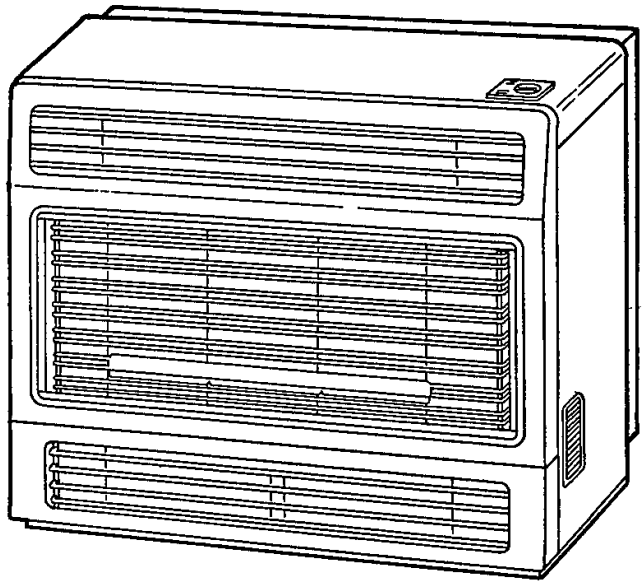
Rinnai

# SERVICE MANUAL

## R2001 REH301EB/EC

## FLUED HEATER



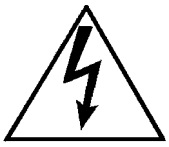
| | |
|---|---|
| The Australian Gas Association | All Rinnai products are certified by the Australian Gas Association as compliant to relevant Australian Standards. |
| Quality System™ Quality Endorsed Company ISO 9001 Lic 4983 SAI Global Head Office Certified<br>Distributed and serviced in Australia 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.<br>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 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 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.

# Table of Contents

# *Glossary of Terms and Symbols*

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

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

# 1. Introduction

## Development Background

Rinnai have developed a Flued Space Heater open flued radiant and fan forced down flow convection space heater. Single main burner with six radiants, thermostically controlled. Available in Inbuilt and Console models.
We recommend that the heater is regularly serviced by qualified service technician.

## Features

- Thermostatically controlled.
- All Rinnai safety features including overheat/flame failure protection.
- Comfortable glow with fan assisted performance for heating large areas.
- Electronic ignition system
- Contemporary styling suits any decor

# 2. Specifications

| Model Number | | REH-301EB | REH-301EC |
|---|---|---|---|
| Model Identification | | **2001EB** | **2001EC** |
| Name of appliance | | Inbuilt Flued Space Heater | Console Flued Heater |
| Average Efficiency Rating | | 70% | 70% |
| Electrical Consumption (max). Watts | | 80 Watts | 80 Watts |
| Dimensions (mm) | Width | 910 | 910 |
| | Depth | 190 | 302 |
| | Height | 650 | 650 |
| Fireplace Dimensions (mm) | Height: | 605 | N/A |
| | Width: | 710 | N/A |
| | Depth: | 270 | N/A |
| Colours: | | Beige / Gunmetal | |
| Weight | Kg | 38 | 45 |
| Heating Output (kW) | Natural Gas High: | 5.8 | |
| | Natural Gas Low: | 0.9 | |
| | LP (Propane) High: | 5.8 | |
| | LP (Propane) Low: | 0.9 | |
| Gas Consumption | (MJ's) | Average: 22.5 | |
| Clearances (mm) | Not to be installed into a mock fireplace | | |
| | Sideways | 150 | |
| | Infront | 1000 | |
| | Above | 150 | |
| | Behind | 150 | |
| Burner | | Stainless Steel Bunsen Ribbon burner | |
| Noise level range | dB (A) | High: 42 | Low: 37 |
| Gas Input (MJ/h) NG | High | 30 | 30 |
| | Low | 15 | 15 |
| LPG | High | 30 | 30 |
| | Low | 15 | 15 |
| Connections | Electrical | 240 V power point | |
| Room Temperature control | | Thermostat control | |
| Controls | | Dial heat control variable settings | |
| Gas Control | | Eurosit Combination gas control | |
| Fan Switch | | Automatic Fan switch ON/OFF | |
| Ignition System | | One touch electronic | |
| Timer | | No | |
| Safety devices | | Automatic Fan delay switch<br>Flame Failure Device<br>Over-heat switch<br>Dress guard | |
| Accessories | | Surround:75 mm or 100 mm fireplace | |
| Flueing | | 10' x 2' flueing is supplied from plumbing outlets only (not supplied by Rinnai) | |

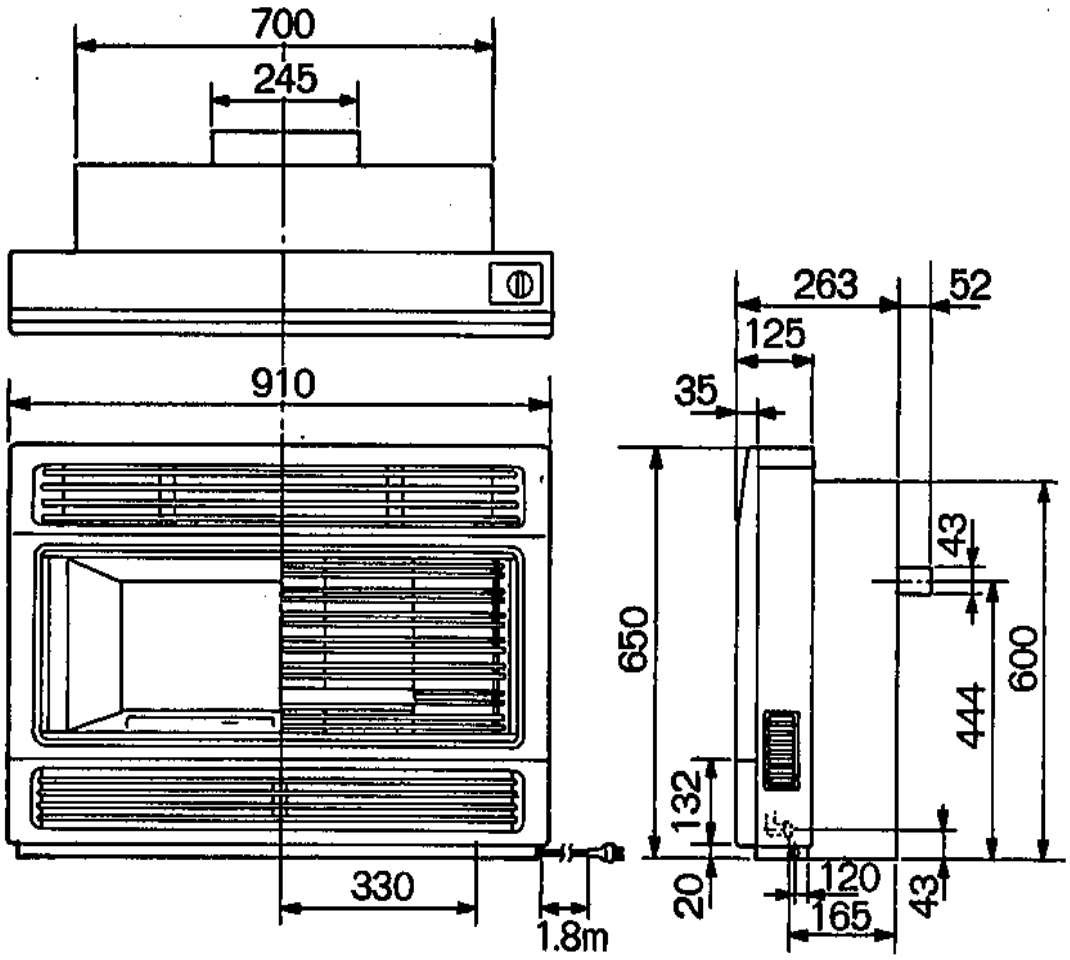
# 3. Combustion Specification

| Gas Type | Main Burner | | | Pilot Burner | | | | Gas Control | | | Gas Rating (MJ/h) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Main Burner Assy | Main Injector | Main Damper | Pilot Bnr Assy | Pilot Injector | Pilot Damper | Draw No. | Reg. | By Pass Opening | Pressure kPa | Full | By Pass | Pilot |
| Prop. | REH300-222 | CP-60013B Ø 1.45 | REH-300-73x03 20% open | REH-300-264x01 | BB-1024 Ø 0.22 | BB-1033-3 Ø 3.3 | REH-300-226-P | Fully Open | Ø1.20 x 1 | 2.72/2.74 | 30 | 12 | 0.5 |
| Nat. | REH300-222 | CP-60013B Ø 2.55 | REH-300-73x03 100% open | REH-300-264x01 | BB-1024 Ø 0.34 | No | REH-300-226-N | Yes | Ø1.85 x 1 | 0.94/1.13 | 30 | 12 | 0.5 |

