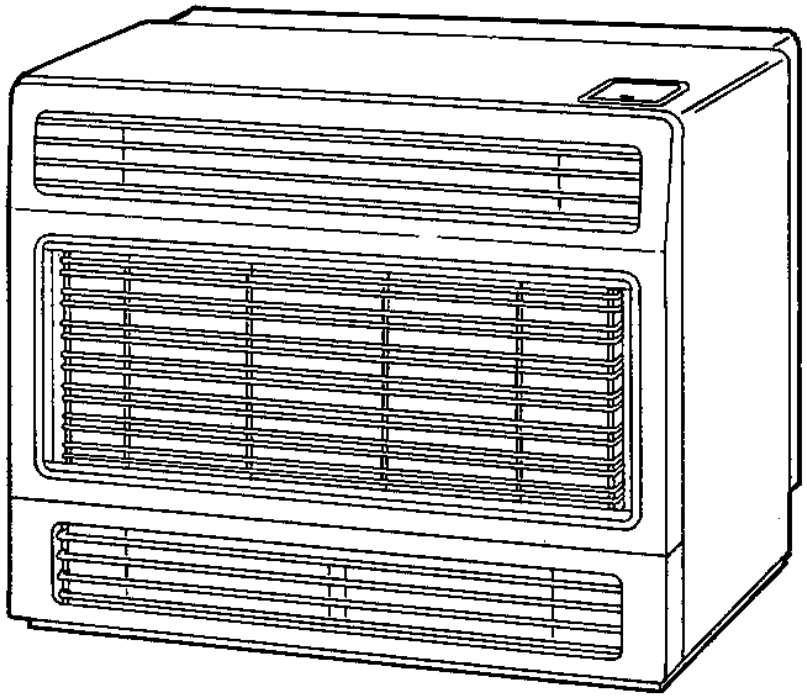
Rinnai

SERVICE MANUAL

Sapphire REH241EB/EC

FLUED HEATER

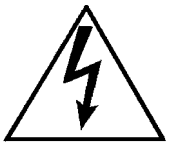


The Australian Gas Association	All Rinnai products are certified by the Australian Gas Association as compliant to relevant Australian Standards.
Quality System™ Quality Endorsed Company ISO 9001 Lic 4983 SAI Global Head Office Certified Distributed and serviced in Australia under a Quality System certified as complying with ISO 9001 by SAI Global	Rinnai Australia Head Office is certified as complying with ISO 9001 by SAI Global.
TELARC REGISTERED SUPPLIER Quality Endorsed Company ISO 9001 Reg 415	Rinnai New Zealand has been certified to ISO 9001 Quality Assurance by Telarc.
N10378	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 N10378.

Produced by Technical Services Department
August 2003 - Issue 1

Key to Warning Symbols

Failure to comply with the following instructions may result in serious personal injuiry 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 activities.

Read Fault Diagnosis and Wiring Diagram carefully to avoid incorrect wiring

Do not disassemble. Parts within cannot be exchanged or diagnosed faulty.

Please follow instructions carefully to ensure safe and appropriate service.
After completing the service and confirming that there are no water or 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 Department. 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 REH241EC
Issue Nº1

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
mA	-	milliamps
MJ/h	-	megajoule per hour
mm	-	millimetres
OHS	-	overheat switch
PCB	-	printed circuit board
CPU	-	central processing unit
POT	-	potentiometer
rpm	-	revolutions per minute
SV	-	solenoid valve
ø	-	diameter
$\Delta^\circ C$	-	temperature rise above ambient
POV	-	modulating valve
TH	-	thermistor

Table of Contents

1. Introduction

Development Background

Rinnai have developed a Flued Console Space Heater open flued radiant and fan forced up flow convection space heater with three (3) surface combustion burners. Manually controlled, with open flue system.

We recommend that the heater is regularly serviced by qualified service technician.

Features

- 24 MJ/h fan assisted, radiant convection space heater.
- Top mounted controls provide simple push button operation.
- All Rinnai safety features including overheat/flame failure protection.
- Ideal for smaller living areas or spot heating.
- Compact sturdy design.
- Built with performance and reliability in mind.

2. Specifications

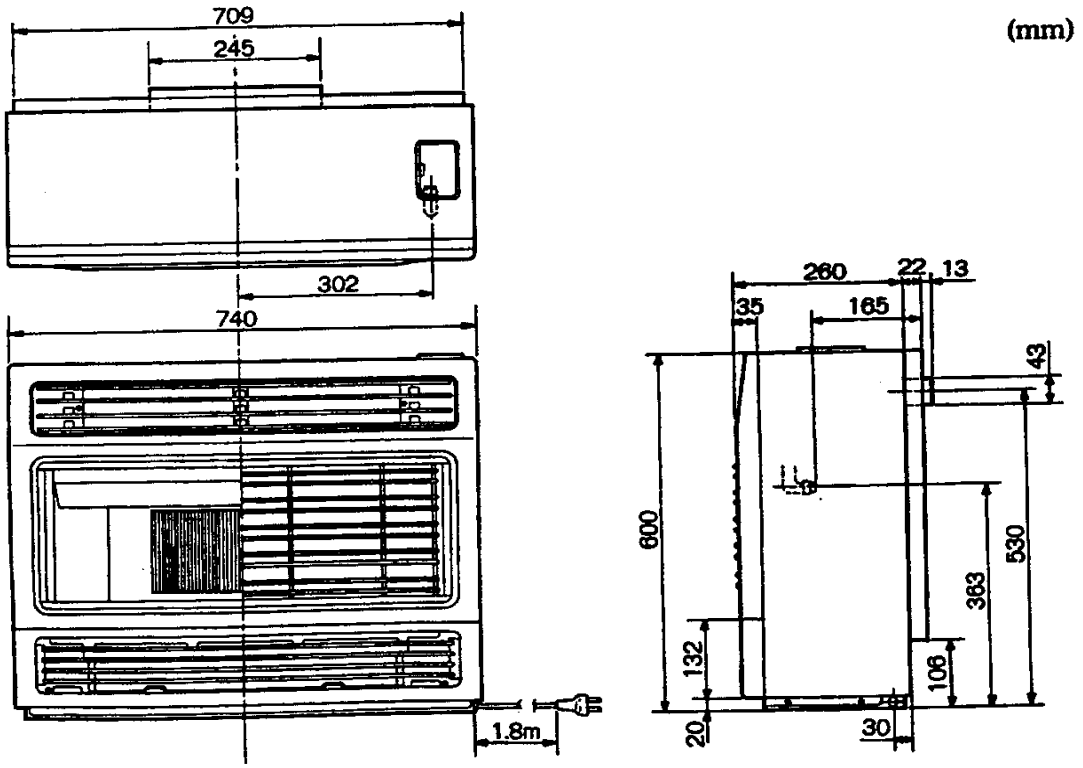
Model Number		REH-241EC	
Model Identification		**Sapphire**	
Name of appliance		Console Flued Space Heater	
Gas Consumption (MJ/h) (Max. / Min).	Natural	24 / 8	
	Propane	24 / 8	
kW Heating Output	High:	4.4	
Average Efficiency Rating		70%	
Electrical Consumption (max). Watts		80 Watts	
Dimensions (mm)	Width	740	
	Depth	282	
	Height	600	
Colours:		Beige	
Weight	Kg	26	
Clearances (mm)			
	Sideways	150	
	Infront	1000	
	Above	150	
	Behind	150	
Burner		Surface Combustion Burner	
Noise level range	dB (A)	High: 42	Low: 37
Gas Input (MJ/h) NG	High	24	
	Low	8	
LPG	High	24	
	Low	8	
Connections	Electrical	240 V power point	
	Gas	1/2” copper flare	
Room Temperature control		Manual control	
Controls		3 step push button	
Gas Control		Push Button Gas Control	
Fan Switch		Automatic Fan switch ON/OFF	
Ignition System		One touch electronic	
Timer		No	
Safety devices		Automatic Fan delay switch Flame Failure Device Over-heat switch Dress guard	
Flueing		10’ x 2’ flueing is supplied from plumbing outlets only (not supplied by Rinnai)	

