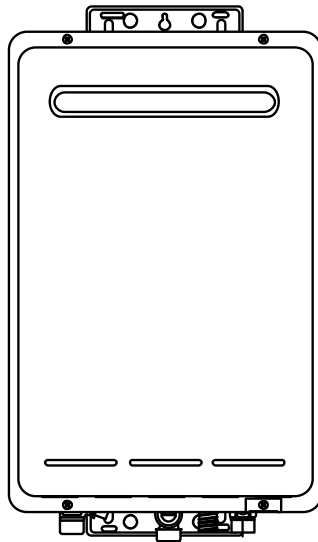


# Rinnai

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INFINITY 16 REU-V1616W  
V1200 REU-V1620W  
INFINITY 18 REU-V2018W  
INFINITY 20 REU-V2020W

## SERVICE MANUAL



Rinnai High Capacity Continuous Flow Gas Hot Water System



The Australian  
Gas Association

All Rinnai products are certified by the Australian Gas Association as compliant to relevant Australian Standards.



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WaterMark

AS3498 Lic W208  
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All Rinnai products are Certified to WaterMark by SAI Global. WaterMark certification is awarded to products and fittings complying with safety and water contamination standards.

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2005 - Issue 2.

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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.  
DO NOT TEST FOR GAS ESCAPES WITH AN OPEN FLAME

This manual has been published by Rinnai Australia Technical Services. We welcome users of this manual to provide feedback and suggestions for improvement purposes.

SM REU-V1616W/  
REU-V1620W/  
REU-V2018W/  
REU-V2020W  
Issue N<sup>o</sup>2

# Table of Contents

---

Glossary of Terms and Symbols .....	iv
1. Introduction .....	1
2. Specifications .....	2
3. Water Flow Rates and Pressures .....	5
4. Dimensions .....	8
5. Smartstart .....	10
6. Cutaway Diagram .....	11
7. Operational Flow Chart .....	13
8. Operation Principles .....	14
9. Main Components .....	15
10. Remote Controls .....	16
11. Time Charts .....	20
12. Wiring Diagram .....	21
13. Dip Switch Settings .....	22
14. Fault Finding .....	23
15. Component Circuit Value Table .....	25
16. Component and Circuit Checks .....	26
17. Maintenance Monitor / Error History .....	32
18. Gas Pressure Setting Procedure .....	34
19. Gas Conversion Procedure .....	36
20. Dismantling for Service .....	37
21. Exploded Diagram .....	42
22. Parts List .....	46
REU-V1616W .....	47
REU-V1620W .....	50
REU-V2018W .....	53
REU-V2020W .....	56
SERVICE CONTACT POINTS .....	60

# Glossary of Terms and Symbols

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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
kPa	-	kilopascals
LED	-	light emitting diode
L/min	-	Litres per minute
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
∅	-	diameter
Δ °C	-	temperature rise above ambient
POV	-	modulating valve
TE	-	thermal efficiency
TH	-	thermistor
T <sub>IN</sub>	-	temperature of incoming water
T <sub>OUT</sub>	-	temperature of outgoing water

# 1. Introduction

---

The Rinnai V-Series hot water units represents the latest technology in continuous flow, temperature controlled hot water.

## Features

- The Infinity 16, V1200, Infinity 18 and Infinity 20 NEVER RUNS OUT of hot water. Whilst electricity, water and gas supplies are connected, hot water is available whenever hot water taps are open.
- Built into the main micro-processor is the facility to LIMIT THE MAXIMUM TEMPERATURE of the hot water supplied. The water temperature may be limited to various maximum temperatures. This is particularly useful when the hot water unit is installed where young children or the infirm may be using the hot water. The Infinity is delivered with a maximum preset temperature of 50°C or 55°C. If required, the temperature limits can be changed by a service technician. For further information, please contact Rinnai.
- The Infinity is a power flued appliance. It is COMPACT, saving both floor and wall space.
- The temperature of outgoing hot water is CONSTANTLY MONITORED by a BUILT-IN SENSOR. If the temperature of the outgoing hot water rises to more than 3°C above the selected temperature shown on the Digital Monitor (or the pre-set limit when Remote Controls are not fitted), the burner will automatically go out. The burner will ignite again once the outgoing hot water temperature falls below the temperature shown on the Digital Monitor (or the pre-set limit).
- The burner lights automatically when the hot water tap is opened, and goes out when the tap is closed. IGNITION IS ELECTRONIC, therefore there is not pilot light. When the hot water tap is off, no gas is used.
- ‘Standard’ Remote Controllers are available as an optional extra. Depending on the models chosen, these offer the following additional features :
  - Localised Temperature Control for up to one kitchen and two bathroom controllers
- Temperatures selected at the controllers are retained in the SYSTEM MEMORY.
- Operating NOISE LEVEL IS VERY LOW.
- ERROR MESSAGES ARE DISPLAYED on the Remote Controllers, assisting with service.

## 2. Specifications

Type of appliance	Temperature controlled continuous flow gas hot water system
Operation	With / without remote controls, mounted in kitchen, bathroom etc
Exhaust system	Forced Flue
Rinnai model number	REU-V1616W / REU-V1620W
Installation	Externally mounted
Dimensions	Width - 350 mm Height - 530 mm Depth - 170 mm
Weight	16 kilograms
Gas consumption (Min. / Max.)	Natural gas : 125 ~ 18 MJ/h Propane gas : 125 ~ 18 MJ/h
Output (kW) (Min. / Max.)	27.9 / 4.0
Connections	Gas connection - R3/4 (20A) Cold water connection - R1/2 (15A) Hot water connection - R 1/2 (15A)
Ignition system	Direct electronic ignition
Electrical consumption	Normal - 47 W Standby - 6 W (with 1 remote control) Anti-frost protection - 74 W
Hot water capacity (Raised 25°C)	2.3 to 16 L/min
Thermal efficiency	80%
NOXaf	35 ppm
Temperature range (with remote)	Kitchen controller : 37 ~ 55°C Bathroom controller: 37 ~ 50°C
Default temperature control (without remote)	40°C, 43°C, 50°C, 55°C (factory setting), 65°C, 75°C (set by combination of dip switches on PCB)
Water Temperature control	Simulation feedforward and feedback
Water flow control	Water flow sensor, Electronic water flow control device
Minimum operating water pressure	10 kPa
Nominal operating water pressure	100 kPa ~ 830 kPa
Minimum operating water flow	2.4 L/min
Maximum operating water flow	16 L/min (REU-V1616W) / 20 L/min (REU-V1620W)
Power supply	Appliance - AC 240 Volts 50 Hz Remote control - DC 12 Volts (Digital)
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 2060 kPa, Closes: 1470 kPa Combustion fan rpm check - Integrated circuit system Over current - Glass fuse (3 Amp)
Deluxe remote control (optional)	Kitchen control - MC-91Q-2A - MC70-2A Bathroom control - MC91Q-2A - BC70-2A Second bathroom control - MC91Q-2A
Cable (optional)	Non-polarized two core cable

*Note 1:* The default factory setting is 50°C or 55°C for REU-V1616W / REU-V1620W. The unit can be ordered from Rinnai to be pre-set to any of the other temperatures listed. The unit can be pre-set to any of the temperatures listed by a suitably qualified person. Controllers are available with default temperatures up to 75° C. When fitted with controllers, only temperatures not exceeding the default temperatures can be selected. When fitted without controllers, the unit will deliver water at the default temperature.

## REU-V2018W / REU-V2020W

Type of appliance	Temperature controlled continuous flow gas hot water system
Operation	With / without remote controls, mounted in kitchen, bathroom etc
Exhaust system	Forced Flue
Rinnai model number	REU-V2020W (Infinity 20) REU-V2018W (Infinity 18)
Installation	Externally mounted
Dimensions	Width - 350 mm Height - 530 mm Depth - 170 mm
Weight	15.5 kilograms
Gas consumption (Min. / Max.)	Natural gas : 160 ~ 20 MJ/h Propane gas : 160 ~ 21 MJ/h
Output (kW) (Min. / Max.)	36.3 / 4.5
Connections	Gas connection - R3/4 (20A) Cold water connection - R1/2 (15A) Hot water connection - R 1/2 (15A)
Ignition system	Direct electronic ignition
Electrical consumption	Normal - 55 W Standby - 6 W (with 1 remote control) Anti-frost protection - 74 W
Hot water capacity (Raised 25°C)	2.5 to 20 L/min
Thermal efficiency	80%
NOXaf	37 ppm
Temperature range (with remote)	Kitchen controller : 37 ~ 55°C Bathroom controller: 37 ~ 50°C
Default temperature control (without remote)	40°C, 43°C, 50°C, 55°C (factory setting), 65°C, 75°C (set by combination of dip switches on PCB)
Water Temperature control	Simulation feedforward and feedback
Water flow control	Water flow sensor, Electronic water flow control device
Minimum operating water pressure	10 kPa
Nominal operating water pressure	150 kPa ~ 830 kPa
Minimum operating water flow	2.4 L/min
Maximum operating water flow	20 L/min (REU-V2020W) / 18 L/min (REU-V2018W)
Power supply	Appliance - AC 240 Volts 50 Hz Remote control - DC 12 Volts (Digital)
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 2060 kPa, Closes: 1470 kPa Combustion fan rpm check - Integrated circuit system Over current - Glass fuse (3 Amp)
Deluxe remote control (optional)	Kitchen control - MC-91Q-2A - MC70-2A Bathroom control - MC91Q-2A - BC70-2A Second bathroom control - MC91Q-2A
Cable (optional)	Non-polarized two core cable

*Note 1:* The default factory setting is 50° C or 55°C for REU-V2018W / REU-V2020W.

The unit can be ordered from Rinnai to be pre-set to any of the other temperatures listed. The unit can be pre-set to any of the temperatures listed by a suitably qualified person.

Controllers are available with default temperatures up to 75° C. When fitted with controllers, only temperatures not exceeding the default temperatures can be selected. When fitted without controllers, the units will deliver water at the default temperature.



## Sensors and Safety Devices

- Heat Exchanger Thermistor: Measures hot water temperature at heat exchanger outlet. If water temperature reaches a predetermined limit, gas supply is stopped.
- Hot Water Delivery Thermistor: Measures hot water temperature at the outlet valve (i.e. the ‘mixed’ temperature).
- Flame Rod: Monitors combustion characteristics inside the combustion chamber. If the flame fails, gas supply is stopped.
- Overheat Switch: Situated on the heat exchanger, gas supply is stopped when water temperature reaches 97°C for a number of seconds.
- Fusible Link: Situated on the heat exchanger, electrical power supply is stopped if the temperature exceeds 129°C.
- Water Pressure Relief Valve: Safeguards the water circuit against excessive inlet pressure. Opens at 2060 kPa, closes at 1470 kPa.
- Electrical Fuse: (3A glass fuse) prevents against over-current.  
Surge Protector: prevents against over-current.
- Boil Dry Prevention: If water flow sensor detects no flow, gas supply is stopped.
- Combustion Fan Speed Sensor: In case of combustion fan defect (no rotation of fan) gas supply is stopped.
- Temperature Cutout: If the delivered hot water temperature rises above the required delivery temperature for a number of seconds, the gas supply is stopped.

## Combustion Specifications - REU-V1616W / REU-V1620W

Gas Type	Injector Size (mm) Upper / [Lower]	Nominal TPP (kPa) **		Gas Input (MJ/hr)	
		Low	High	Low	High
Natural	ø 0.85 [ø 1.30]	0.181 2.05	0.883 1.13	18.8	125
Propane	ø 0.7 [ø 1.05]	0.178 2.75	0.814 2.75	18	125

## Combustion Specifications - REU-V2018W / REU-V2020W

Gas Type	Injector Size (mm) Upper / [Lower]	Nominal TPP (kPa) **		Gas Input (MJ/hr)	
		Low	High	Low	High
Natural	ø 0.85 [ø 1.3]	0.181 2.05	0.922 1.13	20	160
Propane	ø 0.7 [ø 1.05]	0.187 2.75	0.827 2.75	21	160

\*\* The TPP is measured with the cover off the appliance at the regulator test point with supply pressures of 1.13 kPa (NG) and 2.75 kPa (Propane).

### 3. Water Flow Rates and Pressures

---

#### Water Flows

Table 1 shows unmixed and mixed water flow rates and approximate gas consumptions for various temperature rises. The unmixed flow rates are the flow rates available at the given temperature rise directly at the outlet of the water heater. The mixed water flow rates are available at the given temperature rise by mixing hot water from the outlet of the water heater with cold water from the mains supply.

Water Flows can also be calculated by the following formula :

Q = Heat energy available in kW = 28 kW for the REU-V1616W / REU-V1620W

C = Specific heat of water = 4.2KJ/Kg °C. C does not change for the purpose of this calculation.

$\Delta T$  = Temperature rise required (°C)

Example:

What is the flow rate available with an incoming water temperature of 10°C and a required temperature of 20°C?

$$\Delta T = 20 - 10 = 10^{\circ}\text{C}$$

$$Q = 28$$

$$C = 4.2$$

$M = 60 \times ( 28 / (4.2 \times 10) ) = 40 \text{ l/min}$ . Since 40 is greater than 16 this flow rate is mixed. This result corresponds with the value in Table 1.

#### REU-V2018W and REU-V2020W

Q = Heat energy available in kW = 36 kW for the REU-V2018W / REU-V2020W

C = Specific heat of water = 4.2 KJ/Kg °C. C does not change for the purpose of this calculation.

$\Delta T$  = Temperature rise required (°C)

Example:

What is the flow rate available with an incoming water temperature of 10°C and a required temperature of 20°C?

$$\Delta T = 20 - 10 = 10^{\circ}\text{C}$$

$$Q = 28$$

$$C = 4.2$$

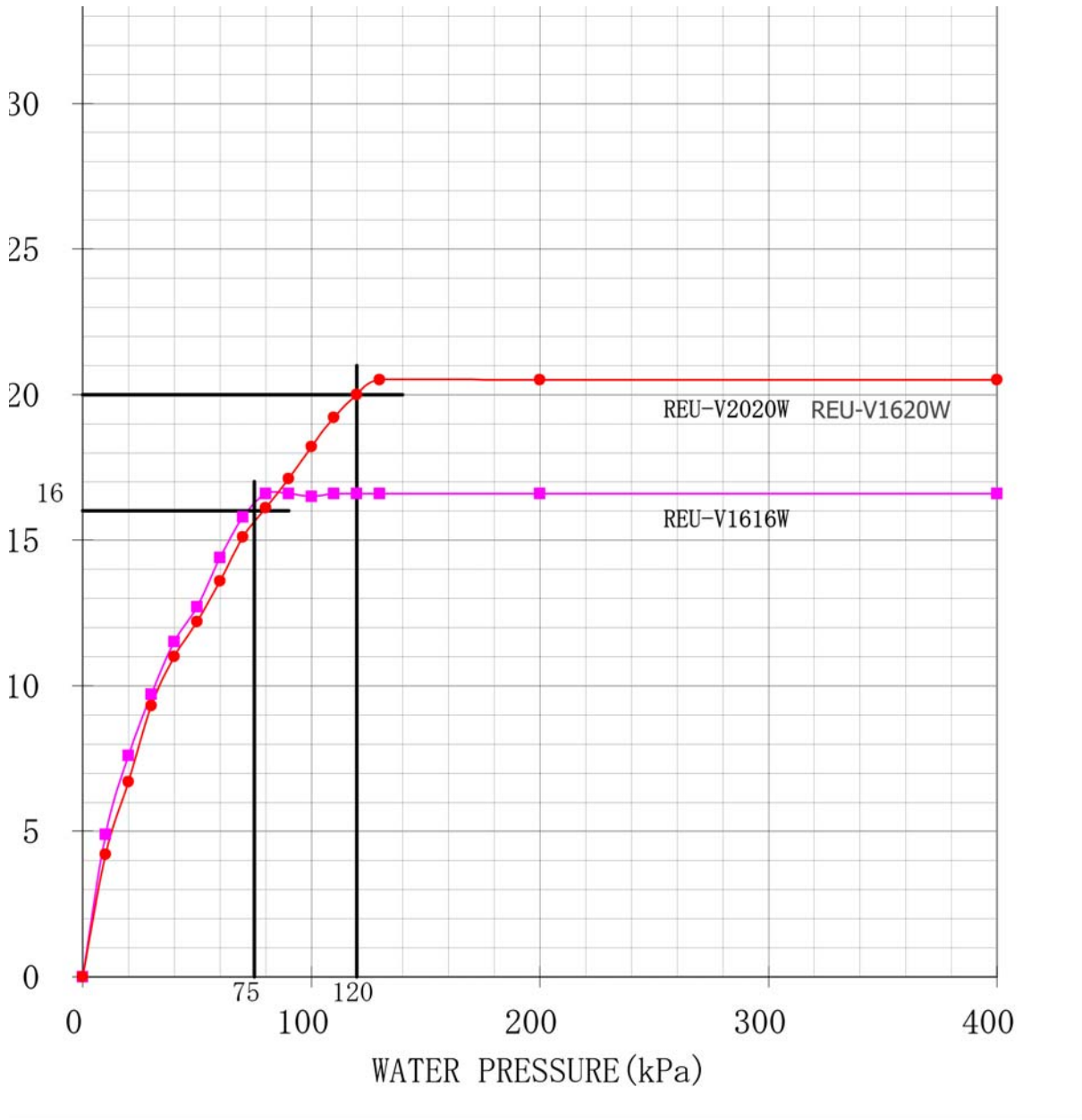
$M = 60 \times ( 28 / (4.2 \times 10) ) = 40 \text{ l/min}$ . Since 40 is greater than 20 (18) this flow rate is mixed. This result corresponds with the value in Table 1.