# 4. Dimensions

### Inbuilt Dimensions

***Note:*** All dimensions are in millimetres



## Console Dimensions

***Note:*** All dimensions are in millimetres

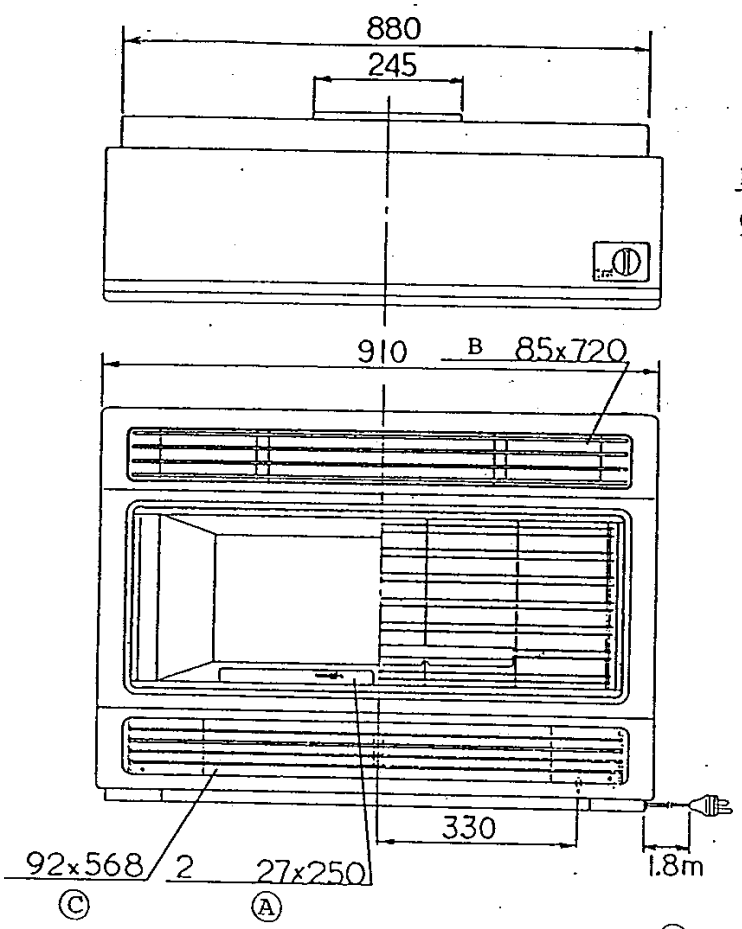
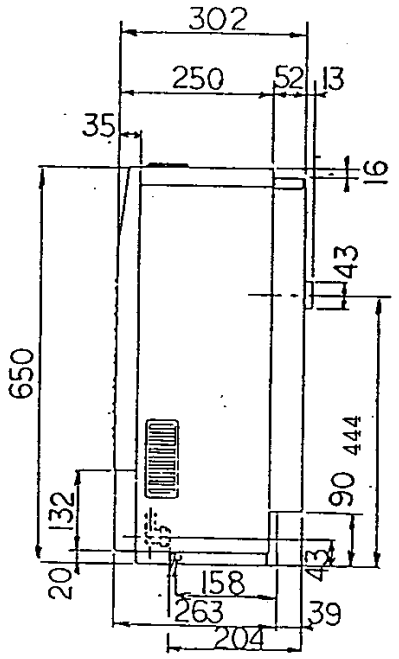



