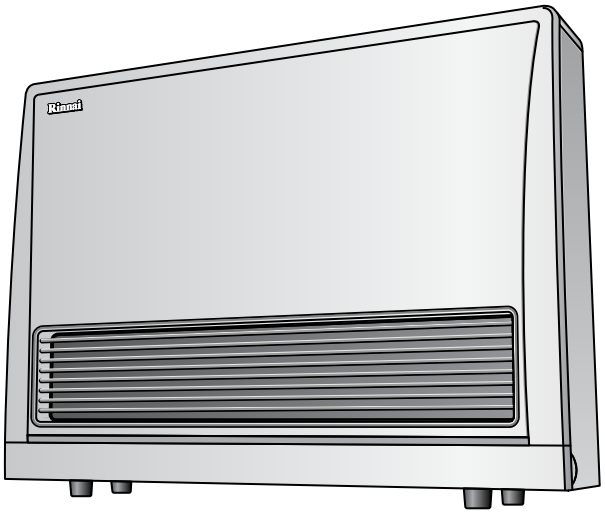
Rinnai Energysaver

ENERGYSAVER
RHFE-559FT

SERVICE MANUAL



High Efficiency Power Flued Gas Space Heater

WARNING

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

ALL WIRING INSIDE THIS APPLIANCE MAY BE AT 240 VOLTS POTENTIAL

ALL SERVICE WORK MUST BE CARRIED OUT BY AN AUTHORISED PERSON.

DO NOT TEST FOR GAS ESCAPES WITH AN OPEN FLAME

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

SM RHFE-559FT
Issue Nº2

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

Table of Contents

Glossary of Terms and Symbols

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

dB(A)	-	sound pressure level in decibels, “A” range
DC	-	direct current
AC	-	alternating current
Hz	-	Hertz
IC	-	integrated circuit
kcal/h	-	kilocalorie per hour
kPa	-	kilopascals
LED	-	light emitting diode
L/min	-	Litres per minute
mA	-	milliamps
MJ/h	-	megajoule per hour
mm	-	millimetres
mmH_2O	-	millimetres of water (gauge pressure)
NO_X	-	oxides of nitrogen (NO & NO_2)
OHS	-	overheat switch
PCB	-	printed circuit board
CPU	-	central processing unit
POT	-	potentiometer
rpm	-	revolutions per minute
SV	-	solenoid valve
ø	-	diameter
Δ^oC	-	temperature rise above ambient
POV	-	modulating valve
TH	-	thermistor

1. Introduction

Background

The Energysaver RHFE-559FT incorporates an improved modulating control system to provide comfortable heating. Other features of these appliances are improved safety, operation, installation, and maintenance features.

Characteristics

- Built into the main PCB is the software for connection to a central ON-OFF control.
- Gas flow modulates in 7 steps between High and Low ensuring comfortable and efficient heating.
- Includes a 24 hour digital clock and dual timer, and an economy mode function. This reduces gas consumption without affecting comfort.
- Temperature control is monitored by “fuzzy logic” technology - relevance to each other.
- All operation and temperature control is with user-friendly push buttons.
- Improvements have been made to the rear convex section for clean-cut design.
- If a problem occurs or service is required, an error coded message appears on the digital display to direct 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 your heater

The bodywork is formed from 0.6 mm galvanised steel sheet, which forms a box to which the components, heat exchangers and blowers are attached. This is then covered by an outer case which is constructed from 0.6 mm galvanised steel sheet, and plastic mouldings.

The combustion chamber is constructed from 1.0 mm hot dip aluminium coated steel sheet, located in the lower centre of the appliance.

The heat exchanger is composed of two sub-heat exchangers sets. The left hand set, No.1 is constructed of 1.0 mm aluminised steel. The right hand set, No.2 is constructed of 0.8 mm stainless steel. The inlet of sub-heat exchanger No.1 is connected to the outlet of the combustion chamber, the outlet is connected to sub-heat exchnager No.2. Sub-heat exchanger No.1 consists of 7 “sub” sections, constructed from 0.8 mm stainless steel. The outlet of sub-heat exchanger No.2 is constructed from 0.5 mm stainless steel and connected to the flue by a concertina stainless steel tube.

The combustion air fan draws combustion air from the outside atmosphere through the flue manifold pipe. Air is then blown into the combustion chamber via a rubber tube. Combustion products in the combustion chamber are pushed out into sub-heat excchanger No.1, to sub-heat exchanger No.2, and then into the 34 mm flue pipe which is connected through the flue manifold to the outside atmosphere.

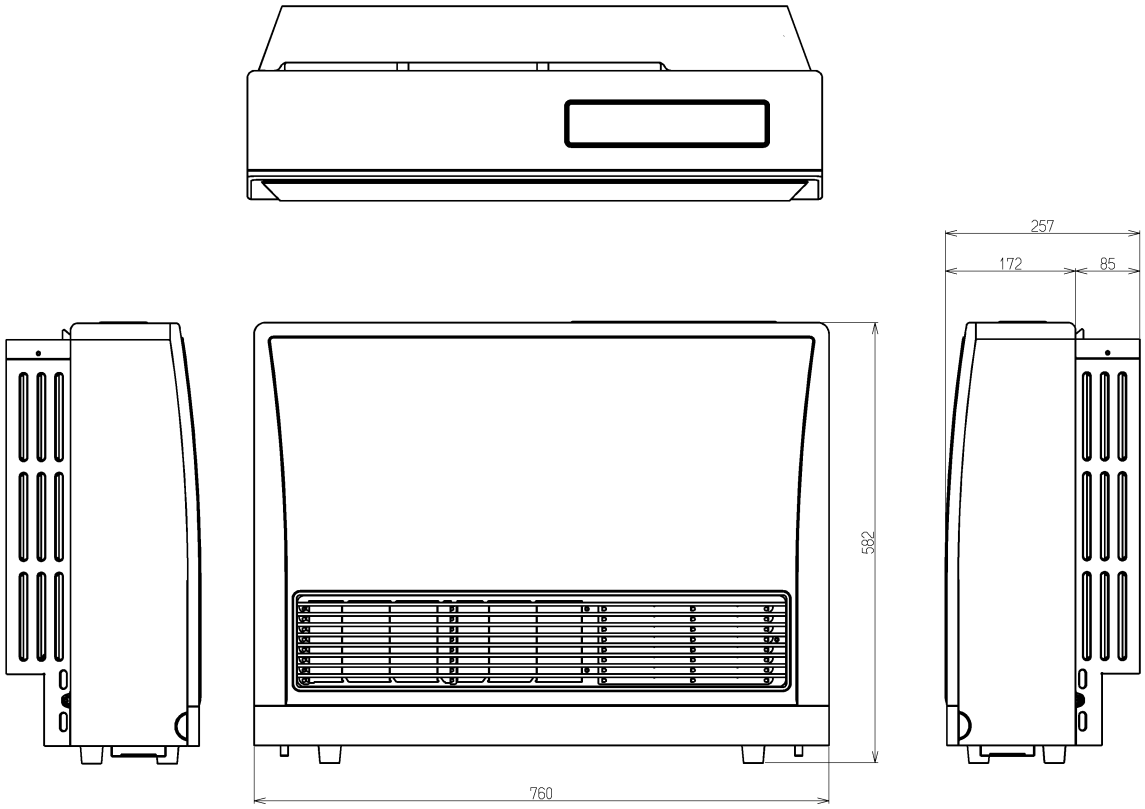
The flue system is connected with stainless steel concentric pipe, The inner pipe (34 mm diameter), is the combustion gas outlet, and is connected to the outlet of sub-heat exchanger No.2. The outer pipe (70 mm diameter) is the combustion air inlet and is connected to the inlet of the combustion fan air pipe. Various flue lengths are available.

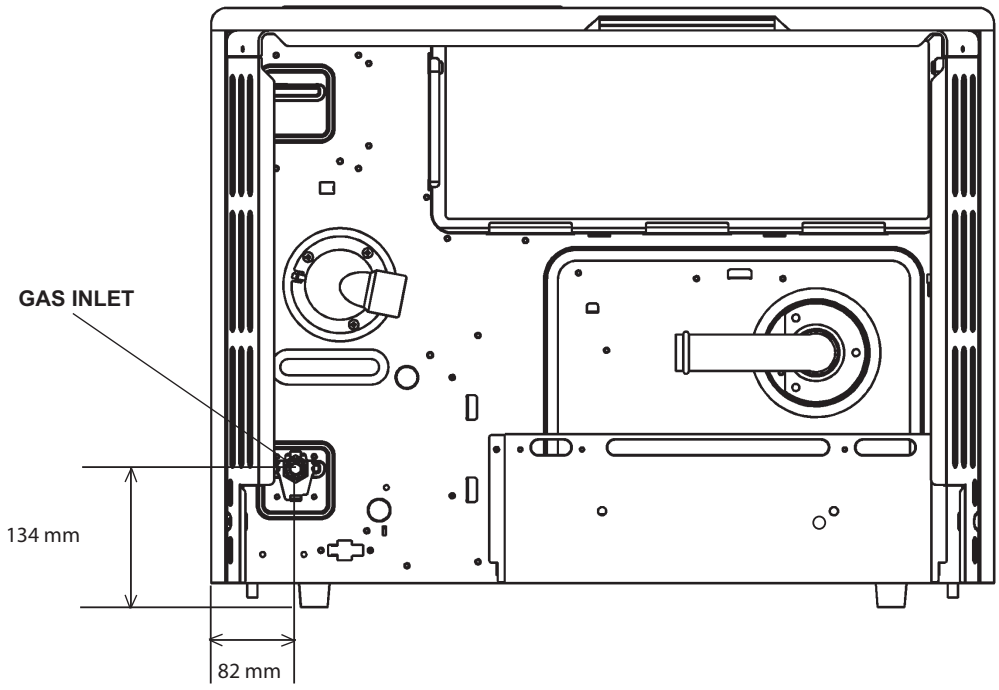
Ignition is continuous spark in conjunction with an electrically operated solenoid and control is monitored by the PCB. Gas passes through the R1/2 15 (BSP) inlet fitting, then via a flange connection to the solenoid valves No.1, No.2, a regulator modulating valve, aluminium injector manifold, before entering the burner.

