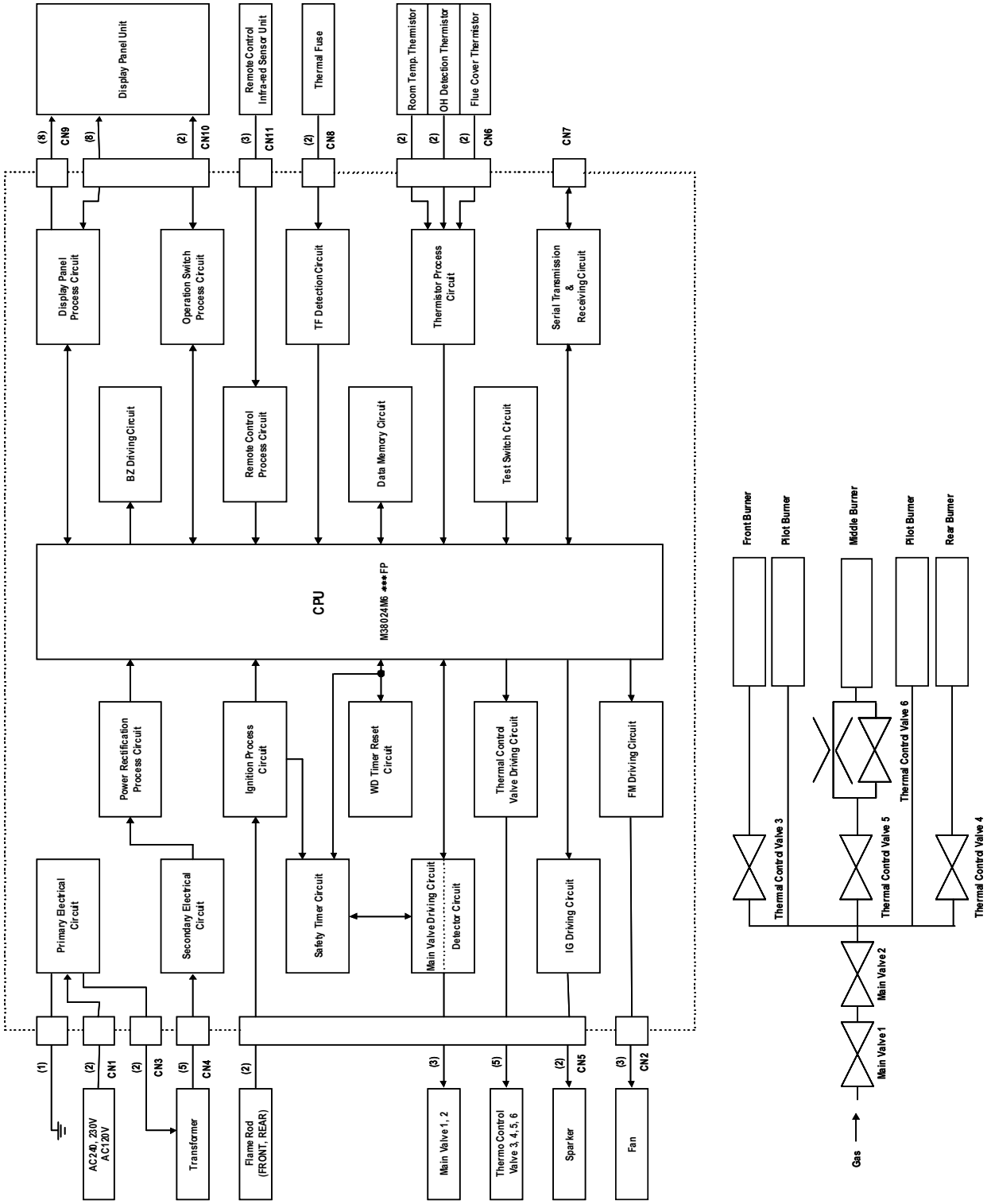



1
2
ON/OFF indicator lit (red)
Temp. control operation
Solenoids SV3~6 control
Convection fan ON
Continues 4 mins after A
Flame Rod recognises ignition
NO
Flame extinction
12
YES
Safety device not activated
NO
Faulty solenoid circuit
71
Faulty ON/OFF switch
70
OHS activated FS:115°C, IB:130°C
14
YES
Faulty high room temp. >40°C for 10 mins cont.
16
B
ON/OFF switch OFF
Room temp. thermistor broken/short
31
OHS thermistor broken/short
32
Other indicators OFF
Solenoids SV1~6 OFF
Flue block TH broken/short
33
Power outage
00
Flue Block Sensor FS:95°C, IB:140°C 60 secs continuous
99
Convection Fan OFF
Continues 4 mins after B
(2 mins continuously if turned off when temperature control is OFF)

14. Wiring Diagram



15. Block Diagram



16. Fault Finding Procedure

Service Call System	Check Points (No.'s refer to causes outlined in the following pages)
Ignition does not occur after having pressed ON/OFF button. (Error code "11")	▪ Check gas meter/regulator is on ……..…. 1 ▪ Check gas pipe is not restricted (i.e. crimped) ……..…… 1 ▪ Air in gas supply …… 1 ▪ Check gas type matches that supplied to appliance ……..…. 8
Room does not warm up	▪ Check preset temperature ……..…… 2 ▪ Warm air outlet short circuit (Obstruction) ……..…. 3 ▪ Check gas valve to room (Inadequate gas supply) ……..…. 1
Flame Failure Error code "99" Error code "14" Error code "16"	▪ Blocked flue terminal ……..…… 4 ▪ Power Failure ……..... 7 ▪ Warm air outlet short circuit (Obstruction) ……..…. 3 ▪ Check gas type ……..... 8 ▪ Check gas hose is not bent/crimped ……..…… 1 ▪ Reverse flame ……..... 5 ▪ Unusually high room temperature ……..…… 6
There is a smell of gas	▪ Leaking gas supply …… 1

1. Gas supply

(Ignition does not occur) (Room does not warm up) (Smell of gas)

- *Is the gas supply fully open?*
- *Is the gas pipe crimped?*
- *Is the gas supply connection secure*

Ensure the gas supply is fully open
Ignition may be delayed by poor gas supply, or air in the supply line.

2. Preset Temperature

(Room does not warm up)

- *Is the set temperature lower than the correct room temperature? (Appliance switches to "Low" approx. 1 minute after ignition)*

Set the room temperature higher than the preset room temperature.
Adjust to the desired room temperature with the room temperature control buttons.

3. Warm Air Short Circuit (Obstructions)

(Room does not warm up) (Extinguishes suddenly)

- *Are there any obstructions in front of the warm air louvres? (Error code 14)*

Do not cover louvres or place any objects within 1 m of the louvres.

4. Flue Terminal

(Extinguishes suddenly)

- *Is the flue terminal blocked? (Error code "99")*

Check the flue terminal every now and then and clean if blocked.

5. Reverse Flame

(Extinguishes suddenly)

- *Is the flue terminal blocked?*
- *Is there any blockage in the burner?*
- *Is combustion, gas pressure etc. normal? (Error code "12")*

6. Room Temperature

- *Is the room temperature unusually high?*

If the unit detects 40°C for over 10 minutes, the unit will stop operating. (Error code "16")

7. Power Failure

- *If a power failure occurs for at least 0.2 seconds, the unit will stop operating.*

After power has been reinstated, the unit can be restarted in the usual manner.

8. Gas Type

- *Does the gas type match the specifications for the appliance?*

Change according to combustion specifications.

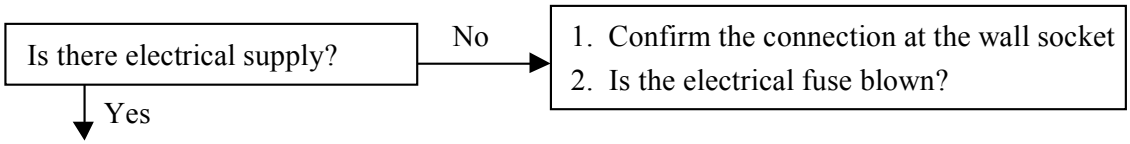
Condition	Cause and Explanation
There is smoke or an unusual smell upon initial use.	There may be grease or dust adhered to the heat exchanger causing smoke when first using the appliance. This will stop after a short period. Increase the ventilation in the room when using the appliance.
The heater does not ignite upon initial use.	There may be air in the gas supply, preventing the appliance igniting immediately. If ignition does not occur after 15 seconds, the spark will stop and the heater will lockout. Turn the heater off to reset before attempting ignition again.
After ignition/extinction there is a ticking or clicking noise.	This could be the sound of the solenoids opening or closing the gas circuit or; the sound of the combustion chamber expanding or contracting to heat. Both conditions are normal.
Resonant sound when the burner ignites.	Normal ignition sound. The extent of the sound will depend on the gas pressure and burner temperature (Sound is of re-ignition straight after extinction).
Resonant sound after ignition.	Movement of the flame as it travels across the burner when combustion commences (This is normal and will soon stop).
There is no warm air flow straight after turning the appliance on.	The appliance is programmed not to blow any cold air. Warm air will start to flow automatically (approximately 4 minutes) once the appliance warms up.
Resonant sound while the appliance is operating.	This is the sound of gas passing through the gas circuit.
The appliance suddenly turns off and does not display an error code.	Fuzzy logic activates so that the room temperature reaches the set temperature. When the room temperature decreases, the appliance automatically ignites to warm the room again.
Warm air continues to blow even after the appliance is turned off.	The fan stops after releasing all the residual heat from the appliance (4 minutes).
The power cord is pulled out and although it is pushed in straight away and the appliance has been turned back on, ignition does not occur.	Do not operate the appliance until it has cooled.

17. Fault Analysis

***Note**: Before carrying out resistance checks, disconnect power*

A. After pressing the Heater ON/OFF button

i. The sequence does not continue
ii. There is no spark (approx. 15-sec. after attempted operation)
iii. The solenoid valves do not open
iv. The convection fan does not begin to rotate after 4 minutes



i. The sequence does not continue
1. Broken wiring or loose pin connectors (open circuit)
2. Faulty ON/OFF button ..... (error code "70")
3. Faulty PCB
4. Faulty Control Panel
5. Faulty Overheat Switch ..... (error code "14")
6. Thermal Fuse has melted ..... (error code "99")
7. Solenoid Valve Circuit driver error ..... (error code "71")
8. Flame rod current was over 0.2 mA while pre-purging ..... (error code "72")

ii. There is no spark (error code "11")
1. Loose power cord (broken wiring or loose pin connectors)
2. Leaks due to broken electrodes etc (no constant sound)
3. Insufficient spark gap (spark electrode gap should be 3.5± 0.5mm)
4. Faulty sparker
5. Faulty PCB

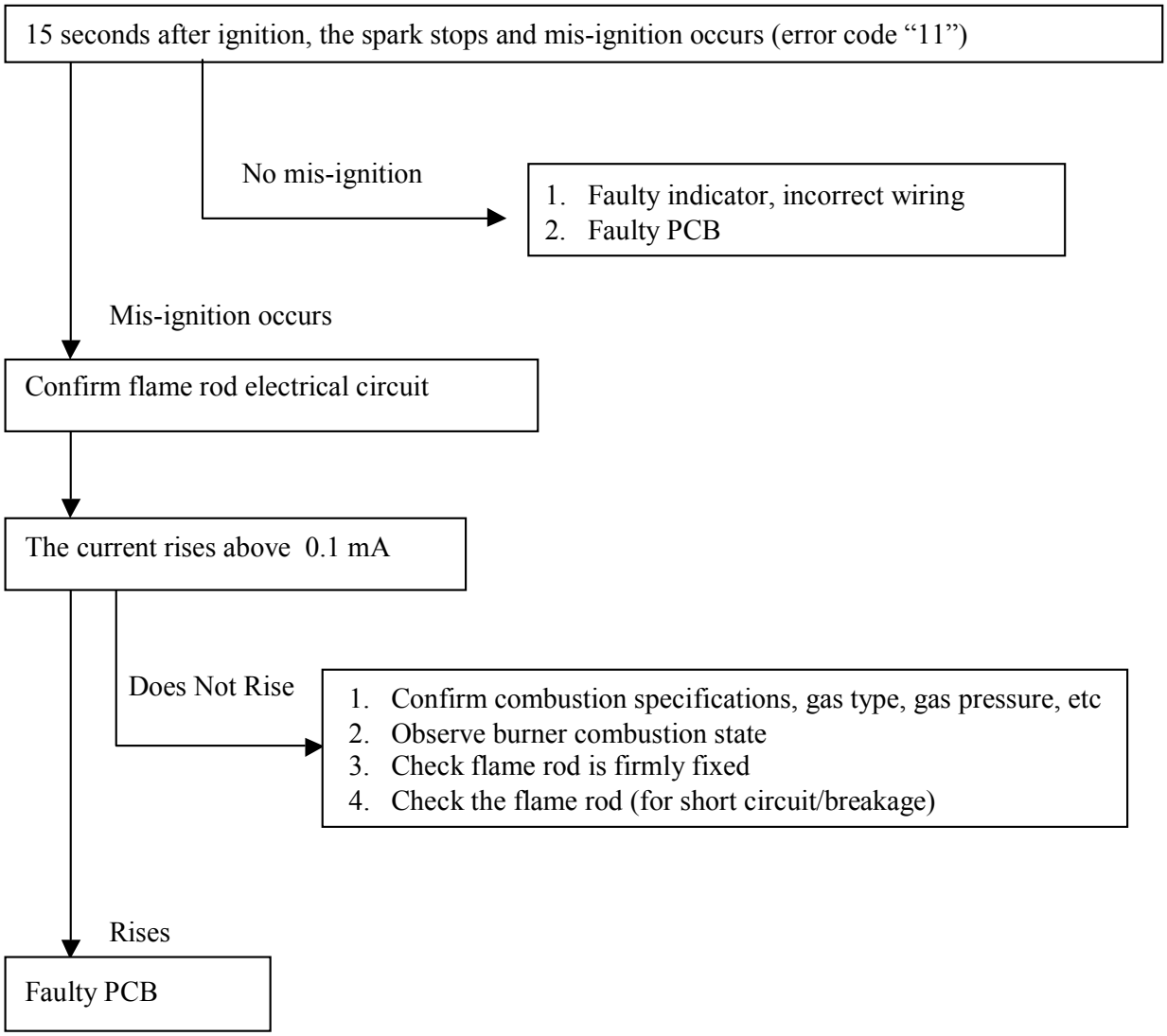
iii. The solenoid valves do not open (error code "11")
1. Broken wiring or loose pin connectors
2. Solenoid coil wiring is broken or shorted
3. Faulty sparker (cannot detect spark)
4. Faulty PCB (Solenoid valve power is less than DC90V)

iv. The convection fan does not begin to rotate after 4 minutes
1. An obstruction in the convection fan is preventing the fan from rotating
2. Open circuit or bad connection in motor circuit
3. Faulty PCB

B. After repeated efforts to operate the appliance, it will not ignite (Error code "11")

1. Air within gas pipe- not completely purged
2. Abnormal (primary) gas pressure
3. Incorrect gas type
4. Bent gas pipe
5. Abnormal sparker
6. Injector blockage or incorrect specification (MN, Governor test pressure, etc)

C. There is an ignition sound, however the combustion indicator does not illuminate



D. The flame fails during normal operation (sudden extinction)

1. Power failure. Commence operation after power re-instalment ..... (error code "00")
2. Safety device has activated ..... (error code "14" or "99")
   - Room temperature has been detected as being above 40°C for 10 minutes ..... (error code "16")
   - Overheat switch activated by fan lock ..... (error code "14")
   - Blocked flue outlet ..... (error code "99")
   - Bent gas pipe ..... (error code "12")
   - Gas pressure abnormally low
   - Clearances around the appliance are insufficient ..... (refer to section 5. Installation)
   - Obstructions in front of appliance ..... (error code "14")
   - Defective fan ..... (error code "14")

3. Safety devices are activated

Check connectors and lead wire connections are correct

→ Flame failure occurs between 30 minutes to 1 hour after ignition (error code "12")

→ Check gas supply

→ Confirm flame rod electrical circuit

→ Check that the electrical current is stable and is above the value in the table below

Measure the circuit current when Hi/Lo combustion is steady (all gases common)

During steady Hi/Lo combustion	> 1.0 μA

Not Stable →
1. Confirm governor test pressure, restrictor, injector, etc
2. Faulty flame rod and/or burner

→ Faulty PCB

4. Reverse Flame (with large noise) and flame fails

→
1. Obstructions in the flue outlet
2. Obstructions in the burner
3. Abnormal combustion specifications and gas pressures

5. Flame failure approx. 1- 3 minutes after ignition (error code "12")

→ Flame rod current is above 1.0 μA

Yes → Faulty PCB

No →
1. Abnormal governor test pressure
2. Flame rod short circuit

18. Electrical Component Analysis

Note: Before starting inspection, check wiring harness and double check that all connectors are tight

WARNING: Before carrying out checks that are marked `*´ disconnect from power supply.

Nature of fault	Examination Point	Diagnostic Point	Values	Y/N	Action
" E " The sequence does not continue even when the power is connected and the appliance is ON	(1) Is the voltage correct	Check power point and voltage	AC 216-264 V	Yes	Go to(2)
				No	Repair electrical source
	(2) Broken thermal fuse	1. Measure the resistance of the fuse	<1 Ω	Yes	Go to (3)
		*2. Remove 3P connector of convection motor and measure resistance	(D) White- Black 45 - 55 Ω	No	Replace fuse and go to (2) -2
	(3) Is the transformer normal?	*3. Remove 6P connector of transformer and check coil resistance	(B) Orange - White 10 - 25 Ω (B) Blue - Yellow 80 -100 Ω (B) Blue - Red 1 - 5 Ω (B) Yellow - Red 80 -100 Ω (A) Black - Grey 40 - 60 Ω (A) Brown - Black 40 - 60 Ω	Yes	Go to (3) -4
				No	Replace convection motor
		*4. Disconnect lead wires of solenoid valves (SV1,SV2,SV3,SV4,SV 5,SV6, and measure coil resistance between terminals	Blue/White-Red/White S.V1 1.8-2.00 KΩ Black/White-White SV2 1.8 -2.00 KΩ Black/White-Red SV3 1.8-2.00 KΩ Blue/Black-White SV4 1.8-2.00 KΩ Yellow-Black/White SV5 1.8-2.00 KΩ Black/White-Brown SV6 1.8-2.00 KΩ	Yes	Go to(3) -5
				No	Replace transformer
		*5. Check the voltage of the transformer	Orange/White AC 90-110 V Blue/yellow AC180-200 V Blue/red AC10-15 V Yellow/Red AC190-220 V Black/Grey AC230-240 V Brown/Black AC220-230 V	Yes	
				No	Replace transformer
" F " An error code appears straight away even when appliance is ON.(sequence does not continue)	(4) Is the hi-limit thermistor working? (error code"14")[If the appliance has overheated after it has cooled it will turn ON.]	*With the appliance in the OFF state, check the conductivity between both terminals.	(F) Black/Black <1 Ω (G) Black/Black 12º C 58-74 KΩ 20º C 37-45 KΩ	Yes	Go to (5)
				No	Replace overheat switch, Flue Block, Thermistor
	(5)Has the thermal fuse switched OFF? (Error code "14")	*Same as above	(F) Black/Black <3 Ω	Yes	Replace P.C.B
				No	Replace thermal fuse
" G " An error code "14"appears within 10 min of ignition appliance stops	(6) High- limit switch activated (Error code ("14")	Disconnect fan plug from P.C.B Terminal C.N.2	White-Red 50-60 Ω	Yes	Go to (7)
				No	Replace Fan
	(7) Activated unit after 4 minutes measure voltage at CN2	White/Red	AC 210-240 V	Yes	Replace fan
				No	Replace P.C.B.

