Trianco Redfyre CENTRAJET 13/17 Wall Hung Pressure Jet balanced flue boiler



INSTALLATION COMMISSIONING AND SERVICING INSTRUCTIONS

DESCRIPTION OF BOILER

The Centrajet 13/17 oil fired boiler is a room-sealed appliance intended for mounting on an external non-combustible wall of thickness varying from 230 mm (9") to 335 mm (131/4"). A balanced flue terminal takes in combustion air and exhausts burned gases. The terminal incorporates a device for cooling the exhaust gases before discharge to the atmosphere.

LOCATION OF BOILER

The boiler can be mounted at high or low level but attention should be paid to accessibility for servicing; at least 300 mm (12") above and 152 mm (6") below the boiler and 25 mm (1") either side should be left clear.

Flue Terminal Siting

The flue terminal should not be fitted in a position that would allow the products of combustion to enter the house through adjacent doors, windows or ventilators. A distance of at least 1 metre (3.3 ft) should be allowed at each side of the terminal to permit uninterrupted discharge and free dispersal of the combustion products.

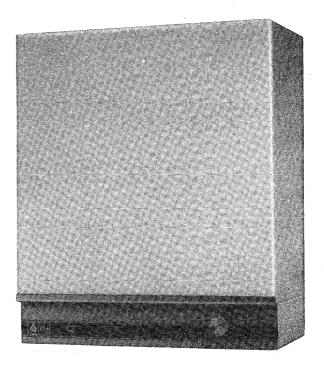
The boiler is suitable for use on microbore, minibore and smallbore central heating installations, but where domestic hot water is required, an indirect cylinder must be used.

For installation, the casings and also the burner chamber cover must be removed. As packed, the boiler is laying on its back, and after removing the cardboard carton the top casing can be lifted off its location pins. Remove boiler thermostat knob, unscrew the two screws retaining the lower casing and pull this upwards. It will now be possible to disconnect the multi-way connector, grip the connector with one hand and press in the two retaining latches on either side of connector with the other hand and pull apart.

Under no circumstances should you try to part the connector by pulling the electric cables.

The casing and control panel can now be removed completely. The burner chamber cover must also be removed. By unfastening the battery type clamp holding the cover in position.

Mark the holes for the fixing bolts (see Fig. 2) and flue terminal in the wall by using the template supplied



within the packaging. The boiler is to be sited level. Drill 4-10mm diameter × 63mm (21/2") deep fixing holes for the anchor bolts and cut a hole in wall to accept terminal. Lift the boiler into place, push the anchor bolts fully home through the holes in the appliance backplate, tighten up the nuts. From outside the building, make the hole in the outer wall large enough to allow access to the inner wall so that a good seal can be made between the inner wall and the boiler terminal. Once this has been done the outer wall can be completed ready to receive the outer half of the terminal. To ensure correct fitting the outer terminal is marked top. The outer terminal should then be positioned so that it slides inside the inner terminal. The terminal flange can then be grouted to the outer wall. If the boiler is mounted where the terminal grille is at height of less than 2 m (6'6") from the ground, an extra guard should be fitted. The guard should be positioned central on vertical line, but the base of the guard should butt up against the base of the terminal grille. The guard Type E 18" \times 16" \times 10" can be obtained from Messrs. Tower Flue Components Ltd., Tower House, Vale Rise, Tonbridge, Kent TH9 1TB.

Water Connections

Water connections should be made in accordance with British Standard Code of Practice recommendations making suitable provision for venting the circuit. The maximum working pressure of the boiler is 206 kN/m² (30 lbs./in²) or 21.0 metres (70 ft) head of water.

The boiler has two 1" BSP female flow tappings and two 1" BSP female return tappings (see diagram on page 3). A pump may be fitted within the casing to the top R.H. vertical tapping but in all cases this tapping must be used.

Circulating Pump

The water circulating pump may, if desired, be fitted in the space alongside the air box inside the top casing. When fitting in this position, the pump will be in the "flow" side of the circuit and the water circuit vent pipe be positioned to suit.

The following space is available:-

End of R.H. flow tapping to inside of top casing — 230 mm Centreline of tapping to back plate — 60 mm. Centreline of tapping to inside of R.H. casing — 68 mm.

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

Fill the system with water and make a thorough check for leaks. Vent boiler body through air vent fitted to top face of boiler.

Where the boiler is also used for providing domestic hot water a double feed indirect cylinder to B.S. 1566 Part 1 must be used. No responsibility will be accepted by Trianco Redfyre Ltd. if connected otherwise.

Electrical Connections

Ensure that the mains supply is switched off before commencing work. The electrical supply must be of 240 volts A.C., single phase, 50 Hz, and this may be supplied from a convenient combined switch and socket suitably fused - 5 amp. Ancillary equipment should be suitably protected.

The supply cable may enter the casing adjacent to the left-hand water return pipe and be run up the right-hand side of the boiler to be connected into the appliance at the terminal block on the side of the burner chamber. A mains cable clamp is provided.

The wiring must conform to I.E.E. Regulations.