2. Dimensions

RHFE-559FT

Note: All dimensions are in millimetres

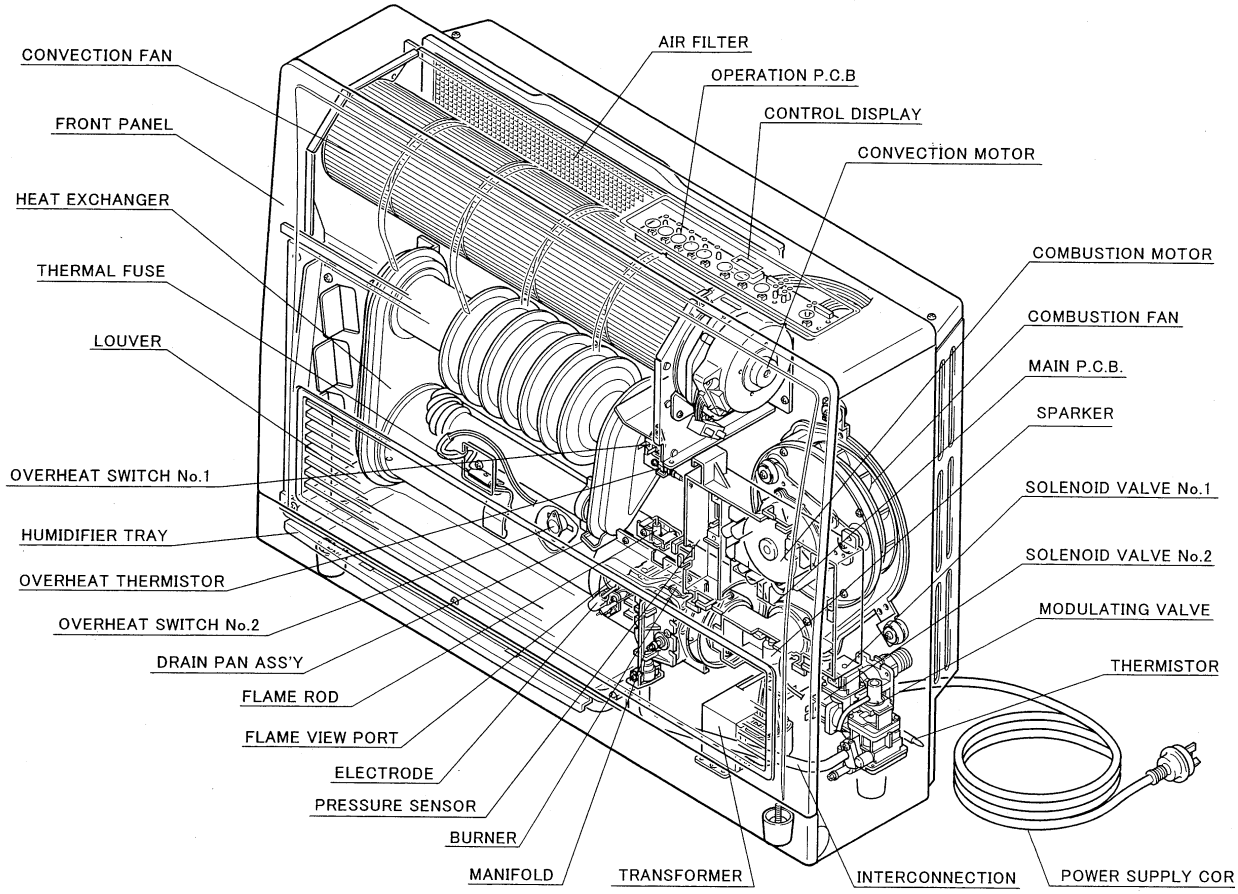




3. Specification

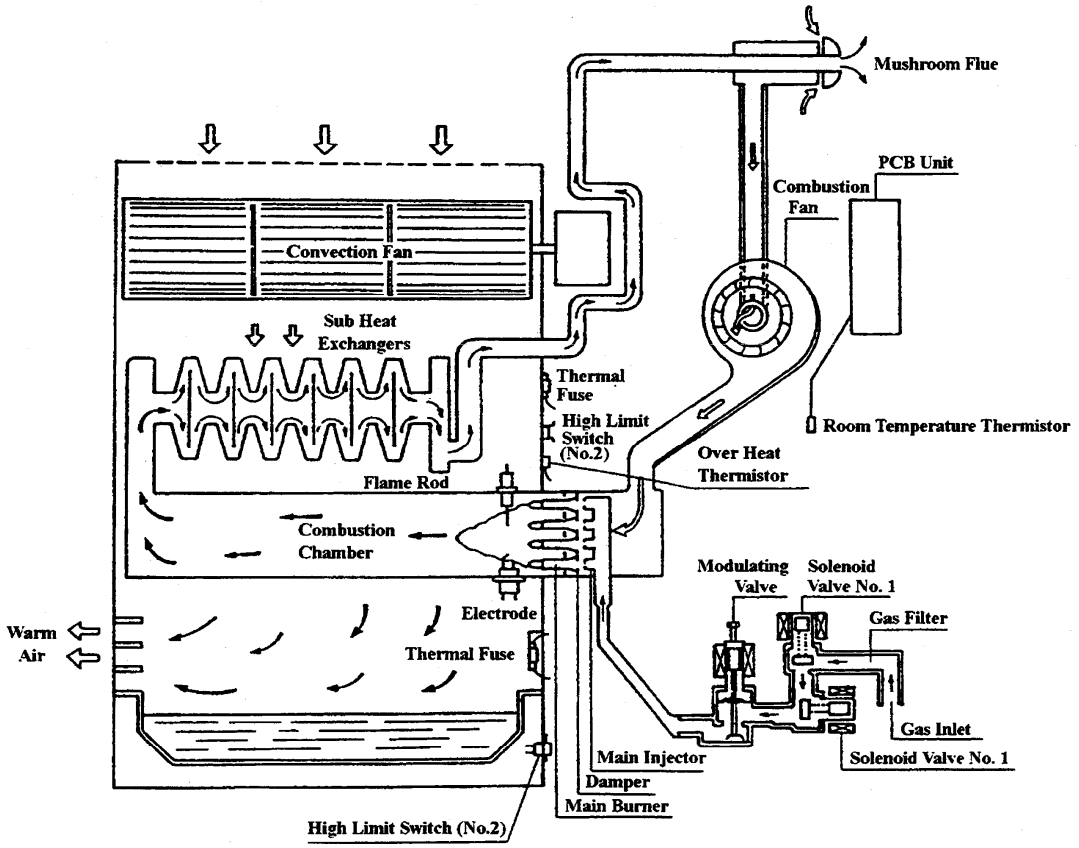
Refer to Operation / Installation Manual for Specification details

4. Cut-Away Diagram



5. Schematic Diagram

RHFE-559FT - Schematic Diagram



6. Control Panel Layout

7. Safety Devices

Overheat Switch:

This device automatically shuts the gas supply off if the heater exceeds a predetermined temperature.

This is normally caused by an obstruction in front of the louvres, or a blocked fan filter.
If the overheat switch operates, turn the unit 'OFF', remove the obstruction (clean filters) and allow the unit cool off for 10-15 minutes before re-operating.

Fusible Links:

The fusible link activates under conditions of severe overheating and shuts off the gas supply.
A service call will be required to repair the appliance.

Flame Failure Device:

If the flame goes out during operation this device shuts off gas to the burner. To reset, turn the unit 'OFF', then 'ON' again. If this happens repeatedly a service call is required.

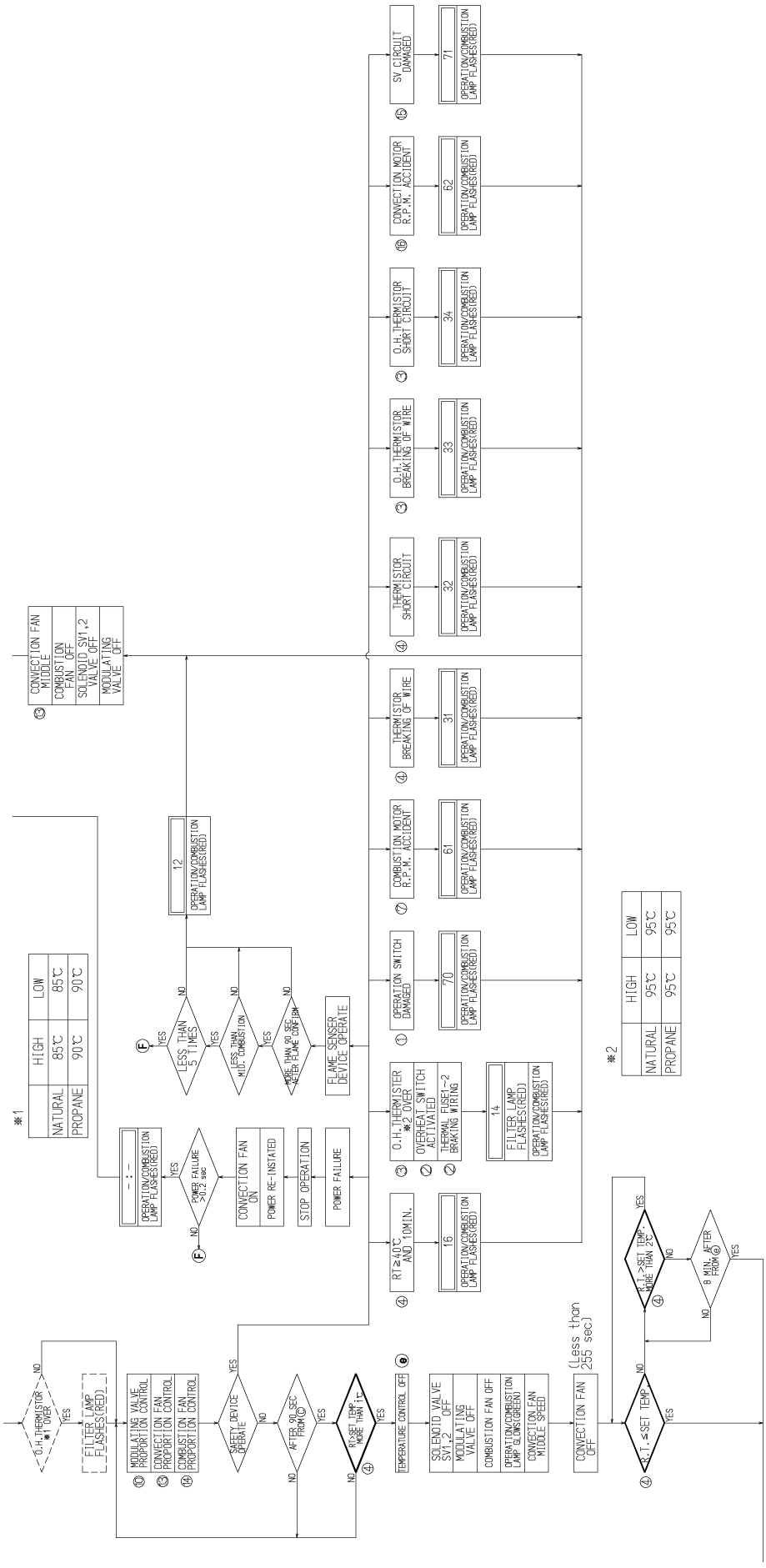
Electrical Fuse:

The electrical circuits are protected by an electric fuse. When the fuse blows, the heater will not operate. The fuse must be replaced by an authorised person.

Power Failure:

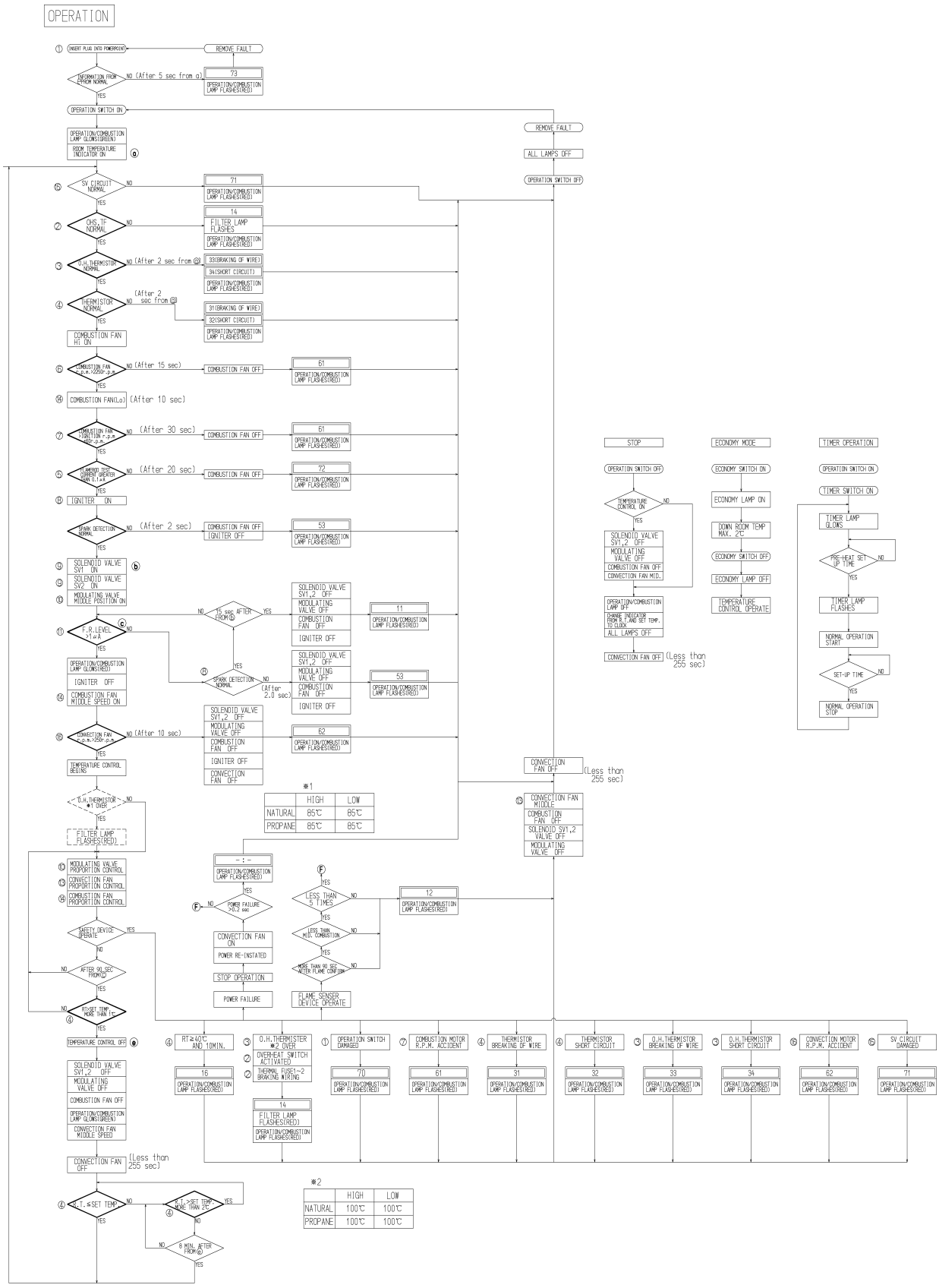
In the event of a power failure or power cut, the gas valves will automatically close. After the power is re-instated the appliance will automatically re-start. The time of day will need to be reset to the correct current time.