Nature of fault	Examination Point	Diagnostic Point	Values	Y/N	Action
" H " No Spark	(8) Loose high voltage cord or any spark leaks	Check by visual observation and manually.	Installation normal No leaks	Yes	GO to(10)
				No	Correct the connection
	(9) Has voltage been marked on sparker unit?	Measure the voltage of the input wire.	DC 70-100V	Yes	Replace sparker
				No	Replace P.C.B.
" I " Spark fails to produce ignition(Sparker stops after approx.15 sec) [Error code"11"]	(10) Are solenoid valves (SV1, SV2) ON?	Check the coil resistance of solenoid valves. Same as (3) *4	Same as (3) *4	Yes	Check gas to pilot
				No	Replace solenoid
		Check gas flow (meter,bottles) Check pressures		Yes	Set to correct pressure
				No	Reinstate gas
" J " Ignition occurs but combustion indicator does not illuminate no flame occurs (Sparker stops after 15 sec)[Error code"11"]	(11) Is there flame rod current	Check the flame rod circuit Black to earth	AC 65-75V	Yes	Replace flame rod
				No	Replace P.C.B
" K " Appliance does not reach set room temperature	(12) is the appliance suitable for room size (Application)	Check room size (Application)		Yes	Go to (13)
				No	Inform customer
	(13) Is thermistor normal?	Disconnect thermistor from unit, and measure the resistance of both terminals. The resistance will change according to the temperature of the thermistor, use the table on the right as a guide	Black/black 12ºC 58-74 K Ω 20ºC 37-45 K Ω	Yes	Replace P.C.B
				No	Replace thermistor
" L " Appliance turns off during use	(14) Room temperature high cut off activated (error code"16")	Was the appliance used for a long period on high setting	>40 ºC	Yes	Explain usage
				No	Replace P.C.B
		Is the convection fan rpm normal? Measure coil resistance of motor (2) *2	Same as (2) * 2	Yes	Go to (15)
				No	Replace fan
	(15) Activated unit after 4 minutes measure voltage at CN2	White/Red	AC210-240V	Yes	Check fan lock and air circulation
				No	Replace P.C.B
" M " Appliance turns off during use (Error code 99)	Flue block thermistor activated	With the appliance in the OFF state check the conductivity between both terminals	Black/Black C.N.6 Terminals 5-6 <1Ω	Yes	Go to 5
				No	Replace flue block resistor
	(16) Check flue is operating check terminal			Yes	Replace P.C.B
				No	
Appliance turns off (error code 31)	Room temperature thermistor faulty	With the appliance in the OFF state check the conductivity between both terminals	Black/Black C.N.6 Terminals 1-2 <1Ω	Yes	Replace P.C.B
				No	Replace room thermistor
Appliance turns off (error code 32)	High limit thermistor disconnection	With the appliance in the OFF state check the conductivity between both terminals	Black/Black C.N.6 Terminals 3-4 <1Ω	Yes	Replace P.C.B
				No	High limit thermistor
Appliance turns off (error code 33)	Flue block thermistor disconnection	With the appliance in the OFF state check the conductivity between both terminals	Black/Black C.N.6 Terminals 3-4 <1Ω	Yes	Replace P.C.B
				No	High limit thermistor
Appliance turns off (error code 70)	ON/OFF switch	ON/OFF switch failure			Replace control panel
----:----		Power failure			

19. Gas Conversion

Warning Ensure power cord is disconnected from power point (240 V potential) and gas supply is isolated.

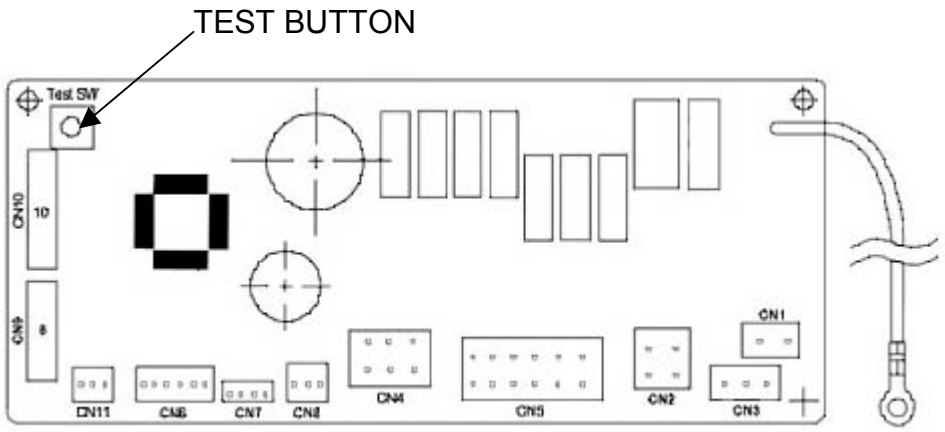
1. Disconnect power supply.
2. Remove the dress guard (*see "Removal of Dress Guard" on page 35* (inbuilt) *or page 43* (freestanding).
3. Remove front panel glass (*see "Removal of Front Panel Glass" on page 35* (inbuilt) *or page 43* (freestanding)) by removing two (2) screws from top retaining bracket. Pull glass away at top 10 mm and lift glass out from the bottom.
4. Remove log set (*see "Removal of Log Set" on page 35* (inbuilt) *or page 43* (freestanding)).
5. Replace small gas label on gas inlet and large gas label on back of appliance.
6. Place very small gas label on Data Plate.
7. Complete details on conversion sticker and place sticker inside front panel.
8. Remove one (1) screw at LHS of burner (*see "Removal of Burners" on page 35* (inbuilt) *or page 44* (freestanding)) and move burner to the left to clear injectors to remove. (Careful not to spill granules).
9. (**Inbuilt Only**) Remove three (3) screws from RHS bottom louvre (*see "Removal of Front Pilot" on page 36*) retaining bracket.

   (**Freestanding Only**) Or remove two (2) screws from RHS bottom louvre (*see "Removal of Front Pilot" on page 44*) retaining bracket.
10. Remove and fit two new pilot injectors.
11. Remove front, middle and rear injectors.
12. Fit new injectors.
13. Refit burners (For natural conversion, ensure aeration sleeves are placed on the front and middle burner - Long aeration sleeve for front burner and short aeration sleeve for middle burner).
14. Reposition Log-Set locating pins for Gas type and replace Log-Set.
15. Replace glass, top glass retainer and dress guard.
16. Connect appliance to gas and electricity.
17. Adjust PCB setting (see 20. PCB Configuration on page 32)
18. Remove test point screw and follow gas pressure setting (see 3. Basic Combustion Specifications on page 3)
19. Turn appliance off and replace test point screw.

20. PCB Configuration

1. Ensure that the appliance is powered up but in standby mode.

2. Press the red test button on the PCB (top front corner for inbuilt heater, top left corner for freestanding) for about 1 second. The LED will display a code at each stage to verify settings.



Use the ". " and ". " buttons on the control panel to change the settings at each stage and use the test button to move to the next stage.

There are three settings that can be changed

a. Country of use:
- AU for Australia, New Zealand and Europe (°C)
- US for America (°F)

b. Appliance type:
- 1B for inbuilt
- FS for freestanding

c. Gas type:
- LP for LPG/Propane
- 13 for Natural gas

3. Pressing the test button again will return the display to --:-- or the current time and save the settings.

The test button can also be used to step through each of the burner settings.

1. Make sure the burners are alight.

2. Press the red test button (the heater will drop to pilot only).

3. Use the “. ” and “. ” buttons on the control panel to step through the heat settings (pilot, low, med/low, med/high, high).

4. Press the ON/OFF button to return the heater to normal operation.

5. Set Gas pressure as per the following:

    a. Remove the test point screw and place manometer on test point.

    b. Start heater and ensure that it is set to high (all burners going).

    c. Check for correct pressure (refer data plate).

    d. If pressure needs adjusting then remove regulator cap and adjust pressure till correct.

    e. Reinstall regulator cap.

    f. Remove manometer and reinstall test point.

    g. Replace covers/louvers and close door/s.

21. Dismantling for Servicing

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

eg. - Isolate gas supply.
- Disconnect electrical supply from wall socket.

INBUILT FLAME FIRE ETR

1. Removal of Dress-Guard 35
2. Removal of Front Panel Glass 35
3. Removal of Log Set 35
4. Removal of Burners (Front, Centre, Rear Burners) 35
5. Removal of Front Pilot 36
6. Removal of Rear Pilot 36
7. Removal of Remote Control Sensor 37
8. Removal of Solenoid Assembly 37
9. Removal of Temperature Thermistor and Overheat Thermistors 38
10. Removal of Main PCB Assy 38
11. Removal of Transformer 39
12. Removal of Convection Fan Assy 39
13. Removal of Spark Ignitor 39
14. Removal of Control Panel and Control Panel PCB 40
15. Removal of Heat Exchanger 40

INBUILT FLAME FIRE ETR

1. Removal of Dress-Guard

a) Swing open left and right spring-loaded trim panels.

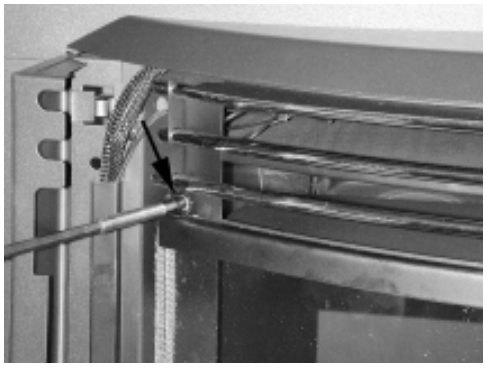
b) Push dress-guard up and pull away to clear bottom locating pins. Drop down to release.

2. Removal of Front Panel Glass

a) Remove dress-guard (Refer to 1.).

b) Ensure glass is cool to touch.

c) Remove two (2) screws from top glass retaining bracket and remove retaining bracket.



d) Pull away glass at top about 10mm. Lift glass from bottom retaining bracket and remove glass.

3. Removal of Log Set

a) Remove dress-guard (Refer to 1.).

b) Remove front panel glass (Refer to 2.).

c) Make sure log set is cool to touch and grasp log set at each end.

d) Lift log set vertically two (2) inches to clear locating pins.

e) Pull log set away to remove.

4. Removal of Burners (Front, Centre, Rear Burners)

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

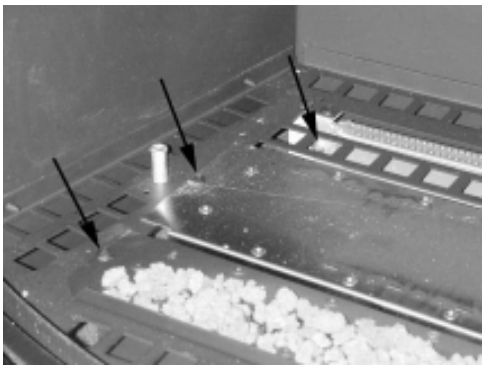
a) Remove dress-guard (Refer to 1.).

b) Remove front panel glass (Refer to 2.).

c) Remove log set (Refer to 3.).

d) Remove one (1) screw at LHS of burner.

e) Lift LHS of burner. Move burner to left to clear injector and remove. (For front burner, take care not to spill granules. Set aside during disassembly/servicing.)



Note: When returning burners on NG models, make sure long aeration sleeve is fitted to front burner, and half aeration sleeve is fitted to centre burner.

5. Removal of Front Pilot

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove dress-guard (Refer to 1.).

b) Remove front panel glass (Refer to 2.).

c) Remove log set (Refer to 3.).

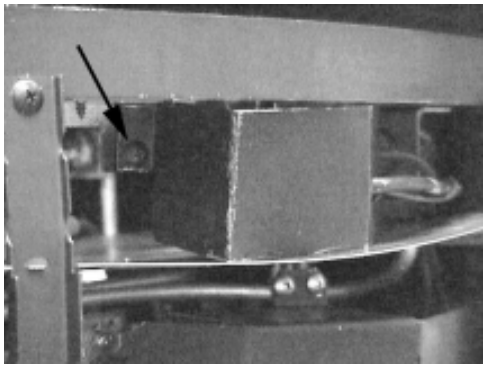
d) Remove front burner (Refer to 4.).

e) Remove three (3) screws from RHS bottom louvre retaining bracket.

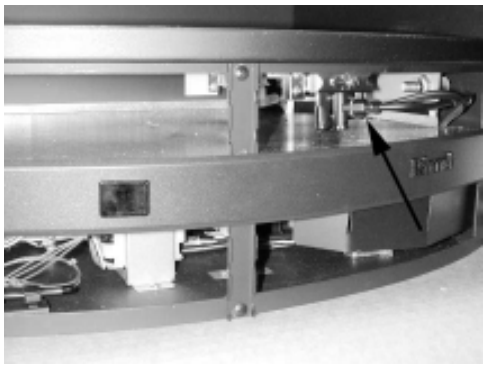
f) Slide louvre rods to the right and remove.

g) Slide panel (with sensor and badge) to the right and remove.

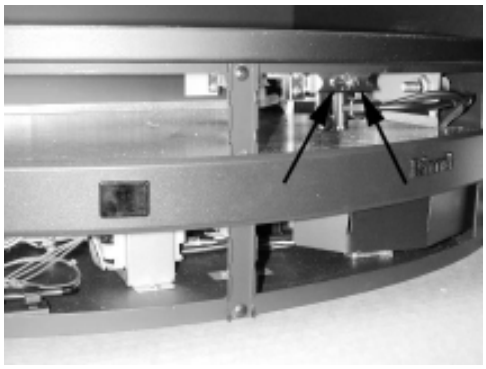
h) Remove one (1) screw from LHS of pilot shield and remove shield.



i) Undo nut on pilot supply tube and pull pilot tube to one side.



j) Undo two (2) hexagonal screws, remove pilot assy retaining bracket and remove pilot.



k) Injector accessible by removing hexagonal screw from base.

6. Removal of Rear Pilot

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

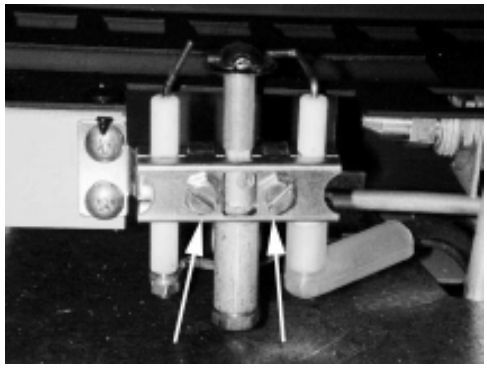
a) Remove dress-guard (Refer to 1.).

b) Remove front panel glass (Refer to 2.).

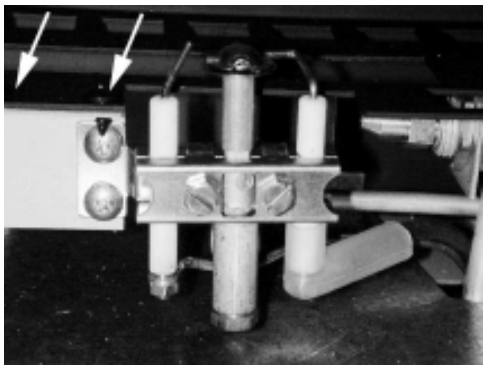
c) Remove log set (Refer to 3.).

d) Remove burners (Refer to 4.).

e) Remove two (2) hexagonal screws on the pilot retaining bracket.



f) Remove two (2) self-tapping screws on top edge of pilot bracket.



g) Remove pilot bracket.

h) Pull pilot assy forward and undo pilot tube nut.

7. Removal of Remote Control Sensor

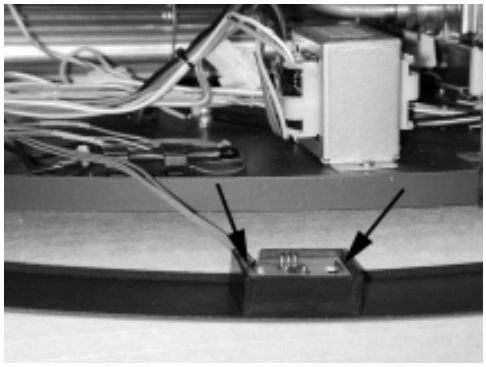
CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Swing open left and right spring-loaded trim panels.

b) Remove two (2) self-tapping screws on panel.

c) Move panel to the right and remove.

d) Squeeze two (2) plastic locating clips together and lift sensor PCB from clips.



8. Removal of Solenoid Assembly

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Isolate gas supply to unit.

b) Remove dress-guard (Refer to 1.).

c) Remove front panel glass. (Refer to 2.).

d) Remove log set (Refer to 3.).

e) Remove burners (Refer to 4.).

f) Remove lower louvre rods and panel (3 screws).

g) Remove centre louvre bracket (2 screws).

h) Remove regulator guard (2 screws).

i) Remove slide-out tray.

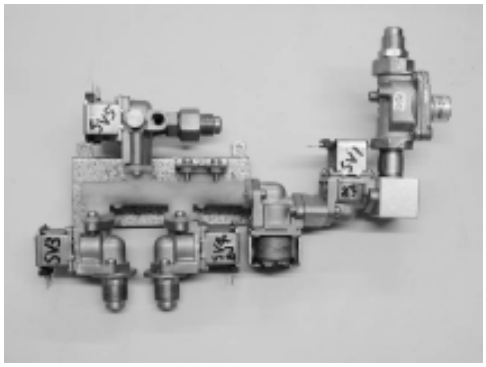
j) Disconnect three (3) burner supply tubes from solenoid valve block.

k) Remove two (2) screws from locating brackets on pilot tubes. Gently pull pilot tubes from solenoid block.

l) Disconnect inlet gas supply from appliance regulator.

m) Remove four (4) mounting screws on base-plate of solenoid block.

n) Remove solenoid assy.



9. Removal of Temperature and Overheat Thermistors

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Isolate gas supply to unit.

b) Disconnect flue.

c) Remove appliance from fire place or zero clearance box.

d) Remove dress-guard (Refer to 1.).

e) Remove front panel glass. (Refer to 2.).

f) Remove lower louvre rods and panel (3 screws).

g) Unclip two (2) retaining clips on thermistor and put thermistor aside.

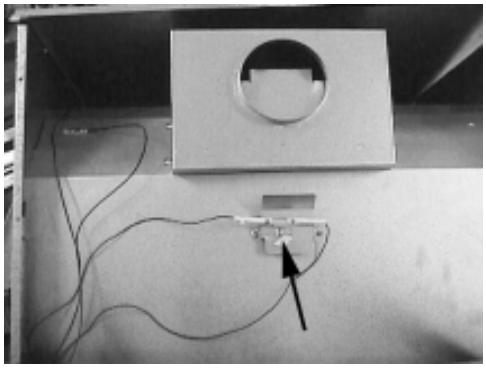
h) Remove polarised plug from PCB.

i) Remove wire cover (2 screws).

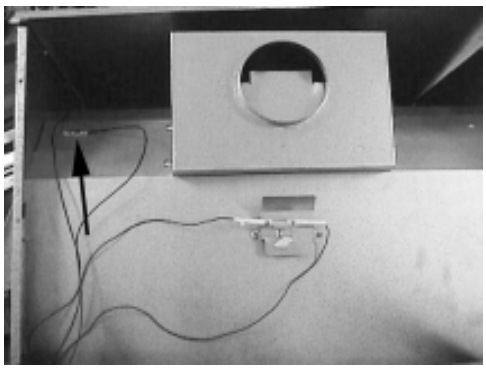
j) Remove top panel of main body (12 screws).

k) Remove rear panel of main body (11 screws).

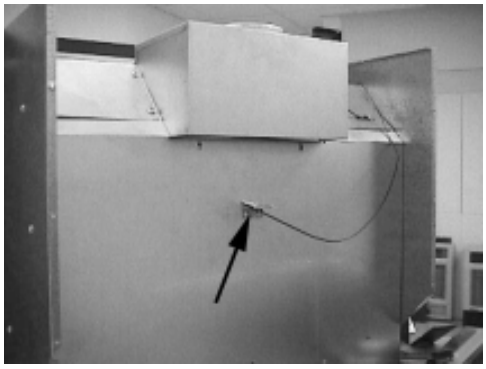
l) Remove one (1) screw from top thermistor and remove.



m) Remove one (1) screw from centre thermistor and remove.



n) Remove one (1) screw from rear thermistor and remove.

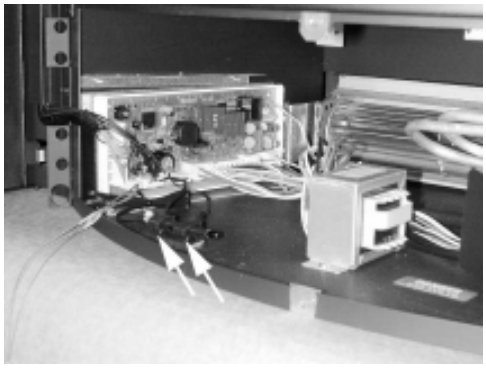


10. Removal of Main PCB Assy

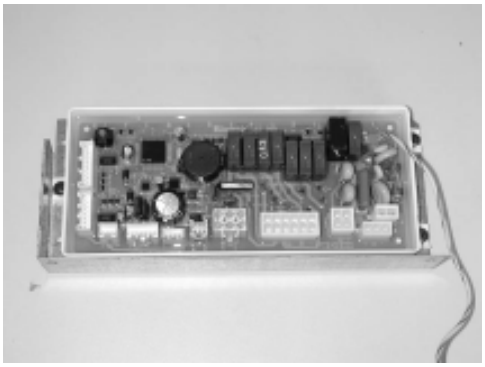
CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove lower louvre rods and panel (3 screws).

b) Remove one (1) screw at front of PCB and two (2) screws from rear of PCB.



c) Disconnect polarised plugs and earth terminal.



11. Removal of Transformer

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove lower louvre rods and panel (3 screws).

b) Remove centre louvre support bar (2 screws).

c) Remove two (2) screws from transformer mounting bracket.

d) Disconnect one (1) polarised plug from PCB.

e) Remove transformer.

12. Removal of Convection Fan Assy

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove front panel glass (Refer to 1.).