3. Combustion Specification

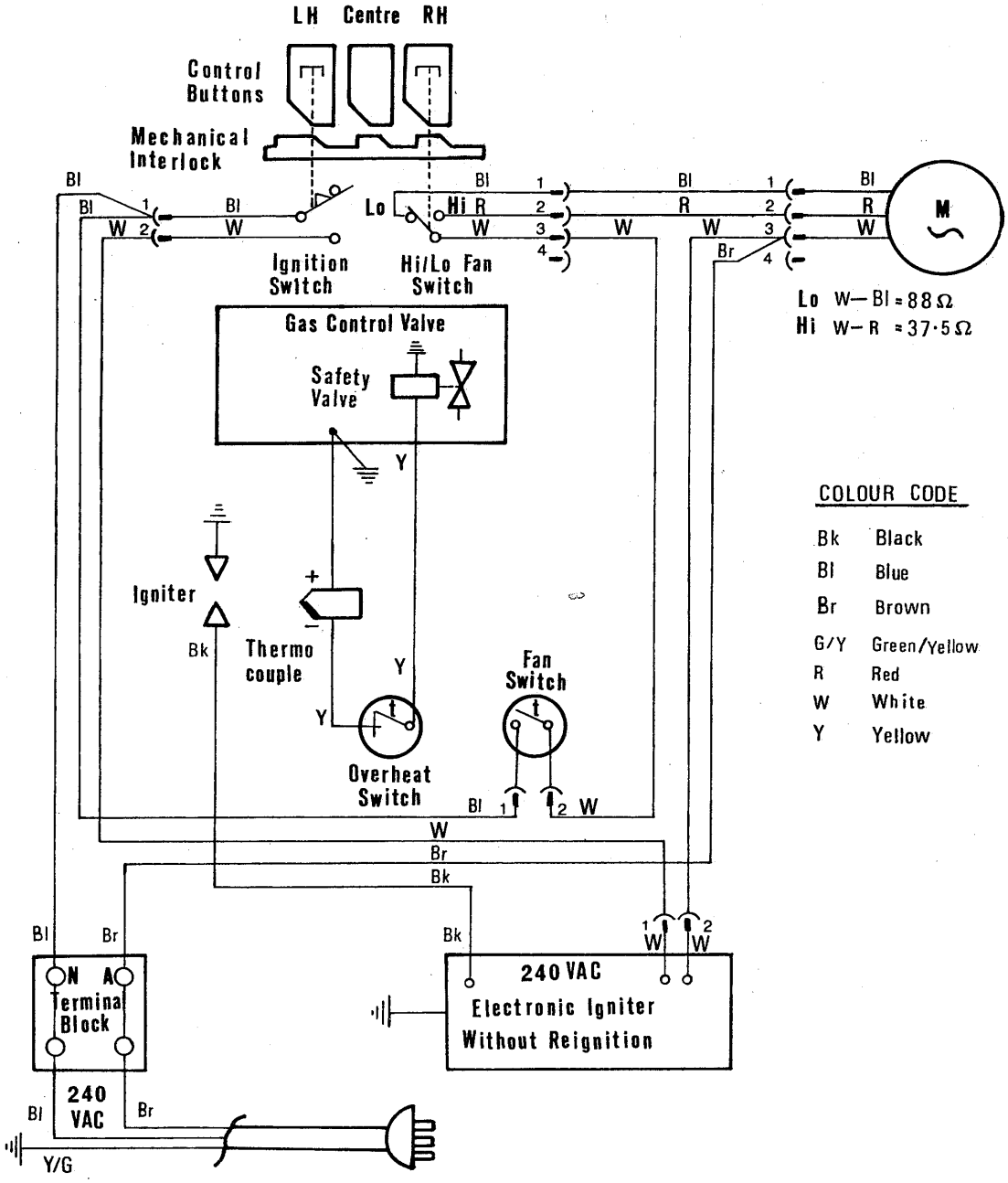
POS	Gas Type	Main Injector	Pilot Injector ϕ mm	Gas Valve	Pressure Valve kPa / (mm $H_2$0)	Pilot Assembly	Pilot Holder Assembly	Pilot Burner	Lift Prevention Panel	Pilot Damper
Australia	Propane	BU101-307-080 ϕ 0.80 x 3	CP-60067-a ϕ 0.20	C28A-6-3 Breather ϕ 0.70	2.16 / 2.75 (220/330)	REH210-127-2B	REH210-128-2	CP-50646 Primary pressure opening 4.2 x 5.6	REH210-48-2 Inprint B	CP-50647D ϕ 4
	Natural	BU101-307-130 ϕ 1.30 x 3	CP-60067-a ϕ 0.40	C28A-6-3 Breather ϕ 0.70	0.98 / 1.13 (100/150)	REH210-127-2B	REH210-128-2B	CP-50646 Primary pressure opening 4.2 x 5.6	REH210-48-2 Inprint B	CP-50647D ϕ 4
New Zealand	Propane	BU101-307-080 ϕ 0.80 x 3	CP-60067-a ϕ 0.20	C28A-6-3 Breather ϕ 0.70	2.16 / 2.75 (220/330)	REH210-127-2B	REH210-128-2B	CP-50646 Primary pressure opening 4.2 x 5.6	REH210-48-2 Inprint B	CP-50647D ϕ 4
	Natural	BU101-307-130 ϕ 1.30 x 3	CP-60067-a ϕ 0.40	C28A-6-3 Breather ϕ 0.70	0.98 / 1.13 (100/150)	REH210-127-2B	REH210-128-2B	CP-50646 Primary pressure opening 4.2 x 5.6	REH210-48-2 Inprint B	CP-50647D ϕ 4

4. Dimensions

Note: All dimensions are in millimetres



5. Schematic Diagram



6. Cut - Away Diagram

7. Operation Principles

Appliance Operation

When the control selector left hand push-button is depressed and held down in the ignition sequence, the normally open ignition switch is closed by the mechanical interlock lever and the gas control outlet valve to the right hand inner burner is opened. The thermo-electric flame failure safety shut-off valve is also mechanically held open by this ignition sequence operation allowing gas to flow to the right hand inner burner.
Simultaneously, the igniter will spark, the pilot and centre burner will ignite.
When the pilot flame has established (approx. 15 seconds), the flame failure system circuit current will hold the thermo-electric safety shut-off valve open - provided that the overheat switch has not operated and broken the circuit.