Diagram 1

CONSOLE



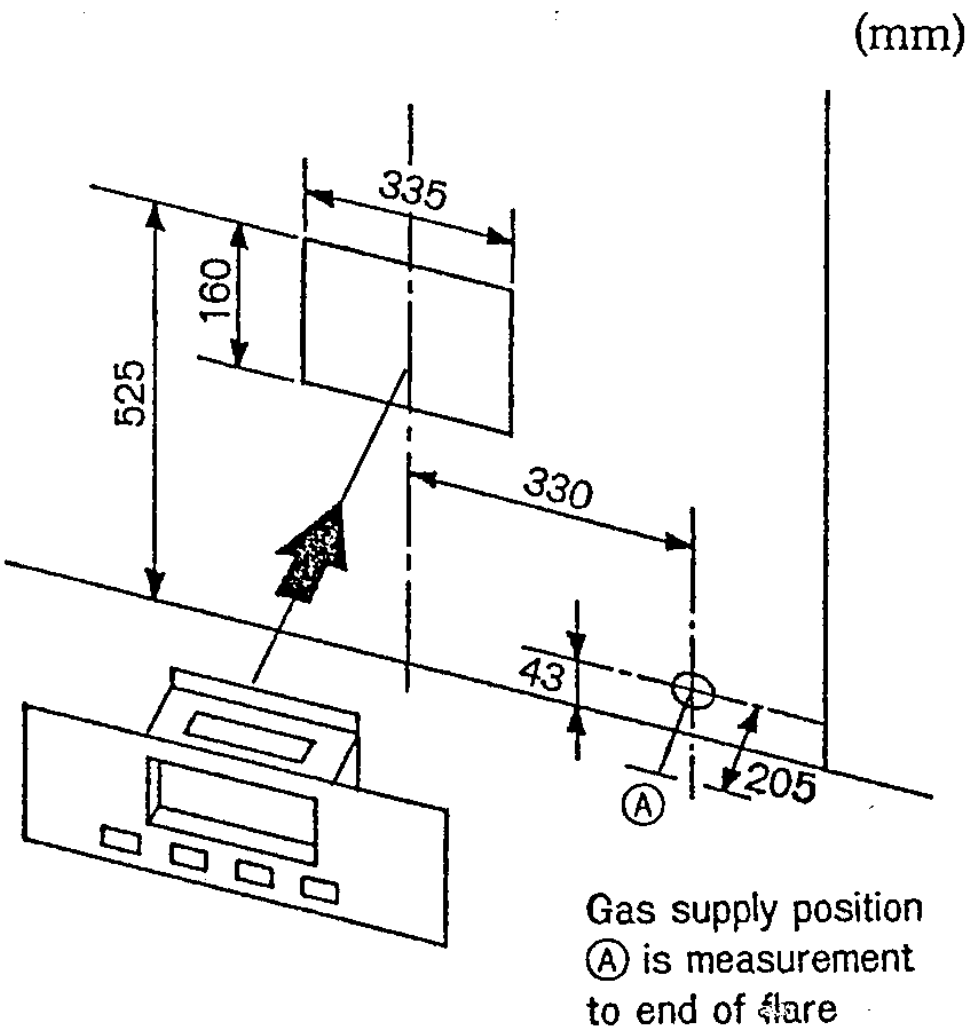

Ⓐ = Combustion air inlet

Ⓑ = Air inlet

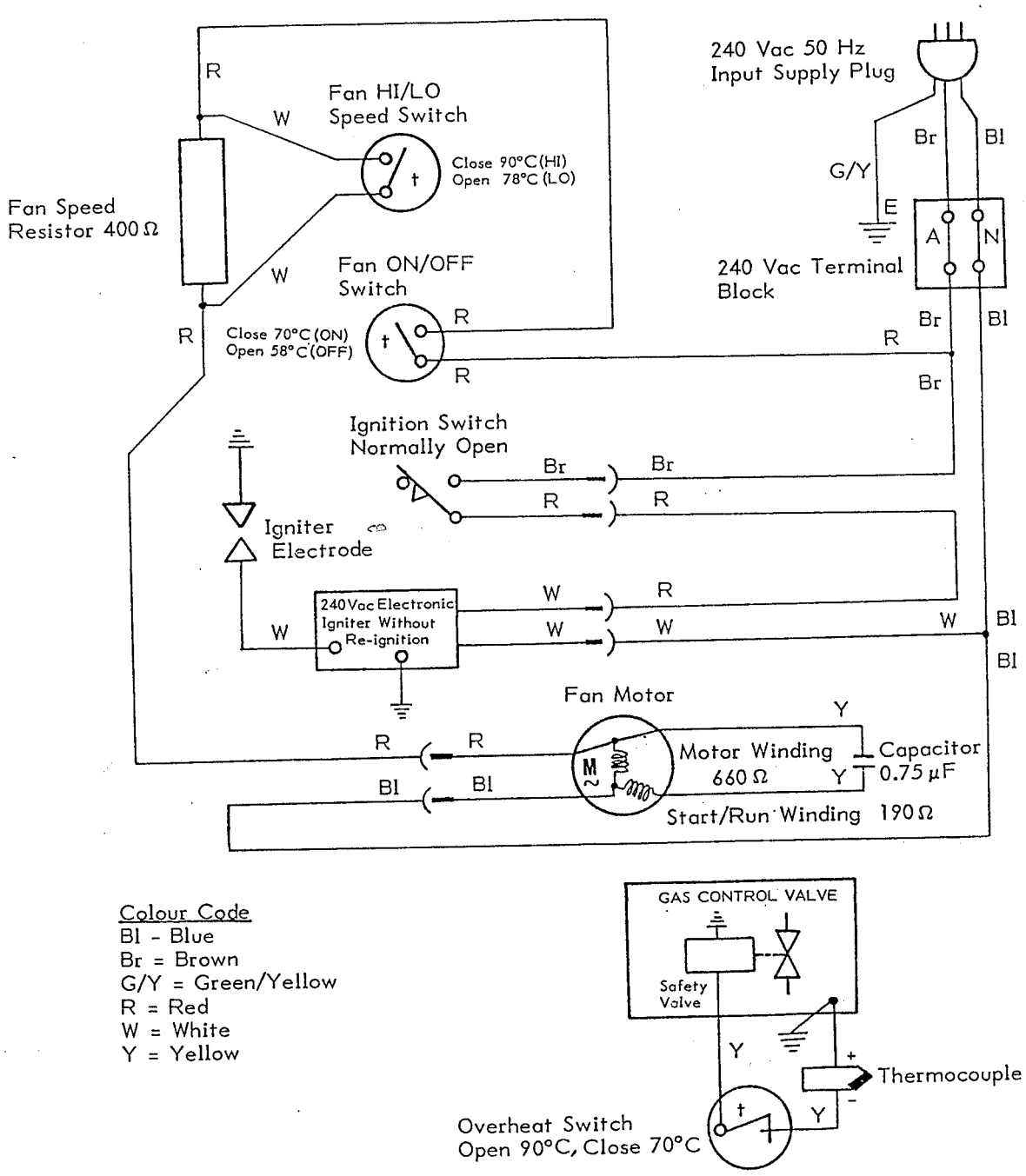
Ⓒ = Warm air outlet

# 5. Installation

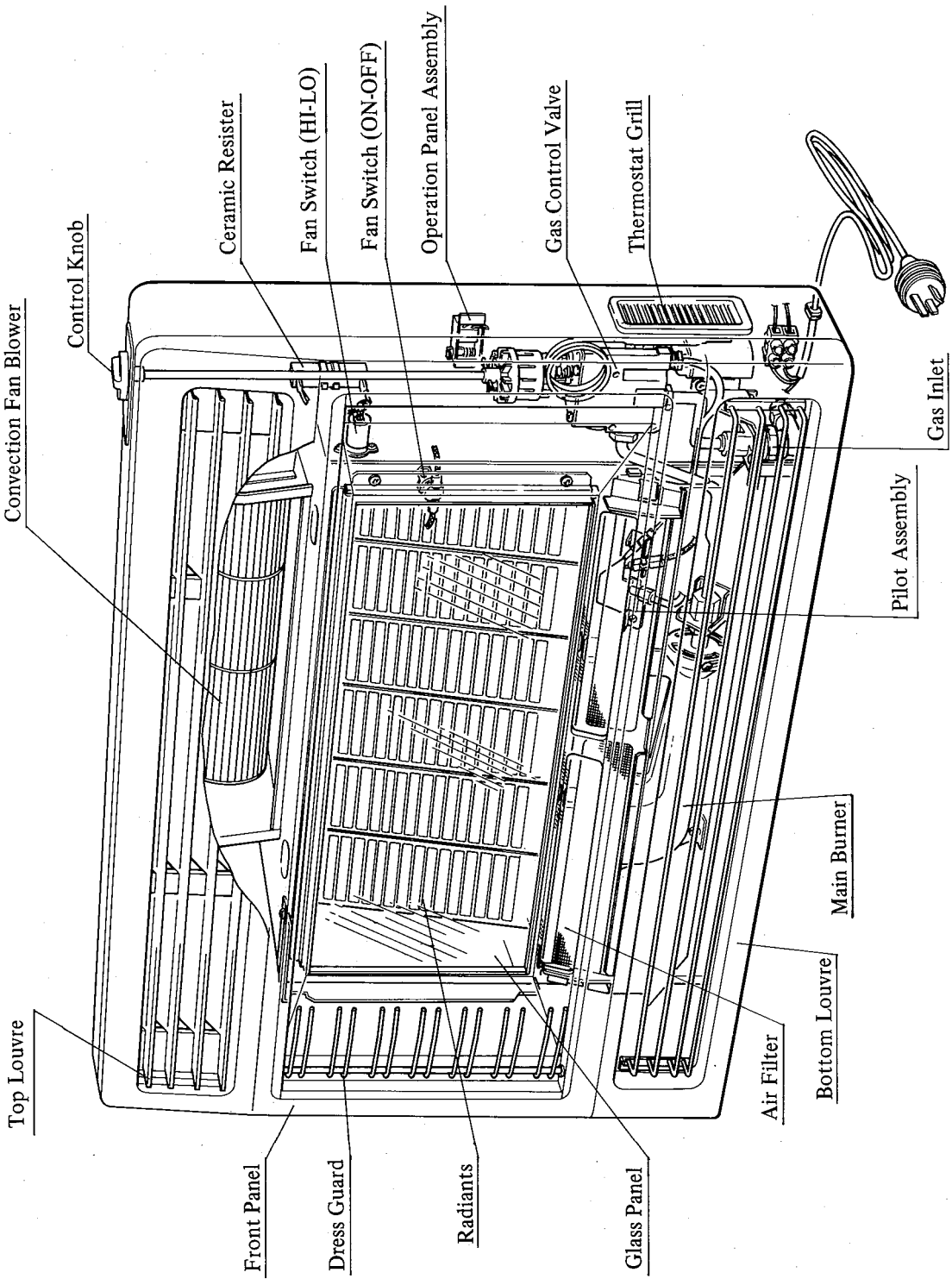
The following clearances are recommended for installation.



# 6. Schematic Diagram



# 7. Cut - Away Diagram



# 8. Operation Principles

## Appliance Operation

When the appliance control knob is rotated from the pilot off to the IGNITION PRESS position, then pressed fully down, the control knob on the gas valve mechanically closes the normally open ignition switch. Simultaneously, the thermo-magnetic flame failure safety shut-off valve is mechanically held down off its seat, allowing pilot gas to flow to the pilot burner. Thus with both ignition spark and pilot gas available, the pilot burner will light.
When the pilot flame has established (approximately 15 seconds), the flame failure system circuit will hold the thermo-magnetic safety shut-off valve open - provided that the appliance over heat switch has not operated and broken this circuit. On release of the control knob, the ignition switch opens and the thermo-magnetic safety shut-off valve is held open by the current flowing in the flame failure system circuit.
When the knob is rotated ant-clockwise past the Standby ("O") (OFF) position, the main burner will light. As the unit is thermostatically controlled, the burner will ignite at differing control knob settings, depending on the room temperature.
The fan is automatically controlled and may or may not run immediately the heater is turned on. When the temperature of the heat exchanger reaches 70°C the heat sensitive ON/OFF switch will close and the fan will run on Low speed. Should the heat exchanger temperature fall below 58°C, the fan ON/OFF switch will open and the fan will stop.
When the temperature of the burner compartment reaches 90°C the temperature sensitive fan HI/LO switch will close, bridging the fan speed resistor out of circuit; the fan will run at HI speed. When the burner compartment temperature falls below 78°C, the fan HI/LO switch opens, switching the fan speed resistor back in circuit. The fan runs at LO speed. Should the temperature inside the appliance cabinet rise to 90°C, the normally closed overheat switch (OHS) will open, breaking the flame failure system circuit. The safety shut-off valve will close, shutting off the gas flow. The appliance can only be manually relit after the temperature has fallen below 70°C, at which the OHS will close.
The heater maintains the selected temperature by sensing the room temperature and modulating the gas flow to the main burner.
When the heater is turned off, the fan will run until the heat exchanger has cooled.

## Gas Control

When the spring loaded plunger on top of the gas control is in the fully up position (pilot off), inlet gas to the gas control is shut off by the safety valve. The gas outlet valve is also closed.

When the control knob is rotated to the ignition press position and pressed fully down, the thermo-magnetic safety shut-off valve is mechanically held open by the spring loaded plunger. Can can flow to the pilot burner.
When ignition is established and the control knob released, the spring loaded plunger rises up until it is halted by the cam on the bottom of the control knob. The safety valve is held open by the electro-magnetic field strength of the current flowing in the flame failure system circuit.

Gas flow to the main burner is shut-off and opened by rotation of the control knob between the Standby position and the fully anti-clockwise (full open) position. The control knob is directly geared to the gas outlet valve operating mechanism.

The thermo-sensitive phial continuously senses room temperature. While the appliance is operating, gas output to the main burner is modulated by the resultant pressure in its bellows effectively opening/closing the gas valve against the output requirement set by the control knob.

## Control Knob

The appliance control knob and the control knob on the gas control valve are directly linked by a connecting rod. Thus any movement of the appliance control knob is duplicated by the control knob on the gas control valve.

### "Pilot Off" Position

When the appliance control knob is in the pilot off position, the gas outlet valve and the safety valve in the gas control are both shut. The spring loaded plunger on top of the control valve is caged in the fully extended position by the control knob on the gas valve. The appliance control knob cannot be depressed in this position, movement is restricted to anti-clockwise rotation to the ignition press position and return to pilot off position.

Note: The control valve can be damaged if abnormal rotational or downward pressure is used to force the control knob when in this position.

### "Ignition Press" Position

When the appliance control knob is rotated to this position, the metal stiker pin in the gas valve control knob is aligned directly above the spring loaded plunger in the gas valve. While the appliance control knob is fully depressed, the operating plunger allows gas to flow to the pilot. Simultaneously, the control knob engages the spring loaded ignition switch operating cam, energising the ignition unit. Thus pilot gas and ignition spark are available while the appliance control knob is held fully down in the position.

When the pilot ignition sequence is complete (approx. 15 seconds), the control knob can be released. The valve plunger will rise up under its spring pressure until it is halted by the cam on the bottom of the gas valve control knob - in the uncaged position. The safety valve will be held open by the current flow in the flame failure circuit.
The pilot burner should remain alight.

### Standby ("O") Position

When the control knob is rotated anti-clockwise past the Standby (OFF) position, gas will flow to the main burner and it will light. As the gas control is thermostatically controlled the main burner will ignite at differing settings depending on the existing room temperature. The thermo sensitive phial continuously senses room temperature and modulates the heater output depending upon that temperature and the setting of the control knob.

### Pilot Ignition

1. Check that the unit is plugged into a 240 V power supply and that it is switched on.
2. Turn the control knob to the igniton press position.
3. Depress the control knob and hold it in the fully down position for at least 15-seconds. The igniter will spark and the pilot burner will ignite.
4. Release the control knob.

   Note: Do not attempt to rotate the control knob when it is in the fully depressed position; the use of abnormal force could result in damage to the gas control.

5. Check that the pilot has ignited. It can be seen under the first radiant on the right hand side.
6. If the pilot does not remain alight, wait 2-minutes for the safety lock to release then repeat the igniton procedure.

   Note: Ignition may take longer if the unit has not been used for some time; for example at the beginning of winter.
7. After successful igniton the control knob can be turned to the Standby (main burner off) position or to the desired operating position.

### Main Burner Ignition

1. Check that the pilot is ignited.
2. Turn the control knob to the desired operating setting. The burner will ignite.

Note: As the appliance is thermostatically controlled, the burner will ignite at different settings, depending upon the room temperature. If the burner does not ignite at the "usual" setting, rotate the control knob further and the main burner will ignite.

Note: The heater will maintain the selected temperature by modulating the main burner heat output. It is normal for the flame size to change or even go out during operation.

## Automatic Fan Operation

The fan will start automatically when the heat exchanger warms up. The heater will automatically change the fan speed (HI/LO) to match the gas input to give the best combination of efficiency and comfort.

