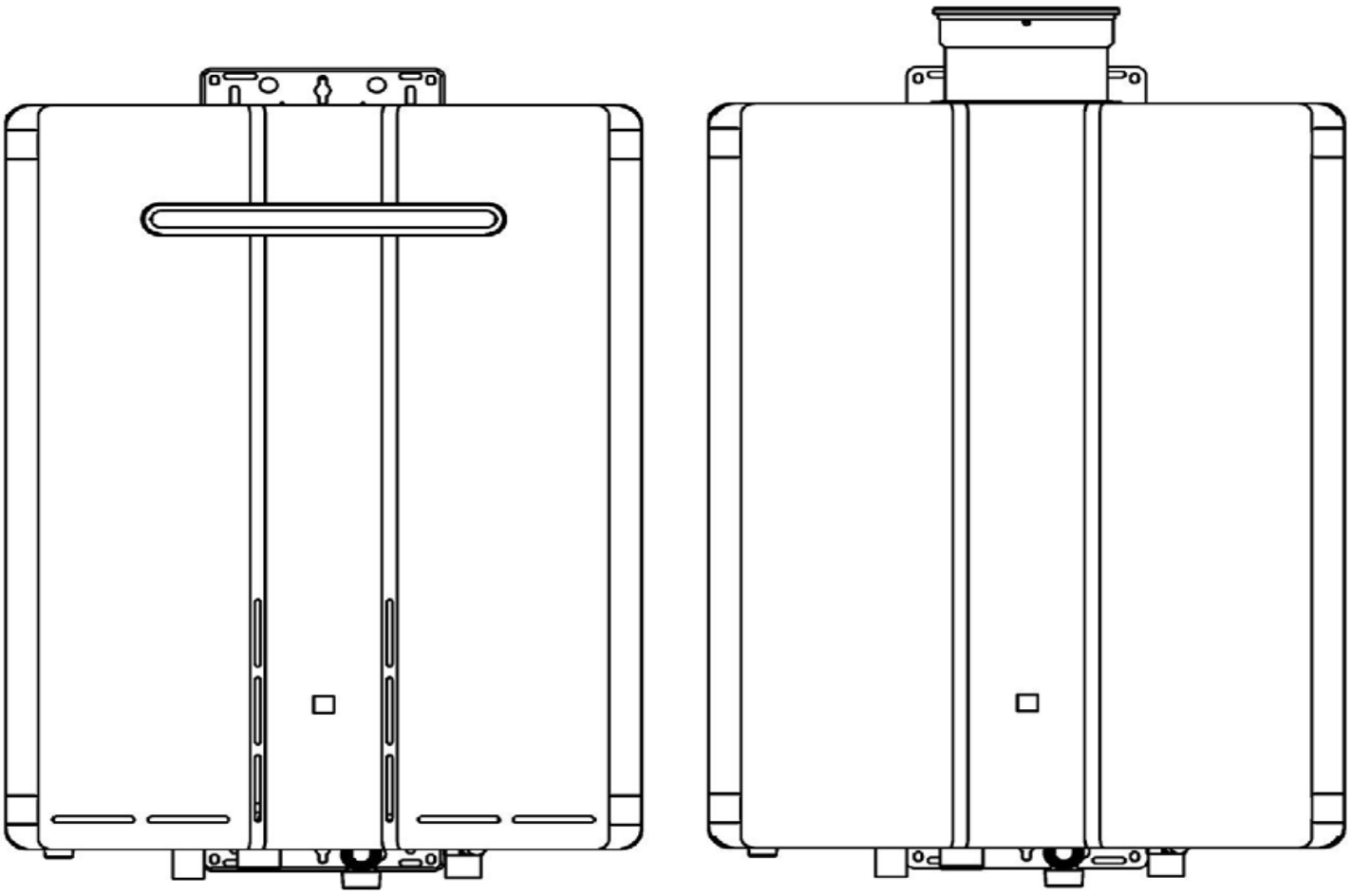
SERVICE MANUAL
REU-KM3237FFUDHD-E
Infinity HDC1500i
REU-KM3237WDHD-E
Infinity 1500e



The Rinnai Infinity range of water heaters, when correctly installed, comply with the requirements of the United Kingdom Water Regulations / Byelaws (Scotland). These Products can be found listed in the Water Fittings and Materials Directory.

WRAS APPROVED PRODUCT

CE 0461

The Rinnai Infinity condensing 32i and condensing 32e water heaters are
CE Marked as allowed by Techni-gas.
Certificate numbers: *E1188/5560 - E1189/5560*
ID number: *0461BU0950*
Date of Issue: *01/09/2009*

Quality System Standard

ISO 9001 - 2000

The Design, Development, and Manufacture of Gas Water Heating Appliances done under Rinnai's Quality Management System is certified under the Quality Management System Standard ISO 9001.

Registration Number JQ0003D
Registered since: February 1994
Certified by JIA—QA Center.

CONTENTS

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 - intergrated circuit

Kcal/h - kilocalorie per hour

kW - kilowatts

LED - light emitting diode

L/min - litres per minute

mA - milliamps

mbar - millibars of pressure

mm - millimetres

bar - gauge pressure

OHS - overheat switch

PCB - printed circuit board

CPU - central processing unit

POT - potentiometer

rpm - revolutions per minute

SV - solenoid valve

∅ - diameter

ΔºC - temperature rise above ambient

POV - modulating valve

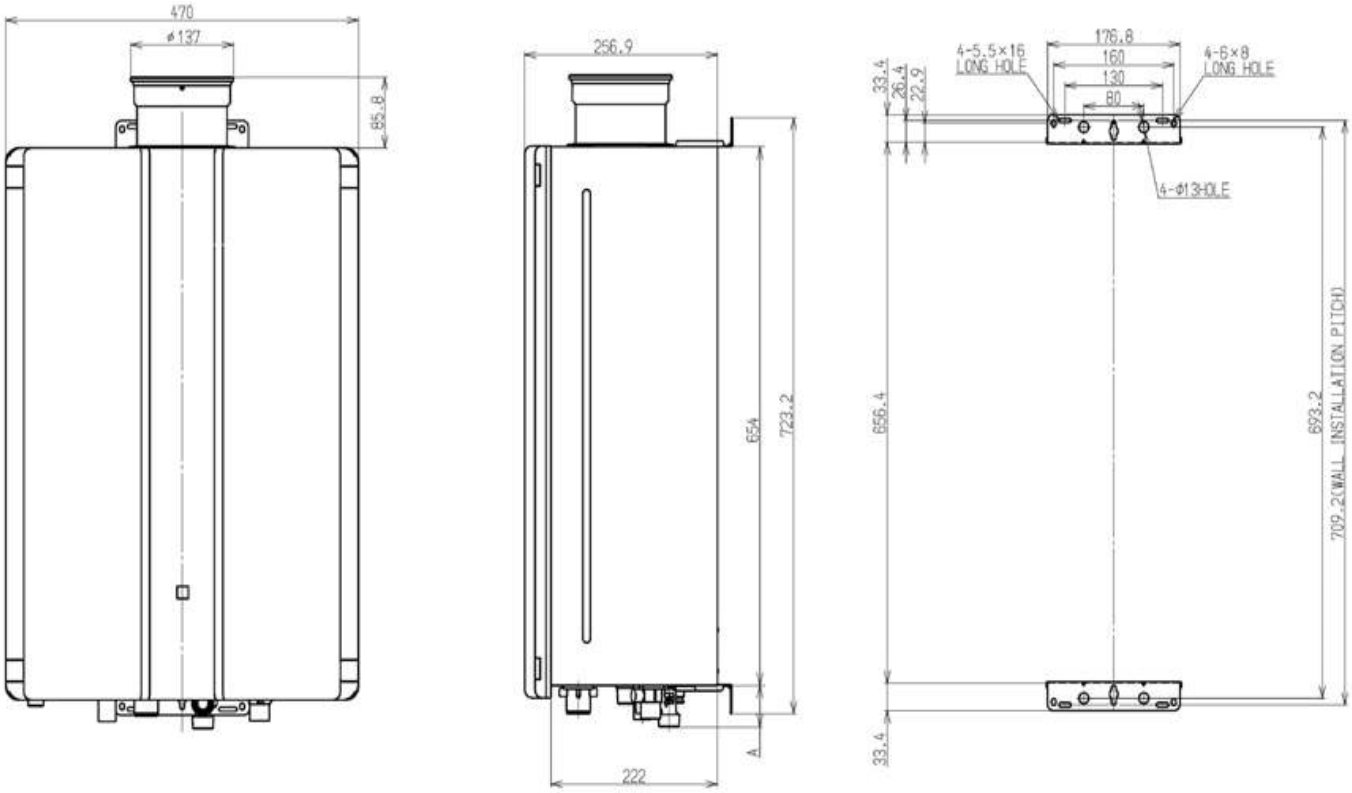
TE - thermal efficiency

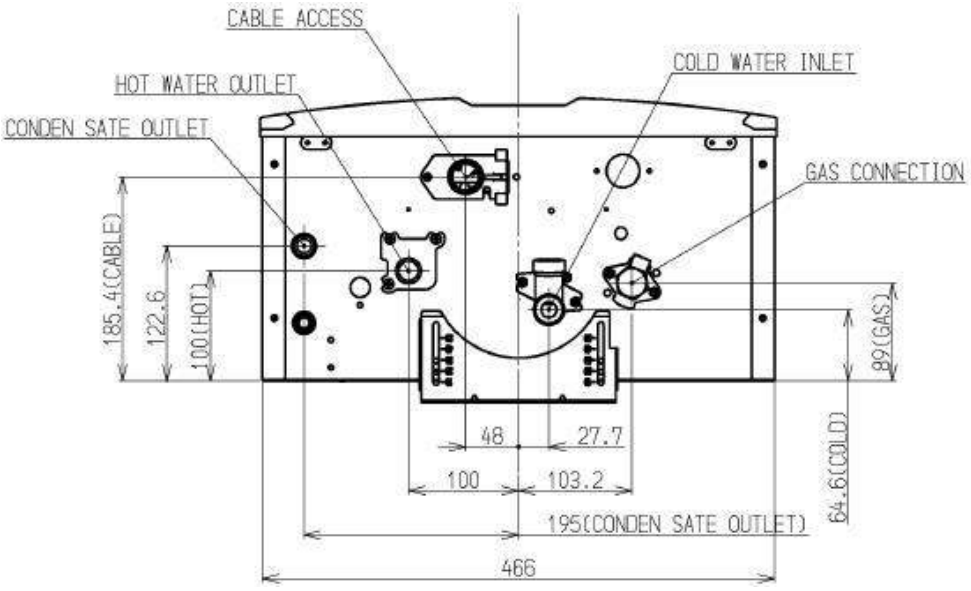
TH - thermistor

T_{IN} - temperature of incoming water

T_{out} - temperature of outgoing water

DIMENSIONS HDC 1500 i

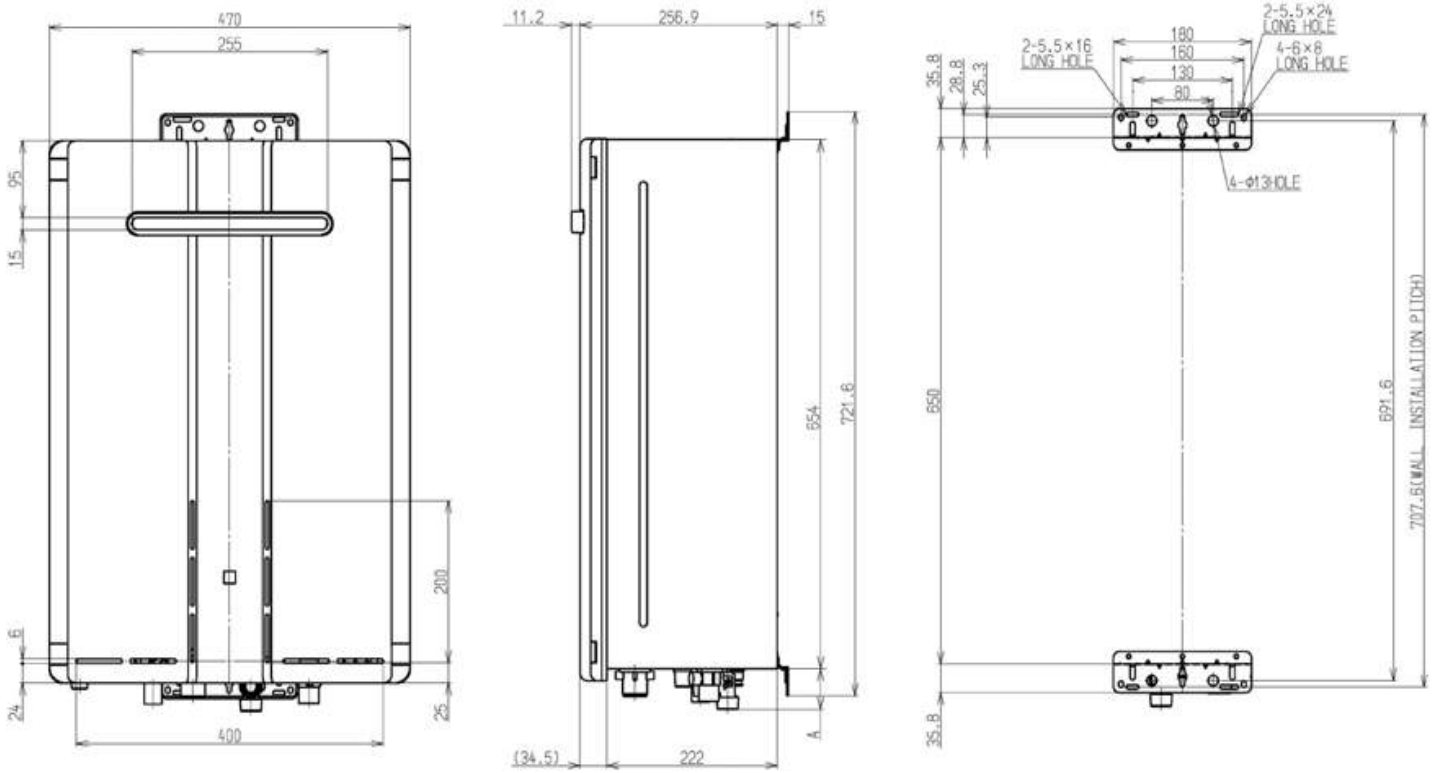


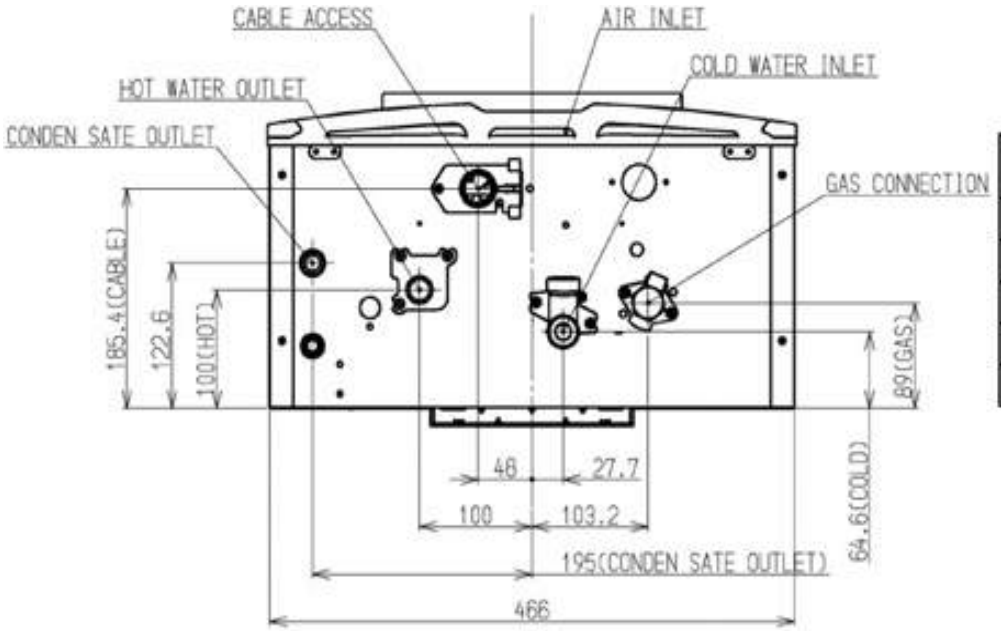


(mm)

	A DIMENSION	CONNECTION
GAS	40.2	R 3/4
COLD	50.2	R 3/4
HOT	41.2	R 3/4
CONDEN SATE OUTLET	22.4	R 1/2
CABLE ACCESS	34.2	——

DIMENSIONS HDC 1500e



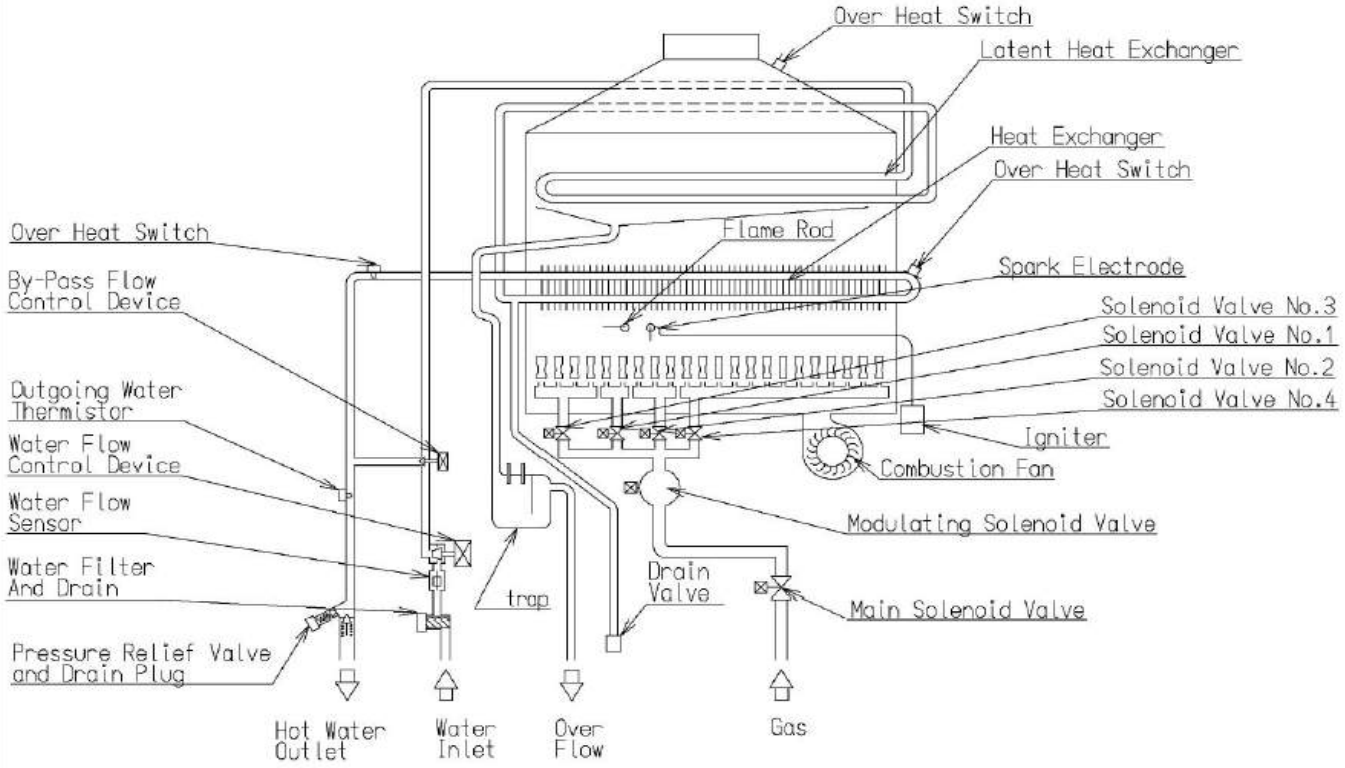


(mm)

