Rinnai

SERVICE MANUAL

To Suit Models:

REU-VR2626WGP SMARTSTART

Does NOT Suit any other Models.

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Quality System Quality Endorsed Company ISO 9002 Lic 4983 Standards Australia	Rinnai Australia Head Office is certified as complying with ISO 9001 by SAI Global.
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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.**

This manual has been published by Rinnai Australia Engineering & Technical Group.

We welcome users of this manual to provide feedback and suggestions for improvement purposes.

REU-VR2626WGP

Glossary of Terms and Symbols

dB(A)	-	sound pressure level in decibels, “A” range
DC	-	direct current
AC	-	alternating current
WFCD	-	water flow control device
FB	-	feedback information
FF	-	feedforward information
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)
OHS	-	overheat switch
PCB	-	printed circuit board
CPU	-	central processing unit
POT	-	potentiometer
rpm	-	revolutions per minute
SV	-	solenoid valve
ø	-	diameter
$\Delta\,^oC$	-	temperature rise above ambient
POV	-	modulating valve
TE	-	thermal efficiency
TH	-	thermistor
T_{IN}	-	temperature of incoming water
T_{OUT}	-	temperature of outgoing water

Table of Contents

1. Specifications

Rinnai model number	**REU-VR2626WGP-AK**
Type of appliance	Temperature controlled continuous flow gas hot water system with preheating system
Operation	With remote controls, mounted in kitchen, bathroom etc.
Exhaust system	Fan assisted
Installation	External
Dimensions	Width - 470 mm Height - 600 mm Depth - 220 mm
Weight	26 kilograms
Gas consumption (Min. / Max.)	Natural gas : Approx. 199 ~ 13.8 MJ/h Propane gas : Approx. 199 ~ 14.7 MJ/h
Connections	Gas connection - R3/4 (20A) Cold water connection - R 3/4 (20A) Hot water connection - R 3/4 (20A) Heating Loop Return connection - R3/4 (20A)
Ignition system	Direct electronic ignition
Electrical consumption	Normal - 60 W Standby - Less than 3.7 W (with 1 water controller) Anti-frost protection - 126 W Pump only - 31.7 W
Hot water capacity (Raised 25°C)	26 L/min
Thermal efficiency	80%
NOx af	35.8ppm
Temperature range (with controller)	Kitchen water controller : 37 ~ 55°C Bathroom water controller: 37 ~ 50°C
Default temperature control (without water controller)	40°C, 42°C, 50°C, 55°C, (factory setting), 60°C, 65°C, 75°C (set by combination of dip switches on the main PCB)
Water temperature control	Simulation feedforward and feedback
Water flow control	Water flow sensor, Electronic water flow control device
Nominal operating water pressure	180 kPa ~ 500 kPa
Minimum operating water flow	2.4 L/min
Maximum operating water flow	26 L/min
Power supply	Appliance - AC 240 Volts 50 Hz Water controller - DC 12 Volts (Digital)
Pump	H (= Water pressure meters/Head) - 2.6 m at 5 L/min.
	Water Head (at 5 L/min) - 25.8 kPa
	Water Head - 37.8 kPa
Safety device	Flame failure - Flame rod
	Boil dry - Water flow sensor
	Remaining Flame (OHS) - 97°C bi-metal switch
	Over temperature - 95°C lockout thermistor
	Fusible link - 129°C Thermal fuse
	Pressure relief valve - Opens 1000 kPa, Closes 700 kPa
	Combustion fan rpm check - Integrated circuit system
	Over current - Glass fuse (3 Amp).
Water controllers (optional)	Kitchen controller - MC91Q-2A or MC-100V-1A or MC-503RC-1A
	Bathroom controller - MC91Q-2A or MC-100V-1A or MC-503RC-1A
	Second Bathroom controller - MC91Q-2A or MC-100V-1A or MC-503RC-1A
	Third Bathroom Controller - MC91Q-2A or MC-503RC-1A
Water Controller Cable	Non-polarized two core cable

Pump Motor Characteristics

Rated Frequency	Hz	50
Rated Current	A	0.14
Rated Power Consumption	W	30
Rated Revolution	RPM	2700
Capacitor Capacity	µf	1
Starting Current	A	0.26
Insulation Class		E
Pump Type	Centrifugal	
Rotation	Counter-clock wise when viewed from front (Refer to arrow on outlet)	
Protection	Impedance protection	
Poles	2	

Pump Operational Characteristics

H = (water pressure metres/head)	Water Flow (L/min)	Current Draw (Amps)	Power consumption (Watts)
3.5 ± 0.3 3.4 ± 0.4	5.0 5.0	0.12 0.13	28 30

Operating Conditions

Ambient Temperature	°C	- 20 ~ 60
Ambient Humidity	% RH	Less than 95
Liquid		Fresh water
Temperature of Liquid	°c	0 ~ 75°C (exclude freezing of liquid)
Suction Height	m	0

Combustion Specifications

Refer to dataplate on the appliance.

2. Water Flow Rates and Pressures

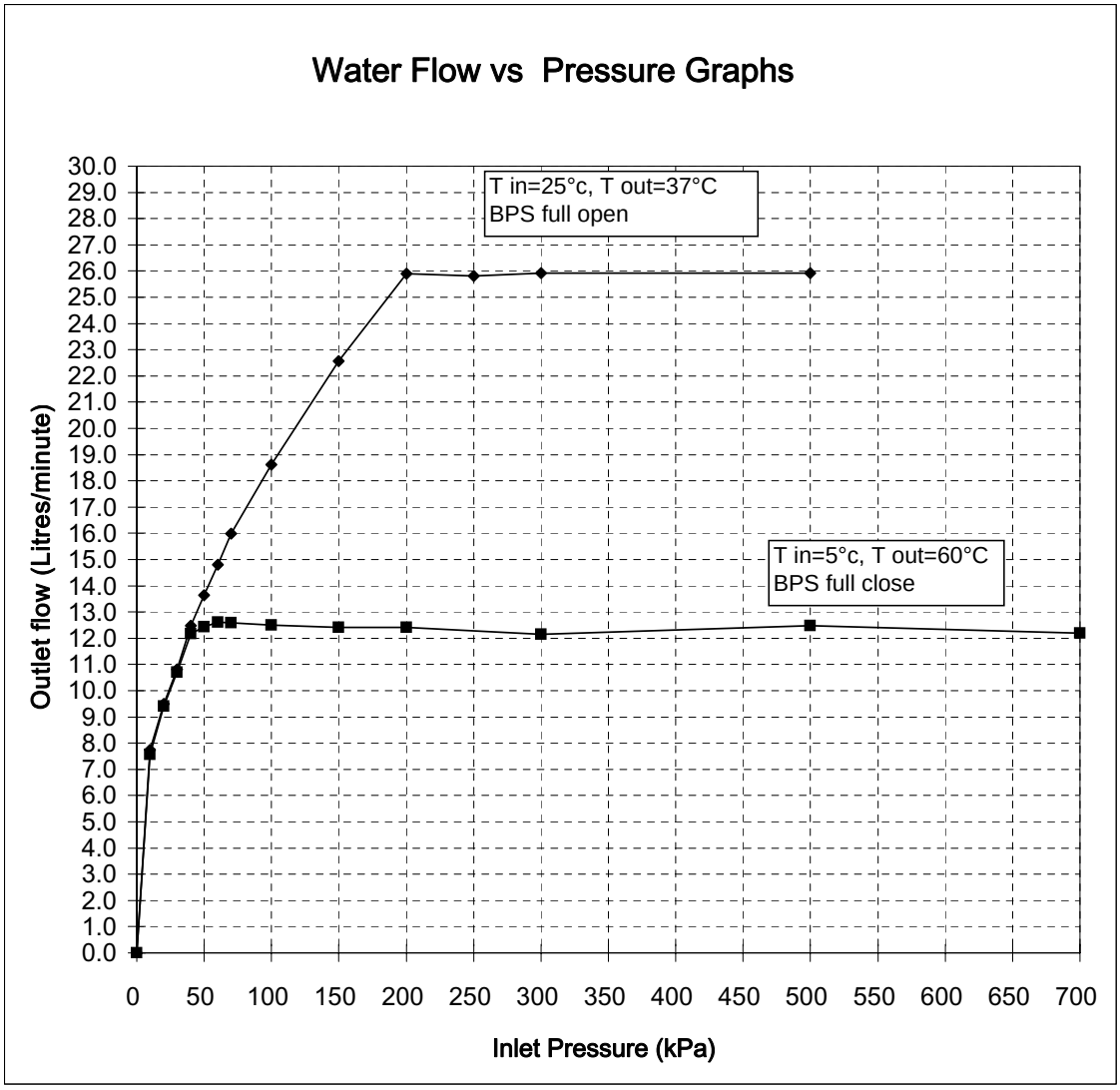
Water Flow Rates and Pressure Characteristics

REU-VR2626WGP BPS full open

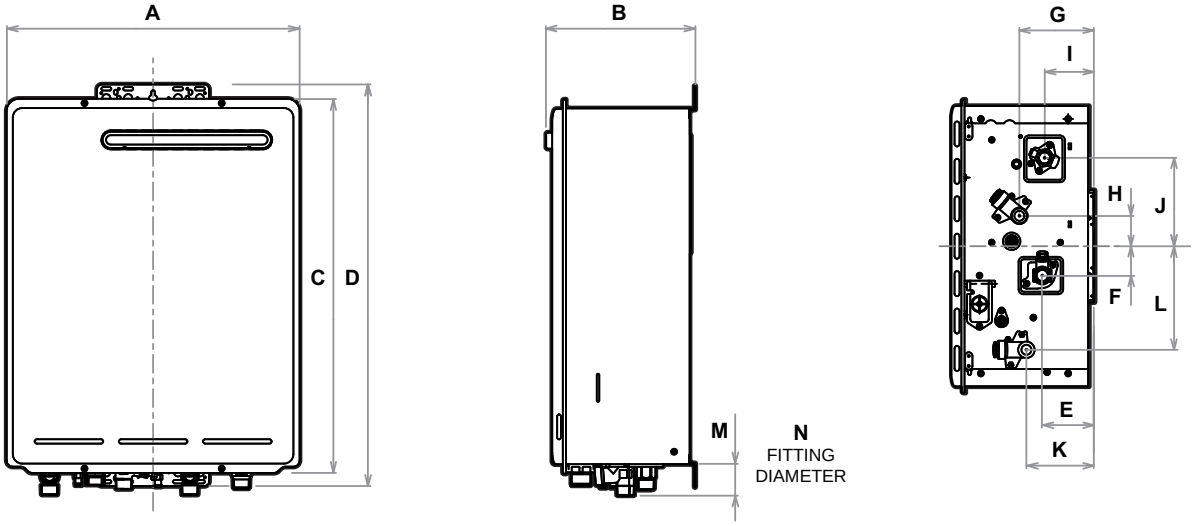
P (kPa)	0	10	20	30	40	50	60	70	100	150	200	250	300	500
Q (L/min)	0.0	7.7	9.5	10.8	12.5	13.6	14.8	16.0	18.6	22.6	25.9	25.8	25.9	25.9

REU-VR2626WGP BPS full close

P (kPa)	0	10	20	30	40	50	60	70	100	150	200	300	500	700
Q (L/min)	0.0	7.6	9.4	10.7	12.2	12.4	12.6	12.6	12.5	12.4	12.4	12.2	12.5	12.2

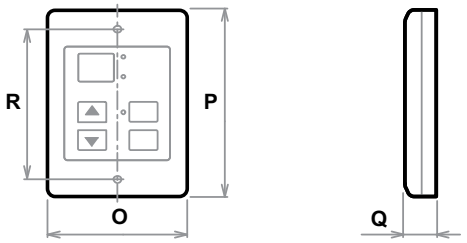


3. Dimensions



Dim'	DESCRIPTION	REU-VR26WGP
A	Width	470
B	Depth	239
C	Height - Unit	600
D	Height - Including Brackets	644
E	Hot Water outlet (from wall)	83
F	Hot Water outlet (from centre)	47
G	Cold Water inlet (from wall)	119
H	Cold Water inlet (from centre)	49
I	Gas Connection (from wall)	79
J	Gas Connection (from centre)	142
K	Return Loop Connection (from wall)	108
L	Return Loop Connection (from centre)	166
M	Gas Connection Length (from base)	40
	Cold Connection Length (from base)	50
	Hot Connection Length (from base)	42
	Return Loop Connection Length (from base)	50
N	Gas: Fitting Diameter	20 (R¾)
	Cold: Fitting Diameter	20 (R¾)
	Hot: Fitting Diameter	20 (R¾)
	Return Loop: Fitting Diameter	20 (R¾)

GAS CONSUMPTION (MJ/h)	WATER SUPPLY (kPa)		WEIGHT (kg)
	Min	Max	
199	100	500	26



Dim'	DESCRIPTION	MC-91	MC-100V	BC-100V
O	Width	90	128	202
P	Height	120	120	104
Q	Depth	20	20	22
R	Distance between mounting hole centres	83	83	181

4. Water Controllers

All water controllers must be installed in accordance with the relevant operation/installation instructions supplied with the water heater or controllers.

Trouble shooting

Water Controller not showing display - (Wired Water Controllers)

- Check that the correct number and combination of controllers have been installed for the specific model Infinity. Refer to controller compatibility table below.
- Check water controller is turned ON.
- Check there is 12VDC power supply available to the controller from the Ezi-connect terminals.
- If there is 12VDC available from the Ezi Connect but no controller display, check wiring between Ezi-connect and controller is sound.
- If there is no power from the Ezi-connect terminals, but the hot water functions correctly, replace PCB.

Error Code 12 as soon as hot water tap is turned ON.

- Check 12VDC internal wiring to Ezi-connect terminal is not crushed or shortened.
- Rectify wiring and re-close Ezi-connect cover carefully.

Water Controller not showing display - (Wireless Water Controllers)

- Ensure transceiver module is mounted in the correct location, as per wireless controller installation instructions.
- Ensure 2 x AA batteries are in good working order and installed with the correct polarity within the wireless controller. (Battery polarity details on rear of wireless controller)
- Ensure distance between wireless controller and transceiver does not exceed 50 metres.
- Ensure channel has been allocated to each wireless water controller.
- Ensure wireless controller has been programmed to the transceiver correctly, as per wireless water controller installation instructions.

Water Controller Compatibility Table

Wireless Only Installation	A maximum of 4 wireless water controllers can be fitted with the following limitation: Only **ONE** MC-502RC can be set as the Master Controller.
Wired & Wireless Installations	A maximum of 4 water controllers can be fitted. Any combination of deluxe, universal and wireless controllers can be used with the following limitation: **Only ONE master controller can be installed. This can be a MC-100V, a MC-91Q (when programmed as a master controller) or a MC-502RC water controller.** **Up to TWO BC-100V water controllers can be installed.** **The FOURTH water controllers in any installation MUST BE a MC-502RC or a MC91Q.**

PROGRAMMING FOR THE 'UNIVERSAL' WATER CONTROLLER (MC-91Q)

QUESTION 1 Are there four water controllers connected?

IF NO: (You have three water controllers or fewer), go to Question 2.

IF YES: You will need to activate the fourth water controller as follows:

STEP 1: For the water controller in the KITCHEN ONLY, press and hold the 'Transfer' and 'On/Off' buttons simultaneously (see Fig. 5) until a 'beep' is heard (approximately 5 seconds).

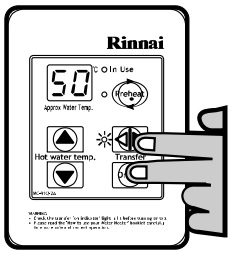


Fig. 5

STEP 2: Check that the display on ALL FOUR water controllers is lit and displaying a temperature when 'switched on'. If any ONE of the controller displays two dashes (see Fig. 6) repeat STEP 1.

This completes the activation procedure for the fourth controller, you may ignore Question 2.


Fig. 6

QUESTION 2 Is the water heater marked to state it delivers water not exceeding 50°C?

IF YES: No further action required.

IF NO: You will need to program the kitchen controller to enable selection of temperatures higher than 50°C.

STEP 1: For the controller in the KITCHEN ONLY, press and hold the 'Transfer' and 'On/Off' buttons simultaneously (Fig. 7) until a 'beep' is heard (approximately 5 seconds).

