



**HANDBOOK
AND SERVICE LOG**

HRM

WEYBOURNE

50/70

70/95

Your Boiler Serial Number is:

to be found on the Burner Cover.



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 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:

- 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 gasses 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

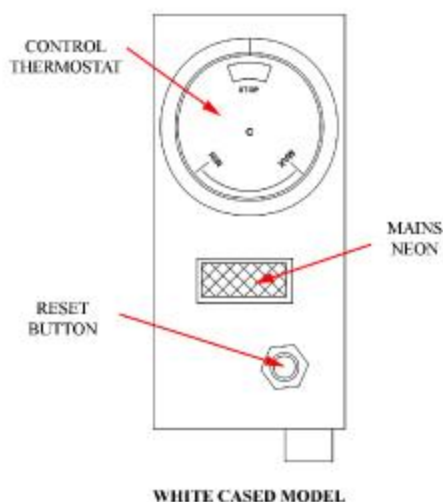
- The boiler must be serviced annually and maintained in accordance with the handbook. A "Benchmark" service log is located on the inside rear cover of this book.
- This warranty is in addition to your statutory and other legal rights.

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. Please quote your boiler's serial number when phoning - this can be found on the cover of this handbook and below the control panel inside the boiler.

BOILER CONTROLS

Control panel



Temperature control thermostat

The control thermostat regulates the temperature of the water within the boiler.

The recommended settings are "MAX" for heating and hot water and "MIN" for hot water only.

Do not operate the boiler below the minimum setting, this will induce corrosion and reduce the life of the boiler.

Boiler overheat (limit) thermostat

If the boiler overheats the reset button will trip and cut the power supply to the boiler. Allow the boiler to cool then press the reset button to reset the thermostat.

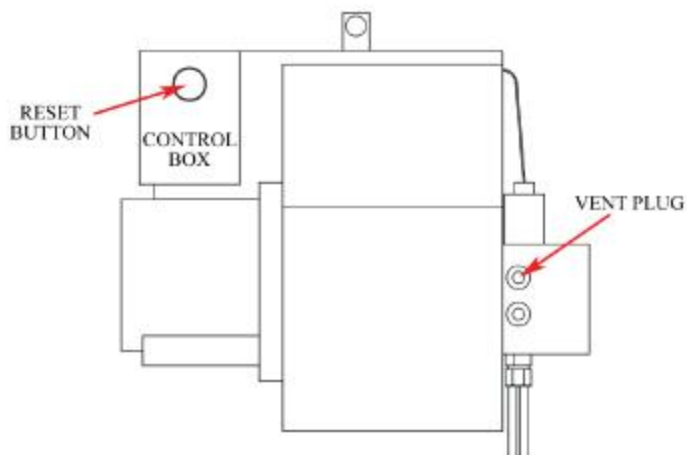
IMPORTANT - If overheating occurs, other than very occasionally, consult your installation engineer. There may be a fault with the central heating system.

Mains neon lamp

The lamp is illuminated when there is power to the control thermostat, and the control system (time clock) is calling for heat.

NOTE - The lamp will not be illuminated if the overheat (limit) thermostat has tripped.

Burner reset button



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 of the handbook to identify possible causes.

Switching the boiler on

- Turn on the oil supply
- Switch on the mains supply
- Set the timer control to "on"
- Set the boiler control thermostat to the required setting

Switching the boiler off for long periods

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

Oil delivery

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

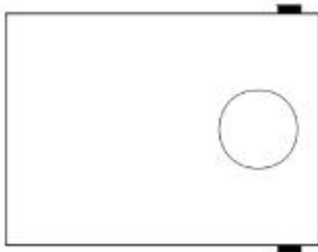
Maintenance

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 inside the rear cover of this handbook.

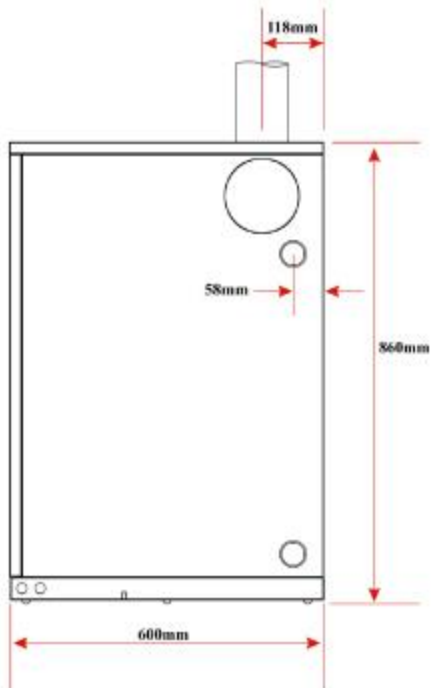
If you have difficulty in locating a service engineer, please contact our service department who may be able to provide you with the name of an engineer in your area.

TECHNICAL INFORMATION - BOILER DIMENSIONS

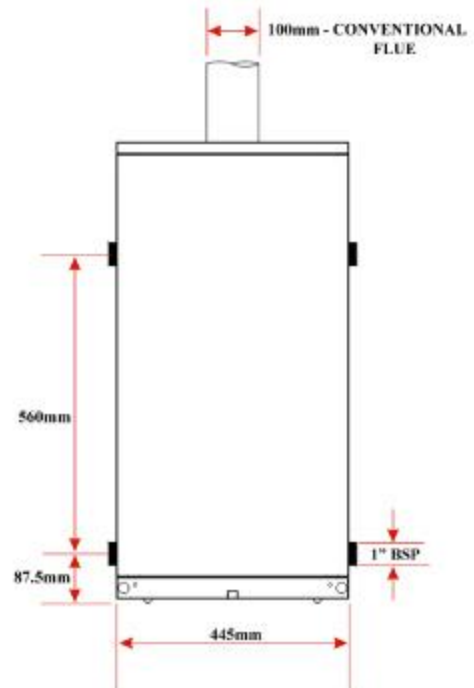
Plan View



Side View



Front View



TECHNICAL SPECIFICATIONS

Heating system requirements:	Conventional open vented or sealed systems
Maximum operating pressure:	3bar (43.5psi) static head 30 metres (100 feet)
Operating temperature:	60°C to 80°C Maximum
Resistance to water flow:	@10°C temperature rise across the boiler model 50/70 = 32mm, W.G. 70/95 = 68mm W.G.
Conventional flue draught limit:	Min. 12.5 Nm ² (0.05" W.G) Max. 33.0 Nm ² (0.13" W.G.)
Thermostats:	Control thermostat range = 58-88°C Limit thermostat, manual reset, set point = 110-6°C
Electrical supply:	230v single phase 50Hz, fused 5amp
Burner:	Sterling 40 - 50/70, Sterling 50 - 70/95
Fuel:	Class 'C2' (28 second kerosene)
Oil supply connection:	1/4" BSP
Weight empty:	50/70 = 88kg, 70/95 = 90kg
Water capacity:	50/70 = 16.5 litres, 70/95 = 20 litres

BURNER SETTINGS

BOILER MODEL		50/70			70/95		
OUTPUT	Btu/h	50,000	60,000	70,000	70,000	82,000	95,000
	kW	14.5	17.5	20.5	20.5	24	28
NOZZLE	US/GPH Size & Type	Danfoss 0.45 x 80 ⁰ EH	Danfoss 0.55 x 80 ⁰ EH	Danfoss 0.65 x 80 ⁰ EH	Danfoss 0.65 x 80 ⁰ EH	Danfoss 0.75 x 80 ⁰ EH	Danfoss 0.85 x 80 ⁰ EH
OIL PRESSURE	BAR	7.5	7.25	7.25	7.25	7.25	8.0
	PSI	110	105	105	105	105	115
FIRING RATE	Kg/hr	1.32	1.58	1.86	1.86	2.15	2.55
	Litres/hr	1.67	2.00	2.35	2.35	2.72	3.23
AIR SETTING	Scale	7.0	8.0	9.0	8.0	10.0	12.0
SMOKE NO	Bacharach Scale	0	0	0	0	0	0
CO2	%	11.5	12.0	12.5	12.0	12.0	12.5
FLUE GAS TEMP.	Less Ambient °C	140	150	160	120	130	140

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 4543 - Part 1 & 3	Factory made insulated chimneys
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
BS 7671: 1992	Electrical Regulations

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.