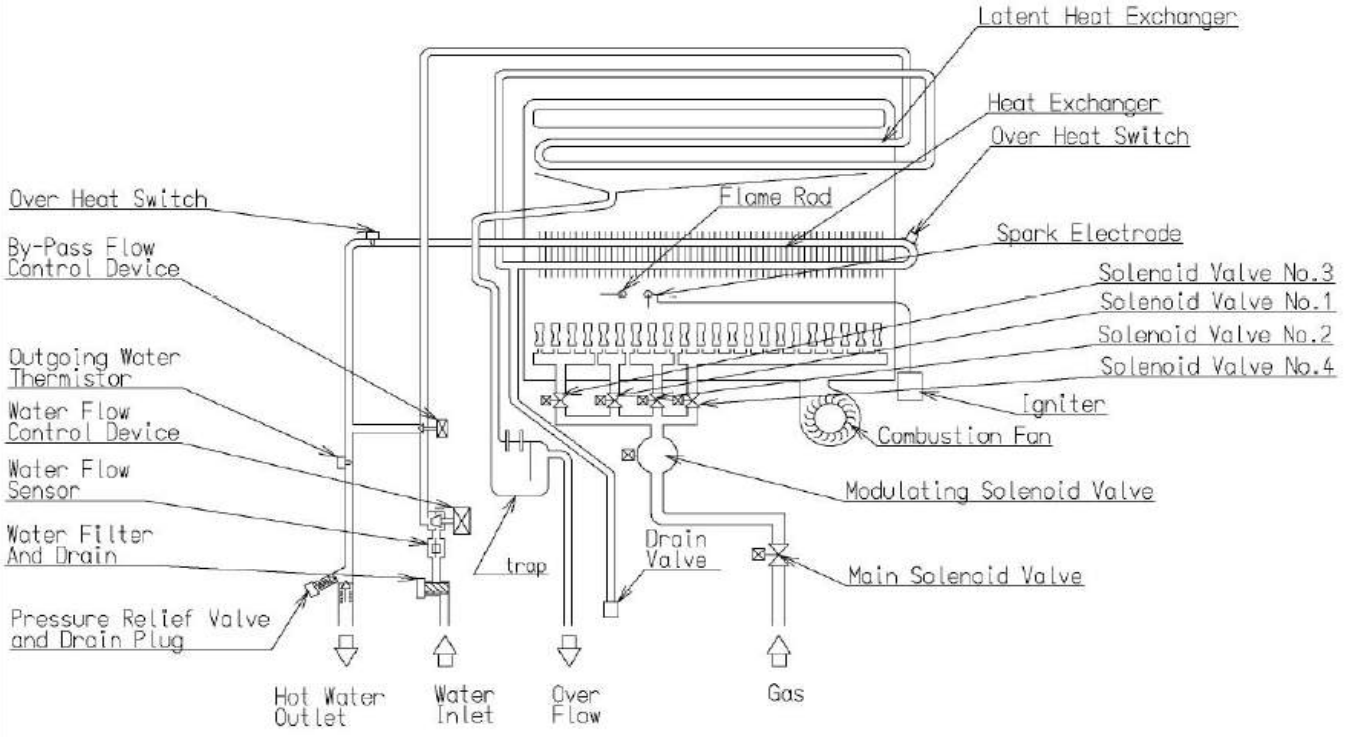
	A DIMENSION	CONNECTION
GAS	40.2	R 3/4
COLD	50.2	R 3/4
HOT	41.2	R 3/4
CONDEN SATE OUTLET	22.4	R 1/2
CABLE ACCESS	34.2	——

OPERATION - SCHEMATIC

Infinity Condensing 32i and HDC1500i



Infinity Condensing 32e and HDC1500e



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 20.6 bar, closes at 14.7 bar.

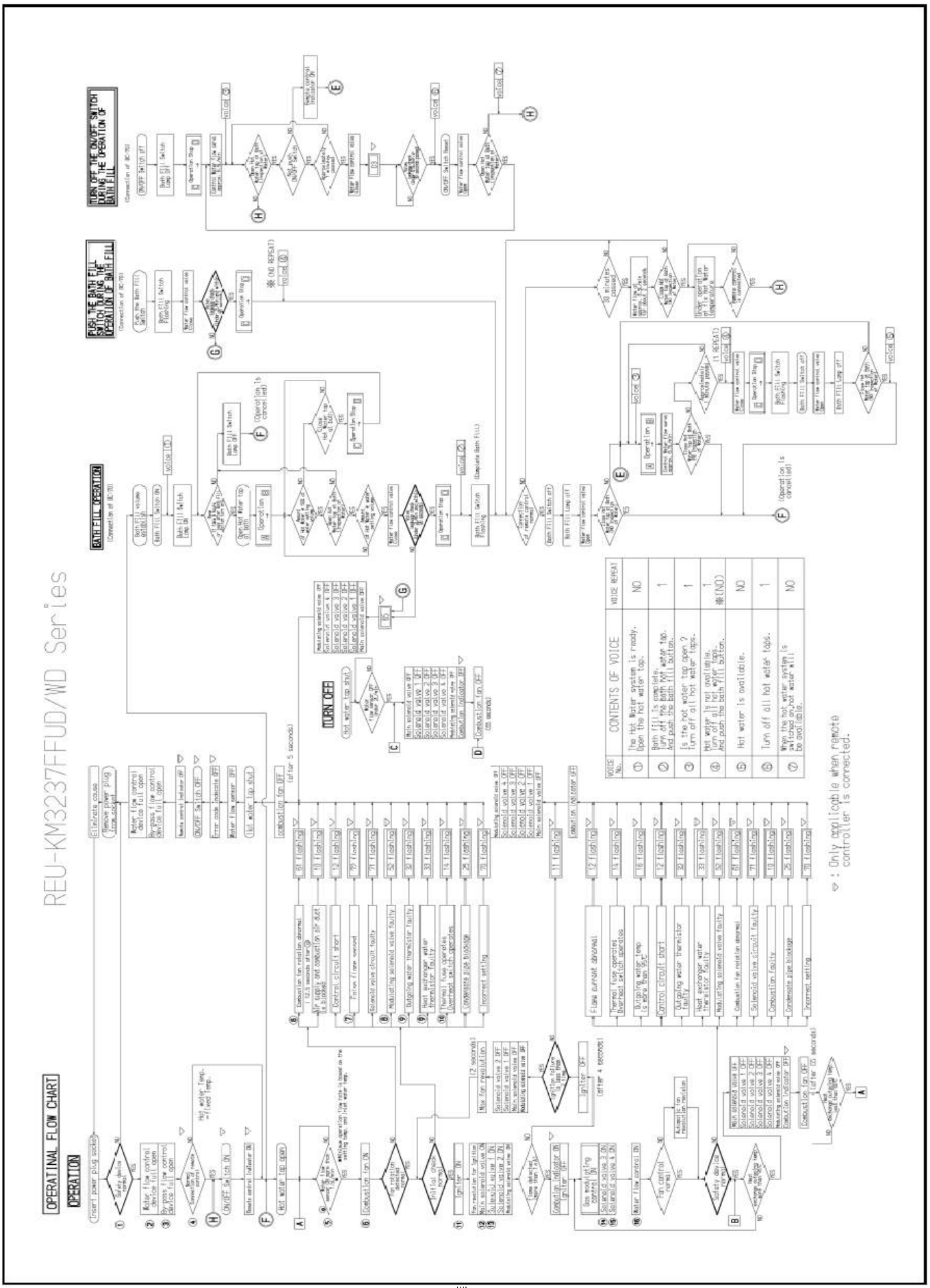
- Electrical Fuse: (3A glass fuse) prevents against over-current.
  Surge Protector: prevents against over-current.

- Boil Dry Prevention: If water flow sensor detects no flow, gas supply is stopped.

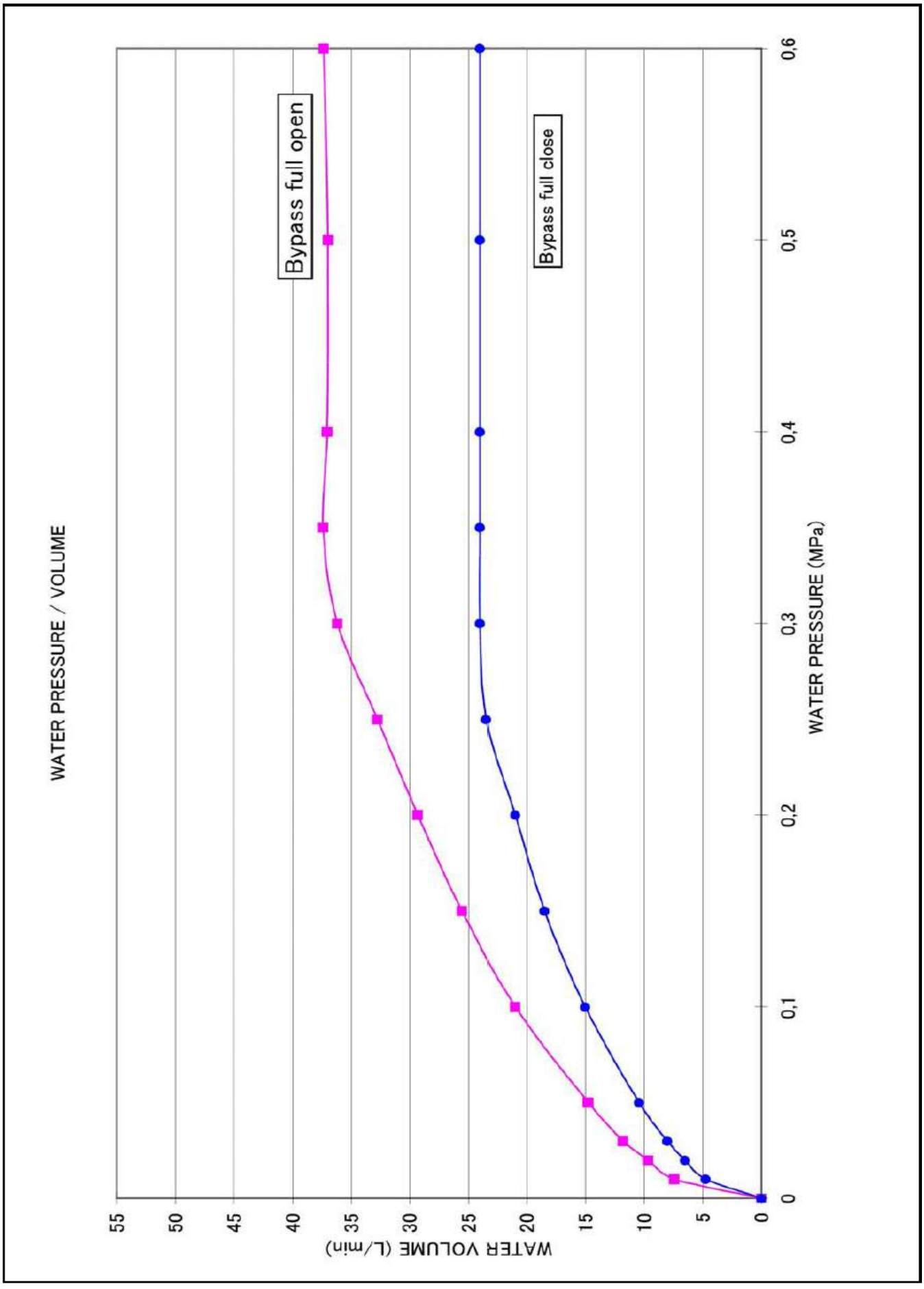
- Combustion Fan Speed Sensor: In case of combustion fan defect (no rotation of fan) gas supply is stopped.

- Temperature Cutout: If the delivered hot water temperature rises above the required delivery temperature for a number of seconds, the gas supply is stopped.

FLOW CHART


OPERATINAL FLOW CHART
OPERATION
REU-KM3237FFUD/WD Series
BATH FILL OPERATION
TURN OFF
PUSH THE BATH FILL SWITCH TO STOP THE OPERATION OF BATH FILL
TURN OFF THE ON/OFF SWITCH DURING THE OPERATION OF BATH FILL
VOICE No.
CONTENTS OF VOICE
VOICE REPEAT
: Only applicable when remote controller is connected.

WATER FLOW CHARACTERISTICS



INSTALLATION INSTRUCTIONS - CONNECTIONS

Water Supply.

Where the water supply pressure exceeds 12 bar, an approved pressure reducing device is required at the inlet of the appliance. To achieve the rated flow a minimum water supply pressure of 1.4 bar is required at the appliance inlet. The unit will operate at lower supply pressures but the rated flow will not be achieved. Contact Rinnai for 'gravity fed' or 'low pressure' hot water installations.

Water pipe sizing and layout should be designed correctly to ensure the given water flows from the appliance are available. All hot water pipework should be insulated to optimise maximum performance and energy efficiency.

Water Connection.

Connect the hot and cold water supply pipes. An approved isolation valve and strainer MUST be installed in the cold water inlet pipe. An approved isolation valve should be installed in the hot water outlet pipe. There must be a union or release fitting on the heater side of the isolation valves. A non return valve is not required unless dictated by local regulations. A pressure relief valve should be installed in the pipework to discharge safely into a suitable drain when the system has a flow and return, or tank.

Positions of the cold water inlet, hot water outlet and gas connections are shown on page 11. All connections are ¾ inch BSP. This is NOT an indication of the pipe sizes required.

If the heater is in a hard water area a suitable water conditioning device should be installed to prevent the build up of limescale within the heat exchanger. Heat exchangers damaged by scaling are not covered by the manufacturer's guarantee. Guidelines are given below. If the local water exceeds these values the heater must be protected.

Description	pH	Total Dissolved Solids (TDS)	Total Hardness	Chlorides	Magnesium	Calcium	Sodium	Iron
Maximum Recommended Levels	6.5 - 9.0	600 mg/litre	200 mg/litre	300 mg/litre	10 mg/litre	20 mg/litre	150 mg/litre	1 mg/litre

Gas Connection

Check pipe sizing required for the heater input. The heat input for the Infinity 26i and HD50i is 54 kW. Refer to BS6891 (Natural Gas) and BS5482 (Propane) for guidance on correct pipe sizing calculation.

Check that the size of the gas meter and pipework will be sufficient for all appliances on the main. Sufficient gas must be available at the appliance if correct operation is to be expected. An approved gas isolation valve must be fitted at the gas inlet. A union or release fitting should be installed after the isolation valve.

Electrical Connection.

The appliance must be earthed. The appliance is suitable for 230VAC – 50Hz mains only and all wiring must be carried out to the I.E.E regulations latest edition. The heater electrical supply must be provided with a fused (3A) local isolator with a contact separation of 3mm minimum on all poles for servicing. Observe polarity and ensure that wiring is correctly restrained.

IMPORTANT INFORMATION

Excessively hot water is dangerous, especially for young children and the infirm. The water heater allows you to control the temperature of your hot water to safe levels.

Water temperature over 50ºC can cause severe burns instantly or even death from scalding.

Children, disabled and the elderly are at the highest risk of being scalded by excessively hot water.

Always test the temperature of the water before bathing or showering.

Burns from hot water taps can result in very severe injuries to young children.

Hot water at 65°C can severely burn a child in less than half a second. At 50°C it takes five minutes.

Burns can occur when children are exposed directly to hot water or when they are placed into a bath which is too hot.

TEMPERATURE CONTROLS - GENERAL

When deciding on the best position for the temperature controls, the following points should be taken into account.

- Fit the controls out of reach of children (suggested height from the floor 1.5m.)
- Avoid positions where the controllers will become hot. Do not fit them near stoves or ovens, or above radiators or heaters.
- If possible, avoid exposure to direct sunlight or positions where bright lights will make the digital display difficult to read.
- Position away from areas where the controller will be prone to splashing by cooking products such as oils and fats.
- The temperature controllers are water resistant, however they should be positioned away from areas where direct or persistent splashing could occur.
- Refer to the I.E.E electrical wiring regulations current edition for location requirements in shower and bath areas.
- The cables to the temperature controller carry only 12VDC (extra low voltage.)
- When using more than one temperature controller the signal cable should be run in parallel. That is, from controller to controller to heater, or from each controller to the heater. Do not wire the controllers in series.

The installation in every application will vary, therefore the temperature controller cable has been provided so that you may cut the length accordingly and fit the spade connectors, ensuring a good connection.

Cables are simply ‘piggy-backed’ at the water heater or at the primary temperature controller. Polarity is not important when connecting the cables, either colour wire can be connected to either terminal at both the heater or primary temperature controller. If more cable is needed any cable with similar specification to the cable supplied with the controller can be used. Maximum length is 50 metres.

TEMPERATURE CONTROLS - INSTALLATION

Universal Temperature Controller

MC-91-1A

1. Determine the most suitable position for the temperature controller.

2. Drill 3 holes in the wall as shown in fig. 1, one for the cable and two for the securing screws. Ensure holes are drilled deep enough. Fit wall plugs if needed. (ensure controller is level.)

3. Run the cable provided through the hole in the wall ensuring that the end fitted with the connector is nearest the controller. (fig. 2.)

4. Remove the face plate from the controller using a flat screwdriver. Take care not to damage the cover (fig. 3.)

5. Connect the cable to the temperature controller.

6. Fix the controller to the wall and fasten with the phillips head screws supplied as shown in (fig. 4.)

7. Remove the protective plastic film from the controller face as shown in fig. 4.

8. Replace the face plate.

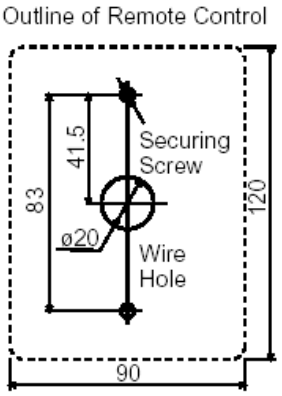


fig.1

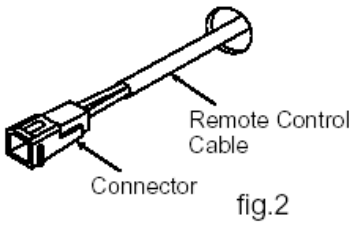


fig.2

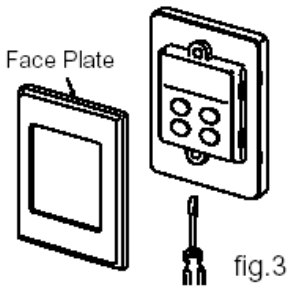


fig.3

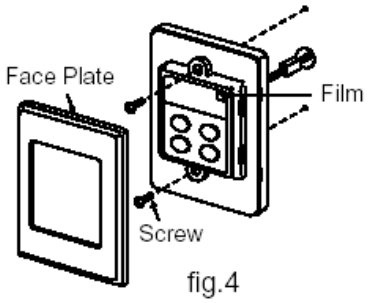


fig.4

TEMPERATURE CONTROLS - INSTALLATION

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 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 special earth screw is placed at the bottom right hand corner for earthing purposes.

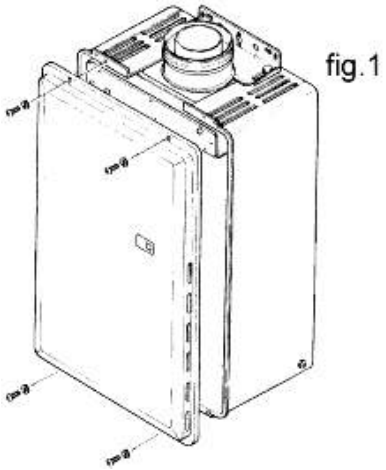


fig.1

fig.1

Connecting Three Controllers

1. Isolate the power supply.
2. Remove the front cover from the Appliance (4 screws) fig.1.
3. Thread the cables through the cable access hole at the base of the appliance.
4. Cut the spade connectors from two controller cables (4 connectors should be cut off) and discard. Connect the wires and terminate into two new spade connectors as shown in fig. 3.
5. 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.
6. Replace cover of the Appliance. Ensure that the special earth screw is placed at the bottom right hand corner for earthing purposes.