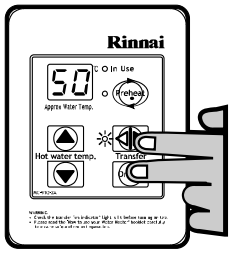


Fig. 7

STEP 2: When the controller fitted in the KITCHEN is switched On, it should be possible to select temperatures higher than 50°C. If not, repeat STEP 1.

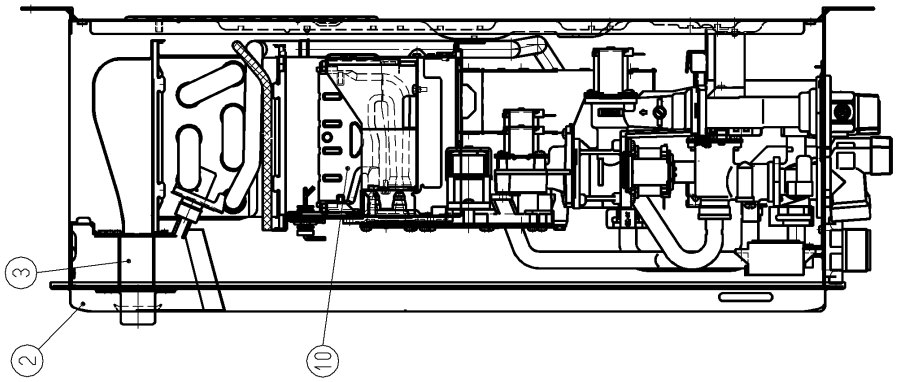
NOTE

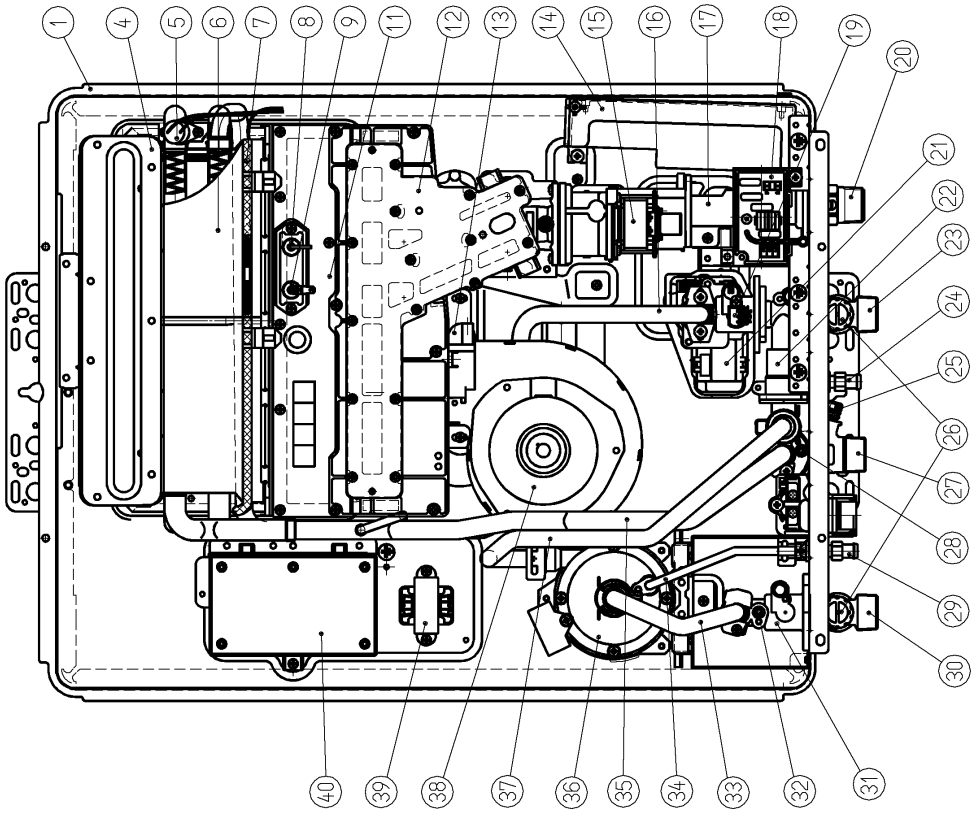
If the water controller in the kitchen is replaced, repeat STEP 1 above for the replacement controller.

If the water controller in the kitchen is swapped with another controller (for example, the controller fitted in a bathroom), repeat STEP 1 for the controller moved from the kitchen to the bathroom. Then perform STEP 1 for the controller moved from bathroom to the kitchen.

5. Cutaway Diagram

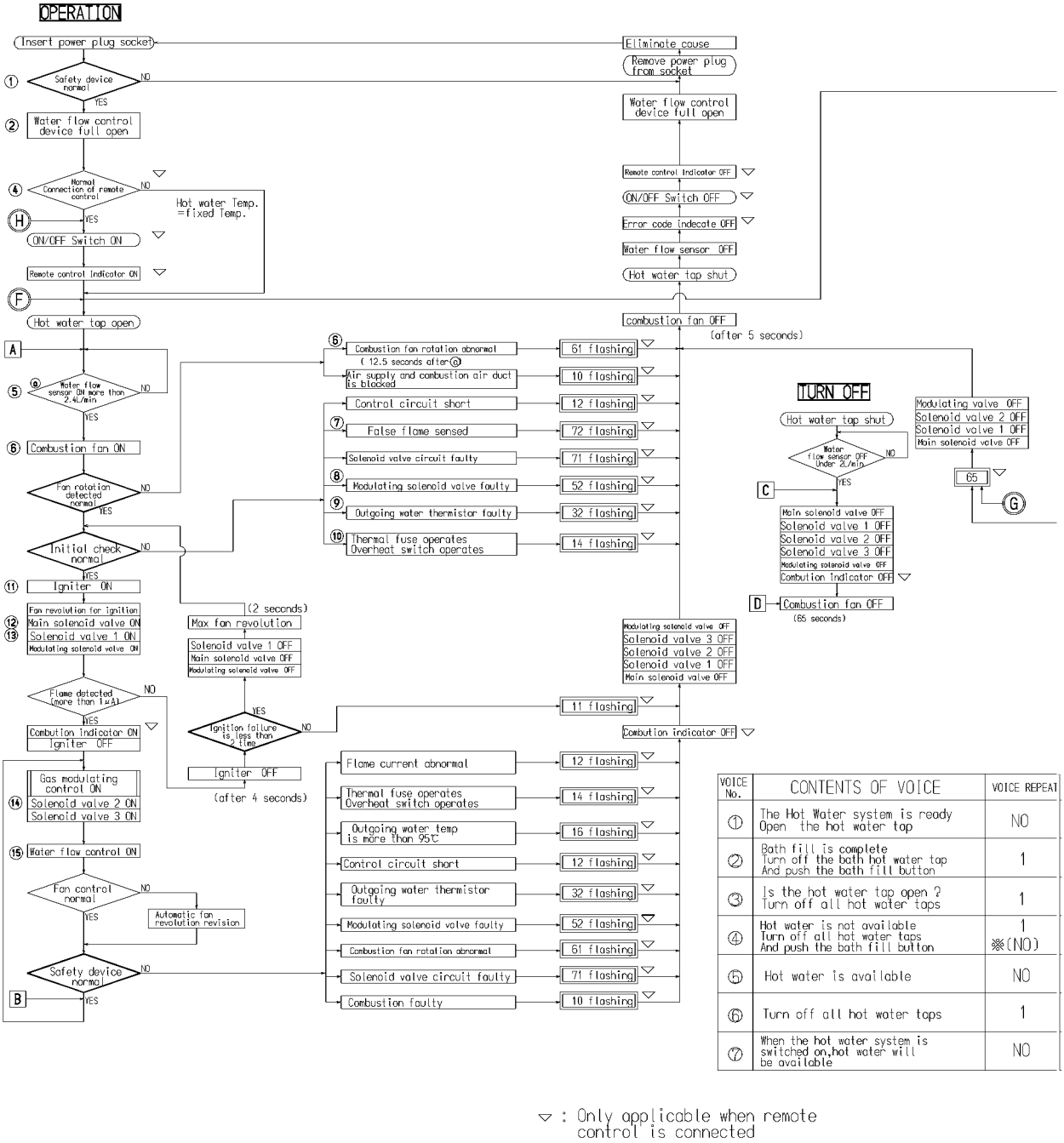
NO.	NAME	MATERIAL
1	MAIN BODY ASS'Y	HOT-DIPPED ZINC-COATED STEEL SHEET
2	FRONT PANNEL ASS'Y	
3	DUCTING EXTENSION PLATES	STAINLESS STEEL
4	FLUE OUTLET	STAINLESS STEEL
5	OVERHEAT SWITCH	
6	HEAT EXCHANGER	COPPER
7	THERMAL FUSES	
8	ELECTRODE	
9	FLAME ROD	
10	MAIN BURNER	STAINLESS STEEL
11	COMBUSTION CHAMBER FRONT PLATE ASS'Y	HOT-DIPPED ALUMINUM COATED STEEL SHEET
12	MANIFOLD ASS'Y	ALUMINUM CASTING
13	IGNITER	
14	MAIN P.C.B.	
15	GAS CONTROL ASS'Y	ALUMINUM CASTING
16	WATER CONNECTING PIPE	COPPER
17	GAS CONNECTING PORT	BRASS
18	SURGE PROTECTOR	
19	WATER FLOW SENSOR	
20	GAS CONNECTION	ALUMINUM CASTING
21	WATER FLOW CONTROL DEVICE	
22	INLET WATER CONNECTING JOINT	BRASS
23	WATER INLET	BRASS
24	DRAIN-OFF VALVE FOR NON-RETURN VALVE	
25	PRESSURE RELIEF VALVE	BRASS
26	WATER FILTER ASS'Y	
27	HOT WATER OUTLET	BRASS
28	OUTGOING WATER THERMISTOR	
29	PUMP BLEED VALVE	
30	HEATING LOOP RETURN VALVE	BRASS
31	CIRCULATION CONNECTING JOINT	BRASS
32	RETURN WATER THERMISTOR	
33	PUMP RETURN PIPE	COPPER
34	PUMP BLEED PIPE	COPPER
35	HOT WATER CONNECTING PIPE	COPPER
36	CIRCULATION PUMP	
37	PUMP ROUND PIPE	COPPER
38	COMBUSTION FAN	
39	TRANSFORMER	
40	P.C.B FOR CIRCULATON	





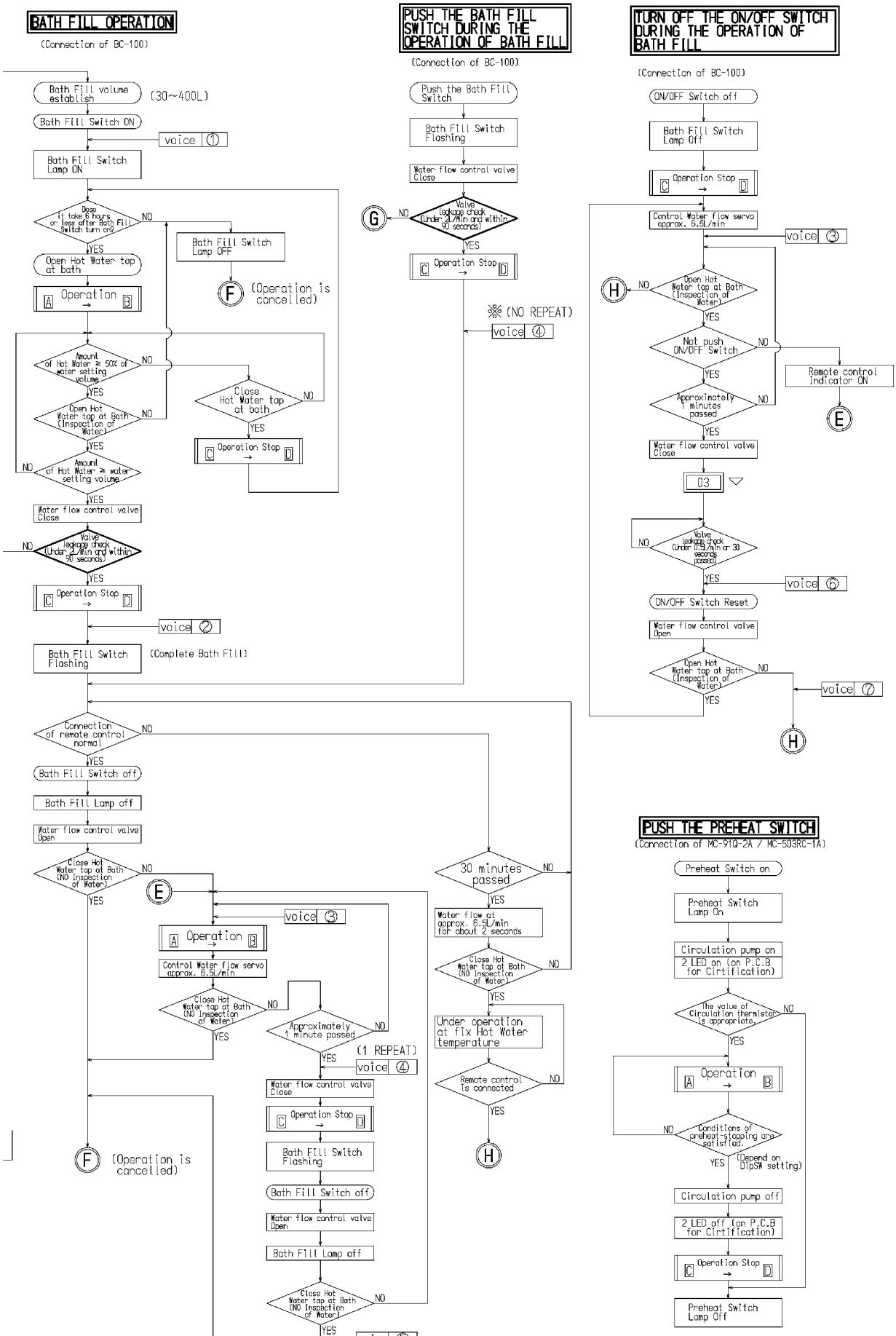
6. Operational Flow Chart

model:REU-VR2626WGP



VOICE No.	CONTENTS OF VOICE	VOICE REPEAT
①	The Hot Water system is ready Open the hot water tap	NO
②	Bath fill is complete Turn off the bath hot water tap And push the bath fill button	1
③	Is the hot water tap open ? Turn off all hot water taps	1
④	Hot water is not available Turn off all hot water taps And push the bath fill button	1 ※(NO)
⑤	Hot water is available	NO
⑥	Turn off all hot water taps	1
⑦	When the hot water system is switched on,hot water will be available	NO

▽ : Only applicable when remote control is connected


BATH FILL OPERATION
(Connection of BC-100)
Bath Fill volume establish
(30~400L)
Bath Fill Switch ON
voice ①
Bath Fill Switch Lamp ON
Dose it take 6 hours or less after Bath Fill Switch turn on?
NO
YES
Bath Fill Switch Lamp OFF
(Operation is cancelled)
Open Hot Water tap at bath
Operation
Amount of Hot Water ≥ 50% of water setting volume
Close Hot Water tap at bath
Operation Stop
Open Hot Water tap at Bath (Inspection of Water)
Amount of Hot Water ≥ water setting volume
Water flow control valve Close
Valve leakage check (Under 2 /Min and within 90 seconds)
Operation Stop
voice ②
Bath Fill Switch Flashing
(Complete Bath Fill)
PUSH THE BATH FILL SWITCH DURING THE OPERATION OF BATH FILL
(Connection of BC-100)
Push the Bath Fill Switch
Bath Fill Switch Flashing
Water flow control valve Close
Valve leakage check (Under 2 /Min and within 90 seconds)
Operation Stop
※ (NO REPEAT)
voice ④
TURN OFF THE ON/OFF SWITCH DURING THE OPERATION OF BATH FILL
(Connection of BC-100)
ON/OFF Switch off
Bath Fill Switch Lamp Off
Operation Stop
Control Water flow servo approx. 6.5L/min
voice ③
Open Hot Water tap at Bath (Inspection of Water)
Not push ON/OFF Switch
Remote control Indicator ON
Approximately 1 minutes passed
Water flow control valve Close
03
Valve leakage check (Under 1.5L/min or 30 seconds passed)
voice ⑥
ON/OFF Switch Reset
Water flow control valve Open
Open Hot Water tap at Bath (Inspection of Water)
voice ⑦
Connection of remote control normal
Bath Fill Switch off
Bath Fill Lamp off
Water flow control valve Open
Close Hot Water tap at Bath (NO Inspection of Water)
Operation
Control Water flow servo approx. 6.5L/min
Approximately 1 minute passed
(1 REPEAT)
voice ④
Water flow control valve Close
Operation Stop
Bath Fill Switch Flashing
Bath Fill Switch off
Water flow control valve Open
Bath Fill Lamp off
Close Hot Water tap at Bath (NO Inspection of Water)
voice ⑤
(Operation is cancelled)
30 minutes passed
Water flow at approx. 6.5L/min for about 2 seconds
Close Hot Water tap at Bath (NO Inspection of Water)
Under operation at fix Hot Water temperature
Remote control is connected
PUSH THE PREHEAT SWITCH
(Connection of MC-910-2A / MC-503RC-1A)
Preheat Switch on
Preheat Switch Lamp On
Circulation pump on 2 LED on (on P.C.B for Cirtification)
The value of Circulation thermistor is appropriate.
Operation
Conditions of preheat-stopping are satisfied.
(Depend on DipSW setting)
Circulation pump off
2 LED off (on P.C.B for Cirtification)
Operation Stop
Preheat Switch Lamp Off

7. Operation Principles

Hot Water Operation

1. Ignition

- Activate controllers and open the hot water tap (for full details regarding operation of controllers refer to the 'Customer Operating / Installation Manual' supplied with water heater).
- When water flows through the unit, the water flow sensor rotates and sends an electrical 'pulse' signal to the Printed Circuit Board (PCB). This signal is proportional to the water flow rate.
- The PCB sends electrical current to the combustion fan motor causing it to turn. The fan motor sends an electrical pulse signal to the PCB. If fan rotation is OK, the main solenoid and changeover solenoid valves open as required, the spark generator activates and the spark electrode ignites the burner.

