INSTALLATION COMMISSIONING & SERVICING INSTRUCTIONS

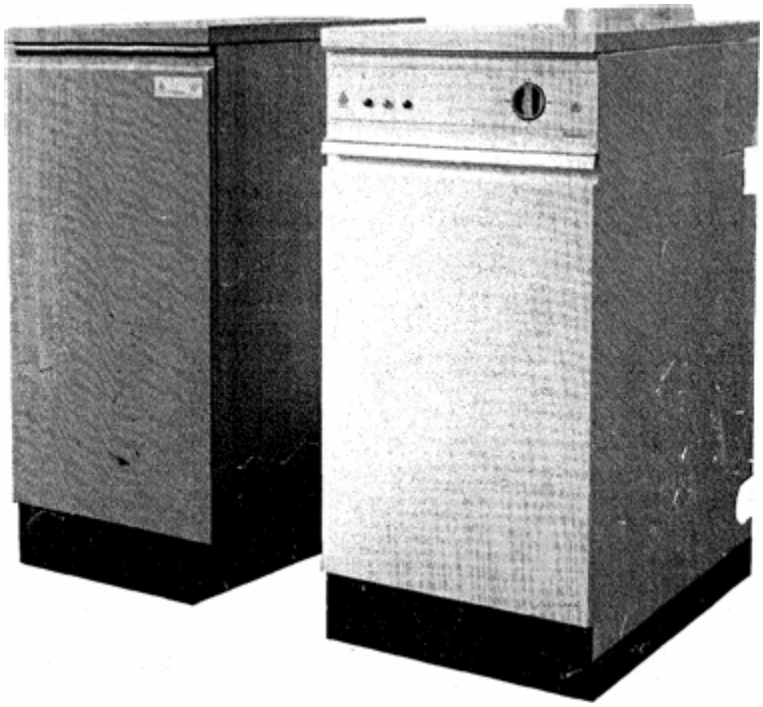
Models covered by these instructions

90-110	EuroStar
110-130	EuroStar

TRANCO EuroStar

OIL FIRED CENTRAL HEATING BOILERS

FOR CONVENTIONAL OR BALANCED FLUE



Standard & Boiler House Models

To be retained by householder

INSTALLATION INSTRUCTIONS

CONTENTS

1. INTRODUCTION

Trianco EuroStar boilers have been designed and constructed to meet the latest European Standards and high efficiency requirements of the Boiler (Efficiency) Regulations 1993. They are available in either white cased kitchen models or blue cased for boiler-house installation.

The boilers, as supplied, are suitable for connection to a conventional chimney but they can readily be converted into a room sealed balanced flue appliance by using any of the Trianco Balanced Flue (4") Kits. These kits allow the boiler to be installed in a wide variety of site conditions, from low level through the wall, to high level roof discharge. (See Balanced Flue Kits for details – Section 5).

The matched pressure jet burner is relatively quiet in operation and the head design ensures clean and efficient combustion with low NO_x emissions.

As the EuroStar balanced flue model is a truly room sealed appliance, it is also eminently suitable for installation in a garage.

EuroStar boilers are suitable for all normal open vented central heating and indirect hot water systems. They can also be used with sealed systems up to a working pressure of 3 bar in conjunction with the appropriate sealed system safety equipment.

Two flow and return sockets are provided to facilitate connection to the heating and hot water systems and additional sockets allow the circulating pump and drain-off cock to be fitted inside the boiler casing.

Burner servicing is carried out from the front of the boiler and the top mounted flue-cover permits easy access for the removal of the flue-baffles and cleaning of heating surfaces.

The boiler is fully automatic in operation and incorporates all necessary safety controls and indication lights to ensure safe and reliable operation.

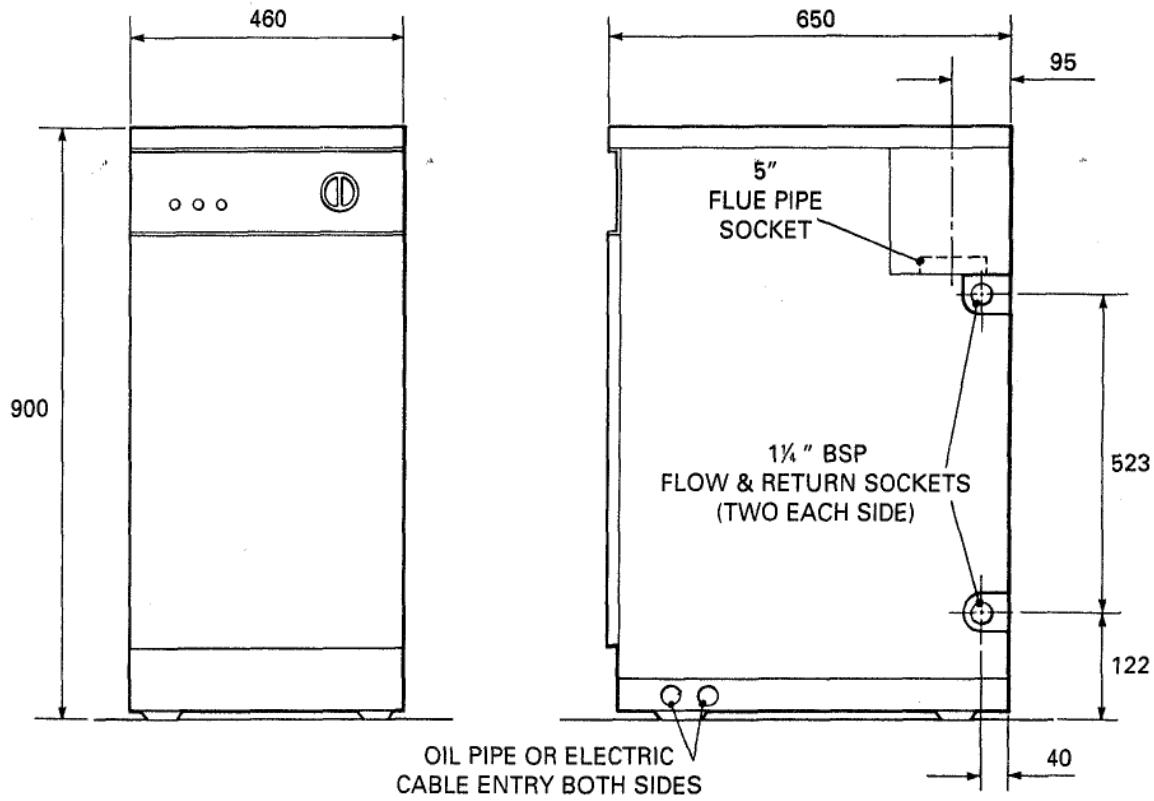
An electronic 7 day plug-in programmer is available as an optional extra.

Trianco EuroStar boilers are supplied with the burner set for Kerosene 28 sec. Class C fuel to meet the Building Regulation requirements for low level flue discharge. It is recommended this fuel is also used when the boiler is connected to a conventional chimney because of the clean burning characteristics of Kerosene.

2. TECHNICAL INFORMATION

Fig. 1 OUTLINE DIMENSIONS

ALL DIMENSIONS
IN MILLIMETRES



NOTE:

OVERALL DIMENSIONS ALSO APPLY TO BOILER-HOUSE MODELS

Technical Specification

EuroStar Boiler	Model	90-110	110-130
Rated Output	(Btu/h)	110,000	130,000
	(kW)	32.2	38.1
Electro-Oil Burner	Model	Sterling 50	Sterling 50
Weight (empty)	(kg)	127	135
	(lb)	279	298

Water content	(litre)	22.0	25.4
	(gal)	4.9	5.6
Flow & return sockets	(in.)	4 × 1 ¼ BSP	4 × 1 ¼ BSP
Pump socket	(in.)	1 BSP	1 BSP
Drain-off socket	(in.)	½ BSP	½ BSP
Flue Socket Dia. (C.F.)	(in.)	5	5
Max. operating pressure	(bar)	3	3
	(psi)	43.5	43.5
Test Pressure	(bar)	4.5	4.5
	(psi)	65.3	65.3
Water side resistance			
10°C diff	(mbar)	21.8	25.4
	(in. w.g.)	8.7	10.2
20°C diff	(mbar)	5.5	8.2
	(in. w.g.)	2.2	3.3
Control Thermostat	– Adjustable between 60°C and 86°C		
Limit Thermostat	– Factory set at 106°C ±4°C (hand reset)		
Casing Finish	– Stove enamelled white with coloured facia trim (Standard Model)		

	– Stove enamelled blue (Boiler House Model)
Thermal Insulation	– Boiler shell insulated with fibre glass
Indicator Light	– Mains ON – Green
	Excess water temperature – Amber
	Burner lock-out – Red
Option Extras	– Plug-in programmer C/W facia (Standard Model only)
	Trianco Balanced Flue Kits