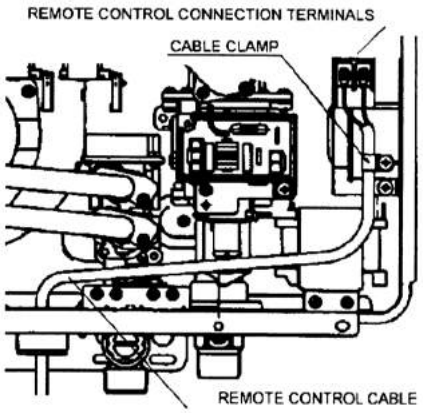


fig.2

Connecting Four Controllers

1. Isolate the power supply.
2. Remove the front cover from the Appliance (4 screws) fig.1.
3. Cut the spade connectors from all four controller cables to be connected to the appliance (8 connectors should be cut off) and discard. Connect the wires from two remotes and terminate into two new spade connectors as shown in fig. 3.
4. Repeat for remaining two remotes.
5. Thread the 4 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.
5. Replace cover of the Appliance. Ensure that the special earth screw is placed at the bottom right hand corner for earthing purposes.

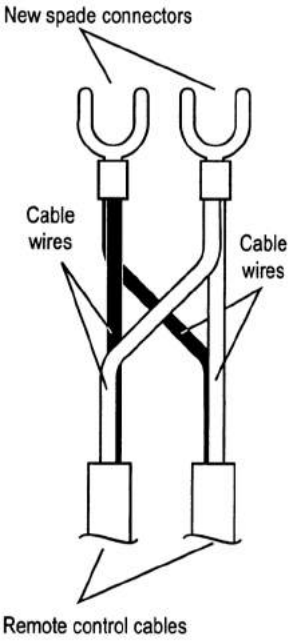


fig. 3

TEMPERATURE CONTROLS

The purpose of a Temperature Controller is to enable the user to have complete control over the hot water supply. Used correctly, the hot water unit will supply hot water at the temperature selected, even when the water flow is varied, or when more than one tap is used. Adjustments to the operation of your hot water unit can be made with any of the Temperature Controllers. Each Temperature Controller can be individually programmed.

Up to four Universal and Deluxe Temperature Controllers can be fitted with the Infinity 26i and HD50i. Universal Controllers allow temperature selection only and come as standard with the water heaters. Deluxe Temperature Controllers are an optional extra. These controllers have temperature selection, bath fill, voice recognition, and time clock functions. When more than one Universal Controller is used one may be set as the Master Controller to allow higher temperatures.

Various water temperatures (°C) can be selected as follows:

Universal Controller:

37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50^0C

Master Universal Controller:

37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 55°C (60, 65°C HD)

Deluxe Bathroom Controller:

Hot Water Delivery: 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50°C

Bath fill Delivery: 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48°C

Deluxe Kitchen Controller:

37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 55°C (60, 65°C HD)

If a temperature 43°C or higher is selected on any controller and this temperature is then decreased to below 43°C and increased again whilst the water is running, the maximum selectable temperature will become 43°C. This provides additional safety for the consumer.

Suggested temperatures are:

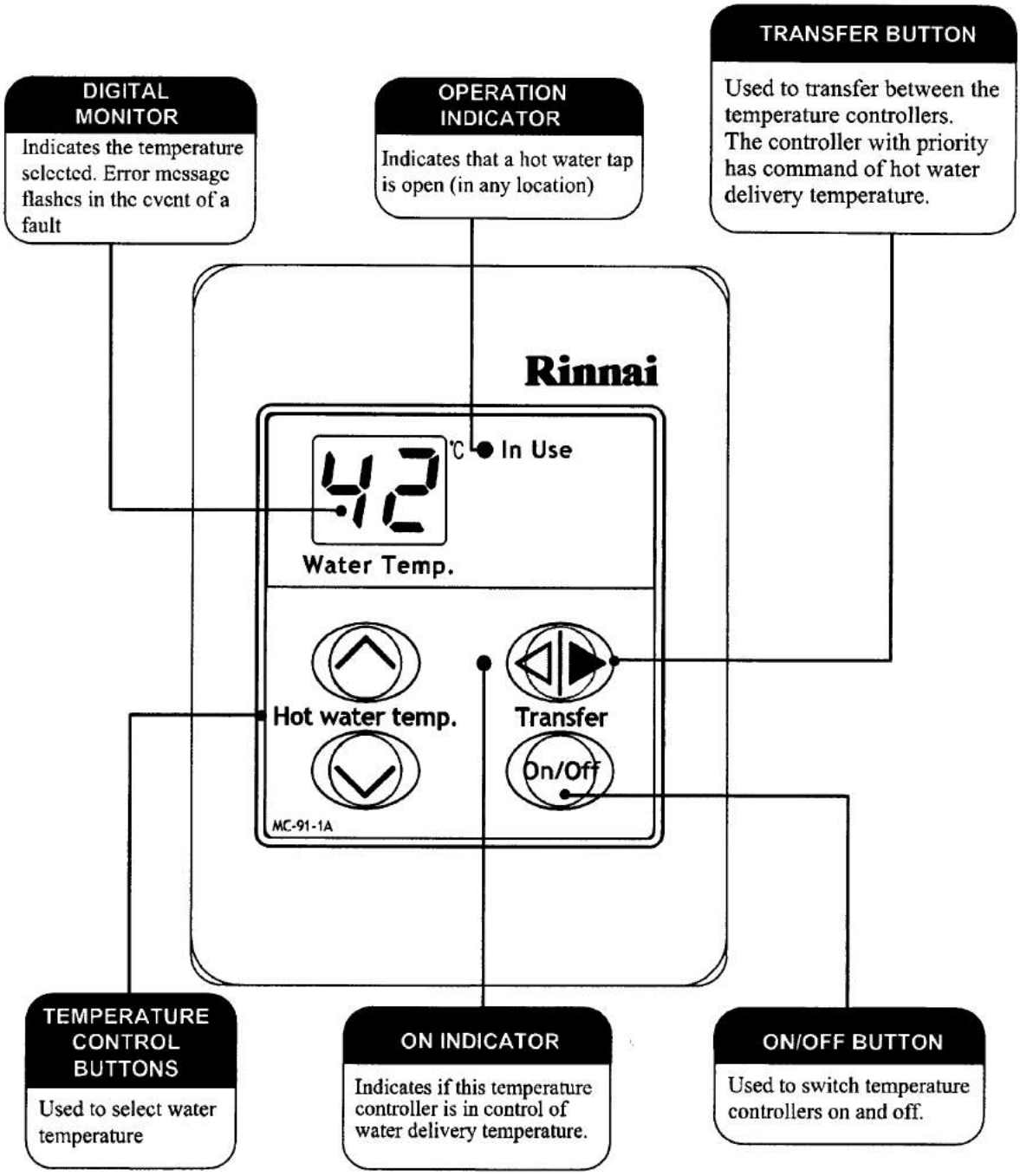
Kitchen 50°C - 65°C*; Shower 39°C - 43°C; Bath fill 39°C - 45°C
** This temperature may not be available on all installations.*

These temperatures are suggested starting points for selection. You may find higher or lower temperatures are more comfortable. Maintaining lower temperatures helps to save energy. To obtain water temperatures lower than 37°C simply add cold water.

Up to four controllers can be used for one Infinity 26i or HD50i. When multiple temperature controllers are used they allow the temperature to be set from various locations by pushing the transfer button which gives that controller priority over the system. The temperature selected by the controller with priority will be available to all outlets.

TEMPERATURE CONTROLS - OPERATING

Remote temperature controllers are a feature that provides control over the water temperature. Rinnai Infinity and HD water heaters can be operated with 1, 2, 3, 4 or no temperature controllers. The Universal controller MC-91-1A comes as standard with all Infinity water heaters, and are optional for the HD range.

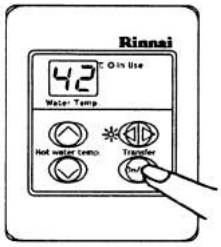


NOTE:
Each time a button is pressed, a BEEP will sound.
The BEEP sound can be muted by depressing the Temperature Controller Up and Down buttons simultaneously for more than 3 seconds.
This can be done for each Temperature Controller.

TEMPERATURE CONTROLS - OPERATING

Using 1 Universal Temperature Controller.

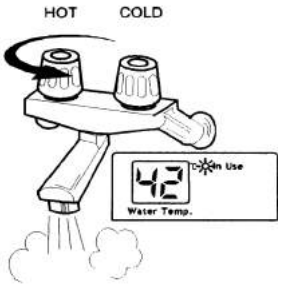
Press the **On/Off** button on the temperature controller.



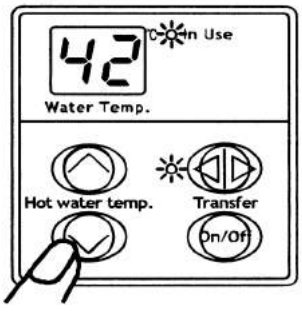
The ON indicator will glow on the Temperature Controller. This indicates that the heater is ready to supply hot water when a tap is opened.

Adjusting Temperature

Simply press the Hot Water Temperature Up or Down arrow button until the desired temperature is displayed on the digital display.



To operate the heater, simply turn any hot water tap on. This will automatically light the burner providing hot water. The red **In Use** indicator will glow on the temperature controller.



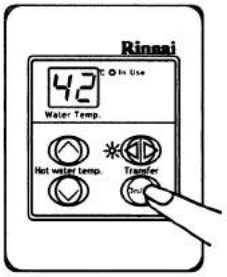
Caution: Always check water temperature before use.

Note: With the hot water tap open and a temperature of 43^0C or higher selected, if the temperature is decreased to below 43^0C, and then raised again the maximum available temperature will be 43^0C. For safety reasons temperature 'priority' cannot be transferred between controllers when a hot water tap is open.

TEMPERATURE CONTROLS - OPERATING

Using 2 or more Universal Temperature Controllers.

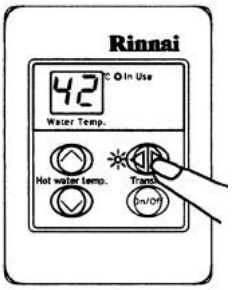
Switching the system ON.



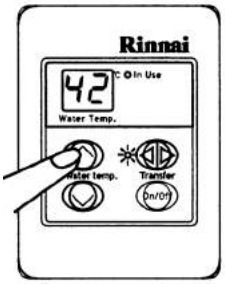
The hot water system and all controllers can be switched ON and OFF from any controller by pressing the **On/Off** button as shown. When the system is turned ON the water temperature display will be lit.

During normal operation the system is left ON. Do not push the **On/Off** button when water is running.

Using hot water.

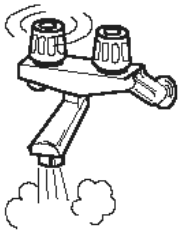


Ensure the system is switched **On** by verifying the temperature display is lit. Ensure the controller has priority by verifying the **Transfer** LED indicator is lit. If it is not then press the **Transfer** button once. This gives the local controller priority of temperature over the system.

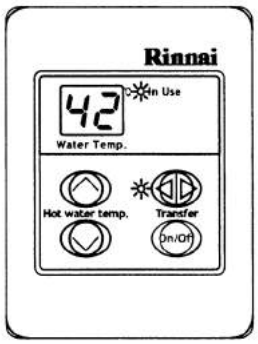


Select the desired temperature using the **Hot water temp.** buttons. The selected temperature will be displayed on all controller displays. This is the water temperature which will be supplied from the heater.

Bathroom temperatures should be no more than 50^{0}C.



Open the hot water tap. The appliance will be activated and the **In Use** indicator will be lit.



TEMPERATURE CONTROLS - OPERATING

Using 4 Universal Temperature Controllers.

You will need to activate the fourth controller.

STEP 1: On the Master controller press and hold the **Transfer** and **On/Off** buttons simultaneously (see fig 2.) until a “beep” is heard (approx. 5 seconds)

STEP 2: Check that the display on all Four controllers is lit and displaying a temperature when switched on. If any ONE of the controllers displays two dashes (see fig 1.) in the display repeat STEP 1.

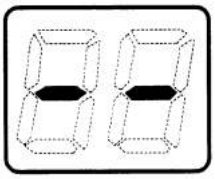


Fig 1.

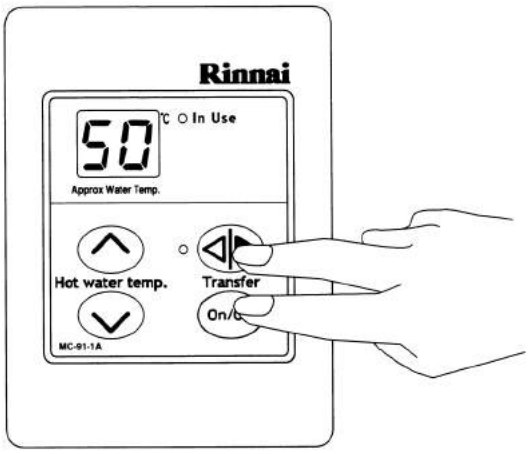


Fig 2.

Note:

If the master controller is replaced, repeat STEP 1 above for the new controller.

TEMPERATURE CONTROLS - OPERATING

Using High Temperature Display Controllers.

You will need to program the Master controller if you want to display and use temperatures over 50^0C. Programming only needs to be done on Master universal controllers; other universal controllers will not allow this, and Deluxe Kitchen Controllers are supplied already programmed to allow high temperatures. Temperatures in bathrooms should never exceed 50^0C.

STEP 1: On the Master controller press and hold the **Transfer** and **On/Off** buttons simultaneously (see fig 2.) until a “beep” is heard (approx. 5 seconds)

STEP 2: When the Master controller is switched on it should be possible to select temperatures higher than 50ºC. If not repeat STEP 1.

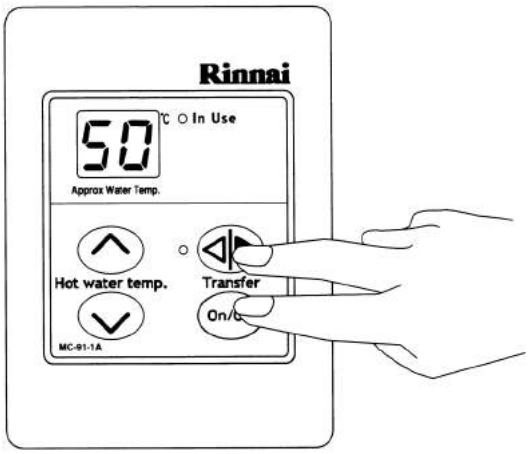


Fig 2.

Note:

If the master controller is replaced, repeat STEP 1 above for the new controller.

TEMPERATURE CONTROLS - OPERATING

To turn off your hot water system.

During normal operation the system is left on.

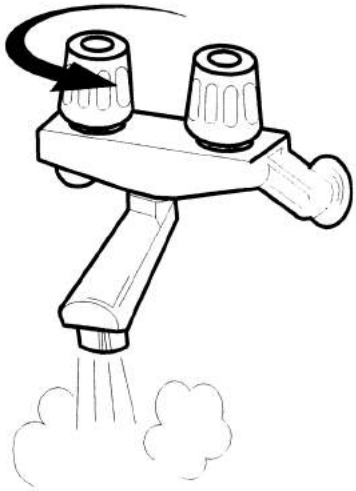
To turn the system off simply press the **On/Off** button on any temperature controller (where fitted). This will shut the water heater down completely including the temperature controller digital display.

The on indicator will go out.

If hot water taps are opened when the Rinnai Infinity is off, cold water will flow from the taps.

If the system is to be left off over the winter be sure to drain it down if there is a possibility of freezing temperatures.

Additional safety features.



Whilst the hot water tap is open, the following safety features apply:

- Temperature selection cannot be transferred.
- If a temperature of 43^0C or higher selected, and the temperature is decreased to below 43^0C, and then raised again the maximum available temperature will be 43^0C.
- Other controllers are unable to change the delivery temperature of the water.

Note

The temperature of the outgoing water is constantly monitored by a built in sensor. If the temperature of the outgoing hot water rises to more than 3ºC above the selected temperature shown on the digital display, or the preset limit if controllers are not fitted, the burner will automatically go out. The red operation indicator will also go out. The burner will ignite again once the outgoing hot water temperature falls to that shown on the digital display (or the pre-set limit of the Rinnai Infinity heater).

TESTING

1. Purge gas, hot water and cold water supply lines before making the final connection of the water heater. Swarf in either the gas or water supplies may cause damage.

2. Turn on gas and cold water supplies.

3. Test for water leaks and gas escapes near the unit.

4. Isolate gas and electric supply. Remove test point screw located on the inlet gas valve connection inside the heater and attach pressure gauge.

5. Turn the power on at the switch and turn on gas. **Warning:** There are 230V AC live supplies inside the heater.

6. If remote controllers are fitted, turn the controller on, select the maximum delivery temperature and open ALL available hot water outlets. If remote controllers are not fitted, simply open all available hot water outlets. (CAUTION: Ensure building occupants do not have access to hot water outlets during this procedure).

7. The gas pressure check must be carried out with all other appliances on the same main operating at maximum capacity to ensure that there is sufficient gas pressure.

8. With all other appliances operating the pressure at the test point on the inlet to the gas valve should read **20 mbar** for Natural Gas. For LPG (Propane) the pressure should be **37 mbar**. If the pressure is lower, the gas supply is inadequate and the water heater will not operate to specification. Check gas meter, regulator and pipework for correct operation/sizing and rectify as required. Note that the gas regulator on the appliance is electronically controlled and factory pre-set. Under normal circumstances it does not need adjustment during installation.

9. Close hot water outlets.

10. Inspect and clean the strainer and the filter located on the cold water inlet pipe. This procedure may need to be repeated to ensure the strainer remains clear.

11. If temperature controllers are fitted, it is necessary to test their operation through the complete range of functions.

12. Confirm the hot water delivery temperature using a thermometer. If controllers are fitted, compare the measured value to the set point.

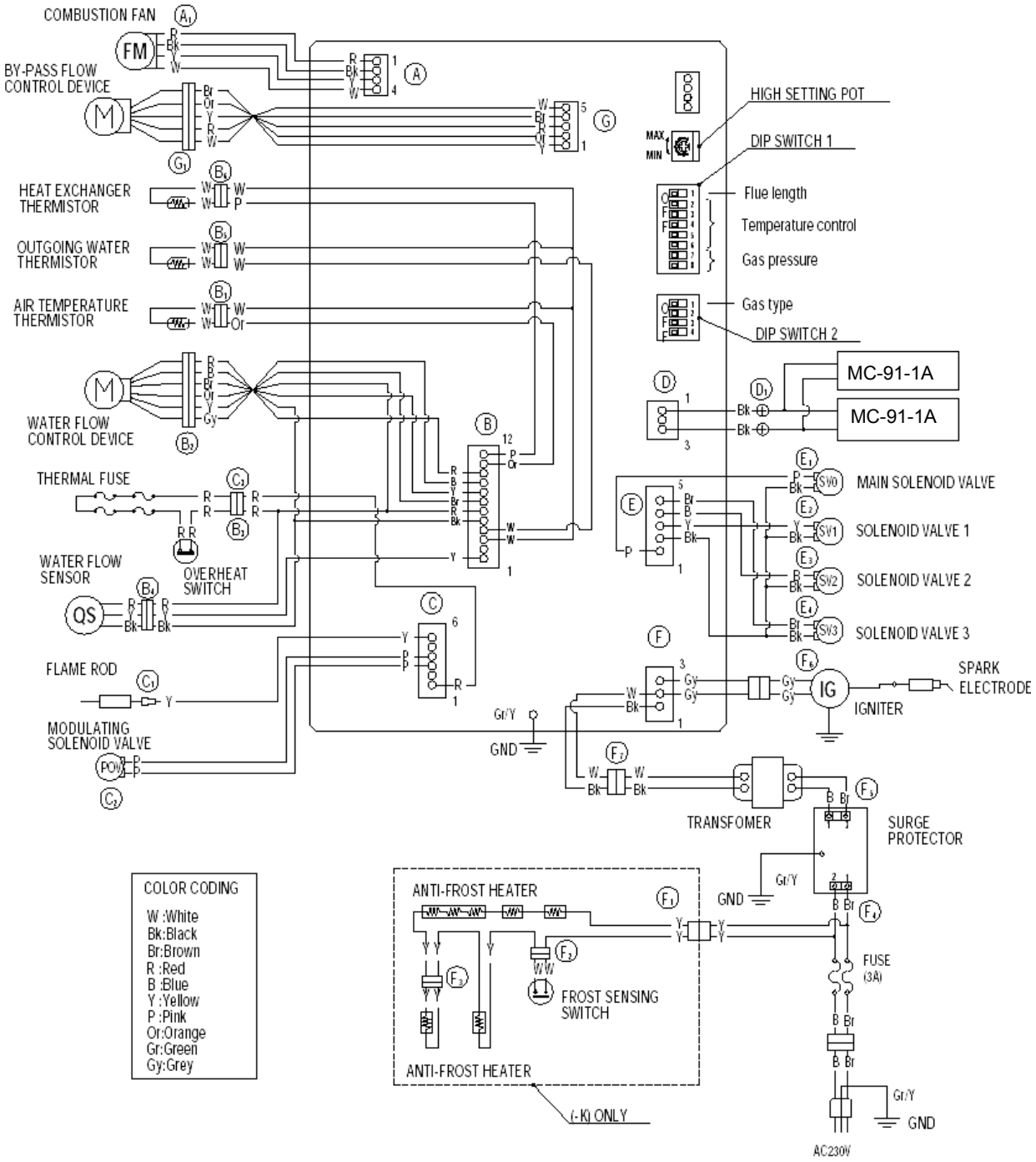
13. After testing is completed, explain to the user the functions and operation of the water heater and temperature controllers.