2. Water Temperature and Flow Control

- The PCB will automatically control operation of the internal components to achieve the programmed temperature. When a high temperature rise is required, the PCB may cause the Water Flow Servo to close partially resulting in a lower flow rate to achieve the programmed temperature. This is a necessary operational feature of the unit.
- When operating in 'Bath Fill' mode, the signal from the water flow sensor is also used by the PCB to compute the volume of water that has been passed through the unit at any instant whilst the bath is filling.

3. Shut Down

- When operating in 'Bath Fill' mode, the PCB causes the Water Flow Servo to close when the programmed Bath Fill volume has passed through the unit. Alternatively, flow is stopped when the user closes the hot water tap.
- When water flow stops, the water flow sensor stops rotating and the pulse signal to the PCB stops. The PCB then causes the main solenoid and solenoid valves to close and the burner is extinguished. The combustion fan will continue to operate for some time to purge the combustion chamber.

4. Smartstart Preheat System

- At least one temperature controller model MC-91Q or a MC-502RC/MC-503RC must be used in this appliance.
- The installation of the water heater and temperature controllers must be performed in accordance with the installation instructions supplied with the water heater.
- The Smartstart preheat system heats the water in the pipework water connected between the water heater and the hot water outlets before any outlets are opened using the 'flow and return' pipwork principle. This results in water savings and reduced waiting time for heated water delivery from the outlet when opened.
- Traditional 'flow and return' systems usually keep the water in the pipework heated continuously. The Smartstart preheat system however, only heats the water before the outlet is opened. This results in significant energy savings because water is not heated unnecessarily whilst retaining the benefits of traditional flow and return systems.
  A Schematic of Infinity 26 Smartstart is shown in Figure below.

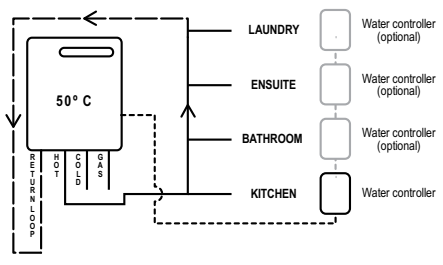


Diagram 1 - 50°C Appliance

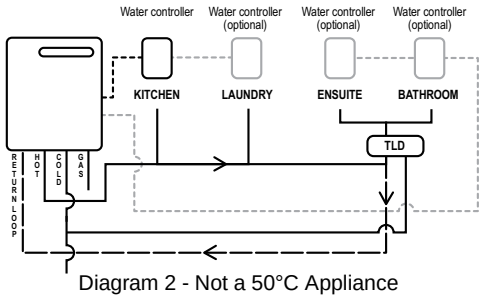


Diagram 2 - Not a 50°C Appliance
Note: TLD = Temperature Limiting Device

The Smartstart preheat system works as follows:

a.) Before hot water is required select desired water temperature via temperature controller, the user activates the Smartstart function by pressing the 'preheat' button on the temperature controller.
b.) This activates the smartstart preheat system and integral pump is switched on.
c.) Water flows from the pump and passes through the water heater. This in turn activates the water heater burner and water in the flow and return heating loop begins to heat.
d.) When the Smartstart system control module senses that the water in the full length of the flow and return heating loop has been heated, the pump and water heater stop operating.
e.) The user opens the desired hot water outlet. Preheated water will be delivered from the flow and return heating loop to the outlet.
f.) Pump will not activate for 5 minutes after water temperature reaches desired water temperature.

8. Main Components

1) Main PCB and Circulating PCB

- The Main PCB controls all operational functions including air supply control, gas control, water flow measurement, water flow control, combustion system and all sensors and safety devices. The circulating PCB controls the circulating pump operational function.

2) Gas Flow Control

- During normal operation, the Main PCB keeps the main solenoid valve open whilst there is flow through the unit and the burner needs to be lit.
- Gas flow rate is controlled by the modulating valve assembly and changeover solenoid valves to always ensure constant outlet water temperature, regardless of flow rate or incoming water temperature.
- The modulating valve is electronically controlled by the Main PCB using signals from the water flow sensor, water flow control device, bypass flow control device, water temperature thermistors and combustion fan speed sensor. The modulating valve directs gas to the three changeover solenoid valves.
- The changeover solenoid valves direct gas to each of the burner banks independantly. Any one, two or all of the solenoid valves may be open during operation.
- Gas flow is modulated by a combination of the modulating valve and changeover solenoid positions.
- The maximum gas rate is predetermined and the appliance cannot be overloaded when correctly installed.

3) Water Flow Control

- Water flow is detected by a turbine coupled to a magnetic pulse generating device. The magnetic pulses are detected and counted by the Main PCB. The Main PCB calculates the exact water flow from the frequency of pulses generated by the turbine, as well as the volume of water that has passed through the unit at any instant during 'Bath Fill' operation. A minimum flow rate of 2.7l/min. is required for the burner to ignite.
- Water flow control is achieved through the use of servo driven water flow and bypass valves. Both servo motors are controlled by the Main PCB. The 'Water Flow Valve' restricts the flow of water into the heat exchanger assembly if the programmed temperature cannot be achieved. Also, when the Bath Fill function is activated, flow of water is stopped when the bath is full. During normal operation, cold water from the inlet valve is mixed with hot water from the heat exchanger outlet. The 'Bypass Valve' mixes the correct proportion of cold and hot water to ensure accurate hot water delivery temperature over the available range of flow rates. The water flow and bypass valves are a combined assembly on the cold water inlet of the appliance.
- The integral pump is switched 'ON' when the preheat function is activated. Water flow from the pump and passes through the water heater, this in turn activates the water heater burner and water in the flow and heating loop returns begins to heat. When return water themistor senses that the water in the full length of the flow and return heating loop has been heated, the pump and water heater stop operating. Pump will not activate for 5 minutes after water temperature reaches desired water temperature, it controlled by the circulating PCB.

4) Air Supply Control

- Air for combustion is supplied by a centrifugal fan driven by a variable speed DC motor. The to the motor is determined by the Main PCB based on water flow, delivered water temperature and programmed water temperature. The actual fan speed is monitored by a magnetic pulse counter. This counter emits a signal to the Main PCB. From the supplied to the DC motor and the fan speed signal, the PCB determines whether an error condition exists with the fan.

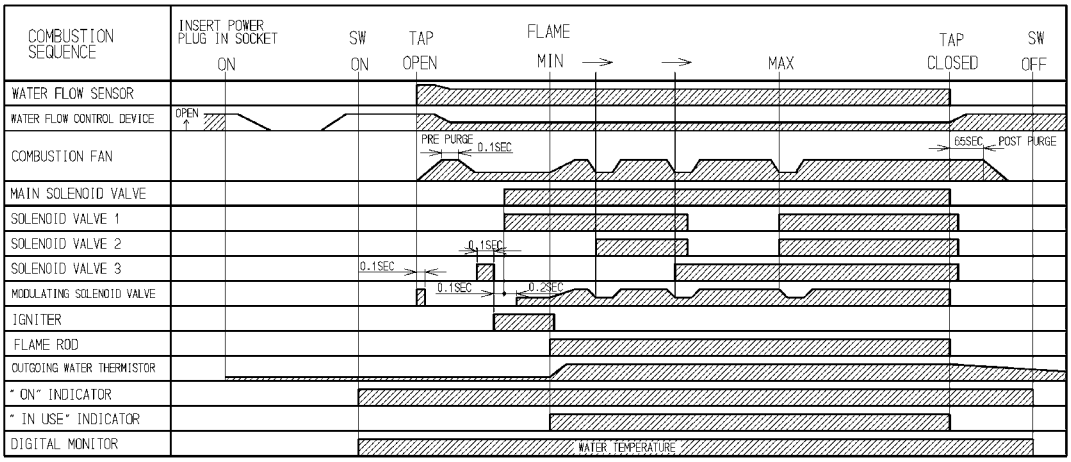
5) Combustion System

The combustion chamber is housed within the heat exchanger assembly and comprises:

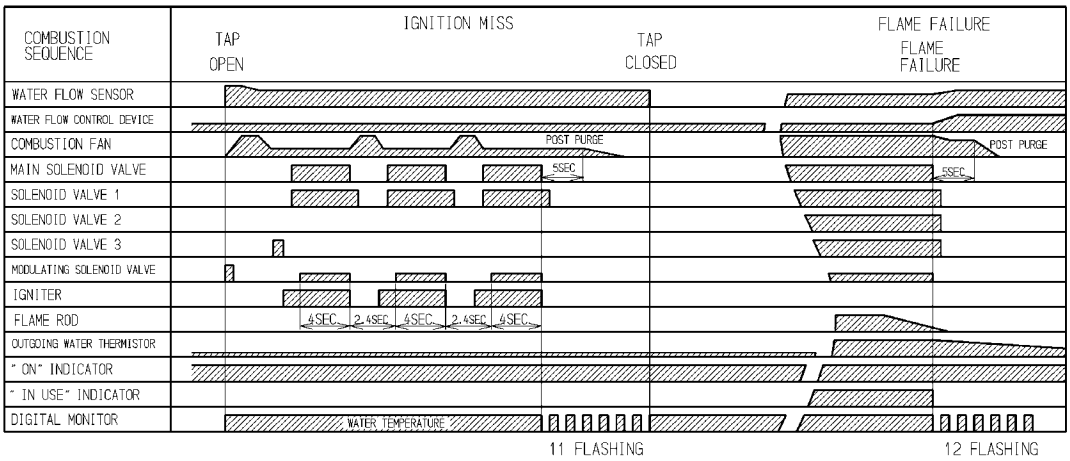
- A multi chamber aluminium alloy manifold with a total of multiple injectors, arranged in multiple rows. The middle chamber houses eight injectors, the left chamber, twelve, and the right chamber, twenty four injectors. Gas flow to each chamber is controlled by an electronic solenoid valve (refer 'Gas Flow Control' above).
- A burner assembly comprising multiple identical modular stainless steel bunsen burners secured by an aluminised steel framework. The manifold is attached to the front of the burner module. Each bunsen burner is supplied by two injectors.
- A combustion chamber. Integrated into the combustion chamber front panel are the flame rod and ignition electrode(s).

9. Time Charts

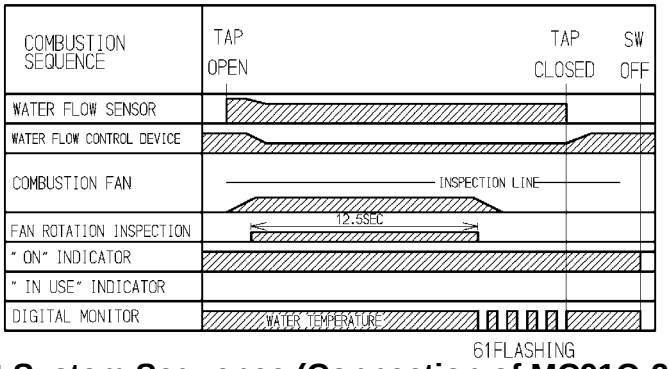
Normal Combustion Sequence



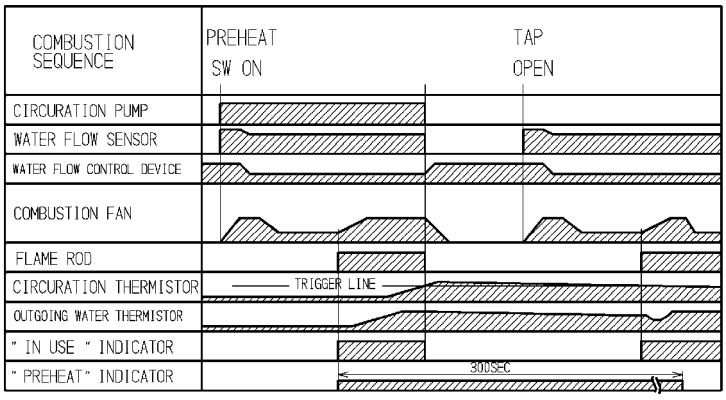
Error Sequence (Ignition / Flame Failure



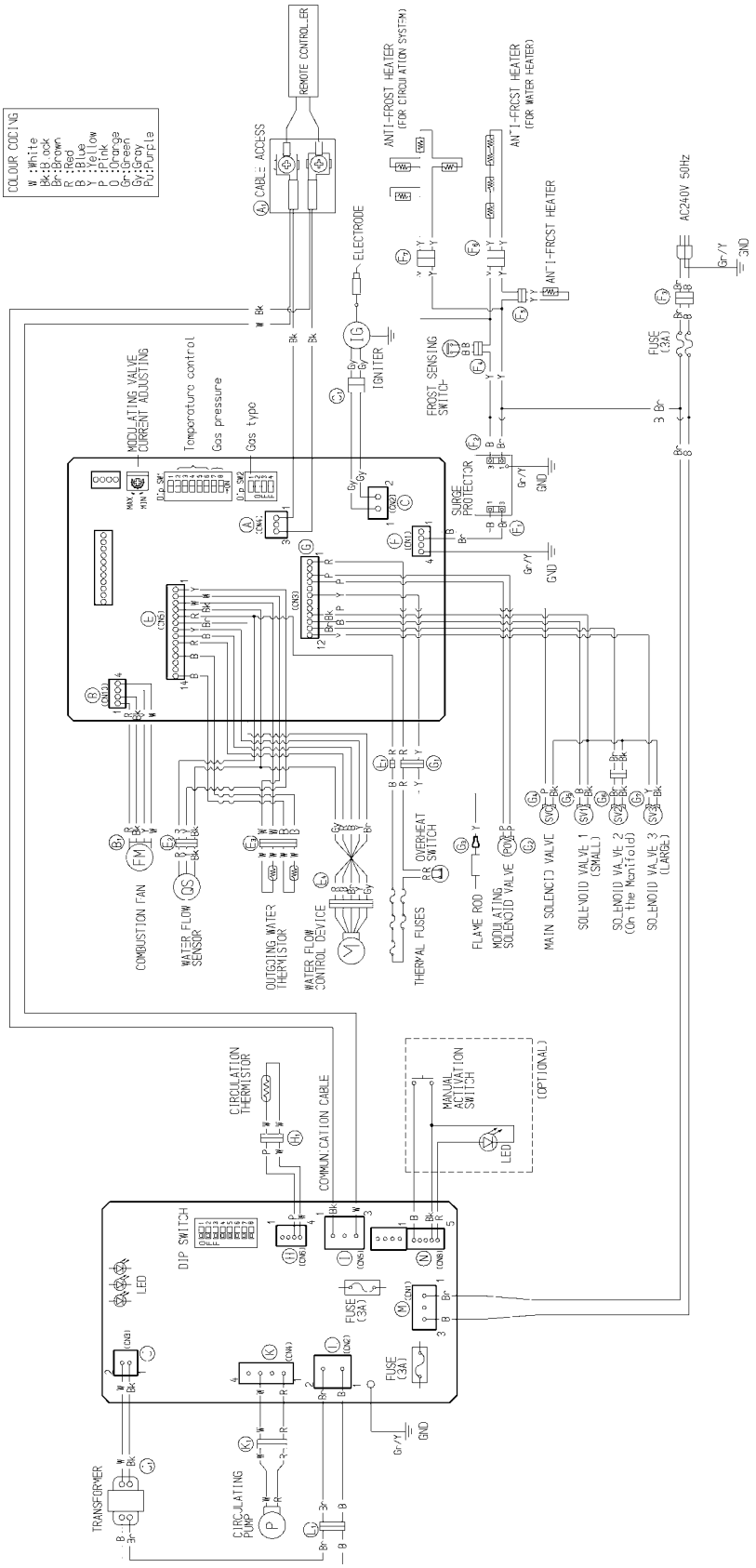
Pre-Purge Defect Sequence



Preheat System Sequence (Connection of MC91Q-2A)