Fig. 2 WIRING DIAGRAM – STANDARD MODEL

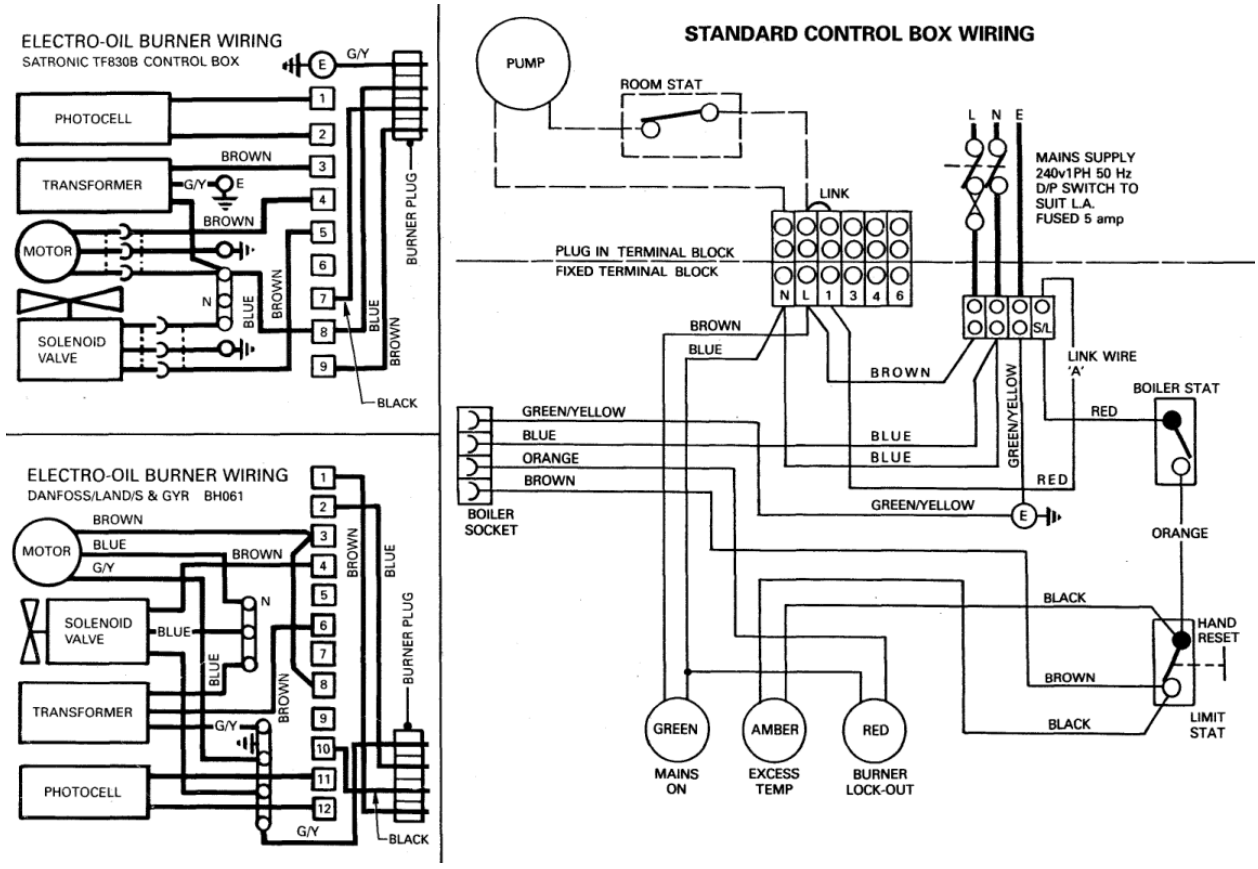


Fig. 3 WIRING DIAGRAM – BOILER HOUSE MODEL

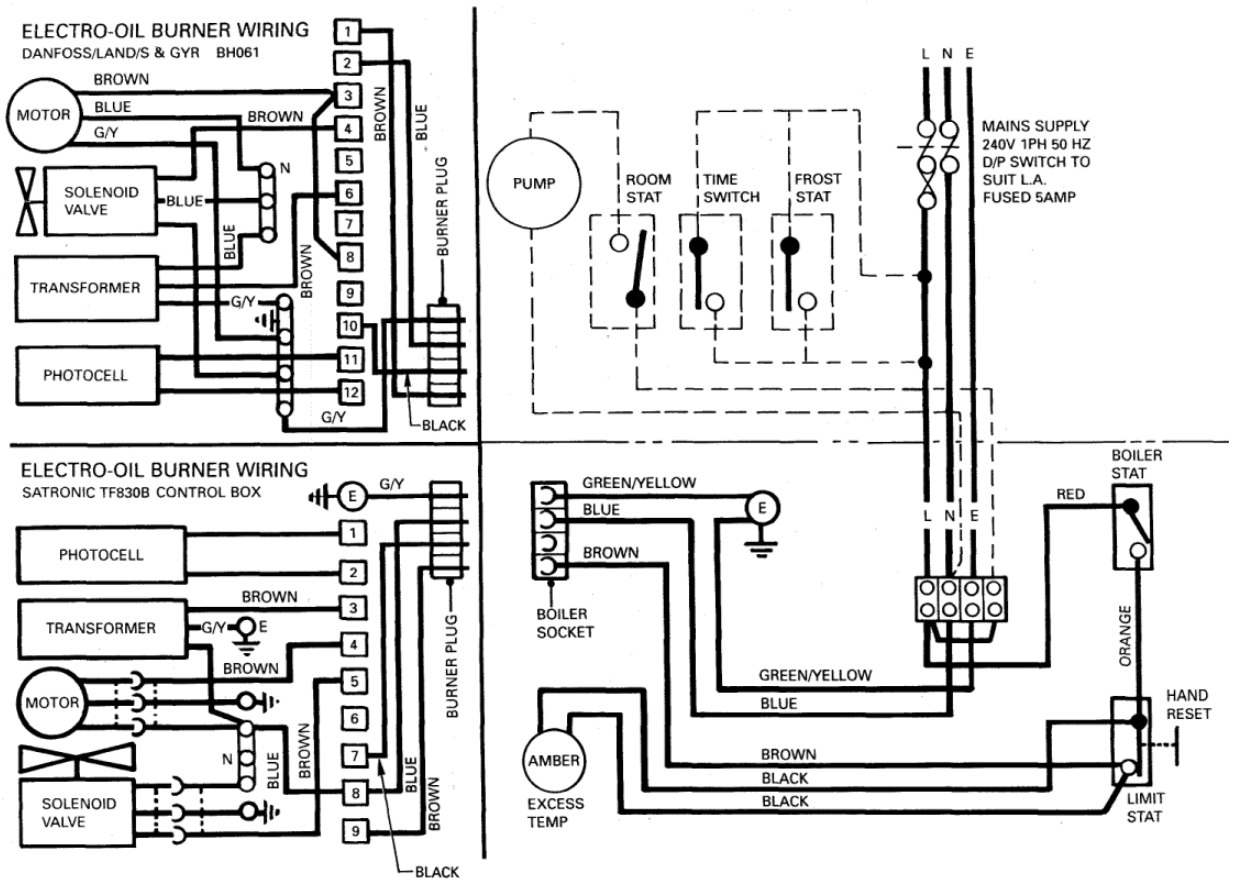
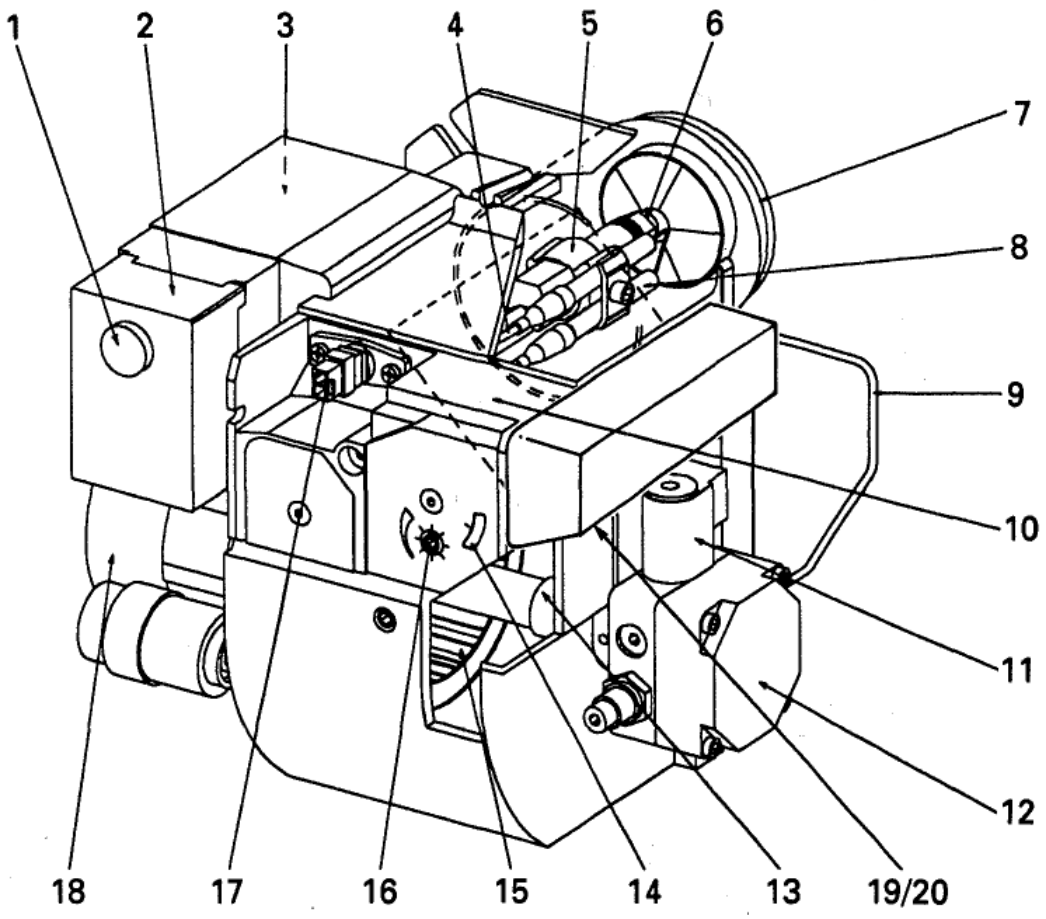


Fig. 4 Electro Oil Sterling Burner (End Cover Removed)



Components

1	Reset button	7	Combustion head	14	Indication, air damper
2	Control box	8	Ignition electrodes	15	Fan wheel
3	Ignition transformer	9	Connecting pipe	16	Adjustment, air damper
4	Ignition cables	10	Air damper	17	Photoresistor
5	Nozzle assembly	11	Solenoid valve	18	Motor
6	Nozzle	12	Pump	19	Air intake (Conv. Flue)
		13	Drive coupling	20	Air intake (Bal. Flue)

Burner Settings

Boiler	Burner Model	Comb. Head	Danfoss Nozzle USG/H	Pump Pressure PSI	Firing Rate ml/min	Nom. Air Setting	$C0_{2\%}$	Smoke No.	Flue Gas Temp. °C
EuroStar. 90-110	Sterling 50	Type E	1.00 × 80°S	110	65	11	12.5	0	220

EuroStar 110-130	Sterling 50	Type EM	1.00 × 60°S	140	75	15	12.5	0	210

Air Adjustment

The air damper is factory set at a nominal position to suit typical conventional flue conditions. However because of variations in flue draught it will usually be necessary to slightly adjust the air damper in order to achieve the CO2 level indicated under ‘Burner Settings’.

N.B. When used with a Trianco Balanced Flue it will be necessary to increase the air setting by 2 to 3 divisions in order to obtain the correct CO_2 level with zero smoke reading.

The adjustment can be carried out by removing the end cover from the burner and using a 4mm Allen key rotate Screw 16 – clockwise to increase air for lowering the CO_2 and anticlockwise to raise CO_2.

The air should be reduced until there is just a trace of smoke (measured with a smoke pump) then opened slightly to achieve a zero smoke reading. This provides the optimum setting.

Fig. 5 STERLING BURNER HEAD DETAILS

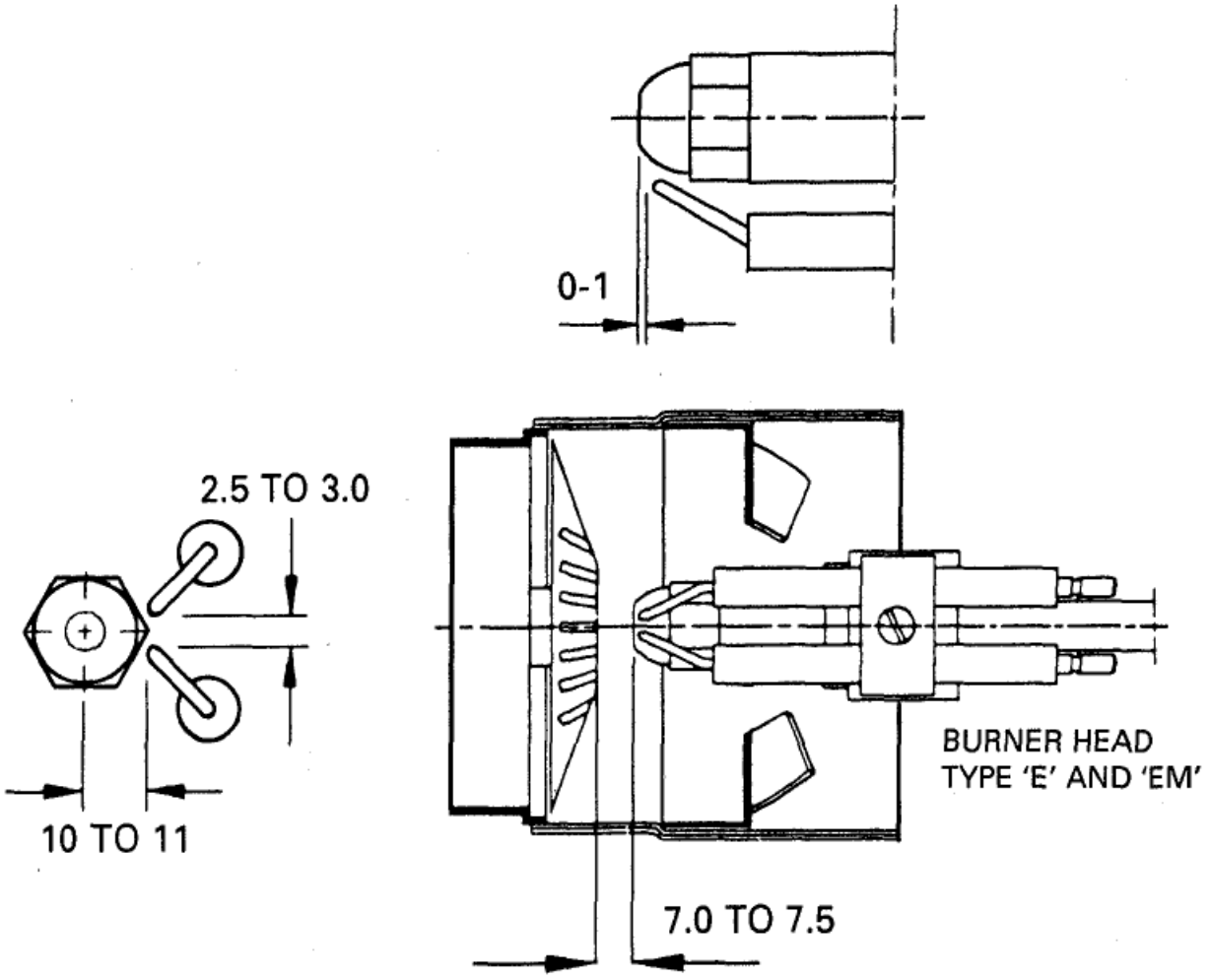
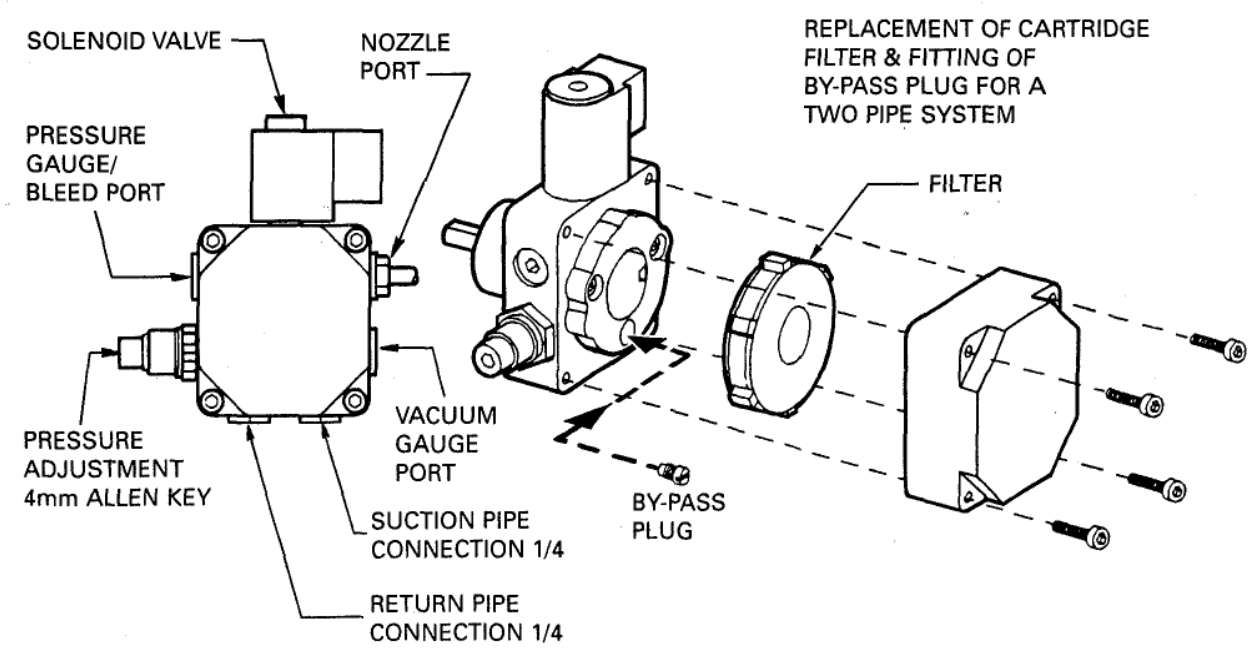


Fig. 6 Danfoss BFP 11 L3 Oil Pump Details



Oil Pipe Connections

The burner is supplied for use with a one pipe oil supply fit the by-pass plug (supplied) into the pump. This system. If used on a two pipe system, it is necessary to requires removal of the pump end-cap and oil filter.

3. INSTALLATION

Regulations

Installation of the boiler must comply with the following British Standards and Regulations:

BS 5410 : Part 1 – Code of Practice for Oil Firing.

BS 5449 – Forced Circulation Hot Water Central Heating Systems.

The Building Regulations	– Part ‘J’ (England and Wales)
	– Part‘F Section 111(Scotland)
	– Part‘L’

The Control of Pollution (Oil) Regulations

Current I.E.E. Regulations

Local Water Undertakings By-laws

OFTEC Installation Requirements for Oil Fired Boilers and Oil Storage Tanks.