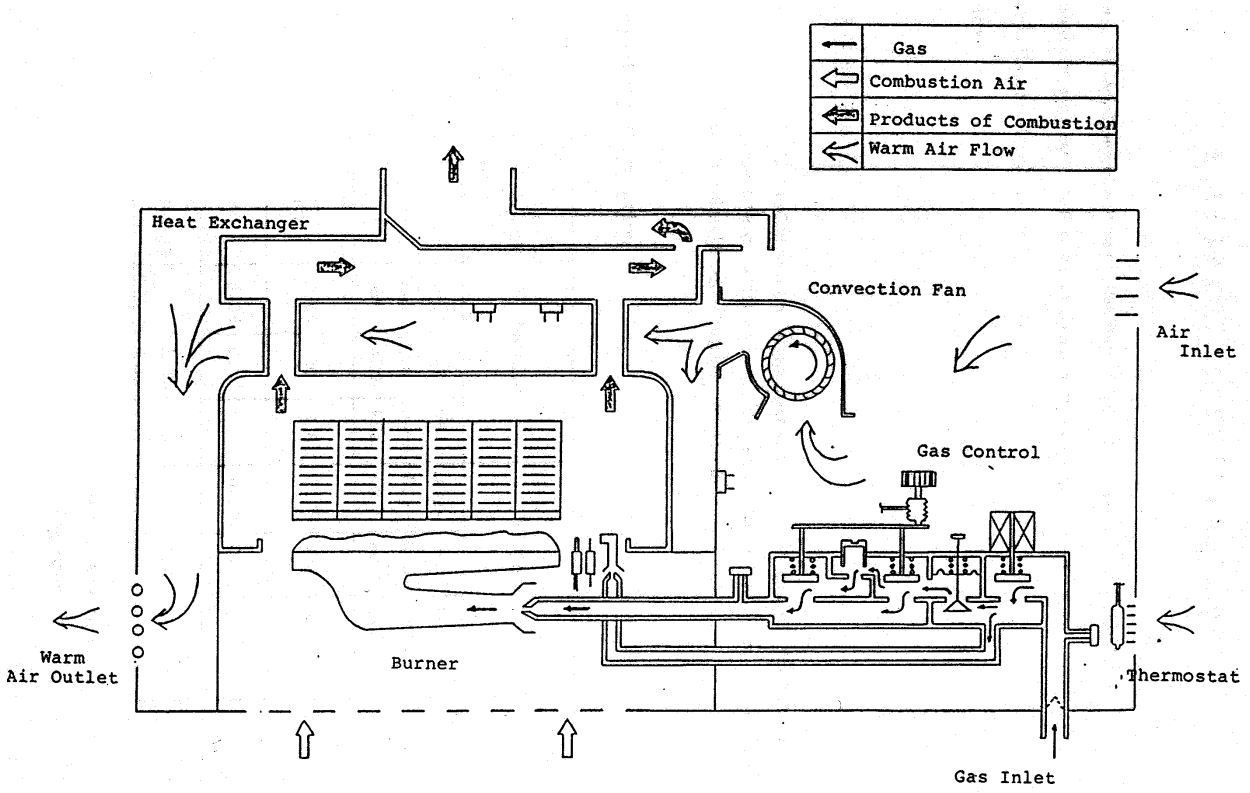
## Turn Main Burner Off

1. Rotate the control knob to the Standby (OFF) position. The pilot will remain alight.

Note: The fan will continue to run until the heat exchanger has cooled, then automatically switch off.

## Turn Pilot Off

1. Rotate the control knob to the "PILOT OFF" position.
2. Check that both the main burner and the pilot burner have extinguished.



# 9. Main Componentry

### Regulator
Incorporated in the 630 Eurosit combination gas control.

### Gas Control
Eurosit combination gas control system consists of gas regulator, modulating temperature control with low flame on/off action and electro magnet safety valve. Features include pilot burner gas flow adjustment and filter, inlet and outlet gas pressure test points and mechanical interlock preventing mandatory re-ignition of main burner.

### Pilot Ignition
Spark ignition and pilot burner is mounted on the right hand side off the burner assembly. Pilot aeration is non-adjustable. Position of spark ignition is lower corner of the right hand side of the rear panel.
To ignite turn the control knob to IGNITION PRESS position which activates the ignition device, and then press the control knob down fully down.

### Safeguard
Thermo-electric flame failure system consists of combination gas control unit and series with thermocouple switch and safety shut down valve. Failure of flame current or opening of the overheat switch will cause the gas control valve to shut down.

### Main Burner and Pilot Burner
Pressed stainless steel, ribbon type burner, with single injector. Primary air is adjustable. Pilot burner assembly is mounted to right hand end of the main burner.

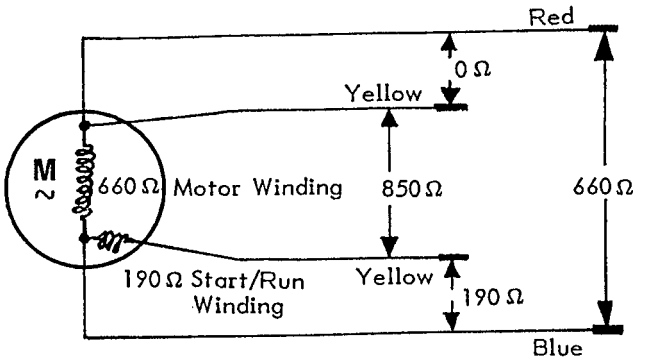
### Radiants
Six ceramic radiant plaques with 14-cross bars, dimensions 220 mm long by 84 mm wide and 56 mm deep.

### Gas Inlet Supply Filter
Grill type filter fitted in the gas inlet tube which are replaceable with removing the inlet union and filter retaining spring.

### Fan
Single speed tangential type blower, with induction motor complete with stainless steel blades are replaceable with removing bearing. Fan motor has electrical leads, the colour red and blue for terminating in a polarised plug for the 240 V power supply and yellow leads connect the capacitor of 0.7 µF across the motor circuit into its start/run circuit. The fan motor will not operate without the capacitor in the circuit.

Note that the fan motor will not start or run without the capacitor in circuit.

External fan circuit components include the temperature sensitive fan HI/LO switch and ceramic resistor for the two fan speeds and the temperature sensitive fan ON/OFF switch. The appliance overheat switch (flame failure circuit component), is mounted on the fan casing adjacent to the fan motor.




FAN MOTOR WINDING AND START/RUN WINDING
Fig. 1

### Capacitor

Screw mounted with two spade type terminals. Capacitor is in series with fan motor start winding (190 ohms) for both starting and running.

### Ceramic Resistor

White ceramic 400 ohm, 63 mm x 13 mm x 13 mm, with single screw mounting bracket. Fan speed circuit component.

### Hi/Low Fan Speed Switch

Temperature sensitive normally open switch, closes (Hi speed) at 90°C, opens (Low speed) at 78°C. Screw mounted, with two spade type terminals connected across the ceramic resistor by two white leads. Located on the outside top corner of the burner compartment right hand panel.

### ON/OFF fan Switch

Temperature sensitive normally open switch, closes (fan ON) at 70°C, opens (fan OFF) at 58°C. Screw mounted, with two spade type terminals, connected into circuit by two red leads. Located inside the heat exchanger compartment, on the right hand side of the back panel below the flue duct.

### Overheat Switch (OHS)

Temperature sensitive normally closed switch, opens at 90°C, closes at 70°C. Screw mounted, with two soldered terminals, connected into the flame failure circuit by two yellow leads. Located on the fan casing adjacent to the fan motor.

### Ignition Switch

Mechanically operated normally open switch. Screw mounted with associated insulation sheets and switch operating spring. Switch is closed while the appliance control knob, when set in the ignition press position, is pressed fully down. With three solder type terminals (only two used, red/brown leads) connected into the ignition circuit by 2-pin plug. Located on upper part of the gas control mounting plate behind the gas control.

# 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 | No ignition spark | Pilot does not light | Main burner does not light | Combustion stops during operation | Smell of gas | Noisy Ignition | Takes too long to heat room | Fan keeps running when heater is turned off. Fan does not start immediately, fan speed changes. | Flame size changes | Unusual combustion | Burner does not light at the "usual" setting | Remedy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Not Plugged In | ● | ● | | ● | | | | | | | | Plug In |
| 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 | ● | ● | ● | | | | | | | | | Clean the air filters (WEEKLY) |
| Louvre obstructed | | | | ● | | | ● | | | | | Clean obstruction |
| Burner filter blocked | | | | | | | | | | ● | | Clean the air filters (WEEKLY) |
| Gas Escape | | | | | ● | | | | | | | Service Call (Contact Rinnai) |
| Auto fan-switch operating | | | | | | | | ● | | | | Normal operation |
| Room too large | | | | | | | ● | | | | | Service Call (Contact Rinnai) |
| Small plastic filter on right hand side blocked | | | | | | | ● | | | | | Clean with vacuum cleaner |
| Thermostat operating | | | | | | | | | ● | | | Normal operation |
| Outside or inside temperature may be higher than usual | | | | | | | | | | | ● | Normal operation |
| Blocked pilot | | ● | | | | ● | | | | | | Service Call (Contact Rinnai) |

# 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. Overheat switch faulty (open circuit). | Test switch/circuit continuity, replace overheat switch if faulty. |
| | 5. Flame failure system circuit faulty (open circuit). | Check flame failure system circuit, replace defective components. |
| | 6. Gas line filter blocked. | Clean gas line filter. |
| | 7. Not pushing control knob fully down. | Instruct user on correct operation procedure. |
| | 8. Blocked pilot. | Clean or replace pilot injector. |
| 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. |
| | 5. Combustion air intake filter(s) blocked. | Clean both filters with vacuum cleaner, instruct user that weekly cleaning is recommended. |
| Fan continues to run after unit is shut down. | 1. Unit has not cooled. | Normal operating sequence. |
| | 2. Defective fan ON/OFF switch. | Replace switch. |
| Fan won't run on low speed. | 1. Fault in fan HI/LO circuit - defective HI/LO fan speed switch or fan speed resistor. | 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. |
| Fan will not run. | 1. Fan motor fault. | Replace fan motor. |
| | 2. Start / run capacitor defective. | Check motor start / run circuit, replace motor or capacitor 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. |
| | 5. Room air temperature sensing grill on right hand side of unit blocked. | Clear / clean grill, instruct user weekly cleaning is recommended. |
| 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. |
| Main burner flame size changes during operation. | 1. Thermostatically controlled temperature/heat output modulating system operating. | Normal operation. |
| 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.<br>Repair / replace defective circuit / components. |
| | 3. Defective flame failure circuit or overheat switch. | Check flame failure circuit, replace defective components. |
| | 4. Dirty pilot injector orifice. | Clean or replace pilot injector. |
| ***On completion of work test for gas escapes*** | | |

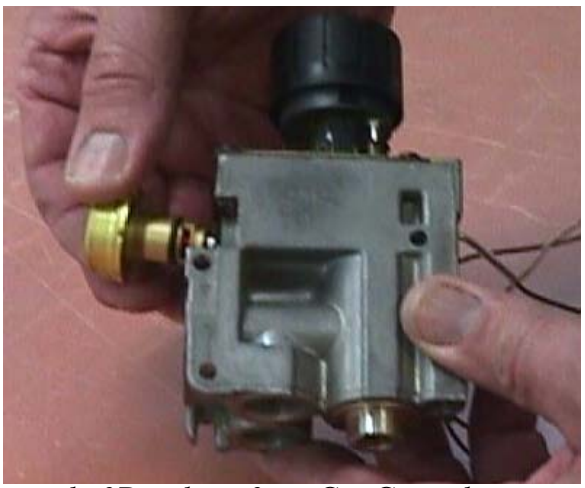
# 11. Gas Conversion / Gas Pressure Setting