CONTROL OF DOMESTIC HOT WATER

In many older systems the domestic hot water is heated by gravity circulating. Reduced running costs can be achieved by converting to a fully pumped system with the benefit of controlled hot water temperature and reduced short cycling of the boiler.

BOILER LOCATION

Noise levels - consideration should be given to the following:

- conventional chimneys create more noise than balanced flues
- 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.

Installation within bathrooms is not permitted.

A balanced flue must be used for garage installations.

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

To provide access for maintenance allow at least 700mm in front of the boiler.

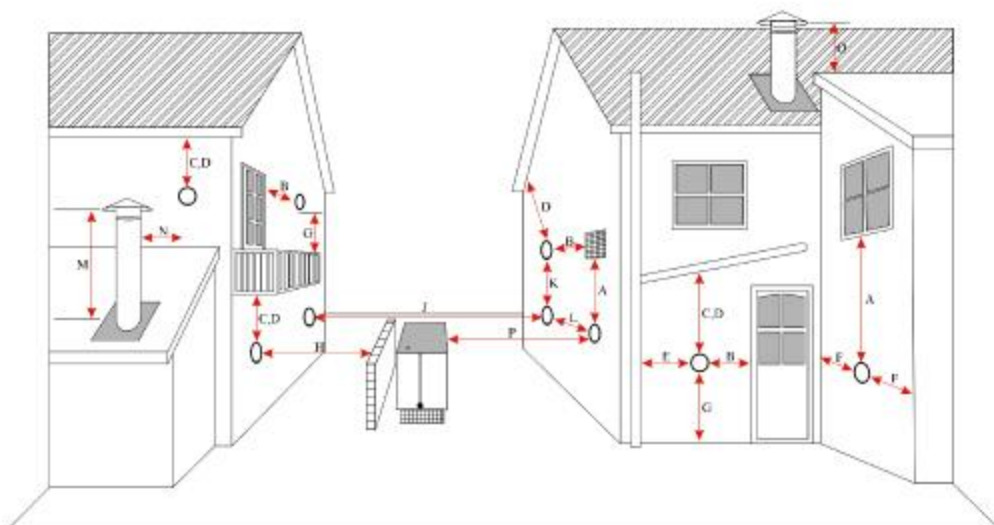
THE HEARTH

A non-combustible hearth should be provided for the boiler.

ACCESSORIES

DESCRIPTION	SIZE	PART CODE
Remote acting fire valves	1.5m capillary 66°deg.	BSFV1.5-66
Remote acting fire valves	3.0m capillary 66°deg.	BSFV3-66
Remote acting fire valves	6.0m capillary 66°deg.	BSFV6-66
Remote acting fire valves	9.0m capillary 66°deg.	BSFV9-66
Remote acting fire valves	15.0m capillary 66°deg.	BSFV15-66
Non-return valve	3/8" BSP	BS008
Stainless steel flue guard	11" x 11" x 10.5"	WEY-FTG

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	Above the highest point of an intersection with the floor.	600mm
N	A vertical surface from the side of the terminal.	750mm
O	Above a vertical structure less than 750mm from the side of the terminal.	600mm
P	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. A non-return valve is required when the burner is above the fuel tank.

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.

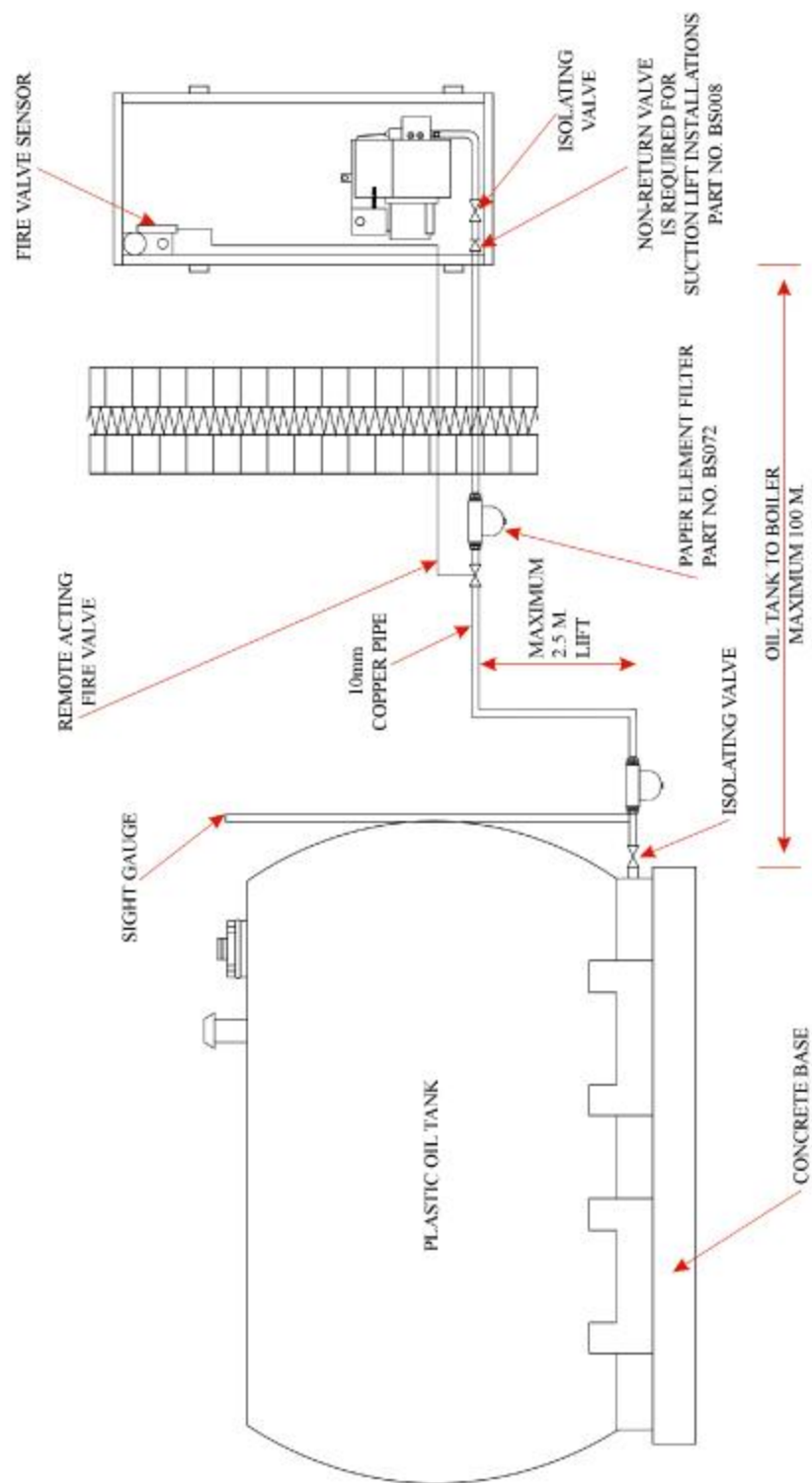
Oil filtration

The paper element filter supplied must be installed adjacent to the boiler. Where a steel oil tank is installed we recommend a further paper element filter is also fitted adjacent to the oil tank, replacement elements are available (Pt. No. BS076).

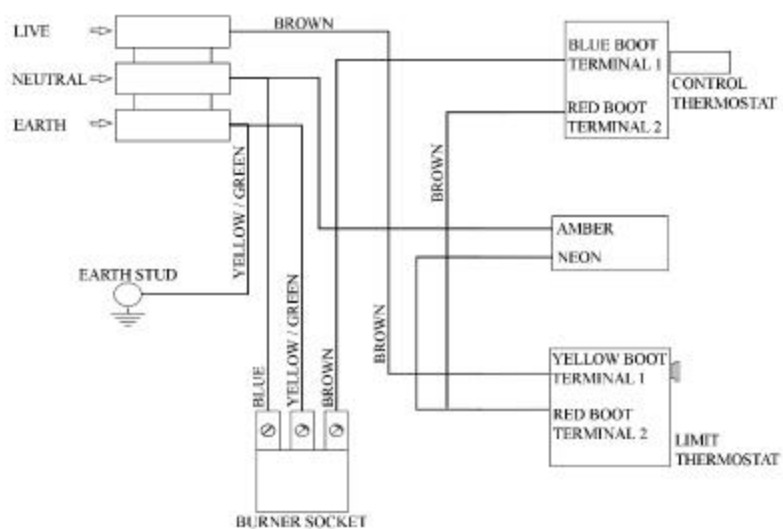
Automatic isolation of the fuel supply in the event of fire

In accordance with Document J and BS5410 Part 1 1997, a remote acting fire valve should be installed (see page 9 for details).