10. Wiring Diagram



11. Diagnostics Points

FLOW CHART No.	COMPONENT	MEASUREMENT POINT CN	MEASUREMENT POINT WIRE COLOUR	NORMAL VALUE	A NOTE
①	SURGE PROTECTOR	F_3	B-Br	AC207～264V	
②	WATER FLOW CONTROL DEVICE	E_4	R-B	±DC11～13V (ONLY WHEN OPERATING)	OPERATE ELECTRICITY
			Y-Gy	BELOW DC1V(LIMITER ON)	FULL OPEN POSITION
				DC4～6V(LIMITER OFF)	
			Br-Gy GND	BELOW DC1V(LIMITER ON)	FULL CLOSE POSITION
				DC4～6V(LIMITER OFF)	
③	REMOTE CONTROL	A_1	Bk-Bk W-Bk	DC11～13V	
④	WATER FLOW SENSOR	E_2	R-Bk	DC11～13V	ON2.4L/MIN (33Hz) OVER 1980PULSE/MIN OFF1.7L/MIN (23Hz) BELOW 1380PULSE/MIN
			Y-Bk GND	DC4～7V(PULSE 20～320Hz)	
⑤	COMBUSTION FAN	B_1	R-Bk	DC15～46V	
			Y-Bk	DC11～13V	
			W-Bk GND	DC5～10V (20～400Hz)	
⑥	FLAME ROD	G_3	Y-FLAME ROD	OVER DC1μA	FLAME CONDITION
⑦	MODULATING SOLENOID VALVE	G_2	P-P	DC2～15V 65～85Ω	
⑧	OUTGOING WATER THERMISTOR	E_3	W-W B-B	15°C…11.4～14.0kΩ 30°C… 6.4～ 7.8kΩ 45°C… 3.6～ 4.5kΩ 60°C… 2.2～ 2.7kΩ 105°C… 0.6～ 0.8kΩ	
⑨	THERMAL FUSES	G_1 E_1	B-R	BELOW 1Ω	
⑩	IGNITER	C_1	Gy-Gy	AC207～264V	
⑪	MAIN SOLENOID VALVE	G_4	P-Bk	DC11～13V 37～43Ω	
⑫	SOLENOID VALVE 1 (SMALL)	G_5	B-Bk	DC11～13V 35～41Ω	
⑬	SOLENOID VALVE 2 (On the Manifold)	G_6	Br-Bk	DC11～13V 35～41Ω	
⑭	SOLENOID VALVE 3 (LARGE)	G_7	Y-Bk	DC11～13V 37～43Ω	
⑮	CIRCURATION THERMISTOR	H_1	W-W	15°C…11.4～14.0kΩ 30°C… 6.4～ 7.8kΩ 45°C… 3.6～ 4.5kΩ 60°C… 2.2～ 2.7kΩ 105°C… 0.6～ 0.8kΩ	
⑯	CIRCURATION PUMP	K_1	W-R	AC216～264V	
⑰	TRAMSFORMER	L_1	B-Br	AC240V	
		J_1	W-Bk	DC18.7V±5%	

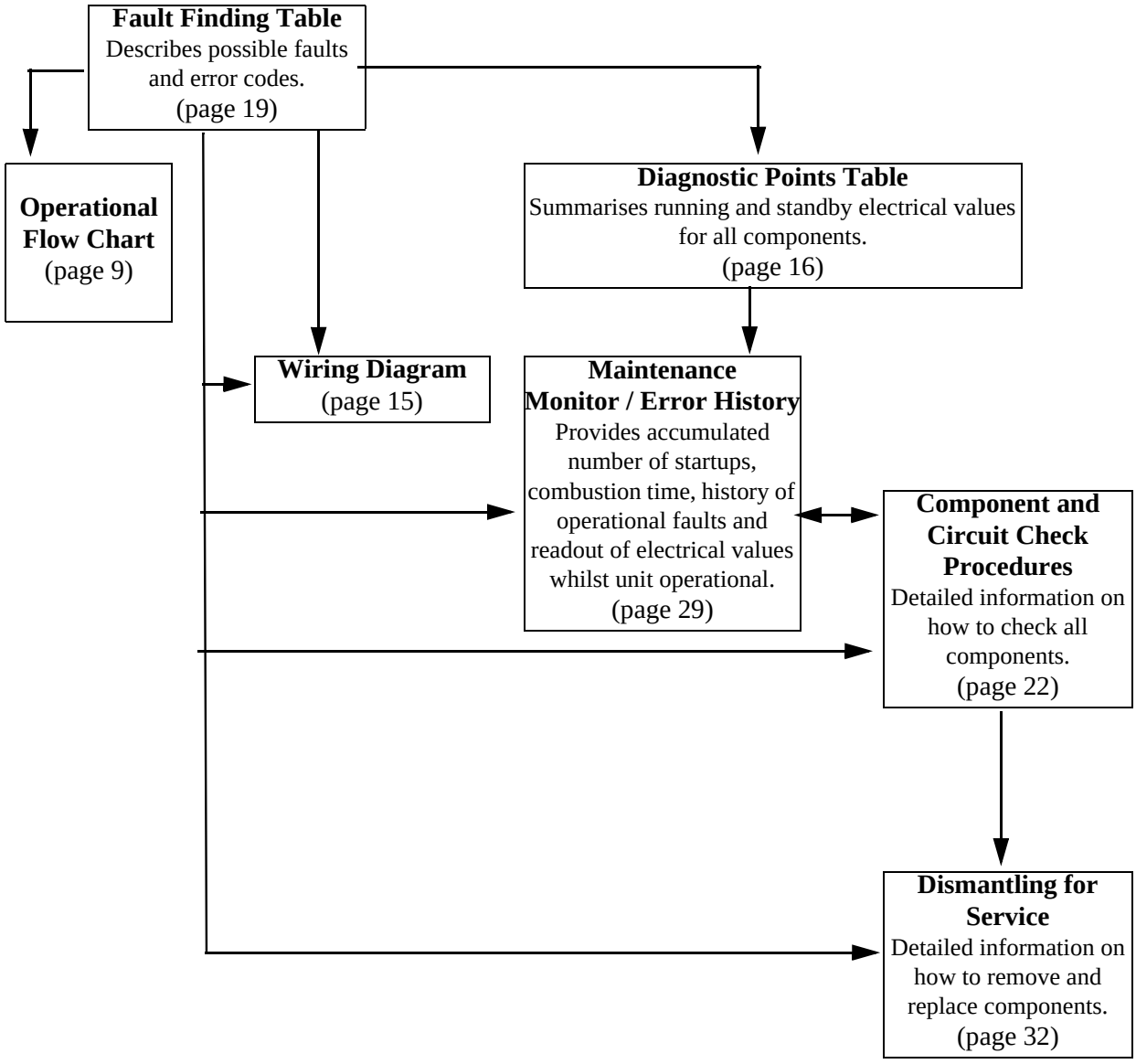
12. Dip Switch Settings

Contact Rinnai for Dipswitch settings.

13. Fault Finding

If there is a fault with the appliance, and controllers are installed, a numerical fault code may appear on the digital display controller. If controllers are not installed, one may be fitted to find out the fault code. Fault finding without controllers (and thus fault codes) is possible but more time consuming.

To diagnose and rectify faults, the **Fault Finding Table** is used as illustrated below:



Fault Finding Table

Code on Controller	Fault	Action
03	Power interruption during Bathfill. Water will not flow when power restored.	1. Turn off all hot water taps.
		1. Press the ON/OFF button on a controller twice.
10	Combustion fan current too high. Unit operates, then stops.	1. Check blockage of air intake/flue outlet.
		2. Check combustion fan.
11	No ignition. Unit stops without flame igniting	1. Check gas supply
		2. Check sparker unit
		3. Check gas valves
12	Flame Failure / Earth Leakage	1. Check gas supply
		2. Check flame rod
		3. Check earth wire lead
		4. Check remote control
14	Thermal fuse and/or overheat switch activated. Unit operates, then stops.	1. Check thermal fuse
		2. Check overheat switch
		IMPORTANT- If thermal fuse or overheat switch were faulty : a. Check heater for damage b. Confirm “Gas Type” and “Combustion” dip switch settings c. Confirm test point pressures .
16	Over temperature warning. Unit operates, then stops.	1. Confirm “Gas Type” and “Combustion” dip switch settings
		2. Confirm test point pressure
		3. Check gas valves
		4. Check water flow sensor
		5. Check water flow servo
		6. Check heat exchanger outlet temperature thermistor
		7. Check hot water outlet temperature thermistor
25	Condensate Pipe Blockage	Check for blockage on condensate pipe path.
32	Outlet water thermistor flow	Check hot water outlet thermistor
33	Heat exchanger thermistor error	Check heat exchanger thermistor
52	Modulating solenoid valve fault. Unit stops without flame ignition.	Check modulating solenoid valve
61	Combustion fan rotation error	Check combustion fan
65	Water flow control device error. Water flow is not controlled. Water temperature too low.	Check water flow servo
71	Solenoid valve circuit error. Unit does not operate.	Check gas valves
72	Flame rod circuit error. Unit does not operate.	Check flame rod
-	Appliance does not operate at all. No display on the water controllers (if fitted).	1. Check power cord plugged in and supply turned on.
		2. Check power supply .
		3. Check electrical fuse.
		5. Check gas valves
		6. Check sparker unit.
		7. Check earth leads and connections.
		8. Check for short circuits.
		9. Check water controller(s) - if fitted.
-	No combustion despite remote control indicating that combustion is occurring - if water controller(s) fitted.	1. Check water flow sensor.
		2. Check flame rod.
		3. Check heat exchanger outlet thermistor.
		4. Check hot water outlet thermistor.
		5. Check combustion fan.
		6. Check the sparker unit.
		7. Check gas valves.
		8. Check thermal fuse.
		9. Check overheat switch.
		IMPORTANT - If thermal fuse or overheat switch were faulty: a) check heater for damage; b) confirm “Gas Type” and “Combustion” dip switch settings; c) confirm test point pressure.
-	Combustion stops during operation.	1. Check gas supply
		2. Check flame rod
		3. Check earth leads and connections.
-	Cannot adjust the hot water temperature via the controller(s) - only if water controller(s) fitted.	1. Check hot water outlet thermistor.
		2. Check heat exchanger outlet thermistor.
		3. Check gas valves
		4. Check water flow servo.
		5. Check bypass servo.
-	Anti-frost heater does not operate.	1. Check anti-frost heater components
		2. Check frost sensing switch

Fault Finding Continued

If the Smartstart preheat system fails to operate perform fault finding in accordance with Table below. The Circulating PCB has 3 LED's to indicate the operational mode and whether the return temperature thermistor appears faulty or not. The wiring diagram in Section 10 shows position of LED's.
Smartstart Preheat System Fault Finding Table:Perform checks and remedies in the order shown in this Table. This table is used in conjunction with the Wiring Diagram in Section 10 and Component and Circuit Checks Section 14.

Fault / Symptom	Check and Remedy
'Preheat' button on temperature controller has been pressed and the pump fails to start. Green LED on Circulating PCB not illuminated	• Check Power is available to appliance. • Confirm 'Preheat' button has been previously pressed within the safety delay time (5 minutes). Turn power supply OFF and the ON again to reset PCB. • Check all Smartstart preheat system Components. • Check communication cable from Circulating PCB is connected to Cable Access.
'Preheat' button on temperature controller has been pressed and the pump fails to start. Green LED flashing.	• Check for faulty return temperature thermistor in accordance with Component and Circuit Checks of Smartstart Preheat system Section 15.
Pump starts and then quickly stops.	• Check return water temperature is not already warm (feel temperature of Return pipe). • Check green LED on Circulating PCB. If it is flashing, check for faulty return temperature thermistor in accordance with Component and Circuit Checks of Smartstart Preheat System Section 15. • Check pump is full of water and all air is bled from the system as follows: 1. Isolate electric power supply to appliance. 2. Crack open the pump and drain-off bleed valves on the base of the appliance until all air pockets are released and a steady stream of bubble free water is discharged - Close bleed valves. 3. Active the power supply to the appliance. 4. Active Smartstart preheat system in the normal manner. • Check all Smartstart preheat system Components.
Pump operates for an extended period (longer than 5 minutes) but the water heater does not operate during this period.	• Check manual operation dip switch (Switch no.8 on the PCB) is not switched to the "ON" position. To rectify, switch off power to appliance, then reactivate power supply to appliance. • Open a hot water trap. The water heater should activate. If it does not, there is a problem with the water heater. If the water heater activates there is a problem with water circulation or with the Smartstart preheat system itself. Check as follows: 1. Check water strainers on both the return and cold water inlet connections at the bottom of the appliance - clean if required. 2. Check pump is full of water & all air is bled from system. 3. Check all air is bled from the flow and return pipework by isolating the power supply to appliance and then opening all available hot water taps, including the shower, until water from all the outlets is cold and free of bubbles. Then close the hot water taps (Ensure building occupants do not have access to hot water outlets during this procedure).

Fault / Symptom	Check and Remedy
	4. Check for obstructions in flow and return pipe work and rectify such as closed isolating valves, jammed or incorrectly installed non-return valves, cross connections between hot and cold pipework, blockages etc. 5. Active the appliance in the normal manner. 6. Check all Smartstart preheat system Components.
Pump operate for an extended period (longer than 5 minutes) and water heater operates continuously or intermittently during this period but pipework does not get warm	• Ensure a hot water tap is not inadvertently left open in the building. Confirm return water temperature is not already warm (feel temperature of Return pipe). • Check to ensure the Water flow and return pipework length and pipe size do not exceed the limits in the Installation Instructions. Confirm the length of 'deadlegs' between flow and return pipework and hot water outlets is minimized. • Check all air is bled from the flow and return pipework by isolating the power supply to the appliance and then opening all available hot water taps, including the shower, until water from all the outlets is cold and free of bubbles. Then close the hot water taps (Ensure building occupants do not have access to hot water outlets during this procedure). • Check for obstructions in flow and return pipe work and rectify such as closed isolating valves, jammed or incorrectly installed non-return valves, cross connections between hot and cold pipework, blockages etc. • Active the appliance in the normal manner. • Check all Smartstart preheat system Components.

14. Component and Circuit Checks

1. Combustion Fan Circuit

Check the Motor

Check the combustion fan if the error indicator displays “61”.

Measure voltages between Black-Red of the PCB connector (**B_1**).