On release of the left hand push-button the igniton switch opens, the mechanical interlock disengages the thermo-electric safety shut-off valve which remains open, held in by the flame failure circuit current.

The fan will not run until the fan temperature operated switch has closed (60°C). The fan low speed circuit is made when the left, right or centre push buttons are depressed and will run at its high speed only when all three push buttons are depressed. It will continue pt run at low speed after appliance shut down until the appliance is cooled to 48°C when the fan circuit thermal switch will open.

Pressing the centre button will cause the gas control outlet to the right hand burner to open and the mechanical interlock lever to lock the centre push-button in its down position. The right hand burner will ignite. Pressing the right hand push-button will cause the fan low / high speed change over circuit switch to change to high speed. The gas control outlet to the left hand burner (parelleled with right hand burner) will open, right hand burner will ignite, and the mechanical internlock lever will lock the push-button in the down position. The fan may or may not run - if the fan temperature switch is closed the fan will run at high speed.
Appliance shut down is by reversing the sequence of push-button selection - the push-button control unit is mechanically interlocked so that only this preset sequence can be used - right, centre, left.

Note: when the front push-button is pressed on this shut down cycle the igniter does not spark.
The appliance is automatically shut down by the de-energisation of the gas control thermo electric safety valve when either the flame failure sensor current is too low to hold it open or when the appliance overheat switch operates and breaks this circuit.
Note that should a 240 V power failure occur during operation the appliance will automatically shut down when the overheat switch opens. Re-igntion is by manual operation only.

Ignition / Low setting

1. Check that the appliance is plugged into a 240 V power supply and is switched on.
2. Check that all push-buttons are in the up ("OFF") position.
3. Depress the left hand control push-button and hold it down - the igniter will spark, the pilot and right hand inner burner will ignite.
4. Continue to hold the left hand push-button down for a further 15 seconds.
5. Release the push-button, check that the pilot and right hand inner burner have ignited and that they remain alight.
6. If the pilot and right hand inner burner does not remain alight, again press the left hand control push-button and release it - this will return the front push-button to the up ("OFF") position.
7. Wait 30 seconds, then repeat the ignition procedure.

Note: All push-buttons must be in the up ("OFF") position before attempting re-ignition.

Medium / high setting

1. To increase the heat output after ignition, depress the control push-buttons in sequence from left to right until the desire heat output is reached.
2. Medium heat setting - push centre push-button, right hand burner will ignite.
3. High heat setting - push in sequence, the right push-button left hand burner will ignite.
4. To decrease the heat output, again depress the control push-buttons in sequence from right to left until the desired heat output is obtained.

Turning the Heater OFF

1. Depress and release all control buttons in sequence from right to left, ensure that all burners and pilot are extinguished. The fan will stop automatically when the appliance has cooled.

Fan Operation

The fan is automatically switched on / off by the temperature sensitive fan switch. Fan speed is selected by the fan low/high speed change over switch.

The fan may not run immediately the heater is lit. It will run at low speed on heater low / medium heat setting and at high speed on heater high heat setting.

The fan may continue to run at low speed after the heater is shut down until the temperature sensitive fan switch turns it off.

8. Operational Flow Chart

9. Main Componentry

Regulator

Spring loaded adjustable type, incorporated in the gas control. With gas line pressure adjusting screw. When operating on L.P. (P) the regulator is still in operation and is fitted with a special lid which has a 0.30 mm breather hole.

Gas Control

A three outlet mechanically operated gas control with a thermo-electric safety valve operated by the flame failure system. Each outlet is separately controlled. The outlets are connected via gas supply tubes to individual burner injector blocks. With combination gas regulator and burner gas pressure test point. Pilot gas supply feed by supply tube to centre burner.
Inlet connection 15 mm flare elbow / barrel union. Gas inlet filter fitted into the gas line between the gas control valve and inlet connection.

Push Button Control Selector Unit

Three rod selector box mounted on top of the gas control valve. Manually operated by three push-buttons which are mechanically interlocked for a preset sequenced operation - push in sequence from left to right:

- Left hand push-button - gas to centre burner and ignition spark, fan on low speed.
- Centre push-button - gas to right hand burner, fan on low speed.
- Right hand push-button - gas to left hand burner fan speed from low to high.
- Push buttons can only be released in reverse order sequence. With ignition micro switch and fan high / low speed change over micro switch.

Ignition

Rinnai intermittent pilot, 240 V electronic ignition unit without re-ignition. Igniter will spark while the left hand push-button is pressed fully down, thermo-electric operated safety valve is mechanically opened on the igition sequence while the left hand push-button is depressed fully down. Electrode gap is 3.5 - 4.5 mm.

Flame Safeguard

Thermo-electric flame failure sensor mounted on the pilot burner assembly, associated main gas safety shut-off thermo-electri valve incorporated in the gas control. Thermocouple assembly includes all leads and overheat switch.

Main Burner and Pilot Burner

Three surface combustion burners, each fitted with a 133 mm x 93 mm ceramic diamond cut plaques with 1.15 mm dia. holes. Plaque surface is designed to prevent flame lift off. Each burner has an injector block into which is attached to the injector block by a screw and locking plate. The centre burner injector block also supplies gas to the pilot through a gas pipe connected between the injector block and the pilot nozzle. The cross lighting channel ensures positive ignition to all burners.

Pilot Burner Assembly

The pilot burner assembly consists of the assembly mounting plate and pilot burner. Pilot injector orifice is located in the pilot / pilot gas pipe connection. Pilot injector has an integral filter screen. Gas flows to pilot whenever the left hand control push button is in the depressed position, provided that the thermo-electric safety shut off valve is open.

Fan

Two speed tangential type blower, with induction motor complete with stainless steel blades are replaceable with removing bearing. Fan motor has electrical leads,

Lo speed winding - pins 3 and 1 - white / blue = 88 ohms approx.
Hi speed winding - pins 3 and 2 - white / red = 37.5 ohms approx.

Low speed is 630 ± 150 RPM. High speed is 940 ± 150 RPM.

10. Error Code Messages and Maintenance Data

SERVICE CHECK LIST AND FAULT FINDING

Please check this fault finding chart before asking for a service call you may be able to overcome the problem without a service call, or the unit may be operating normally.
Service calls to a unit which is operating normally may be chargeable, even when the unit is under warranty.
If you are unsure about the way the unit is operating, contact Rinnai or your agent.