FUEL SUPPLY SYSTEM DIAGRAM - burner above tank



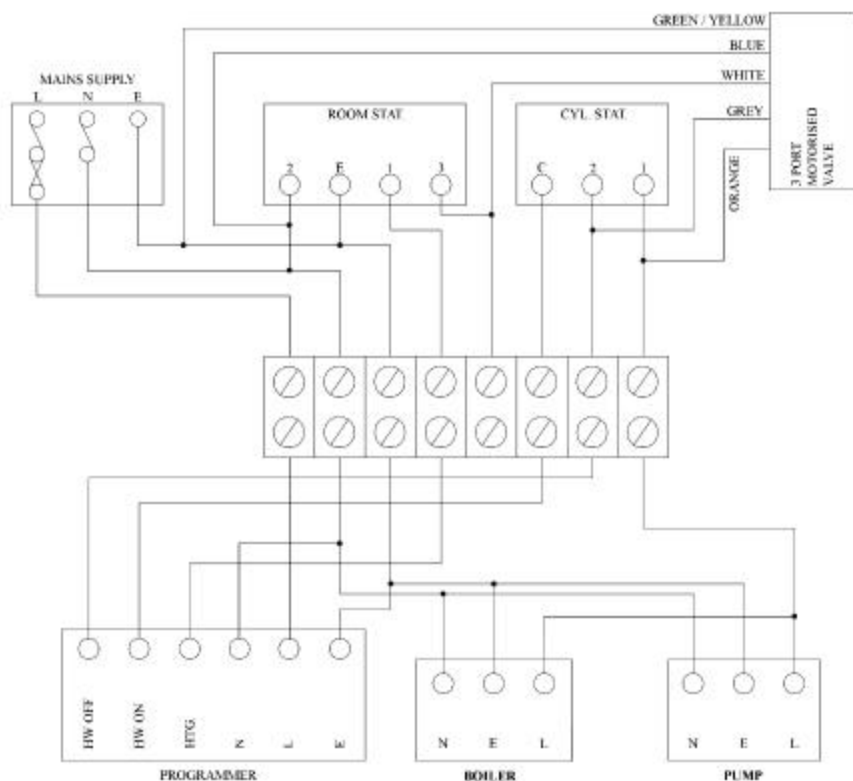
ELECTRICAL CONNECTIONS



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.

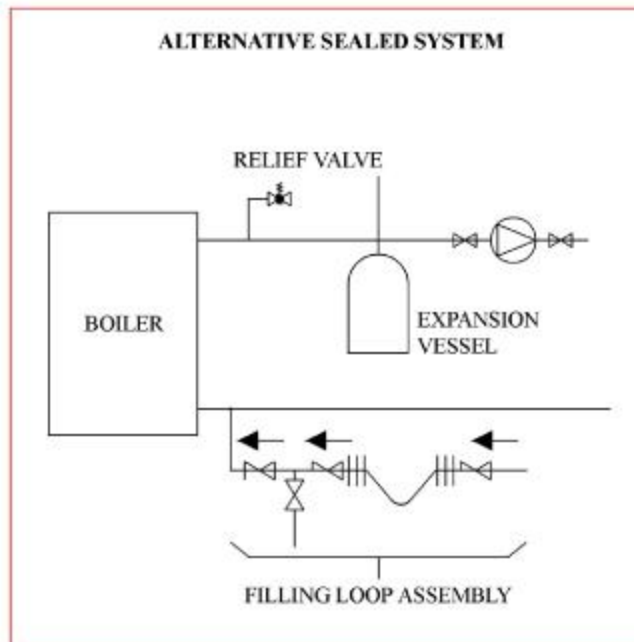
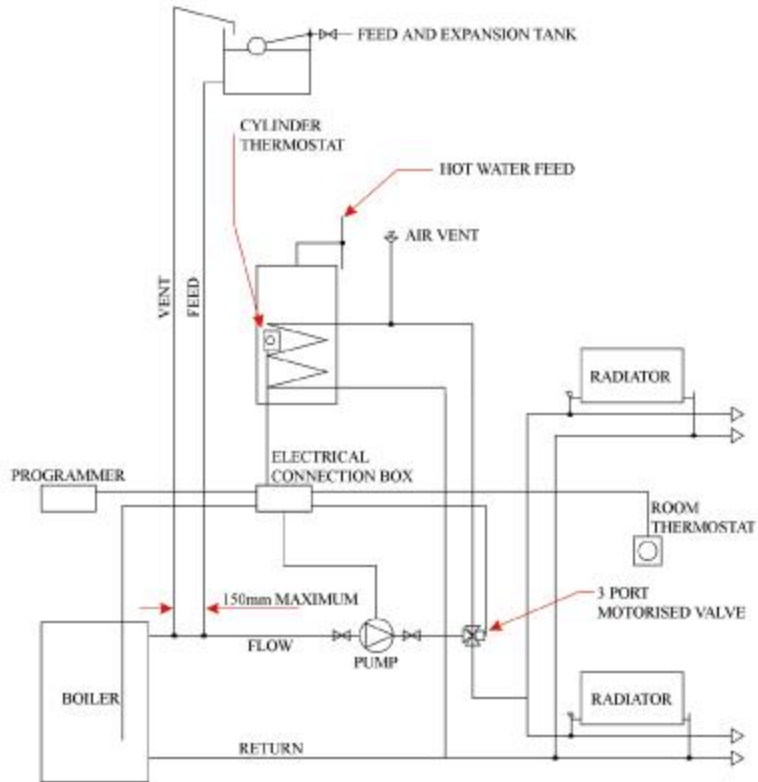
A frost thermostat may be required where the boiler is installed in an outbuilding.

HONEYWELL Y-PLAN FULLY PUMPED SYSTEM



FULLY PUMPED Y-PLAN HEATING SYSTEM

The following diagrams show a general arrangement only, there are many alternative systems. Sealed system components are available in the form of a kit from your plumber's merchant.



CONVENTIONAL FLUE INSTALLATION

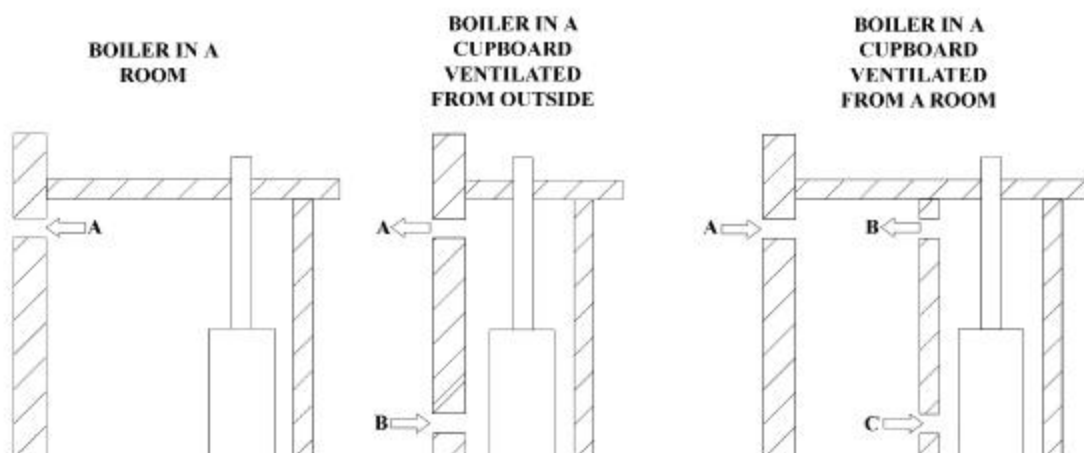
If the boiler is to be used with a conventional flue then an 100mm conventional flue adapter must be purchased (Part No: FL100CF) and fitted.

Where an existing chimney is being used it should be fitted with a flexible or rigid stainless steel liner, back filling with a suitable insulation material may be necessary to avoid condensation. The risk of condensation increases if the flue gas temperature falls below 60°C measured 0.5 metres from the top of the chimney.

A draught stabiliser may be required for chimneys over 6 metres in height as they may produce excessive draught, (see technical details).

