

TRIANCO



Premier 50/90 Condensing System Boiler

OIL FIRED CENTRAL HEATING BOILERS
FOR BALANCED OR CONVENTIONAL FLUE



TRIANCO

CE BED 92/42 EEC
EMC 89/336 EEC

**ADDITIONAL INSTRUCTIONS
FOR SYSTEM BOILER**

To be retained by householder

HEALTH AND SAFETY

INFORMATION FOR THE INSTALLER AND SERVICE ENGINEERS

Under the Consumer Protection Act 1987 and the Health and Safety at Work Act 1974, it is a requirement to provide information on substances hazardous to health (COSHH Regulations 1988).

The Company takes every reasonable care to ensure that these products are designed and constructed to meet these general safety requirements, when properly used and installed.

To fulfil this requirement products are comprehensively tested and examined before despatch.

This appliance may contain some of the items below.

When working on the appliance it is the Users/Engineers responsibility to ensure that any necessary personal protective clothing or equipment is worn appropriate to parts that could be considered as being hazardous to health and safety.

INSULATION AND SEALS

Glass Rope, Mineral Wool, Insulation Pads, Ceramic Fibre, Glass Insulation.

May be harmful if inhaled. May be irritating to the skin, eyes, nose or throat. When handling avoid inhalation and contact with eyes. Use (disposable) gloves, face masks and eye protection.

After handling wash hands and other exposed parts. When disposing, reduce dust with water spray, ensure parts are securely wrapped.

GLUES, SEALANTS & PAINT

Glues, Sealants and Paints are used in the product and present no known hazards when used in the manner for which they are intended.

KEROSENE & GAS OIL FUELS (MINERAL OILS)

1. The effect of mineral oils on the skin vary according to the duration of exposure.
2. The lighter fractions also remove the protective grease normally present on the surface of the skin rendering the skin dry, liable to crack and more prone to damage caused by cuts and abrasions.
3. Skin rashes (oil acne). Seek immediate medical attention for any rash, wart or sore developing on any part of the body, particularly the scrotum.
4. Avoid as far as possible any skin contact with mineral oil or with clothing contaminated with mineral oil.
5. Never breathe any mineral oil vapours. Do not fire the Burner in the open i.e. out of the Boiler as a misfire will cause unburnt oil vapours.
6. Barrier cream containing lanolin such as Rosalex Antisolv, is highly recommended together with a strict routine of personal cleaning.
7. Under no circumstances should mineral oils be taken internally.

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1. USER INSTRUCTIONS

HOW TO USE YOUR TRIANCO BOILER

The Trianco EuroStar Condensing boiler has been designed and constructed to give years of trouble free service. These instructions are provided to assist you in obtaining the best performance with the least trouble and cost.

The boiler will provide both domestic hot water and central heating with the simplest of controls.

The boiler is supplied with adjustable boiler control thermostat, manual reset high limit thermostat and an option for fitting a programmer kit.

On the control panel there are three neon indicator lights. (See Fig 1 below)

- Green - Power on to the boiler
- Amber - Boiler is calling for heat
- Red - Limit Thermostat Light

TO FIRE THE BOILER

Before firing the boiler, ensure the system is full of water, there is sufficient oil in the storage tank and all valves are open.

1. Check that the Time-switch/Programmer (if fitted) is ON and the room thermostat is calling for heat.
2. Set the boiler thermostat to the desired temperature.
3. Switch on the electrical supply to the boiler. The green and amber neon lights will illuminate and the burner should fire after a few seconds of fan pre-purge.
4. Set the Time-switch/Programmer (if fitted) to the times and programme required.
5. The boiler will now operate automatically, cutting in and out according to the heat demand.

TO STOP THE BURNER

The burner may be stopped by turning the Boiler Control Thermostat fully anti-clockwise to the OFF position 'O'.

If the boiler is to be off for a long time, it is recommended that the mains supply to the boiler is switched off or the Time-switch/Programmer (if fitted) is switched to the OFF position.

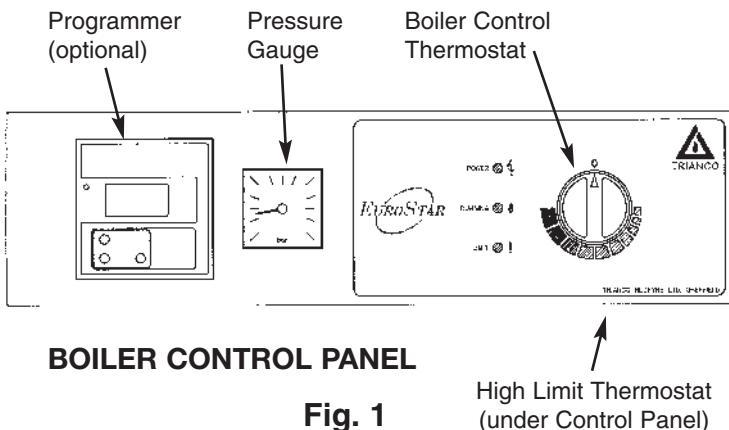


Fig. 1

BOILER CONTROL THERMOSTAT

The boiler control thermostat is fully adjustable allowing you to select the required temperature of the water leaving the boiler.