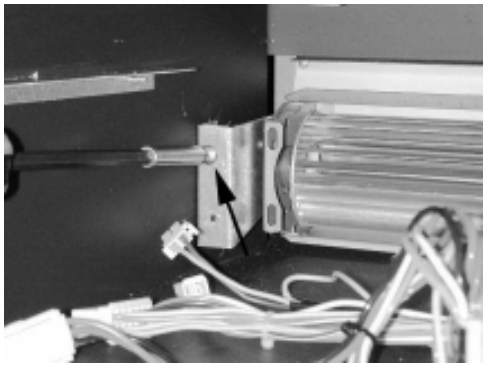
b) Remove log set (Refer to 2.).

c) Remove burners (Refer to 3.).

d) Remove main PCB assy (Refer to 10.)

e) Remove screws from transformer (2 screws).

f) Remove mounting screws either side of fan assembly (4 screws).



g) Remove four (4) mounting screws from solenoid valve assembly.

h) Gently flex the solenoid valves to your right whilst sliding the fan assembly in an arc to the left and pull forward.

13. Removal of Spark Ignitor

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove dress-guard (Refer to 1.).

b) Remove front panel glass. (Refer to 2.).

c) Remove log set (Refer to 3.).

d) Remove burners (Refer to 4.).

e) Remove lower louvre rods and panel (3 screws).

f) Remove centre louvre support bar (2 screws).

g) Remove two (2) mounting screws from spark ignitor.

h) Remove two (2) spade connectors.

i) Unplug ignitor leads (2 leads) from spark plug.

j) Remove spark ignitor assembly.

14. Removal of Control Panel and Control Panel PCB

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Carefully prise control panel from main body with flat head screw driver and lift clear.

b) Disconnect two (2) polarised plugs from control panel PCB.

c) Remove eight (8) screws from the PCB to remove from control panel.

15. Removal of Heat Exchanger

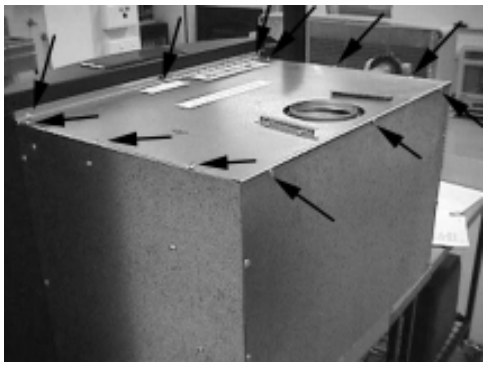
CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Disconnect gas supply to appliance.

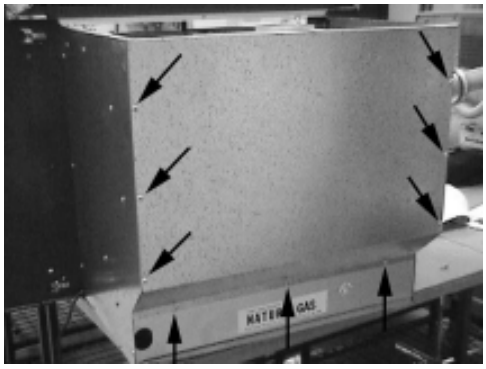
b) Disconnect flue.

c) Remove appliance from enclosure.

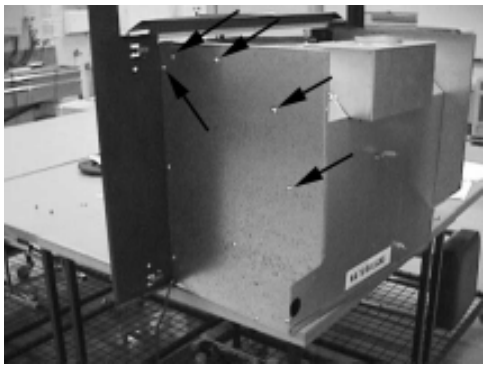
d) Remove top panel of main body (12 screws).



e) Remove rear panel (9 screws).



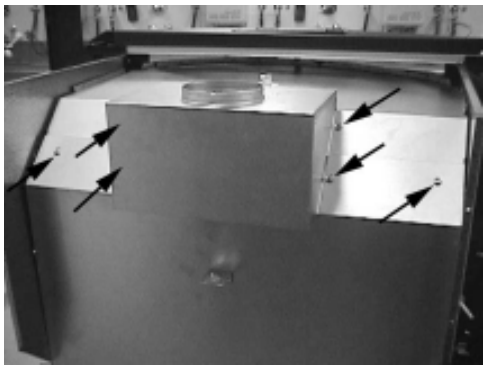
f) Remove screws on LHS and RHS panel (5 screws from each side).



g) Remove mounting screws on each of the three overheat thermistors. Move thermistors to one side.

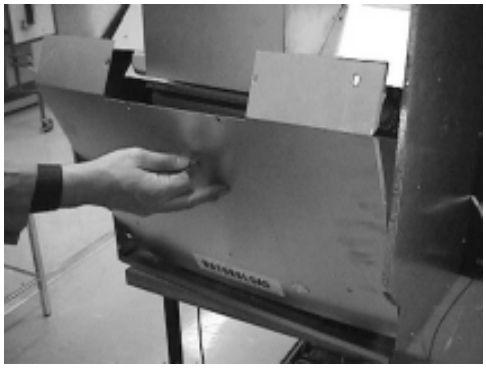
h) Remove one (1) screw at centre of top louvre.

i) Remove three (3) screws either side of down draft diverter (total 6 screws).



j) Remove one (1) screw from bottom rear panel.

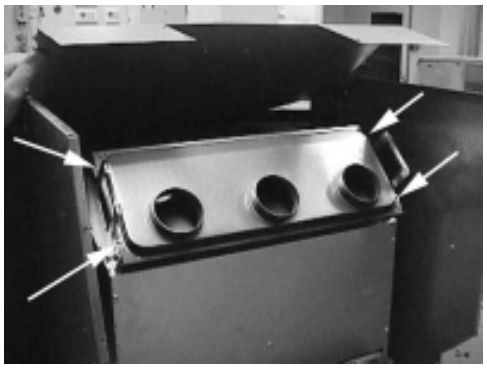
k) Gently flex side panels outwards and lift inner back panel out.



l) Gently flex side panels outwards and lift top panel upwards to allow access to heat exchanger.

m) Remove four (4) screws and lift top part of heat exchanger (with down draft diverter attached) away from appliance.

n) Remove four (4) screws and lift bottom part of heat exchanger away from appliance.



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

eg. - Isolate gas supply.
- Disconnect electrical supply from wall socket.

FREESTANDING FLAME FIRE ETR

1. Removal of Dress-Guard 43
2. Removal of Front Panel Glass 43
3. Removal of Log Set 43
4. Removal of Burners (Front, Centre, Rear Burners) 44
5. Removal of Front Pilot 44
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7. Removal of Remote Control Sensor 45
8. Removal of Solenoid Assy 46
9. Removal of Temperature Thermistor and Overheat Thermistors 47
10. Removal of Main PCB Assy 48
11. Removal of Transformer 49
12. Removal of Convection Fan Assy 49
13. Removal of Spark Ignitor 50
14. Removal of Control Panel and Control Panel PCB 50
15. Removal of Heat Exchanger 51

FREESTANDING FLAME FIRE ETR

1. Removal of Dress-Guard

a) Loosen retaining screws on LHS and RHS panel (1 screw on each side).

b) Swing open left and right trim panels.

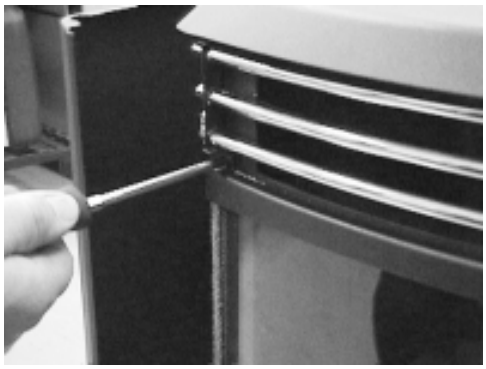
c) Push dress-guard upwards to clear two bottom mounting lugs. Lower from top mounting lugs and remove.

2. Removal of Front Panel Glass

a) Remove dress-guard (Refer to 1.).

b) Ensure glass is cool to touch.

c) Remove two (2) screws from top glass retaining bracket and remove retaining bracket.



d) Pull away glass at top about 10mm. Lift glass from bottom retaining bracket and remove glass.

3. Removal of Log Set

a) Remove dress-guard. (Refer to 1.)

a) Remove front panel glass. (Refer to 2.)

c) Make sure log set is cool to touch and grasp log set at each end.

d) Lift log set vertically two (2) inches to clear locating pins.

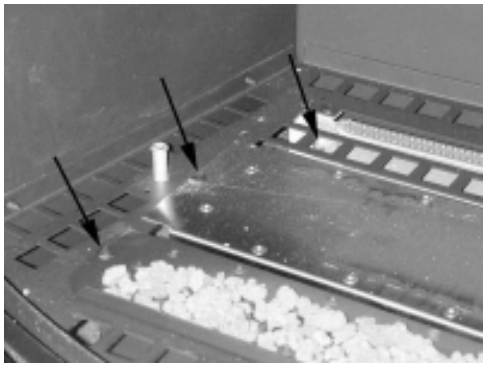
e) Pull log set away to remove.

4. Removal of Burners (Front, Centre, Rear Burners)

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove one (1) screw at LHS of burner.

b) Lift LHS of burner. Move burner to left to clear injector and remove. (For Natural gas make sure aeration sleeves are attached when re-assembling. For front burner, take care not to spill granules. Set aside during disassembly/servicing.)



5. Removal of Front Pilot

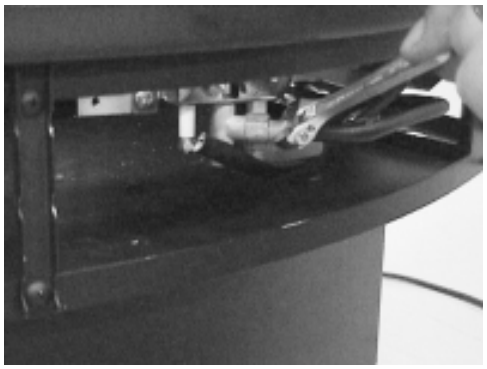
CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove two (2) screws from RHS bottom louvre retaining bracket.

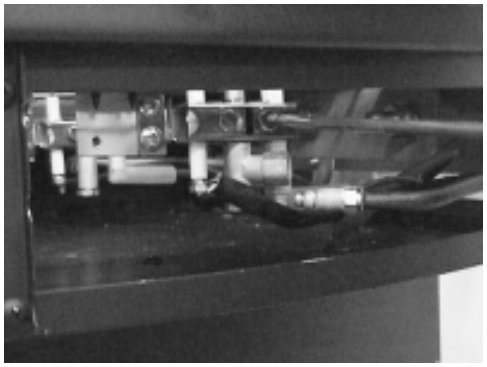
b) Pull louvre rods to the right and remove.

c) Remove one(1) screw from LHS of pilot shield and remove shield.

d) Undo nut on pilot supply tube and pull pilot tube to one side.



e) Undo two (2) hexagonal screws, remove pilot assy retaining bracket and remove pilot.



f) Injector accessible by removing hexagonal screw from base.

6. Removal of Rear Pilot

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

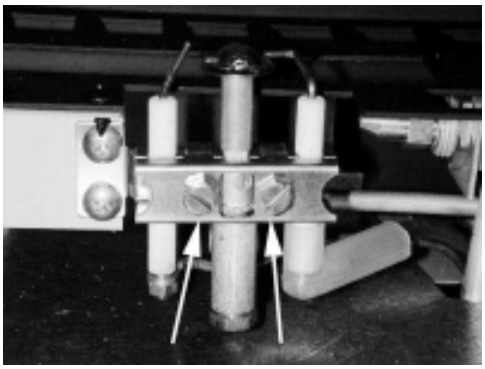
a) Remove dress-guard (Refer to 1.).

b) Remove front panel glass (Refer to 2.).

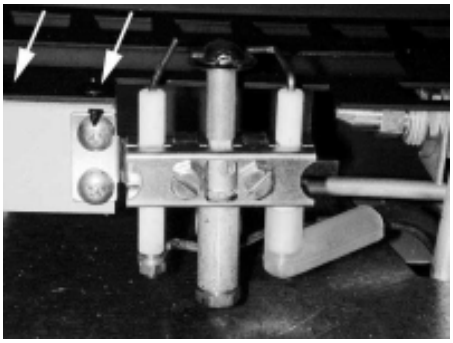
c) Remove log set (Refer to 3.).

d) Remove burners (Refer to 4.).

e) Remove two (2) hexagonal screws on the pilot retaining bracket.



f) Remove two (2) self-tapping screws on top edge of pilot bracket.



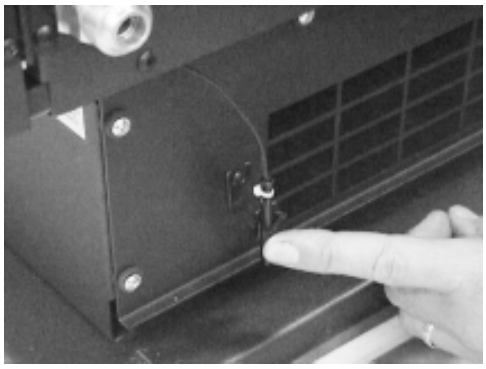
g) Remove pilot bracket.

h) Pull pilot assy forward and undo pilot tube nut.

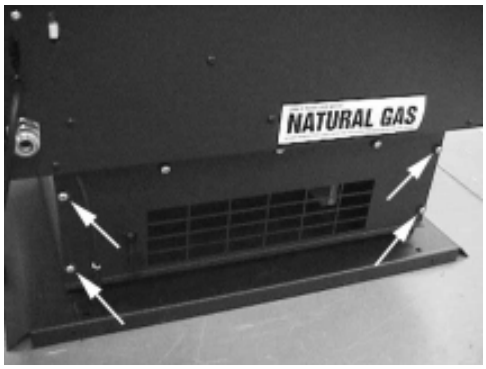
7. Removal of Remote Control Sensor

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Unclip temperature thermistor.



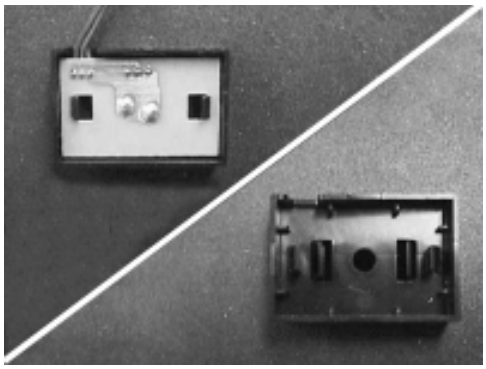
b) Remove four (4) screws from convection fan mounting bracket and move to one side.



c) Remove three (3) screws from air deflection plate.

d) Remove four (4) screws from lower inner front panel.

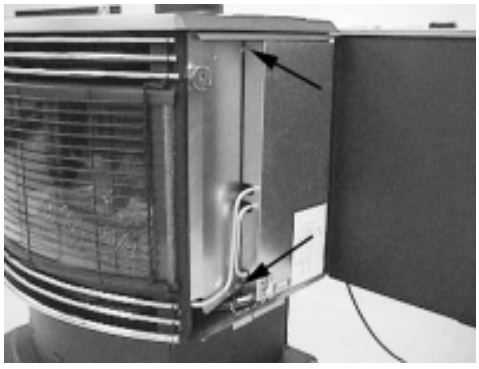
e) Unclip remote control sensor from bracket on curved front panel.



f) Unclip bracket on front panel.

g) Loosen one (1) retaining screw on RHS panel and swing open RHS trim panel.

h) Remove two (2) screws from solenoid cover panel and remove panel.



i) Unplug sensor connector from PCB.

j) Undo cable ties.

k) Pull grommet and three (3) wires through bottom of curved front panel.

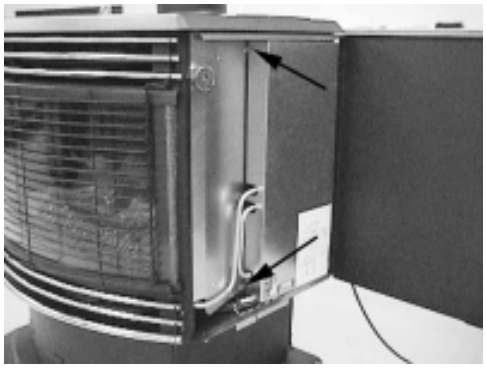
8. Removal of Solenoid Assy

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Isolate and disconnect gas supply.

b) Remove RHS panel (4 screws).

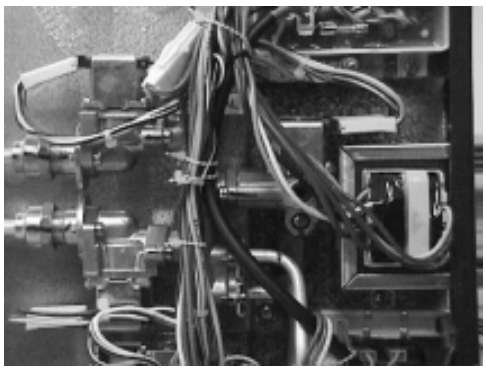
c) Remove two (2) screws from solenoid cover panel.



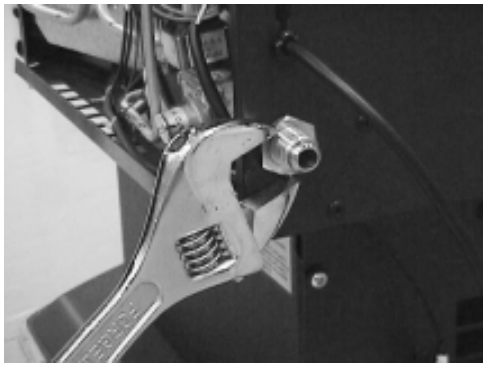
d) Disconnect three (3) burner supply tubes and two (2) pilot supply tubes (1 screw each) from solenoid valve block.

e) Remove polarised plugs (6 plugs) and move wiring loom to one side.

f) Remove two (2) mounting screws.



g) Undo lock nut on inlet gas connection.



h) Remove solenoid assy and lift clear from unit.

9. Removal of Temperature and Overheat Thermistors

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

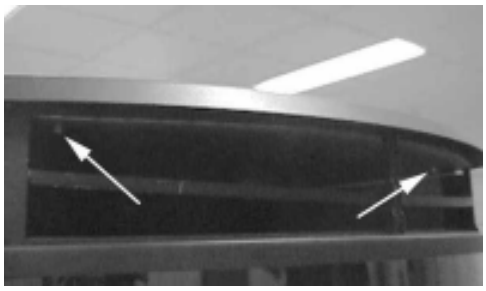
a) Remove inner flue and outer flue guard.

b) Remove dress guard. (Refer to 1.)

c) Remove three (3) screws from LHS and RHS top louvre retaining bracket (total 6 screws).

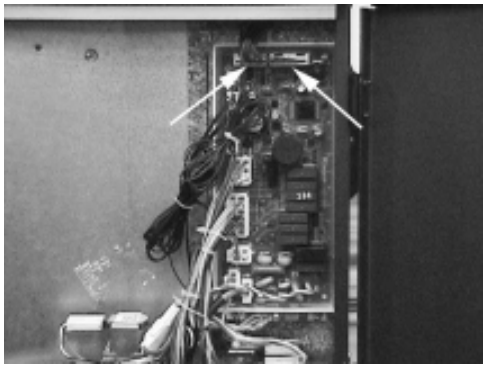
d) Slide louvre rods to the right and remove.

e) Undo 2 hexagonal bolts on inside of main body top panel.



f) Remove two (2) screws from solenoid cover panel and remove panel.

g) Disconnect two (2) connectors at top of main PCB.

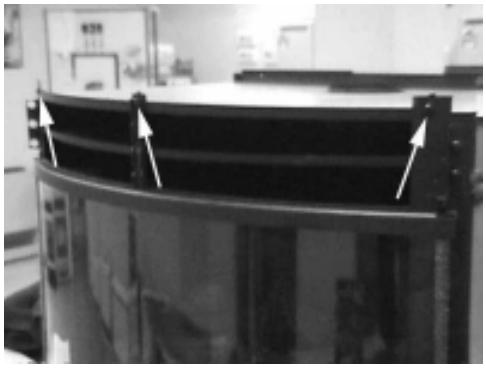


h) Lift top panel of main body clear.

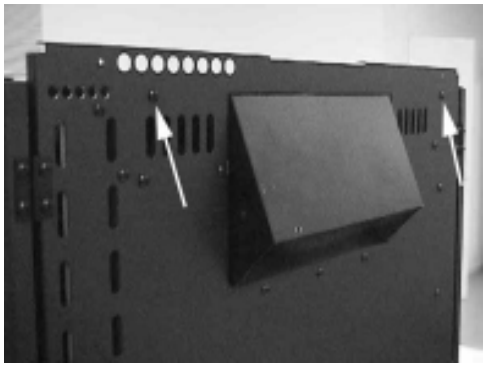
i) Remove one (1) screw from top over-heat thermistor.

j) Disconnect one (1) connector to main PCB.

