HANDBOOK
AND SERVICE LOG

WALLSTAR

25/19 COMBI

☐

Your Boiler Serial Number is:

to be found on the Burner Cover.

benchmark

The code of practice for the installation, commissioning, and servicing of oil central heating.

CONTENTS

CONTACTS

- **TEL No:** 01953 455400
- **FREEPHONE No:** 0800 0282529
- **FAX No:** 01953 454483
- **E-MAIL:** sales@hrmboilers.co.uk technical@hrmboilers.co.uk

Dear Householder

Thank you, for selecting a boiler from HRM. Your boiler is the culmination of years of experience in the development, testing and manufacture of oil fired equipment.

Our boilers are independently tested and comply with the latest European Boiler Efficiency Directive; our quality assurance procedures are also approved and comply with the International Standard, ISO9000.

Each boiler is manufactured and tested with care by a member of our production team; you will find their name inside the boiler casing.

Your boiler will provide you with a long and trouble free service life provided that a few essential steps are addressed. Please take the time to read the "householder information" section of this handbook.

In the unlikely event of a fault, please contact your installer who should be able to identify the cause of the problem, if appropriate your installer will contact us.

Hedley Mickleburgh

Hedley Mickleburgh
Chief Executive

HOUSEHOLDER INFORMATION

IMPORTANT!

Your boiler must be commissioned, in order to:

- validate your warranty.
- ensure the boiler has been installed correctly and avoid premature failure.
- set the boiler to its optimum efficiency. Operating conditions for the boiler will vary from site to site, your commissioning engineer has specialised equipment to check the oil pressure and analyse the exhaust gases for "temperature", "smoke" and "CO2" content.

Your installer will organise commissioning of your boiler. Should you experience any difficulty locating an engineer our service department may be able to provide you with the name of an engineer in your area.

"Benchmark" Installation, Commissioning and Service Record Log Book

Please ensure that your installer has completed all sections of the log book. The details in the log book will be required in the event of any warranty work. Ensure that the service record is completed.

WARRANTY

Your HRM boiler is under warranty for 2 years from the date of installation.

Warranty conditions

- The boiler must be installed and commissioned in accordance with our handbook.
- The boiler must not be repaired, modified or tampered with by any person not authorised by HRM.

EXTENDED WARRANTY

The **"Benchmark" and warranty registration document inside the rear cover** should be completed as appropriate by your installer / engineer, this is your record that the boiler has been correctly installed in accordance with our recommendations. Return the copy to HRM in order to qualify for a **further 3 years warranty** of the heat exchanger **- a total of 5 years.**

Extended warranty conditions

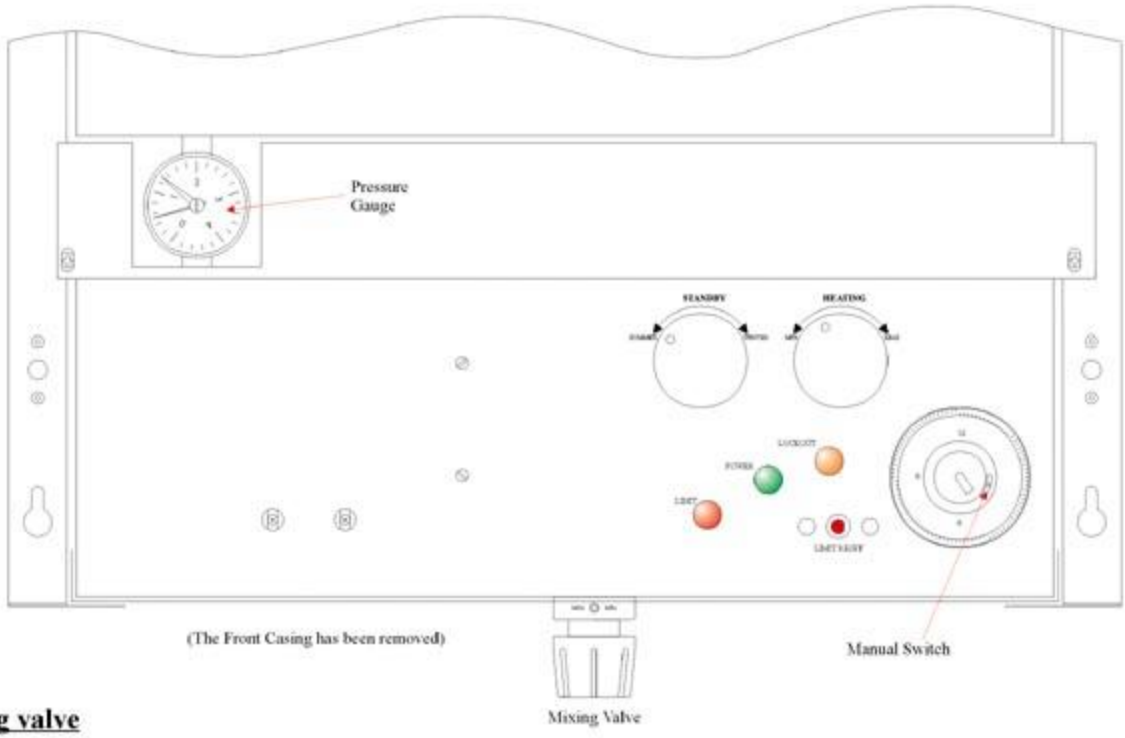
- The boiler must be serviced annually and maintained in accordance with the handbook. A "Benchmark" service log is located on the inside rear cover of this book.
- This warranty is in addition to your statutory and other legal rights.

AFTER SALES SERVICE

- If your boiler fails during the warranty period contact your installer, who will be able to identify the cause of the problem. If appropriate, your installer will contact us.
- Under no circumstances should "in warranty" work be undertaken without authorisation from our service department.
- If you are unable to contact your installer please contact our service department.

BOILER CONTROLS

Control panel



Mixing valve

The mixing valve can be adjusted to set the maximum temperature of the hot water produced. The valve is graduated between 1 to 5, the greater the number the hotter the water.

WARNING too high a setting may cause scalding!

Standby thermostat

This thermostat maintains the temperature of the boiler for the production of hot water. Set to "summer" when incoming mains water is warmer and "winter" when the incoming mains is colder.

Heating thermostat

The heating thermostat regulates the temperature of the water supplied to the central heating system. To achieve the heating system performance indicated by 'max' setting, the standby thermostat should be set to the 'winter' position.

Note. The heating function is interrupted whenever there is a demand for domestic hot water.

Boiler overheat (limit) thermostat

If the boiler overheats, the limit thermostat trips. This will illuminate the red neon and cut the power supply to the boiler. Allow the boiler to cool then press the "limit reset" button.

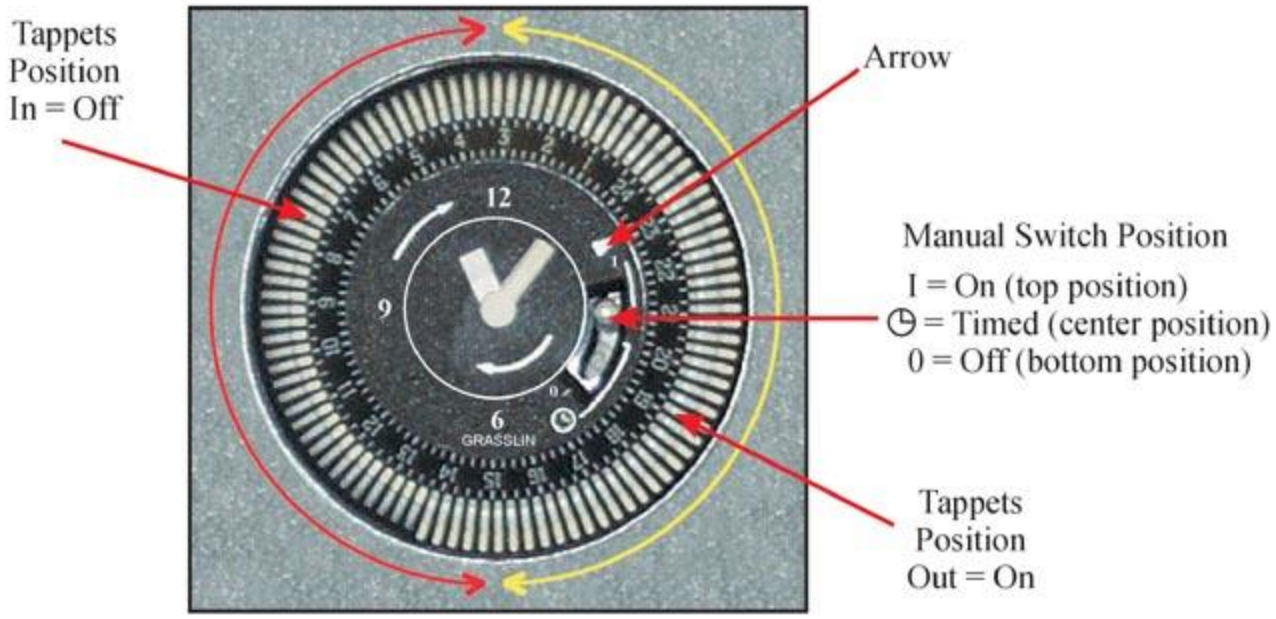
IMPORTANT - If overheating occurs, other than very occasionally, consult your installation engineer, as there may be a fault with the central heating system.

Note. Loss of system pressure may cause the overheat thermostat to trip; refer to the pressure gauge section below.

Pressure gauge

The heating system should be pressurised to approximately 1 bar when cold. Check the pressure occasionally, as loss of pressure may cause the boiler to overheat. ***Please refer to page 20 for instructions on pressurising the system.***

Time clock programming guide



Setting up

The outer dial should be set to the current time. Rotate the dial slowly in a clockwise direction, until the correct hour is approaching the arrow printed on the dial.

Manual switch operation

The manual switch will provide On / Timed / Off control, thereby allowing manual control of the heating without disrupting the timed (tappet) settings.