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

## Conversion Method

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

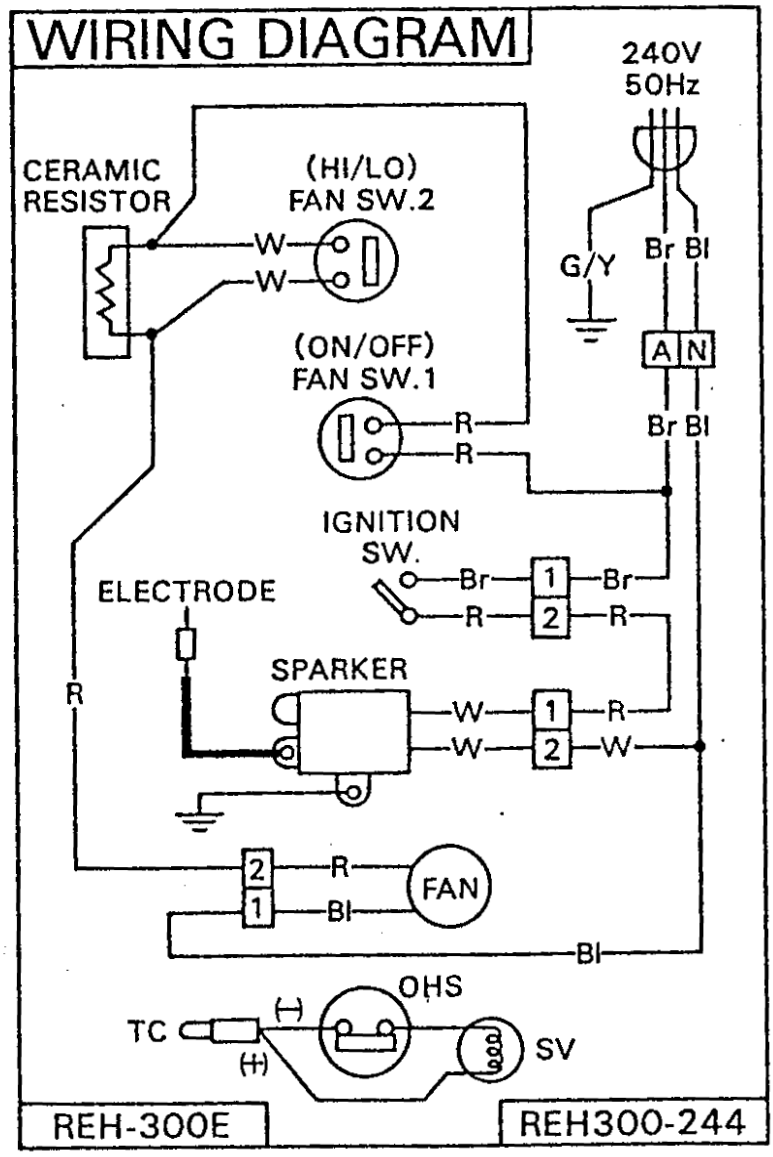
1. Remove bottom louvre, 2 screws.
2. Remove front panel, 2 screws, 1 in each bottom corner.
3. Delete Gas type from inside bottom panel. Write appropriate new gas type (NG/LP) in felt tip pen
4. Replace small gas label on gas inlet with appropriate new gas label (NG/LPG).
5. Replace large gas label on back of appliance.
6. Place very small gas label over with appropriate new gas label (NG/LPG) on Data Plate.
7. Remove filter and filter cover to main injector, 4 screws.
8. Remove 1 screw from burner also remove 2 screws from pilot mounting bracket, then move burner away from injector.
9. Remove main injector - take care not to distort bracket.
10. Fit correct injector for new gas type. NG. 2.55 mm / Propane 1.45 mm.
11. Replace burner and screws.
12. Remove pilot injector from pilot assembly.
13. Fit appropriate pilot inj. for new gas type & replace pilot bkt retaining screw NG 0.34/Prop. 0.22mm
14. Remove By Pass screw from top of gas control.
15. Fit appropriate By Pass screw suitable for new gas type.
16. Remove regulator from gas control (Left hand side) - for NG to LPG.
17. Replace with appropriate blanking screw (for LPG to NG remove blanking plate and fit regulator).
18. Connect appliance to gas and electricity.
19. Remove small louvre (RHS of panel), to gain access to test point screw.
20. Remove upper test point screw and attach hose and manometer.
21. Connect pressure gauge.
22. Light appliance on full.
23. Check test point pressure as per data on data plate for gas type and adjust if required.
24. Turn appliance off.
25. Remove gauge and replace test point screw - check for gas escape from test point screw.
26. Replace small louvre.
27. Replace filter and filter cover.
28. Replace front cover and bottom louvre.



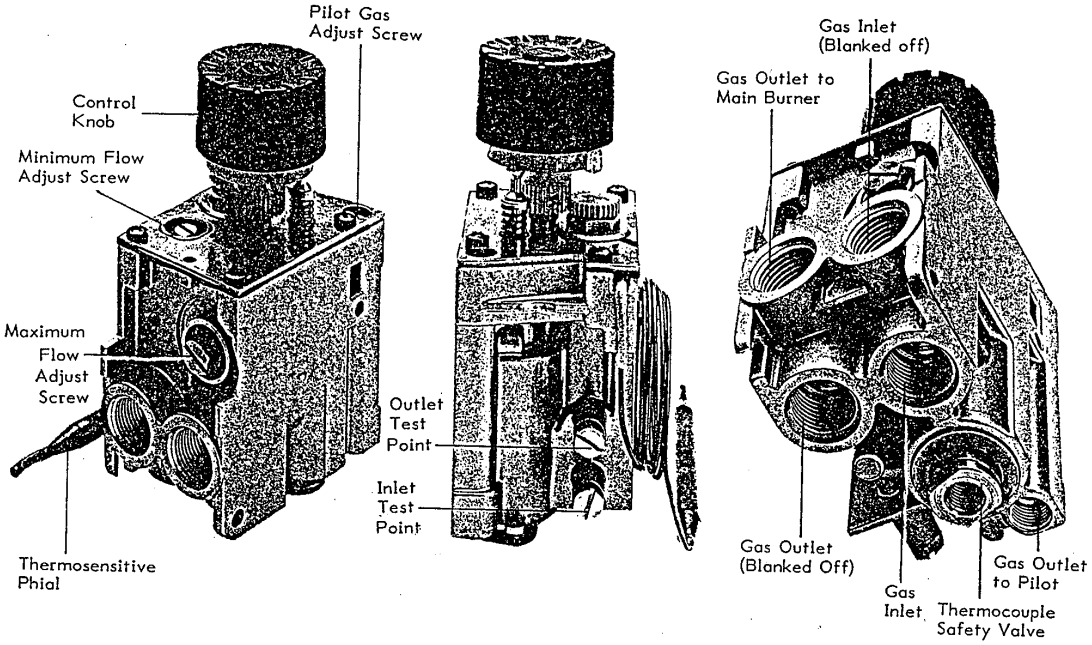
Removal of Regulator from Gas Control

| | Propane Gas | Natural Gas |
|---|---|---|
| Pilot Injector | 0.22 mm | 0.34 mm |
| Main Burner | 1.45 mm | 2.55 mm |
| Burner Pressure | 2.75 kPa | 0.94 kPa |

# 12. Wiring Diagram



## Eurosit 630 Combination Gas Control



# 13. Component Circuit Value Table

| Table - Fan Motor | | | |
|---|---|---|---|
| **CN** | **Wire Colour** | **Correct Value** | **Remarks** |
| M<br>660 Ω | Yellow - Yellow | 850 Ω | Power Source. Capacitor 0.75 μF |
| | Yellow - Blue | 190 Ω | Start / run winding |
| | Red - Yellow | 0 Ω | |
| | Red - Blue | 660 Ω | Motor winding |

# 14. 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**

1. Isolate the 240 V power supply to the appliance.
2. Remove grill attaching screws (2-off).
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.

**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) Front Cover Removal**

1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill.
3. Remove two attaching screws, one from each bottom side of front cover.
4. Swing bottom of front cover out, then lift up until it clears its top locating tabs.

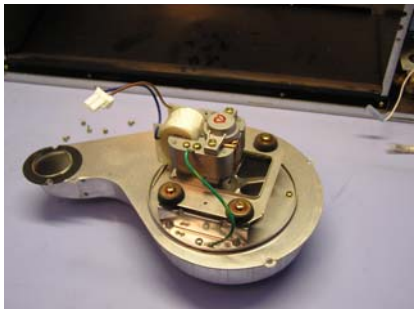
**4) Air Filters Removal**

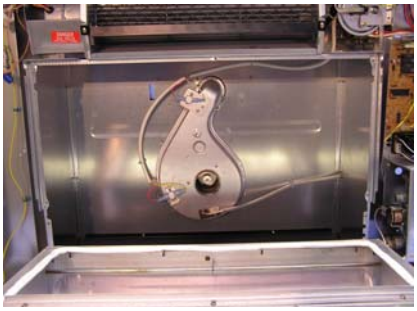
1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill and front cover.
3. Unclip filter from inside front cover.

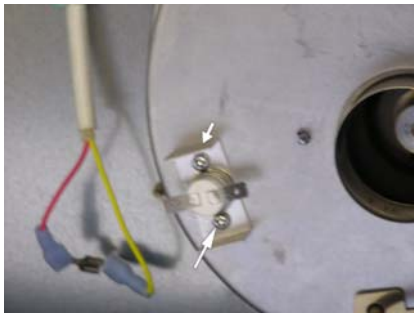

*240 volt potential exposure. Isolate the appliance and reconfirm with a neon screwdriver or multimeter.*

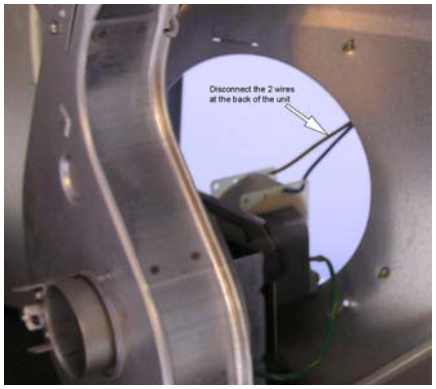
## 5) Heat Exchanger / Overheat and Fan Switch

1. Isolate the 240 V supply to the appliance.
2. Remove bottom grill, front cover and radiants.
3. Remove combustion air filter and air duct assembly.
4. Remove main burner assembly.
5. Remove main burner gas supply line (2-screws on burner, unscrew from gas control).
6. Remove the Heat Exchanger mounting screws (5-screws), pull Heat Exchanger forward.
7. Unplug wiring from fan switch and overheat switch.
8. Disconnect Air Hose and remove (5-mounting screws) on fan housing.
9. Pull Housing towards you. Reach through fan opening on rear of case and unplug 2-pin polarised plug.