The boiler thermostat operates between 55°C (low) and 82°C (high).

Note: Where a cylinder thermostat or room thermostat is fitted ensure that the boiler thermostat is set above or equal to the highest setting.

The thermostat is switched off when the knob is turned fully anti-clockwise with pointer opposite 'O'

HIGH LIMIT THERMOSTAT (Fig. 1) (Hand Reset)

The high limit thermostat is factory set and requires no adjustment. Should the boiler thermostat malfunction, the limit thermostat will take over and shut down the boiler. The red light will illuminate when limit thermostat has operated.

If the limit thermostat operates frequently, consult your Service Engineer as there may be a fault in the system.

To reset the limit thermostat, remove the front panel and push in button.

Note: The limit thermostat can only be reset when the water temperature has dropped at least 20° C.

BURNER LOCK-OUT (Fig. 2)

If the burner has failed to light, the boiler will go into lock-out mode. The illuminated reset button on the burner control box will indicate this. To reset the burner press the illuminated reset button. In case of the burner not firing and the boiler returning to lock-out mode, wait a further minute and then press the reset button again. If the burner still fails to start, switch off the electrical supply to the boiler.

WARNING - DO NOT ATTEMPT TO START BURNER MORE THAN TWICE

(See Simple Fault Finding before contacting your Service Engineer).

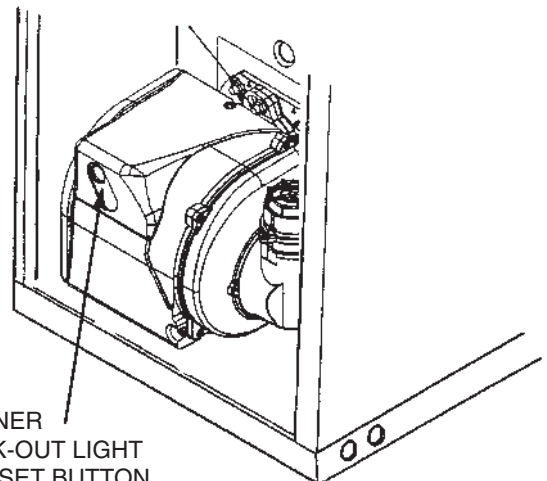


Fig. 2

SEALED WATER SYSTEMS REQUIREMENTS

The installation must comply with the appropriate requirements of the current issue of BS4814, BS5449, BS6798 and BS7074 Part 1 and 2.

Safety Valve

A safety valve set at 3 bar is supplied with the boiler for sealed system installations. This valve must be fitted into the pipework within the casings using the fitting provided and the drain routed to the outside of the building. The drain must not discharge above an entrance or a window or any public access area, be clear of any electrical fittings and positioned so that any discharge can be seen.

Pipe Connections (See Fig.6)

The system flow pipe should be connected to the tail end pipe within the boiler casing.

Routing of the pipework up to this point is dependent on the type of flue system used. Where a low level flue terminal is fitted to the right side of the boiler, the pipework must be taken across the boiler in front of the air-box and along the left hand side of the boiler.

All other flue system arrangements allow pipe connections to be made on right hand side of boiler.

One or both of the return tappings can be used.

Expansion Vessel

The expansion vessel is suitable for systems with a static head of up to 5 metres (16.5ft.) i.e. the vertical distance between the expansion vessel and highest point of system, usually the top of bedroom radiators. If the static head is greater than 5 metres, then the air charge in the vessel must be increased to equal this higher static pressure. the pressure can be increased by simply pumping up the vessel with a standard type pump and checking the pressure with a tyre gauge. A schraider type valve is provided on the vessel for this purpose (see note below).

Note: The air charge should not exceed a pressure of 1.5 bar (22 p.s.i.).

1ft. head	= 0.434 p.s.i
1 metre head	= 1.4 p.s.i
1 bar	= 14.5 p.s.i

The capacity of the expansion vessel is suitable for systems with a water content of up to 120 litres (this includes the boiler). A check should be made to ensure the system volume comes within this capacity but if it is greater, then an additional expansion vessel will be needed. Refer to BS 7074 Part 1 for information on the size of the additional vessel required.

Circulating Pump

As the pressure loss through the boiler system is negligible, virtually all the pressure head developed by the pump can be used for the system. The pump has 3 settings.

Automatic Air Vent

The air vent automatically expels any air-released from the water in the system.

Pressure Gauge

The pressure gauge provides visual indication of the system water pressure and the red pointer which must be set to the cold fill pressure, allows any water loss to be easily seen and made-up as necessary. The pressure sensing fitting on the back of the pressure gauge must be screwed into the tapping on the 3 bar safety valve.

Domestic Hot Water Cylinder

The domestic hot water cylinder must be of the indirect coil type and suitable for working at a gauge pressure of 0.35 bar above the safety value setting, i.e. 3.65 bar

FILLING THE SYSTEM (Fig. 3)

First, ensure any unused boiler tappings are plugged. Filling is carried out by connecting a temporary flexible hose between the incoming mains supply and the heating system. Three methods are shown in the diagram. There must be no permanent connection to the mains water supply, even through a non-return valve. Provision for replacing water lost from the system can be made by the flexible hose. Thoroughly flush out the system to remove any swarf and residues in the pipework and check the function of the safety valve by raising the water pressure until the valve operates - this should be between 2.7 and 3.3 bar.

