HANDBOOK & SERVICE LOG

HOME OF THE WALLSTAR MAX

HRMBOILERS.CO.UK

benchmark

At HRM Boilers we have spent 30+ years perfecting the correct way to design a boiler. The Wallstar, X Range and FS Range of boilers are well known in the industry as a leading Oil Boiler to install, with the benefits of being whisper quiet and the added advantage that none of the kerosene or smells enter the property.

Our boilers are independently tested and comply with the latest European Boiler Efficiency Directives. Our Quality assurance procedures are also approved independently and comply with The International Standard, ISO9001 & ISO14001.

If you choose to install any of the HRM Boilers please be ensured that you will receive a high efficient quality product, constructed to a high specification at our factory in Attleborough and peace of mind that in the rare event of a warranty issue our bespoke back up service will ease any frustrations and inconvenience that you may incur.

Our dedicated team will deliver a quick response to your predicament and will use our data base of reliable engineers to rectify the boiler issue in the quickest time possible.

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.

Simon Eastwell
Managing Director HRM Boilers Ltd

HOUSEHOLDER INFORMATION

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 carbon dioxide content.

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

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.
- The warranty engineer must have direct access to all indoor components of the boiler and any outdoor components of the boiler must be no more than 3 metres above ground level or a safe working platform.
- We recommend a full system flush.

Extended Warranty

The 'Benchmark' and warranty registration document at the end of this manual should be completed as appropriate by your installer / engineer. This is your record that the boiler has been correctly installed in accordance with our recommendation. Return the warranty registration document to HRM in order to qualify for a further 3 year warranty of the heat exchanger - a total of 5 years.

"Benchmark" Installation, Commissioning and Service Record Log Book

Please ensure that your installer has completed all sections of the log book (found at the back of this manual). 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.

Extended Warranty Conditions

- The boiler must be serviced annually and maintained in accordance with this handbook. The 'Benchmark; service log is located at the back of this manual.
- 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 and refer to HRM for any warranty work instruction.
- Under no circumstances should 'in warranty' work be undertaken without authorisation from the HRM service department.
- If you are unable to contact your installer please contact our service department, quoting your boiler's serial number when phoning - this can be found on the back cover of this manual.

Burner Information

Boiler Model	Wallstar 1 Max			Wallstar 2 Max				Wallstar 3 Max			W/star Combi Max
Nominal Power (output)	12kW	14kW	16kW	14kW	16kW	18kW	20kW	20kW	22kW	24kW	24kW
Head Position (mm)	20.0	20.5	21.5	20.5	21.5	22.5	23.5	24	24.5	25.3	25.3
Dist. Diffuser-Nozzle (mm)	2	2	2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Air	0.4	0.8	1.8	1.8	1.7	2.4	3.2	3.6	4	6	4.2
Nozzle	0.35 80°S	0.45 80°ES	0.50 80°ES	0.45 80°ES	0.50 80°ES	0.55 80°ES	0.65 80°ES	0.65 80°ES	0.65 80°ES	0.65 80°ES	0.75 80°ES
Pump pressure	125	115	120	115	125	125	110	115	130	160	105
CO2	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%
PPM	6	9	7	9	9	10	13	14	15	10	11

BOILER CONTROLS:

WALLSTAR 1 MAX, 2 MAX, 3 MAX

Boiler Overheat (Limit) Thermostat

In the unlikely event the boiler overheats, the reset button will trip and cut the power supply to the burner. Please allow the boiler to cool then press the reset button to reset the thermostat.

IMPORTANT -

If overheating occurs regularly, consult your installation engineer. There may be a fault with the central heating system.

Lockout Reset Lamp

The lamp is illuminated when there is power to the controls, but the burner has not fired correctly. When the lockout is pressed this lamp should extinguish. This lamp is also a reset button which provides an alternative to pressing the reset on the burner itself.

Limit Neon Lamp

The lamp is illuminated when there is power to the controls, but the boiler has overheated. When the limit reset is pressed this lamp should extinguish.

Temperature Control Thermostat

The control thermostat regulates the temperature of the water within the boiler. The recommended settings, governed by the control knob, are maximum for heating and hot water, and minimum for hot water only.

Power Neon Lamp

The lamp remains illuminated at all times when power is supplied to the control thermostat, not just when requesting heat.

WALLSTAR 2 SYSTEM MAX

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.

Boiler Overheat (Limit) Thermostat

In the unlikely event the boiler overheats, the reset button will trip and cut the power supply to the burner. Please allow the boiler to cool then press the reset button to reset the thermostat.

IMPORTANT –

If overheating occurs regularly, consult your installation engineer. There may be a fault with the central heating system.

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Limit Neon Lamp

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Temperature Control Thermostat

The control thermostat regulates the temperature of the water within the boiler. The recommended settings, governed by the control knob, are maximum for heating and hot water, and minimum for hot water only.

Power Neon Lamp

The lamp remains illuminated at all times when power is supplied to the control thermostat not just when requesting heat.

WALLSTAR COMBI MAX

Mixing Valve (not pictured)

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

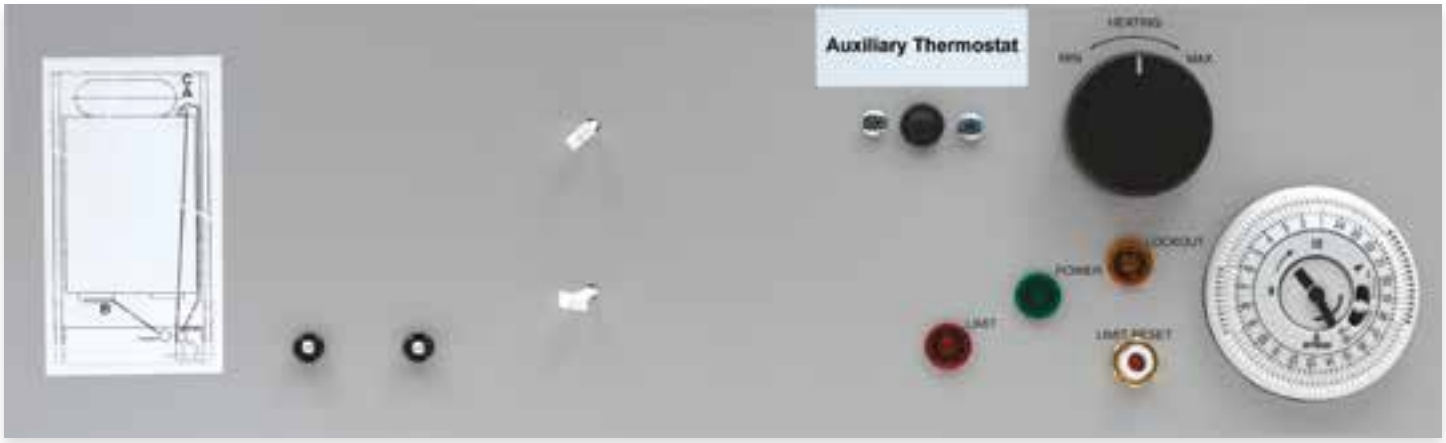
Auxiliary Thermostat

Recognises when the hot tap is turned on and fires the boiler. Pre-set at maximum position.

Heating / Control Thermostat

This thermostat maintains the temperature of the boiler for the production of hot water and also regulates the temperature of the water supplied to the central heating system.

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



Boiler Overheat (Limit) Thermostat

In the unlikely event the boiler overheats, the reset button will trip and cut the power supply to the burner. Please allow the boiler to cool then press the reset button to reset the thermostat.

IMPORTANT -

If overheating occurs regularly, consult your installation engineer. There may be a fault with the central heating system.

Pressure Gauge (not pictured)

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 the combi fault diagnosis page for instructions on pressurising the system.**

TIME CLOCK

Tappets Position

In = Off

Out = On

Arrow

Manual Switch Position

I = On (top position)

O = Timed (centre position)

0 = Off (bottom position)

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 Lamp

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

Limit Neon Lamp

The lamp is illuminated when there is power to the controls, but the boiler has overheated. When the limit reset is pressed this lamp should extinguish.

Lockout Neon Lamp

The lamp is illuminated when there is power to the controls, but the burner has not fired correctly.

X1 MAX, X2 MAX, X1 SYSTEM MAX

Temperature Control Thermostat

The control thermostat regulates the temperature of the water within the boiler. The recommended settings, governed by the control knob are maximum for heating and hot water and minimum for hot water only.

Boiler Overheat (Limit) Thermostat

In the unlikely event the boiler overheats the reset button will trip and cut the power supply to the burner. Allow the boiler to cool then press the reset button to reset the thermostat.

IMPORTANT -

If overheating occurs regularly, consult your installation engineer. There may be a fault with the central heating system.

Power Neon Lamp

The lamp remains illuminated at all times when power is supplied to the control thermostat not just when requesting heat.

Limit Neon Lamp

The lamp is illuminated when there is power to the controls, but the boiler has overheated. When the limited reset is pressed this lamp should extinguish.

Lockout Neon Lamp

The remote reset plate supplied with the boiler can be connected to the X-ternal control panel to allow for indoor resetting of the burner. Simply pass the Molex connector through the cable trunking already used to supply power to the boiler and connect to the corresponding Molex connector on the control panel. The lamp is illuminated when there is power to the controls, but the burner has not fired correctly. When the lockout reset is pressed this lamp should extinguish. This lamp is also a reset button which provides an alternative to pressing the reset on the burner itself.

BURNER LOCKOUT

The burner is equipped with a flame failure device. When activated the reset button on the burner control box is illuminated. Refer to the fault finding section on page 19 of the handbook to identify possible causes.

The test switch is provided for the service engineer, in normal operation the switch should be left in the **'PROG'** position for Wallstar Max and Wallstar System Max boilers and in the **'NORMAL'** position for the Wallstar Combi Max.

Switching The Boiler **On**

- Turn on oil supply.
- Switch on the mains supply.
- Set the timer control to 'on'.
- Set the boiler control thermostat.

Switching The Boiler **Off** For Long Periods

- Have the boiler serviced.
- Switch off the mains supply.
- Turn off the oil at the tank.

Pump Priming

If the burner fails to lift oil, the pump may be dry and require priming. To prime the pump, fill a suitable container, such as a jar, with heating oil, disconnect the flexible oil line and place the end into the container. Hold the container above the height of the burner while bleeding pump and press the **LOCKOUT RESET** button. Once the pump has pulled the oil from the container through, it is primed and can be reconnected to the main supply.

Maintenance

Your boiler should be serviced annually. Failure to have this done will invalidate your warranty and may also lead to inconvenient break downs. A **BENCHMARK** service log can be found at the back of this manual.

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.

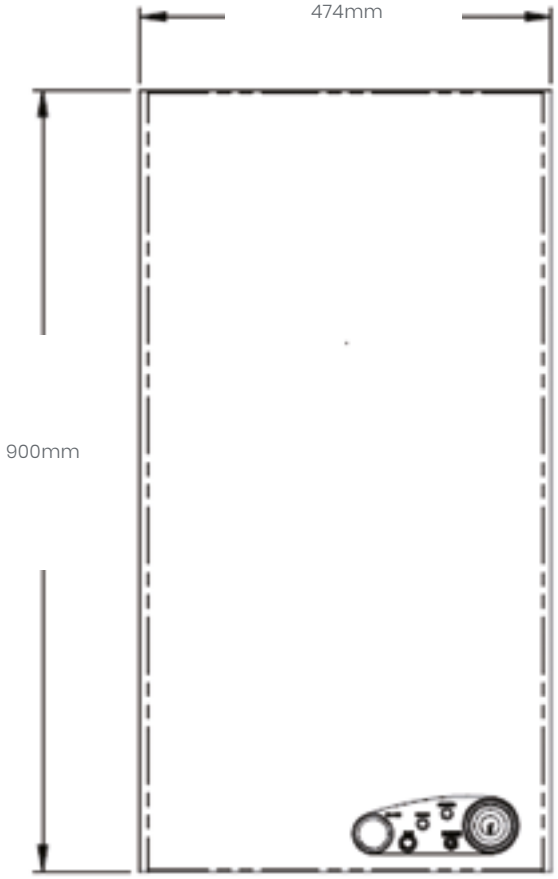
Oil Delivery

Switch the boiler off during an oil delivery, wait for at least 1 hour before switching the boiler back on to allow sediment in the bottom of the oil supply tank to settle.

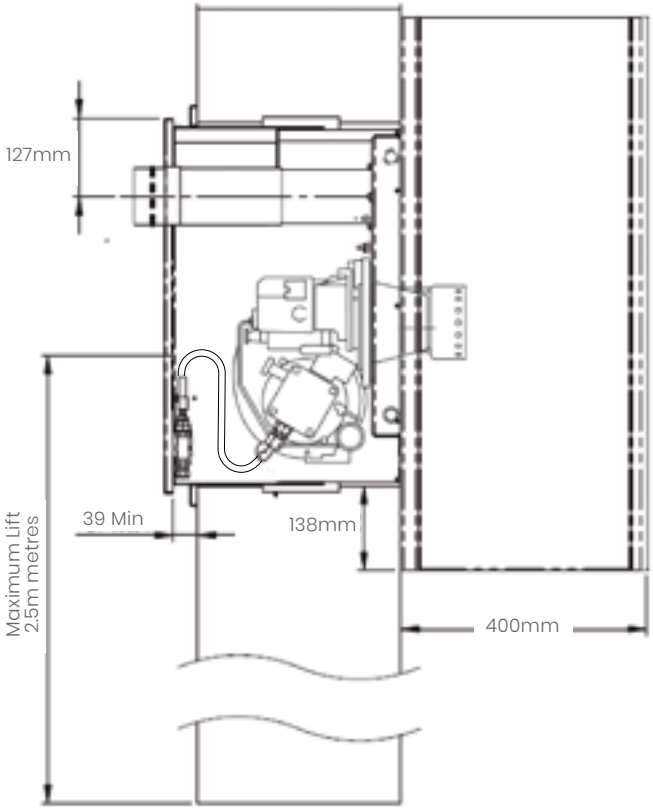
Burner Spares

Please contact our sales department for further information on burner spares.

