spares & parts online
IBASIS.co.uk ©

221873B.07.01

Saunier Duval

Instructions for Use
Installation and Servicing

To be left with the user

SD 30e

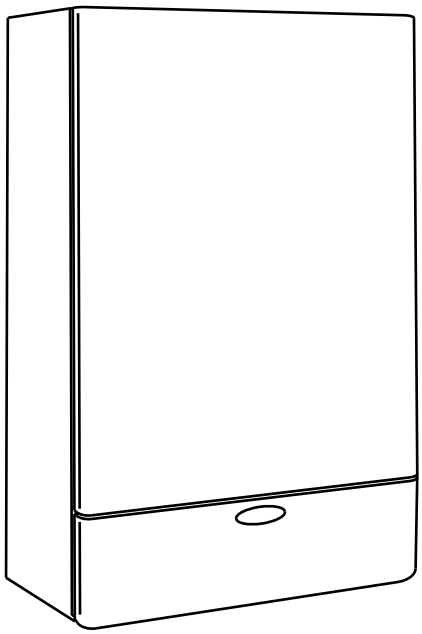
G.C. No. 47-920-16

Fanned Flue
Combination Boiler

This is a Cat I_{2H} Appliance

CE

benchmark
The mark of quality for domestic heating



7086

The instructions consist of three parts, User, Installation and Servicing Instructions, which include the Guarantee Registration Card. The instructions are an integral part of the appliance and must, to comply with the current issue of the Gas Safety (Installation and Use) Regulations, be handed to the user on completion of the installation.

Guarantee Registration

Thank you for installing a new Saunier Duval appliance in your home.

Saunier Duval appliances' are manufactured to the very highest standard so we are pleased to offer our customers' a Comprehensive First Year Guarantee.

In the centre pages are to be found your Guarantee Registration Card, which we recommend you complete and return as soon as possible.

If this card is missing you can obtain a copy or record your registration by telephoning the Heatcall Customer Service number 01773 828100.

Our Guarantee gives you peace of mind plus valuable protection against breakdown by covering the cost of:

- ☑ ***All replacement parts***
- ☑ ***All labour charges***
- ☑ ***All call-out charges***

REGISTER YOUR SAUNIER DUVAL APPLIANCE FOR 1ST YEAR GUARANTEE PROTECTION

CALL 0208 247 9857

HEATCALL
One Contact Local Service

Customer Services:
Tel: (01773) 828100
Fax: (01773) 828070

Hepworth Heating Ltd.,
Nottingham Road, Belper, Derbyshire. DE56 1JT
General/Sales enquiries:
Tel: (01773) 824141 Fax: (01773) 820569

Important Information

Testing and Certification

This boiler is tested and certificated for safety and performance. It is therefore important that no alteration is made to the boiler, without permission, in writing, from Hepworth Heating Ltd.

Any alteration not approved by Hepworth Heating Ltd., could invalidate the certification, boiler warranty and may also infringe the current issue of the Statutory Requirements, see Section 1.4.

CE Mark

This boiler meets the requirements of Statutory Instrument No. 3083 The boiler (Efficiency) Regulations, and therefore is deemed to meet the requirements of Directive 92/42/EEC on the efficiency requirements for new hot water boilers fired with liquid or gaseous fuels.

Type test for purposes of Regulation 5 certified by: Notified body 0086.

Product/production certified by: Notified body 0086.

The CE mark on this appliance shows compliance with:

1. Directive 90/396/EEC on the approximation of the laws of the Member States relating to appliances burning gaseous fuels.

2. Directive 73/23/EEC on the harmonization of the Laws of the Member States relating to the electrical equipment designed for use within certain voltage limits.

3. Directive 89/336/EEC on the approximation of the Laws of the Member States relating to electromagnetic compatibility.

Substances Hazardous to Health

The adhesives and sealants used in this appliance are cured and give no known hazard in this state.

INSULATION PADS/CERAMIC FIBRE, GLASSYARN, MINERAL WOOL
These can cause irritation to skin, eyes and the respiratory tract.
If you have a history of skin complaint you may be susceptible to irritation. High dust levels are usual only if the material is broken.
Normal handling should not cause discomfort, but follow normal good hygiene and wash your hands before eating, drinking or going to the lavatory.
If you do suffer irritation to the eyes or severe irritation to the skin seek medical attention.

Spare Parts

REMEMBER, When replacing a part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Hepworth Heating Ltd.

CONTENTS	DESCRIPTION	SECTION	PAGE No.
INSTRUCTIONS FOR USE	Introduction		3
	Clock Settings		4
	Lighting the Boiler		5
INSTALLATION INSTRUCTIONS	General Data	1	7
	Boiler Position	2	9
	Flue and Ventilation	3	10
	Heating System	4	11
	Domestic Hot Water System	5	12
	Installation Preparation and Gas/Water Connections	6	13
	Flue Preparation	7	13
	Mounting the Boiler	8	16
	Electrical Connections	9	20
	Commissioning	10	22
SERVICING INSTRUCTIONS	General Data	11	25
	Servicing	12	25
	Fault Finding	13	27
	Replacement Parts	14	32
	Spare Parts	15	43

Instructions for Use

Introduction

Please read these instructions and follow them carefully for the safe and economical use of your Combination boiler.

This boiler must have been installed by a competent person in accordance with the current rules in force in the countries of destination at the time of installation.

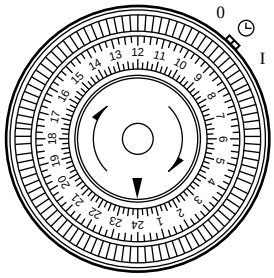
Once the controls are set, the boiler is automatic in operation.

The 30e combination boiler is able to provide room heating as part of a central heating system and domestic hot water direct from the cold water supply, without the need for secondary storage.

The boiler can be fitted with one of two makes of clock, which look like this:-

Clock / Timers

6937



Electro / mechanical clock / timer

IMPORTANT NOTICE:

This boiler is for use only on G20 gas.

Gas Leak or Fault

If a gas leak or fault exists or is suspected, turn the boiler off and consult your local gas company or your local installation/ servicing company.

Mains Water Temperature

NOTE: The mains incoming water temperature in the winter is lower than in summer.

To achieve the same outlet water temperature in the winter, it will be necessary to reduce the water flow rate using the hot water tap.

Boilers Installed in Compartments

If the boiler has been fitted into a compartment or cupboard, do not obstruct the compartment air supply vents.

Do not use the compartment for storage.

Electrical Supply

WARNING. The boiler must be earthed.

The boiler must be connected to a 230V~50Hz permanent supply.

Connection of the whole electrical system of the boiler and any heating system controls to the electrical supply, must be through one common isolator.

Isolation should preferably be by a double pole switched fused spur box. The fused spur box should be readily accessible and preferably adjacent to the appliance. It should be identified as to its use.

Alternatively a fused 3A 3 pin plug and shuttered unswitched socket may be used.

The colours of three core flexible cable are, blue - neutral, brown - live, green and yellow - earth.

As the markings on your plug may not correspond with these colours continue as follows:-

The wire coloured blue must be connected to the terminal marked “N” or “Black”.

The wire coloured brown must be connected to the terminal marked “L” or “Red”.

The wire coloured green and yellow must be connected to the terminal marked “E” or “Green” or the earth symbol ⏚ .

PVC flexible cable having a conductor size of 0.75mm^2 (24/ 0.20mm) must be used within the boiler casing to connect to the boiler.

Electrical Supply Failure

The boiler will not work without an electrical supply.

Normal operation of the boiler should resume when the electrical supply is restored.

Note. The boiler safety cutoff may have operated, please refer to the following section to reset.

Reset any external controls, to resume normal operation of the central heating.

Boiler Safety Cutoff Reset Button

The boiler is fitted with a safety cutoff device to prevent damage through overheating.

Should the main burner go out during a demand the red lockout light “F” will illuminate on the control fascia situated above the Reset Button “G”, see diagram 4.

The red light will not illuminate if there is no system demand.

Allow the boiler and system to cool down waiting at least a minimum of four minutes before pressing the Reset button “G”.

The boiler will take a few seconds to reset after the button is pressed.

If the problem persists, turn the boiler off and consult your installation/ servicing company.

The Gas Safety (Installation & Use) Regulations

In your interests and that of safety it is the law that ALL gas appliances are installed by competant persons in accordance with the current issue of the above regulations.

Setting Instructions for Electro/mechanical Clock

This clock has a twenty four hour dial, that is, 1pm is 13.

To set the time, turn the whole face clockwise until the pointer is against the time of day.

To set any “Off” time, push the tappets outwards.

To set any “On” time, push the tappets inwards.

Time can be set either “On” or “Off” in fifteen minute segments.

Note. The clock supplied could be fitted with an override device, see diagram 1, which switches the clock programme “On” or “Off” permanently.

The switch will need to be repositioned to resume programmed working.

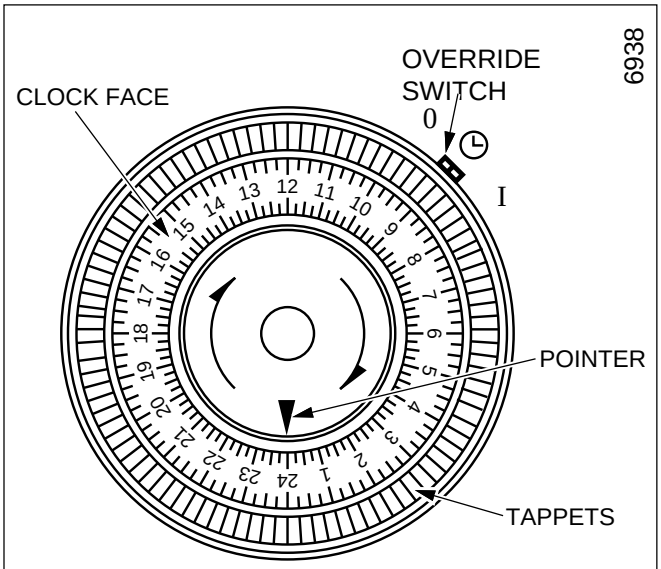


Diagram 1

To Light the Boiler

1. Check that all four isolating valves are open, the levers in line with the valvebody, see diagram 2.

2. Open the controls cover door and familiarise yourself with the controls, see diagram 3.

3. CAUTION. A sealed pressurised system must be filled and pressurised by a competent person. (Optional extra filling loop kit No. 457120).

Only operate the boiler when you are sure that the system has been filled and pressurised. Check this by looking at the pressure gauge “A”, it should read 0.7bar minimum.

4. Open a hot water tap, check that water flows, then close it.

5. If you are in any doubt about the boiler being filled with water contact your installation/servicing company or the local gas company.

6. Check that the electrical supply to the boiler is ON at the external isolator.

7. Check lockout light, refer to boiler safety cutoff reset button.

8. Set the switch “B” to 1 situated on the control fascia.

9. Set the summer / winter button “J”, light “L” or “K” will illuminate.

10. Set “C”, clock/timer and any remote controls as required.

11. Check the lights “D” and “E” are illuminated on the control fascia.

Close the controls cover door.

In certain circumstances, a surge in water pressure may cause the appliance to operate momentarily, this will be indicated by the pump starting and the fan speed increasing. This is quite normal.

Domestic Hot Water Temperature

The sanitary water temperature control knob “M”, see diagram 4, will control the desired temperature of the water until the flow exceeds the capability of the boiler to give the required temperature rise.

Then the temperature is determined by controlling the hot water flow from the tap ie: **reduce flow - increase temperature**
increase flow - reduce temperature

NOTE : The mains incoming water temperature in the winter is lower than in the summer.

Summer / Winter Selector Button

Adjust the central heating water temperature control knob "N" to desired setting.

For central heating set button "J" to Winter light "K" will illuminate. The main burner will light. The burner ON light "D" will illuminate.

When the heating is controlled by a room thermostat and/or a time switch, button "J" must be set to Winter light "K" will illuminate.

If a hot water tap is opened while the boiler is on for heating, priority will be given to hot water.

To turn the heating off for short periods, set button "J" to summer "Off" light "L" will illuminate.

To turn on again set button "J" to winter "On", light "K" will illuminate.

To Turn the Boiler Off

To turn the boiler off, set switch "B" to O.

To turn on again follow the operating instructions.

Maintenance and Servicing

To ensure the continued efficient and safe operation of the appliance it is recommended that it is checked and serviced as necessary at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage, but in general once a year should be enough.

If this appliance is installed in a rented property there is a duty of care imposed on the owner of the property by the current issue of the Gas Safety (Installation and Use) Regulations, Section 35.

Servicing/maintenance should be carried out by a competent person in accordance with the rules in force in the countries of destination.

To obtain service, please call your installer or Heatcall (Saunier Duval's own service organisation) using the telephone number behind the controls cover door.

Please be advised that the 'Benchmark' logbook should be completed by the installation engineer on completion of commissioning and servicing.

All CORGI Registered Installers carry a CORGI ID card, and have a registration number. Both should be recorded in your boiler Logbook. You can check your installer is CORGI registered by calling CORGI direct on :- 01256 372300.

Clearances

The boiler requires a clearance in front, below and at the sides of the casing for safety, servicing and maintenance access, see diagram 2.1.

Protection Against Freezing

The boiler has a 2 stage built in frost protection. Provided power and gas are available and there is adequate pressure in the system, if the water temperature within the appliance falls below 10°C approx. the pump only will come on. If the water temp continues to fall to 6°C approx. the main burner will fire at min rate until the water in the appliance is greater than 15°C approx. This is a separate function to any remote frost protection fitted.

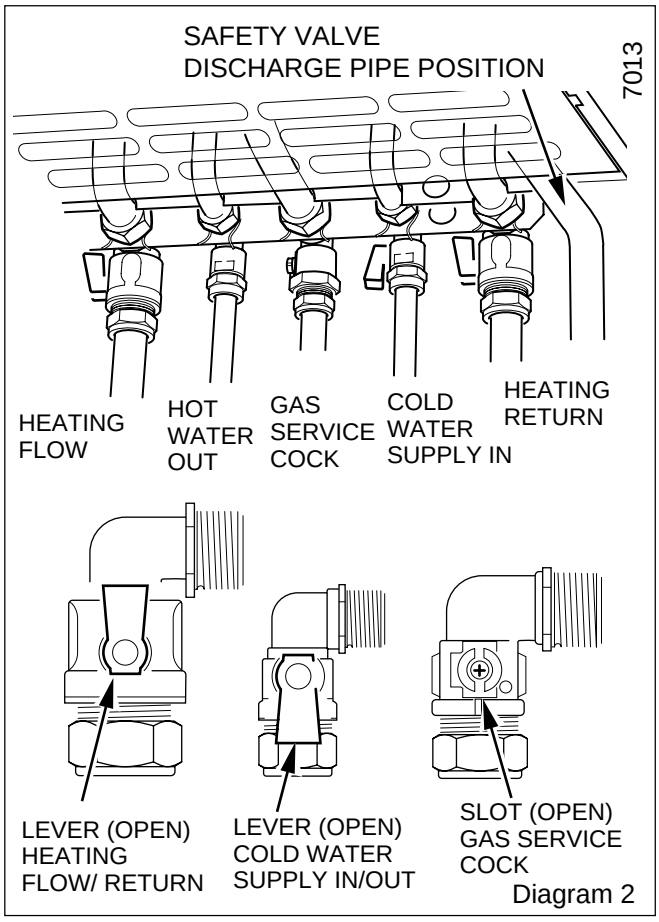


Diagram 2

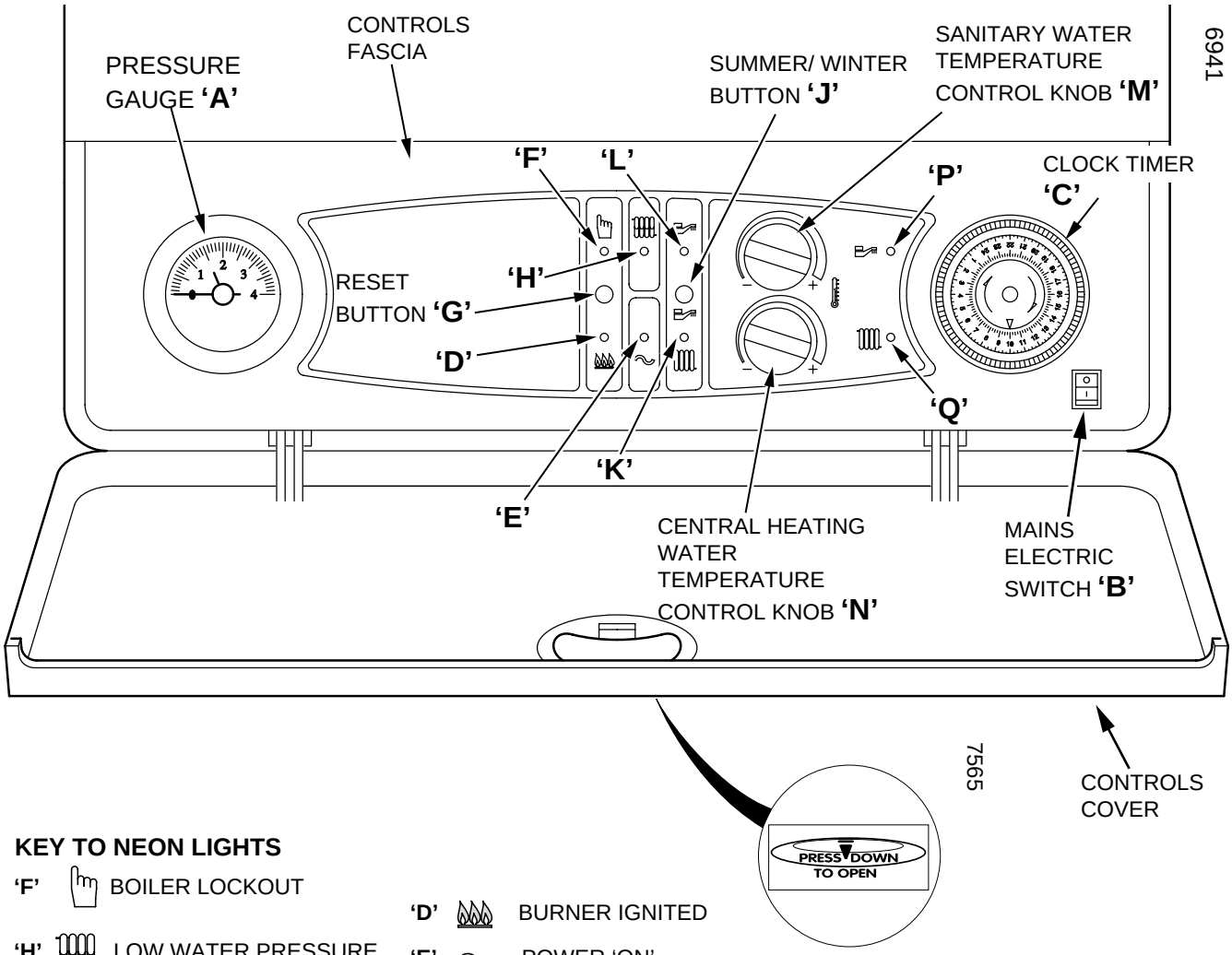


Diagram 3

Other system pipework external to the boiler may require frost protection.

If the boiler is to be out of use for any long periods during severe weather, it is recommended that the whole system, including the boiler, should be drained to avoid the risk of freezing. Make sure that, if fitted, the immersion heater in the cylinder is switched off.

If in doubt, contact you installation/servicing company for advice.

Draining and Filling

CAUTION. This boiler works in a pressurised system which must only be drained, refilled and pressurised by a competent person.

Note: If the pressure gauge indicates a loss of system pressure, that is, less than 0.7bar, YOU MUST CONTACT YOUR INSTALLER.

Pressure Relief Safety Valve

CAUTION. A pressure relief safety valve and discharge pipe is fitted to the boiler. This valve must not be touched. Should there be any discharge from the pipe, turn the boiler off, isolate from the electrical supply and contact your installation/servicing company.

Cleaning

WARNING. This appliance contains metal parts (components) and care should be taken when handling and cleaning with particular regard to edges.

The boiler casing can be cleaned using a mild liquid detergent with a damp cloth, then a dry cloth to polish.

Do not use any form of abrasive or solvent cleaner as you may damage the paint work

Boiler Casing

CAUTION. Do not remove or adjust the casing in any way, as incorrect fitting may result in incorrect operation or failure to operate at all. If in doubt seek advice from the local gas company or your installation/servicing company.

Replacement Parts

If replacement parts are required apply to your local supplier or British Gas.

Please quote the name of the appliance.

1 General Data

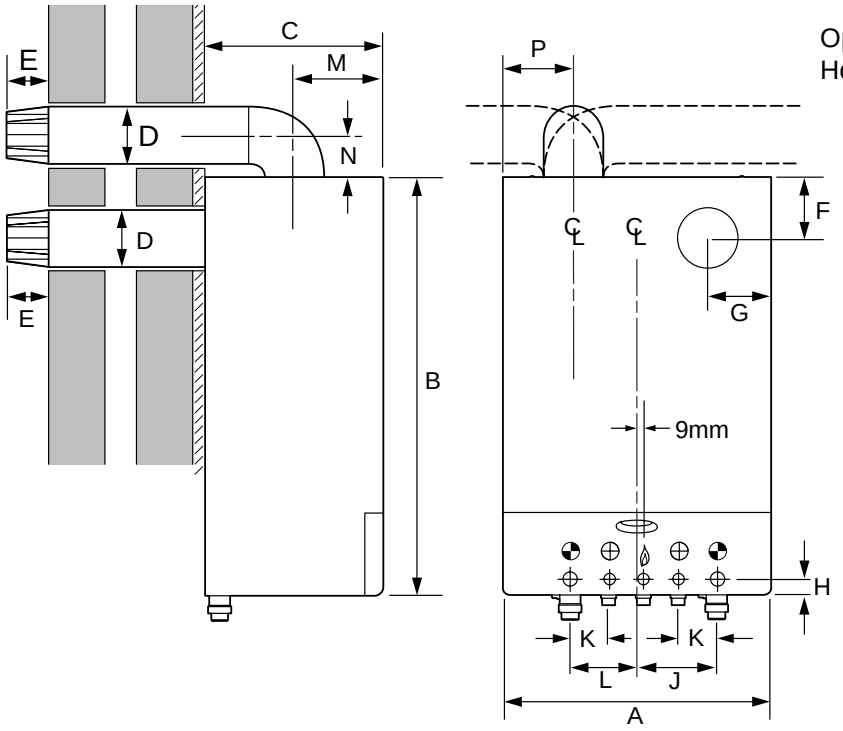


Diagram 1.1

A	B	C	D	E	F	G	H	J	K	L	M	N		P
450	700	300	100	75	138	142	18	135	65	110	138	85 EXTD.	115 EASYFIT	103

TABLE 1

Lift Weight	31.7kg (69.89b)
Total Weight	41.1kg (90.61lb)
Gas connection	Ø 15mm compression
Heating and return	Ø 22mm compression
Domestic hot water	Ø 15mm compression
Safety valve	Preset 3bar (43.5lbf/in^2)
Safety valve discharge	Ø 15mm copper
Water content	1.42 litres (0.31 gallon)
■ **Expansion vessel capacity**	6 litres (1.32 gallons)
Heating cold fill pressure minimum	0.7bar (10.1lbf/in^2)
✻ **D.H.W working pressure**	0.8 to 10bar
■ **Maximum Heating system water content using fitted expansion vessel.**	60 litres (13.2 gallons) with a cold fill pressure of 0.7bar
Electrical supply	230V~50Hz
Electrical rating	150W fused 3A
Internal Fuse rating	1) Type T2A
✻ Boiler starts at an inlet pressure of 0.5bar but requires 0.8bar for maximum output.	
■ For larger systems use an additional expansion vessel, see Section 4.	
Approximate gas rate at max input	3.03m^3/h (107ft^3/h)

1.1 Installation

Materials and equipment should be fit for their purpose and of suitable quality and workmanship.

1.2 Important Notice

This boiler is for use only on natural gas, G20.

1.3 Sheet Metal Parts

WARNING. When installing or servicing this boiler care should be taken when handling the edges of sheet metal parts to avoid any possibility of personal injury.

1.4 Requirements

The installation of this boiler must be carried out by a competent person in accordance with the current rules in force in the countries of destination at the time of installation.

Manufacturer's instructions, supplied.

Manufacturer's instructions must not be taken as overriding statutory requirements.

1.5 Data Label

The data label is on the inner case front, see diagram 1.2.

1.6 Data

See table 1 and diagrams 1.1, 1.2 & 1.3.

The Seasonal Efficiency Domestic Boilers UK (SEDBUK) is 78.3%.

The value is used in the UK Government's Standard Assessment Procedure (SAP) for energy rating of dwellings. The test data from which it has been calculated have been certified by B.S.I.

1.7 Gas Supply

The gas installation shall be in accordance with the rules in force in the countries of destination.

The supply from the governed meter must be of adequate size to provide a steady inlet working pressure of 20mbar (8in wg) at the boiler. With all other appliances operating.

1.8 Electrical Supply

WARNING. This boiler must be earthed.

All system components shall be of an approved type.

The electrical installation shall be in accordance with the current rules in force in the countries of destination at the time of installation.

Connection of the whole electrical system of the boiler and any heating system controls to the electrical supply, must be through one common isolator.

Isolation should be by a double pole switched fused spur box, having a minimum contact separation of 3mm in each pole. The fused spur box should be readily accessible and preferably adjacent to the appliance. It should be identified as to its use.

Alternatively, a fused 3A 3pin plug and unswitched socket may be used, provided they are not used in a room containing a bath or shower.

The mains supply cable and other cables connected to the boiler must be the PVC flexible type of at least 0.75mm^2 (24/ 0.20mm) .

1.9 Heating System Controls

The heating system should have installed: a timer and room thermostat controlling the boiler.

Thermostatic radiator valves may be installed, however they must not be fitted in a room where the room thermostat is located.

Note: All systems must have at least one radiator not fitted with a thermostatic valve.

Note: For further information, see The Building Regulations 1991 - Conservation of fuel and power, 1995 edition - Appendix G, table 4b.

7664

Saunier Duval

HEPWORTH HEATING LTD., BELPER,DERBYS. DE56 1JT

SD30e

230V~50Hz 150W Fused at 3A			TYPE : C_{12} - C_{32}
For use on: I_{2H} -G20 - 20 mbar			NOx Class 5
This boiler is intended exclusively to be installed on a gas supply with a governed meter.			GC No. 47-920-16
			CE 0086
SPECIFIC WATER RATE 14.03 l/min.			GB IE
DOMESTIC CIRCUIT PMW = 10 bar			
HEATING CIRCUIT PMS = 2,5 bar			86/AU/587
G20	DHW MAX.	CH MAX.	MIN
COLD BURNER PRESSURE mbar	14.3	14.3	0.6
HEAT INPUT NETT Q = kW	30.61	30.61	10.37
HEAT OUTPUT P = kW	28.2	28.2	8.79
INJECTOR: 4.6mm 205768			
SERIAL No.			

452240

The appliance flue type is a C_{12} and C_{32}. This refers to a concentric flue where the fan is downstream of the heat exchanger. The C_{12} is a horizontal flue termination, and the C_{32} is a vertical flue termination.