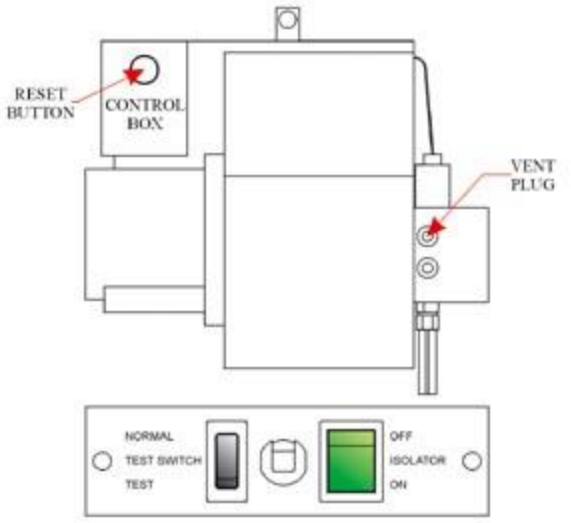
Programming switching times

One tappet is equal to 15 minutes. Set the number of tappets to the outer edge of the dial, equal to the duration of time the heating is required to be switched on.

Power neon (green)

The neon is illuminated when the mains supply to the boiler is switched on.

Burner lockout



The burner is equipped with a flame failure safety device. When activated the reset button on the burner control box and the amber "lockout" neon on the control panel are illuminated. Refer to the fault finding section of the handbook to identify possible causes.

Test and isolation switches (located below the burner)

The test switch should be set to the "normal" position. The "test" position allows your engineer to test the burner and central heating, bypassing the time clock / programmer settings.

The isolation switch cuts the power supply to the burner.

Oil delivery

Switch the boiler off during an oil delivery; wait for a short period before switching the boiler back on to allow any sediment in the bottom of the tank to settle.

Maintenance

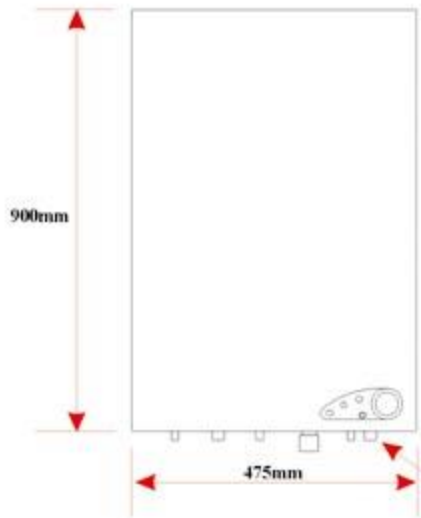
Your boiler should be serviced annually. Failure to have this done will invalidate your warranty and also lead to inconvenient breakdowns. A "Benchmark" service log is provided on the inside of the rear cover.

If you have difficulty in locating a service engineer, please contact our service department who may be able to provide you with the name of an engineer in your area.

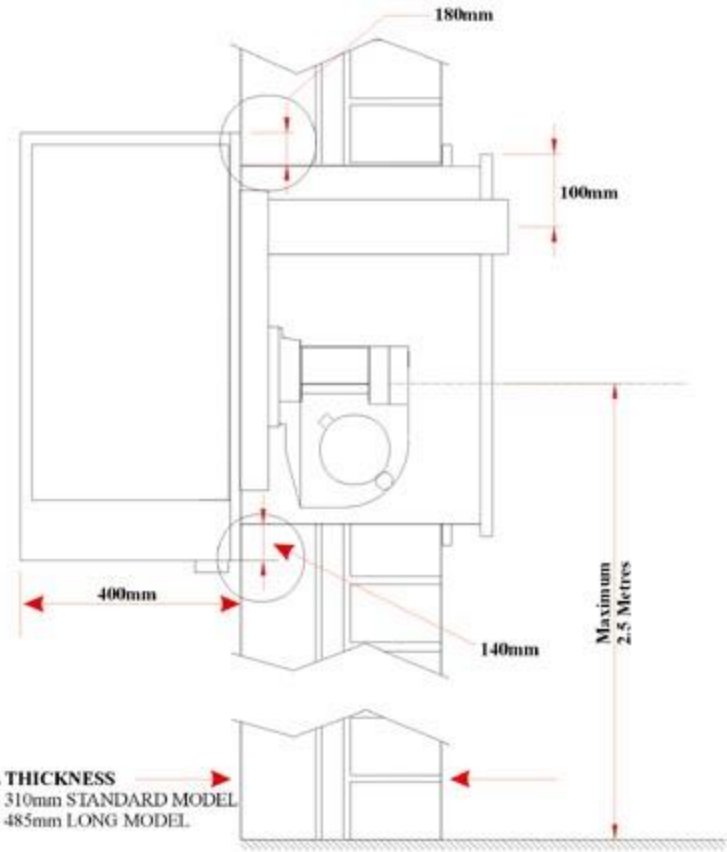
TECHNICAL SPECIFICATIONS

BOILER DIMENSIONS

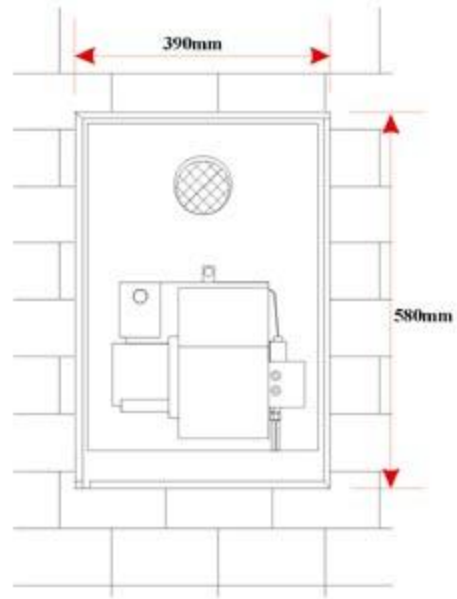
Internal view



Cross-sectional view



External view



EXTENSION KIT PART NUMBERS

MODEL	50mm

CLEARANCE FOR SERVICE ACCESS

ALLOW 150MM BELOW AND 50MM ABOVE THE WHITE CASING
FOR SERVICE ACCESS

TECHNICAL SPECIFICATIONS

Output (Heating)	**19kW**
Output (DHW)	**25kW**
Hot water flow rate	**@35° C Rise = 10.5 Litres**
Heating system requirements	Sealed systems only
Maximum operating pressure	3bar (43.5psi) static head 30.59 metres (100 feet)
Operating temperature	60° C to 82° C Maximum
Resistance to water flow	@ 10° C temperature rise across the boiler = 48mm W.G.
Thermostats	Heating thermostat range = 60-82° C
	Standby thermostat range = 60-82° C
Limit thermostat, manual reset	110-6° C
Electricity supply	230V single phase 50Hz, fused 5amp
Burner	Sterling 40
Fuel	Class C2 (28 second kerosene)
Oil supply connection	10mm compression
Weight empty	82Kg
Water capacity	32.5 Litres
Maximum cold water pressure	5 bar
Minimum cold water pressure	1.5 bar
Expansion vessel capacity	12 Litres
Expansion vessel pressure	1 bar
Safety relief valve	3 bar
External fuse	5 amp
Power supply	220/240V 50Hz
Power consumption	240W (approx)

BURNER SETTINGS

Output	Btu/h = 86,665.
	kW = 25.4
Nozzle	Danfoss 0.75x80° EH
Oil Pressure	BAR = 8.6
	PSI = 125
Firing Rate	Kg/hr = 2.32
	Litres/hr = 2.94
Air Setting	Scale = 11.5
Smoke No	Bacharach Scale = 0
CO	% = 13
Flue Gas Temperature	Less Ambient ° C = 165
SEDBUK	Band = C
	Rating = 82.7%
Efficiency Nett	B.E.D. Test = 91.3%

BOILER INSTALLATION

REGULATIONS

The installation of oil fired boilers must comply with the following Standards and Codes of Practice.

BS 5410 - Part 1	Oil installations up to 45kW
BS 5449	Forced circulation hot water central heating systems for domestic premises
BS 7593:1992	Treatment of water in hot water central heating systems
Building Regulations	Part L1 Part J 2002 England and Wales, Part F Scottish Regulations and Technical Booklet L Northern Ireland
BS7671: 1992	Electrical Regulations
BS 7074	Code of practice for sealed systems

BOILER SIZING

It is important to establish the correct size of boiler required. Boiler output will depend on a number of factors including:

- the preferred room temperatures
- the design winter temperature
- structural and ventilation heat losses
- domestic hot water requirements

This is a complicated calculation. We recommend you employ the services of a heating engineer, who will determine the correct size of boiler required for your property.

REFURBISHING AN OLD SYSTEM

WARNING! - BEFORE INSTALLING A NEW BOILER:

The system should be chemically cleaned to remove debris, in the form of black magnetite sludge and lime scale that accumulates in radiators and pipe work. Failure to do this will result in debris adhering to the clean surfaces of a new boiler, causing kettling or knocking noises. It also prohibits efficient heat transfer. A cleanser such as Fernox Superfloc should be added to the system 48 hours prior to changing the boiler.

SYSTEM PROTECTION

After installation

Flush the system with a cleanser such as Fernox Superfloc to remove traces of flux residues, grease, metal swarf, solder pieces and oils used during component manufacture.

After flushing

Add a corrosion inhibitor such as Fernox MB-1 this will minimize the chemical action and chemical change that takes place in the system's primary water and system components.

Note.

The manufacturer's usage instructions for chemical cleaners and inhibitors should always be followed. Please refer to BS7593 1992 for a detailed explanation of cleansing procedures.

PROTECTION OF D.H.W. HEAT EXCHANGER

We recommend that a water scale reducer is installed in areas of hard water.

BOILER LOCATION

Noise levels - consideration should be given to the following:

- small rooms will accentuate noise levels
- where a flue terminates near the boundary of an adjoining property, consideration should be given to possible noise disturbance as some people are sensitive to even low noise levels.

Roof space, bathroom and bedroom installation should only be considered where there is no alternative.

WALL CONSTRUCTION

The boiler must be installed in a suitable load bearing external wall - a lintel is not required.

For walls constructed of timber, Stramit or similar material, the structural material must support the weight of the boiler when filled with water. A stud work frame should be constructed when appropriate.

It is not necessary to construct a heat barrier around the wall duct.

Where the external cladding is of weatherboard or similar, construct a "picture frame" for the wall duct trim to seat against.