8. Operation Flow Chart



<RHFE-559FT FLOW CHART>

OPERATION



9. Diagnostic Points

Part	Wire		309FT	Measurement	559FT	Measurement
Control Panel	Red - Blue		DC0-5V (Pulsed voltage) The resistance is infinity but the curent flow when the switch is pushed.	0.1 ~ 0.2V (This is pulse voltage)	DC0-5V (Pulsed voltage) The resistance is infinity but the curent flow when the switch is pushed.	-
	Blue - Blue					
Hi-Limit SW etc.	White - White		Below DC 1V, Below 2Ω	0.2Ω	Below DC 1V, Below 2Ω	-
	White - White (OHS1)					
	White - White (TF)					
	White - White (OHS2)					
Hi-Limit TH	White - White		0.87-482kΩ (<0.87kΩ:Short, >482kΩ:Open)	-	0.87-482kΩ (<0.87kΩ:Short, >482kΩ:Open)	-
	Temperature		0 °C:214kΩ, 20°C:78kΩ, 50°C:21kΩ 80°C:7.3kΩ, 100°C:3.6kΩ, 135°C:1.5kΩ	-	0 °C:214kΩ, 20°C:78kΩ, 50°C:21kΩ 80°C:7.3kΩ, 100°C:3.6kΩ, 135°C:1.5kΩ	-
	White - White (Filter sign)	High	NG: Flashes below 6.19kΩ LP: Flashes below 5.29kΩ	-	NG: Flashes below 6.19kΩ LP: Flashes below 6.19kΩ	-
		Low	NG: Flashes below 6.19kΩ LP: Flashes below 5.29kΩ	-	NG: Flashes below 6.19kΩ LP: Flashes below 6.19kΩ	-
	White - White (The TH operate)	High	NG: Operates below 4.53kΩ LP: Operates below 4.53kΩ	-	NG: Operates below 3.90kΩ LP: Operates below 3.90kΩ	-
		Low	NG: Operates below 4.53kΩ LP: Operates below 4.53kΩ	-	NG: Operates below 3.90kΩ LP: Operates below 3.90kΩ	-
RT TH	Yellow - Yellow		1.82-707kΩ (<1.82kΩ:Short, >707kΩ:Open)	-	1.82-707kΩ (<1.82kΩ:Short, >707kΩ:Open)	-
	Temperature		0 °C:113kΩ, 20°C:39kΩ, 30°C:24kΩ, 40°C:15kΩ	-	0 °C:113kΩ, 20°C:39kΩ, 30°C:24kΩ, 40°C:15kΩ	-
FR	Yellow - Yellow		Below 0.1μA (During Stop)	-	Below 0.1μA (During Stop)	-
Combustion Fan (In case of short vent.)	White - Black		Below ignition revolution +2Hz	-	Below ignition revolution +2Hz	-
	Ignition revolution	Initial	LP: 56Hz, NG: 60Hz	-	LP: 65Hz, NG: 70Hz	-
		Re-attempt	LP: 56Hz, NG: 60Hz	-	LP: 65Hz, NG: 70Hz	-
	Normal revolution	High	LP: 105Hz, NG: 91Hz	-	LP: 112Hz, NG: 105Hz	-
		Low	LP: 55Hz, NG: 52Hz	-	LP: 55Hz, NG: 54Hz	-
Combustion Fan (In case of long vent.)	White - Black		Below ignition revolution +2Hz	-	Below ignition revolution +2Hz	-
	Ignition revolution	Initial	LP: 56Hz, NG: 60Hz	-	LP: 65Hz, NG: 70Hz	-
		Re-attempt	LP: 56Hz, NG: 60Hz	-	LP: 65Hz, NG: 70Hz	-
	Normal revolution	High	LP: 115Hz, NG: 103Hz	-	LP: 112Hz, NG: 110Hz	-
		Low	LP: 60Hz, NG: 60Hz	-	LP: 58Hz, NG: 56Hz	-

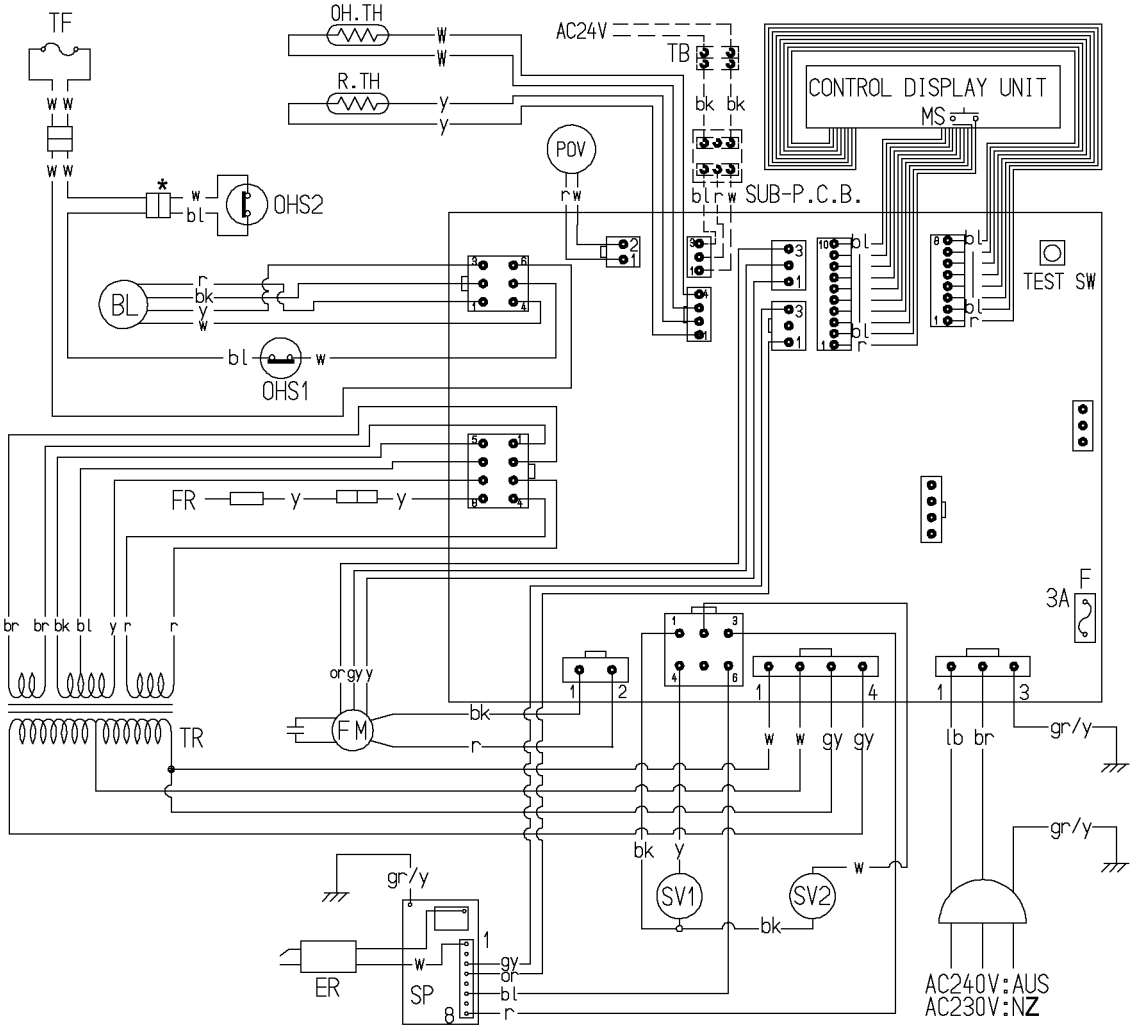
Diagnostic Points - Page Two of Two

Part	Wire	309FT	Measurement	559FT	Measurement
Convection Fan	Red - Black	50-110V 90-180Ω	68.4 ~ 85.3V (Without flont panel) 135.8Ω (20°C)	50-110V 70-160Ω	70 ~ 90V (Without flont panel) 116.5Ω (20°C)
SV	Black-White	80-100V 1.5-2.5kΩ	92.6V, 1.9kΩ	80-100V 1.5-2.5kΩ	-
	Black-Yellow		92.6V, 2.0kΩ		-
POV	Red-White	DC2-15V (Low-High) 60-90Ω	DC5.4-11.9V, 74.3Ω	DC2-15V (Low-High) 60-90Ω	-

Transformer*	Australia (240V)
Gray - Gray	AC216-264V, 20-60Ω
Red - Red	AC20-40V, 0.5-2.0Ω
Brown - Brown	AC10-30V, 1-5Ω
Black - Yellow	AC200-240V, 150-350Ω

*Both models are same

10. Wiring Diagram

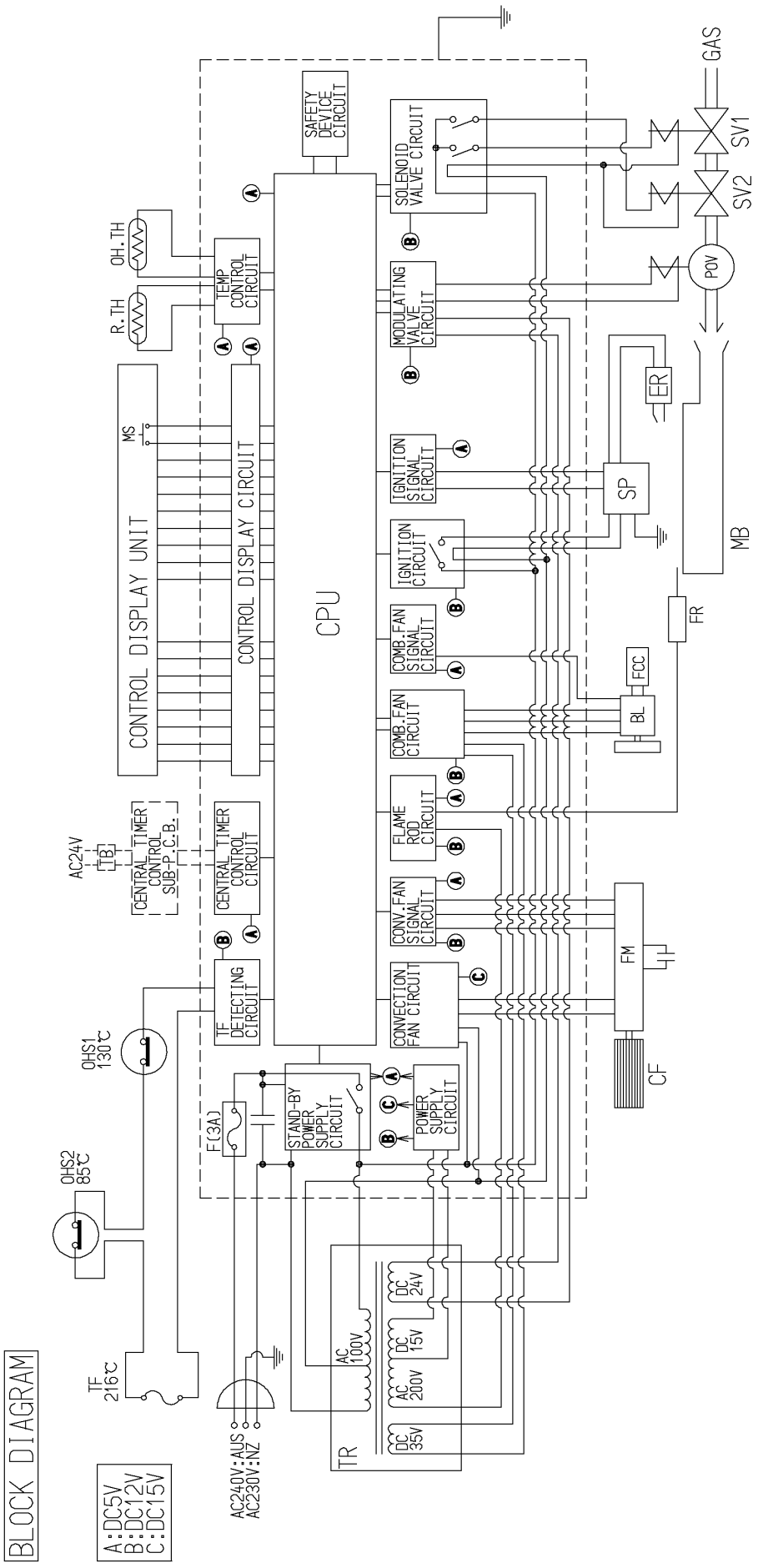


CODE	COLOUR	CODE	COLOUR
bk	black	w	white
bl	blue	y	yellow
lb	light blue	gy	gray
gr/y	green/yellow	or	orange
r	red	br	brown

MARK	PARTS NAME
MS	MAIN SWITCH
R.TH	THERMISTOR
TF	THERMAL FUSE
F	FUSE
ER	ELECTRODE
POV	MODULATING SOLENOID VALVE
TR	TRANSFORMER
FR	FLAME ROD
CF	CONVECTION FAN
FM	CONVECTION FAN MOTOR
SP	SPARKER
OH.TH	OVER HEAT THERMISTOR
SV1～2	SOLENOID VALVE 1～2
BL	COMBUSTION FAN MOTOR
FCC	FAN CONTROL CIRCUIT
CPU	CENTRAL PROCESSING UNIT
MB	MAIN BURNER
OHS.1～2	OVERHEAT SWITCH 1～2
TB	TERMINAL BLOCK