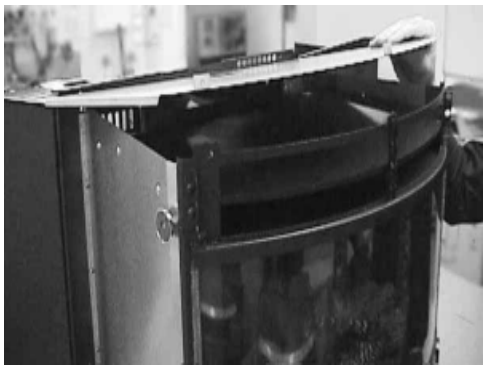
k) Remove three (3) screws from top of front curved panel.



l) Remove two (2) screws from top of rear panel.



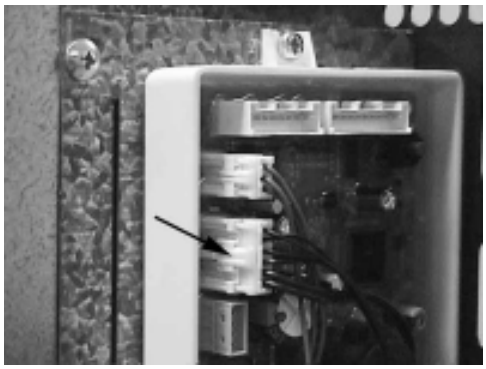
m) Remove inner top panel.



n) Remove one (1) screw from centre overheat thermistor and feed wire down back of main PCB.

o) Remove one (1) screw from rear overheat thermistor and feed wire down back of main PCB.

p) Disconnect one (1) connector connecting centre and rear overheat thermistors to main PCB and remove.

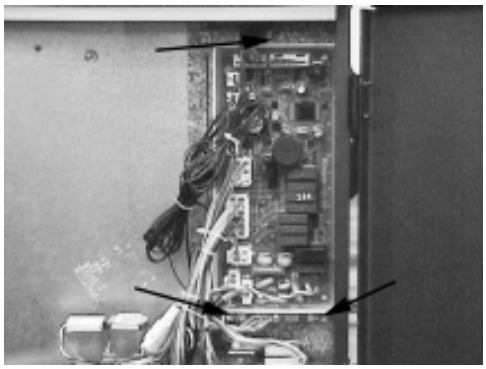


10. Removal of Main PCB Assy

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove eleven (11) connectors and one (1) earth wire from main PCB.

b) Remove three (3) screws from main PCB and remove PCB.

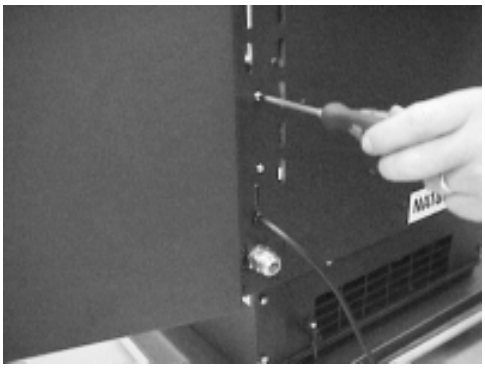


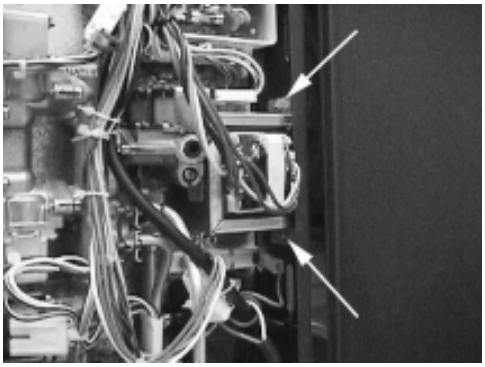
11. Removal of Transformer

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Disconnect two (2) connectors from transformer.

b) Remove two (2) nuts and bolts and remove transformer.

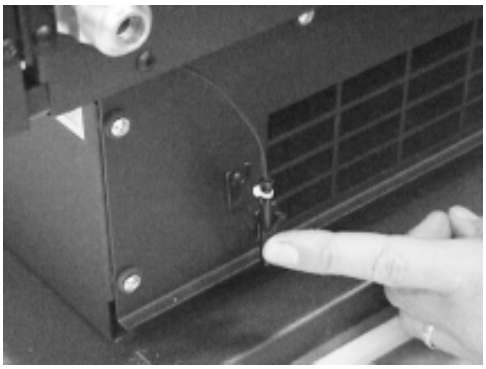




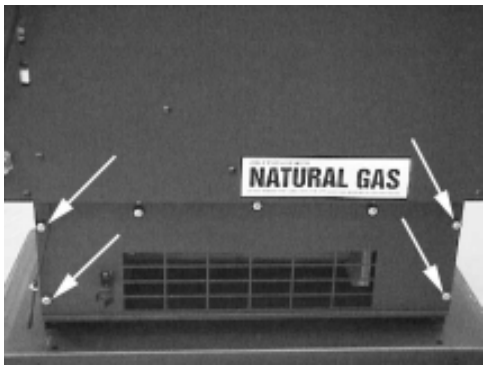
12. Removal of Convection Fan Assy

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Unclip thermistor.



b) Remove four (4) screws on bottom rear panel and gently lower panel and fan assembly.



c) Disconnect two (2) connectors on fan motor.

d) Remove earth wire from body of fan motor (1 nut).

13. Removal of Spark Ignitor

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Remove two (2) screws from RHS bottom louvre retaining bracket.

b) Slide louvre rods to the right and remove.

c) Remove one (1) screw from LHS of pilot shield and remove shield.

d) Undo two (2) hexagonal screws and remove retaining bracket.

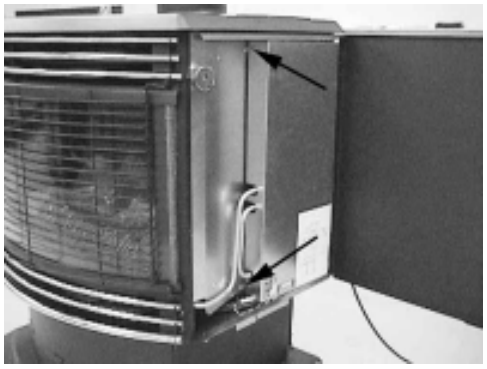
e) Undo one (1) connection to the flame rod and one (1) connection on the sparker and remove.

14. Removal of Control Panel and Control Panel PCB

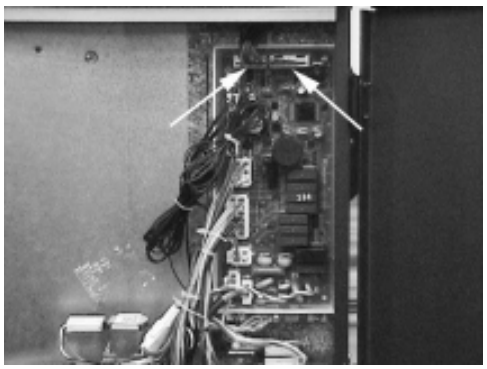
CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

a) Loosen one (1) retaining screw on RHS panel and swing open RHS trim panel.

b) Remove two (2) screws from solenoid cover panel and remove panel.

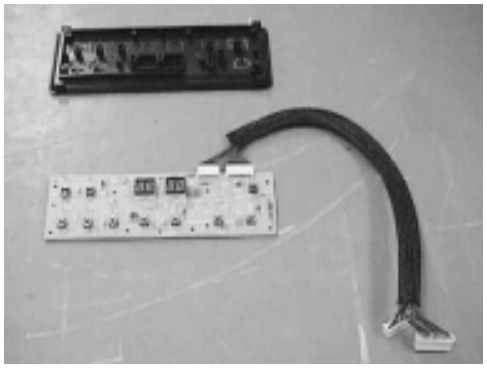


c) Disconnect two (2) connectors at top of main PCB.



d) Carefully prise control panel from main body with flat head screw driver and lift clear.

e) Remove eight (8) screws from control panel PCB.



15. Removal of Heat Exchanger

CAUTION: 240 Volt exposure. Isolate the electrical supply to the appliance and reconfirm with a neon screwdriver or multimeter.

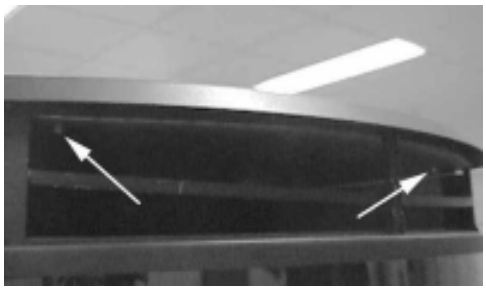
a) Remove inner flue and outer flue guard.

b) Remove dress guard. (Refer to 1.)

c) Remove three (3) screws from LHS and RHS top louvre retaining bracket (total 6 screws).

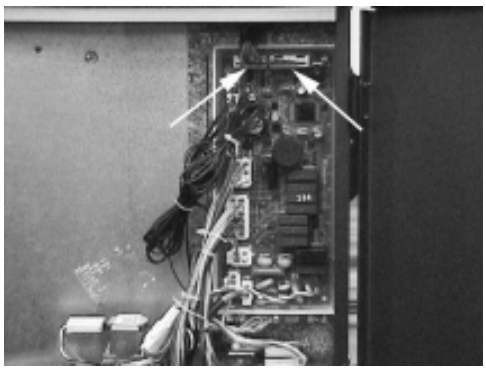
d) Pull louvre rods to the right and remove.

e) Undo 2 hexagonal bolts on inside of main body top panel.



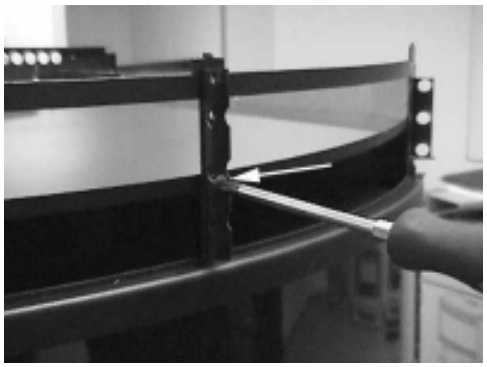
f) Remove two (2) screws from solenoid cover panel and remove panel.

g) Disconnect two (2) connectors at top of main PCB.

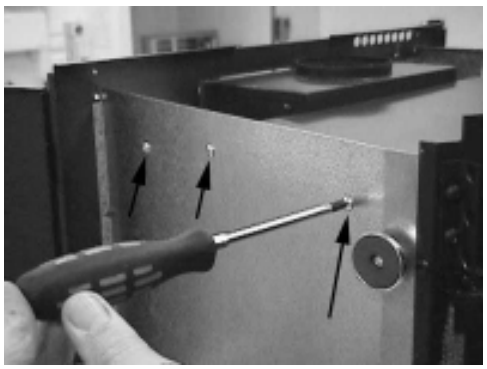


h) Lift top panel of main body clear.

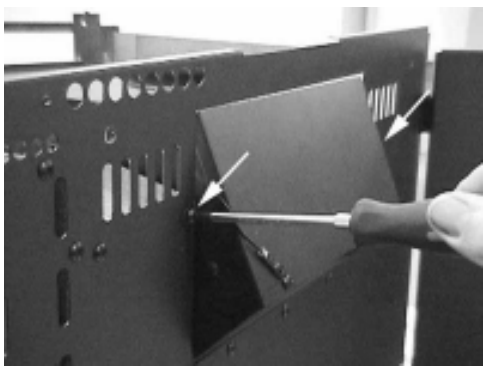
i) Remove screws from top louvre retaining brackets and remove brackets (total 5 screws).



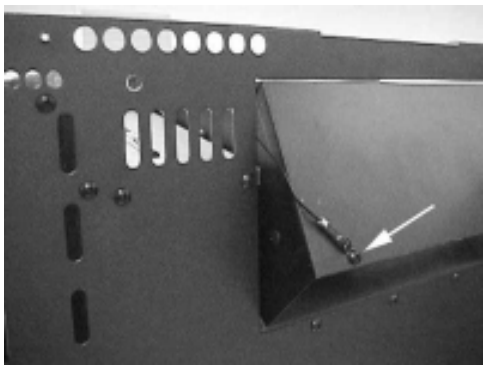
j) Remove three (3) screws from LHS and RHS inner panels (total 6 screws).



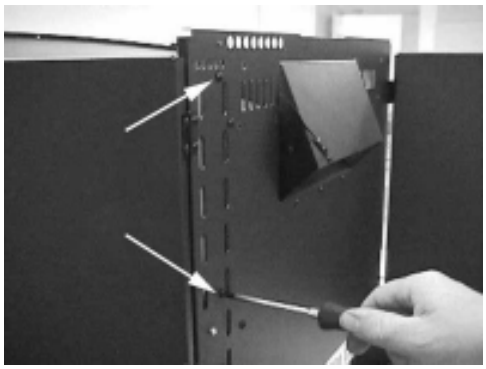
k) Remove two (2) screws from LHS and RHS of down draft diverter. (total 4 screws).



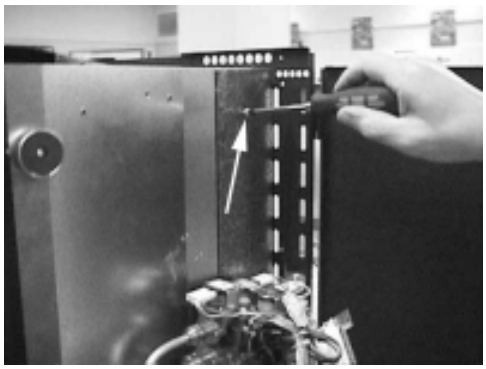
l) Remove one (1) screw from rear over-heat thermistor and feed wire through.



m) Remove three (3) screws from main PCB bracket and set aside.

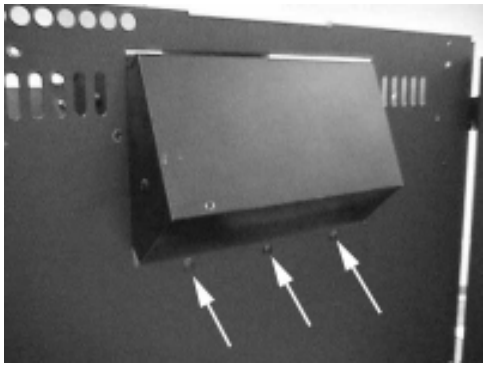


n) Remove one (1) screw from inner panel behind main PCB.

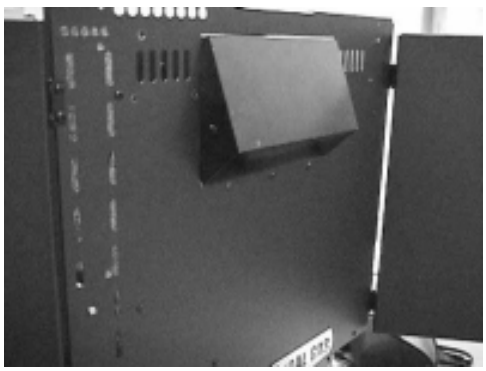


o) Remove inner top panel.

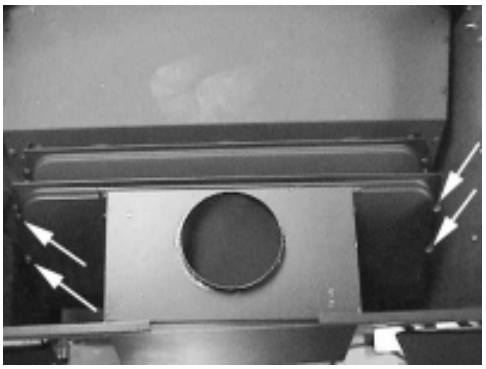
p) Remove three (3) screws at base of down draft diverter.



q) Remove four (4) screws on rear panel.

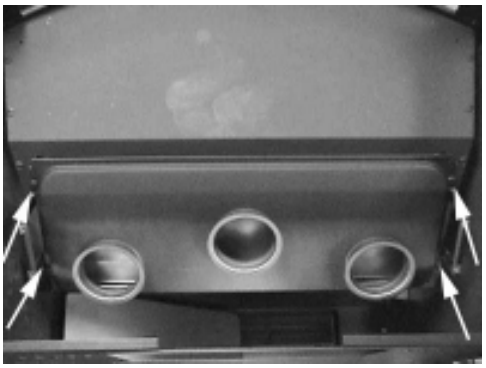


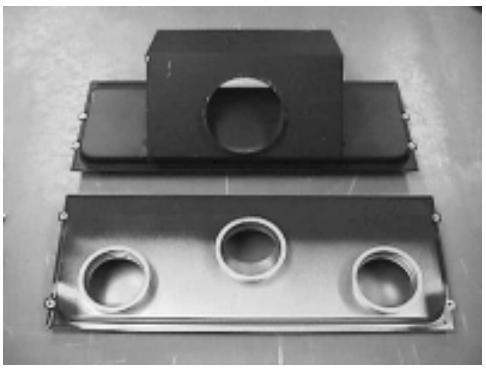
r) Remove four (4) screws from top heat exchanger.



s) Flex rear panel and lift top heat exchanger with down draft diverter attached.

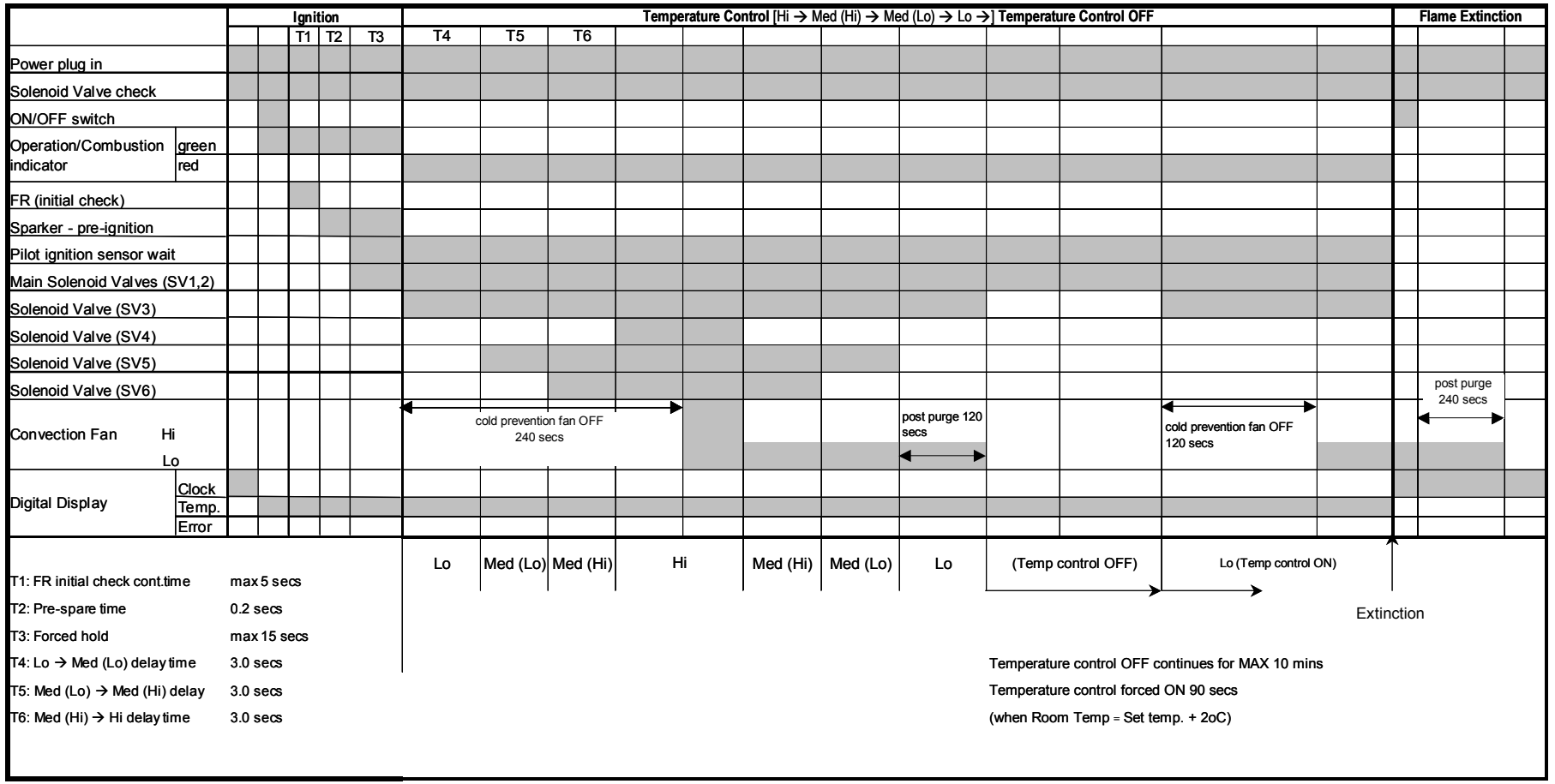
t) Remove four (4) screws from bottom heat exchanger and remove.