WALL THICKNESS

The standard flue Wallstar models are designed to fit through exterior walls 260-310mm thick but for walls of differing thickness it is still possible to install and benefit from a Wallstar boiler:

- For a wall below 260mm, either construct stud work on the internal face of the wall or allow the boiler to protrude externally.
- For thicker walls between 410 and 485mm a long version is available in each model. Walls that fall outside this measurement range may require a 50mm or 100mm wall duct and flue extension kit meaning the Wallstar can be fitted through walls up to 585mm (23") thick.
- The 50mm and 100mm kits can be used on all boiler models in order to extend the length of the wall duct and flue - only 1 kit is permitted per boiler.

  IMPORTANT - Be sure to measure your wall thickness before purchase!

WALL DUCT AND FLUE EXTENSION KITS

Only one extension kit per boiler is permitted.

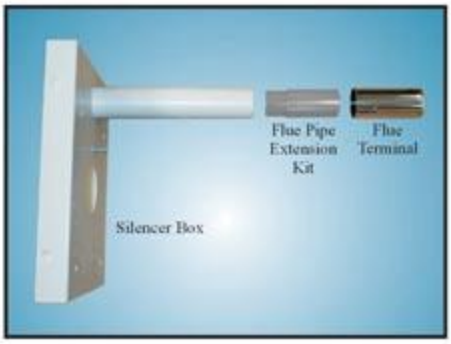
The extension kit is fitted at the wall plate / interior end of the supplied wall duct. It cannot be fitted at the access door / exterior end of the wall duct.

DESCRIPTION	SIZE	PART CODE
Wallstar 20/25 duct and flue extension	50mm (2")	20/25X50
Wallstar 20/25 duct and flue extension	100mm (4")	20/25X100

The wall duct should protrude from the outside wall by a minimum of 30mm to allow sufficient air to be drawn in by the burner.

Extending the Wall Duct

1. Remove the wall duct from the wall plate.
2. Fit the extension piece to the wall duct using the screws and nuts provided.
3. Refit the extended wall duct to the wall plate using the original screws and nuts.



Extending the Flue Pipe

1. Remove the screw holding the stainless steel flue terminalin place.
2. Pull the terminal off and replace with the flue pipe extension kit provided.
3. Refit the stainless steel terminal and secure using the original fixing method.

WALLSTAR ACCESSORIES

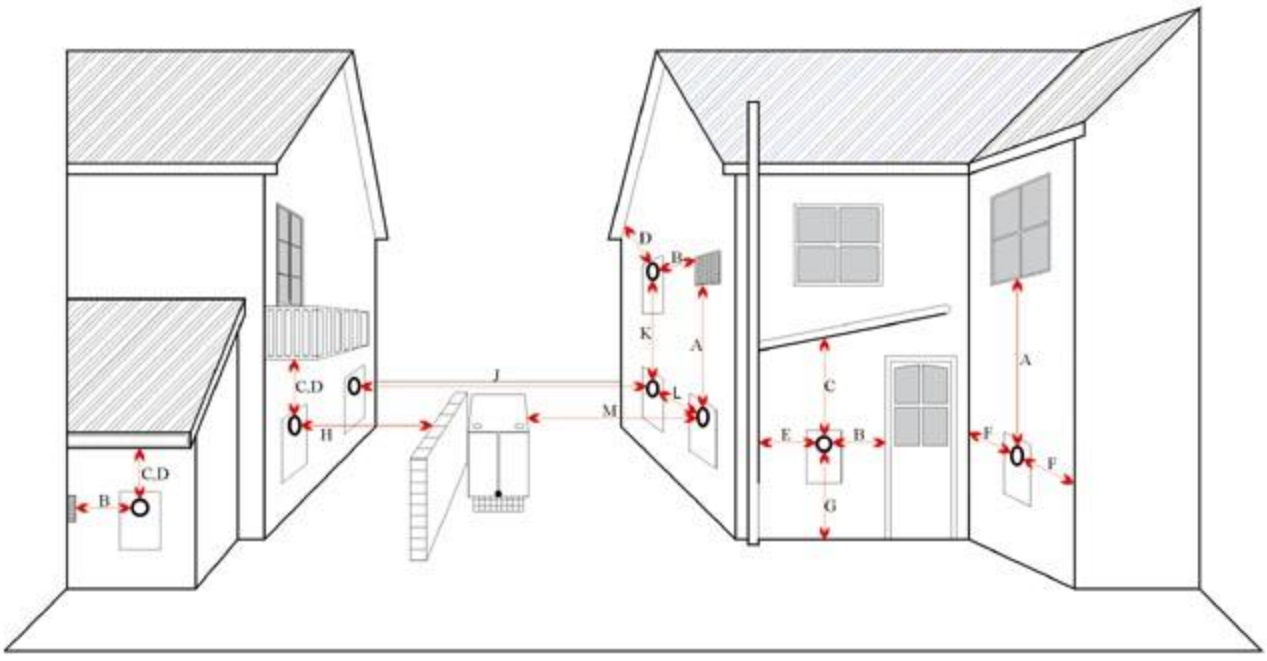
Terminal guards

It is recommended that a terminal guard is fitted in situations where the flue height is less than 2 metres. HRM's custom-made stainless steel flue terminal guard comes in one size to fit all Wallstar models and is quickly and easily installed with no drilling or screwing required.

Oil filters

Oil filters are an essential part of your fuel supply system. They can increase the life of your burner by preventing debris contained in the fuel from reaching it. To ensure that your boiler's warranty remains valid, a paper element filter must be used. The HRM oil filter comes with all the required fittings.

FLUE TERMINATING POSITIONS



A	Directly below an opening. (air brick, window, etc.)	600mm
B	Horizontally to an opening. (air brick, window, door, etc.)	600mm
C	Below a gutter, eaves or balcony with protection (note 2)	75mm
D	Below a gutter, eaves or balcony with out protection	600mm
E	From vertical sanitary pipework	300mm
F	From an internal or external corner	300mm
G	Above ground or balcony level	300mm
H	From a surface or boundary facing the terminal	600mm
J	From a terminal facing a terminal	1200mm
K	Vertical from a terminal on the same wall	1500mm
L	Horizontally from a terminal on the same wall	750mm
M	From an oil tank	1800mm

Information from BS5410: Part 1: 1997 and The Building Regulations: Approved Document J.

Notes.

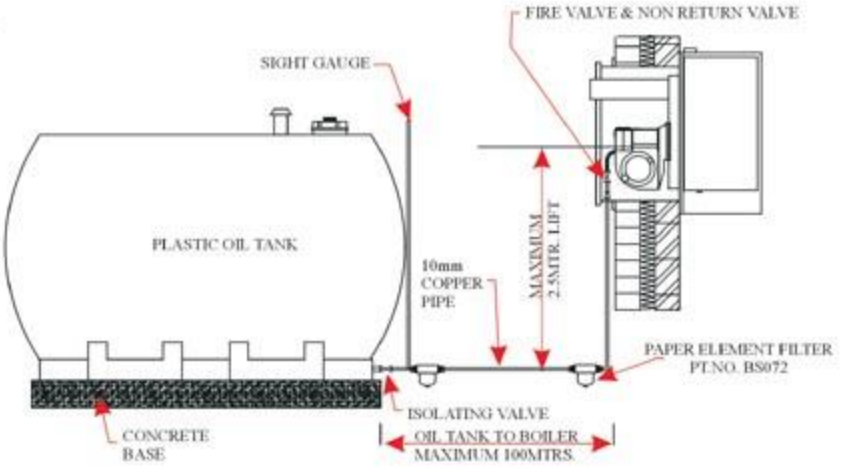
1. Terminals should be positioned so as to avoid products of combustion accumulating in stagnant pockets around the building or entering into buildings.

2. Where a flue is terminated less than 600mm away from a projection above it and the projection consists of plastics or has a combustible or painted surface, then a shield of at least 750mm should be fitted to protect these surfaces.

3. If the lowest part of the terminal is less than 2m above the ground, balcony, flat roof or other place to which any person has access, the terminal should be protected by a guard.

4. Where a flue terminates near the boundary of an adjoining property, consideration should be given to possible noise disturbance as some people are sensitive to even low noise levels.

FUEL SUPPLY SYSTEM



Oil tank

We recommend the use of plastic oil tanks as they require less maintenance than steel tanks and are longer lasting.

A bunded oil tank may be required on any environmentally sensitive site where spillage of oil could pollute rivers, ponds, or any other water courses. **Reference should be made to the: Control of Pollution (Oil Storage) Regulations 2001.**

A concrete base 100mm high is sufficient support for the tank. Alternatively use paving slabs of 42mm thickness. Ensure enough clearance is provided to allow removal of the oil filter bowl.

OIL SUPPLY

Fuel tank below the burner

The fuel pump can lift fuel to a height of 2.5 metres. A two pipe system or a deaerator (Tiger loop, 3K or similar) is not required. For heights above 2.5 metres, please consult our technical department.

Pipework

Soldered fittings should not be used, as the joints will fail in the event of fire. Flux deposits may damage the pump and fuel may deteriorate the solder within the joint. Galvanised pipe and fittings must not be used. The aggressive action of the fuel will erode the zinc and damage the fuel pump.

Keep the number of pipe joints to a minimum, form bends rather than using compression fittings.

Jointing compounds

Jointing compounds should be used with care. Excessive amounts can cause blockages, and fragments may cause failure of the fuel pump or the non-return valve. We recommend the use of a non-setting liquid pipe sealant.

Automatic isolation of the fuel supply in the event of fire

In accordance with Document J of the Building Regulations we provide "a means of automatic isolation of the fuel supply" in the form of a fusible hand wheel fire valve.

In the majority of installations fuel supply is under suction, i.e. the burner is above the oil level in the tank. For installations where the oil level is above the burner we recommend the installation of a remote acting fire valve in accordance with BS5410 Pt.1 1997.

Oil filtration

A paper element filter must be installed adjacent to the boiler (1/4" filter Pt No. BS072). Paper element filters have high filtration rates (12 microns). Gauze strainers which are commonly used, have a filtration rate of 100 microns, and do not provide the best protection for the highly toleranced components within the burner. They may also lead to the premature failure of burner components. Where a steel oil tank is installed we recommend a further paper element filter is also fitted adjacent to the oil tank.

