

TRIANCO

TRG Range MKII Gravity Feed Forced Draught Boilers

**SOLID FUEL
CENTRAL HEATING BOILERS**



TRIANCO

CE EMC 89/336 EEC

**USER, INSTALLATION
COMMISSIONING & SERVICING
INSTRUCTIONS**

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.

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

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.

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CUSTOMER AFTER SALES SERVICE INFORMATION

A step by step guide to reporting a fault with your appliance

A qualified field SERVICE ENGINEER is available to attend a breakdown or manufacturing fault occurring whilst the appliance is under guarantee.

No charge will be made for parts and/or labour providing:

- An appliance fault is found and the appliance has been installed and commissioned within the past 12 months. Reasonable evidence of this must be supplied on request.

A charge will be made where:

- Our Service Engineer finds no fault with the appliance (see note below).
or
- The cause of a breakdown is due to other parts of the plumbing/heating system (including sub-standard or incorrect fuel type), or with equipment not supplied by Trianco.
or
- The appliance is outside the manufacturer's guarantee period (see terms and conditions).
or
- The appliance has not been correctly installed, commissioned or serviced as recommended (see commissioning, installation and service instructions)
or
- The breakdown occurs immediately following an annual service visit. In this instance your appointed Service Agent must check all his work PRIOR to requesting Trianco to attend.
or
- When a service engineer fails to find a fault with the boiler, or if other parts of your heating system, other than the boiler, are faulty.

What to do in the event of an appliance fault or breakdown:

Step 1: Always contact your installer or commissioning engineer in the first instance, who must thoroughly check all his work PRIOR to requesting a service visit from Trianco.

Step 2: If your appliance has developed an in-guarantee fault your installer should contact Trianco for assistance.

What happens if my installer/engineer is unavailable?

Step 3: Contact Trianco Direct. We will provide you with the name and telephone number of our Service Agent. However, a charge may apply if the fault is not covered by the appliance guarantee (payment will be requested on site by our independent Service Agent).

PLEASE NOTE:

Unauthorised invoices for attendance and repair work carried out on this appliance by any third party will not be accepted by Trianco.

SERVICE CENTRE AND TECHNICAL SUPPORT

Tel: 0114 257 2300 Fax: 0114 257 2338

Hours of business Monday to Thursday 8.30am - 4.45pm

Friday 8.30am - 2.30pm

1. USER INSTRUCTIONS

After completing the installation, the heating Contractor should demonstrate to the user the operation of the boiler, in particular the method of lighting, declinking and flue-way cleaning.

The following information and instructions are provided to enable you to obtain the best possible results from your boiler with the minimum of attention.

Trianco "TRG" forced draught gravity feed boilers have been approved for burning smokeless fuel and are in the list of Approved Domestic Solid Fuel Appliances issued by the heating Equipment Technical Approval Scheme (HETAS Ltd.) They are designed to burn anthracite in accordance with the requirements of the Clean Air Act 1956 and can be installed in the kitchen or utility room to provide full central heating and domestic hot water for the whole house.

The boiler output is automatically controlled by a water sensing thermostat which switches the forced draught fan on to boost the fire when there is a demand for heat. On reaching the desired temperature the fan is switched off and the fire then slumbers at a low burning rate under controlled natural draught until there is a further demand for heat.

The fuel feeds by gravity from the hopper to the firebed where it is burnt at a constant firebed depth with the residual ash being formed into a solid clinker for easy removal by the inbuilt declinking ram.

Routine Cleaning

IMPORTANT: ISOLATE ELECTRICAL SUPPLY TO THE BOILER BEFORE SERVICING

Routine flue cleaning of the boiler on a weekly basis is easily carried out by the user through the draught stabiliser opening, which allows the purpose designed scraper to be passed down the flue ways. A complete maintenance service should be carried out annually by a qualified service engineer.

Electrical work should be carried out by a qualified electrical engineer.

The boiler can be connected to any normal type of heating and indirect hot water system but being a continuous burning appliance it is essential that a radiator or towel rail is connected in the gravity circuit to dissipate any residual heat when the heating pump is off.

Fuel

The TRG boiler is designed to burn anthracite grains and beans. These must be of a type which, when burned, produce mostly clinker residue. Using a fuel which produces mostly ash may cause restriction of the airways, potentially extinguishing the fire. The ratio should be at least 80% clinker to 20% ash.

Please note that the quality of fuel can drastically affect the performance of your boiler. As such, care must be taken to make sure these recommendations are carried out.

Wet fuel and oversize pieces could impede the gravity-feeding of the appliance, so to avoid the inconvenience of the fire going out, any excess moisture should be allowed to drain and any oversized pieces of fuel should be removed.

Fuel Feed Regulations

A fuel-regulator is located at the back of the hopper to control the depth of firebed. Adjustment is provided by means of holes which engage over a hanger peg to suit the fuel being burned. The following settings must be used:

Fuel Regulator Settings

Top hole	Anthracite Grains
2nd hole from top	Anthracite Beans

Note: Do not allow fuel level in hopper to fall below fuel-regulator plate.

Declinking

Under average winter conditions it is usually necessary to declinker once a day, preferably in the morning at the start of the heating load. Do not declinker last thing at night as this could cause a blow-back (delayed ignition of flue gases) if the fire is not fully recovered to a bright condition.

During periods of low demand, the boiler will not require declinking as often. This will be determined by the amount of fuel used. Where the fuel being used produces low density ash rather than a clinker, the boiler may require more frequent declinking.

Method of Declinking

1. Ensure that a bright fire exists by turning up the thermostat setting to bring fan on for a few minutes.
2. Switch off thermostat.
3. Pull the declinking lever two full strokes.
4. Switch on thermostat and ensure fan blows for a few minutes to recover the fire.
5. Re-set thermostat to required temperature.
6. Top up hopper with fuel as required.

Notes:

- a. Not more than two strokes should be made in any declinking operation.
- b. Occasionally it may be necessary to free large clinkers by pulling them slowly forward with a hooked poker.
- c. The art of declinking is to do it often enough to prevent a large clinker forming, but not so often as would push unburnt fuel into the ashpan to waste.
- d. A blow-back is caused by the delayed ignition of flue gases. This is normally a very rare phenomenon and should never occur on a correctly operated boiler. If, however, a blow-back is experienced then particular attention should be paid to the method of Declinking with emphasis on the recovery of the fire both before and after declinking. (See Fault Finding Chart).
- e. Remember to empty the ashpan every few days and never allow it to become over full otherwise the fire plate could be damaged. It is recommended that the ashpan is emptied prior to declinking to ensure the clinker is cool and there is adequate capacity to receive fresh clinkers.