Health and Safety at Work Act

The installer should be aware of his responsibilities under the Act and provide, where necessary, appropriate protection for persons carrying out the installation.

In the interest of safety, the boiler should be installed and commissioned by a competent engineer, preferably OFTEC trained and Registered.

A useful guide to ‘Safe Working Practices for Oil Firing Technicians’ is published by OFTEC.

Siting the Boiler

Sound Levels

Whilst the sound level of the Trianco EuroStar boiler is relatively low, the following aspects should be considered before installation.

(a) Some people are particularly sensitive to even low noise levels so this aspect should be discussed with the householder.

(b) Small rooms tend to amplify noise, particularly if the wall construction is hollow or the surface tiled.

(c) A chimney passing through a bedroom can sometimes transmit noise.

(d) Low level flue terminals produce some exhaust noise, so care should be taken when siting adjacent to neighbouring property.

Clearance and Service Access

When siting the boiler, ensure adequate clearance is allowed for making water and flue connections and a headroom of 450mm (18") is provided for removal of flue baffles and flue-way cleaning. A clearance of 750mm (30") is also required at the front of the boiler for burner maintenance.

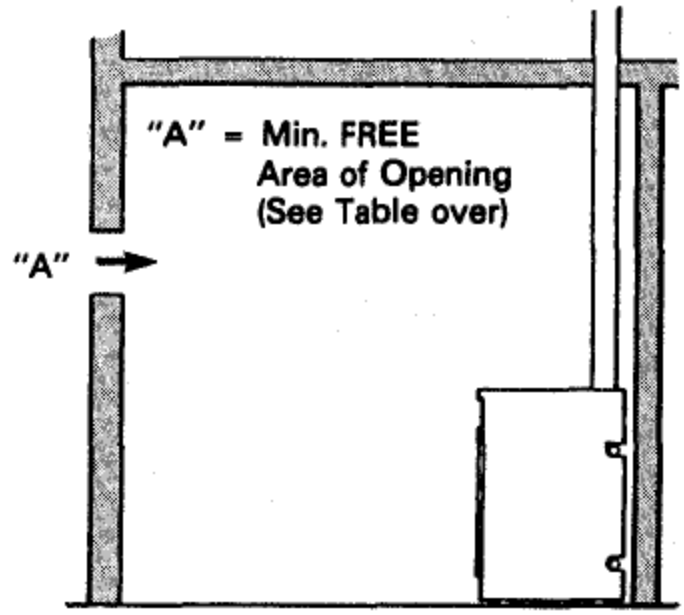
Hearth

The thermal insulation provided in the boiler base ensures the floor temperature is kept below 80°C and, as such, a non combustible hearth is required. However, the floor must be level and capable of supporting the installed weight of the boiler, including its water content.

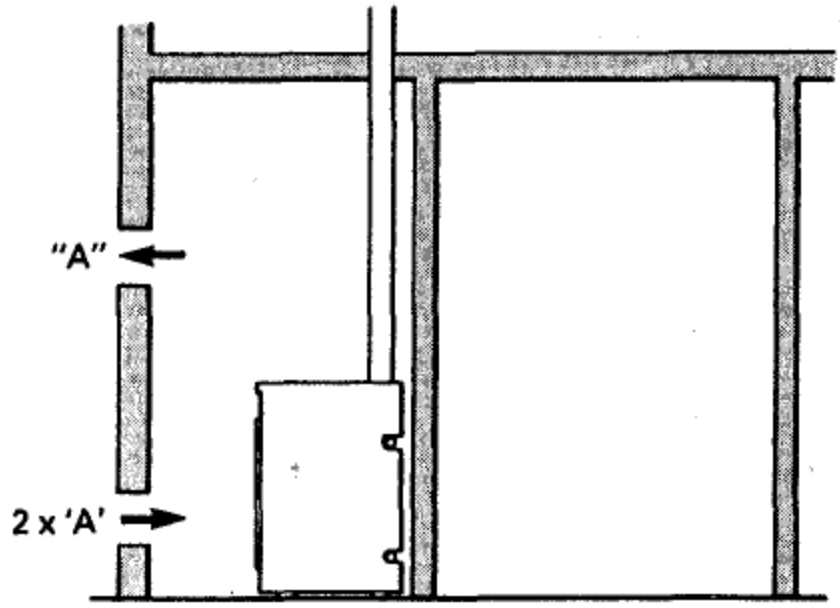
Combustion Air (Conventional flue boilers)

The provision of an adequate supply of combustion air is essential for the efficient and safe operation of the boiler. The air opening should be position so as to cause the least possible draught to the occupants and located so it is not liable to be accidentally blocked.

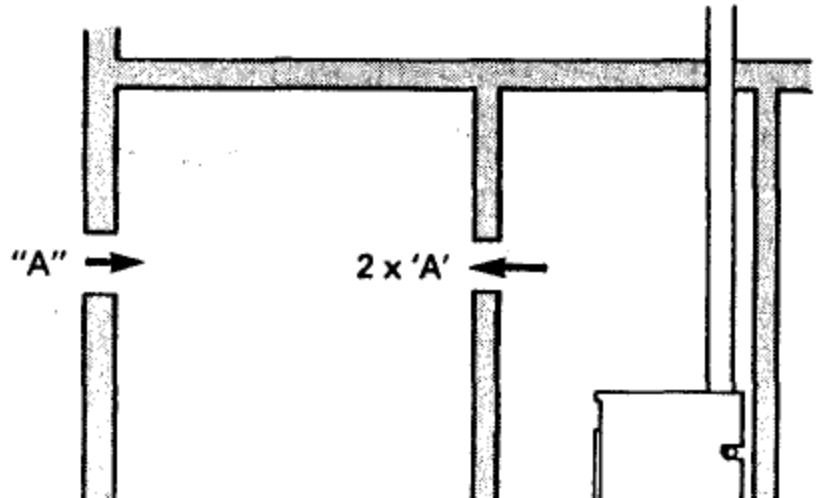
Fig. 7 AIR SUPPLY & VENTILATION FOR CONVENTIONAL FLUE BOILERS



BOILER IN ROOM



BOILER COMPARTMENT
VENTILATED FROM OUTSIDE



British Standard Code of Practice for Oil Firing BS 5410: requires a permanent air inlet opening of 550mm^2 per kW of boiler rated output.

The following air openings are therefore required for Trianco EuroStar boilers:

EuroStar Model	Minimum Free Area Opening 'A'
90-110	176 cm^2(27 in^2)
110-130	210 cm^2(32 in^2)

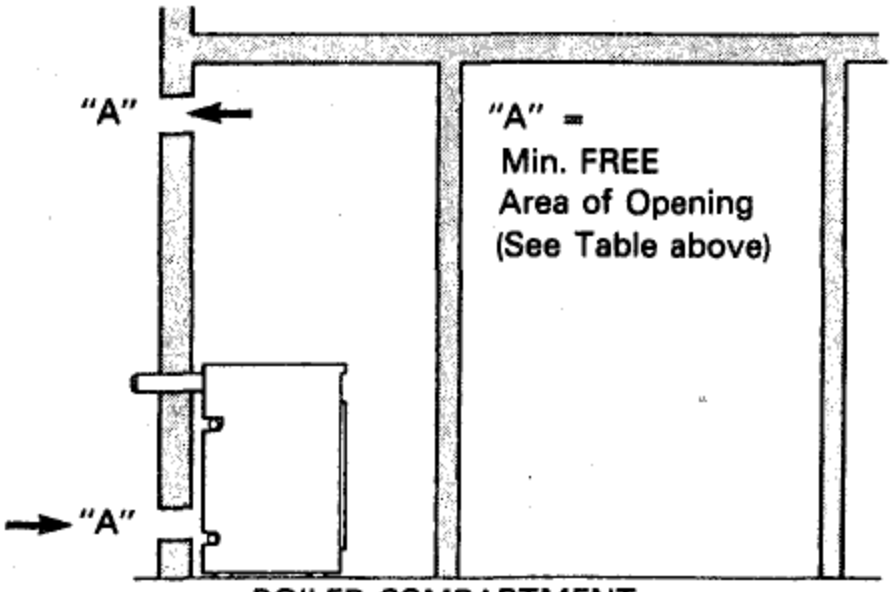
Ventilation (Conventional flue boilers)

Where the boiler is installed in a compartment or a confined space, ventilation openings are also required to prevent overheating of the appliance controls. (The ventilation areas are shown in Fig. 7).

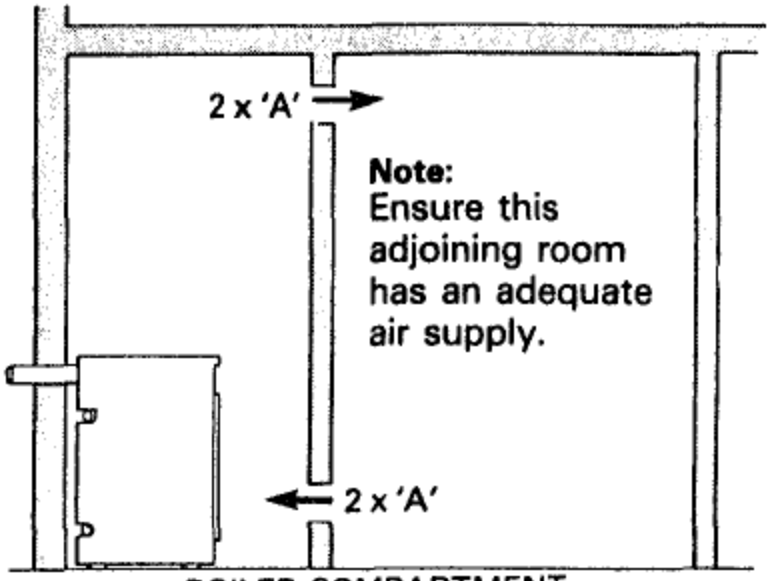
Ventilation (Room sealed balanced flue boilers)

Although no openings are required for the supply of combustion air (this comes from outside through the air duct system direct to the burner), ventilation is, however, necessary if the boiler is installed in a compartment or a confined space in order to prevent overheating of the boiler controls. (See Fig. 8 for ventilation openings).

Fig. 8 VENTILATION FOR ROOM SEALED BALANCED FLUE BOILERS IN A COMPARTMENT



BOILER COMPARTMENT
VENTILATED FROM OUTSIDE



BOILER COMPARTMENT
VENTILATED FROM ADJOINING ROOM

Extractor Fan

If the boiler room has an extractor fan, the combustion performance of the appliance must not be affected when the fan is running and all doors and windows are closed. A flue gas check on the C02% and smoke number must be carried out to provide that combustion is satisfactory.

Heating and Domestic Hot Water Systems

The heating system should be installed in accordance with current HVCA Codes of Practice and BS 5449 ‘Forced Circulation Hot Water Systems’.

Water connections can be made to the boiler using both pairs of flow and return tappings or, alternatively, single diagonally opposite tappings can be used.

If it is required to fit the circulating pump inside the boiler casing, use the socket on top of boiler body.

Fit a drain-off cock in the ½” BSP tapping at bottom front of boiler.

Where a boiler is also used for providing domestic hot water, a double feed indirect cylinder to BS 1566 Part 1 must be used.

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

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

Electrical Supply

240V 1 Phase 50 Hz (Fused 5 Amp)

NOTE:

THIS APPLIANCE MUST BE EARTHED

All electrical wiring must be carried out by a qualified electrician in accordance with current I.E.E. Regulations and any Local Regulations that may apply.

The mains electrical supply can be taken from a double pole isolating switch (fused 5 amp) situated near the boiler. The cable should be heat resisting and routed either along the top side of the casing in the cable clip provided or run from the bottom side through the hole in the base tray. It should finally be secured with the strain bush in the bottom of the control panel.

Terminal connections are also provided in the control panel for ancillary controls.

See wiring diagrams Figs. 2 or 3.

Warning – High and Low Voltage

In certain parts of the country, where there is a known risk of high or low voltage fluctuations, the oil burner shall be prevented from starting by the use of a voltage sensitive device if the voltage drops or increases sufficiently to endanger the installation.

Thermostats

The boiler is fitted with a variable setting control thermostat and a preset limit thermostat. Should the boiler thermostat malfunction, the limit thermostat will take over control and shut down the boiler.

Programmer (Optional extra)

A seven day, twin circuit electronic programmer is available for plugging directly into the terminal block on boiler control panel. (See separate instructions supplied with programmer).

4. OIL SUPPLY

Oil

The oil burner is factory set to burn 28 sec. Kerosene.

NOTE:

Only Kerosene is permitted for low level flue discharge.

Gas oil (35 sec) can be used where the boiler is connected to a conventional chimney but it is essential that a nozzle line oil pre-heater is fitted to the burner. Pre-heaters are available from Trianco Redfyre Limited as an optional extra.

Oil Storage Tanks

Size and Location of Tank

The tank should be large enough to allow for economic deliveries and be located in the most unobtrusive position, having regard to the need for safety, filling, maintenance (if steel tank) and the head of oil required.

Whilst it is highly unlikely that a fire could start from an oil tank, it does however need to be protected from a fire that may originate in a nearby building. The tank should therefore not be located nearer than 1.8 metres from a building, nor closer than 760mm from a site boundary. Where a tank has to be less than 1.8 metres, the building wall must not have any openings other than small ventilation openings. The wall shall have a half hour resistance to an internal fire and extend 1.8 metres from any part of the tank.

Alternatively, a non-combustible radiation barrier must be provided which meets the requirements of BS 5410. This Standard applies to tanks up to a capacity of 3,400 litres.

Steel Tanks

Steel tanks should comply with the requirements of BS 799, Pt. 5: 1987 and mounted on brick or block piers with a waterproof membrane between the piers and tank.

The tank should be fitted with fill and vent connections (weather protected), a drain-off cock, shut-off valve and an oil level indicator.

Plastic Tanks

Polyethylene tanks are now widely used because of their advantages over traditional steel tanks:

(a) They do not need pier supports and can be mounted directly on any flat surface giving uniform support for the tank base.

(b) They do not corrode and therefore never need painting.