INSTALLATION PROCEDURE

(Refer to component identification pages).

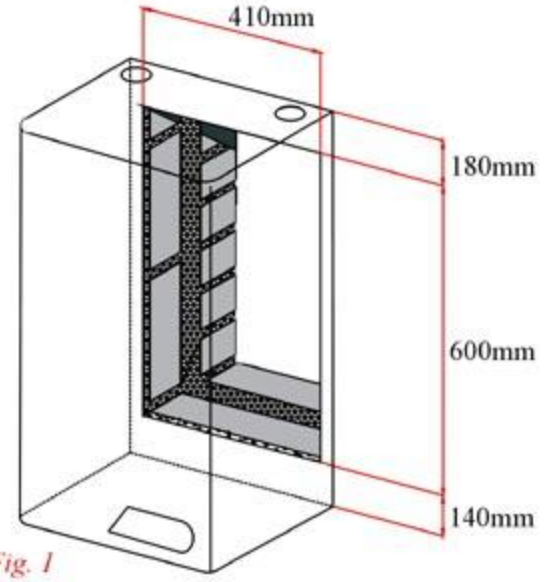


Fig. 1

1. CUT A HOLE IN THE WALL

Hole sizes stated allow for a 10mm clearance around the wall duct.

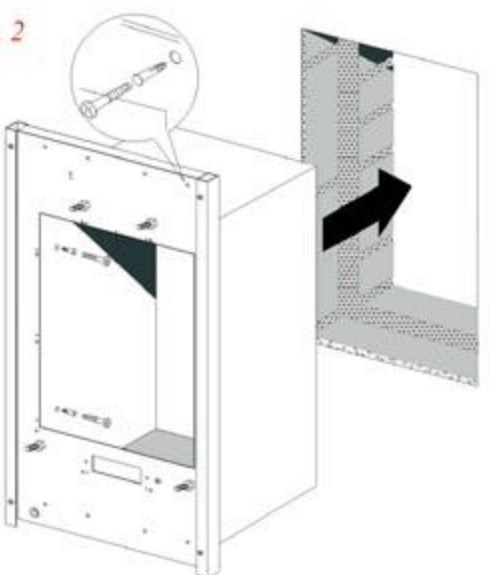
Note. Allow 150mm clearance below and 50mm above the white casing for service access.

2. WALL PLATE AND DUCT ASSEMBLY

Drill through the holes in the wall plate and wall duct, and secure the assembly to the interior wall using the eight wall plugs and screws provided. *(See Fig. 2 below and Fig. 11 at the back of this manual)*

If the wall is uneven, avoid distortion of the wall plate. Place packing behind the wall plate, ensure the rubber foam on the rear of the wall plate forms an air tight seal against the wall. Use silicone sealant to fill any gaps if necessary.

Fig. 2



3. WALL DUCT TRIM

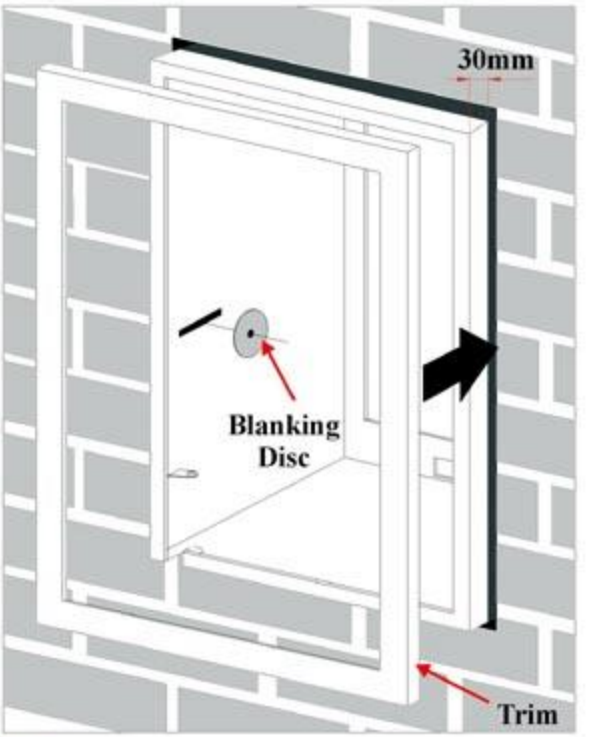


Fig. 3

Secure the trim with the blanking discs and screws provided. *(See Fig. 11 at the back of this manual)*

Do not recess the trim into the wall, as this will restrict combustion air supply.

Note. The wall duct must protrude a minimum of 30mm from the face of the wall. If it is less than this an extension kit should be fitted. *(See Page 10)*

4. HEAT EXCHANGER

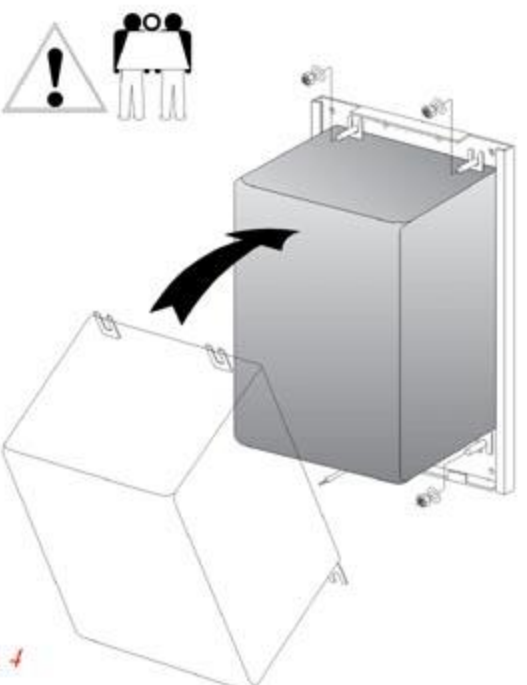


Fig. 4

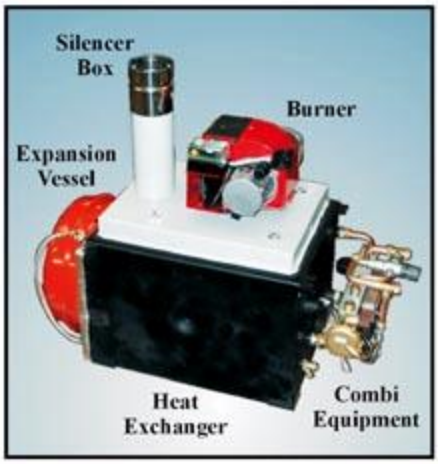


Fig. 5

Remove the components from the heat exchanger shown above, (Fig. 5).

Lift the heat exchanger into position, secure with nuts and washers provided.

Safety: The heat exchanger is heavy, two people will be required to lift it into position.

Re-assemble combi equipment/expansion vessel. *(Fig. 5).*

5. CONNECT PIPEWORK

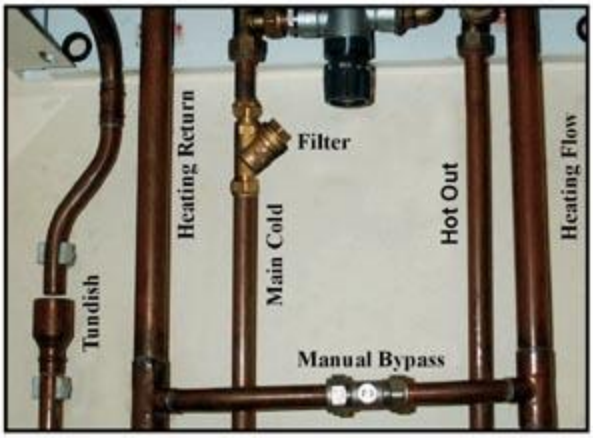


Fig. 6

Important: To allow the boiler to function correctly a manual bypass must be fitted and opened slightly.

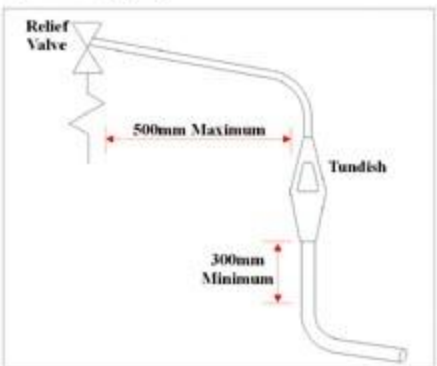


Fig. 7

Note. A Tundish must be installed in accordance with Building Regulations: G3

Filling the system

Ensure that the mixing valve is fully open and that the automatic air vent is open.

Open the filling loop valve and pressurise the system until 1 bar is showing on the gauge.

It may be necessary, initially, to repeat this operation a number of times in order to fill the system correctly.

6. FIT THE WHITE CASING AND CONTROL PANEL ASSEMBLY

The casing is supplied pre-assembled. Remove the front cover, top panel and bottom panel with control panel assembly. Locate the side panels onto the wall plate reassemble the top and bottom panels leave the control panel in the forward position.

Uncoil the three thermostat capillaries and place their phials into the appropriate pockets as shown in the diagram below.

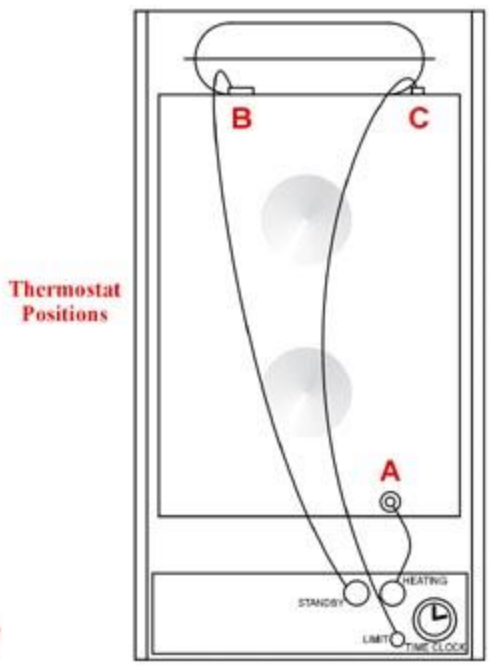


Fig. 8

7. ELECTRICAL CONNECTIONS

Mains power supply

A switched 13amp socket should be installed near the boiler. The boiler is supplied with a 13amp plug (fused at 5amps) with a 1.5 metre lead.