A wiring diagram for the appliance with and without programmer is shown in page 4 of this leaflet and also on the burner chamber cover.

Where consistant low mains voltage conditions are known to exist, it is recommended that a constant voltage transformer is fitted.

Before any attempt to start the appliance is made, the lower casing with control panel must be refitted. It is important that the multiway cable connection is reconnected before the lower casing is fully fitted.

Limit Thermostat

The appliance is fitted with a limit-thermostat which is pre-set and requires no adjustment. Should the boiler thermostat become inoperative the limit-thermostat will take over control of the boiler and provide protection, but at a higher temperature setting. The AMBER light on the control panel will then come ON and OFF as the limit-thermostat contacts make and break. Indicating that the unit is operating on the limit-thermostat only. Before attempting to replace the control thermostat check that the limit-thermostat has not tripped out as a result of rise in boiler temperature due to the pump switching off or a valve closing down. The boiler thermostat should be replaced by a Service Engineer as soon as possible.

Fuel Supply

An oil supply line, minimum 8 mm inside diameter, will be required. (See diagram Fig. 3).

The oil connection from the burner is an 8 mm compression fitting or 1/4" BSP male.

An isolating valve should be fitted as near to the unit as practicable to enable oil line to be disconnected without undue loss of fuel.

The burner unit is supplied for use on a two pipe supply.

It is important that a stop valve, filter and a non return valve are fitted into the oil supply line. Should these be omitted no responsibility can be accepted by Trianco Redfyre Limited for failure to any part of the burner assembly. Where there is any doubt about the suitability of oil storage tank site, the Local Fire Prevention Officer should be consulted.

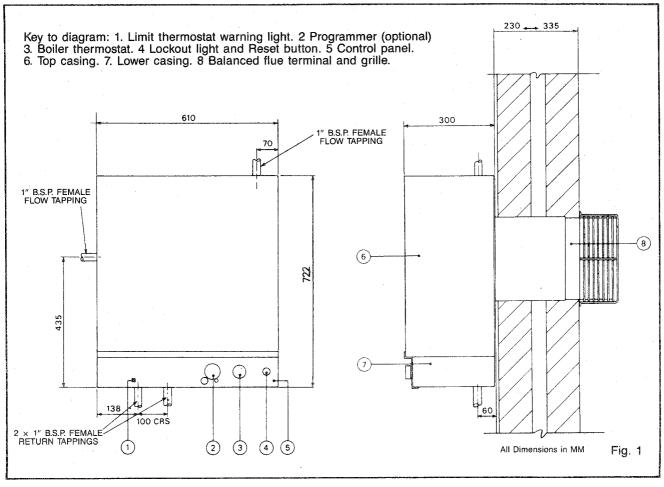
Fuel

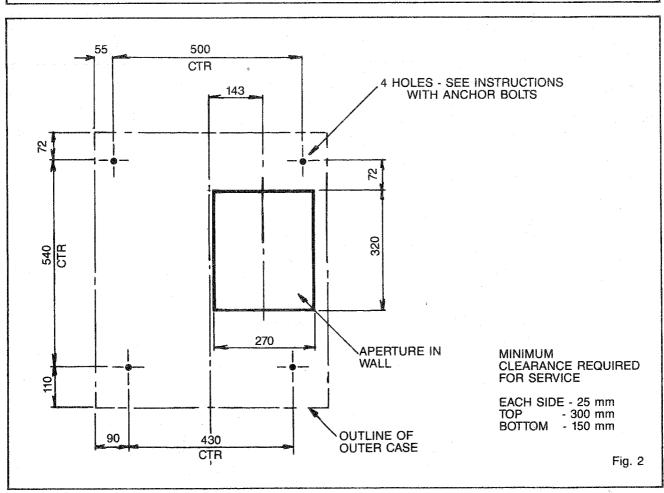
The recommended fuel for the Centrajet 13/17 is 28 second kerosene (B.S. 2869 1970 - Class C2).