22. Time Charts

Normal Operation (Auto-off selected)



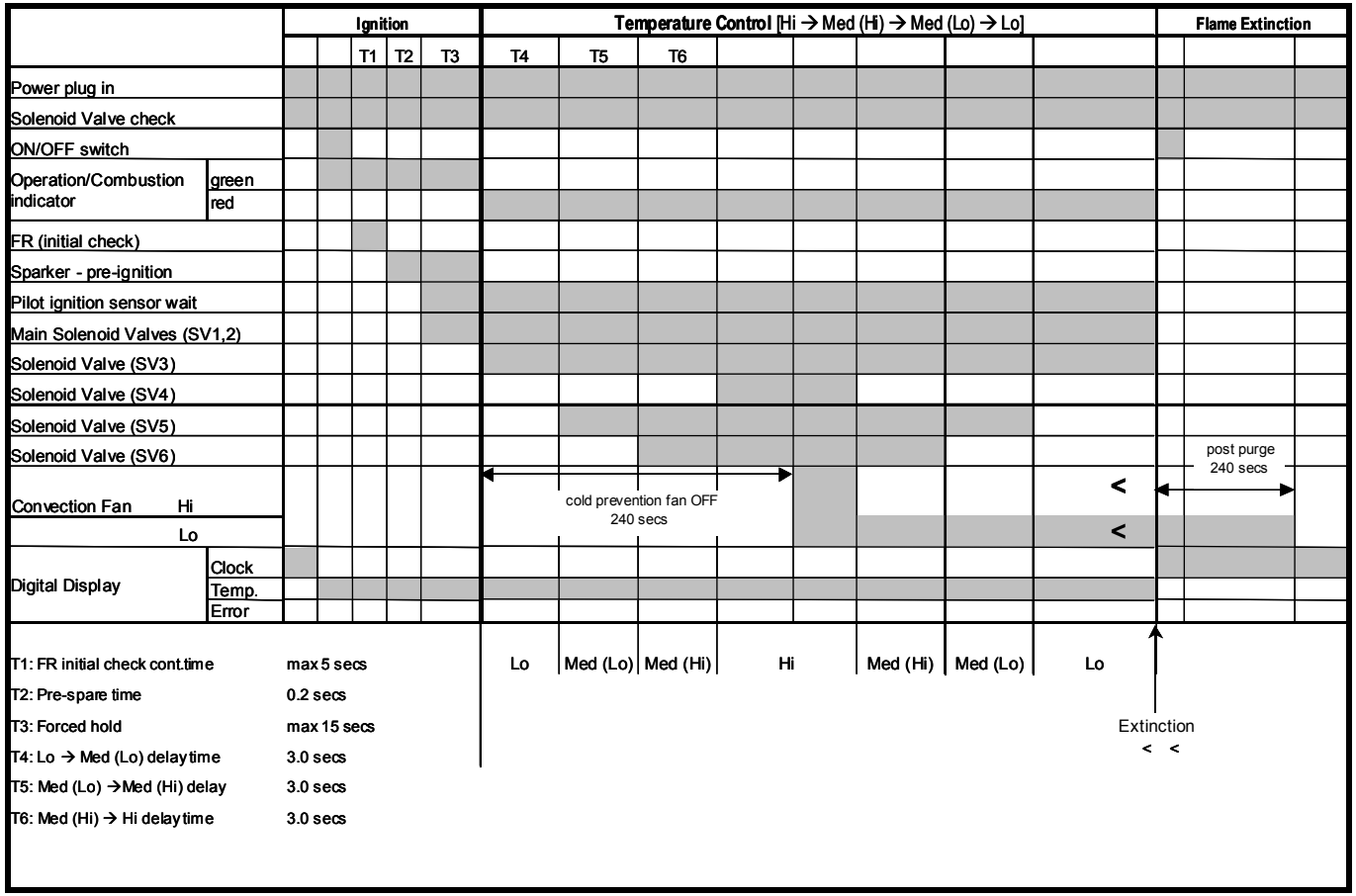
T1: FR initial check cont.time	max 5 secs
T2: Pre-spare time	0.2 secs
T3: Forced hold	max 15 secs
T4: Lo → Med (Lo) delay time	3.0 secs
T5: Med (Lo) → Med (Hi) delay	3.0 secs
T6: Med (Hi) → Hi delay time	3.0 secs

Temperature control OFF continues for MAX 10 mins

Temperature control forced ON 90 secs

(when Room Temp = Set temp. + 2oC)

Normal Operation (Auto-off end selected)



Second Operation

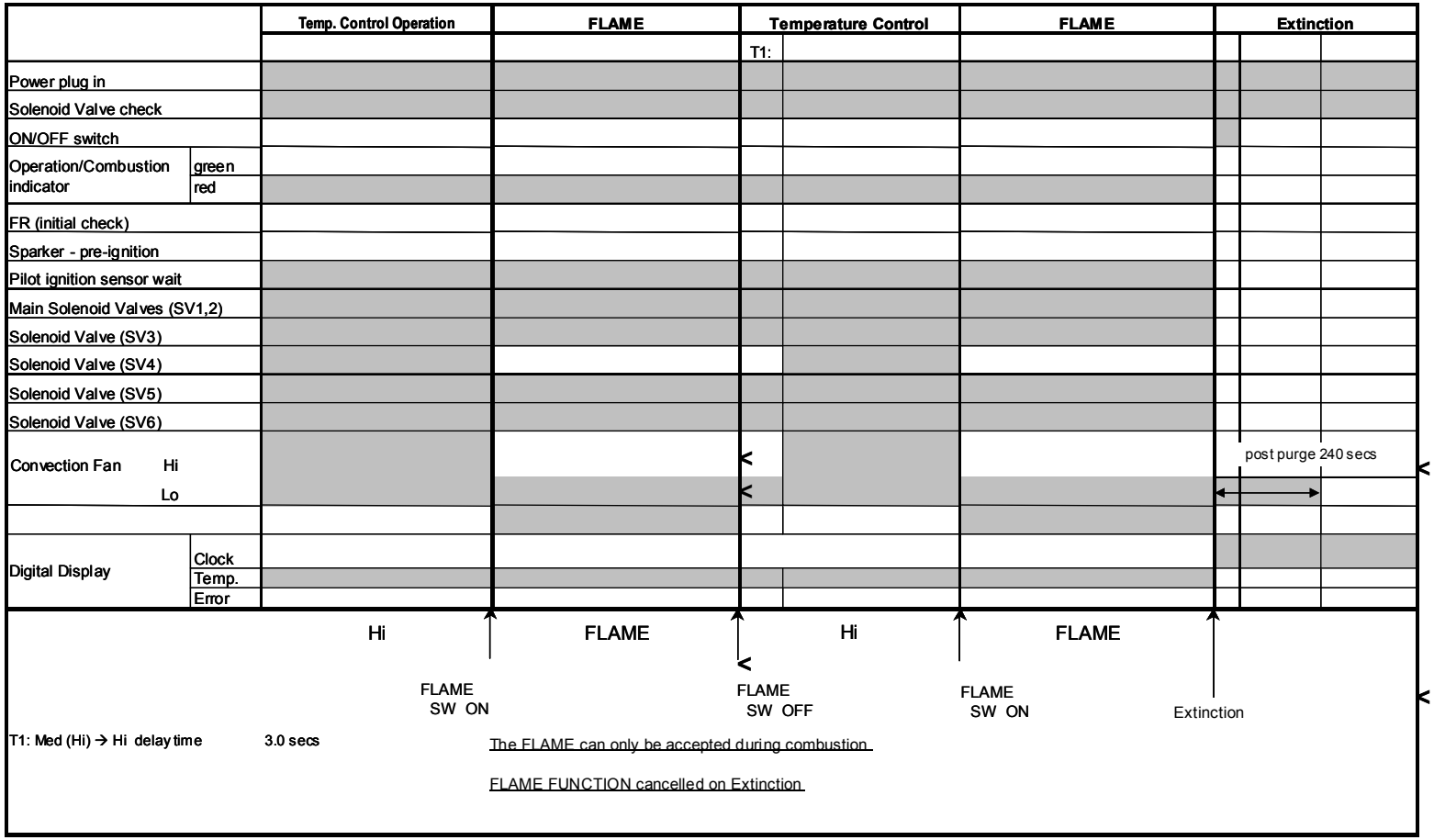
		Temp. Control Operation	Extinction	Re-ignition Operation			Temperature Control
				T1	T2	T3	
Power plug in		■	■	■	■	■	■
Solenoid Valve check		■	■	■	■	■	■
ON/OFF switch			■				
Operation/Combustion indicator	green			■	■	■	
	red	■					■
FR (initial check)				■			
Sparker - pre-ignition					■	■	
Pilot ignition sensor wait		■				■	■
Main Solenoid Valves (SV1,2)		■				■	■
Solenoid Valve (SV3)		■					■
Solenoid Valve (SV4)		■					
Solenoid Valve (SV5)		■					
Solenoid Valve (SV6)		■					
Convection Fan	Hi	■	If ignition is show n during post purge, there is no cold (w ind) prevention				
	Lo	■	post purge				
Digital Display	Clock		◄►				
	Temp.	■		■	■	■	■
	Error						

T1: FR initial check cont.time max 5 secs
T2: Pre-spare time 0.2 secs
T3: Forced hold max 15 secs

Extinction — Ignition

In Terms of forced stoppage, operation delay is prepared 2 seconds after extinction.

Flame Operation



23. List of Parts Inbuilt

IB35ETR

No.	Part Name	RA Part No.	RNZ Part No.	QTY
001	Combustion Chamber Assy Paint		7602	1
002	Union Body 3/8 BSP x 3/8 C		5061	1
003	Union Body 3/8 C x 3/8 FL		5065	1
004	Locknut Brass 3/8		5070	3
006	Regulator Packing EC-0617 R22SL	90195553	6121	9
008	O-Ring Main Gas	90187873	6308	2
009	Gas Tube Retainer		6313	2
011	Injector Block BRKT Front		7108	1
012	Injector Block BRKT Rear		7109	1
015	Vidaflex 6 *		7270	0.35m
016	Elbow 1/8" M & F		7452	1
017	Manifold ETR		7454	1
018	Manifold Adaptor ETR		7455	1
019	Manifold Elbow ETR		7456	1
020	Manifold Tube Adaptor ETR		7457	2
021	Olive 6mm *		7519	2
022	Hex Nipple 3/8" x 1.5"		7523	1
023	Solenoid C23H-3-5-S	90187931	7555	1
024	Solenoid C23H-3-3-S	90187956	7558	1
025	Solenoid C23H-3-2-S	90187949	7559	1
026	Twin Solenoid	90187774	7560	1
027	Gas Supply Tube Assy A Front	90187865	7580	1
028	Gas Supply Tube Assy B Middle	90187840	7585	1
029	Gas Supply Tube Assy C Rear	90187857	7590	1
030	Front Pilot Tube IB35ETR	90187824	7594	1
031	Rear Pilot Tube IB35ETR	90187832	7595	1
032	Gas Manifold Mounting Plate IB35ETR		7611	1
033	Regulator Support IB35ETR		7614	1
036	Pressure Test Point		9992	1
037	Cushion Rubber REH210 *		6651	2
038	Fan QLN65/0030-3038LH MVL 240V	90187733	4986	1
039	Fan MTG Grommet		7129	9
040	Fan MTG Sleeve *		7130	9
041	Fan MTG Panel IBR *		7072	1
042	Fan Mounting Bracket IBR		7288	2
043	Screw 8x5/8 Mush Head *		9028	4
045	Brand Badge Gold *		5327G	1
046	Push Nut (Brand Badge) *		5431	1
047	Remote Sensor Unit ETR-015x01	90188004	7536	1
048	Remote Sensor Holder 35ETR-016		7537	1
049	Remote Sensor Cover 35ETR-017		7539	1
050	Front Panel Painted IB35ETR Black	90188905	7616	1
050	Front Panel Painted IB35ETR Satin Black	90189721	7616V	1
050	Front Panel Painted IB35ETR Silver	90189739	7616SP	1

* Parts listed not shown in exploded views.

IB35ETR

No.	Part Name	RA Part No.	RNZ Part No.	QTY
050	Front Panel Painted IB35ETR Silver		7616SM	1
051	Cord Holder UCH/EC *		6653	1
053	Flue Spigot Assy IB	90189069	7174-1	1
054	Fan Partition Panel Lower IBR		7202	1
055	Fan Dividing Panel Support IB		7220	1
056	Log Locating Sleeve	90186479	7240	2
057	Spark Ignitor ETR EI-145	90188046	7542	1
059	Rear Air Partition Panel IBR		7207	1
060	Top Air Guide Painted IB35ETR		7601	1
061	Fan Dividing BRKT RH IB35ETR *		7613	1
067	Harness Main IB35ETR *		7467	1
068	Harness Flame Rod IB35ETR *		7468	1
069	Transformer ETR ET-261	90187972	7543	1
070	PCB Assy ETR 35ETR-020	90187980	7544	1
071	Thermistor OH Switch 35ETR-023	90188012	7549	1
072	Harness - PCB to CTRL IB35ETR *		7550	1
073	Harness Thermal Fuse 35ETR-024	90188020	7553	1
074	Clip Thermistor CP-90125-2 ETR		7554	2
075	PCB Mounting BRKT PNT IB35ETR		7596	1
076	Harness Transformer ETR Aust *		7634	1
081	Rear Panel IBR		7196	1
082	Rear Top Panel IBR		7197	1
083	Rear Side Panel LH IBR		7198	1
088	Bracket Thermal Fuse IB35ETR		7563	1
089	Thermistor BRKT Rear IB35ETR		7621	1
091	Louvre Tube FS 9.5 Gold	90182130	7029	7
091	Louvre Tube FS 9.5 Black Nickel	90189481	7029BN	7
091A	Louvre (Top)	90197203	10502B	1
091B	Louvre (Centre)	90197211	10503B	1
092A	Louvre (Bottom)	90197237	10504B	1
092	Louvre Tube RD 15.8 Gold	90182132	7099	1
092	Louvre Tube RD 15.8 Black Nickel	90189499	7099BN	1
093	Rubber Grommet P/Cord IMG030 *		7132	1
094	Door Spring IBR *		7177	4
095	Surround Top Panel Painted IBR Black	90184102	7190	1
095	Surround Top Panel Painted IBR Satin Black	90189747	7190V	1
095	Surround Top Panel Painted IBR Silver	90189655	7190SP	1
096	Surround Left Hand Paint IBR Black	90184110	7191	1
096	Surround Left Hand Paint IBR Satin Black	90189754	7191V	1
096	Surround Left Hand Paint IBR Silver	90189663	7191SP	1
097	Surround Right Hand Paint IBR Black	90184094	7192	1
097	Surround Right Hand Paint IBR Satin Black	90189762	7192V	1
097	Surround Right Hand Paint IBR Silver	90189671	7192SP	1
098	Door LH Painted IBR Black	90184128	7193	1

* Parts listed not shown in exploded views.

IB35ETR

No.	Part Name	RA Part No.	RNZ Part No.	QTY
098	Door LH Painted IBR Satin Black	90189770	7193V	1
098	Door LH Painted IBR Silver	90189689	7193SP	1
099	Door RH Painted IBR Black	90184136	7194	1
099	Door RH Painted IBR Satin Black	90189788	7194V	1
099	Door RH Painted IBR Silver	90189697	7194SP	1
100	Secondary Air Guide IBR		7227	1
101	Front Trim Painted IBR		7228	1
102	Control Unit Assy 35ETR-010Bx0	90187998	7545	1
102	Top Panel Assy Painted IB35ETR Silver	90189358	7545S	1
103	Lid Control Unit 35ETR-014	90188053	4985	1
105	Cable Cover Painted IB35ETR		7598	1
106	Top Panel Assy Painted IB35ETR Black	90188079	7615	1
106	Top Panel Assy Painted IB35ETR Satin Black	90189705	7615V	1
106	Top Panel Assy Painted IB35ETR Silver	90189713	7615SP	1
106	Top Panel Assy Painted IB35ETR Silver Metallic		7615SM	1
107	Screw M5x25 Hex Head *		9116	2
111	Rear Burner NG & LP	90182000	6384	1
112	Electrode Rear Pilot	90182285	7007	1
114	Glass Ret Top Assy Painted	90182262	7033	1
115	Glass Ret Bottom Assy Painted	90182288	7037	1
120	Aeration Sleeve Short (NG ONLY)	90183880	7258	1
121	Rear Pilot Bracket		7275	1
122	Burner Bracket Rear		7276	1
123	Front Pilot Bracket		7516	1
124	Front Pilot Shield ETR Painted		7518	1
125	Flame Rod	90187790	7520	2
126	Electrode Catoba CB2058	90187808	7521	1
127	ETR High Tension Lead 560mm LG *	90188038	7552	2
128	Electrode Sleeve *	90189325	7564	2
129	Protective Shield Painted	90189598	7617	1
132	Press. Test Point Screw		9994	1
133	Press. Test Point Packing		9995	1
135	Glass 636x320x5mm 532mm	90182070	7005	1
136	Glass Seal Hytex 304B25mmx304.8m	90182072	7010	2m
137	Log Set C/W Granules *	90182180	7044	1
139	Dressguard Free ST *	90182122	7119	1
140	Rear Side Panel RH IBR		7199	1
141	Burner Air Divert Panel Painted	90185505	7004	1
148	Remote Control 556F-2005	90175555	7541	1
150	Flextube Kit (3/8 x 150)	90187261	4988	1
153	Flue Seal 19mm IBR *	90187246	7186	2.5m
154	Wall MTG BRKT IBR *		7287	2
160	Power Cord ETR BKL *		6766	1
162	O-Ring Pressure Adjust Screw *		7535	1

* Parts listed not shown in exploded views.