**Table 1: Approximate Water Flows & Gas Usage - REU-V1616W/V1620W/V2020W**

Models (All Pre-set Temperatures)	Temp Rise (°C)	5				10				15				20							
		L/sec	L/min	L/hr	Min Water Pressure (kPa)	Approx Gas Cons. (MJ/h)	L/sec	L/min	L/hr	Min Water Pressure (kPa)	Approx Gas Cons. (MJ/h)	L/sec	L/min	L/hr	Min Water Pressure (kPa)	Approx Gas Cons. (MJ/h)	L/sec	L/min	L/hr	Min Water Pressure (kPa)	Approx Gas Cons. (MJ/h)
		Temp Rise (°C)				25				30				35				40			
REU-V1616W - Ext.	18-125 20-125	0.27	16	960	72	25	0.27	16	960	72	50	0.27	16	960	72	75	0.27	16	960	72	100
REU-V2020W - Ext.	21-160	0.33	20	1200	115	31	0.33	20	1200	115	62	0.33	20	1200	115	93	0.33	20	1200	115	124
Models (All Pre-set Temperatures)	Temp Rise (°C)	25				30				35				40							
REU-V1616W	18-125 20-125	0.27	16	960	72	125	0.22	13.2	792	60	125	0.19	11.4	684	44	125	0.17	10.2	612	35	125
REU-V2020W	21-160	0.33	20	1200	115	155	0.29	17.4	1044	87	160	0.25	15	900	64	160	0.22	13.2	792	50	160
Models (All Pre-set Temperatures)	Temp Rise (°C)	45				50				55				60							
REU-V1616W	18-125 20-125	0.15	9	540	29	125	0.13	8	480	24	125	0.12	7.2	434	21	125	0.11	6.6	396	20	125
REU-V2020W	21-160	0.19	11.4	684	42	160	0.17	10.2	612	35	160	0.16	9.6	576	29	160	0.14	8.4	504	26	160

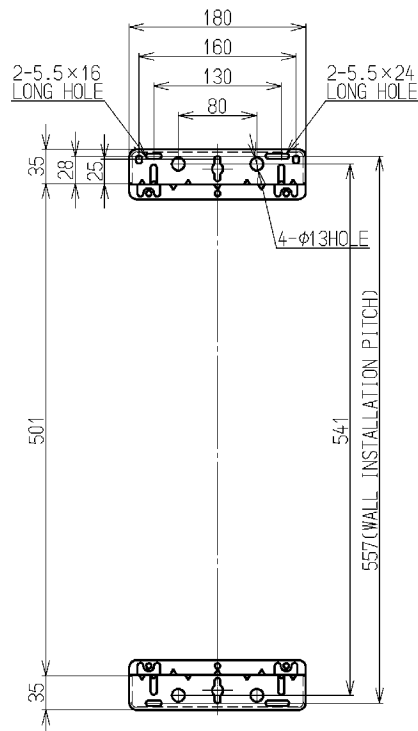
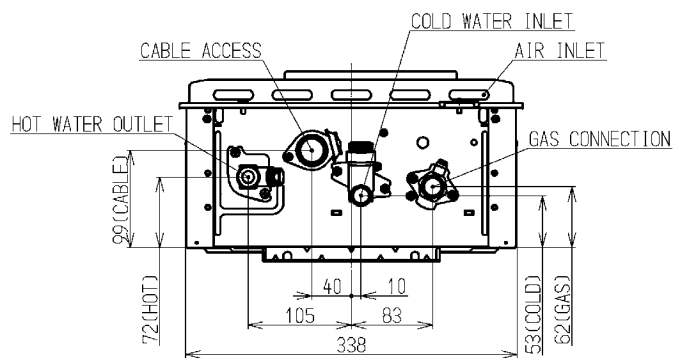
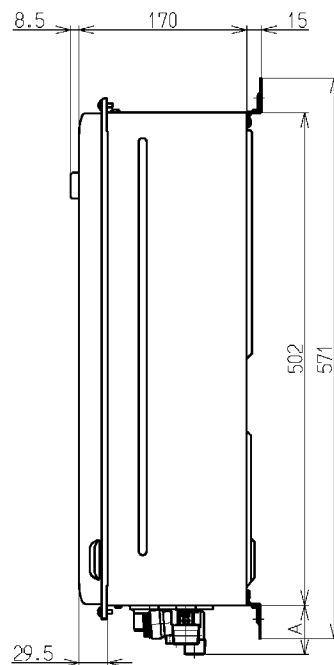
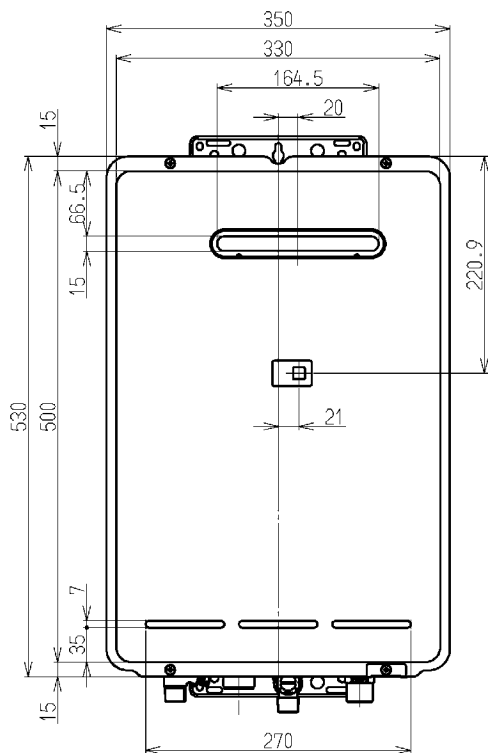
## Water Pressure

As seen in the table below a minimum supply pressure of 80 kPa is required to operate at the rated flow of 16 L/min. In an actual installation, pressure losses in the plumbing system also need to be considered.



# 4. Dimensions

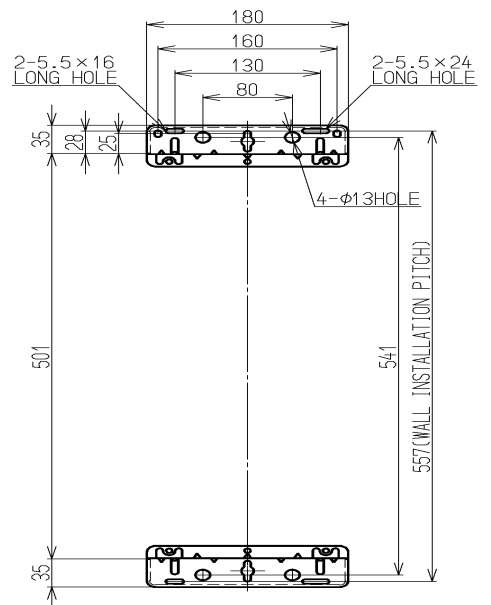
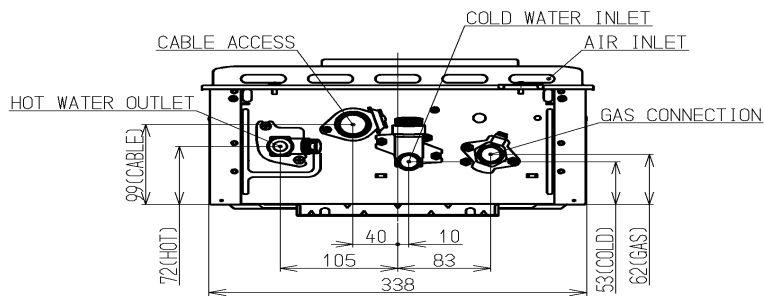
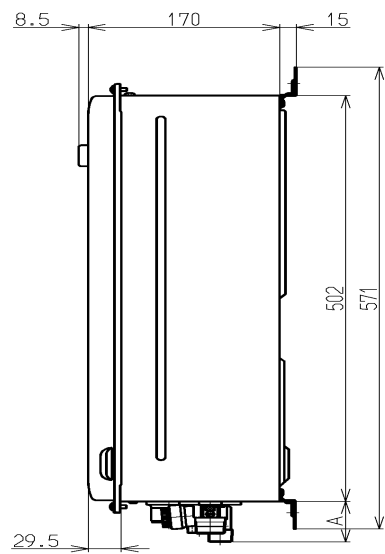
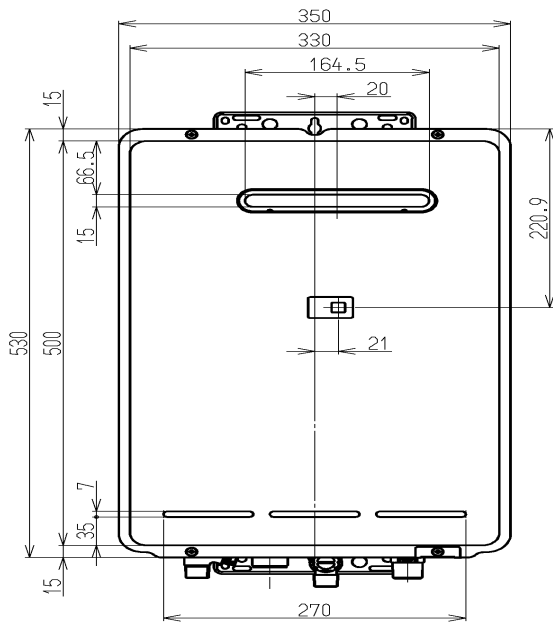
## REU-V1616W / REU-V1620W



(mm)

	A DIMENSION
GAS	40
COLD	50
HOT	39
CABLE ACCESS	26

# REU-V2018W / REU-V20202W



(mm)

	A DIMENSION
GAS	40
COLD	50
HOT	39
CABLE ACCESS	26

## 5. Smartstart

At least one temperature controller model MC-91Q must be used in conjunction with the water heater and the Smartstart® system. Alternatively, if Temperature Controllers cannot be used a manual activation switch is available. See separate service manual.

The installation of the water heater and temperature controllers must be performed in accordance with the installation instructions supplied with the water heater.

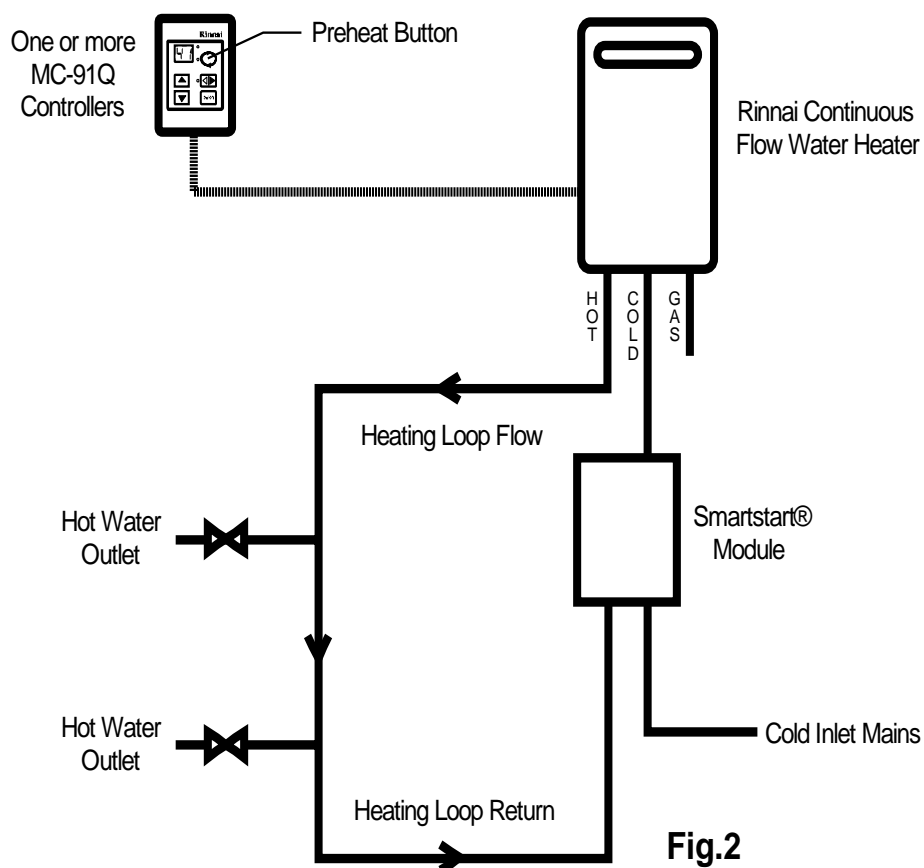
The Smartstart® system is designed for domestic installations. However, it may be suitable for certain non domestic installations. See separate service manual for more information.

### Principle of operation (Fig.2)

The "Smartstart®" 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' pipework principle. This results in water savings and reduced waiting time for heated water delivery from the outlet when opened.

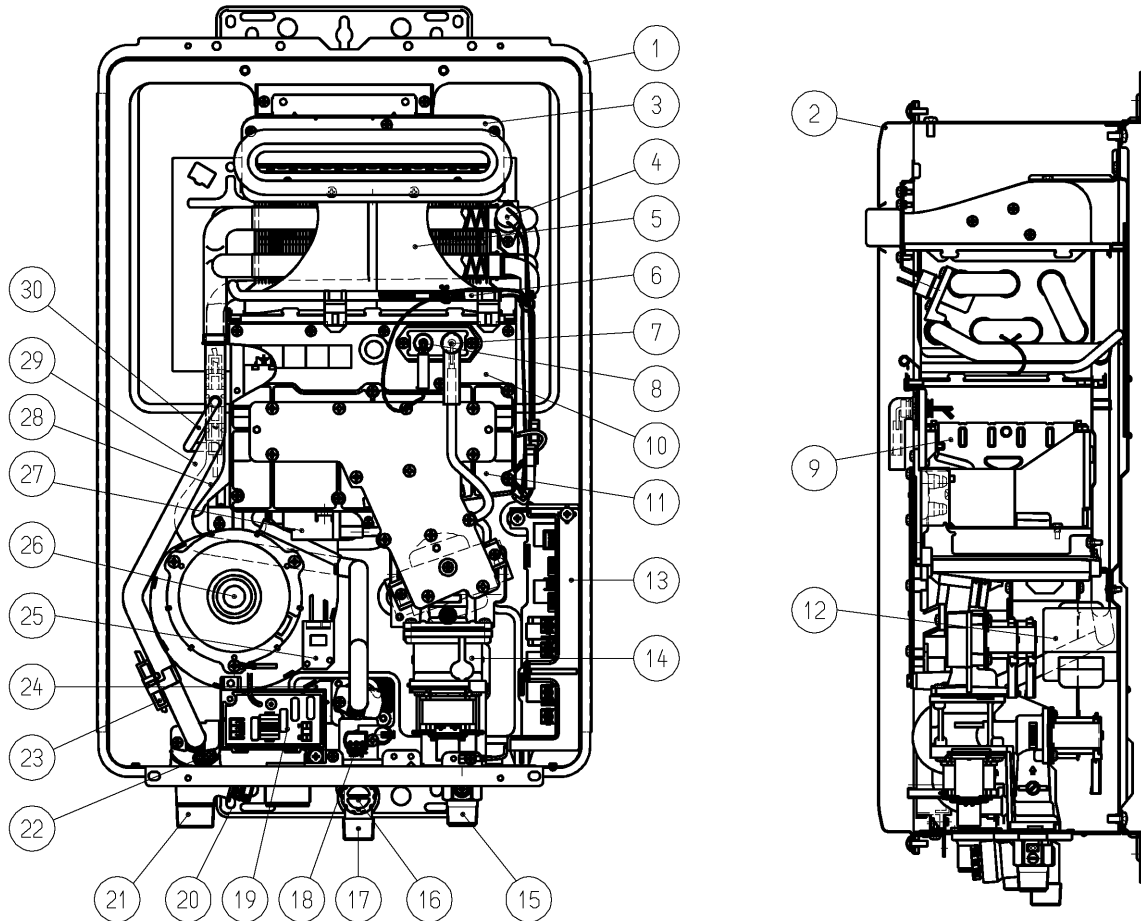
Traditional 'flow and return' systems usually keep the water in the pipework heated continuously. The Smartstart® system however, only heats the water before the outlet is opened. This results in significant energy savings because water is not heated unnecessarily whilst retaining the benefits of traditional flow and return systems.

A schematic of the Smartstart® system installed in conjunction with a Rinnai continuous flow water heater and temperature controller is shown in Fig.2 below.



# 6. Cutaway Diagram

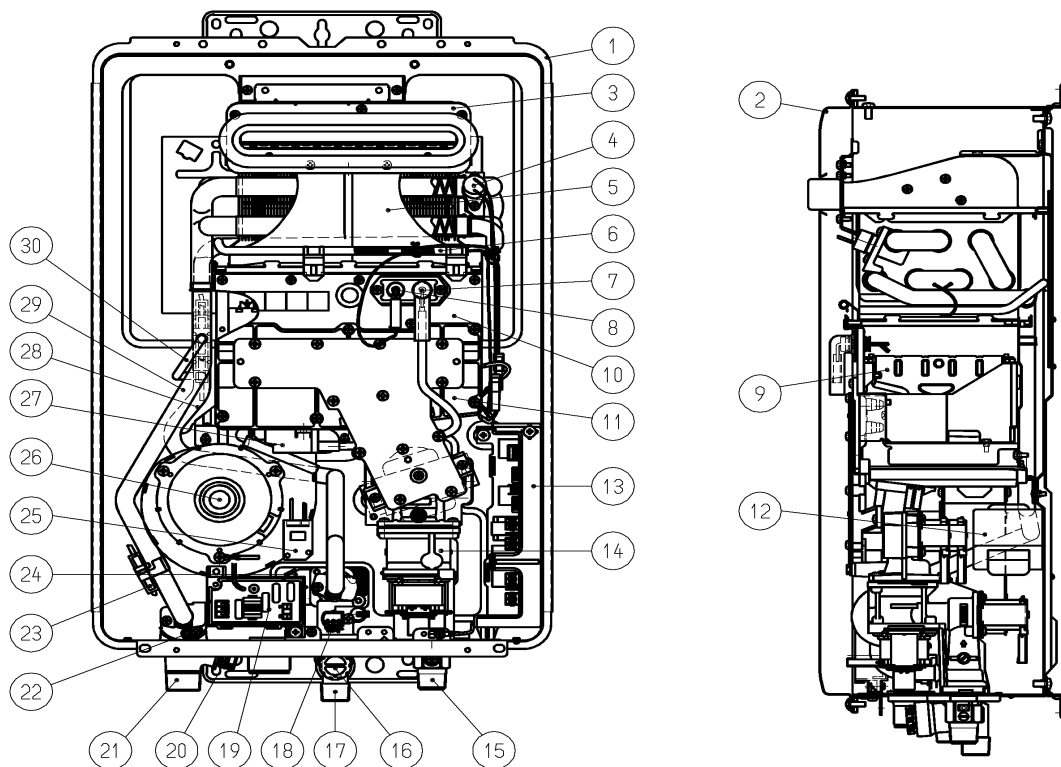
REU-V1616W / REU-V1620W



Part No.	Description	Part No.	Description	Part No.	Description
1	Casing Assembly	11	Manifold Assembly	21	Hot Water Outlet
2	Front Panel Assembly	12	Transformer	22	Ongoing Water Thermistor
3	Flue Outlet	13	P.C.B.	23	Anti-Frost Heater
4	Overheat Switch	14	Gas Control Assembly	24	Water Flow Control Device
5	Heat Exchanger	15	Gas Connection	25	Frost Sensing Switch
6	Thermal Fuses	16	Water Filter Assembly	26	Combustion Fan
7	Electrode	17	Water Inlet	27	Igniter
8	Flame Rod	18	Water Flow Sensor	28	Water Connecting Pipe
9	Main Burner	19	Surge Protector	29	Hot Water Connecting Pipe
10	Combustion Chamber Front Plate Assembly	20	Pressure Relief Valve	30	By-pass Pipe