For concealed cable entry 20mm holes are provided in the wall plate, alternatively use plastic ducting to any corner of the wall plate. *(Fig. 10).*

The earth bonding cable can be passed through an 8mm hole, adjacent to the test switch, and secured to the 6mm stud provided in the wall duct.

Control panel connections

Feed the burner socket through the rectangular opening in the wall plate and secure the switch panel. Ensure the switch plate gasket is in position.

Connect the three-pin socket to the pump and the six-pin socket to the micro-switch. *(Fig. 10).*

Control options

IMPORTANT: Part L1 of the Building Regulations 2002 requires the installation of a room thermostat.

Integral time clock

The integral time clock controls the central heating function. The domestic hot water function is permanently on.

Installation of a room thermostat

Connect a room thermostat to terminals 5A and 6A and discard the link wire. *(Fig. 9).*

Installation of a programmable room thermostat or time clock

Connect a remote programmable room thermostat or time clock to terminals 5A and 6A discard the link wire.

The integral time clock should be switched to 'On' (position 1, see time clock programming guide). The time clock can be used to time the domestic hot water function. To achieve this, move the link wire from terminal 3A to terminal 5A and move the wire from terminal 5B to 3A. *(Fig. 9).*

Important: If the domestic hot water function is to be timed a frost protection thermostat may be required.

Note: The heating system will not function when the domestic hot water function is timed to be off.

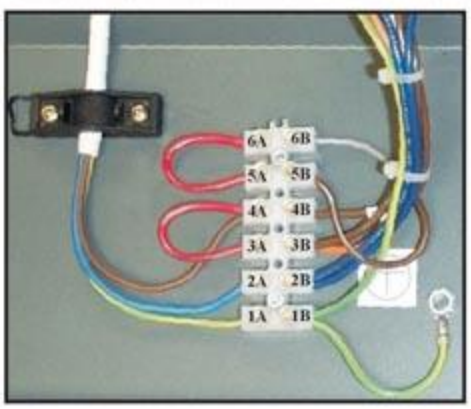


Fig. 9

8. SILENCER BOX AND BURNER

Fit the silencer box and burner. Connect the 4-pin plug and socket. *(Fig. 10).*

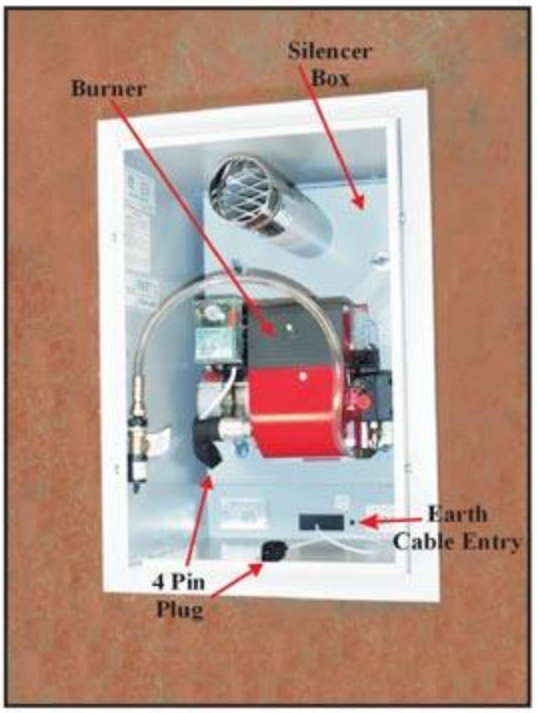


Fig. 10

9. CONNECT THE FUEL LINE

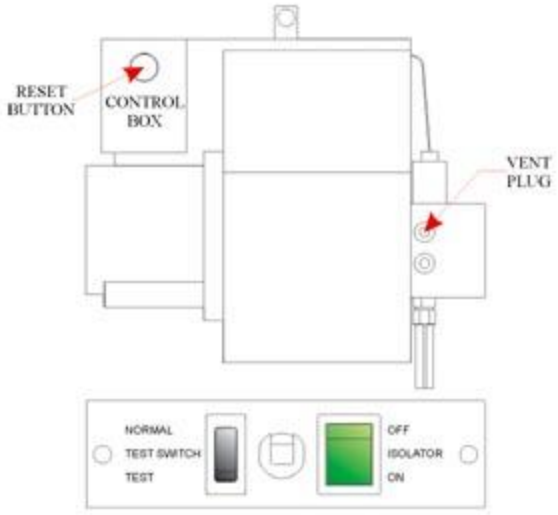
Fit a paper element filter. Gauze strainers commonly used do not provide adequate protection. (1/4" filter Pt. No.BS072)

Do not use soldered or galvanised fittings.

Please refer to page 13 of this handbook for oil tank installation recommendations.

Fig. 11

10. PRIMING THE BURNER



Ensure both power and fuel supplies to the boiler are switched on. Press the reset button, the burner will start its firing sequence. To release air from the oil line slacken the vent plug during this period.

If ignition fails the burner will go to lockout. Wait 60 seconds and repeat the procedure.

Fig. 12

11. TEST THE FUEL SUPPLY

With the burner running, check the fuel supply for air leaks. It is normal for a static air bubble to remain at the highest point of the oil line, but a continuous stream of bubbles through the oil line indicates that air is being drawn in. This must be cured before proceeding.

12. COMMISSIONING THE BOILER

Installation is complete. The boiler must now be commissioned by a competent engineer. The "Benchmark" log book should be completed and warranty documentation returned to HRM Boilers Ltd..

Inside

Outside

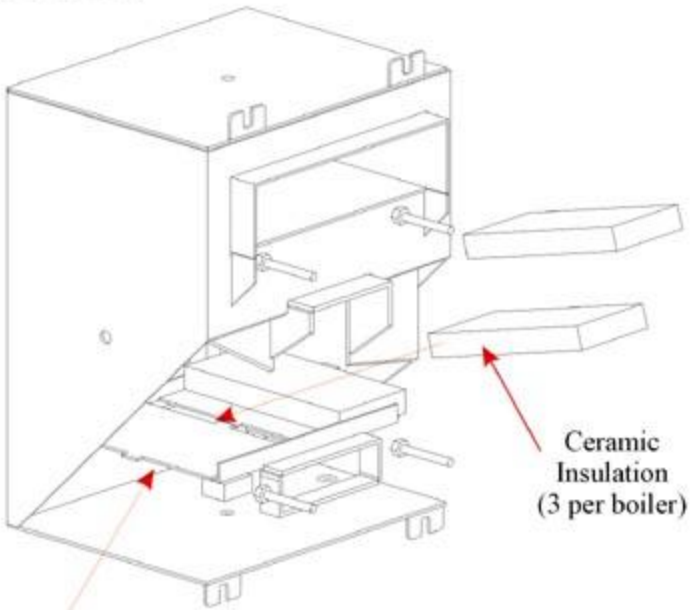
BOILER MAINTENANCE

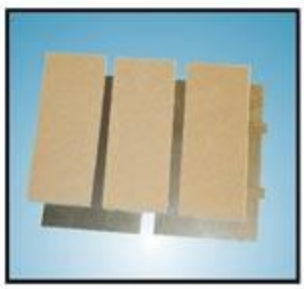
The boiler should be serviced annually. Should you experience any difficulty in locating an engineer our service department may be able to provide you with the name of an engineer in your area.

WARNING! ISOLATE THE POWER SUPPLY BEFORE SERVICING THE BOILER

1. Remove the burner and combustion chamber baffles, clean the internal heat exchanger surfaces and components.
2. Check and replace seals and gaskets as appropriate.
3. Clean / replace filter elements and de-sludge the oil tank.
4. Dismantle the burner assembly and clean. Fit a new nozzle.
5. Check the oil pressure and flue gas analysis, adjust the burner settings as appropriate.