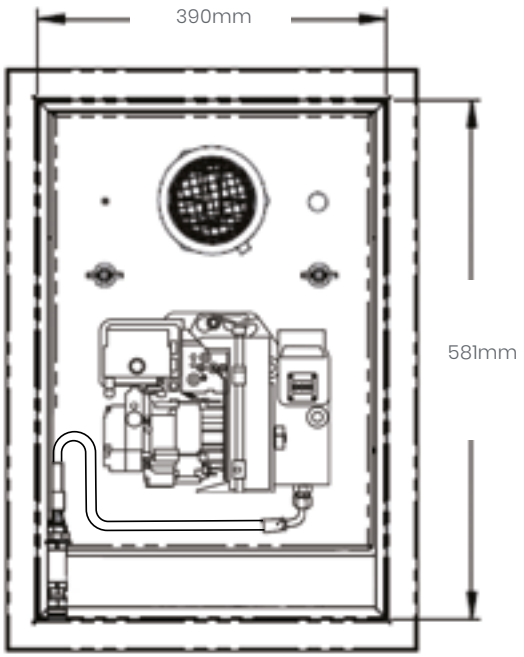
Internal View

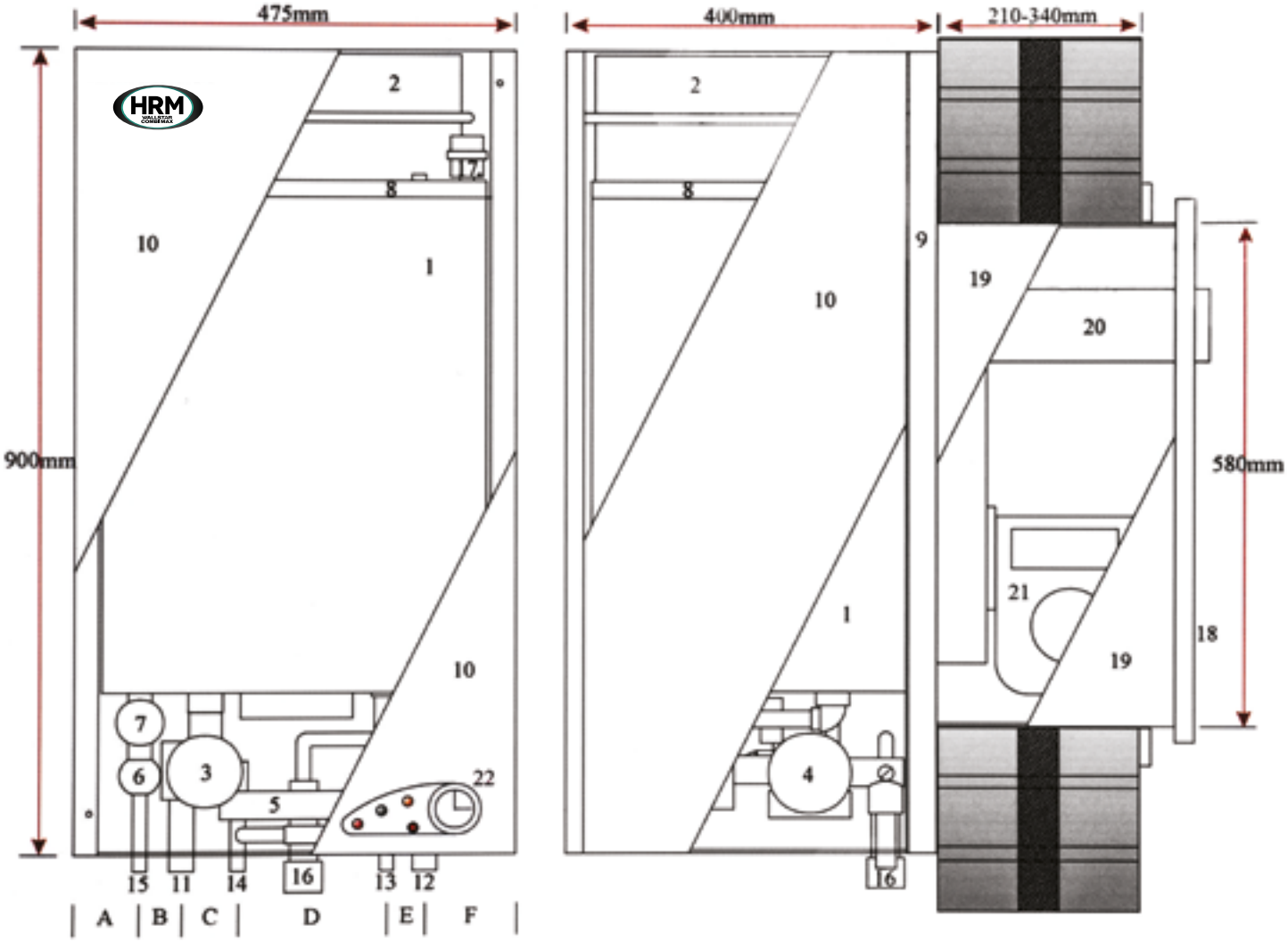


Cross-Sectional View



External View



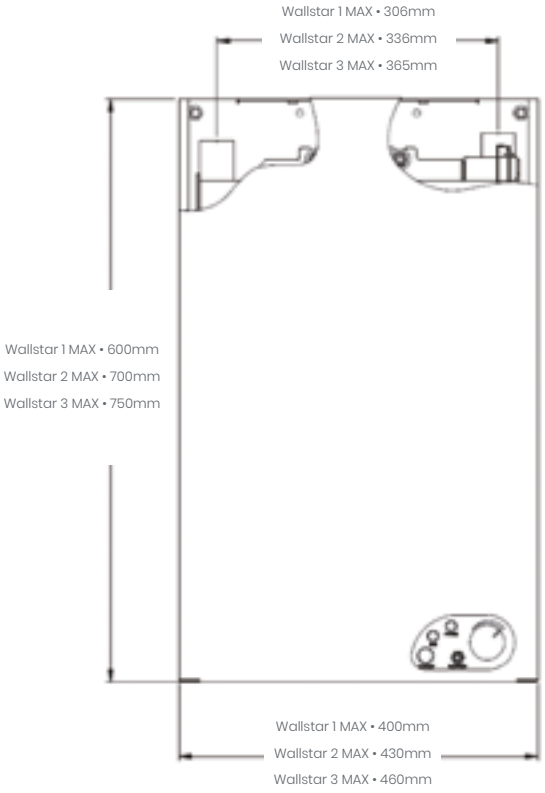


Wallstar Combi MAX Component Guide

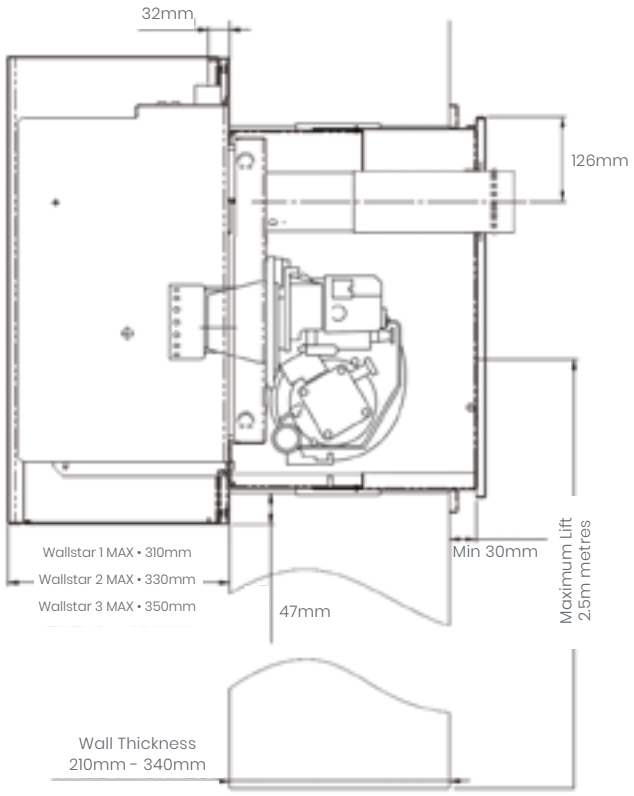
1	Boiler Heat Exchanger	12	Heating Flow
2	Expansion Vessel	13	15mm DHW Outlet
3	Circulating Pump	14	15mm Mains Water Inlet
4	Diaphragm	15	Pressure Vent Pipe
5	Plate Heat Exchanger	16	Mixing Valve
6	Pressure Relief Valve	17	Air Vent
7	Pressure Gauge	18	Service Access Door
8	Insulation	19	Wall Duct
9	Wall Plate	20	Flue
10	White Casing	21	Burner
11	Heating Return	22	Timer

