icor23t
icor28t

Wall hung combination boilers



This is a CAT II2H3+ appliance

CE

WATER BYELAWS SCHEME APPROVED PRODUCT WRc

SUPPORTED BY

HEATCALL

☎ 01773 828100

One Contact-Local Service

USER, INSTALLATION AND SERVICING INSTRUCTIONS

spares & parts online IBASIS.CO.UK®

Index

Introduction 3

User instructions 3
Introduction 4
Controls and lighting 4

Technical data 7

Installation instructions 11
Clearances 11
Terminal position 12
Heating system design 13
Domestic hot water system design 13
Boiler connections 14
Gas connection 14
Boiler installation 15
Horizontal flue installation 16
Vertical flue installation 17
Flue configuration 18
Electrical connection 19
Commissioning 20
Safety devices 22
Gas valve setting 23
Adjustments 23
Boiler schematic 25

Servicing instructions 26
Routine cleaning and inspection 27
Replacement of parts 28
Schematic wiring diagram 31

Note

The boiler serial number is marked on the data label attached to the inside of the outer casing. Refer to the 'Introduction' section for a description of the basic functions of the boiler. The 'User' section describes how to safely operate the boiler.

Mandatory warning for CEE countries

WARNING, these appliances were designed, approved and inspected to meet the requirements of the English market. The identification plate located on the inside of the appliance **certifies the origin** where the product was manufactured and the **country** for which it is intended.

If you see any exception to this rule, please contact your nearest Stockist.

Thank you in advance for your assistance.

Introduction

The **icon 23 t** and **icon 28 t** boilers are wall mounted combination boilers providing central heating and instantaneous domestic hot water.

The boilers are of the II2H3+ category for use with Natural gas (G20) as distributed in the United Kingdom.

These instructions should be carefully followed for the safe and economical use of your boiler.

The boiler has a fan assisted balanced flue which both discharges the product of combustion to, and draws the combustion air from the outside of the building.

ACCESSORIES

A range of accessories are available including vertical flue components. For further information, contact you nearest Stockist.

GAS SAFETY (INSTALLATION AND USE) REGULATIONS

In your interests and that of gas safety, it is the law that ALL gas appliances are installed and serviced by a competent person in accordance with the above regulations.

GAS LEAK OR FAULT

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

BOILER CONTROLS

The control panel, located at the lower front of the boiler, allows the boiler to be started, shut down, controlled and monitored during use, refer to ‘User Instructions’.

User instructions

Introduction

The **icon 23 t** and **icon 28 t** boilers are wall mounted combination boilers providing central heating and instantaneous domestic hot water.

These instructions should be carefully followed for the safe and economical use of your boiler.

GAS LEAK OR FAULT

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

IN CASE OF POWER SUPPLY FAILURE

The boiler no longer operates.

As soon as power supply is restored, the boiler will restart automatically.

IN CASE OF LOSS OF WATER IN THE SYSTEM

CAUTION: The boiler is installed as part of a sealed system which must only be drained and filled by a competent person.

If the pressure shown on the pressure gauge is less than 1 bar the system must be filled up immediately.

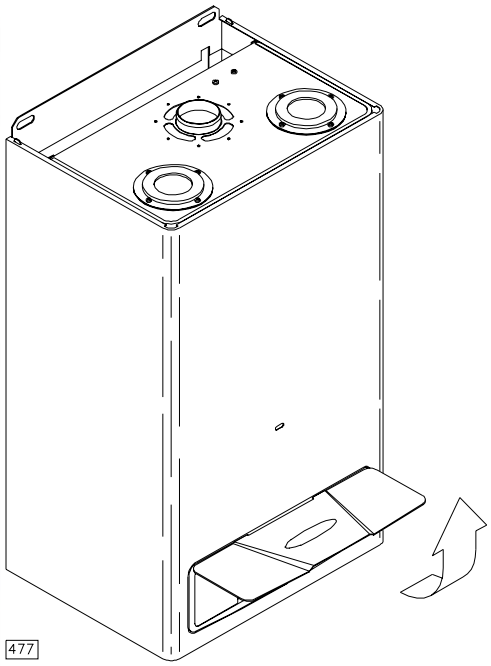
Important notice: A central heating system cannot operate satisfactorily unless it is properly filled with water and unless the air initially contained in the piping systems has been properly bled off. If these conditions are not satisfied, air noise will occur within the system.

AIR IN THE HEATING SYSTEM

Persistent air in the heating system may indicate leaks in the system or corrosion taking place. Call your Installer/Service provider.

OVERHEATING SAFETY

In the event of problem, the overheat safety device causes safety shutdown of the boiler. If this happens, call your Installer/Service provider.



Controls and lighting

The control panel, located at the lower front of the boiler casing, see diagram, allows the boiler to be started, shut down, controlled and monitored during use.

Make sure that:

— The boiler is connected to the electrical supply.

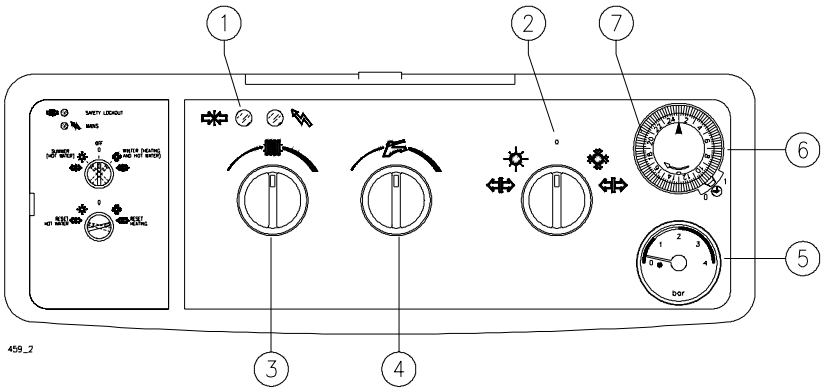
— The boiler gas service cock is open.

— The pressure gauge reads between 1 and 2 bar.

The boiler is now ready to start.

Controls

1 Safety lockout light
2 Summer/Winter switch
3 Heating temperature control
4 Hot water temperature control
5 Pressure gauge
6 Timeclock
7 Plastic toggles



TO START THE BOILER

Turn selector (2) to the desired Summer or Winter position.

The green lamp will light.

TO STOP THE BOILER

Turn selector (2) to the OFF position (0).

If the boiler is to be out of operation for a long period, turn off the gas service cock.

SETTING TO 'SUMMER' MODE (HOT WATER ONLY)

Turn selector (2) to the Summer position .

Adjust the domestic hot water control (4) to the desired hot water temperature. The boiler will operate according to the system requirements.

SETTING TO 'WINTER' MODE (HEATING AND HOT WATER)

Turn selector (2) to the Winter position .

Adjust the heating temperature control (3) to the desired temperature.

Adjust the domestic hot water control (4) to the desired hot water temperature. The heating will operate according to the requirements of the timeclock and room thermostat if fitted or, will operate according to the system requirements.

Domestic hot water always has priority over central heating.

TO PROGRAM DAILY TIMECLOCK (6) (WINTER MODE ONLY)

Set the current time, by turning the dial clockwise until the current time is shown against the indicator "▲".

Push in plastic toggles (7) against the time you wish the heating to come on.

The timeclock can operate in three positions: automatic "🕓", heating off "0", and heating on "1".

To select, move the lever to the desired position.

NOTE: In case of failure of electrical supply, timeclock does not operate, having no back-up battery. Therefore it will be necessary to adjust the current time, once electrical supply is restored.

SAFETY LOCKOUT

If, for any reason, the boiler does not operate, check if lockout lamp  (1) is lit. If so, turn selector (2) to the reset position  . The selector is spring loaded and automatically returns to its' previous position when released.

Note: This lamp will only light if the boiler has locked out and there is a hot water or central heating demand at that particular time.

IMPORTANT: If the safety lockout lamp lights frequently, contact your Installer/Service Provider.

DRAINING AND FILLING

CAUTION: The boiler is installed as part of a sealed system which must only be drained and filled by a competent person.

Note: If there is persistent loss of system pressure, you must consult your Installer/Service Provider.

HEATING SAFETY VALVE

CAUTION: A safety valve with a discharge pipe is fitted to this boiler.

The valve **MUST NOT BE TOUCHED** except by a competent person. If the valve discharges at any time, switch the boiler off and isolate it from the electrical supply. Contact your Installer/Service Provider.

SERVICING/MAINTENANCE

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

CLEANING

The boiler casing can be cleaned with a damp cloth followed by a dry cloth to polish.

Do not use abrasive or solvent cleaners.

BOILER CASING

CAUTION: Do not remove or adjust the casing in any way, as incorrect fitting may result in faulty operation.

If in doubt, contact your Installer/Service Provider.