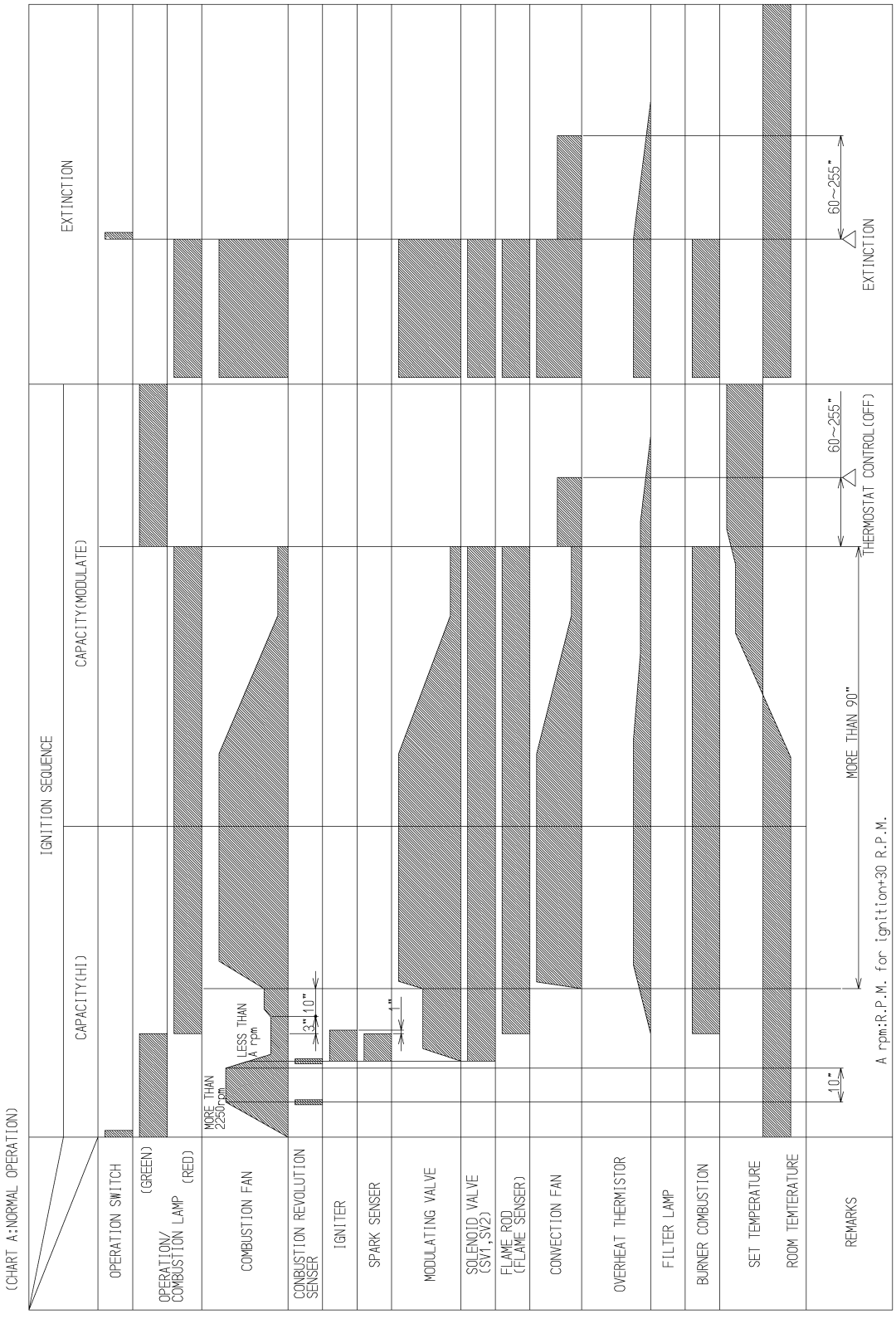
* NOTE: THIS CONNECTOR APPLICABLE TO RHFE-559FT ONLY.

11. Block Diagram

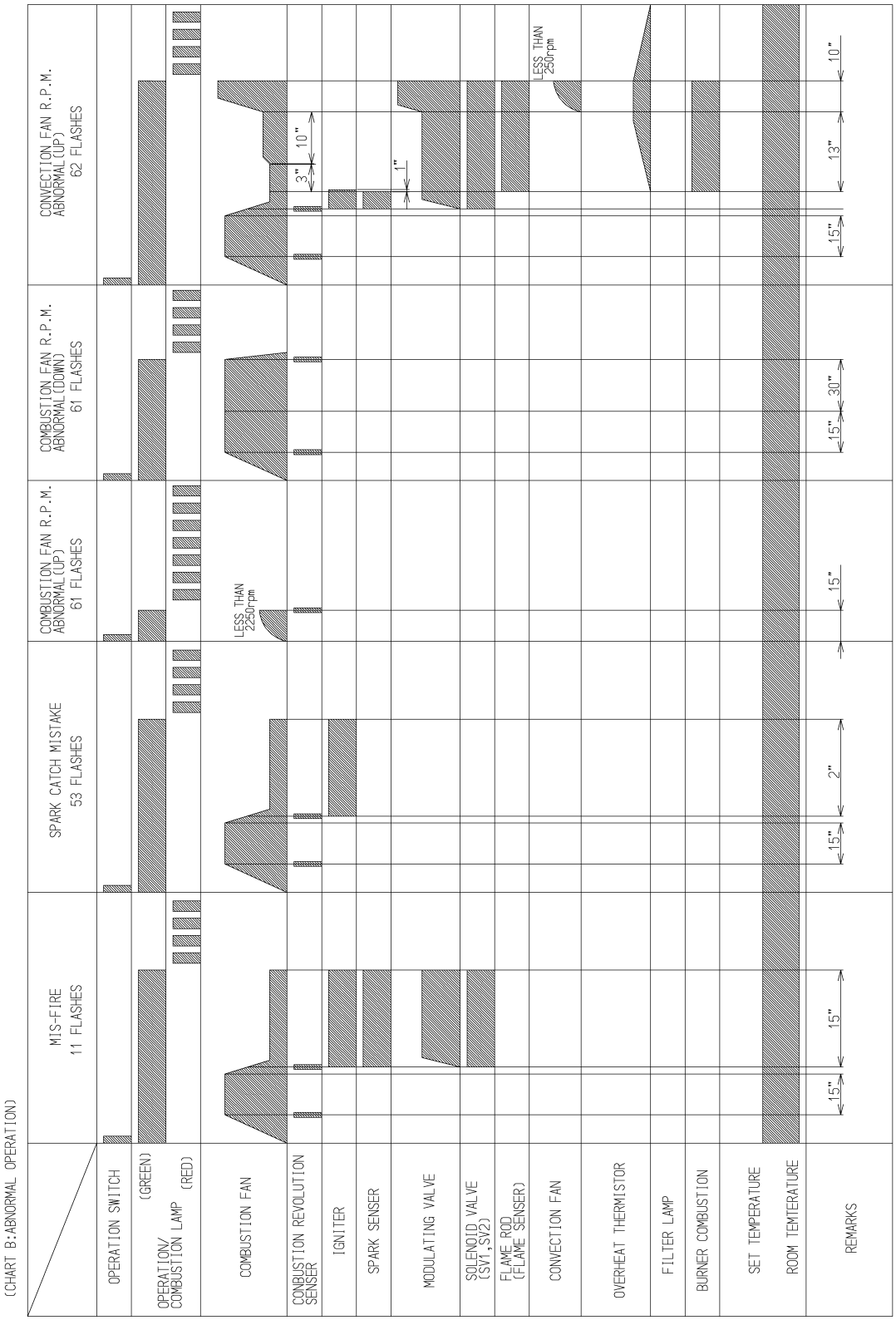


12. Time Charts

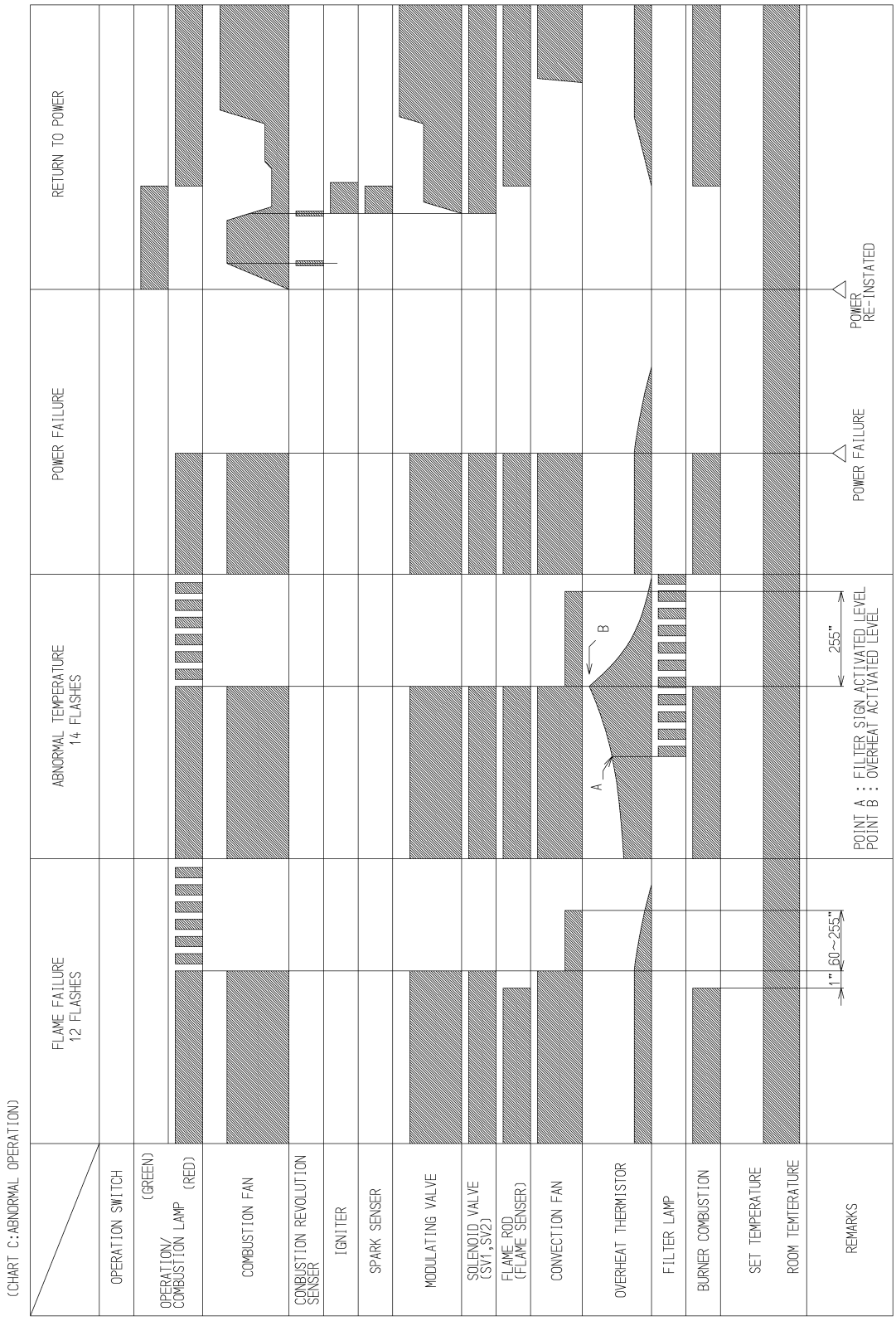
RHFE-559FT - Time Charts (page one of three)



RHFE-559FT - Time Charts (page two of three)



RHFE-559FT - Time Charts (page three of three)



13. Fault Finding

Trouble Shooting Check List

Please check this list before asking for Service

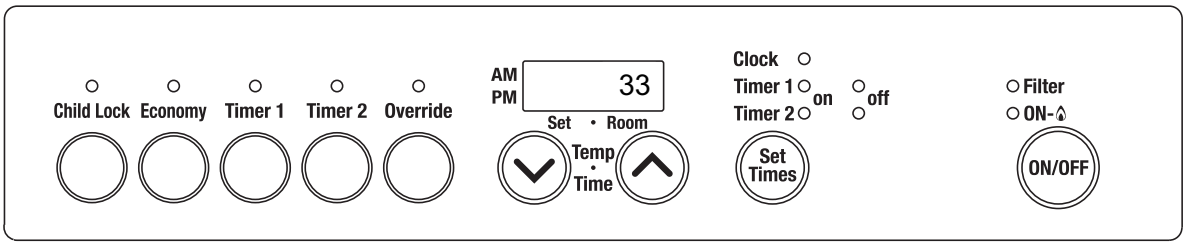
Fault / Cause	No Power ON/Combuston Indicator	Burner doesn't ignite	Unusual Combustion	Combustion stops during operation	Smell of Gas	Noisy Ignition	Remedy
Not plugged in	●	●					Plug in power cord and press the control panel 'ON'/ 'OFF' button.
Power Cut	●	●		●			Re-ignite manually after power is restored.
(Initial Installation) Air in gas pipe		●					Purge air (Installer).
Gas Filter Blocked		●	●				Service Call (Contact Rinnai).
Mis-Ignition	●	●					Check customer instructions.
Flue Terminal obstructed			●	●		●	Clear obstruction.
Flue manifold not connected					●	●	Service Call (Contact Rinnai).
Louvre obstructed				●			Clear obstruction.
Air Filter Blocked				●			Clean filter (weekly).
Gas Escape					●		Service Call (Contact Rinnai).
'ON' Timer is set		●					Cancel 'ON' Timer or press the override button.
Gas turned 'OFF' at meter		●					Turn Gas 'ON'.
Function / Child Lock Set		●					Cancel Function / Child Lock.