Item	Distance	Item	Distance
A	67	D	160
B	38	E	40
C	65	F	105

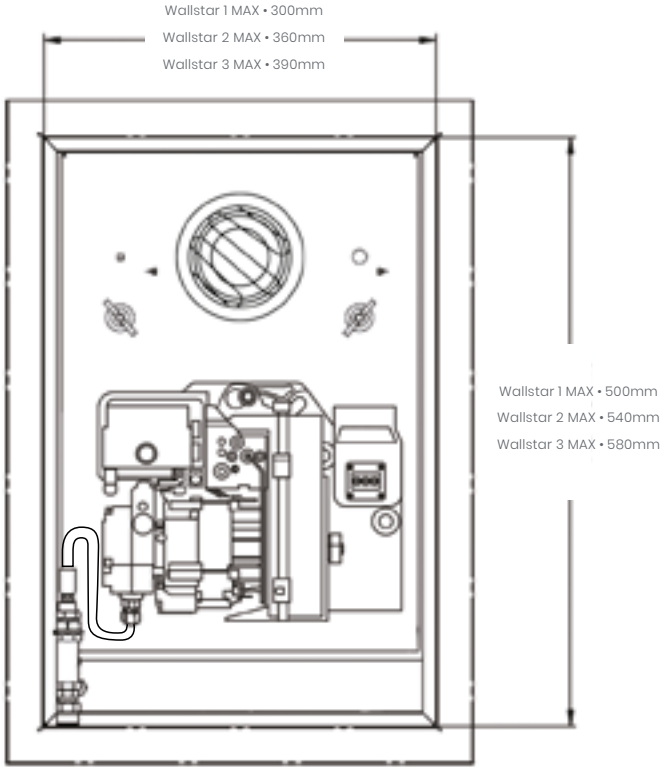
Internal View



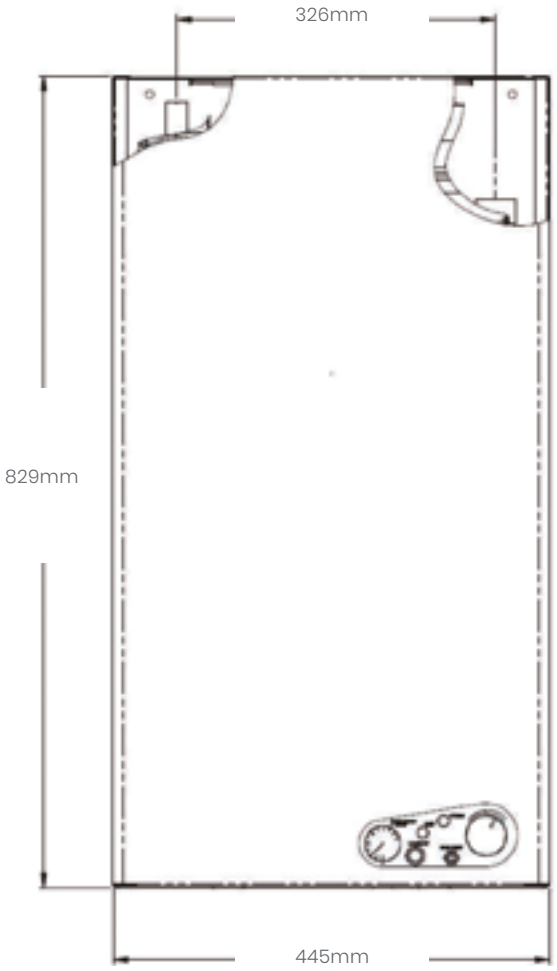
Cross-Sectional View



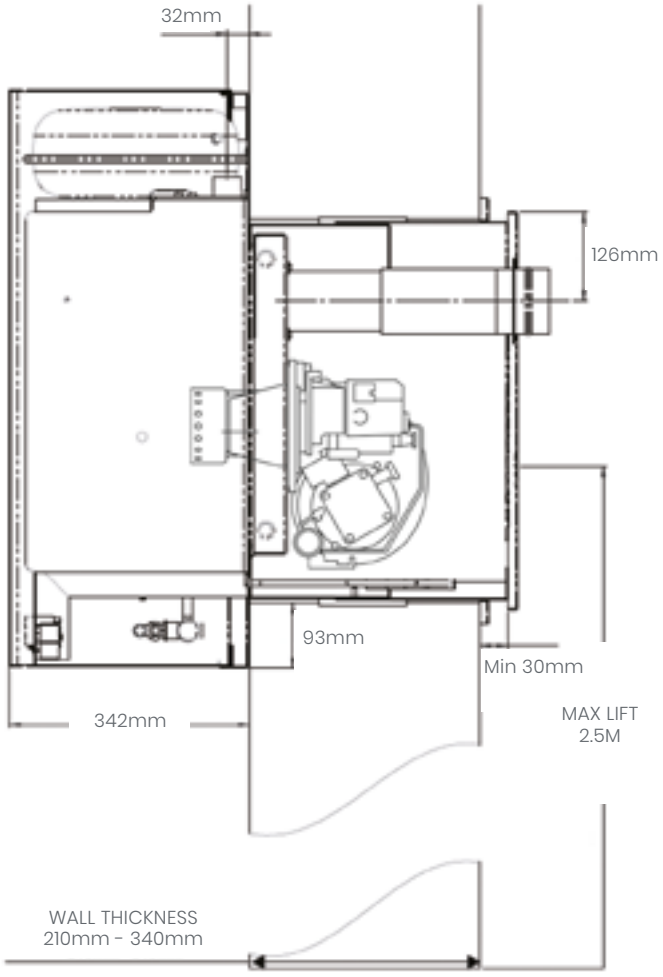
External View



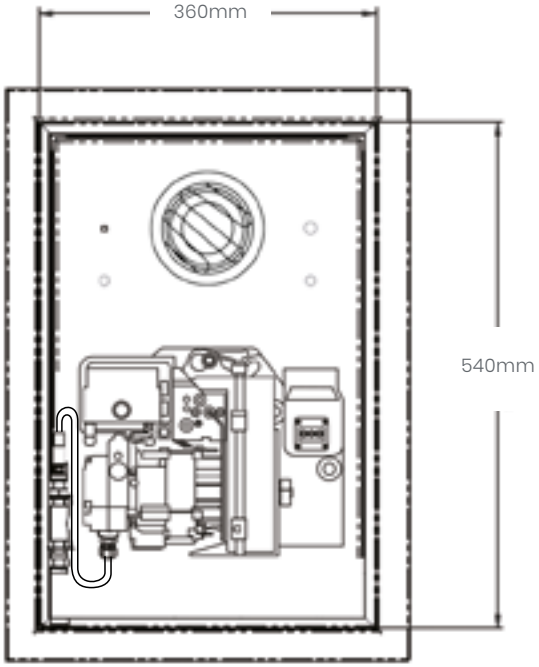
Internal View



Cross-Sectional View

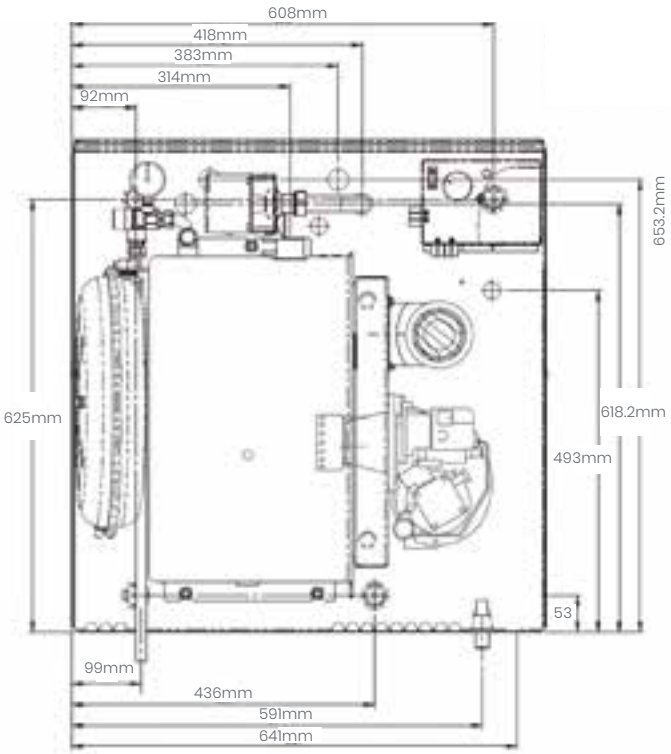


External View

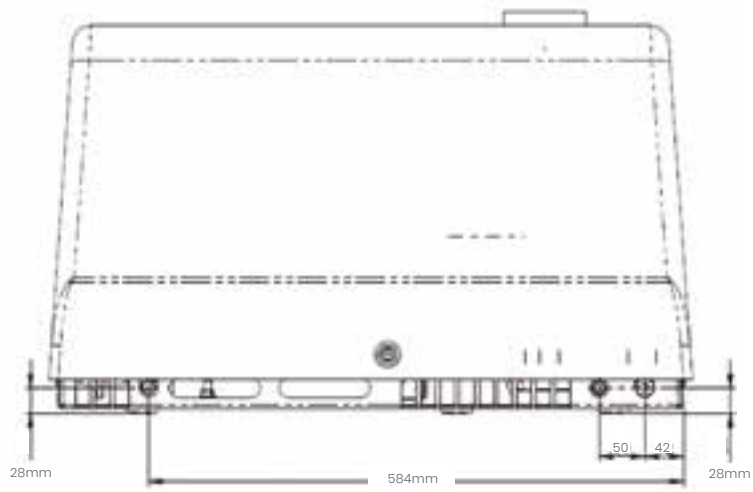


X1 MAX, X1 System MAX

Cross-Sectional View

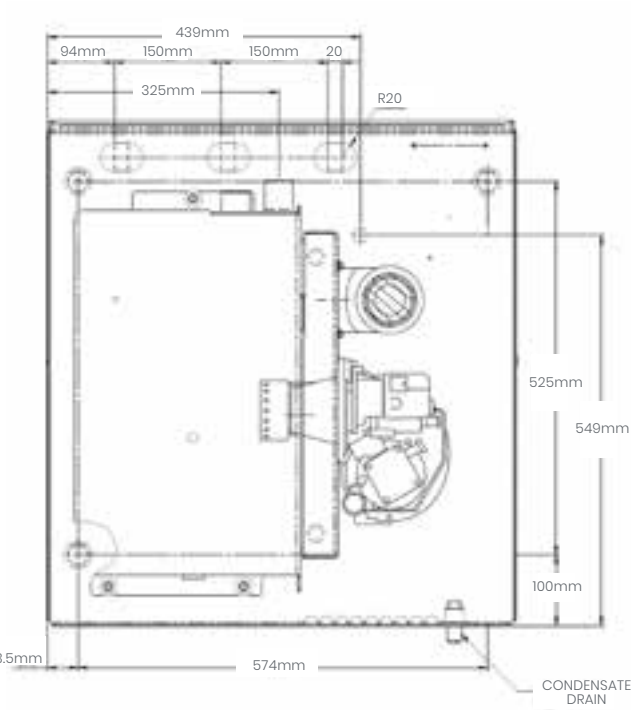


Cross-Sectional View

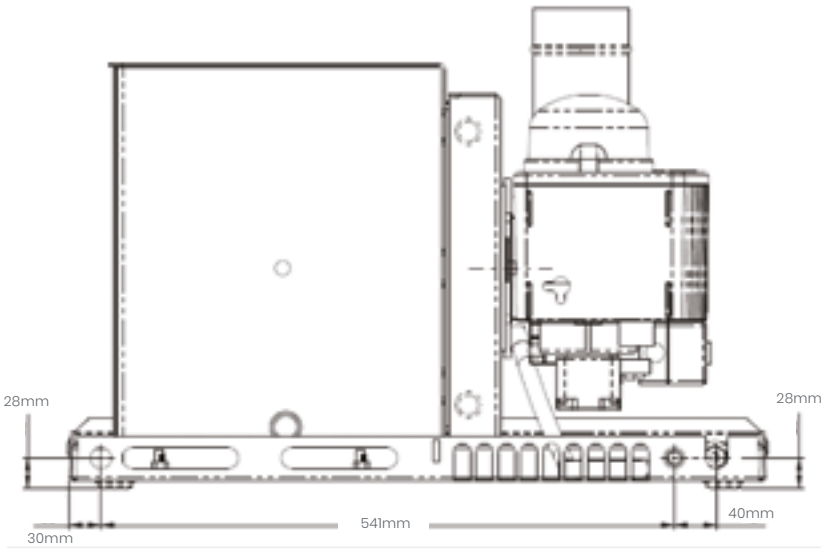


X2 MAX

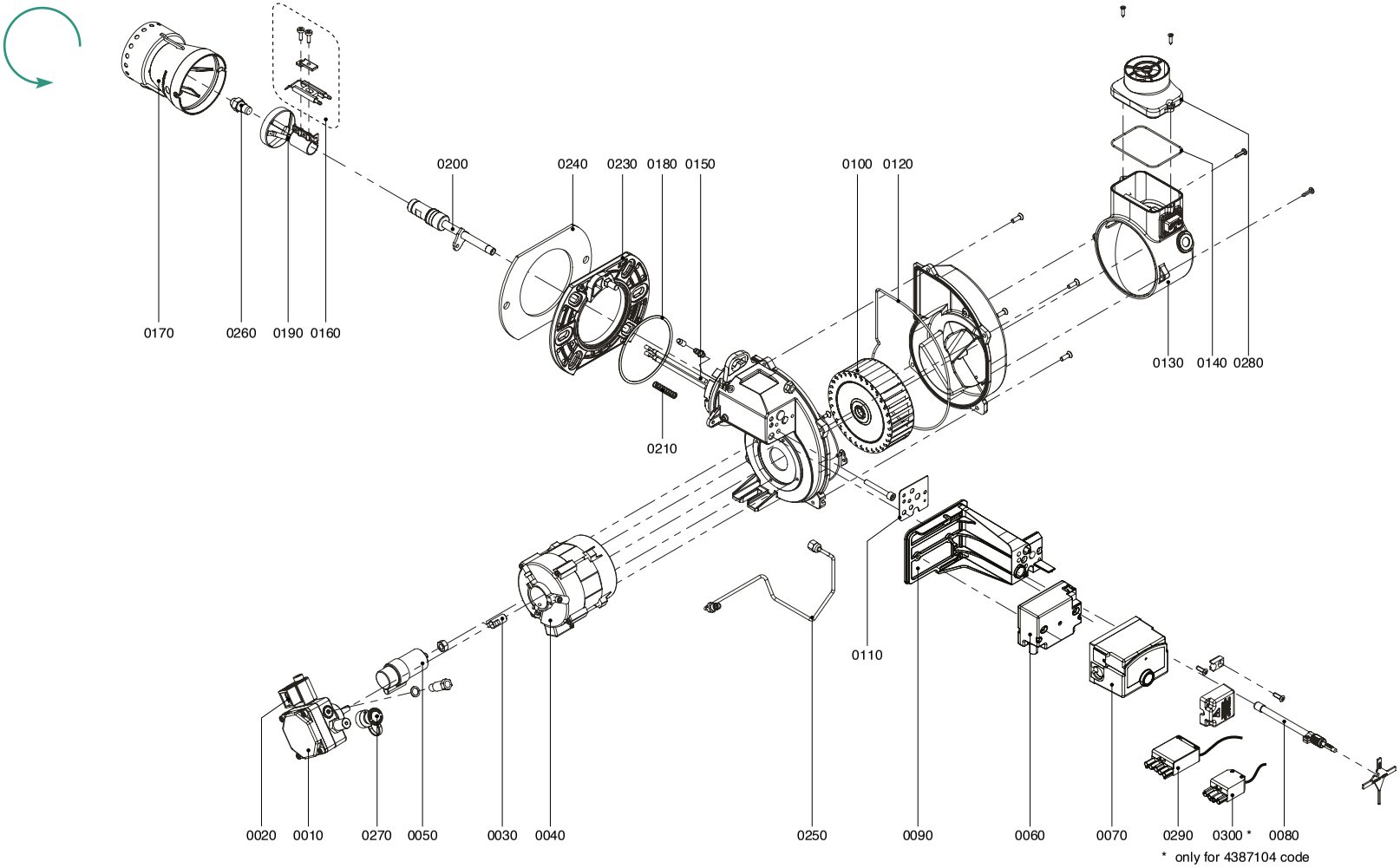
Frontal View



Underside View



Bentone Model BF1N1



Key

0010 PUMP
0020 COIL
0030 COUPLING
0040 MOTOR + CAPACITOR
0050 CAPACITOR
0060 IGNITION TRANSFOMER
0070 CONTROL BOX
0080 FLAME SENSOR E.B.R.
0090 SUPPORT
0100 FAN
0110 FLAT SEALED
0120 HOUSING GASKET
0130 AIR INLET ASSEMBLY
0140 SNORKEL O-RING
0150 IGNITION CABLE
0160 ELECTRODE
0170 BLAST TUBE
0180 HOUSING/FLANGE O-RING
0190 DIFFUSER DISK
0200 NOZZLE HOLDER
0210 SPRING
0230 FLANGE
0240 GASKET/BURNER FLANGE
0250 PIPE
0260 NOZZLE MAX 1 LN HRM W1
NOZZLE MAX 1 LN HRM W2
NOZZLE MAX 1 LN HRM W3/C
0270 PRESSURE ADJUSTMENT CAP
0280 SNORKEL
0290 CABLE + 5-PIN PLUG
0300 CABLE + 4-PIN PLUG

All Wallstar Max Models

Electrical Supply	230V Single Phase, Fused 5amp
Max Power Consumption	125W
Fuel	Class C2 (28 Sec Kerosene)
Oil Supply Connection	10mm Compression, Single Pipe
Heating Systems Requirements	Fully Pumped, Conventional Open Vented, or Sealed System
Max Operating Pressure	3 Bar (43.5psi) Static Head 30.59 Metres (100ft)
Operating Temperature Range	60°C to 90°C
Resistance To Water Flow Between Return and Flow Connections (10 Deg Temp Rise)	Wallstar 1 MAX – 26mm Wallstar 2 MAX – 35mm Wallstar 3 MAX – 48mm
Cut Out Temperature	100°C
Weight Empty	Wallstar 1 MAX – 84kg Wallstar 2 MAX – 96kg Wallstar 3 MAX – 107kg
Water Capacity	Wallstar 1 MAX – 17.5 Litres Wallstar 2 MAX – 19.25 Litres Wallstar 3 MAX – 21 Litres