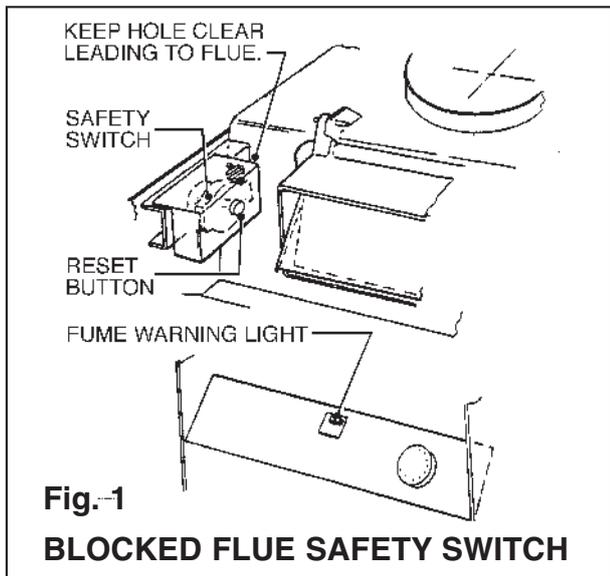
Door and Hopper Seals

Always keep the fire-door and hopper lid/chute firmly clamped when the boiler is in operation, otherwise uncontrolled combustion could result.

Safety Switch

In the event of a chimney blockage the boiler should automatically shut down to a safe condition due to the operation of the Safety Switch. This condition is indicated by illumination of the red 'Fume Warning' light on the fan cover. The Safety Switch is located at the top of the boiler near the draught-stabiliser and in the event of a boiler shut down will need resetting. It is important, however, that the Safety Switch is only reset after the blockage has been cleared.

Push the red reset button to restart the boiler; the warning light will then go out.



To Light Boiler

1. Check that the boiler is full of water and all valves are open.
2. Switch on electrical supply to boiler
3. Ensure that the fuel- regulator is correctly positioned to suit the fuel being used and fill hopper (see under Fuel Regulator Settings)
4. Thoroughly warm the chimney by lighting two or three wax firelighters in the boiler flue outlet.
5. After warming the chimney insert three wax fire lighters in the middle and well up into the firebed. Light and allow them to burn under natural draught for 3 or 4 minutes. (See Fig. 3 for position of fire lighters)
6. Close the fire-door., switch on the fan by turning up the thermostat.
7. The fire should be well established within approximately 15 minutes, but check to make sure that the fire lighters have not been extinguished.
8. The fan will continue to blow until the thermostat setting is reached. Thereafter it will operate automatically, switching on and off to satisfy the heat demand.

Thermostat Settings

Setting	Low	I	I	I	I	High
Approx Temp. °C	55	60	66	71	76	82

The setting selected will depend on the nature of the load, i.e. whether heating or hot water, the season of the year and individual requirements.

Typical settings are:

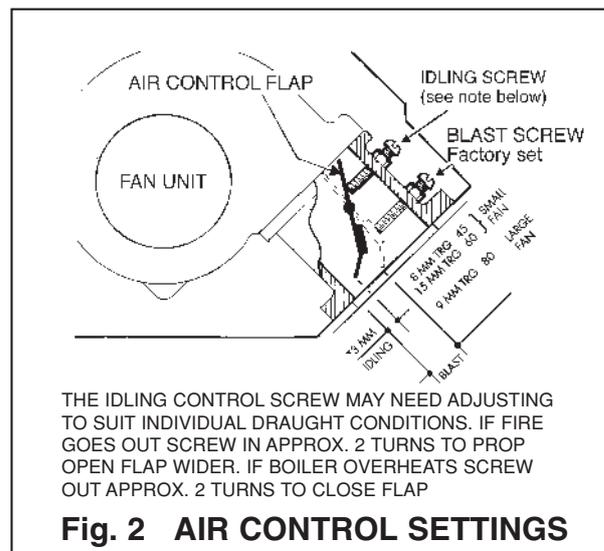
Domestic Hot Water	55° to 60°C
Early and latter parts of heating system	66° to 71°C
Mid winter conditions	76° to 82°C

Air Control

On a demand for heat, air is supplied to the fire by a thermostatically controlled forced draught fan, whereas during the "fan off" period the fire idles at a low rate of burning under natural draught.

The air supply for both rates of combustion is controlled by a balanced flap in the fan throat which is factory set for "blast" and has adjustment for "idling" if required.(See Fig. 2.)

In addition to the primary air, pre-heated secondary air is also supplied over the firebed to ensure complete combustion.



Fumes:

When properly installed and operated, this appliance will not emit fumes into the dwelling. Occasional fumes from ash removal and refuelling may occur but persistent fume emission is potentially dangerous and must not be tolerated. If, despite the operation of the Safety Switch, fumes are emitted from the boiler then the following immediate action should be taken:

- a. Switch off the electrical supply to the boiler.
- b. Open doors and windows to ventilate the room.
- c. Let the fire out or safely dispose of fuel from the appliance.
- d. Check the boiler flueways and chimney for blockage and clean as required.
- e. Do not attempt to re-light the fire until the cause of the fume emission has been identified and corrected. If necessary, seek expert advice.

Frozen System

Do not attempt to light the fire if it is suspected that any part of the water system is frozen.

Ventilation

An extractor fan must not be fitted in the same room as the appliance.