If you are unsure about the way the unit is operating, contact Rinnai or your Agent.

Before asking for a service call please check the following.
These symptoms are part of the normal operation of the unit and do not indicate a fault.

Symptom		Explanation
At Ignition:		
Warm air does not start when the burner lights.	→	The fan is started automatically after a short delay. This is to allow the heat exchanger to warm up, helping to avoid cold draughts.
Smoke or strange smells are produced on the first trial light up after installation.	→	This is caused by grease or oil from the manufacturing process on the heat exchanger and dust, and will stop after a short time.
Sharp clicking noises at ignition, or when the unit cuts down on the thermostat, or goes out.	→	This is simply expansion noise from the metal heat exchanger.
During combustion:		
Clunking noise when the thermostat operates.	→	This is the sound of the solenoid gas valves opening and closing.
When the unit is turned 'OFF':		
Convection fan continues to run after turning 'OFF'	→	This is to remove the residual heat from the heat exchanger. The fan will stop when the unit cools down.
Other points:		
Steam is discharged from the flue terminal.	→	High efficiency appliances tend to discharge water vapour on cold days. This is normal.
Heater does not start even when 'ON' button is pushed and thermostat is on HIGH.	→	Check timer. Timer must be in the "OFF" position for manual operation. Room temperature is hotter than 'High' setting.
Timers:		
Timers do not operate at set time.	→	Timers may either be inactivated or incorrectly programmed. Repeat programming. Refer to "OPERATING THE TIMERS" on page 11.
Timer operates for 30 seconds then cuts out.	→	Room temperature may be higher than set temperature. Adjust temperature upwards if desired.

14. Error Messages



The Energysaver® Range of heaters has the ability to monitor its own operation continuously. If a fault occurs, an Error Message will flash on the Digital Display ⑪ on the control panel. This assists with diagnosing the fault, and may enable you to overcome a problem without a service call.
Please quote the code displayed when inquiring about service.

Code Displayed	Fault	Remedy
11	Ignition failure	Check gas supply is turned 'ON' Turn Heater 'OFF' then 'ON' again Service call if repeated
12	Flame failure	Check gas is turned 'ON'
14	Overheat	Clean filter Service call if repeated
16	Room Overheat	Lower room temperature to less than 40°C
31 32	Room temperature sensor faulty	Service call
33 34	Overheat temperature sensor faulty	Service call
53	Sparker failure	Service call
61	Combustion fan failure	Service call
62	Convection fan failure	Service call
70	Faulty 'ON'/'OFF' Switch	Service call
71	Faulty solenoids	Service call
72	Faulty Flame Rod	Service call
73	Communication error	Service call

In all cases, you may be able to clear the Error Message simply by turning the heater 'OFF', then 'ON' again. If the Error Message still remains or returns on the next operation, contact Rinnai or your nearest service agent and arrange for a service call.

NOTE

Service calls for general cleaning, maintenance and wear and tear are not necessarily covered under the warranty. Service calls of this nature may be chargeable.
Faults caused by insufficient gas supply, gas quality, installation errors or operation errors are not covered by the Rinnai warranty. Refer to the Warranty Card for details.

15. Gas Pressure Setting Procedure

Refer seperate Rinnai document behind front cover of appliance.

16. Gas Conversion Procedure

Refer seperate document availabe from Rinnai.

17. Dismantling for Service

NOTE: Before proceeding with dismantling, be sure to follow the

CAUTION

240 volt potential inside appliance

Disconnect electrical supply

ONLY AUTHORISED PERSON TO CARRY OUT REPAIRS TO THIS APPLIANCE

DISMANTLING FOR RHFE-559FT

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

NOTE

When servicing this unit, please make sure that flue integrity is checked, i.e. check for any corrosion of transition box and clear any deposit.

Also check for any burn marks around the burner cover plate.

Check that the drip catcher is fitted.

Note: Please ensure that proper screws are used at proper location in re-assembly

To secure metallic panel	Front/Side panel, louvre	Gas connecting tube	Earthing lead
8g Pan Head - self taper	8g Pan Head - self taper with captive star washer	Pan Head M4 with captive spring washer	Pan Head M4 with captive star washer
			

To secure plastics, exhaust pipe	To secure air intake tube
Flat Head 8g - self taper	Flat Head M4
	

CAUTION

240 volt potential inside appliance

Disconnect electrical supply

1) Removal of Front Panel

a. Grip sides of skirt and pull forward to remove.

b. Remove five (5) screws to release louvre and front panel.

c. Remove the louvre.

d. Grip bottom left and right hand corners of front panel, lift up and pull forward to release.

2) Removal of Top Panel, Control Panel & Control Panel PCB

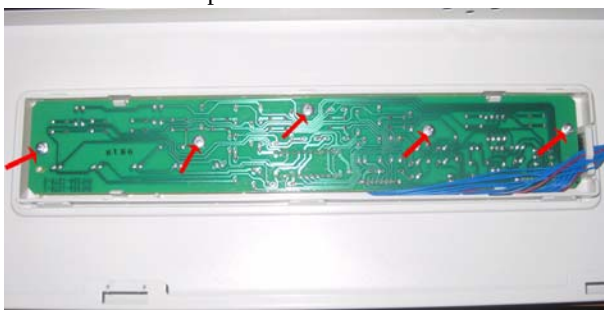
a. Remove front panel assembly, see section 1.

b. Remove (5) five screws from top panel.

c. Release (2) two multi-pin connectors from main PCB, releasing the control panel PCB harness from wire clip on main PCB casing.

d. Pull forward of top panel and lift both sides to remove..

e. Unscrew (5) five screws to remove control PCB from control panel.



CAUTION

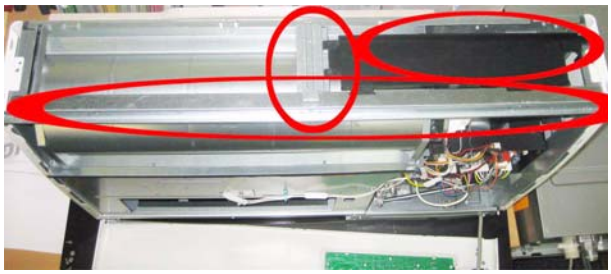
240 volt potential inside appliance

Disconnect electrical supply

3) Removal of Convection Fan Motor

a. Remove front panel assembly, see section 1. Remove top panel and control panel assembly, see section 2 a) ~ d).

b. Remove three parts which are on top.

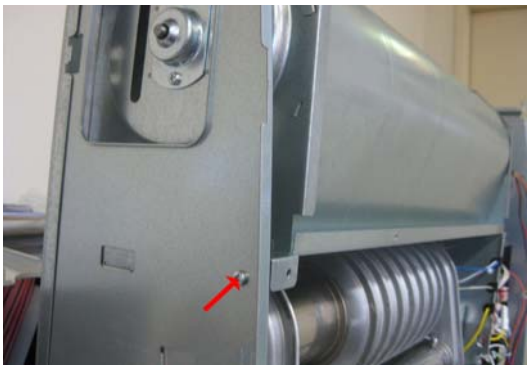


c. Remove two (2) screws on the left side panel.

d. Pull forward the left side panel to release the panel.

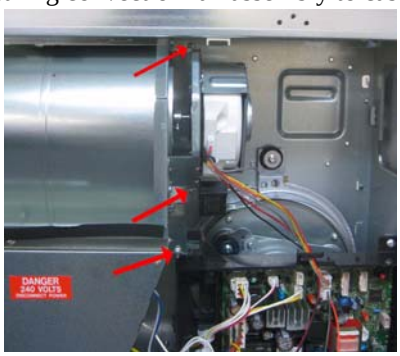
e. Remove one (1) screw at left side of casing.

f. Release two (2) multi-pin connectors from main PCB.



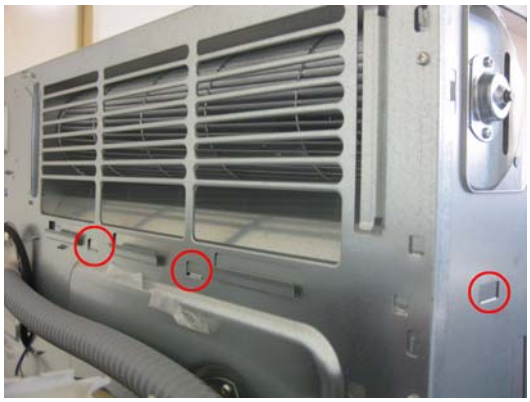
g. Disconnect the fuse connector and remove eight (8) screws securing heat shield, and lift heat shield off.

h. Remove three (3) screws on right hand side securing convection fan assembly to casing.



i. Grip convection fan assembly on both sides, and lift up carefully to remove from casing.

Note: There are three tabs on casing.
Please carefully remove and refit convection fan assembly.



CAUTION

240 volt potential inside appliance

Disconnect electrical supply

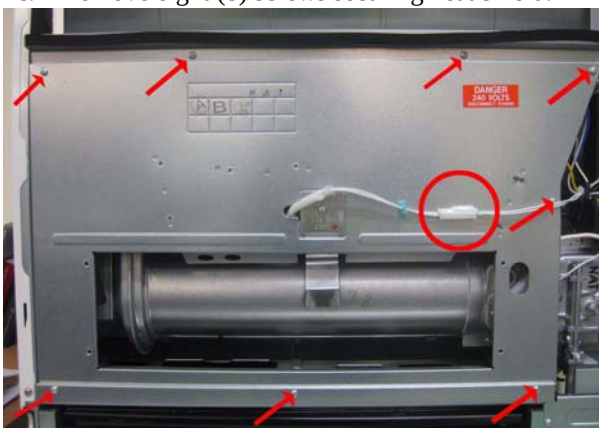
4) Removal of Heat Exchanger

Attention: Combustion tube gasket must be replaced (refer to part number 90199862) whenever burner tube cover plate has been removed. Need to clean off old gasket before fitting replacement gasket.

a. Remove front panel assembly, see section 1.

b. Disconnect fusible link on front of heat shield.

c. Remove eight (8) screws securing heat shield.

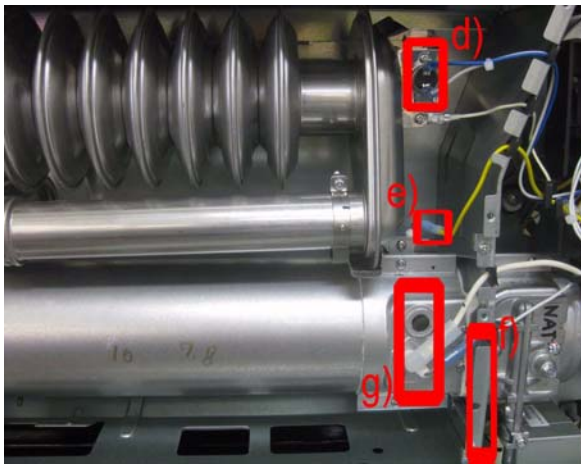


d. Disconnect overheat switch and thermistor, two (2) screws.

e. Disconnect flame sensing lead connector (pull of gently).

f. Remove blanking panel, two (2) screws.

g. Remove spark sensing lead, and high tension lead (pull off gently).

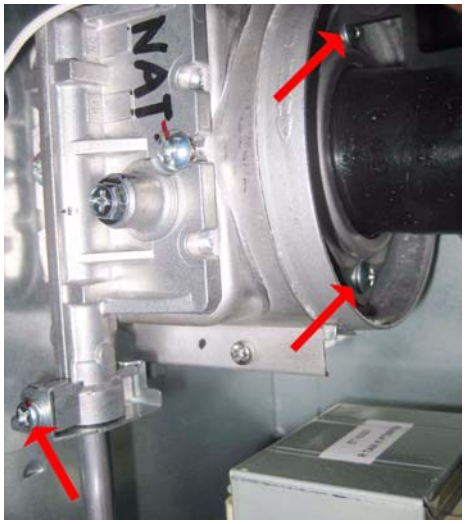


h. Remove top panel and control panel assembly, see section 2 a) ~ d)

i. Remove right side panel, two (2) screws.