Normal: DC15~46V (when fan ON)
DC0V (when fan OFF)
If normal proceed to check the rotation sensor
Faulty: Replace PCB

Check for the Fan Rotation Sensor

a.) Measure voltages between Black-Yellow of connector (**B_1**).
Normal: DC11~13V
If normal proceed to b.).
Faulty: Replace PCB.

b.) Measure voltages between Black-White of connector (**B_1**).
Normal: DC5~10V (20~400Hz)
If normal proceed to - 2. Sparker Circuit.
Faulty: Replace Combustion Fan.

2. Sparker Circuit

a.) Measure voltages between Grey-Grey of connector (**C_1**).
Normal: AC207~264V
If Normal proceed to b.).
Faulty: Replace PCB.

b.) Disconnect connector (**C_1**) and measure voltage between both terminals of the sparker.
Normal: 1MΩ
If not sparking, adjust or replace ignition plug.
Faulty: Replace Sparker.

3. Main Solenoid Valve (SV_0)

Check the main solenoid if error indicator “11” is displayed.

a.) Disconnect Main Solenoid connector (**G_4**) and measure voltage between Pink-Black
Normal: DC11~13V
If normal, proceed to b.).
Faulty: Replace PCB

b.) Measure voltage between Main Solenoid connectors.

Normal: 37~43Ω
If normal, proceed to 4. Solenoid Valve (SV_1) ***Faulty:*** Replace Main Solenoid.

4. Solenoid Valve 1 (Small) (SV_1)

Check Solenoid 1 if error indicator "11" is displayed.

a.) Disconnect Solenoid 1 connector (**G_5**) and measure voltage between Blue-Black.

Normal: DC11~13V
If normal, proceed to b).
Faulty: Replace PCB.

b.) Measure resistance between Solenoid 1 connectors.

Normal: 35~41Ω
If normal, proceed to 5. Solenoid Valve 2 (SV_2) Circuit
Faulty: Replace Solenoid 1

5. Solenoid Valve 2 (on manifold)

a.) Check Solenoid Valve 1 if error indicator "11" is displayed.

b.) Measure resistance between Blue-Black wires of main solenoid connector (**G_6**)

If normal proceed to b)
Faulty: Replace Solenoid Valve 1.

6. Solenoid Valve 3 (Large) (SV_3)

a.) Disconnect Solenoid Valve 2 connector (**G_7**) and measure voltage between Brown and Black.

Normal: DC11~13V
If normal, proceed to b.).
Faulty: Replace PCB.

b.) Measure resistance between Solenoid Valve 2 connectors.

Normal: 35~41Ω
If normal, proceed to Solenoid Valve 2 (SV_2) Circuit.
Faulty: Replace Solenoid Valve 2.

7. Modulating Solenoid Valve (POV)

a.) Disconnect Modulating Valve fasten terminals and measure voltage between terminals.(**G_2**)

Normal: DC2.0 ~ 15
If Normal proceed to c)
Faulty*:* Replace PCB

b.) Measure resistance between solenoid valve connectors.

Normal: 65 ~ 85 DC
If normal, proceed to b.).
Faulty: Replace PCB.

c.) Check the gas secondary pressure change when set temperature on the water control changes from 37°C to 55°C.

Normal*:* Burner gas pressure changes. Go to Water flow Servo Circuit.
Faulty: Burner gas pressure does not change. Replace Modulating Valve.

8. Flame Rod Circuit

Operate appliance and check flame rod (**G_3**).
Check Dc current flow is between yellow flame rod wire and earth is over DC1μA

Disconnect flame rod terminal (**G_3**), and re-operate.
"72" indicated:- Proceed to c).
"72" is not indicated:- check for electrical leaks from the flame rod circuit.

Measure voltage between flame rod terminal (**G_3**) and appliance earth.

Normal: >1MΩ
If normal, check all power inputs into PCB if power inputs okay replace PCB.
If resistance abnormal replace flame rod.
Faulty: Replace flame rod.

a.) Remove the Flame Rod terminal (**G_3**) repeat operation procedure, if "72" is displayed again check the Hot water outlet thermistor.
If "72" is not displayed check current leakage from the Flame Rod.

b.) Measure voltage between body earth and Flame Rod terminal (**G_3**).
Normal: resistance AC100~160V
If normal, check all power inputs into PCB. If power inputs okay replace PCB.
Faulty: Replace Flame Rod.

c.) Check if the Flame Rod is securely fitted.

Normal*:* check all power inputs into PCB. If power inputs okay replace PCB.
Faulty: Adjust the fitting of the Flame Rod. Check all appliance earth connections are clean and secure.

9. Thermal Fuse Circuit

Check the Thermal Fuse.

Disconnect relay connector (**I_1**) & (**E_1**) measure resistance between blue and red.
Normal: < 1Ω
If normal, replace PCB.
Faulty: Replace Thermal Fuse if after confirming there is no damage to appliance.

10.Water Flow Sensor

a.) Measure voltage between Red-Black of relay connector (**E_2**).
Normal: DC 11~13V
If normal, proceed to b.
Faulty: Replace PCB.

b.) Measure voltage between Yellow-Black of relay connector (**E_2**).
Normal: DC 4~7V
If normal, proceed to 2.
Faulty: Replace water flow sensor.

Note: For controller readout of water flow whilst operational refer maintenance monitor. (Chapter 18) No. 1.

11.Water Flow Control Device Circuit

a.) Disconnect relay connector (**E_4**), and measure voltage between Red (+) and Black (-) on PCB unit side (while operating).

Normal: DC10-13V
If normal: proceed to c.).
Faulty: Replace PCB unit.

b.) Measure voltage between Black and Yellow with relay connector (**E_4**) connected (with no water flowing, water flow servo fully open).

Normal: DC4~7V (Pulse 20~320Hz)
Faulty: Replace Water Flow Servo with Water Flow Sensor.

c.) Measure voltage between Yellow and Grey with relay connector (**E_4**) connected (with no water flowing, water flow servo fully open).

Normal: DC4~7V
Faulty: Replace Water Flow Servo and Water Flow Sensor.

12.Thermistor Circuit

Check Hot Water Thermistor if error code "32" is displayed.

Disconnect relay connector (**E_3**) and measure resistance White -White.

When disconnected: >1MΩ
When short circuit: > 1 Ω
Normal: Check Heat exchanger outlet thermistor

Faulty: Replace hot water outlet thermistor.

Normal

Temperature	15°C	30°C	45°C	60°C	105°C
Resistance	11.4~14 kΩ	6.4~7.8 kΩ	3.6~4.5 kΩ	2.2~2.7 kΩ	0.6~0.8 kΩ

If normal proceed to 8. Flame Rod circuit.

Faulty: Replace the Hot water Outlet Thermistor.

Note: For controller readout of thermistor temperature whilst operational refer maintenance monitor.
Disconnect relay connector (**E_6**) and measure resistance between the yellow wires on the pipe frost heater at the frost heat side.

13.Surge Protector (F_1)

Check the fuse. Blue-Brown

AC207~264V

a.) Unplug the power plug.
b.) Check whether or not the fuse (3A) x 2 has blown by measuring the resistance.

Normal: <1Ω
If normal go to step 14. Electrical Fuse
Faulty: Replace fuse/s (3Ax2). Check for a short next time it's turned off.

14.Electrical Fuse

a.) Measure voltage between Blue-Brown on the connector (**F_2**)

Normal :AC 207~264V
If normal proceed to b.). (11~13Ω)
Faulty: Check if voltage on the fuse terminal is AC207~264V

b.) Measure voltage between White-White on the (**F_1**).

Normal: AC 207~264V.
Faulty: replace surge protector unit.

15.Anti-frost Heater Circuit

a.) Disconnect relay connectors (**F_4**) and (**F_5**) and measure resistance between Yellow- Yellow on heater side (water flow servo and HW connection).

Normal: 53Ω
If normal, proceed to b.).
Faulty: Replace Valve Heater.

b.) Disconnect relay connector (**F_4**) and (**F_5**) and measure voltage between Yellow- Yellow on each connector on heater side.

Normal: 618Ω
If normal, proceed to c.).16. Frost Sensing Switch.
Faulty: Replace Anti-frost Heater.

16.Frost Sensing Switch

a.) Disconnect relay connector (**F_4**) and measure resistance between Blue-Blue.

Normal: < 1Ω
If normal, check wiring (AC240V circuit).
Faulty: Replace Frost Sensing Switch.

Component and Circuit checks of Smartstart Preheat system

Circulating PCB has 3 LED's to indicate operational mode and whether the return temperature thermistor appears faulty or not.

<table>
<tr><td colspan="2">Performance component and circuit checks only as dictated in 'Fault Finding'. This table is used in conjunction with 'Fault Finding' and the Wiring Diagram.
Performance component and circuit checks in the order shown in this Table.</td></tr>
<tr><th>Component</th><th>Testing Procedure</th></tr>
<tr><td>Check the power supply and electric fuses</td><td>1.Check voltages across the fuses. Replace fuses if defective.
2.Check voltage between Brown-Blue of transformer (L_1).
Normal: DC207-264V.
Faulty: Replace Circluating PCB.
3.Check voltages between Black-White of transformer (J_1).
Normal: DC17.7-19.6V. Faulty: Check resistances of transformer winding. Replace transformer if defective.</td></tr>
<tr><td>Communications cable</td><td>1.Check the communication cable is connected to the cable access.
2.Check voltage of communications cable. If voltage is zero or too low, confirm power supply to appliance.</td></tr>
<tr><td>Check return temperature thermistor</td><td>1.Check LED display on Circulating PCB. If PCB LED indicates the circulation thermistor might be faulty (Green LED flashing) check resistance of circulation thermistor. Resistance matches table below.
If resistance is incorrect, replace thermistor.
<table>
<tr><td>Temperature</td><td>Resistance</td></tr>
<tr><td>16°C</td><td>11.4-14KΩ</td></tr>
<tr><td>30°C</td><td>6.4-7.8 KΩ</td></tr>
<tr><td>45°C</td><td>3.6-4.5 KΩ</td></tr>
<tr><td>60°C</td><td>2.2-2.7 KΩ</td></tr>
<tr><td>105°C</td><td>0.6-0.8 KΩ</td></tr>
</table></td></tr>
<tr><td>Circulating Pump</td><td>Check voltage between Red-White of Circulating Pump (K_1).
Normal: DC207-264V.
Faulty: Replace Circulating Pump.</td></tr>
</table>

15. Gas Pressure Setting Procedure

Refer separate Rinnai document behind front cover of appliance.

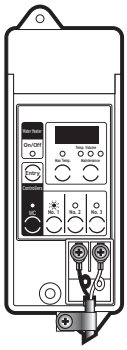
16. Gas Conversion Procedure

Refer separate document availabe from Rinnai.

17. Maintenance Monitor / Error History

Wireless Controllers

Maintenance Function - Wireless Controller Transceiver



1.) Press maintenance button once.

2.) Temperature light (orange) will illuminate & the Led display will show current water temperature in heat exchanger.

3.) Press maintenance button again.
'Volume' light - (orange) will illuminate. Led display to show l/min water flow through the Infinity.

4.) Press maintenance button again and the previous 10 error codes will be displayed.

First number shown on Led display will be 1 - followed by error code then 2 and the error code.

If error code reads — —, it means there was no error recorded.

Press maintenance button again to return to transceiver to normal mode.

This feature is available where the appliances are connected with a deluxe controller This will enable service personnel to locate the maintenance history and faulty components, with the appliance in operation.

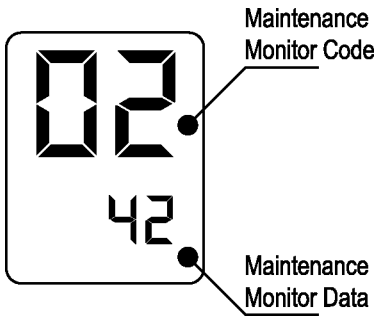
NB. When the maintenance information, error history is shown, use only one controller. If two or more water controllers are used at the same time, it may not operate correctly.

To display Maintenance Information

1. With the controller in the "OFF" position press the Water Temperature "DOWN" (Cooler) button while holding the "ON/ OFF" button to activate the maintenance monitor. Press the "ON/ OFF" button a second time to set the controller in the "ON" mode. This feature can now be used with the appliance in operation.

2. The maintenance number will be shown in the Water Temperature display.

3. Data will be shown in the Clock display.



4. To select the required maintenance number, press the Water Temperature "UP" and "DOWN" buttons.

Display Monitor Contents			
No.	Contents	Units	Data Range
01	Water flow sensor recognition flow (Example 123 = 12.3L/min).	0.1L/min	0~400
02	Hot water Outlet thermistor temperature (Example 20 = 20°C)	°C	0~999
03	Hot water combustion time (Example 6 = 600 hours)	100 hours	000~999
04	Hot water operation frequency (Example 6 = 600 Operations)	100	0~999
05	Hot water fan frequency	Hz pulses/sec	0~999 ***Note 1**

***Note 1** Fan Frequency rpm Conversion

(rpm) = (Hz) x15

06	Water control connection	none	0 or 1 ***Note 2**

***Note 2** Water Control Connections

Bathroom Controller

Additional controller "0" Kitchen controller "1"

Controls connected	Display
No	"0"
Yes	"1"

07	Water flow servo present recognising positioning	None	0~2 ***Note 3**

***Note 3** Water Flow Servo Positioning

Servo Position	Open	Centre	Closed
Display	**"1"**	**"0"**	**"2"**

08	Inlet water temperature (PCB recognition value) (Example 25 = 25°C)	°C	0 ~ 999
09	Hot water fan current flow value (Example 6 x 10 = 60 mA)	10 mA	0 ~ 999
10	Bath fill amount (this counts the litres during bath fill operation).	Litres	0 ~ 999
11	Heat exchanger exit thermistor temperature (Example 55 = 55°C)	°C	0 ~ 999
12	Bypass servo present recognition positioning (Example 0 = Closed 250 = Half open 500 = Open	Degrees	0 ~ 500

To return to normal operation

- Press the ON/OFF button again while holding down the Water Temperature "DOWN" (Cooler) button.

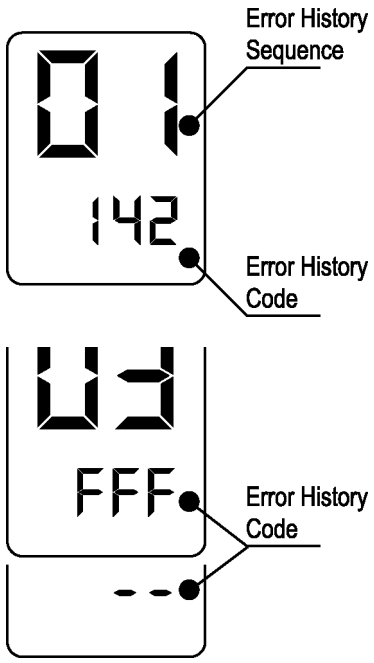
Error History

To Display Error Memory (History)
(This feature will show the last 10 faults in sequence)

1. Turn off at the ON/OFF button. (This can be done during operation)

2. Press the ON/OFF button while holding the Water Temperature "UP" (Hotter) button.

   - The Sequence will be shown in the Water Temperature display.
   - Error Code will be shown in the Clock display. (See service Manual for error codes).
   - Where there are less than a total of 9 errors, "FFF" or " - - " will be displayed in the Clock display.



To return to normal operation.

- Press the ON/OFF button again while holding the Water Temperature “UP” (Hotter) button.
- This feature will automatically shut down after 3 minutes.

18. 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

Item *Page*

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

IMPORTANT

For some areas of dismantling you may need to isolate any or all of the following:

* Isolate gas supply.
* Disconnect electrical supply from wall socket.
* Isolate water supply.
* Drain **all** water from appliance.

1) Removal of the Front Panel

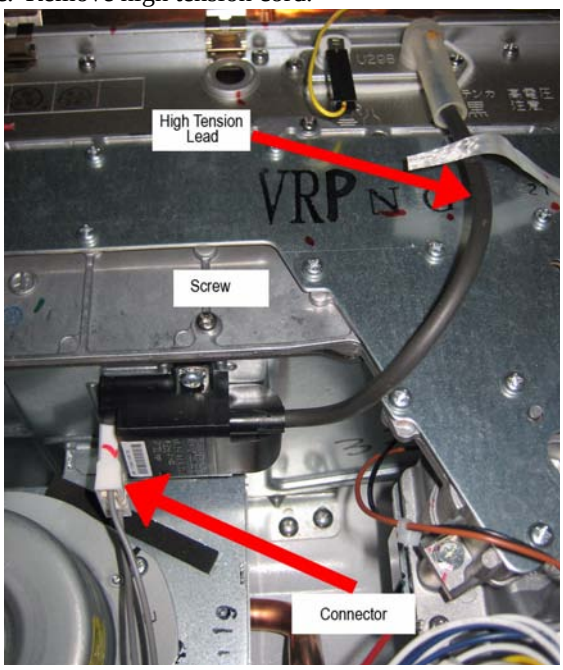
a. Remove four (4) screws.