IB35ETR

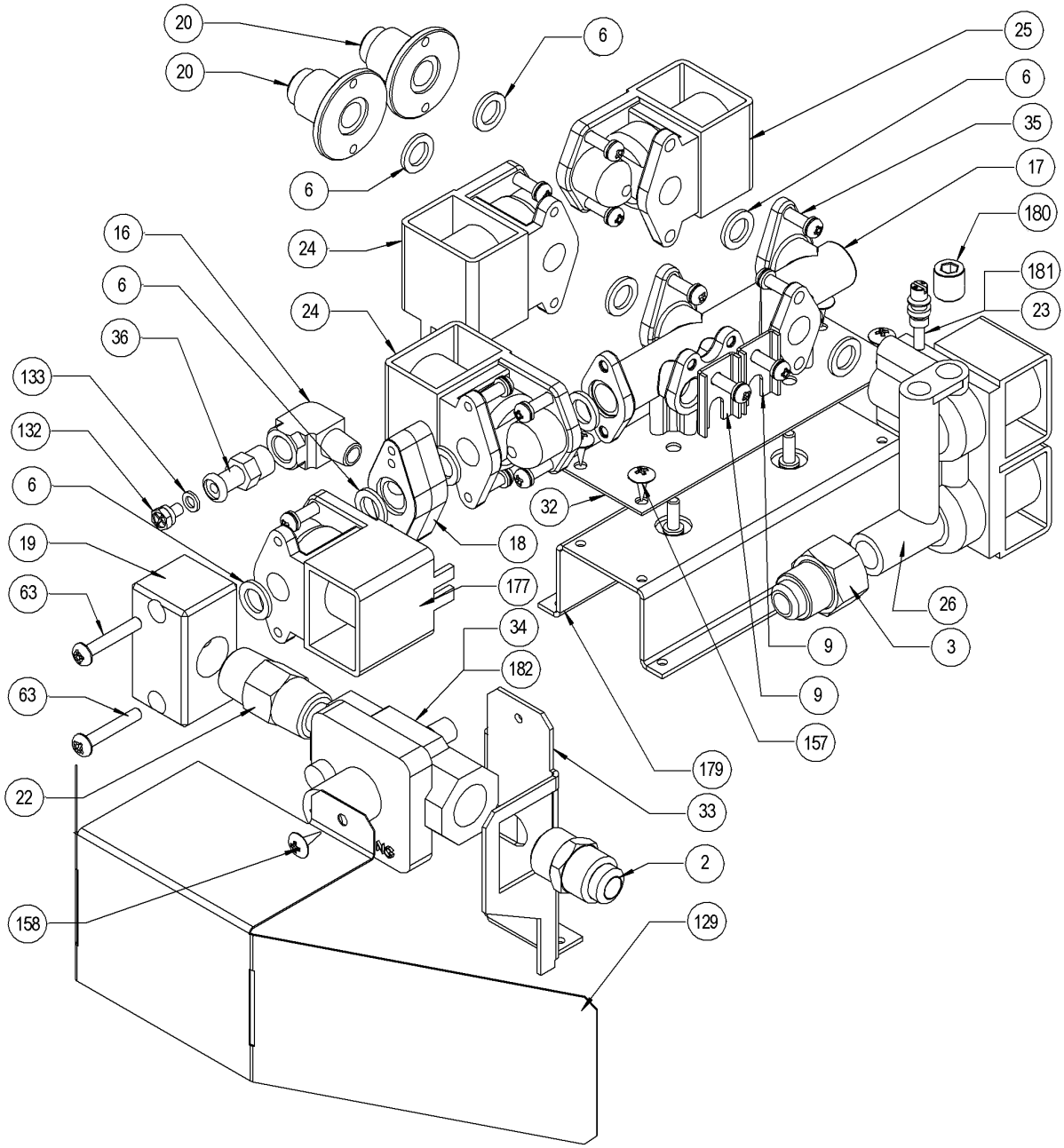
No.	Part Name	RA Part No.	RNZ Part No.	QTY
164	Harness MVL Fan Single Speed *		7635	1
165	Resistor RC-211-73-14 440 OHMS		7464	1
166	Aeration Sleeve Long NG	90187816	7293	1
167	Instruction Book IBETR Aust *		7083	1
168	Fan Discharge Guide IBR		7221	1
169	Wire Earth MVL Fan 600mm *		7495	1
170	Resistor Wire MVL *		7496	1
171	Anti-Rattle Button IMA132 *		7294	1
173	Fan Discharge Guide Shroud IBR		7222	1
174	Resistor RC-211-73-5 100 OHMS		7465	1
175	Resistor Mounting Bracket *		7001	1
179	Gas Manifold MTG Bracket IB35ETR		7610	1
181	Bypass Screw (B) C6C1-6x01 LPG	90188202	7533	1
	Bypass Screw (A) C6C1-5x01 NG	90188244	7529	1
182	Regulator LP ETR	90187964	7633	1
	Regulator NG ETR	90187782	7632	1
184	Flue Spigot Guide LH		7241L	1
185	Flue Spigot Guide RH		7241R	1
187	Fan Dividing Panel IBR	90185497	7230	1
188	Brand Badge Gold	90178815	5327G	1
190	Heat Exchanger Rear ETR 3+3H	90189093	7074	1
191	Heat Exchanger Front ETR 3H	90189101	7075	1
192	Heat Exchanger Transfer Tube	90189119	6624	6
193	Pilot Assy complete with injector 0.45 NG	90182290	7008	2
	Pilot Assy complete with injector 0.30 LPG	90188947	7008L	2
194	Pilot injector 0.45 NG	90186453	9600	2
	Pilot injector 0.30 LPG	90186495	7009	2
195	Burner Support ETR		7473	1
196	Front Burner Painted NG & LP	90182155	7040	1
	Heat Exchanger Bracket		6625	2
199	Main Burner NG	90182150	4970	1
	Main Burner LP	90183872	4971	1
201	Solenoid C23H-20-S	90189135	7557	1

Injector Table

No.	Part Name	RA Part No.	RNZ Part No.	QTY
13a	Front Natural Gas	90183864	7184	1
13b	Middle Natural Gas	90188228	7166	1
13c	Rear Natural Gas	90188236	7180	1
13a	Front Liquid Propane Gas		7133	1
13b	Middle Liquid Propane Gas	90183864	7184	1
13c	Rear Liquid Propane Gas	90188194	7175	1

* Parts listed not shown in exploded views.

IB35ETR - ROYALE INBUILT



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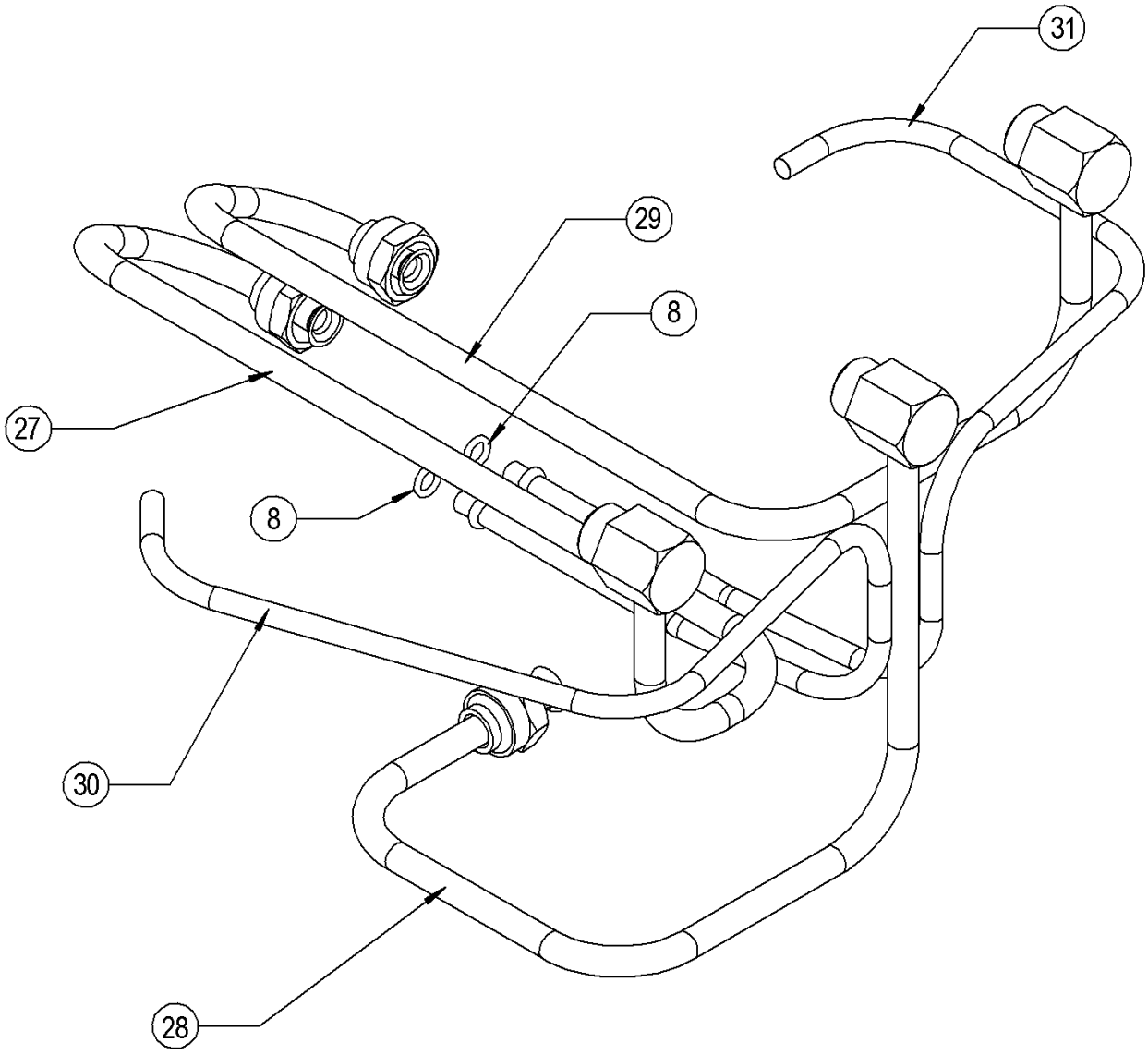

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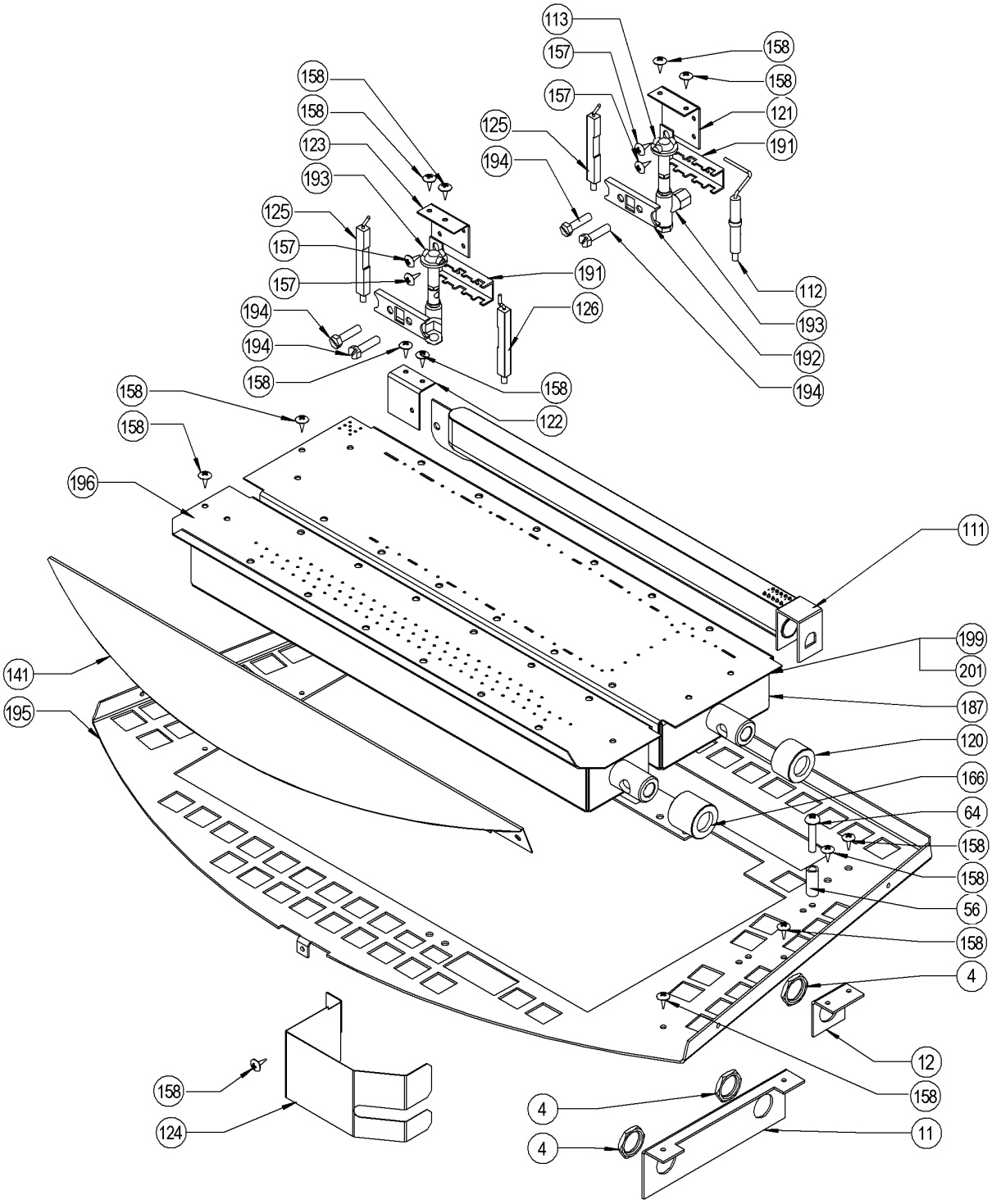

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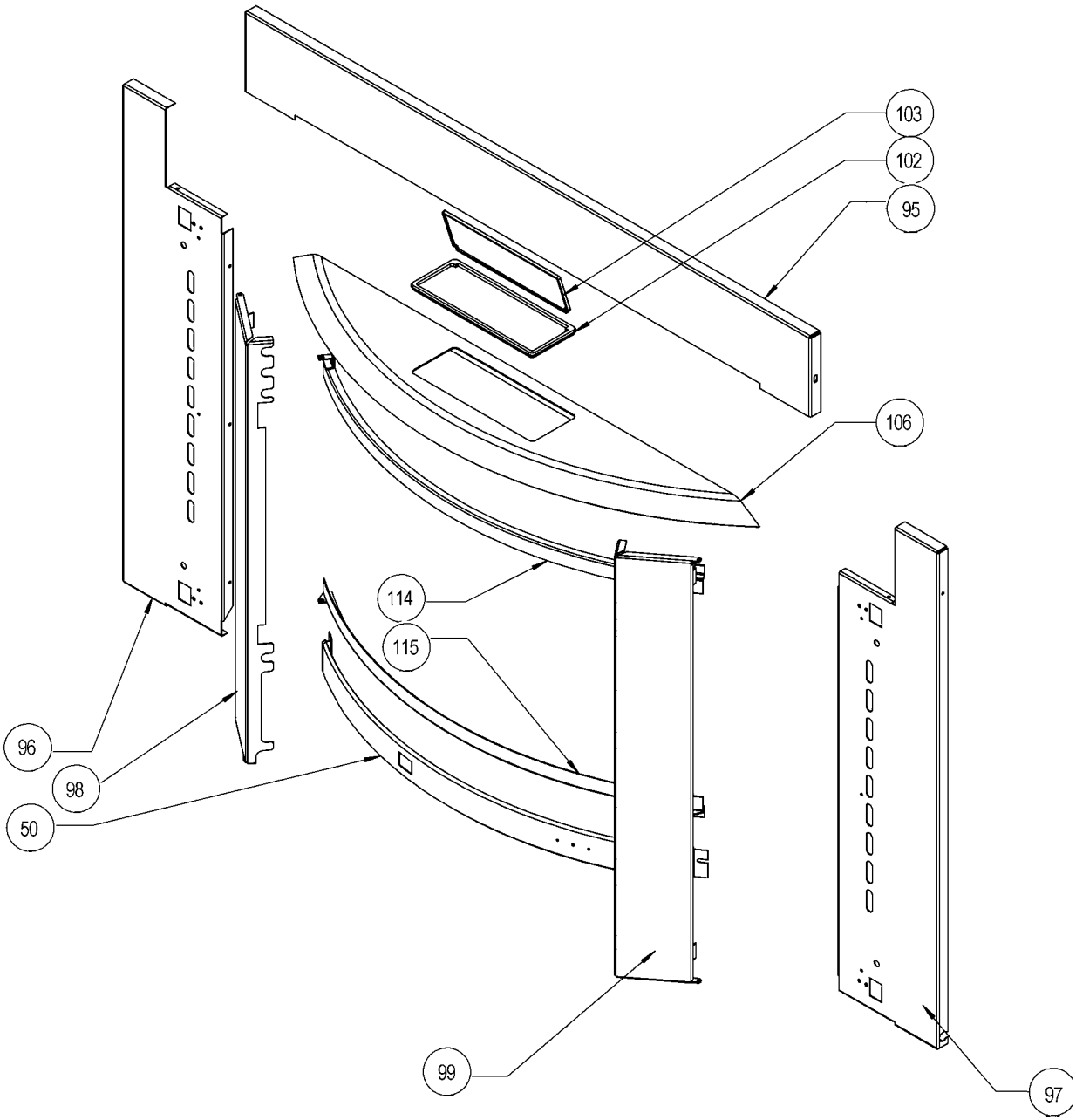

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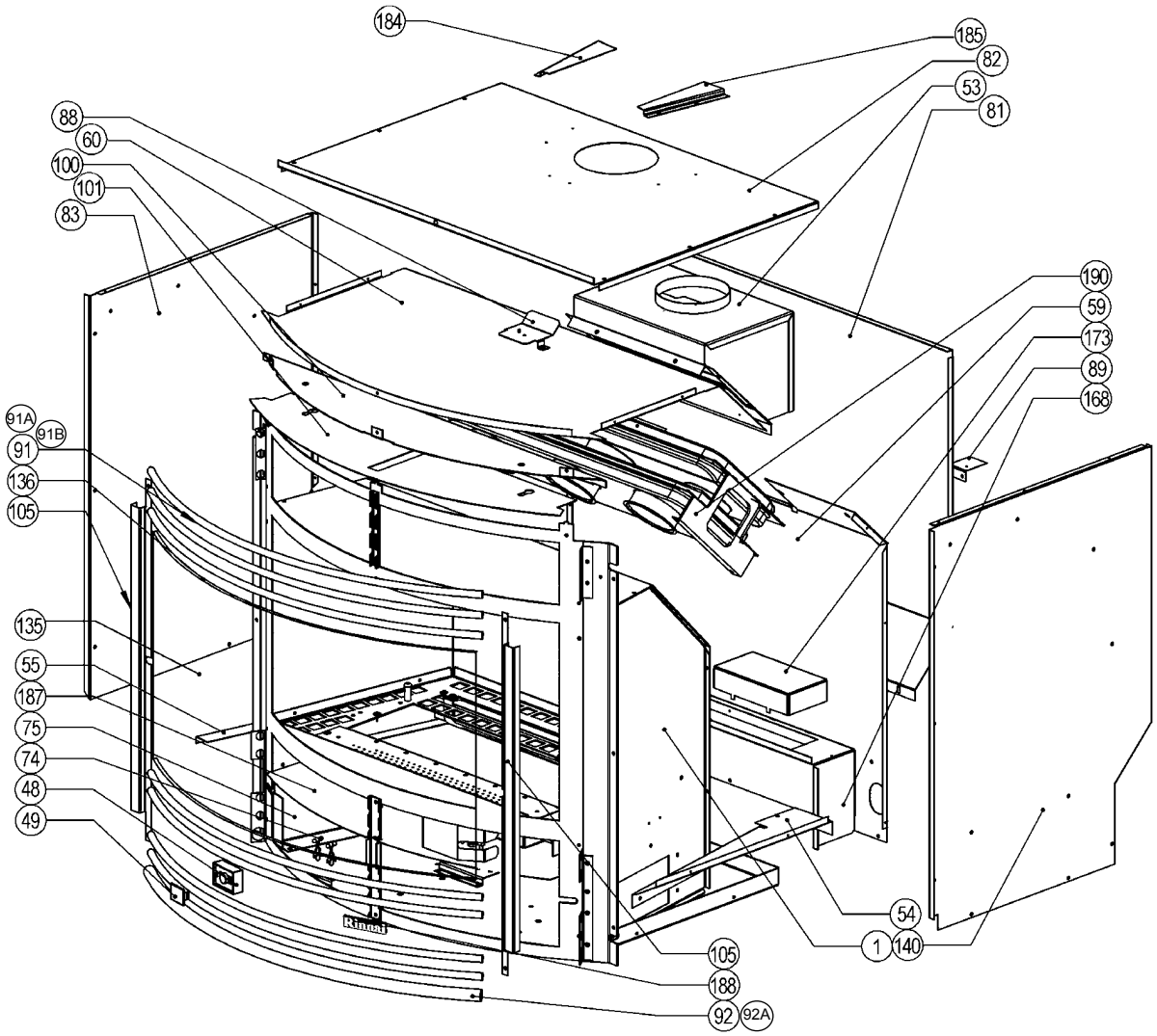

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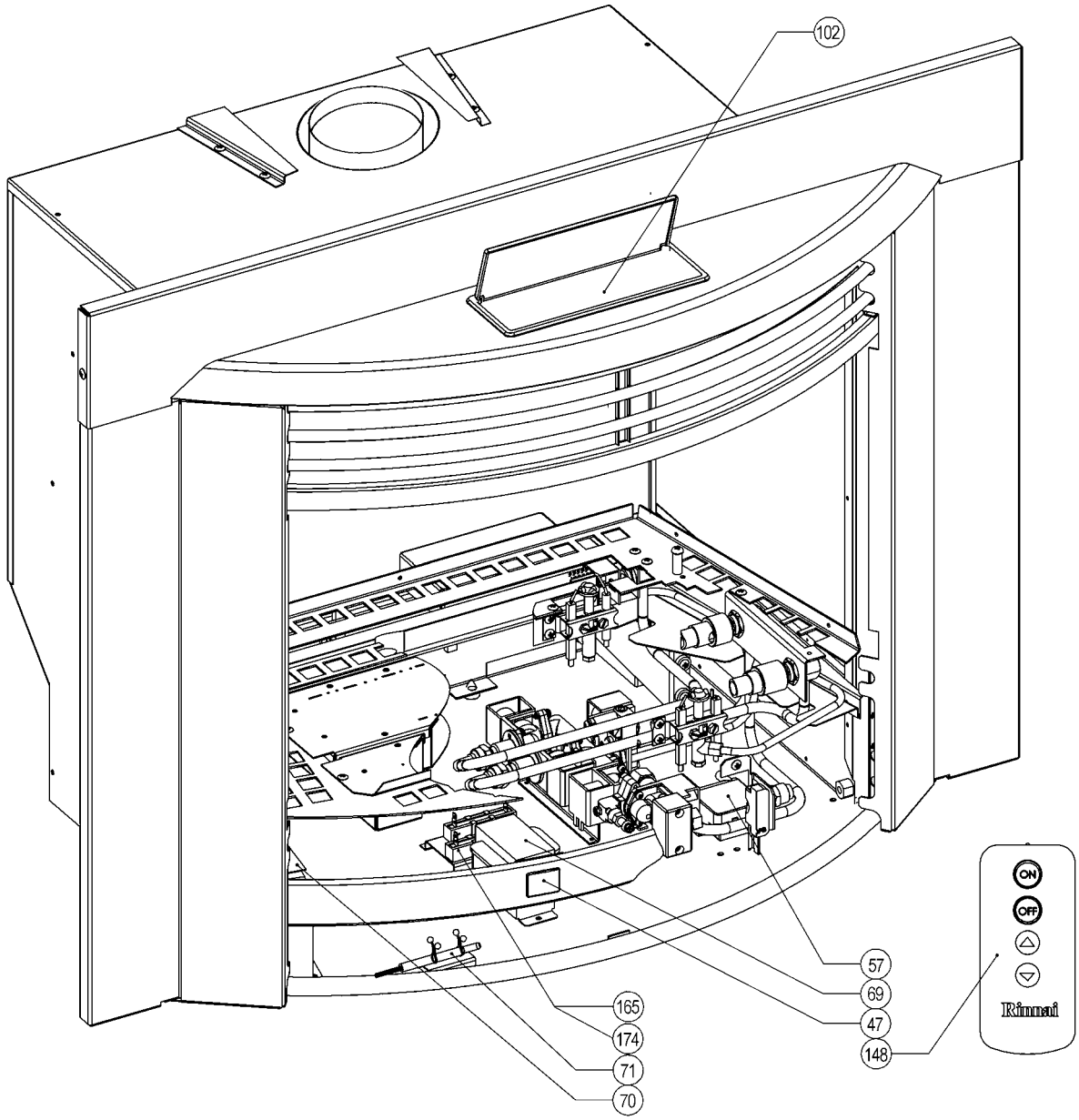