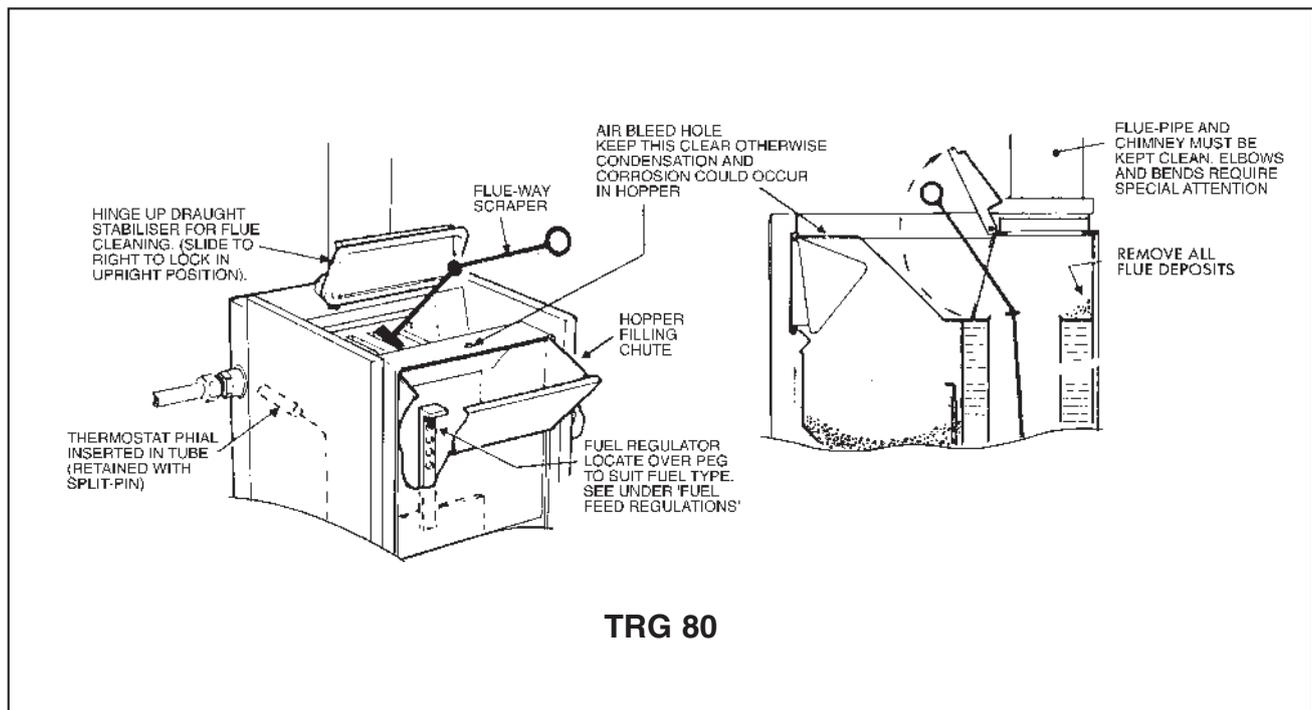
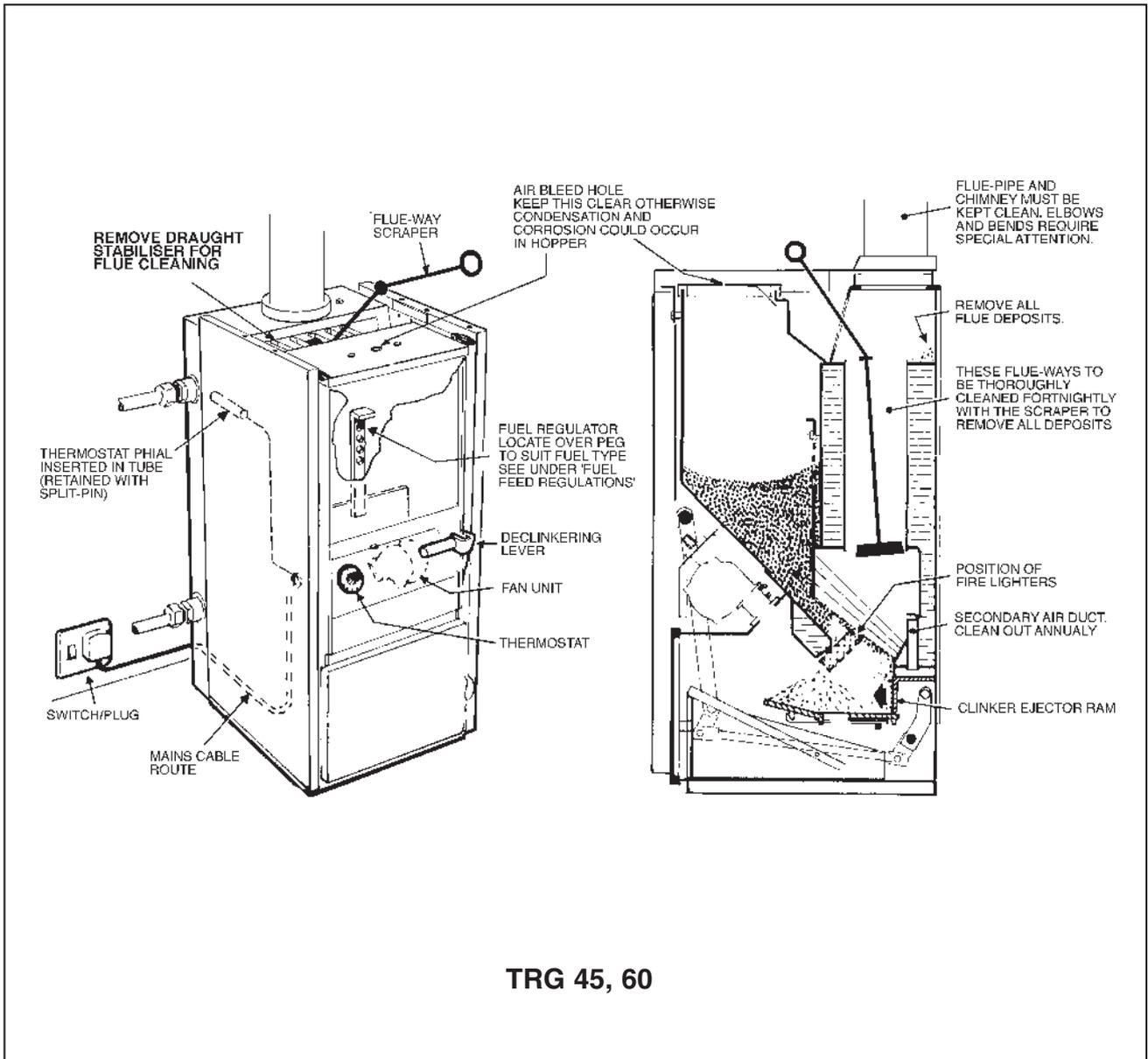
Operating Problems

If in difficulty with the operation of the boiler, refer to the Fault Finding Chart which indicates most of the common operating faults and suggests remedies to overcome them. If this chart does not provide the answer, contact your local Heating Engineer for assistance.