(c) They are easier to handle because of their lower weight.

(d) They have a 10 year manufacturer's guarantee.

Plastic tanks should be fitted with similar components as those used with steel tanks.

Oil supply line

A long life flexible oil hose, filter and shut-off valve are supplied with the boiler and these should be fitted as shown in Figs. 9, 10 and 11.

The oil shut-off valve should be fitted as close to the burner as practicable to enable the burner to be disconnected without undue loss of oil. A filter must be connected in the oil supply pipe and positioned either inside or outside the building.

A fire-valve must be fitted in the oil line outside the building with its sensing phial inserted in clips provided on the underside of boiler control panel.

All oil line joints must be completely sealed and the total pipe run thoroughly flushed out before connecting to the burner. No soldered joints are permitted in the oil line.

The oil line can be fed into the back of the boiler base tray or through the holes at the side.

Single pipe oil supply

(Fig. 9)

When the bottom of the oil supply tank is above the burner, a single pipe gravity system can be used. The oil supply pipe must be connected to the suction port on the burner pump via the flexible hose.

Two pipe oil supply

(Fig. 10)

Where the bottom of the oil storage tank is below the burner, a two pipe suction lift system is necessary. When using a two pipe system, it is important that the by-pass plug (supplied with burner) is fitted in the pump as shown in Fig. 6. An additional long life flexible hose is required for the return pipe – this is obtainable from Trianco Redfyre as an optional extra.

A spring loaded non-return valve must be fitted in the suction line to stop the oil running back to the tank. A filter, shut-off valve and fire valve must also be fitted in the line.

No valves are permitted in the return line which must remain unobstructed at all times.

NOTE:

(1) The pump suction should not exceed 0.4 bar, otherwise dissolved gas will be released from the oil to affect combustion.

(2) The return pipe must end at the same level as the suction outlet to prevent loss of prime.

(3) The outlet from the tank should be approximately 75mm (3 in) above the bottom to prevent sediment and water being drawn into the supply pipe.

Tigerloop Oil De-aerator – single pipe supply

(Fig. 11)

Where a two pipe suction lift system is required, but the return pipe is too long, or impractical to run, a Tigerloop De-aerator may be used. The burner is piped as for a two pipe system up to the Tigerloop but only a single pipe is required to be run back to the oil storage tank. A non-return valve is not required with this system but the by-pass plug must be fitted in the pump as for a two pipe system.

The Tigerloop, which should be fitted close to but not inside the boiler casing, is available from most Builders Merchants and some Oil Tank manufacturers.

Fig. 9 SINGLE PIPE OIL SUPPLY INSTALLATION

MAXIMUM OIL SUPPLY LINE LENGTH 'L'

HEAD 'H' METRES		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
PIPE 6mm OD	MAXIMUM LENGTH (METRES)	6	13	19	26	32	38	45	51
PIPE 8mm OD		32	65	97	100	100	100	100	100

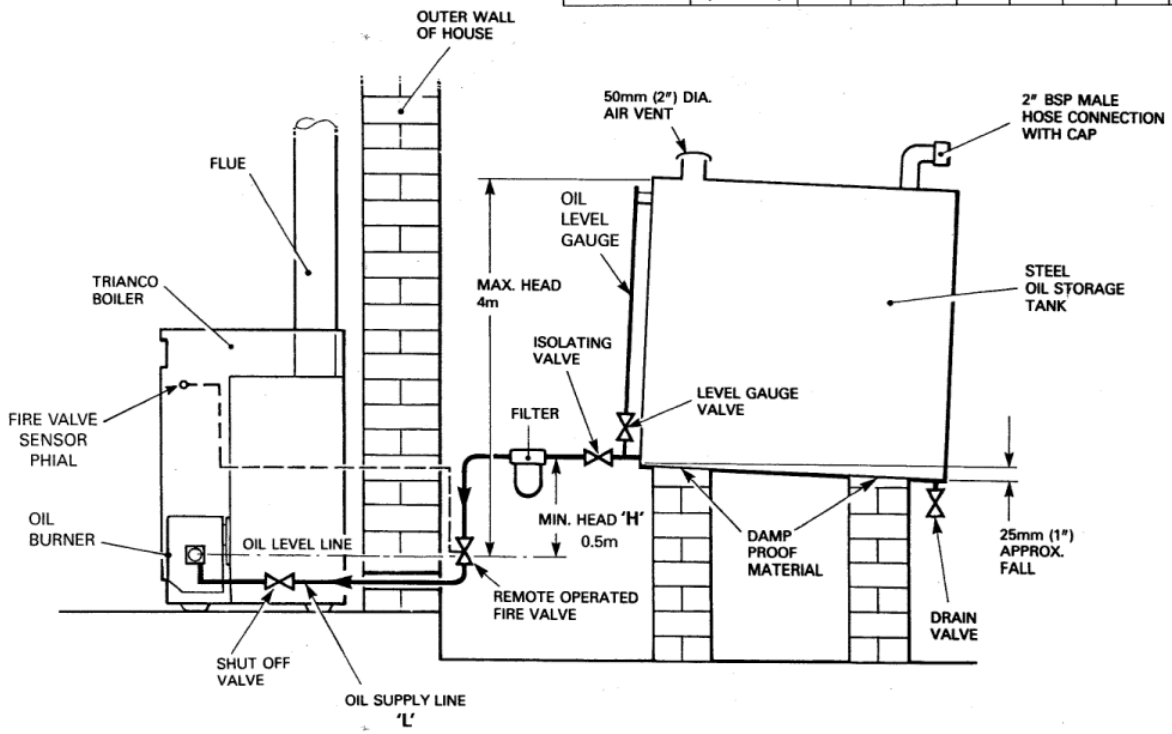


Fig. 10 TWO PIPE OIL SUPPLY INSTALLATION

MAXIMUM OIL LINE LENGTH 'L'

LIFT 'H' METRES		0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
PIPE 8mm OD	MAXIMUM	15	13	11	9	7	5	3	1
PIPE 10mm OD	LENGTH	47	41	34	28	22	15	9	3
PIPE 12mm OD	(METRES)	100	99	84	68	53	37	22	6

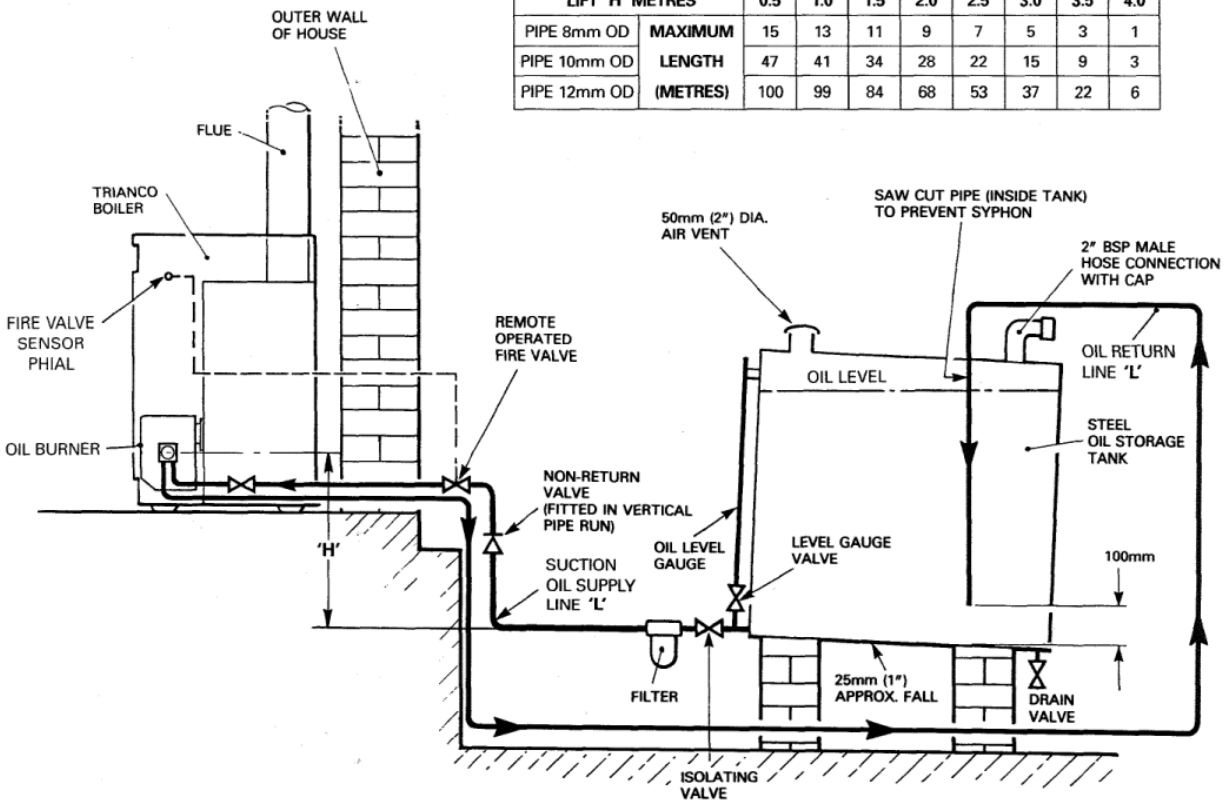
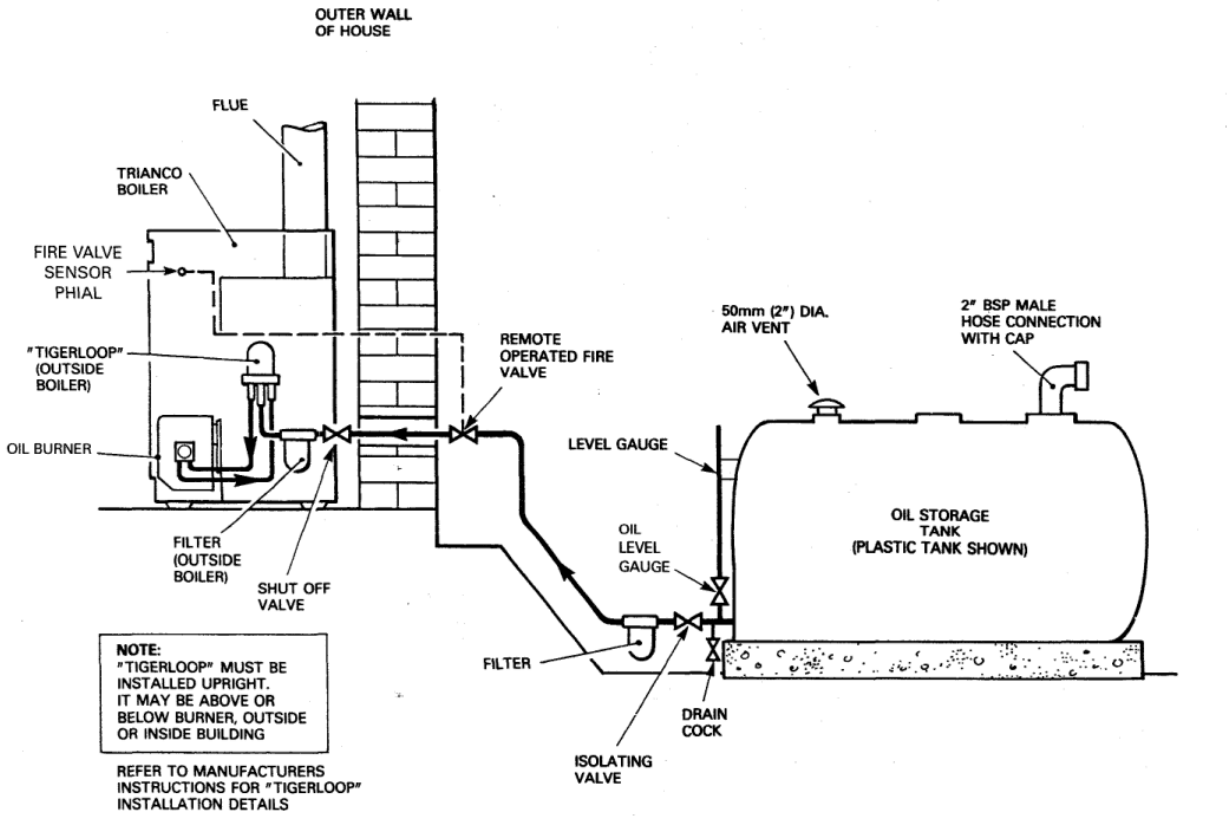


Fig. 11'TIGERLOOP' OIL SUPPLY INSTALLATION



5. FLUE SYSTEM

To evacuate the products of combustion safely and thoroughly, the boiler must have an efficient flue system. The design and construction of the Trianco Low Level Discharger Kits already takes these factors into account so the following guidance notes are for conventional chimneys. Reference should also be made to BS 5410 if further information is required on conventional chimneys.

Conventional chimney

(Fig. 12)

(a)The chimney should rise as vertically as possible and terminate at a point not subject to down draughts or wind eddies.

(b) Brick and masonry chimneys must be lined with a moisture and acid resistant liner of the same diameter as boiler flue outlet.

The use of a flexible stainless steel liner is a convenient method of lining an existing chimney and this should be back filled with ‘Vermiculite’ or similar Insulating material to retain the heat.

A flexible liner should also be used in chimneys fitted with large diameter clay liners to reduce the flue bore and improve the thermal insulation.

NOTE:

(1) In view of the Euro Trader's high thermal efficiency, it is important that a liner is fitted, otherwise condensation problems could result.