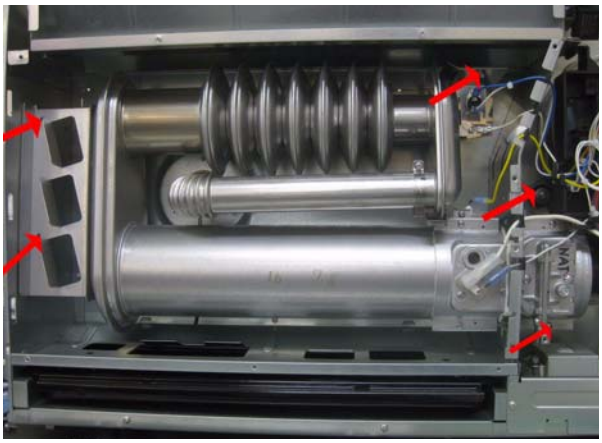
j. Remove two (2) air intake tube securing screws, one gas supply tube securing screw.

k. Rotate clip at end of gas supply tube push down on tube to release from manifold.



l. Remove flue spigot, three (3) screws.

m. Remove five (5) heat exchanger securing screws.



n. Grip heat exchanger on left hand side, then lift to release it from a tab and pull forward from the left hand side.

Note: Be careful not to damage O-ring on gas supply tube when removing right hand side of heat exchanger assembly.

Note: Refer to section 5 to disconnect burner from heat exchanger complete assembly.

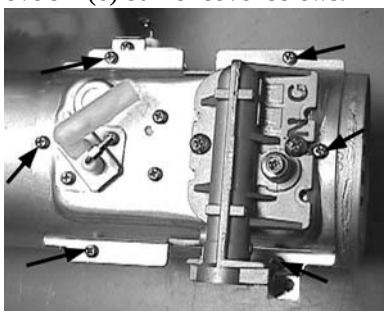
CAUTION

240 volt potential inside appliance

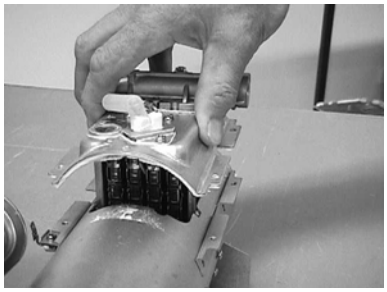
Disconnect electrical supply

5) Removal of Burner

a. Remove front panel assembly, see section 1.
b. Remove front heat shield, see section 4 b) ~ c).
c. Remove blanking panel, two (2) screws.
d. Remove spark sensing lead, and high tension lead (pull off gently).
e. Remove one (1) gas supply tube securing screw.
f. Rotate clip at end of gas supply tube push down on tube to release from manifold.
g. Remove six (6) burner cover screws.



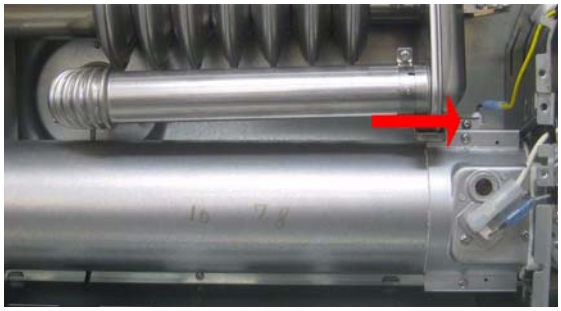
h. Gently manoeuvre burner and cover forward and out of burner chamber by pulling on manifold. Take care not to damage gasket.



Note: to reassemble the burner, please replace gland to secure airtight of burner chamber.

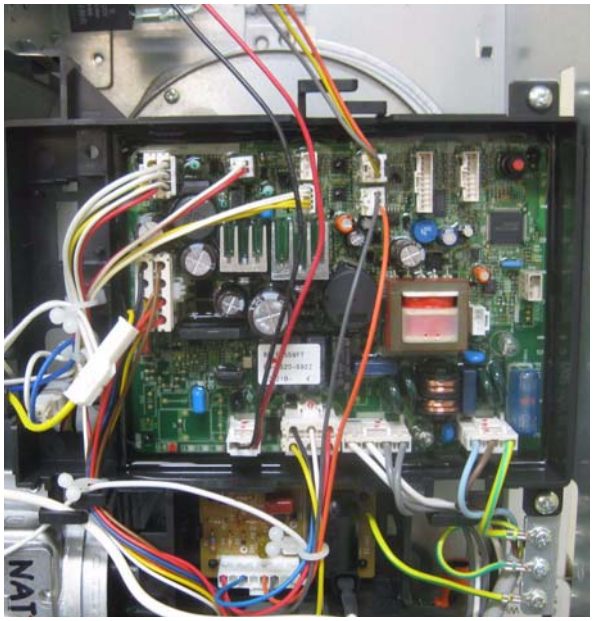
6) Removal of Flame Rod

a. Remove front panel assembly, see section 1.
b. Disconnect the fuse connector and remove eight (8) screws securing heat shield, and lift heat shield off.
c. Remove one (1) screw securing flame rod, and lift flame rod.



7) Removal of Main PCB

a. Remove front panel assembly, see section 1.
b. Disconnect all multi-pin connectors and wire harness from clips of PCB casing
c. Remove bottom earth screw only.
d. Release PCB by removing two (2) screws on right hand side.



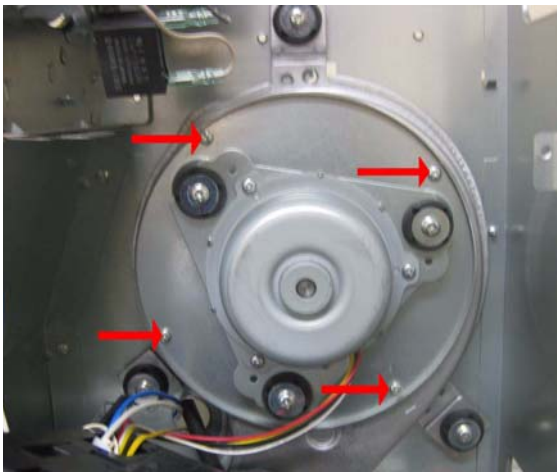
CAUTION

240 volt potential inside appliance

Disconnect electrical supply

8) Removal of Combustion Fan

a. Remove front panel assembly, see section 1.
b. Remove main PCB, see section 7
c. Remove four (4) combustion fan securing screws.



d. Grip triangular fan motor plate and pull forward to remove fan from casing.

Note: Arrow should be aligned when fan assembly is replaced.

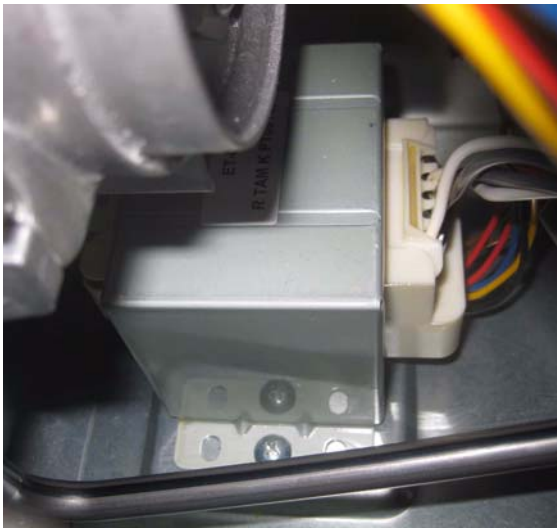
9) Removal of Gas Control

a. Turn off gas supply at the meter and disconnect appliance from installation.
b. Remove front panel assembly, see section 1.
c. Release solenoid connectors and one gas supply tube securing screw (1).
d. Release gas supply tube, take care with O-ring.
e. Remove four (4) screws surrounding gas inlet at back of heater.

f. Pull gas control assembly forward to remove.

10) Removal of Main Transformer

a. Remove front panel assembly, see section 1.
b. Remove one (1) securing screw from transformer mounting bracket.



c. Pull forward transformer to remove.

11) Removal of Room Thermistor

Note: Room temperature thermistor and heat exchanger overheat thermistor are connected together as one harness.

a. Remove front panel assembly, see section 1.
b. Remove top and right hand side rear spacer panels.
c. Reach in behind appliance and unclip thermistor from purse locks.
d. Disconnect the fuse connector and remove eight (8) screws securing heat shield, and lift heat shield off.
e. Remove overheat thermistor, see section 4 d.
f. Release connector from main PCB.

CAUTION

240 volt potential inside appliance

Disconnect electrical supply

12) Removal of Thermal Fuse

a. Remove front panel assembly, see section 1

b. Disconnect the fuse connector and remove eight (8) screws securing heat shield, and lift heat shield off.

c. Remove two (2) screws securing thermal fuse.

d. Release thermal fuse from appliance.

18. Parts List

Effective: 29/11/12
Supersedes: 28/04/10 Issue 2

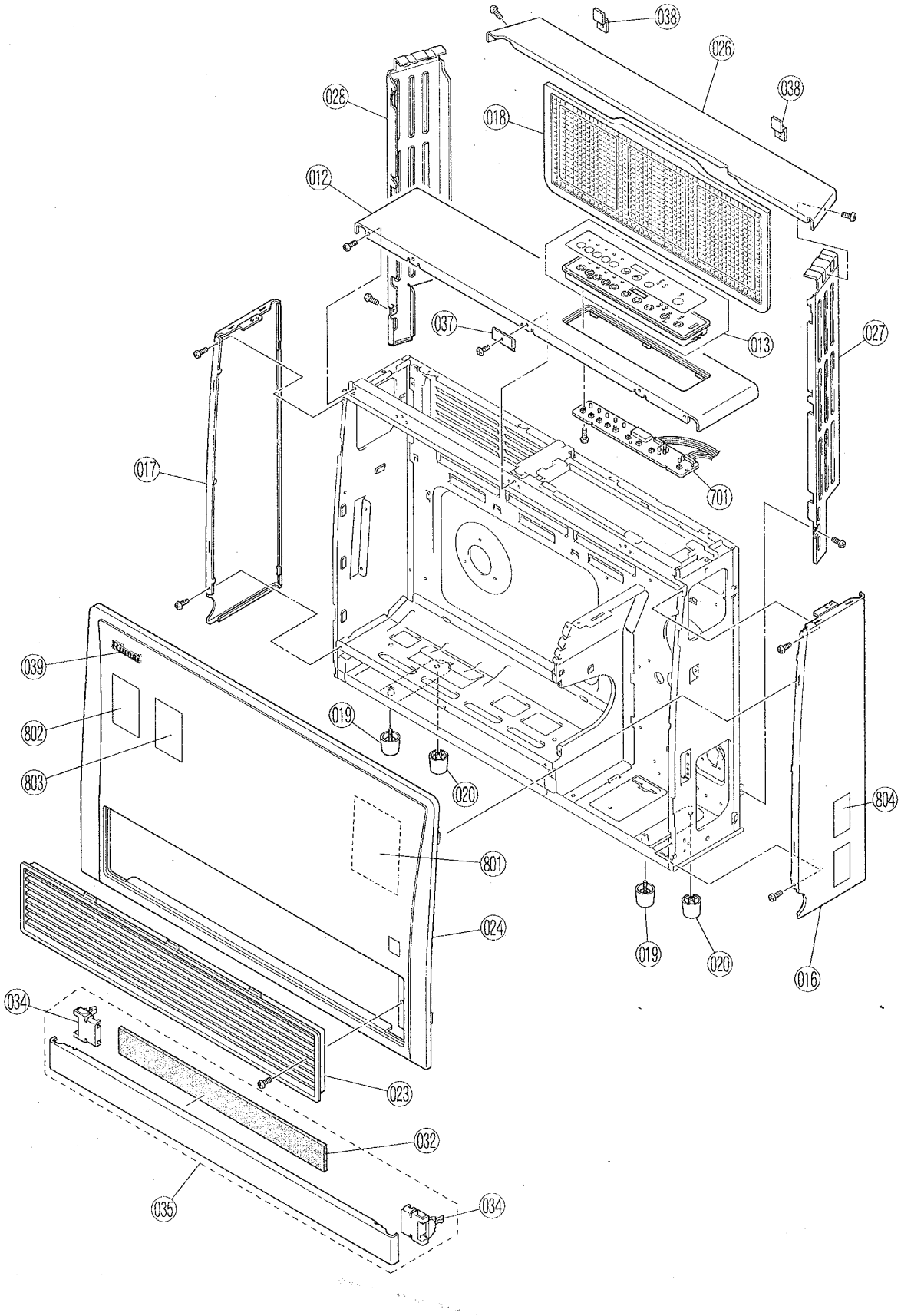
No. RA-2010-004			
Title: Spare parts for Energysaver RHFE-559FT			
No	**Description**	**RA Item**	**11 Digit Code**
1	Rear Panel A		004-936-000
2	Frame R		047-0006000
3	Frame L		047-0007000
4	Frame Center		047-0008000
5	Bottom Plate Support		005-281-000
6	Humidifier Tray Fixing Plate		538-0672000
7	Bottom Plate Upper Partition Plate		515-354-000
10	Top Plate Supporter H		044-194-000
11	Top Plate Supporter V		044-195-000
12	PANEL TOP	90196560	001-0719000
13	PANEL CONTROL	90196562	063-901-000
15	Cover		098-3025000
16	PANEL SIDE R	90196564	003-972-000
17	PANEL SIDE L	90196566	003-973-000
18	FILTER ASSY 1	90175548	017-296-000
19	FOOT FRONT	90165663	015-140-000
20	FOOT REAR	90165655	015-141-000
21	Floor Fixing Bracket		537-677-000
22	HEAT EXCH GASKET	90175563	580-640-000
23	LOUVER ASSY	90196568	095-251-000
24	PANEL FRONT	90196570	019-4377000
25	Heat Shierd Panel		030-0280000
26	BACK SPACER TOP	90196572	034-0052000
27	BACK SPACER R	90196574	034-0053000
28	BACK SPACER L	90196576	034-0054000
29	Warm Air Seal Panel		512-420-000
30	Cord Packing B		580-149-000
31	Cord Packing A		580-148-000
32	Heat Insulator A		031-331-000
34	Lock A		066-874-000
35	PANEL KICK ASSY	90196578	098-3026000
36	Guard		056-203-000
37	Front Panel Bracket		517-512-000
38	CLIP WALL SPACER	90147471	504-018-000
39	DECAL RINNAI	90196518	602-0817000
40	Lock Bracket		517-513-000
100	Heat Exchanger Assy		314-796-000
101	Fixing Plate		537-0931000
102	Combustion Chamber Fixer		537-673-000
103	OHS Fixer		538-0673000
104	Burner Box		527-217-000
105	Flange Board		190-199-000
106	Seal Plate B		538-653-000
107	Flame Rod Retainer		538-277-000
108	FLAME ROD	90142803	230-017-000
109	Flame Rod Bracket		537-849-000
110	Flame Rod Packing		580-458-000
111	BURNER ASSY	90170630	157-063-LPG
112	Seal Plate Packing		580-0615000