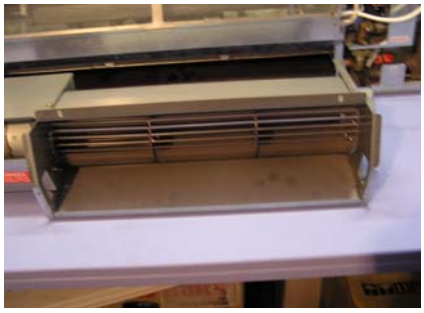





*240 volt potential exposure. Isolate the appliance and reconfirm with a neon screwdriver or multimeter.*

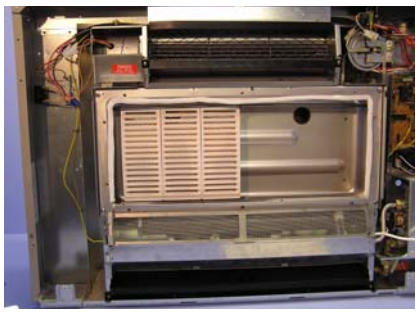
## 6) Fan Removal

1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill and front cover.
3. Unplug lead to fan motor.
4. Disconnect the 2-brown leads (push-on type terminals) from the capacitor.
5. Remove the cabinet support plate from the top of the fan casing (2-screws).
6. Remove (2-screws) from fan access grill.
7. Remove the 2-fan mounting screws (1-each side), then pull the fan free.



## 7) Radiants 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).
4. Remove glass, then remove radiants as required.



## 8) Main Burner Removal

1. Isolate the 240 V power supply to the appliance.
2. Remove bottom grill and front cover.
3. Remove combustion air filter and air duct panel assembly.

**Note: On re assembly, it is most important that the bottom edge of the duct panel with its two locating tabs, is correctly engaged over the bottom front edge of the heat exchanger panel.**


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

**Main Burner Removal continued**

4. Disconnect gas burner gas supply tube and remove.
5. Unclip igniter electrode from pilot assembly mounting bracket.
6. Unclip flame rod wire (left hand side electrode).
7. Remove burner mounting screw and pull main burner assembly free.

## 9) Gas Control Removal

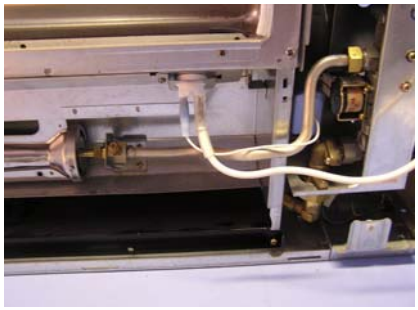
1. Isolate the 240 V power supply to the appliance.
2. Isolate the gas supply to the appliance.
3. Remove the bottom grill and front cover.

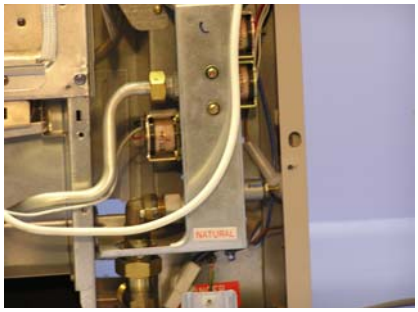
**Note: On re-assembly, ensure that the appliance control knob and the gas control knob, are in the same position when re-pinned together (for example, both in the PILOT OFF position).**

4. Unscrew thermocouple lead assembly from gas control.
5. Unscrew pilot burner gas supply line from the gas control.
6. Undo Barrel union gas connection.
7. Undo Gas Valve mounting bracket (3 screws).
8. Undo Burner supply tube.

**Note: On re-assembly ensure that the thermostat phial is positioned so that its body runs the full length of the plastic grill.**

9. Remove the two attaching screws from the gas control and pull it free.





**Note: Ensure that the sealing gasket is correctly located on each of the flue exhaust outlets before re-assembly of the heat exchanger to the inner casing.**

# REH-301EB / EC - R2001 (Inbuilt / Console)

**Note: This model does not have a PCB it has a surge arrestor P/N 90192840.**
**Refer to Exploded Diagram No. 150**

| NO | Part Name | RA Part Number | 11 Digit Code | REH-301EB-1A Inbuilt - Beige | REH-301EB-1B Inbuilt - Brown | REH-301EC-1A Console |
|---|---|---|---|---|---|---|
| | Air Shield Plate Assembly | 90173220 | 039-174-000 | 1 | 1 | 1 |
| 001 | Front Panel E Assembly | 90150632 | 019-877-000 | 1 | | 1 |
| 001 | Front Panel F Assembly | 90146283 | 019-0691000 | | 1 | |
| 002 | Front Panel Fixing Plate | | 537-675-000 | 2 | 2 | 2 |
| 003 | Logo Mark | 90178815 | 602-228-000 | 1 | 1 | 1 |
| 004 | Shaft Pushing Nut | | 502-252-000 | 1 | 1 | 1 |
| 005 | Upper Louvre D Assembly | 90196783 | 046-150-000 | 1 | | 1 |
| 005 | Upper Louvre C Assembly | 90186024 | 046-151-000 | | 1 | |
| 006 | Reflector Upper | 90186040 | 038-129-000 | 1 | | 1 |
| 006 | Reflector Upper | 90186032 | 038-145-000 | | 1 | |
| 006 | Reflector Lower | 90186040 | 038-130-000 | 1 | | 1 |
| 006 | Reflector Lower | 90184656 | 038-147-000 | | 1 | |
| 006 | Side Reflector | 90186032 | 038-146-000 | 2 | | 2 |
| 006 | Side Reflector | 90184631 | 038-128-000 | | 2 | |
| 007 | Air Filter D Assembly - Inbuilt | | 017-971-000 | 1 | | 1 |
| 007 | Air Filter C Assembly | | 017-304-000 | | 1 | |
| 008 | Dress Guard | 90147760 | 056-162-000 | 1 | 1 | 1 |
| 009 | Shield Heat Dress Guard | 90195900 | 030-830-000 | 1 | 1 | 1 |
| 010 | Panel Top (2001) Inbuilt | 90151333 | 001-784-000 | 1 | | |
| 010 | Panel Top Assembly (2001) Inbuil | 90146374 | 001-620-000 | | 1 | |
| 011 | Panel Side R1I | 90150384 | 003-551-000 | 1 | | |
| 011 | Panel Side L1I | 90146382 | 003-575-000 | | 1 | |
| 012 | Side Panel L E | 90147836 | 003-560-000 | 1 | | |
| 012 | Side Panel L F | | 003-576-000 | | 1 | |
| 013 | Top Plate F-E Assembly Console | 90151341 | 001-785-000 | | | 1 |
| 014 | Side Panel R E Console | 90150418 | 003-577-000 | | | 1 |
| 015 | Side Panel L E Console | 90147877 | 003-562-000 | | | 1 |
| 016 | Back Spacer Upper D Console | 90149741 | 550-138-000 | | | 1 |
| 017 | Back Spacer Side D Console | 90147653 | 550-153-000 | | | 2 |
| 018 | Louvre Bottom 1 | 90180290 | 019-893-000 | 1 | | 1 |
| 021 | Escutcheon New Style | 90176843 | 527-194-000 | 1 | 1 | 1 |
| 022 | Knob 2001 New Style | 90180868 | 021-361-000 | 1 | 1 | 1 |
| 023 | Thermistor Window D | 90150475 | 061-059-000 | 1 | 1 | 1 |
| 032 | Screw Grommet | | 502-297-000 | 2 | 2 | 2 |
| 040 | Heat Exchanger | 90150004 | 314-435-000 | 1 | 1 | 1 |
| 041 | Gasket Transfer Tube | 90157462 | 580-654-000 | 1 | 1 | 1 |
| 042 | Air Seal Plate B | | 526-144-000 | 1 | 1 | 1 |
| 044 | Gasket A | | 580-809-000 | 1 | 1 | 1 |
| 045 | Combustion Chamber Assembly | 90157504 | 092-053-000 | 1 | 1 | 1 |