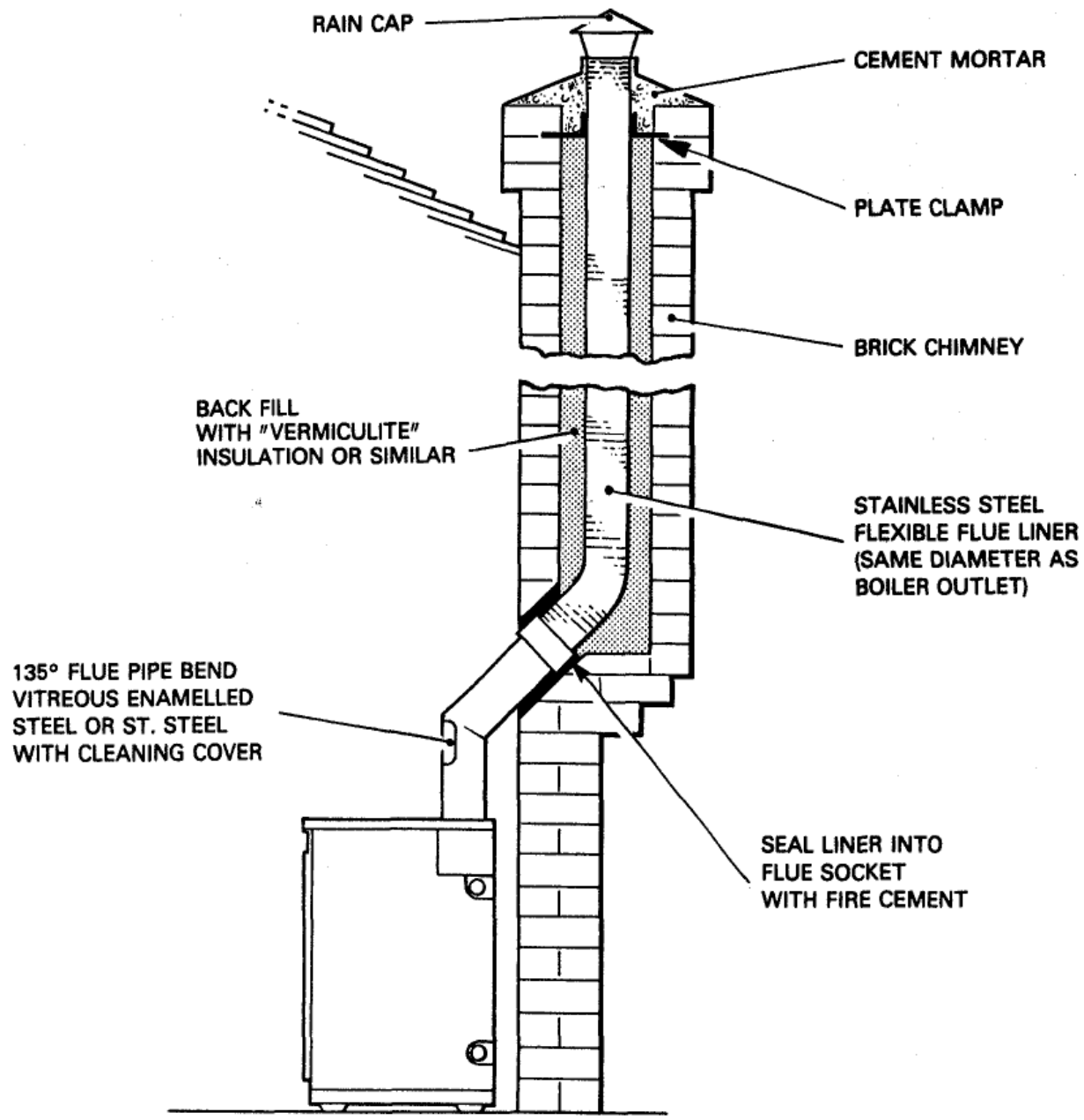
(2) Before fitting a liner, the chimney must be thoroughly cleaned free from all traces of soot and scale.

(c) A factory made insulated chimney complying with BS 4543 Part 3 may be considered as an alternative to a structural chimney both for new and existing buildings.

(d) The inbuilt flue gas resistance of the EuroStar is such that it allows the boiler to operate reliably over a wide range of chimney draughts encountered from typical chimneys.

The use of a draught-stabillser should not be necessary nor Is it desirable since it allows flue noise to be emitted into the room.

Fig. 12 CONVENTIONAL BRICK CHIMNEY WITH LINER



Balanced Flue (Room sealed) systems (Optional Extra)

The Trianco balanced flue system offers much greater flexibility for siting the boiler compared with a conventional chimney. The only requirement is for a suitable outside wall to fit the horizontal discharge terminal or, alternatively, a single storey roof for a vertical discharge.

In addition to the siting benefit, the performance of balanced flue boilers is virtually unaffected by high wind conditions since wind pressures are applied equally to both air intake and flue gas discharge, thus creating a balanced condition.

Whereas some balanced flue boilers rely on case sealing to achieve a room seal, Trianco EuroStar boilers have a sealed air duct system which maintains the room sealed performance even when the casing door is removed for burner commissioning or adjustments.

The use of the balanced flue principle also enhances the overall thermal efficiency of the boiler since the incoming air extracts waste heat from the flue and returns it as preheated air to the burner where it aids combustion.

The high-level kits have an additional benefit in that the flue noise is reduced due to the coaxial arrangements of the air and flue-pipes - the flue being surrounded by an air space forms an effective acoustic barrier.

INSTALLATION NOTES

(a) **Location**

The Terminal Silencer must be position so as to avoid products of combustion entering the building. A distance of at least 600mm must be allowed between the Terminal and any window, door or other opening into the building. (See diagram for Recommended Terminal Position. Fig. 13).

(b) **Flue Sealing**

As the flue system operates under positive pressure, it is essential to seal all flue joint. Apply a thin bead of silicone sealant (supplied) around flue pipe spigot before inserting into socket.

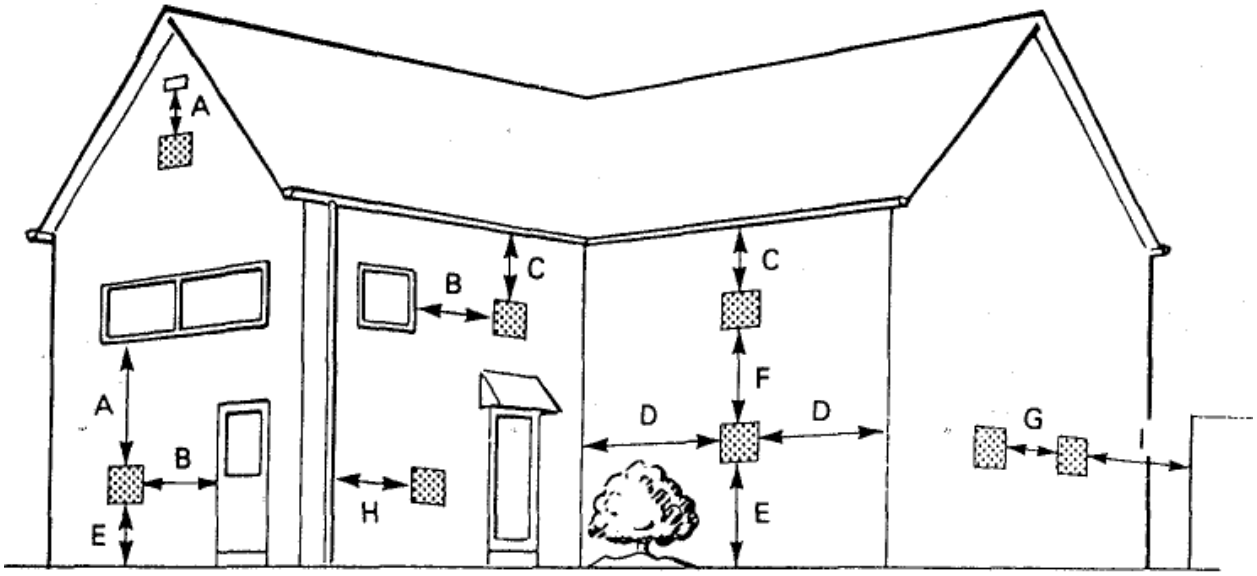
(c) **Fuel**

Only Kerosene 28 sec. Class C2 is permitted for boilers using low level flue discharge.

(d) **Important**

Trianco Flue Kits have been designed primarily to use with Trianco EuroStar boilers and as such compatibility with other makes of boiler cannot be guaranteed.

Fig. 13 TERMINAL POSITION



RECOMMENDED MINIMUM DISTANCES FOR TERMINAL POSITION

Location		Minimum Distance (mm)
A	Directly below an opening, window or air brick	600
B	Horizontally to an opening, window, door or air brick	600
C	Below a gutter, drainpipe, eaves or balcony	600
D	From internal or external corners	300
E	Above ground level	600
F	Vertically from a terminal on the same wall	1500
G	Horizontally from terminals on the same wall	900
H	From a vertical drain pipe	300

l	From a surface facing the terminal	1000

NOTE:

(i) The terminal should be positioned so as to avoid products of combustion entering the building.

(ii) If the terminal is less than 2 metres above the ground level, balcony or place to which any person has access, the terminal must be protected by a guard.

(iii) If the terminal is fitted within 850mm of plastic or painted gutter or within 450mm of painted eaves a heat protection shield should be fitted to the underside of the gutter or eaves.

Fig. 14 LOW-LEVEL REAR DISCHARGE (also L/H & R/H discharge)

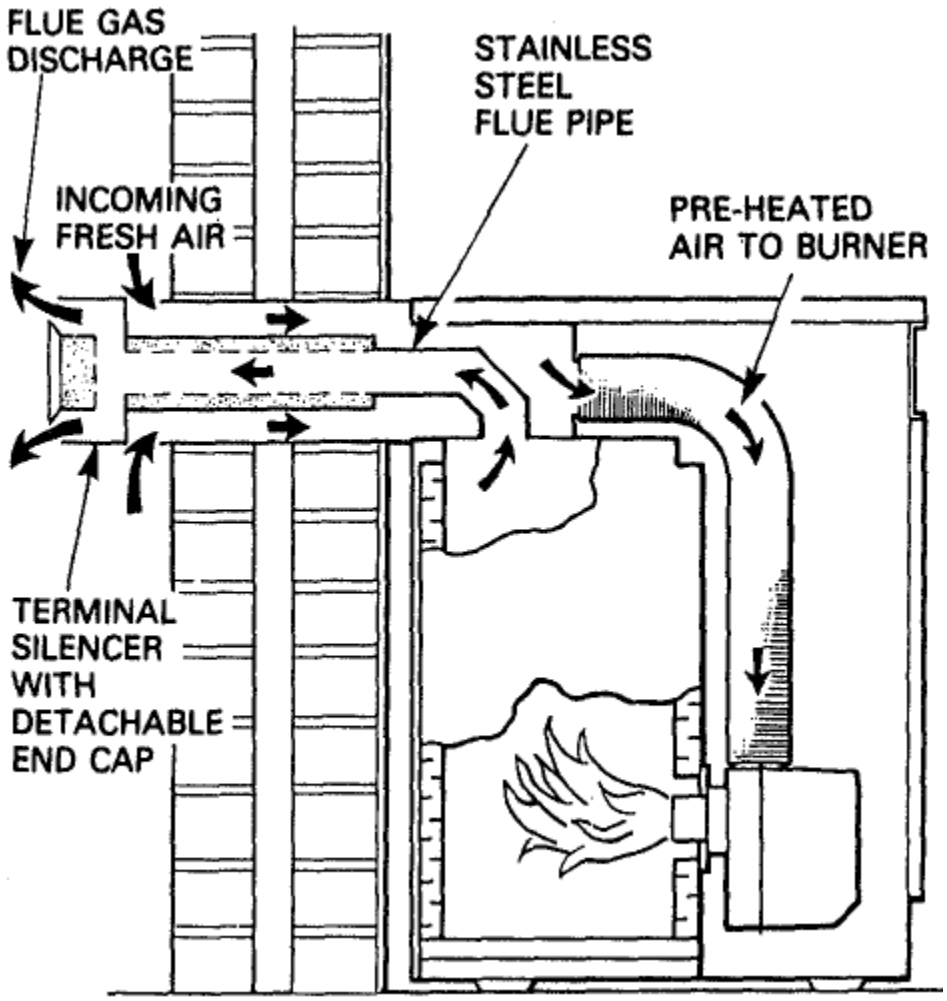
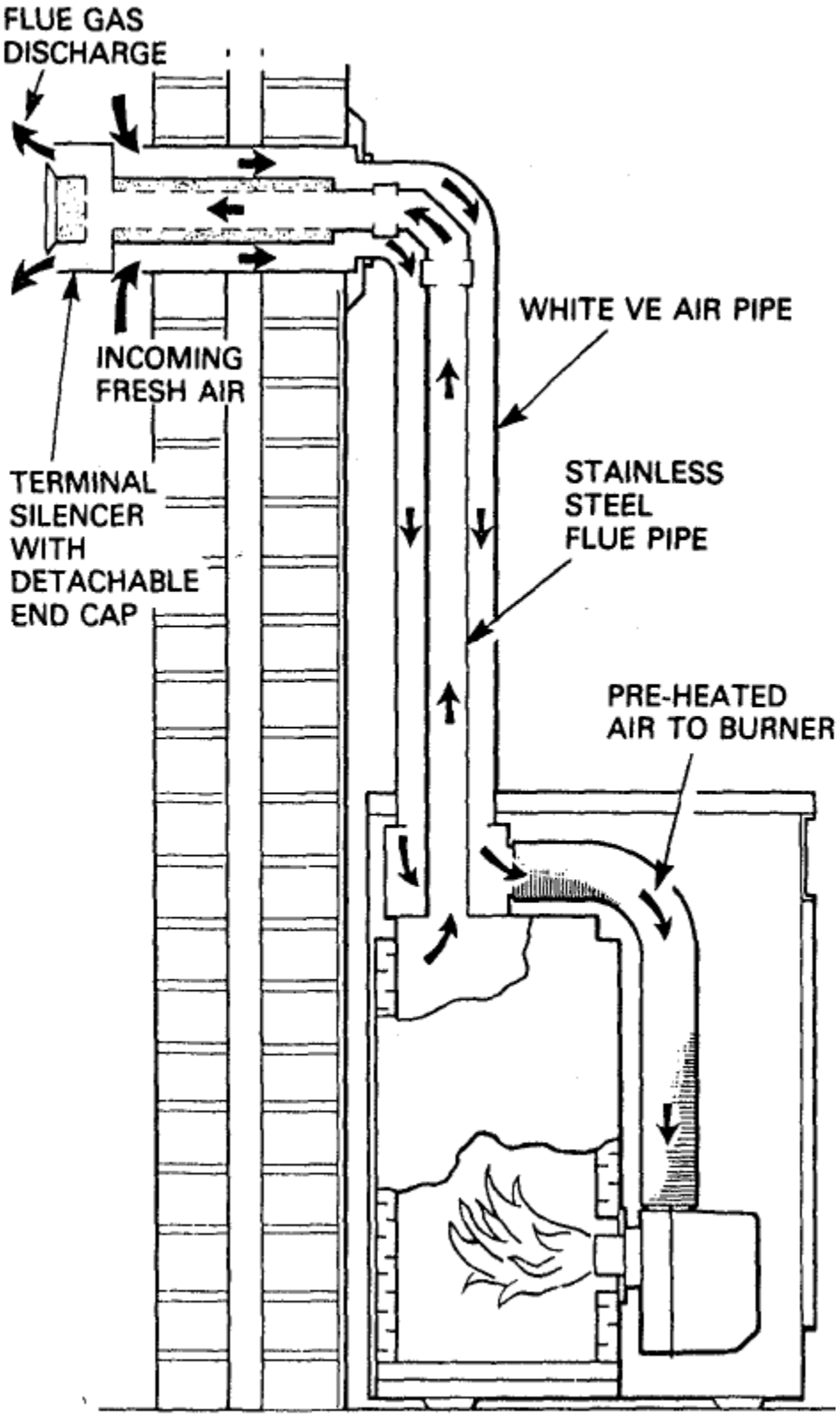


Fig. 15 HIGH-LEVEL REAR DISCHARGE (also L/H & R/H discharge)



TRIANCO ROOM SEALED BALANCED FLUE SYSTEMS

KITS AVAILABLE

Low-Level Discharge

(Fig. 14 and 17)

For rear or side outlet below boiler casing top. Optional terminal extension ducts available for extra thick walls.