TECHNICAL DETAILS

Infinity Model	**Inf. Cond.32e/HDC1500e**	**Inf. Cond.32i/HDC1500i**	Units
Installation	External	Internal	
G20 Nat Gas Press Low	1.81	2.26	mbar
G20 Nat Gas Press High	5.64	6.28	mbar
G25 Nat Gas Press Low	2.35	2.81	mbar
G25 Nat Gas Press High	7.40	8.00	mbar
G31 Propane / G30 Butane Press Low	2.65	3.19	mbar
G31 Propane / G30 Butane Press High	7.99	9.02	mbar
Flue System	Direct Forced Exhaust	Forced, Room Sealed	
Temp. Range Controllers	37-46,48,50,55 - Infinity Range (plus 60,65,75 - HDC)		°C
Temp. via dip switches	40, 42, 50, 55, 60, 65, 75, 85		°C
Ignition	Direct Electronic Ignition		
Gas Consumption & Capacities **min** conditions	H_i = net calorific value H_s = gross calorific value		
G20 Nat Gas: Input Q_m: Hi/Hs | Useful output P_m	2.55/2.83 | 2.27	2.55/2.83 | 2.27	kW
G20 Nat Gas flow V	0.27	0.27	m^3/hr
G25 Nat Gas: Input Q_m: Hi/Hs | Useful output P_m	2.55/2.83 | 2.27	2.55/2.83 | 2.27	kW
G25 Nat Gas flow ref. conditions V_r	0.31	0.31	m^3/hr
G30 Input Q_m: Hi/Hs | Useful output P_m	3.17/3.44 | 2.75	3.17/3.44 | 2.75	kW
G30 flow normal operating conditions M_m	0.25	0.25	Kg./hr
G31 Input Q_m: Hi/Hs | Useful output P_m	2.78/3.02 | 2.42	2.78/3.02 | 2.42	kW
G31 flow normal operating conditions M_m	0.22	0.22	Kg./hr
Gas Consumption & Capacities **nominal** condit.	H_i = net calorific value H_s = gross calorific value		
G20 Nat Gas: Input Q_n: Hi/Hs | Useful output P_n	53.6/59.5 | 56	53.6/59.5 | 56	kW
G20 Nat Gas flow ref. conditions V_r	5.7	5.7	m^3/hr
G25 Nat Gas: Input Q_n: Hi/Hs | Useful output P_n	53.6/59.5 | 56	53.6/59.5 | 56	kW
G25 Nat Gas flow ref. conditions V_r	6.6	6.6	m^3/hr
G30 Input Q_n: Hi/Hs | Useful output P_n	61.7/67.06 | 62.2	61.7/67.06 | 62.2	kW
G30 flow normal operating conditions M_n	4.87	4.87	Kg./hr
G31 Input Q_n: Hi/Hs | Useful output P_n	54.1/58.8 | 54.7	54.1/58.8 | 54.7	kW
G31 flow normal operating conditions M_n	4.2	4.2	Kg./hr
Country of destination	GB/IE		
Gas category and pressure	I_{2H} G20-20mbar / I_{2L} G25-25mbar / I_{3P} G31-37mbar		
Type	A3 Outdoor	C13/33	
Max Flow (delta T = 21° K)	37	37	L/min
Min Operation Flow	1.5*	1.5*	L/min
Water Pressure (P_w)	1.0* - 10.0 (recommend 2.0 min.)		bar
Power Supply	230 V / 50 Hz		
Electric Consumption (1 remote)	72	99	Watts
Noise Level	50		dB (A)
Ignition safety time T_{SAmax}	4.2		Sec.

* *Minimum operation pressure and flow based on temperature setpoint and inlet conditions.*

WIRING DIAGRAM



DIAGNOSTIC POINTS

Diagnostic Points- To be read in conjunction with the wiring diagram.

FLOW CHART NO.	COMPONENT	MEASUREMENT POINT CN	MEASUREMENT POINT WIRE COLOR	NORMAL VALUE	A NOTE
①	SURGE PROTECTOR	J_7	B-Br	AC207~264V	
②⑯	WATER FLOW CONTROL DEVICE	B_2	R-B	DC11~13V	OPERATE ELECTRICITY
			Gy-Or	DC11~13V	CONTROL ELECTRICITY
			Gy-Y	BELOW DC1V (LIMITER ON)	FULL OPEN POSITION
				DC4~6V (LIMITER OFF)	
			Gy-Br	BELOW DC1V (LIMITER ON)	FULL CLOSE POSITION
				DC4~6V (LIMITER OFF)	
③	BY-PASS FLOW CONTROL DEVICE	B_1	Br-W Or-W Y-W R-W GND	DC2~6V	OPERATE CONDITION
				15~35Ω	
④	REMOTE CONTROL	H_1	Bk-Bk	DC11~13V	
⑤	WATER FLOW SENSOR	E_3	R-Bk	DC11~13V	ON 2.7L/min (30Hz) OVER 1800PULSE/MIN OFF 2.0L/min (20Hz) BELOW 1200PULSE/min
			Y-Bk GND	DC4~7V (PULSE 17~460Hz)	
⑥	COMBUSTION FAN	C	W-Bk GND	DC2~9V	
			CHECK TERMINAL	60~360Hz	
⑦	FLAME ROD	A_1	Y-BODY EARTH	AC100~160V	NO FLAME CONDITION
				OVER DC1μA	FLAME CONDITION
⑧	MODULATING VALVE	F_3	Or-Or	AC1.0~25V 70~90Ω	
⑨	OUTGOING THERMISTOR E_1 HEAT EXCHANGER OUTGOING THERMISTOR E_2		W-W	15℃…11.4~14.0kΩ 30℃…6.4~7.8kΩ 45℃…3.6~4.6kΩ 60℃…2.2~2.7kΩ 105℃…0.6~0.8kΩ	
⑩	THERMAL FUSE	F_1	R-R	BELOW 1Ω	
⑪	IGNITER	J_6	Gy-Bk	AC90~110V	
⑫	MAIN SOLENOID VALVE	I_1	P-Bk	DC80~100V 1.5~1.9kΩ	
⑬	SOLENOID VALVE 1	I_2	R-Bk	DC80~100V 1.8~2.2kΩ	
⑭	SOLENOID VALVE 2	I_3	Or-Bk	DC80~100V 1.8~2.2kΩ	
⑮	SOLENOID VALVE 3	I_4	Y-Bk	DC80~100V 1.8~2.2kΩ	

TRANSFORMER VOLTAGES AND RESISTANCE

CN	WIRE COLOR	NORMAL VALUE
A_2	R-R	AC90~110V 12~21Ω
D	Gr-Gr	AC12~18V 2.4~4.3Ω
A	Br-Gy	AC30~50V 2.2~3.9Ω
A	Y-Gy	AC180~220V 300~530Ω

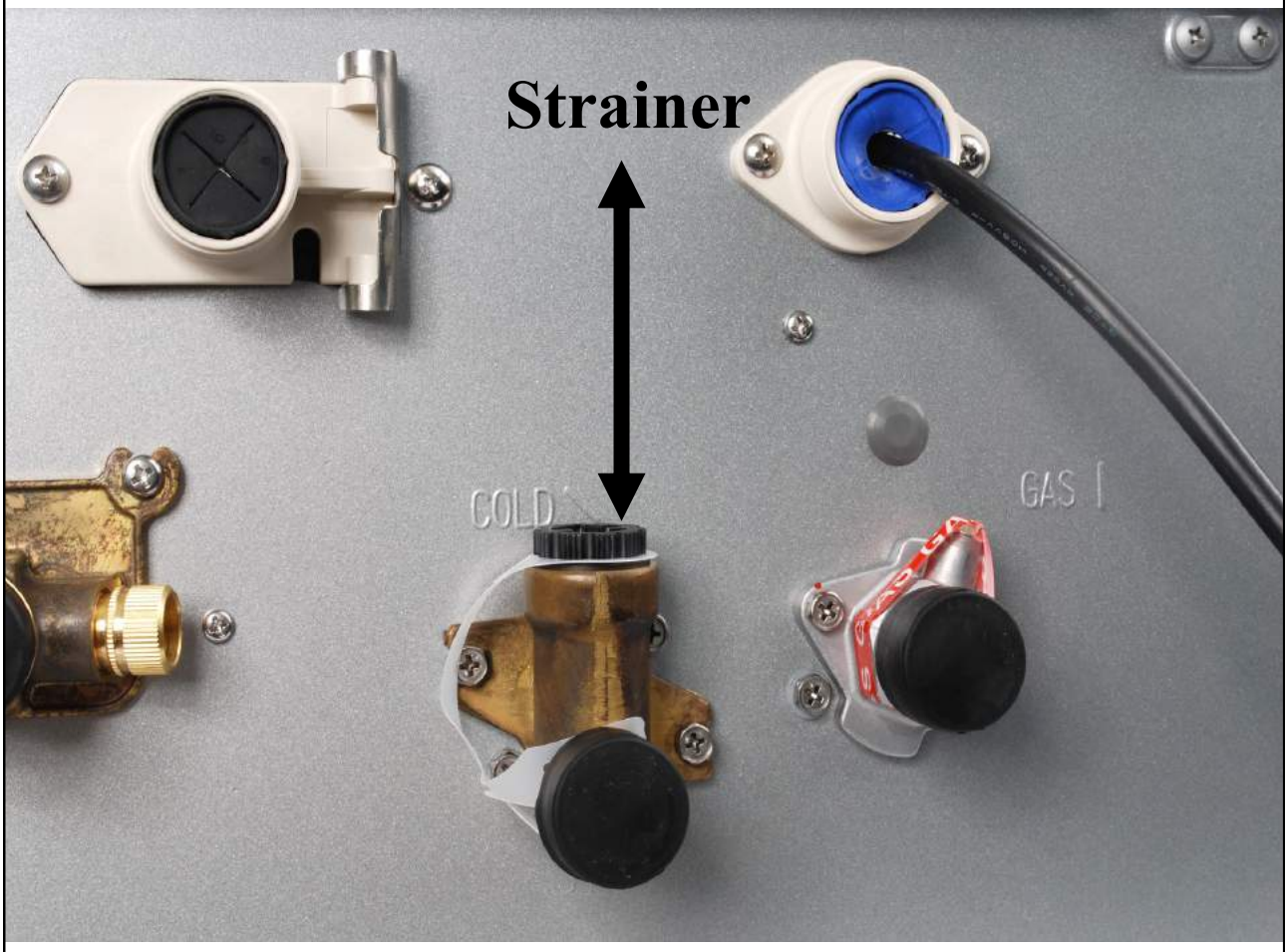
Strainer/Filter Location

The in line strainer / filter is located behind this disc.

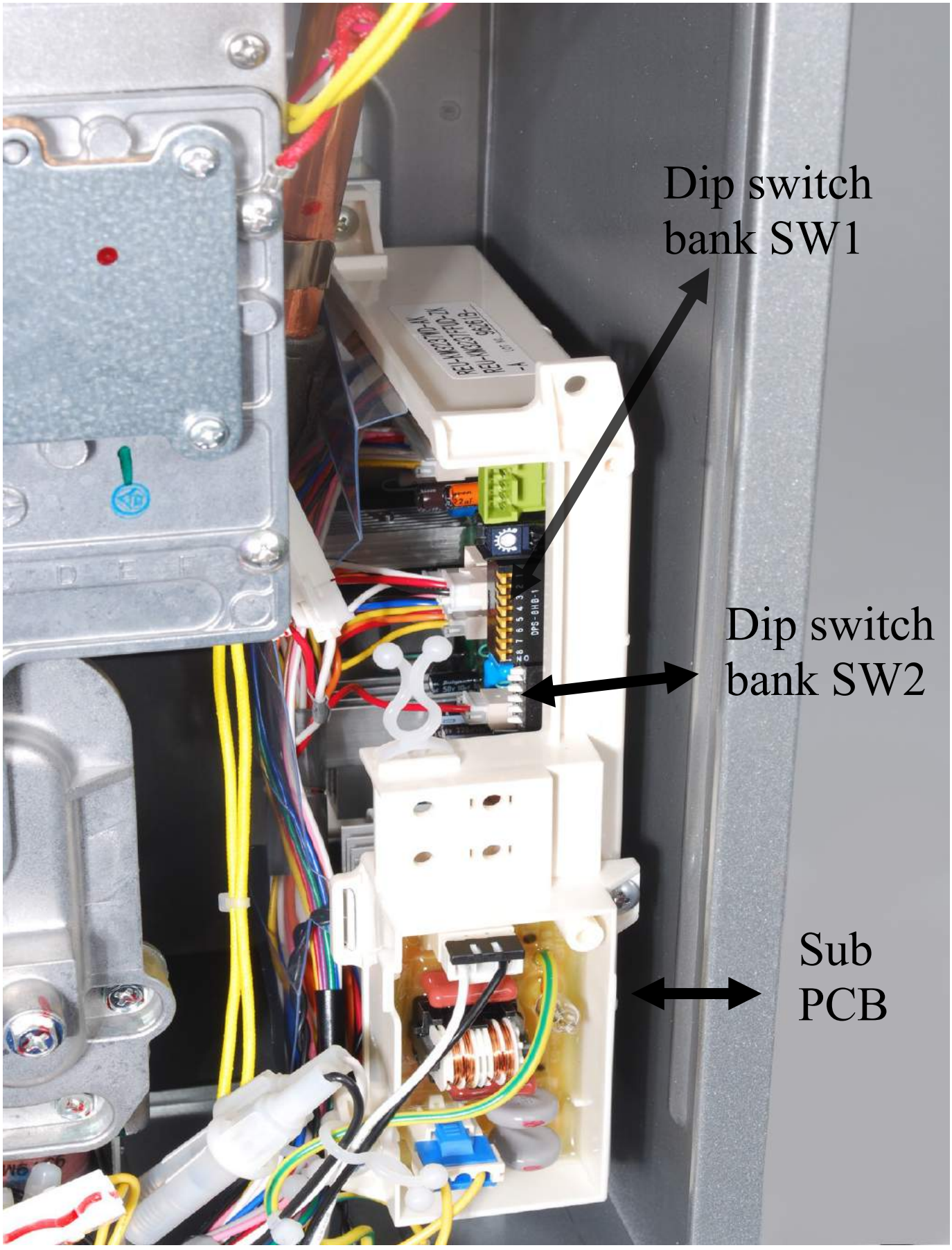
To remove turn anti clockwise, this will unscrew the complete assembly, withdraw and the strainer / filter will be found attached, behind the disc.

To clean simply gently brush clean under a running tap, this should be all that is required.

Should the gauze be split a new element can be obtained from Rinnai UK.

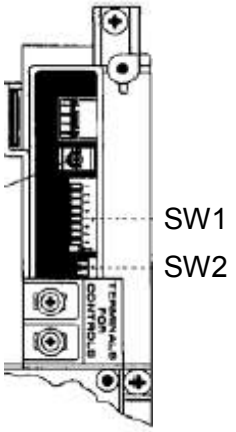


DIP SWITCH LOCATION



GAS PRESSURE SETTING

The working gas pressure on the water heater is electronically controlled and factory 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. **Contact Rinnai UK before attempting to alter the gas pressure. Failure to do so could void the warranty.**



1. Turn 'OFF' the gas supply.
2. Turn 'OFF' 230V power supply.
3. Remove the front cover from the appliance.
4. Check gas type switch no.1 of SW2 is in the correct position for the type of gas (Nat. or LPG) you are using. (SW2 is bottom set of switches.)

off	on	SW2	
	■	1	-Nat. Gas
		2	
		3	
		4	

off	on	SW2	
■		1	-LPG
		2	
		3	
		4	

* On is in the forward position, Off is in the back position. Pull the switch toward you to put it in the on position.

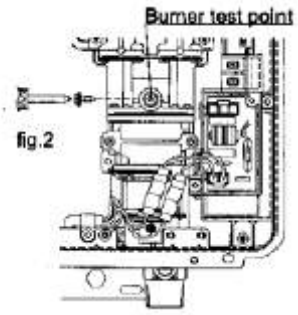


fig.2

5. Attach pressure gauge to burner test point. (fig. 2)
6. Turn 'ON' the gas supply.
7. Turn 'ON' 230V power supply.
8. If remote controllers are fitted, turn the unit 'ON' at the master controller, select a maximum delivery temperature 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 Rinnai Infinity to 'Forced Low' combustion by setting No. 7 dipswitch of the top set of dip switches (SW1) to 'ON'. (fig 3)
10. Check the burner test point operating pressure.

off	on	SW1
		1
		2
		3
		4
		5
		6
	■	7
		8

fig. 3

GAS PRESSURE SETTING

11. Remove rubber access plug and adjust the regulator screw on the modulating valve (fig. 4) as required to the pressure below. Replace rubber access plug.

N.G	**1.9 mbar**
LPG	**2.3 mbar**

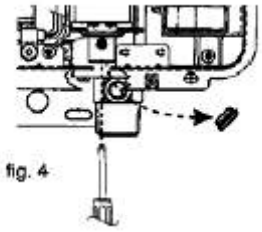


fig. 4

12. Set the Rinnai Infinity to 'Forced High' combustion by setting no. 7 and no. 8 dipswitches of the top set of switches (SW1) to 'ON'. (fig.5) Ensure maximum water flow.

13. Check the burner test point pressure.

14. Adjust the high pressure potentiometer on the Printed Circuit Board above SW1 (fig. 6) to the pressure shown below. The potentiometer is very sensitive, turn no more than a few degrees at a time; then let the pressure settle down before turning it more.

N.G	**8.5 mbar**
LPG	**10.8 mbar**

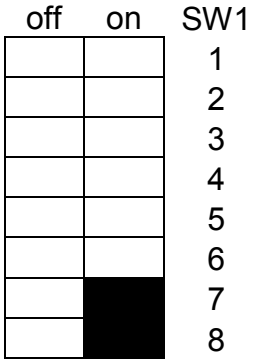


fig. 5

High Press. Potentiometer

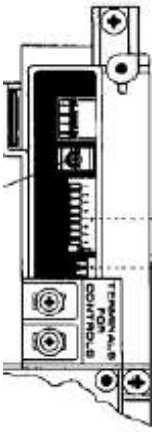


fig. 6

15. **IMPORTANT**: Set dip switch no. 7 and no. 8 on the top set of switches (SW1) to 'OFF' to return the appliance to 'Normal' combustion.

16. Close hot water tap.

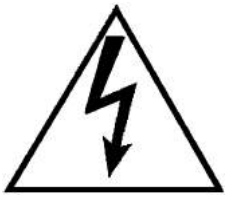
17. Turn OFF the gas supply and 230V power supply.