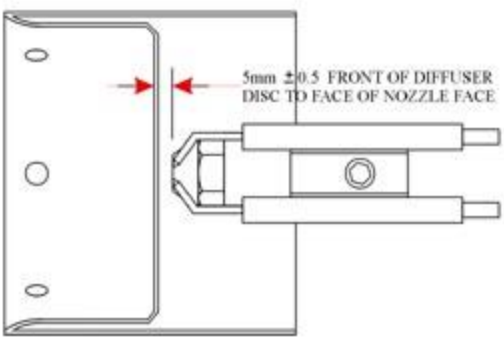
BAFFLE REMOVAL

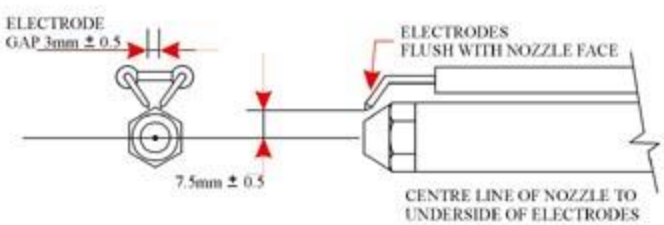




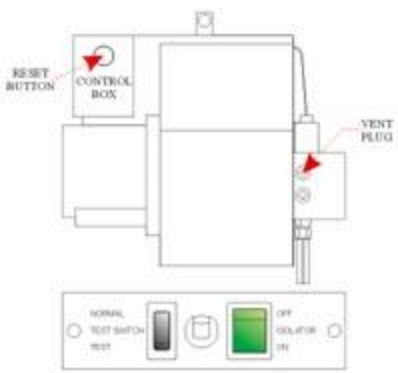
Baffles & Insulation

BURNER HEAD SETTINGS



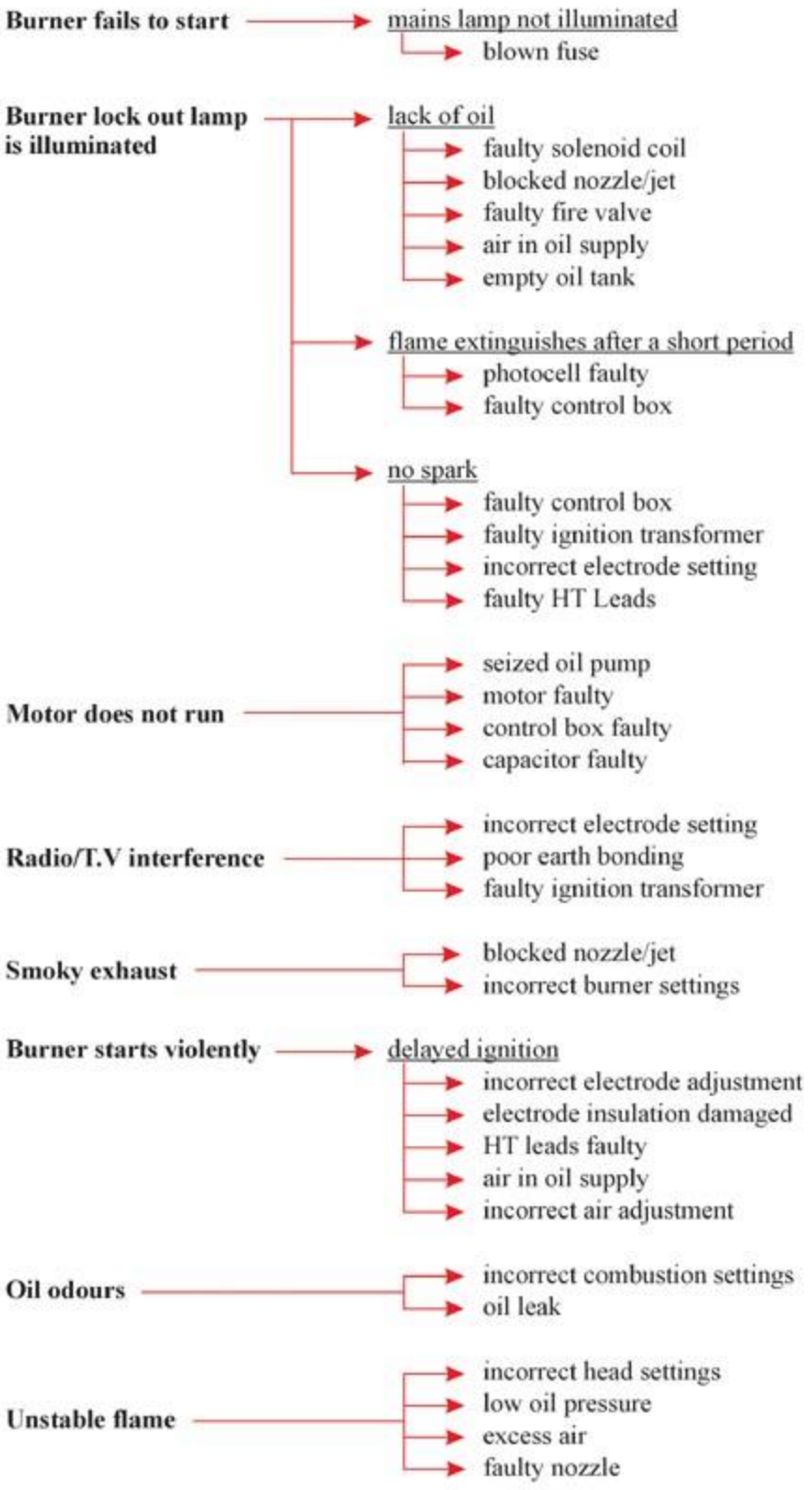


PRIMING THE BURNER

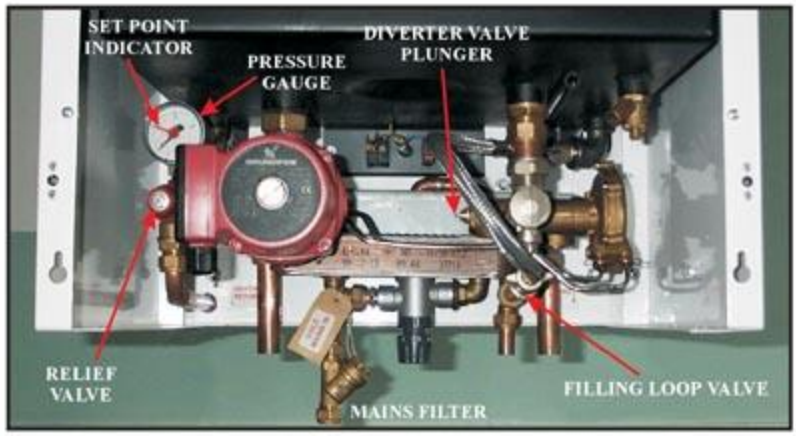


Ensure both power and fuel supplies to the boiler are switched on. Press the reset button, and the burner will start its firing sequence. To release air from the oil line, slacken the vent plug during this period. If ignition fails the burner will go to lockout. Wait 60 seconds and repeat the procedure.

FAULT DIAGNOSIS



FAULT DIAGNOSIS



1. No heating or domestic hot water (DHW)

- If the heating and DHW works when the test switch is in the "test" position, check the plug and socket connection from the micro switch.
- Is the circulation pump working?

2. Cold DHW, heating functions satisfactorily

- Pipe work for the "mains in" and DHW have been connected the wrong way around

3. Warm DHW, heating functions satisfactorily

- Is the system pressure set to one bar (when cold)?
- Is the black plastic plug in the automatic air vent open?
- Is there a combustion problem/faulty nozzle?
- Is the mains water temperature low? The boiler will raise the mains water temperature by 35˚C at a flow rate of 10.5 ltrs.
- Check the operation of the mixing valve - is the "hot water" (right hand) inlet to valve excessively hot indicating that water is not flowing through the valve?
- If the "hot water" inlet to the mixing valve is cool, the plate heat exchanger may be blocked/contaminated.

4. No heating, DHW functions satisfactorily

- Are the valves on the heating flow and return closed?
- Has the plunger on the diverter valve stuck in the out position? Press the plunger a few times to free, or dismantle the diverter valve assembly and clean.

5. DHW flow is less than 10.5 ltrs.

- Is the mains water pressure sufficient? It should be greater than 1.5 bar or 15 ltrs per minute.
- Is the mains water filter blocked?

6. Heating runs constantly

- Has the switch under the burner been left in the test position?
- Has the heating time clock been left in the permanently on position?

7. The boiler overheat thermostat needs resetting frequently

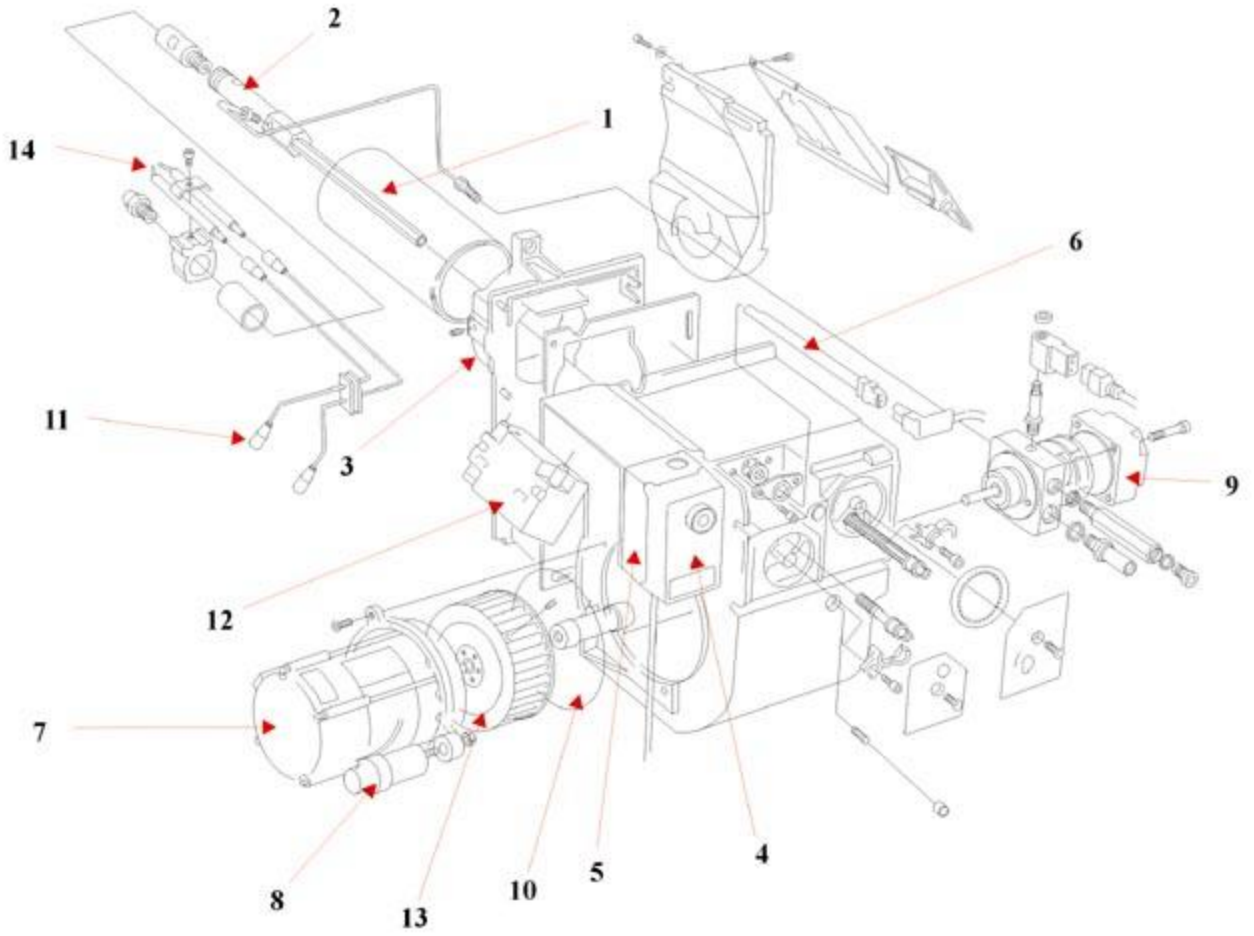
- Has the boiler lost system pressure?