High-Level Discharge

(Fig. 15 and 18)

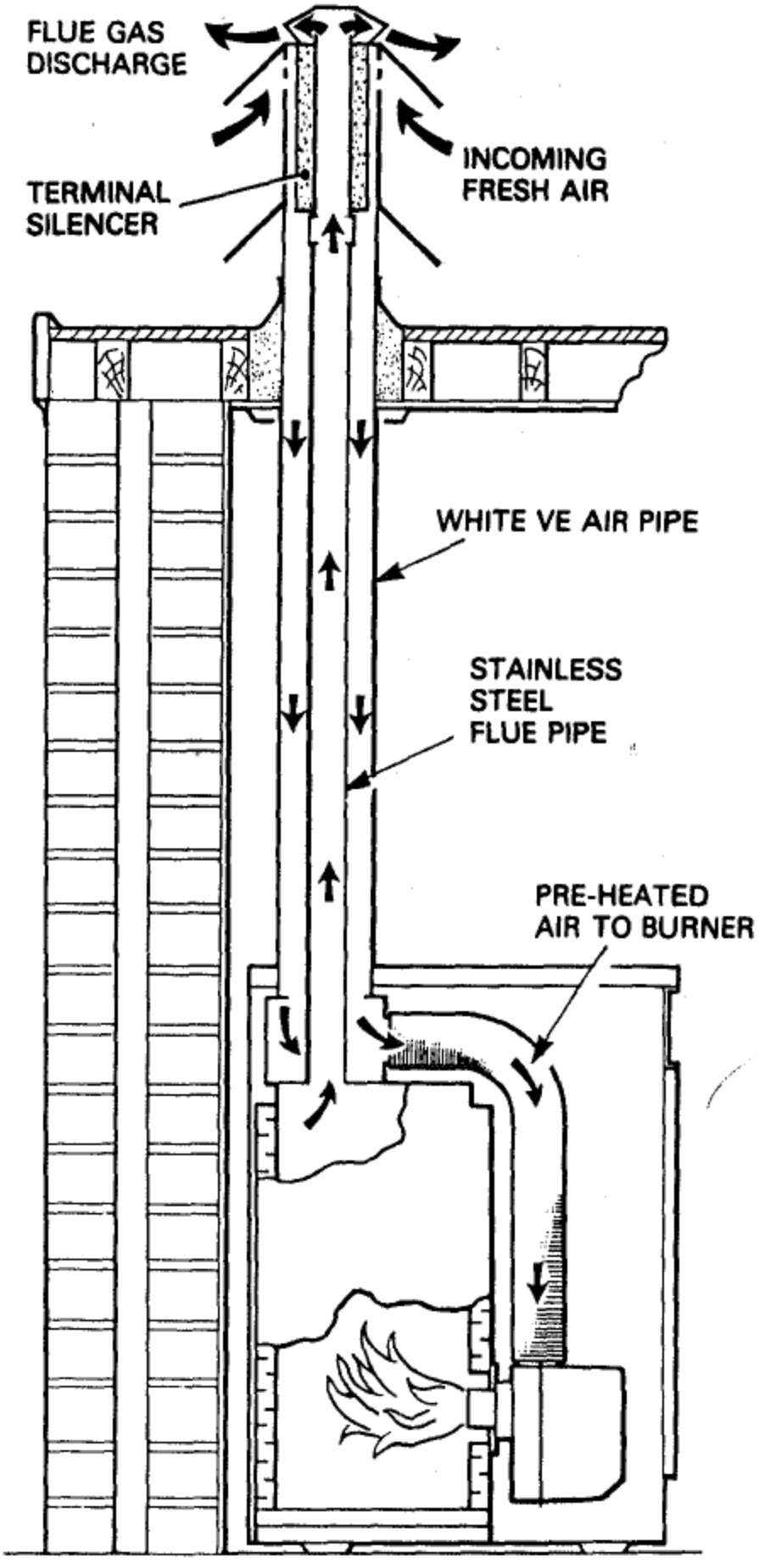
For high-level rear outlet. Optional horizontal pipe length available for right and left side outlets. Optional terminal extension ducts also available for extra thick walls.

Vertical Discharge

(Fig. 16 and 19)

For flat or pitched roof application in single storey buildings. Maximum flue length 2.9m.

Fig. 16 VERTICAL DISCHARGE (also for pitched roofs)


FLUE GAS
DISCHARGE
TERMINAL
SILENCER
INCOMING
FRESH AIR
WHITE VE AIR PIPE
STAINLESS
STEEL
FLUE PIPE
PRE-HEATED
AIR TO BURNER

LOW-LEVEL DISCHARGE 9" to 20" wall thickness

(Fig. 17)

ASSEMBLY - REAR OUTLET

1. Having decided position of boiler, cut hole in wall 200mm square at a centre height of 775mm from floor level.

2. Pull off top casing panel, remove flue socket from top of boiler and fit AIR-BOX in its place, having removed top lid.

3. Fit FLUE ELBOW over spigot at bottom of air-box.

4. Connect TERMINAL SILENCER to back of air-box ensuring pipe spigot engages fully into elbow. Tighten nuts to seal joint and replace top-lid on air-box.

5. Fit AIR HOSE over spigot on burner and air-box and tighten HOSE CLIPS to seal.

6. Push boiler back to wall, inserting terminal through hole.

7. Make good around terminal on both sides of wall.

8. Fit GUARD centrally over terminal and secure with the screws and plugs supplied.

9. Replace top casing panel and fit flue BLANKING PLATE.

ASSEMBLY - SIDE OUTLET

NOTE:

When using the rear discharge kit for a side outlet installation the maximum wall thickness is reduced to 13" (330). The Extension Duct must be used for thicker walls.

1. Having decided position of boiler, cut hole in wall 200mm square at a centre height of 775mm from floor level and 115mm horizontal to centre from corner.

2. Pull off top casing panel, remove flue socket from top of boiler and fit AIR-BOX in its place, having removed top lid. Also, remove corner panel from side casing.

3. Fit FLUE ELBOW over spigot at bottom of air-box.

4. Remove cover plate from side of air-box required for terminal.

5. Push boiler in position, leaving side clearance of about 40mm for pipe connections (if required).

6. Measure distance from side of air-box to outside face of wall and add 120mm for terminal projection.

7. Slide EXTENSION DUCT over TERMINAL-SILENCER, adjust to overall measured length and seal joint with tape.

8. Fit FLUE PIPE into terminal and cut off surplus pipe flush with end of extension duct.

9. Slide terminal assembly through wall from outside and connect to air-box, ensuring flue pipe engages fully into elbow. Tighten nuts to seal gasket and replace top lid on air-box.

10. Make good around terminal on both sides of wall.

11. Fit GUARD centrally over terminal and secure with the screws and plugs supplied.

12. Fit AIR HOSE over spigot on burner and air-box and tighten HOSE CLIPS to seal.

13. Replace top casing panel and fit flue Blanking-

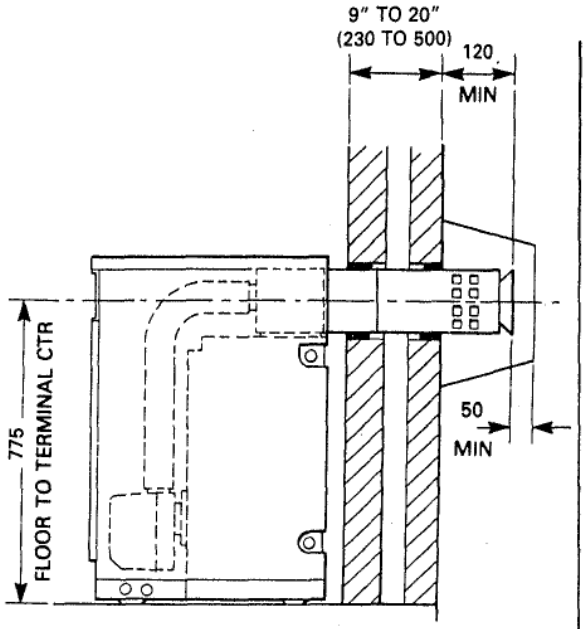
IMPORTANT:

Flue Sealing

As the flue system operates under positive pressure, it is essential to seal all flue joints. Apply a thin bead of silicon sealant (supplied) around flue pipe spigot before inserting into socket.

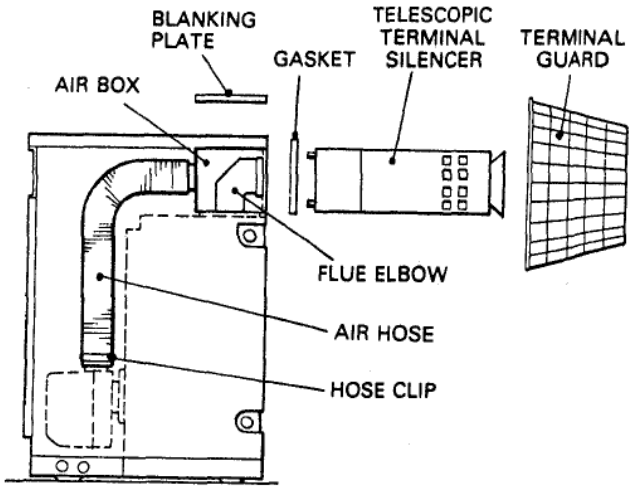
Fig. 17 LOW LEVEL DISCHARGE 9" to 20" THICKNESS (REAR OUTLET, SIDE OUTLET & EXTRA THICK WALLS)

REAR OUTLET



DIMENSIONS IN MILLIMETRES

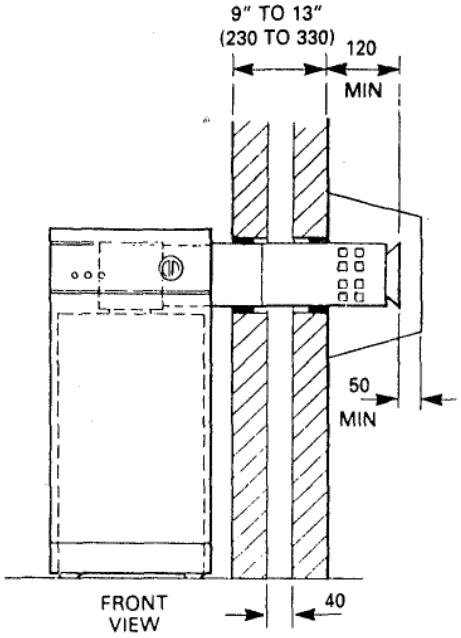
DIMENSIONS



PART CODE: 2208

COMPONENTS

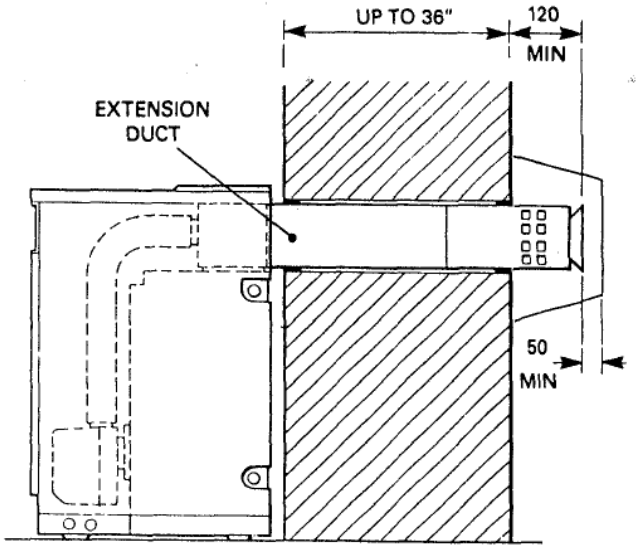
SIDE OUTLET



EXTRA THICK WALLS USING EXTENSION DUCT

PART CODE: 2213 for walls up to 36" thick

Note: WHEN USED FOR SIDE DISCHARGE FLUE THE MAX. WALL THICKNESS IS REDUCED TO 28"



USE IN CONJUNCTION WITH PART CODE: 2208

HIGH-LEVEL DISCHARGE 9" to 20" WALL THICKNESS

(Fig. 18)

BOILER PREPARATION (REAR OUTLET)

1. Having decided position of boiler, cut hole in wall 200mm square at a centre height of 1,935mm from floor level.

2. Pull off top casing panel, remove flue socket from top of boiler and fit AIR-BOX in its place, having removed top lid.