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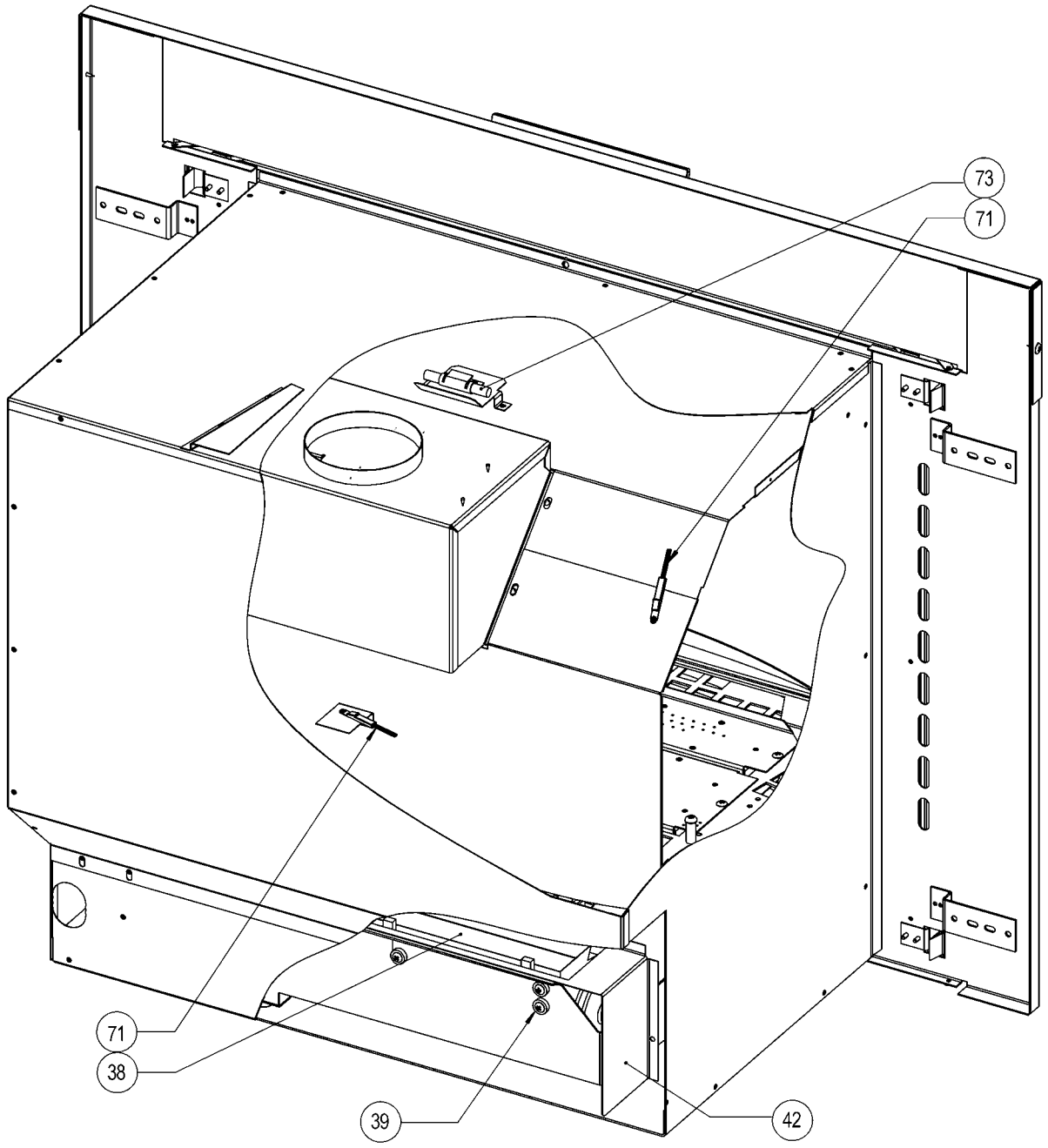


25. List of Parts Freestanding

FS35ETR

No.	Part Name	RA Part No.	RNZ Part No.	QTY
001	Combustion Chamber Assy Painted		7469	1
002	Union Body 3/8 C x 3/8 FI		5065	1
003	Locknut Brass 3/8		5070	3
004	Reg Packing EC-0617 R22SL	90195553	6121	9
006	O-Ring Pilot	90187873	6308	2
007	Gas Tube Retainer		6313	2
008	Label Gas Type NG		6696	1
008	Label Gas Type LP		7229	1
009	Inlet Adaptor FS 99		7079	1
010	Injector Block Bracket Front		7108	1
011	Injector Block Bracket Rear		7109	1
015	Manifold ETR		7454	1
016	Manifold Adaptor ETR		7455	1
017	Manifold Elbow ETR		7456	1
018	Manifold Tube Adaptor ETR		7457	2
019	Gas Supply Tube Assy B Middle	90187923	7500	1
020	Gas Supply Tube Assy A Front	90187907	7501	1
021	Gas Supply Tube Assy C Rear	90187915	7502	1
022	Manifold Mounting BRKT FS35ETR		7517	1
023	Olive 6mm		7519	2
024	Front Pilot Tube FS35ETR	90187881	7522	1
025	Hex Nipple 3/8" x 1.5"		7523	1
026	Rear Pilot Tube FS35ETR	90187899	7524	1
027	Bypass Screw (B) C6C1-6x01 LPG B105	90188202	7533	1
027	Bypass Screw (A) C6C1-5x01 NG A350	90188244	7529	1
028	Solenoid C23H-3-5-S	90187931	7555	3
030	Twin Solenoid C23H-9-4-S	90187774	7560	1
031	Regulator RV20LM-33-D-O NG ETR	90187782	7632	1
031	Regulator RV20LM-33-G-O LP ETR	90187964	7633	1
033	Pressure Test Point		9992	1
035	Fan QLN65/0030-3038LH MVL 240V	90187733	4986	1
036	Fan MTG Grommet		7129	9
037	Fan MTG Sleeve		7130	9
038	Screw 8x5/8 Mush Head		9028	4
040	Brand Badge Gold	90178815	5327G	1
041	Push Nut (Brand Badge)		5431	1
042	Pillar Front FS35ETR Black		7471	1
042	Pillar Front FS35ETR Satin Black	90195959	7471V	1
042	Pillar Front FS35ETR Silver		7471SP	1
042	Pillar Front FS35ETR Silver Metallic		7471SM	1
043	Remote Sensor Unit ETR-015x01	90188004	7536	1
044	Remote Sensor Holder 35ETR-016		7537	1
045	Remote Sensor Cover 35ETR-017		7539	1
046	Partition Panel FS35ETR		7513	1
047	Spark Ignitor ETR EI-145	90188046	7542	1
048	Base Painted Black	90182125	7022	1
048	Base Painted Satin Black	90189515	7022V	1
048	Base Painted Silver	90189523	7022SP	1
049	Rubber Grommet P/Cord IMG030		7132	2

* Parts listed not shown in exploded views.

FS35ETR

No.	Part Name	RA Part No.	RNZ Part No.	QTY
050	Log Locating Sleeve	90186479	7240	2
051	Air Guide Top FS35ETR Painted		7472	1
054	Screw M5x25 PHSMZ	90186487	9115	2
056	Nut 1/2 Compression		5064	1
057	Cord Holder UCH/EC		6653	1
058	Hinge BKL		7050	4
060	Rear Panel FS35ETR Painted Black	90189028	7470	1
060	Rear Panel FS35ETR Painted Satin Black		7470V	1
060	Rear Panel FS35ETR Painted Silver	90192030	7470SP	1
060	Rear Panel FS35ETR Painted Silver Metallic		7470SM	1
062	Flexo Pet 4 (1/2")		7453	1m
063	Harness Flame Rod FS35ETR	90195110	7466	1
064	PCB Mounting BRKT Assy FS35ETR		7507	1
065	Transformer ETR ET-261	90187972	7543	1
066	PCB Assy ETR 35ETR-020	90187980	7544	1
067	Thermistor OH Switch 35ETR-023	90188012	7549	1
068	Harness-PCB To CTRL FS35ETR		7551	1
069	Harness Thermal Fuse 35ETR-024	90188020	7553	1
070	Harness Main FS35ETR		7630	1
071	Harness Transformer ETR Aust		7634	1
075	Rear Burner NG & LP	90182000	6384	1
076	Electrode Rear Pilot	90182285	7007	1
081	Aeration Sleeve Short (NG ONLY)	90183880	7258	1
082	Pilot Bracket Rear		7275	1
083	Burner Bracket Rear		7276	1
084	Pilot Bracket Front		7516	1
085	Front Pilot Shield ETR Painted		7518	1
086	Flame Rod	90187790	7520	2
087	Electrode Front Pilot	90187808	7521	1
088	ETR High Tension Lead 560mm	90188038	7552	2
089	Electrode Sleeve	90189325	7564	2
092	Louvre Tube FS 9.5 Gold	90182130	7029	5
092	Louvre Tube FS 9.5 Black Nickel	90189481	7029BN	5
92A	Louvre (Top)	90196999	10500B	1
093	Glass Ret Top Assy Painted	90182262	7033	1
094	Glass Ret Bottom Assy Painted	90182288	7037	1
095	Louvre Tube RD 15.8 Gold	90182132	7099	1
095	Louvre Tube RD 15.8 Black Nickel	90189499	7099BN	1
95A	Louvre (Bottom)	90197195	10501B	1
096	Door Magnet FS	90184003	7136	2
097	Top Panel Assy Painted FS35ETR Black	90188061	7482	1
097	Top Panel Assy Painted FS35ETR Satin Black	90189424	7482V	1
097	Top Panel Assy Painted FS35ETR Silver	90189507	7482SP	1
098	Secondary Air Guide FS35ETR		7491	1
099	Heat Shield RH FS35ETR		7508	1
100	Heat Shield LH FS35		7509	1
102	Control Unit Assy 35ETR-010Bx0	90187998	7545	1
103	Lid Control Unit 35ETR-014	90188053	4985	1
105	Screw M5x25 Hex Head		9116	2
108	Pressure Test Point Screw		9994	1

* Parts listed not shown in exploded views.

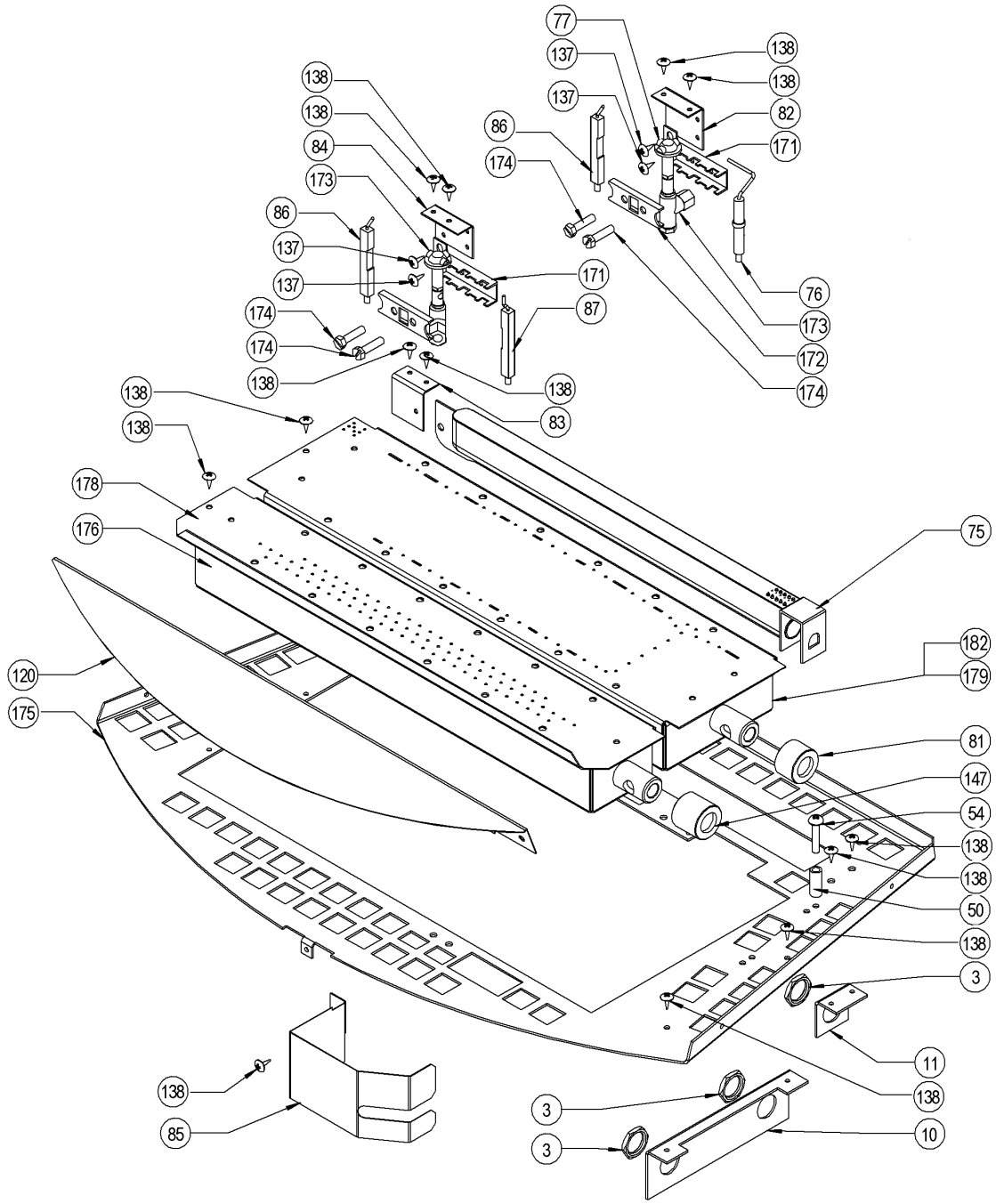
FS35ETR

No.	Part Name	RA Part No.	RNZ Part No.	QTY
109	Pressure Test Point Packing		9995	1
112	Glass	90182070	7005	1
113	Glass Seal Hytex 304B25mmx304.8m	90182072	7010	2m
114	Side Panel LH Painted Black	90184078	7018	1
114	Side Panel LH Painted Satin Black	90189374	7018V	1
114	Side Panel LH Painted Silver	90189390	7018SP	1
115	Side Panel RH Painted FS35 Black	90184086	7019	1
115	Side Panel RH Painted FS35 Satin Black	90189382	7019V	1
115	Side Panel RH Painted FS37 Silver	90189473	7019SP	1
116	Log Set C/W Granules	90182180	7044	1
119	Dressguard Free ST	90182122	7119	1
120	Burner Air Divert Panel PTD ETR	90185505	7004	1
121	Wiring Cover FS35ETR		7512	1
133	Remote Control 556F	90175555	7541	1
134	Instruction Book FS35ETR		7567	1
136	Locknut 1/2 BSP		7165	1
143	Power Cord ETR		6766	1
145	Harness MVL Fan Single Speed		7635	1
146	Resistor RC-211-73-14 440 OHMS		7464	1
147	Aeration Sleeve Long (NG ONLY)	90187816	7293	1
148	Fan Inlet Guide FS		7063	1
150	Wire Earth MVL Fan 600 mm		7495	1
152	Fan Divertor Panel FS35ETR		7514	1
153	Reducing Nipple 3/8" x 1/4"		7525	1
159	Heat Shield Lower LH FS		7060	1
160	Heat Shield Lower RH FS ETR		7062	1
165	Pillar FS Flame Fire Black		7020	1
165	Pillar FS Flame Fire Satin Black		7020V	1
165	Pillar FS Flame Fire Silver		7020SP	1
166	Heat Exchanger Bracket		6625	2
167	Flue Spigot Assy FS	90180085	7028-1	1
168	Top Heat Shield FS35ETR		7484	1
170	Heat Exchanger Front ETR 3 + 3H	90189093	7074	1
171	Heat Exchanger Rear ETR 3H	90189101	7075	1
172	Heat Exchanger Transfer Tubes	90189119	6624	6
173	Pilot Assy complete with 0.45 injector NG	90182290	7008	2
173	Pilot Assy complete with 0.30 injector LPG	90188947	7008L	2
174	Pilot injector 0.45 NG	90186453	9600	2
174	Pilot Injector 0.30 LPG	90186495	7009	2
175	Burner Support ETR		7473	1
176	Front Burner NG & LPG	90182155	7040	1
179	Main Burner NG	90182150	4970	1
179	Main Burner LP	90183872	4971	1
181	Pillar / Fan Bracket		7069	1
183	Solenoid C23H-20-S	90189135	7557	1

Injector Table

No.	Part Name	RA Part No.	RNZ Part No.	QTY
12a	Front Natural Gas	90183864	7184	1
12b	Middle Natural Gas	90188228	7166	1
12c	Rear Natural Gas	90183835	7180	1
12a	Front Liquid Propane Gas		7133	1
12b	Middle Liquid Propane Gas	90183864	7184	1
12c	Rear Liquid Propane Gas	90188194	7175	1

FS35ETR - ROYALE FREESTANDING



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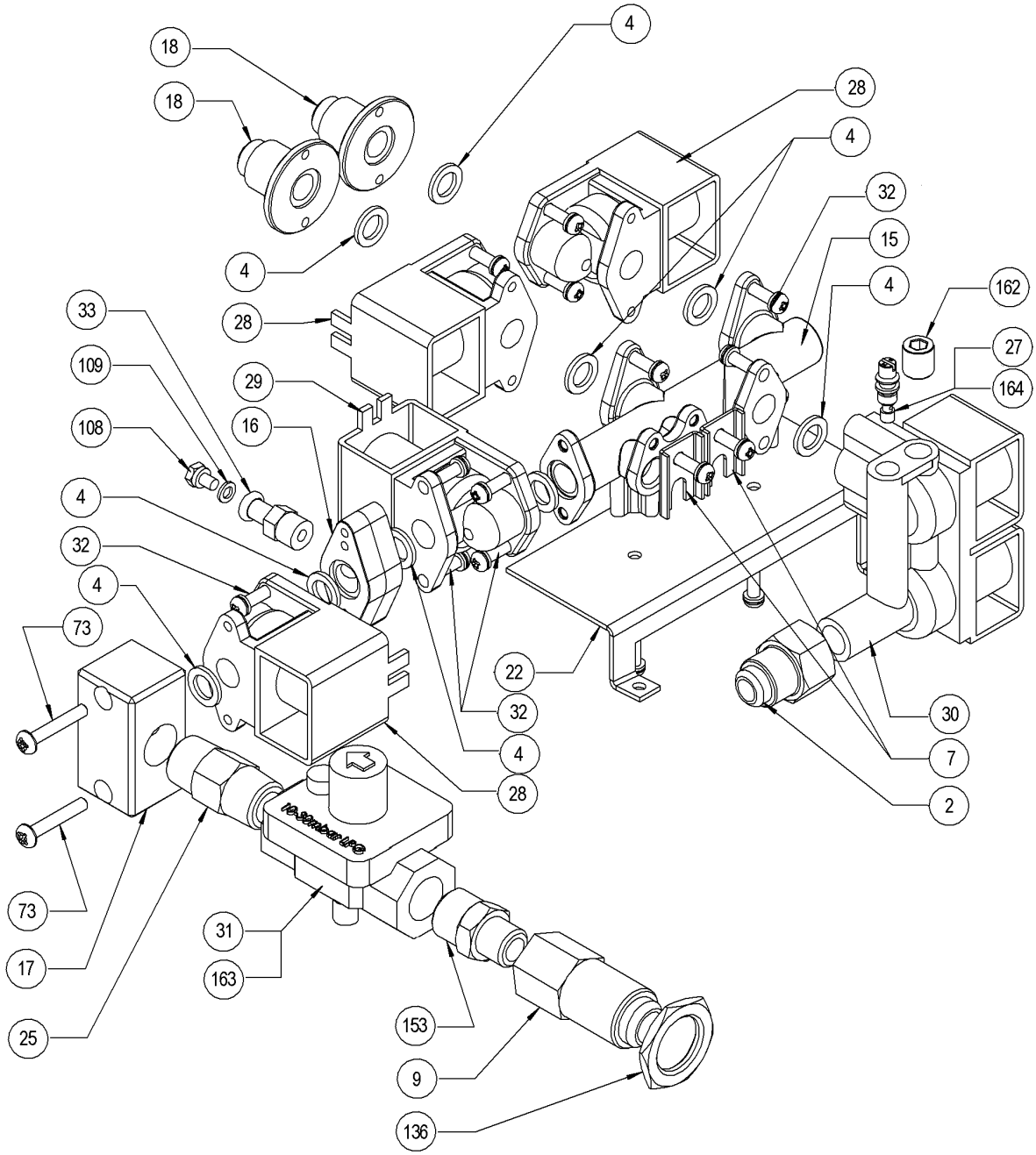