18. Remove pressure gauge, and replace sealing screw

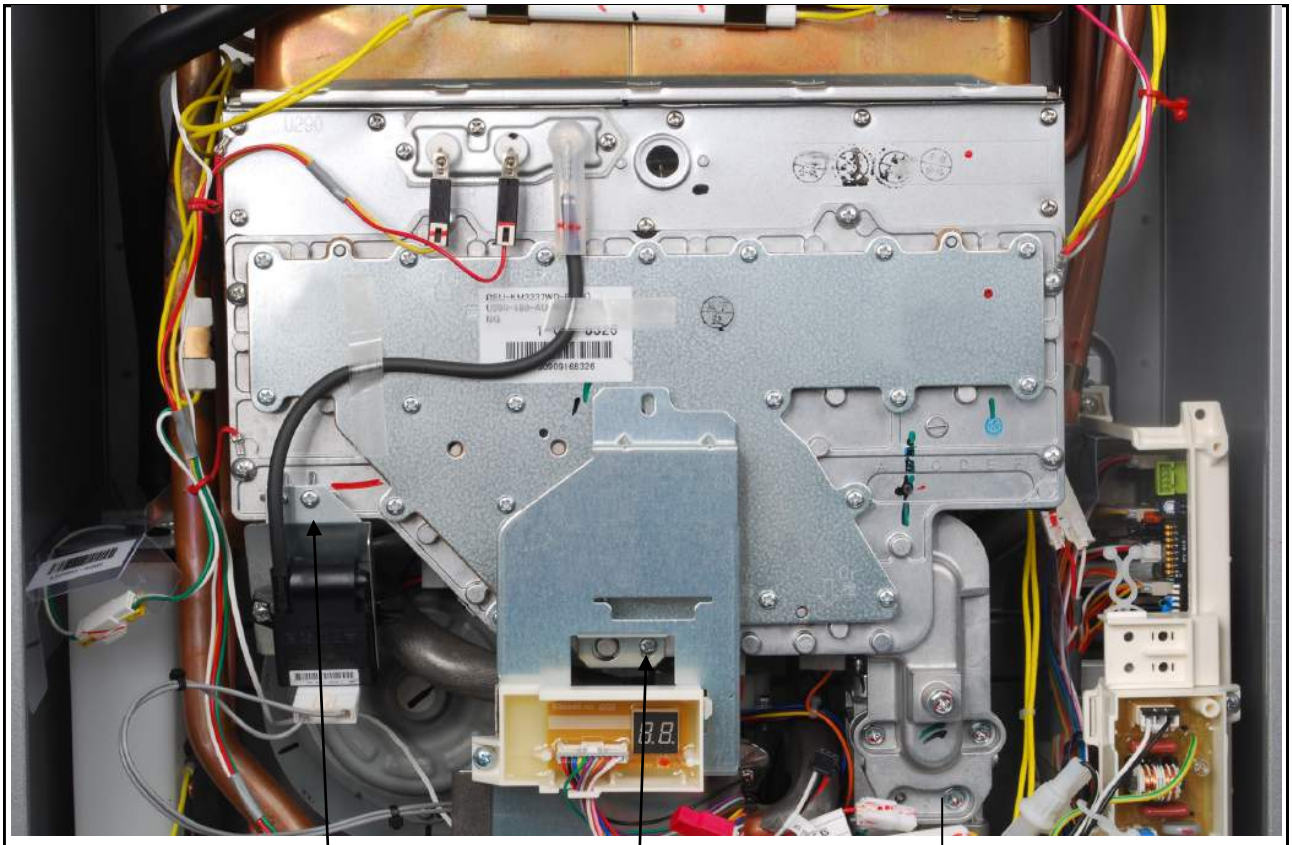
19. Turn 'ON' the gas supply and 230V power supply.

20. Operate unit and check for gas leaks at test point.

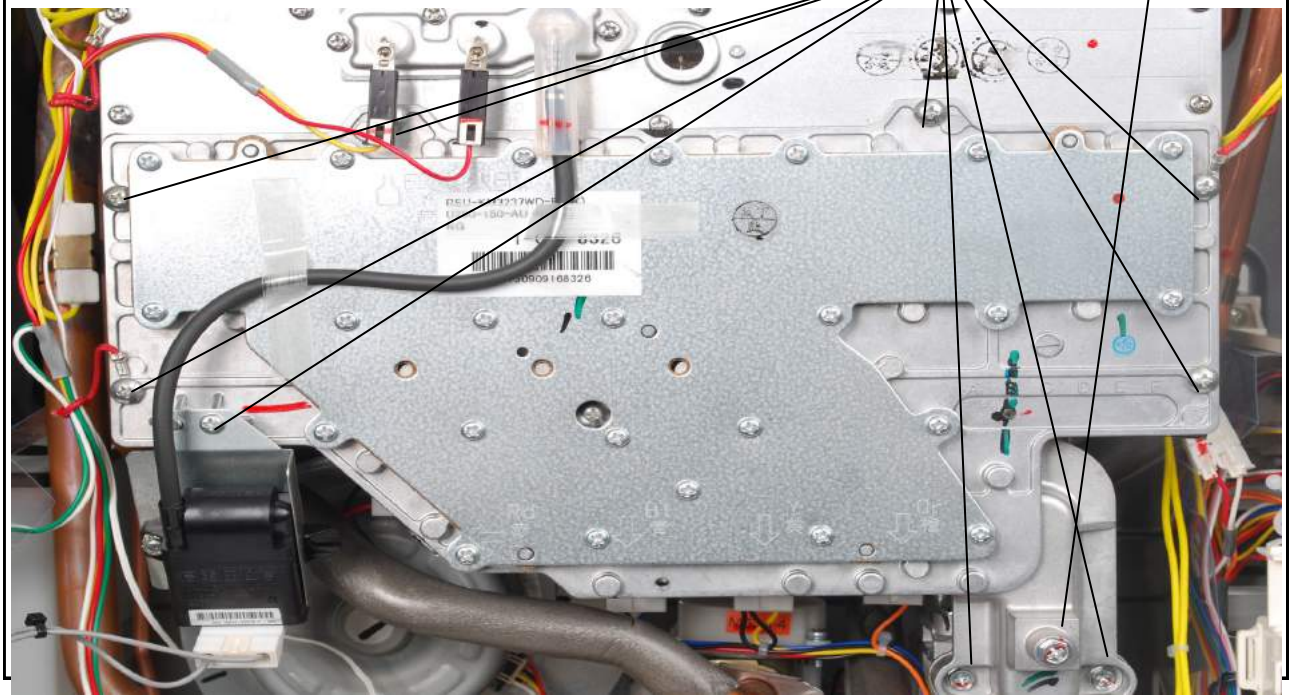
21. Replace the front cover of the appliance.


CAUTION

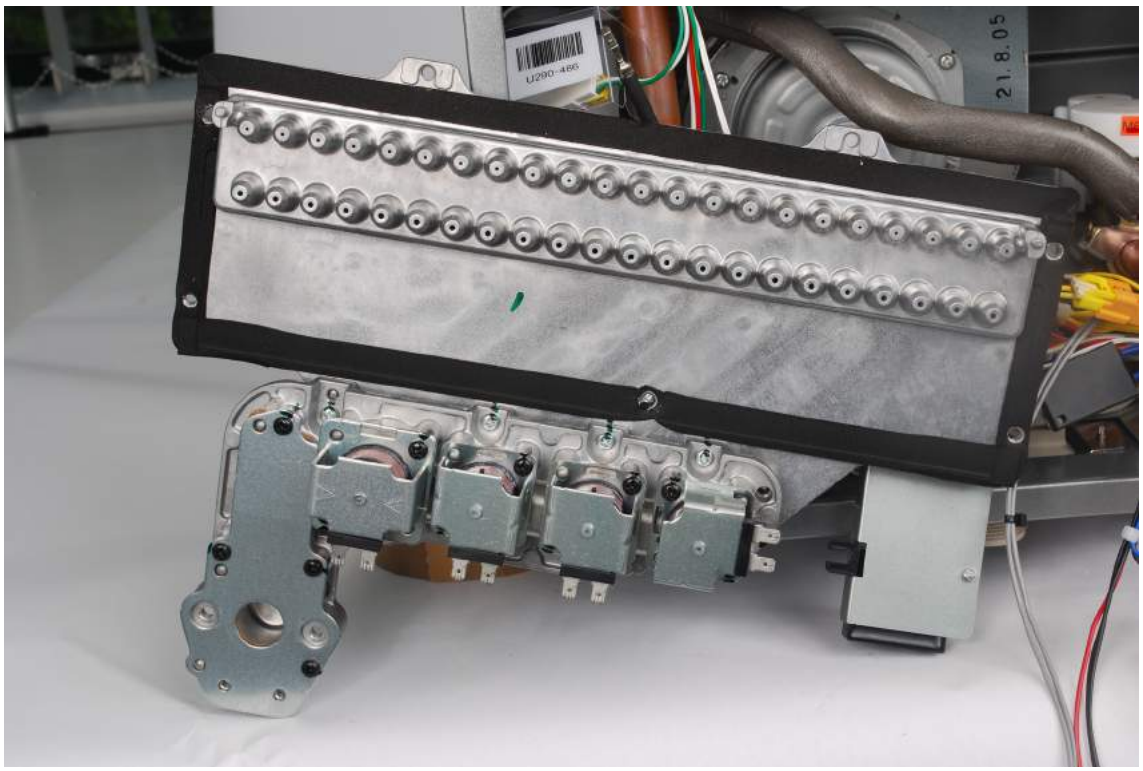
GAS CONVERSION



1. Turn 'OFF' the gas supply.
2. Turn 'OFF' 230V power supply.
3. Remove the front cover from the appliance.
4. Disconnect Flame Probe Leads and Ignition Electrodes lead
5. Remove Sparker via Retaining screw (A)
6. Remove Display panel via screw (B)
7. Remove 8 Manifold Retaining Screws (C)



GAS CONVERSION

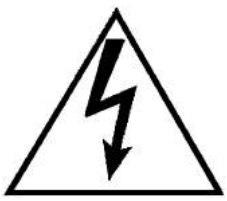


5. Remove Complete Manifold and Replace with New Gas Type
6. Reverse operations 1—4
7. Select New Gas Type on Dip Switch No1 on SW2 Block

off	on	SW2	
	■	1	-Nat. Gas
		2	
		3	
		4	

off	on	SW2	
■		1	-LPG
		2	
		3	
		4	

8 Remove Test Point Screw D and fit Manometer
9 Re-Instate Gas
10 Re Instate Electric
11 Follow Gas Pressure Setting Procedure on Page 34



CAUTION

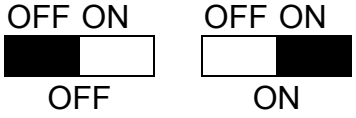
DIP SWITCH SETTING

Dip Switch Positions Explained

OFF ON SW1

■		1	-	Computer Programming
		2	-	Temperature
		3	-	Temperature
		4	-	Temperature
		5	-	Temperature
		6	-	Temperature
		7	-	Combustion
		8	-	Combustion

LEGEND:
Black Section indicates position of dip switch.



OFF ON SW2

		1	-	Gas Type
■		2	-	Not in Use
		3	-	Computer Programming
■		4	-	Not in Use

Dip Switches Explained

GAS TYPE

LPG

OFF ON SW2

■		1	off
		2	
		3	
		4	

NAT GAS

OFF ON SW2

	■	1	on
		2	
		3	
		4	

COMPUTER PROGRAMMING

OFF ON SW1

■		1	Computer programming
		2	Switches and Not in Use
		3	Switches are always in the
		4	OFF position for the
		5	Infinity 26i and HD50i.
		6	
		7	
		8	

OFF ON SW2

		1
■		2
■		3
■		4

COMBUSTION

NORMAL

OFF ON SW1

■		7	off
■		8	off

FORCED LOW

OFF ON SW1

	■	7	on
■		8	off

FORCED HIGH

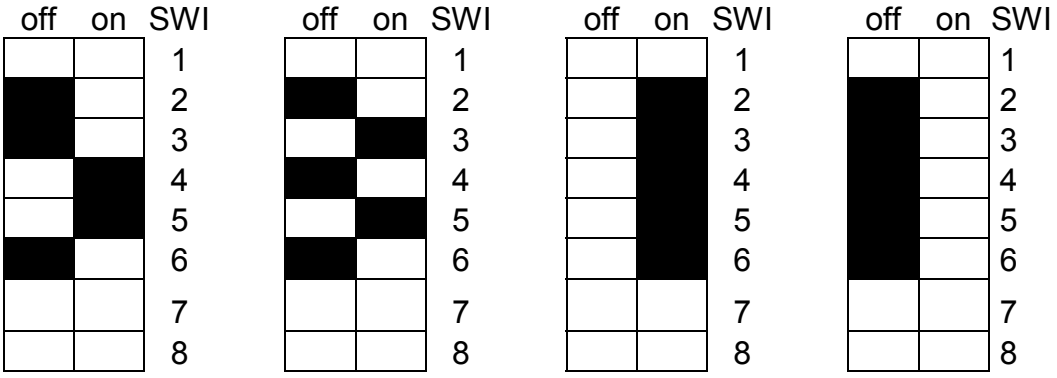
OFF ON SW1

	■	7	
	■	8	on

DIP SWITCH SETTING

Infinity 26i and HD50i

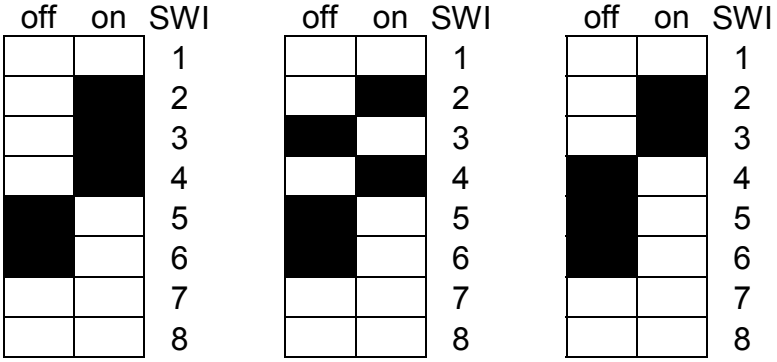
Temperatures - With or Without Remotes Connected



(factory setting)

HD50i only

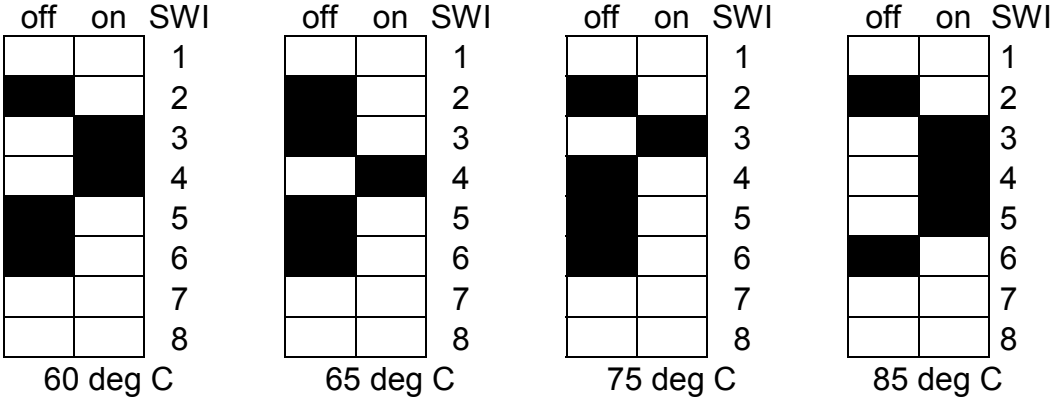
Temperatures - Remotes Connected



If the remote was accidentally disconnected the unit would revert to 55C

HD50i only

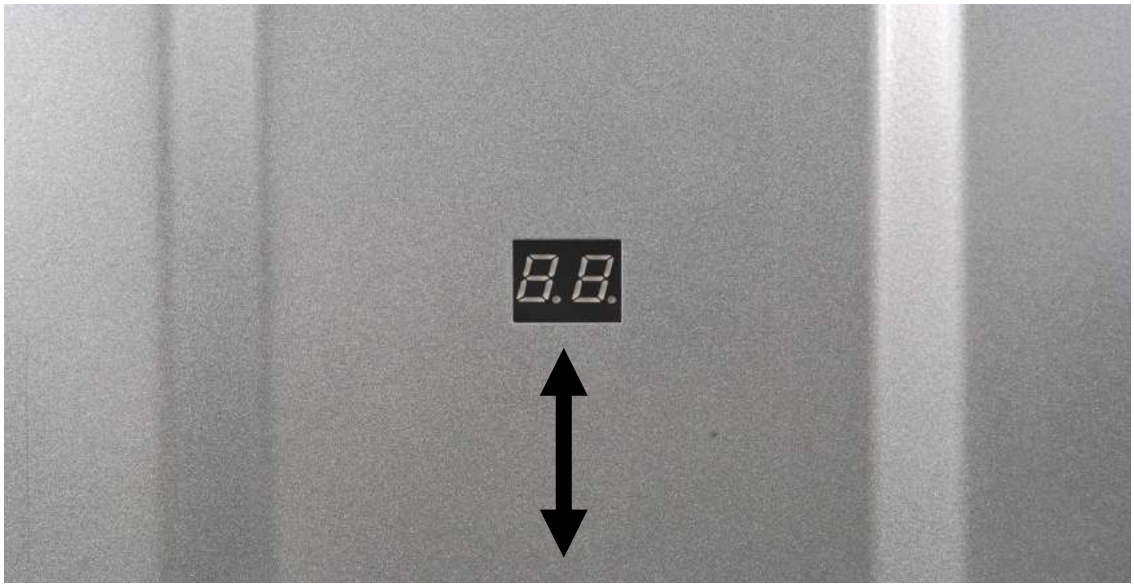
Temperatures - Remotes Not Connected



(factory setting)

Error Display Screen

Error Display Screen



Error Display Message

ERROR MESSAGES

Troubleshooting without controllers

If you have not installed temperature controllers and experience the following symptoms, please carry out the suggestions below. If symptoms continue, please contact Rinnai for advice.

Fault	Remedy
Heater does not attempt to start at all.	Check the power is on at the heater. Check the cold water valve supplying the heater is open.
Heater starts then shuts down immediately.	Check the power is on. Check the gas valve at the heater and at the gas meter is fully open. Open the hot water tap fully.
Heater starts then the water goes cold.	Check the power is on. Open your hot water tap further or try another hot outlet.

NOTE: Faults caused by insufficient gas/water supply or gas/water quality and installation errors are not covered by the manufacturer's guarantee.

Installations with circulation pumps

With temperature controller fitted.

If you have an installation using a secondary circulation pump this must be switched off so that there is no flow through the heater when starting or after a power failure. If the pump is running the unit will not operate (no display on the controller). Isolate pump then start heater before restarting pump. This is a safety feature.

The pump should also be fitted with a thermostat to prevent the return temperature reaching the heater set point temperature.

Without temperature controller fitted.

The heater should automatically reset and provide water at the temperature set by the internal limit switches.

ERROR MESSAGES

Rinnai water heaters have the ability to check their own operation continuously. If a fault occurs, an error code will flash on the Digital Display if you have temperature controllers installed. This assists with diagnosing the fault, and may enable you to overcome a problem without a service call. Please quote the code displayed when enquiring about service.

Code Displayed	Fault	Remedy
-	Noticeable reduction in water flow	Inlet water filter needs to be cleaned.
03	Power interruption during operation (water will not flow when power returned)	Turn off all hot water taps and circulating pumps. Press 'On/Off' twice
10	Not enough combustion air	Check for physical blockages around air intake or exhaust. Check combustion fan.
11	No Ignition / Gas supply	Check gas valves, gas supply and ignition unit.
12	Flame failure / Earth Leakage	Check gas valves and gas supply. Check flame rod. Check earth wire lead. Check remote control.
14	High flame safety device	Service Call
16	Over temperature warning	Service Call
32	Outgoing water temperature sensor faulty	Service Call
33	Heat exchanger outlet sensor faulty	Service Call
34	Combustion Air Temperature Sensor Faulty	Service Call
52	Gas modulating valve faulty	Service Call
61	Combustion fan failure	Service Call
65	Water flow control faulty (does not stop flow properly)	Service Call
71	Micro-processor failure	Service Call
72	Flame rod circuit error	Service Call

* In all cases, you may be able to clear the Error code by turning the hot water tap OFF, then ON again. If this does not clear the error, try pushing the On/Off button OFF then ON again. If the Error Code still remains contact Rinnai or your nearest service agent for advice.