Diagram 1.2

7641

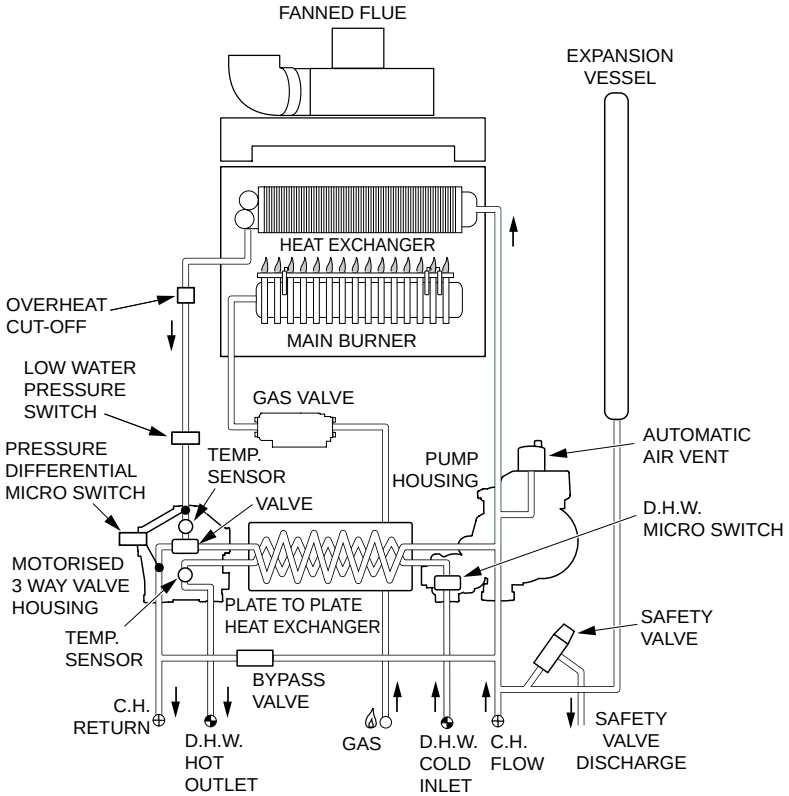


Diagram 1.3

2 Boiler Position

2.1 Location

This boiler must be installed in accordance with the rules in force in the countries of destination.

This boiler is not suitable for fitting outside.

Any electrical switch must be positioned so that it cannot be touched by a person using the bath or shower.

The boiler must be mounted on a flat wall which is sufficiently robust to take its weight, refer to Table 1, “Data”.

If the location of the boiler or any part of the system is subject to severe cold weather conditions, it is recommended that a frost thermostat is fitted. Any part of the system that may be vulnerable to freezing must be protected.

2.2 Boilers in a compartment

Where the installation of the boiler will be in an unusual position, the current issue of BS6798 gives detailed guidance on these requirements.

An existing cupboard or compartment modified for the purpose may be used, providing minimum clearances are maintained. Details of essential requirements for cupboard or compartment design are given in the current issue of BS6798.

The door way opening should be of sufficient size to allow for easy removal of the boiler.

Where the boiler is fitted in a cupboard or compartment, permanent ventillation is not required.

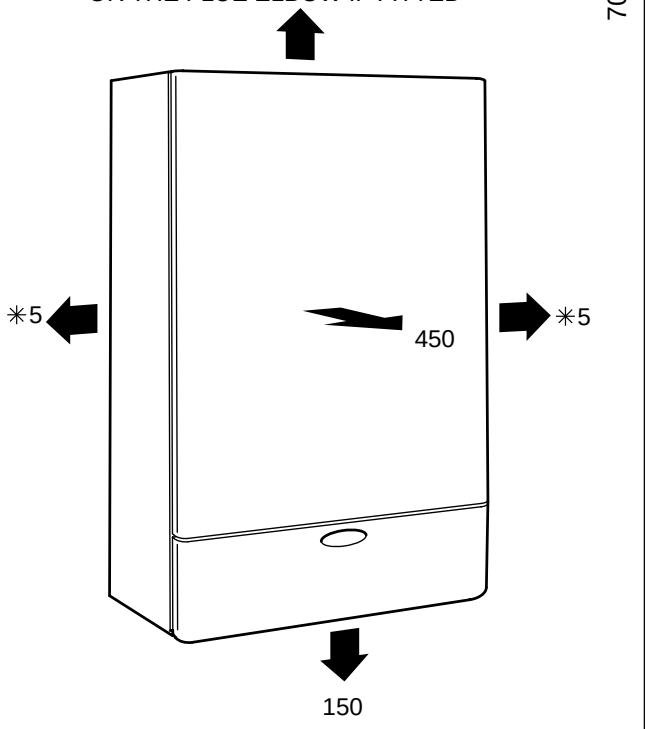
Any existing compartment air vents must not be removed or blocked off.

2.3 Clearances

The boiler should be positioned so that at least the minimum operational and servicing clearances are provided, see diagram 2.1. Additional clearances may be required around the boiler for installation.

2.4 Timber Frame Buildings

If the boiler is to be installed in a timber frame building it should be fitted in accordance with the Institute of Gas Engineers document IGE/UP/7/1998. If in doubt seek advice from the local gas undertaking or Hepworth Heating Ltd.



✳To achieve minimum "Installation" clearance of 5mm. The side panels will have to be fitted prior to boiler mounting.

DIMENSIONS IN MILLIMETRES

Diagram 2.1

3 Flue and Ventilation

3.1 General

The flue must be installed in accordance with the rules in force in the countries of destination.

3.2 Terminal Position

The minimum acceptable siting dimensions for the terminal from obstructions, other terminals and ventilation openings are shown in diagram 3.1.

The terminal must be exposed to the external air, the position allowing free passage of air across it at all times.

Car port or similar extensions of a roof only, or roof and one wall, require special consideration with respect to any openings, doors, vents or windows under the roof. Care is required to protect the roof if made of plastic sheeting. If the car port comprises of a roof and two or more walls seek advice from the local gas undertaking before installing the boiler.

If the terminal is fitted within 600mm below plastic guttering, an aluminium shield 1500mm long should be fitted immediately beneath the guttering or eaves. If the terminal is fitted within 450mm below painted eaves or a painted gutter, an aluminium shield 750mm long should be fitted immediately beneath the guttering or eaves.

3.3 Flue Options

There are various flue systems to choose from, as follows:

Easyfit Top Outlet Flue Pack - Pt.No. 232057

Standard Rear Outlet Flue Pack - Pt.No. 230482

Extended Top Outlet Flue Pack - Pt. No. 230487

1 Metre Extension Kit - Pt. No. 230484

Optional Wall Liner Kit No. 900862

A Flue Bend Kit or Vertical Flue Kit can be supplied, see Hepworth Heating "Flue Options Guide" for configurations available.

45° Flue Bend Pack - Pt. No. 230485

90° Flue Bend Pack - Pt. No. 230486

In Line Flue Adapter Kit - Pt. No. 230488

Vertical Flue Kit No. 458115

3.4 Internal Access Flue

All flue assemblies are designed for internal installation, given that there is sufficient clearances opposite to the flue for the installation of the flue.

If there is insufficient clearance the flue can be installed from outside.

For a wall thickness up to 300mm, provided that there is sufficient space and the optional wall liner kit is used, the flue can be installed from the inside.

For a wall thickness of over 300mm the external flue hole will need to be made good from the outside, this also applies if you use the flue kit without the optional wall liner kit, irrespective of wall thickness.

3.5 Terminal Guard

A terminal guard is required if persons could come into contact with the terminal or the terminal could be subject to damage.

If a terminal guard is required, it must be positioned to provide a minimum of 50mm clearance from any part of the terminal and be central over the terminal.

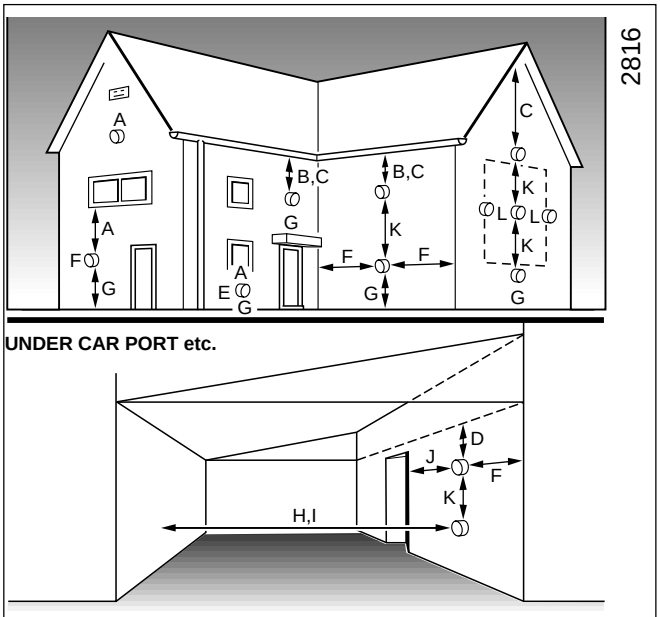
The guard should be similar to that shown in diagram 3.1 .

3.6 Room Ventilation

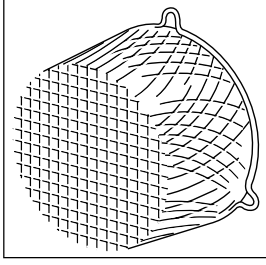
Ventilation must be provided in accordance with the rules in force in the countries of destination. The boiler is room sealed, so where the boiler is fitted in a room or space, a permanent air vent is not required.

3.7 Cupboard/Compartment Ventilation

If the boiler is to be fitted in a cupboard or compartment. Refer to Section 2.2.



MINIMUM SITING DIMENSIONS FOR FANNED FLUE TERMINALS POSITION		MINIMUM SPACING mm
A	DIRECTLY BELOW, ABOVE OR HORIZONTALLY TO AN OPENING, AIR BRICK, OPENING WINDOWS, AIR VENT OR ANY OTHER VENTILATION OPENING.	300
B	BELOW GUTTER, DRAIN/SOIL PIPE	25
C	BELOW EAVES	25
D	BELOW A BALCONY	25
	OR CAR PORT	200
E	FROM VERTICAL DRAIN PIPES AND SOIL PIPES	25
F	FROM INTERNAL OR EXTERNAL CORNERS	25
G	ABOVE ADJACENT GROUND OR BALCONY LEVEL	300
H	FROM SURFACE FACING THE TERMINAL	600
I	FACING TERMINALS	1200
J	FROM OPENING (DOOR/WINDOW) IN CAR PORT INTO DWELLING	1200
K	VERTICAL FROM A TERMINAL	1500
L	HORIZONTALLY FROM A TERMINAL	300



TERMINAL GUARD TYPE K3
SUPPLIED BY :
Tower Flue Components Ltd.
Morley Road
Tonbridge
Kent
TN9 1RA

Diagram 3.1

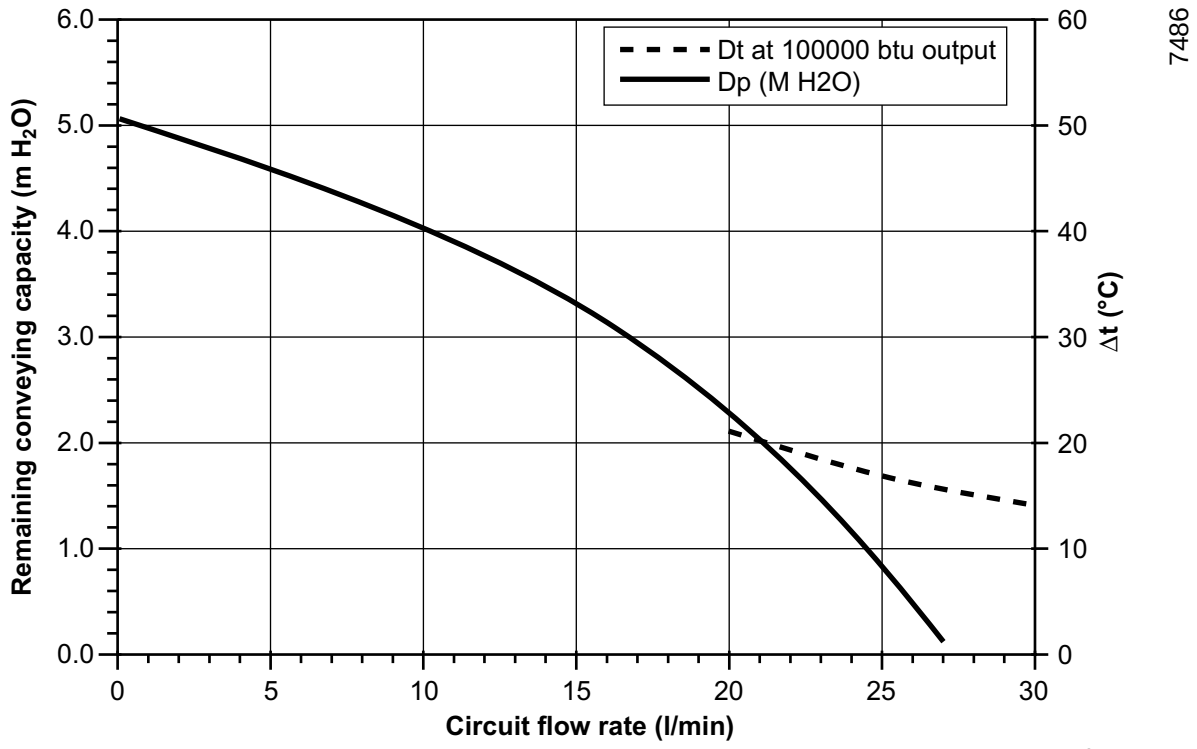


Diagram 4.1

4.1 General Notes

The boiler is intended for use in a sealed system only.

4.2 Safety Valve

The safety valve is an integral part of the boiler.

It cannot be adjusted but has a manual test device.

4.3 Pressure Gauge

A pressure gauge is incorporated into the boiler to indicate the system pressure.

The gauge has a cold fill set pointer.

4.4 Pump

The circulation pump is integral with the boiler.

The remaining circulating pressure head available from the boiler is shown in diagram 4.1, Saunier Duval pump.

4.5 Expansion Vessel

The boiler has an integral expansion vessel with a capacity of 6 Litres. If the system water content exceeds the maximum quoted in Table 1, Data, an additional vessel should be connected into the system as close as possible to the central heating return connection of the boiler, see diagram 4.2.

The charge pressure shall not be less that the static head at the point of connection, that is, the height of the top point of the system above the expansion vessel.

4.6 Flow Rate

A valve must be incorporated in the main flow or return of the system, valve “A” shown in the flow diagram 4.2. This valve must be lockable and positioned so that inadvertent closure or unauthorised interference is not possible. The design differential can be between 11°C (20°F) and 17°C (30°F), dependent upon the system resistance and the available pump head.

4.7 Bypass

The bypass is an integral part of the boiler.

4.8 Filling Sealed Systems

An optional extra filling loop is available Part No. 457120 Provision for filling the system at a low level must be made. Three methods of filling are shown in diagram 4.3.

There must be no permanent connection to the mains water supply, even through a non-return valve.

NOTE: It is important that fittings used for connection to potable water comply with the water undertakers requirements.

4.9 Corrosion Inhibitor

If an inhibitor is to be used in the system, contact the inhibitor manufacturer so that they can recommend their most suitable product.

When fitting the boiler into an existing system, special care should be taken to drain the entire system, including radiators, then thoroughly cleaning out before fitting the boiler whether or not adding an inhibitor.

4.10 Draining

A draining tap must be provided at the lowest points of the system, which will allow the entire system to be drained. An additional draining tap MUST be fitted close to the boiler.

The flow and return isolation valves are provided with drain points for boiler heat exchanger drainage.

4 Heating System

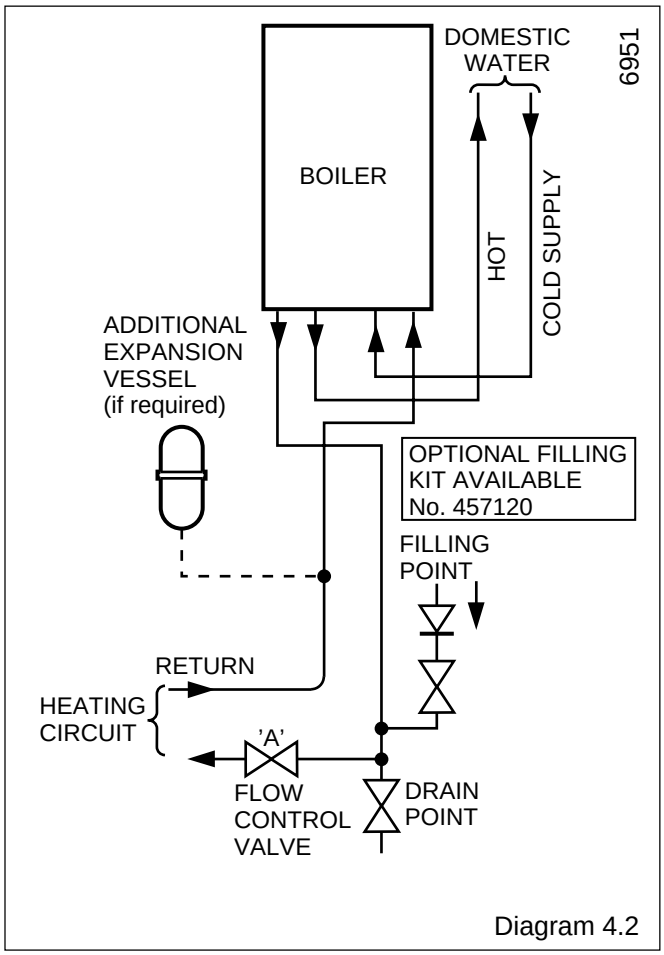


Diagram 4.2

ALTERNATIVE METHODS OF FILLING

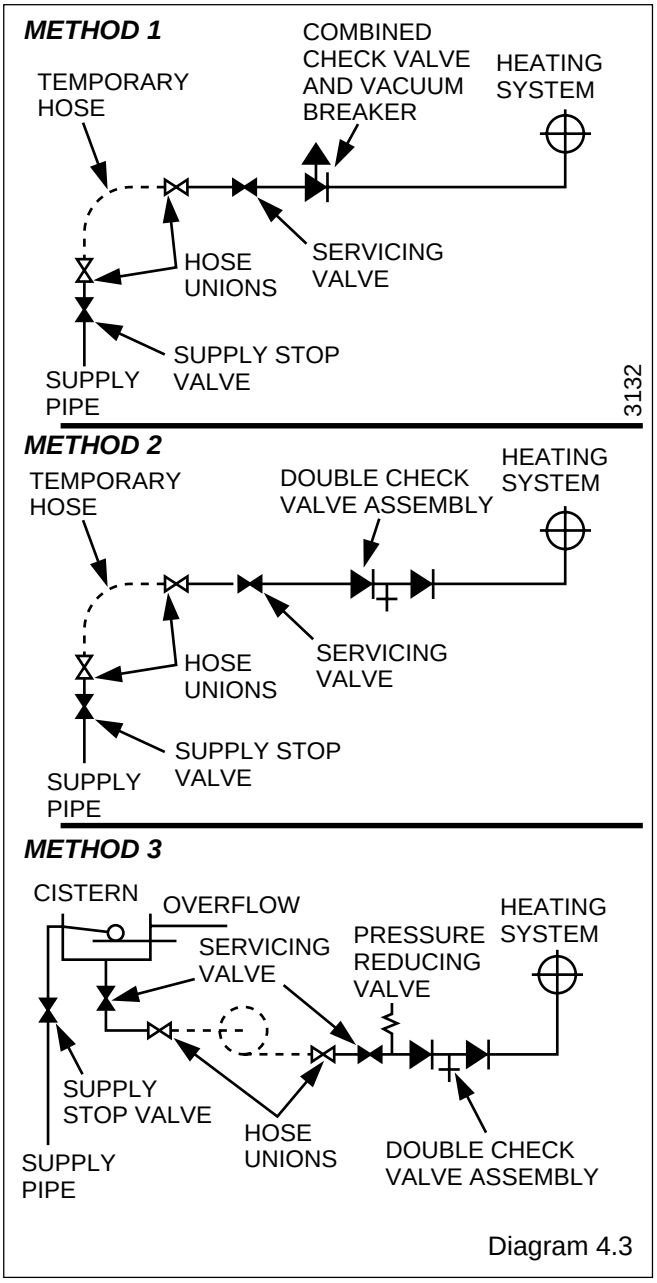


Diagram 4.3

5 Domestic Hot Water System

5.1 General

The domestic hot water service must be in accordance with the rules in force in the countries of destination.

5.2 Water Pressure

For the minimum and maximum working pressures of the domestic hot water circuit of the boiler refer to diagram 1.2.

If the cold water supply pressure exceeds the maximum, a governor must be fitted in the supply to the boiler to reduce the pressure to within the limits given.

5.3 “Hard” Water Areas

In areas where the water is “hard”, more than 200mg/litre, it is recommended that a proprietary scale reducer is fitted in the cold water supply to the boiler. Consult the local water company for additional advice.

A double check valve assembly must be fitted upstream of the scale reducer. For the relative position of the scale reducer and pressure reducing valve, if required, refer to the manufacturer’s instructions.

6 Installation Preparation and Gas / Water Connections

The installation requires the following components :-

1. Plumbing jig Carton
2. Boiler Carton
3. Flue Pack

6.1. Plumbing Jig

Remove from the wall template, then follow the instructions given on the template.

Note: Leaving the service cock bracket (lower jig) fixing screws loose will make the fitting of the boiler service elbows on to the service cocks easier. Once the service connections are made, tighten service cock bracket (lower jig) fixing screws. It is important that the wall hanging bracket and the service cock bracket (lower jig) are fitted to a flat and true wall area for correct alignment with the boiler. If this cannot be achieved it is acceptable to pack out the service cock bracket (lower jig) to obtain the correct alignment with the wall hanging bracket.

6.2 Gas Connection

Provision is made for the gas supply to be connected from below the boiler, see diagrams 1.1 and 6.1 for position.

Refer also to “Gas Supply”, Section 1.7.

Make the gas supply connection to the gas service cock. While making the connection, do not subject the gas service cock to heat as you may damage the seals.

6.3 Water Connections

Provision is made for the domestic cold water inlet to be connected from below or through an internal wall at the rear of the boiler, see diagram 1.1 and 6.1 for position.

Refer also to Section 5 “Domestic Hot Water System”.

Provision is made for the water connections to be connected from below or from above, passing down either side of the boiler. Take care that any pipework connected from above will clear the expansion vessel. Refer to the wall template. If connecting from above a vertical piping kit 457160 is available and is recommended.

NOTE: Top rear flue outlet is not possible with a vertical piping kit.

If necessary, temporarily fit the boiler.

Flush out the domestic water and heating system before connecting the boiler.

Make the connections to the domestic hot water outlet and the heating system by means of the isolating valves, see diagram 6.1.

While making the connections. Do not subject any of the isolating valves to heat as you may damage the seals.

Make sure that the drain and operating screw heads on the isolating valves are accessible.

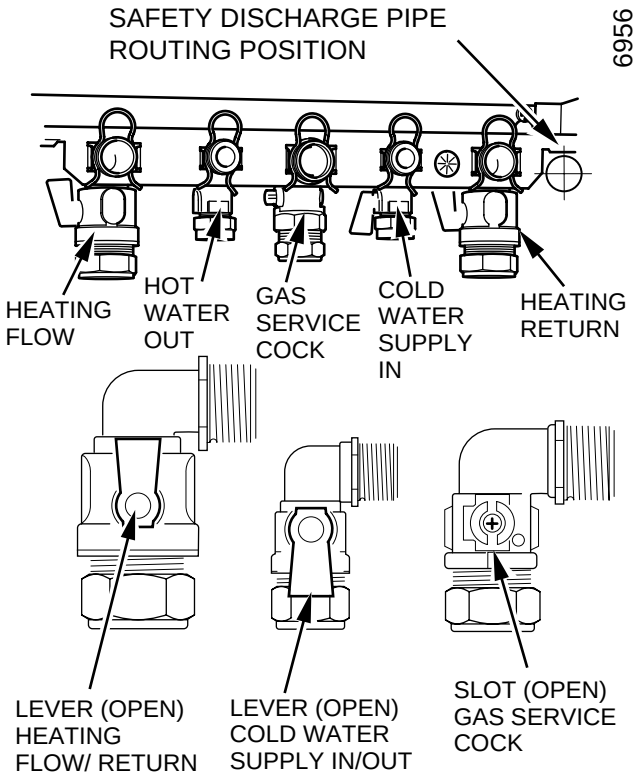


Diagram 6.1

6.4 Safety Valve Discharge

WARNING. It must not discharge above an entrance or window or any type of public access area.

A short discharge pipe is supplied loose with the boiler, which when fitted to the safety valve, will end below the boiler the position is next to the heating return, for position see diagram 6.1.

This must be extended, using not less than 15mm od metal pipe, to discharge, in a visible position, outside the building, facing downwards, preferably over a drain. The pipe must have a continuous fall and be routed to a position so that any discharge of water, possibly boiling, or steam cannot create any danger to persons, damage to property or external electrical components and wiring.

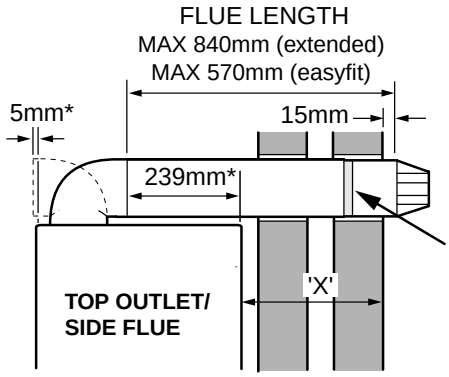
Note. To ease future servicing it is advisable to use a compression type fitting to extend the discharge pipe.

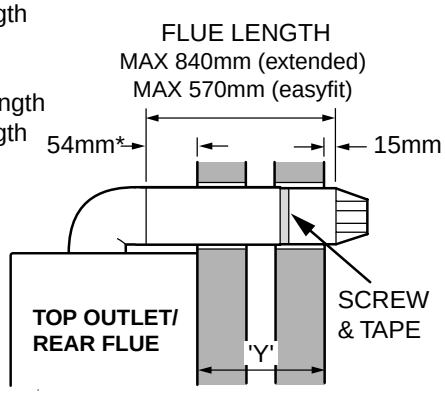
7 Flue Preparation

TOP OUTLET FLUE PACK

EXTENDED
'X' plus 254mm (RH) = flue length
'X' plus 10mm (LH) = flue length

EASYFIT
'X' plus 282mm (RH) = flue length
'X' plus 38mm (LH) = flue length
(must include 50mm min. side clearance)





9359

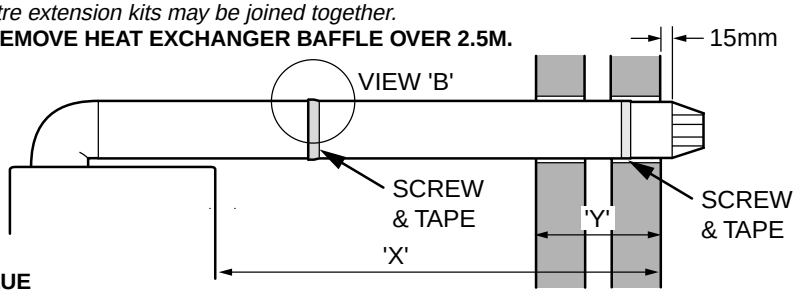
*EXTENDED flue only

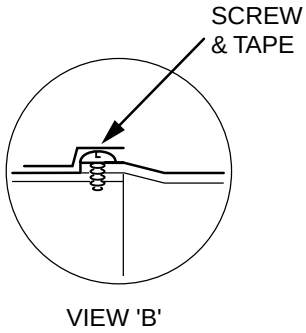
EXTENDED 'Y' plus 69mm = flue length
EASYFIT 'Y' plus 97mm = flue length

EASYFIT/EXTENDED TOP OUTLET FLUE PACK & 1 METRE EXTENSION KIT

3 x 1 metre extension kits may be joined together.