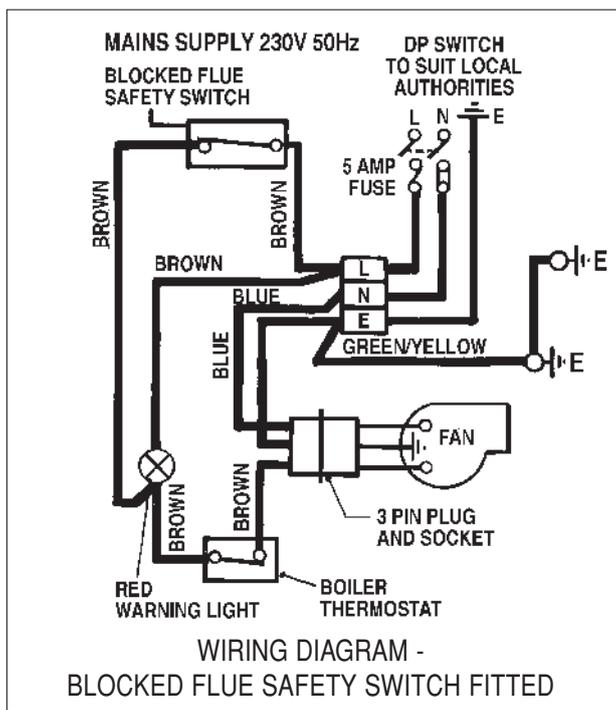
Maintaining the Boiler

Routine cleaning maintenance of this boiler is a simple procedure and can be carried out by the user, but it is recommended that a complete service be undertaken annually by a qualified Service Engineer.

2. OPERATING DETAILS



3. TECHNICAL INFORMATION



NOTE

THE BOILER MUST HAVE A CONTINUOUS ELECTRICAL SUPPLY WHICH SHOULD BE INTERRUPTED ONLY BY THE BOILER THERMOSTAT AND THE SAFETY SWITCH. ANY SYSTEM CONTROLS SUCH AS A TIME-SWITCH OR ROOM THERMOSTAT MUST BE WIRED INDEPENDENT OF THE BOILER TO CONTROL THE CENTRAL HEATING PUMP.

BOILER MODEL		TRG 45	TRG 60	TRG 80
Heat Output	kW	13.2	17.6	23.5
	Btu/h	45,000	60,000	80,000
*Radiator Surface	m ²	21	30	42
	ft ²	230	325	450
Max. Burning Rate	kg/h	2	2.5	3.4
	lb/h	4.5	5.5	7.5
Hopper Capacity	kg	30	37	41
	lb	67	82	91
Weight	kg	120	150	196
	lb	266	330	435
Water Capacity	litres	34	40	48
	gal.	7.5	8.8	10.6
Forced Draught Fan 230 volt 50Hz	Watts	24	24	35
Water Connections (two flow, two return)	in. BSP	1	1	1
Flue Outlet Socket for BS Flue-pipe	in	5	5	5
Maximum Working head	15.8m (52ft)			
Thermostat	Adjustable between 55° C and 82° C in six settings.			
Casing	White stove enamel with two tone grey facia.			
Insulation	Glass fibre lining in side panels.			
Draught Stabiliser	Integral part of boiler			

**Based on 160 Btu/h/sq. ft/100 F difference. An allowance of 8,000 Btu/h has been made for domestic hot water.*

4. INSTALLATION INSTRUCTIONS

IMPORTANT SAFETY NOTES

Read these instructions before installing your boiler.

IMPORTANT: ISOLATE ELECTRICAL SUPPLY TO THE BOILER BEFORE CARRYING OUT ANY WORK

The mains supply plug is the primary disconnect device and must be readily accessible during normal use.

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

Electrical work should be carried out by a qualified electrical engineer.

The boiler can be connected to any normal type of heating and indirect hot water system but being a continuous burning appliance it is essential that a radiator or towel rail is connected in the gravity circuit to dissipate any residual heat when the heating pump is off. (see page 7).

The heating system must comply with the latest editions of British Standards and The Building Regulation, and Electrical Wiring Regulations BS 7671.

Please note: It is essential in the interest of boiler efficiency and reliable performance that once the boiler has been installed it is first commissioned, preferably by a registered engineer. It is the responsibility of the installer to ensure that the boiler is commissioned.

Always switch off the electrical supply before removing any of the covers for cleaning.

If any part of the boiler or its flue is modified, then the guarantee/warranty will be invalidated.

We recommend that you keep these instructions in a place near your appliance for easy reference.

Before installing the boiler it is important that these instructions are carefully read and complied with. The installer must also be satisfied that the appropriate sections of the following current issues Standards, Codes of Practice and Regulations are observed:

'Installation of domestic heating appliances burning solid fuel' British Standard Code of Practice BS 8303.

'Installation of chimneys and flues for domestic appliances burning solid fuel' British Standard BS6461 Parts 1 & 2
'Forced circulation hot water central heating systems for domestic premises' BS 5449.

The Building Regulations and Local Bye-laws, Local Water Authority Bye-laws.

ELECTRICAL SUPPLY

230V 1 Phase 50Hz (Fused 5 Amp)

Regulations for the electrical equipment of buildings - published by the Institute of Electric Engineers.

The supply cable to the appliance must be BASEC or HAR approved

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.

Boiler Output

The total heat requirement of the installation should not exceed the rated output of the boiler:

13.2 kW (45,000 Btu/h) - TRG 45
17.6 kW (60,000 Btu/h) - TRG 60
23.5 kW (80,000 Btu/h) - TRG 80

Central Heating System

The boiler can be used as the heat source for any normal heating system employing pumped small bore circulation with radiators, skirting heating, fan convectors or any other suitable form of heat emitters pump controlled by room stat and time switch. Ensure that a draincock is fitted at the lowest part of the system and a suitable safety-valve is incorporated in the system pipe-work adjacent to the boiler and before any shut-off valves (Max. setting 35 psi).

The total heating surface recommended when using radiators is:

21m TRG 45
30m TRG 60
42m TRG 80

This is based on an emission of 160 Btu /sq. ft./hour/100 F diff. An allowance of 2.3 kW (8,000 Btu/h) has been made for domestic hot water.

Domestic Hot Water System

It is essential that a double feed indirect cylinder complying with BS 1566: Part 1 is used for domestic hot water supplies. No responsibility will be accepted by Trianco if connected otherwise.

Interconnecting pipework between boiler and cylinder should be at least 28mm or 35mm dependent upon size of calorifier used and the vertical distance between thermal centres must not be less than 1m.

Care should be taken to ensure that all pipes have the necessary fall to ensure correct gravity circulation. It is important that the primary circuit to the cylinder is permanently open - no form of control must be used to restrict the circulation.

D.H.W. Temperature Control

If temperature control of the domestic hot water is required, it is recommended that a mixing valve is used to blend hot water from the cylinder with a cold supply so as to provide an acceptable temperature at the taps.