** Faults caused by insufficient gas/water supply or gas/water quality and installation errors are not covered by the manufacturer's guarantee.

RESTARTING THE RINNAI WATER HEATER

Following a power cut the heaters should be restarted in this manner.

Standard system.

Single or multiple water heaters without remote controllers.

The heaters will automatically reset without any user involvement.

Single or multiple water heaters with remote controllers.

The heaters will be required to be switched on using the ON/OFF button on a remote controller. Ensure that all taps/water outlets are closed and no water is flowing through heaters.

Hot water system incorporating secondary recirculation pump.

Single or multiple water heaters without remote controllers.

The heater(s) will automatically reset without any user involvement.

Single or multiple water heater(s) with remote controller(s).

To reset the heaters follow the steps.

1. Turn off all hot water taps.
2. Turn off supply to secondary circulating pump or alternatively, if heater and pump are fed from the same electrical supply, isolate pump flow.
3. Turn on heater at remote control.
4. Select required temperature.
5. Switch on supply to secondary circulating pump or open valve on pump flow.

The heater will now be ready to supply water at the set temperature.

If following the above procedure does not reset the heater switch it on and off at its main supply, and then go through these steps again. If heater is still not working call your local service agent or Rinnai for assistance.

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 (A1).

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 (A1).
Normal: DC11~13V
If normal proceed to b.).
Faulty: Replace PCB.

b.) Measure voltages between Black and White of connector (A1).
Normal: DC5~10V
If normal proceed to Sparker Circuit 2.
Faulty: Replace Combustion Fan.

2. Sparker Circuit

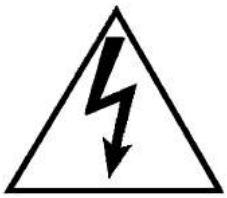
a.) Measure voltages between Grey and Grey of connector (F6).
Normal: AC207~264V During Ignition
If normal, proceed to b.).
Faulty: Replace PCB.

b.) Disconnect connector (J6) and measure resistance between both terminals of the sparker.

Normal: 1M

If not sparking, adjust or replace ignition plug.
Faulty: Replace Sparker.

Component and Circuit Checks



3a.Main Solenoid Valve (SV0) Circuit

Check the main solenoid if error indicator “11” is displayed.
a.) Disconnect Main Solenoid connector (SV0) and measure resistance between Pink and Black
Normal: 37~43Ω
If normal, proceed to b.).
Faulty: Replace Main Solenoid.
b.) Measure voltage between Pink-Black of Main Solenoid connector.
Normal: DC 11~13v
If normal, proceed to Solenoid Valve SV1 (B4)
Faulty: Replace PCB.

3b.Solenoid Valve 1 (SV1) Circuit

Check Solenoid 1 if error indicator “11” is displayed.
a.) Disconnect Solenoid 1 connector (B4) and measure resistance between Blue and Black.
Normal: 37~43Ω
If normal, proceed to b.).
Faulty: Replace Solenoid 1.
b.) Measure voltage between Blue and Black of Solenoid 1 connector.
Normal: DC*11~13v*
If normal, proceed to Solenoid Valve 2 (B5) Circuit
Faulty: Replace PCB.

3c. Solenoid Valve 2 (SV2) Circuit

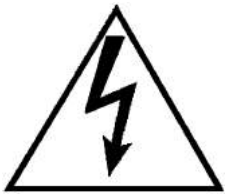
a.) Disconnect Solenoid 2 connector (B5) and measure resistance between Yellow and Black.
Normal: 37~43Ω
If normal,, proceed to b.
Faulty: Replace Solenoid Valve 2.
b.) Measure voltage between Yellow and Black of Solenoid Valve connector.
Normal: DC*11~13v*
If normal, proceed to Thermal fuse Circuit.
Faulty: Replace PCB

3c. Solenoid Valve 3 (SV3) Circuit

a.) Disconnect Solenoid 3 connector (B6) and measure resistance between Red and Black.
Normal: 37~43Ω
If normal,, proceed to b.
Faulty: Replace Solenoid Valve 2.

.b) Measure voltage between Red and Black of Solenoid Valve connector.
Normal: DC*11~13v*
If normal, proceed to Thermal fuse Circuit.
Faulty: Replace PCB

Component and Circuit Checks



3d. Solenoid Valve 4 SV4 Circuit

a.) Disconnect Solenoid connector (B7), measure resistance between Orange and Black.
Normal: 37~43Ω
If normal, proceed to b.)
Faulty Replace Solenoid valve 4

b) Measure voltage between Orange and Black of Solenoid Valve 4 connector.(B7)
Normal: DC*11~13v*
If normal, proceed to Thermal fuse Circuit.
Faulty: Replace PCB

3c. Modulating Valve

a.) Disconnect Solenoid connector (B2), measure resistance between Orange and Orange
Normal: 67~82Ω
If normal, proceed b)
Faulty*:* Replace Modulating Solenoid valve

b) Measure voltage between Orange and Orange of Modulating Valve connector.(B7)
Normal: DC 2~15V
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 to 55°C.
Normal: If secondary pressure changes, go to Water Flow Servo Circuit.
Faulty: Replace Modulating Valve.

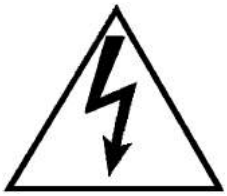
4. Flame Rod Circuit

Check flame rod.

Disconnect flame rod terminal (B8 or M1), 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 (B8 or M1) and appliance earth.
Normal: >1M
If normal, replace PCB.
Faulty: Replace flame rod.

a.) Remove the Flame Rod terminal (B8 or M1) repeat operation procedure, if 72 is displayed again check
the Hot water outlet thermistor.

Component and Circuit Checks



4. 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.

5. Thermal Fuse Circuit

Check the Thermal Fuse.
Disconnect relay connector (F1,) measure resistance between Red and White.
Normal: < 1 Ω
If normal, replace PCB.

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

6. Overheat Switch Circuit

Measure resistance between Overheat Switch terminals.
Normal: < 1 Ω
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.

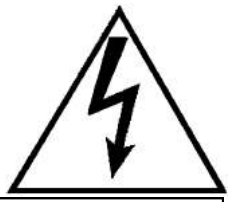
7. Water Flow Sensor

a.) Measure voltage between Red - Black of relay connector (E5).
Normal: DC 11~13V
If normal, proceed to b).
Faulty: Replace PCB.

b.) Measure voltage between Yellow - Black of relay connector (E5).
Normal: DC 4~7V (PULSE 20-300Hz)
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).
ON: 2.4l/min(33Hz) over 1980 pulse/min
OFF: 1.7l/min (23Hz) over 1380 pulse/min

Component and Circuit Checks



8. Water Flow Servo Circuit

a.) Disconnect relay connector (G2), and measure resistance between Red and Pink & Blue and White on water flow servo.
Normal: 30~50Ω
If normal: proceed to b.)
Faulty: Replace Water Flow Servo and Water Flow Sensor.

b.) Disconnect relay connector (G2), and measure voltage between Red / Orange, Pink / Orange, Blue / Orange, White / Orange on PCB unit side.
Normal: DC11~13V (DC 5—7V During Operation)
If Normal: proceed to c.).
Faulty: Replace PCB unit.

c.) Measure voltage between Yellow and Grey with relay connector (G2) connected (with no water flowing, **water flow servo fully open**).
Normal: < DC4~6V (limiter off) Below DC1v (limiter on)
If Normal proceed to d.)
Faulty: Replace Water Flow Servo and Water Flow Sensor.

d.) Measure voltage between Brown and Grey with relay connector (G2) connected (with no water flowing, water flow servo fully close).
Normal: < DC1.0V (limiter on) DC4 –6V (limiter off)

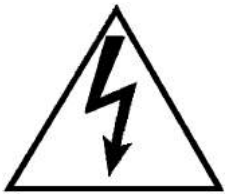
Faulty: Replace Water Flow Servo and Water Flow Sensor.

9. Bypass Servo Circuit 15.

a.) Disconnect relay connector (G1) and measure resistance. Brown / White, Orange / White, Yellow / White, Red / White
Normal: 15—35 Ω
If normal, proceed to b.).
Faulty: Replace PCB.

b.) Measure working voltage while relay connector (G1) is connected. . Brown / White, Orange / White, Yellow / White, Red / White.
Normal: DC 12C (DC 2—6V During operation)
Faulty: Replace Bypass Servo.

Component and Circuit Checks



10. Heat Exchanger Outlet Thermistor Circuit

Check Heat Exchanger Thermistor (TH) if error code “33” is displayed.
Disconnect relay connector (E2) and measure resistance between White -White.
Circuit break: Resistance >1M Ω
Short circuit: Resistance > 1 Ω
15ºC : 11.4—14.0kΩ
30ºC : 6.4 —7.8kΩ
45ºC : 3.6— 4.5kΩ
60ºC : 2.2— 2.7kΩ
100ºC : 0.6— 0.8kΩ
Normal: Check Heat exchanger outlet thermistor
Faulty: Replace heat exchanger outlet thermistor.
Note: For controller readout of thermistor temperature whilst operational refer maintenance monitor.

11. Hot Water Outlet Thermistor Circuit

Check Hot Water Thermistors (TH1, TH2) if error code “32” is displayed.
Disconnect relay connector (B5) and measure resistance White - White.
When disconnected: Resistance > 1 M Ω
When short circuit: Resistance > 1Ω
15ºC : 11.4—14.0kΩ
30ºC : 6.4 —7.8kΩ
45ºC : 3.6— 4.5kΩ
60ºC : 2.2— 2.7kΩ
100ºC : 0.6— 0.8kΩ
Normal: Check Heat Exchanger Outlet Thermistor.
Faulty: Replace hot water outlet thermistor.
Note: For controller readout of thermistor temperature whilst operational refer maintenance monitor.
Disconnect relay connector (E1) and measure resistance White-White.

12.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: <1
If normal go to step Electrical Fuse 13.
Faulty: Replace fuse/s (3Ax2). Check for a short next time it’s turned off.

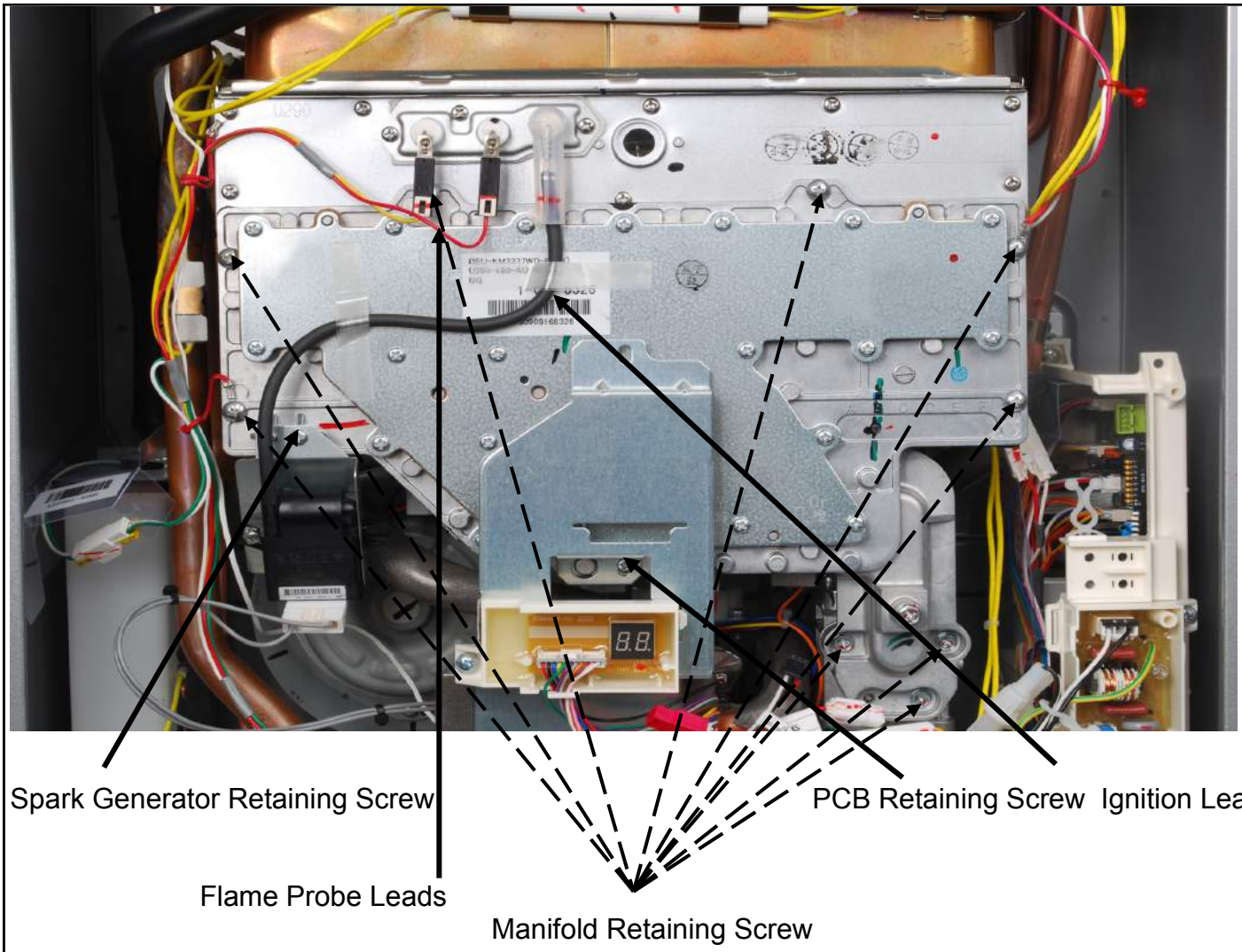
13.Electrical Fuse

a.) Measure voltage between blue and brown on the connector (F4)
Normal :AC 207~264V
If normal proceed to b.
Faulty: Check if voltage on the fuse terminal is AC207~264V
b.) Measure voltage between Black and white on the (F5).
Normal: AC207~264V.
Faulty: replace surge protector unit.

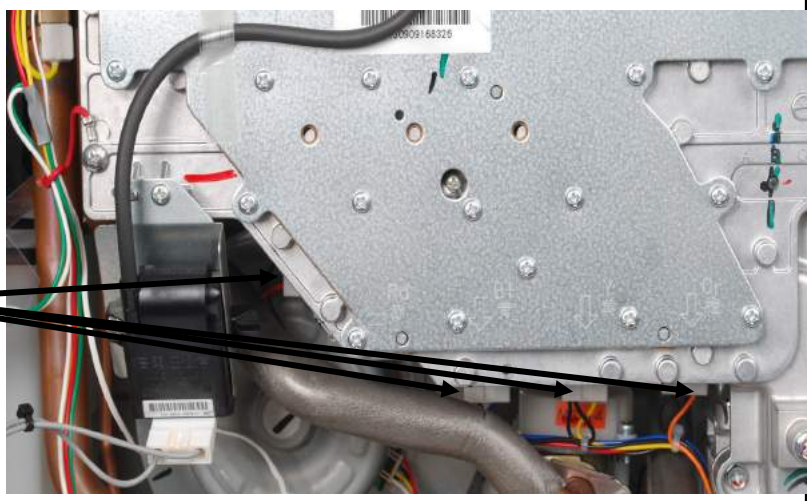
SERVICING

- Isolate Gas Supply
- Isolate Power Supply
- Remove all four cover plate retaining screws behind hinged cover plates and remove front cover

SERVICING



- Remove flame probe cables
- Remove ignition electrode cable
- Remove Display PCB
- Remove Spark Generator
- Disconnect Solenoid Cables
- Remove Manifold Retaining Screws
- Remove Manifold

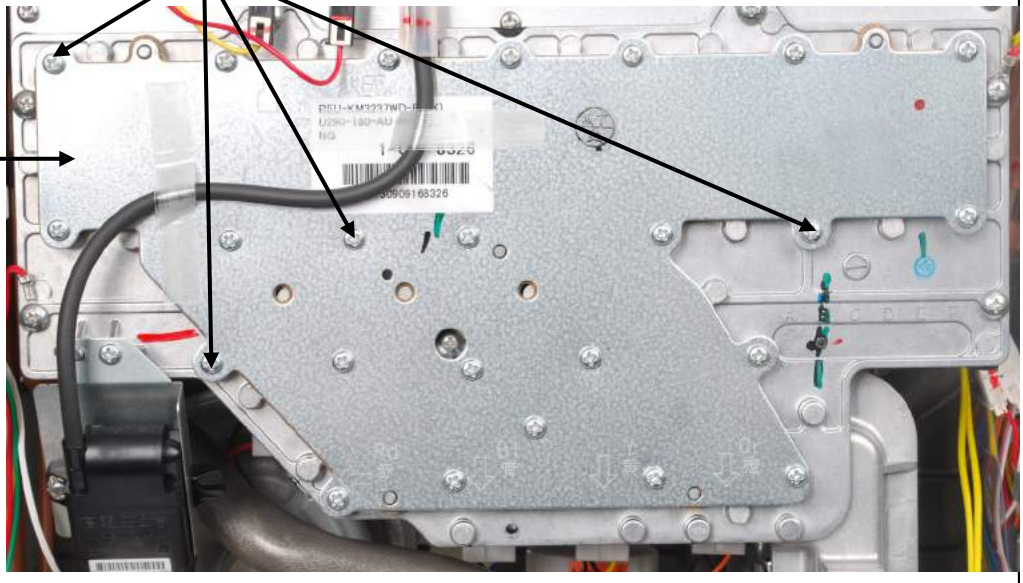


SERVICING

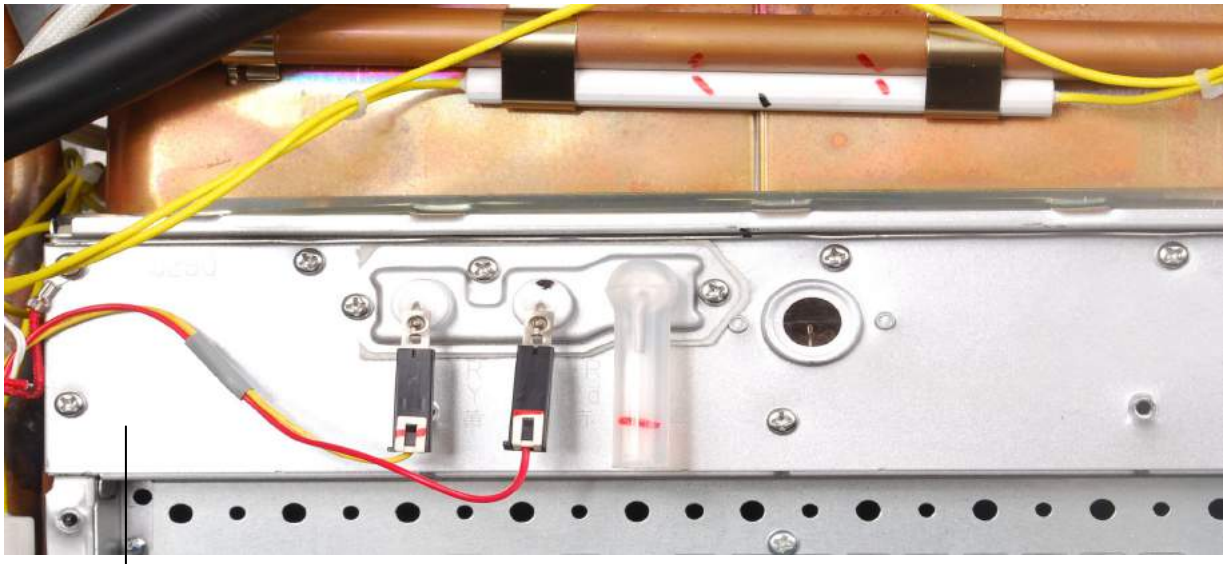
- Inspect Injectors If cleaning required
- Remove 24 Injector cover plate Retaining Screws & Remove Plate
- Once Plate Removed Brush Injectors through from this Face