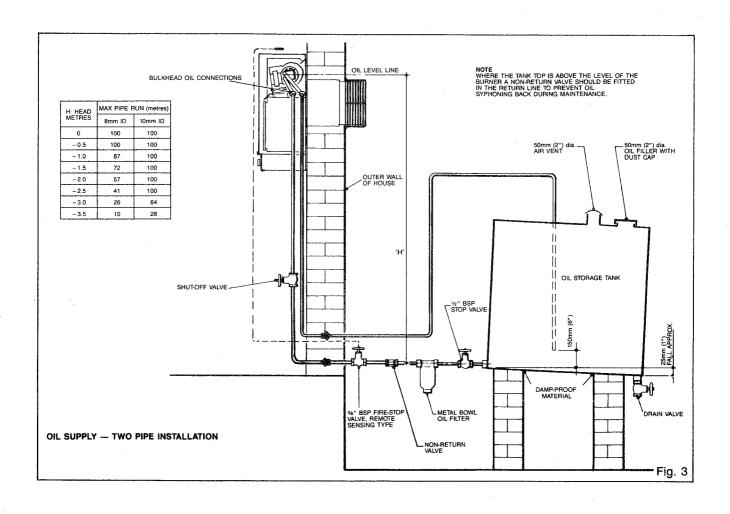
OPERATION

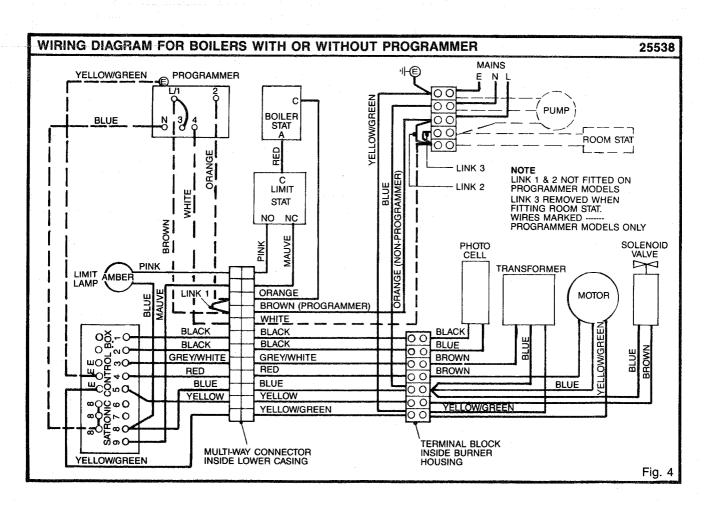
Normal Operating Sequence

Turn the thermostat knob clockwise to switch on the boiler and then set to the required temperature. The low setting corresponds approximately to 60°C (140°F), and the high setting 88°C (190°F). Once the boiler has been switched on, the burner will ignite immediately after the 10 seconds pre-ventilation period and continue to run until the boiler thermostat reaches the desired temperature. The electrical supply to the ignitor is automatically switched off when a stable flame is established. Should flame failure occur during normal running, the control box will shut down the burner after 15 seconds and go to a lockout condition. This condition will remain until the reset button is pressed in to restart the burner. Wait for at least 60 seconds before pressing reset button.



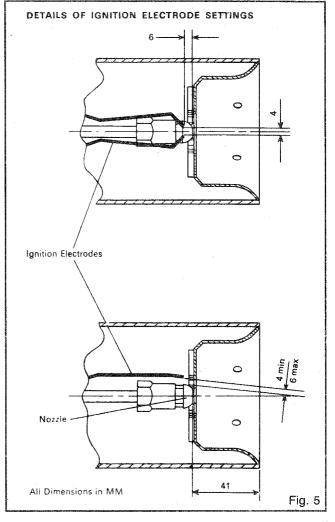






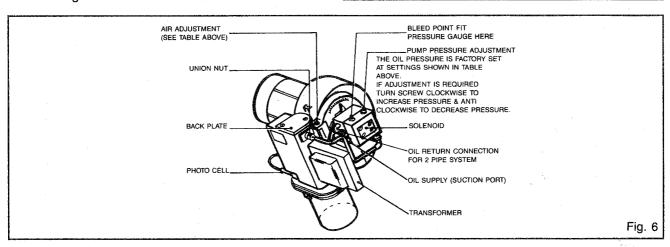
COMMISSIONING INSTRUCTIONS

- 1 Switch off electricity at the mains.
- 2 Remove top casing, combustion chamber door and burner chamber cover.
- 3 Remove back plate of burner, disconnect oil pipe union nut and withdraw photo-cell.
- 4 Withdraw oil pipe assembly sufficiently to unclip ignition leads then fully withdraw.
- 5 Check electrodes and nozzle sizes (see table).
- 6 Replace oil pipe assembly ensuring that the nozzle is centrally positioned in the blast tube (access from inside chamber door).
- 7 Check that the photo-cell is correctly located in its socket.
- 8 Set air band (see table).
- 9 Check that target plate and baffle are correctly positioned. Baffle marked with 'Top' and 'Arrow'.
- 10 Replace combustion chamber door, ensuring a good seal.
- 11 Ensure that the boiler is full of water check that all oil and electricity connections are made. Open all fuel valves and set time clock/programmer etc to an 'on' position.
- 12 Switch on mains electricity supply.
- 13 Turn boiler thermostat to an 'on' position, on first firing the burner will most likely go to lock out wait one minute and reset. Vent air from oil pump through bleed point provided.
- 14 Turn boiler thermostat to the 'off' position.
- 15 To check pump pressure. Remove the bleed screw from the top of the pump and insert pressure gauge.
- 16 Turn boiler thermostat to an 'on' position.
- 17 Check pressure and adjust regulating screw with an allen key if necessary. Turn boiler thermostat to 'off' remove pressure gauge and replace bleed screw.
- 18 After 15 minutes running take smoke and CO₂ readings through sampling hole in R.H. side of combustion chamber door. (see table).
- 19 Replace burner chamber cover ensuring a good seal is made.
- 20 Set all systems controls as required and refit top casing.