No. RA-2010-004			
Title: Spare parts for Energysaver RHFE-559FT			
No	**Description**	**RA Item**	**11 Digit Code**
113	Burner Box Supporter Assy		538-276-000
114	GASKET BURNER BOX	90175662	580-641-000
115	Burner Box Fitting Plate Assy		202-251-000
116	DAMPER	90196580	140-543-G00
117	DAMPER SECONDARY NG	90178740	140-564-100
117	DAMPER SECONDARY LP	90178112	140-564-200
118	Fitting Plate Packing		580-0616000
119	Manifold		101-779-000
120	INJECTOR LP	90196582	130-329-082
120	INJECTOR NG	90196584	130-329-125
121	Manifold Packing		580-392-000
122	Electrode Mounting Plate	999	202-251-000
123	ELECTRODE	999	202-251-000
124	GASKET ELECTRODE	999	202-251-000
125	GAS CONTROL	90196588	120-0083000
126	Inter Connection Assy		109-848-000
127	O RING GAS	90148594	520-001-010
128	O Ring		520-027-010
129	Pressure Point		501-193-000
130	GASKET	90176637	510-519-000
131	FILTER GAS	90196530	017-0108000
132	FLANGE GAS INLET	90165515	106-301-000
133	Connecting Tube Retainer		538-0674000
134	DRAIN COLLECTOR	90197286	517-296-000
135	INLET AIR	90196590	094-026-000
136	SEAL INLET HOUSING	90123050	510-506-000
137	INLET AIR HOSE	90196592	513-206-000
138	ELBOW AIR INLET RUBBER	90122953	191-051-000
139	TUBE CONN COMB CHAMB	90175720	322-141-000
140	Connecting Tube Fixer		538-062-000
141	Connecting Tube Fixer		538-0606000
142	Combustion Fan Casing Assy		019-0820000
148	Screw For Motor		501-303-000
149	CUSHION	90183195	540-051-000
150	FLUE SLIDING TUBE ASSY	90196594	554-224-000
151	ORING EXHAUST	90196528	520-160-000
152	COVER OUTLET FLUE	90165382	034-457-000
153	CLIP INSTALLATION	90165374	552-075-000
156	Pressure Point Screw		501-275-005
157	O RING (S4) TEST POINT	90195165	520-300-010
158	FAN COMB ASSY	90196596	040-385-000
159	FLUE LOCK CLAMP	90165358	512-327-000
160	ELEC CORD BKT	90177114	538-180-000
161	Tube		513-212-000
162	CLIP HOSE 556 **USE 90170341**	90178146	538-065-000
400	FAN CONV TOTAL ASSY	90196598	040-386-000
401	CAPACITOR CONV FAN 3UF	90179490	225-111-000
402	Convection Motor		222-671-000

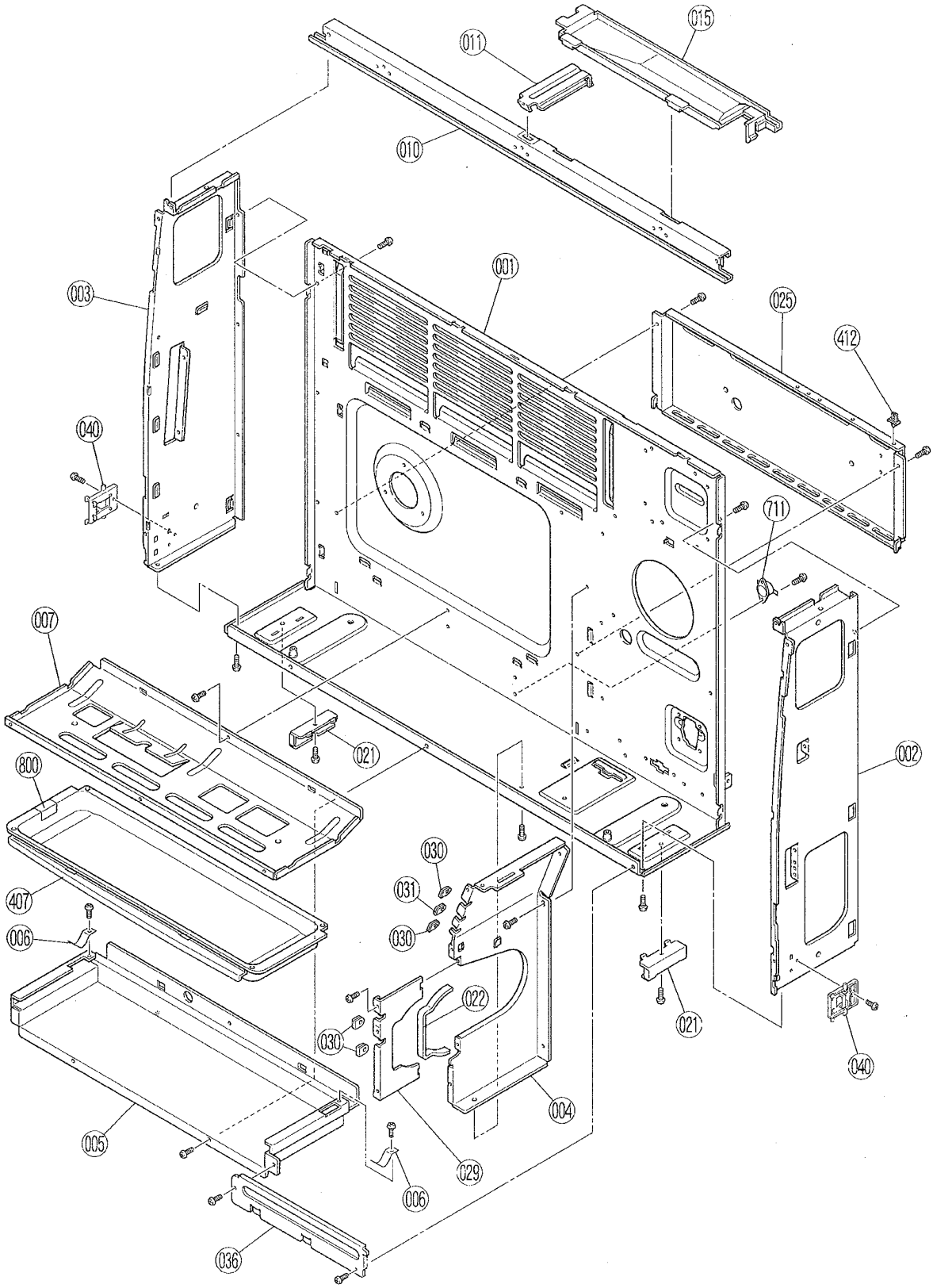
No. RA-2010-004			
Title: Spare parts for Energysaver RHFE-559FT			
No	**Description**	**RA Item**	**11 Digit Code**
403	Motor Fixing Plate		537-0932000
404	Convection Fan Blade		040-387-000
405	Casing Assembly		98-3027000
406	Bearing		067-031-000
407	TRAY HUMIDIFIER	90175753	078-016-000
408	Heat Shield Board Assy		030-0281000
409	SEAL	90196602	526-367-000
410	TF Fixing Plate		537-847-000
411	Cable Clip		504-024-000
412	Wire Clip		505-122-000
413	Motor Bracket		538-0675000
700	PCB MAIN	90196604	200-1823000
701	PCB CONTROL	90196538	200-1824000
702	THERMISTOR	90196606	233-296-000
703	CORD POWER	90196608	206-298-000
704	TRANSFORMER	90196610	224-372-000
705	HARNESS SOLENOID	90196612	290-1987000
706	HARNESS MOTOR	90196614	290-1988000
707	LEAD HT	90196616	203-881-000
708	HARNESS OHS ASSY	90196618	290-1989000
710	OHS	90196546	234-416-000
711	OHS	90196620	234-408-000
712	IGNITER	90196542	211-228-000
713	Sleeve		513-109-000
714	LEAD FLAME ROD	90196558	209-326-000
715	HARNESS THERMAL FUSE	90196552	290-1990000
999	ELECTRODE ASSY 309 559	90196591	202-251-000