Wallstar 2 System MAX

Heating Systems Requirements	Sealed Systems Only
Max Operating Pressure	3 Bar (43.5psi) Static Head 30.59 Meters (100ft)
Operating Temperature Range	60°C to 90°C
Resistance To Water Flow Between Return and Flow Connections (10 Deg Temp Rise)	35mm
Cut Out Temperature	100°C
Weight Empty	107kg
Water Capacity	19.25 Litres

Wallstar Combi MAX

Heating Systems Requirements	Sealed Systems Only
Max Operating Pressure	3 Bar (43.5psi) Static Head 30.59 Meters (100ft)
Operating Temperature Range	60°C to 90°C
Resistance To Water Flow Between Return and Flow Connections (10 Deg Temp Rise)	48mm
Cut Out Temperature	110°C
Weight Empty	140kg
Water Capacity	35 Litres
Maximum Cold Water Pressure	5 bar / 72.5psi
Minimum Cold Water Pressure	1.5 bar / 21.7psi
Expansion Vessel Capacity	10 Litre
Expansion Vessel Pressure	1 bar / 14.5psi
Safety Relief Valve	3 bar / 43.5psi
Heating Output	18kW
Domestic Hot Water Output	23kW
Hot Water Flow Rate	35°C Rise @ 10.5 Litres / Min

X1 MAX & X1 System MAX

Electrical Supply	230V Single Phase, Fused 5amp
Max Power Consumption	110W
Fuel	Class C2 (28 Sec Kerosene)
Oil Supply Connection	10mm Compression, Single Pipe
Heating Systems Requirements	Sealed Systems Only
Max Operating Pressure	3 Bar (43.5psi) Static Head 30.59 Metres (100ft)
Operating Temperature Range	60°C to 90°C
Resistance To Water Flow Between Return and Flow Connections (10 Deg Temp Rise)	X1 MAX, X1 System MAX – 26mm
Cut Out Temperature	100°C
Weight Empty	X1 MAX, X1 System MAX – 84kg
Water Capacity	X1 MAX, X1 System MAX – 17.5 Litres

X2 MAX

Electrical Supply	230V Single Phase, Fused 5amp
Max Power Consumption	110W
Fuel	Class C2 (28 Sec Kerosene)
Oil Supply Connection	10mm Compression, Single Pipe
Heating Systems Requirements	Fully Pumped, Conventional Open Vented, or Sealed System
Max Operating Pressure	3 Bar (43.5psi) Static Head 30.59 Metres (100ft)
Operating Temperature Range	60°C to 90°C
Resistance To Water Flow Between Return and Flow Connections (10 Deg Temp Rise)	X2 MAX – 35mm
Cut Out Temperature	100°C
Weight Empty	X2 MAX – 93kg
Water Capacity	X2 MAX – 19.25 litres

(12/16kW) Wallstar 1 MAX, X1 MAX, X1 System MAX, FS1 MAX

	12kW	14kW	16kW
Nozzle	0.35 80° S	0.45 80° ES	0.50 80° ES
Oil Pressure	125PSI	115PSI	120PSI
CO^2	12% +/-1%	12% +/-1%	12% +/-1%
air position	No. 0.4	No. 0.8	No. 1.8

(14/20kW) Wallstar 2 MAX, Wallstar 2 System MAX, X2 MAX, FS2 MAX

	14kW	16kW	18kW	20kW
Nozzle	0.45 80° ES	0.50 80° ES	0.55 80° ES	0.65 80° ES
Oil Pressure	115PSI	125PSI	125PSI	110PSI
CO^2	12% +/-1%	12% +/-1%	12% +/-1%	12% +/-1%
air position	No. 1.8	No. 1.7	No. 2.4	No. 3.2

(20/24kW) Wallstar 3 MAX, FS3 MAX

	20kW	22kW	24kW
Nozzle	0.65 80° ES	0.65 80° ES	0.65 80° ES
Oil Pressure	115PSI	130PSI	160PSI
CO^2	12% +/-1%	12% +/-1%	12% +/-1%
air position	No. 3.6	No. 4	No. 6

(23kW) Wallstar Combi MAX

	23kW
Nozzle	0.75 80° ES
Oil Pressure	105PSI
CO^2	12% +/-1%
air position	No 4.2

Burner Fault Diagnosis : Common To All Boilers

Burner fails to start	**Mains lamp not illuminated** ▪ Blown fuse ▪ Time clock / programmer not calling for heat ▪ Room or hot water thermostats not calling for heat
Burner lockout lamp is illuminated	**Lack of oil** ▪ Faulty solenoid coil ▪ Blocked nozzle ▪ Faulty fire valve ▪ Air in oil supply ▪ Empty oil tank ▪ Blocked oil filter **Flame extinguishes after a short period** ▪ Photocell faulty ▪ Faulty control box **No spark** ▪ Faulty control box ▪ Faulty ignition transformer ▪ Incorrect electrode setting ▪ HT leads electrodes
Motor does not run	▪ Seized oil pump ▪ Motor faulty ▪ Control box faulty ▪ Capacitor faulty • Motor does not run - pump coupling broken
Radio / TV interference	▪ Incorrect electrode setting ▪ Poor earth bonding ▪ Faulty ignition transformer
Smoky exhaust	▪ Blocked nozzle ▪ Incorrect burner settings
Burner starts violently	**Delayed Ignition** ▪ Incorrect electrode adjustment ▪ Electrode insulation damaged ▪ HT leads faulty ▪ Air in oil supply ▪ Incorrect air adjustment
Oil odours	▪ Incorrect combustion settings ▪ Oil leak
Unstable flame	▪ Incorrect head settings ▪ Low oil pressure ▪ Excess air ▪ Faulty nozzle

Regulations

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

BS 5410-1:2014	Oil installations up to 45KW output capacity for space heating and hot water supply purposes.
BS EN14336:2004	Heating systems in buildings. Installation and commissioning of water based heating systems.
BS 7593:2006	Treatment of water in hot water central heating systems.
Building Regulations	Part L1 Part J 2006 England and Wales, Part F Scottish Regulations and Technical Booklet L Northern Ireland.
BS 7671:2018	Requirements for electrical installations.
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.**
- **Location 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

IMPORTANT - 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

Protection of DHW Heat Exchanger (Wallstar Combi MAX)

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

After Installation

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

After Flushing

Add a corrosion inhibitor. This will minimise the chemical action and chemical change that takes place in a systems primary water and system components.

Note. The manufacturer's usage instructions for chemical cleaners and inhibitors should always be followed. Please refer to BS 7593:2006 for a detailed explanation of cleansing procedures.

Boiler Location : **Wallstar MAX Models**

IMPORTANT - Boilers should be installed no higher than 2.5m.

Noise levels
Consideration must 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.

Bathroom and bedroom installation should only be considered where there is no alternative.

Boiler Location : **X1 MAX, X1 System MAX, X2 MAX**

Noise levels
Consideration must be given to the following:

- 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.

Wall Duct & Flue Extension Kits

Only one extension kit per boiler is permitted. The extension kit is fitted to the inner half of the telescopic wall duct.

Extension Kit	Size	Part Number
Wallstar 1 MAX Wall Duct & Flue Extension Kit	100mm (4")	WA1CX100
Wallstar 2 MAX Wall Duct & Flue Extension Kit (Fits Standard & System Models)	100mm (4")	WA2CX100
Wallstar 3 MAX Wallstar Combi MAX Wall Duct & Flue Extension Kit	100mm (4")	WA3CX100

Wall Construction

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

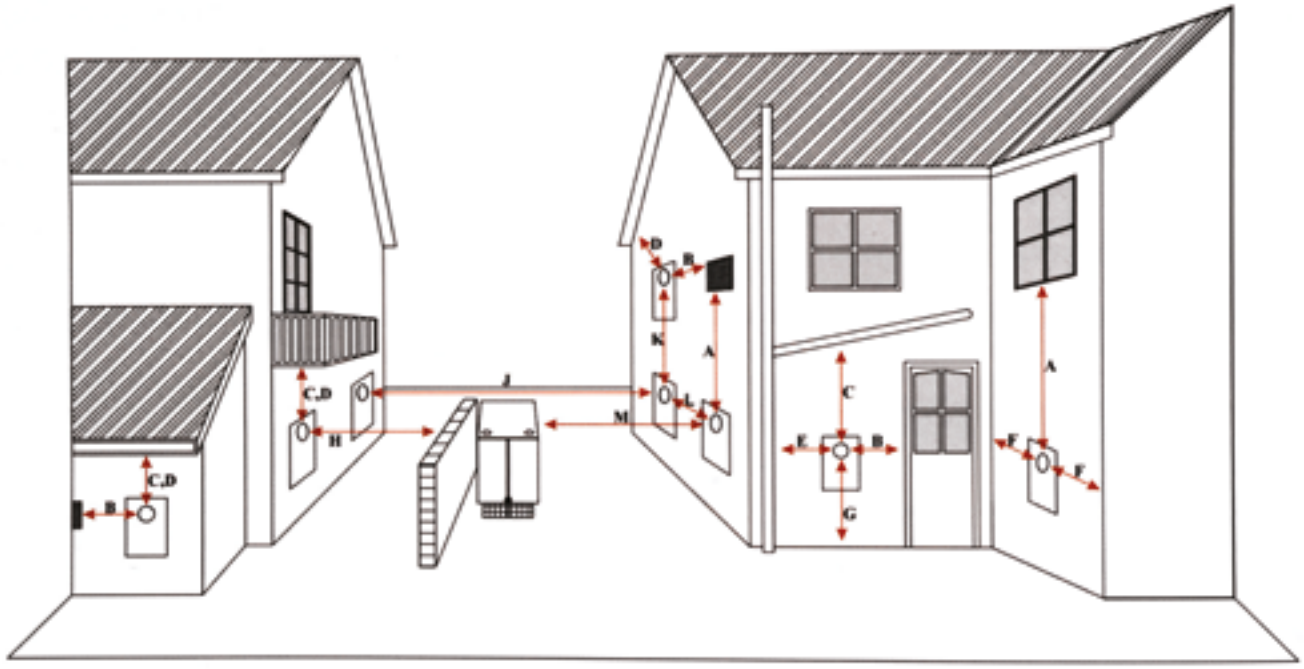
It is not necessary to construct a heat barrier around the wall duct.

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

Wall Thickness

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

The Wallstar MAX condensing models are supplied with telescopic wall ducts and flues, designed to fit through exterior walls 210mm to 340m thick. However with the addition of a 100mm extension kit, it is possible to install a Wallstar MAX condensing boiler in walls up to 440mm thick.



A	Directly Below An Opening (Air Brick, Window, etc)	**600mm**
B	Horizontally To An Opening	**600mm**
C	Below a Gutter, Eaves or Balcony With Protection (Note 2)	**75mm**
D	Below a Gutter, Eaves or Balcony Without 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 Surface or Boundry 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 taken from BS 5410-1:1997 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.

5. Boilers can produce sulphur deposits, occasionally these deposits are discharged out of the flue, this should be taken into consideration when planning to site flues over patios etc.

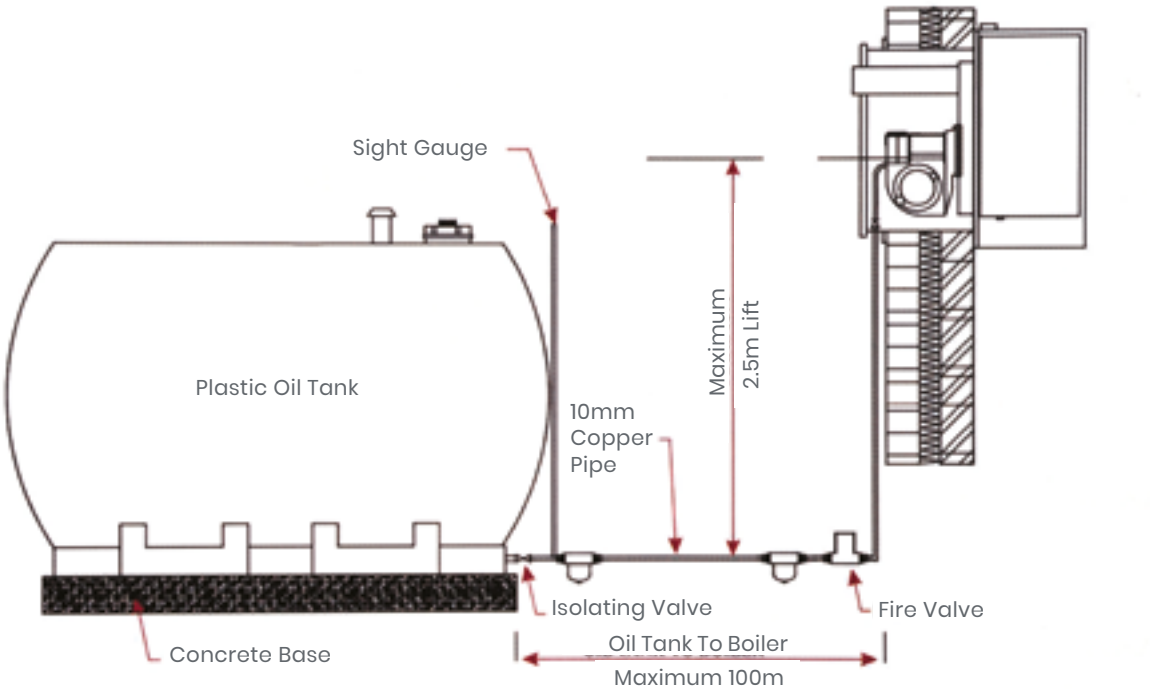
Oil Tank

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. Please refer to the appropriate requirement when locating oil tanks: "Control of Pollution Regulations", "Building Regulations" and OFTEC Technical Paper T19.