2) Removal of the PCB Unit

a. Remove the front panel. (Refer Item 1.)
b. Remove one (1) PCB unit fixing screws and pull out forward.

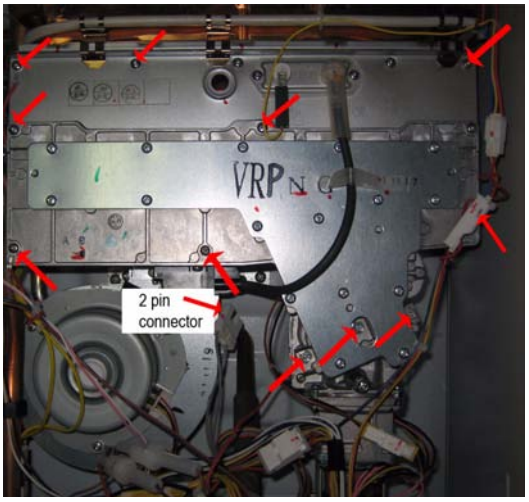
3) Removal of the Sparker

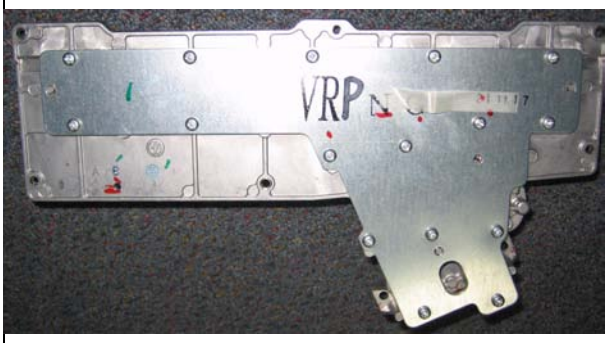
a. Remove Sparker.
b. Remove 2 pin connector.
c. Remove high tension cord.



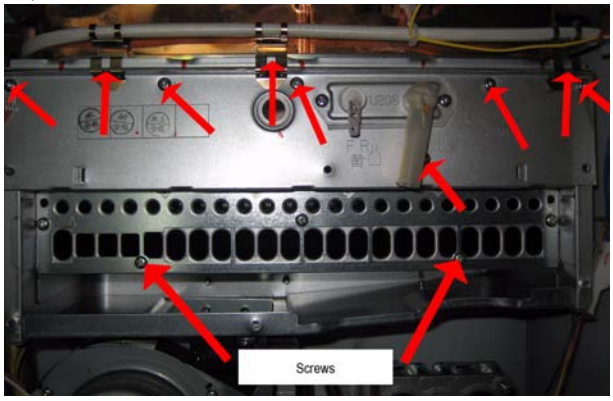
4) Removal of the Manifold & Burner unit

a). Remove high tension and flame rod.
b). Remove 2 pin connection of solenoid valve.
c). Remove 9 screws on the manifold.
d). Remove manifold.

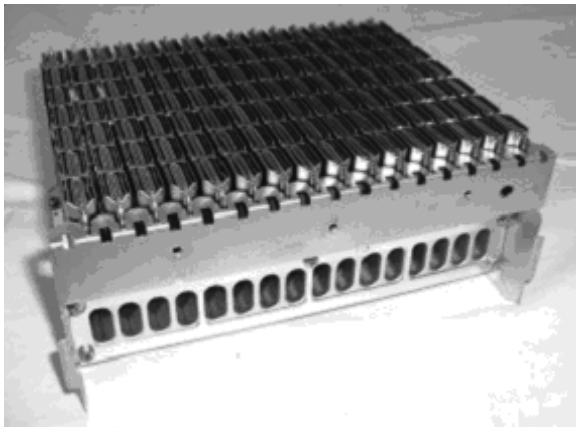




e). Remove combustion chamber front panel.
f). Remove burner unit.

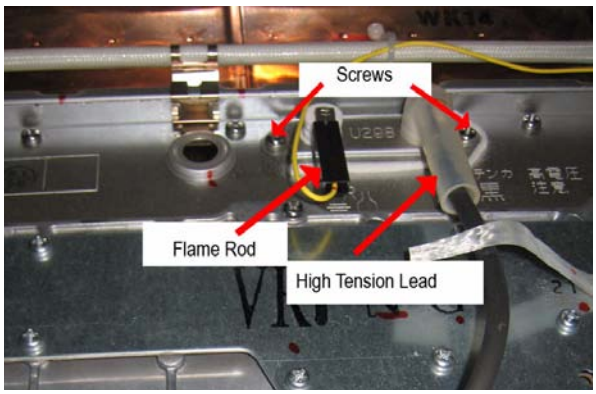


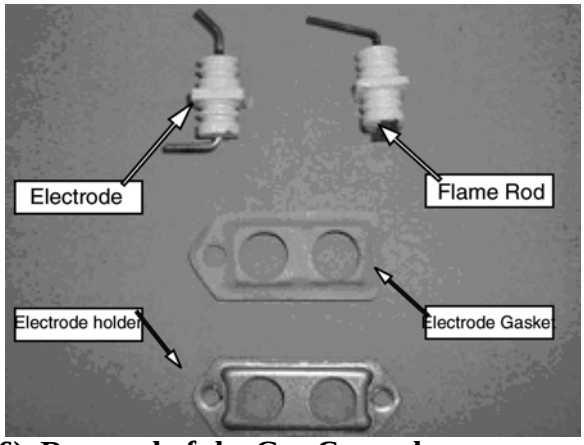
g). Pull off burner unit.



5) Removal Flame Rod and Spark Plug

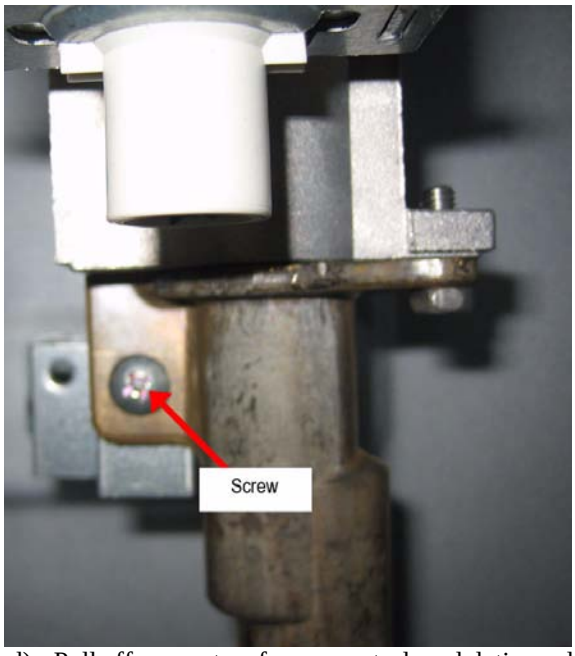
a). Remove flame rod terminal and tighten sparker lead.
b). Remove flame rod and spark plug.



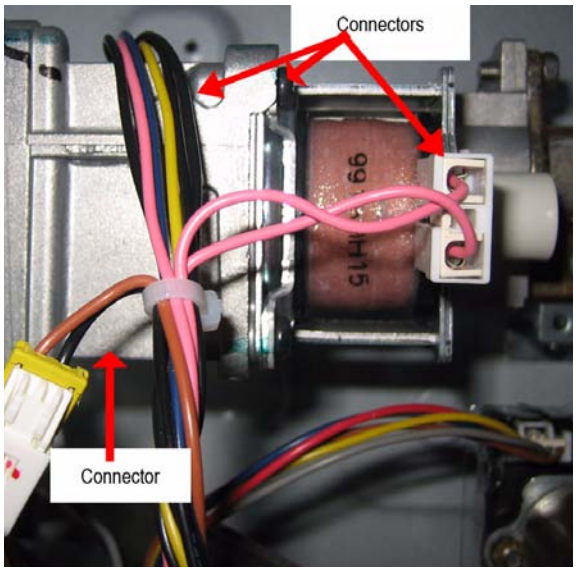


6) Removal of the Gas Control

a). Remove manifold
b). Remove Inlet gas connection
c). Remove control gas connection.

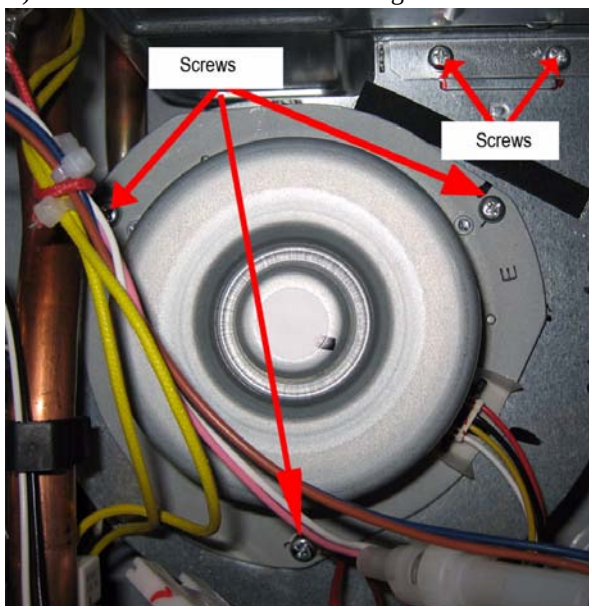


d). Pull off connectors for gas control modulation valve and solenoid valve.



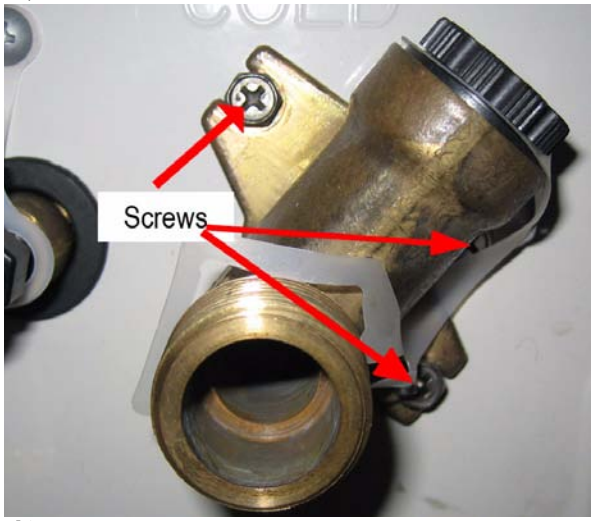
7) Removal of the Fan Motor

a). Remove 4 pin connector to fan motor
b). Remove 2 fan motor screws
c). Remove fan motor from housing via 3 screws.

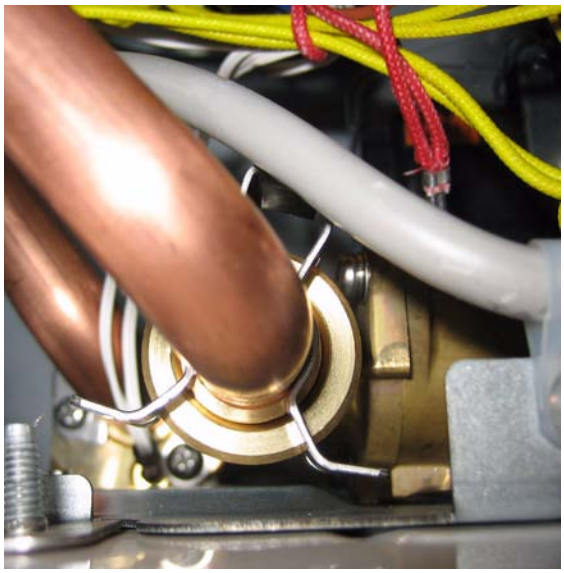


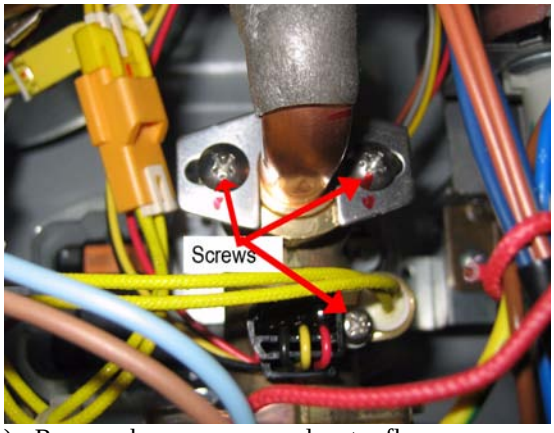
8) Removal of Bypass Servo

a). Removal of inlet waer connection and valve drain.

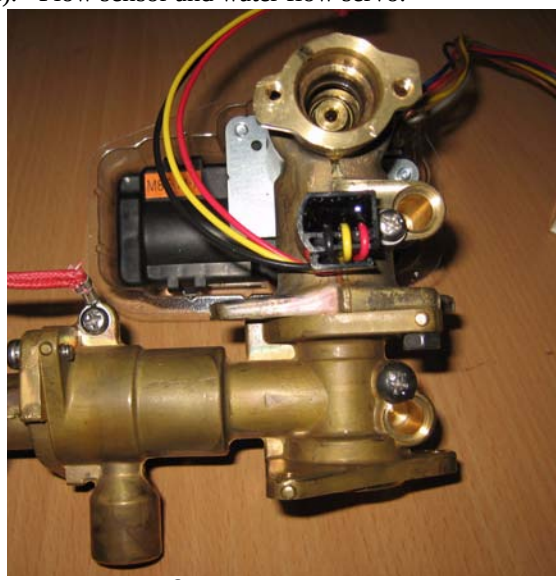


b). Remove 3 pin connector
c). Remove 5 pin connector
d). Remove anti frost heater
e). Remove bracket for water connection tube
f). Remove clip for pump tube



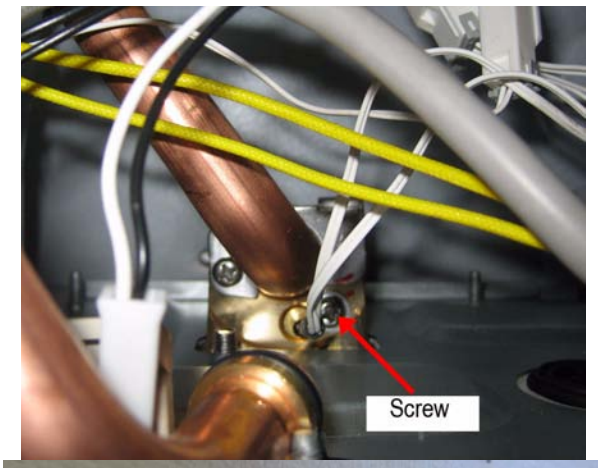


g). Remove bypass servo and water flow servo.
h). Remove fitting screws of bypass servo.
i). Flow sensor and water flow servo.



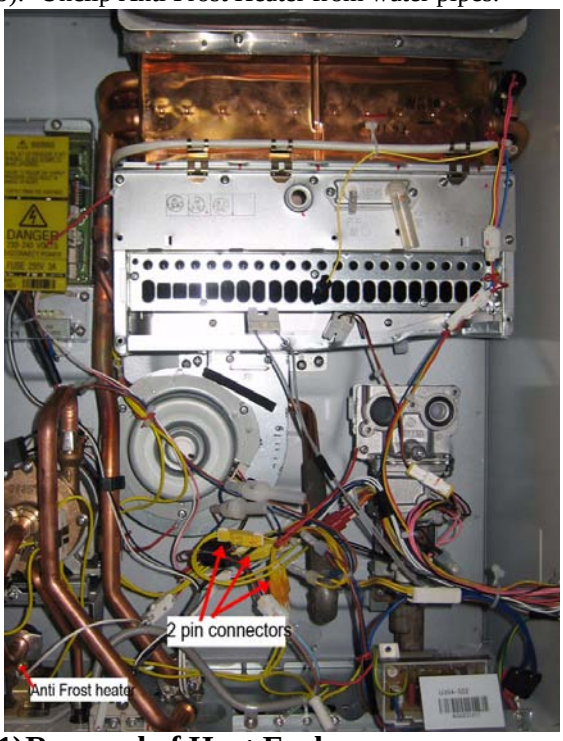
9) Removal of Outgoing water Thermistor

a). Remove Thermistor fixing screw.