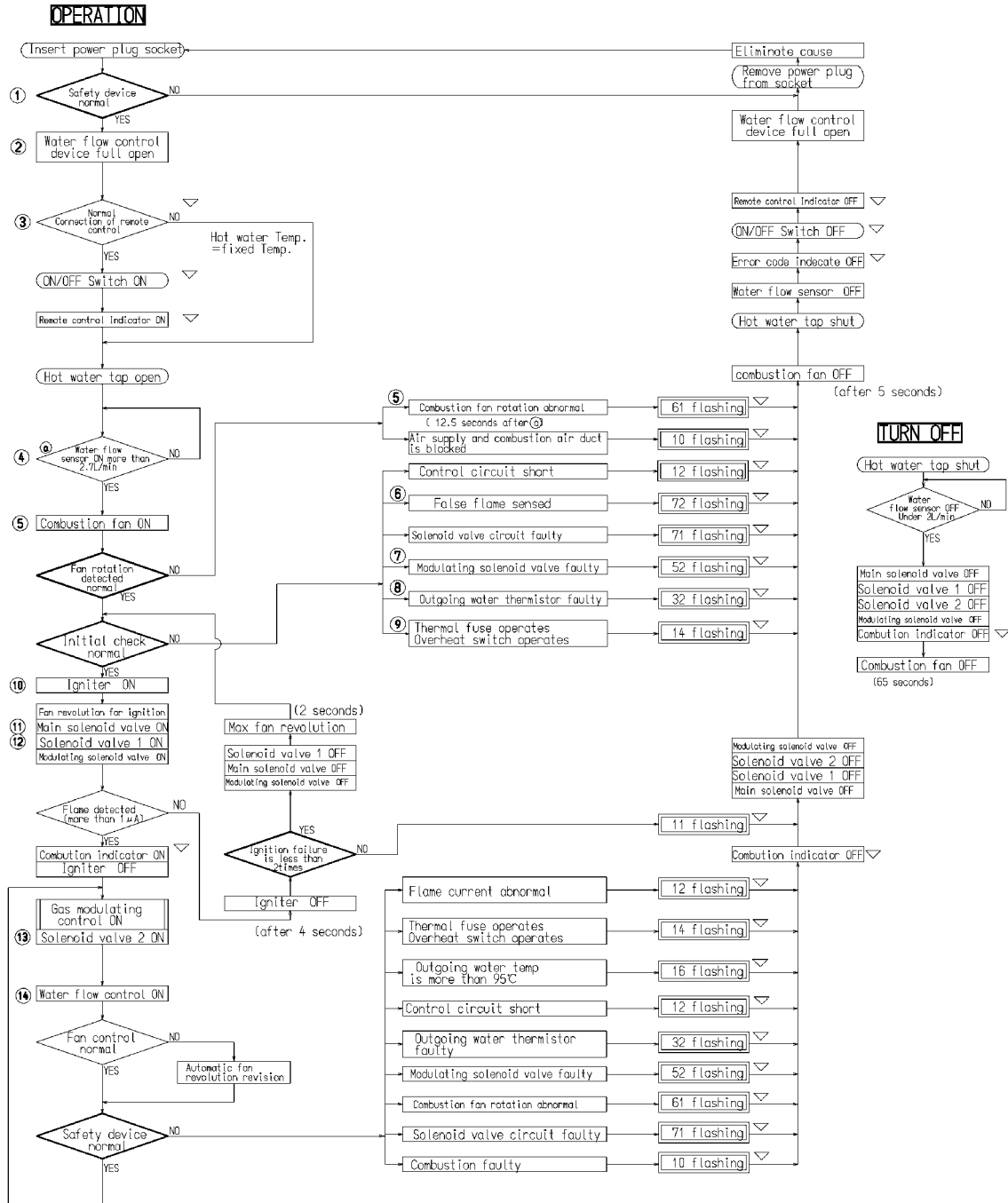


# REU-V2018W / REU-V2020W



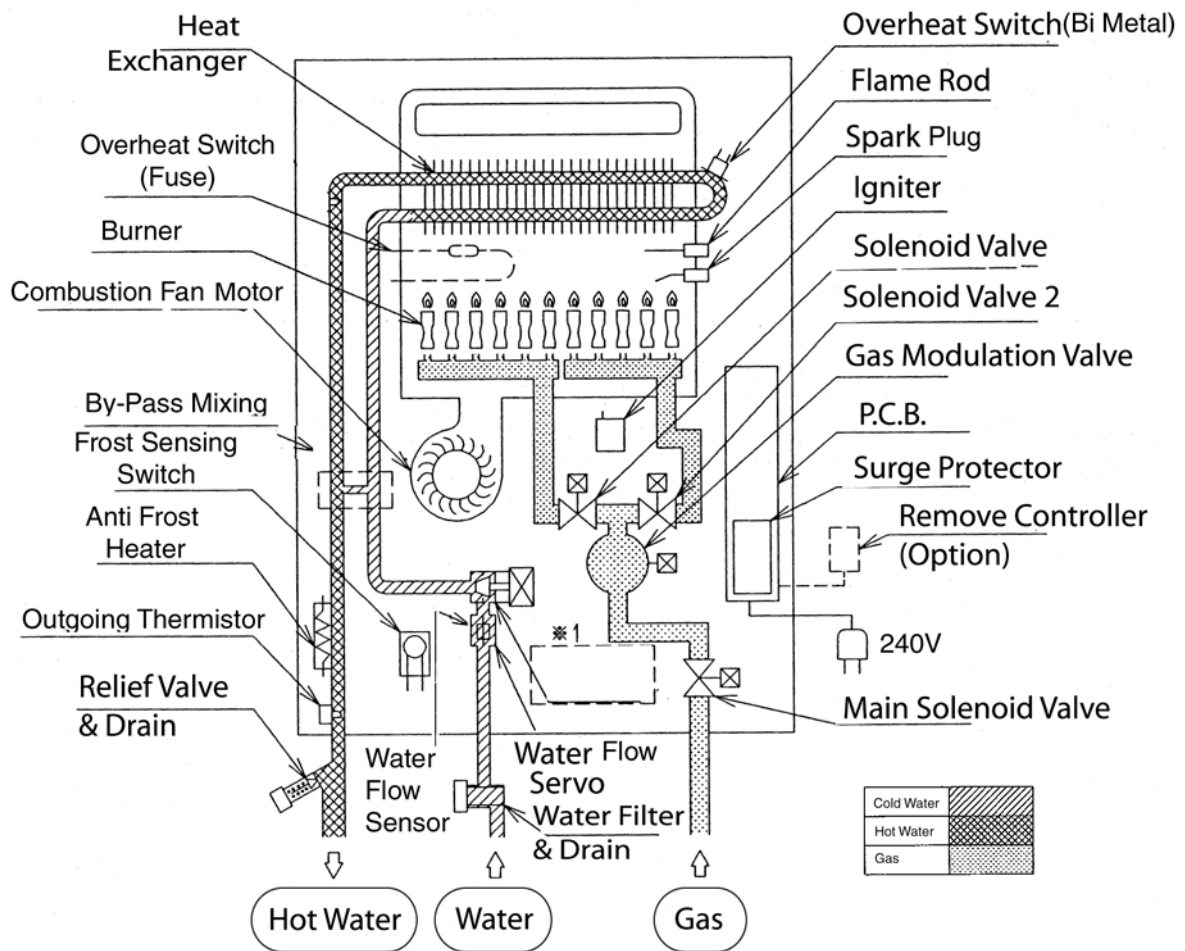
Part No.	Description	Part No.	Description	Part No.	Description
1	Casing Assembly	11	Manifold Assembly	21	Hot Water Outlet
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8	Flame Rod	18	Water Flow Sensor	28	Water Connecting Pipe
9	Main Burner	19	Surge Protector	29	Hot Water Connecting Pipe
10	Combustion Chamber Front Plate Assembly	20	Pressure Relief Valve	30	By-pass Pipe

# 7. Operational Flow Chart



▽ : Only applicable when remote control is connected

## 8. Operation Principles



### Hot Water Operation

#### 1. Ignition

- Activate controllers (if fitted) and open the hot water tap (for full details regarding operation of controllers refer to the 'How To Use Your Water Heater' booklet).
- 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 / Flow Control / Volume 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.

# 9. Main Components

---

## 1) Printed Circuit Board

- The Printed Circuit Board controls all operational functions including Air Supply Control, Gas Control, Water Flow Measurement, Water Flow Control, Combustion System and all sensors and safety devices.

## 2) Gas Flow Control

- During normal operation, the 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 three 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 PCB using signals from the water flow sensor, water flow control device, water temperature thermistors and combustion fan speed sensor. The modulating valve directs gas to the three changeover solenoid valves.
- The three changeover solenoid valves direct gas to each of the two burner banks independently. Any one or two or both of the solenoid valves may be open during operation.
- Gas flow is modulated between 18 and 125 MJ/hr for REU-V1616W/REU-V1620W and between 20 and 160 MJ/hr for REU-V2018W and REU-V2020W 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 PCB. The PCB calculates the exact water flow from the frequency of pulses generated by the turbine. A minimum flow rate of 2.4 L/min. is required for the burner to ignite.
- Water flow control is achieved through the use of servo driven water flow and fixed bypass. Servo motor is controlled by the PCB. The 'Water Flow Valve' restricts the flow of water into the heat exchanger assembly if the programmed temperature cannot be achieved. During normal operation, cold water from the inlet valve is mixed with hot water from the heat exchanger outlet.
- The 'Bypass' mixes cold and hot water to ensure hot water delivery temperature over the available range of flow rates.

## 4) Air Supply Control

- Air for combustion is supplied by a centrifugal fan driven by a variable speed DC motor. The voltage to the motor is determined by the 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 PCB. From the voltage 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:

- Aluminium alloy manifold with a total of 28 integral injectors. Gas flow to each chamber is controlled by an electronic solenoid valve (refer 'Gas Flow Control' above).
- A burner assembly comprising fourteen 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 two ignition electrodes.

# 10. Remote Controls

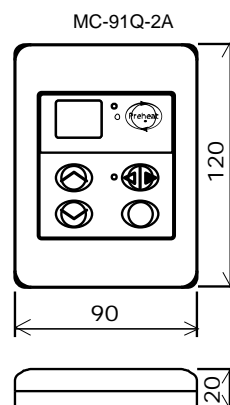
## Remote Controls

Remote Controllers are an optional extra. 'Standard' and 'Deluxe' controllers can be fitted.

Standard controllers allow temperature selection only. Deluxe controllers have temperature selection, bath-fill and voice prompting functions. For detailed information regarding controller operation refer to the 'How to use your water heater' booklet supplied with the appliance. Other manufacturers' controllers are NOT compatible with this appliance.

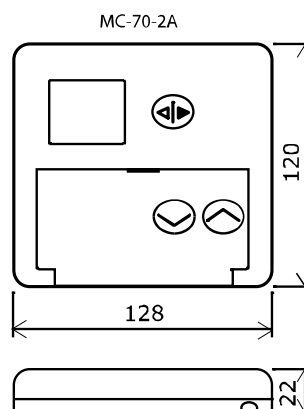
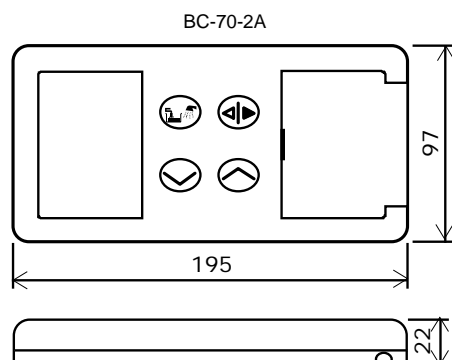
### Standard Controller (Model MC-91Q)

Up to 3 Standard Controllers can be fitted to the appliance. They are normally installed in the areas where the majority of hot water is used, for example, the kitchen, bathroom, ensuite and laundry.



### Deluxe Kitchen Remote Control (MC-70) and (BC-70A)

Deluxe controllers have 'Kitchen' (MC-70-2A) and 'Bathroom' (BC-70-2A) versions. 'Kitchen' controls are intended for the Kitchen or other convenient area where the majority of hot water is used. Bathroom Controllers are intended to be fitted in the bathroom or ensuite and allow the user to have a bath filled to the required level and temperature automatically.



:

Up to three 'Deluxe' Controllers can be connected		
Kitchen	Bathroom	Ensuite
MC91Q-2A		
MC91Q-2A		
MC70-2A	BC70-2A	
MC70-2A	BC70-2A	MC91Q-2A

## Positioning of Controllers

Controllers must be installed in shaded and clean locations. They should be fitted out of reach of children (suggested height from floor at least 1500mm). Controllers are water resistant, however, durability is improved when positioned outside the shower recess or at least 400mm above the highest part of a sink, basin or bath.

## **DO NOT INSTALL THE CONTROLLERS**

- NEAR A HEAT SOURCE, SUCH AS A COOK TOP, STOVE OR OVEN. HEAT, STEAM, SMOKE AND HOT OIL MAY CAUSE DAMAGE
- IN DIRECT SUNLIGHT
- OUTDOORS UNLESS AN ENCLOSURE IS PROVIDED WHICH PROTECTS THE CONTROLLER AGAINST SUNLIGHT AND DUST INGRESS.
- AGAINST A METAL WALL UNLESS THE WALL IS EARTHED IN ACCORDANCE WITH AS/NZ3000.

## **Remote Controller Connection**

Remote controls operate at extra low voltage (12 Volts DC) which is supplied from the appliance. Controllers are supplied with 15 m of electrical cable. The cable wires for connection to the appliance are fitted with spade terminals.

Extension cables are available from Rinnai. Alternatively, a two core sheathed (double insulated) flex with minimum cross-sectional area of 0.5 mm<sup>2</sup> can be used. Maximum cable length is 50 m.

For connection refer to the “CONNECTING REMOTE CONTROL CABLES” section.

If the front cover of the appliance contains the following text install it in accordance with Diagram 1 below:

# Water Heater and Controller installation configurations

**"THIS APPLIANCE DELIVERS WATER  
NOT EXCEEDING 50°C IN ACCORDANCE WITH AS 3498"**

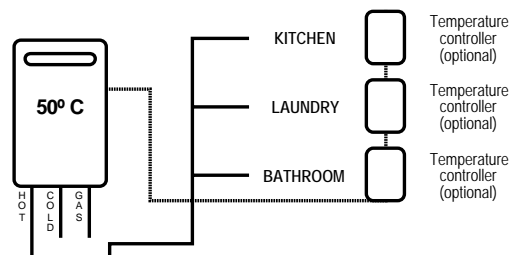


Diagram 1. 50° C Appliance

If the front cover of the appliance does NOT contain the above text install it in accordance with Diagram 2:

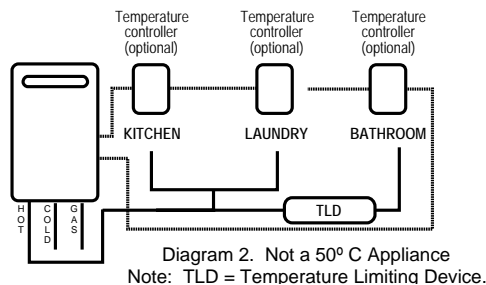


Diagram 2. Not a 50° C Appliance  
Note: TLD = Temperature Limiting Device.

**IMPORTANT:** If the appliance is to deliver water primarily for the purposes of personal hygiene in an early childhood centre, primary or secondary school, nursing home or similar facility for young, aged, sick or disabled persons as defined in AS/NZ3500.4 a Temperature Limiting Device (TLD), such as a Tempering Valve, may be required even if the appliance is set to 50° C or less. For these types of applications contact Rinnai.

## Connecting remote control cables



Do not attempt to connect the remote control cable terminals to the appliance with the power on.  
**RISK OF ELECTRICAL SHOCK.**

### Connecting One or Two Controllers

1. Isolate the power supply
2. Remove the front cover from the Appliance (4 screws) fig. 1.
3. Thread the cable(s) through the cable access hole at the base of the appliance.
4. Connect the spade connectors to the terminals marked "Remote Control" on the printed circuit board (fig. 2). Polarity is not important. Either wire colour can be connected to either terminal.
5. Replace cover of the Appliance. Ensure that the screw with the star washer is placed at the bottom right hand corner for earthing purposes.

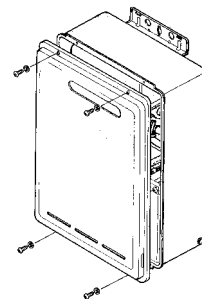
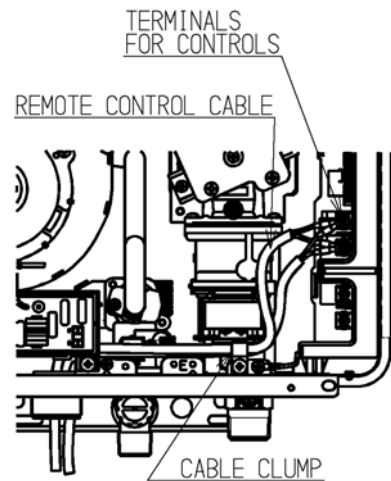


fig.1.

## Connecting Three Controllers

6. Isolate the power supply.
7. Remove the front cover from the Appliance (4 screws) fig.1.
8. Cut the spade connectors from 2 of the controller cables to be connected to the appliance (4 spade connectors should be cut off) and discard. Connect the wires from these two cables and terminate into two new spade connectors as shown in fig.3. Spade connectors are available from your local electrical component retailer.
9. Thread the 3 cables through the cable access hole at the base of the appliance. Connect the 4 spade connectors to the terminals marked "Remote Control" on the printed circuit board (fig.2). Polarity is not important. Either wire colour can be connected to either terminal.
10. Replace cover of the Appliance. Ensure that the screw with the star washer is placed at the bottom right hand corner for earthing purposes.

For the Controller in the 'KITCHEN' only, press and hold the 'Transfer' and 'On/Off' buttons simultaneously (see fig. 1) until a 'beep' is heard (approximately 5 seconds).



## Question 2: Is your water heater labelled "THIS APPLIANCE DELIVERS WATER NOT EXCEEDING 50° C IN ACCORDANCE WITH AS 3498" On the front cover ?

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 (see fig 1.) until a 'beep' is heard (approximately 5 seconds).

### 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.

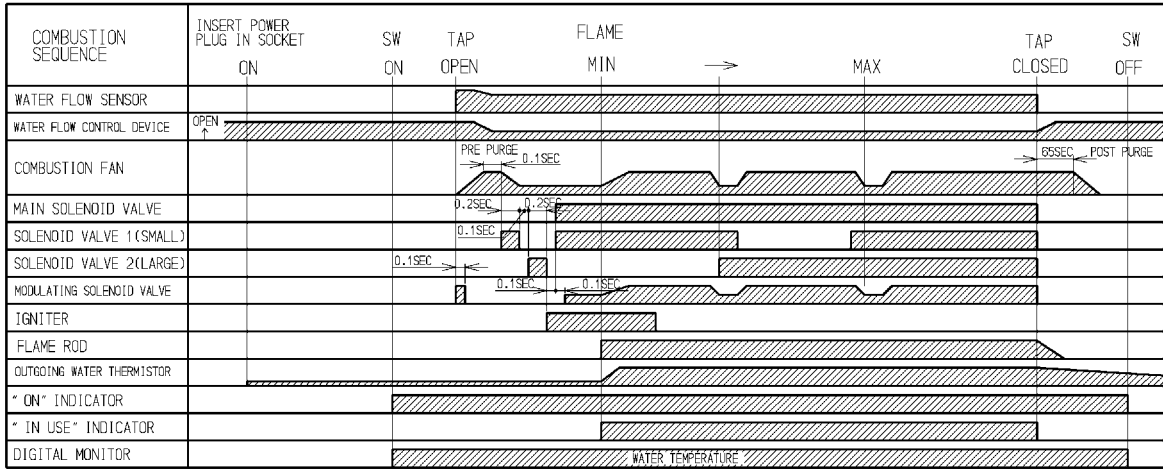
### Note:

- If the kitchen controller is replaced, repeat STEP 1 above for the replacement controller.
- If the kitchen controller 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 the bathroom to the kitchen.