A conventional flue is unsuitable for garage installation, where petrol could be stored in cans or vehicles.

An air supply is required for combustion of fuel and also ventilation for the boiler. Position extraction fans and tumble dryers as far as possible away from the boiler. A combustion test must be carried out with these appliances operating, with all doors and windows closed, to ensure there is no interference with the performance of the boiler.

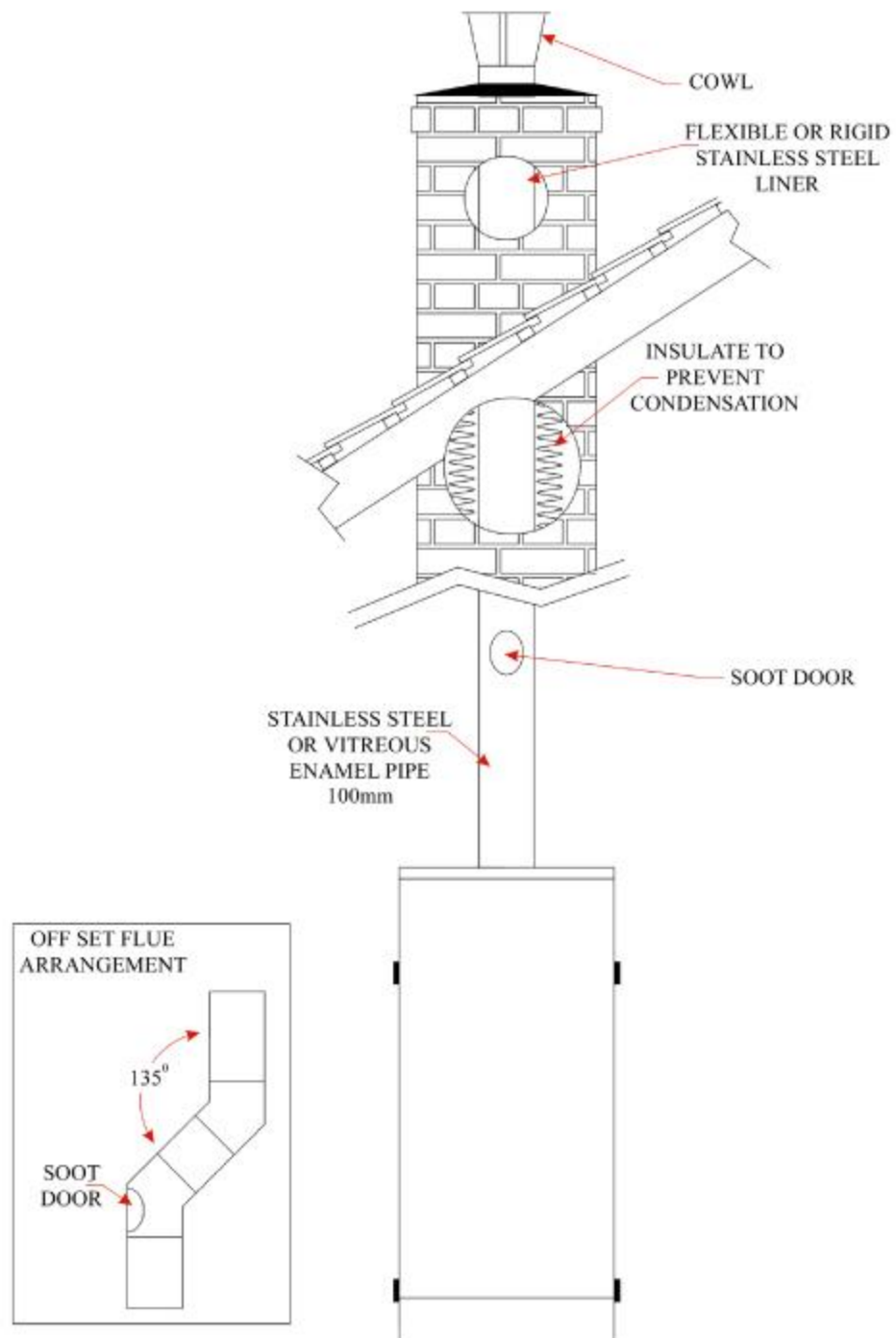


CONVENTIONAL FLUE AIR REQUIREMENTS

FREE AREA OF VENTILATION GRILL CM²

MODEL	A	B	C
50/70	110	240	360
70/95	150	300	450

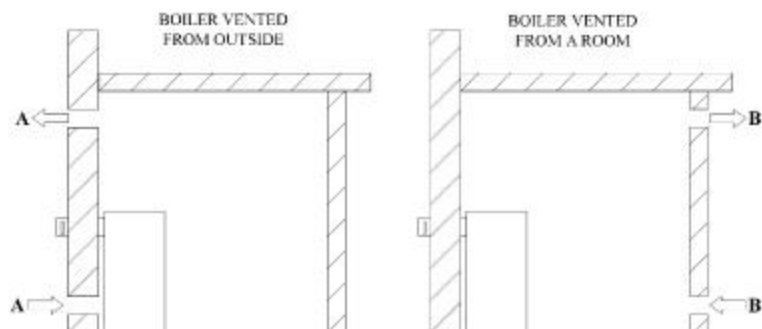
CONVENTIONAL FLUE, GENERAL ARRANGEMENT



BALANCED FLUE INSTALLATION

Ventilation air supply

Air for ventilation is only required if the boiler is installed in a confined space, i.e. a cupboard, to prevent overheating of components and any equipment nearby.



FREE AREA OF VENTILATION GRILL CM²

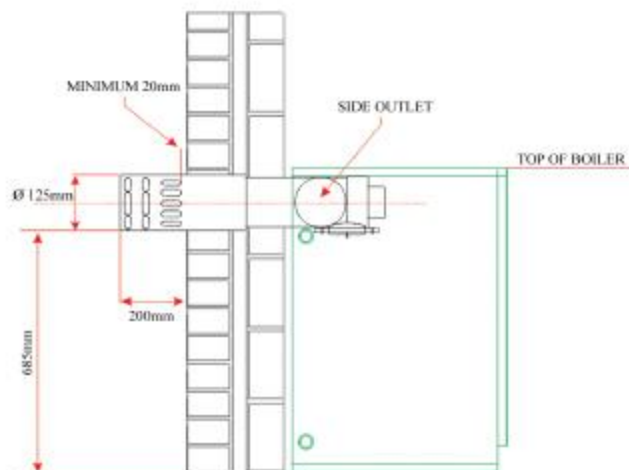
MODEL	A	B
50/70	110	240
70/95	150	300

Low level horizontal balanced flue

The flue is telescopic and, as supplied, has a range of 180-450mm from the rear of the boiler. Extension kits of 300mm are available. The maximum horizontal flue length is 950mm.

When using either of the side outlets allow 50mm clearance between the side of the boiler and the internal face of the wall. The telescopic range of the flue is 100-280mm for both the 50/70 and 70/95 model.

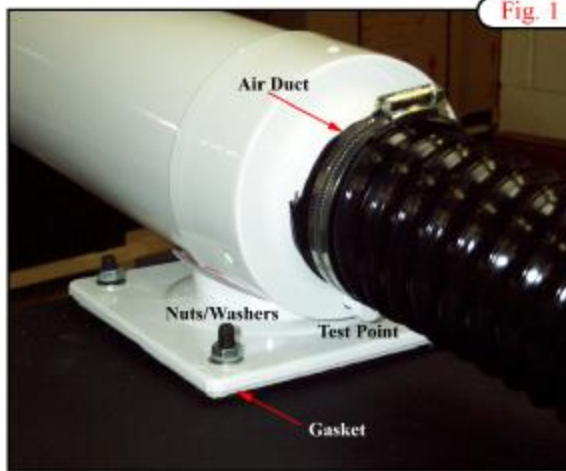
If the lowest part of a terminal is less than 2000mm above the ground, or in another other place to which any person has access, a terminal guard must be fitted.