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

Fault Finding Chart

FAULT	CAUSE	REMEDY
Unit won't ignite.	1. Power supply fault - not plugged in, blown fuse in external circuit.	Plug in power supply. Replace blown fuse. Check 240 Vac at power point.
	2. Area power cut.	Allow unit to cool, re-ignite when power is restored.
	3. Air in gas line.	Purge air from gas line.
	4. Gas line filter blocked.	Clean gas line filter.
	5. Not pushing button firmly enough.	Instruct user on correct operating procedure.
Unit cuts off after ignition.	1. Power supply fault.	Check 240 Vac at power point.
	2. Gas control thermo-magnetic safety valve not being held open by flame failure system circuit.	Check flame failure circuit, replace defective components (thermocouple assy, gas control).
	3. Overheat switch faulty (open circuit).	Test circuit continuity, replace switch if defective.
	4. Partially blocked pilot.	Clean / replace pilot injector orifice and filter assembly.
Fan continues to run after unit is shut down.	1. Unit has not cooled.	Normal operating sequence.
	2. Defective fan ON/OFF switch.	Replace defective fan switch.
Fan won't run on low, medium heat selections.	1. Fault in fan HI/LO circuit - faulty HI/LO speed switch.	Check fan circuit, check HI/LO switch for correct operation, check resistor, replace if defective.
Fan won't run on high speed.	1. Fault in fan HI/LO speed circuit or switch.	Check fan circuit, check HI/LO switch, replace if defective.
Takes too long to heat room.	1. Gas pressure / rate fault.	Clean gas line filter. Check pressure / flow rate.
	2. Room too large for heater.	User problem.
	3. Fan air intake louvre blocked.	Clear obstruction.
	4. Faulty fan circuit or fan.	Check fan circuit components, fan ON/OFF switch, fan HI/LO speed switch and fan for correct operation. Replace defective components.
Unit goes out when ignition knob is released.	1. Incorrect operating procedure - not pushing knob firmly down or holding it down long enough.	Instruct user on correct method of operation - press knob down firmly and hold for 15-seconds minimum.
Units cut out on all settings.	1. Air intake or outlet louvres obstructed.	Remove obstruction. Instruct user on minimum clear area required around the heater.
	2. Fan not coming on.	Check fan operating circuit. Repair / replace defective circuit / components.
	3. Defective flame failure circuit or overheat switch.	Check flame failure sensor circuit (thermocouple & overheat switch), replace defective components
	4. Dirty pilot injector orifice / filter.	Clean or replace pilot injector orifice / filter.
On completion of work test for gas escapes		

11. Diagnostic Points

12. Gas Conversion / Gas Pressure Setting

Note: All Service Work must be carried out by an Authorised Person.

Conversion Method

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

1. Remove bottom louvre, 2 screws
2. Remove front panel, 4 screws
3. Replace small gas label on gas inlet
4. Replace large gas label on back of appliance
5. Place "Propane" very small gas label over "Natural" on Data Plate
6. Record serial number on Heater Gas Conversion Record sheet (F9) **(For Workshop Use Only)**
7. Complete details on conversion sticker, place sticker inside left hand side panel **(For Workshop Use Only)**
8. Remove glass rod assembly, 2 screws
9. Remove pilot injector from pilot assembly
10. Remove 3 screws from pilot assembly
11. Bend pilot assembly gently forward to allow access to the main injectors
12. Remove main injectors (3)
13. Fit Propane injectors
14. Reposition and refit pilot assembly
15. Fit Propane pilot injector
16. Refit glass rod assembly
17. Connect appliance to gas and electricity
18. Set incoming pressure to 3.25kPa
19. Remove test point screw
20. Connect pressure gauge
21. Light appliance on full (3 burners)
22. Reset test point pressure to 2.16 kPa
23. Reduce incoming pressure to 2.75 kPa, check that test point pressure remains at 2.16 kPa
24. Turn appliance off
25. Remove gauge and replace test point screw
26. Test for gas escapes
27. Disconnect appliance from services **(For Workshop Use Only)**
28. Replace front panel and bottom louvre
29. Replace labels on carton with 4 large gas type labels **(For Workshop Use Only)**
30. Attach barcode labels over existing labels **(For Workshop Use Only)**
31. Re pack appliance into carton **(For Workshop Use Only)**
32. Complete conversion records by signing test confirmation **(For Workshop Use Only)**

13. Dismantling for Service

240 volt potential exposure. Isolate the appliance and reconfirm with a neon screwdriver or multimeter.

Item *Page*

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

240 volt potential exposure. Isolate the appliance and reconfirm with a neon screwdriver or multimeter.

1) Bottom Grill Removal and Front Cover

1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill attaching screws (2).
3. Grasp the bottom of the grill with both hands, swing it out just clear of its bottom locating tabs (approx. 12 mm 1/2 inch), then allow the grill to drop down.
4. The top tabs will now clear their locating slots, the grill to be withdrawn.
5. Remove 2 screws from top louvres lift off front panel.

2) Replacement of Bottom Grill

1. Place the bottom edge of the grill air duct over and inside the edge of the cabinet case.
2. Align the grill flush with the cabinet, raise the grill and locate its top tabs, then grasp the bottom of the grill and press up gently to locate its bottom tabs.
3. Replace two grill attaching screws.

3) Air Filter Removal

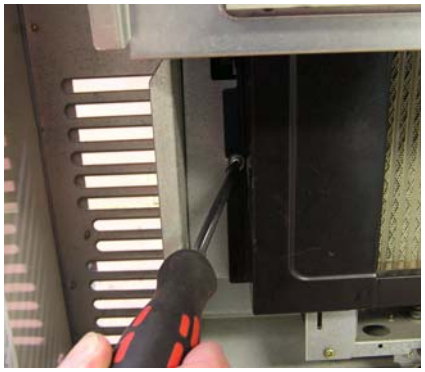
1. Slide filter out (located through the lower louvre on bottom grill).

4) Heat Exchanger / Overheat Switch / Thermocouple lead

1. Isolate the power and gas supply.
2. Remove lower bottom grill, front panel.
3. Disconnect and remove heater.

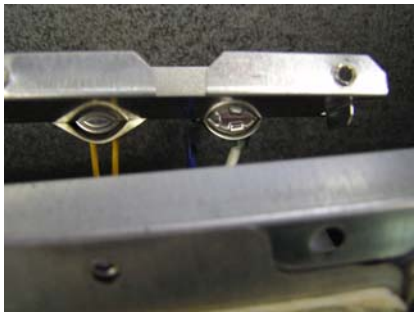
240 volt potential exposure. Isolate the appliance and reconfirm with a neon screwdriver or multimeter.

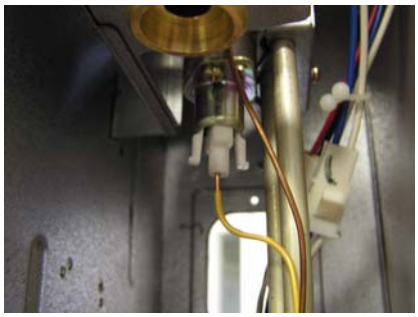
5) Heat Exchanger Removal



1. Remove quartz rod panel (1 screw each side).
2. Lift panel up and out.
3. Remove metal sleeve from flue outlet (4 screws on rear of unit).
4. Remove Heat Exchanger (2 screws each side) and pull heat Exchanger forward.