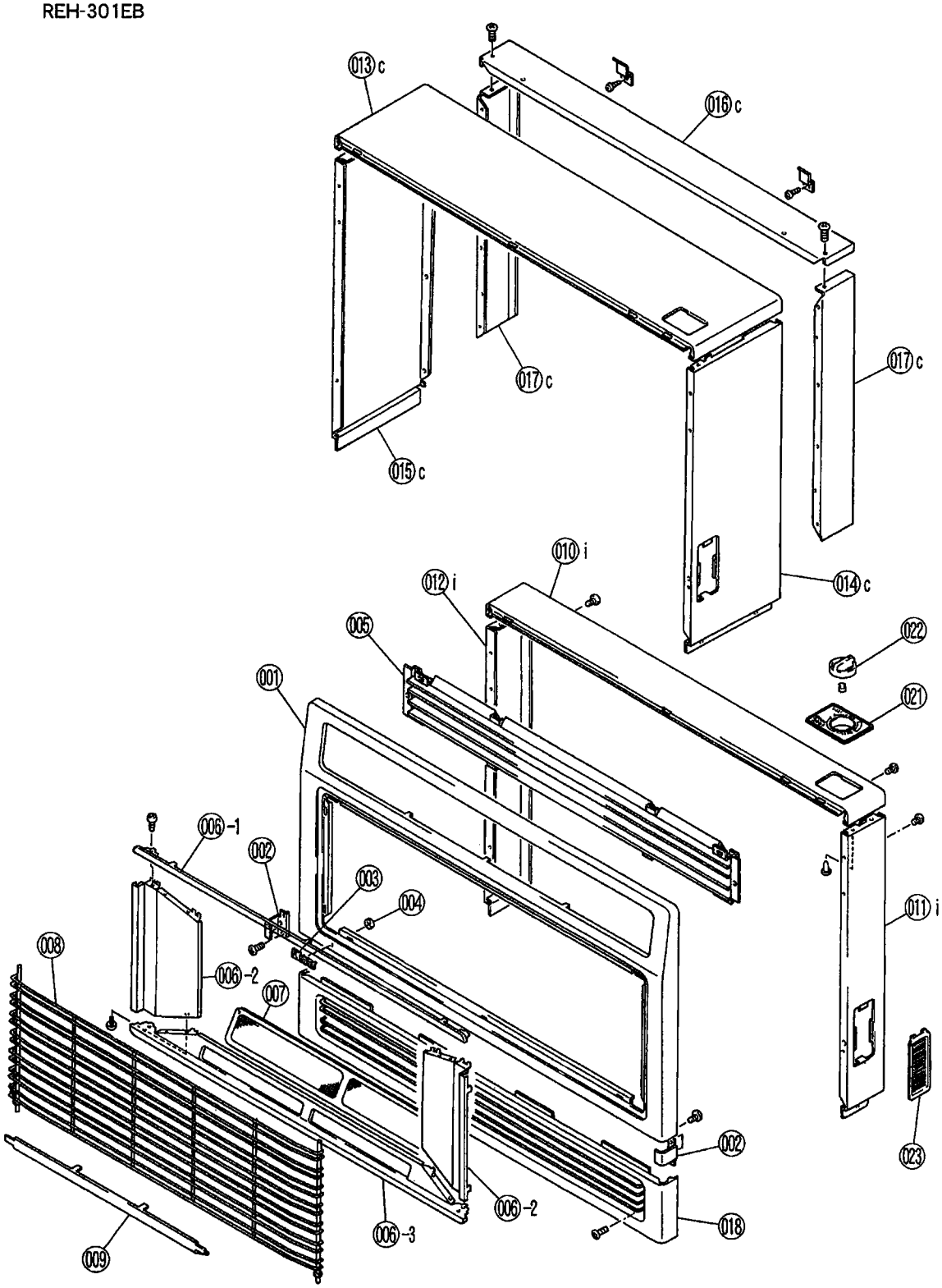
# REH-301EB / EC - R2001 (Inbuilt / Console)

| Note: This model does not have a PCB it has a surge arrestor P/N 90192840. Refer to Exploded Diagram No. 150 | | | | REH-301EB-1A | REH-301EB-1B | REH-301EC-1A |
|---|---|---|---|---|---|---|
| **NO** | **Part Name** | **RA Part Number** | **11 Digit Code** | **Inbuilt - Beige** | **Inbuilt - Brown** | **Console** |
| 046 | Rod Holding Radiant | 90147091 | 538-228-000 | 1 | 1 | 1 |
| 048 | Glass Panel Seal Packing | 90147133 | 580-655-000 | 1 | 1 | 1 |
| 050 | Glass Panel | 90147109 | 051-081-000 | 1 | 1 | 1 |
| 051 | Retainer Glass Top & Bottom | 90147117 | 538-229-000 | 2 | 2 | 2 |
| 052 | Retainer Glass Side | 90147125 | 538-084-000 | 2 | 2 | 2 |
| 055 | Operation Guide Assy | 90156993 | 013-283-000 | 1 | 1 | 1 |
| 056 | Radiants | 90142282 | | 6 | 6 | 6 |
| 057 | Burner Box Assembly | 90149097 | 527-204-000 | 1 | 1 | 1 |
| 058 | Box Front Panel Assembly | | 019-0707000 | 1 | 1 | 1 |
| 059 | Connecting Tube Fixing | | 037-0001000 | 1 | 1 | 1 |
| 060 | Filter Burner Assembly | 90148982 | 017-972-000 | 1 | 1 | 1 |
| 061 | Burner Assembly | 90146739 | 150-529-000 | 1 | 1 | 1 |
| 062 | Shutter Aeration | 90148966 | 140-645-000 | 1 | 1 | 1 |
| 063 | Pilot Burner Assembly | 90146747 | 152-540-000 | 1 | 1 | 1 |
| 064 | Electrode | 90147554 | 202-176-000 | 1 | 1 | 1 |
| 065 | Thermocouple & OHS | 90146762 | 121-345-000 | 1 | 1 | 1 |
| 067 | INJECTOR PILOT LPG | 90113085 | 131-008-022 | 1 | 1 | 1 |
| 067 | INJECTOR PILOT NG | 90113077 | 131-008-034 | 1 | 1 | 1 |
| **068** | **Pilot Connecting Tube Kit (Made up of Exploded Diagram Part Numbers: 068,069,070&071)** | **90146838** | 109-089-000 | 1 | 1 | 1 |
| 069 | Bag Nut | | 502-098-000 | 1 | 1 | 1 |
| 070 | Pipe Nut | | 502-298-000 | 1 | 1 | 1 |
| 071 | Ball Sleeve | | 518-044-000 | 1 | 1 | 1 |
| 072 | Control Shaft | 90147604 | 058-067-000 | 1 | 1 | 1 |
| 073 | Snap Pin | | 505-009-000 | 1 | 1 | 1 |
| 074 | Control Adapter | 90146861 | 561-376-000 | 1 | 1 | 1 |
| 075 | Gas Control NG | 90184169 | ---------- | 1 | 1 | 1 |
| 075 | Gas Control LPG | 90184177 | ---------- | 1 | 1 | 1 |
| 076 | Tube Inlet Gas | 90149006 | 109-196-000 | 1 | 1 | 1 |
| 077 | Gas Filter | | 017-974-000 | 1 | 1 | 1 |
| 078 | Retainer Spring | | 560-523-000 | 1 | 1 | 1 |
| 080 | Valve Union Nut | | 502-292-000 | 1 | 1 | 1 |
| 081 | Valve Union Sleeve 2 | 90104035 | 518-042-000 | 1 | 1 | 1 |
| 081 | Valve Union Sleeve 2 | 90145020 | 518-042-000 | 1 | 1 | 1 |
| 082 | Elbow Inlet | 90104191 | 196-032-000 | 1 | 1 | 1 |
| 083 | Bag Nut | | 502-296-000 | 1 | 1 | 1 |
| 084 | Tube Main Gas | 90149055 | 109-197-000 | 1 | 1 | 1 |
| 085 | Connecting Tube Fixing Bracket | | 538-230-000 | 1 | 1 | 1 |

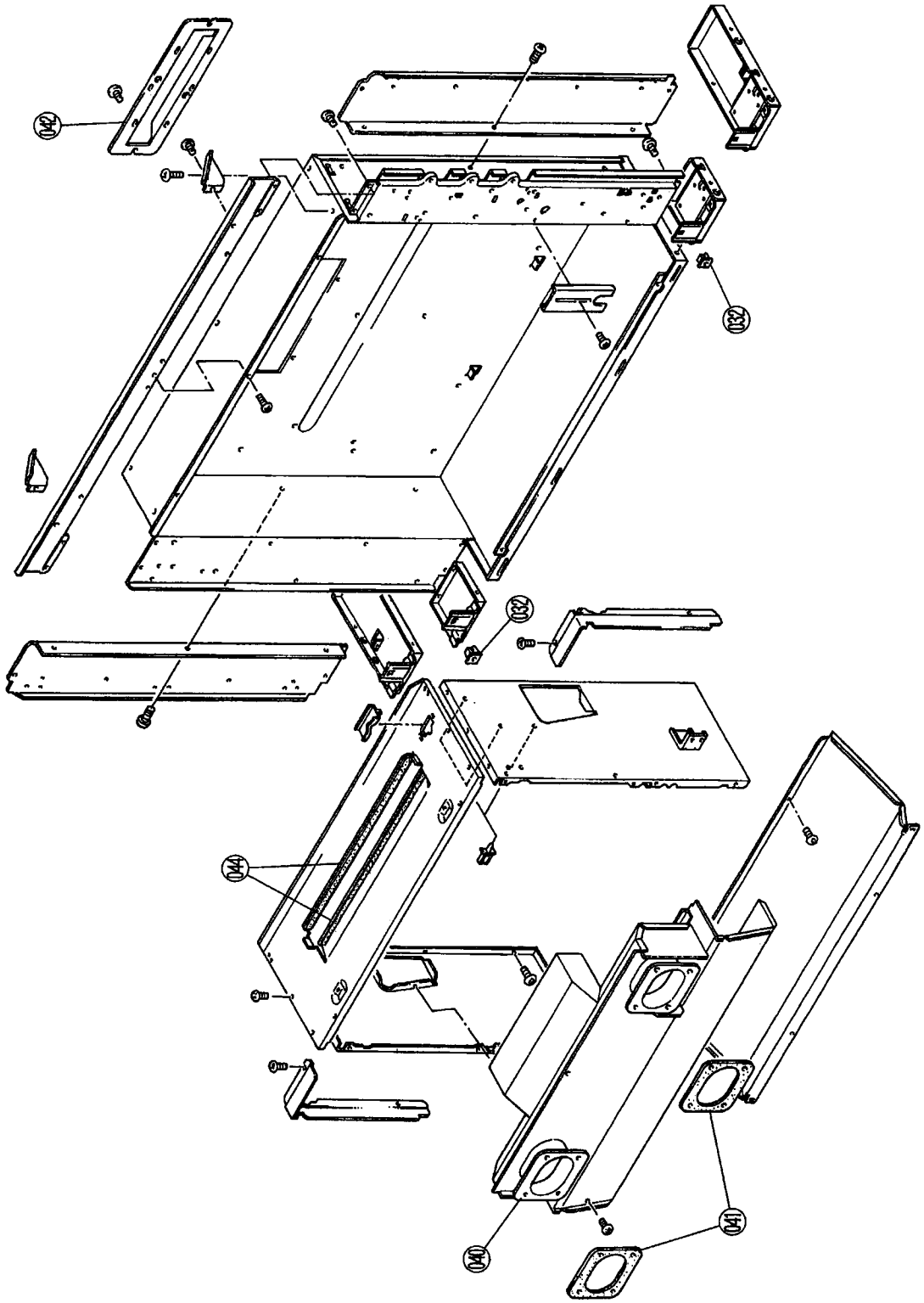
# REH-301EB / EC - R2001 (Inbuilt / Console)