Reduce the water pressure to achieve the initial 'cold fill' system design pressure which will usually be about 1 bar if the standard expansion vessel pre-charge of 0.5 bar is used. The red pointer on the pressure gauge should then be set to 1 bar.

Thoroughly vent all parts of the system of air and examine for leaks; this particularly important on old systems which may have operated on a low pressure head.

The use of a corrosion inhibitor is recommended for the water system

Note: When the system water is heated, the pressure will rise above the cold fill setting. If the pressure reaches 2.5 bar when the boiler is operated at its highest temperature with all radiators in circulation, then an additional expansion vessel must be fitted in the system. Refer to BS 7074 Part 1 for information on sizing of the additional expansion vessel.

IMPORTANT

After filling the system, ensure both shut-off valves on the filling loop are turned off and disconnect the flexible hose from the mains supply shut-off valve.

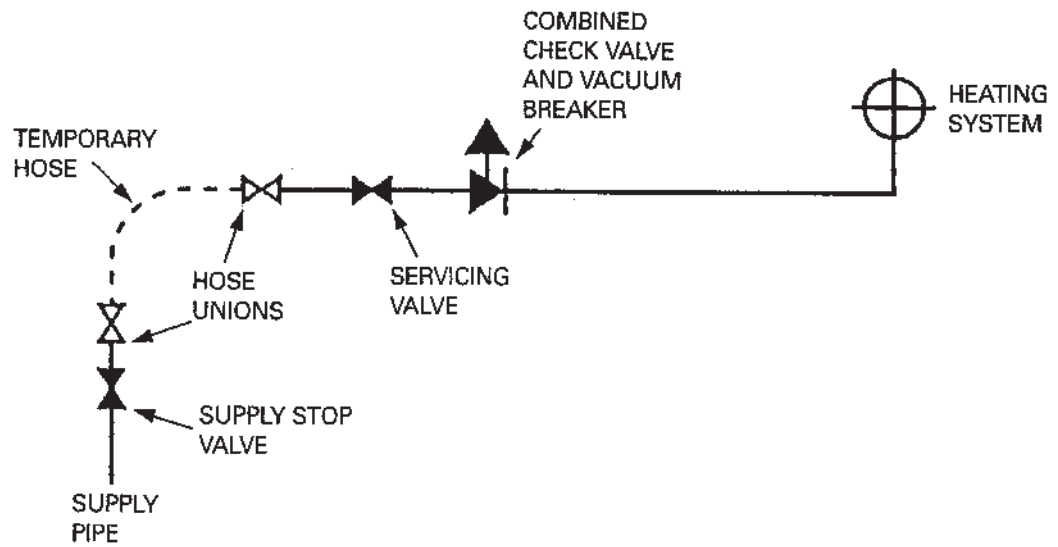
Inhibitor

If using an existing system, take care to drain down the entire system including the radiators then thoroughly clean out before fitting the boiler. Attention is drawn to the current issue of BS5449 and BS7593 on the use of inhibitors in central heating systems.

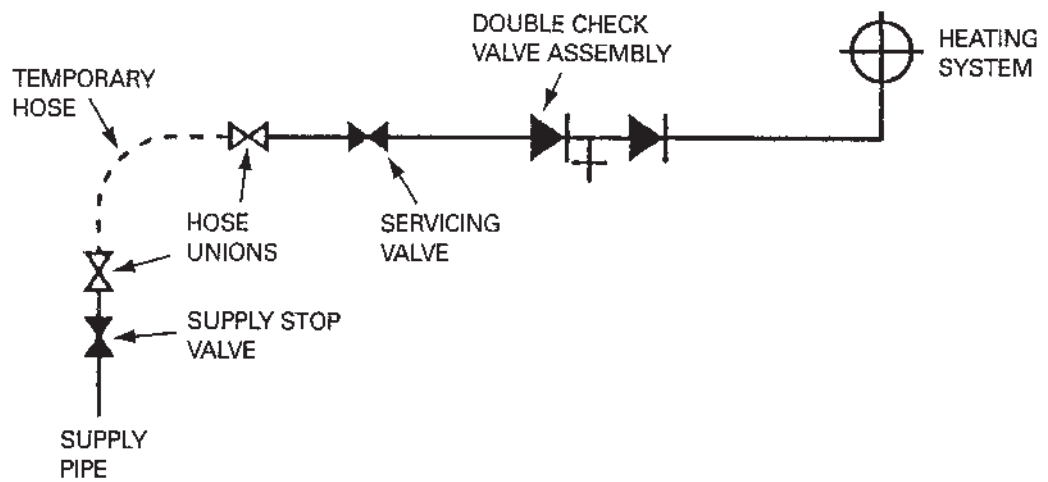
Drain Tapping

A drain tapping must be provided at the lowest point of the system, which will allow the entire system to be drained.