6) Remove Overheat Switch & Fan Thermal Switch



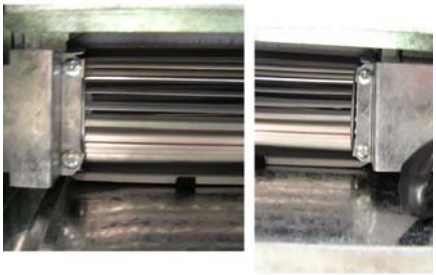


1. Undo 2 top screws in top tile retaining bracket.
2. Undo 2 screws top burner mounting bracket (1 each side).
3. Remove bracket by rolling forward and lifting out.
4. Overhead switch & fan thermal switch are now accessible.
5. Remove thermocouple lead as above. Unclip thermocouple head from holder. Unclip from magnet assembly and undo earth wire. Undo cable tie.

240 volt potential exposure. Isolate the appliance and reconfirm with a neon screwdriver or multimeter.

7) Fan Removal

1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill and front cover.
3. Unplug lead to fan motor.
4. Remove fan air guide (6-screws) 2 either side and 1 at the back each side.

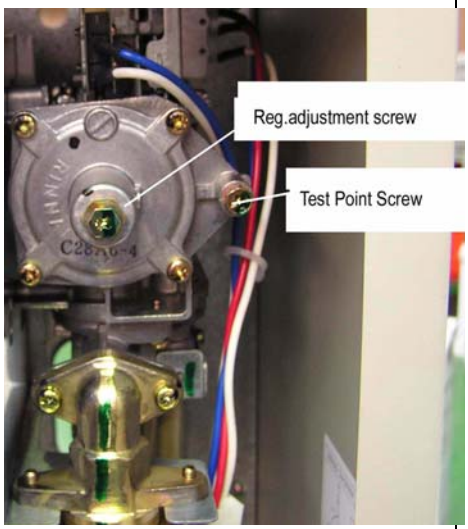


8) Plaques Removal

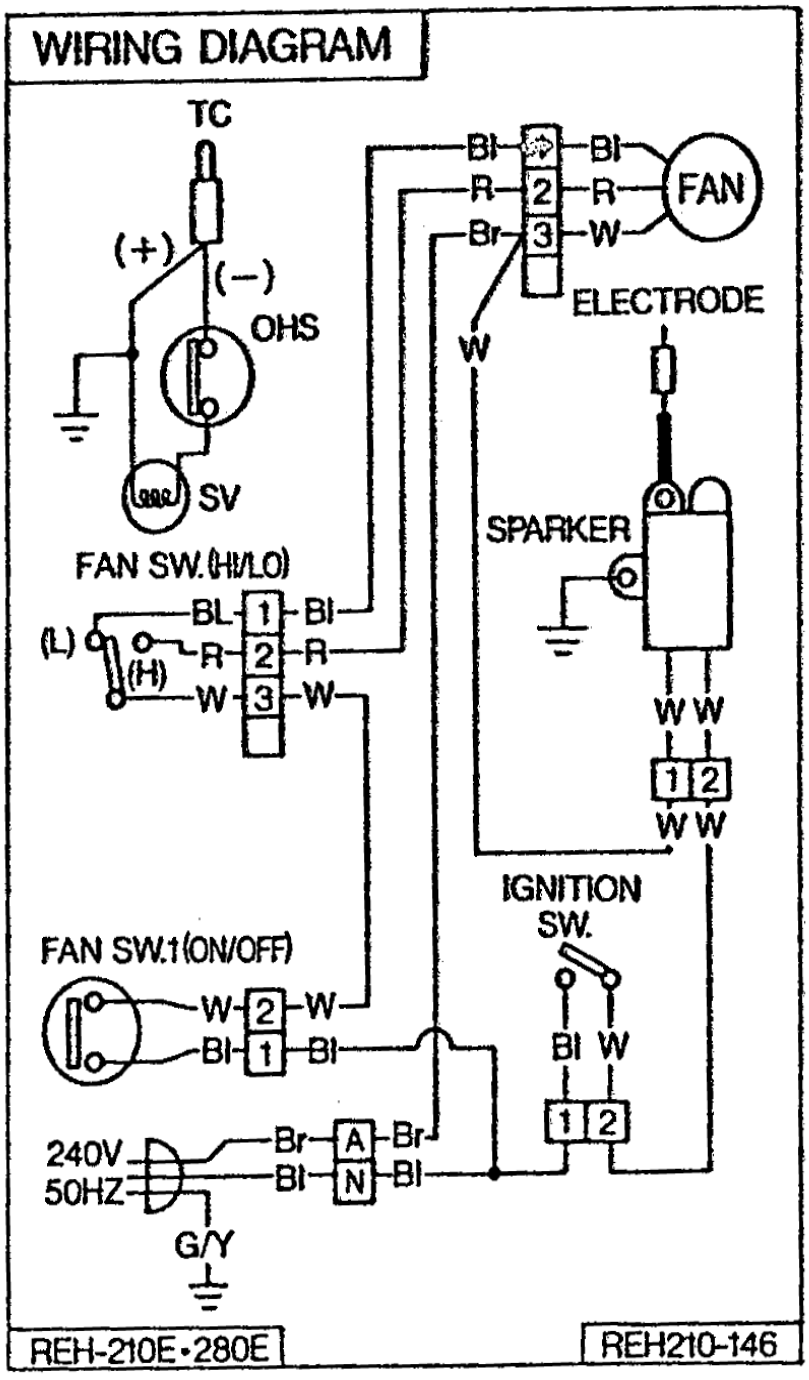
1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill and front cover.
3. Remove top and both side glass support strips (7-screws).

9) Gas Control Removal

1. Isolate the 240 V power supply to the appliance.
2. Isolate the gas supply to the appliance.
3. Remove the bottom grill and front cover.
4. Remove 2 screws gas control mounting control bracket.
5. Remove top panel control cover reach up and press on sides to clear tabs and push upwards.
6. Gently move control out to access the ignition micro switch / fan - high / low switch.