COMBUSTION TABLE

	13 kW	17 kW
Nozzle	0.5 US gal	0.6 US gal
CO ₂	10-10.5%	10.5-11.5%
Smoke No.	01	01
Air Band	1—2	3—4
Pump Pressure p.s.i.	105	105



SERVICING INSTRUCTIONS

SERVICING THE BURNER

- 1. Switch off electricity at the mains.
- 2. Remove top casing and burner chamber cover.
- Disconnect oil pipes and electrical wires from terminal block.
- Slacken off the two fixing screws on burner fixing flange and remove burner from boiler.
 - N.B. The burner mounting flange is permanently sealed to the boiler body and should not be removed.
- 5. Remove back plate, disconnect oil pipe union nut and withdraw photo-cell.
- Withdraw oil pipe assembly sufficiently to unclip ignition leads, then fully withdraw.
- Clean ignition electrodes and combustion head, wiping other parts clean but NOT nozzle tip.
- Clean air impeller. It will be necessary to remove the complete motor assembly from the fan casing by unscrewing the outer motor retaining bolts and pulling clear. (When re-assembling ensure that the fibre dog on the impeller hub engages with the pump coupling).
- Re-assemble oil pipe to burner, replacing nozzle if it is thought to be worn or damaged. Ensure that nozzle is centrally positioned in the combustion head.
- Replace burner in boiler, reconnect oil pipes and electrical wires.
- 11. Switch ON electricity supply.
- 12. After 15 minutes running take CO₂ and smoke readings, making any adjustment necessary. (Refer to Commissioning Instructions).
- 13. Check operation of safety control:
 - (a) Run burner for a few minutes.
 - (b) Remove photo-cell and cover with a cloth to prevent exposure to light.
 - (c) After about 15 seconds the burner should stop and the lock-out light on the control box will come on.
 - (d) Wait approximately one minute then press the re-start button when the burner should start up normally.
- Replace burner chamber cover ensuring a good seal is made.
- In addition to the foregoing EVERY 2 YEARS clean oil filters:-
- (i) Oil supply filter-in pipe line.

- (a) Turn off oil.
- (b) Unscrew bowl retaining bolt and lower the bowl.
- (c) Remove element and clean with kerosene or white spirit.
- (d) Re-assemble element and bowl.
- (e) Turn on oil, check that bowl is oil tight and bleed off any air through the bleed screws on top of body.
- (ii) Oil pump filter on burner.
 - (a) Turn off oil.
 - (b) Unscrew the retaining bolts which secure the pump end cover.
 - (c) Remove end cover carefully, avoiding damage to gasket, if necessary replace.
 - (d) Remove filter element and clean with kerosene or white spirit.
 - (e) Re-assemble element and end cover.
 - (f) Turn on oil and vent air from pump bleed points.

SERVICING THE BOILER

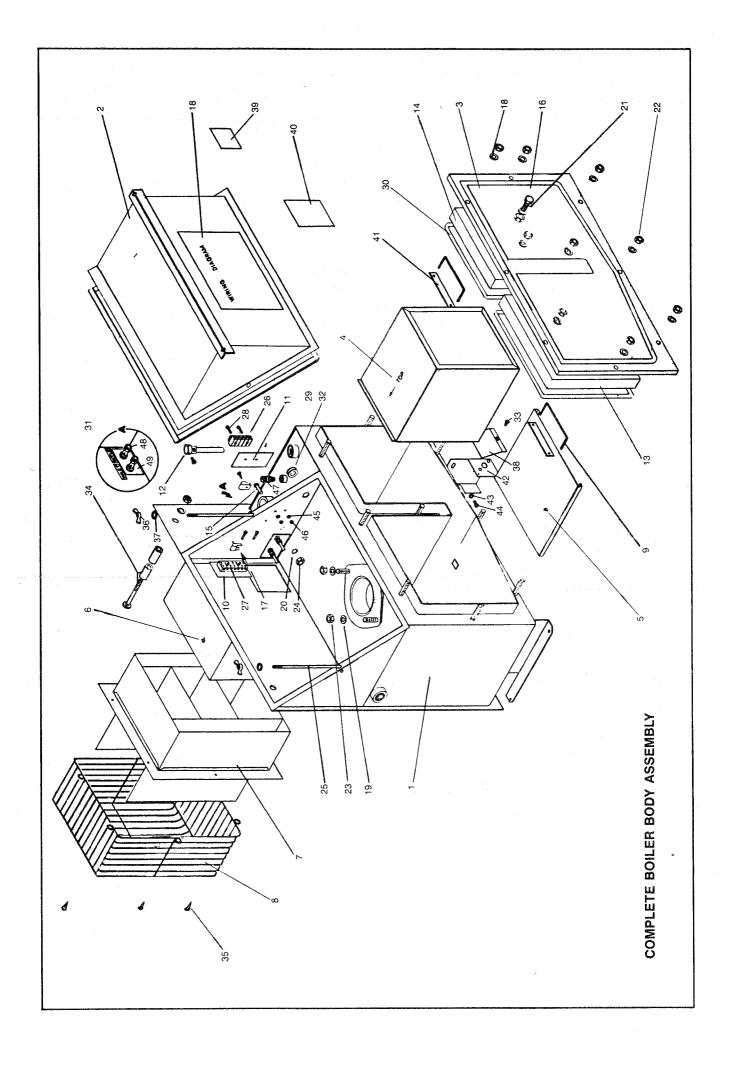
To maintain the high thermal efficiency of the boiler it should be given a regular skilled service at least once a year. It is suggested that a service contract be arranged with the installer or fuel supplier. If the boiler is used to provide hot water all the year round as well as central heating the best time for its annual service is just before the start of the heating season. For a boiler which is shut down completely during the summer, the service should be as soon as possible after the annual shut down.