METHOD 1



METHOD 2



METHOD 3

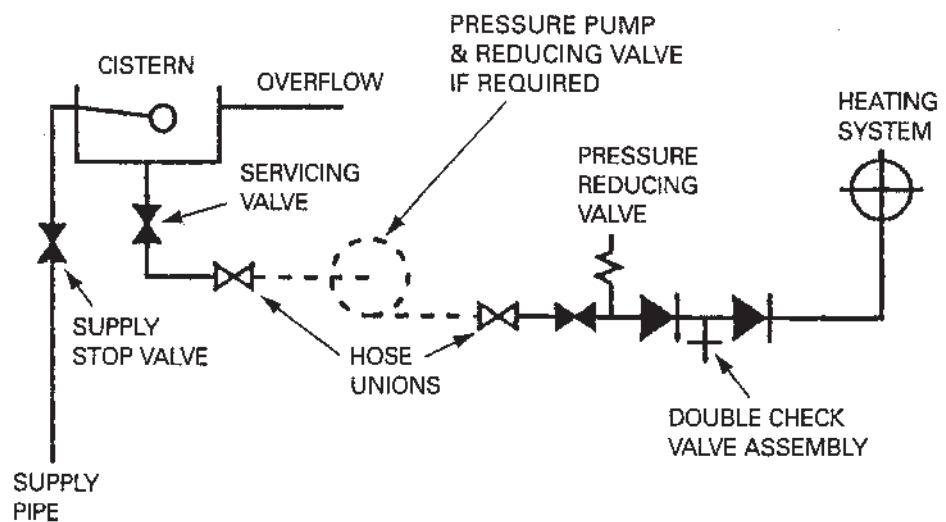


Fig. 3

MAKE SURE ALL UNUSED BOILER TAPPINGS ARE PLUGGED BEFORE FILLING THE SYSTEM.

Flush out the system to remove any swarf or residues before fitting the circulation pump.

The boiler is fitted with all necessary components to enable it to be used in a SEALED WATER SYSTEM.

The following SYSTEM components are incorporated:

- (a) Expansion vessel 10 litre capacity
- (b) Circulating pump - 3 speed, variable head.
- (c) Automatic air vent.
- (d) Safety Valve - factory set at 3 bar (45 p.s.i)
- (e) Limit thermostat - cut out at 110°C (hand reset).
- (f) Pressure gauge - 0 to 4 bar range.

EXPANSION VESSEL REQUIREMENT

1. As an approximation of water content, where it is not feasible to make accurate calculation, a figure of 12 L/kW output of the heat generator could be used.
2. **Capacity of expansion vessel.**

Where design information is not complete table 2 can be used for selecting the size of the vessel; it should be noted that the size given in table 2 takes account of the fault condition temperature rise referred to in (3) and other safety factors.

The 10 Ltr expansion vessel supplied with the boiler is suitable for a system volume of approx 120 Ltr. An additional vessel will be required for system volumes above this, see table 2.

3. System flow temperature

Whilst the normal operating temperature is limited to 82 °C, a fault condition may occur with the safety devices enabling system temperature to rise to 110 °C and it is recommended that this figure be used in the calculation of vessel sizes.

4. Should it be considered necessary to use a chemical inhibitor to prevent corrosion in the system, care should be taken to ensure compatibility with the diaphragm, and other system components