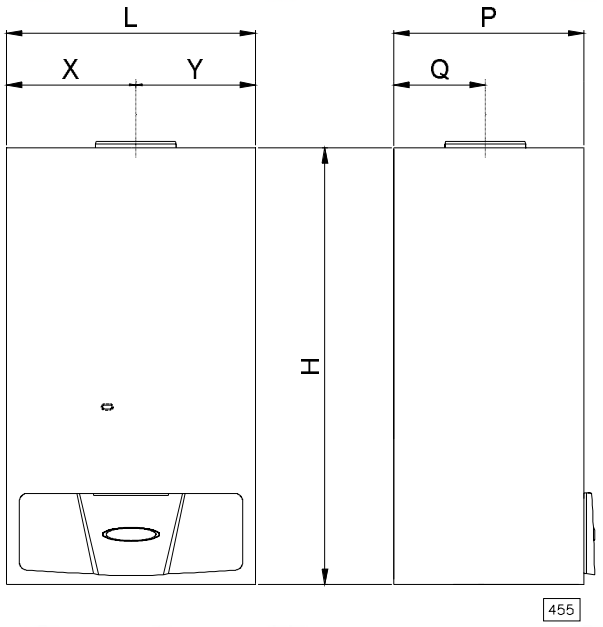
Technical data

TECHNICAL DATA	Unit	icon 23 t	icon 28 t
CE Certification	n°	0063 AT 4247	0694 BL 2995
Class		II2H3+	
Type		C12-32-42-52-62-82	
Gas Type		G20	
Max. Heat Input (Hs)	kW	28.4	35
Min. Heat Input (Hs)	kW	11.6	15
Max. Heat Output (Hi)	kW	23.3	28.1
Min. Heat Output (Hi)	kW	8.7	11
EFFICIENCY			
Nominal efficiency	%	92	92.3
Efficiency at 30% load	%	87.4	90
HEATING			
Temperature range	°C	40-85	40-85
Expansion vessel	l	6	8
Expansion vessel pressure	bar	1	1
Max. working pressure	bar	2.5	2.5
Max. system temperature	°C	85	85
HOT WATER			
Flow rate at 35°C temperature rise	l/min	9.6	11,5
Min. water flow	l/min	2.5	2.5
Max. supply pressure	bar	6	6
Min. supply pressure	bar	0.4	0.4
Temperature range	°C	35-65	35-65
ELECTRICAL DATA			
Voltage / frequency	V / Hz	230 / 50	230 / 50
Power	W	150	170
Level of protection	IP	44	44
DIMENSIONS			
Width	mm	400	450
Height	mm	700	700
Depth	mm	300	330
Weight (lift)	kg	35	42
CONNECTIONS			
Heating flow / return	mm	22 mm	22 mm
Domestic Water inlet / outlet	mm	15 mm	15 mm
Gas	mm	15 mm	15 mm
Flue products outlet / air inlet Ø	mm	60/100	60/100
Horizontal flue length min/max	m	1-3	1-3
Vertical flue length min/max	m	1-4	1-4
GAS SUPPLY PRESSURE			
Nominal pressure	mbar	20	20
Injectors diameter	Ø mm	1.2	1.2
GAS CONSUMPTION			
Qmax	mc/h	2.7	3.28
Qmin	mc/h	1.1	1.4

icon 23 t		
HEAT OUTPUT		PRESSURE
kW	Btu/hr	mbar
8.7 (min)	29684	1.6
10	34120	2.3
11	37532	2.7
12	40944	3.4
13	44356	3.7
14	47768	4.5
15	51180	5
16	54592	5.5
17	58004	6.1
18	61416	6.5
19	64828	7.2
20	68240	8
21	71652	8.6
22	75064	10
23.3 (max)	79500	11.8

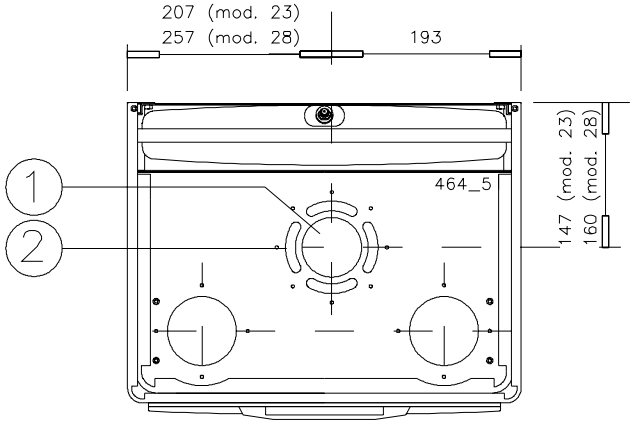
icon 28 t		
HEAT OUTPUT		PRESSURE
kW	Btu/hr	mbar
9.2 (min)	31390	2.6
10	34120	2.8
11	37532	3
12	40944	3.2
13	44356	3.6
14	47768	4.2
15	51180	5
16	54592	5.6
17	58004	6.2
18	61416	7
19	64828	7.6
20	68240	8.3
21	71652	9
22	75064	9.5
23	78476	10.1
24	81888	10.8
25	85300	12
26	88712	12.5
28.7 (max)	97924	13.2

DIMENSIONS



Boiler	L (mm)	H (mm)	P (mm)	X (mm)	Y (mm)	Q (mm)
icon 23 t	400	700	300	207	193	147
icon 28 t	450	700	330	257	193	160

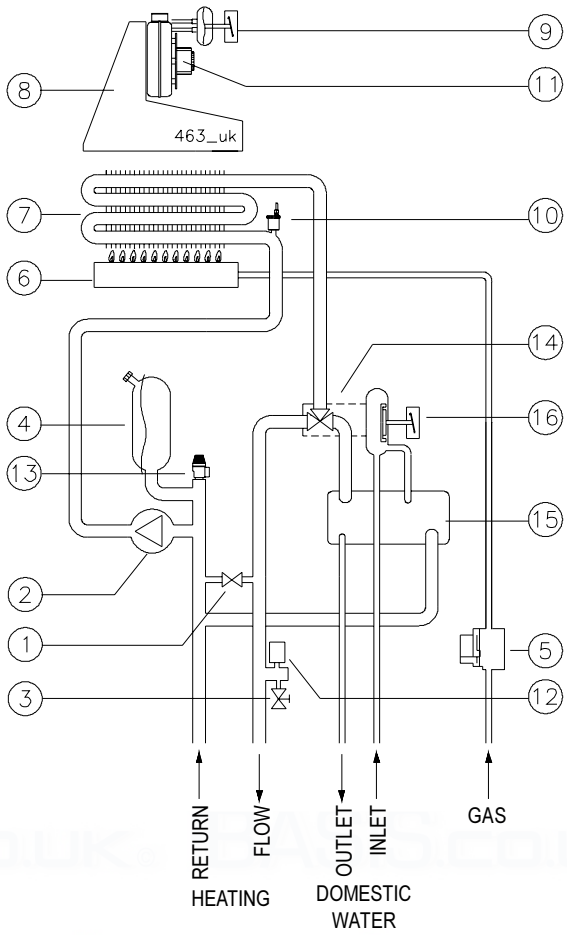
CONNECTIONS FOR FLUE



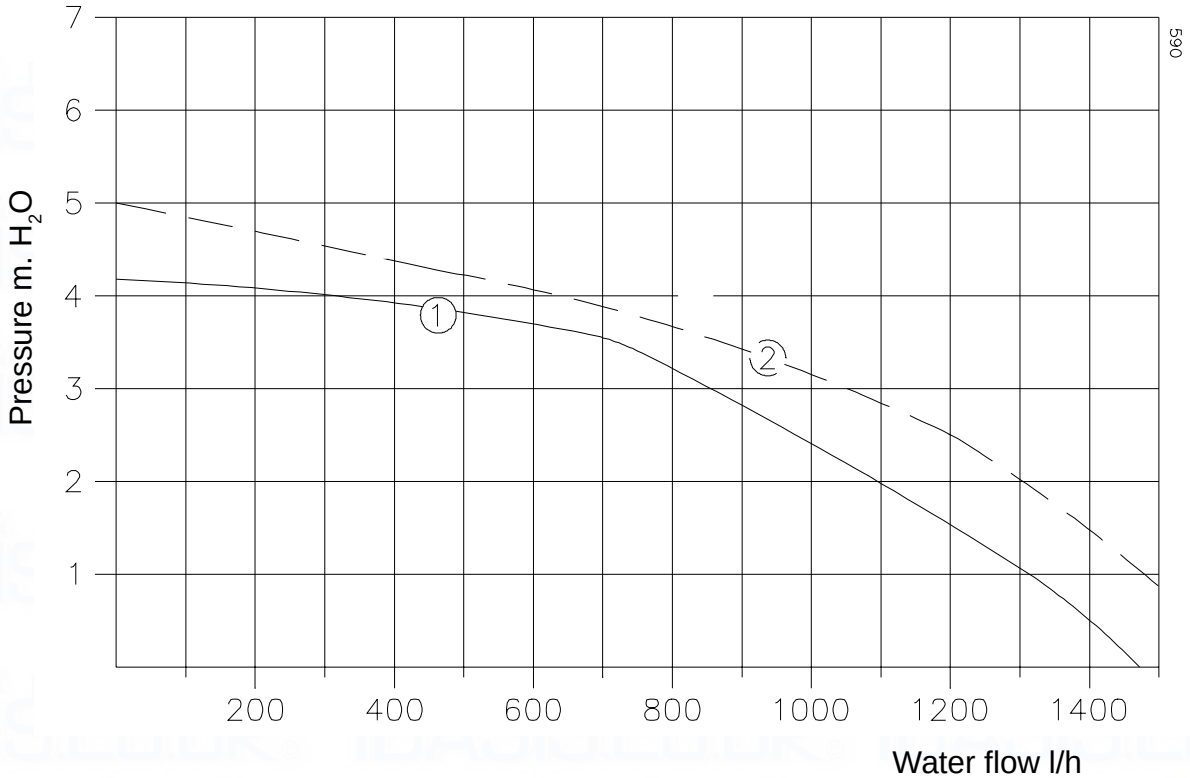
1	Flue products outlet
2	Air inlet

BOILER SCHEMATIC

1 By-pass
2 Pump
3 Drain valve
4 Expansion vessel
5 Gas valve
6 Burner
7 Primary heat exchanger
8 Flue hood
9 Air pressure switch
10 Automatic air vent
11 Fan
12 Loss of water switch
13 Heating system safety valve 3 bar
14 Hydraulic 3-way valve
15 Domestic heat exchanger
16 Water valve



AVAILABLE PUMP CAPACITY



1 – **icon 23 t** (Automatic By-Pass)
2 – **icon 28 t** (Automatic By-Pass)

Installation instructions

Clearances

The boiler can be installed with the following clearances:

5 mm	either side if the boiler
600 mm	to the front of the boiler
150 mm	below the boiler
200 mm	above the boiler

The above clearances are minimum clearances, consideration must be given to allow adequate space for servicing.