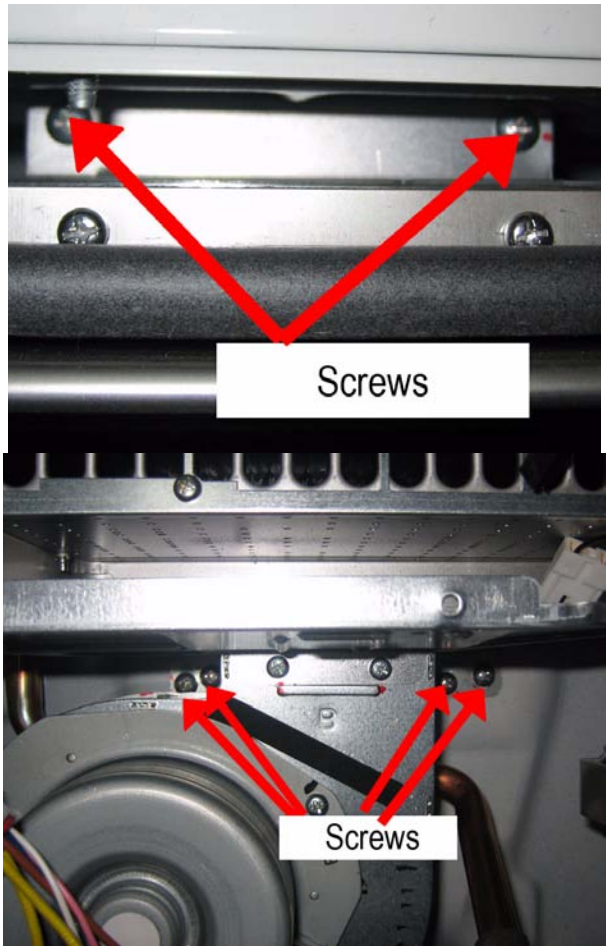
10)Removal of Anti Frost Heater

a). Remove 2 pin connectors of Anti Frost Heater (3x)
b). Unclip Anti Frost Heater from water pipes.



11)Removal of Heat Exchanger

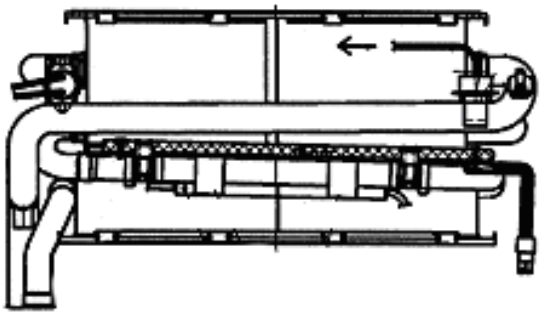
a). Remove fixing screws of the heat exchanger unit.
b). Remove Heat Exchanger from box.



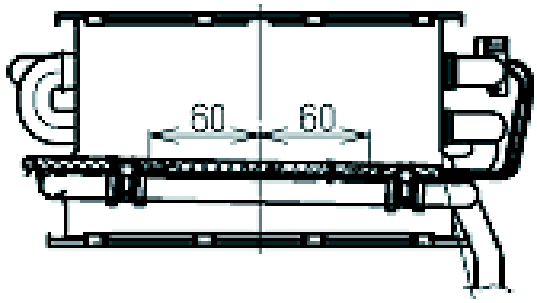
12)Removal of Thermal Fuse

a). Remove Heat Exchanger.
b). Remove Thermal Fuse
c). After removal of thermal fuse fitting procedure is as follows:

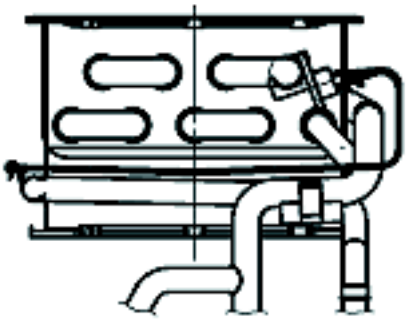
Heat Exchanger Front



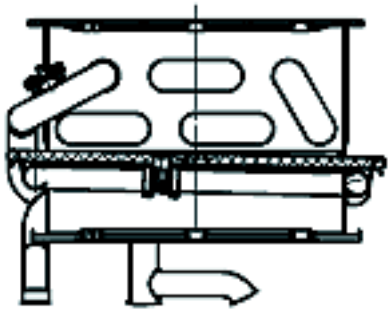
Heat Exchanger Right



Heat Exchanger Left

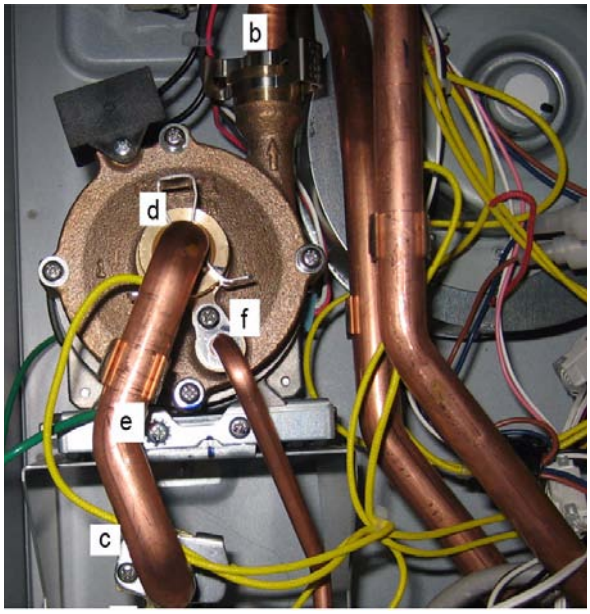


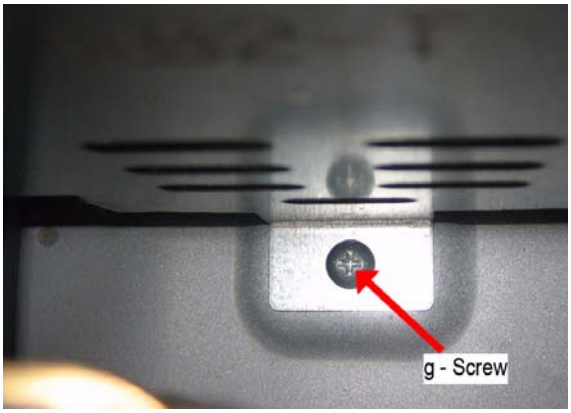
Heat Exchanger Right

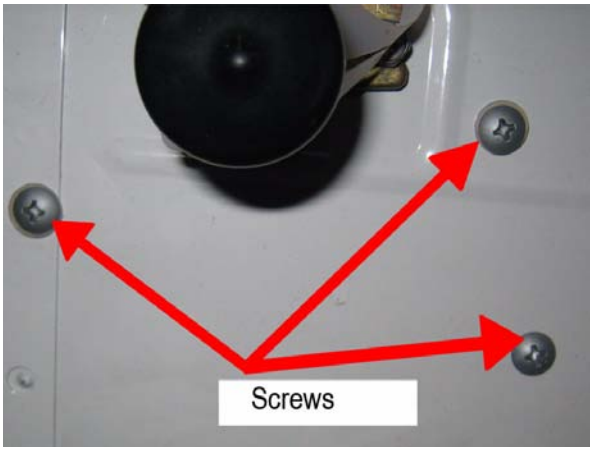


13)Removal of Pump

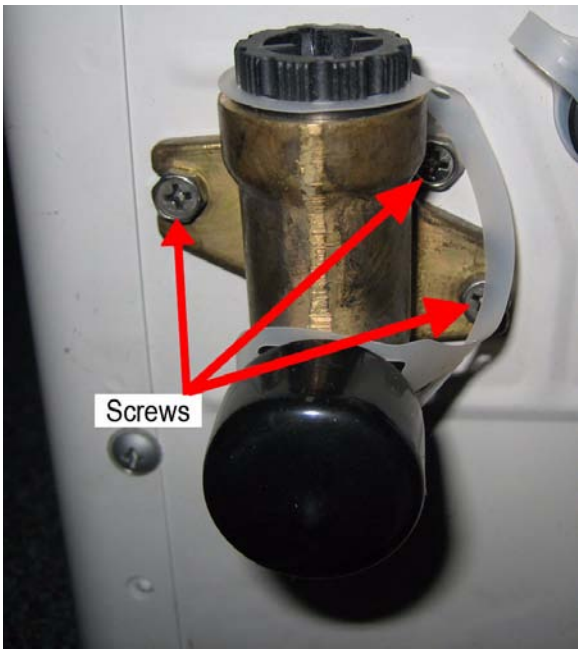
a). Remove the front cover panel.
b). Remove top pipe retaining clip by pulling towards you
c). Remove pipe retaining clip on left hand side pump bleed screw and return pump inlet securing bracket
d). Remove pump return pipe securing clip
e). Remove and lift out 'U' shape piece of tube
f). Remove fixing screw of pump drain tube assembly and lift out from pump
g). Unclip antifroster resistor and undo pump mounting bracket screws.







14)Removal of water return connection



19. Parts List

Note: Some parts details may have changed since publicaton of this manual. Contact Rinnai to confirm spare parts details before ordering.

Effective: 22/2/10

INFINITY 26 SMARTSTART (REU-VR2626WGP-AK)			23-1217	
NO	PART NAME	RA CODE	RJ 11 DIGIT CODE	Quantity Required
001	PANEL FRONT	92098919	019-4346000	1
002	SEAL PANEL FRONT TOP	92086909	580-453-000	1
003	SEAL PANEL FRONT SIDE	92086917	510-903-000	2
005	OUTER CASE	92098931	014-504-000	1
010	Connection Reinforcement Panel		044-192-000	1
011	Heat Insulation Plate		030-0279000	1
012	P.C.B Bracket		538-0666000	1
013	BRKT WALL	92093479	106-292-000	2
014	Seal Packing		510-893-000	1
015	HARNESS EASY CONNECT	92098905	106-665-000	1
016	CLIP SUPPORT	92095896	538-840-000	1
017	Rubber Bushing		194-152-000	1
100	INLET GAS	92081587	106-290-000	1
101	CONTROL GAS CONNECTION	92098903	106-682-000	1
102	Bracket		538-0403000	1
103	GAS CONTROL	92099198	120-0028000	1
104	MANIFOLD LP	92099264	101-753-000	1
104	MANIFOLD NG	92099266	101-754-000	1
105	MANIFOLD PACKING UPPER	92098910	580-0578000	1
106	MANIFOLD PACKING LOWER	92099294	580-0576000	1
107	Burner Case Front		098-0821000	1
108	Packing		580-597-000	1
109	Damper-A		140-608-000	1
110	Burner .Low Nox Bunsen Assy		157-083-000	22
111	Burner Case Rear		098-412-000	1
112	Combustion Chamber Front Panel Assy		019-4090000	1
113	Combustion Chamber Packing Upper		580-0577000	1
114	ELECTRODE	92086974	202-156-000	1
115	ELECTRODE FR	92095598	202-215-000	1

116	PACKING ELECTRODE	92099214	580-0569000	1
117	ELECTRODE HOLDER	92099216	538-0572000	1
118	SLEEVE ELECTRODE	92087030	518-035-000	1
119	HEAT EXCHANGER	92098924	314-810-000	1
120	BRKT THERMISTOR	92093315	538-615-000	1
121	BRKT H/EXCH OUTLET	92099548	537-502-000	1
122	BURNER ASSY	92099270	157-139-000	1
130	EXHAUST FLUE	92099976	055-858-000	1
131	GASKET EXHAUST FLUE	92098904	580-599-000	2
132	SEAL EXHAUST	92098902	580-601-000	1
133	FLUE EXTENSION ASSY	92098917	055-0011000	1
134	GASKET EXHAUST EXTENSION	92098906	580-0668000	1
150	FAN COMB ASSY	92098988	222-613-000	1
400	WATER FLOW SENSOR	92099957	301-152-000	1
401	Cover		098-1445000	1
402	INLET BYPASS	92098922	326-229-000	1
403	INLET ELBOW	92098920	326-230-000	1
404	VALVE INLET NON RETURN CUG1	92097088	340-044-000	1
405	VALVE DRAIN	92097120	337-034-000	2
406	Drain Valve Band A		324-003-000	1
407	Pump Tube		332-0237000	1
408	Clip		512-552-000	3
409	INLET WATER 3/4	92095901	333-483-000	2
410	RECTIFIER WATER	92093552	330-107-000	2
411	FILTER WATER 0 LARGE	92083773	196-062-000	2
412	Plug Band		553-119-000	2
413	OUTLET WATER 3/4	92099970	333-304-000	1
414	Plug Band		553-043-000	1
415	VALVE PRESS RELEASE	92098912	337-123-000	1
500	PUMP WATER ASSY	92097039	270-076-000	1
501	Rubber Cap		540-038-000	4
502	HARNESS 2 WIRE	92097161	204-836-000	1
503	S Pump Base		013-385-000	1
504	D Pump Bracket Base		013-384-000	1