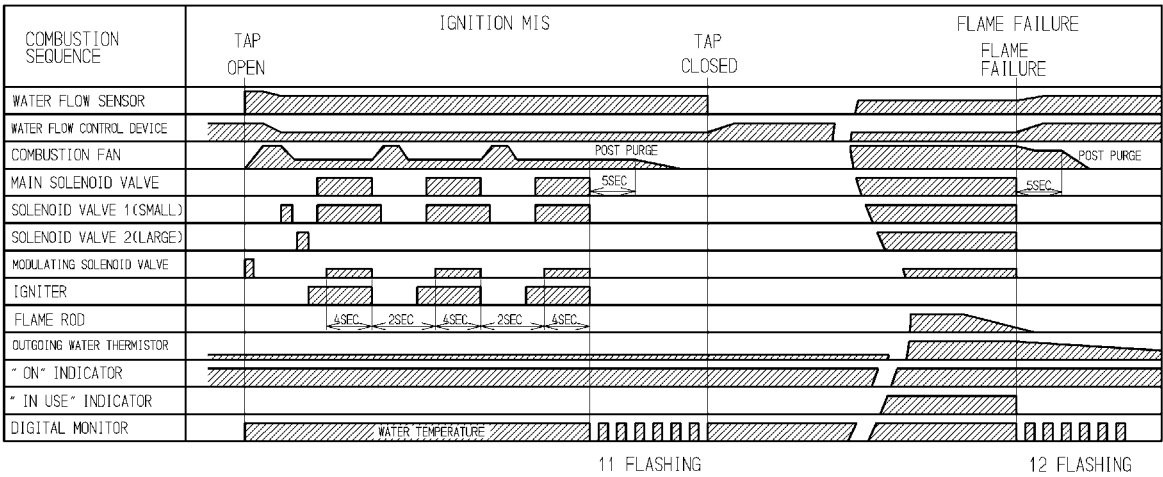


# 11. Time Charts

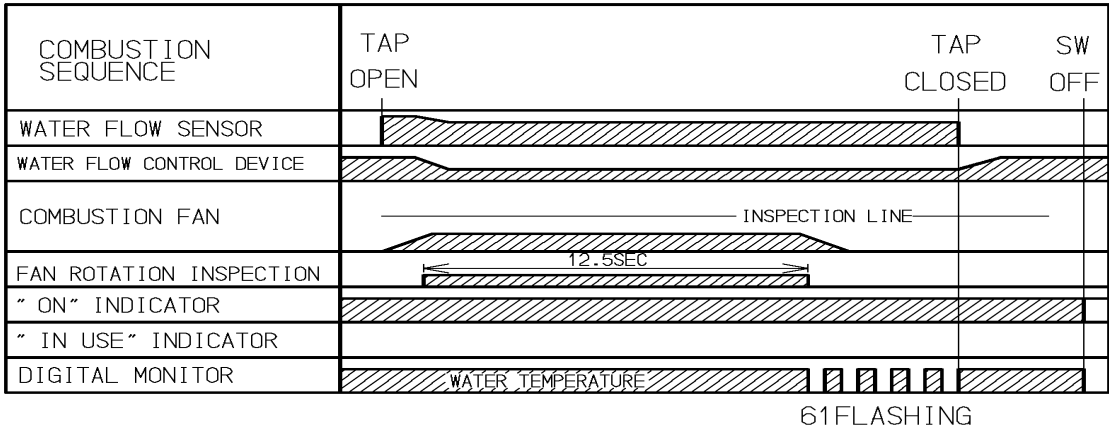
## Normal Combustion



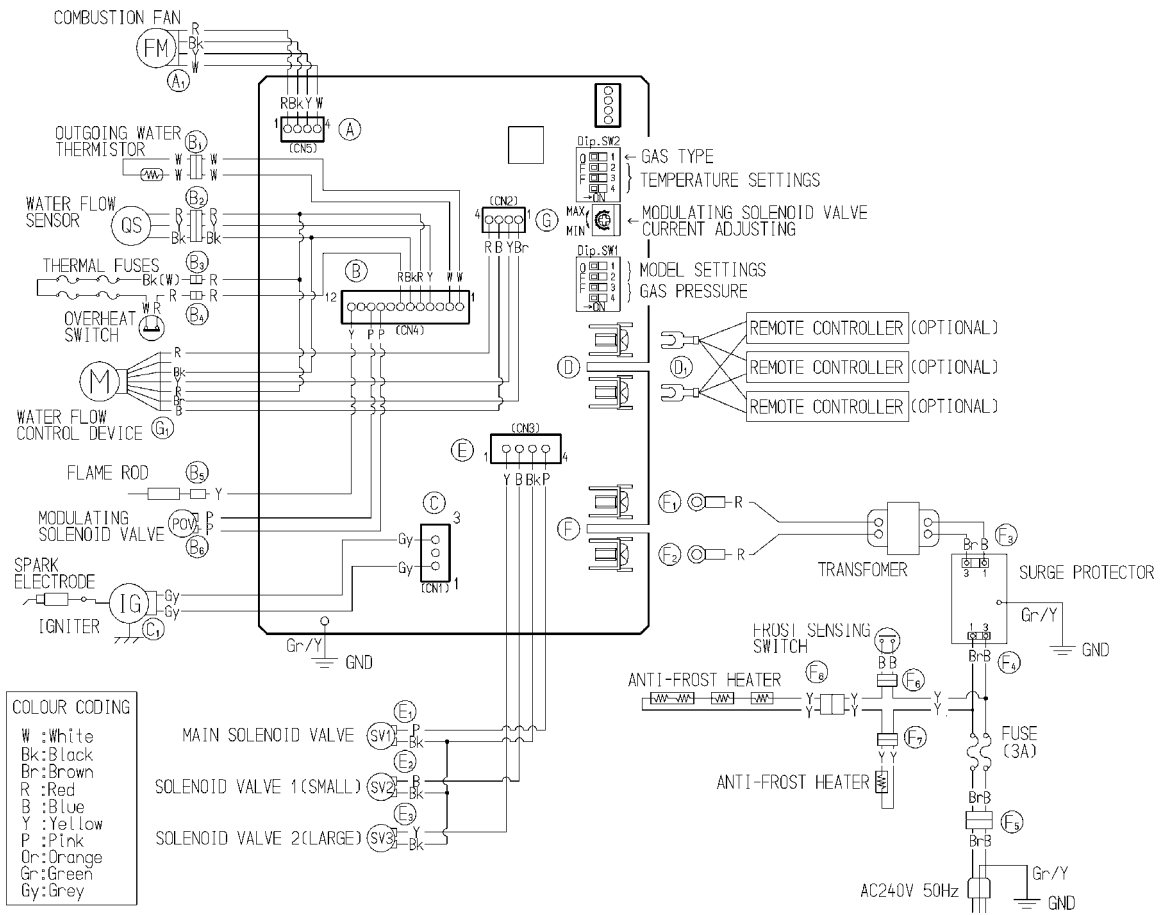
## Mis-Ignition / Flame Failure



## Abnormal Pre-Purge (Air Supply/Exhaust Blockage)

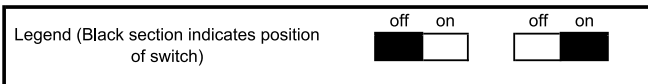
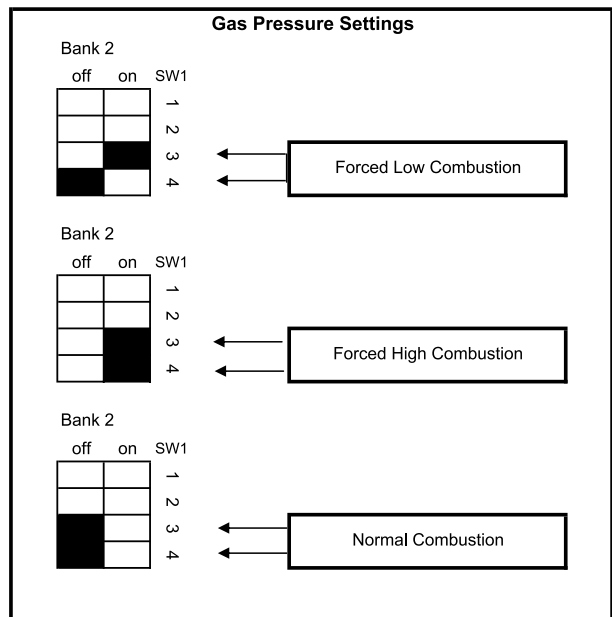
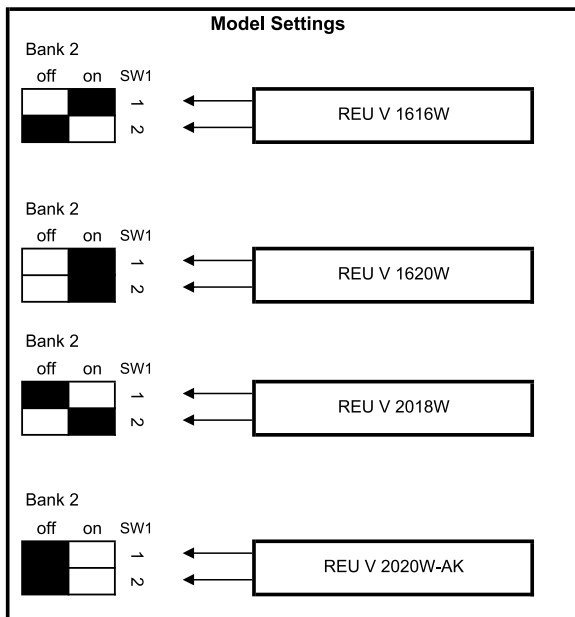
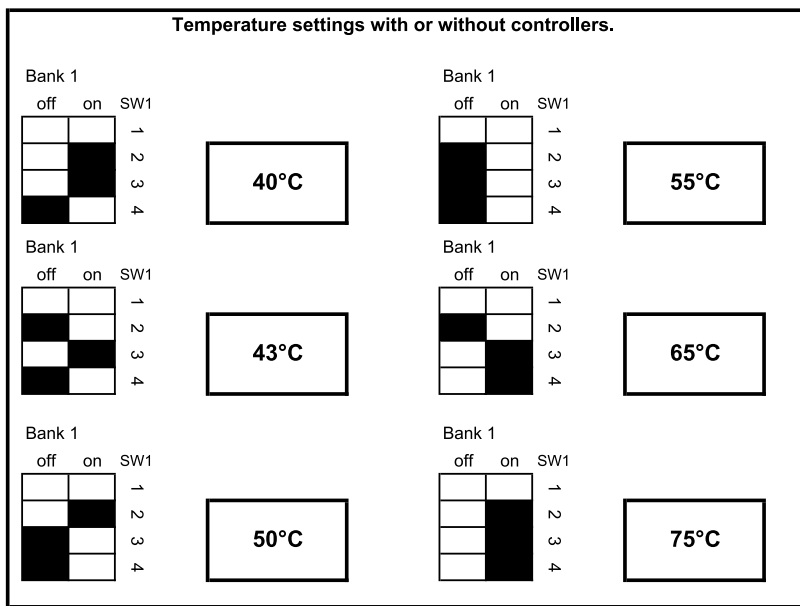
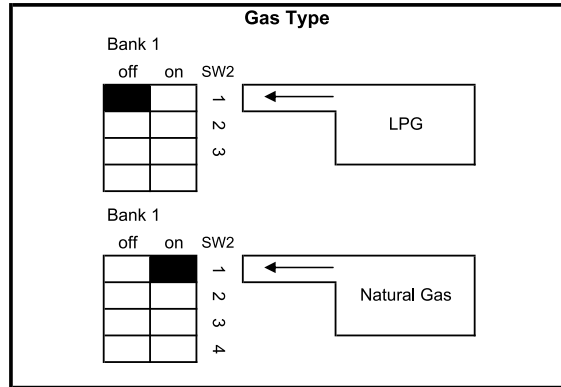
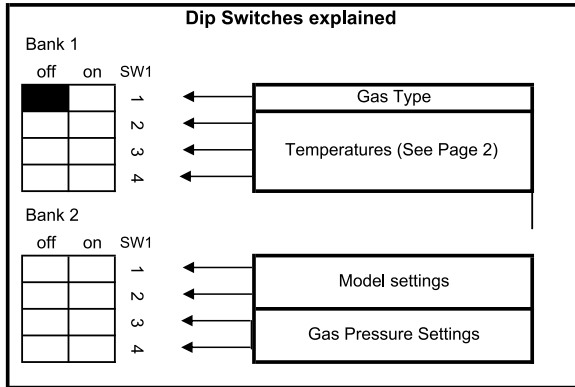


# 12. Wiring Diagram



# 13. Dip Switch Settings

Dip Switch Settings REU-V1616W-AK, REU-V1620W, REU V2018W-AK & REU-V2020W-AK



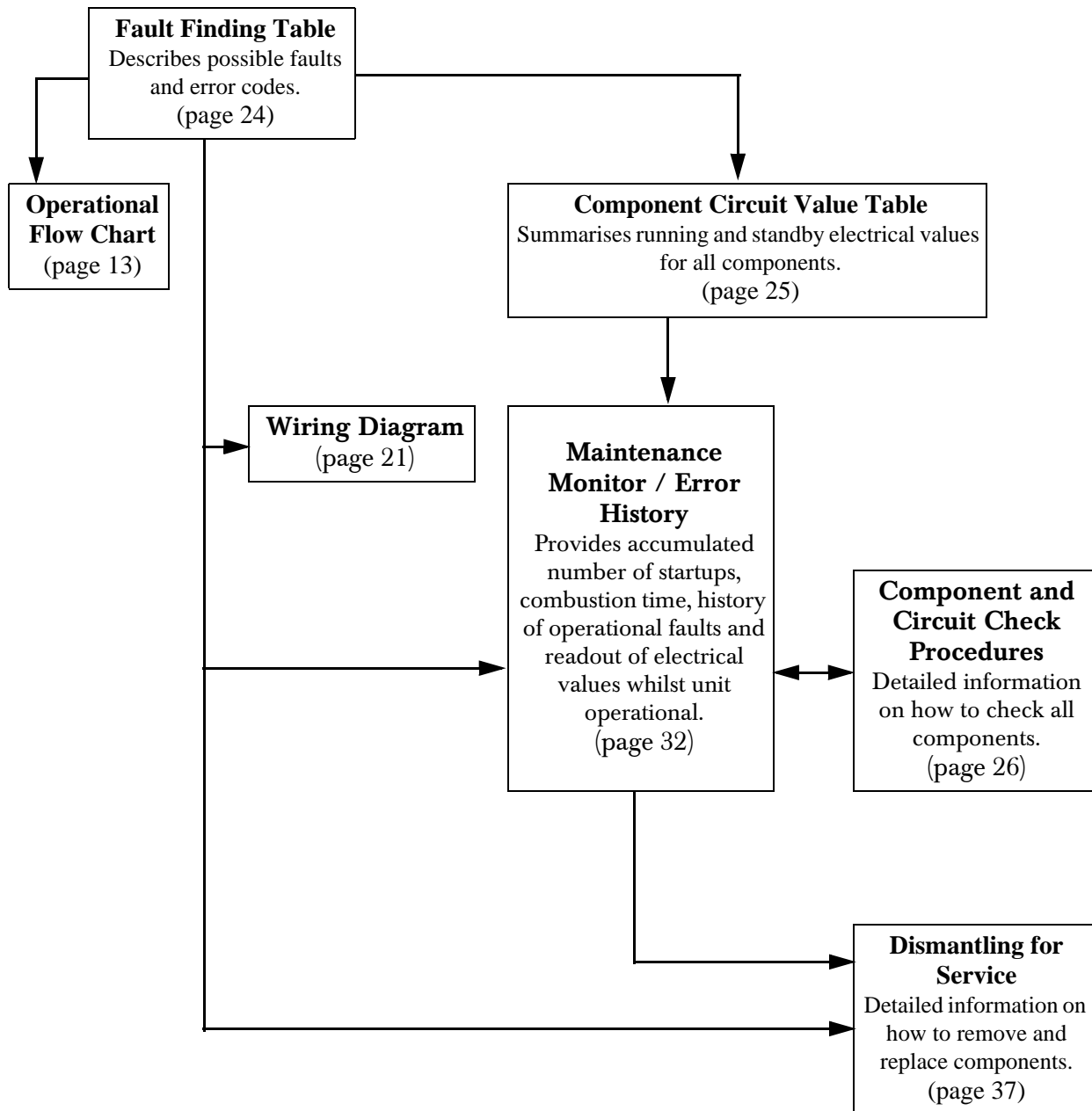
01-December-2004

# 14. 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	Table	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.	E	1. Check blockage of air intake/flue outlet. 2. Check combustion fan.
11	No ignition. Unit stops without flame igniting	C	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 (page 22) c. Confirm test point pressures (page 26).
16	Over temperature warning. Unit operates, then stops.		1. Confirm "Gas Type" and "Combustion" dip switch settings (page 22) 2. Confirm test point pressure (page 26)
		C	3. Check gas valves
		D	4. Check water flow sensor
		B	5. Check water flow servo
		A	6. Check heat exchanger outlet temperature thermistor 7. Check hot water outlet temperature thermistor
32	Outlet water thermistor flow	A	Check hot water outlet thermistor
33	Heat exchanger thermistor error	A	Check heat exchanger thermistor
52	Modulating solenoid valve fault. Unit stops without flame ignition.	C	Check modulating solenoid valve
61	Combustion fan rotation error	E	Check combustion fan
65	Water flow control device error. Water flow is not controlled. Water temperature too low.	B	Check water flow servo
71	Solenoid valve circuit error. Unit does not operate.	C	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 remote controllers (if fitted).		1. Check power cord plugged in and supply turned on. 2. Check power supply voltage. 3. Check electrical fuse. 4. Check transformer.
		C	5. Check gas valves
			6. Check sparker unit. 7. Check earth leads and connections. 8. Check for short circuits. 9. Check remote controller(s) - if fitted.
		D	1. Check water flow sensor. 2. Check flame rod.
		A	3. Check heat exchanger outlet thermistor.
		A	4. Check hot water outlet thermistor.
		E	5. Check combustion fan.
			6. Check the sparker unit.
		C	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 controller(s) fitted.	A	1. Check hot water outlet thermistor. 2. Check heat exchanger outlet thermistor.
		C	3. Check gas valves
		B	4. Check water flow servo.
			5. Check bypass servo.
		F	1. Check anti-frost heater components 2. Check frost sensing switch