NOTE: REMOVE HEAT EXCHANGER BAFFLE OVER 2.5M.

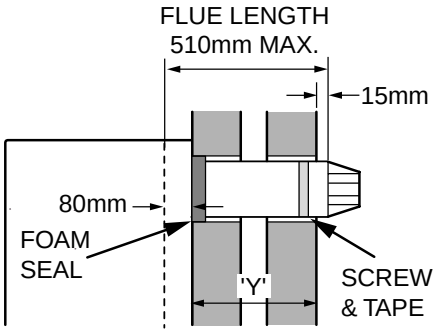




SIDE FLUE
EXTENDED
'X' plus 254mm (RH) = flue length
'X' plus 10mm (LH) = flue length
EASYFIT: 'X' plus 282mm (RH) 'X' plus 38mm (LH) = flue length

REAR FLUE
EXTENDED 'Y' plus 69mm = flue length
EASYFIT 'Y' plus 97mm = flue length

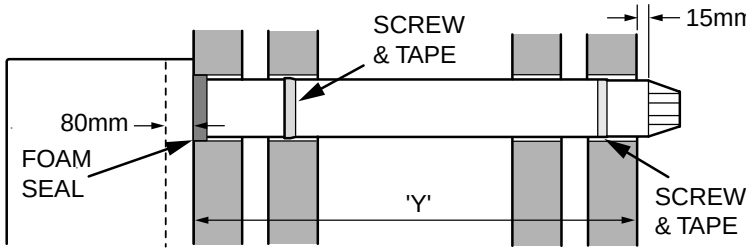
REAR OUTLET FLUE PACK



'Y' plus 95mm = FLUE LENGTH

REAR OUTLET FLUE PACK & 1 METRE EXTENSION KIT

2 x 1 metre extension kits may be joined together.



'Y' plus 95mm = FLUE LENGTH

FLUE PACKS	MINIMUM WALL THICKNESS	MINIMUM FLUE LENGTH	MAXIMUM FLUE LENGTH	MAXIMUM DISTANCE FROM "Y" BOILER MOUNTING FACE TO EXTERNAL WALL FACE	MAXIMUM DISTANCE FROM "X" BOILER CASING TO EXTERNAL WALL FACE
EASYFIT					
REAR	75	144	570	500	-
SIDE R.H.	75	334	570	-	316
SIDE L.H.	75	90	570	-	560
TOP EXTD.					
REAR	75	144	840	770	-
SIDE R.H.	75	334	840	-	586
SIDE L.H.	75	90	840	-	830
REAR STD.					
REAR	75	170	510	415	-

NOTE :
IF IT IS NECESSARY TO CUT THE DUCTS TO ACHIEVE THE "FLUE LENGTH" MAKE SURE THAT THE OVERLAPS ARE AS FOLLOWS :-
THE OVERLAP FOR AIR DUCT = 25mm
THE OVERLAP FOR FLUE DUCT = 50mm

THE MAXIMUM LENGTHS CAN BE INCREASED BY AN ADDITIONAL 2 METRES WITH THE USE OF THE 1 METRE EXTENSION KITS.
NOTE :THIS APPLIES TO STANDARD KITS ONLY.

9360

Diagram 7.1

7 Flue Preparation

7.1 Flue Position and Length

Determine flue application, length and terminal position before starting.

Refer to diagram 7.1.

Note: The Easyfit Top Outlet Flue Pack and the Extended Top Outlet Flue Pack contains a flue duct extension piece complete with "O" rings, this should be discarded.

If you are using a Flue Bend or a Vertical Flue Kit, please follow the instructions supplied with the kit.

To make a neat finish to the flue outlet a flue collar kit, part No. 443286, with instructions, is available, see diagram 7.2.

Note: If required an optional wall liner kit, part no. 900862, is available complete with instructions.

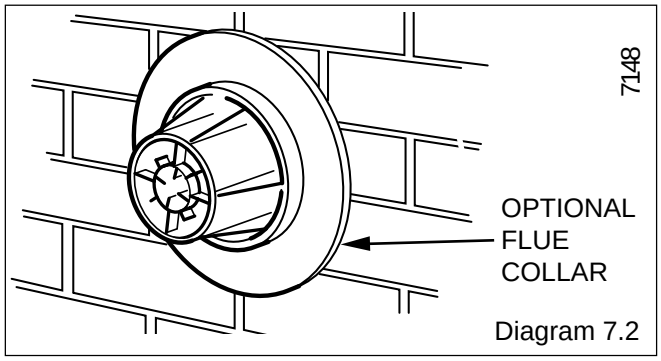


Diagram 7.2

7.2 Flue Assembly

Extend the telescopic flue to the required length, making sure that the minimum overlap is no less than 25mm, and that the flue terminal projects 15mm minmum beyond wall face, see diagram 7.1.

Carefully drill though air duct pilot hole and secure with self tapping screw provided in fittings pack, see diagram 7.1.

Seal the joint with the tape provided.

If the flue system requires the addition of flue extension kits, drill, seal and secure them with the self tapping screw and tape provided.

Note: Should any one of the flue sections require cutting to obtain desired flue system length, cut at the end opposite the expanded end.

If the boiler is not to be fitted for some time cover the hole in the wall.

7.3 Internal Access Flue

If access to the outside wall is not practical, the flue system can be installed from inside. Use of the optional wall liner kit is required.

7.4 Rear Outlet Flue Fixing

Fit the self adhesive foam seal provided in the flue pack around the air duct at the position shown in diagram 7.1.

Make good around the flue outside after installation of the boiler.

Important: If the wall liner kit is used, the self adhesive foam seal included in the wall liner kit must be used in place of the one supplied with the flue pack, see diagram 7.3 for position of self adhesive seal.

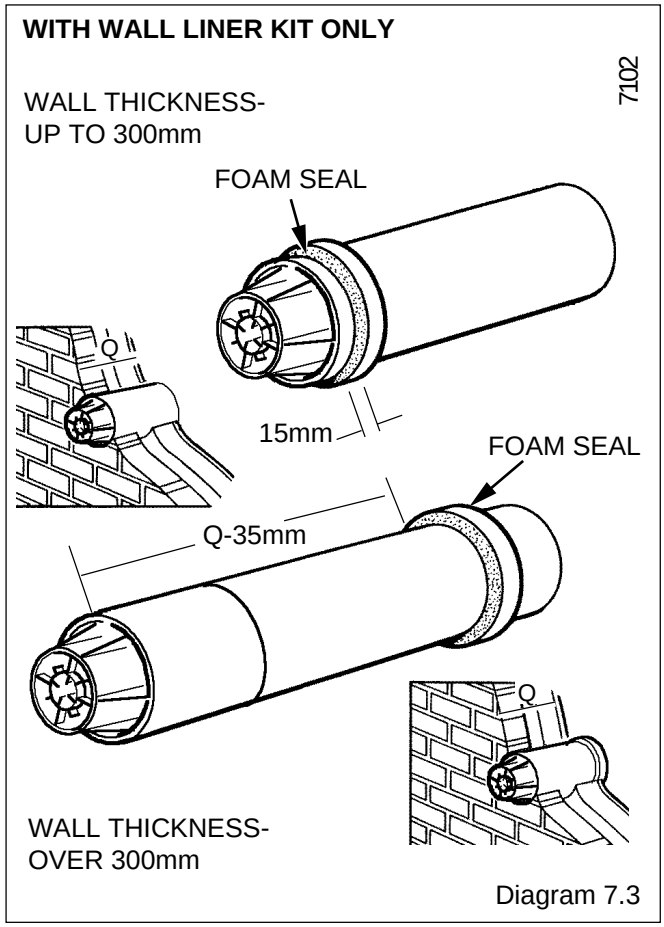


Diagram 7.3

7.5 Top Outlet Side or Rear Flue Fixing

Make good the area around the flue inside and outside after installation of the boiler.

Important: If the wall liner kit is used, the self adhesive foam seal included in the wall liner kit must be used in place of the one supplied with the flue pack, see diagram 7.3 for position of self adhesive seal.

7.6 Flue Positioning

Push the flue assembly into and through the hole such that it is within the wall, and does not stick out into the room. Do not push the flue assembly too far into the hole as it has to be pulled back into the boiler and secured

8 Mounting the boiler

8.1 Boiler Mounting

Remove the inner case front, secured by two clamps at the bottom lift up and unhook from the threaded lugs at the top, see diagram 8.1.

Remove the combustion chamber panel transit screws, see diagram 8.2. (It will not be necessary to refit these).

Slide the combustion chamber panel upwards to disengage from the retaining lugs, pull forward to remove, see diagram 8.2.

Remove the fan electrical connections by pulling the plastic boots not the wires. Remove the tubes from fan, noting the colour tubes positions. see diagram 8.3.

Remove the fan and flue collector assembly by pulling it forward see, diagram 8.3.

Remove the rear outlet restrictor plate and retain if using the rear flue outlet, see diagram 8.4.

REAR FLUE ONLY Fit the flue spigot supplied seperately, see diagram 8.5.

TOP FLUE ONLY Remove the blanking plate from the top of the boiler and use to blank the hole where the rear restrictor plate (discard) was fitted.

Note: Should the side clearances be less than 30mm. It will be necessary to fit the side panels before mounting the boiler. Refer to Section 10.10 for fitting.

Remove the protective caps from the boiler water pipes.

Fit the sealing washers (supplied in the fittings pack) to the boiler water pipes by inserting them into the tubing nuts (the nipples on the washers will hold them in position), see diagram 8.8.

Lift the boiler into position on the top mounting brackets use hand holes provided, see diagram 8.6.

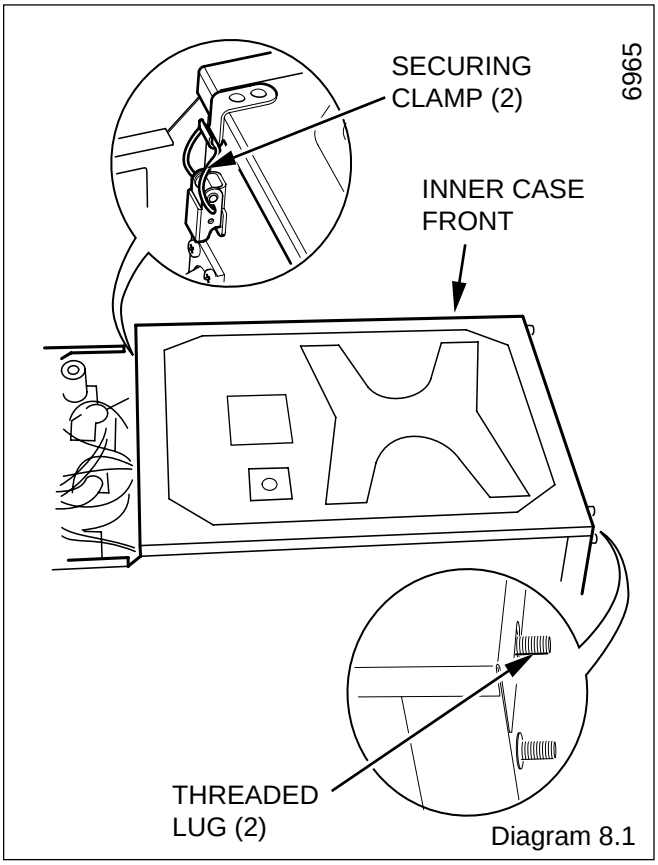


Diagram 8.1

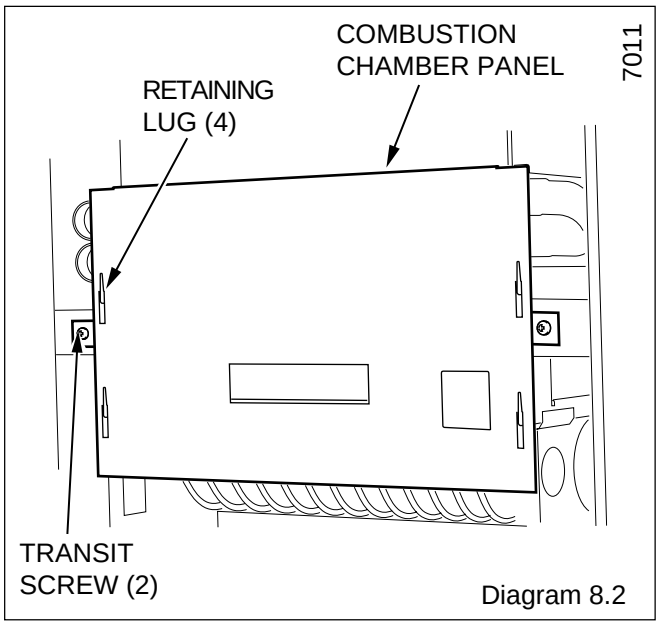


Diagram 8.2

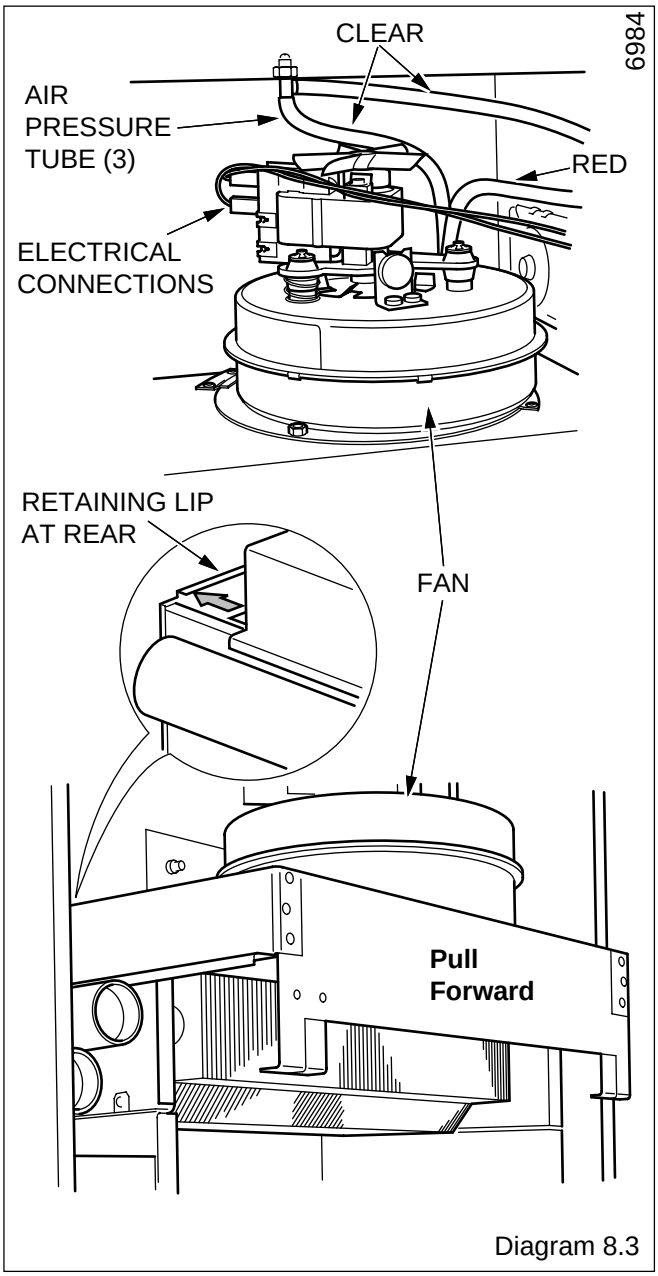


Diagram 8.3

8.2 Water and Gas Connections

Locate the boiler water pipes and gas supply pipe making sure the washers are retained in the tubing nuts onto the isolation valves, fully push the boiler back, see diagram 8.8.

Ensure the bottom boiler bracket is sitting on top of the service cock bracket, see diagram 8.6.

Secure all the tubing nuts finger tight, plus $^{3}/_{4}$ turn maximum.

Connect the gas pipe to the isolation valve ensuring that the sealing washer (supplied fitted) is in position.

8.3 Boiler Securing

Secure the boiler to the service cock bracket with the screws provided in the fittings pack, see diagram 8.6.

An anti theft kit is available, Kit No. 457110.

8.4 Discharge Pipe

Fit the short discharge pipe to the safety valve using the nut and sealing washer supplied in the fittings pack, see diagram 8.9.

Extend the discharge pipe, using only a compression type fitting to join the discharge extension, refer also to Section 6.4 “Safety Valve Discharge”.

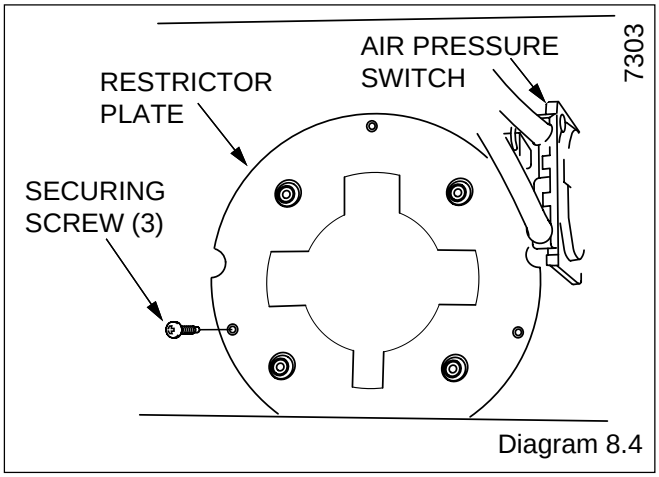


Diagram 8.4

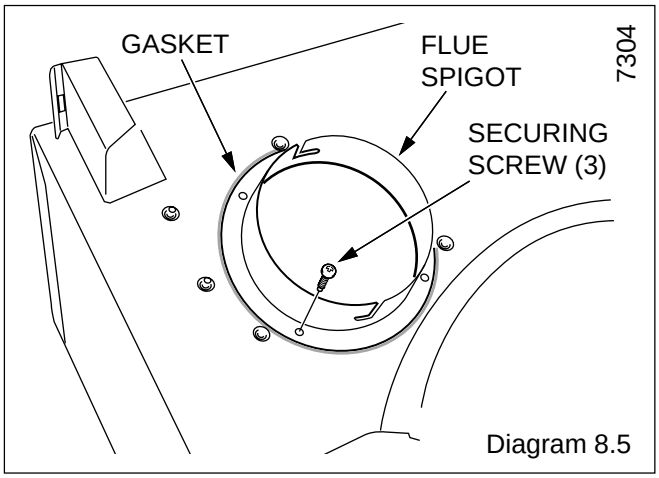


Diagram 8.5

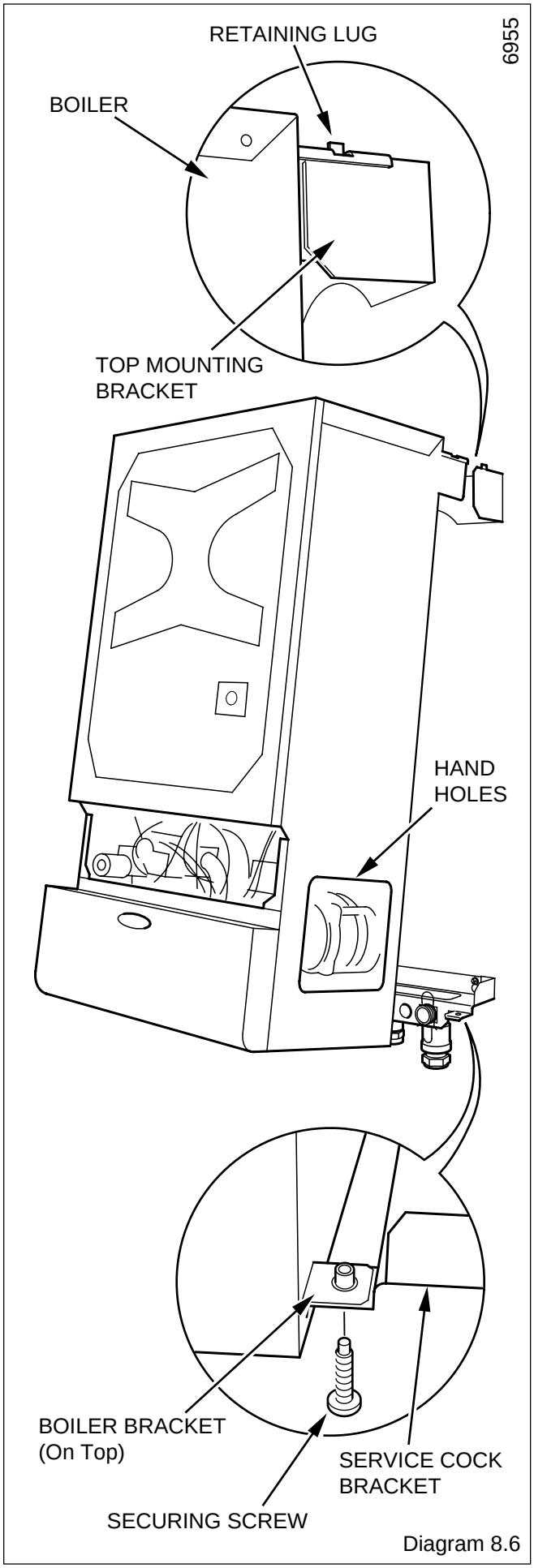


Diagram 8.6

8.5 Rear Outlet Flue Fixing

Make sure that the ductings do not slope down towards the boiler.

Fit the air duct into the flue spigot by pulling the air duct into the flue, locating cutouts. Turn the air duct anti-clockwise to lock the tabs into the cutouts, see diagram 8.10.

Refit the restrictor plate that was supplied fitted & marked as Restrictor Table below.

Fit the flue connecting sleeve onto the fan, see diagram 8.11.

Fit the fan to the flue ducting, see diagram 8.11.

Fit the fan and flue collector the electrical connections and air pressure tubes to the fan.

Refit the combustion chamber panel.

Make the outer wall weatherproof. A Flue Collar Kit Part No. 443286 is available.

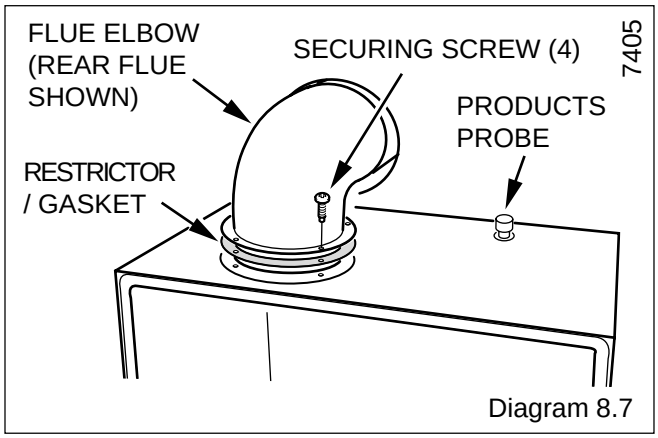


Diagram 8.7

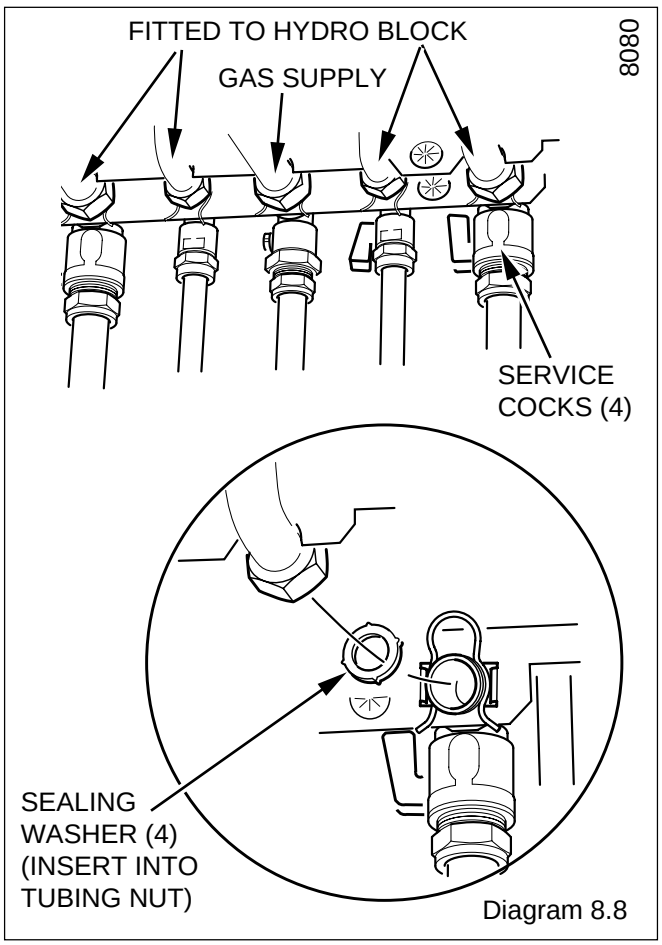


Diagram 8.8

8.6 Top Outlet Side or Rear Flue Fixing

Position the restrictor plate supplied in the loose items pack, between the flue elbow and boiler , (gasket facing upwards). Fit the flue elbow to the restrictor plate and top of the boiler using the four screws supplied, see diagram 8.7.

Tighten the four screws of the flue elbow evenly to ensure a good seal at the gasket.

Note: It is important the correct restrictor plate is fitted or omitted where instructed.

For top flue outlet be sure to use the correct restrictor plate, all restrictors are supplied with the appliance, see restrictor table.