Oil Supply

Fuel Tank Below The Burner

The fuel pump can lift fuel to a height of 2.5m. **A two pipe system or deaerator (Tiger Loop, 3k or similar) is not required. If fitted will void all warranty.** For heights above 2.5m, please consult our technical department.



Pipework

Soldered fittings should not be used, as the joints will fail in the vent of a fire. Flux deposits may damage the pump and fuel may deteriorate the solder within the joint. Galvanised pipes 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.

Oil Filtration

All boilers are supplied with a flexible fuel line. If the flexible fuel line needs replacing it must be replaced by an item of the type (Part No. BS012). A paper element filter is also supplied and must be fitted adjacent to the boiler, replacement filters are available (Part No. BS076). Where a steel oil tank is installed we recommend a further paper element filter is also fitted adjacent to the oil tank.

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. Do not use PTFE Tape.

In the event of a fire

In accordance with Document J of the Building Regulations, "a means of automatic isolation of the fuel supply" in the form of a remote acting fire valve must be fitted inline of the fuel supply in accordance with BS 5410-1:1997. A clip is provided in the top of the wall duct for the fire valve capillary bulb.

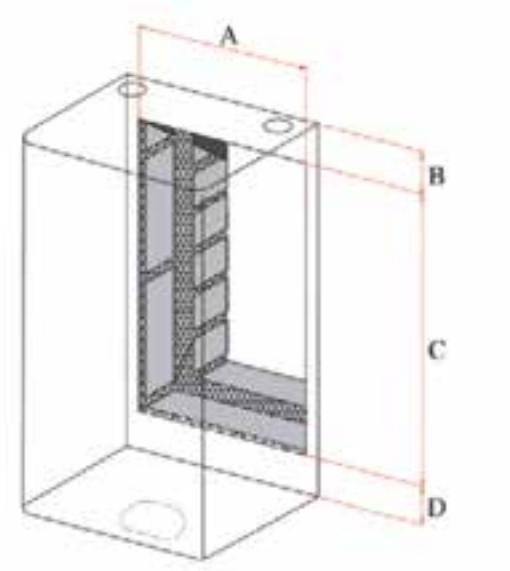
1 Cut a hole in the wall

Unpack the boiler, remove the burner and silencer box from the heat exchanger. Hole sizes stated allow for a 10mm clearance around the wall duct.

	A	B	C	D
Wallstar 1 MAX	350	40	520	40
Wallstar 2 MAX	380	100	560	40
Wallstar 3 MAX	410	110	600	40

Note: For all Wallstar MAX models, please allow 120mm clearance above the casing for removal of the thermostat phials.

For all Wallstar MAX models, please allow 75mm clearance above the casing for access to the case retaining screws.



2 Wall Plate & Duct Assembly

Place the Wall Plate and attached Wall Duct inner through the opening you have created in the wall. Drill through the holes in the wall plate, and secure the assembly to the interior wall using the eight wall plugs and screws provided. 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.

Note: Hole positions vary according to model.

3 Trim

Take the wall duct outer and attach the trim using the 4 self drilling screws from the fixing kit.

4 Wall Duct Outer

Slide the wall duct outer with the now attached trim over the wall duct inner. Join the wall duct outer and wall duct inner together using the 4 supplied self drilling screws.

5 Heat Exchanger

Lift the heat exchanger into position and secure it with the nuts and washers provided. Fit 1" BSP pipe fittings to the flow and return sockets and a drain cock to the 1/2" socket.

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

6 Control Panel

Fit the control panel onto the wall plate with the nuts provided.

7 Thermostats

Place the thermostat phials into their pockets located at the top of the heat exchanger.

IMPORTANT - Ensure the thermostat capillary tubes are kept clear of any possible electrical contact on the control panel.

8 Electrical Connections

A 20mm hole is provided in the wall plate for concealed cable entry. Alternatively use plastic ducting to any corner of the wall plate. The earth bonding cable can be passed through an 8mm hole, adjacent to the test switch, and secured to the m5 stud provided in the wall duct.

Note: The power supply to the boiler should be fitted with a 5 amp fuse. The electrical supply to the boiler should be made via a switched and fused spur located near the boiler, fitted with a 5 amp fuse. A frost thermostat is fitted as standard to protect the boiler. A permanent live must be fitted to the boiler for frost protection. Where appropriate, an additional frost thermostat maybe required.

9. Fit the white casing

Lift the case into position, ensure the tabs and slots are aligned, and then tighten the retaining screws located on the top of the wall plate/white casing.

10 Top Baffle

Firstly place the two separate top baffle boxes into the flue chamber and then slide the single piece of the baffle on top of these.

11 Silencer Box

Slide the silencer box over the 4 mounting pins located on the heat exchanger. Secure the silencer box to heat exchanger by tightening the 4 supplied wing nuts and penny washers down onto the mounting pins.

12 Flue Positioning

Pull the end of the flue out until the flange on it sits flush against the back of the access door.

13 Burner

Fit the burner to the mounting flange on the silencer box.

14. Connect The Fuel Line

Connect the fuel line from the burner, to the oil supply.

15. Burner Lead

Connect the 5 pin plug and socket.

IMPORTANT - The Wallstar MAX comes supplied with a non-return valve attached to the burner pump. No additional non-return valve must be used. Should the boiler be used in conjunction with a purpose designed underground tank, the foot valve found inside such tanks must be removed or at least rendered ineffective. In addition to the sealed fuel filter found in the boilers flexible fuel line, a replacement element fuel filter must be fitted near the tank.

16 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, remove the vent plug during this sequence. If ignition fails the burner will go to lock out, wait 60 seconds and repeat the procedure.

17 Testing 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.

18 Access Door

Fit the access door onto the wall duct, secure it in place by tightening the two screws located on both sides.

19 Commissioning the Boiler

Installation is complete. The boiler must now be commissioned by a competent engineer. The “Benchmark” log found at the back of this manual should be completed and the warranty documentation returned to HRM Boilers Ltd.

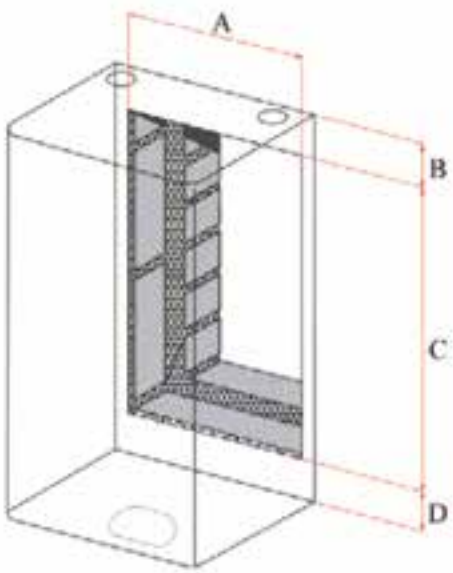
1 Cut a hole in the wall

Unpack the boiler, remove the burner and silencer box from the heat exchanger.

	A	B	C	D
Wallstar 2 System MAX	380	180	560	85

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

Note. Please allow 75mm clearance above the casing for access to the case retaining screws.



2 Wall Plate & Duct Assembly

Place the Wall Plate and attached Wall Duct inner through the opening you have created in the wall. 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.

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.

3 Trim

Take the wall duct outer and attach the trim using the 4 stainless steel screws from the fixing kit.

4 Wall Duct Outer

Slide the wall duct outer with the now attached trim over the wall duct inner.

Join the wall duct outer and wall duct inner together using the 4 supplied self drilling screws.

5 Heat Exchanger

Lift the heat exchanger into position and secure it with the nuts and washers provided. Fit 1" BSP pipe fittings to the flow and a drain cock to the 1/2" socket.

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

6 Attach The Pump

Attach the circulating pump to the heat exchanger and tighten, ensuring the supplied washers are used between the connections.

7 Expansion Vessel

Place the expansion vessel on top of the heat exchanger and connect the hose to the expansion vessel nipple on the heat exchanger.

8 Pressure Relief Valve

Connect the pressure relief valve to the underside of the heat exchanger.

9 Control Panel

Fit the control panel onto the wall plate with the nuts provided.

10 Pressure Gauge

Take the capillary/phial from the pressure gauge mounted in the control panel and insert it into the pressure relief valve.

11 Thermostats

Place the thermostat phials into their pockets located at the top of the heat exchanger. IMPORTANT - Ensure the thermostat capillary tubes are kept clear of any possible electrical contact on the control panel.

12 Pump Lead

Take the lead that comes from the pump and place it behind the left hand side of the wall plate. Connect the 3 pin plug on the end of the lead to the 3 pin socket coming from the control panel.

13 Pressure Relief Valve Pipe Work

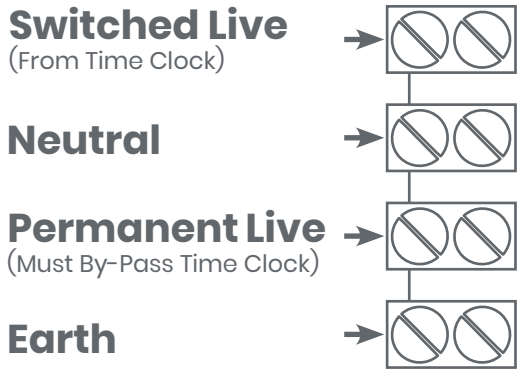
The flow from the pressure relief valve should be plumbed away.

14 Electrical Connections

A 20mm hole is provided in the wall plate for concealed cable entry. Alternatively, use plastic ducting to any corner of the wall plate. The earth bonding cable can be passed through an 8mm hole, adjacent to the test switch and secured to the 5mm stud provided in the wall duct.

NOTE - The power supply to the boiler should be fitted with a 5 amp fuse. The electrical supply to the boiler should be made via a switched and fused spur located near the boiler, fitted with a 5 amp fuse.

A frost thermostat is fitted as standard to protect the boiler. Where appropriate, an additional frost thermostat may be required to protect the rest of the heating system.



15 Filling The System

Open the filling loop valve and pressurise the system until 1 bar is showing on the pressure gauge, it may be necessary after venting the air from the heating system to repeat this operation in order to fill the system correctly.

16 Fit The White Case

Lift the case into position, ensure the tabs and slots are aligned, and tighten the retaining screws.

17 Top Baffle

Firstly place the two separate top baffle boxes into the flue chamber and slide the single piece of the baffle on top of these.

18 Silencer Box

Slide the silencer box over the 4 mounting pins located on the heat exchanger. Secure the silencer box to the heat exchanger by tightening the 4 supplied wing nuts and penny washers down onto the mounting pins.

19 Flue Positioning

Pull the end of the flue out until the flange on it sits flush against the back of the access door.

20 Burner

Fit the burner to the mounting flange on the silencer box.

21 Connect The Fuel Line

Connect the fuel line from the burner to the oil supply.

IMPORTANT - The Wallstar MAX is supplied with a non-return valve attached to the burner pump. No additional non-return valve must be used. Should the boiler be used in conjunction with a purpose designed underground tank, the foot valve found inside such tanks must be removed or at least rendered ineffective. In addition to the sealed fuel filter found in the boilers flexible fuel line, a replaceable element fuel filter must be fitted near the tank.

22 Burner Lead

Connect the 5 pin plug and socket.

23 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 remove the vent plug during this sequence.

24 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 indicates that air is being drawn in. This must be cured before proceeding.

25 Access Door

Fit the access door onto the wall duct, secure it in place by tightening the 2 screws located on both sides.

26 Commissioning The Boiler

Installation is complete. The boiler must now be commissioned by a competent engineer. The 'Benchmark' log found at the back of this manual should be completed and the warranty documentation returned to HRM Boilers Ltd.

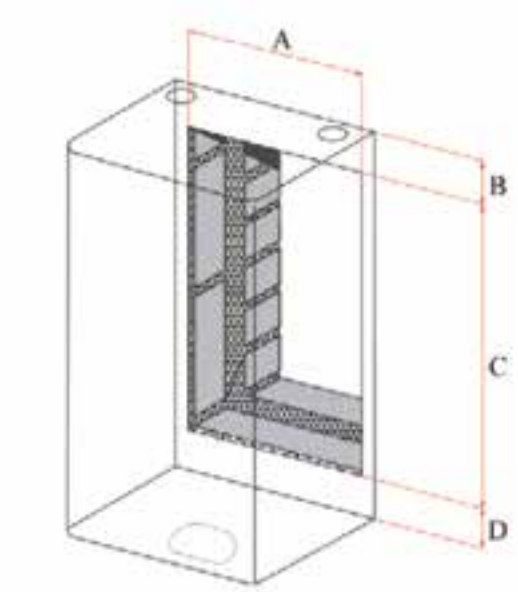
1 Cut a hole in the wall

Unpack the boiler, remove the burner, silencer box, top baffles, expansion vessel, pump and fugas assembly from the heat exchanger.

	A	B	C	D
Wallstar Combi MAX	410	170	600	130

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

NOTE - Please allow 150mm clearance below and 500mm above the white casing for service access.



2 Wall Plate & Duct Assembly

Place the Wall Plate and attached Wall Duct inner through the opening you have created in the wall. Drill through the holes in the wall plate, and secure the assembly to the interior wall using the eight wall plugs and screws provided.

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.

3 Heat Exchanger

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

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

4 Expansion Vessel

Place the expansion vessel on top of the heat exchanger and connect the hose to the expansion vessel nipple on the heat exchanger.