THE PERSON(S) WHO INSTALLS THIS APPLIANCE, COMMISSIONS, SERVICES OR CARRIES OUT ANY REMEDIAL WORK, I.E. ELECTRICAL FAULT FINDING, MUST HAVE SUITABLE ENGINEERING QUALIFICATIONS.

Pump Overrun Thermostat

If the boiler is employed solely for central heating and there is no means of dissipating the residual heat by way of a hot water cylinder or heat leak radiator, then a pump overrun stat must be fitted to the boiler flow pipe.

Air Supply

Adequate ventilation is required to ensure that sufficient air is available for combustion. The room in which the boiler is installed must be provided with a permanent fresh air opening of not less than the following:

- 148cm² - TRG 45
- 194cm² - TRG 60
- 258cm² - TRG 80

An extractor fan must not be used in the same room as the boiler.

Chimney and Flue Connection (See Fig. 2)

The chimney must be structurally sound and preferably fitted with a moisture and acid resistant liner. A minimum height of 15ft. is required with the top of the chimney terminating in a zone not subject to down draught. The terminal must not be fitted with any form of capping that could impede the discharge of flue gases. A soot cleaning door must be provided at the base of the chimney for removal of flue deposits. The connection between boiler and chimney must be made in cast iron or vitreous enamelled steel flue-pipe, and any bends must have an angle of 135 and be complete with a soot cleaning door in class 1 stainless steel.

Note: A draught of 0.03 to 0.05 ins. w.g. is required over the firebed when the boiler is running at its rated output. To measure the draught without the built-in draught stabiliser influencing the reading it is necessary to insert a 6 or 8 mm tube through the tapping at the top of the boiler and down one of the flue-ways, emerging about 25 mm (1") below the bottom.

The draught should also read between 0.03 and 0.05 ins. w.g. when the fire is slumbering with the fan off. The reading should be taken about 15 minutes after a fan blowing period and if in excess of 0.05 ins. w.g. then an additional draught stabiliser may be necessary in the flue-pipe or chimney.

Boiler House Installations

Where it is not possible to use a 15ft high chimney and the boiler can be sited in a separate boiler house, the Monodraught flue system may be considered.

A Code of Practice has been laid down by Trianco for this type of installation which must be strictly adhered to for correct operation of the boilers. Information on the Monodraught flue systems may be obtained from:

Monodraught Flues Ltd., Unit 6 Lancaster Court, Coronation Road, High Wycombe, Bucks. HP12 3TD

Draught Stabiliser

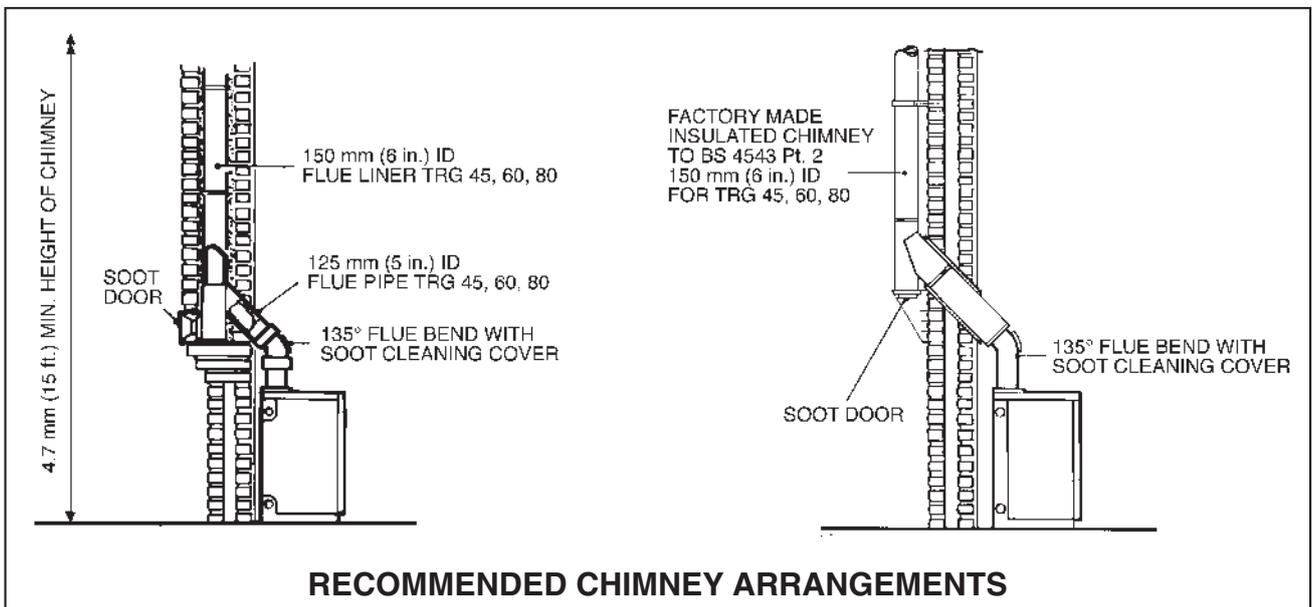
The draught stabiliser fitted to this boiler is designed to cope with the excess draught produced by the average chimney; however, in coastal areas and other places where high winds are liable to produce exceptionally high draughts, it may be necessary to fit an additional draught stabiliser in the chimney to reduce the draught to an acceptable level.

The boiler's draught stabiliser is factory set and should not be altered.

Blocked Flue Safety Switch

In the event of a chimney blockage the boiler should automatically shut down to a safe condition due to the operation of the Safety Switch. This condition is indicated by illumination of the red 'Fume Warning' light on the fan cover.

The Safety Switch is located at the top of the boiler near the draught-stabiliser and in the event of a boiler shut down will need resetting. It is important, however, that the Safety Switch is only reset after the blockage has been cleared. Push the red reset button to restart the boiler; the warning light will then go out.



Boiler Installation

The boiler is despatched fully assembled (except for larger boilers which have separate casing packs) and only requires the usual water, flue and electrical connections to be made.

1. Connect boiler to the heating and hot water systems at the two pairs of side tappings. Fill system and check for leaks (maximum working head 52ft.).
2. Make flue connection to chimney with cast iron or vitreous enamelled pipe, fitting sockets uppermost. Check draught stabiliser for free operation of the flap.