Cover Plate Retaining Screws

Injector Cover Plate

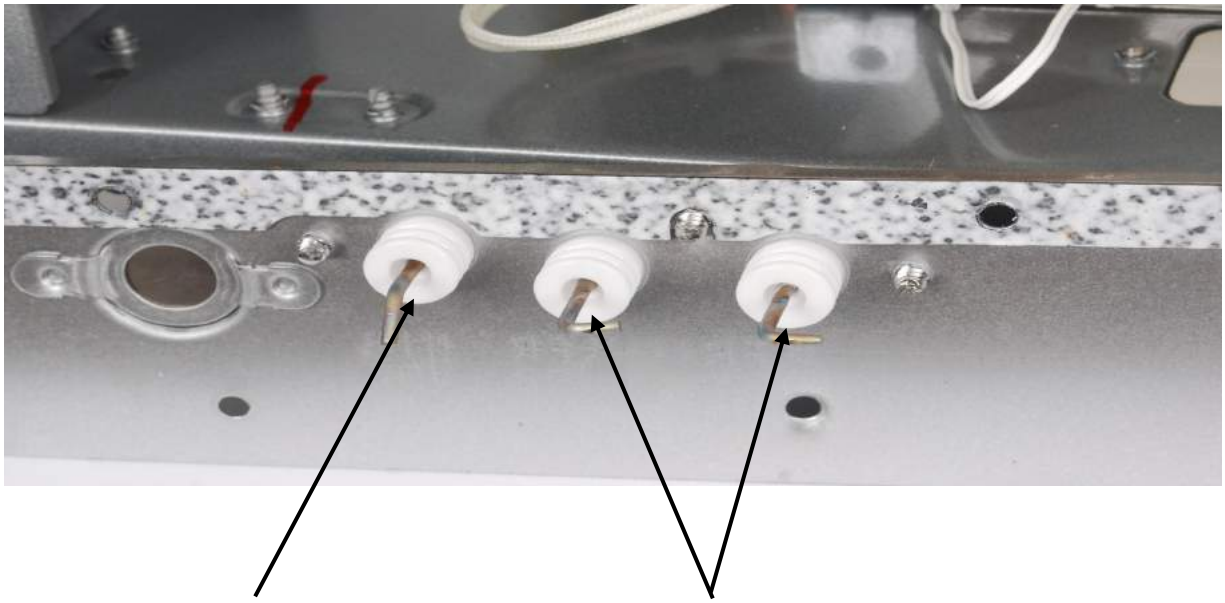


SERVICING



Combustion Chamber Plate

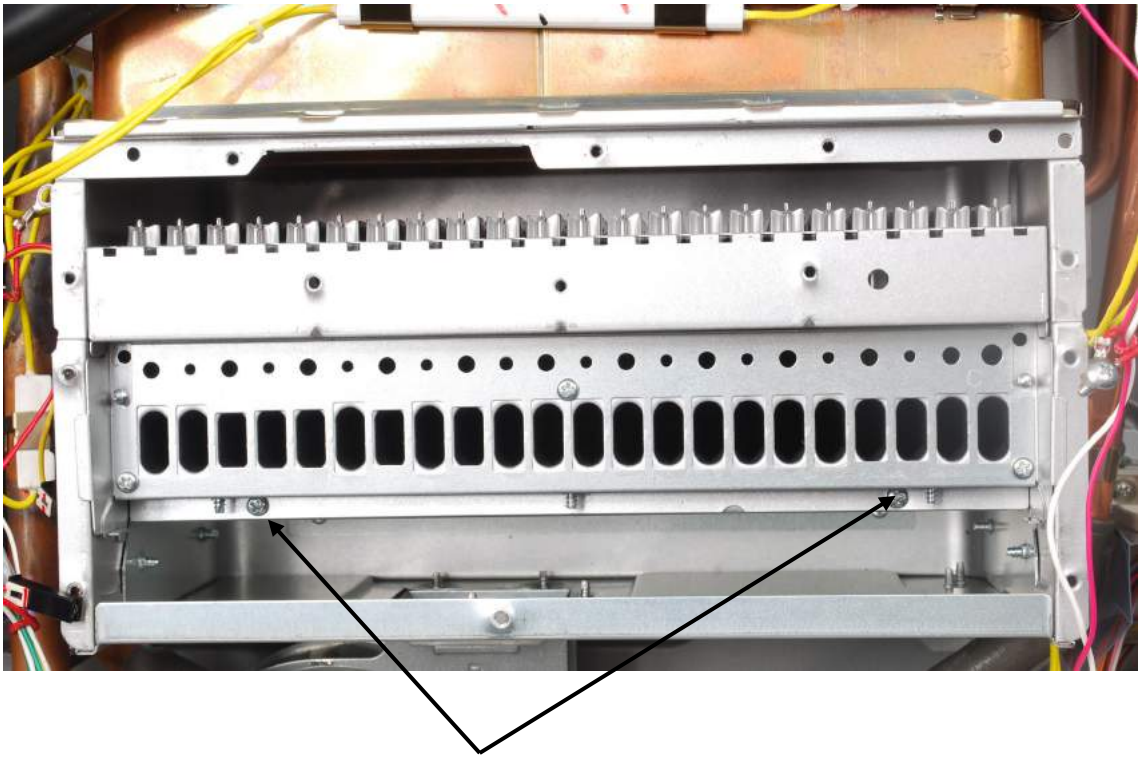
- Remove All Screws Along Combustion Chamber Plate Edge
- Remove Plate and Inspect & Clean Ignition Electrode and Flame Probes



Ignition Electrode

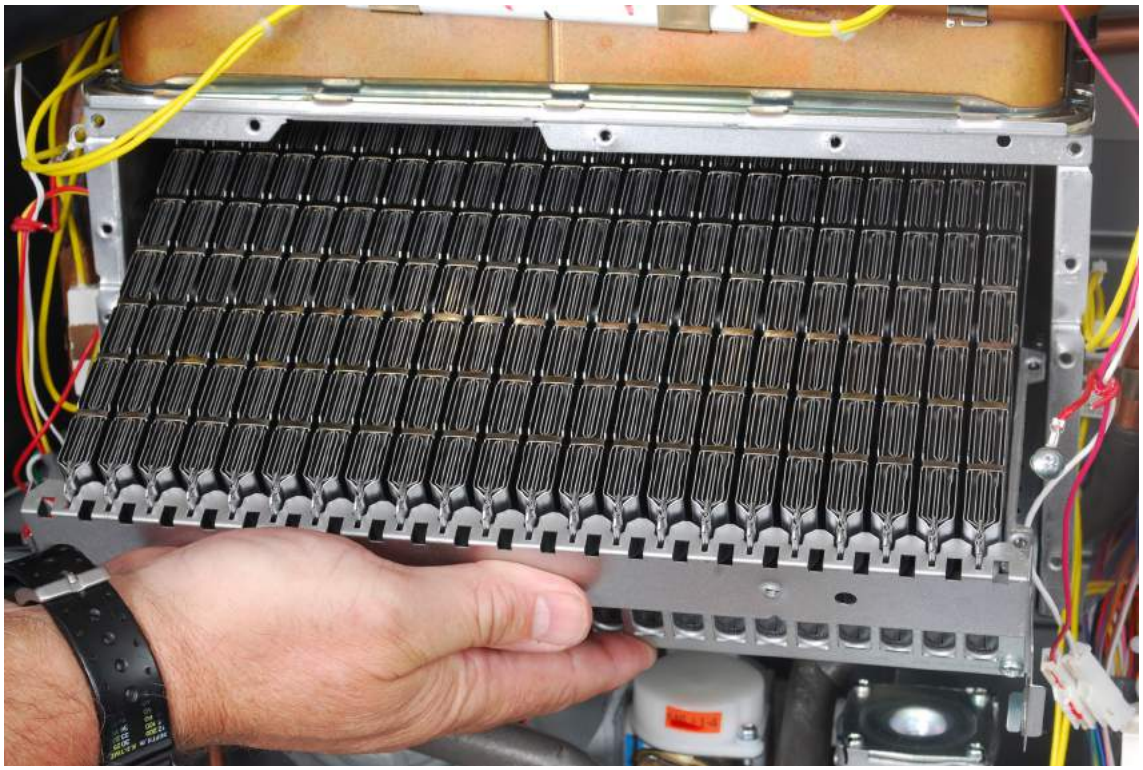
Flame Probes

SERVICING



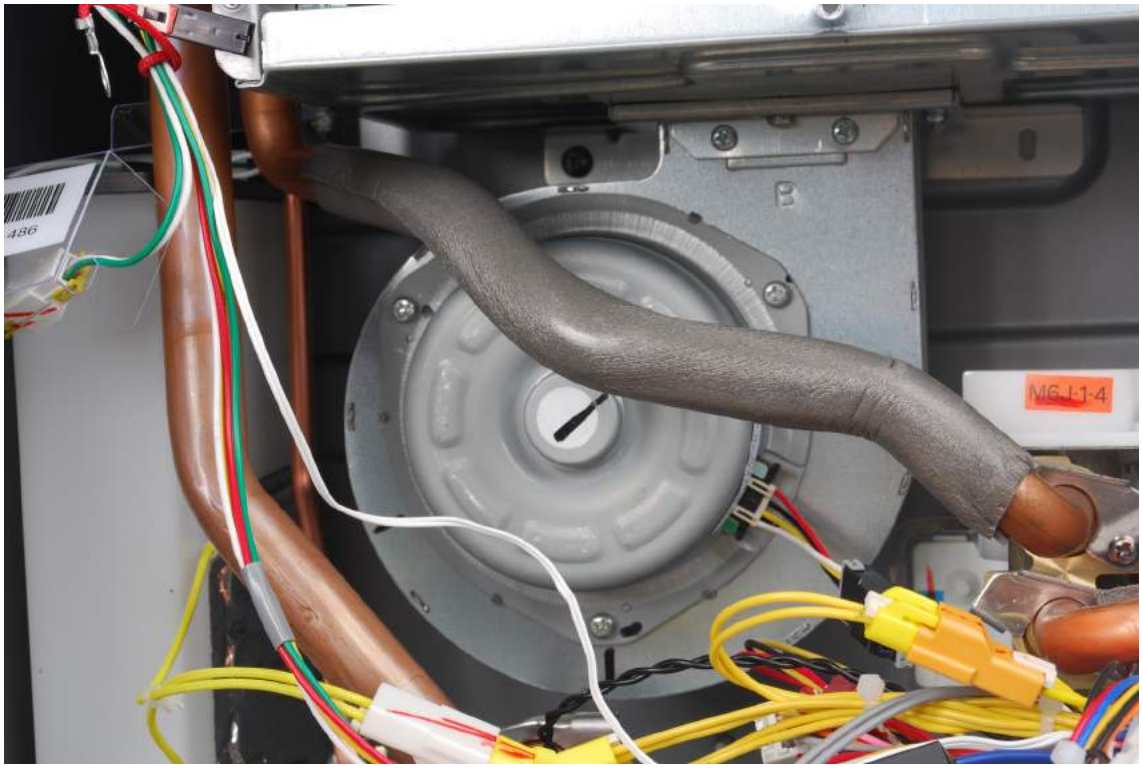
Burner Box Screws

- Remove Burner retaining Screws and Remove Burner Box Box

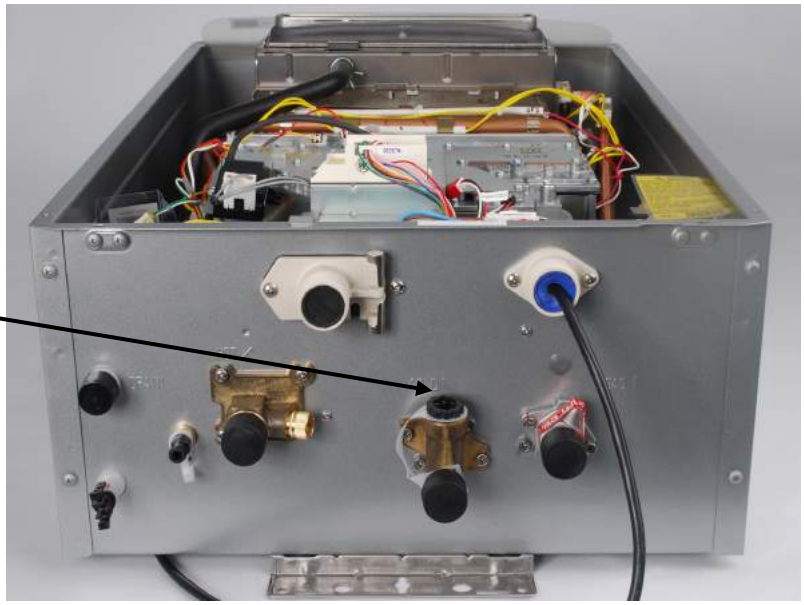


- To Clean Use Light Brush or Air brush, Invert and Shake

SERVICING



- Disconnect Fan and Remove
- Check Impellor and clean as Required
- Re Assemble All Components
- Remove and Check Water Filter
- Re-Instate Gas
- Re-Instate Power
- Check Gas Pressures (as per page 35)
- Replace Front Cover



SERVICING

Flow And By-Pass Servo

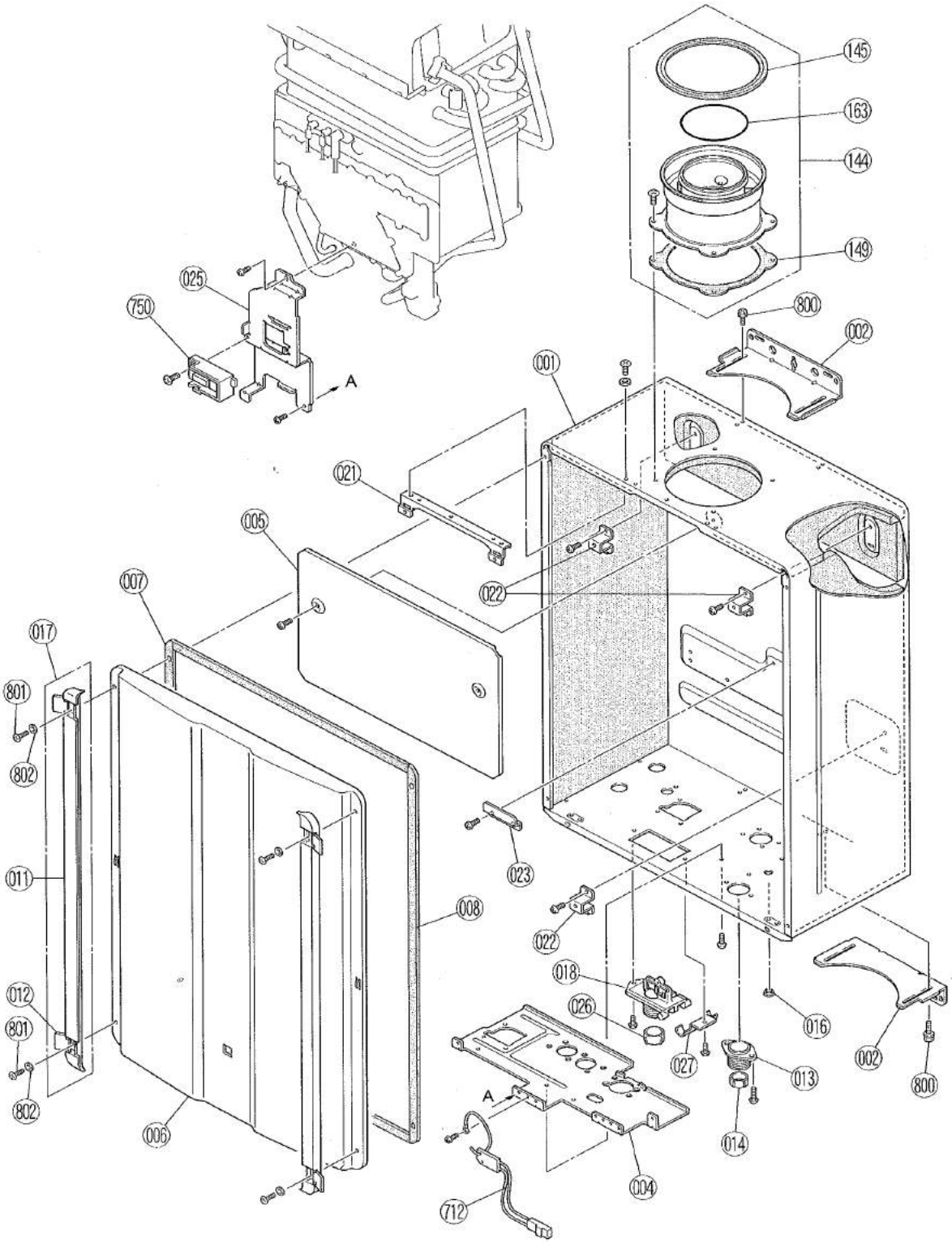
- Drain Heat Exchanger
- Undo Pipe Retaining Screws and Spin Brackets Pull Pipes Clear
- Remove Screws `A`
- Pull Flow / Bypass Servo clear of Inlet
- Disconnect wiring plug and Socket

Gas Valve

- Isolate Gas
- Remove Manifold as Described Earlier
- Disconnect Modulating Valve Wiring (B)
- Remove Screws C
- Lift Gas Valve Clear
- Disconnect Safety Solenoid Wiring to Rear of Valve