5 Pump & Manifold Block

Re-attach the circulating pump and the manifold block to the heat exchanger.

6 Connect The Pipe Work

Connect the system pipe work. The boiler has a built in bypass. 90 degree copper bends are supplied for connecting the Heating Return and Heating Flow.

7 Tundish Installation

The flow from the pressure relief valve should be plumbed away. A Tundish must be installed in accordance with Building Regulations : G3.

8 Filling the System

Ensure the automatic air vent on top of the heat exchanger is functioning correctly. Open the filling loop valve and pressurise the system until 1 bar is showing on the pressure gauge. It may be necessary after venting air from the heating system, to repeat this operation in order to fill the system correctly.

9 Fit The White Casing

The casing is supplied pre-assembled. Remove the front cover first, then the top panel and then the bottom panel which has the control panel assembly attached to it.

10 Side Panels

Locate the side panels by hooking the slots over the screws located in the wall plate. Tighten to secure.

11 Top Panel

Slide the white case top panel into the two side panels until it rests on the supports at the back.

12 Bottom Panel & Control Panel

Slide the bottom panel, with the control panel assembly still attached inside the white case. Align the screws on the bottom panel up with the slots on the base of the side panels and drop them through, slide the bottom panel back and tighten the screws. Leave the control panel in the forward position.

13 Mains Supply

A switched 13 amp socket should be installed near the boiler. The boiler is supplied with a 13 amp plug (fused at 5 amps) with a 1.5m lead. For concealed cable entry, 20mm holes are provided in the wall plate, alternatively use plastic ducting to any corner of the wall.

14 Burner Lead

Pass the burner lead which is attached to the control panel through the rectangular opening in the wall plate and secure the switch panel. Ensure the switch plate gasket is in position.

15 Pump Connection

Connect the 3 pin socket coming from the control panel to the corresponding lead attached to the pump.

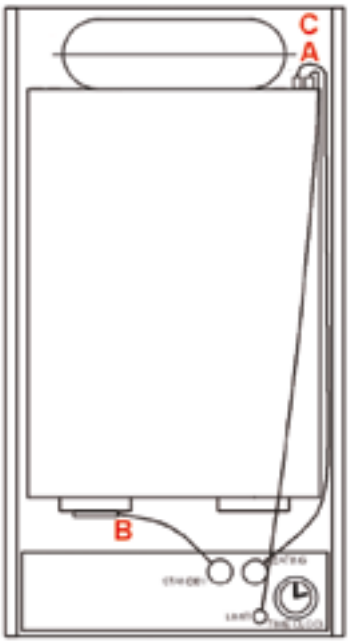
16 Micro Switch Connection

Connect the 6 pin socket coming from the control panel to the corresponding lead attached to the micro switch.

17 Thermostats

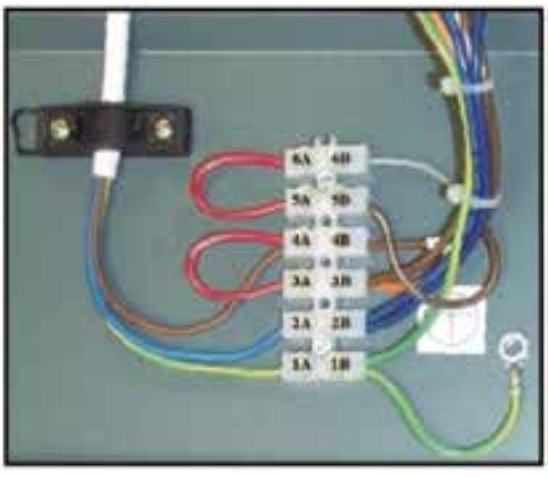
Uncoil the three thermostat capillaries marked A, B and C and place the phials into appropriate pockets as shown. Thermostats A and C must be routed up the side of the heat exchanger in order to reach their corresponding pockets.

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



18 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'.



18 Secure Control Panel

Pivot the control panel into its upright position and secure it to the side panels using the two screws provided.

19 Top Baffles

Firstly place the two separate top baffles boxes into the flue chamber and then slide the single piece of the baffle on top of these.

20 Silencer Box

Slide the silencer box over the 4 mounting pins located on the heat exchanger. Secure the silencer box to heat exchanger by tightening the 4 supplied wing nuts and penny washers down onto the mounting pins.

21 Trim

Take the wall duct outer and attach the trim using the 4 steel screws from fixing kit.

22 Wall Duct Outer

Slide the wall duct outer with the now attached trim over the wall duct inner as shown. Join the wall duct outer and wall duct inner together using the 4 supplied self drilling screws.

23 Burner

Fit the burner to the mounting flange on the silencer box.

24 Connect The Fuel Line

Connect the fuel line from the burner to the oil supply.

IMPORTANT - The Wallstar MAX comes supplied with a non-return valve attached to the burner pump. No additional non-return valve must be used. Should the boiler be used in conjunction with a purpose designed underground tank, the foot valve found inside such tanks must be removed or at least rendered ineffective. In addition to the sealed fuel filter found in the boilers flexible fuel line, a replaceable element fuel filter must be fitted near the tank.

25 Burner Lead

Connect the 4 pin plug and socket.

26 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 remove the vent plug during this sequence.

27 Access Door

Fit the access door onto the wall duct, secure it in place by tightening the 2 screws located on both sides.

28 Flue Positioning

Pull the end of the flue out until the flange on it sits flush against the back of the access door.

29 Commissioning The Boiler

Installation is complete. The boiler must now be commissioned by competent engineer. The 'Benchmark' log found at the back of this manual should be completed and the warranty documentation returned to HRM Boilers Ltd.

1 Unpack The Boiler

Remove the fibre glass cover, burner assembly, silencer box assembly, heat exchanger, top baffle and control panel.

NOTE - Keys for the fibre glass cover are secured to the burner.

2 Attach Wall Plate To Wall

4 Rawl bolts are supplied to secure the wall plate to the wall. The drill size for the Rawl bolts is 14mm. Secure the wall plate to the wall and ensure that it is level.

3 Drill Holes For Pipe Work & Power Supply

Once the wall plate is secure, drill holes for the pipe work and power supply connections with a suitably sized drill bit.

4 Heat Exchanger

The boiler is supplied with 22mm copper end feed bends for the flow and return connections, and a drain cock. Lift the heat exchanger into position, secure with nuts and washers provided. Do not run any pipework over the thermostat pockets.

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

5 Top Baffle

Place the top baffle into the heat exchanger.

6 Control Panel

Fit the control panel onto the wall plate and secure with the screw provided.

7 Thermostats

Place the thermostat phials into their pockets located at the top of the heat exchanger.

IMPORTANT - Ensure the thermostat capillary tubes are kept clear of any possible electrical contact on the control panel.

8 Electrical Connections

A 20mm hole is provided in the wall plate for concealed cable entry. Use round cable ducting to pass wires through the wall cavity. The earth bonding cable can be secured to the m5 stud provided on the wall plate.

Note: The power supply to the boiler should be fitted with a 5 amp fuse. The electrical supply to the boiler should be made via a switched and fused spur located near the boiler, fitted with a 5 amp fuse.

A frost thermostat is fitted as standard to protect the boiler. Where appropriate, an additional frost thermostat may be required to protect the rest of the heating system.

9 Silencer Box

Slide the silencer box over the 4 mounting pins located on the heat exchanger. Secure the silencer box to heat exchanger by tightening the 4 supplied wing nuts and penny washers down onto the mounting pins.

10 Burner

Fit the burner to the mounting flange on the silencer box.

11 Connect The Fuel Line

Connect the fuel line from the burner, to the oil supply.

IMPORTANT - The X MAX range comes supplied with a non-return valve. No additional non-return valve must be used. Should the boiler be used in conjunction with a purpose designed underground tank, the foot valve found inside such tanks must be removed or at least rendered ineffective. A replacement element fuel filter must be fitted near the tank.

12 Burner Lead

Connect the 5 pin plug and socket.

13 Condensate Drain

In order to drain away condensate produced in operation there is a stainless steel tube connection on the underside of the flue, which comes pre-connected to a flexible hose. The flexible hose supplied forms the condensate trap and is terminated with a rubber fitting which will seal inside 22mm plastic waste pipe that must be connected into a soak-away, the household drains or a vertical stack.

14 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, remove the vent plug during this sequence. If ignition fails the burner will go to lock out, wait 60 seconds and repeat the procedure.

15 Testing 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.

16 Casing

Lift the case into position, secure it to the wall plate using the lock located on the underside.

17 Commissioning the Boiler

Installation is complete. The boiler must now be commissioned by a competent engineer. The “Benchmark” log found at the back of this manual should be completed and the warranty documentation returned to HRM Boilers Ltd.

1 Unpack The Boiler

Remove the fibre glass cover, burner assembly, silencer box assembly, heat exchanger, top baffle and control panel.

NOTE - Keys for the fibre glass cover are secured to the burner.

2 Attach Wall Plate To Wall

4 Rawl bolts are supplied to secure the wall plate to the wall. The drill size for the Rawl bolts is 14mm. Secure the wall plate to the wall and ensure that it is level.

3 Drill Holes For Pipe Work & Power Supply

Once the wall plate is secure, drill holes for the pipe work and power supply connections with a suitably sized drill bit.

4 Heat Exchanger

The boiler is supplied with 22mm copper end feed bends for the flow and return connections, and a drain cock. Lift the heat exchanger into position, secure with nuts and washers provided.

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

5 Top Baffle

Place the top baffle into the heat exchanger.

6 Control Panel

Fit the control panel onto the wall plate and secure with the screw provided.

7 Thermostats

Place the thermostat phials into their pockets located at the top of the heat exchanger.

IMPORTANT - Ensure the thermostat capillary tubes are kept clear of any possible electrical contact on the control panel.

Boiler flow pipe at front near the thermostats. Return pipe is nearest the wall.

8 Electrical Connections

A 20mm hole is provided in the wall plate for concealed cable entry. Use round cable ducting to pass wires through the wall cavity. The earth bonding cable can be secured to the m5 stud provided on the wall plate.

Note: The power supply to the boiler should be fitted with a 5 amp fuse. The electrical supply to the boiler should be made via a switched and fused spur located near the boiler, fitted with a 5 amp fuse.

A frost thermostat is fitted as standard to protect the boiler. Where appropriate, an additional frost thermostat may be required to protect the rest of the heating system.

9 Silencer Box

Slide the silencer box over the 4 mounting pins located on the heat exchanger. Secure the silencer box to heat exchanger by tightening the 4 supplied wing nuts and penny washers down onto the mounting pins.

10 Attach Pump

Attach the pump to the heat exchanger, ensuring that the supplied washer is used between the connection.

Connect the 3 pin plug from the pump to the control panel.

11 Pressure Relief Valve

Attach the pressure relief valve to the half inch socket located at the back left of the heat exchanger in the orientation shown. The flow from the pressure relief valve should be plumbed away through the bottom of the wall plate using the supplied 15mm copper pipe.

12 Expansion Vessel

Hook the expansion vessel nut over the bracket located at the back of the heat exchanger. Connect the other end of the expansion vessel hose to the nipple on the heat exchanger.

13 Filling The System

25mm diameter holes are provided in the wall plate allowing a connection to a cold feed. Connect the filling loop to the heat exchanger on the 1/2" elbow. Open the filling loop valve and pressurise the system until 1 bar is showing on the pressure gauge. It may be necessary, after venting air from the heating system, to repeat this operation in order to fill the system correctly.

14 Burner

Fit the burner to the mounting flange on the silencer box.

15 Connect The Fuel Line

Connect the fuel line from the burner, to the oil supply.

16 Burner Lead

Connect the 5 pin plug and socket.

IMPORTANT - The X MAX range comes supplied with a non-return valve. No additional non-return valve must be used. Should the boiler be used in conjunction with a purpose designed underground tank, the foot valve found inside such tanks must be removed or at least rendered ineffective. A replacement element fuel filter must be fitted near the tank.

17 Condensate Drain

In order to drain away condensate produced in operation there is a stainless steel tube connection on the underside of the flue, which comes pre-connected to a hose. The hose supplied forms the condensate trap and is terminated with a rubber fitting which will seal inside 22mm plastic waste pipe that must be connected into a soak-away, the household drains or a vertical stack.

18 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, remove the vent plug during this sequence. If ignition fails the burner will go to lock out, wait 60 seconds and repeat the procedure.

19 Testing 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.

20 Casing

Lift the case into position, secure it to the wall plate using the lock located on the underside.

21 Commissioning the Boiler

Installation is complete. The boiler must now be commissioned by a competent engineer. The "Benchmark" log found at the back of this manual should be completed and the warranty documentation returned to HRM Boilers Ltd.

The FS MAX range of boilers are mainly pre-assembled to make installation as quick and easy as possible. Depending on the orientation you plan to install the boiler in (sideways or back on to the wall). You may need to remove a side and / or back panel as well as the top panel.

1 Remove Parts

Remove the Burner from the boiler. Remove the Flue, Wall Spacer, Fuel filter kit and Free Remote Acting Fire Valve.

Remove the Silencer Box using the 4 Wing Nuts and Washers.

2 Flow & Return

The Flow & Return Sockets accept 1" BSP fittings (not supplied).

Not on other models.

Flow & Return pipes plus electrical connection can be taken through either side or the rear of the boiler, a Wall Spacer is supplied. It is important the spacer is used to space the boiler from the wall to allow access to compression fittings which should be used on the Flow & Return as they leave the boiler casing.

3 Silencer Box

With the Silencer Box on a flat surface, attach the Flue using the Washers and Nuts provided.

IMPORTANT - Ensure that the Condensate Collection tray is horizontal.