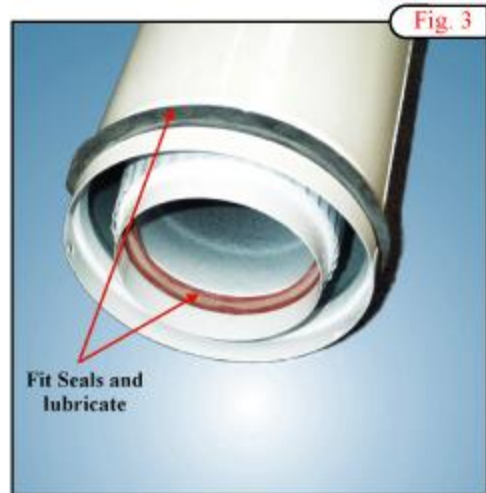
LOW LEVEL BALANCED FLUE ARRANGEMENT

DESCRIPTION	PART NO
Low Level Flue Kit	FL80LL
300mm Extension	FL80X300
Terminal Guard Stainless Steel	WEY-FTG

Installation of Low Level Balanced Flue



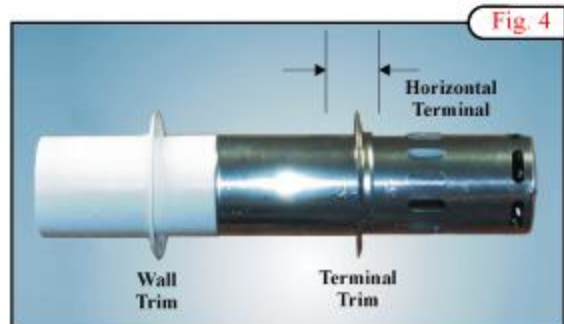
- Fit the bottom section of the flue with the nuts and washers provided.
- Attach the air intake hose with the jubilee clip as pictured above.



- Fit seals to all joints and lubricate.



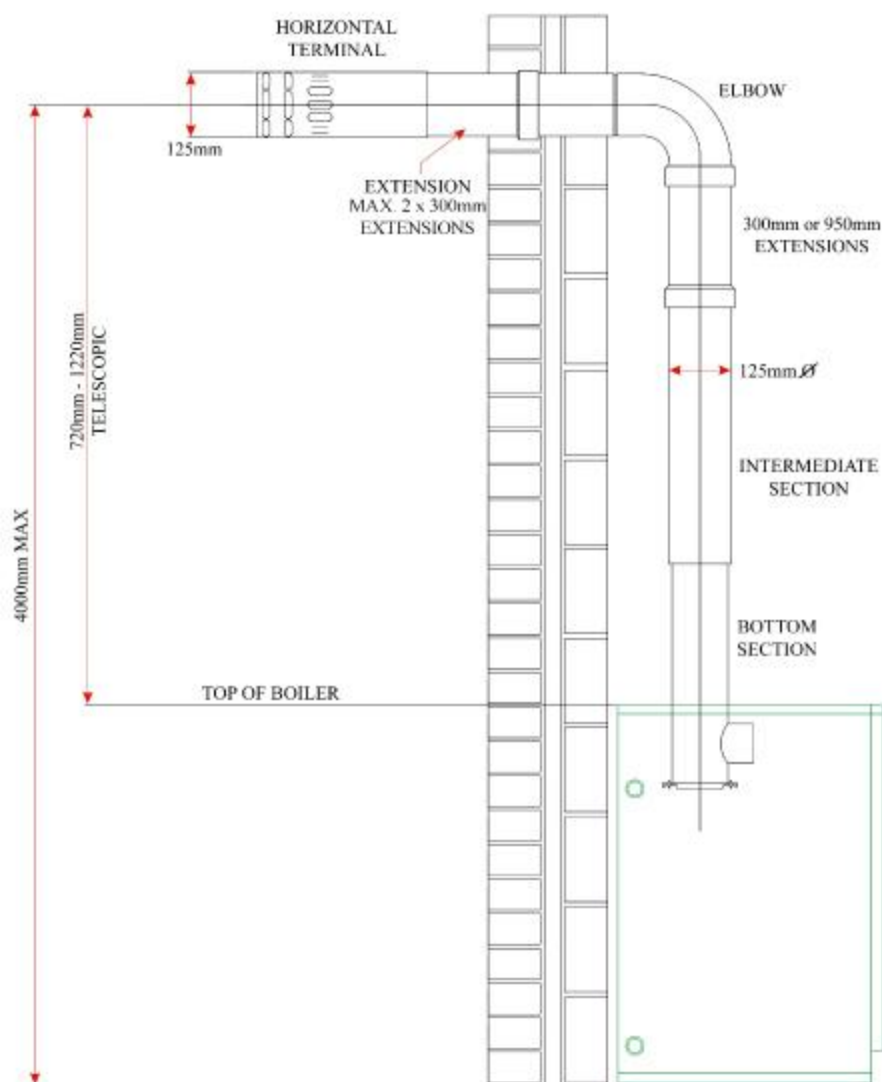
- Remove the blanking plate from the burner and discard.
- Fit the gasket and manifold.



- Position the boiler and cut a hole through the wall.
- The length of the terminal should be adjusted to align the wall between arrows embossed on the terminal.
- **Note.** A flue guard may be required where a flue terminates below 2 metres.

High level horizontal balanced flue

The flue is telescopic both vertically and horizontally (see below) and, as supplied, has a range of 720-1220mm vertically and 110-300mm side outlet, and 270-460mm back outlet horizontally. Extension kits of 300mm and 950mm are available. The maximum high level horizontal flue length is 950mm and vertical length is 4000mm.



HIGH LEVEL BALANCED FLUE ARRANGEMENTYT

DESCRIPTION	PART NO
High Level Horizontal kit	FL80HL
300mm Extension	FL80X300
950mm Extension (vertical only)	FL80X950
Terminal Guard Stainless Steel	WEY-FTG

Installation of High Level balanced flue



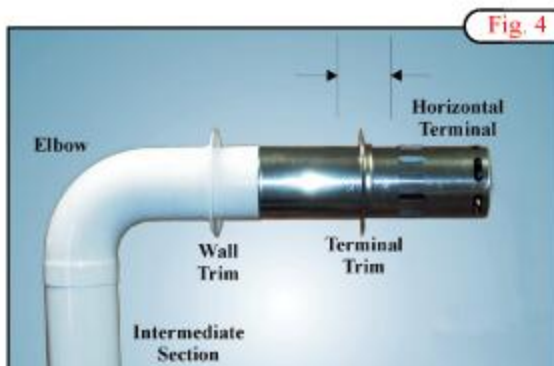
- Fit the bottom section of the flue with the nuts and washers provided.
- Attach the air intake hose with the jubilee clip as pictured above.



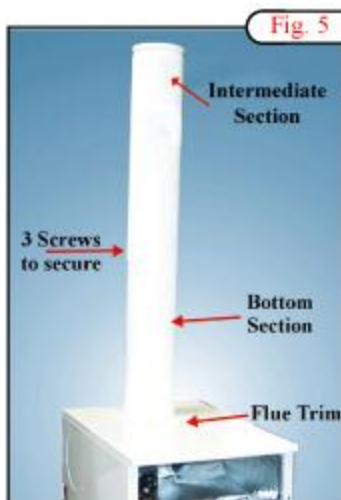
- Remove the blanking plate from the burner and discard.
- Fit the gasket and manifold.



- Fit seals to all joints and lubricate.