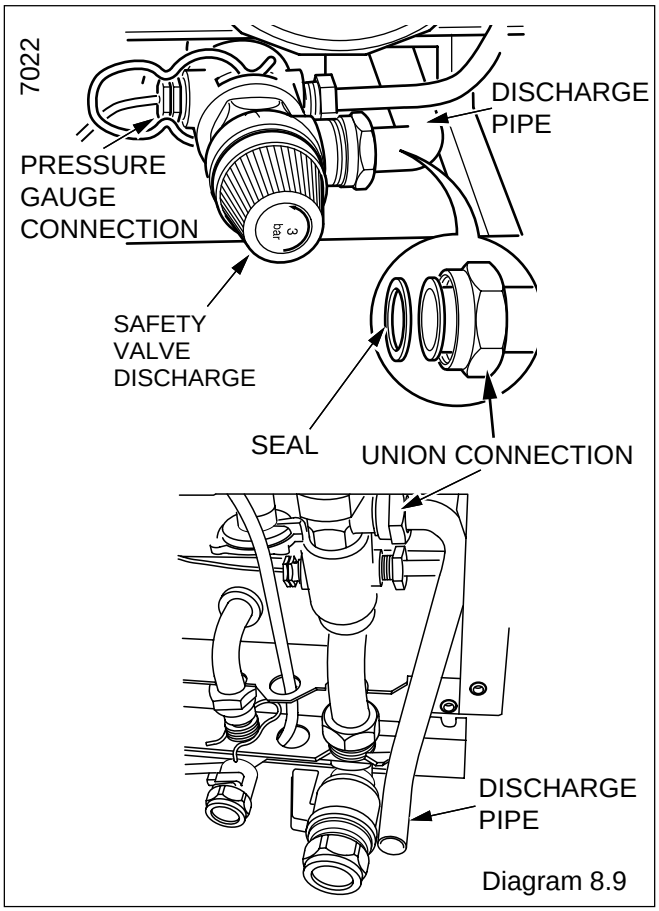


Diagram 8.9

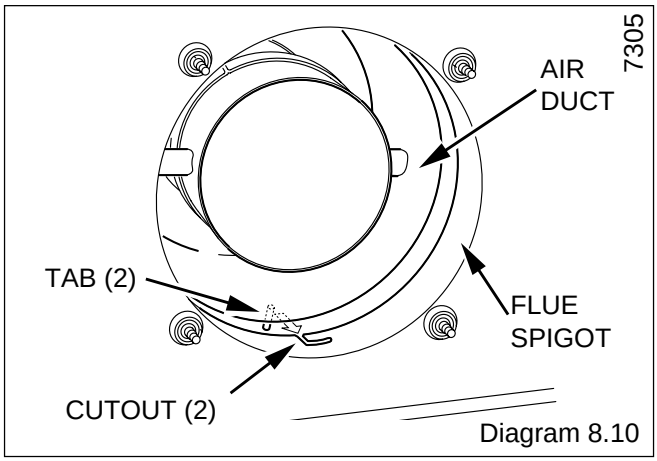


Diagram 8.10

8 Mounting the boiler

RESTRICTOR TABLE				
FLUE OUTLET	**MAX FLUE LENGTH**	**RESTRICTOR PLATE**	**MAX FLUE LENGTH**	**RESTRICTOR PLATE**
CASE REAR	UP TO 2.5m	G	N/A	N/A
TOP LHS	UP TO 2.5m	C	2.5m TO 3.5m	NON
TOP RHS	UP TO 2.5m	C	2.5m TO 3.5m	D
TOP REAR	UP TO 2.5m	C	2.5m TO 3.5m	D

Make sure that the ductings do not slope down towards the boiler.

Remove the fan from the flue collector, secured with a screw and retaining lip.

Fit the flue connecting sleeve onto the fan, see diagram 8.12.

Fit the fan to the flue ducting, Holding it up in position fit the flue collector, see diagram 8.13.

Secure the fan to the flue collector with the securing screw and retaining lip, see diagram 8.14.

Fit the electrical connections and air pressure tubes to the fan.

Refit the combustion chamber panel.

Make the outer wall weatherproof. A Flue Collar Kit Part No. 443286 is available.

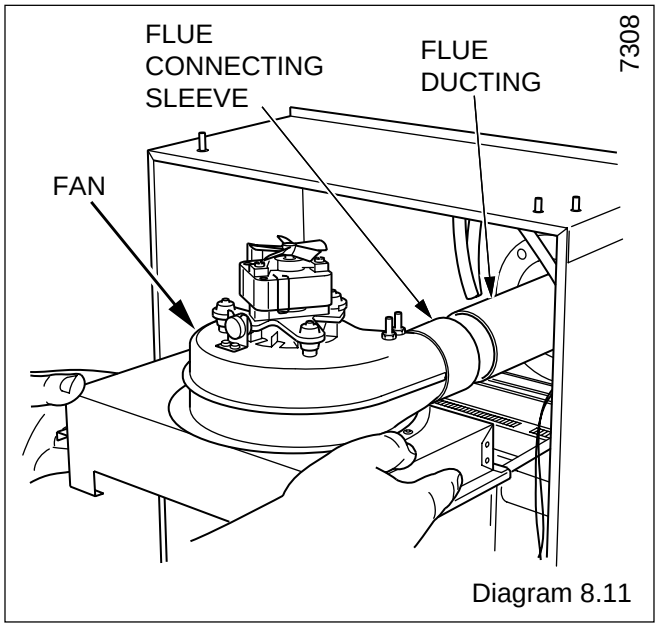


Diagram 8.11

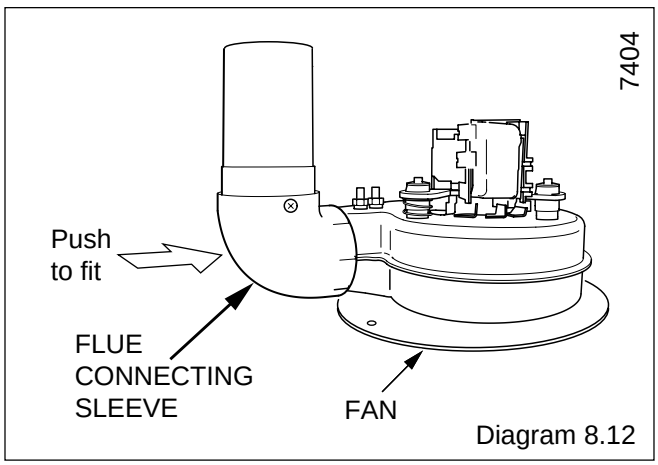


Diagram 8.12

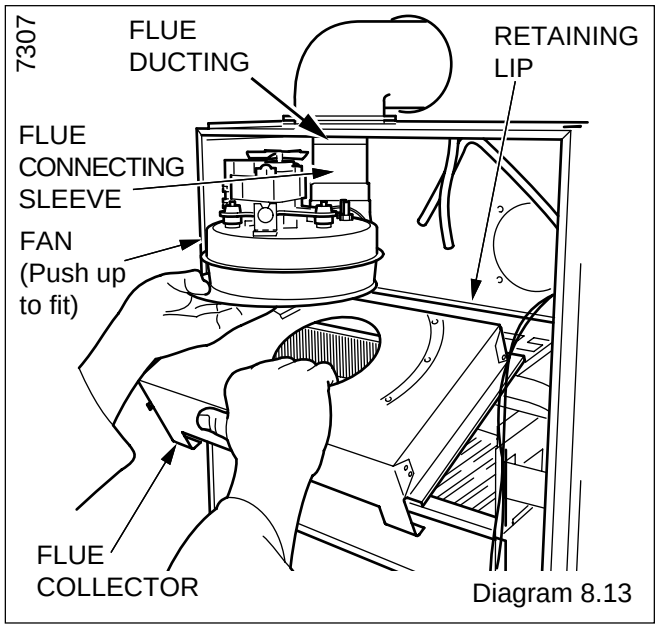


Diagram 8.13

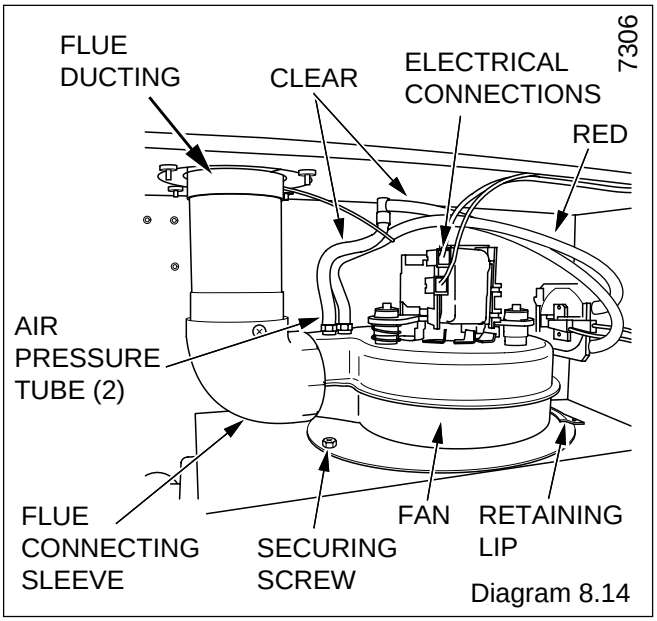


Diagram 8.14

9 Electrical Connections

9.1 Supply Cable Connection

CAUTION: To prevent an induced current from switching the central heating on, when not required, it is important that the heating system control cables are separated from the other mains supply cables.

Open the controls cover door. Remove the two screws securing the controls facia, see diagram 9.1.

Hinge the control fascia open.

The boiler requires a permanant mains supply through an external isolator which must also isolate any heating system controls, see diagram 9.2.

Any heating system controls must not interrupt the permanent mains supply to the boiler.

Using PVC cable of a suitable length and rating as stated in Section 1.8 “Electrical Supply”, route the mains supply cable and connect to the appropriate terminals of the connector block, restrain with the cable clamp supplied, see diagram 9.2.

Standard colours are, Brown - Live, Blue - Neutral, Green and Yellow - Earth.

Make the earth cable of a greater length so that if the cable is strained the earth would be the last to become disconnected.

CAUTION: It is ESSENTIAL to make sure that the polarity is correct.

9.2 Heating System Controls

All external controls and wiring are required to provide a minimum of reinforced insulation at 250Vrms between the parts of those devices operating at mains hazardous voltage and the user accessible parts af those devices.

Note: For further information, see The Building Regulations 1991 - Conservation of fuel and power, 1995 edition - Appendix G, table 4b.

If electrical controls are not to be used to regulate the heating system, do not remove the red link cable.

When any form of external electrical control is being used to regulate the heating system, remove the red link cable and connect heating system controls in series.

The mains cable outer insulation must not be cut back external to the plug.

9.3 Frost Thermostat

If the installation requires protection by a “frost thermostat”, connect a single pole type, to the appropriate terminals of the connector.

Keep all cables away from hot surfaces.

9.4 Electrical Test

Carry out preliminary electrical system checks as below:

1. Test insulation resistance to earth of mains cables.
2. Test earth continuity and short circuit of all cables
3. Test the polarity of the mains.

Refit the control fascia.

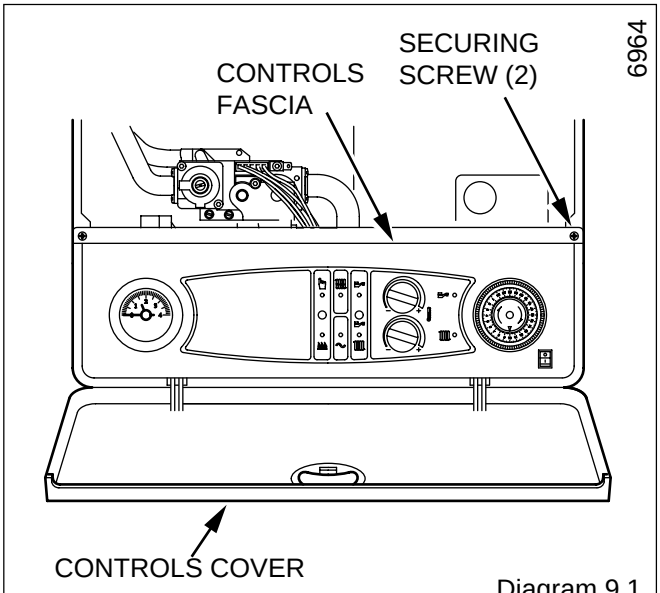


Diagram 9.1

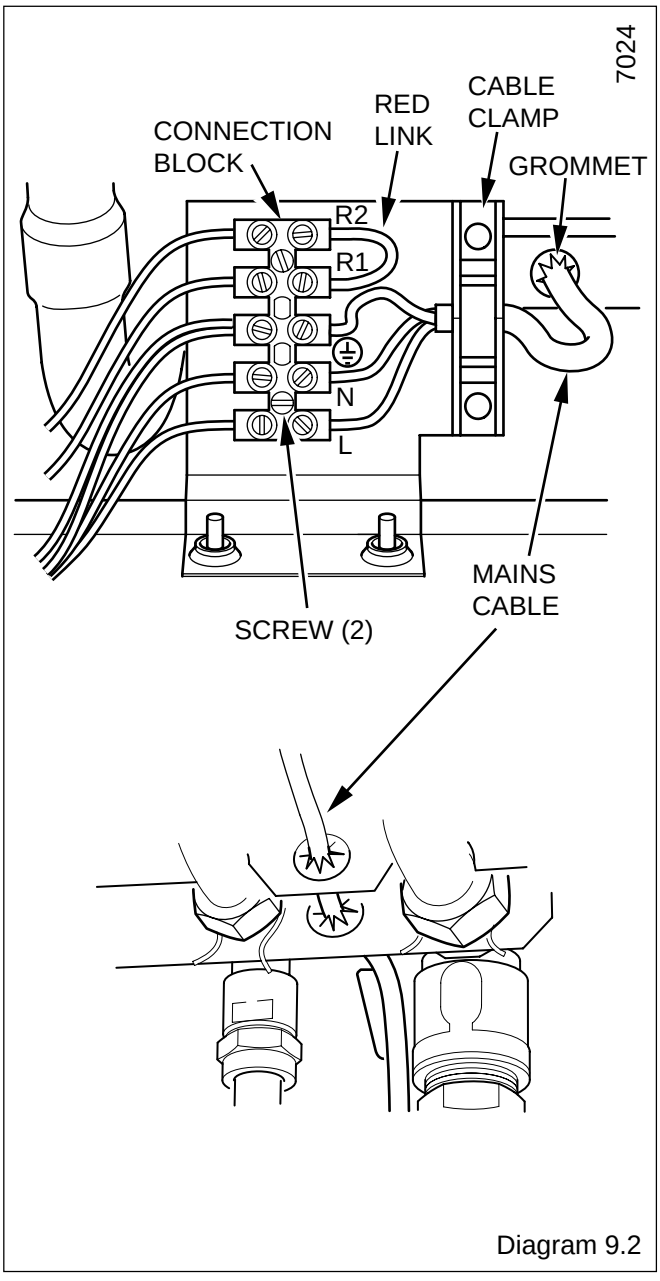
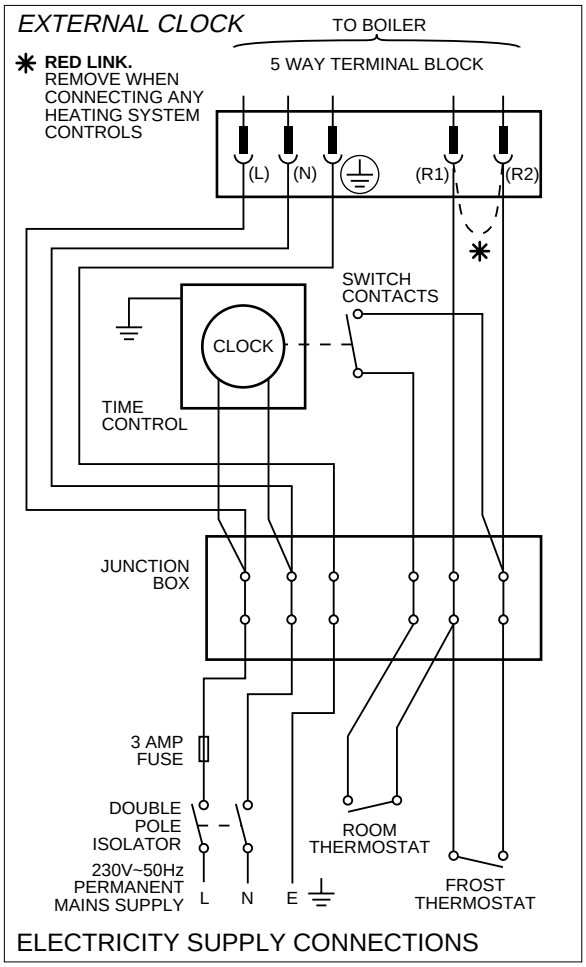
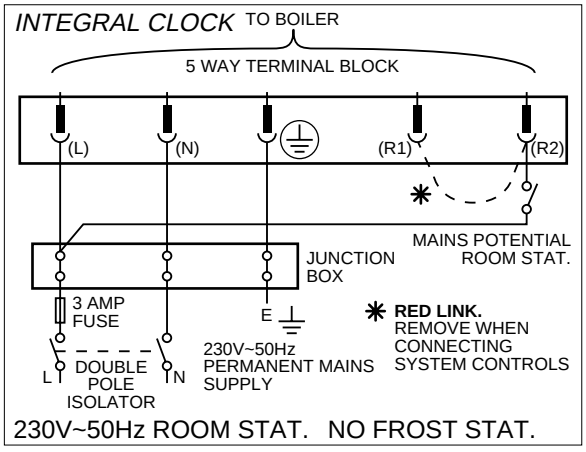


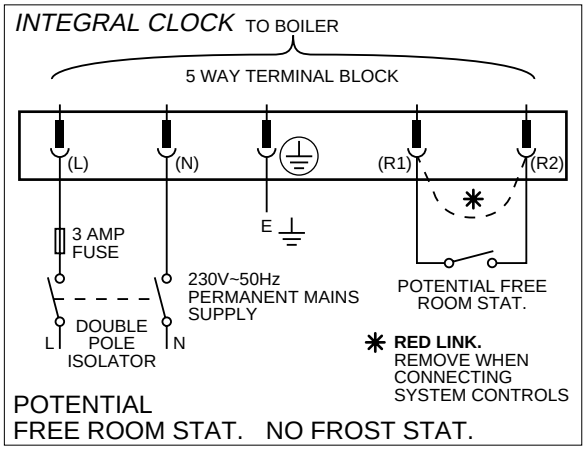
Diagram 9.2

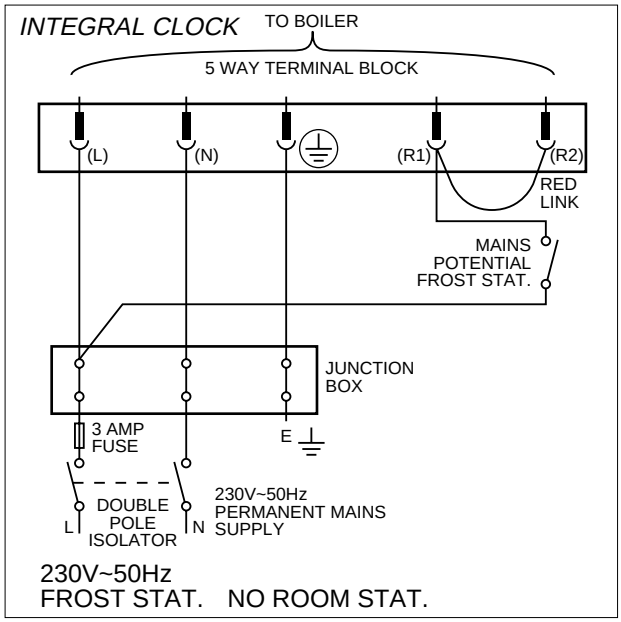
9 Electrical Connections

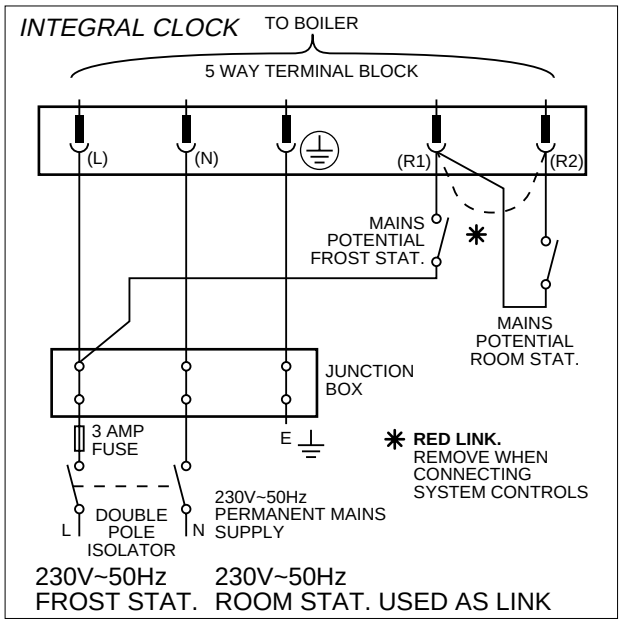
7100











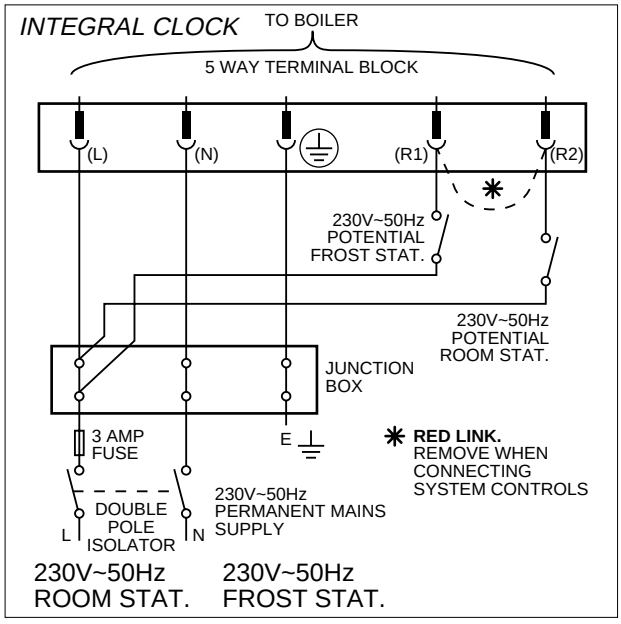


Diagram 9.3

10 Commissioning

Please ensure the “Benchmark” logbook is completed and left with the user.

10.1 Filling Domestic Water Circuit

Check that the boiler is isolated from the electrical supply, at the external isolator.

Fully open the domestic water supply stop cock or valve in the supply to the boiler.

Open the inlet domestic water isolation valve, lever in line with the valve body, see diagram 6.1.

Open all hot water draw-off taps and close them when water flows. Check for water soundness of the whole domestic water system and boiler.

10.2 Filling the Heating System

Open the two central heating isolating valves, levers in line with the valve body, see diagram 6.1.

Flush, fill and vent the system refer to Section 4.8 “Filling Sealed Systems”.

WARNING. SEVERAL COMPONENTS OPERATE ON MAINS VOLTAGE AND WITH THE OUTER CASE REMOVED, LIVE COMPONENTS BECOME EXPOSED.

Make sure that the automatic air vent is operating correctly.

Take care not to splash any of the electrical components.

Open the controls cover.

Refer to diagram 3 Instructions for Use. Operate button “J” between “L” summer and “K” winter to ensure that water flows through all parts of the boiler and air is not trapped in the boiler internal bypass.

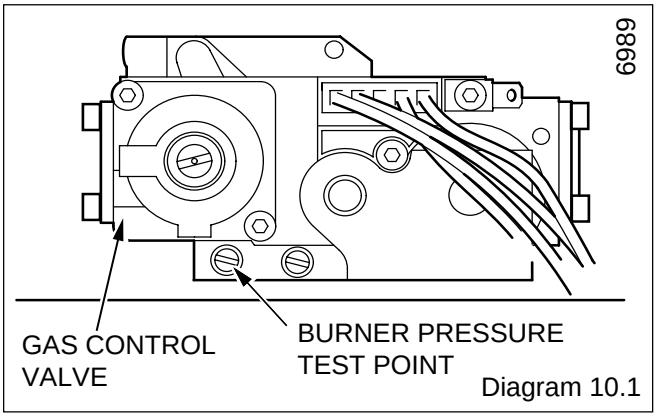


Diagram 10.1

Pressurise the system until the pressure is 1.5bar. Check the heating system and boiler for water soundness.

Check the operation of the safety valve by turning the safety valve knob in the direction of the arrow.

Lower the pressure to the initial cold fill design pressure, refer to Table 1. Position the set pointer on the boiler pressure gauge at this pressure also.

Refit inner case front.

10.3 Preparation for Lighting

Isolate the boiler from the mains electrical supply at the external isolator.

Purge gas supply test for soundness . Turn on the gas service cock, slot in line with the length of the cock.

Loosen the burner pressure test point screw and connect a suitable pressure gauge, see diagram 10.1.

10.4 Burner Pressure - Hot Water

Connect the electrical supply; the pump will operate for about 30 seconds, then the pump will stop.

Fully open the largest hot water draw off tap whereby the main burner will light, the flames gradually increasing to the maximum.

Check the soundness of the boiler gas joints, with the main burner on, using a leak detection fluid. Take care not to splash any of the electrical components.

To achieve this flow rate a water pressure of at least 0.8bar is required during commissioning, although subsequently the appliance will work at a minimum pressure of 0.5bar.

This flow rate should prevent any modulation of the gas pressure.

The burner pressure is factory preset and no adjustment should be required.

Check the burner pressure is within +/-0.2mbar. of 14.3mbar. If this is incorrect, the burner pressure may be adjusted to the correct setting by turning the hot water gas pressure adjuster (potentiometer), located on the control board. To gain access remove the two screws securing the controls facia, see diagram 9.1.

Hinge the control facia forward.

Remove the plastic plugs. Using the burner adjusting tool supplied. (clockwise to increase), see diagram 10.2. Turn the adjuster slowly, always making adjustment by reducing below the required pressure then increasing up to the required setting.

Close the hot water draw off.

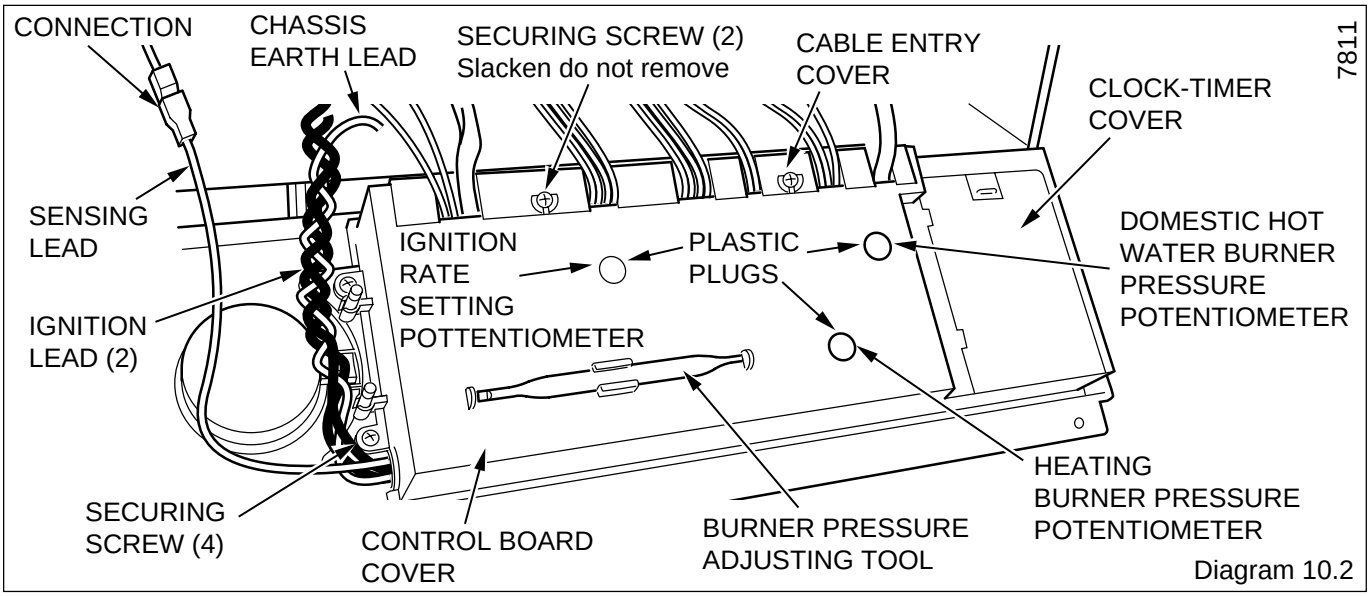


Diagram 10.2

If the maximum pressure cannot be obtained, check that the gas supply of adequate size, refer to Section 1.7.