4 Baffles

The Baffles should already be in place in the Heat Exchanger. It is worth taking the opportunity to double check nothing has moved out of place in transit before re-fitting the Silencer Box.

The baffle assemblies are identical to those described in the other boiler models in the manual.

5 Fitting The Boiler

The Silencer Box with Flue attached can now be reattached to the Heat Exchanger using the 4 Wing nuts and Washers.

The Burner can be re-fitted and the fuel supply and condensate pipes connected. There are holes in the base of the Boiler to allow the pipes to enter / leave the casing.

6 Control Panel

The Control Panel is attached inside the boiler casing. It has two sockets, one marked for connecting the power supply to the boiler and one for the Burner plug connection, the wiring and Control Panel are the same as detailed for the X MAX Range.

There is an Earthing Stud located directly below the Control Panel.

7 Remote Fire Valve

There are clips to hold the Remote Fire Valve bulb, located on the underside of the Tool Tray.

Not on other models.

8 Thermostat

The Control and Limit Thermostat bulbs go in the Thermostat Pockets on the top of the Heat Exchanger. A bracket holds the Frost Thermostat to the side of the Heat Exchanger.

9 Firing The Boiler

When the boiler is initially fired there may be a strong odour and inaccurate readings, this is due to coatings on the baffles and insulation in the boiler being burnt off. After a short time this should pass and the boiler run cleaner.

10 Flue Guard

The Flue Guard is attached to the Front Panel with four nuts and bolts, there are slots on the Front Panel marked to correspond with the different FS MAX models. Line the Flue Guard up with the appropriate slots and tighten the screws to fix.

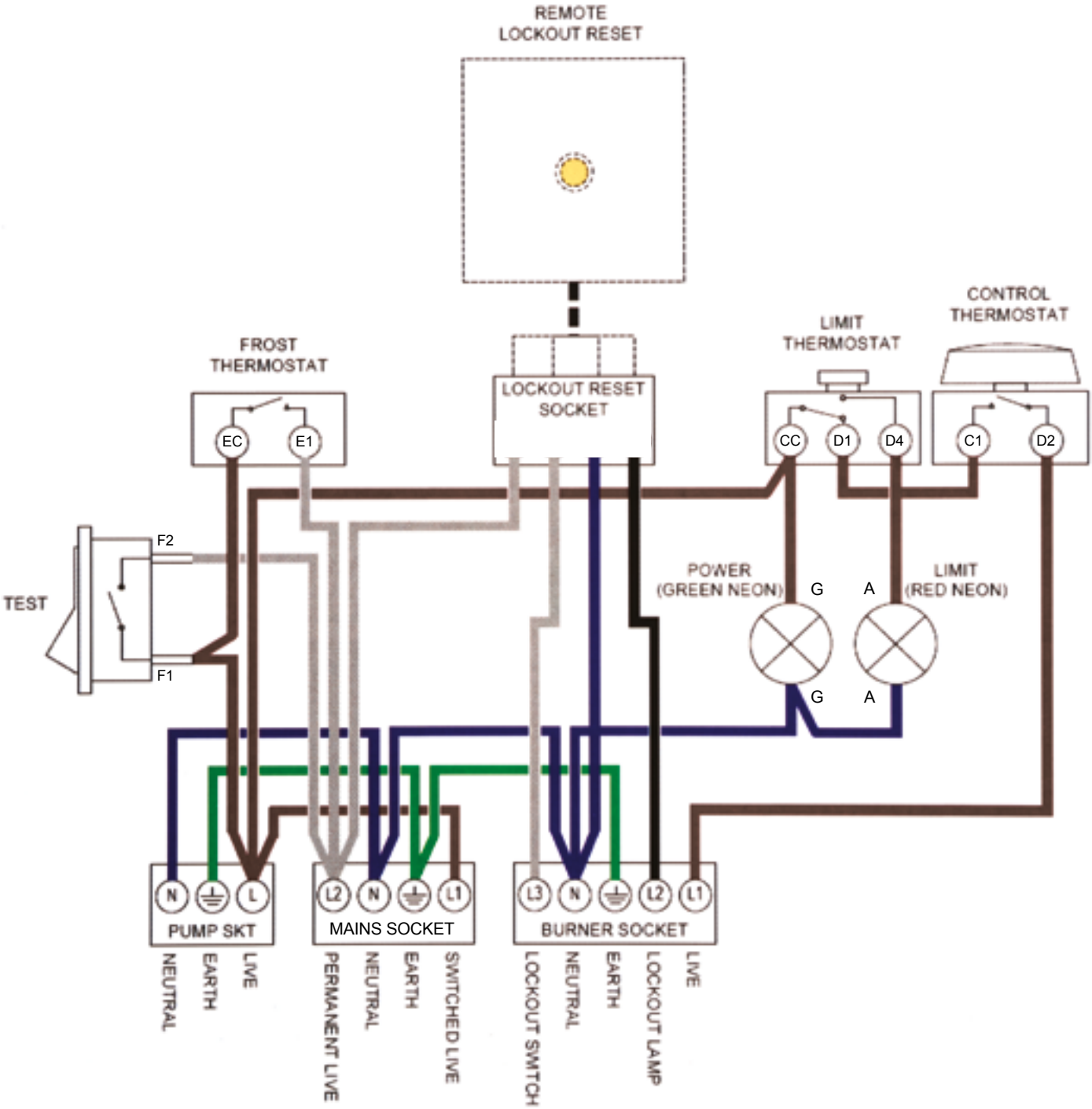
11 Front Panel

After re-fitting the Top Panel, the Front Panel can be re-fitted. To fit the Front Panel, the top of the Front Panel should be inserted first then the bottom.

12 Benchmark Log Book

The Benchmark Log Book is in the back of this manual.

FS Max Range

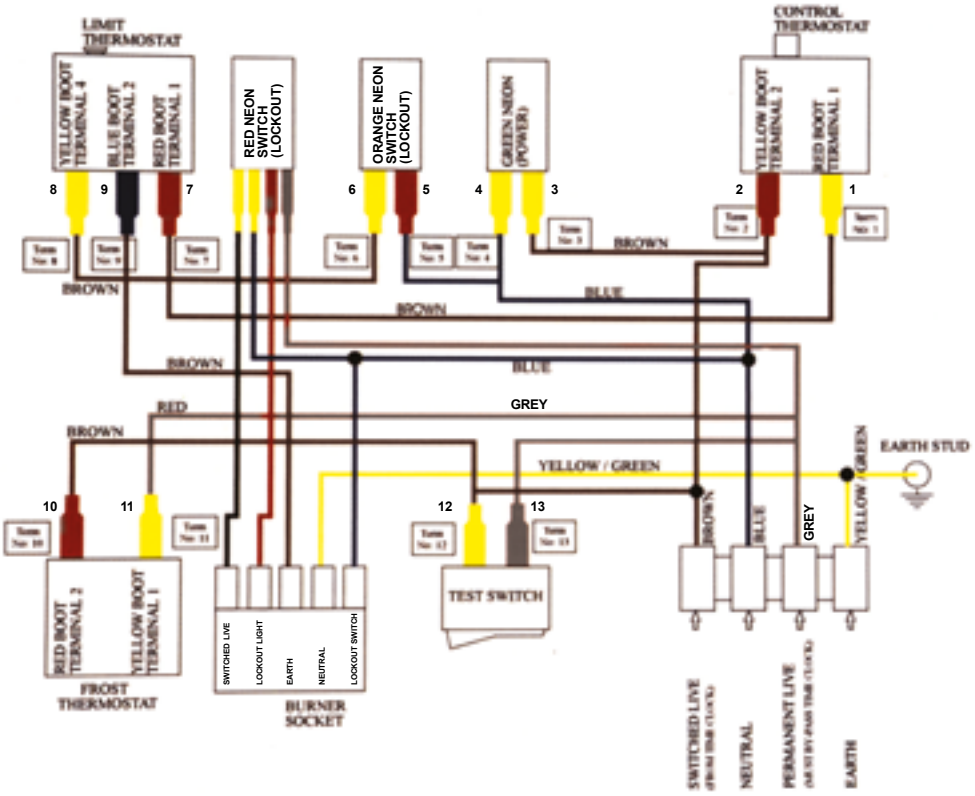


Note.

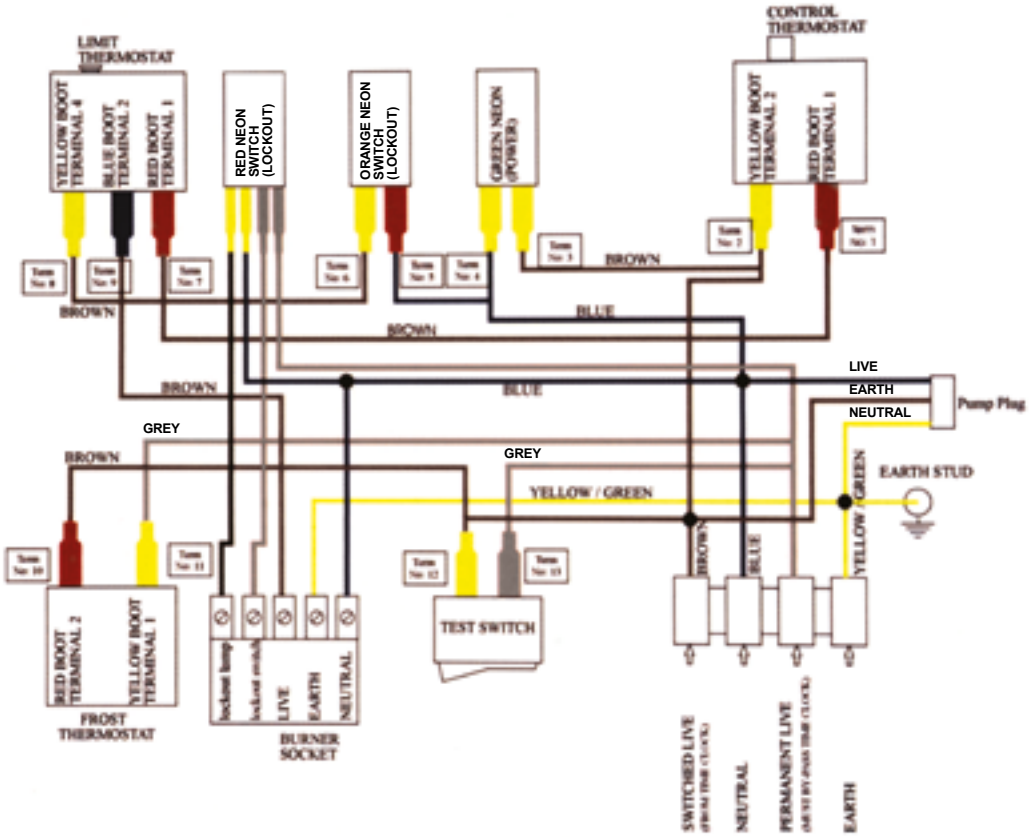
The electrical supply to the boiler should be made via switched and fused spur located near the boiler, fitted with a 5 amp fuse. The pump socket is only utilised on the FS MAX Range. A frost thermostat is fitted as standard to protect the FS MAX Range boilers. Where appropriate, an additional frost thermostat may be required to protect the rest of the heating system.

Pump socket is only utilised on the X1 System MAX range.

Wallstar 1 MAX, Wallstar 2 MAX, Wallstar 3 MAX,



Wallstar 2 System MAX

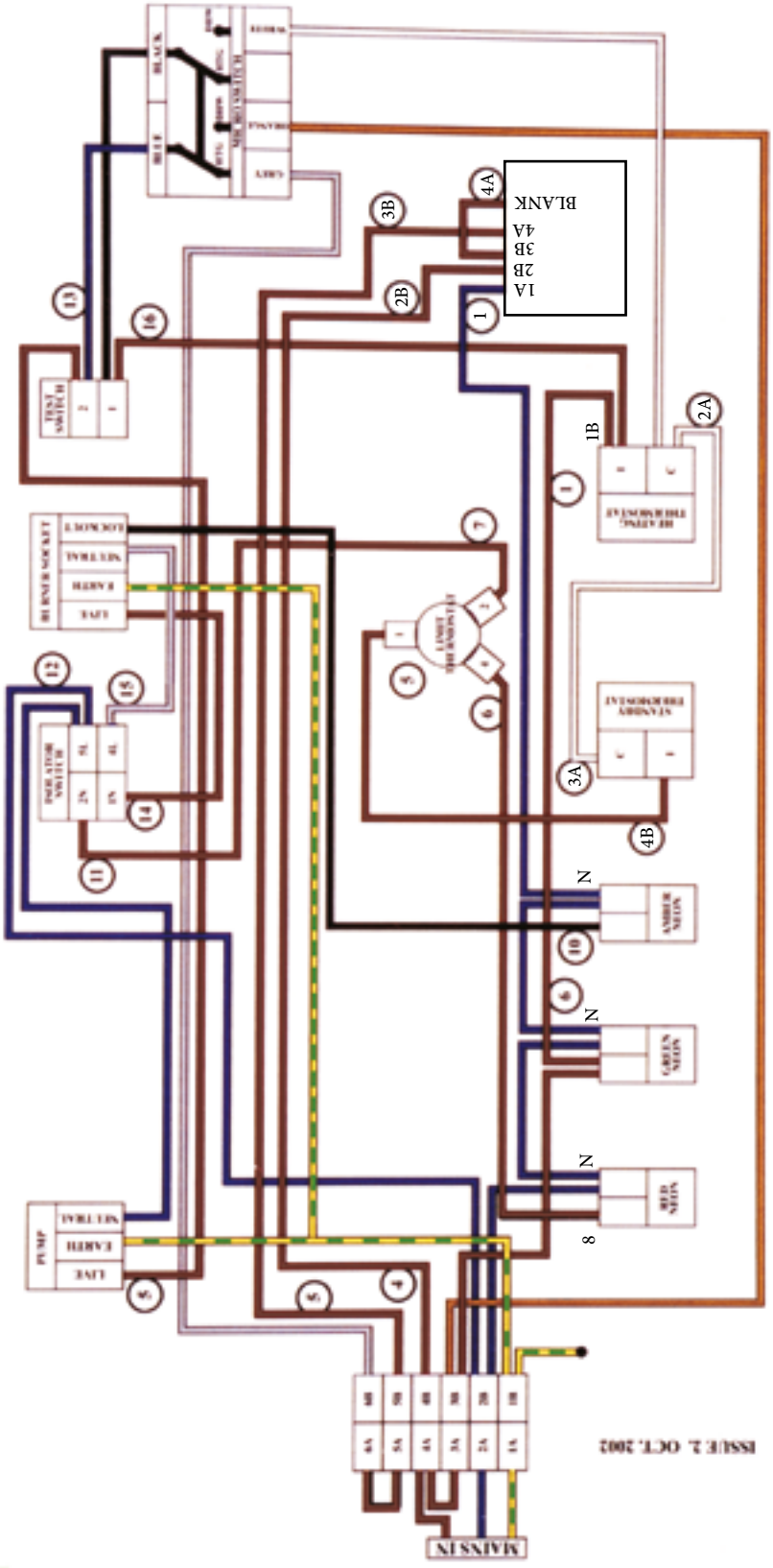


Note.