The recommended servicing clearances are:

50 mm	either side if the boiler
600 mm	to the front of the boiler
150 mm	below the boiler
200 mm	above the boiler

CUPBOARD OR COMPARTMENT VENTILATION

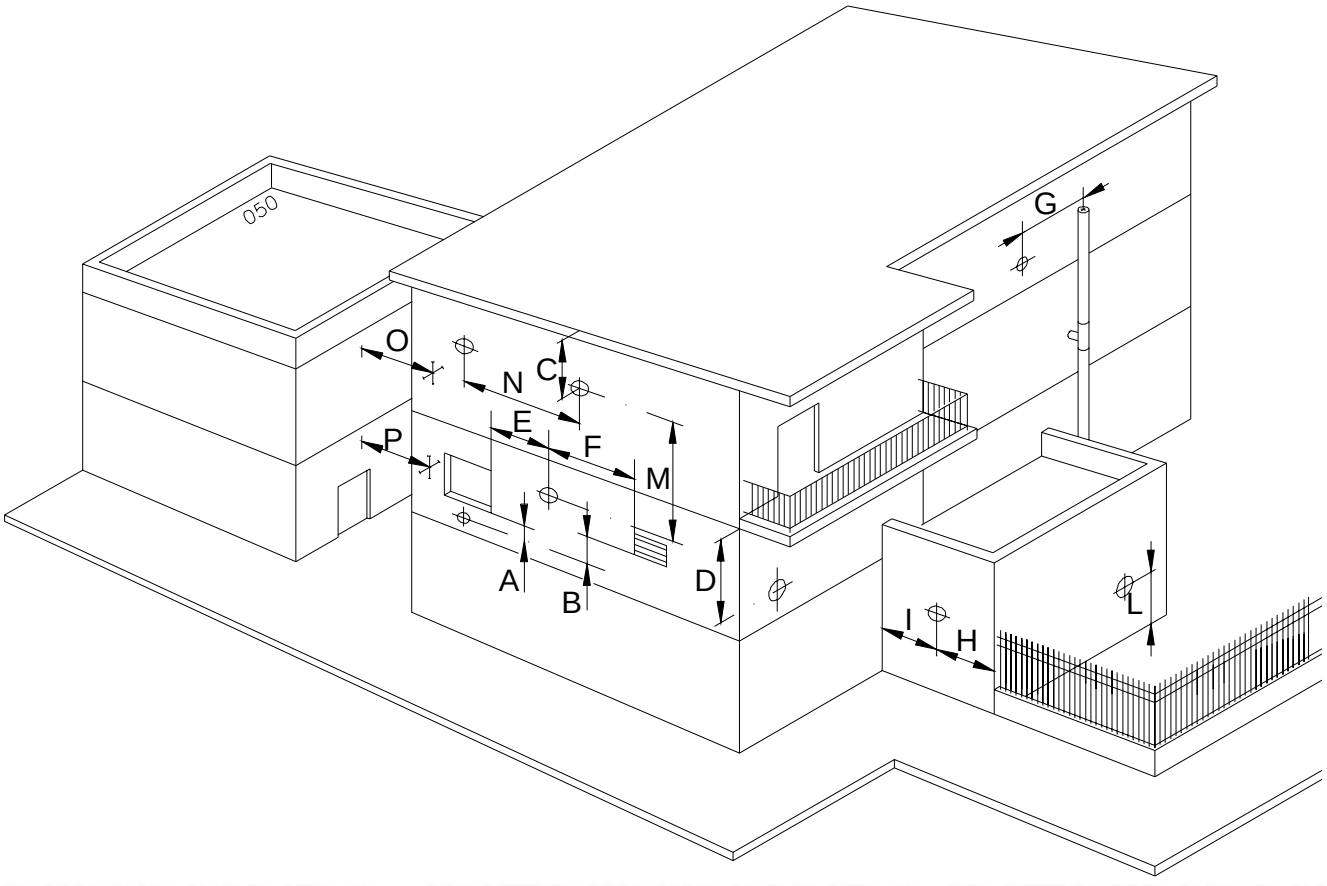
The boiler can be installed in a cupboard or compartment without the need for high or low level ventilation

Terminal position

The minimum acceptable spacings from the terminal to obstructions and ventilation openings are shown in the diagram below:

MINIMUM DIMENSIONS (in mm) FOR THE POSITIONING OF FLUE TERMINALS

A	Under a window	300
B	Under an air vent	300
C	Under a gutter	75
D	Under a balcony	300
E	From an adjacent window	300
F	From an adjacent air vent	300
G	From vertical drain pipes or soil pipes	75
H	From an external corner of the building	300
I	From an internal corner of the building	300
L	From the ground or from another floor	300
M	Between two terminals vertically	1500
N	Between two terminals horizontally	300



Heating system design

The **icon 23 t** and **icon 28 t** are compatible with any type of installation.

The heating surfaces may consist of radiators, convectors or fan assisted convectors.

Pipe sectional areas shall be determined in accordance with normal practices, using the pump curve, refer to 'Technical Data'. The distribution system shall be calculated in accordance with the output requirements of the actual system, not the maximum output of the boiler. However, provision shall be made to ensure sufficient flow so that the temperature difference between the flow and return pipes is less than or equal to 20°C. The minimum flow is 420 l/h.

The piping system shall be routed so as to avoid any air pockets and facilitate permanent venting of the installation. Bleed fittings shall be provided at every high point of the system and on all radiators.

The total volume of water permitted for the heating system depends, amongst other things, on the static head in the cold condition. The expansion vessel on the boiler is pressurised at 1 bar (corresponding to a static head of 5m wg.) and allows a maximum system volume of 190 litres for an average temperature of 75°C and a maximum service pressure of 3 bar. This pressure setting can be modified at commissioning stage if the static head differs.

Provision shall be made for a drain valve at the lowest point of the system.

Where thermostatic radiator valves are fitted, not all radiators must be fitted with this type of valve and particularly where the room thermostat is fitted.

A suitable WRC approved filling loop must be fitted to enable correct filling of the system.

In all cases, it is **ESSENTIAL** that the system be thoroughly flushed prior to installing the new boiler.

Domestic hot water system design

Copper tubing or plastic HeP2O may be used for the domestic hot water system. Unnecessary pressure losses should be avoided.

The domestic hot water supply pressure must be between 1 and 6 bar. If the pressure exceeds 6 bar, a pressure reducing valve must be fitted.

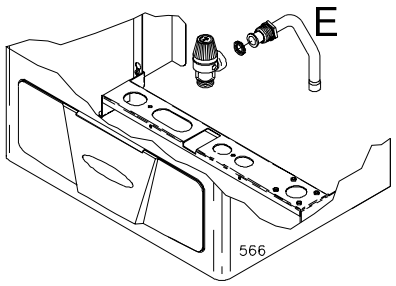
HARD WATER AREAS

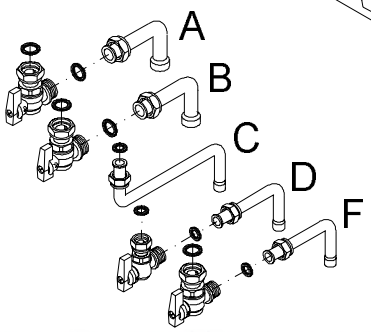
In areas where the water hardness exceeds 200mg/litre, it is recommended that a suitable scale reducing device is fitted.

Boiler connections

Heating system connections Pipe diameter 22 mm.
Hot water system connections Pipe diameter 15 mm.
Gas connection Pipe diameter 15 mm.

A Heating return
B Heating flow
C Hot water outlet
D Cold water mains inlet
E Safety valve discharge connection
F Gas connection





SAFETY VALVE DISCHARGE

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

Connect the safety valve discharge pipe to the valve, the discharge must be extended using not less than 15 mm o.d. pipe, to discharge in a visible position outside the building, facing downward, 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. Tighten all pipe connection joints.

Gas connection

The supply from the governed meter must be of adequate size to provide a constant inlet working pressure of 20 mbar (8 in wg).

To avoid low pressure problems, it is recommended that the supply is taken to the boiler using 22 mm pipe as far as possible.

On completion, the gas installation must be tested using the pressure drop method and purged in accordance with the current issue of BS6891.

WARNING: While connecting gas inlet pipe of the boiler to the pipe coming from gas network, it is MANDATORY to insert a TIGHT GASKET, whose dimensions and material must be adequate. Connection is NOT suitable for hemp, teflon strip or similar materials.

GAS SAFETY (Installation and Use) REGULATIONS.

In your interests and that of gas safety, it is the law that **ALL** gas appliances are installed and serviced by a competent person in accordance with the above regulations.

STATUTORY REQUIREMENTS

The installation of this boiler must be carried out by a competent person in accordance with the relevant requirements of the current issue of:

— The Gas Safety (Installation and Use) Regulations

— The Building Regulations

— The local water company Bylaws

— The Building Standards Regulations (Scotland)

— The Health and Safety at Work Act

SHEET METAL PARTS

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

INSTALLING THE BOILER

Prior to starting work, the system must be thoroughly flushed to eliminate any foreign bodies and contaminents such as filings, solder, particles, oil, grease etc.

Note: Solvent products could cause damage to the system.

Boiler installation

To install the boiler, proceed as follows:

— Allowing sufficient clearances for servicing/repair, place the template on the wall (see diagram below).

— Determine the position of the flue hole and drill hole for flue, preferably using a 120 mm core drill.

— Drill two 8mm holes for the wallplugs (supplied).