10.5 Gas Rate Modulation

The burner pressures are factory preset and no adjustment should be required.

When checked if they are not consistant with the information in table 1. the following steps should be taken.

Fully open a domestic hot water tap ensure there is no modulation. Turn the domestic burner pressure potentiometer to minimum by turnining anticlockwise with the tool supplied (do not force it), see diagram 10.2.

Carefully turn the minimum stop screw on the gas control valve. When the correct setting is achieved adjust the potentiometer on the control board (PCB) until the maximum is achieved. If it is not possible to abtain the maximum required turn the potentiometer fully clockwise (do not force it). Removing the cover screw on the main gas control valve and turn the adjustment screw until a pressure of 1mbar above the maximum stated in table 1. is achieved. Refit the cover and adjust the potentiometer to give the stated maximum setting by turning below the setting, then slowly increasing upwards.

10.6 Domestic Water Flow Rate

This is factory preset and can not be adjusted.

10.7 Burner Pressure - Heating

The burner pressure is factory preset and no adjustment should be required.

Check that all remote heating system controls, room thermostats, integral clock and the like are switched on/programmed and calling for heat.

Refer to diagram 3 Instructions for Use. Set button “J” to “K” winter, see diagram 3.

The pump will circulate water through the boiler and the main burner will light.

Check that the burner pressure, with the heating system cold to prevent any modulation of the gas pressure, is within +/-0.2mbar of 14.3mbar, the central heating pressure.

If the burner pressure is incorrect, it may be adjusted to the correct setting by turning the central heating gas pressure adjuster (potentiometer), located on the control board to gain access remove the two screws securing the controls facia.

Hinge the control facia forward.

Remove the plastic plugs. Using the burner adjusting tool supplied. (clockwise to increase), see diagram 10.2. Turn the adjuster slowly, always making adjustment by reducing below the required pressure then increasing up to the required setting.

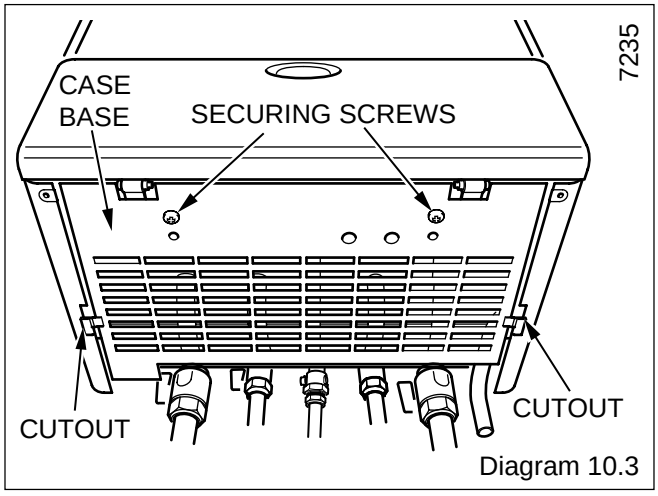


Diagram 10.3

10.8 Ignition Rate

Set the mains electrical switch “B” to 0, located on the controls fascia, see diagram 3. (Instructions for Use).

Disconnect the sensing lead at the connection, see diagram 10.2.

Set the mains electrical switch “B” to 1. The electrode will continue to spark for (10 seconds approx.) to enable the ignition to be set and checked before going to lockout. Check the ignition rate is set to 6.0 mbar +/-1.0 mbar, adjust if required by turning the ignition rate setting potentiometer using the adjustment tool supplied, If this is not achieved before the boiler goes to lockout the process can be repeated as required by pressing the rest button “G”, see diagram 3. (Instructions for Use). When set, switch the mains electrical switch “B” to 0. Reconnect the sensing lead.

Set mains electrical switch “B” to 1, depress the rest button “G” if required. Check the appliance operates correctly.

Isolate the boiler from the electrical supply.

Replace plastic plugs, screw cap and adjusting tool.

Disconnect the pressure gauge, tighten the burner pressure test point screw . Test for gas soundness. Take care not to splash any of electrical components.

Refit control fascia.

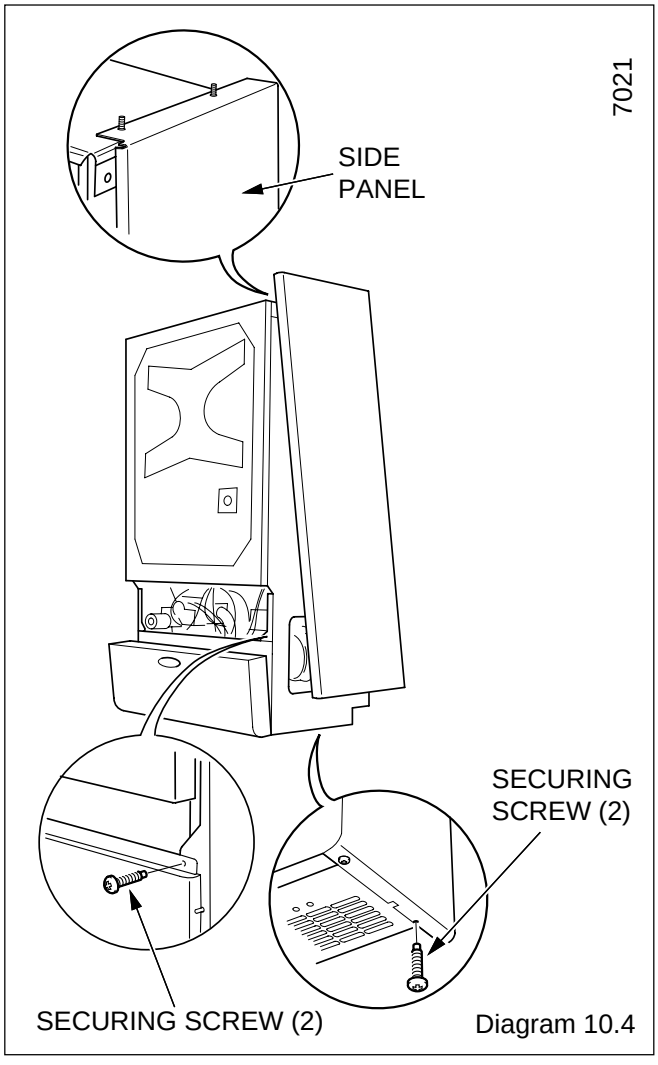


Diagram 10.4

10.9 Temperature Settings

The maximum temperature setting for the domestic hot water outlet is 65°C.

The maximum flow temperature setting for central heating is 80°C.

10.10 Heating System - Commissioning

Check that all remote controls and integral clock are calling for heat.

Fully open all radiator valves.

Set the heating system in operation and balance the radiators.

Refer to Section 4.6 and diagram 4.1.

Allow the system to reach maximum temperature then switch off, isolate the boiler from the electrical supply and drain the system rapidly whilst still hot.

Remove the inner case front.

Fill and vent the system as described in Section 10.2 “Filling the Central Heating Circuit”. Add inhibitor, if applicable, refer to Section 4.9 “Corrosion Inhibitor”.

Lower the pressure to the initial cold fill design pressure, using the external draining tap, close to the boiler, refer Table 1 and Section 4.10.

10.11 Completion

Fit the side panels, hook into the threaded lugs at the top. see diagram 10.4.

Fit the case base, slide back engage the rear lugs, secure with four screws, see diagram 10.3.

Fit the outer case front by locating it on one side then wrap it around locating it on the opposite side, slide down locating on to the threaded lugs at the top and behind the controls cover at the bottom, secure with nuts ,see diagram 10.5.

Set the boiler and any remote heating control to the desired settings, then close the control cover door.

10.12 Instruct the User

Instruct and demonstrate the lighting procedure, then advise the user of the efficient and safe operation of the boiler.

Instruct and demonstrate the operation of any heating system controls.

Advise the user on the use and maintenance of any scale reducer and pass on any relevant instructional documents.

Advise the user that to ensure the continued efficient and safe operation of the appliance it is recommended that it is checked and serviced at regular intervals. The frequency of servicing will depend upon the particular installation and usage, but in general once a year should be enough.

Draw attention, if applicable, to the current issue of the Gas Safety (Installation and Use) Regulations, Section 35, which imposes a duty of care on all persons who let out any property containing a gas appliance.

It is the Law that any servicing is carried out by a competent person.

Advise the user of the precautions necessary to prevent damage to the system and building in the event of the heating system being out of use during frost and freezing conditions.

Reminder - Leave these instructions and the “Benchmark” logbook with the user.

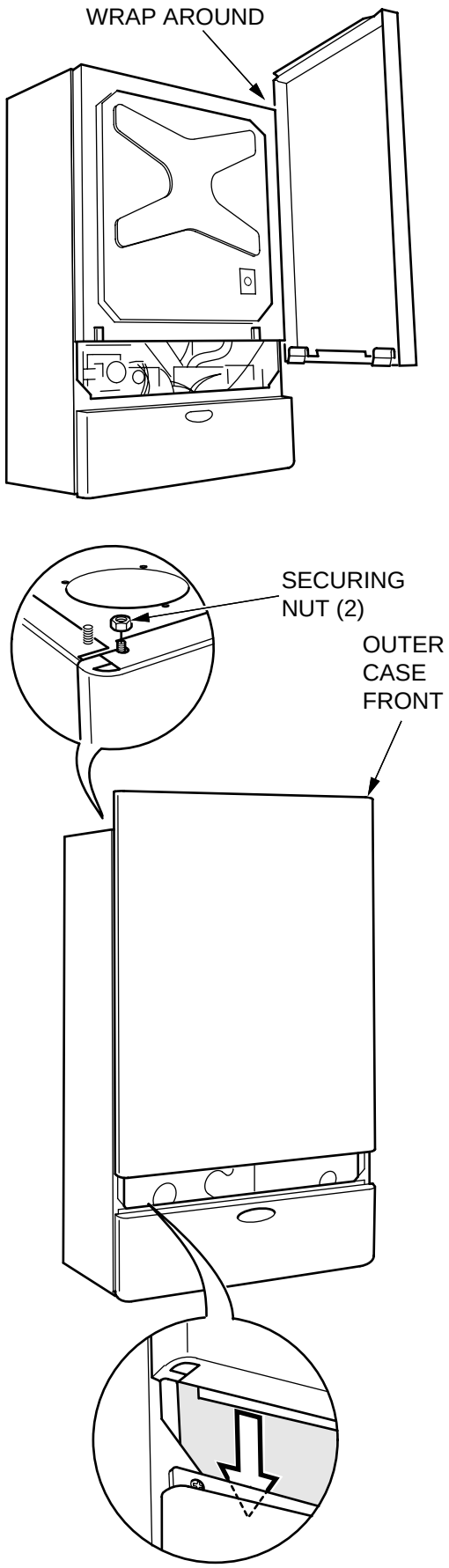


Diagram 10.5

11 General Data

11.1 Servicing or Replacing Parts

To ensure the continued efficient and safe operation of the boiler it is recommended that it is checked and serviced as necessary at regular intervals.

The frequency of servicing will depend upon the particular installation conditions and usage, but in general once a year should be enough.

The servicing of this boiler must be carried out by a competent person in accordance with the rules in force in the countries of destination.

NOTE: To obtain a products of combustion reading, remove the cap from the analyser probe positioned on the top of the boiler, see diagram 12.7. Disconnect the analyser tube after use replace the cap.

Typical values for this boiler at maximum domestic hot water demand is:- CO_2 = 5.8 - 7 and CO < 0.006. These are based on a 300mm length rear flue.

Make sure the appliance does not modulate whilst checking combustion and allow the appliance to warm up for 15 minutes before taking a reading.

Unless stated otherwise, parts removed or renewed during servicing should be fitted in the reverse order to removal.

After completing any servicing, or renewing of gas carrying components, ALWAYS test for gas soundness and carry out functional checks of controls.

Dispose of all used sealing washers, gaskets and “O” rings when renewing components.

Use the new ones supplied with the replacement.

11.2 Data Label

The data label is positioned on the inner case front refer to diagram 1.2.

11.3 Isolation of Boiler

Before starting any servicing or the replacement of parts, isolate the boiler from the electrical supply at the external isolator.

When servicing or replacing any cold/hot water or heating system components close all water cocks and drain appliance.

Close the gas service cock, see diagram 6.1.

BEFORE DRAINING THE BOILER, REFER TO SECTION 11.6.

11.4 Outer Case Front Removal

Remove the two nuts securing the outer case front then lift up unhook the case at the top from the threaded lugs, pull it off on one side to release then remove, see diagram 10.5.

11.5 Inner Case Front

Remove the inner case front, secured by two clamps at the bottom lift up and unhook at the top, see diagram 8.1.

11.6 System Pressures and Draining

All parts containing water of the central heating circuit within the boiler, are under the system pressure. Before any parts of this circuit are disconnected, reduce the system pressure at the external draining tap, turn the central heating isolating valves off, and drain at the drain points on the appropriate valves, see diagram 6.1.

All water containing parts of the domestic hot water circuit of the boiler will be under the supply water pressure. Before any parts of this circuit are disconnected, turn the domestic cold water isolating valve off, open the hot water taps to reduce the water pressure in the boiler, close the hot water isolating valve and drain the boiler at the valves, see diagram 6.1.

After replacing any water containing part of the central heating circuit, make up the water loss, vent all air and pressurise the system. Refer to “Commissioning” in the Installation Instructions.

Check for water soundness and that the safety valve seats without leaking.

12 Servicing

REMEMBER, When replacing a part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Hepworth Heating Ltd.

12.1 Isolation and Access REAR FLUE ONLY

Before commencing, refer to Section 11.

Remove the combustion chamber panel, unhook and lift off, see diagram 8.2.

Remove the fan electrical connections by pulling the boots not the wires and air pressure switch tubes, see diagram 8.3.

Remove the fan and flue collector assembly by pulling it forward see, diagram 8.3.

Disconnect the three electrode leads, see diagram 12.1 (White lead sensing electrode).

Remove the left hand section of the burner base baffle, secured with two screws, see diagram 14.24.

Remove the burner retaining bracket by sliding it out, see diagram 12.4.

Carefully pull the burner forward to remove, see diagram 12.5.

Take care not damage the combustion chamber insulation.

12.2 Isolation and Access HORIZONTAL TOP FLUE OUTLET ONLY

Before commencing, refer to Section 11.

Remove the combustion chamber panel unhook and lift off, see diagram 8.2.

Remove the fan electrical connections by pulling the boots not the wires and air pressure switch tubes, see diagram 12.2.

Remove the fan.

Remove flue collector assembly by pulling it forward, see diagram 12.3.

Disconnect the three electrode leads, see diagram 12.1 (White lead sensing electrode).

Remove the left hand section of the burner base baffle, secured with two screws, see diagram 14.24.

Remove the burner retaining bracket by sliding it out, see diagram 12.4.

Carefully pull the burner forward to remove, see diagram 12.5.

Take care not damage the combustion chamber insulation.

12.3 Cleaning Heat Exchanger

Place a sheet of paper or similar in the combustion chamber, to act as a collector for deposits removed.

Brush the heat exchanger with a suitable brush, remove paper together with any debris.

Take care not to damage the insulation.

Do not use a brush with metallic bristles.

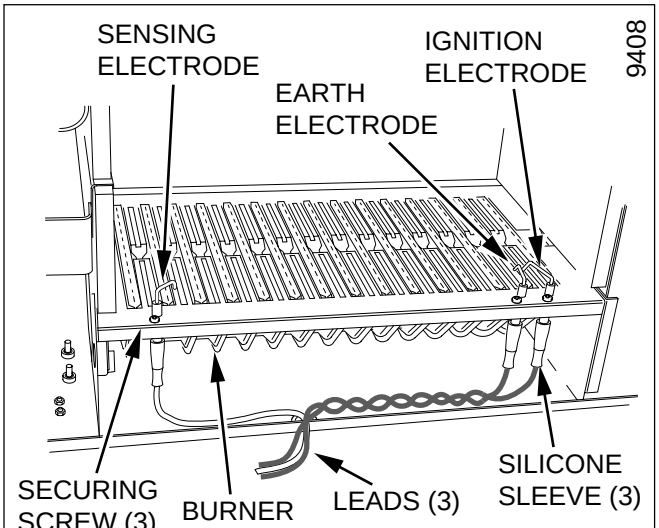


Diagram 12.1

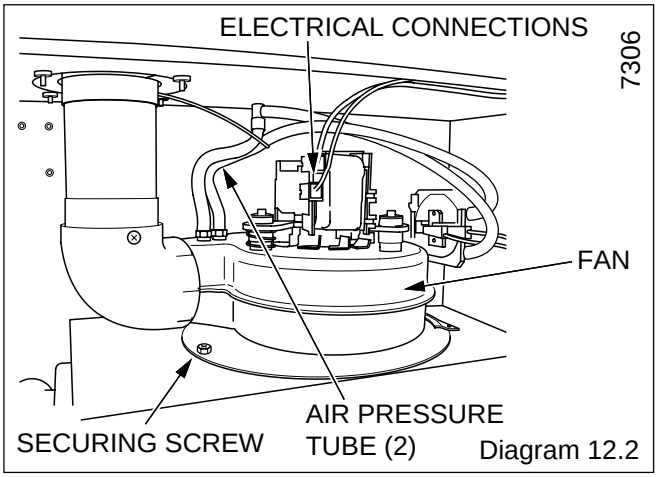


Diagram 12.2

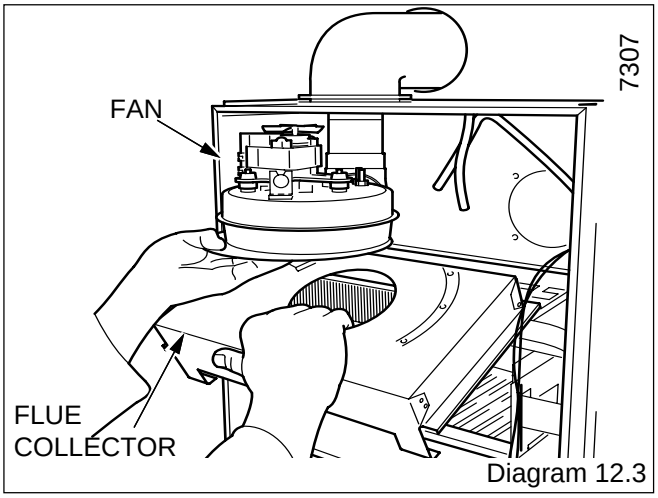
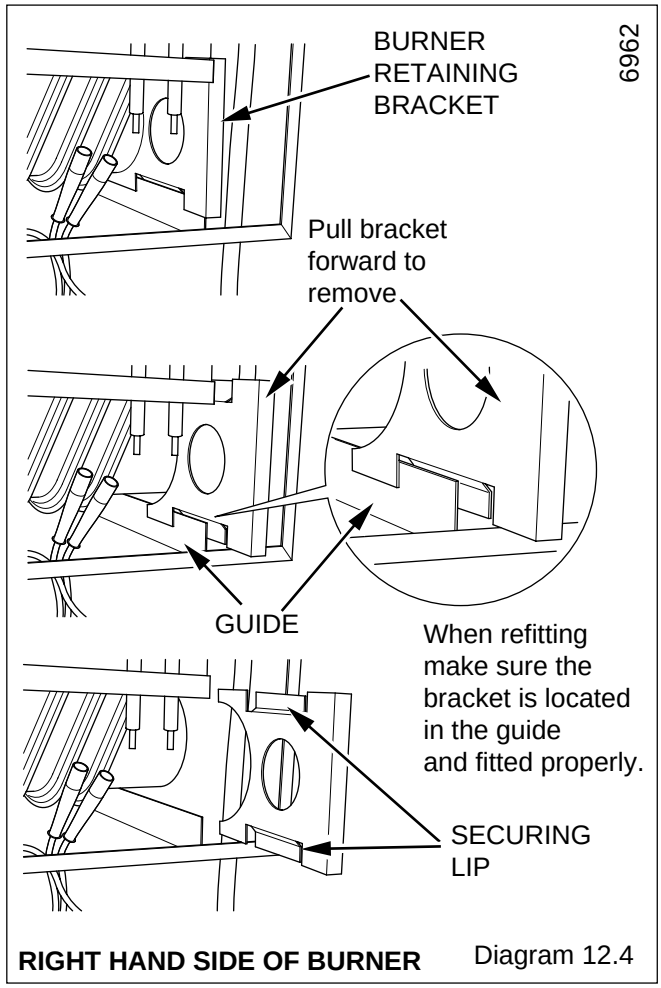


Diagram 12.3

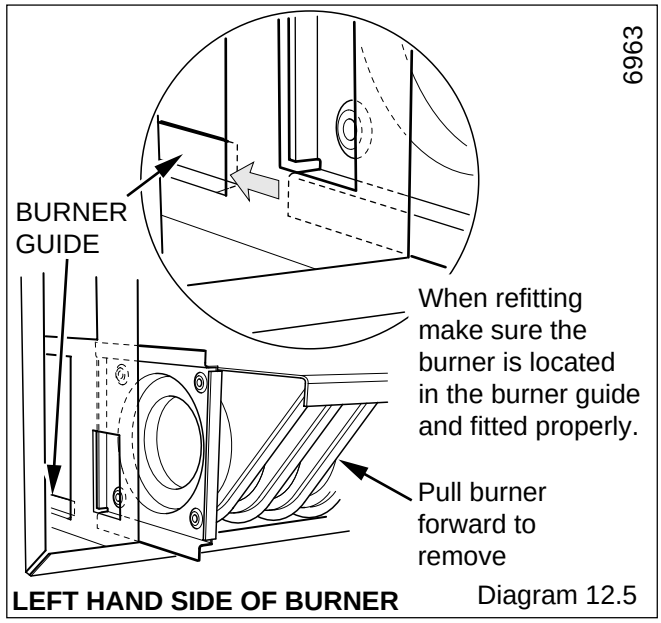
12.4 Cleaning Main Burner

Use a vacuum cleaner or suitable brush to clean the burner thoroughly, making sure that all burner ports are clear and unobstructed.

Do not use a brush with metallic bristles.



RIGHT HAND SIDE OF BURNER Diagram 12.4



LEFT HAND SIDE OF BURNER Diagram 12.5

12 Servicing

12.5 Service Checks

Inspect the spark and sensing electrodes, Clean or renew if necessary, refer to Sections 14.4 and 14.5.

Check the main injector, cleaning or renewing as necessary, refer to Section 14.3.

Before replacing any of the parts removed during servicing, inspect the condition of all seals and joints, renewing them as necessary.

Check the condition of the combustion chamber insulation. If renewing, refer to Section 4.27.

12.6 Spark Gap

Check that the spark and sensing gaps are as shown in diagram 12.6.

12.7 Operational Checks

Light the boiler, carry out operational checks and any necessary adjustments as described in "Commissioning" in the Installation Instructions.

12.8 Completion

Slide the outer case front on secure with the nuts previously removed.

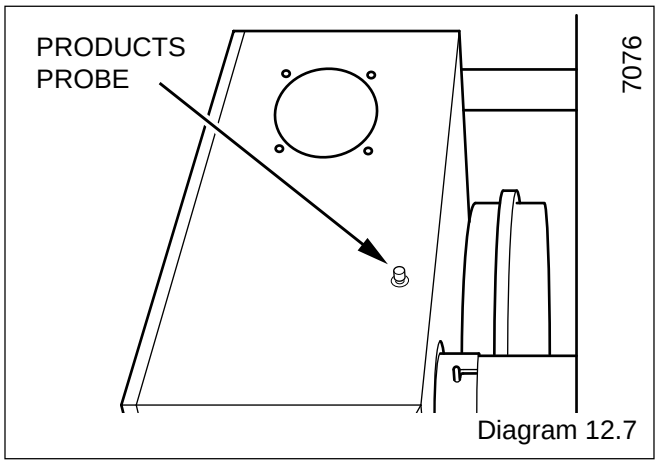
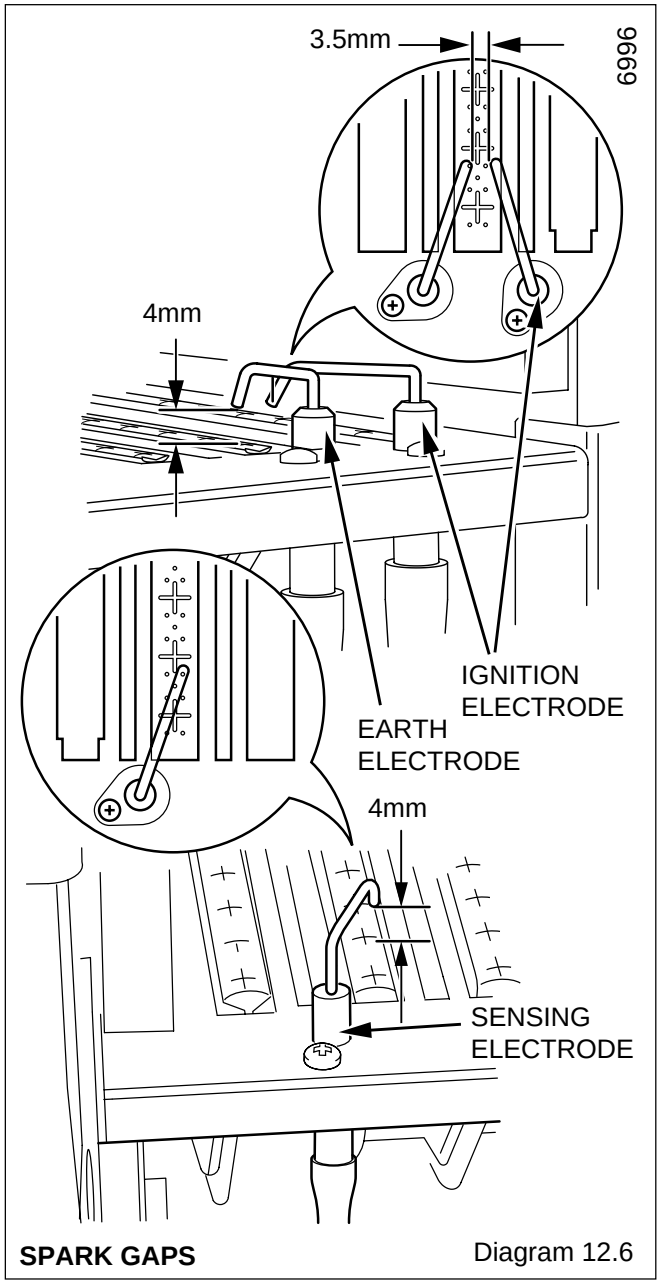


Diagram 12.7



SPARK GAPS Diagram 12.6

13 Fault Finding

13.1 Initial Checks

If the boiler fails to operate, first check the following:-

1) That the electrical supply is available at the boiler and the fuses are in order.