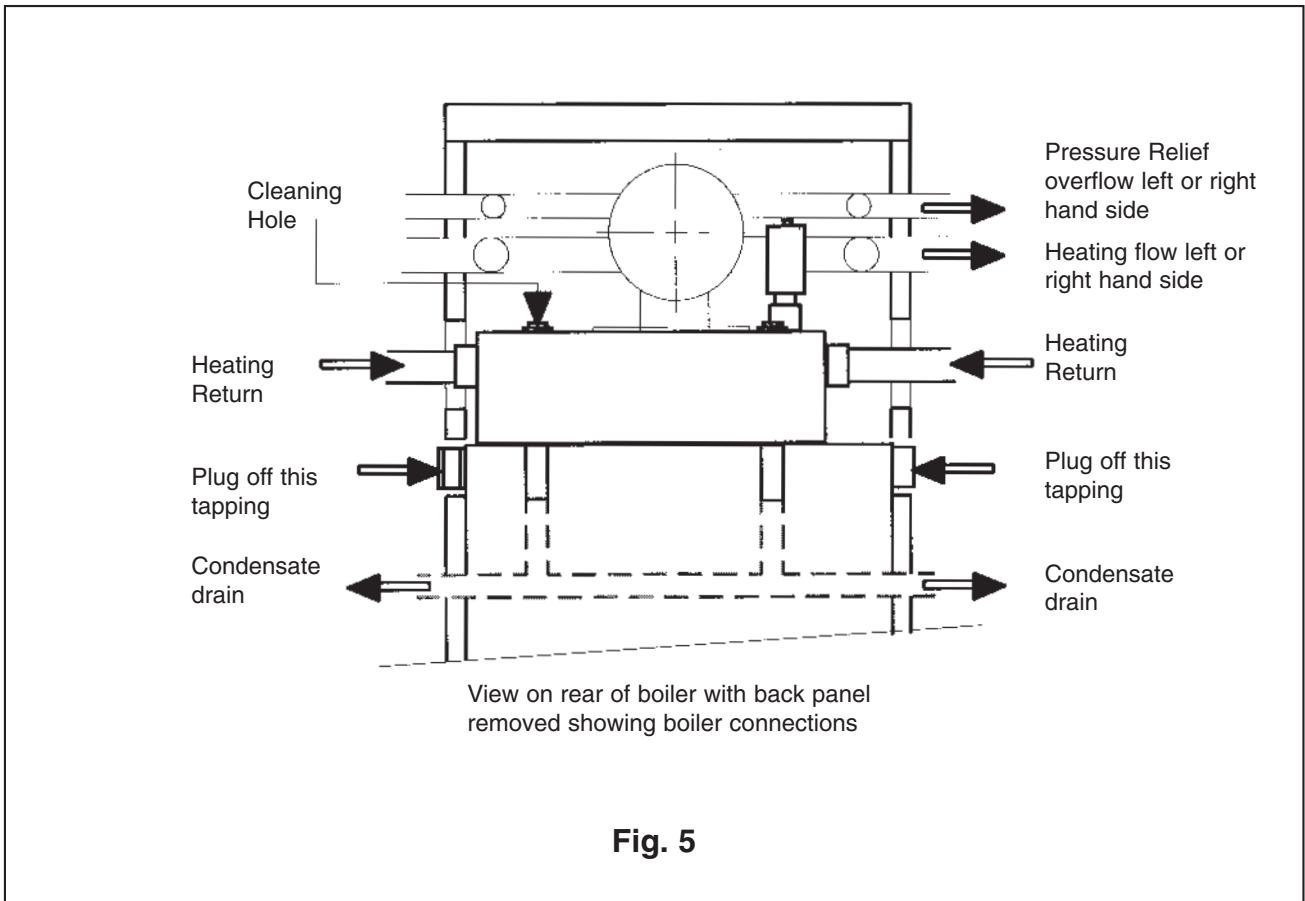
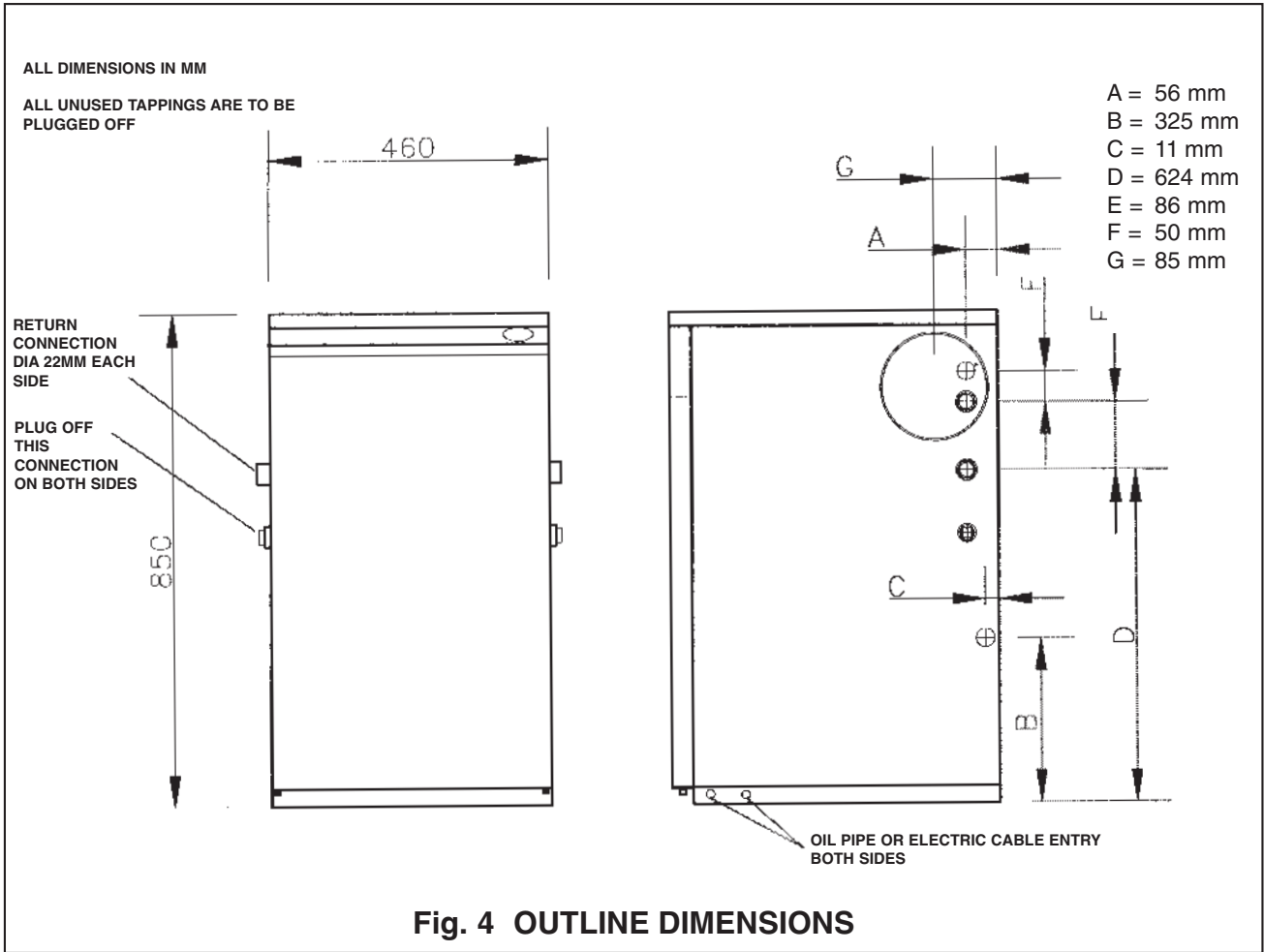
5. Connection of the expansion vessel.