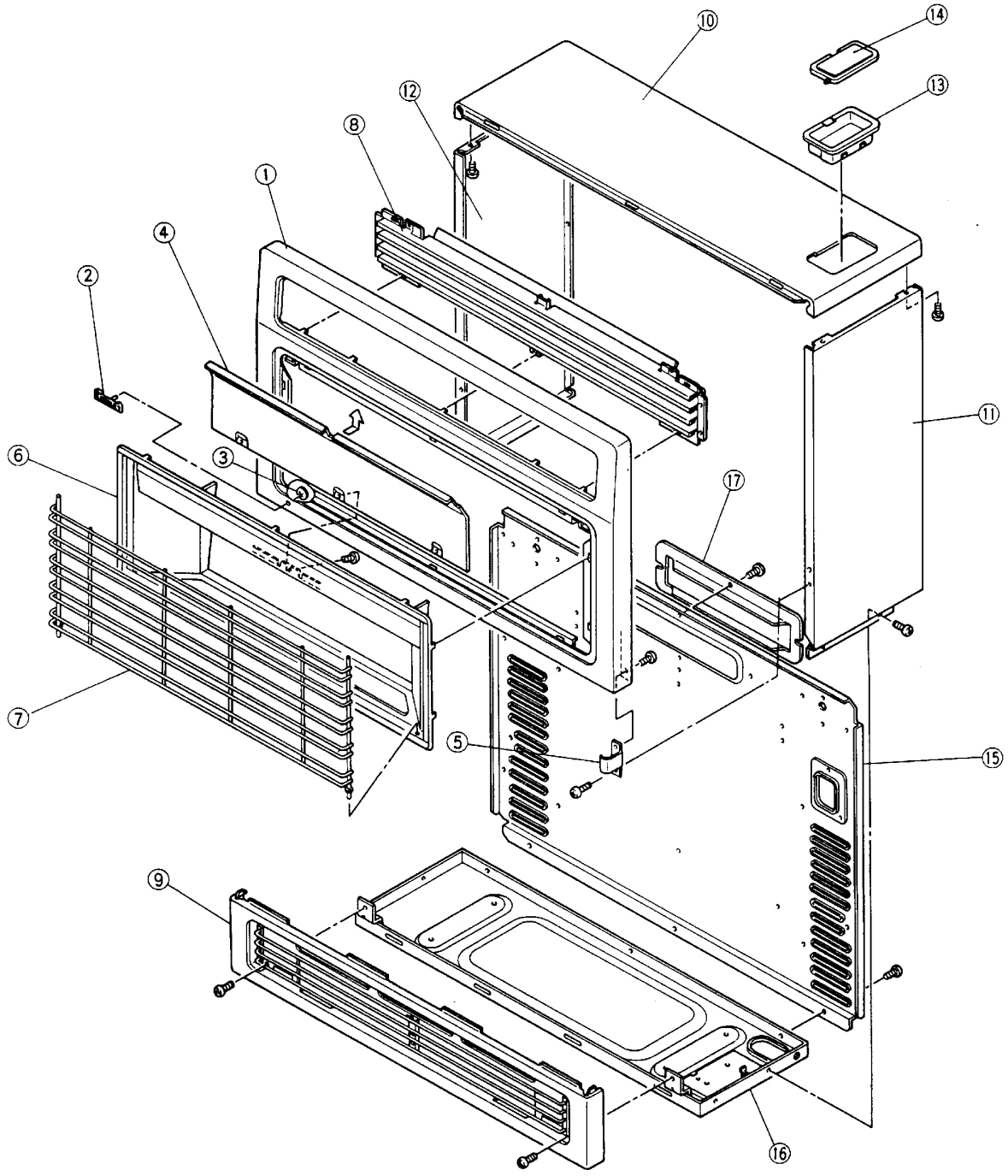


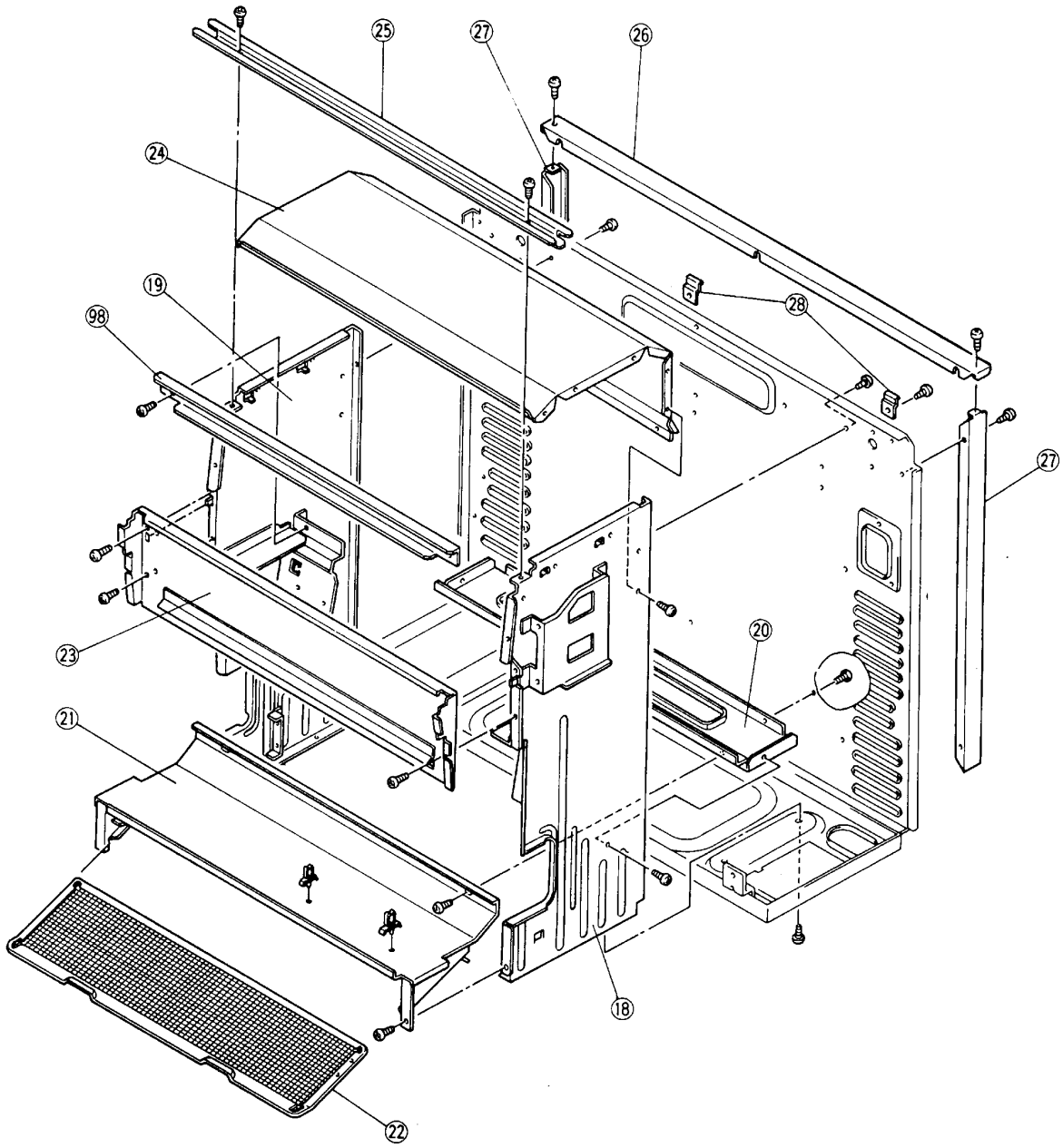
14. Wiring Diagram



* Supply lead must only be replaced with Rinnai part number 90148206.