NOTE: THE BOILER CONTROL BOARDS CAN BE DAMAGED BY INCORRECT TESTING OF COMPONENTS AND WIRING WITH THE POWER ON.

2) Make sure that the system pressure gauge registers 0.7bar, minimum, and that the automatic air vent works. Refer to Installation Instructions, Section 10.2.

3) That the gas supply is available at the boiler and purged of air.

4) That the boiler is set for the required service.

5) With the boiler Summer/Winter Button "J" set to summer "L", see diagram 4 User Instructions, check that the domestic water supply is available and water flows freely from the hot taps. Close the taps.

6) With the boiler Summer/Winter Button "J" set to Winter "K", see diagram 3 User Instructions, check that all heating system controls, if fitted, are working correctly and calling for heat. If not isolate the boiler from the electrical supply.

Test for continuity, at mains.

7) Check Summer/Winter Button "J" is set to Winter, see diagram 3 User Instructions. In certain circumstances the red neon light may not come on, due to no system demand. Turn on a domestic hot water draw off tap to create a demand.

Allow the boiler and system to cool down waiting at least a minimum of four minutes before pressing Summer/Winter Button "J" to set to Winter "K".

If this is satisfactory proceed with the detailed fault finding as Section 13.3.

13.2 Clock/Timer

If the clock has failed it can be bypassed by disconnecting the plug and reconnecting the link, see diagram 13.1.

Gain access by removing the two screws securing the controls facia, see diagram 9.1.

Hinge the control facia forward.

Remove the clock timer cover, see diagram 10.2.

Disconnect the clock wiring harness plug and connect the link.

This is a temporary measure and the clock should be repaired or replaced as soon as possible.

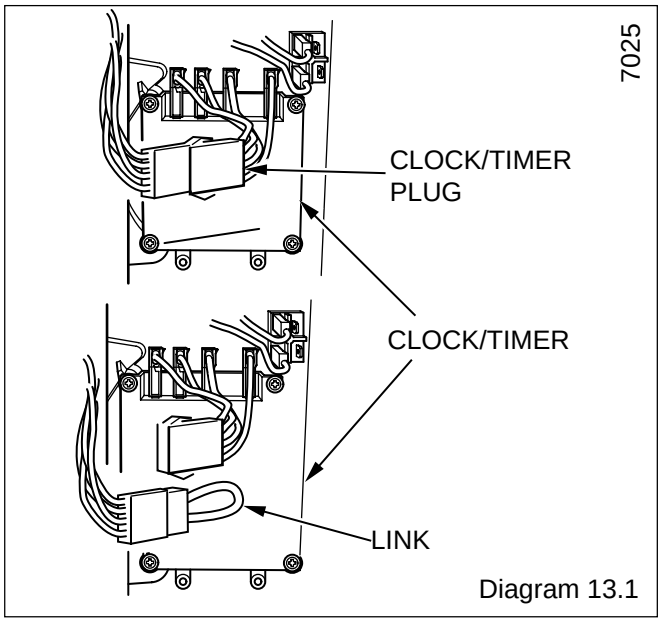
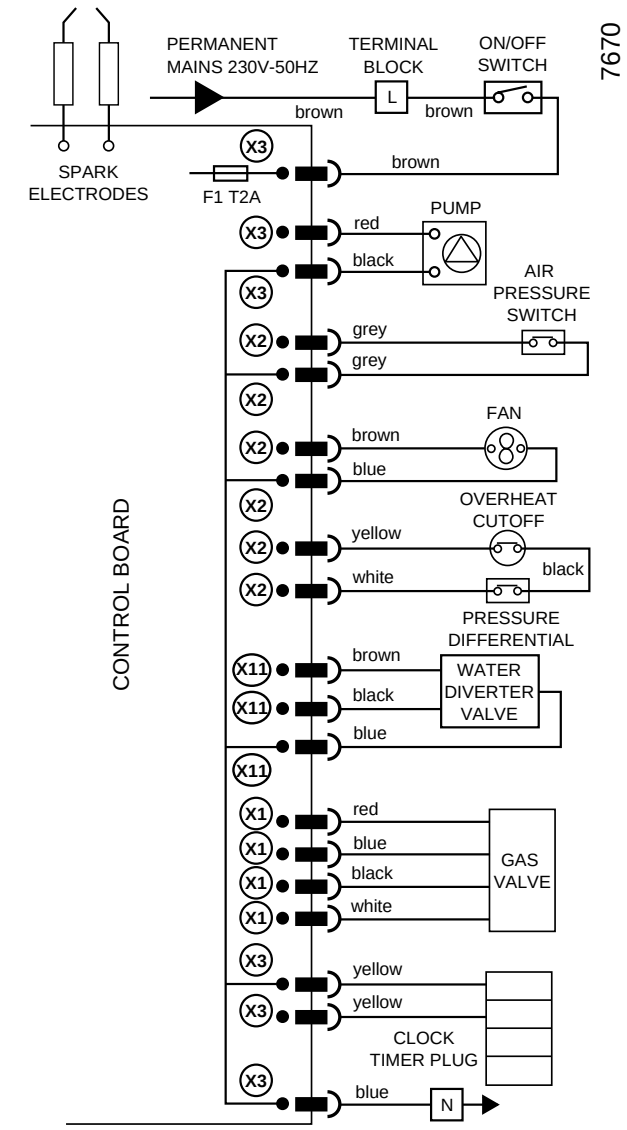
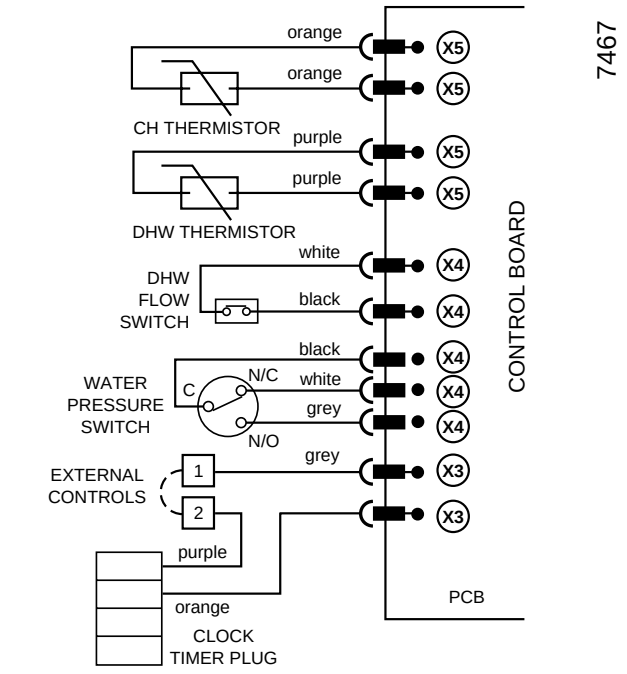


Diagram 13.1



MAINS FUNCTIONAL FLOW



LOW VOLTAGE FUNCTIONAL FLOW

Diagram 13.2

13.3 Electrical

Preliminary electrical system checks, as outlined in a Multimeter Instruction book, are the first checks to be carried out during a fault finding procedure.

Isolate the boiler from the electrical supply, refer to Section 11.3.

Gain access to the boiler controls by removing the outer case front, refer to diagram 10.5.

Remove the two screws securing the controls facia, see diagram 9.1.

Hinge the control facia forward.

Remove the controls board cover by slackening the cable entry cover screws, see diagram 10.2.

Remove the covers.

Ease the cover up and clear.

Check that all cables, multipin connectors and connectors are secure on the board.

Test the fuse on the main control board and renew as necessary. Fuse 1 type (2AT). If a fuse fails repeatedly or the initial fault-finding checks described in Section 13.1 indicate a boiler fault, check the boiler electrical circuits and follow the fault finding procedures, see diagram 13.2, 13.3, and for clock/timer fault finding, diagram 13.4 and 13.5.

On completion of a fault finding task that has required the disconnection and making of electrical connections then checks, for earth continuity, polarity and resistance to earth must be carried out.

Before replacing any part please read points below:-

Replacement of parts must only be carried out by a competent person.

1. Refer to Section 11.1.

2. Always isolate the boiler from the electrical supply and as required, the gas supply, as Section 11.3.

3. On completion, make good any water loss and pressurise the system to initial design pressure, refer to “Commissioning” in the Installation Instructions.

Before starting refer to Section 11.1

Isolate the boiler from the electrical supply, refer to Section 11.3.

TO TEST FOR COMPONENT OPERATION / FAILURE

Power to the appliance :- Test for 230V~ across live (brown) and earth (yellow and green), 230V~ across live and neutral (blue), and zero potential across neutral and earth.

Thermistors :- With the power off unplug the connector and test resistance is 10k ohms at 25°C

Differential pressure switch :- With the power off seperate the in-line connector and test for continuity across male end. restore the power and with demand off, open circuit, demand on closed circuit

Domestic Hot Water demand switch :- With the power off seperate in-line connector and test for continuity across male end. Tap open, continuity between black and white cables, black and red are open circuit. With demand off there is continuity between black and red and that black and white are open circuit.

Overheat thermostat :- With the power off unplug the connectors and test for continuity (zero resistance).

Power to the gas control valve :- With a demand on test for voltages of 24 to 50V~ across the black and white cable connectors and 130V~ across the red and blue cable connectors.

Power to the fan :- With a demand on and the front cover removed test for 230v~ at the fan connectors.

Fan failure :- with the power off and the supply leads to the fan disconnected (pull the boots only) the resistance across the fan coil should not be greater than 50Ω.

Pump :- With the power off unplug the connector from the pump. Restore the power and check that there is 230V~ between live (red) and neutral (black) or live and the appliance earth.

Air pressure switch :- With the power off and the front cover removed pull one of the supply cables from the fan and ensure it is electrially safe. Restore the power establish a demand, check that there is 230v~ at one of the APS cables but not at the other. Turn the power off, refit the fan cable, restore the power and check that there is now 230V~ at both the APS connectors (**Caution**, the appliance will light unless the spark leads are temporarily unplugged from the electrodes and laid where they cannot spark and ignite the gas and are electrically safe). This indicates that the APS changes state when the fan is run.

The three way valve :- Seperate the cable connector from the motor noting its orientation and the connector numbering marked on the motor housing. Check that with a DHW demand there is 230V~ across sockets 2 and 1 and with a CH demand there is 230V~ across sockets 2 and 3 (or ground and 1, ground and 3 respectively).

13 Fault Finding

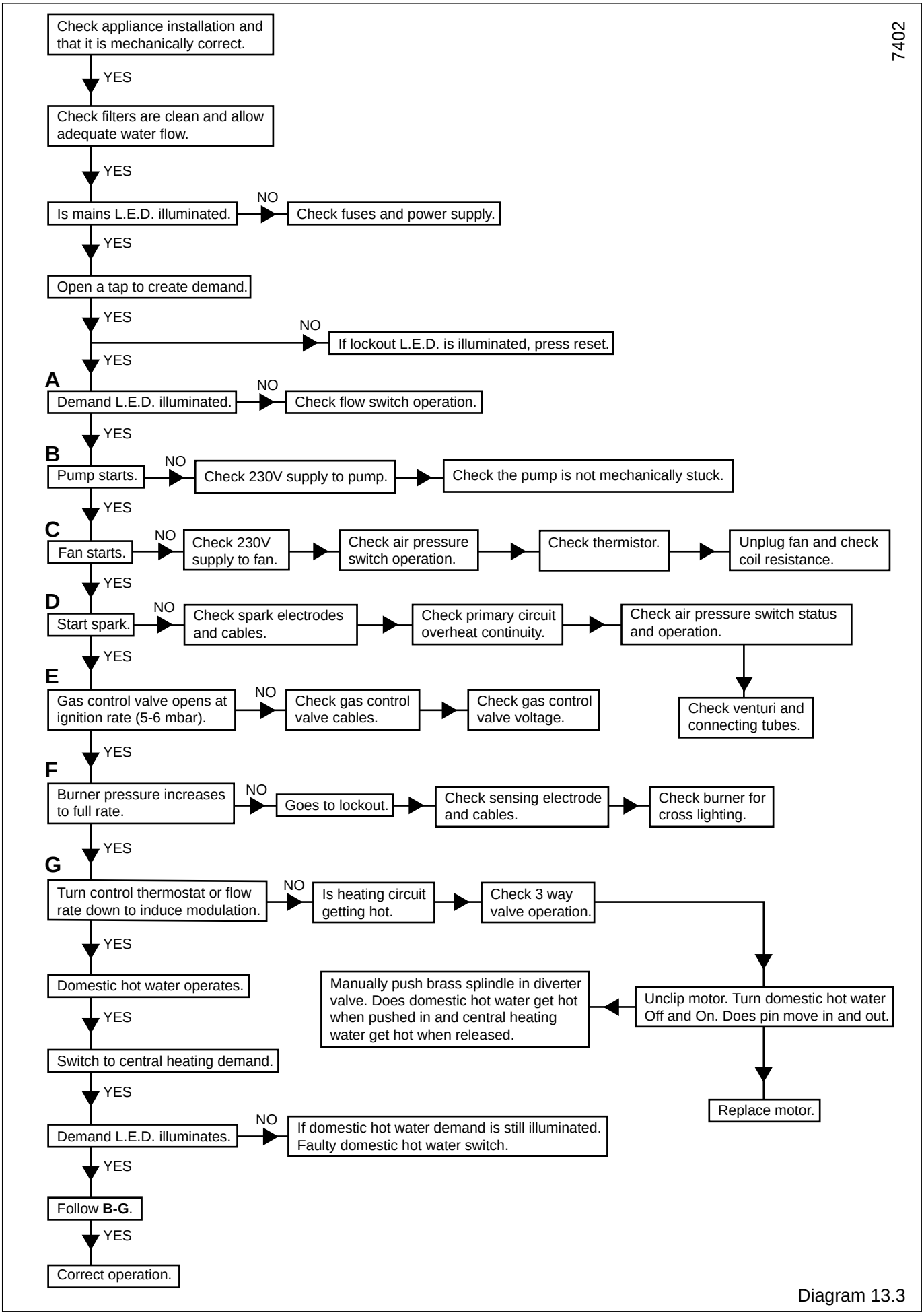


Diagram 13.3

7461

NB. The clock can be by passed by refitting the plug link which should be inside the clock timer cover.

Check continuity of clock/timer harness, ensure an electrical supply is available, ensure that remote controls are calling for heat.

Isolate the boiler from electrical supply remove outer case.

YES

Switch on electrical supply, is there a display on clock/timer? **NO** → Faulty clock/timer. Replace.

YES

Disconnect and insulate the cables from heating common and heating on.

YES

Advance clock/timer until a demand is indicated Is there now continuity between heating common and heating on? **NO** → Faulty clock/timer. Replace.

YES

Clock/timer in order if no central heating, refer to main fault finding.

DIGITAL CLOCK/TIMER FAULT FINDING

Diagram 13.4

7463

NB. The clock can be by passed by refitting the plug link which should be inside the clock timer cover.

Check continuity of clock/timer harness, ensure an electrical supply is available at the clock, ensure that remote controls are calling for heat, ensure the override switch, if fitted, is in overide position.

Does clock keep time? **NO** → Faulty clock/timer. Replace.

YES

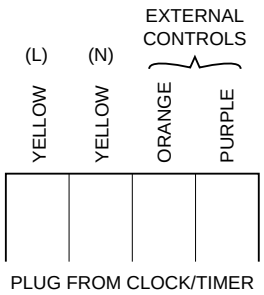
Isolate electrical supply, set clock to an on period. Is there continuity across common and heating? **NO** → Faulty clock/timer. Replace.

YES

Set clock to off period. Is there continuity across common and heating on? **YES** → Faulty clock/timer. Replace.

NO

Clock/timer in order if no central heating, refer to main fault finding.



ELECTRO/MECHANICAL CLOCK/TIMER FAULT FINDING

Diagram 13.5

14 Replacement of Parts

14.1 Fan

Before starting refer to Section 11.

Disconnect the two electrical connectors at the fan by pulling the boots not the wires, see diagram 14.1.

Remove the two flexible tubes from the fan, see diagram 14.1.

Note: When replacing the tubes from the air pressure switch ensure the lower (red) tube from the fan connects to the upper connection of the switch.

Remove the fan, secured with a screw at the front, ease the fan outlet from the flue duct and retaining lip at the rear, see diagram 14.1.

Note: To fit the fan, locate it into the flue duct and rear retaining lip, push fully up to ensure a good seal, then secure the fan with the screw, see diagram 14.1.

The polarity of the two electrical connectors is not important.

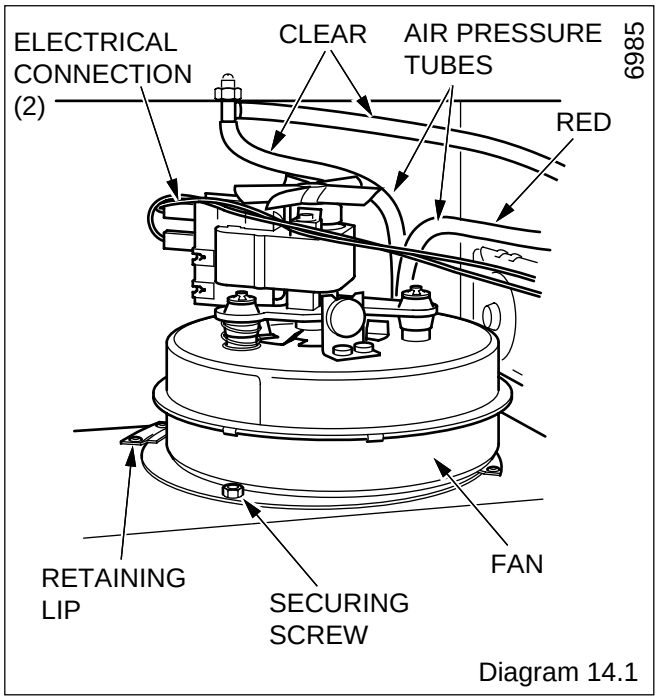


Diagram 14.1

14.2 Main Burner

Before starting refer to Section 11.

Remove as described in Servicing Section 12.

Remove the spark electrode assemblies from the burner secured by three screws see diagram 12.1.

Fit spark electrode assemblies to new burner.

Taking care fit new burner.

14.3 Main Injector

Before starting refer to Section 11.

Remove as described in Servicing Section 12.

Unscrew the main injector.

When fitting the new main injector, fit the new copper sealing washer, supplied, to ensure gas soundness, see diagram 14.2.

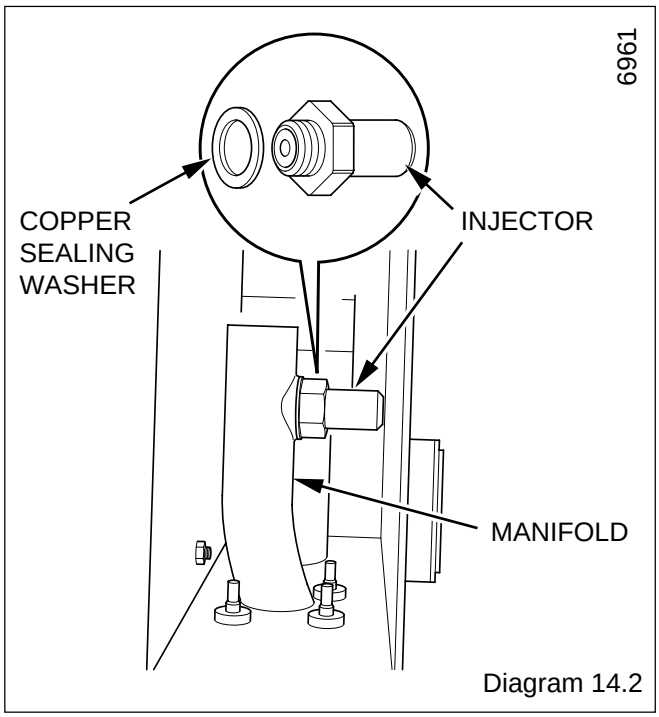


Diagram 14.2

14.4 Ignition, Earth and Sensing Electrode

Before starting refer to Section 11 General Data.

Isolate the boiler from the electrical supply.

Remove the outer case front and the inner case front, refer to Sections 11.4 and 11.5.

Remove the electrode lead and silicone sleeve, remove the securing screw and electrode, see diagram 12.1.

14.5 Ignition, Earth and Sensing Lead

Before starting refer to Section 11.

Disconnect the silicone sleeve and lead at the electrode, see diagram 12.1. (White to sensing electrode).

Important Note : If replacing one of the ignition leads it will be necessary to disconnect both from their electrodes and untwist them from one another and the earth lead. Make sure when replacing the two ignition leads that they are tightly twisted together again, and the earth lead is twisted round the pair, see diagrams 10.2 and 12.1.

Disconnect leads from the two retaining clips at the side of case.

Remove the two screws securing the controls facia, see diagram 9.1.

Hinge the control fascia open.

Remove the control board cover, see diagram 10.2.

Remove the lead on the control board and withdraw from grommet, see diagram 14.8.

14.6 Boiler Overheat Cutoff

Before starting refer to Section 11.

Disconnect the electrical connections, unclip to remove the overheat cutoff, see diagram 14.4.

14.7 Pressure Gauge

Before starting refer to Section 11.

Remove case base, see diagram 10.3.

Open the controls cover door. Remove the two screws securing the controls facia, see diagram 9.1.

Hinge the control fascia open.

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 11.3 and 11.6.

Disconnect the pressure gauge connection from the safety valve, discard the washer, see diagram 14.5.

Remove the pressure gauge, see diagram 14.6.

Locate the supplied washer under the pressure gauge connection when refitted to the safety valve.

14.8 Control Board

Before starting refer to Section 11.

Remove the two screws securing the controls facia, see diagram 9.1.

Hinge the control fascia open.

Remove the cable entry covers, see diagram 10.2.

Disconnect the multi-pin connectors retained by clips, see diagram 14.7.

Remove the controls board cover, see diagram 10.2.

Disconnect the remaining multi-pin connector retained by a clip.

Remove the control board securing screw and the control board from the support posts, see diagram 14.8.

THE MAIN CONTROL BOARD MUST BE KEPT IN THE ANTI STATIC HOLDER UNTIL IMMEDIATE REQUIREMENT.

When replacing the main control board check and if necessary adjust the main burner gas pressure in both the hot water and central heating modes. Refer to “Commissioning” in the Installation Instructions.

14.9 Gas Control Valve

Before starting refer to Section 11.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Disconnect multi-pin connector

Support the gas control valve, remove the eight socket head capscrews at the sides of the gas control valve, see diagram 14.9.

Separate the valve from the pipes, noting the fitted position.

Discard the “O” rings and fit the new ones supplied.

Check and adjust the main burner gas pressure in the hot water and central heating modes, refer to “Commissioning” in the Installation Instructions.