Notes:

- a. Horizontal flue runs must not be used.
 - b. A maximum of two flue bends is permissible but these must incline at an angle of 135 and be fitted with soot cleaning covers.
 - c. Under no circumstances must a single-wall flue pipe be used as an outside chimney. The chimney must be either a conventional brick construction with a liner or a factory made insulated chimney conforming to BS 4543 Part 2:. Recommended installation practice for chimneys and flues is given in BS 6461 Parts 1 & 2 and also shown below.
3. Connect the electrical supply in heat resisting cable B A S E C or H A R approved, from a switched plug (5 amp fuse) to the mains terminal block under thermostat cover. Pass cable along bottom of boiler and through bush in left handside. Check operation of forced draught fan by turning on thermostat, also ensure that the air control flap pivots freely in fan throat.
 4. Position the fuel regulator on the appropriate hole to suit the fuel being used. (see Operating Instructions for settings).

IMPORTANT NOTICE: Heat-Leak Device

As with all solid fuel boilers, a certain amount of residual heat is generated even when the appliance is slumbering. To ensure that the boiler continues to operate this excess heat must be dissipated. It is essential that a heat leak radiator or towel rail is fitted to the heating system to disperse this heat.

The heat leak device fitted must meet the following emission values and should be located in the gravity circuit parallel with the indirect cylinder.

**TRG 45 0.75 Kw (2,500 Btu/h) MIN
TRG 60 0.75 Kw (2,500 Btu/h) MIN
TRG 80 0.75 Kw (2,500 Btu/h) MIN**

If the appliance is replacing an existing installation, it may be necessary for the installer to recalculate the heat losses for the premise, as building changes made over time (such as double glazing, cavity insulation, more efficient hot water cylinders) can significantly alter the heating requirements.

5. SERVICING

IMPORTANT: ISOLATE ELECTRICAL SUPPLY TO THE BOILER BY REMOVING THE MAINS SUPPLY PLUG

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

ELECTRICAL WORK SHOULD BE 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.

Boiler Flue Cleaning

To maintain the high thermal efficiency of the boiler and to avoid the possibility of **DANGEROUS GASES** being emitted, it is necessary to keep the internal flue-ways clear by scraping off deposits at regular intervals - weekly in Winter and according to usage in Summer.

Important: Always ensure the special scraper provided is pushed down the full depth of flue-ways to stop position on shaft. This gives a positive indication the flue-ways are clear.

Access for cleaning is gained by lifting off top casing and removing draught-stabiliser on the TRG 45 and 60, hinging up draught stabiliser on the TRG 80.

Any loose fly ash deposits in the flue outlet should be removed from the boiler rather than brushed down the flue-ways where they could smother the fire.

Before cleaning the flue-ways ensure a bright fire exists, then switch fan "OFF".

Remember to switch fan "ON" after cleaning.

Chimney and Flue Pipe Cleaning

The flue pipe and any bends should be cleaned every 3 months and the chimney swept annually.

Note: In areas subject to heavy rain, it is recommended that the chimney is swept twice a year.

Air Tightness

Always ensure that the fire door and hopper lid/chute are securely latched and air tight, otherwise the boiler will not give its full output and furthermore overheating may occur during "idling" conditions.

Shutting Down

When shutting down boiler for a prolonged period the following procedure should be carried out:

- a. Switch off electrical supply.
- b. Remove all fuel from hopper and fire box.
- c. Thoroughly scrape all deposits from the flue-ways, hopper and fire box.
- d. Empty ashpan.
- e. Leave fire door and hopper lid/chute partially open to ensure good ventilation through the boiler.
- f. As a further safeguard against corrosion it is a good plan to coat the internal surfaces with an anti-corrosion treatment.

Annual Maintenance

The following items should be checked for correct operation and cleaned where necessary:

Fan unit, draught stabiliser flap thermostat, air control flap, secondary air duct(s) and clinker ram mechanism. All air and flue sealing joints should also be inspected and replaced or made good as necessary.

Safety Switch

Check for fly-ash deposits in the flue opening at the back of Safety Switch. Remove draught-stabiliser and insert a small bottle brush into hole to clear out any deposits. This hole is provided to allow cool air from the room to be drawn over the Safety Switch during normal operation of the boiler but also allow hot gases to be blown out in the event of a flue- or chimney blockage. It is therefore important for the hole to be kept clear at all times for correct operation of the Safety Switch.