The point of connection of the expansion pipework is the neutral point of the system and it is recommended that this is in the return pipework close to the heat generator. The fill position should be between the expansion vessel connection point and the inlet circulation pump. The point of connection of the expansion vessel into the system having been clearly defined, the physical location of the vessel can be anywhere.

Note: Failure to ensure the correct vessel size could result in premature failure of the expansion vessel, which in turn may adversely affect other components of the boiler, ie circulating pump and diverter valve.

Table 2. Capacities of expansion vessels		50/90		
Safety valve setting (bar gauge)		3.0		
Vessel charge and initial system pressure (bar gauge)		0.5	1.0	1.5
Total water content of system (litres)		Vessel Volume		
L	L	L	L	L
25	2.1	2.7	3.9	
50	4.2	5.4	7.8	
75	6.3	8.2	11.7	
100	8.3	10.9	15.6	
125	10.4	13.6	19.5	
150	12.5	16.3	23.4	
175	14.6	19.1	27.3	
200	16.7	21.8	31.2	
225	18.7	24.5	35.1	
250	20.8	27.2	39.0	
275	22.9	30.0	42.9	
300	25.0	32.7	46.8	
Multiplying factors for other system volumes		0.0833	0.109	0.156

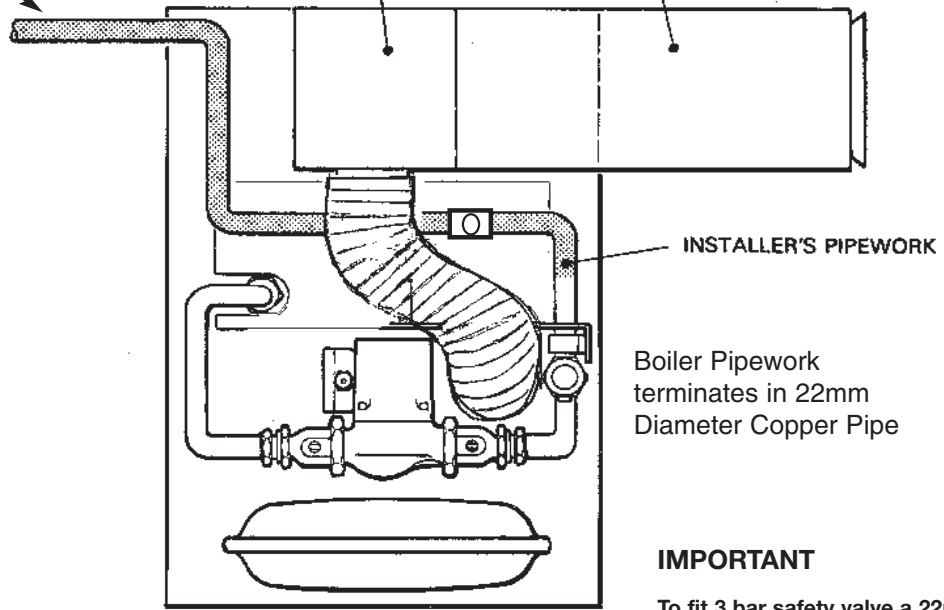
3. TECHNICAL INFORMATION



Recommended
28mm Flow Pipe

AIR
BOX

FLUE
TERMINAL



INSTALLER'S PIPEWORK

Boiler Pipework
terminates in 22mm
Diameter Copper Pipe

IMPORTANT

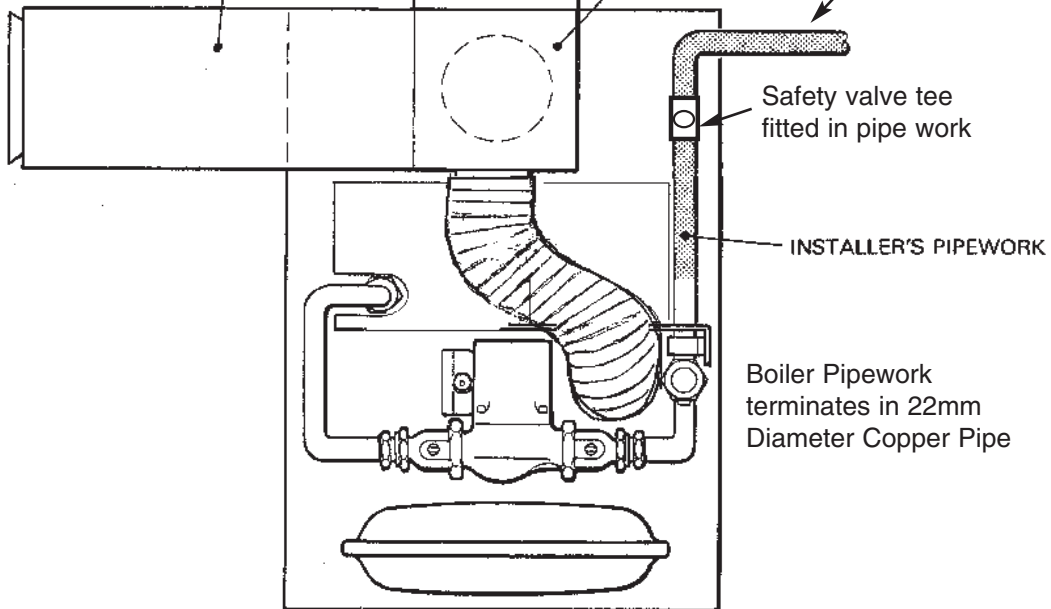
To fit 3 bar safety valve a 22mm x 22mm x 1/2" BSP fitting is supplied in the instruction bag. This fitting to be fitted in the pipework within the casings.