19. Exploded Diagram

RHFE-559FT



RHFE-559FT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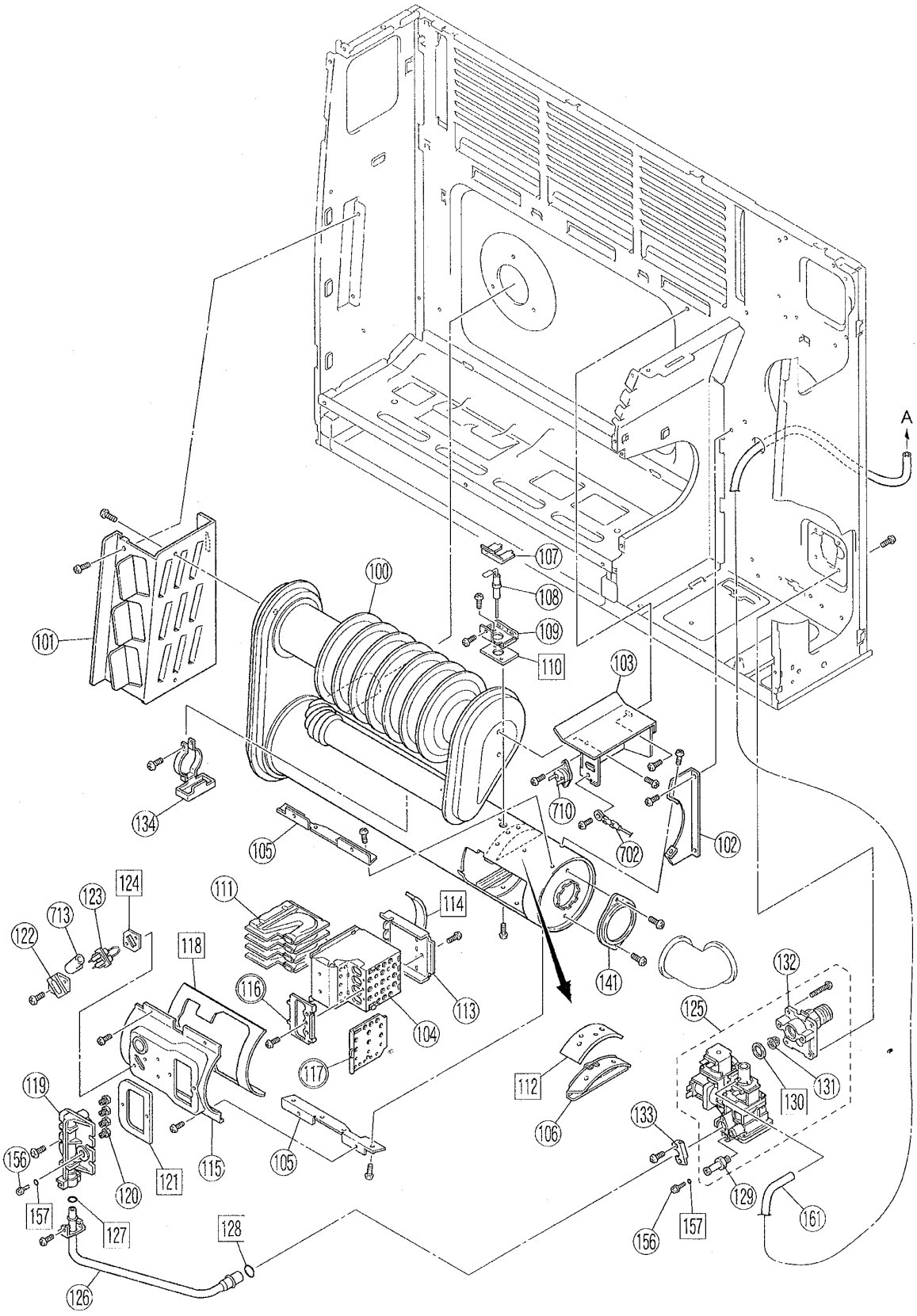
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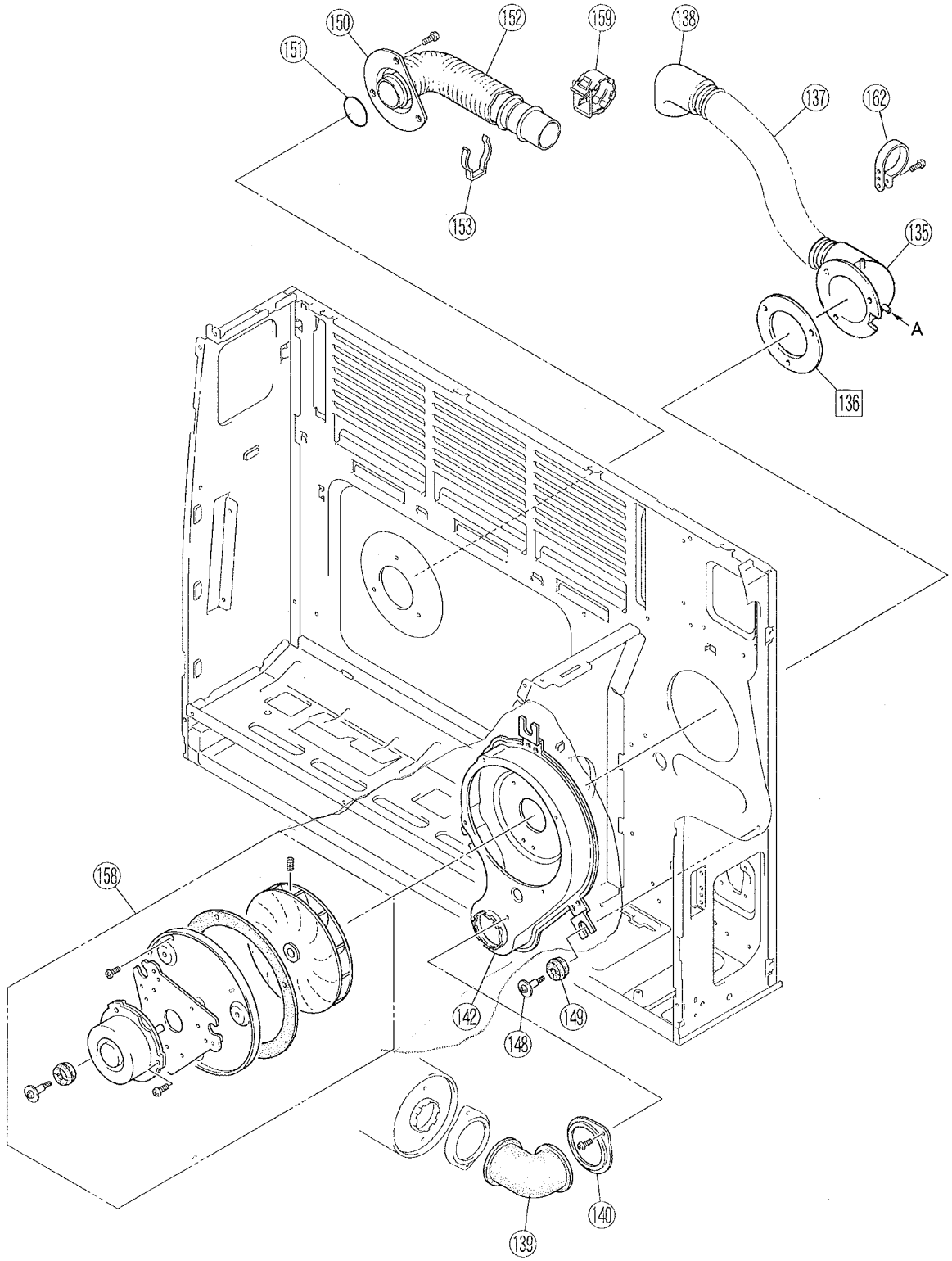
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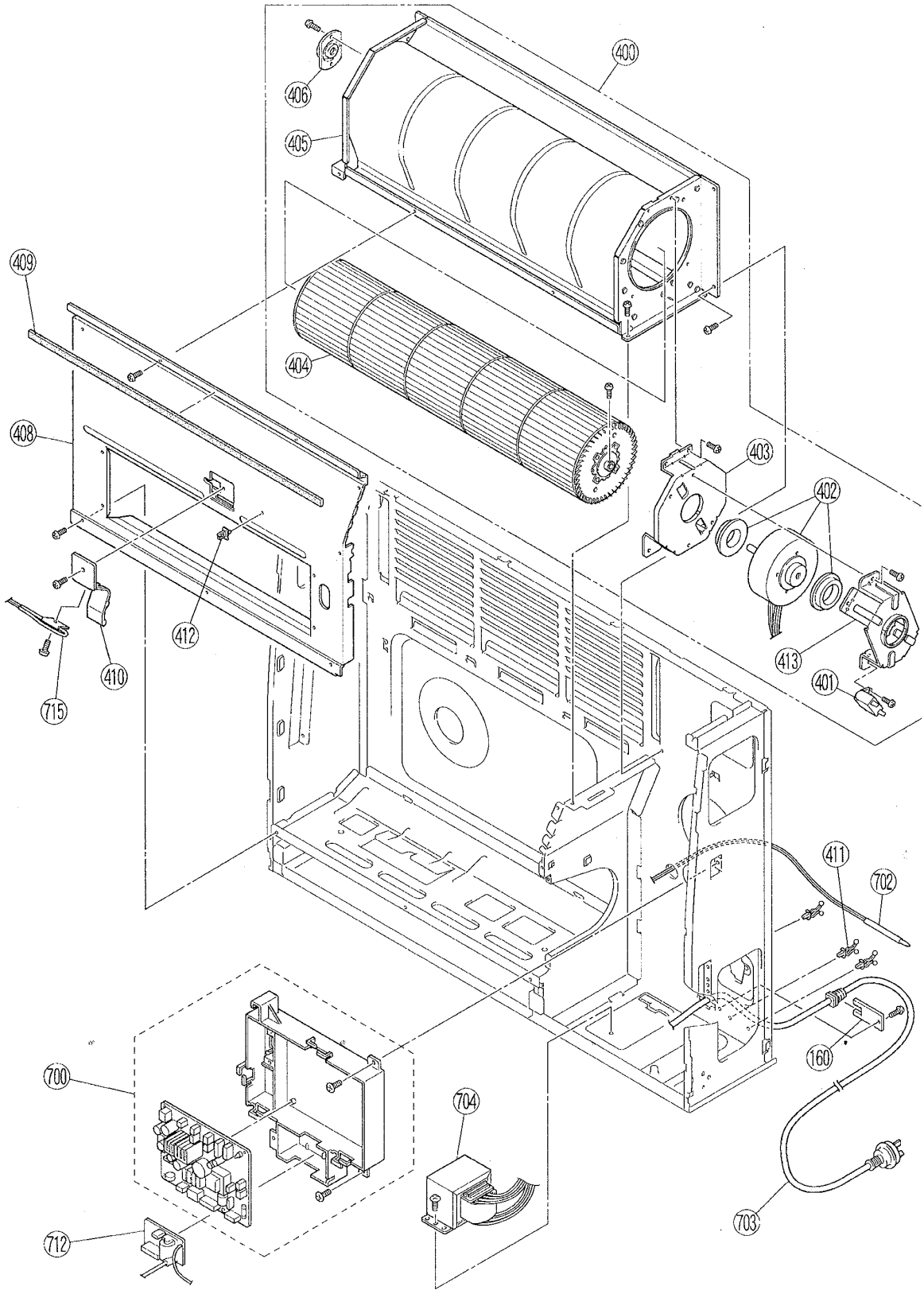
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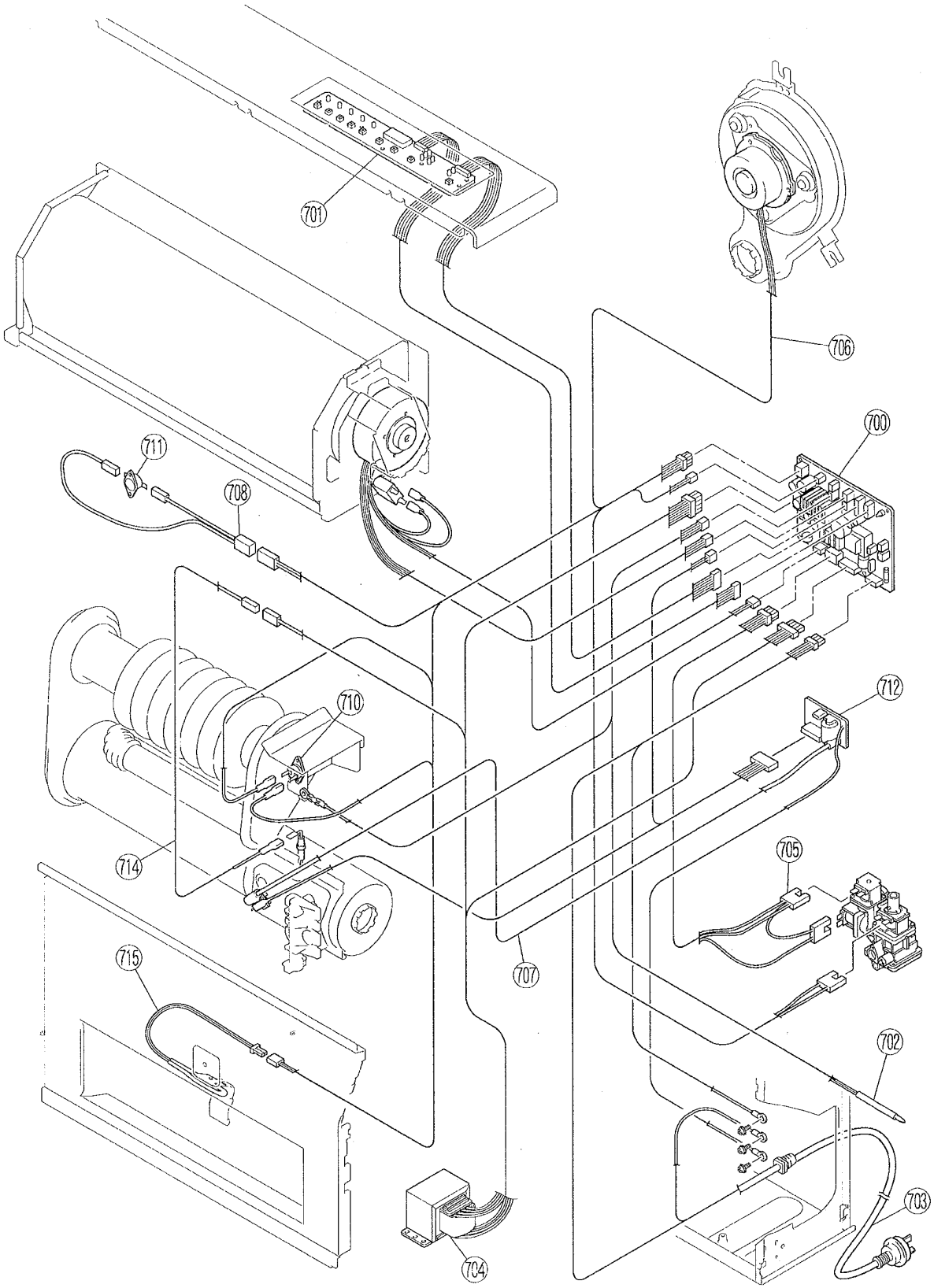

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Cost of a local call Higher from mobile or public phones.

Rinnai has a Service and Spare Parts network with personnel who are fully trained and equipped to give the best service on your Rinnai appliance. If your appliance requires service, please call our Helpline. Rinnai recommends that this appliance be serviced every 2 years.

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