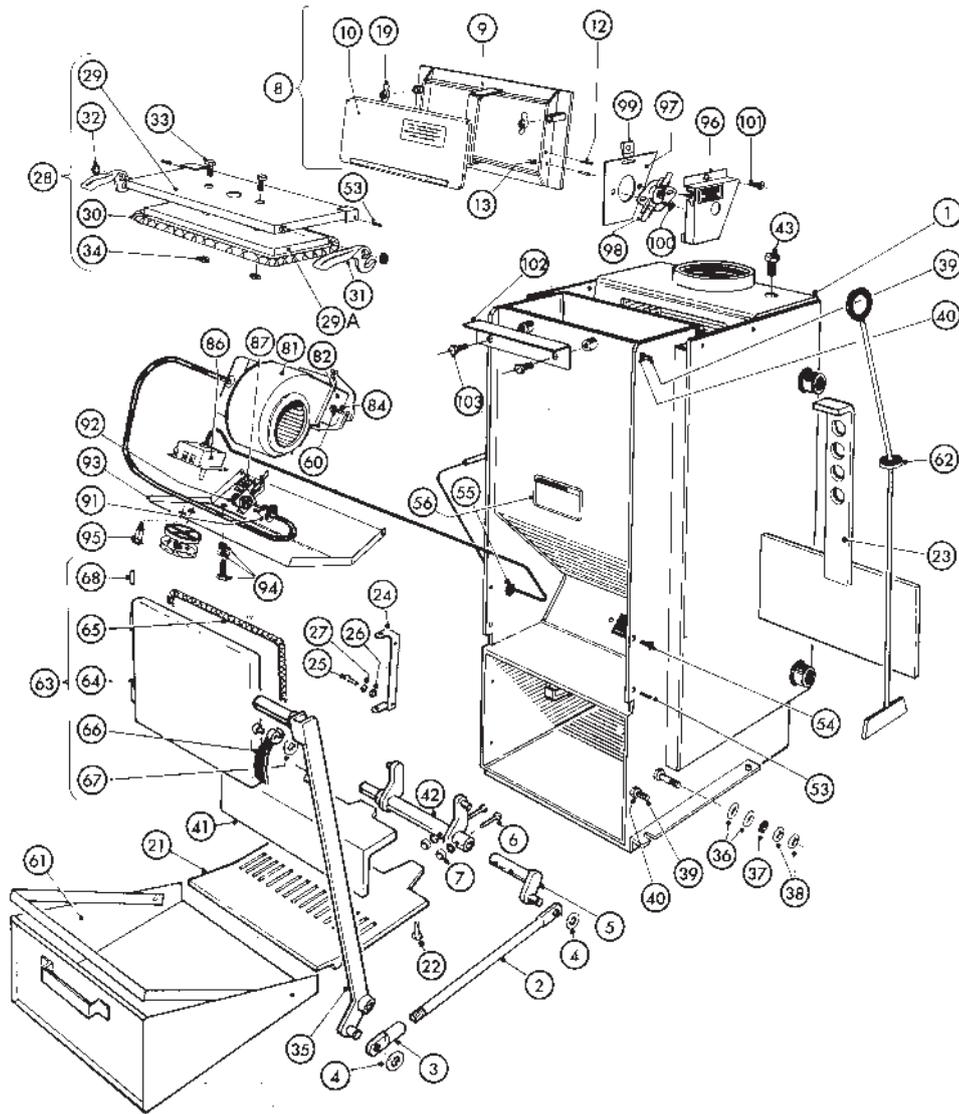
Cleaning Tool

A special scraper is provided for cleaning boiler flue-ways.

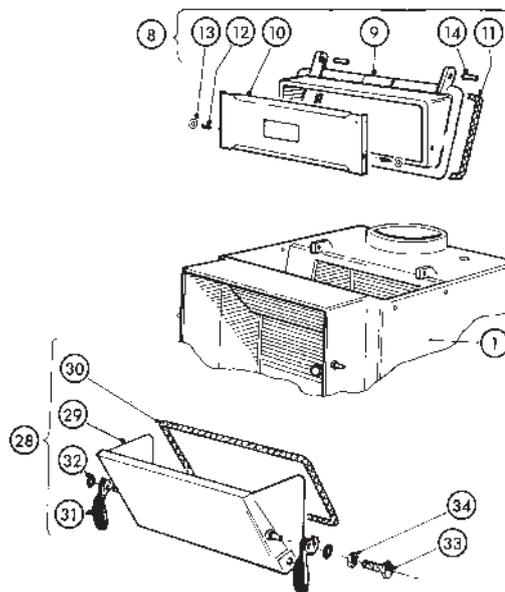
Warning:

Before re-lighting and in particular at the start of the heating season or after a period of shut down it is important to check that the boiler flue-ways, flue-pipe and chimney have not become obstructed by a fall of deposits or are blocked in any other way. Seek professional advice if in doubt.

6. SPARES



BOILER BODY ASSEMBLY TRG 45, 60

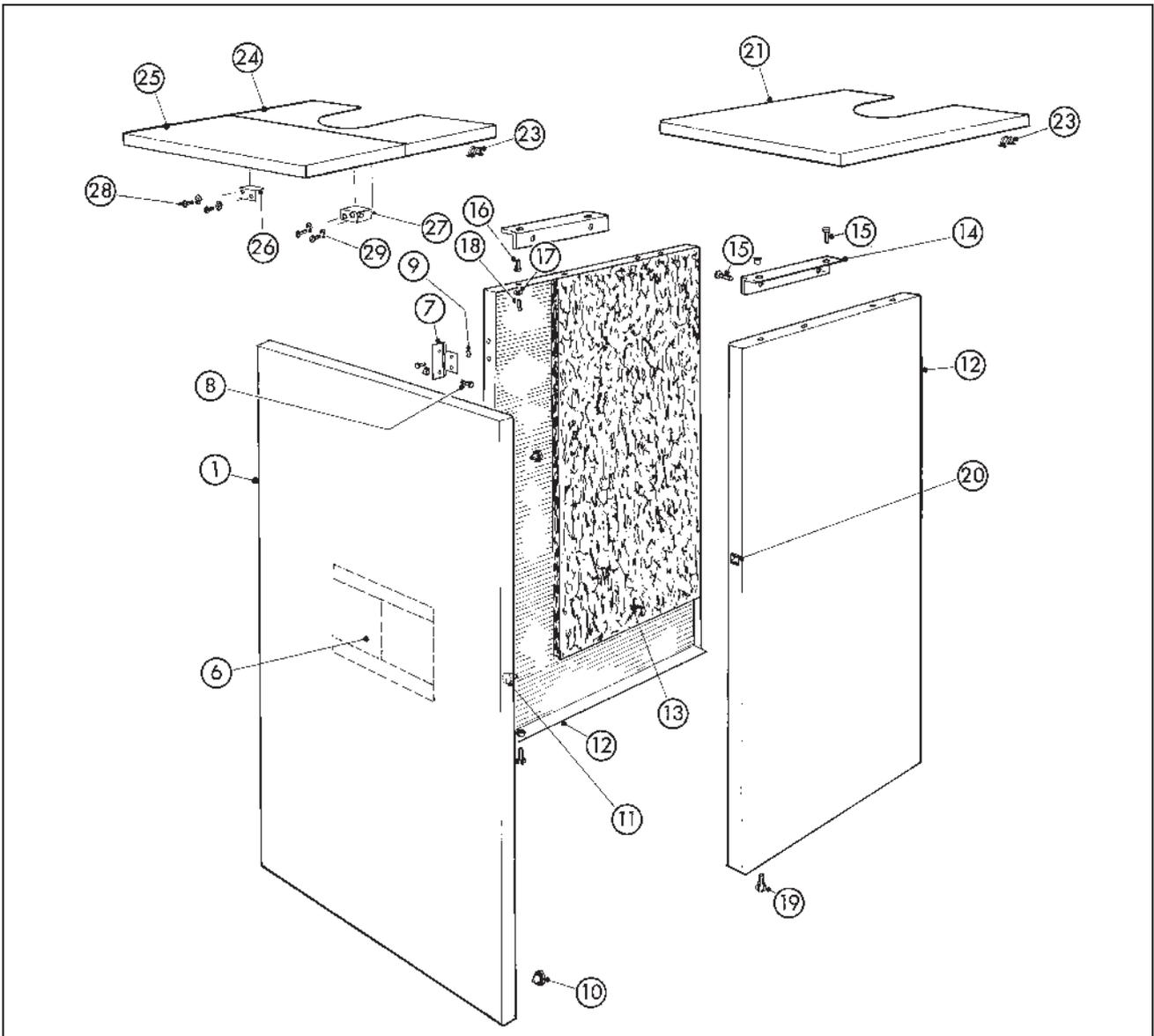


BOILER BODY ASSEMBLY TRG 80

Item No.	Description	TRG 45	TRG 60	TRG 80	No. OFF
1	Body	36510	36610	37510	1
8	Draught/Stab Assembly	36551	36651	37680	1
11	Seal	-	-	98164	1
21	Fire Plate	37061	37275	37630	1
23	Fuel Regulator	37056	37272	37590	1
28	Hopper/Lid Assembly	36571	36671	37570	1
30	Seal	98178	98178	98178	1
61	Clinker Tray Assembly	36505	36705	37720	1
62	Flue Scraper	38500	38500	38500	1
65	Seal	98178	98178	98178	1
81	Fan Unit	37134	37134	35534	1
86	Thermostat (Ranco)	206896	206896	206896	1
93	Thermostat Control Cover Assembly	36566	36641	36145	1
98	Blocked Flue Stat	45651	45651	45651	1