— Screw fixing screws (supplied) into wallplugs, leave proud by approx. 10 mm.

Note: Boiler fixing holes are keyhole type slots to allow easy hanging of boiler.

— Remove template.

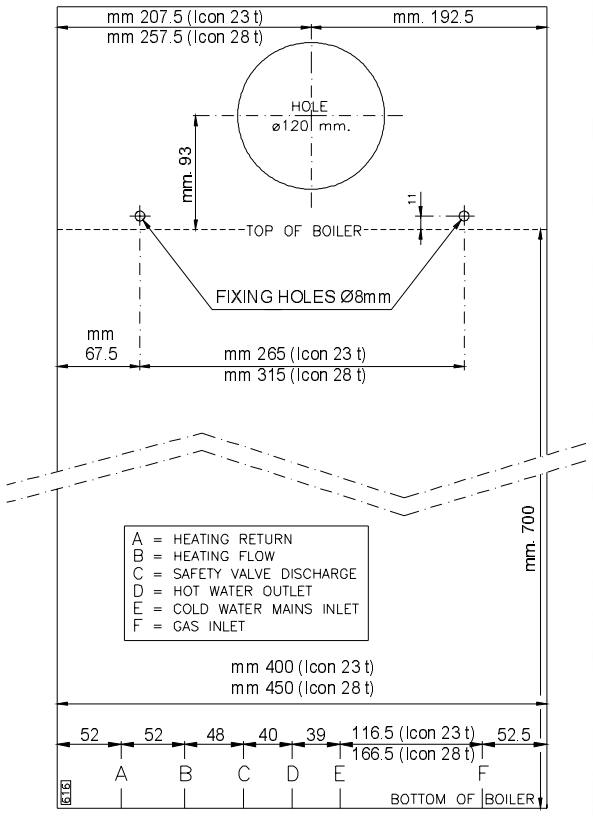
— Hang the boiler on the screws and tighten screws.

— Connect system pipework and gas connection.

Note:

1. *The template is only used as a guide, it can be removed prior to fitting the boiler.*

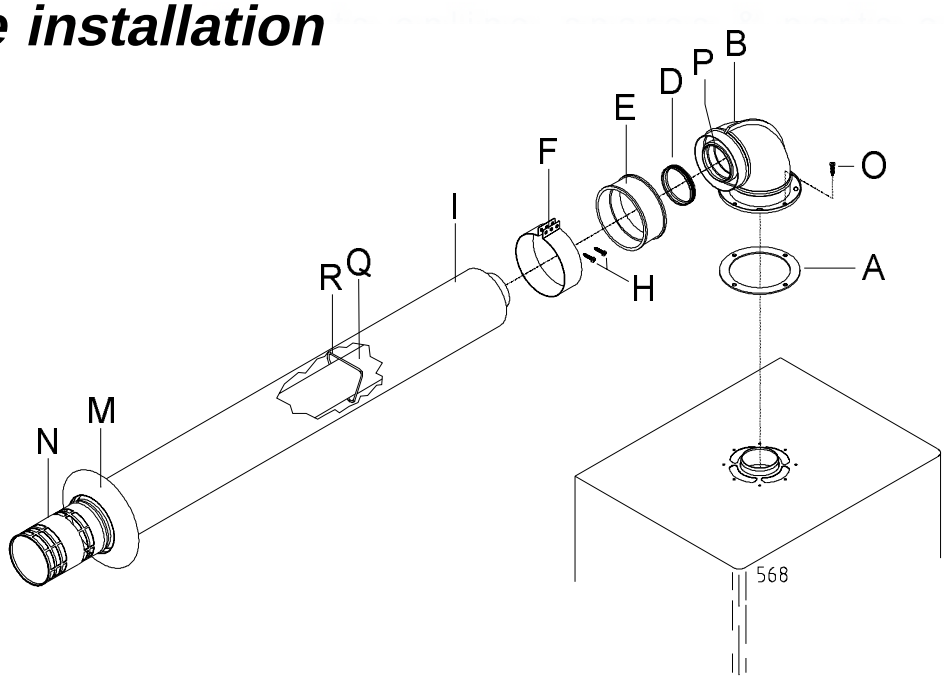
2. *Remove the plastic caps from the boiler connections prior to connecting boiler to the pipework.*



BOILER TEMPLATE

Horizontal flue installation

A Gasket
B 90˚ bend
D 'O' ring
E Collar
F Clamp
H Screws
I Air inlet pipe
M External sealing collar
N Terminal
O Screws
P Inner elbow
Q Inner pipe
R Clip



— Fit gasket (A) onto underside of flue elbow (B).

— Fit elbow onto top of boiler ensuring it locates correctly onto fan outlet.

— Carefully insert 'O' ring (D) into inner elbow (P).

— Fit external sealing collar (M) onto air inlet pipe (I).

— Fit flue through hole in wall and pull up so that external collar (M) is flush against outside wall.

— Fit collar (E) and clamp (F) to flue and assemble into elbow (B) making sure that both inner and outer pipes are sealed properly.

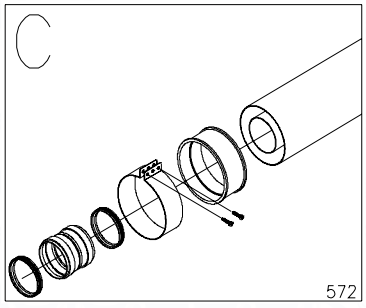
NOTE: Maximum horizontal length with no additional bends is 3m.

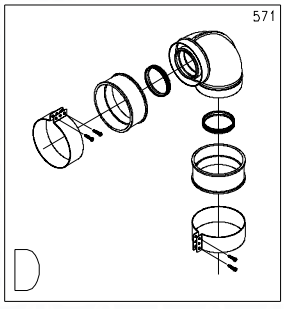
— Tighten up clamp using screws and nuts provided (H & G).

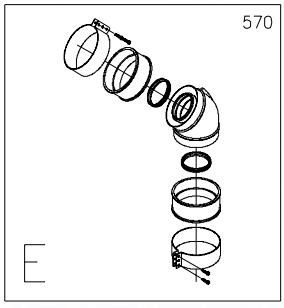
Note: Should it be necessary to cut the flue, always cut equal amounts from both inner and outer pipes. Always cut the end furthest from the terminal.

For each 90° flue bend fitted, reduce overall flue length by 1 m.
For each 45° flue bend fitted, reduce overall flue length by 1/2 m.

	Flue accessory	Cat No.
C	**Flue extension kit**	**885117**
D	**90° bend kit**	**885118**
E	**45° bend kit**	**885119**







Vertical flue installation

A Gasket
B Vertical adaptor
D ‘O’ ring
E Collar
L Terminal
M Screws

— Fit gasket (A) onto underside of vertical adaptor (B).

— Fit vertical adaptor onto top of boiler ensuring it locates correctly onto fan outlet.

— Carefully insert ‘O’ ring (D) into vertical adaptor inner spigot.

— **For flat roof installation**, fit flat roof flashing collar (part no. 885121)

— Fit flue terminal (L) onto roof ensuring flashing makes a watertight joint.

— **For pitch roof installation**, fit pitch roof flashing collar (part no. 885120)

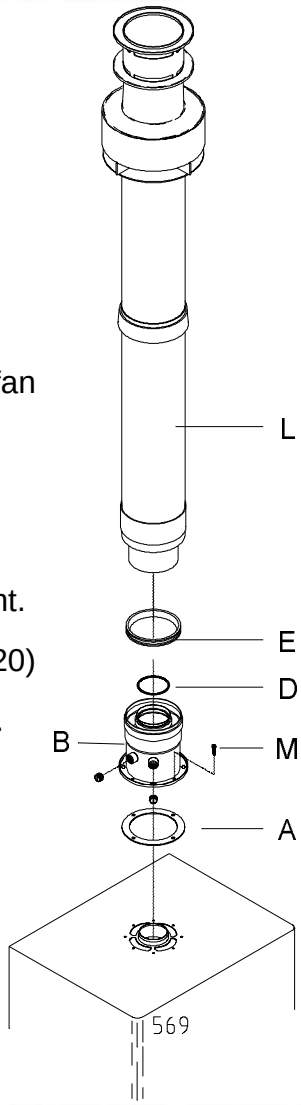
— Fit flue terminal (L) onto roof ensuring flashing makes a watertight joint.

— Fit collar (E) to vertical flue pipes and assemble between terminal (L) and vertical adaptor (B) making sure that both inner and outer pipes are sealed properly.

NOTE: Maximum vertical height with no bends is 4m.

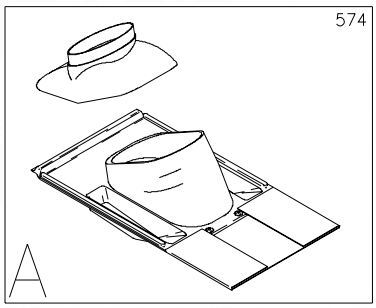
— Tighten up clamp using screws provided (H).

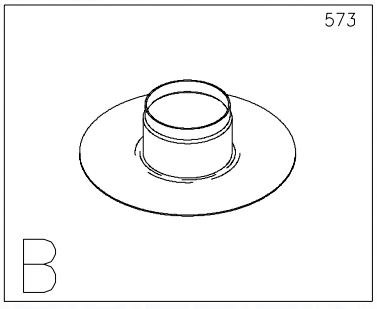
Note: Should it be necessary to cut the flue, always cut equal amounts from both inner and outer pipes.