Boiler flueway cleaning may, by arrangement, be part of the annual service. The procedure for this operation is as follows:-

- 1. Switch off the mains electricity supply.
- 2. Remove top casing.
- 3. Remove combustion chamber door.
- 4. Lift out baffle and target plate.
- Brush all deposits from the baffle, target plate and boiler internal surfaces.
- Wash boiler internal surfaces with an anti-rust solution.
- Re-assemble the parts, ensuring that the baffle and target plate are correctly located.
- Inspect combustion chamber door insulation and seal. Re-new if required. Replace door ensuring a good seal is made.

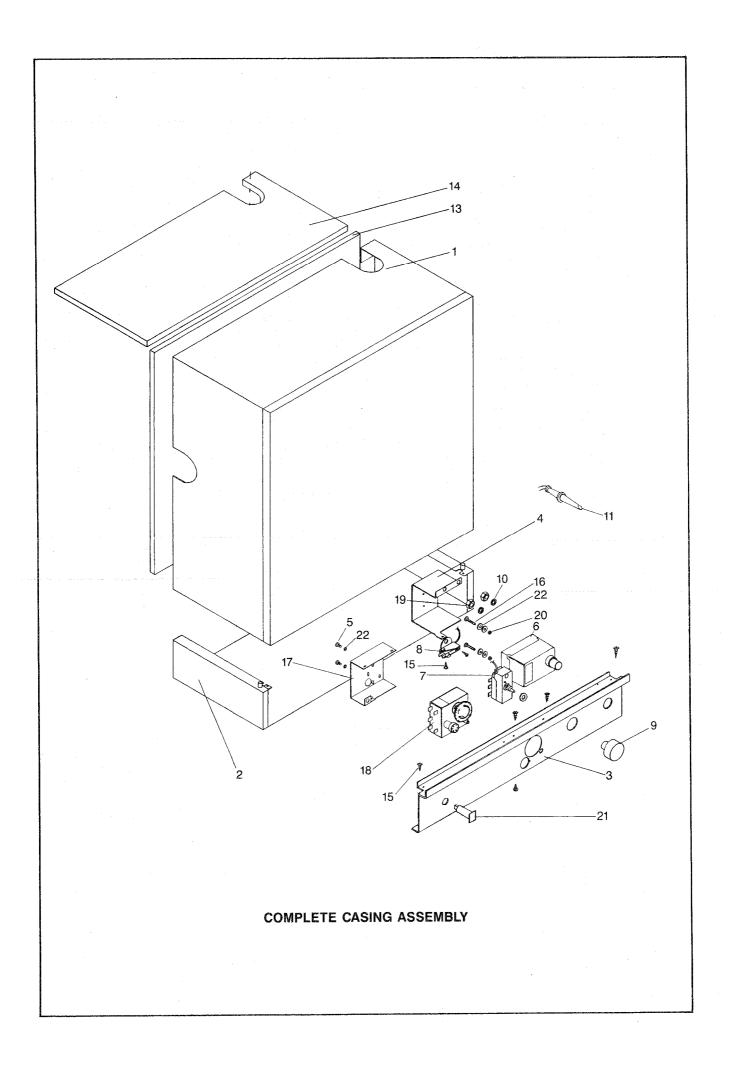
The casing of the boiler requires only an occasional wipe over with a damp cloth to retain its finish.

FAULT FINDING CHART			
FAULT	POSSIBLE CAUSE	ACTION	
THE BURNER WILL NOT START WHEN THE LOCK-OUT	The fuse has blown.	Fit new füse.	
RESET BUTTON IS PUSHED	Thermostat or other controls.	Wait until boiler water temperature drops, or raise thermostat setting.	
	No current through motor or transformer.	Control box faulty — replace. Light on photo-cell — check cell position.	
BURNER STOPS AND STARTS WITHOUT FLAME WHEN RESET BUTTON IS PUSHED.	The burner is not getting oil. Air in oil line, shut-off valve closed.	Check oil tank is full, clean oil filter, vent oil line and pump, Check oil shut-off valve is open, check fire valve.	
	Ignition fault.	Check electrodes are clean and correctly set. Check H.T. leads for breaks or burns.	
c	Nozzle fault.	Change nozzle.	
	Pump fault.	Check with gauge that pressure is correct.	
	Coupling between fan and pump is broken or slipping.	Fit new coupling.	
	Solenoid valve not operating.	Check power supply to coil; if faulty change Solenoid valve coil. If fault persists, change oil pump.	
BURNER STARTS BUT FAILS TO ESTABLISH FLAME.	Dirty photo-cell.	Clean cell, use soft dry rag.	
TO ESTABLISH PLANE.	Faulty photo-cell.	Change cell.	
	Faulty control box.	Change control box.	
FLAME BURNS ONE SIDED.	Nozzle partially blocked or damaged.	Replace nozzle.	