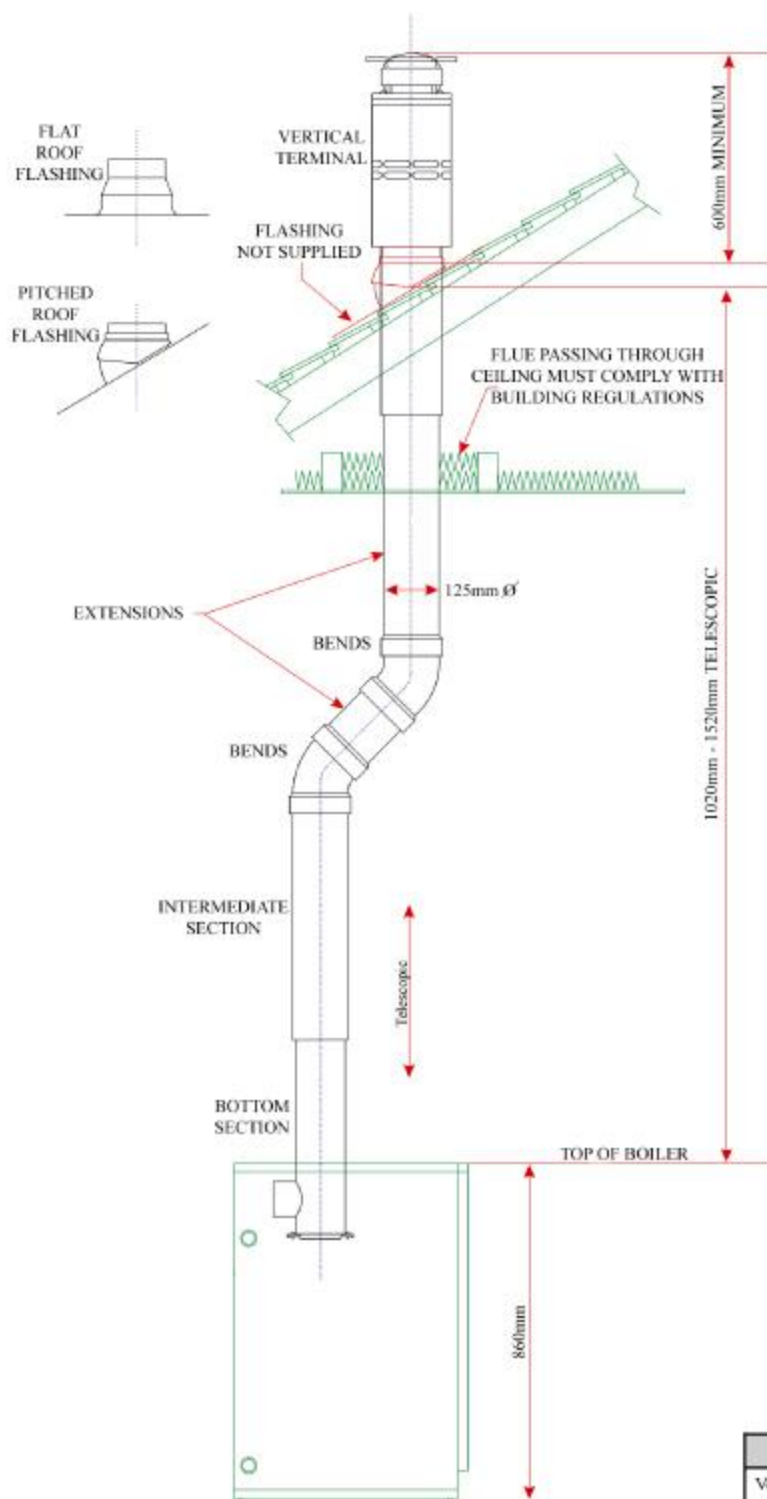


- Position the boiler and cut a hole through the wall.
- The length of the terminal should be adjusted to align the wall between arrows embossed on the terminal.
- **Note.** A flue guard may be required where a flue terminates below 2 metres.



- Replace boiler top panel, fit the flue trim.
- Position the terminal in the wall and connect the elbow and intermediate sections. Secure telescopic section with screws provided.
- Use a mastic sealant to secure the wall trim and terminal trims.
- Expanding foam can be used to fill/insulate the gap between flue parts and wall.

Vertical Balanced Flue



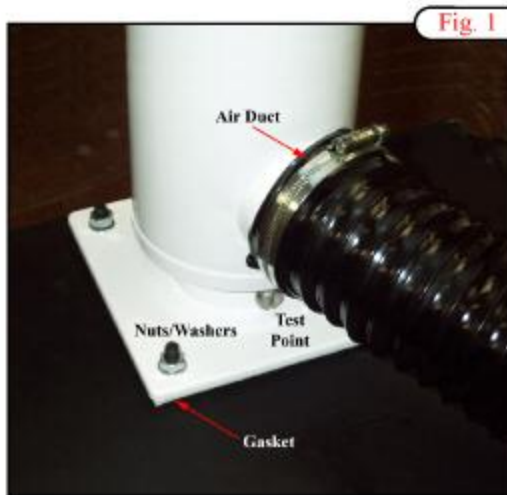
VERTICAL BALANCED FLUE ARRANGEMENT

The flue is telescopic, as supplied. The flue has a range of 1020-1520mm from the top of the boiler to the flashing, extension kits of 300mm and 950mm are available. The maximum vertical flue length is 5000mm.

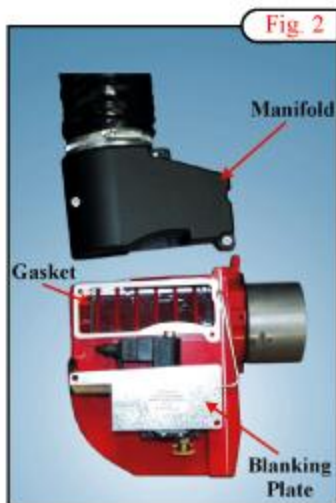
Also available are flashing kits and 45° bends.

DESCRIPTION	PART NO
Vertical Terminal	FL80V
300mm Extension	FL80X300
950mm Extension	FL80X950
Pitched Roof Flashing	FL80P
Flat Roof Flashing	FL80F
2 x 45° Bends	FL80X45

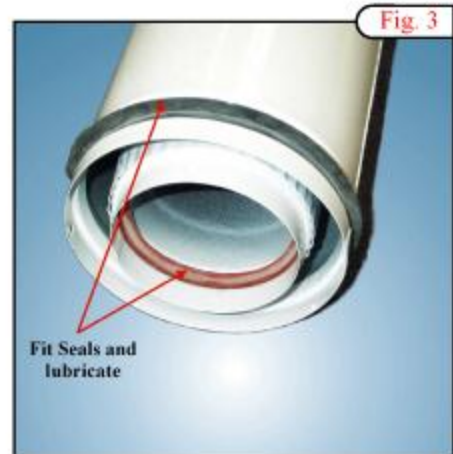
Installation of Vertical Flues



- Fit the bottom section of the flue with the nuts and washers provided.
- Attach the air intake hose with the jubilee clip as pictured above.



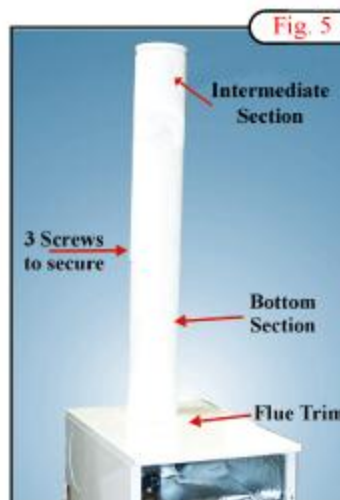
- Remove the blanking plate from the burner and discard.
- Fit the gasket and manifold.



- Fit seals to all joints and lubricate.



- Position boiler and cut a hole in ceiling and roof.
- Fit the roof flashing and flue terminal.
- Use the clamp provided to secure the terminal to a roof joist.



- Replace boiler top panel, fit the flue trim.
- Position the terminal in the wall and connect the elbow and intermediate sections. Secure telescopic section with screws provided.
- Use a mastic sealant to secure the wall trim and terminal trims.
- Expanding foam can be used to fill/insulate the gap between flue parts and wall.

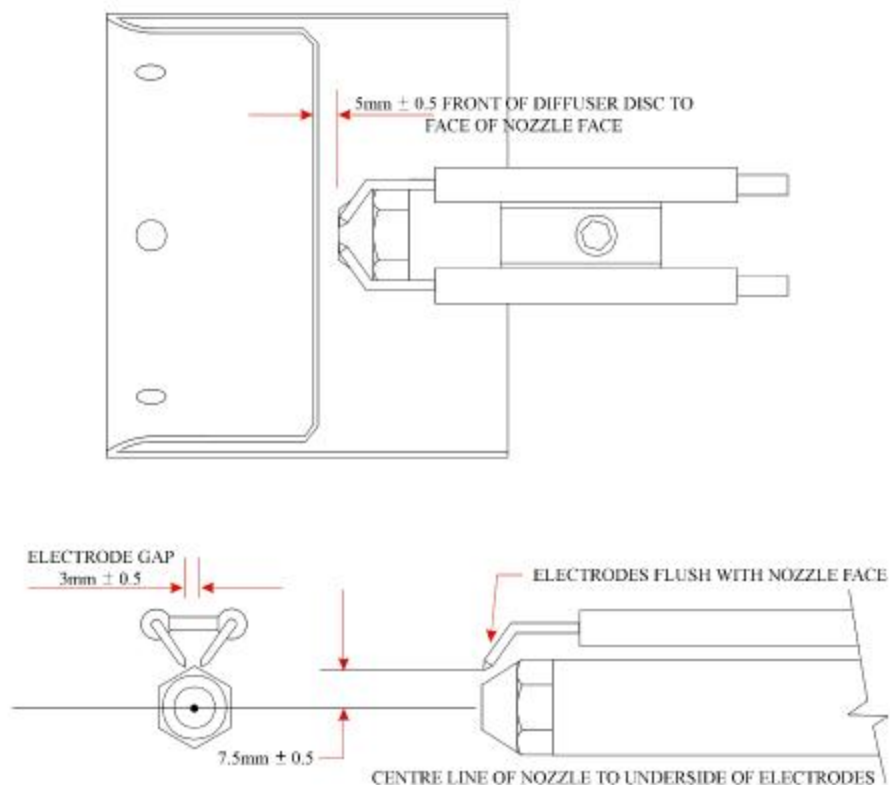
BOILER MAINTENANCE

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.