3. Fit AIR PIPE SOCKET to top of air-box and TOP LID to back of box.

ASSEMBLY OF BALANCED FLUE

1. Screw ADAPTOR-PLATE to end of TERMINAL.

2. Connect FLUE-BEND to terminal spigot.

3. Clamp AIR-BEND to adaptor-plate with the CHROME CLIP.

4. Assemble FLUE-PIPE and connect to flue-bend.

5. Feed AIR-PIPE over flue-pipe and clamp to air bend with a chrome clip.

6. Slide WALL-PLATE up from bottom of pipe and screw to adaptor-plate.

7. Offer complete balanced flue assembly over boiler and engage pipes into socket and spigot on air-box.

8. Line up terminal with hole in wall and push boiler back until terminal is fully inserted in wall, up to wall-plate.

9. Seal air-pipe into socket on air-box with glass fibre rope and fire-cement.

10. Make good around terminal on both sides of wall.

11. Fit AIR HOSE over spigot on burner and air-box and tighten HOSE CUPS to seal.

12. Replace top casing panel and flue bezel.

13. Fit a terminal guard if the terminal is less than 2 metres from outside ground level.

SIDE OUTLET

When using the rear discharge kit for a side outlet installation, it is necessary to use a High-level side Discharge Kit Part Code: 2212.

BOILER PREPARATION (SIDE OUTLET)

1. Having decided position of boiler, cut hole in wall 200mm square at a centre height of 1,935mm from floor level and 115mm horizontally to centre from corner.

2. Pull off top casing panel, remove flue socket from top of boiler and fit AIR-BOX in its place, having removed top lid.

3. Fit air-pipe socket to top of air-box and top-lid to back of box.

ASSEMBLY OF BALANCED FLUE

1. Screw ADAPTOR-PLATE to end of TERMINAL.

2. Connect horizontal FLUE-PIPE to terminal.

3. Clamp horizontal AIR PIPE to adaptor-plate with CHROME CLIPS.

4. Slide WALL-PLATE over pipe and screw to adaptor-plate.

5. Connect FLUE-BEND to flue-pipe and AIR-BEND to the horizontal assembly.

6. Assemble vertical FLUE-PIPE, slide inside AIRPIPE and connect to both bends.

7. Offer complete balanced flue assembly over boiler, pushing flue-pipe over spigot in air-box and locate air-pipe in socket on top.

8. Line up terminal with hole in wall and push boiler sideways until terminal is fully inserted in wall, up to wall-plate.

Alternatively, the terminal can be inserted from outside if space is restricted.

9. Make good around terminal on both sides of wall.

10. Sear air-pipe into boiler socket with glass fibre rope and fire-cement.

11. Fit AIR-HOSE over spigots on burner and air-box and tighten HOSE CLIPS to seal.

12. Replace top casing panel and flue bezel.

13. Fit a terminal guard if the terminal is less than 2 metres from outside ground level.

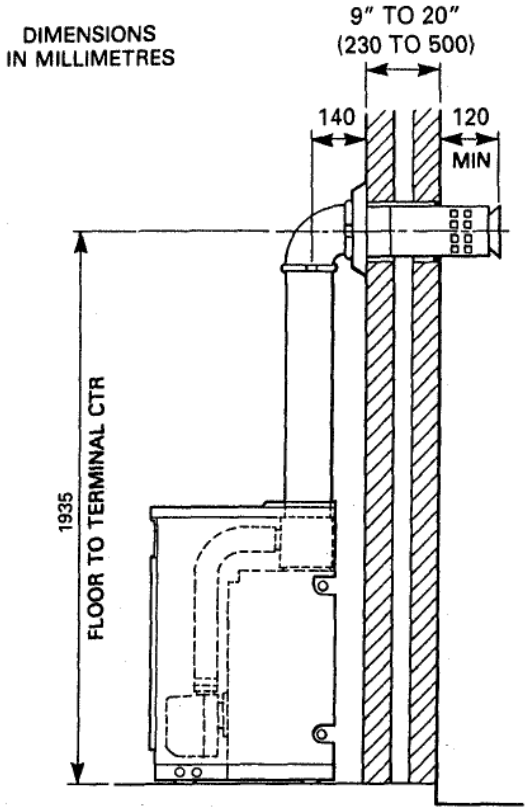
IMPORTANT:

Flue Sealing

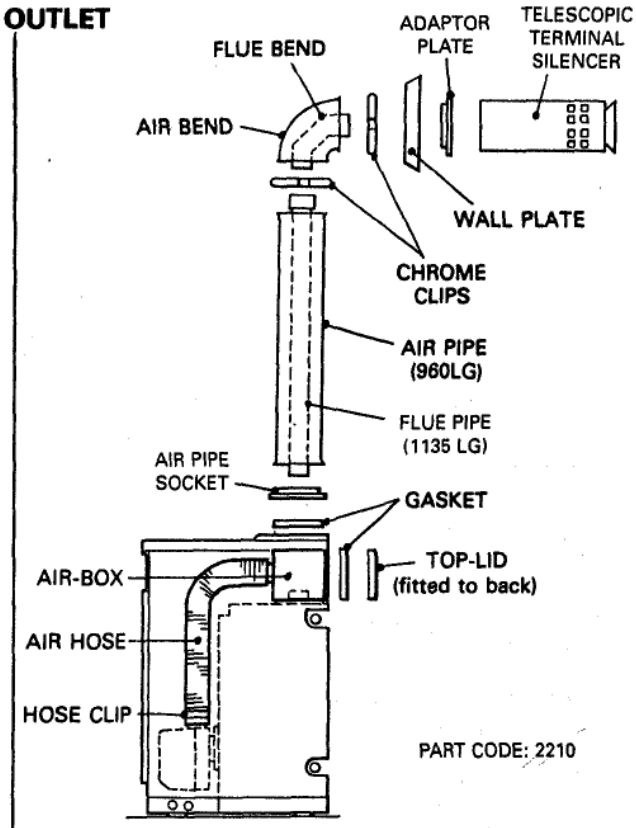
As the flue system operates under positive pressure, it is essential to seal all flue joints. Apply a thin bead of silicon sealant (supplied) around flue pipe spigot before inserting into socket.

Fig. 18 HIGH LEVEL DISCHARGE 9" to 20" THICKNESS (REAR OUTLET, SIDE OUTLET & EXTRA THICK WALLS

REAR OUTLET

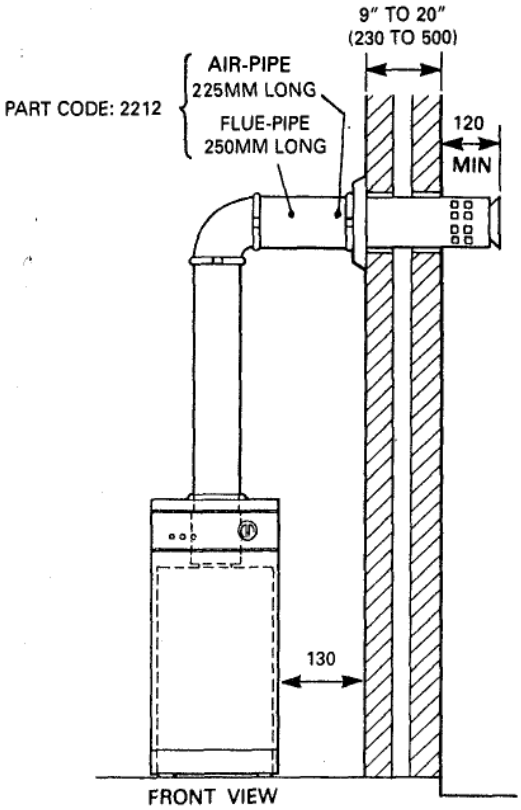


DIMENSIONS



COMPONENTS

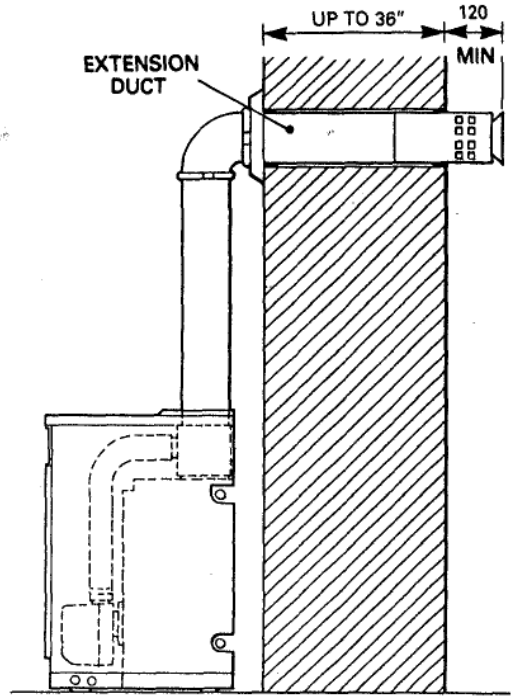
SIDE OUTLET USING HORIZONTAL PIPE (HIGH-LEVEL SIDE DISCHARGE KIT)



USE IN CONNECTION WITH PART CODE: 2210

EXTRA THICK WALLS USING EXTENSION DUCT

PART CODE: 2213 FOR WALLS UP TO 36"



USE IN CONNECTION WITH PART CODE: 2210

VERTICAL DISCHARGE

(Fig. 19)

BOILER PREPARATION

1. Having decided position of boiler, cut a hole 200mm diameter or square in ceiling and roof.

2. Pull off top casing panel, remove FLUE-SOCKET from top of boiler and fit AIR-BOX in its place, having removed top-lid.

3. Fit AIR-PIPE SOCKET to top of air-box and TOP LID to back of box.

BALANCED FLUE ASSEMBLY

1. Measure length of air-pipe required from top of air-box to a point above roof flashing line.

2. Assemble required lengths of FLUE and AIR PIPES, ensuring flue-pipes are pushed fully into their sockets and air pipes are firmly clamped with the CHROME CLIPS.

3. Adjust the flue-pipe so that the socket is 60mm above the top of air-pipe and protruding 175mm at bottom. Cut off any surplus flue-pipe from bottom.

4. Pass complete pipe assembly up through ceiling and lower flue-pipe over spigot in air-box whilst locating air-pipe in socket.

5. Fit CEILING-PLATE centrally over hole, ensuring air-pipe has a minimum clearance of 25mm from any combustible material. Pack space with glass fibre insulation.

6. Fix pipe brackets (where necessary) to roof structure and fit weatherproof flashing around air-pipe at roof line.

7. Slide TERMINAL SILENCER into top of pipe, ensuring flue spigot fully engages in flue-pipe socket. Use chrome clip to secure terminal to airpipe.

8. Fit STORM COLLAR, RAIN CAP and AIR INLET cover to terminal in positions shown.

9. Seal air-pipe into socket on boiler with glass fibre rope and fire cement.

10. Fir AIR-HOSE over spigots on burner and air-box and tighten HOSE CLIPS to seal.

11. Replace top casing panel and flue bezel.

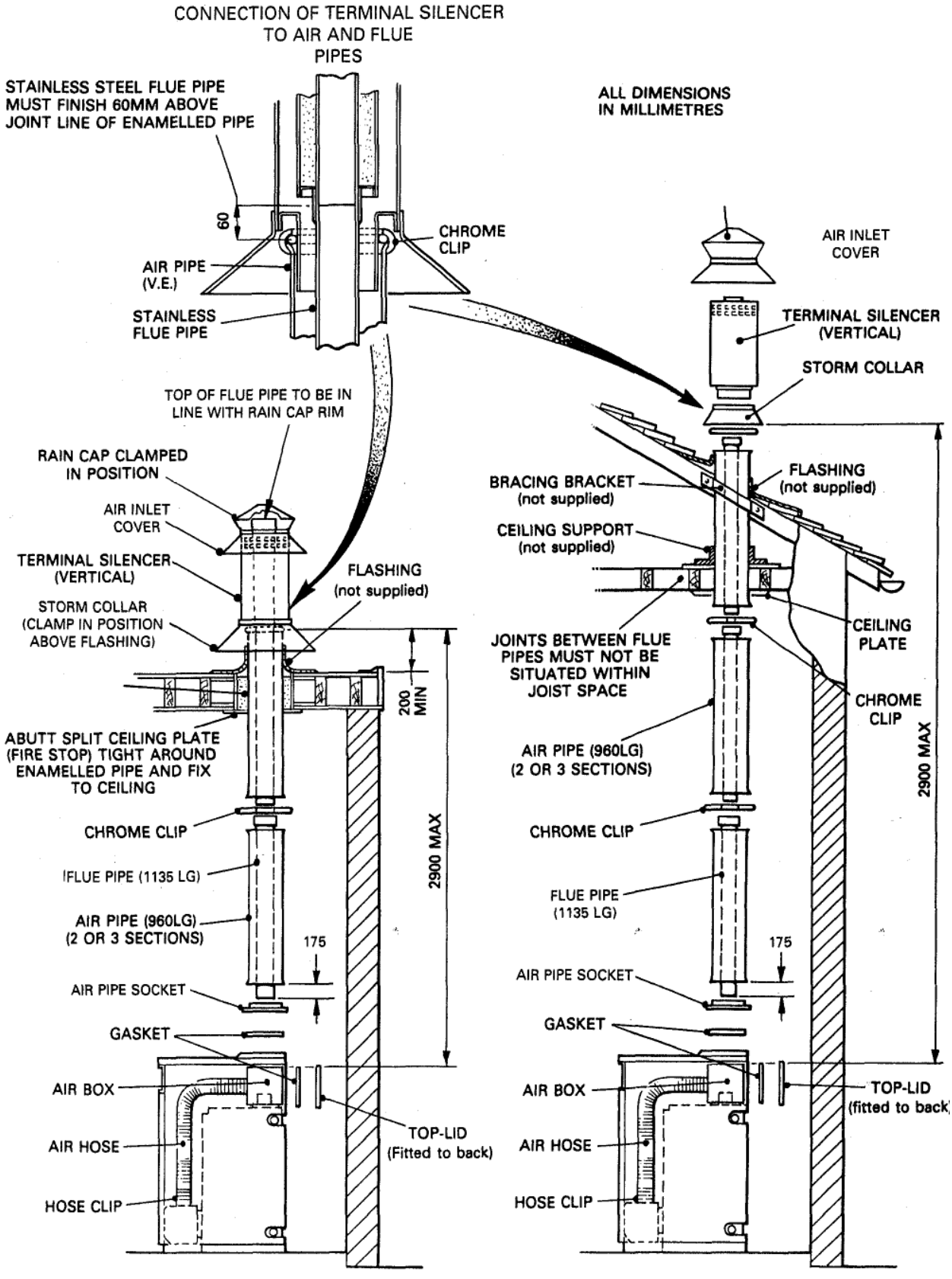
IMPORTANT:

Flue Sealing

As the flue system operates under positive pressure, it is essential to seal all flue joints. Apply a thin bead of silicon sealant (supplied) around flue pipe spigot before inserting into socket.