# 15. Component Circuit Value Table

Table reference	Component	Measurement Point		Normal Value	A Note
		CN	Wire Colour		
	Surge Protection		B-Br	AC207~264V	
	Water Flow Control Device	G <sub>1</sub>	R(CN2-NO.4)-B	±DC11~13V (Only When Operating)	Operate Electricity
			R(CN4-NO.5)-Bk	DC11~13V	Control Electricity
			Bk-Y	Below DC1V (Limiter On)	Full Open Position
				DC4~6V (Limiter Off)	
Bk-Br	Below DC1V (Limiter On)	Full Close Position			
	DC4~6V (Limiter Off)				
	Remote Control	D	(TERMINAL)	DC11~13V	
3	Water Flow Sensor	B <sub>2</sub>	R-Bk	DC11~13V	On 2.4L/min (33Hz) Over 1980 PULSE/min Off 1.7L/min (23Hz) Below 1380 PULSE/min
			Y-Bk GND	DC4~7V (Pulse 20~320Hz)	
8	Combustion Fan	A <sub>1</sub>	R-Bk	DC15~46V	
			Y-Bk	DC11~13V	
			W-Bk GND	DC5~10V (33~400Hz)	
	Flame Rod	B <sub>5</sub>	Y-FLAME ROD	Over DC1μA	Flame Condition
	Modulating Valve	B <sub>6</sub>	P-P	DC2~15V 65~85Ω	
2	Outgoing Thermistor	B <sub>1</sub>	W-W	15° C... 11.4 ~ 14.0kΩ	
				30° C... 6.4 ~ 7.8kΩ	
	Thermal Fuse	B <sub>3</sub>	R-R	Below 1Ω	
		B <sub>4</sub>	R-Bk		
	Igniter	C <sub>1</sub>	Gy-Gy	AC90~110V	
7	Main Solenoid Valve	E <sub>1</sub>	P-Bk	DC80~100V 1.7~2.1kΩ	
	Solenoid Valve 1 (Small)	E <sub>2</sub>	B-Bk	DC80~100V 1.7~2.1kΩ	
	Solenoid Valve 2 (Large)	E <sub>3</sub>	Y-Bk	DC80~100V 1.7~2.1kΩ	
1	Transformer	F	R-R	AC90~110V 11~13kΩ	
		F <sub>1</sub>	B-Br	31~36kΩ	
10	Valve Heater	F <sub>5</sub>	Y-Y	1kΩ	
	Pipe Heater	F <sub>6</sub>	Y-Y	125kΩ~156kΩ	Pipe Heater Only
10	Fan Current REU-V1616W	Gas Type	Current	On High	On Ignition
		Prop Nat	660 ± 66mA 585 ± 59mA	297Hz / 4455rpm 279Hz / 4185rpm	180Hz / 2700rpm 180Hz / 2700rpm
10	Fan Current REU-V2020W REU-V2018W	Gas Type	Current	On High	On Ignition
		Prop Nat	845 ± 85mA 770 ± 77mA	308Hz / 4620rpm 290Hz / 4350rpm	195Hz / 2925rpm 195Hz / 2925rpm
4	Gas Secondary Pressure			Secondary	
	Gas Type	Primary	High	Low	
	Propane Natural	2.75kPa 1.13kPa	0.81kPa 0.88kPa	0.18kPa 0.18kPa	

# 16. 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 and Red of the PCB connector (A).

*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 and Yellow of connector (A).

*Normal:* DC11~13V

If normal proceed to b.).

**Faulty:** Replace PCB.

b.) Measure voltages between Black and White of connector (A).

*Normal:* DC5~10V

If normal proceed to Sparker Circuit 2.

**Faulty:** Replace Combustion Fan.

## 2. Sparker Circuit

a.) Measure voltages between Grey and Grey of connector (C<sub>1</sub>).

*Normal:* AC90~110V

If Normal proceed to b.).

**Faulty:** Replace PCB.

b.) Disconnect connector (C<sub>1</sub>) and measure resistance between both terminals of the sparker.

*Normal:* 1MΩ

If not sparking, adjust or replace ignition plug.

**Faulty:** Replace Sparker.

## 3. Main Solenoid Valve (SV<sub>1</sub>) Circuit

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

a.) Disconnect Main Solenoid connector (E<sub>1</sub>) and measure resistance between Pink and Black

*Normal:* 1.7 ~2.1kΩ

If normal, proceed to b.).

**Faulty:** Replace Main Solenoid.

b.) Measure voltage between Pink-Black of Main Solenoid connector.

*Normal:* DC80~100V

If normal, proceed to Solenoid Valve SV<sub>2</sub>

**Faulty:** Replace PCB.

#### 4. Solenoid Valve 1 (SV<sub>2</sub>) Circuit

Check Solenoid 1 if error indicator “11” is displayed.

- a.) Disconnect Solenoid 1 connector (E<sub>2</sub>) and measure resistance between Blue and Black.

*Normal:* 1.7 ~2.0kΩ

If normal, proceed to b.

**Faulty:** Replace Solenoid 1.

- b.) Measure voltage between Blue and Black of Solenoid 1 connector.

*Normal:* DC80~100V

If normal, proceed to Solenoid Valve 2 (SV<sub>3</sub>) Circuit

**Faulty:** Replace PCB.

#### 5. Solenoid Valve 2 (SV<sub>2</sub>) Circuit

- a.) Disconnect Solenoid Valve 2 connector (E<sub>3</sub>) and measure resistance between Yellow and Black.

*Normal:* 1.7 ~2.1kΩ

If normal,, proceed to b.).

**Faulty:** Replace Solenoid Valve 2.

- b.) Measure voltage between Yellow and Black of Solenoid Valve connector.

*Normal:* DC80~100V

If normal, proceed to Thermal fuse Circuit.

**Faulty:** Replace PCB.

#### 6. Modulating Valve Circuit

- a.) Disconnect Modulating Valve fasten terminals and measure resistance between terminals.

*Normal:* 65~85Ω

If normal, proceed to b.).

**Faulty:** Replace Modulating Valve.

- b.) Measure voltage between Pink and Pink of Modulating Valve fasten terminal.

*Normal:* DC2.0~15V

If normal, proceed to c.).

**Faulty:** Replace PCB.

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

*Normal:* If secondary pressure changes, go to Water Flow Servo Circuit.

**Faulty:** Replace Modulating Valve.



## 7. Flame Rod Circuit

Check flame rod.

Disconnect flame rod terminal (B<sub>5</sub>), and re-operate.

“72” indicated:- Proceed to 3.

“72” is not indicated:- check for electrical leaks from the flame rod.

Measure resistance between flame rod terminal (B<sub>5</sub>) and appliance earth.

*Normal:* >1MΩ

If normal, replace PCB.

**Faulty:** Replace flame rod.

a.) Remove the Flame Rod terminal (B<sub>5</sub>) 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 (B<sub>5</sub>).

*Normal:* Voltage AC100~160V

If normal, replaced PCB

**Faulty:** Replace Flame Rod.

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

*Normal:* replace the PCB

**Faulty:** Adjust the fitting of the Flame Rod

## 8. Earth Lead

Confirm the Earth Lead connection is secure (at round terminal), and check for broken or short circuits in the lead.

If normal, check other possible causes for flame failure (is gas valve open?, is the filter blocked? etc.).

**If faulty,** tighten the earth lead, PCB, power cord and surge arrester.

## 9. Thermal Fuse Circuit

Check the Thermal Fuse.

Disconnect relay connector (B<sub>3</sub>) and measure resistance between Black and Red.

*Normal:* < 1Ω

If normal, replace PCB.

**Faulty:** Replace Thermal Fuse if after confirming there is no damage to the appliance.

## 10. Overheat Switch Circuit

Measure resistance between Overheat Switch terminals. (B<sub>4</sub>).

*Normal:* < 1Ω

If normal, replace PCB.

**Faulty:** Replace Overheat Switch.

*Note:* If Thermal fuse or Overheat Switch were faulty.

- a.) Check heater for damage
- b.) Confirm gas type and combustion dipswitch settings
- c.) Confirm test point pressure.

## 11. Water Flow Sensor

a.) Measure voltage between Red - Black of relay connector (B<sub>2</sub>).

*Normal:* DC 11~13V

If normal, proceed to b.

**Faulty:** Replace PCB.

b.) Measure voltage between Yellow - Black of relay connector (B<sub>2</sub>).

*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 17) No. 1.

## 12. Water Flow Servo Circuit

a.) Disconnect relay connector (G<sub>1</sub>), and measure voltage between Red (+) and Black (-) on PCB unit side.

*Normal:* DC11-13V

If normal: proceed to c.).

**Faulty:** Replace PCB unit.

b.) Measure voltage between Black and Yellow with relay connector (G<sub>1</sub>) connected (with no water flowing, water flow servo fully open).

*Normal:* DC4~6V

**Faulty:** Replace Water Flow Servo with Water Flow Servo.

c.) Measure voltage between Black and Brown with relay connector (G<sub>1</sub>) connected (with no water flowing, water flow servo fully open).

*Normal:* DC4~6V

**Faulty:** Replace Water Flow Servo and Water Flow Sensor.

### 13. Hot Water Outlet Thermistor Circuit

Check Hot Water Thermistor if error code “32” is displayed.

Disconnect relay connector (B<sub>1</sub>) and measure resistance White -White.

*When disconnected:* resistance >1MΩ

*When short circuit:* resistance > 1 Ω

*Normal:* Check Heat exchanger outlet thermistor

**Faulty:** Replace hot water outlet thermistor.

*Normal*

Temp.	15°C	30°C	45°C	60°C
Resistance	11.4~14 kΩ	6.4~7.8 kΩ	3.6~4.5 kΩ	2.2~2.7 kΩ

If normal proceed to 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 (B<sub>1</sub>) and measure resistance White -White.

### 14. Surge Protector

Check the fuse.

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 Electrical Fuse 13.

**Faulty:** Replace fuse/s (3Ax2). Check for a short next time it's turned off.

### 15. Electrical Fuse

a.) Measure voltage between Blue and Brown on the connector (F<sub>2</sub>)

*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 and white on the (F<sub>1</sub>).

*Normal:* AC207~264V.

**Faulty:** replace surge protector unit.

### 16. Transformer

Check for the transformer

a.) Measure the voltage between white and white on the transmission connector (F).

*Normal:* AC207~264V (11~13 Ω)

If normal proceed to b.). (11~13Ω)

**Faulty:** Check if the voltage on fuse terminals is AC207-264V.

## 17. Remote Control

Check the voltage between the 2-core remote control cable.

Measure the voltage between terminals on the remote control terminal (D).

*Normal:* DC 11~13V

If normal, replace the remote control after confirming that the cable hasn't been damaged or shorted.

*Faulty:* Because normal voltage is not given due a short circuit, despite the PCB being in normal state, check Water Flow Servo circuit.

If solution is not given from the above replace PCB.

## 18. Anti-frost Heater Circuit

a.) Disconnect relay connectors ( F<sub>4</sub> ) and ( F<sub>5</sub> ) and measure resistance between Yellow and 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<sub>4</sub> ) and ( F<sub>5</sub> ) and measure resistance between Yellow and Yellow on each connector on heater side.

*Normal:* 618Ω

If normal, proceed to c.).

*Faulty:* Replace Anti-frost Heater.

## 19. Frost Sensing Switch

a.) Disconnect relay connector ( F<sub>4</sub> ) and measure resistance between Blue and Blue.

*Normal:* < 1Ω

If normal, check wiring (AC240V circuit).

*Faulty:* Replace Frost Sensing Switch.

# 17. Maintenance Monitor / Error History

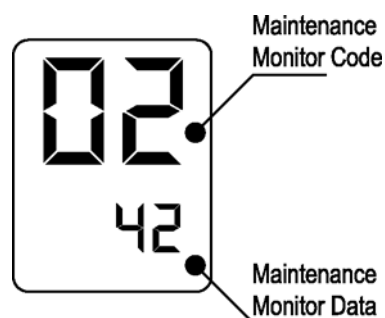
* REU-V2020W	INFINITY 20
* REU-V2018W	INFINITY 18
* REU-V1616W	INFINITY 16
* REU-V1620W	V1200

A deluxe controller (MC70-2A) should only be fitted to the above water heater models, for the purpose of enabling service personnel to locate the error history and fault find operational appliances.

NB. Use only one controller, when accessing the maintenance information, error history, as two or more remote controls may cause incorrect operation.

### 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 <b>*Note 1</b>

**\*Note 1** Fan Frequency rpm Conversion  
 $(rpm) = (Hz) \times 15$

06	Remote control connection	none	0 or 1 <b>*Note 2</b>
----	---------------------------	------	-----------------------

**\*Note 2** Remote Control Connections

Bathroom Remote

Additional remotes                      Kitchen remote

"0"                      1                      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

**To return to normal operation**

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

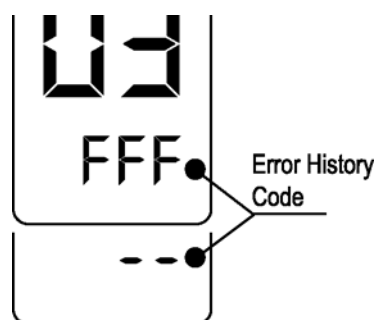
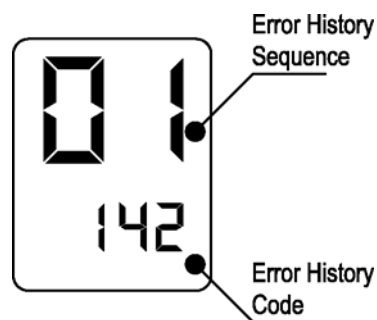
**Error History**

**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. Gas Pressure Setting Procedure



The regulator on the Infinity is electronically controlled and factory pre-set. Under normal circumstances it **does not** require adjustment during installation. Perform this procedure only if the unit is not operating correctly and **all** other possible causes for incorrect operation have been eliminated.

- 1) Turn 'OFF' the gas supply
- 2) Turn 'OFF' 240V power supply.
- 3) Remove the appliance cover.
- 4) Check gas type switches (fig. 1) are in the correct position (dip switch 1 of SW2 'ON' = NG, 'OFF' = LPG).
- 5) Attach pressure gauge to burner test point, located on the gas control. (fig. 2).
- 6) Turn 'ON' the gas supply.
- 7) Turn 'ON' 240V power supply.
- 8) If remote controllers are fitted, turn the unit 'ON' at the kitchen controller, select the maximum delivery temperature of 55°C and open a hot water tap fully. **(CAUTION: Ensure building occupants do not have access to hot water outlets during this procedure).**
- 9) Set the Infinity to 'Forced Low' combustion by setting No. 3 dipswitch of the (SW1) set of dip switches to 'ON'. (fig 3)
- 10) Check the burner test point pressure.

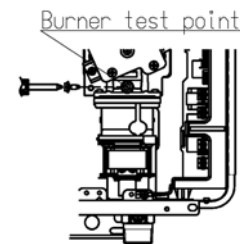
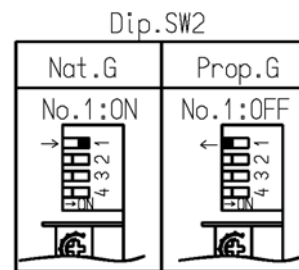
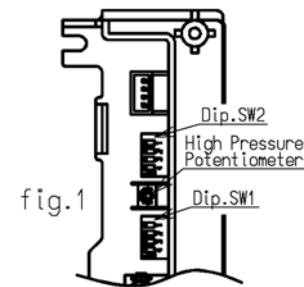


fig.2

Dip.SW1	Pressure Setting Low (kPa)	
	Nat.G	Prop.G
REU-V1616W	0.18	0.18
REU-V2020W	0.18	0.19
REU-V2018W	0.18	0.19

fig.3

Table.1

- 11) Remove rubber access plug and adjust the regulator screw on the modulating valve (fig. 4) as required to the pressure. Table 1. Replace rubber access plug.
- 12) Set the Infinity to 'Forced High' combustion by setting both No. 3 and No. 4 dip switches of the bottom (SW1) set to 'ON'. (fig. 5) ensure maximum water flow.
- 13) Check the burner test point pressure.
- 14) Adjust the high pressure Potentiometer (POT) on the Printed Circuit Board (PCB) as required to the pressure shown Table 2. (fig. 1).

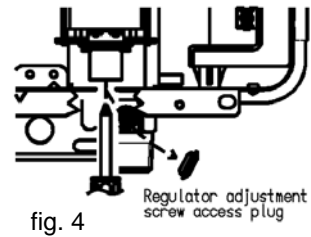


fig. 4

Dip.SW1	Pressure Setting High (kPa)	
	Nat.G	Prop.G
REU-V1616W	0.88	0.81
REU-V2020W	0.92	0.84
REU-V2018W		

fig.5

Table.2

- 15) **IMPORTANT:** Set dip switches No's 3 and 4 on the bottom (SW1) set of dip switches to 'OFF' to return the appliance to 'Normal' combustion. (fig. 6).



fig.6

- 16) Close hot water tap.
- 17) Turn OFF the gas supply and 240V power supply.
- 18) Remove pressure gauge, and replace sealing screw.
- 19) Turn 'ON' the gas supply and 240V power supply.
- 20) Operate unit and check for gas leaks at test point.
- 21) Replace the front cover of the appliance.

## Warning

DURING PRESSURE TESTING OF THE INSTALLATION ENSURE GAS COCK SITUATED BEFORE UNIT IS SHUT OFF.

FAILURE TO DO SO MAY RESULT IN SERIOUS DAMAGE TO THE APPLIANCE AND POSSIBLE INJURY.