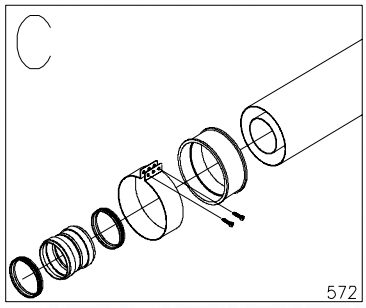


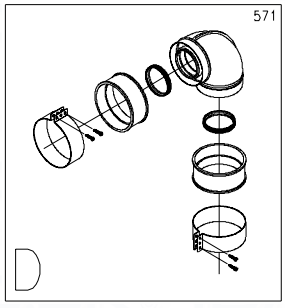
For each 90° flue bend fitted, reduce overall flue height by 1 m.
For each 45° flue bend fitted, reduce overall flue height by 1/2 m.

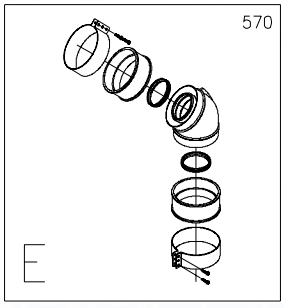
	Vertical flue kit	885116
	Flue accessory	**Cat. No.**
A	**Pitched roof flashing**	**885120**
B	**Flat roof flashing**	**885121**
C	**Flue extension kit**	**885117**
D	**90° bend kit**	**885118**
E	**45° bend kit**	**885119**







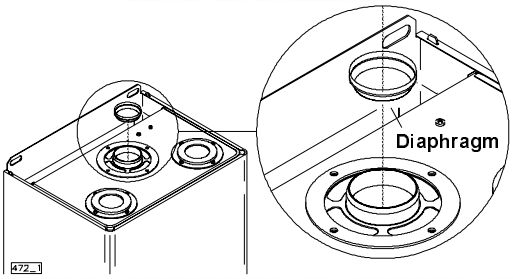


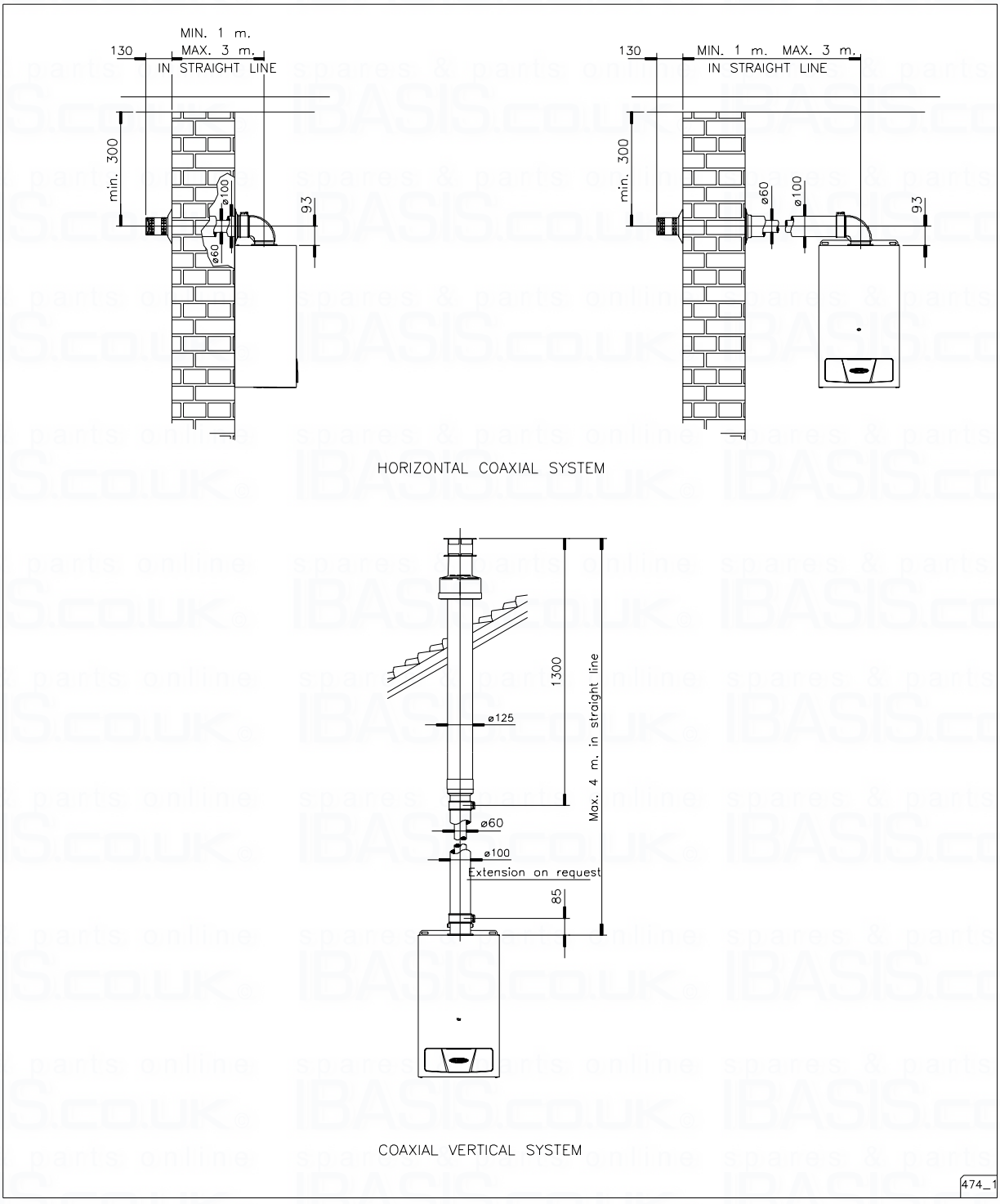


Flue configuration

ATTENTION

If coaxial system would have a total length lower than 2 linear meters (n°1 additional bend = 0.5 linear meters), it will be necessary to install the diaphragm supplied with the gas boiler, as indicated in the figure besides





Electrical connection

It is important that the mains supply is wired with correct polarity: brown to LIVE, blue to NEUTRAL.

Warning: This boiler must be earthed.

All system components must be of an approved type.

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

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

A fused three pin plug and shuttered socket outlet may be used instead of the fused spur box, provided that:

a) They are not used in a room containing a bath or shower.

b) Both the plug and socket comply with the current issue of BS1363.

The mains electrical supply must be maintained at all times in order to provide domestic hot water.

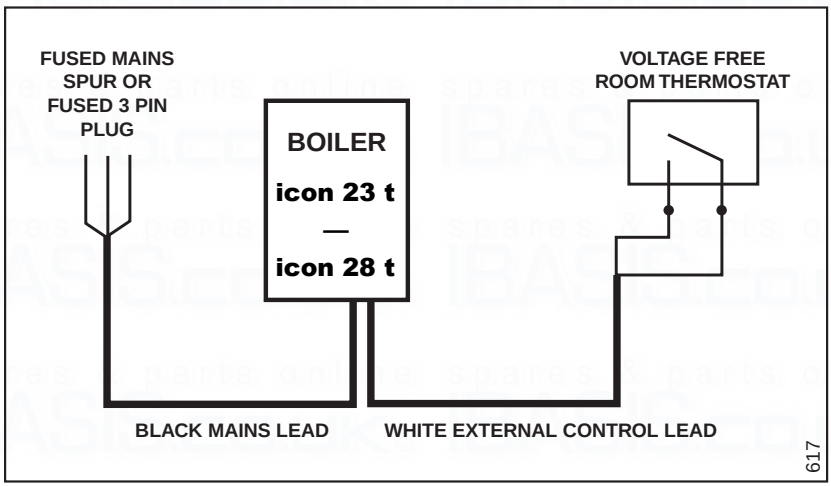
DO NOT INTERRUPT THE MAINS SUPPLY TO THE BOILER WITH A TIME SWITCH OR PROGRAMMER.

The **icon 23 t** and **icon 28 t** are delivered with an integral mains supply lead AND an integral external controls lead.

EXTERNAL CONTROLS

The boiler will work for heating **AS DELIVERED** without a room thermostat fitted provided the two wires on the integral external controls lead **REMAIN LINKED TOGETHER** (as supplied).

If a room thermostat is required, it must be connected to the external controls lead as shown below, using a suitable electrical connection.



ANY ROOM THERMOSTAT MUST BE OF THE VOLTAGE FREE TYPE.

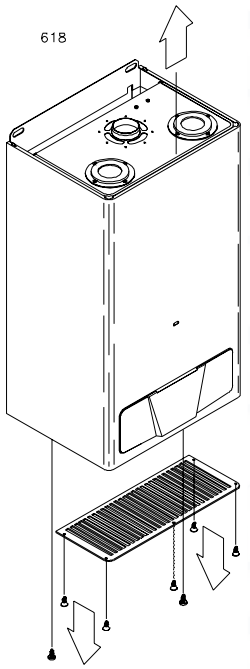
Note: For further information, see The Building Regulations 1991 – Conservation of fuel and power – 1995 edition – Appendix G, table 4b.

ON NO ACCOUNT MUST ANY ELECTRICAL VOLTAGE BE APPLIED TO EITHER OF THE TERMINALS OF THE WHITE EXTERNAL CONTROLS LEAD

WARNING: This boiler must be wired in accordance with these instructions. Any fault arising from incorrect wiring may invalidate the terms of the guarantee.

Commissioning

The commissioning and first firing of the boiler must only be carried out by a competent person.



ACCESS FOR ADJUSTMENT

1. Remove the lower grille, remove two screws securing outer casing. Remove casing by lifting up and forwards.
2. Unscrew 6 screws securing inner casing and remove casing.
3. After commissioning, replace all items in reverse order to removal.

GAS INSTALLATION

It is recommended that any air is purged from the supply at the gas inlet test point on the gas valve, see diagram below.

FILLING THE SYSTEM

— Open isolating valves (see “Boiler connections”, items A, B and D) and cap on automatic air vent inside sealed chamber.

— Fill system by opening system filling loop until a pressure of between 1 and 2 bar is shown on the boiler pressure gauge.