Fig. 19 VERTICAL DISCHARGE COMPONENTS

CONNECTION OF TERMINAL SILENCER TO AIR AND FLUE PIPES



FLAT ROOF **PITCHED ROOF**

PART CODE: 2211

6. COMMISSIONING

It is strongly recommended that the boiler/burner unit is commissioned by a qualified technician, preferably OFTEC trained and registered.

It is the responsibility of the installer to ensure the boiler is properly commissioned, failure to do so will make the boiler's guarantee and any extended warranty invalid.

Although all burners are factory tested before despatch, they will usually need further air adjustment to achieve the readings indicated under 'Burner Settings' because of site variations in flue draught and back pressure.

Procedure

1. Switch off electrical supply to boiler.

2. Ensure boiler is full of water and all valves are open.

3. Remove flue-cover and check that flue-baffles are correctly positioned (See Fig. 21 for baffle arrangement).

4. Disconnect oil hose from burner, open shut-off valve and run off a quantity of oil into a container to check for a clean air free supply then reconnect hose. (This applies to a single pipe gravity system only).

5. Check that the time-switch (if fitted) is in the ON position and room and boiler thermostats are calling for heat.

6. Switch on electrical supply and the burner should start.

NOTE:

The burner may lock-out on first firing due to air in the pump, if this happens, wait about a minute before pressing reset button to restart burner. If a further lock-out occurs, the air should be bled from the pump pressure gauge connection.

7. Start and stop the burner two or three times until the flame cuts off sharply – this indicates any remaining air has been dispersed.

8. Allow the burner to run for about 15 minutes, then take a CO_2 reading through the sampling hole in flue-cover. Compare the reading with that given under 'Burner Settings' and adjust the air setting if necessary to achieve the required CO^2%. Also, check smoke and flue gas temperature.

Handing over

After completing the boiler installation, the installer should make a thorough check of the system to ensure it is completely satisfactory and demonstrate to the user the operation of the boiler and any system controls.

All instructions should be handed to the user for retention and advice given regarding the need for annual servicing.

7. SERVICING

To maintain the boiler's high thermal efficiency and reliable operation, it should be serviced annually by a qualified engineer preferably OFTEC trained and registered.

NOTE:

It is a requirement of the boiler's guarantee that an annual service is carried out by a qualified engineer.

If the boiler is used to provide central heating and hot water all year round, the best time for its annual service is just before the start of the heating season.

Where the boiler is shut down for the summer months, the service should be carried out as soon as possible after the end of the heating season.

Oil tank

Open tank drain-cock to draw off any accumulated water and sludge.

Line filters

Turn off oil supply and remove filter bowl. Wash filter element clean with kerosene.

Servicing the Burner (Electro-oil Sterling)

1. Switch off electrical supply to boiler and turn off oil.

2. Unscrew long securing bolt connecting both sections of burner together and remove main burner section from boiler.

3. Unscrew the fixing nuts and remove blast-tube assembly from boiler.

4. Clean blast-tube air vanes and inner and outer annular slots.

5. Fit a new nozzle with one of the same specification - do not attempt to clean or dismantle nozzle.

6. Clean ignition electrodes and check their settings. Also, examine the porcelain insulators and replace electrodes if there are cracks or signs of crazing.

7. Pull out photo-cell and clean glass face.

8. Clean deposits from impeller blades and check impeller is firmly tightened to motor shaft.

9. Check condition of flexible coupling for free play between pump and impeller – replace if necessary.

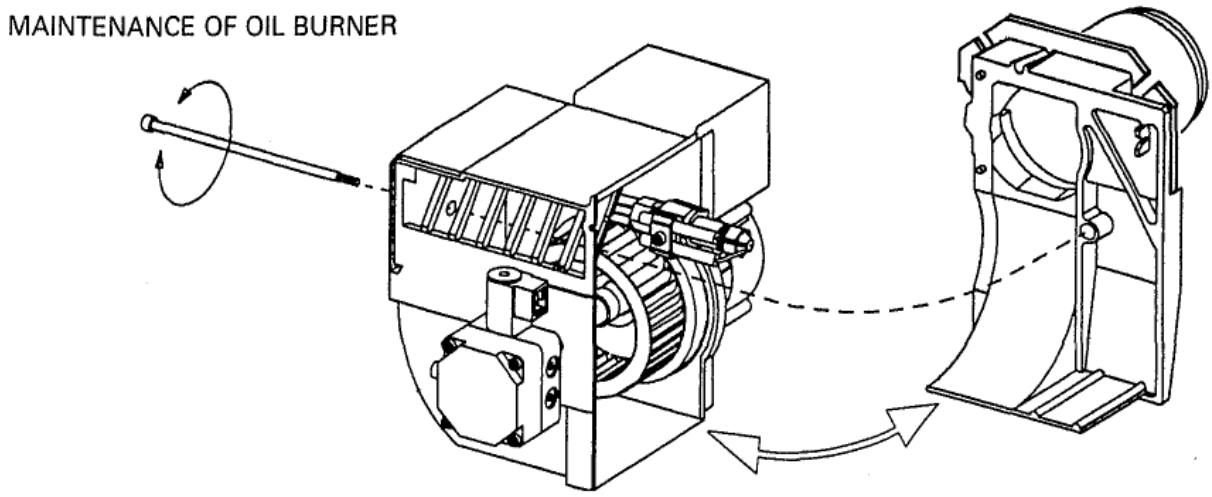
10. Clean any deposits from around air intake and shutter.

11. Remove end cap from oil pump – take out filter and wash in kerosene.

12. Check flexible hose(s) for oil leaks and replace if necessary with a similar ‘long life’ hose supplied with boiler.

13. Reassemble all parts but do not refit burner until boiler flue-ways have been cleaned.

Fig. 20 Servicing of Burner Head and Nozzle Assembly



WARNING:

Before servicing switch off power at the main switch and turn off the oil supply

Servicing the Boiler (Burner removed)

1. Remove flue-cover and lift out flue-baffles. (See fig. 21).

2. Brush all deposits from flue-baffles and internal surfaces of the boiler.

3. Remove flue deposits from the combustion chamber floor using a vacuum cleaner.

4. Replaces flue-baffles in the correct arrangement

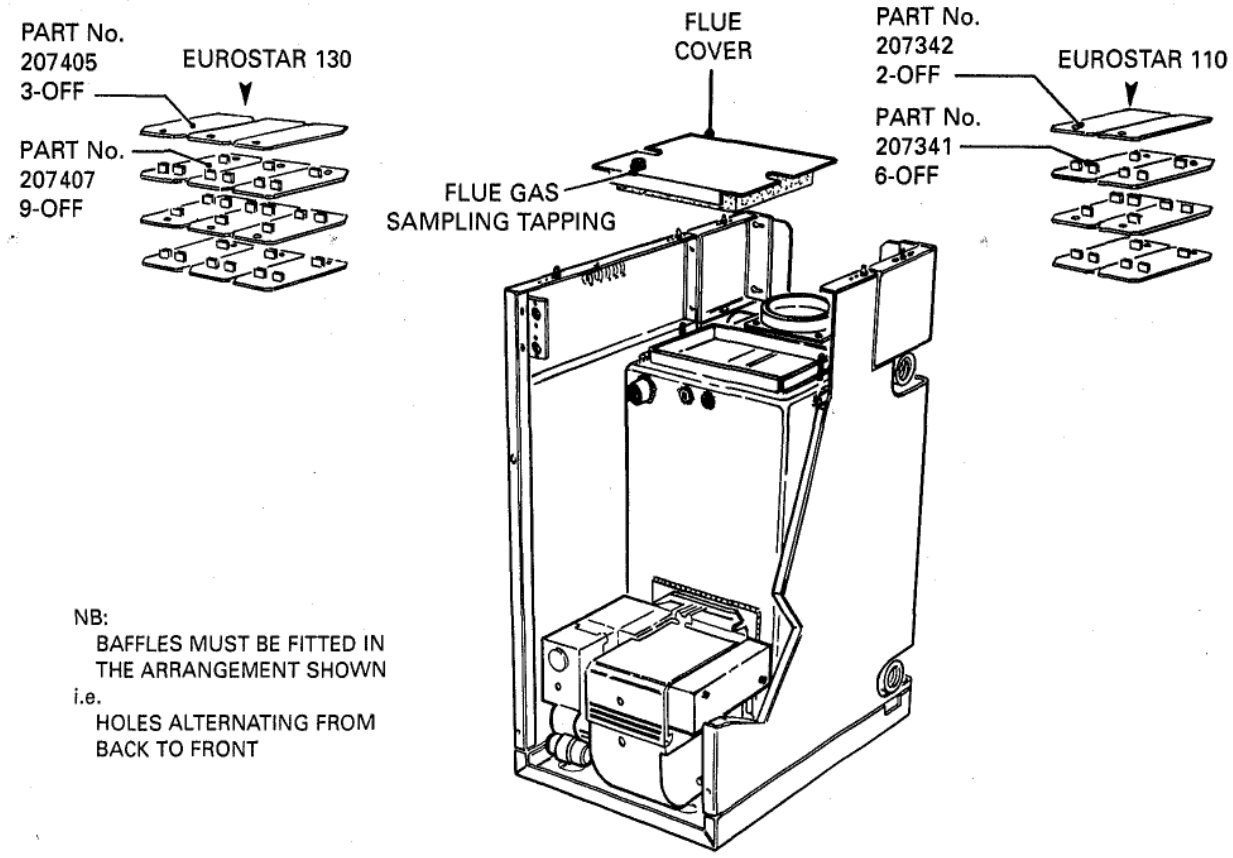
(See Fig. 21 for order of assembly). Re-fit flue- cover and fully tighten wing-nuts to make a gas tight seal.

5. Re-fit burner to boiler, connect flexible air hose (balanced flue boilers only) and plug-in burner lead.

6. Turn on oil supply, switch on electricity and burner should fire.

7. Finally check the combustion readings with those given under ‘Burner Settings’ and make any air or pressure adjustments necessary.

Fig. 21 BAFFLE DETAILS FOR TRIANCO ‘EuroStar’ OIL FIRED BOILERS



8. FAULT FINDING

ELECTRICAL SAFETY - Before making any electrical checks, switch off mains supply to boiler.

FAULT	POSSIBLE CAUSE	ACTION
BURNER FAILS TO START	Control box locked out – Light on	Press control box reset button. **N.B. only try twice**
	Limit-stat tripped	Press reset button on control-panel and check function of boiler control thermostat
	Boiler thermostat or other system controls satisfied	Ensure all controls are calling for heat
	Fuse blown	Fit new 5 amp fuse, if it blows again, check for short circuit in wiring
	Check for live supply continuity up to burner	If live supply confirmed, change controlbox
	Motor or pump seized	Check for rotation and replace as necessary
BURNER STARTS BUT FLAME NOT ESTABLISHED	No oil supply	Check oil level in tank and feed to burner
	Photo-cell not seeing flame	Clean photo-cell and ensure it is fully plugged in
	Air trapped in pump	Bleed off air through pressure gauge tapping
	Solenoid valve faulty	Check coil for continuity and replace if faulty
	Nozzle blocked	Replace nozzle with one of same specification
	Electrodes incorrectly set	Reset gap and position electrodes as shown in Burner diagram
	Electrode insulators cracked	Check and replace if insulators cracked or crazed

	Ignition transformer and H.T. leads faulty	Check for spark and condition of H.T. leads. Replace as necessary
	Low oil pressure	Check pump pressure and adjust to correct setting
FLAME ESTABLISHED BUT BURNER LOCKS OUT AFTER FEW SECONDS	Oil contaminated with water	Run off oil at burner until free of water and drain condensate from tank
	Oil filter partially blocked	Wash filter clean with kerosene
	Photo-cell fault	Clean photo-cell and ensure it is fully plugged in. Replace if faulty
	Oil pressure low	Check pump pressure and adjust to correct setting
POOR FLAME CUT-OFF	Air in pump or at back of nozzle	Bleed pump through pressure gauge port, also check for leaks in oil line if 2 pipe system
	Oil contaminated with water	Run off oil at burner until free of water and drain condensate from tank
	Dirt in solenoid valve Pump shut-off	Clean or replace valve
	piston sticking	Replace pump
MORNING START LOCK-OUT	Faulty non-return valve or air leak in two pipe system	Replace non-return valve and cure leak
	Low voltage	Check with local Electricity Board
	Combustion readings incorrect	Check combustion under normal running conditions and compare readings with those given under ‘Burner Settings’
	Oil level in tank below burner	Raise tank or fit a 2-pipe system

DELAYED IGNITION - BURNER PULSATES ON START-UP	Nozzle partially blocked	Replace nozzle
	Oil pressure too low	Check and recommission
	Flue blocked or damaged	Check and rectify
	Fan slipping on shaft	Check and retighten
	Pump coupling loose or worn	Check and replace
BURNER STARTS VIOLENTLY	Delayed ignition	Check electrode setting and adjust to correct gap
		Check electrodes for damage
		Check H.T. leads for damage and positive connection