## 19. Gas Conversion Procedure

---



### Conversion Method

**Warning-**Ensure that the power cords is disconnected from the power point (240V potential) and isolate gas supply.

1. Remove outer cover, 4 screws.
  2. Delete "Natural" from the combustion chamber cover and replace with "Propane". (Use a black marking pen).
  3. Delete gas type from small paper sticker on bottom edge of inner casing.
  4. Replace small gas label on gas inlet.
  5. Replace large gas label on top of appliance.
  6. Place "Propane" very small gas label over "Natural" on Data Plate.
  7. Lift PCB protective plastic cover up.
  8. Disconnect Flame rectification and sparker leads (2). (if needed)
  9. Remove manifold, 9 screws.
  10. Disconnect leads to solenoid (Polarized Plug).
  11. Remove Natural Gas manifold.
  12. Place the Propane manifold in the correct location ensuring,
    - The "O" rings are correctly positioned
    - No wires are trapped.
    - Manifold is marked with the correct gas type. ("A" for Propane)
  13. Carefully replace the 9 screws to secure the manifold (Including the Wire ties)
    - Reconnect the Solenoids Wires (Polarized plug Brown and Black wires).
  14. Refit flame rectification and sparker leads (2).
  15. Connect appliance to gas, water.
  16. Check for gas escapes.
  17. Connect the appliance to the electricity.
  18. Follow gas pressure setting and dipswitch setting procedures (see next page).
  19. Disconnect appliance from services.
  20. Replace front cover, star washer must be on bottom right hand screw
-

## 20. Dismantling for Service

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

<i>Item</i>	<i>Page</i>
1. <b>“Removal of Front Panel”</b> .....	38
2. <b>“Removal of the PCB Unit”</b> .....	38
3. <b>“Removal of the Water Flow Sensor and Servo”</b> .....	38
4. <b>“Removal of Sparker”</b> .....	38
5. <b>“Removal of Fan Motor”</b> .....	38
6. <b>“Removal of Outgoing Water Thermistor”</b> .....	39
7. <b>“Removal of Transformer”</b> .....	39
8. <b>“Removal of Manifold and burner”</b> .....	39
9. <b>“Removal of Gas Control”</b> .....	40
10. <b>“Removal of Heat Exchanger”</b> .....	40
11. <b>“Removal of Thermal Fuse”</b> .....	40

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.

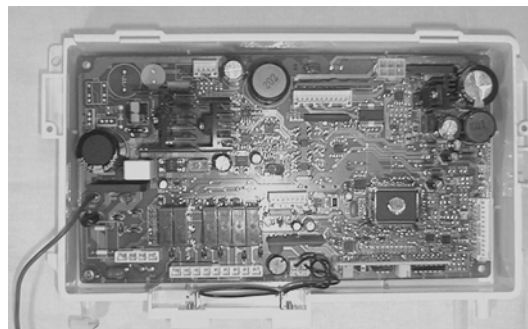
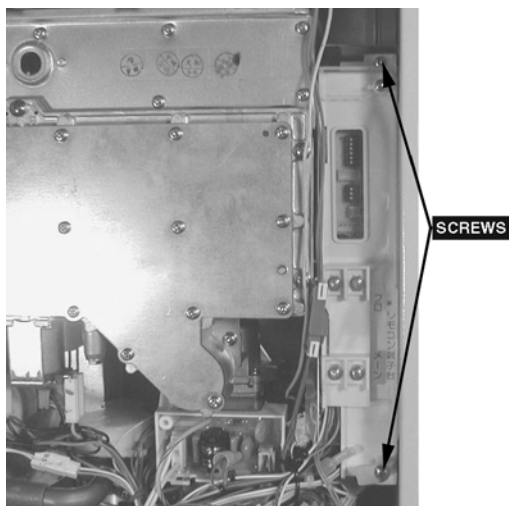
### 1) Removal of **Front Panel**

- a. Remove four (4) screws.



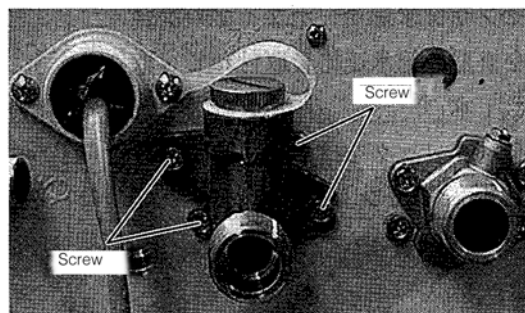
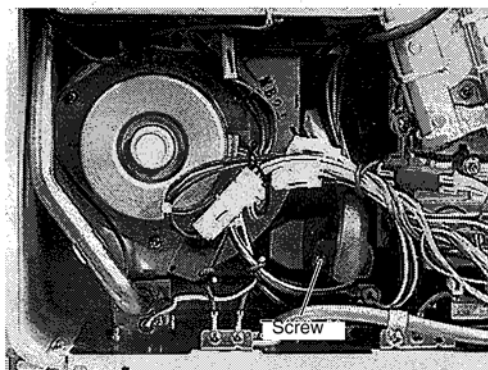
### 2) Removal of the **PCB Unit**

- a. Remove the front panel. (Refer Item 1.)
- b. Remove one (1) screw and take off plastic cover.
- c. Remove two (2) screws and take off earth wire.
- d. Remove two (2) screws and pull out two (2) red wires from transformer.
- e. Remove two (2) screws and pull off PCB unit.
- f. Remove connectors from PCB unit.



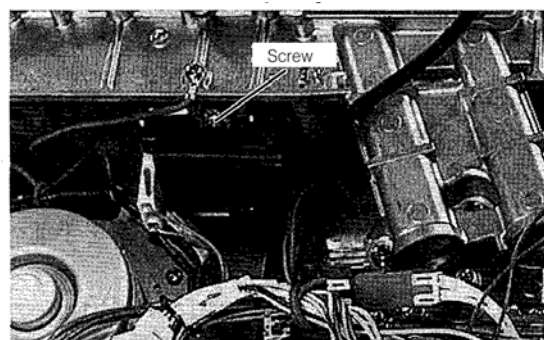
### 3) Removal of the **Water Flow Sensor and Servo**

- a. Remove one (1) screw and pull off heat exchanger inlet water connection tube.
- b. Remove lock bracket and pull off inlet water connection tube. Ensure O-ring not lost or damaged.



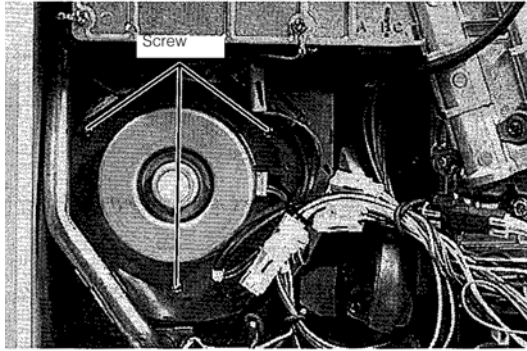
### 4) Removal of **Sparker**

- a. Remove connector from sparker.
- b. Remove screw from sparker and take out sparker.
- c. Pull off high tension lead.

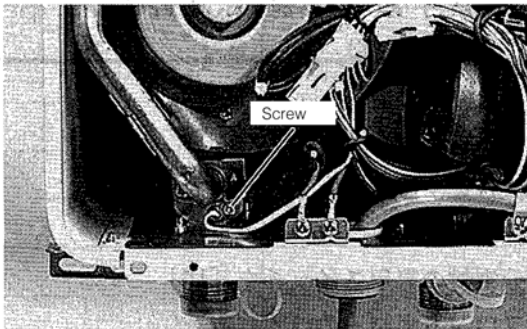


### 5) Removal of **Fan Motor**

- a. Remove screws three (3) and pull off combustion fan.
- b. Remove connector (4P).



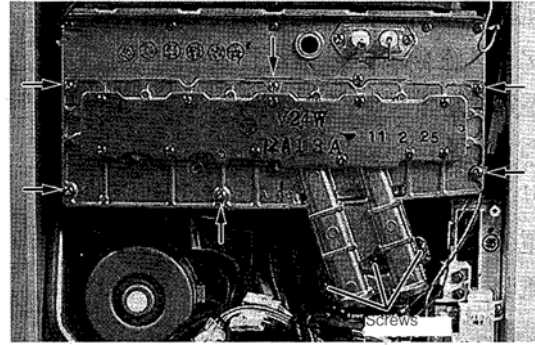
- 6) **Removal of Outgoing Water Thermistor**
- Remove one (1) screw of Heat Exchanger outlet water tube.
  - Unlock bracket and pull off inlet water tube. Ensure O-ring is not lost or damaged.
  - Remove one (1) screw and pull off outgoing water thermistor.



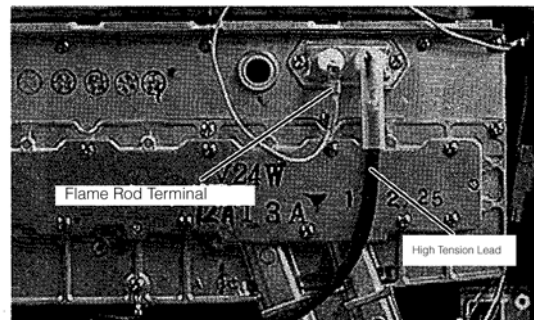
- 7) **Removal of Transformer**
- Remove PCB (refer item 2)
  - Remove two (2) screws and pull off transformer.



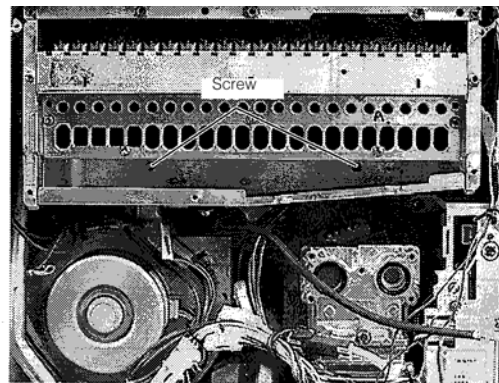
- 8) **Removal of Manifold and burner**
- Remove screws (6 + 3) and pull off manifold.



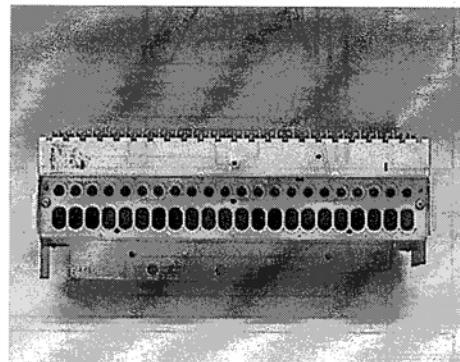
- Remove flame rod terminal (yellow)
- Remove combustion chamber front panel (6 screws)

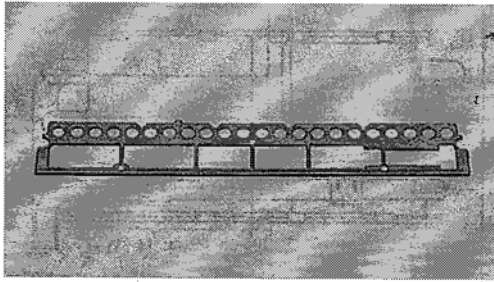


- Remove two (2) screws and pull off the burner unit.



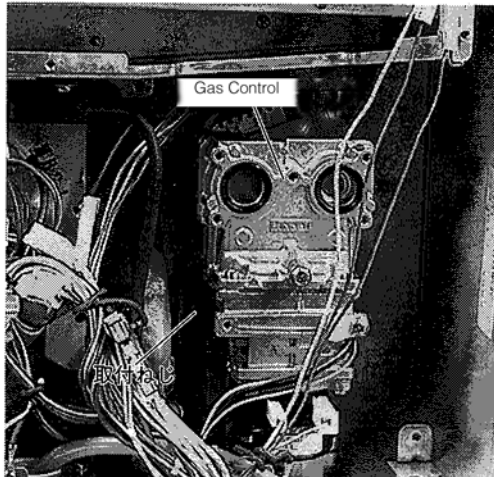
- Remove three (3) screws and pull off damper





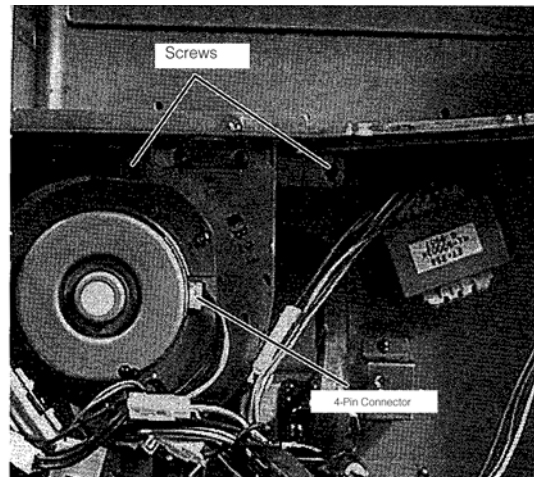
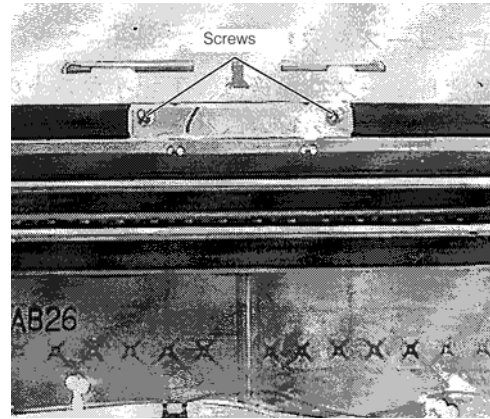
9) **Removal of Gas Control**

- a. Remove manifold (refer item 8)
- b. Remove front panel (4 screws). (refer item 1).
- c. Remove four (4) screws on gas connection inlet and gas control (assy), and pull out the gas connection. Handle O-ring carefully.

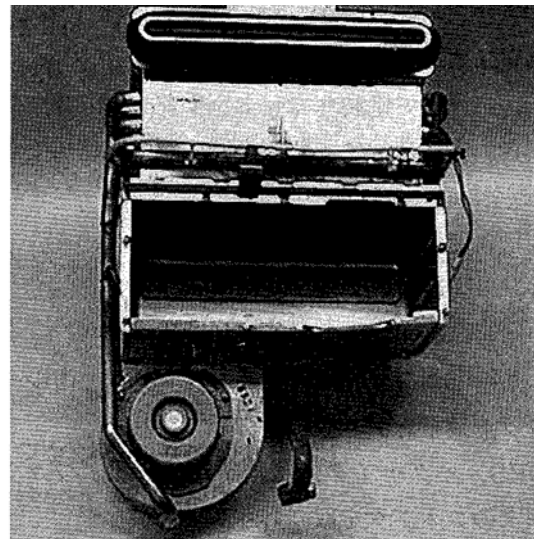


10) **Removal of Heat Exchanger**

- a. Remove PCB (refer item 2)
- b. Remove Heat Exchanger inlet water tube (refer item 3)
- c. Remove outlet water tube (refer item 6).
- d. Remove three (3) screws from the manifold (refer item 8).
- e. Pull off high tension lead and flame rod terminal (refer item 4).
- f. Remove connectors of OHS, Sparker, Anti Frost heater and fan motor.
- g. Remove four (4) screws from heat exchanger.



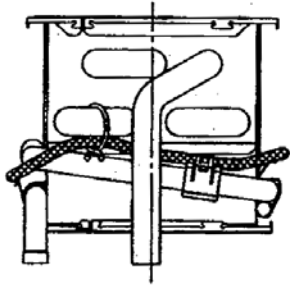
h. Pull off Heat Exchanger



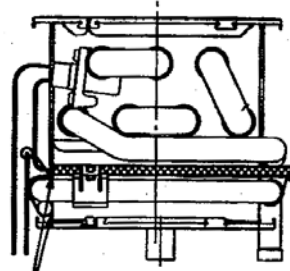
11) **Removal of Thermal Fuse**

- a. Pull off heat exchanger (refer item 10).
- b. Remove thermal fuse .

When Thermal Fuse is replaced, mount the thermal fuse as follows:

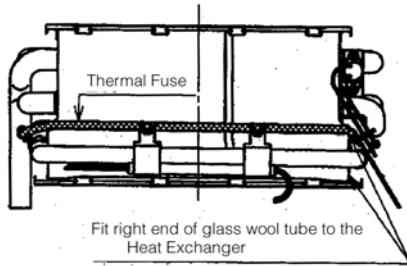


**Heat Exchanger LH side**



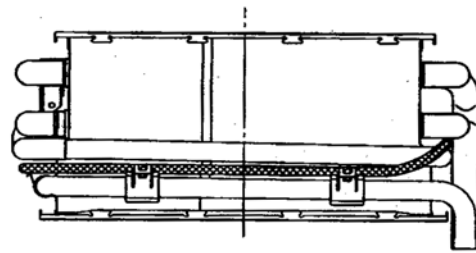
Fit Left end of glass wool tube to Heat Exchanger

**Heat Exchanger RH side**



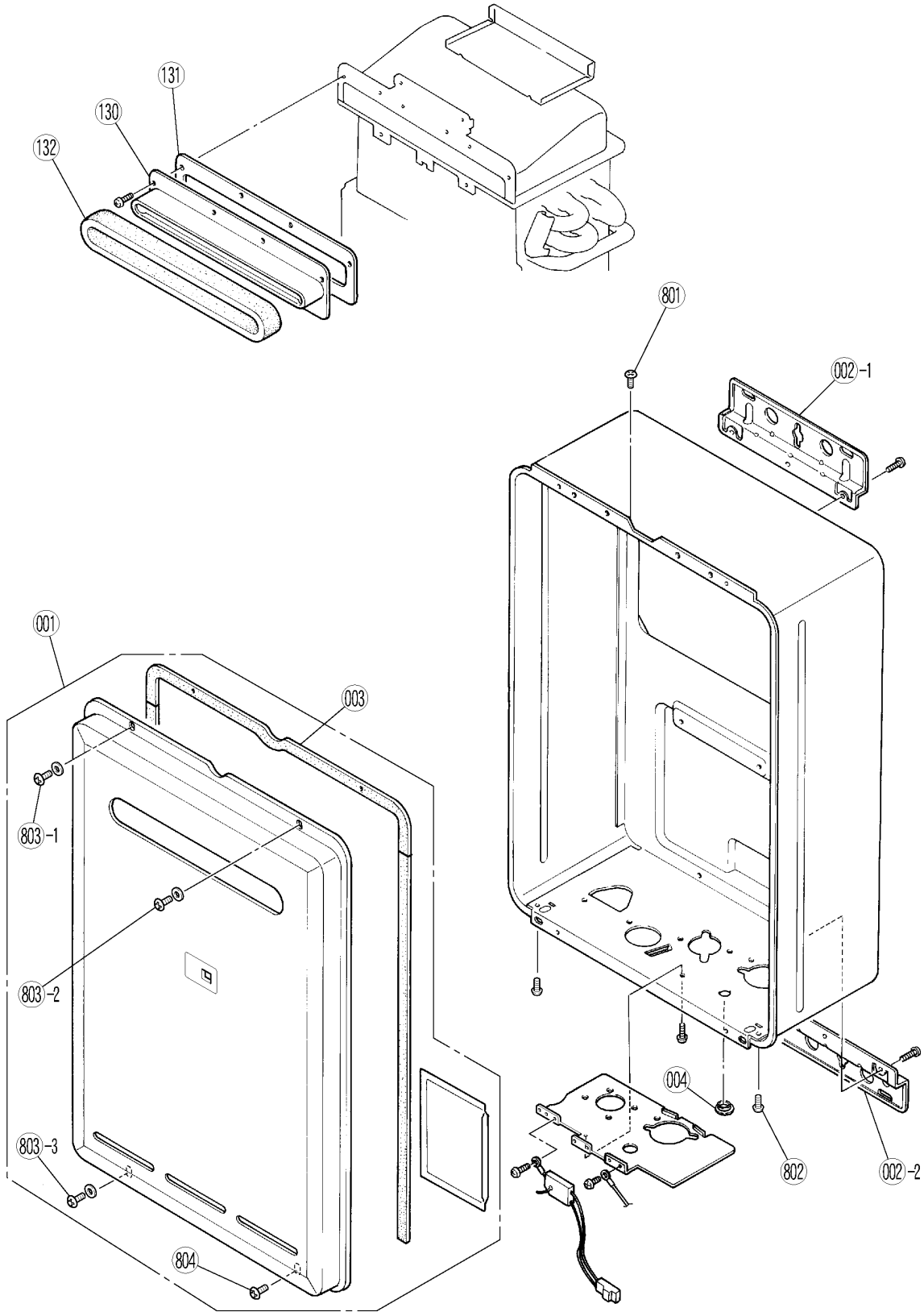
Fit right end of glass wool tube to the Heat Exchanger