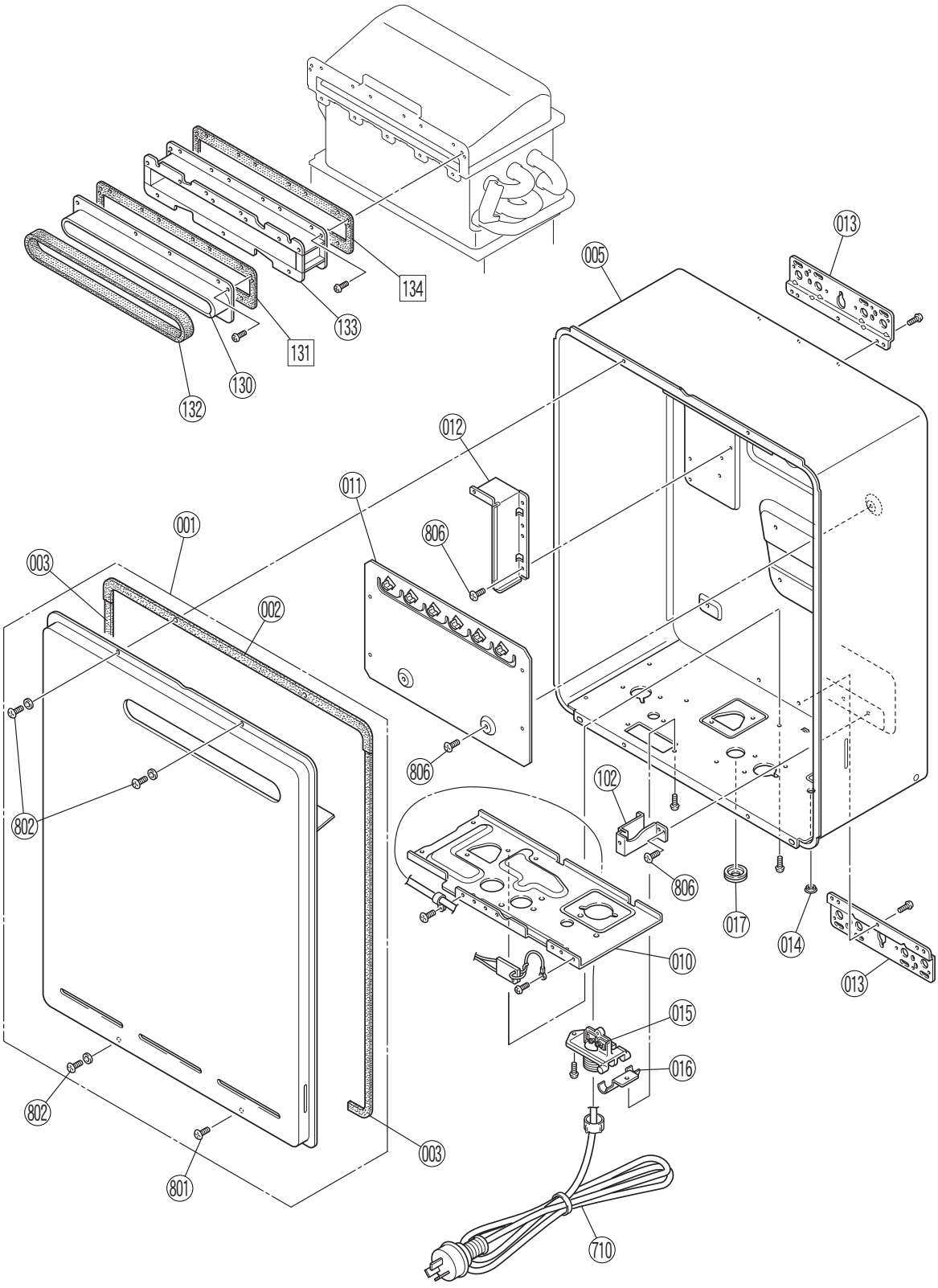
505	Pump Bracket Panel B		538-357-000	1
506	Pump Drain Tube Assembly		332-0238000	1
507	INLET DRAIN VALVE	92098918	333-461-000	1
508	Plug Band		553-173-000	1
509	Clip		512-550-000	1
510	Connector		326-185-000	1
511	THERMISTOR 1	92095030	233-246-000	1
512	Pump Tube		332-0239000	1
513	Fixing Bracket		537-501-000	1
700	PCB MAIN	92098990	210-0058000	1
701	PC Board Cover Front		098-1853000	1
702	PC Board Cover Side		098-3009000	1
703	SPARKER	92095026	261-157-000	1
704	LEAD HT	92098994	203-264-000	1
705	SURGE ARRESTOR	92093699	210-605-000	1
706	Surge Protector Cover		098-3004000	1
707	PCB MAIN CUG1 (10 MIN DELAY)	92098268	210-691-000	1
708	PC Board Cover Front		098-3005000	1
709	TRANS	92097054	224-347-000	1
710	ELEC CORD	92089051	206-226-000	1
711	FUSE PUMP	92098942	290-1955000	1
712	HEATER PUMP A-FROST	92098970	235-407-000	1
713	HEATER HEX A-FROST	92098968	235-408-000	1
714	SWITCH THERMAL CUG1	92097187	234-444-000	1
715	CLIP HEATER	92076123	537-174-000	6
716	HARNESS POWER	92095027	290-1285000	1
717	HARNESS MAGNET VALVE	92098940	290-1956000	1
718	HARNESS SENSOR A-FROST	92098938	290-1957000	1
719	HARNESS SENSOR WATERFLOW	92098936	290-1958000	1
720	HARNESS PCB TO PCB	92098934	290-1959000	1
721	FUSE THERMAL	92098964	290-1767000	1
722	Thermal Fuse Fixing Plate		537-505-000	2
723	Thermal Fuse Fixing Plate		537-0110000	4
724	SENSOR MR	92099988	243-133-000	1

725	HARNESS TWIN THERMIST	92099234	233-278-000	1
726	HARNESS RELAY	92099236	290-1748000	1
800	SCREW TEST POINT	92099956	501-275-005	2
801	Screw		501-889-000	4
802	Screw		501-973-010	3
803	Screw		501-0064000	3
804	Screw		501-737-000	4
805	Screw		501-295-000	2
806	Screw		501-0259000	15
807	Screw		501-0260000	2
820	O RING (S4) TEST POINT	90195165	520-300-010	2
821	O RING GAS CON	92072859	520-043-010	2
822	O RING GAS CONTROL	92096502	580-180-000	2
823	O RING THERMISTOR	92062249	520-209-010	2
824	O RING BYPASS	92071455	520-194-010	2
825	O RING WATER 6MM	92043223	520-074-010	2
826	O RING	92062348	520-281-010	1
827	O RING HEAT EXCH	92072800	520-255-010	5
828	O RING HEAT EXCH	92062207	520-193-010	1
829	O RING HEAT EXCH	92062199	520-048-010	2
830	O RING IN/OUT WATER	92071182	520-049-010	4

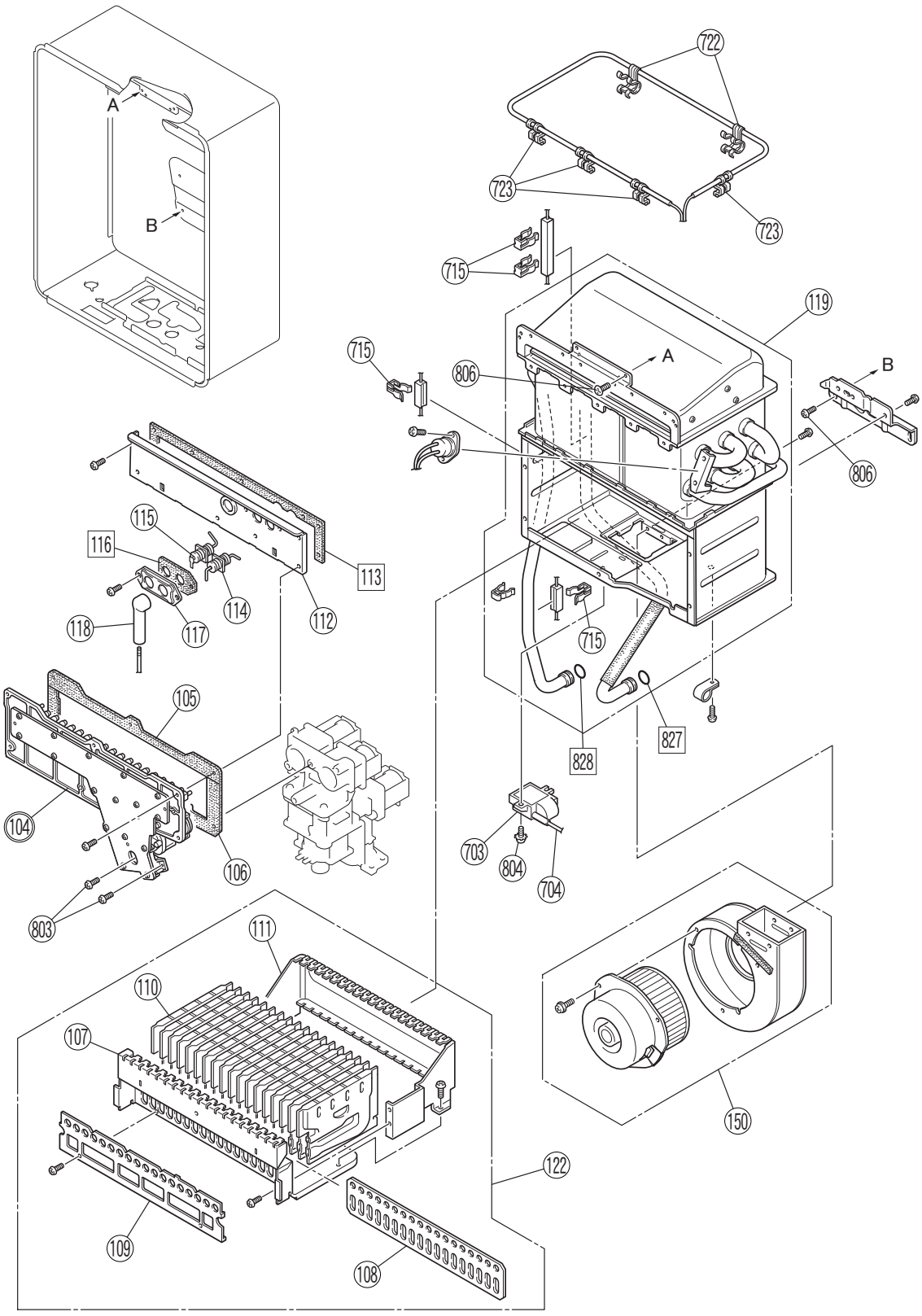
20. Exploded Diagram

Note: Some parts details may have changed since publicaton of this manual. Contact Rinnai to confirm spare parts details before ordering.

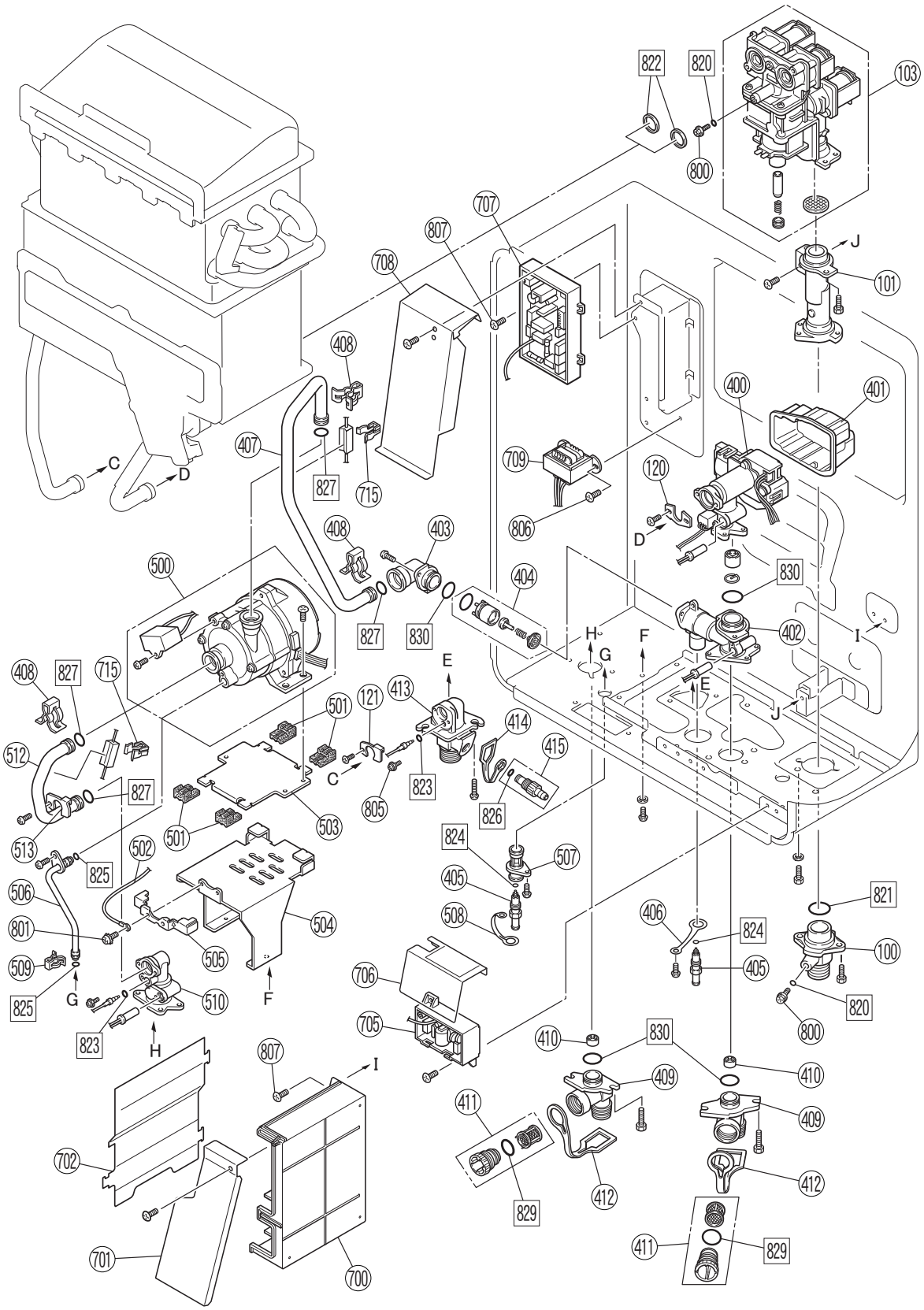
REU-VR2626WGP-AK



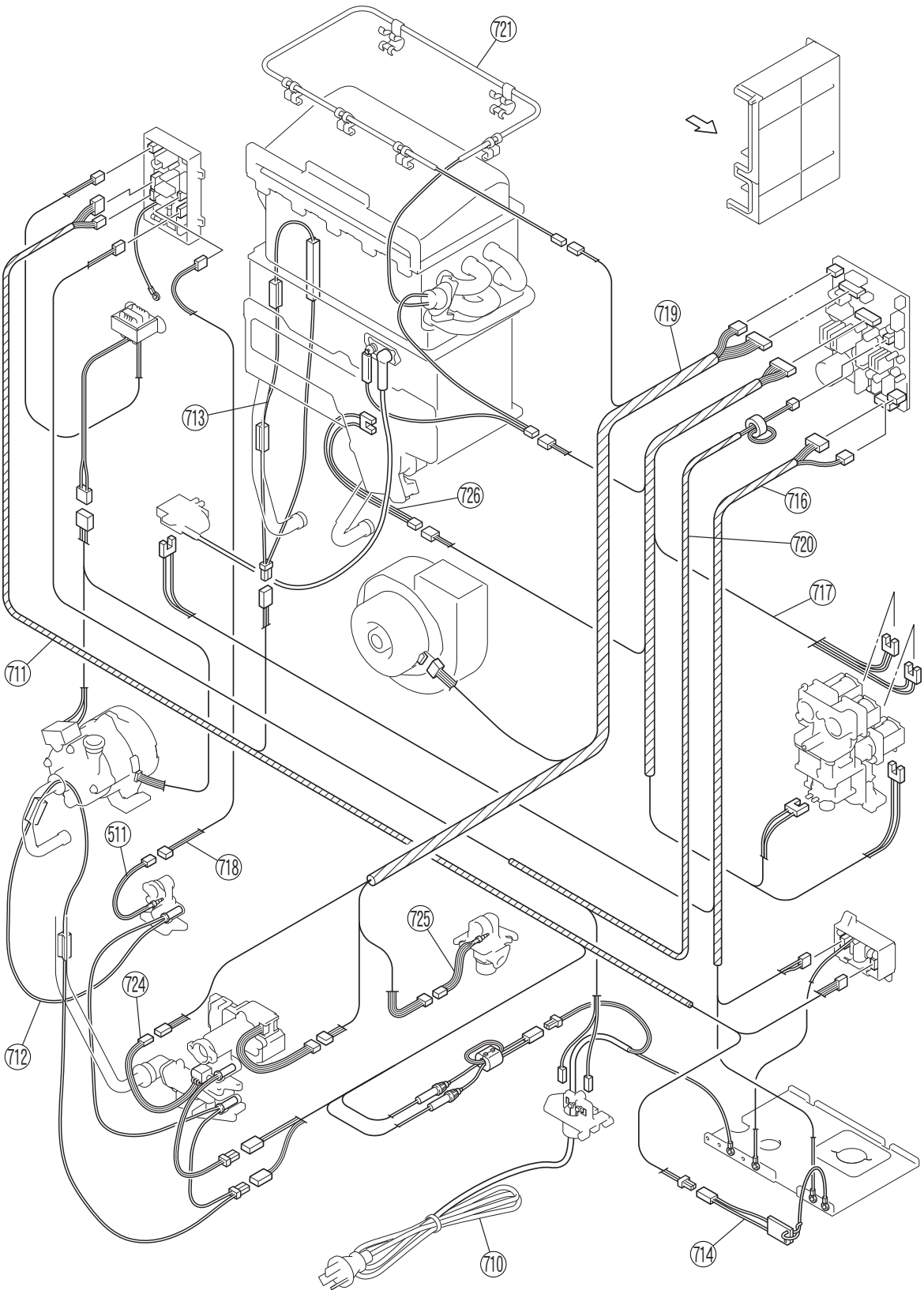
REU-VR2626WGP-AK



REU-VR2626WGP-AK



REU-VR2626WGP-AK



SERVICE CONTACT POINTS

Rinnai

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Internet: www.rinnai.com.au E-mail: enquiry@rinnai.com.au

National Help Lines

Sales & Service
Tel: 1300 555 545* Fax: 1300 555 655*
Spare Parts & Technical Info
Tel: 1300 366 388* Fax: 1300 300 141*
Cost of a local call Higher from mobile or public phones.
Hot Water Service Line
Tel: 1800 000 340

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 National Help Line. Rinnai recommends that this appliance be serviced every 3 years.