— Bleed each radiator until a continuous jet of water is obtained.

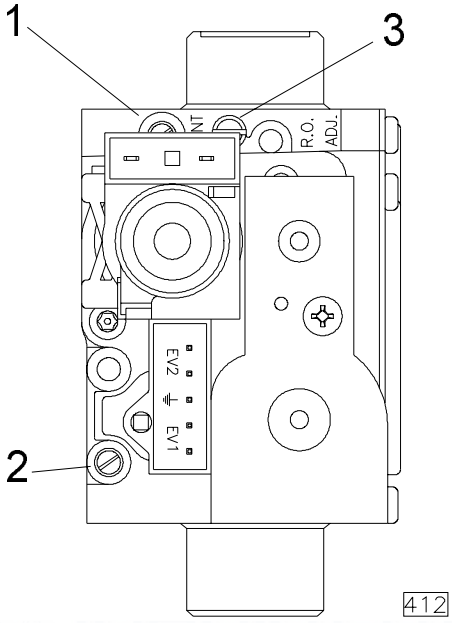
— Do not close automatic air vent cap.

— Open various hot water taps to bleed system.

— Make sure that pressure gauge reads between 1 and 2 bar. Re-pressure as necessary.

Important: When venting air from boiler, do not touch the schrader valve on the expansion vessel, it is NOT a vent.

1 Outlet test point
2 Inlet test point
3 Vent



STARTING THE BOILER

Before starting the boiler check that:

— The gas meter tap is open.

— The boiler gas service cock is open.

— The water isolating cocks are open.

— The boiler is connected to the electrical supply.

FIRST STARTING UP

— Set boiler to run in central heating as described in 'Users Instructions'.

— Set heating temperature control to maximum temperature and check that any external controls, if fitted, are calling for heat.

— Allow the temperature to rise to the maximum value, with all radiator valves open. The temperature rise will cause release of the gases contained in the water of central heating system.

- Gases driven towards the boiler will be automatically released through the automatic air vent.
- The gases trapped at the highest point of the system must be released by bleeding the radiators.

— On reaching maximum temperature, the boiler should be **turned off** and the system drained as rapidly as possible whilst still hot.

— Refill system to a pressure of 1 bar and vent as before.

— Restart boiler and operate until a maximum temperature is reached. Shut down boiler and vent heating system. If necessary, top up heating system and make sure that a pressure of 1 bar is indicated on the pressure gauge when system is COLD.

GAS PRESSURES

— Shut down boiler.

— Undo screw on gas inlet test point '2' on gas valve.

— Connect a suitable pressure gauge.

— Start boiler as described in "Users Instructions".

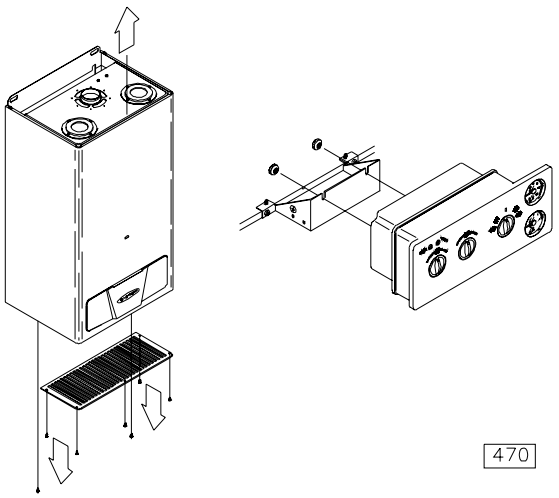
— Check that there is a constant pressure of 20 mbar. If the pressure is insufficient, it is necessary to check the gas supply/pipework and correct any fault.

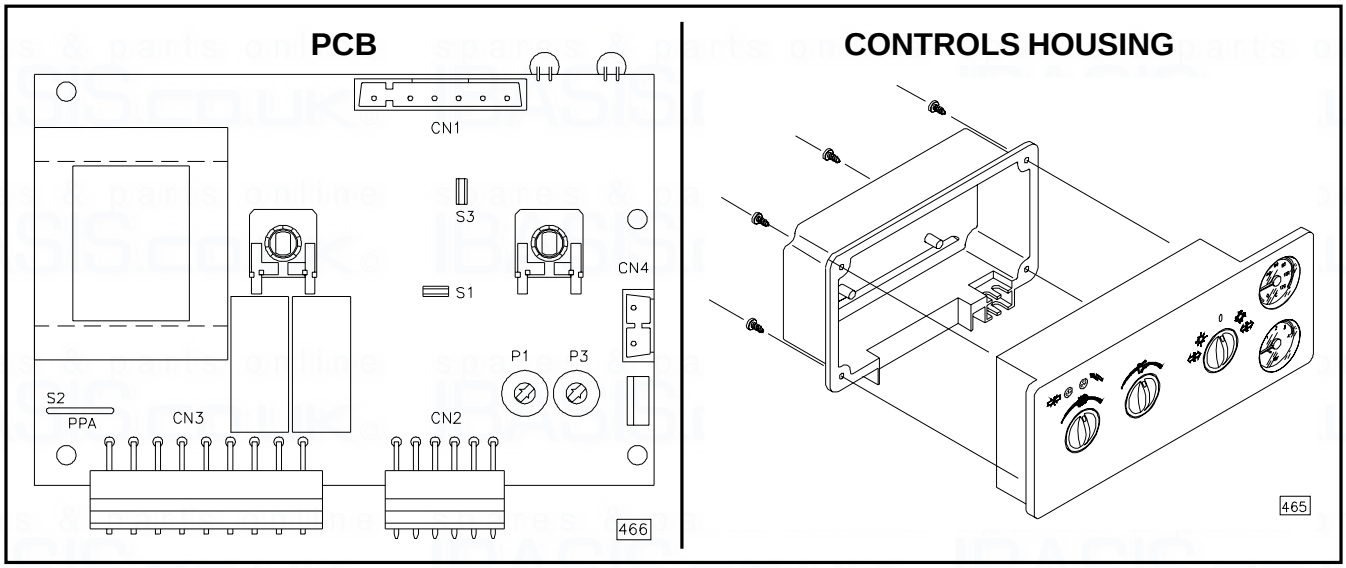
— Shut down boiler.

— Remove pressure gauge, tighten up test point screw and check for gas soundness.

ACCESS FOR ADJUSTMENT

1. Remove the lower grille, remove two screws securing outer casing. Remove casing by lifting up and forwards.
2. Unscrew 6 screws securing inner casing and remove casing.
3. Loosen, but do not remove, the two knurled nuts securing controls housing to boiler (behind control panel).
4. Lift controls housing from bracket and remove rear cover.
5. After commissioning, replace all items in reverse order to removal.





SETTING THE CENTRAL HEATING OUTPUT

The central heating output must be set in accordance with the system requirements. To adjust the burner pressure, proceed as follows, referring to the tables listed in 'Technical Data':

— Gain access to the PCB, see diagram above.

— Set the "summer/winter" switch to the "winter" position

— Light the burner and check the gas pressure

— Adjust the pressure using potentiometer P1 on the PCB.

— Refit cover to controls housing.

DOMESTIC HOT WATER FLOW ADJUSTMENT

The domestic hot water flow rate is factory set. However, after installation, it may be necessary to adjust the domestic hot water flow rate, proceed as follows:

— Fully open a domestic hot water tap.

— Using a suitable water flow gauge, adjust water flow by turning the adjuster screw on the water valve (item G, page 27)

— Nominal water flow rate is 9.6 l/min.

Safety devices

OVERHEAT SAFETY

In the event of problem, the overheat safety device causes safety shutdown of the boiler. In the event of this, the lockout warning light will illuminate. To clear this, turn the summer/winter switch fully to the right or left as appropriate. This resets the boiler.

Gas valve setting

All boilers are tested and factory set during manufacture. Should it be necessary to reset a gas valve, for example after replacement, proceed as follows:

MAX/MIN. DOMESTIC HOT WATER OUTPUT ADJUSTMENT

Check that the Inlet pressure is correct for the type of gas being used.

— Set “Summer/Winter” switch to “Summer” position.

— Open the domestic hot water tap fully, wait for 10 seconds and check gas burner pressure on test point ‘1’, refer to “Technical data”

To adjust the settings, proceed as follows:

— Verify that the modulation coil is energised

— Remove protection cap (C).

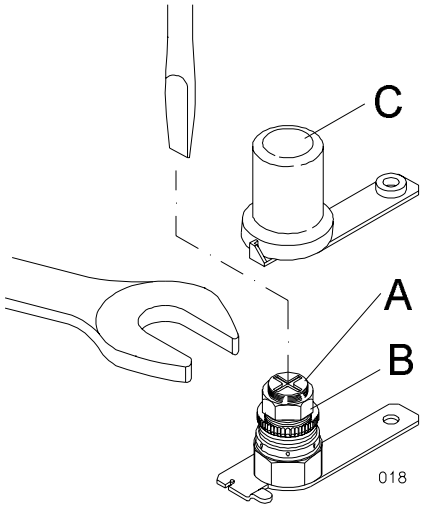
— Set maximum pressure by turning knob (B) with 10 mm spanner. Clockwise to increase, anti-clockwise to decrease.

— Remove electrical connector on modulation coil.

— Keeping knob (B) locked, adjust minimum pressure unscrewing screw (A) very slowly, using a 4 mm spanner

— Refit electrical connector and check settings.

— Lock the adjustement device after any setting operation.



Adjustments

SLOW OPENING REGULATION

Should ignition of the burner be noisy, it will be necessary to adjust the slow opening setting of the gas valve. This adjustment is made on the PCB.

To adjust the slow opening, proceed as follows:

— Switch off the boiler and isolate from the mains supply.

— Remove control housing cover as described previously.