8. System pressure is low

- Recharge system pressure by opening the filling loop valve and increasing pressure to the jet point indicator on the pressure gauge (approx. 1bar).

PARTS LIST/COMPONENT IDENTIFICATION

STERLING BURNER

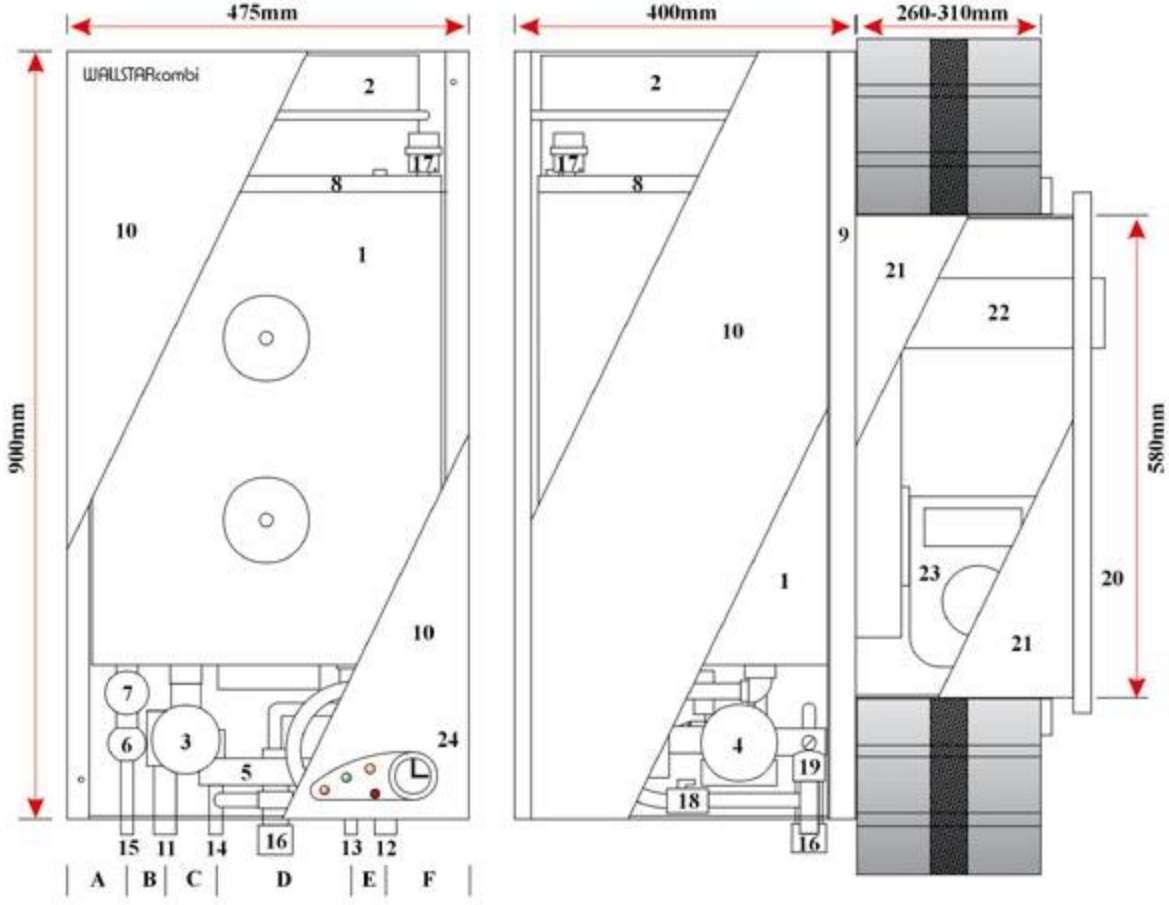


ITEM	DESCRIPTION	EOGB Ref.	PART No.
1	Blast Tube 25/19	B03-960-D0212	BS045
2	Nozzle Assembly	118-538-01	BS046
3	Intermediate Gasket	04-390-120-27	BS047
4	Satronic Control Box	DK0970	BS041
5	Control Box Base	390-109-01	BS022
6	Photocell MZ770S	118-00301	BS065
7	Motor	118-483-02	BS050
8	Capacitor	118-95201	BS051
9	Danfoss Pump BFP11 L3	117-586-02	Bs052
10	Pump Coupling	CO-1-00-115-94201	BS064
11	HT Lead	118-55901	BS054
12	Transformer EB1	115-977-01	BS055
13	Fan	114-176-04	BS056
14	Ignition electrode	113-867-01	BS067
15	Clear Flexible Oil Line (not shown)	N/A	BS012

BOILER COMPONENTS

ITEM	DESCRIPTION	PART No.
1	BOILER HEAT EXCHANGER	WS110
2	EXPANSION VESSEL	COM307
3	PUMP	COM402
4	DIVERTER VALVE	-
5	PLATE HEAT EXCHANGER	-
6	PRESSURE RELIEF VALVE	-
7	PRESSURE GAUGE	COM305
8	INSULATION	-
9	WALL PLATE	CW001
10	WHITE CASING	-
11	HEATING RETURN	-
12	HEATING FLOW	-
13	15mm DHW OUTLET	-
14	15mm MAINS WATER INLET	-
15	PRESSURE VENT PIPE	-
16	MIXING VALVE	COM412
17	AUTOMATIC AIR VENT	COM303
18	FILLING LOOP	COM302
19	HEATING ISOLATOR VALVES	-
20	SERVICE ACCESS DOOR	WA027C
21	WALL DUCT	WA031B
22	FLUE PIPE	WA100-20
23	BURNER	WA25119
24	TIMER	EL037
A	67mm	
B	38mm	
C	65mm	
D	160mm	
E	40mm	
F	105mm	