CASING ASSEMBLY

ITEM No.	DESCRIPTION	TRG 45	TRG 60	TRG 80	No.Off
1	DOOR ASSEMBLY	36591	36691	36743	1
12	SIDE ASSEMBLY L/H	36595	36595	37750	1
13	SIDE ASSEMBLY R/H	36596	36596	37760	1
14	SIDE FIXING ANGLE ASSEMBLY	36561	36561	37160	2
20	DOOR STRIKE 263 E1561-01	95192	95192	95192	1
21	TOP ASSEMBLY	-	-	37770	1
23	LATCH, SPIRE SCO2130	95190	95190	95190	4
	FRONT & REAR PANEL ASSEMBLY	36581	36681		
24	REAR PANEL	36582	36682		
25	FRONT PANEL	36586	36686	36686	
26	L/H HINGE BRACKET ASSEMBLY	36584	36584		
27	R/H HINGE BRACKET ASSEMBLY	36585	36584		
11	LATCH, FASTEX ITW	95163	95163	95163	1
16	STUD SPIRE No. 5 BV2141/17	95191	95191	95191	4
17	WASHER, SHAKEPROOF 4BA92211	92211	92211	92211	4
18	SCREW ROUND HEAD 4BA X 3/16"	91171	91171	91171	4



7. FAULT FINDING

FAULT	POSSIBLE CAUSE	ACTION
FUMES	Blocked flues.	Switch fan "off" immediately. Open windows and doors etc., to disperse fumes. Remove all burning fuel from boiler. Locate and remove cause of blockage. DO NOT ATTEMPT TO USE BOILER UNTIL TROUBLE HAS BEEN RECTIFIED - COMBUSTION FUMES ARE DANGEROUS.
	Downdraught.	Increase height of chimney above roof ridge or adjacent building. If the foregoing is not possible fit an anti-downdraught flue terminal such as an 'OH' pot.
OVERHEATING	Too much Idling Air.	Although the Idling Screw is factory set to suit most conditions, chimneys giving a high draught may require a reduction in the Idling Setting to limit the air input. Release lock-nut and screw out Idling Screw one or two turns, then tighten lock-nut.
	Excessive draught.	Fit an additional draught stabiliser in the chimney or flue-pipe.
	Fan blowing continuously.	Check operation of thermostat for ON-OFF switching. Replace thermostat if switch faulty. Ensure that thermostat phial is fully inserted in its pocket.
	Hopper/lid chute not sealing.	Check seal and replace if necessary
	Fire door not sealing.	Check seal and replace if necessary.
FIRE OUT	Insufficient Idling Air.	Screw in Idling Screw one or two turns to increase air supply.
	Firebed choked with clinker and ash.	Declinker firebed until 'fresh' fuel is seen and re-light.
	Insufficient draught.	Clean boiler flue-ways and sweep chimney. Ensure that draught stabiliser closes when draught is low..
	Wet fuel.	Ensure fuel is reasonably dry before using.
	Poor quality fuel.	When ordering from Fuel Supplier specify for use with Trianco TRG boiler. (see page 1)
	Stoppage in hopper feed.	Empty hopper and remove obstruction. Use a sieve to remove oversize fuel and foreign matter.
	Thermostat setting too low.	Increase thermostat setting.
	Fan failure	Check electrical supply for temporary cut. Check fuses.
	Chimney blockage.	The boiler should have shut down to a safe condition due to the operation of the Safety Switch and the red warning light will be ON. Open windows and doors to disperse any fumes that may have been emitted during the operation of the safety switch. Locate and remove cause of blockage which might be either in the flue pipe or chimney. DO NOT ATTEMPT TO USE THE BOILER UNTIL THE BLOCKAGE HAS BEEN CLEARED. COMBUSTION FUMES ARE DANGEROUS.

FAULT FINDING *(Continued)*

FAULT	POSSIBLE CAUSE	ACTION
FIRE OUT	Chimney blockage continued.	To start boiler, push the Safety Switch reset button and re-light fire if necessary. (See Fig 2.) Note: If a flue blockage is not found, the Safety Switch may have operated as a result of persistent downdraught. If this is the case, an anti-downdraught cowl should be fitted to the top of the chimney such as an 'OH' pot or similar, or extend the chimney height above the pressure zone.
FAILURE TO REACH THERMOSTAT SETTING	Continuous fan blowing Blockage in hopper. Fan runner blades choked. Air control flap not opening to "blast" setting.	Check that system is not in excess of boiler output. Empty hopper and remove obstruction. Clinker and ash build up in fire box. Declinker firebed and if necessary re-light boiler. Remove and clean. Remove fan and clean flap to ensure free operation.
BLOW BACK	Delayed ignition of flue gases. Incorrect declinkering Over declinkering	Always recover fire to a bright condition as quickly as possible after clinkering. Ensure fire is recovered by turning on fan for a few minutes both before and after declinkering. Do not declinker more than two strokes at any declinkering operation. Hopper allowed to empty below fuel regulator plate and then re-filled. Always keep hopper topped up and never let fuel fall below fuel regulator plate.
EXCESSIVE FUEL CONSUMPTION	No system controls. Boiler thermostat sensing phial chilled by a cold draught causing stat, to keep fan running. Firebed partly choked with ash and clinker causing fan to blow continuously in an attempt to reach stat. setting.	Fit time-switch and room stat. to control heating pump for specific periods of the day. Also fit thermostat radiator valves or zone valves controlled by room stats.. Stop cause of draught and ensure stat. phial is thermally insulated by the fibre glass blanket inside boiler casing. Declinker firebed several times until live fire is seen at front of bed. Also remove any large clinkers that may have built-up at either side of fire-bed. Remember the more fuel in combustion the quicker the fan is shut off by the thermostat.



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



TRIANCO LIMITED
Thorncliffe, Chapeltown, Sheffield S35 2PH
Tel: Sheffield (0114) 257 2300
Fax: (0114) 257 1419
www.trianco.co.uk



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