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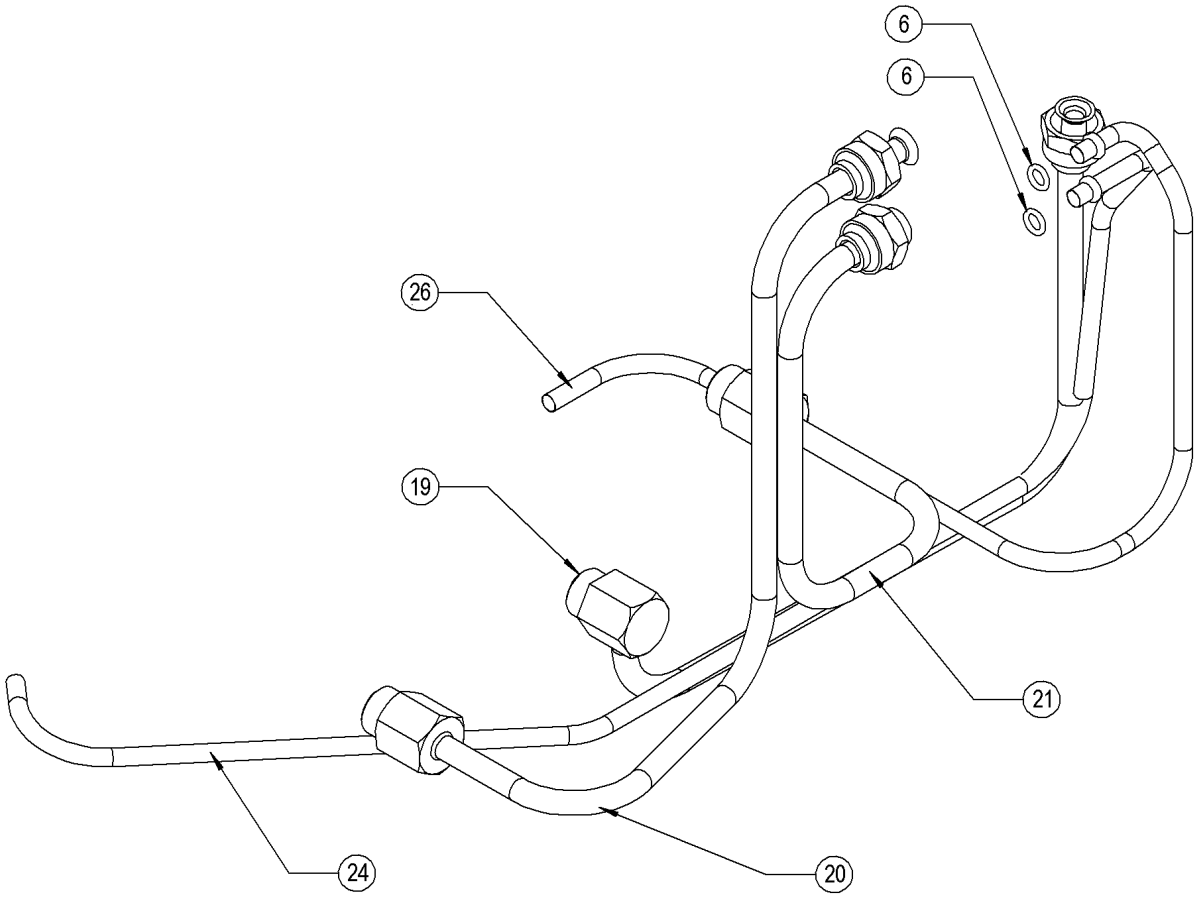

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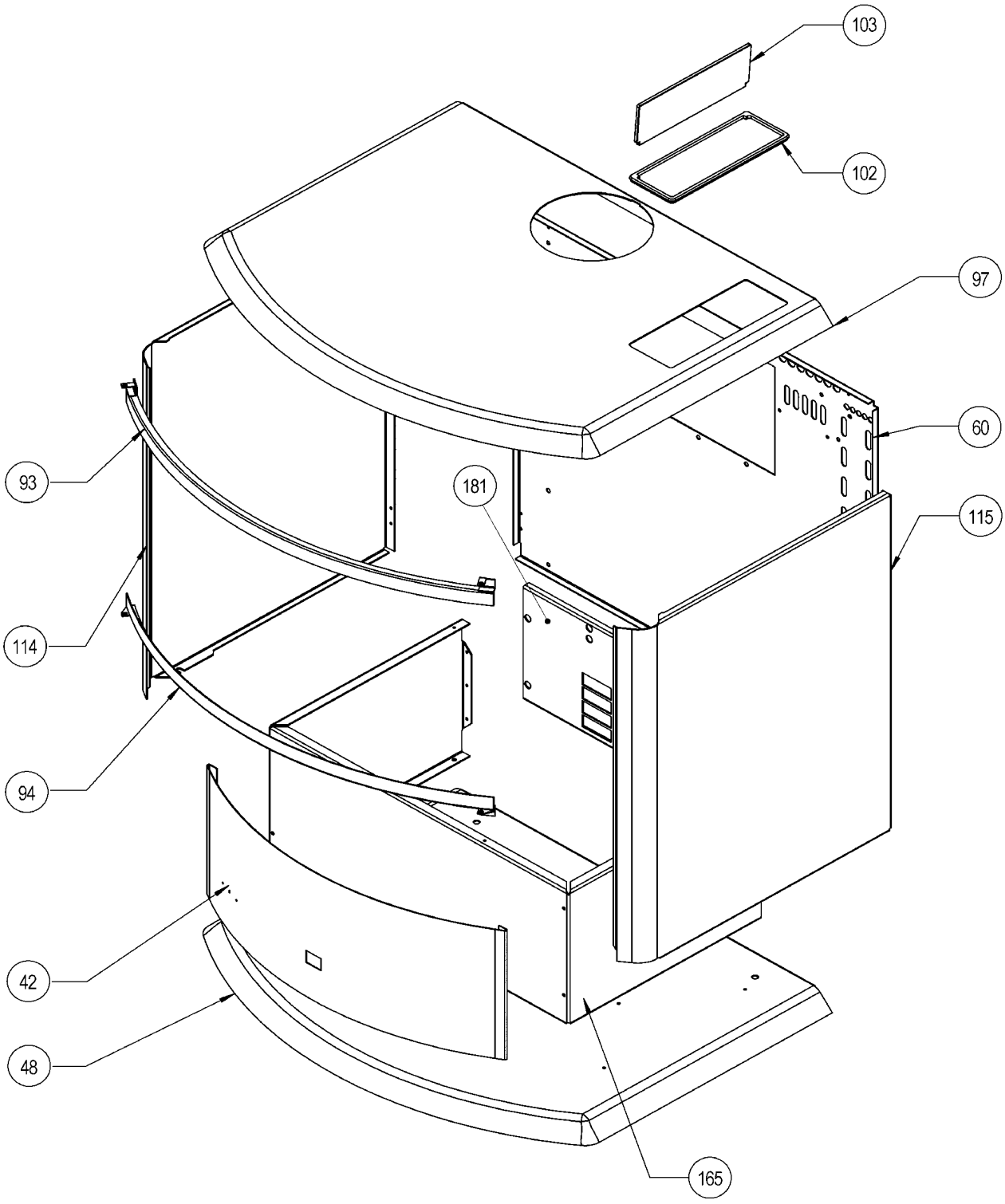

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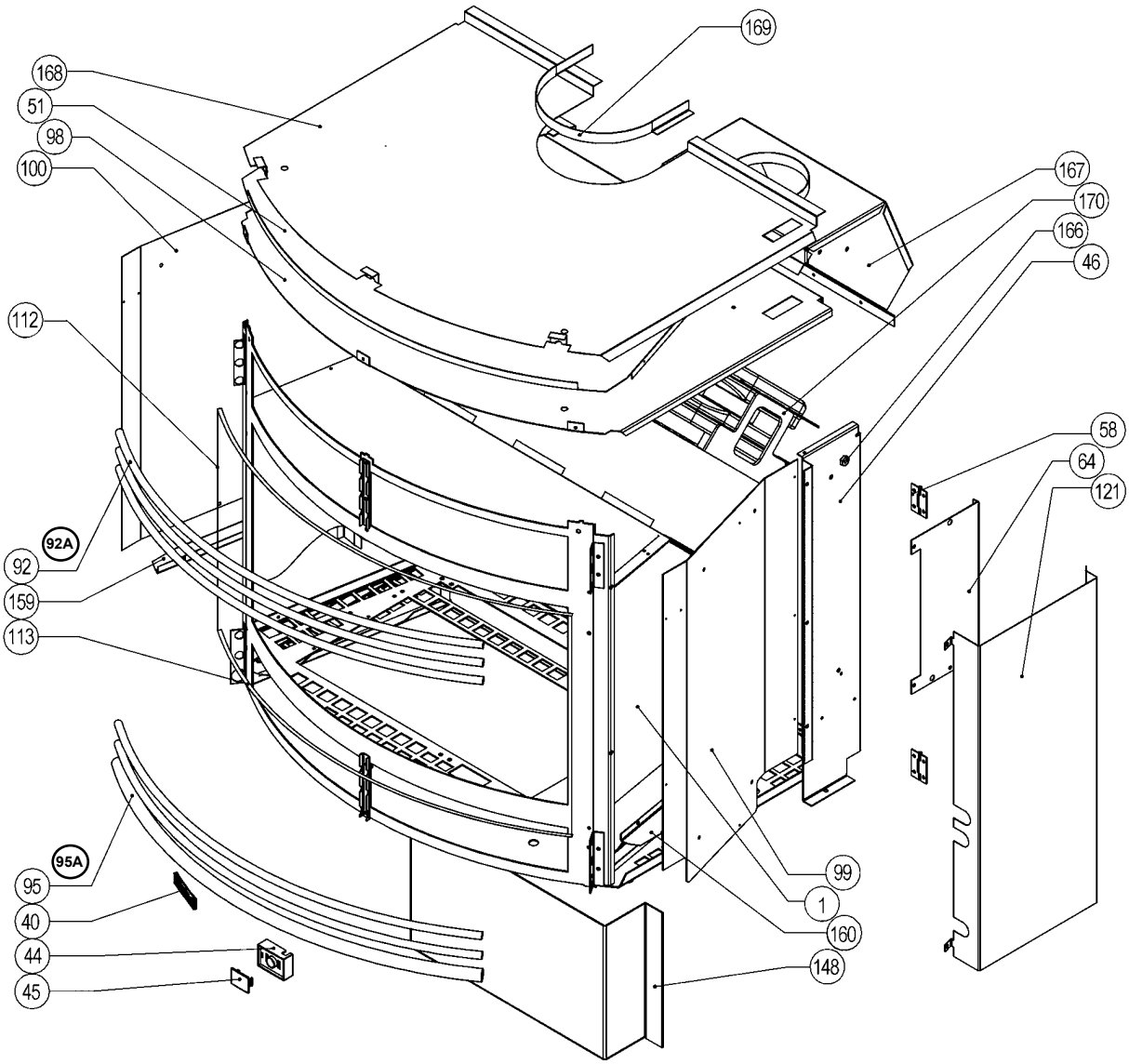

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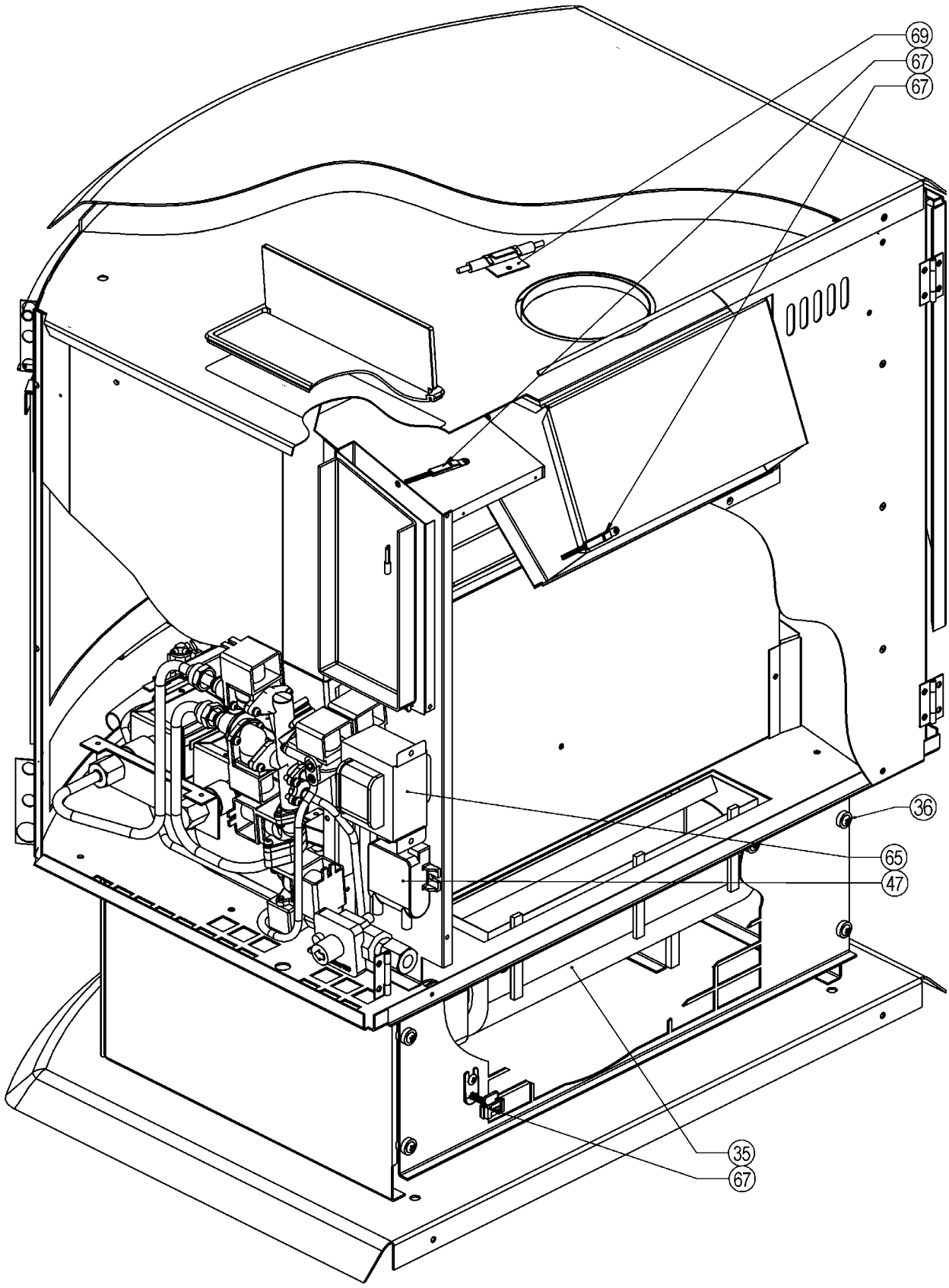

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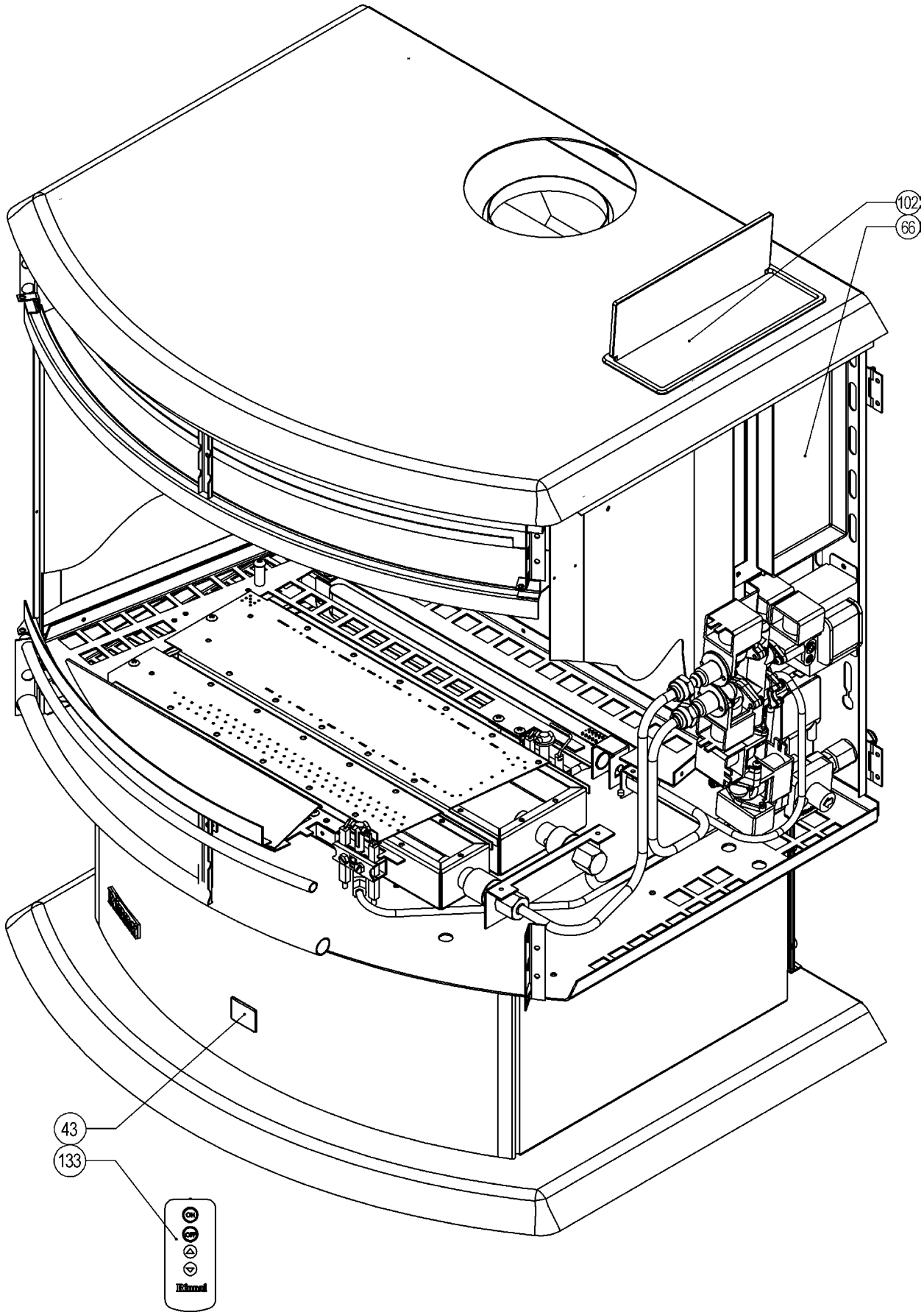

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New South Wales	Tel: (02) 9609 2888 Fax: (02) 9609 5260
Queensland	Tel: (07) 3209 4622 Fax (07) 3209 4722
Western Australia	Tel: (08) 9479 9479 Fax: (08) 9277 2531

Spare Parts

National	Tel: 1300 366 388 Fax: (03) 9271 6611

HelpLine

National	Tel: 1300 366 388 Fax: (03) 9271 6611

Product Service

Victoria / South Australia / Northern Territory / Tasmania	Tel: 1300 366 388 Fax: (03) 9271 6611
New South Wales	Tel: (02) 9609 2600 Fax: (02) 9729 0467
Queensland	Tel: 1300 363 123 Fax: (07) 3209 4722
Western Australia	Tel: (08) 9479 9479 Fax: (08) 9277 2531

Emergency Hot Water

Victoria	1800 632 386
New South Wales	(02) 9729 0468
South Australia	(08) 8345 5185
Western Australia	(08) 9324 4145
Queensland	1800 255 655

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