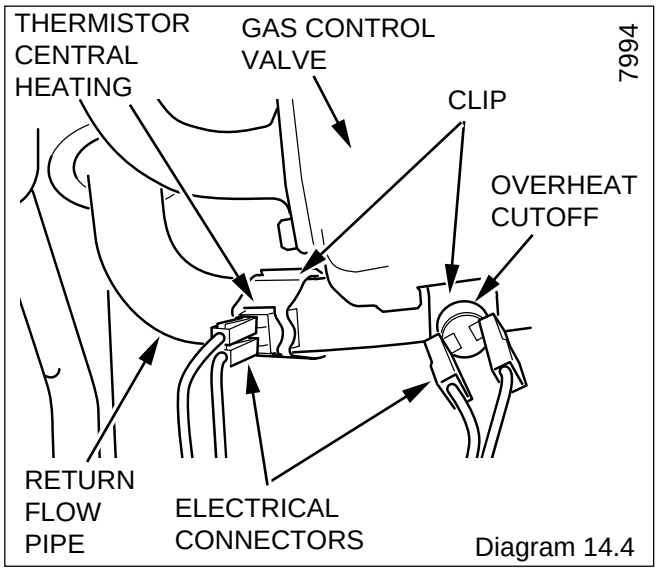


Diagram 14.4

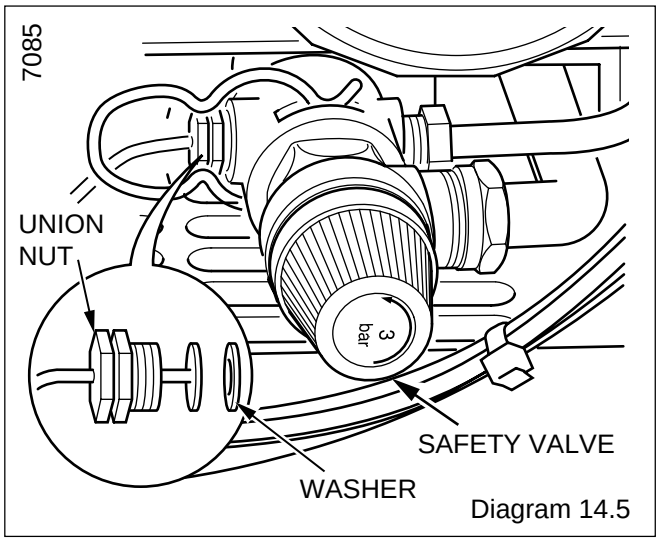


Diagram 14.5

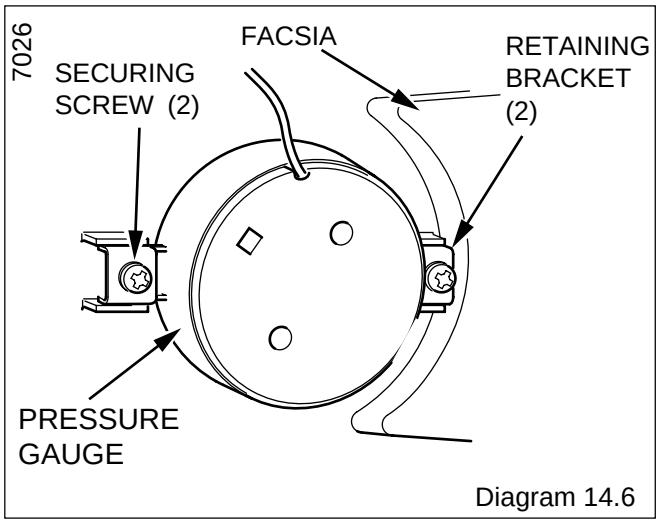


Diagram 14.6

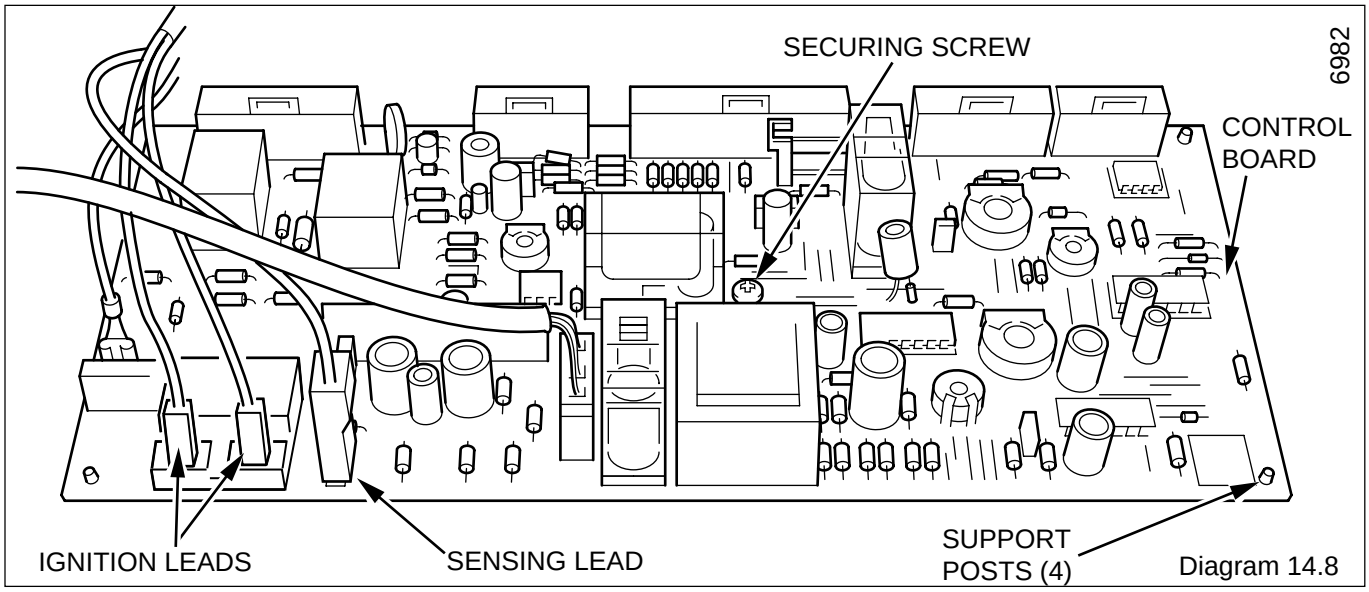


Diagram 14.8

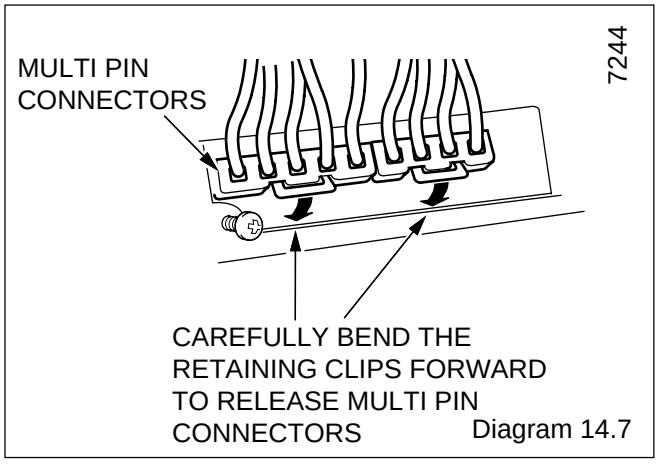


Diagram 14.7

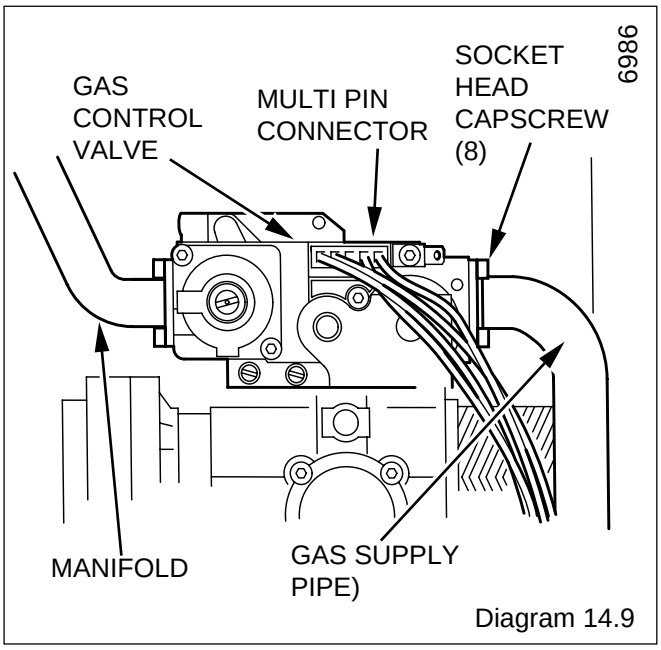


Diagram 14.9

14.10 Pump

Before starting refer to Section 11.

Remove the two screws securing the controls facia, see diagram 9.1.

Hinge the assembly open.

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 11.3 and 11.6.

Remove the electrical plug at the pump, see diagram 14.10.

Remove the four cap head screws, see diagram 14.10.

Make sure that the pump is fitted in the correct orientation.

The pump adjuster on the new pump should be set to that of the original, refer also to Section 4.4.

The flow rate should be controlled by means of a valve in the heating flow, refer to Section 4.6.

14.11 Low Water Pressure Switch

Before starting refer to Section 11.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 11.3 and 11.6.

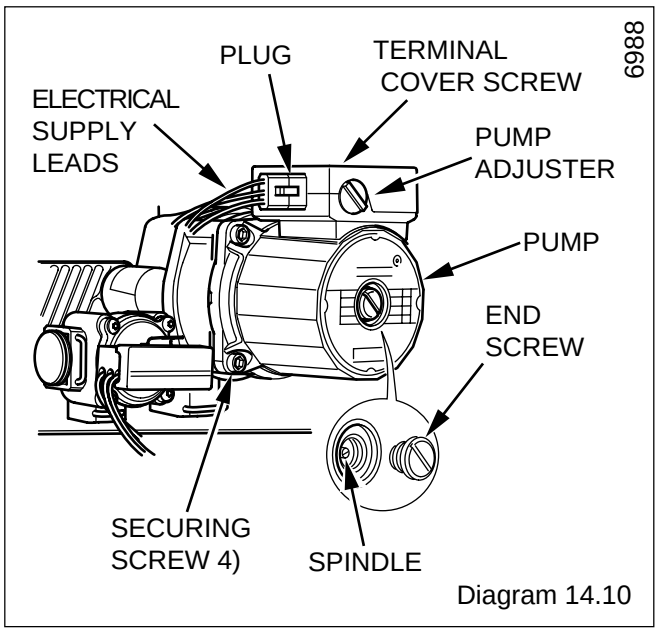


Diagram 14.10

Remove the clip to remove the water pressure switch, see diagram 14.11.

Remove the plastic cover.

Remove the electrical connectors.

Refer to wiring diagram 14.29 when fitting.

14.12 Safety Valve

Before starting refer to Section 11.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Remove the case base, see diagram 10.3.

Release the water pressure and drain the central heating circuit of the boiler, refer to Section 11.3 and 11.6.

Disconnect the union nut and clip to release the safety valve, see diagram 14.5.

14.13 Diverter Switch

Before starting refer to Section 11.

Isolate the boiler from the electrical supply.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Remove the electrical plug, the retaining clip ease the switch from the diverter valve, see diagram 14.12.

14.14 Diverter Valve

Before starting refer to Section 11.

Remove the diverter switch as section 14.13.

Remove the diverter valve securing pin, ease the diverter valve from its housing, see diagram 14.13.

14.15 Thermistor - Domestic Hot Water.

Before starting refer to Section 11.

Drain domestic hot water.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Remove the electrical connection, securing pin, ease the thermistor from its housing, see diagram 14.14.

14.16 Thermistor - Central Heating.

Before starting refer to Section 11.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls facia, see diagram 9.1.

Hinge the assembly forward.

Disconnect the electrical connections, unclip to remove thermistor, see diagram 14.4.

14.17 Flow Regulator / Filter

Before starting refer to Section 11.

Drain domestic hot water.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Release the water pressure and drain the domestic hot water circuit of the boiler, refer to Section 11.3 and 11.6.

Remove the flow regulator/filter, see diagram 14.15.

14.18 Pressure Differential Micro Switch

Before starting refer to Section 11.

Drain central heating water.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls facia, see diagram 9.1.

Hinge the assembly open.

Disconnect the inline connector to the pressure differential micro switch.

Remove the micro switch securing clip, ease the micro switch from its housing, see diagram 14.16.

14.19 Domestic Hot Water Micro Switch

Before starting refer to Section 11.

Drain domestic hot water.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Disconnect the inline connector to the hot water micro switch.

Remove the micro switch securing clip, ease the micro switch from its housing, see diagram 14.17.

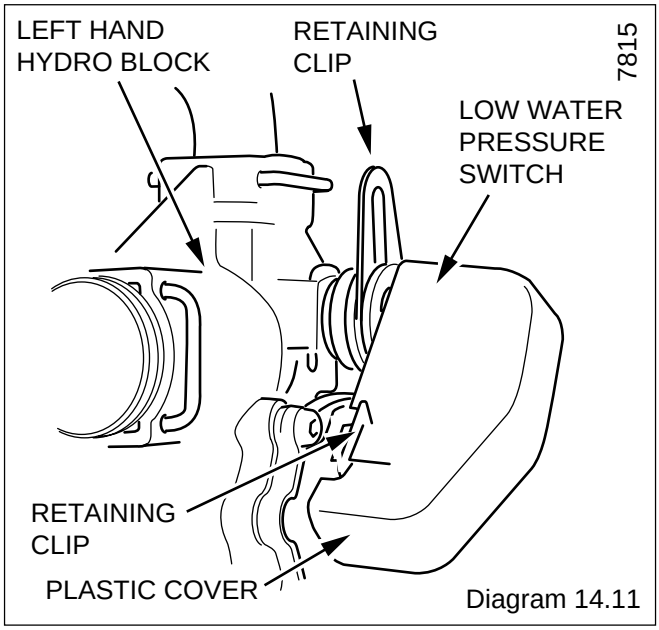


Diagram 14.11

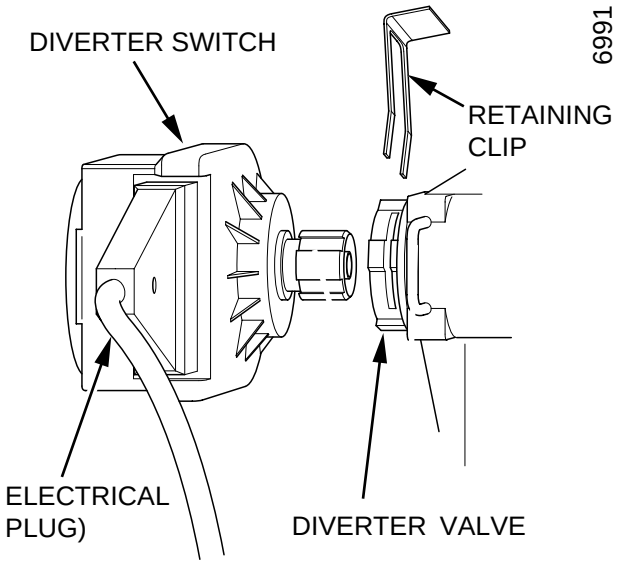


Diagram 14.12

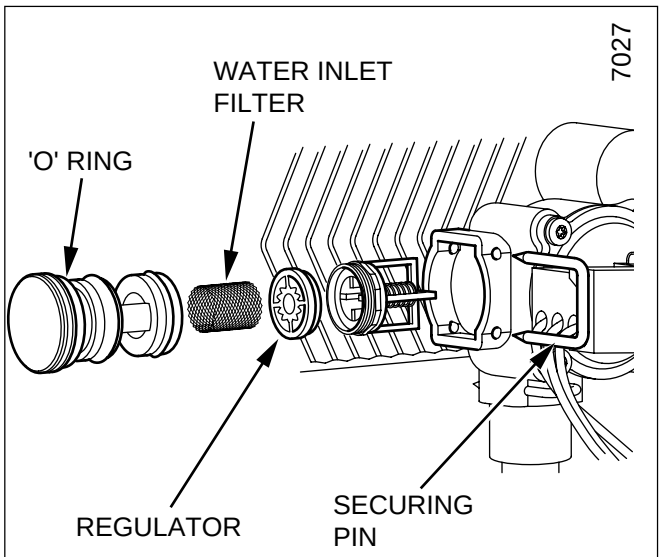


Diagram 14.15

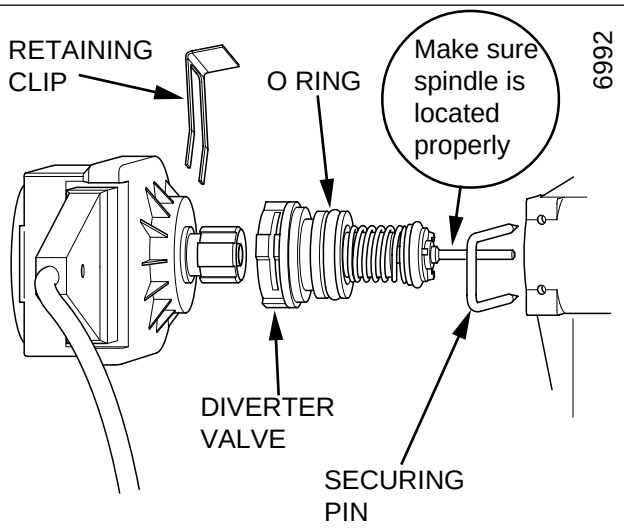


Diagram 14.13

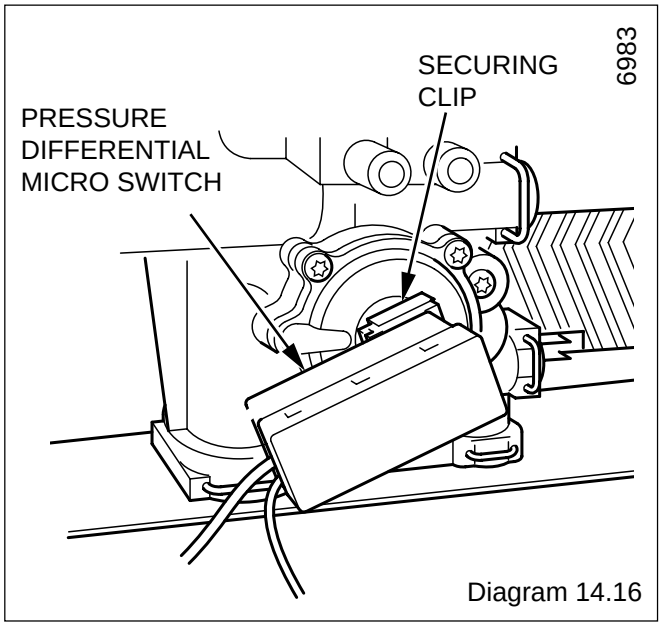


Diagram 14.16

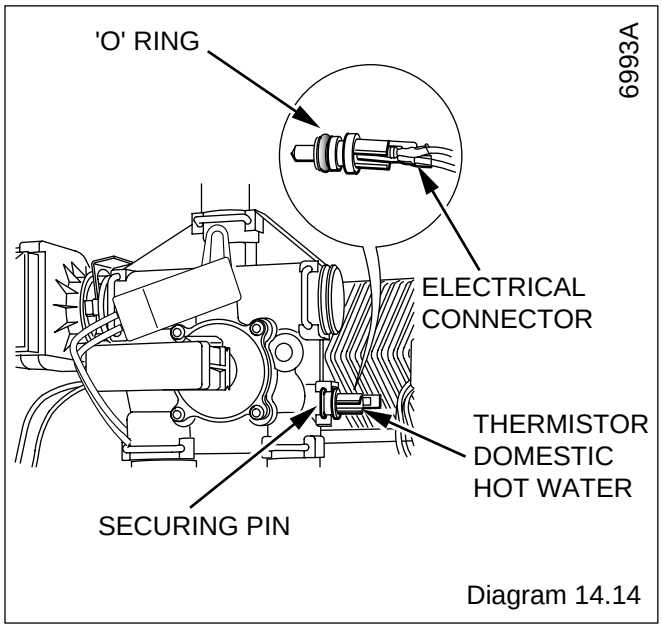


Diagram 14.14

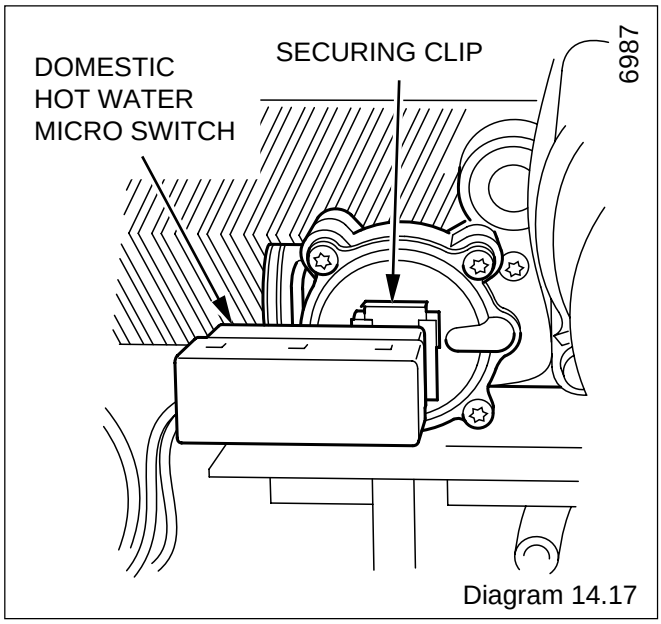


Diagram 14.17

14.20 Hydro Block Assembly Left hand side (see diagram 14.18)

Before starting refer to Section 11.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Remove the heat exchanger, refer to Section 14.26.

Remove the diverter switch, refer to Section 14.13.

Remove low water pressure switch, refer to section 14.11.

Disconnect the pressure differential micro switch inline electrical connector, refer to Section 14.18.

Unplug gas control valve multi pin connector.

Remove securing pins 1,2 and 3, see diagram 14.18.

Remove the plate to plate heat exchanger, refer to Section14.23.

Remove the bypass tube refer to Section 14.22

Remove the left hand side of the hydro block.

14.21 Hydro Block Assembly Right hand side (see diagram 14.18)

Before starting refer to Section 11.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Remove the heat exchanger, refer to Section 14.26.

Remove the diverter switch, refer to Section 14.13.

Disconnect the domestic hot water micro switch inline electrical connector, refer to Section 14.19.

Unplug gas control valve multi pin connector.

Remove securing pins 4,5 and 6, see diagram 14.18.

Remove the plate to plate heat exchanger, refer to Section 14.23.

Remove the bypass tube refer to Section 14.22.

Remove the right hand side of the hydro block.

See inset on diagram 14.18 to remove heating return filter.

14.22 Bypass Tube/Valve

Remove the diverter switch, refer to Section14.13.

Remove the plate to plate heat exchanger, refer to section 14.23.

Remove the bypass tube by removing the two securing pins, see Diagram 14.19.

Remove the bypass valve, see diagram 14.20.

14.23 Plate to Plate Heat Exchanger

Before starting refer to Section 11.

Remove the two screws securing the controls cover door and controls fascia, see diagram 9.1.

Hinge the assembly open.

Remove the securing screws to release the plate to plate heat exchanger, see diagram 14.21.

Remove the diverter switch, refer to Section14.22.

Push it out, tilt and remove, see diagram 14.21.

When re-fitting it will only fit one way.

14.24 Expansion Vessel

Before starting refer to Section 11.

Renewal of the expansion vessel requires the boiler to be removed from the wall. As an alternative, a separate expansion vessel of the same specification may be connected as close as possible to the boiler, leaving the original in position, refer to the Installation Instructions.

Disconnect the boiler water connection union nuts at the front of the isolating valves, see 6.1.

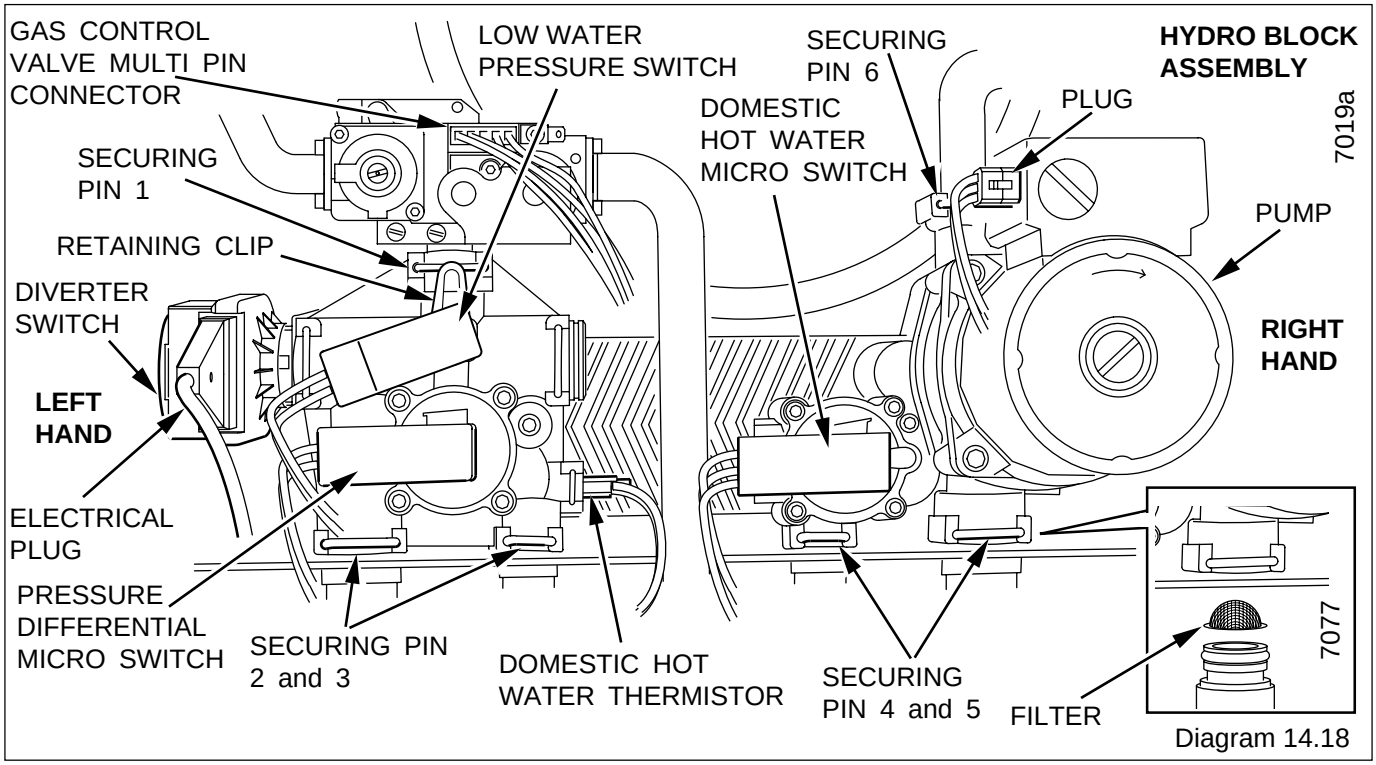


Diagram 14.18

Disconnect the gas service cock union.

Disconnect the safety valve discharge pipe from the boiler.

Disconnect the mains supply cable at the connector block on the back of the controls fascia.

Remove the two screws at the service cock bracket. Pull the boiler from the isolating valves. Unhook the boiler at the top, easing the boiler from the flue outlet and lift off.

Carefully lay the boiler down on its side for access to the expansion vessel.

Disconnect the union nut connection, see diagram 14.22 and discard the sealing washer for the new one supplied.

Remove the expansion vessel, secured with two clamping screws.

Connect the union nut, when fitting the expansion vessel, before clamping it.

14.25 Automatic Air Vent

Before starting refer to Section 11.

Remove the automatic air vent, see diagram 14.23.

SLACKEN THE SMALL CAP ON THE AIR VENT. THIS MUST NOT BE RE-TIGHTENED.