The electrical supply to the boiler should be made via switched and fused spur located near the boiler, fitted with a 5 amp fuse.

A frost thermostat is fitted as standard to protect the Wallstar MAX and Wallstar 2 System MAX boilers. Where appropriate, an additional frost thermostat may be required to protect the rest of the heating system.

Wallstar Combi MAX



Note.

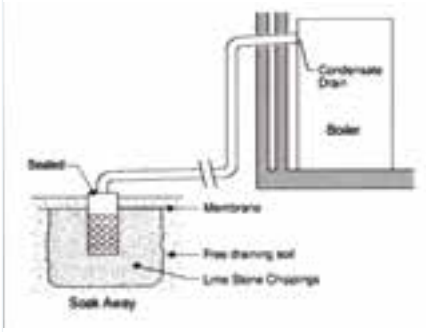
The electrical supply to the boiler should be made via switched and fused spur located near the boiler, fitted with a 5 amp fuse.

The Wallstar MAX Range

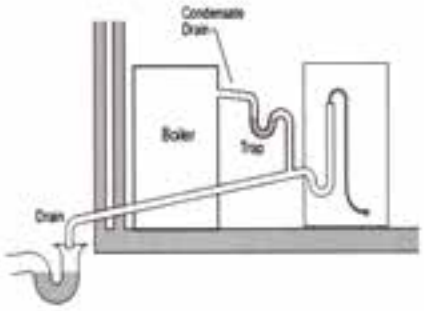
The Wallstar MAX condensing range of boilers use a single unit heat exchanger similar to those in the conventional non-condensing Wallstar MAX. However, in order to drain away condensate produced in operation, there is a stainless steel tube connection on the underside of the flue which comes pre-connected to a flexible hose. The flexible hose supplied forms the condensate trap and is terminated with a rubber fitting which will seal inside 22mm plastic waste pipe.

The hose can either exit the boiler casework through the bottom of the wall-plate or be taken out through the bottom of the wall duct, in both cases it must be connected into a soak-away (figure 1), the household drains (figure 2) or a vertical stack (figure 3) via the supplied condensate trap.

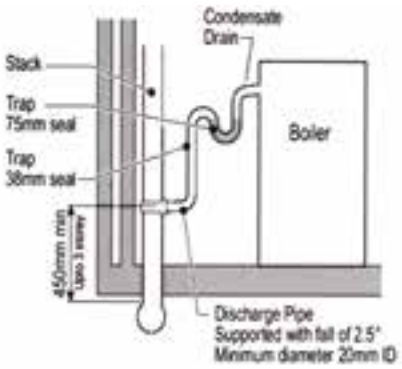
Soak Away
Figure 1



Household Drains
Figure 2



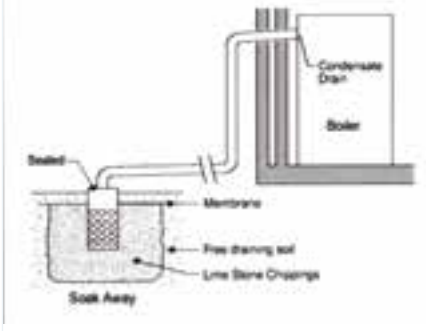
Vertical Stack
Figure 3



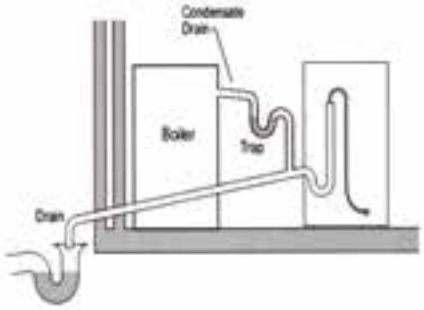
The X MAX Range

The X MAX range of boilers use a single unit heat exchanger similar to those in the condensing Wallstar MAX. However, in order to drain away condensate produced in operation, there is a stainless steel tube connection on the underside of the flue which comes pre-connected to a flexible hose. The flexible hose supplied forms the condensate trap and is terminated with a rubber fitting which will seal inside 22mm plastic waste pipe. It must be connected into a soak-away (figure 1), the household drains (figure 2) or a vertical stack (figure 3).

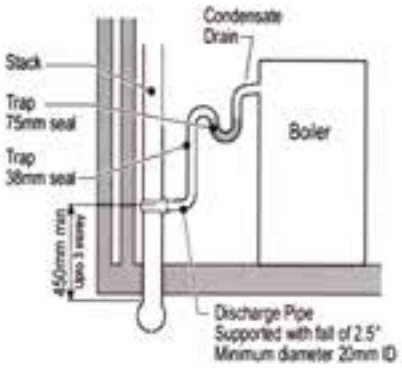
Soak Away
Figure 1



Household Drains
Figure 2



Vertical Stack
Figure 3



Servicing

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 contact details of an engineer in your area.

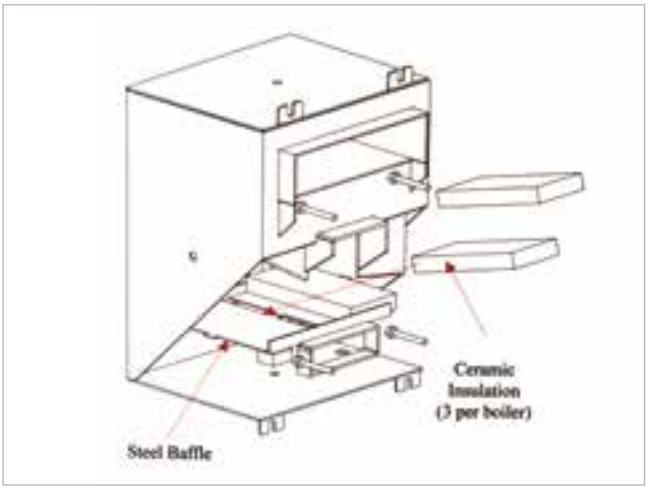
IMPORTANT - Isolate the power supply before servicing the boiler

Servicing Steps

1. Remove the burner, silencer box and combustion chamber baffles / insulation, clean the internal heat exchanger surfaces and components. Replace the combustion chamber baffles and insulation with new items if required.
2. Check and replace seals, gaskets and flexible oil lines as appropriate.
3. Clean or replace filter elements.
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.

IMPORTANT - Do not use a wire brush to clean flue ways.

Baffle Replacement



Priming The Burner

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

Wallstar MAX Fault Diagnosis

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?

Cold 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 10.5l per minute.
- Check the operation of the mixing valve. Is the 'hot water' (right hand) inlet to the 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.

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?

Cold DHW, heating functions satisfactorily

- Pipe work for the 'mains in' and DHW have been connected the wrong way round.

No heating, DHW functions satisfactorily

- Has the plunger on diverter valve stuck in the out position? Press the plunger a few times to free or dismantle the diverter valve assembly and clean.

DHW flow is less than 10.5 litres

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

The boiler overheat thermostat needs resetting frequently

- Has the boiler lost system pressure?

System pressure is low

- Recharge system pressure by opening the auto air vent and opening the filling loop valve and increasing pressure to 1 bar.

BS012
12-25 Flex Oil Line

BS018
B9 Intermediate Gasket

BS023
B9-ECOFLAM Photocell

BS024
B9 AEG Motor

BS034
0.5 x 80 deg. EH Nozzle

BS041
Satronic DKO Control Box

BS047
Gasket (Round Black)

BS049
Flange Gasket

BS050 Motor

BS051
Capacitor

BS052
Danfoss Pump BFP11L3 (STERL)

BS055
Transformer EB1

BS054
HT Leads (Pair)

BS067
Electrode Kit

BS065
Sterling Photocell

BS072
3-8" Kerosene Filter Kit

BS076
Filter Element & 'O' Ring

BS077
Telescopic Flue Seal RED

IN003
12mm Glass Rope

BS118
Danfoss Stop Plug 071N0604

BS120
Siemens LMO 14 Control Box

COM416-5B
Pipe xchanger To Fugas

BSUFK-3
Non-Return Fire Valve Assy

BS070
Danfos Solenoid Coil

COM010
Plate Heat Exchanger Assy

COM012
Manifold Assembly

COM011
Combi mixing Valve Inc Pipes

COM013
Combi Washer Set

COM424
Diaphram Service Kit

EL010B
Frost Thermostat

EL209
100 Degree Limit Stat

EL221
110 Degree Limit Stat

COM423
Diverter Valve Service

EL223
Control 60-90 Range

EL224
Auxiliary Stat Preset at 90deg

COM432
Grundfoss Pump UPM3

RP021
12-25 Round Burner Gasket

COM317
1/2"BSP Automatic Air Vent

COM301
Pressure Relief Valve

EL040
Combi Microswitch

COM304
1/2" STR x 3/4" Elbow

WA011A
Non-Return Valve Kit

W1CX100
100mm Extention Kit

W2CX100
100mm Extention Kit

W3CX100
100mm Extention Kit

SYS440
7 Litre Pressure Vessel

SYS010
10 Litre Flat Pressure Vessel

12-25G - Wallstar
12-19XG - X Range
Flue Terminal Guard For The Whole HRM Range

WA082
12-15 Baffle Set

WA102
20-25 & 25-19 Baffle Set

WA092
15-19 & 15-20 Baffle Set

WA282
12-14 Baffle Set

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

Installation, Commissioning & Service Record Log Book

1. **Please keep the Log Book in a safe place for future reference.**
2. **This Log Book is to be completed in full by the competent person(s) who commissioned the boiler and associated equipment and the handed to the customer. When this is done, the Log Book is a commissioning certificate that can be accepted as evidence of compliance with the appropriate Building Regulations.**
3. **Failure to install and commission this appliance to the manufacturer's instructions may invalidate the warranty.**

The above does not affect your statutory rights.

The content of the Log Book has been produced in consultation with

DTLR
Transport
Local Government
Regions

Service Log

DATE	PARTS REPLACED	COMMENTS / PARTS TO BE REPLACED NEXT SERVICE

Service Engineer's Name

Telephone Number

Installer Details

Company Name .....

Installation Date .....

Address .....

Telephone Number .....

OFTEC REG. Number .....

Commissioning Details

Company Name .....

Installation Date .....

Address .....

Telephone Number .....

OFTEC REG. Number .....

Appliance Details

Model .....

Serial Number .....

☐ Is adequate combustion / ventilation air supply provided?

☐ Does flue terminate in accordance with the installation manual?

Oil System

Tank Capacity ..... Litres

☐ Bunded?

☐ Is the tank supported on a suitable base?

☐ Is a paper element oil filter fitted?

Controls

Time and temperature control to heating	☐	Room stat and programmer / timer	☐	Programmable roomstat
Time and temperature control to hot water	☐	Cylinder stat and programmer / timer	☐	Combi Boiler
Heating zone valves	☐	Fitted	☐	Not required
Thermostatic radiator valves	☐	Fitted		
Automatic bypass to system	☐	Fitted	☐	Not required

Circulation

Has the system been flushed in accordance with the installation -

☐ Instructions?

☐ Has an inhibitor been added?

Central heating flow temperature ..... °C

Central heating return temperature ..... °C

Burner Settings

Smoke Number ..... CO^2 ..... % Nett flue gas temperature ..... °C

Nozzle Size .....

Oil Pressure .....

Combi Boilers ONLY

Has the water scale reducer been fitted? ☐ Yes ☐ No ..... Type fitted

Max operating water pressure ..... bar

Cold water inlet temperature ..... °C

Hot water outlet temperature ..... °C

Water flow rate at max setting ..... Litres / min

Is the system pressure correct? ☐

Condensing Boilers ONLY

Has the condensate drain been installed in accordance with the manufacturer's instructions? ☐

For all installations

Does the heating and hot water system comply with the appropriate building regulations? ☐

Has the boiler & associated equipment been installed & commissioned in accordance with the installations regs.? ☐

Does the heating and hot water system comply with the appropriate building regulations? ☐

Has the boiler & associated equipment been installed & commissioned in accordance with the installations regs.? ☐

Has warranty documentation been completed and returned? ☐

Competent Person's Signature

Customer's Signature

HOME OF THE WALLSTAR

HRM BOILERS LIMITED
REGISTERED IN ENGLAND NO.4168704

Your boiler serial number

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WWW.HRMBOILERS.CO.UK