16. Exploded Diagrams

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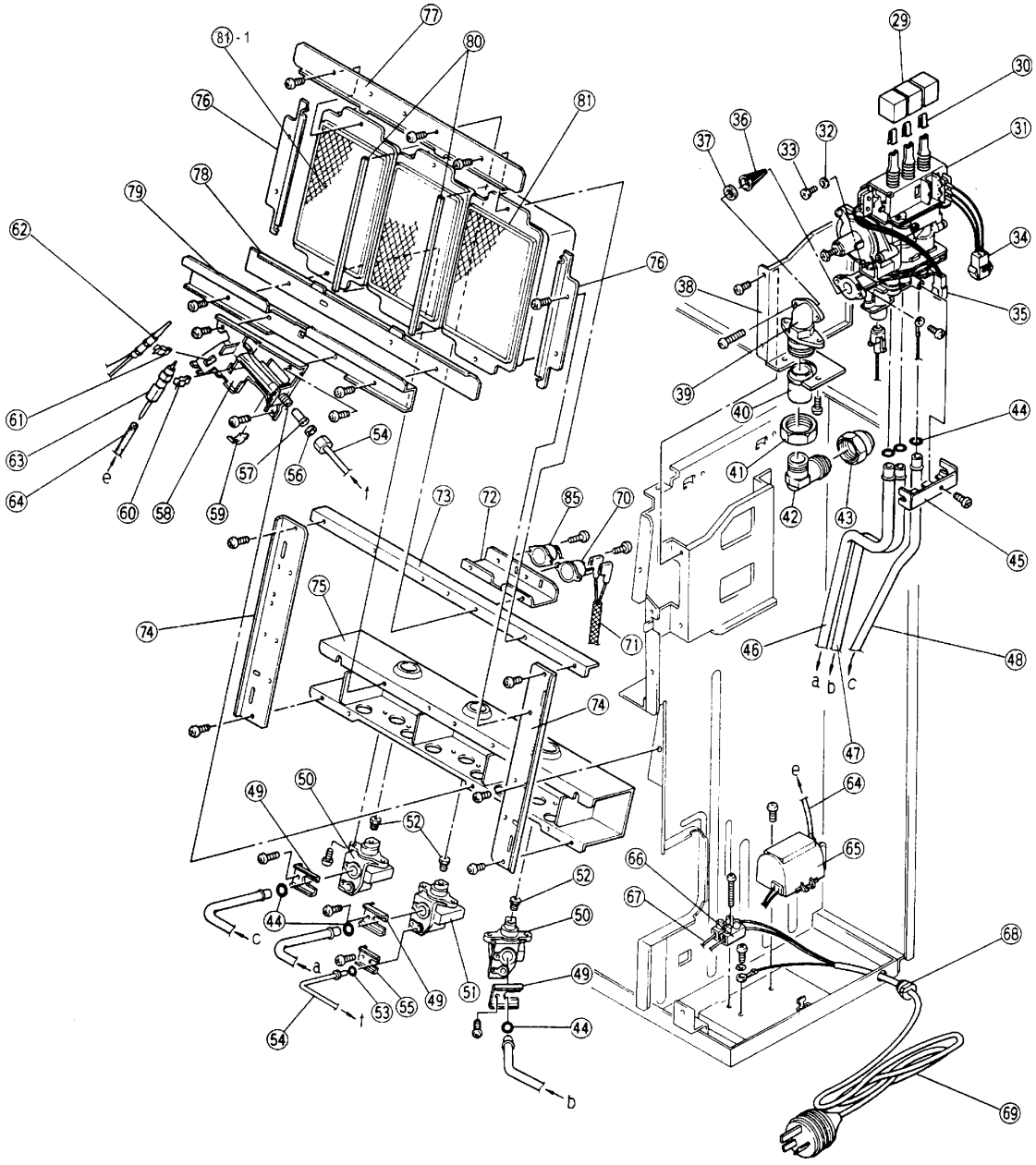
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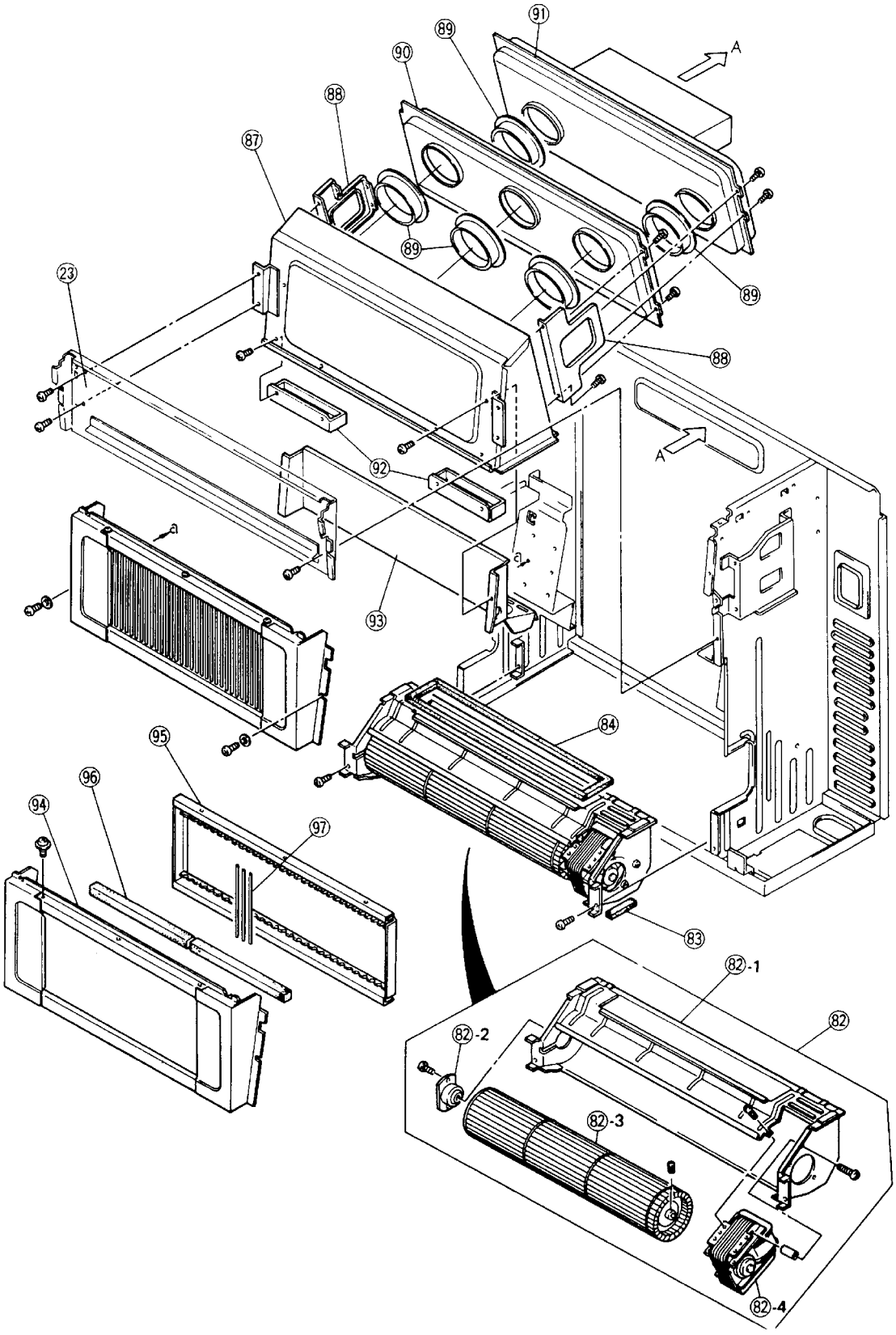
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17. Parts List