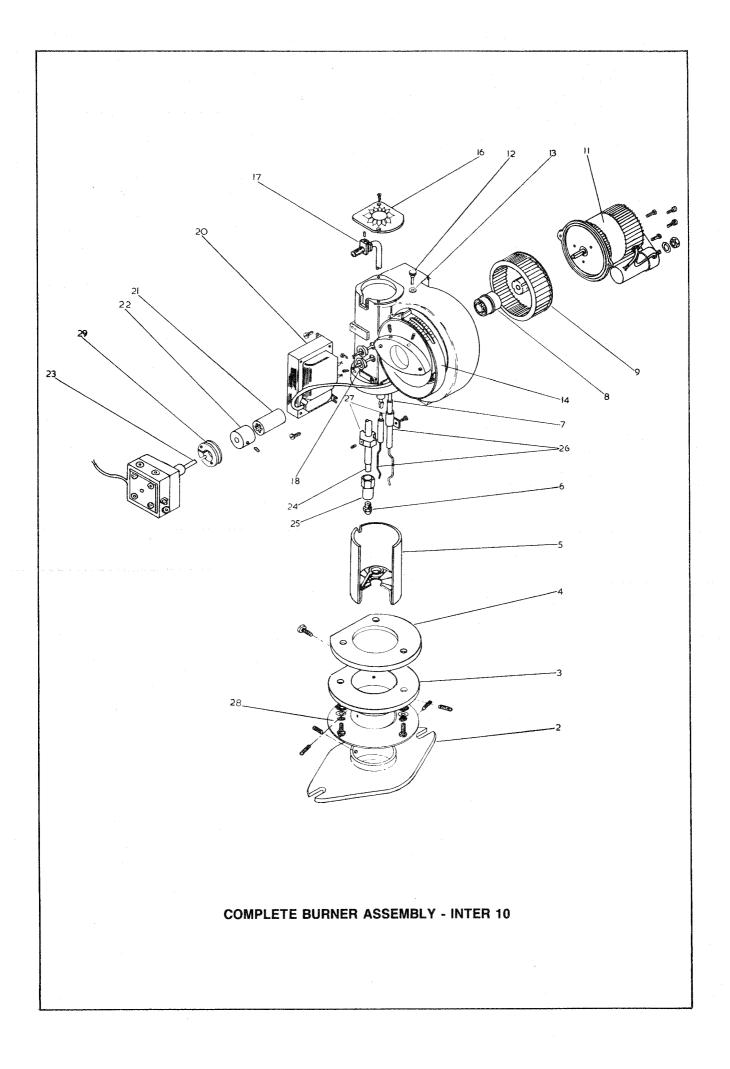
COMPLETE BOILER BODY ASSEMBLY

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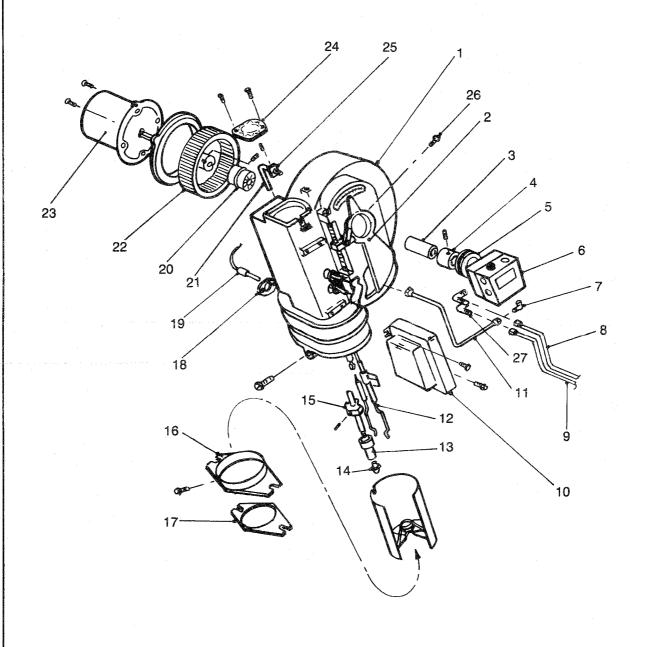
COMPLETE CASING ASSEMBLY