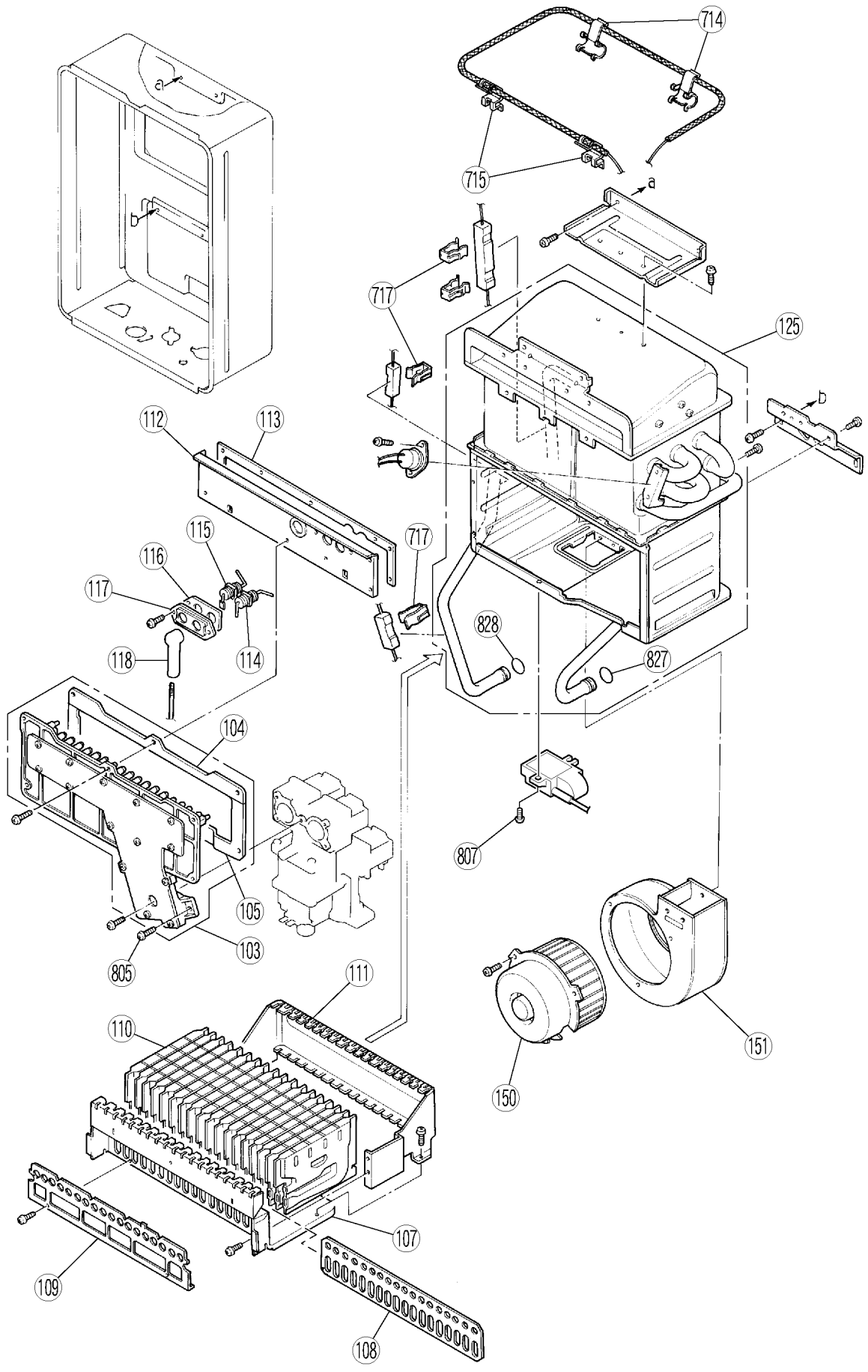
**Heat Exchanger Front**



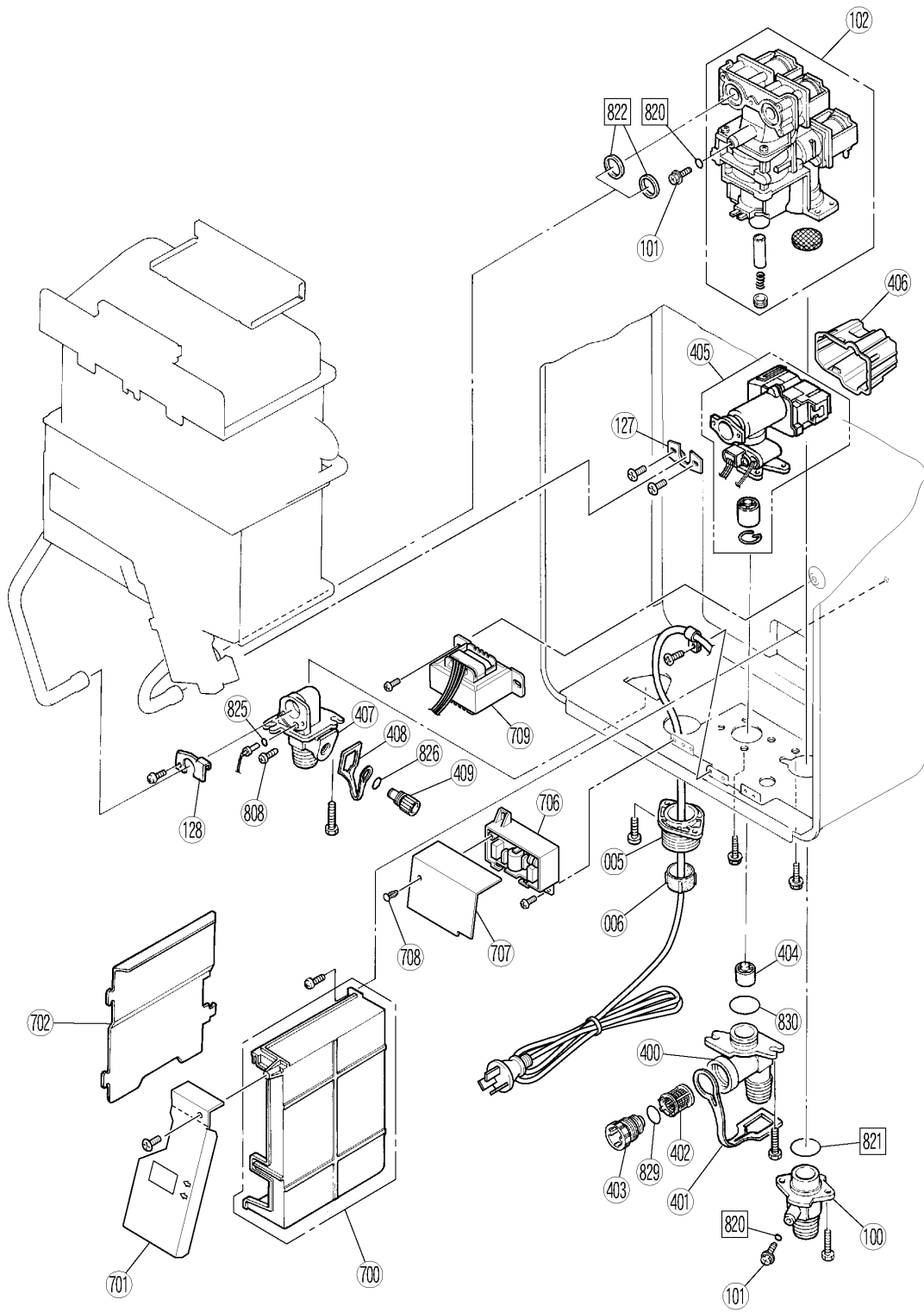
**Heat Exchanger Back**

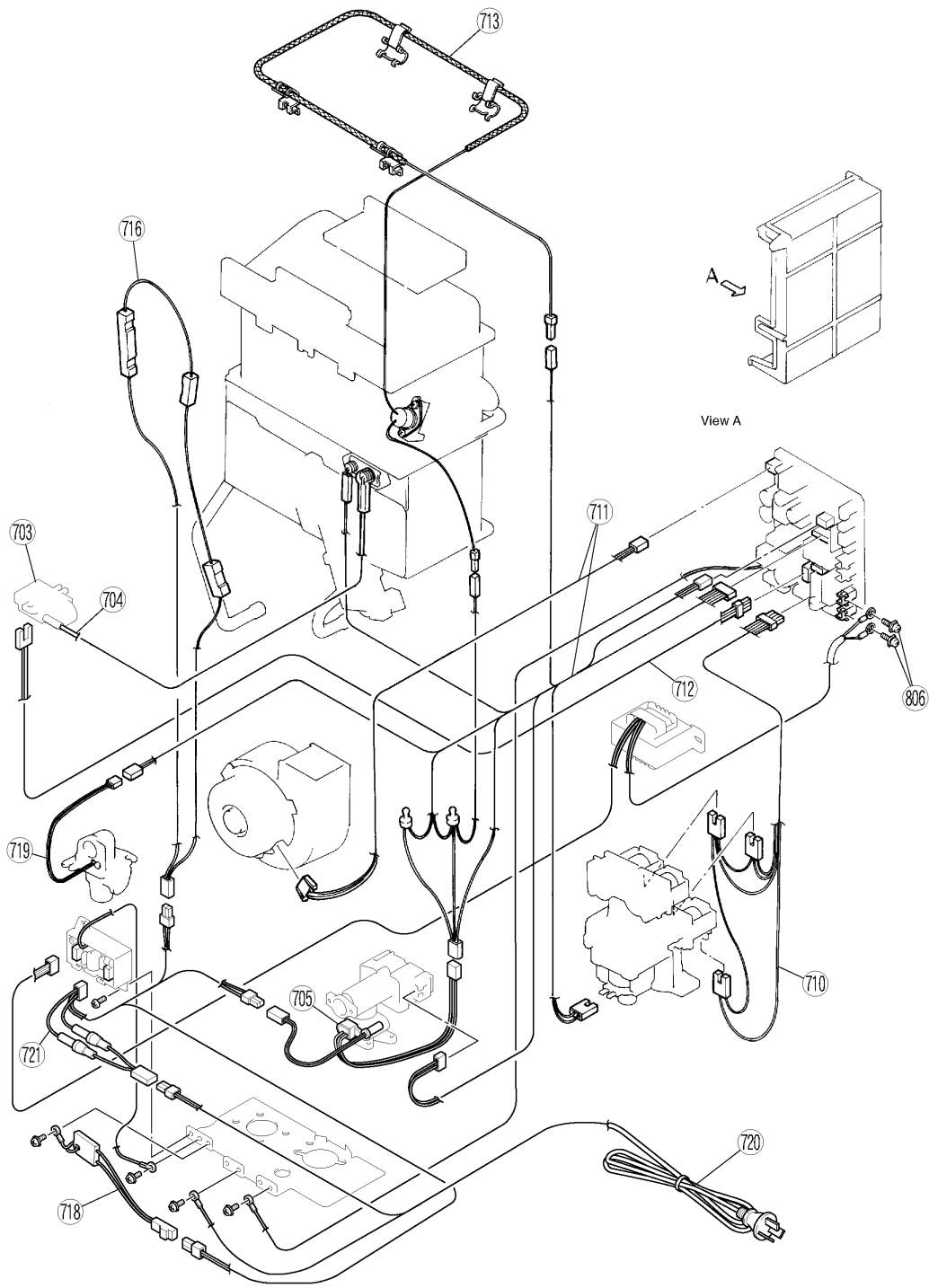
# 21. Exploded Diagram











## **22. Parts List**

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**“REU-V1616W” on page 47**

**“REU-V1620W” on page 50**

**“REU-V2018W” on page 53**

**“REU-V2020W” on page 56**

# REU-V1616W

Effective Date: 06/04/04

Supersedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
	OUTER CASE, White	92094275	U250-100-3	014-387-000	
001	PANEL ASSY, Fr	92093590	U250-120	019-1967000	1
002	BRACKET, Wall Mount.		BU195-121	106-329-000	2
003	SEAL, Fr. Panel		U250-165	580-0039000	3
004	PLUG		AU105-113	510-893-000	1
005	GROMMET, Cable	92073352	BU56-602-N	106-104-000	1
006	GASKET, Cable		U250-1560	580-0105000	1
100	CONNECTION, R3/4 Gas	92081587	CU195-211	106-290-000	1
101	SCREW, TP. Seal	90195157	C10D-5	501-275-005	2
102	CONTROL, Gas	92093608	C36E-45-S	120-162-000	1
103	MANIFOLD 'A' Assy (Prop.)	92093624	U250-200-A	101-592-000	1
103	MANIFOLD 'B' Assy (NG)	92093632	U250-200-B	101-593-000	1
104	GASKET, Manif. Upr		U250-208	580-0106000	1
105	GASKET, Manif. Lwr		U250-209	580-0107000	1
107	BURNER CASE, Fr		U250-311	098-0624000	1
108	GASKET, Burner		U216-313	580-589-000	1
109	DAMPER		U250-314	140-722-000	1
110	BURNER ASSY		B3A6-1	157-083-000	14
111	BURNER CASE, Rr		U216-312	098-402-000	1
112	FRONT PLATE, Comb. Cmbr		U216-306	019-715-000	1
113	SEALING UPPER, Comb.Cmbr		U216-307	580-591-000	1
114	ELECTRODE	92086974	H73-120	202-156-000	1
115	ELECTRODE, FR	92093640	U250-295	230-057-000	1
116	GASKET, Electrode	92086990	AH66-398	580-507-000	1
117	HOLDER, Electrode	92087006	AH66-393	580-505-000	1
118	SLEEVE, Electrode	92087030	AU206-218	518-035-000	1
125	HEAT EXCH. Assy	92093657	U250-910-S	314-538-000	1
127	BRACKET A		U222-703-2	538-615-000	1
128	BRACKET B		AU195-321	537-502-000	1
130	TERMINAL, Flue		U216-405-2	055-787-000	1
131	GASKET, Flue Term		U216-406	580-593-000	1
132	PACKING, Flue Term		BH29-486-H	580-594-000	1

# REU-V1616W

Effective Date: 06/04/04

Supersedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
150	FAN MOTOR, Assy	92093665	U250-555	222-512-000	1
151	FAN CASING, Assy		CU169-552	035-870-000	1
400	CONNECTION 1/2, In. Water		H73-500	333-300-000	1
401	STRAP, Plug		U250-631	553-119-000	1
402	FILTER, Inlet Water	92083773	H73-511	017-268-000	1
403	FILTER, Plug		H73-510	196-031-000	1
404	RECTIFIER		M8D1-15	330-107-000	1
405	SERVO, Water Flow	92093673	M8E-4-11-A	301-100-000	1
406	COVER, Water Flow Sy.		U250-530	098-0781000	1
407	CONNECTION, 1/2 HW		U217-441	333-303-000	1
408	STRAP, Plug		AU129-526	553-043-000	1
409	DRAIN VALVE, Assy	92081751	BU129-520-C	337-048-000	1
700	PCB, Assy	92093681	U250-1600	210-604-000	1
701	COVER-A, EC		U250-1605-A	098-0782000	1
702	COVER, EC		U250-507	098-0627000	1
703	SPARKER	92072776	EI-144	261-015-000	1
704	LEAD, High Tension	92092253	BH38-710-240	203-828-000	1
705	MR SENSOR, Assy	92092279	M8D1-10-4	243-072-000	1
706	EMC BOARD, Assy	92093699	U250-1602	210-605-000	1
707	COVER, EMC Board		U250-1625	098-0784000	1
708	CLIP		CP-90200	504-058-000	1
709	TRANSFOMER, Assy	92093616	ET-293	224-332-000	1
710	HARNESS, Solenoid Valve		U250-604	290-0488000	1
711	HARNESS, Sensor		U250-603-2	290-0643000	1
712	HARNESS, Breaker		U250-1610	290-0644000	1
713	HARNESS, Thermal Fuse		U250-610	290-0491000	1
714	HOLDER, Thermal Fuse		U217-676	537-505-000	2
715	HOLDER, Thermal Fuse		U250-670	537-0110000	2
716	VALVE HEATER		U250-1550	213-001-000	1
717	BRACKET, Heater	92076123	AU100-721	537-174-000	4
718	SENSOR SWITCH,Low Temp		H73-750	234-444-000	1
719	THERMISTOR, Inlet	92073675	BH45-650	233-108-000	1
720	ELECTRICAL CORD	92089051	CP-90491T	206-226-000	1

**REU-V1616W**

Effective Date: 06/04/04

Supercedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
721	HARNESS, Fuse		U250-1612	290-0645000	
721	HARNESS, Fuse	92094002	U250-1612-2	290-0646000	1
801	SCREW		CP-30583	501-865-000	2
802	SCREW		ZFDB0408UK	501-827-000	2
803	SCREW		CP-30580	501-856-000	3
804	SCREW		CP-30586	501-889-000	1
805	SCREW		CP-21478-412	501-400-000	3
806	SCREW		U217-510	501-296-000	2
807	SCREW		CP-80452	501-737-000	1
808	SCREW		U217-449	501-295-000	1
820	O-RING	90195165	M10B-13-4	520-300-010	2
821	O-RING	92072859	M10B-1-24	520-043-010	1
822	WASHER		C36E1-6	580-180-000	2
825	O-RING	92062249	M10B-2-4	520-209-010	1
826	O-RING	92062348	M10B-2-7	520-281-010	1
827	O-RING	92072800	M10B-2-12.5	520-255-010	1
828	O-RING	92062207	M10B-2-14	520-193-010	1
829	O-RING	92062199	M10B-2-16	520-048-010	1
830	O-RING	92071182	M10B-2-18	520-049-010	1
888	CUSTOMER INSTRUCTIONS		U250-1630	623-912-100	1
889	INSTALLATION INSTRUCTIONS		U250-1645	K23-912-100	1

# REU-V1620W

Effective Date: 24/05/2005  
Supersedes:

No.	Part Name	RA Part No.	RJ Part No.	11 Digit Code	QTY
1	PANEL, Front w Assy		U250-121-10-A	019-2694000	
2	BRACKET, Wall Hang		BU195-121	106-329-000	
3	PANEL, Front w Packing		U250-165	580-0039000	
4	GASKET, Blind		AU105-113	510-893-000	
5	INF 20 CABLE, Entry	92073352	BU56-602-N	106-104-000	
6	GASKET, Seal Cable		U250-1560	580-0105000	
100	INLET GAS (3/4")	92081587	CU195-211	106-290-000	
101	SCREW, Test Point	90195157	C10D-5	501-275-005	
102	GAS CONTROL, Assy	92093608	C36E-45-S	120-162-000	
103	MANIFOLD LP, A	92093624	U250-200-A-AS	101-592-000	
103	MANIFOLD NG, B	92093632	U250-200-B-AS	101-593-000	
104	MANIFOLD PACKING UPPER		U250-208	580-0106000	
105	MANIFOLD PACKING LOWER		U250-209	580-0107000	
107	BURNER CASE FRONT PANEL-1		U250-311	098-0624000	
108	PACKING		U216-313	580-589-000	
109	DAMPER		U250-314	140-722-000	
110	BUNSEN Burner		B3A6-1X06	157-083-000	
111	PANEL, Rear Burner Case		U216-312	098-402-000	
112	COMBUSTION CHAMBER, Front		U216-306	019-715-000	
113	COMBUSTION CHAMBER, Packing		U216-307	580-591-000	
114	ELECTRODE REU3203	92086974	H73-120	202-156-000	
115	ELECTRODE FR	92093640	U250-295	230-057-000	
116	PACKING ELECTRODE RT	92086990	AH66-398-2	580-507-000	
117	ELECTRODE HOLDER RT	92087006	AH66-393	580-505-000	
118	ELECTRODE SLEEVE	92087030	AU206-218	518-035-000	
125	HEAT EXCHANGER ASSEMBLY	92093657	U250-910-S	314-538-000	
127	BRACKET		U222-703-2	538-615-000	
128	FIXING BRACKET A		AU195-321	537-502-000	
130	FLUE OUTLET		U216-405-2	055-787-000	
131	FLUE OUTLET PACKING		U216-406	580-593-000	
132	FRONT PANEL SEALING PACKING		BH29-486-H	580-594-000	
150	FAN COMBUSTION Assy	92093665	U250-555	222-512-000	
151	FAN CASING Assy		CU169-552	035-870-000	
400	CONNECTION, Water Inlet		H73-500	333-300-000	
401	PLUG BAND		U250-631	553-119-000	
402	FILTER WATER O Large	92083773	H73-511	017-268-000	

## REU-V1620W

No.	Part Name	RA Part No.	RJ Part No.	11 Digit Code	QTY
403	FILTER PLUG (WITH O RING)		H73-510	196-031-000	
404	RECTIFIER		M8D1-15	330-107-000	
405	VALVE FLOW W/OUT HEATER	92085414	M8E-4-3-A	301-043-000	
406	WATER FLOW Servo Cover		U250-530	098-0781000	
407	WATER CONNECTOR, 1/2 HOT		U217-441	333-303-000	
408	PLUG BAND		AU129-526	553-043-000	
409	VALVE, Pressure Relief	92081751	BU129-520-C	337-048-000	
700	PCB, Main Assy	92094168	U250-1600-B	210-645-000	
701	EC COVER-Z		U250-1605-Z	098-0783000	
702	ELECTRIC UNIT COVER		U250-507X03	098-0627000	
703	SPARKER	92072776	EI-144	261-015-000	
704	LEAD, High Tension	92092253	BH38-710-240	203-828-000	
705	SENSOR, MR	92092279	M8D1-10-4	243-072-000	
706	SURGE PROTECTOR	92093699	U250-1602	210-605-000	
707	SURGE PROTECTOR COVER		U250-1625	098-0784000	
708	CLIP		CP-90200	504-058-000	
709	TRANSFORMER, V1616	92093616	ET-293	224-332-000	
710	MAGNET VALVE HARNESS		U250-604	290-0488000	
711	SENSOR HARNESS		U250-603-2	290-0643000	
712	SPARKER HARNESS		U250-1610	290-0644000	
713	THERMAL FUSE ASSEMBLY-16		U250-610	290-0491000	
714	TEMPERATURE FUSE FIXING		U217-676	537-505-000	
715	TEMPERATURE FUSE FIXING P		U250-670	537-0110000	
719	THERMISTOR	92073675	BH45-650	233-108-000	
720	ELECTRIC CORD	92089051	CP-90491T	206-226-000	
721	FUSE HARNESS		U250-1612	290-0645000	
801	SCREW		CP-30583	501-865-000	
802	SCREW		ZFDB0408UK	501-827-000	
803	TRUSS		CP-30580-JW	501-856-000	
804	SCREW		CP-30586	501-889-000	
805	SCREW, Cup		CP-21478-412	501-400-000	
806	SCREW, Power Terminal		U217-510	501-296-000	
807	SCREW, Tapping		CP-80452	501-737-000	
808	THERMISTOR STOP SCREW		U217-449	501-295-000	
820	O-RING (S-4)	90195165	M10B-13-4	520-300-010	
821	O RING GAS CON 2010	92062272	M10B-1-24	520-043-010	



Effective Date: 24/05/2005  
 Supercedes:

## REU-V1620W

No.	Part Name	RA Part No.	RJ Part No.	11 Digit Code	QTY
821	O RING GAS INLET INF16	92072859	M10B-1-24	520-043-010	
822	GASKET	92096502	C36E1-6	580-180-000	
825	O RING WATER 4MM EBF130	92043231	M10B-2-4	520-209-010	
825	THERMISTOR O RING 2010	92062249	M10B-2-4	520-209-010	
826	O RING RELIEF VALVE 2010	92062348	M10B-2-7	520-281-010	
827	PRESSURE RELIEF PLASTIC	92071422	M10B-2-12.5	520-255-010	
827	HEAT EX O RING INF16	92072800	M10B-2-12.5	520-255-010	
828	O RING HEAT EX OUTLET	92062207	M10B-2-14	520-193-010	
829	O RING HEAT EX INLET 2010	92062199	M10B-2-16	520-048-010	
830	WATER INLET/OUTLET O RING	92071182	M10B-2-18	520-049-010	
830	WATER INLET O RING INF16	92072818	M10B-2-18	520-049-010	
888	INSTRUCTION MANUAL		U225-1220	623-909-600	
889	INSTALLATION MANUAL		U211-1350	K23-909-600	

# REU-V2018W

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
	OUTER CASE	92094275		014-387-000	1
001	PANEL Assy, Front	92093798	U250-120-7-C	019-1971000	1
002	BRACKET, Wall Mount.		BU195-121	106-329-000	2
003	PANEL, Fr		U250-165	580-0039000	3
004	PLUG		AU105-113	510-893-000	1
005	GROMMET, Cable	92073352	BU56-602-N	106-104-000	1
006	GASKET, Cable		U250-1560	580-0105000	1
100	CONNECTION, R3/4 Gas	92081587	CU195-211	106-290-000	1
101	SCREW, TP. Seal	90195157	C10D-5	501-275-005	2
102	CONTROL, Gas	92093608	C36E-45-S	120-162-000	1
103	MANIFOLD 'A' Assy (Prop.)	92093764	U250-210-A	101-594-000	1
103	MANIFOLD 'B' Assy (NG)	92093814	U250-210-B	101-595-000	1
104	GASKET, Manif. Upr		U250-218	580-0108000	1
105	GASKET, Manif. Lwr		U250-219	580-0109000	1
107	BURNER CASE, Fr		U250-331	098-0625000	1
108	GASKET, Burner		U217-313	580-590-000	1
109	DAMPER		U250-334	140-723-000	1
111	BURNER CASE, Rr		U217-312	098-403-000	1
112	FRONT PLATE, Comb. Cmbr		U217-306	019-1676000	1
113	SEALING UPPER, Comb.Cmbr		U217-307	580-596-000	1
114	ELECTRODE	92086974	H73-120	202-156-000	1
115	ELECTRODE, FR	92093640	U250-295	230-057-000	1
116	GASKET, Electrode	92086990	AH66-398	580-507-000	1
117	HOLDER, Electrode	92087006	AH66-393	580-505-000	1
118	SLEEVE, Electrode	92087030	AU206-218	518-035-000	1
125	HEAT EXCH. Assy	92093822	U250-915-S	314-539-000	1
127	BRACKET A		U222-703-2	538-615-000	1
128	BRACKET B		AU195-321	537-502-000	1
130	TERMINAL, Flue		U217-405-2	055-788-000	1
131	GASKET, Flue Term		U217-406	580-592-000	1
132	PACKING, Flue Term		BH29-486-I	580-600-000	1

# REU-V2018W

Effective Date: 06/04/04

Supercedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
150	FAN MOTOR, Assy	92093665	U250-555	222-512-000	1
151	FAN CASING, Assy		CU169-552	035-870-000	1
400	CONNECTION 1/2, In. Water		H73-500	333-300-000	1
401	STRAP, Plug		U250-631	553-119-000	1
402	FILTER, Inlet Water	92083773	H73-511	017-268-000	1
403	FILTER, Plug		H73-510	196-031-000	1
404	RECTIFIER		M8D1-15	330-107-000	1
405	SERVO, Water Flow	92093673	M8E-4-11-A	301-100-000	1
405	SERVO, Water Flow		M8E-4-3-A	301-043-000	1
406	COVER, Water Flow Sy.		U250-530	098-0781000	1
407	CONNECTION, 1/2 HW		U217-441	333-303-000	1
408	STRAP, Plug		AU129-526	553-043-000	1
409	DRAIN VALVE, Assy	92081751	BU129-520-C	337-048-000	1
700	PCB, Assy	92093681	U250-1600	210-604-000	1
701	COVER-A, EC		U250-1605-A	098-0782000	1
702	COVER, EC		U250-507	098-0627000	1
703	SPARKER	92072776	EI-144	261-015-000	1
704	LEAD, High Tension	92092253	BH38-710-240	203-828-000	1
705	MR SENSOR, Assy	92092279	M8D1-10-4	243-072-000	1
706	EMC BOARD, Assy	92093699	U250-1602	210-605-000	1
707	COVER, EMC Board		U250-1625	098-0784000	1
708	CLIP		CP-90200	504-058-000	1
709	TRANSFOMER, Assy	92093616	ET-293	224-332-000	1
710	HARNESS, Solenoid Valve		U250-604	290-0488000	1
711	HARNESS, Sensor		U250-603-2	290-0643000	1
712	HARNESS, Breaker		U250-1610	290-0644000	1
713	HARNESS, Thermal Fuse		U250-611	290-0492000	1
714	HOLDER, Thermal Fuse		U217-676	537-505-000	2
715	HOLDER, Thermal Fuse		U250-670	537-0110000	2

# REU-V2018W

Effective Date: 06/04/04  
Supercedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
716	VALVE HEATER		U250-1550	213-001-000	1
717	BRACKET, Heater	92076123	AU100-721	537-174-000	1
718	SENSOR SWITCH, Low Temp		H73-750	234-444-000	1
719	THERMISTOR, Inlet	92073675	BH45-650	233-108-000	1
720	ELECTRICAL CORD	92089051	CP-90491T	206-226-000	1
721	HARNESS, Fuse		U250-1612	290-0645000	1
721	HARNESS, Fuse	92094002	U250-1612-2	290-0646000	1
801	SCREW		CP-30583	501-865-000	2
802	SCREW		ZFDB0408UK	501-827-000	2
803	SCREW		CP-30580	501-856-000	3
804	SCREW		CP-30586	501-889-000	1
805	SCREW		CP-21478-412	501-400-000	3
806	SCREW		U217-510	501-296-000	2
807	SCREW		CP-80452	501-737-000	1
808	SCREW		U217-449	501-295-000	1
820	O-RING	90195165	M10B-13-4	520-300-010	2
821	O-RING	92072859	M10B-1-24	520-043-010	1
822	WASHER		C36E1-6	580-180-000	2
825	O-RING	92062249	M10B-2-4	520-209-010	1
826	O-RING	92062348	M10B-2-7	520-281-010	1
827	O-RING	92072800	M10B-2-12.5	520-255-010	1
828	O-RING	92062207	M10B-2-14	520-193-010	1
829	O-RING	92062199	M10B-2-16	520-048-010	1
830	O-RING	92071182	M10B-2-18	520-049-010	1
888	CUSTOMER INSTRUCTIONS		U250-1630	623-912-100	1
889	INSTALLATION INSTRUCTIONS		U250-1645	K23-912-100	1

# REU-V2020W

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
	OUTER CASE	92094275		014-387-000	1
001	PANEL FRONT	92093756	U250-120-7-A	019-1969000	1
002	BRACKET, Wall Mount.		BU195-121	106-329-000	2
003	PANEL, Fr		U250-165	580-0039000	3
004	PLUG		AU105-113	510-893-000	1
005	GROMMET, Cable	92073352	BU56-602-N	106-104-000	1
006	GASKET, Cable		U250-1560	580-0105000	1
100	CONNECTION, R3/4 Gas	92081587	CU195-211	106-290-000	1
101	SCREW, TP. Seal	90195157	C10D-5	501-275-005	2
102	CONTROL, Gas	92093608	C36E-45-S	120-162-000	1
103	MANIFOLD 'A' Assy (Prop.)	92093764	U250-210-A	101-594-000	1
103	MANIFOLD 'B' Assy (NG)	92093814	U250-210-B	101-595-000	1
104	GASKET, Manif. Upr		U250-218	580-0108000	1
105	GASKET, Manif. Lwr		U250-219	580-0109000	1
107	BURNER CASE, Fr		U250-331	098-0625000	1
108	GASKET, Burner		U217-313	580-590-000	1
109	DAMPER		U250-334	140-723-000	1
111	BURNER CASE, Rr		U217-312	098-403-000	1
112	FRONT PLATE, Comb. Cmbr		U217-306	019-1676000	1
113	SEALING UPPER, Comb.Cmbr		U217-307	580-596-000	1
114	ELECTRODE	92086974	H73-120	202-156-000	1
115	ELECTRODE, FR	92093640	U250-295	230-057-000	1
116	GASKET, Electrode	92086990	AH66-398	580-507-000	1
117	HOLDER, Electrode	92087006	AH66-393	580-505-000	1
118	SLEEVE, Electrode	92087030	AU206-218	518-035-000	1
125	HEAT EXCH. Assy	92093822	U250-915-S	314-539-000	1
127	BRACKET A		U222-703-2	538-615-000	1
128	BRACKET B		AU195-321	537-502-000	1
130	TERMINAL, Flue		U217-405-2	055-788-000	1
131	GASKET, Flue Term		U217-406	580-592-000	1
132	PACKING, Flue Term		BH29-486-I	580-600-000	1
150	FAN MOTOR, Assy	92093665	U250-555	222-512-000	1
151	FAN CASING, Assy		CU169-552	035-870-000	1

**REU-V2020W**

Effective Date: 06/04/04

Supersedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
400	CONNECTION 1/2, In. Water		H73-500	333-300-000	1
401	STRAP, Plug		U250-631	553-119-000	1
402	FILTER, Inlet Water	92083773	H73-511	017-268-000	1
403	FILTER, Plug		H73-510	196-031-000	1
404	RECTIFIER		M8D1-15	330-107-000	1
405	SERVO, Water Flow	92093673	M8E-4-11-A	301-100-000	1
406	COVER, Water Flow Sy.		U250-530	098-0781000	1
407	CONNECTION, 1/2 HW		U217-441	333-303-000	1
408	STRAP, Plug		AU129-526	553-043-000	1
409	DRAIN VALVE, Assy	92081751	BU129-520-C	337-048-000	1
700	PCB, Assy	92093681	U250-1600	210-604-000	1
701	COVER-A, EC		U250-1605-A	098-0782000	1
702	COVER, EC		U250-507	098-0627000	1
703	SPARKER	92072776	EI-144	261-015-000	1
704	LEAD, High Tension	92092253	BH38-710-240	203-828-000	1
705	MR SENSOR, Assy	92092279	M8D1-10-4	243-072-000	1
706	EMC BOARD, Assy	92093699	U250-1602	210-605-000	1
707	COVER, EMC Board		U250-1625	098-0784000	1
708	CLIP		CP-90200	504-058-000	1
709	TRANSFOMER, Assy	92093616	ET-293	224-332-000	1
710	HARNESS, Solenoid Valve		U250-604	290-0488000	1
711	HARNESS, Sensor		U250-603-2	290-0643000	1
712	HARNESS, Breaker		U250-1610	290-0644000	1
713	HARNESS, Thermal Fuse		U250-611	290-0492000	1
714	HOLDER, Thermal Fuse		U217-676	537-505-000	2
715	HOLDER, Thermal Fuse		U250-670	537-0110000	2
716	VALVE HEATER		U250-1550	213-001-000	1
717	BRACKET, Heater	92076123	AU100-721	537-174-000	4
718	SENSOR SWITCH, Low Temp		H73-750	234-444-000	1
719	THERMISTOR, Inlet	92073675	BH45-650	233-108-000	1
720	ELECTRICAL CORD	92089051	CP-90491T	206-226-000	1
721	HARNESS, Fuse		U250-1612	290-0645000	
721	HARNESS, Fuse	92094002	U250-1612-2	290-0646000	1

# REU-V2020W

Effective Date: 06/04/04

Supercedes: 05/04/04

No.	PART NAME	RA PART No.	RJ DRAWING No.	11 DIGIT CODE	QTY
801	SCREW		CP-30583	501-865-000	2
802	SCREW		ZFDB0408UK	501-827-000	2
803	SCREW		CP-30580	501-856-000	3
804	SCREW		CP-30586	501-889-000	1
805	SCREW		CP-21478-412	501-400-000	3
806	SCREW		U217-510	501-296-000	2
807	SCREW		CP-80452	501-737-000	1
808	SCREW		U217-449	501-295-000	1
820	O-RING	90195165	M10B-13-4	520-300-010	2
821	O-RING	92072859	M10B-1-24	520-043-010	1
822	WASHER		C36E1-6	580-180-000	2
825	O-RING	92062249	M10B-2-4	520-209-010	1
826	O-RING	92062348	M10B-2-7	520-281-010	1
827	O-RING	92072800	M10B-2-12.5	520-255-010	1
828	O-RING	92062207	M10B-2-14	520-193-010	1
829	O-RING	92062199	M10B-2-16	520-048-010	1
830	O-RING	92071182	M10B-2-18	520-049-010	1
888	CUSTOMER INSTRUCTIONS		U250-1630	623-912-100	1
889	INSTALLATION INSTRUCTIONS		U250-1645	K23-912-100	1

# Notes



# SERVICE CONTACT POINTS

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Fax: (03) 9271 6622

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Fax: 1300 555 655

## Hot Water Service Line

Tel: 1800 000 340

## Help Line: Spare Parts & Technical Info

Tel: 1300 366 388  
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