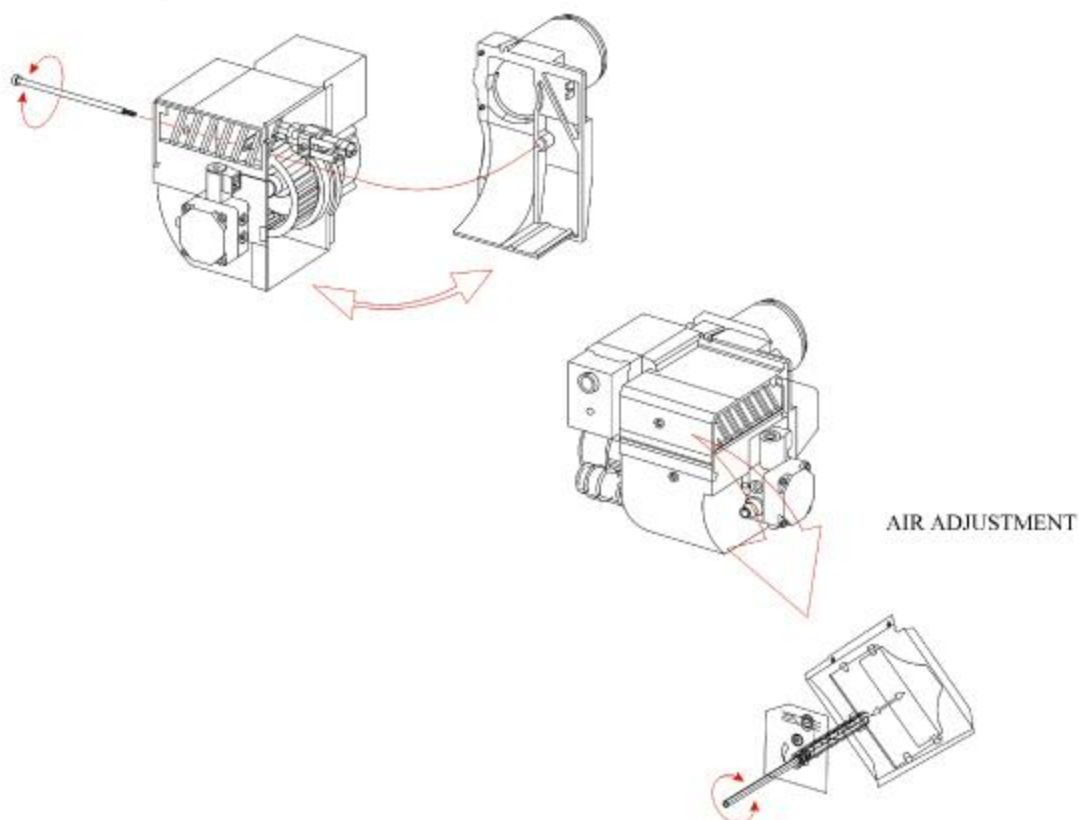
WARNING - ISOLATE THE POWER SUPPLY BEFORE SERVICING THE BOILER

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.