ITEM No.	PART No.	DESCRIPTION	No. OFF
1	25760	Top Casing	1
2	25442	Lower Casing	1
3	25713	Control Panel Programmer	1
3	25715	Control Panel Non Programmer	1
4	25444	Control Box Bracket	1
5	91238	4BA × 3/8" Hex Hd. Setscrew	2
6	25440	Control Box Satronic TF 701 B TF 801 B	1
7	25156	Thermostat Teddington TBB/BD1 D. Shaped Phial	1
8	25157	High Limit Thermostat Teddington AAM/BA1 D. Shaped Phial	1
9	22055	Thermostat Knob with Clip	1
10	92189	M6 Washer	2
11	25582	Satronic Photo-cell and Holder	1 1
13	25462	Casing Insulation Front	1
14	25463	Casing Insulation Top	1
15	91003	No. 6 × 10 mm long Pan Head Pozidriv S.T.S.	7
16	91062	M3 × 10 mm long Pan Head Pozidriv Setscrew	2
17	25446	Programmer Bracket	1
18	25053	Programmer Horstmann 423	1
19	94217	M6 Hex Nut	2
20	94319	M3 Hex Nut	2
21	96350	Neon Light Arcoelectric SL 184K	1
22	92230	M4 Washer	6



COMPLETE BURNER ASSEMBLY - INTER 10

ITEM No.	PART No.	DESCRIPTION	No. OFF
1	25470	Mounting Flange Gasket	1
2	25471	Mounting Flange	1 1
3	25472	Burner Tube Spacer	
4	25473	Burner Tube Spacer Gasket	1
5	25474	PL 1 Head 90 mm overall length	1
6	25476/75	Nozzle Danfoss 13 kW 0.5 80°R (25476) 17kW 0.6 80°R (25475)	1
7	25477	High Tension Leads	2
8	25478	Coupling Motor Dog	1
9	25479	Motor Impeller	1
10 (00500	Capacitor (
11 ∮	26589	Motor	1
12)		Air Adjusting Screw	
13 }	25481	Washer for Adjusting Screw	1
14)		Air Band Regulator	
14	26219	Air Band Regulator (Black Cylindrical)	1
15	26220	Burner Housing	1 1
16	25482	Back Plate	1
17 ,	25483	Locating Block	1
18	25484	Grommet	2
19	25583	Photo-cell Holder	1
20	25486	Transformer	1
21	25487	Coupling Drive Rubber	1
22	25488	Coupling Pump Dog	1
23	25489	Oil Pump Fuelmaster Mono Tube	1
23	26076	Oil Pump Danfoss M.S.L.A.	1
24	25490	Nozzle Oil Tube	1
25	25491	Nozzle Holder	1
26	25492	Electrodes	2
27	25493	Electrode Holder	1
28	25500	Burner Tube Sealing Gasket	1
29	25504	Oil Pump Mounting Flange	1



COMPLETE BURNER ASSEMBLY - INTER 99

COMPLETE BURNER ASSEMBLY - INTER 99

ITEM No.	PART No.	DESCRIPTION	No. OFF
1	25781	Burner Housing	1
2	25782	Air Regulator	1
3	25487	Coupling Drive Rubber	1
4	25488	Coupling Dog Pump	1
5	25504	Oil Pump Mounting Flange	1
6	26076	Oil Pump Danfoss	1
7	25783	Elbow	1
8	25579	Oil Pipe — Out-let	1
9	25580	Oil Pipe — Inlet	1
10	25486	Transformer	1
11	25784	Oil Pipe	1
12	25492	Electrodes Assembly	1
13	25491	Nozzle Holder	1
14	25476/75	Nozzle 0.5 80°H 0.6 80°H	1
15	25493	Electrode Holder	1
16	25471	Mounting Flange	1
.17	25470	Gasket	1
18	25583	Photo-cell Holder	1
19	25582	Photo-cell	1
20	25478	Coupling Motor Dog	1
21	25490	Nozzle Oil Tube	1
22	25479	Fan Impeller	1
23	26589	Motor	1
24	25482	Back Plate	1
25	25483	Location Block	1
26	25785	Air Control Locking Screw	1
27	99344	Elbow	2

GENERAL SPECIFICATION

The serial number is mounted on the burner chamber cover or top RH side of appliance back plate. This number is to be quoted on all correspondence and orders for parts.

Boiler Model	Centrajet 13/17 Room Sealed — Standard and Programmer		
Heat Exchanger	Mild Steel. Rectangular		
Flue Offtake	Balanced Flue 279 mm (11") × 229 mm (9")		
Heat Output	13 kW 44,500 Btu/h	17 kW 58,000 Btu/h	
Max Firing Rate (Nom)	29 ml/min 0.369 imp gal/h	36.5 ml/min 0.475 imp gal/h	
Nozzle Danfoss	0.5 US gal. 80°H	0.6 US gal. 80°H	
Radiator Surface	25.8m²	33.7m²	
Based on 160 Btu/h/ft² (100°F Diff.)	278 ft ² Deduct approx. 5.6 m ² (60 ft ²) if	362 ft² a 35 gal. indirect cylinder is used.	
Burner	Electro oil, Inter 10/Inter 99 with P.L.I. combustion head.		
Motor	1/8 up capacitor start 2750 r.p.m. 90 watts.		
Oil Pump	Danfoss M.S.L.A. with integral solenoid.		
Oil Pump Pressure	105 p.s.i.		
Ignition	10,000 volt Ht Spark B7 transformer.		
Safety Control	Photo resistor type complying with requirements of BS799 Part 3.		
Power Supply	240 volts AC 50 Hz		
Power Loading	Running 0.3 amp	Ignition 1.6 amp	
Water Content	16 litres (3.5 gals.)		
Max Working Head	21 m (70 ft)		
Water Connections	2 × 1" B.S.P. Female Flow 2 × 1" B.S.P. Female Return		
Weight	78.5 kg (173 lbs)		
Control Thermostat	Adjustable between 60°C and 88°C (140-190°F)		
Limit Thermostat	Factory set at 100°C (212°F) auto reset on fall of 20°C		
Casings	Stove enamelled white with silver/black screen printed control panel.		
Overall Dimensions	Width - 610 mm (24") Height - 722 mm (28½") Depth - 300 mm (12")		