PIPEWORK ARRANGEMENT USING R/H
FLUE TERMINAL CONNECTION
(PLAN VIEW)

FLUE
TERMINAL

AIR
BOX

Recommended
28mm Flow Pipe



Safety valve tee
fitted in pipe work

INSTALLER'S PIPEWORK

Boiler Pipework
terminates in 22mm
Diameter Copper Pipe

PIPEWORK ARRANGEMENT FOR REAR AND L/H FLUE CONNECTIONS

Fig. 6 PIPE CONNECTIONS

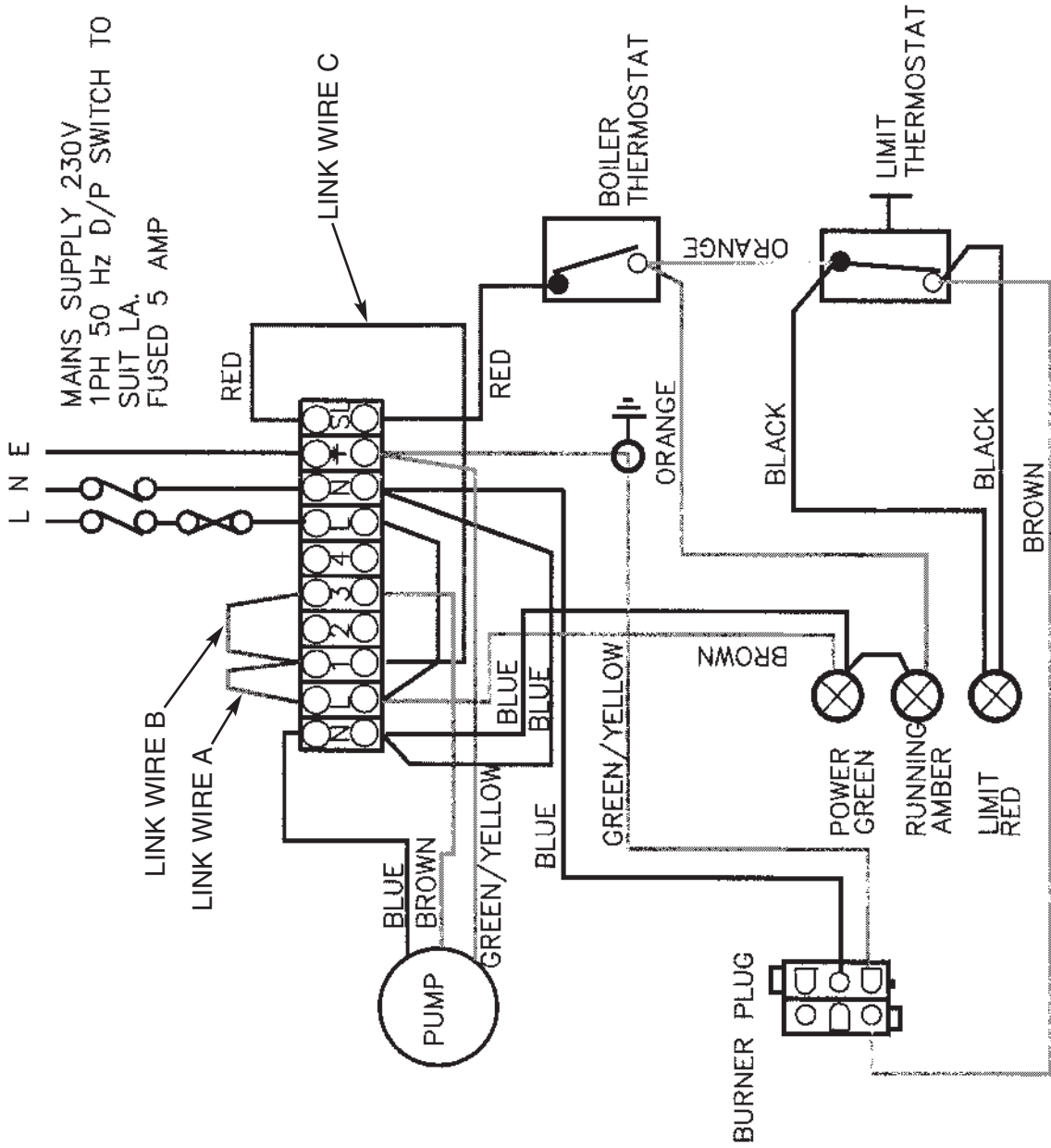


Fig. 7 WIRING DIAGRAM

Eurostar 50/90 System Components - SPARES

Item	Description	Qty	Part Code
1	Pump	1	26224
2	Pump Valve	1	99461
3	Equal	2	99391
4	Air Vent Fitting	1	209114
5	Automatic Air Vent	1	207269