| Note: This model does not have a PCB it has a surge arrestor P/N 90192840.<br>Refer to Exploded Diagram No. 150 | | | | REH-301EB-1A | REH-301EB-1B | REH-301EC-1A |
|---|---|---|---|---|---|---|
| **NO** | **Part Name** | **RA Part Number** | **11 Digit Code** | **Inbuilt - Beige** | **Inbuilt - Brown** | **Console** |
| 086 | Lock Nut | | 502-005-000 | 1 | 1 | 1 |
| 087 | Main Injector - NG | 90148933 | | 1 | 1 | 1 |
| 087 | Main Injector - LPG | 90150236 | | 1 | 1 | 1 |
| 088 | Convection Fan Complete Assy | 90146895 | | 1 | 1 | 1 |
| 088-1 | Fan Casing Assy | | | 1 | 1 | 1 |
| 088-2 | Convection Fan | | | 1 | 1 | 1 |
| 088-3 | Convection Fan Motor Bracket | | | 1 | 1 | 1 |
| 088-4 | LS Bearing | | 067-013-000 | 1 | 1 | 1 |
| 088-5 | Convection Fan Motor Assy | | | 1 | 1 | 1 |
| 088-6 | Housing | | | 1 | 1 | 1 |
| 088-7 | Heat Shield Bracket | | | 1 | 1 | 1 |
| 088-8 | Wiring Clip | | 512-280-000 | 1 | 1 | 1 |
| 089 | Top Plate Suporting Plate | | | 1 | 1 | 1 |
| 092 | Power Cord Assy (Import) | | | 1 | 1 | 1 |
| 092 | Power Cord Assy (Domestic) | 90192303 | 206-127-000 | (1) | (1) | (1) |
| 094 | Wire Harness | | | 1 | 1 | 1 |
| 095 | Cord Bush | | 194-098-000 | 1 | 1 | 1 |
| 096 | Ceramic Resistor | 90146986 | 237-070-000 | 1 | 1 | 1 |
| 097 | Fan Switch | 90147000 | 248-044-000 | 1 | 1 | 1 |
| 098 | Fan Switch Tube | | | 1 | 1 | 1 |
| 099 | Fan Switch - Delay | 90146994 | 258-001-000 | 1 | 1 | 1 |
| 100 | OHS Bracket | | | 1 | 1 | 1 |
| 101 | Cable Clip | | 41435600034 | 2 | 2 | 2 |
| 102 | Sparker | 90169384 | 262-026-000 | 1 | 1 | 1 |
| 103 | High Tension Cord A | | | 1 | 1 | 1 |
| 142 | Foam Sealing Strip | 90150301 | 580-663-000 | 1 | 1 | |
| 150 | Surge Arrestor | 90192840 | 200-912-000 | 1 | 1 | 1 |
| 151 | Electric Power Harness | 90197310 | 290-1065000 | 1 | 1 | 1 |

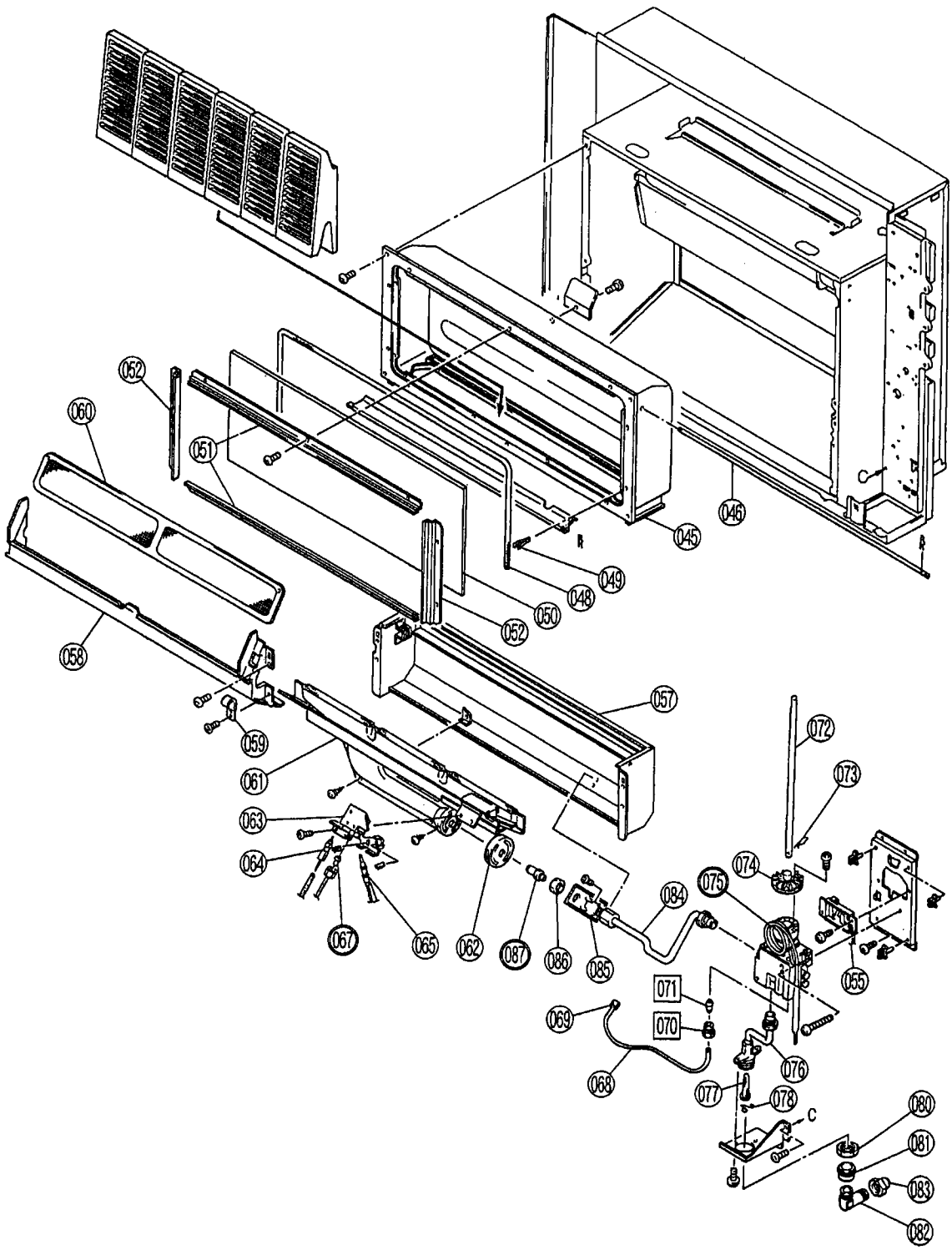
REH-301EC
REH-301EB



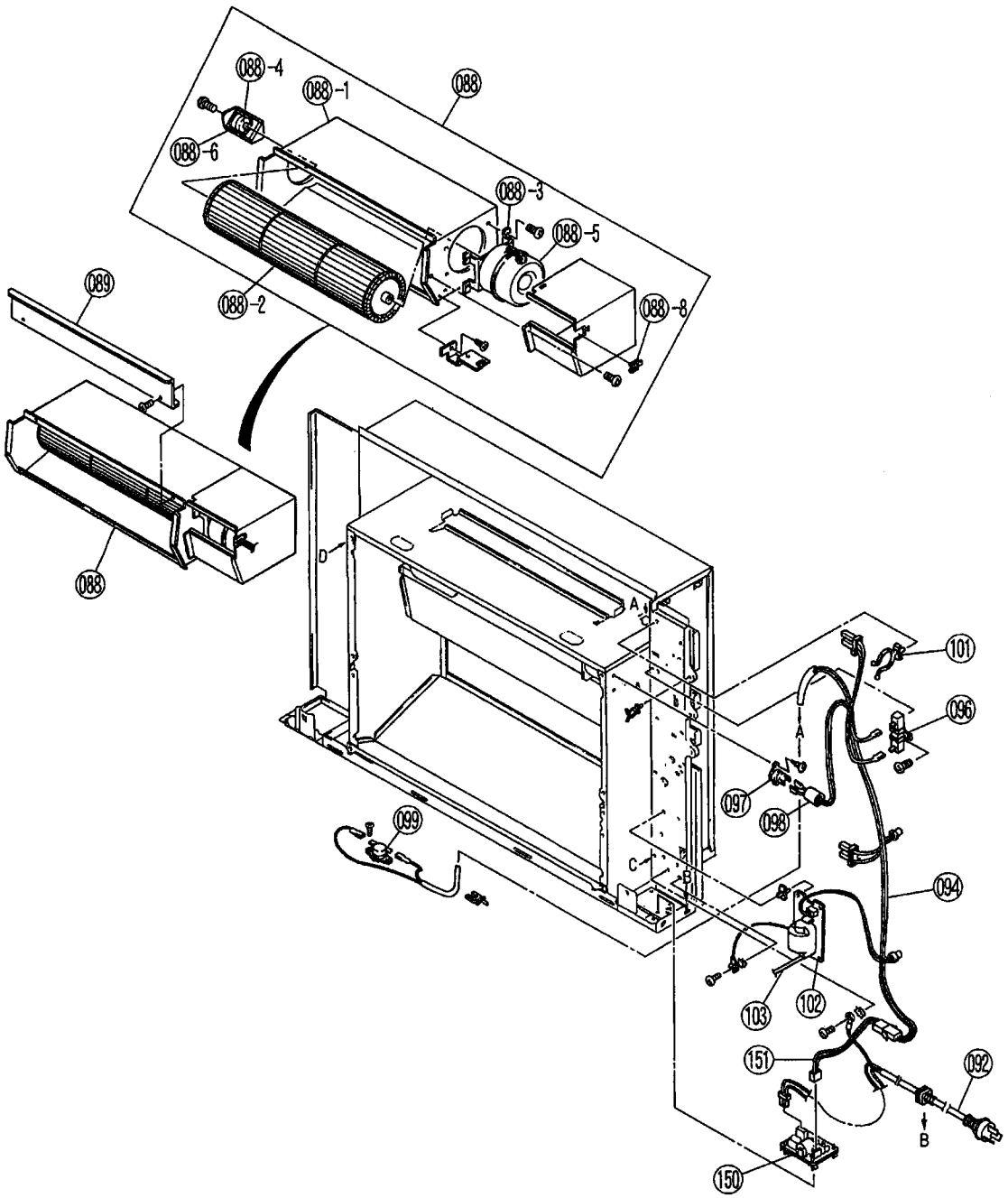
REH-301EC
REH-301EB



REH-301EC
REH-301EB



REH-301EC
REH-301EB



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