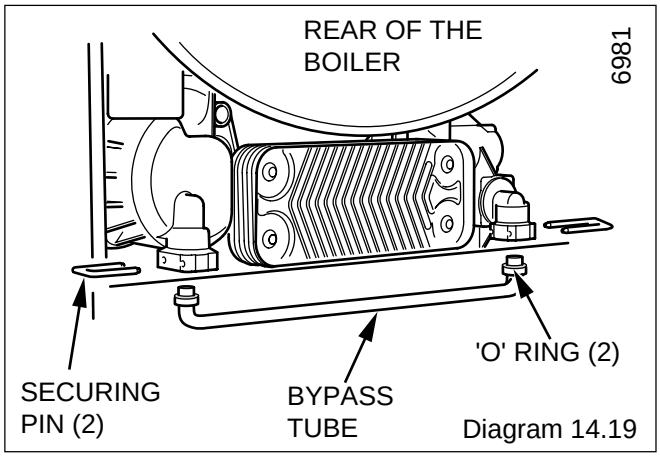


Diagram 14.19

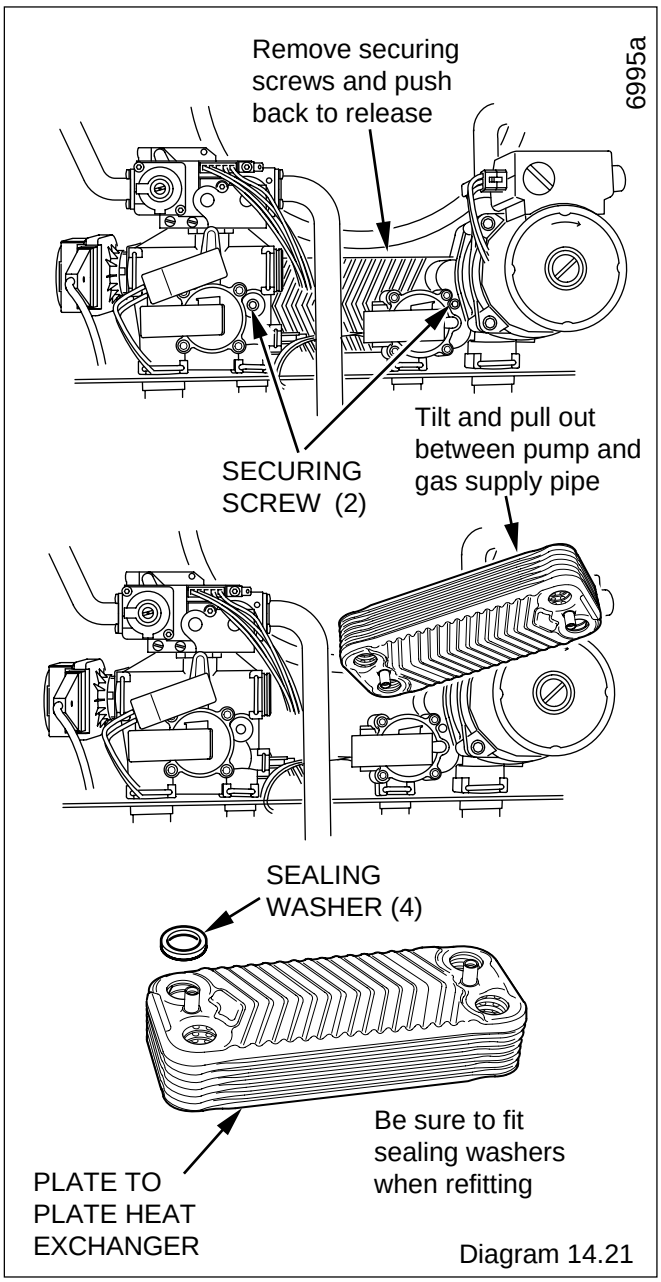


Diagram 14.21

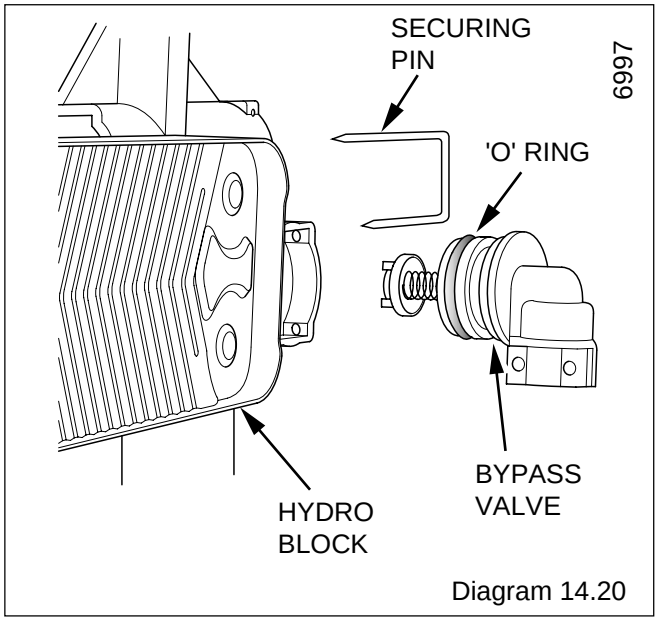


Diagram 14.20

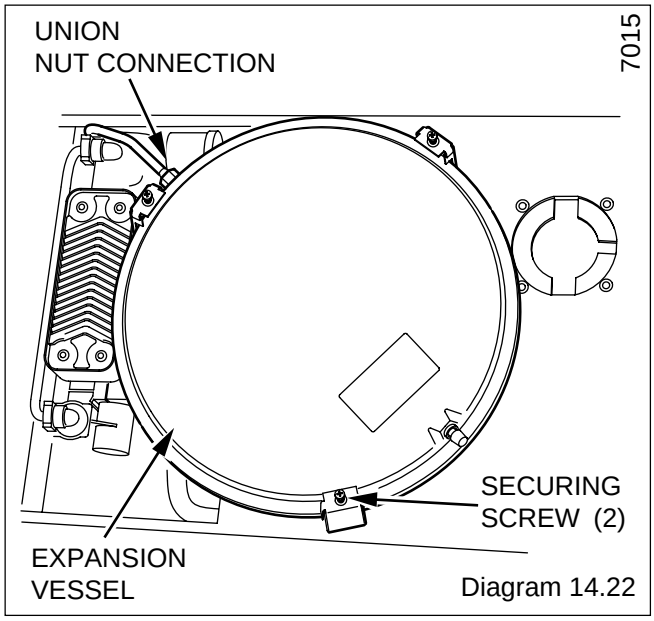


Diagram 14.22

14.26 Heat Exchanger

Before starting refer to Section 11.

Unhook the combustion chamber front, see diagram 8.2.

Remove the fan and flue collector, refer to Section 14.1.

Remove the burner see Section 14.2.

Refer to diagram 14.24 and remove the two side insulation pieces.

Remove the securing clips on the inlet and outlet pipes.

Remove the combustion chamber main panel securing screws.

Remove the heat exchanger/combustion chamber assembly.

Remove heat exchanger front retaining clips.

Remove the heat exchanger from its retaining tabs positioned at the rear by easing it forward and up.

Replace heat exchanger making sure that it is correctly engaged on the retaining lugs at the back of the combustion chamber, carefully refit the pipe securing clips and front retaining clips.

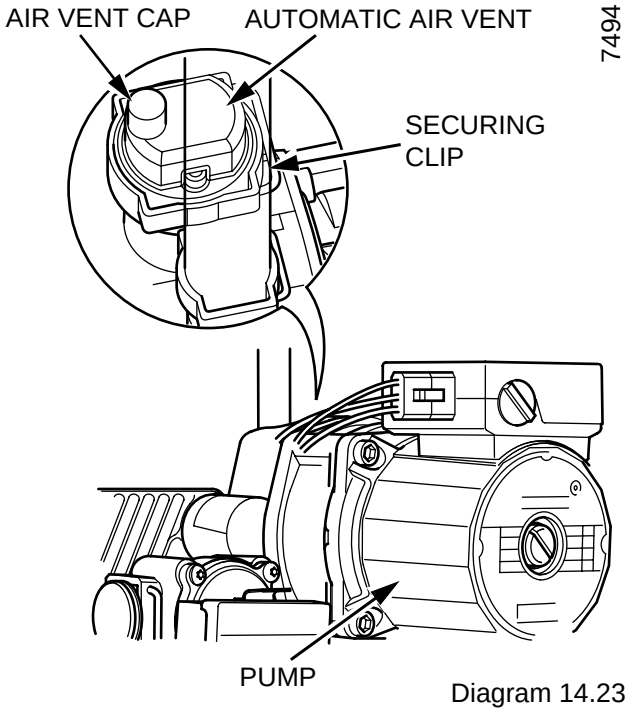


Diagram 14.23

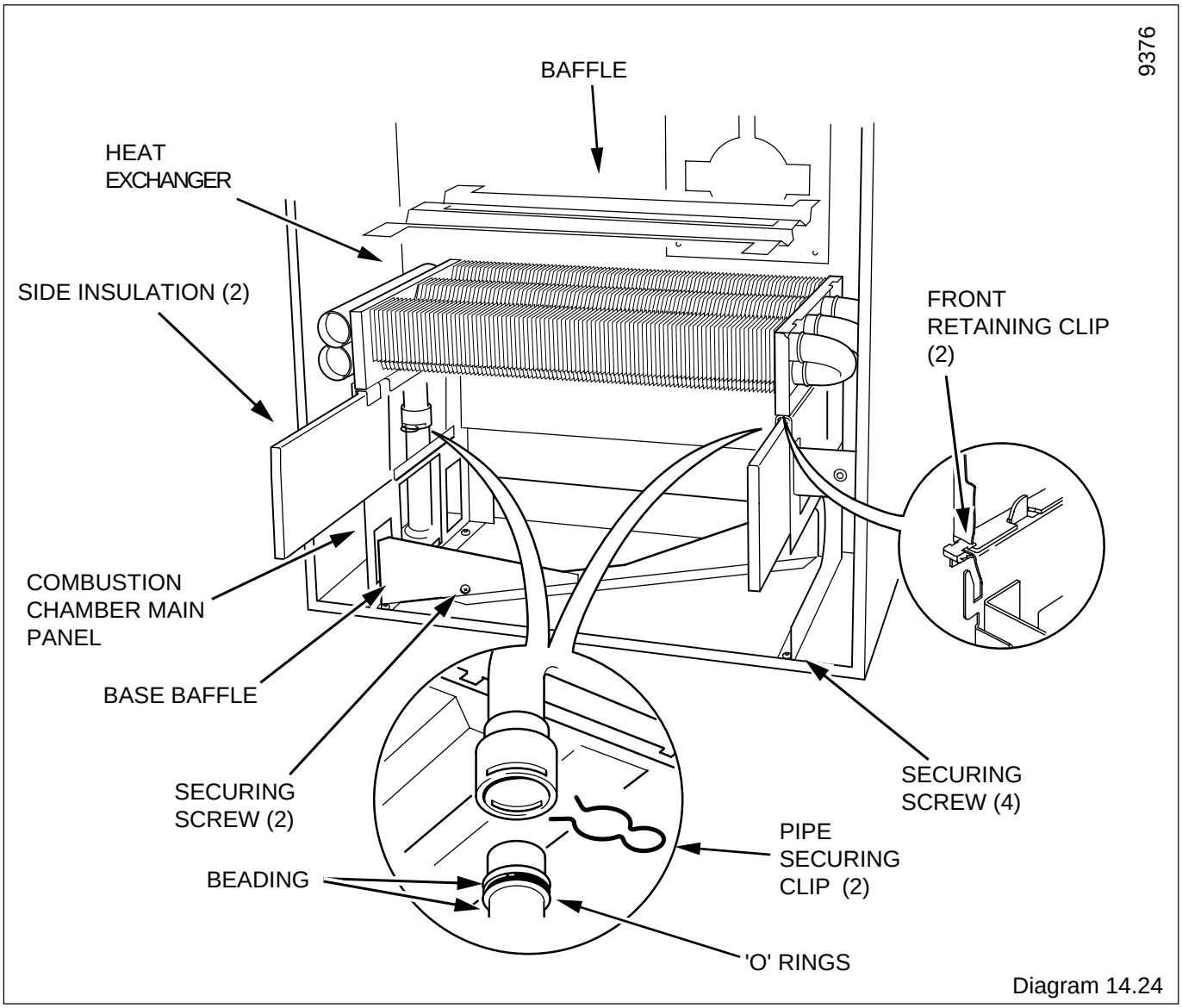


Diagram 14.24

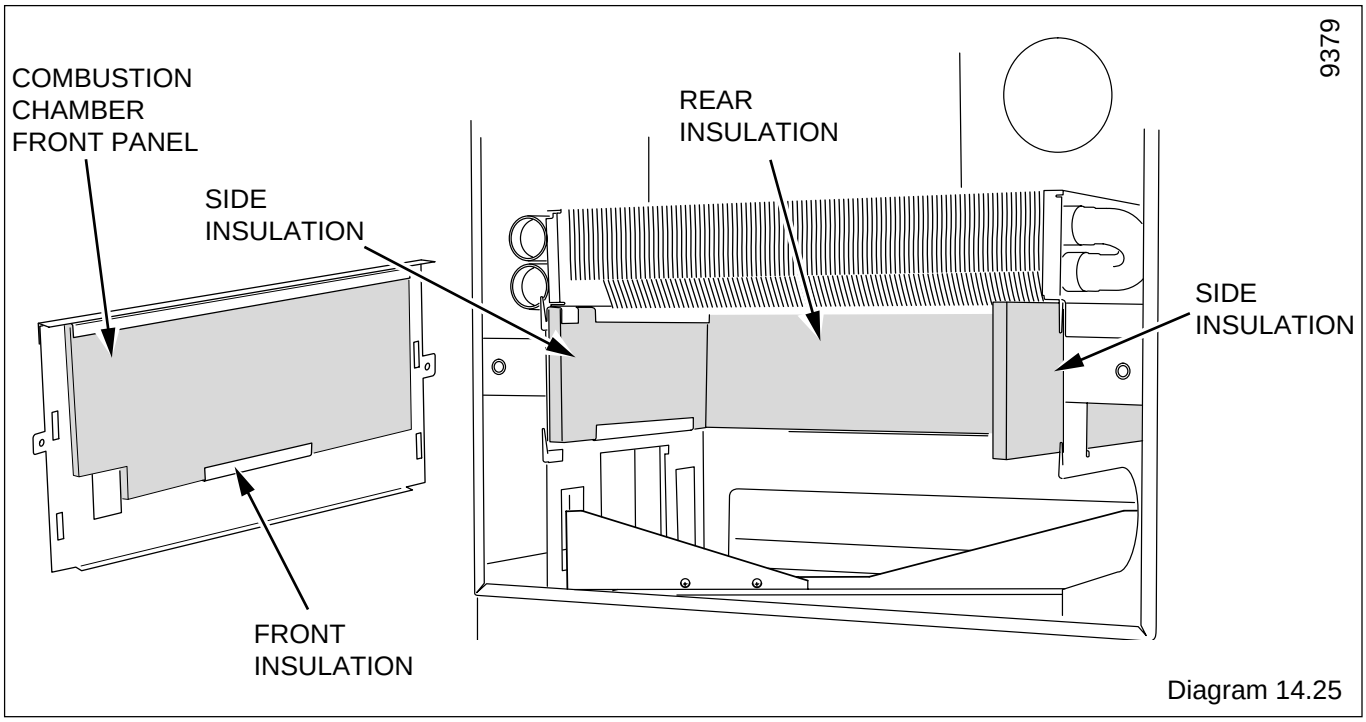


Diagram 14.25

14.27 Combustion Chamber Insulation

Remove outer case front as section 11.4.

Remove the inner case front as Section 11.5.

Unhook the combustion chamber front, see diagram 8.2.

Remove the burner see section 14.2.

Remove the front insulation piece, see diagram 14.25.

Slide out both side insulation pieces

Pull the lower rear insulation forwards, then slide the upper rear insulation down from behind the heat exchanger.

14.28 Viewing Window

Before starting refer to Section 11.

Remove the old self adhesive aluminium foil gasket and the old mica window. Replace with a new mica window, see diagram 14.26. Peel off the backing paper and secure with new self adhesive aluminium foil gasket. Ensure no air bubbles are trapped underneath the foil.

Important

Make sure that the mica window fully covers the opening and that the hole in the aluminium foil gasket is centred over opening.

14.29 Inner Casing Seal

Before starting refer to Section 11.

Remove the old seal, clean out the old adhesive.

Glue the new seal into place, making sure that there are no breaks in it.

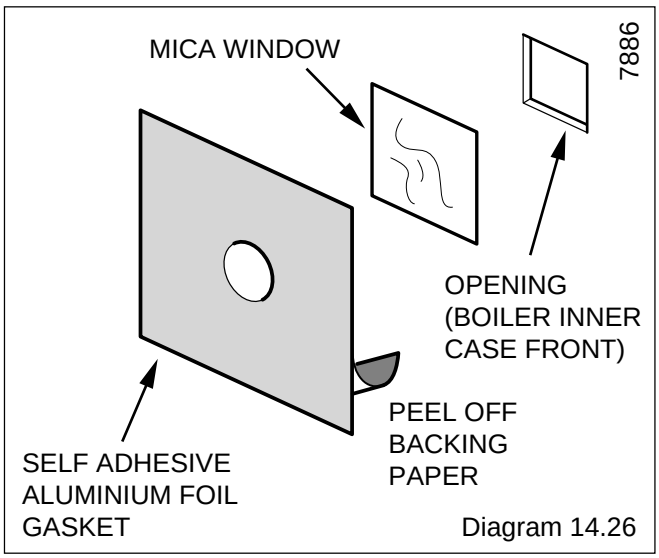


Diagram 14.26

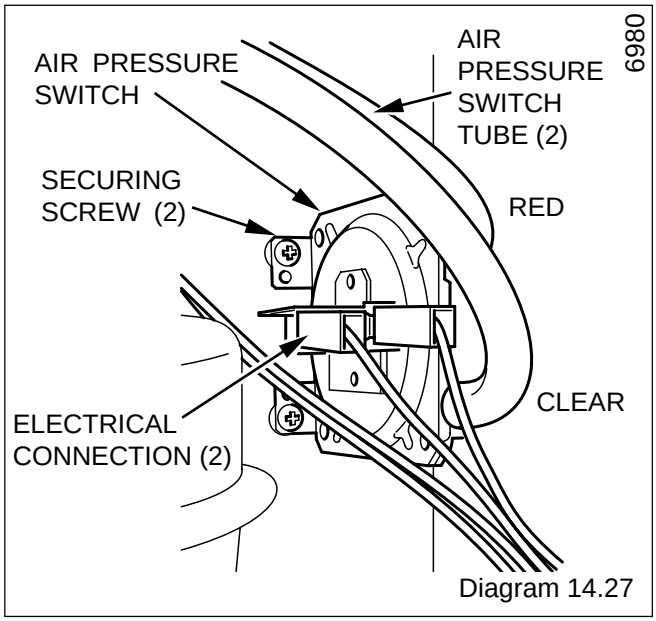


Diagram 14.27

14.30 Air Pressure Switch

Before starting refer to Section 11.

Disconnect the two electrical connectors at the air pressure switch, see diagram 14.27.

Remove the flexible tubes from the switch.

Remove the air pressure switch, secured with two screws.

When replacing the tubes to the air pressure switch make sure that the red tube from the fan connects to the upper connection of the switch.

The polarity of the electrical connections is important, refer to diagram 14.29.

14.31 Electro-Mechanical Clock/Timer

Before starting refer to Section 1 General Data.

Isolate the boiler from the electrical supply.

Remove outer case front as section 11.4.

Remove the two screws securing the controls cover door and controls facia, see diagram 9.1.

Hinge the assembly forward.

Remove the clock timer cover, see diagram 10.2.

Disconnect the clock timer wiring harness plug, remove the clock/timer and electrical connections, see diagram 14.28.

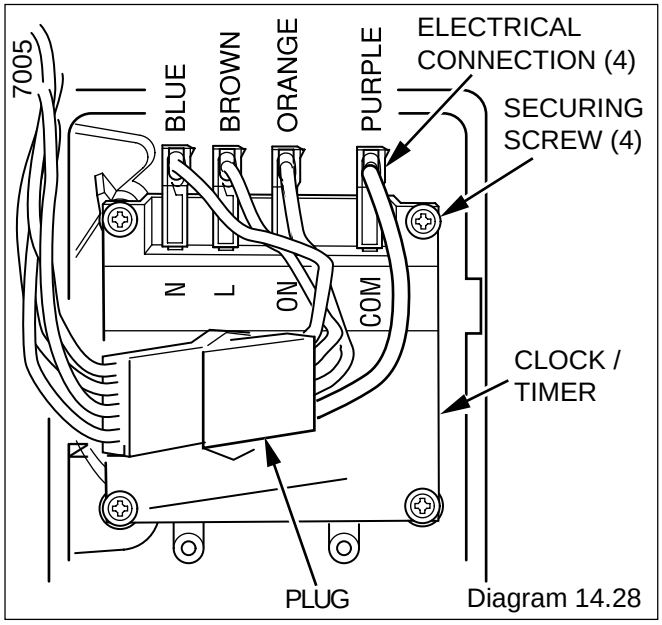
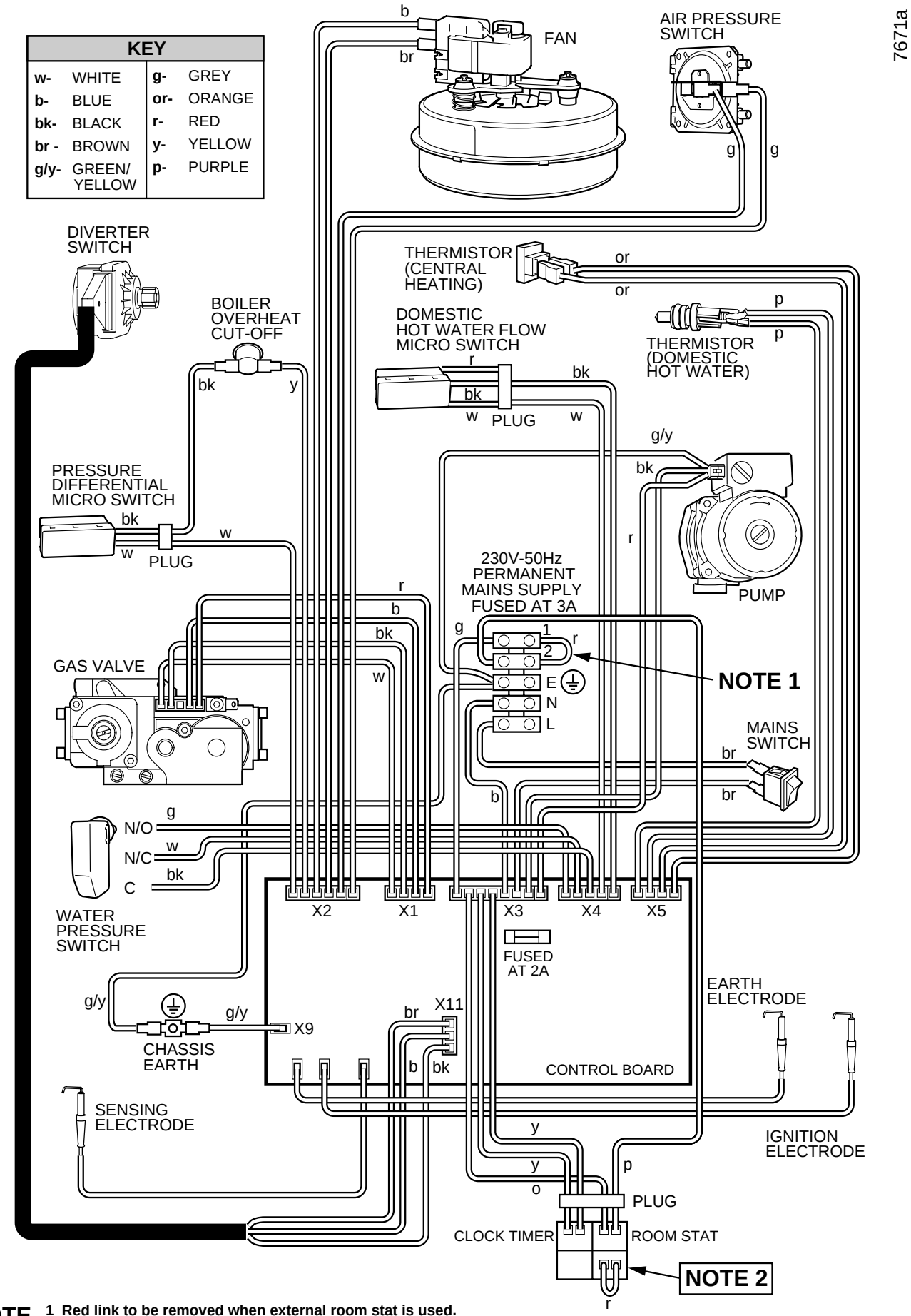


Diagram 14.28



NOTE **1 Red link to be removed when external room stat is used.**
2 Plug C/W link to be removed when clock timer is used. (The removed plug to be left inside the clock timer cover.)

Diagram 14.29

15 Spare Parts

15.1 Part Identification

The key number in diagram 15.1 and the first column of the list will help identify the spare part.

15.2 Ordering

When ordering any spare part, please quote the part number and the description from the list together with the model name and serial number information from the data label.

The data label is positioned on the inner case front, see diagram 8.1 Installation Instructions.

Key No	Part No	Description	GC No
1	457077	Fan assembly	E27122
2	205768	Main injector assembly	E27120
3	202641	Spark electrode (2)	********
4	202641	Sensing electrode	********
5	801179	Boiler over heat cut off assy	E27159
6	801199	Domestic Hot Water Micro Switch	E27185
7	801166	Pressure gauge assembly	E26680
8	227106	Control board	********
9	801189	Pressure Differential Micro Switch	E27177
10	801195	Plate to Plate Heat Exchanger	E27163
11	801203	Thermistor assembly-Domestic	E27207
12	227004	Thermistor assembly-Heating	********
13	801193	Pump (not illustrated)	E27213
14	202226	Fuse (not illustrated)	278136
15	801182	Gas control valve	E27124
16	227129	Air pressure switch assy	********
17	801186	Automatic air vent assembly	E27166
18	801208	Safety valve assembly	E27115
19	801181	Low water pressure switch	E27143
20	227060	Mains switch	E26675

15 Spare Parts

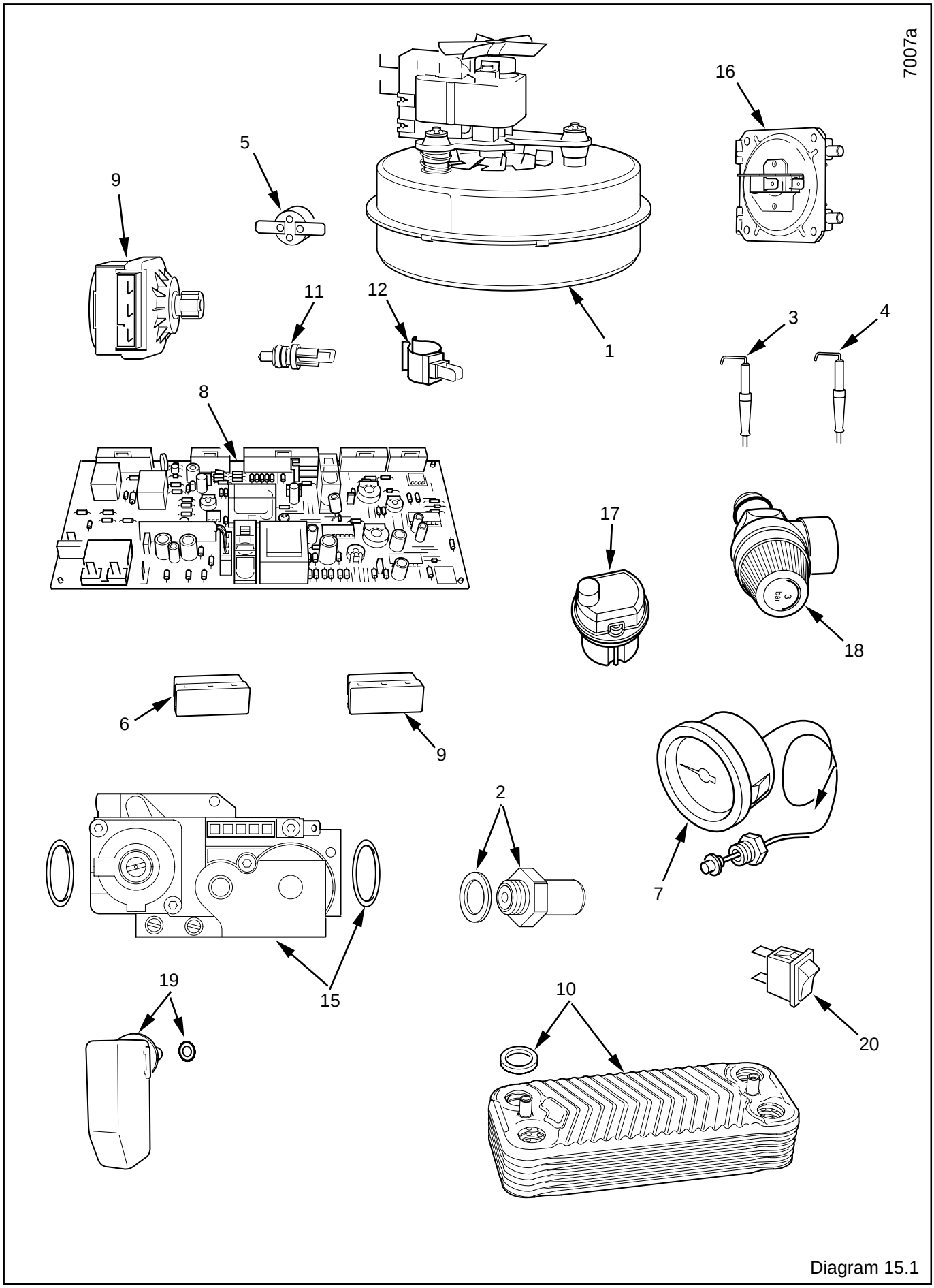


Diagram 15.1

Because of our constant endeavour for improvement, details may vary slightly from those shown in these instructions.