BURNER HEAD SETTINGS

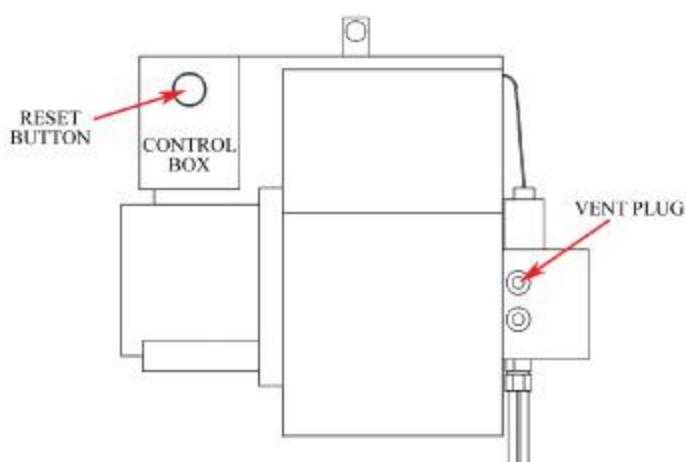


DISMANTLE THE BURNER

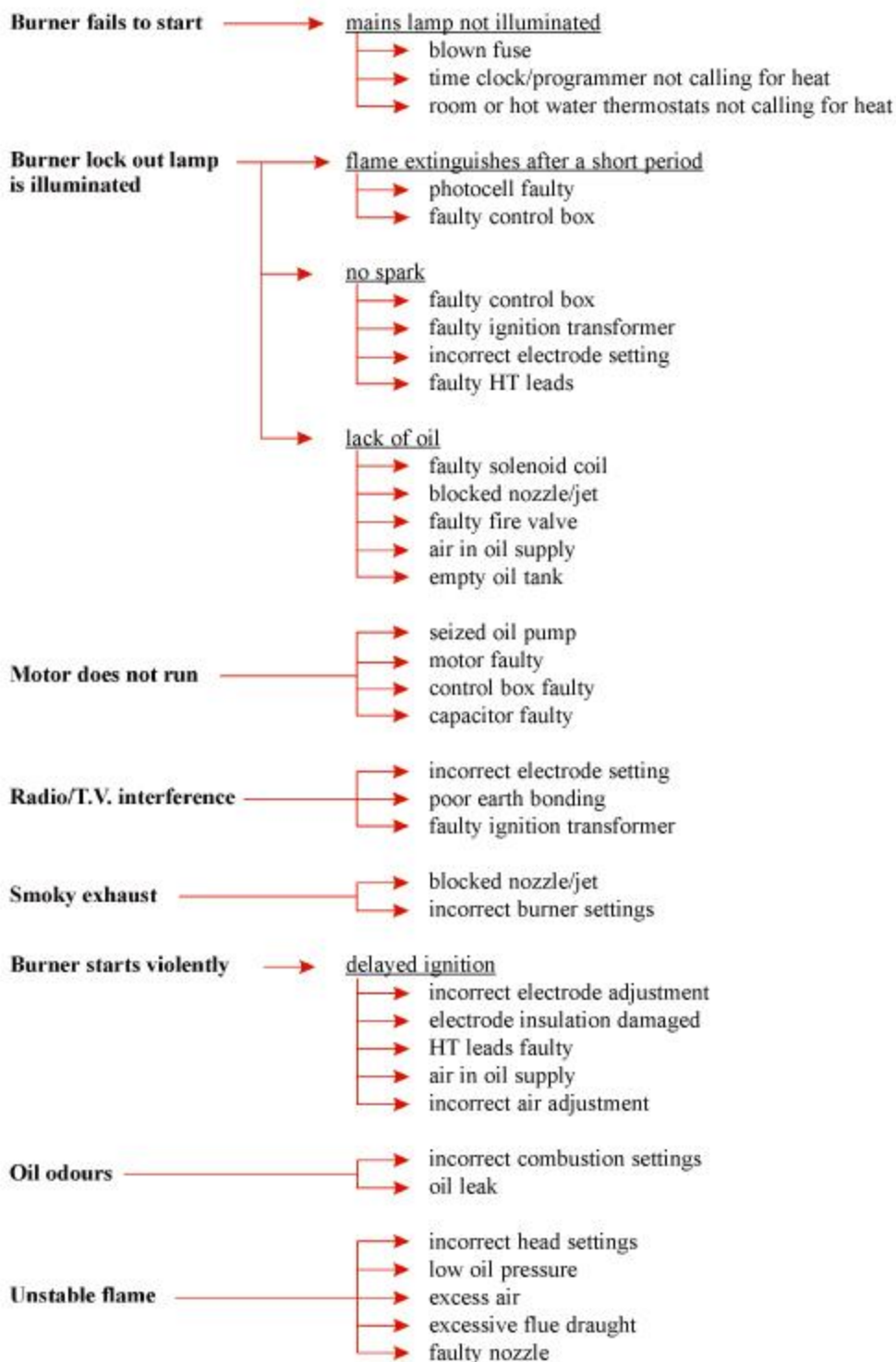


PRIMING THE BURNER

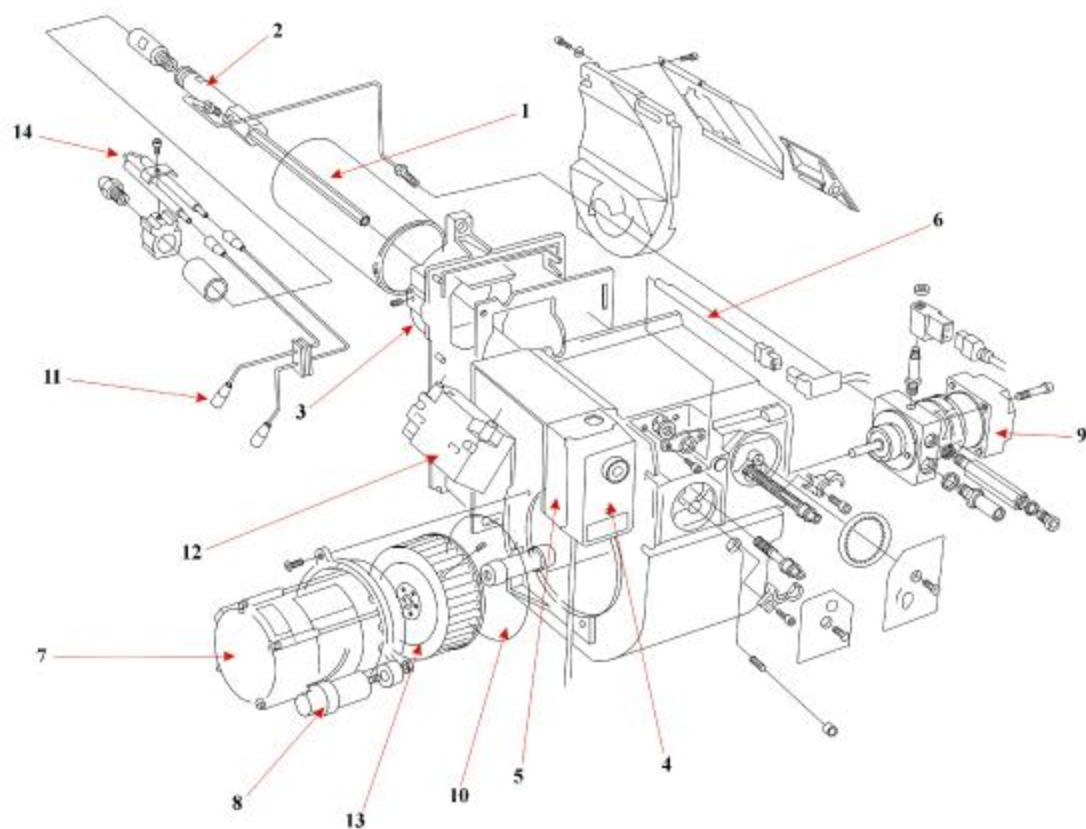
Ensure both power and fuel supplies to the boiler are switched on. Press the reset button, the burner will start its firing sequence. To release air from the oil line slacken the vent plug during this period. If ignition fails the burner will go to lockout. Wait 60 seconds and repeat the procedure.



FAULT DIAGNOSIS

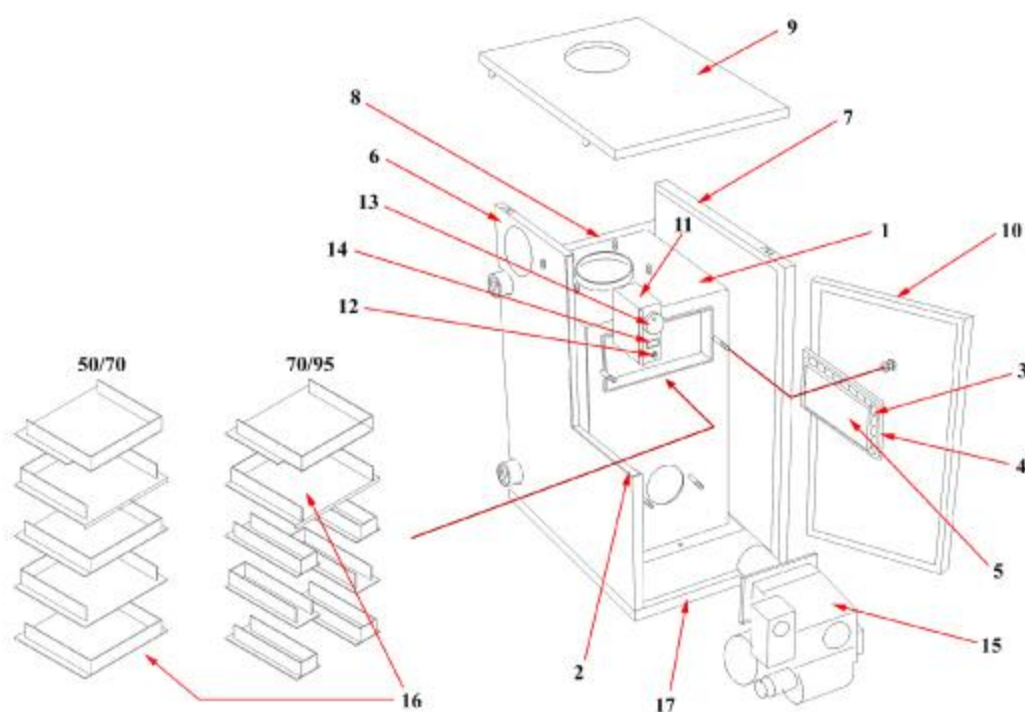


PARTS LIST - STERLING BURNER



ITEM	DESCRIPTION	BENTONE Ref.	PART No.
1	Blast Tube 50/70	PL6-7-19-10-80mm	BS058
1	Blast Tube 70/95	PL6-7-21-10-80mm	BS059
2	Nozzle Assembly	118-72001	BS046
3	Intermediate Gasket	04-390-120-27	BS047
4	Satronic Control Box	S01-TF832.3	BS021
5	Control Box Base	75310598	BS091
6	Photocell MZ770S	118-00301	BS065
7	Motor	M02-1-90-11	BS050
8	Capacitor	B03-00-118-9-5201	BS051
9	Danfoss Pump	BFP11L3	BS052
10	Pump Coupling	CO-1-00-115-94201	BS064
11	HT Lead	3-00-118-55901	BS054
12	Transformer EB1	115-977-01	BS055
13	Fan 50/70	114-176-04	BS056
13	Fan 70/95	114-176-01	BS061
14	Ignition electrode (one piece)	B03-00-11886701	BS067
	Open Braid Flexible Oil Line (not shown)	-	BS057

PARTS LIST - BOILER



ITEM	DESCRIPTION	50/70	70/95
1	Heat Exchanger	WP070	WP080
2	Fibreglass Insulation Set	IN017	IN017
3	Glass Rope - door seal	IN003	IN003
4	Access Door	WP0050	WP0050
5	Ceramic Insulation Set	IN018	IN018
6	L.H. Side Panel	WP0010	WP0010
7	R.H. Side Panel	WP0020	WP0020
8	Back Panel	WP0030	WP0030
9	Top Panel	WP0040	WP0040
10	Front Casing	WP0050	WP0050
11	Control Panel	SE5001	SE5001
12	High Limit Thermostat	EL019	EL019
13	Control Thermostat	EL005	EL005
14	Amber Neon	EL004	EL004
15	Burner Assembly	WA50/70	WA70/95
16	Baffle Stack (50/70 and 70/95)	WP080	WP0090
17	Panel Base (Grey)	WP0060	WP0060

NOTES