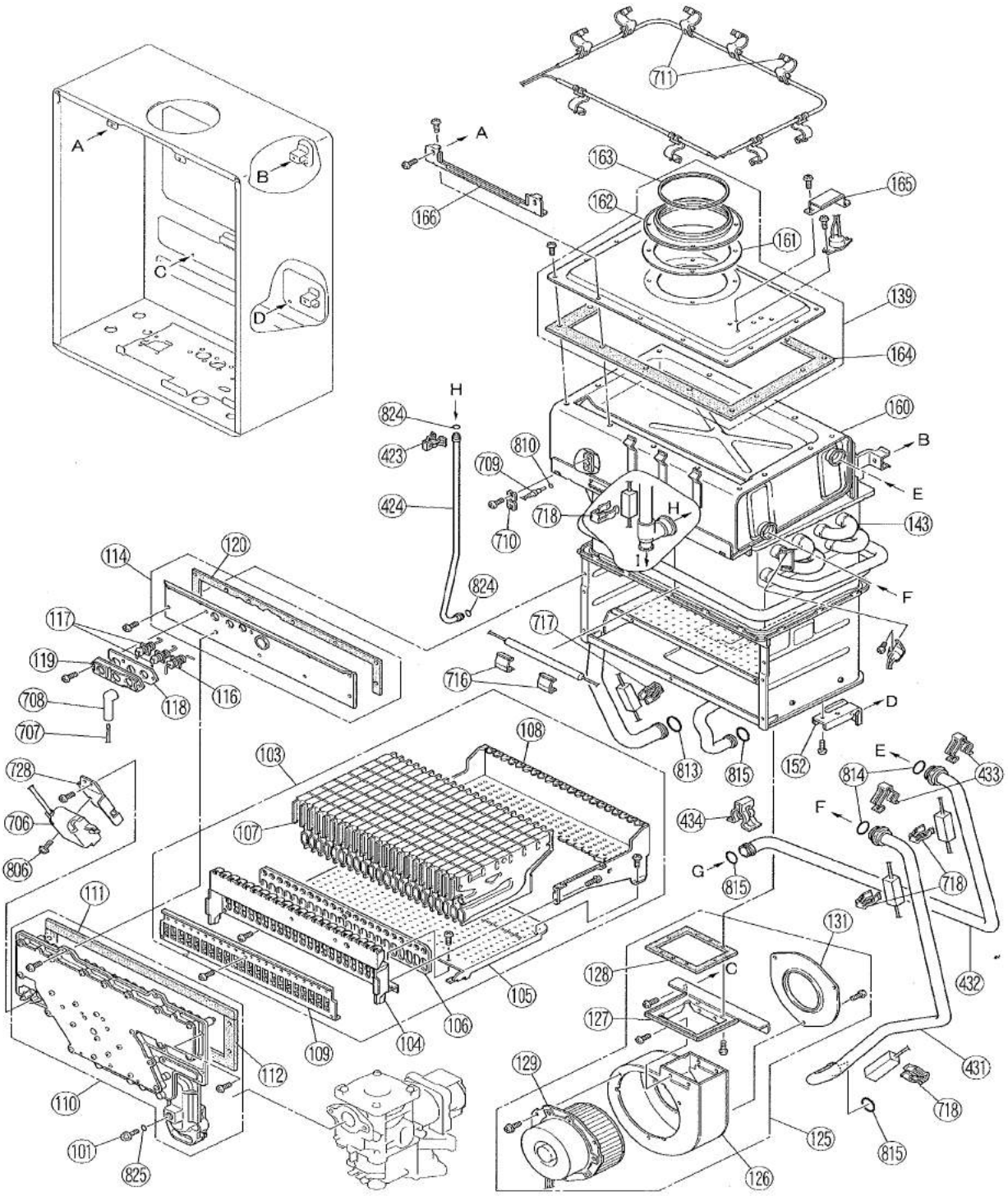
EXPOLODED DIAGRAMS

REU-KM3237FFUD-ZK/-E
REU-KM3237FFUDHD-E



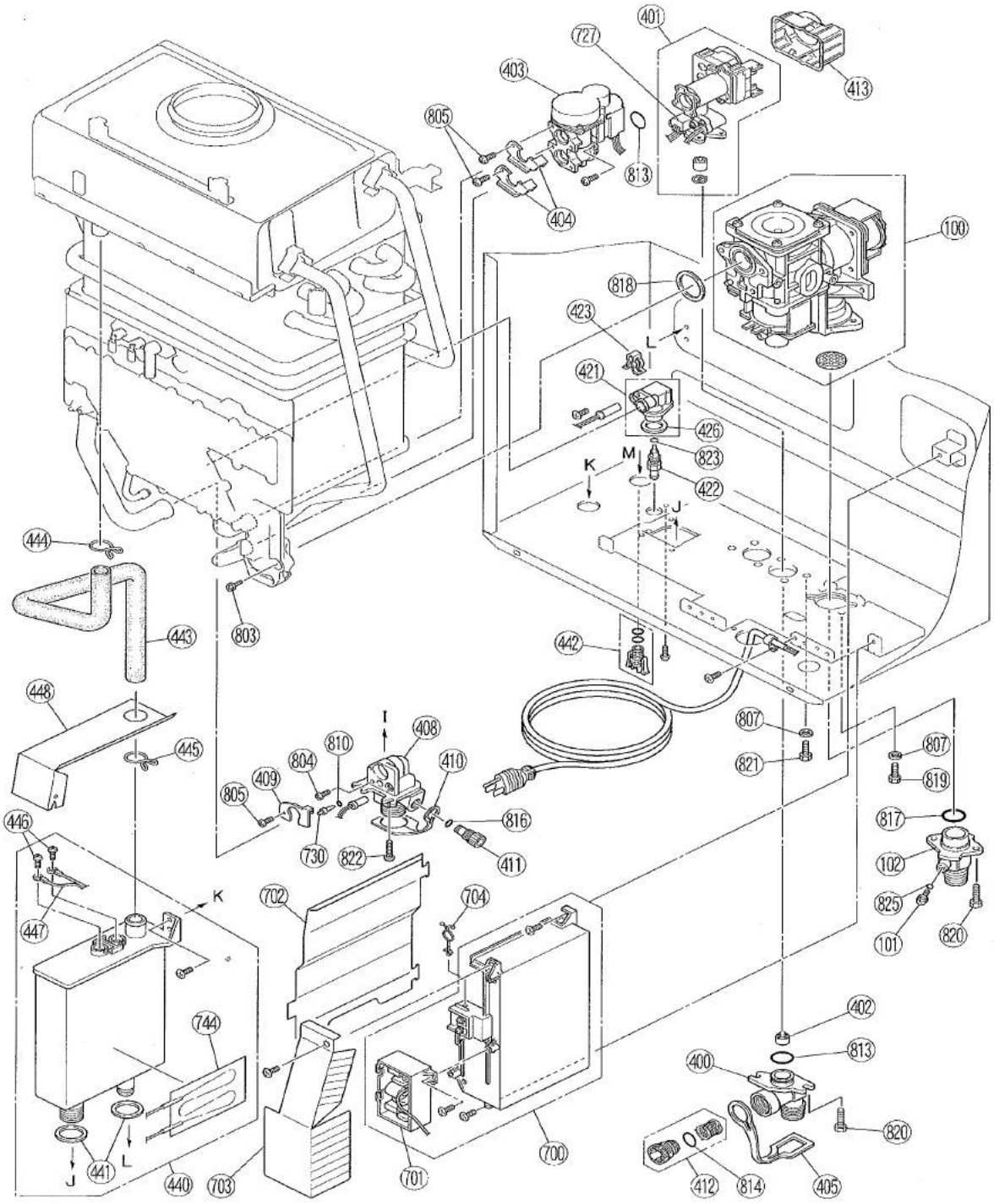
EXPOLODED DIAGRAMS

REU-KM3237FFUD-ZK/-E
REU-KM3237FFUDHD-E

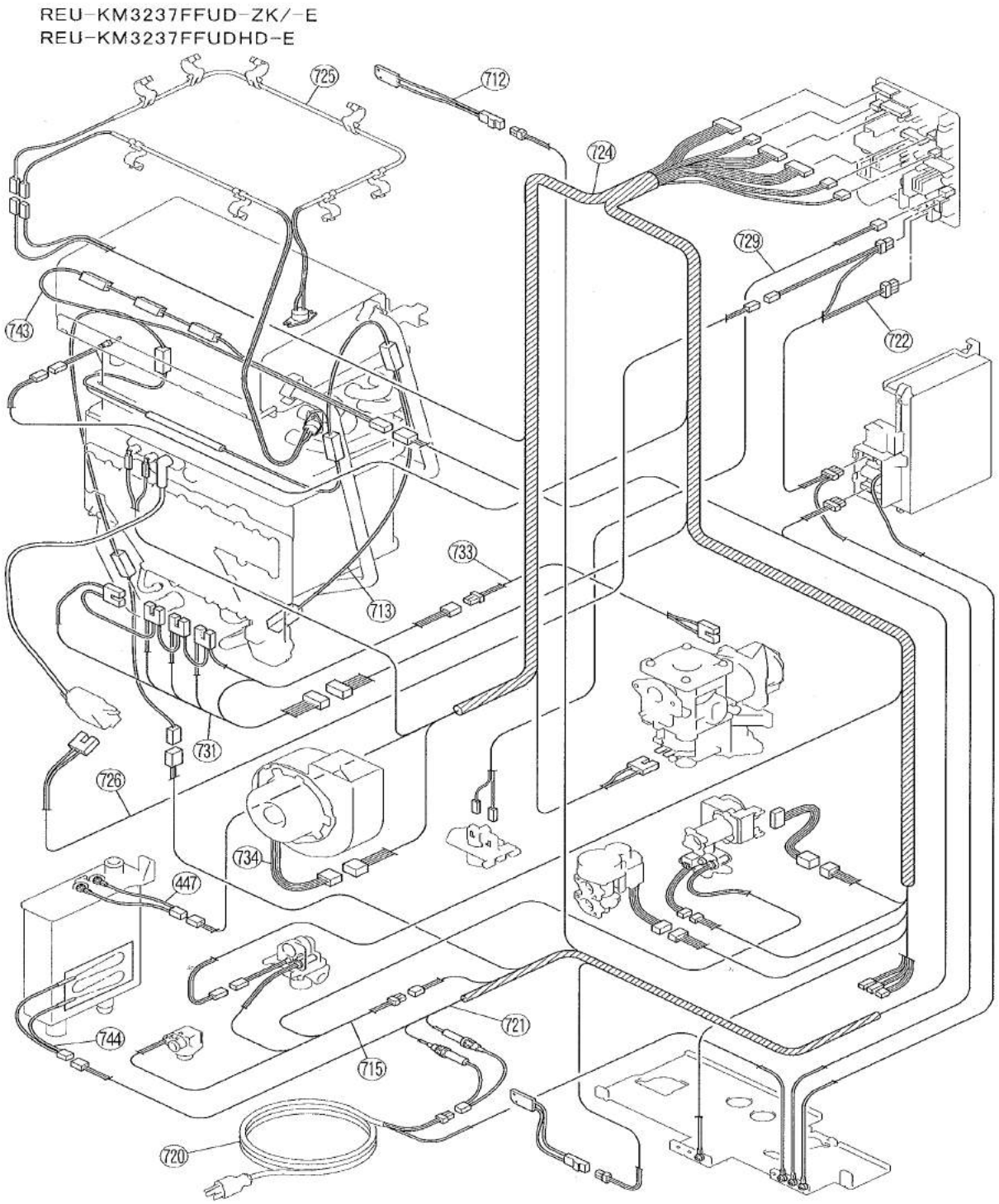


EXPOLODED DIAGRAMS

REU-KM3237FFUD-ZK/-E
REU-KM3237FFUDHD-E



EXPOLODED DIAGRAMS



PARTS LIST

NO	PART CODE	PART NO.	PART NAME		Remark
001	014-490-000	U290-100-5X03	Main Body	1	
002	106-678-000	U273-110-11	Wall Bracket	2	FF
004	044-182-000	U290-111X05	Connection Reinforcement Panel	1	
005	030-941-000	H73-065	Heat Protection Plate	1	
006	019-4322000	U290-120-3-B	Front Panel		FF
006	019-4317000	U290-120-3-A	Front Panel	1	FF
007	580-0632000	U290-126	Gasket-Top and Bottom	2	
008	580-0633000	U290-125	Gasket-Side	2	
011	098-2927000	U290-141-1X02	Screw Cover	2	
012	035-1795000	U290-142-1X02	Screw Cover Rid	4	
013	106-104-000	BU56-602-NX06	Cable Access Assembly	1	
014	580-0105000	U250-1560	Cable Seal Packing	1	
016	510-893-000	AU105-113	Paciking	1	
017	019-4197000	U290-140-1X02	Screw Cover Assembly	2	
018	106-665-000	U245-2820	Cable Access Assembly	1	
021	044-183-000	U290-115X01	Reinforcement Bracket	1	
022	517-499-000	H129-115	Attachment Bracket	3	
023	044-151-000	U273-113	Reinforcement Bracket	1	
025	537-0881000	U290-117	Status Monitor Bracket	1	
026	580-306-000	AU169-126X01	Cable Seal Packing	1	
027	538-840-000	AH59-772	Cable Access Bracket	1	
100	114-528-000	C36Q-12-2-S	Gas Controller Assembly	1	
101	501-275-005	C10D-5	Test port set screw	2	5 Pieces
102	106-290-000	CU195-211X01	Gas Connection 3/4"NPT	1	
103	000-160-000	U273-240-B	Burner Unit Assembly LPG	1	Prop.G
103	000-173-000	U273-240-C	Burner Unit Assembly NG	1	Nat.G
104	098-985-000	U211-259X02	Burner Case Front Panel	1	
105	004-564-000	U211-260	Burner Case Bottom Panel	1	
106	580-573-000	U211-263X01	Packing	1	
107	157-090-000	B3A7-1X05	Burner Low Nox Bunsen Assy	22	

PARTS LIST

REU-KM3237FFUD-E

NO	PART CODE	PART NO.	PART NAME			Remark
108	098-986-000	U211-261X01	Burner Case Rear Panel		1	
109	140-788-000	U273-235-B	Damper LPG		1	Prop.G
109	140-803-000	U273-235-C	Damper NG		1	Nat.G
110	101-773-000	U290-200-2X03	Manifold Assembly NG		1	Nat.G No.113.812
110	101-774-000	U290-200-1X03	Manifold Assembly LPG		1	Prop.G No.113.812
111	092-046-000	U211-264X02	Combustion Chamber Packing Upper		1	
112	092-047-000	U211-268X02	Combustion Chamber Packing Lower		1	
114	019-4198000	U290-160X01	Combustion Chamber FrontPanel Ass		1	No.120
116	202-156-000	H73-120	Electrode		1	
117	202-233-000	U290-191	Flame Rod		2	
118	580-0635000	U290-163	Electrode Packing		1	
119	580-0636000	U290-162X01	Electrode Holder		1	
120	580-0637000	U290-164X01	Combustion Chamber Packing		1	
125	222-664-000	U290-360-B	Fan Motor All Assembly		1	
126	035-0013000	U218-565X01	Fan Casing Assembly		1	
127	106-649-000	U273-335	Fan Connecting		1	
128	580-580-000	U211-552	Fan Connecting Packing		1	
129	222-643-000	H129-601	Fan Motor Assembly		1	
131	036-322-000	U290-367	Bell Mouth 40π		1	
139	055-0002000	U290-211X01	Exhaust Duct		1	No.161.162.163.164
143	314-808-000	U290-900-C	Heat Exchanger Assembly		1	
144	055-0003000	U290-220	Flue Assembly		1	No149
145	552-155-000	U287-210	Seal Ring		1	
149	580-0638000	U290-229	Exhaust Pipe Fixing Packing		1	
152	538-0597000	H129-208X01	Reinforcement Bracket		1	
160	314-804-000	U290-502X04	Heat Exchanger,Secondary		1	U290-514
161	580-0639000	U290-215	Exhaust Pipe Packing		1	
162	055-0004000	U290-213	Exhaust Pipe		1	
163	580-0491000	U287-211	O-ring		2	
164	580-0640000	U290-217X01	Duct Sealing Packing		2	

PARTS LIST

REU-KM3237FFUD-E

NO	PART CODE	PART NO.	PART NAME			Remark
165	098-2928000	U290-474	Over Heat Switch Cover		1	
166	537-0883000	U290-315	Combustion Chamber Bracket		1	
400	333-483-000	H73-501X02	Water Inlet 3/4" NPT		1	
401	301-199-000	M008K-01000-SN	Water Flow Servo & Sensor Assembly		1	
402	330-107-000	M8D1-15X01	Rectifier		1	
403	301-158-000	M6J-1-4	By-pass Servo Assembly		1	
404	512-401-000	AH69-310	Stop Bracket		2	
405	553-119-000	U250-631X01	Plug Band		1	
408	333-500-000	U290-306-2	Hot Water Outlet 3/4" NPT		1	
409	512-406-000	U211-322X01	Stop Bracket		1	
410	553-181-000	U290-348	Plug Band (small)		1	
411	337-152-000	BU129-520-CX03	Drain Valve		1	
412	196-062-000	H98-510-S	Water Filter Assembly		1	
413	098-2780000	U295-430X01	Cover		1	
421	333-493-000	U290-307	Drain Connection		1	No.426
422	337-034-000	AH50-590X02	Drain Plug		1	
423	512-550-000	M10A1-9X04	Clip		2	
424	332-0200000	U290-333	Connecting Pipe		1	
426	580-0641000	U290-481	Packing		1	
431	332-0201000	U290-321-2X03	Connecting pipe-Inlet		1	
432	332-0202000	U290-331X01	Connecting pipe-HEX		1	
433	512-249-000	M10A1-5-5	Clip		2	
434	512-552-000	M10A1-11X04	Clip		1	
440	341-370-000	U290-460-AUX04	Condensate Trap		1	
441	580-0642000	U290-483	Packing		2	
442	341-369-000	U290-467X01	Condensate Trap Plug		1	
443	513-0051000	U290-466X01	Condensate Drain Tube		1	
444	553-130-000	CP-30592-18.5	Band		1	
445	553-158-000	CP-30592-20.0	Band		1	
446	501-0232000	CP-30645-2	Screw		2	

PARTS LIST

REU-KM3237FFUD-E

NO	PART CODE	PART NO.	PART NAME			Remark
447	290-1795000	H129-729X02	Conection Harness		1	
448	098-2986000	U290-486X01	Cover		1	
700	210-0046000	U290-350-1-B	PC Board		1	
701	210-605-000	U250-1602	Surge Protector		1	
702	098-2929000	U290-354X01	PC Board Cover Side		1	
703	098-1076000	U245-1610-Z	PC Board Cover Front		1	
704	504-021-000	CP-90125-4	Clip		1	
706	261-157-000	EI-202	Ignitor		1	
707	203-828-000	BH38-710-240	High Tension Cord		1	
708	518-035-000	AU206-218	Electrode Sleeve		1	
709	233-246-000	H111-650	Thermistor		1	
710	508-836-000	CP-90172	Thermistor Clip Large		1	
711	553-056-000	CP-80532X01	Thermistor Fuse Clip		9	
712	234-444-000	H73-750	Frost Sensing Switch		2	
713	235-404-000	U290-395X02	Anti Frost Heater		1	
715	235-397-000	U290-394X02	Valve Heater Assembly		1	
716	538-493-000	CF29-742X01	Anti Front Heater Clip B		2	
717	537-215-000	AU124-618X01	Anti Front Heater Clip A		1	
718	537-0440000	U250-625	Anti Front Heater Clip C		1	
720	206-232-000	CP-90532X02	Power Cord (EUROPE)		1	
720	206-233-000	CP-90506X01	Power Cord (UK)			
721	290-1936000	U290-380-1X04	Fuse Harness		1	
722	290-1931000	U290-384X01	Power Harness		1	
724	290-1939000	U290-372-1X05	Sensor Harness		1	
725	290-1942000	U290-378X02	Thermal Fuse Harness Assembly		1	
726	290-1398000	U273-1061X01	Ignitor Harness		1	
727	243-133-000	M8D1-10-6	Flow sensor		1	
728	537-0884000	U290-357X01	Ignitor Attachment Plate		1	
729	290-1288000	U283-625	Temperature Controller Harness		1	
730	233-278-000	U292-600	Thermistor		1	
731	290-1863000	U290-375X02	Solenoid Connection Harness		1	

PARTS LIST

REU-KM3237FFUD-E

NO	PART CODE	PART NO.	PART NAME			Remark
733	290-1865000	U290-389	Connection Harness		1	
734	290-1447000	H117-727	Fan Harness		1	
743	235-403-000	U290-399-2X02	Heat Exchanger Heater		1	
744	235-380-000	U280-994	Heater And Harness		1	
750	210-810-000	U283-510	Status Monitor Assembly		1	
800	501-577-000	ZIHD0510UK	Screw		8	
801	501-0234000	CP-30580-3	Screw		4	
802	503-210-000	CF83-41430	Washer		4	
803	501-0235000	CP-30627-414	Screw		3	
804	501-295-000	U217-449	Screw		1	
805	501-0093000	CP-20883-408UK	Screw		3	
806	501-737-000	CP-80452	Screw		1	
807	503-268-000	H73-099	Washer		2	
810	520-209-010	M10B-2-4	O-ring		2	10 Pieces
813	520-049-010	M10B-2-18	O-ring		3	10 Pieces
814	520-048-010	M10B-2-16	O-ring		3	10 Pieces
815	520-193-010	M10B-2-14	O-ring		4	10 Pieces
816	520-281-000	M10B-2-7	O-ring		1	10 Pieces
817	520-043-010	M10B-1-24	O-ring		1	10 Pieces
818	580-157-000	C36E3-7	Packing		1	
819	501-395-000	ZQAA0512UK	Screw		2	
820	501-799-000	ZQAA0514UK	Screw		4	
821	511-119-000	ZQAA0508UK	Screw		2	
822	501-403-000	ZBA0512UK	Screw		3	
823	520-194-010	M10B-2-5	O-ring		1	10 Pieces
824	520-074-010	M10B-2-6	O-ring		2	10 Pieces
825	520-300-010	M10B-13-4	O-ring		2	10 Pieces

SERVICE CONTACT

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COMMISSIONING CHECK LIST

For full details - Refer to Installation Instructions

Attention Installer - have you checked:

- ☑ Gas supply pipe is purged of foreign matter before connection.
- ☑ For Hot and Cold cross connections i.e. Capped breaches/shower mixers, taps closed and reversed 'Flick Mixer' connections?
- ☑ That isolating valves are not connected directly to the appliance and there is means of disconnection after the isolating valve?
- ☑ Have you cleaned cold water inlet filter?
- ☑ That plumbing connections are correct?
- ☑ Is appliance inlet gas pressure correct with all appliances operating?
- ☑ Do the Master Controllers (if fitted) operate correctly?
- ☑ Have you checked water temperature at all outlets?
- ☑ Have you shown the customer how to operate the Temperature Controllers? (If fitted)
- ☑ Have you explained to the customer the minimum flow rate required to operate the unit?
- ☑ Have you explained to the Customer the Benefits of Controllers (If not fitted) and that they can be added later?