— Remove jumper S1

— Connect a suitable pressure gauge to the gas valve outlet test point ‘I’

— Switch on the boiler and open an hot water tap, the burner will ignite. The gas pressures should be as follows:

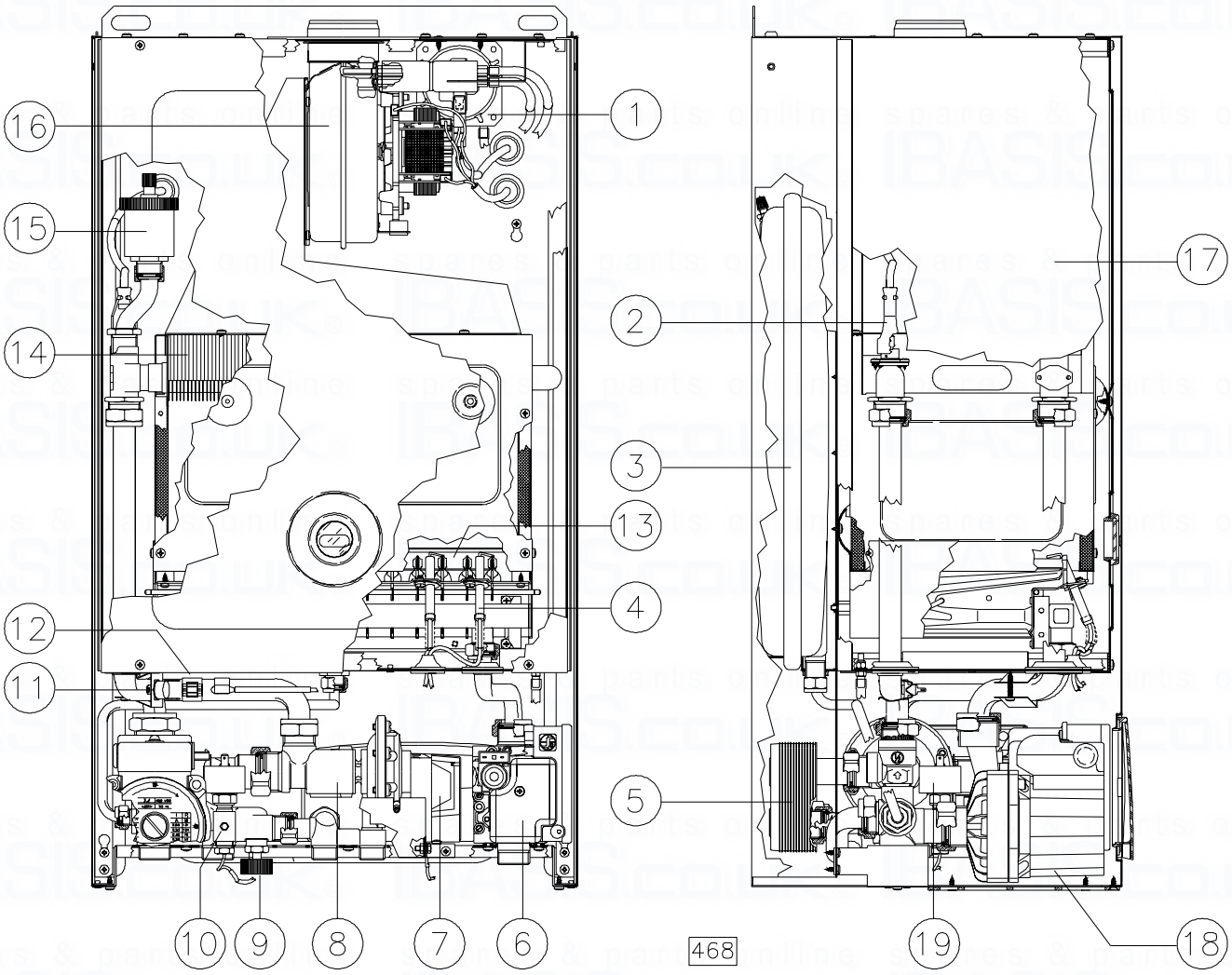
- NATURAL GAS= 3 mbar (30 mm w.g.)

— Turn potentiometer P3 (clockwise to increase pressure and counterclockwise to decrease pressure) until the required value is obtained.

— Refit jumper S1.

spares & parts online IBASIS.CO.UK®

Boiler schematic



1 Air pressure switch
2 Overheat thermostat
3 Expansion vessel
4 Ignition and flame sense electrodes
5 Domestic heat exchanger
6 Gas valve
7 Water valve
8 Hydraulic 3-way valve
9 N/A
10 Drain valve
11 N/A
12 Thermistor
13 Burner
14 Primary heat exchanger
15 Automatic air vent
16 Fan
17 Sealed chamber
18 Pump
19 Loss of water pressure switch

spares & parts online IBASIS.CO.UK®

Servicing instructions

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

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

Routine cleaning and inspection

— Operate boiler and check for any faults that need to be put right.

— Isolate boiler from the gas and electrical supplies.

— On completion check all gas carrying parts for soundness with leak detection fluid.

— Remove boiler casing as follows:

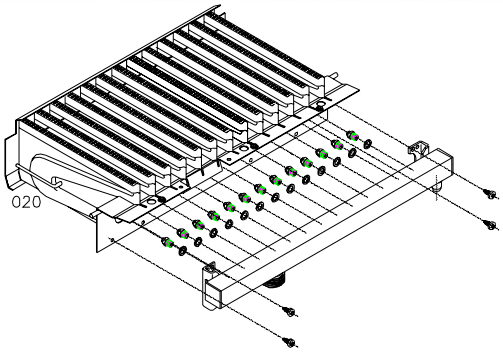
OUTER CASING

Remove the lower grille, remove two screws securing outer casing. Remove casing by lifting up and forwards.

COMBUSTION CHAMBER

— Unscrew and remove 6 screws securing sealed chamber cover to boiler. Pull cover forward and off boiler.

BURNER



— Undo main gas supply nut from burner.

— Pull main burner forward, pull off the ignition and flame sense leads from the electrodes and remove burner from boiler.

Note: *The washer between main burner and main burner gas supply must be kept for use on reassembly.*

— Remove ignition and flame sense electrodes from burner.

— Unscrew and remove four injector bar retaining screws and separate injector bar from burner.

— Examine and clean injectors as necessary.

Note: *DO NOT use a wire or sharp instrument on the holes.*

HEAT EXCHANGER

— Locate the heat exchanger inside the sealed chamber.

— Gain acces to heat exchanger by removing fan and flue hood.

— Examine heat exchanger for any blockages or build up of deposits.

— Clean heat exchanger with soft brush or vacuum cleaner.

REASSEMBLY OF PARTS REMOVED FOR SERVICING

All parts are replaced in reverse order to removal.

FLUE SYSTEM

— Check externally to make sure that flue is not blocked

— Inspect flue system to make sure that all fittings are secure.

OPERATION OF FAN

— Switch on electrical supply and turn on gas.

— Set selector switch to “Winter” position.

— Light burner by operating external controls (if fitted) to call for heat.

— Do not light the boiler without the sealed chamber cover fitted

— Check that fan operates when burner light and stops when it goes out.

Replacement of parts

TO REPLACE FAN

— Slide flue sensing probe insulating boot away from fan.

— Pull off both red and white sensing probe tubes.

— Disconnect power supply and earth leads to fan.

— Slacken, but do not remove, two screws securing fan to rear of flue hood.

— Supporting fan, unscrew and remove two screws securing fan to front of flue hood.

— Lower fan from top of boiler then tilt base of fan to right hand side. Gently ease fan forwards and out of boiler.

— Transfer flue sensing probe assembly onto replacement fan.

— Fit replacement fan in reverse order to removal.

Note: Ensure white air sensing tube is connected to upper probe and red tube to lower probe.

TO REPLACE AIR PRESSURE SWITCH

— Locate air pressure switch in upper right hand corner of sealed chamber.

— Pull off plastic tubes from base of switch.

— Remove electrical connections from switch.

— Unscrew and remove two screws securing switch to upper panel and remove switch.

— Fit electrical connections to replacement switch as follows:

NO - RED
NC - BLACK
C - BLUE

— Fit replacement switch in reverse order to removal.

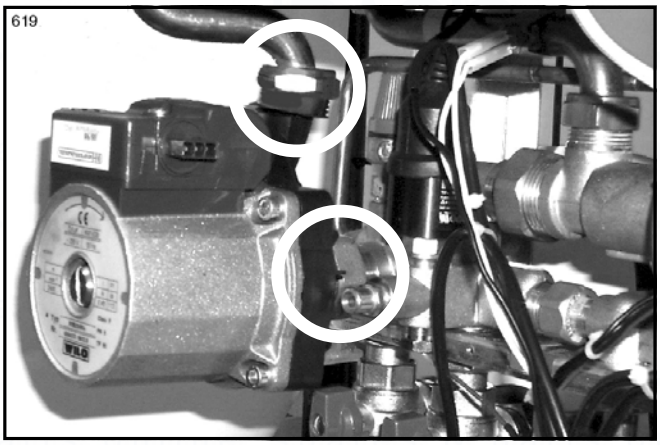
Important: Refit red tube to right hand connector and white tube to left hand connector.

TO REPLACE PUMP

— Drain down heating circuit only of boiler as follows:

— From below boiler, close isolating valves on flow and return connections to boiler.

— Open boiler drain valve to right of pump.



Note: It is not necessary to drain down entire heating circuit to carry out this work.

— Unscrew, but do not remove, knurled nuts at rear of controls housing and lift housing off bracket and clear of pump.

— Pull off electrical connection to pump.