Trianco Redfyre policy is one of continuous research and development. This may necessitate alterations to this specification.



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Manufacturers of Domestic Boilers

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Trianco Redfyre CENTRAJET 13/17



Operating Instructions

WARNING: It is dangerous to tamper with any component whilst the boiler is connected to the mains electrical supply.

Fuel

Recommended fuel for this boiler, 28 seconds Kerosene (B.S.2869 Class C2).

Starting

To start boiler turn thermostat knob clockwise to desired setting. Boiler will start automatically. Where a programmer is supplied ensure that it is not set to an 'OFF' period.

Stopping

To stop boiler turn thermostat knob fully anti-clockwise to 'OFF' position. Turning the programmer selector to 'O' also turns off the boiler.

Automatic Safety Lock-out

If a satisfactory flame is not established in the boiler within 15 seconds of ignition the boiler automatically switches to lock-out.

This may also occur during running if for any reason the flame is extinguished.

Lock-out is signalled by the re-set button glowing.

The lock-out condition will remain for 60 seconds after which the re-set button can be pressed to re-start the boiler.

If lock-out occurs, before sending for a service engineer make sure that the oil tank is not empty or valved off.

Servicing

The boiler should be serviced every 6 months and it is recommended that this is arranged by a service agreement with the fuel suppliers.

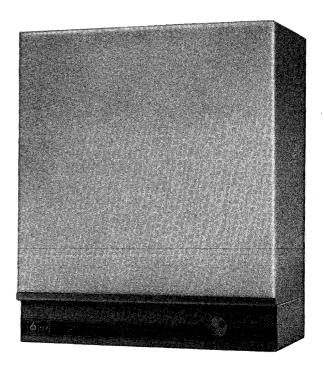
Limit Lamp

The limit stat is a *safety* control. Should the lamp glow, the boiler will operate, but call in your service company.

How to use the Programmer

The programmer will start automatically as soon as electricity is switched on.

The 24 hour dial should be turned in a clockwise direction to set the clock to the correct time. The dial is divided into quarter hour divisions.



The time indicator is the inclined line between the dial aperture and advance control button.

Setting the Programmer

The programmer is set by moving the tappets which are numbered in sequence of daily operations.

'ON' Tappets (1 & 3) are coloured RED.

'OFF' Tappets (2 & 4) are coloured BLUE.

The tappets can be set to required times by pressing the arrow heads and sliding them around the dial clockwise until they are opposite the appropriate times.

'ON'/'OFF' Indication

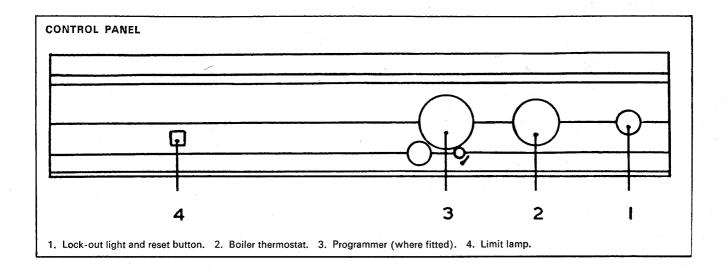
This is indicated on the Advance Control button adjacent to the time indicator.

When the boiler is off, Blue will be adjacent to the indicator.

When the boiler is on, Red will be adjacent to the indicator.

Advance Control

This is a simple way of bringing forward the next operation without moving the dial. Press the Advance Control button and turn it anti-clockwise as far as it will go.



Programming

The numbers on the selection knob correspond to the programmes printed on the control panel. By turning the knob in either direction the required programme can be obtained.

NOTE

Tel.

When changing from a twice-a-day to an all-day programme or vice-versa between tappet operations 2 and 3, it will be necessary to use Advance Control to put the switch in sequence with the programme.

Always ensure that the 'ON'/'OFF' indicator is in sequence with the tappet and programmed operation. Use the Advance Control if adjustment is needed.

Installed by:	Service Agent's Name:
Address:	Address:
Date:	Tel.

Installer: Please fill in details and leave the instructions in a prominent place for customer's use.

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