NOTE: WALL DUCT WIDTH = 390mm



BOILER COMPONENTS

Fig. 1 Silencer Box

Fig. 2 White Casing

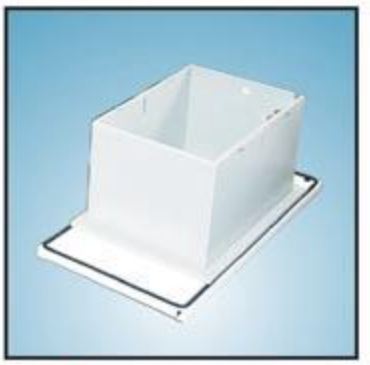


Fig. 3 Wall Duct & Trim

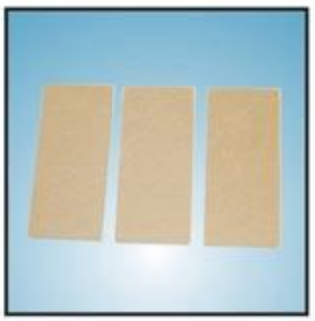


Fig. 4 Ceraboard Insulation

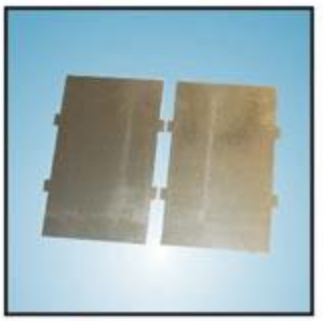


Fig. 5 Bottom Baffles

Fig. 6 Silencer Insulation

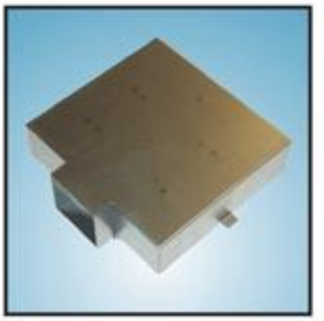


Fig. 7 Flue Baffles

Fig. 8 Expansion Vessel

Fig. 9 Burner

Fig. 10 Heat Exchanger

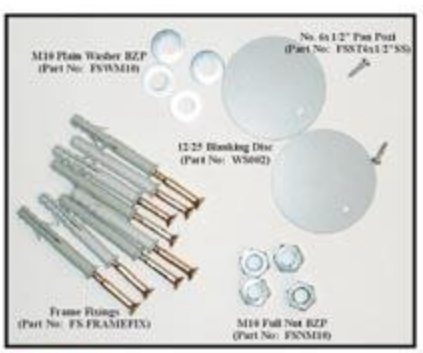
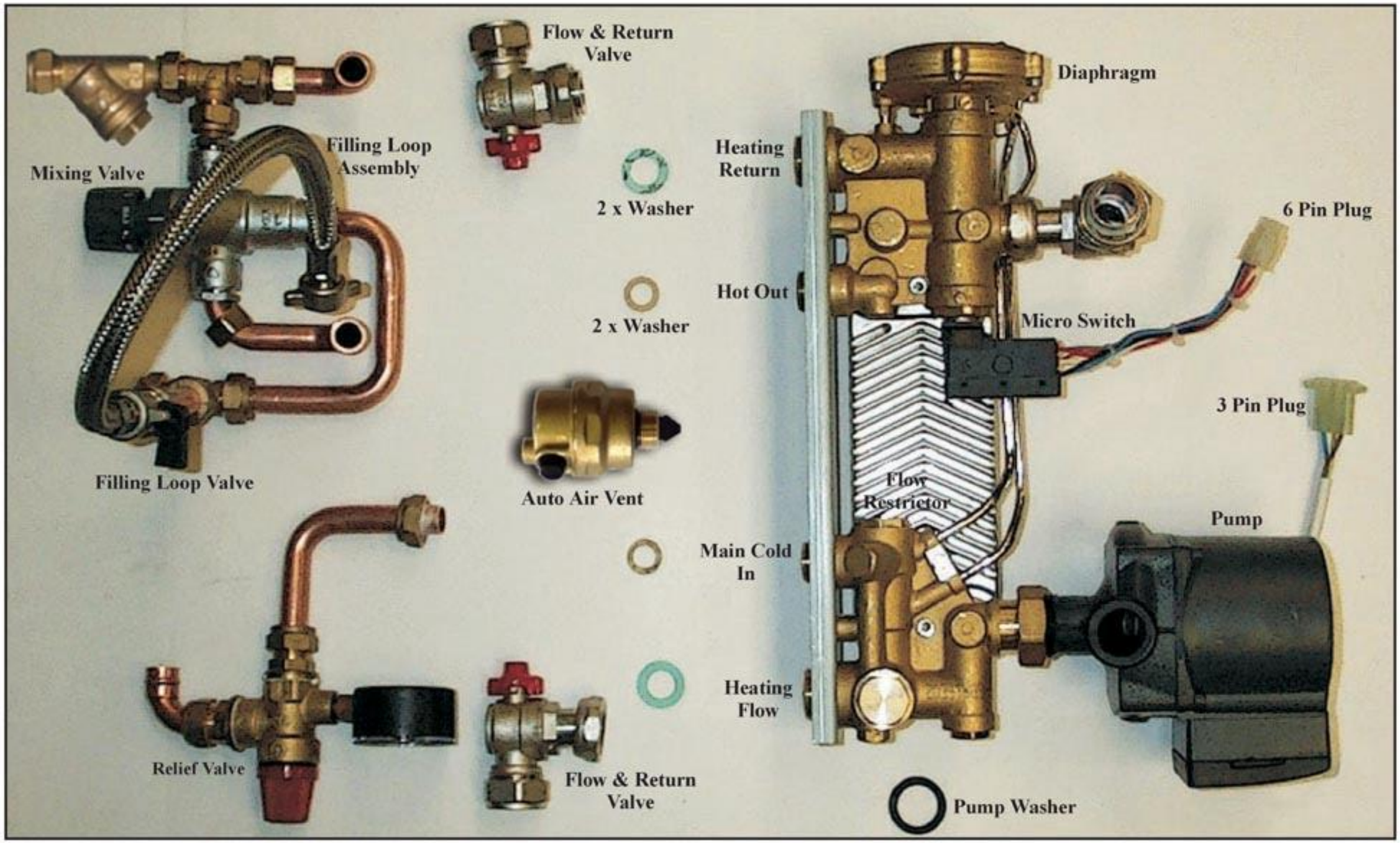
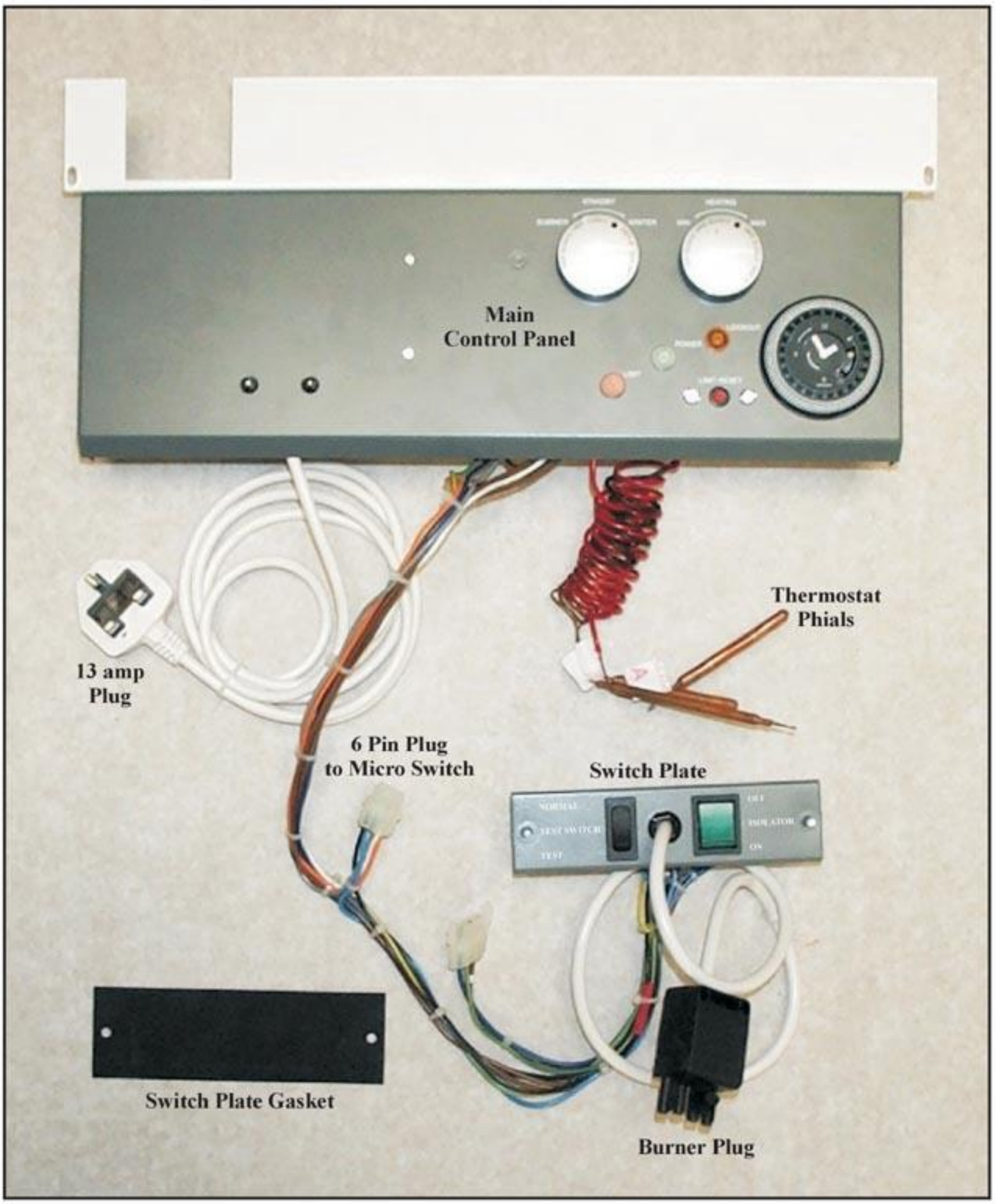


Fig. 11 Fixing Kit Set

Fig. 12 Access Door (Outside)

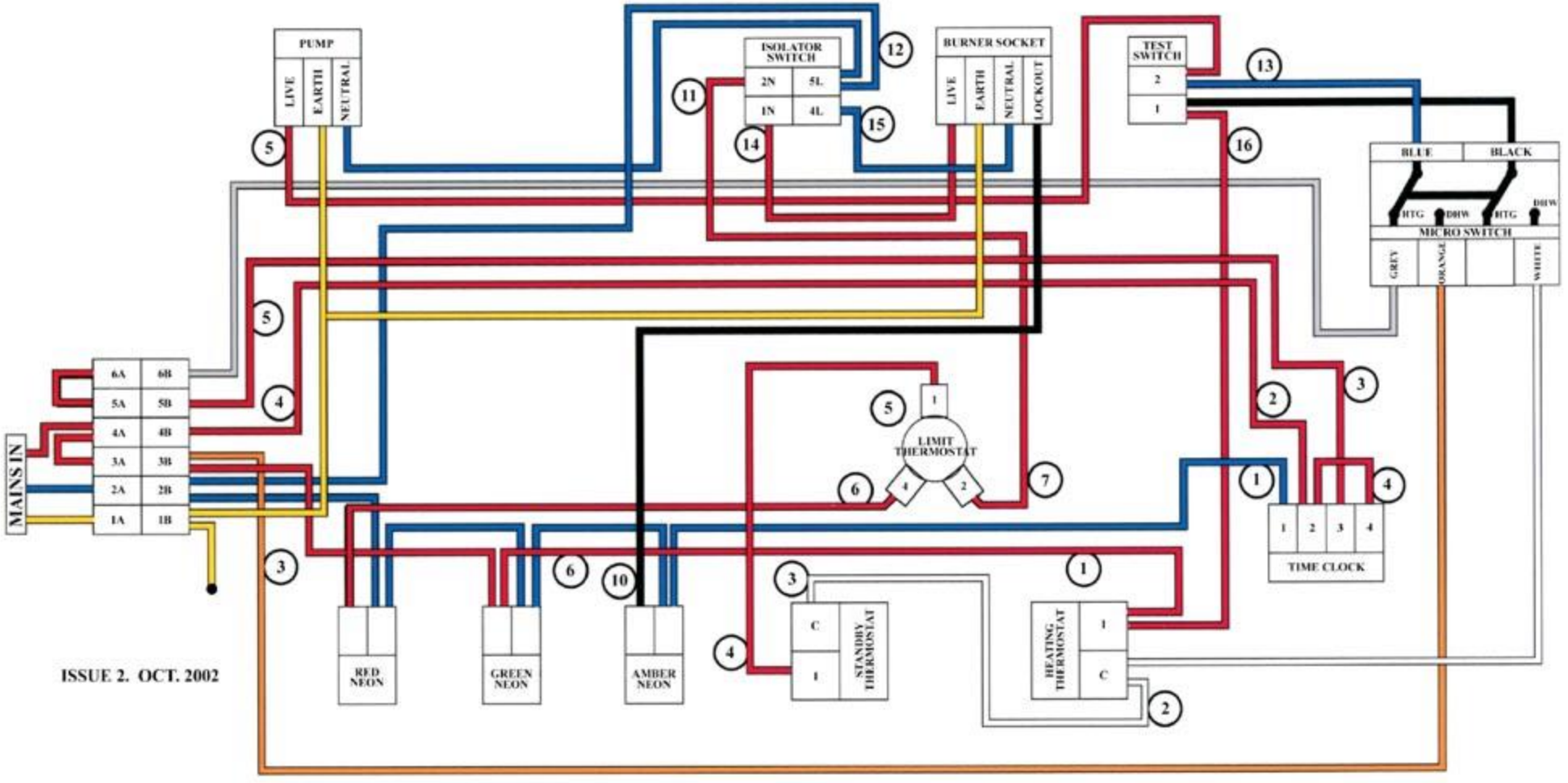

Flow & Return Valve
Diaphragm
Mixing Valve
Filling Loop Assembly
Heating Return
2 x Washer
6 Pin Plug
Hot Out
2 x Washer
Micro Switch
3 Pin Plug
Filling Loop Valve
Auto Air Vent
Flow Restrictor
Pump
Main Cold In
Heating Flow
Relief Valve
Flow & Return Valve
Pump Washer

CONTROL PANEL



In accordance with our policy of continual improvement in design, we reserve the right to amend specifications without prior notice.

CONTROL PANEL - Wiring Diagram



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