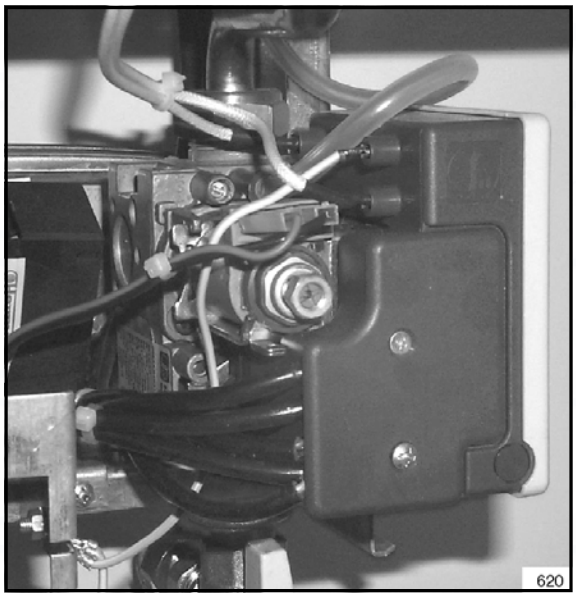
— Supporting pump, unscrew pump connection nuts at top and rear of pump. Remove pump by lifting forward and out of boiler.

— Fit replacement pump in reverse order to removal.

— Open isolating valves on flow and return connections,

— Refill, vent and pressurise boiler. Check for leaks.

TO REPLACE GAS VALVE



— Isolate boiler from gas supply.

— Remove controls housing as described in ‘To replace pump”.

— Remove clear plastic sensing pipe from gas valve.

— Unscrew and remove upper screw holding gas valve ignition box onto gas valve body.

— Carefully pull off ignition box, leaving electrical wiring connected, and move clear of gas valve.

— Remove electrical connections to gas valve modulating coil.

— Disconnect gas inlet cock from boiler.

— Undo nuts on gas valve to burner supply pipe and swing pipe clear of gas valve.

— Unscrew and remove two screws securing gas valve to boiler lower frame.

— Fit replacement gas valve in reverse order to removal.

Note: *When refitting electrical connections to gas valve modulating coil, the polarity is not important.*

TO REPLACE DOMESTIC HEAT EXCHANGER

— Drain down heating circuit of boiler as described previously.

— Drain down hot water circuit of boiler as follows:

— From below boiler, close cold water inlet isolating valve.

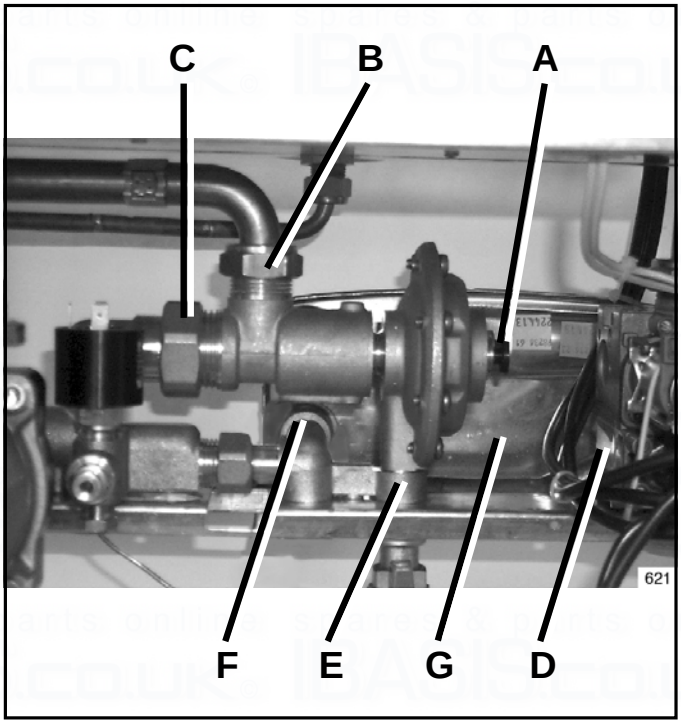
— Open a hot tap to drain hot water circuit.

— Remove clip (A) and pull off microswitch assembly

— Undo connections (B), (C), (D) and (F) on 3 way valve

— Grasp 3 way valve and lift upwards releasing 'O' ring joint (E)

— Remove 3 way valve and domestic heat exchanger assembly from boiler.



Important: Take care not to drip water into pub housing when removing assembly.

— Fit replacement heat exchanger in reverse order to removal.

— Open isolating valves on flow and return connections, refill, vent and pressurise boiler. Check for leaks.

— Open cold water isolating valve. Check for leaks.

TO REPLACE THERMISTOR

— Locate thermistor clipped onto flow pipe behind pump.

— Pull off clip from flow pipe.

— Remove electrical connections from thermistor.

— Fit replacement thermistor in reverse order to removal.

Note: *1) No heat sink compound is required.*

2) The polarity of the connections is not important.

TO REPLACE OVERHEAT THERMOSTAT

— Locate overheat thermostat on left hand side of main heat exchanger at rear.

— Remove electrical connections from overheat thermostat.

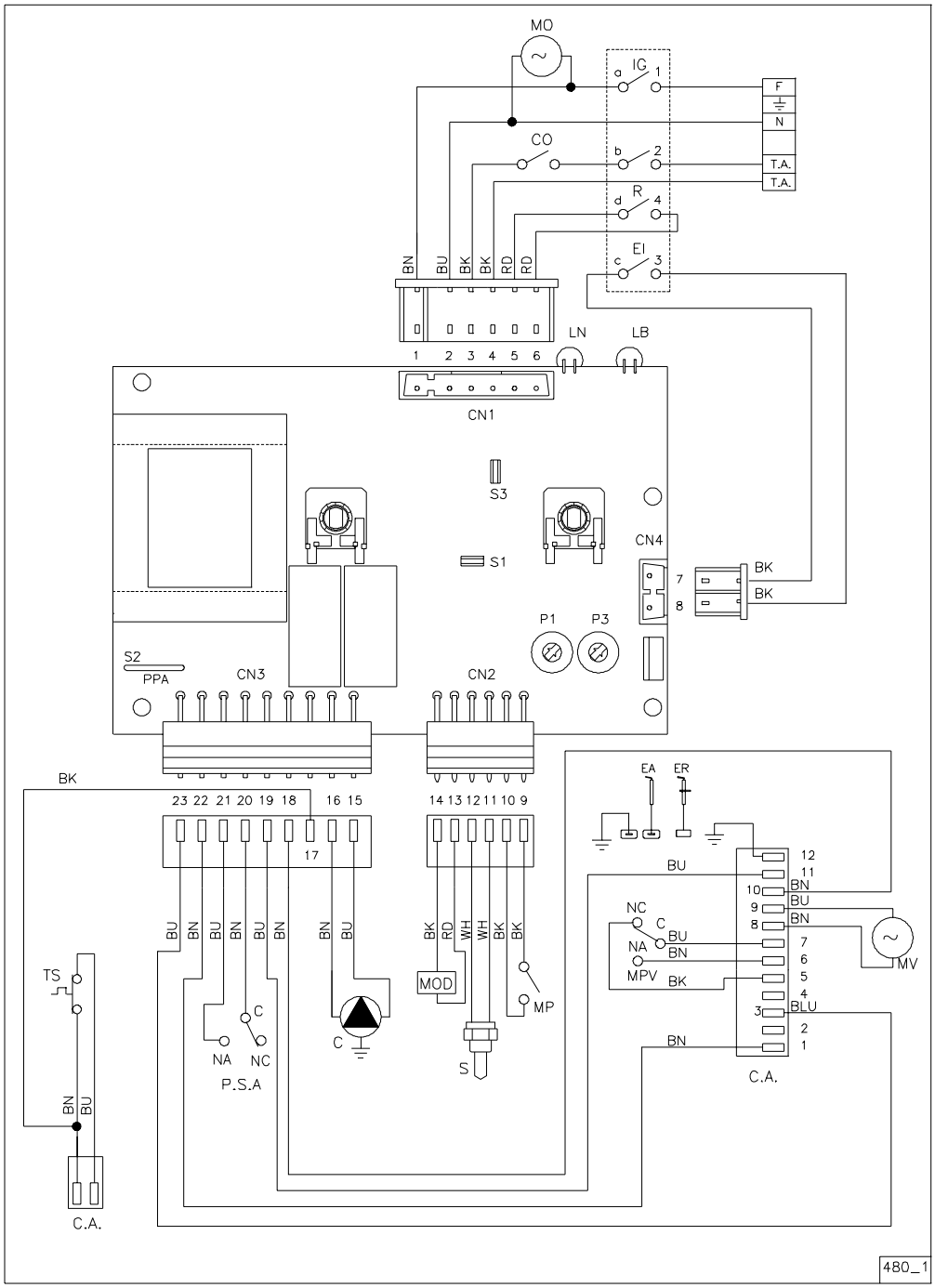
— Unscrew and remove two screws securing overheat thermostat to heat exchanger.

— Fit replacement overheat thermostat in reverse order to removal.

Note: *1) No heat sink compound is required.*

2) The polarity of the connections is not important.

Schematic wiring diagram



Colours abbreviations:

BK	Black
BN	Brown
BU	Blue
GN	Green
GNYE	Green-Yellow
GY	Grey
OG	Orange
RD	Red
VT	Violet
WH	White

IG	Mains switch
C	Pump
E/I	Summer/winter selector
PSA	Loss of water pressure switch
MOD	Modulating coil
S	Thermistor
MP	Water valve microswitch
CA	Ignition and flame control unit
EA	Ignition electrodes

ER	Flame sense electrode
LN	Mains lamp
TS	Overheat thermostat
R	Lockout reset switch
LB	Lockout warning light
MV	Fan
MPV	Air pressure switch
MO	Timeclock
CO	Timeclock microswitch

SUPPORTED BY



02/2000 COD. 982160005 / REV. 06