6	Pressure Gauge	1	221921
7	Expansion Vessel	1	207291
8	Flexible Connector	1	207292
9	Expansion Vessel Bracket	3	207274
10	M8 Nut	2	94396
11	Pressure Relief Valve	1	221920
12	1/2" x 1/2" BSP Male Straight Connector	1	99522
13	Boiler/Pump Pipe Assembly	1	209152
14	Flow/Pump Pipe Assembly	1	209153
15	22 x 22 x 1/2 BSP TEE	1	99391

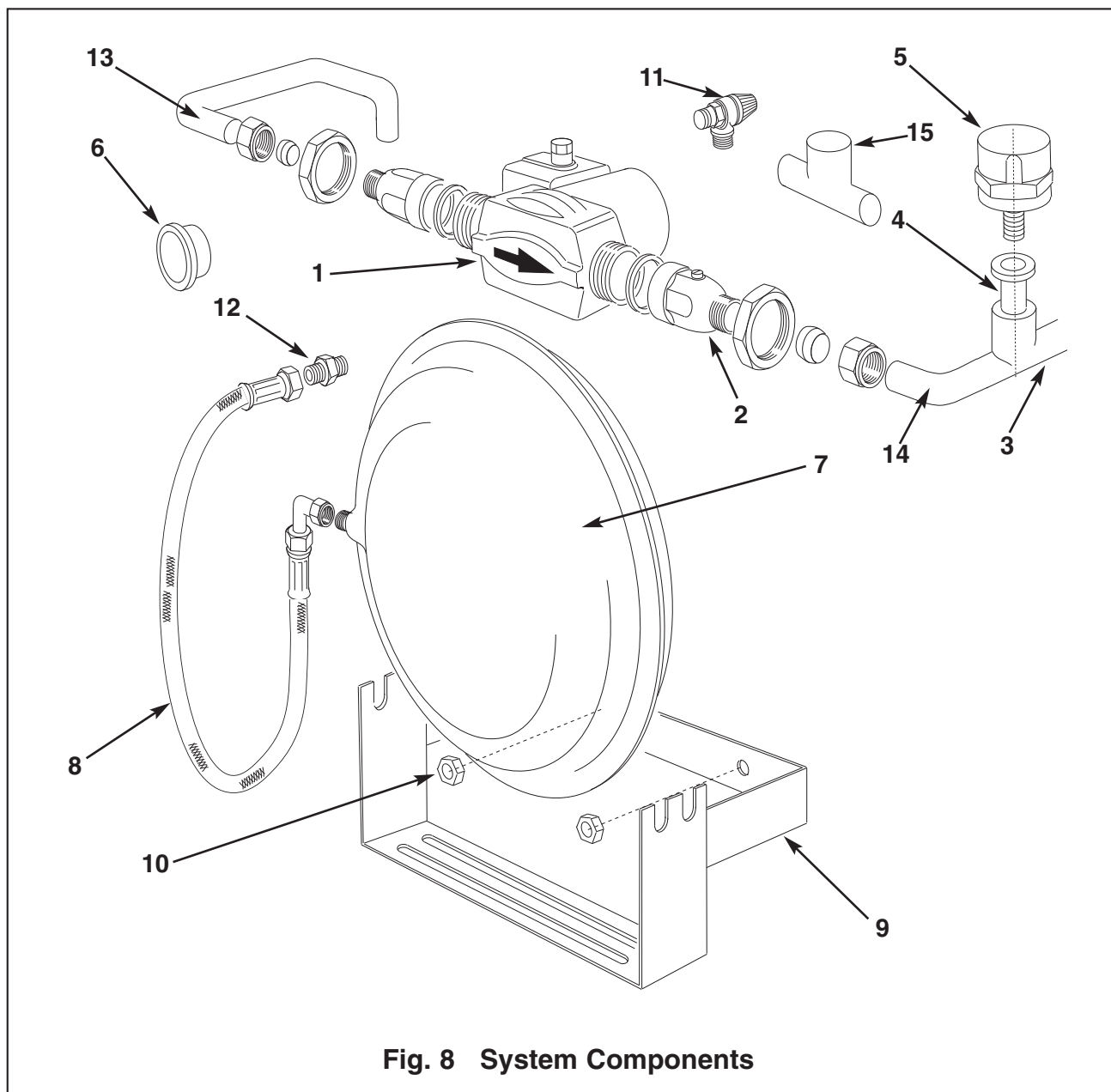


Fig. 8 System Components



By appointment to H.M. Queen Elizabeth
The Queen Mother
Manufacturers of Domestic Boilers



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