REH-240EC / REH-241EC

No.	Part Name	RA Part No.	RNZ Part No.	11 Digit Code	Qty
001	Front Panel A (Beige)	90196965	6601A		1
001	Front Panel G (Gunmetal)	90141258	6601G		1
002	Brand Badge	90178815	5327	602-228-000	1
003	Push Nut		5431		1
004	Front Panel Heat Shield		6608		1
005	Front Panel Fixing Bracket		6603		2
006	Reflector Bottom Panel	90190166	6604		1
006	Reflector Top Panel	90190034	6605		1
006	Reflector R/H Panel	90190042	6606		1
006	Reflector L/H Panel	90190059	6607		1
007	Dress Guard	90169178	6778	056-173-000	1
008	Louvre Top (Beige)	90169228	6602C		1
008	Louvre Top(Gunmetal)	90148412	6602G		1
009	Louvre Bottom (Beige)	90169152	6613A		1
009	Louvre Bottom (Gunmetal)	90148404	6613G	147-029-000	1
010	Panel Top (Beige)	90147257	6610A	001-843-000	1
010	Panel Top (Gunmetal)	90125329	6610G		1
011	Panel R/H Side (Beige)	90147273	6611A		1
011	Panel R/H Side (Gunmetal)	90142639	6611G		1
012	Panel L/H Side (Beige)	90169251	6612A		1
012	Panel L/H Side (Gunmetal)	90142449	6612G		1
013	Box Control A (Black) 1999	90183906	7125		1
013	Box Control G (Black) 1998	90182050	6615G		1
014	Lid Control A (Beige)	90147364	6616A	035-742-000	1
014	Lid Control G (Gunmetal)	90182055	6616G		1
015	Panel Rear A		6677		1
016	Panel Bottom		6660		1
017	Flue Spigot Seal		5251		1
018	R/H Side Pillar A		6664		1
019	L/H Side Pillar A		6669		1
020	Fan Outlet Panel		6675		1
021	Filter Guide Assy		6678		1
022	Filter	90147331	6614	017-292-000	1
023	Panel Dividing A		6626		1
024	Air Guide Panel		6674		1
025	Panel Top Support		6683		1
026	Spacer Back Top A (Beige)	90147679	6685A		1

No.	Part Name	RA Part No.	RNZ Part No.	11 Digit Code	Qty
026	Spacer Back Top G (Gunmetal)	90144320	6685G		1
027	Spacer Back Side A (Beige)	90147695	6686A		2
027	Spacer Back Side G (Gunmetal)	90145699	6686G		2
028	Clip Wall Spacer	90147471	6684	504-018-000	2
029	Button Control B (Black)	90193442	6617G		3
030	Spring Button	90142019	6618	194-081-000	3
031	Gas Control	90147638	6665	120-062-000	1
032	Pressure Test Point Packing		9995		1
033	Screw PTP	92068907	9994	501-060-010	1
034	Change-over Switch and Lead				1
035	Switch Spark and Head	90150608		209-336-000	1
036	Gas Filter		2791		1
037	Rubber Packing		1969		1
038	Control Mounting Panel		6681		1
039	Elbow Gas Control	90166810	6668	191-244-000	1
040	Elbow Inlet	90144973	3603		1
041	Elbow Inlet	90144973	6880	502-292-000	1
043	Compression Nut		5064		1
044	O Ring		6642		6
045	Main Gas Tube Retainer (3)		6643		1
046	Tube Main Gas A	90148560	6639		1
047	Tube Main Gas B	90148578	6640		1
048	Main Gas Tube C	90148586	6641		1
049	Tube Retainer Injector	90148628	6644	537-386-000	3
050	Injector Holder A		3599		2
051	Injector Holder C		3610		1
052	Injector Main (NG) - 1.30	90172628	1962	130-365-130	3
052	Injector Main (LPG) - 0.80	90172537	6390	130-295-080	3
053	O Ring	90148602	6774	520-020-000	1
054	Tube Pilot	90150616	6647	130-459-000	1
055	Bracket Pilot Tube	90170861	6648	537-799-000	1
056	Pilot Tube Filter		6646		1
057	Injector Pilot (NG) 0.40	90148669	6649	131-271-040	1
057	Injector Pilot (LPG) 0.20	90131293	6771	131-266-020	1
058	Pilot Assy (NG / LPG) OLD	90147521	6629	152-539-000	1
058	Pilot Assy (NG / LPG)	90156167	6629	152-501-000	1
059	Pilot Aeration Shutter (4mm diam)		6699		1
060	Holder Electrode Plug	90179524	6630		1

No.	Part Name	RA Part No.	RNZ Part No.	11 Digit Code	Qty
061	Thermcouple Retainer		6632		1
062	Thermocouple Assy B	90147570	6633	121-346-000	1
063	Electrode	90147554	6631	202-011-000	1
064	Lead High Tension	90148743	6704	203-804-000	1
065	Sparker	90169384	6917	262-026-000	1
066	Terminal Block (Early units)				1
067	Harness Wiring	90148735	6735		1
068	Cord Bush	90177106	6653	194-098-000	1
069	Electrical Cord (Early units)	90161894		206-127-000	1
069	Electrical Cord with Connector	90182065	6765	248-043-000	1
070	Fan Switch	90169368	6635	248-006-000	1
071	Fan Switch Lead		6656		1
072	Burner Cover		6634	537-792-000	1
078	Bottom Plaque Retainer	90148891		508-962-000	1
079	Cross Lighting Strip B				1
080	Burner Dividing Bar				2
081	Burner Assy	90175407	6600 or 6662		3
00	Burner Assy LPG 0.80		6662		1
081-1	Burner Body				3
081-1	Burner Plaque	90179326	1674	164-008-000	3
081-1	Burner Paque Packing				3
082	Fan Convection	90182020	6411	222-401-000	1
083	Rubber Cushion		6651		2
084	Fan Outlet Packing		6676		2
085	Switch Overheat	90169343		244-021-000	1
087	Hood Combustion	90170499	6621	055-642-000	1
088	Heat Exchanger Bracket		6625		2
089	Tube Heat Exchanger	90189119	6624		5
090	Heat Exchanger Front	90147497	6620	314-372-000	1
091	Heat Exchanger Rear	90170507	6661	314-430-000	1
092	Combustion Hood Air Guide B		6623		2
093	Combustion Hood Air Guide A		6622		1
094	Burner Cover	90169327	6636	047-607-000	1
095	Frame Glass	90189580	6761		1
096	Packing Glass	90189606	6763		4
097	Quartz Rod	90103359	6764	051-080-000	42
098	Combustion Hood Rear Support		6673		1

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