

Trianco Redfyre

TRO 15/19, 20/25, 28/32

Pressure Jet Oil fired domestic boilers



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

Service Manual

To be read in conjunction with the Installation and Commissioning Instructions

SECTION A

TOOLS FOR MAINTENANCE

Pozidriv screwdrivers sizes 1 and 2
Small screwdriver
Medium screwdriver
Small adjustable spanner
M4 Box spanner
M6 Spanner
M5 Spanner
Avo-meter or similar electrical testing meter
Combustion testing kit (Fyrite or equivalent)
Smoke gun
Pressure gauge
Allen Key – 3 mm
Allen Key – 6 mm
Nozzle removing tool
Electrical mains testing screwdriver
Steel rule 150 mm.

SECTION B

SERVICE SCHEDULE

Every 6 months

1. Clean combustion head (see section 'D')
2. Check atomising nozzle (see section 'D')
3. Photocell – clean, check and re-fit (see section 'D')
4. Check combustion (see section 'G')

Every 12 months

Carry out 6 monthly service with the addition of:

1. Clean burner thoroughly (see section 'D')
2. Inspect and clean boiler heat exchanger surfaces (see section 'C')

Every 2 years

In addition to all other operations, clean oil filters in supply line and oil pump (see section 'D').

SECTION C

Before carrying out any service operation, turn boiler thermostat to 'off' position. Switch off mains electrical supply to boiler. To remove panels, see paragraph in Installation Instructions attached.

BOILER INSPECTION AND CLEANING

Remove Front Panel (30) and Top Panel (31) Thumb Screws (22) and Flue Cover (6) to gain access to

baffles (1) (2) (3) (19). All surfaces of the heat exchanger and the baffles should be cleaned thoroughly.

Important: On re-assembly, ensure that baffles are replaced correctly (see diagram in Installation Instructions).

SECTION D

BURNER ASSEMBLY

The burner assembly consists of electric motor, fan, fuel pump, combustion head, oil nozzle and supply pipe, ignition electrodes, transformer, mounting flange and solenoid.

Access for servicing burner is gained by unscrewing 2 nuts (65) holding burner in position and removing burner complete.

Every 6 months

To clean nozzle tube assembly, remove two screws holding burner back plate on top of burner, unscrew oil line at swivel nut. Withdraw the assembly far enough to disconnect transformer leads from ignition electrodes. The whole assembly can now be withdrawn and cleaned. Withdraw photo-cell from its holder and clean with cloth. Clean combustion head.

DO NOT CLEAN NOZZLE TIP.

Every 12 months

1. Clean burner thoroughly
2. Inspect and clean heat exchanger surfaces.

Every 2 years

Clean the pump strainer and shut off oil at the isolating valve. Unscrew the 2 slotted screws in the end of the pump. Using a 5 mm Allen Key, dismantle the cover and gasket, withdraw the strainer, wash out in petrol and shake dry. **UNDER NO CIRCUMSTANCES WIPE THE STRAINER WITH A CLOTH.** Use the reverse procedure for re-assembly. When re-assembling the burner, care should be taken to ensure that the ignition electrodes are replaced correctly as per diagram in Installation Instructions.

SECTION E

SOLENOID VALVE

The solenoid valve is an integral part of the pump and does not require servicing mechanically, but should the electrical coil become damaged or open circuit, this can be changed by removing the two slotted screws, lifting off the back plate and withdrawing the coil, disconnecting the wires from the control box and replace.

SECTION F

PROGRAMMER REMOVAL

Remove Top Panel as in Installation Instructions, unscrew wing nut (61) remove bracket (33) and lift out programmer (56) disconnect wires. To replace, reverse this procedure. On early models the programmer bracket is attached to the upper front panel by two self tapping screws on the top of the panel, and a M6 nut at the rear. The programmer is attached to the bracket by the M4 hexagon set screws. The wires can have either screw connections or spade terminals.

SECTION G

COMBUSTION TESTING

The combustion check should be carried out when the boiler is stabilised, i.e. starting from cold the boiler should be allowed to run for at least 30 minutes. For permissible range of combustion readings see Installation Instructions.

SECTION J

FAULT FINDING

Condition	Symptom	Cause	Remedy
A. Boiler fails to start, no lock-out light. Boiler stops during normal running, no lock-out light.	Electrical failure.	Electrical Supply not connected. Faulty connection on main supply. Blown fuse on mains and mains supply failure.	Make good connections or replace fuses. Await resumption of mains supply.
B.1. During start-up or running, boiler goes to lock-out, lock-out light on.	Oil supply failure.	Empty oil tank ; valves not turned on ; blocked filters ; oil supply undersized or badly fitted causing permanent or intermittent air locks.	Check tank valves, filters etc.
B.2. During start-up or running, boiler goes to lock-out, lock-out light on.	Ignition circuit.	Electrodes too far apart or dirty. Photocell incorrect, open circuit or dirty. Air in pump or line. Air control incorrectly set or loose.	Clean and re-set Electrodes as per diagram in instructions. Clean and re-set Photocell. Bleed air from pump as per instructions. Re-set air control to give clean smoke and correct CO ₂ . Tighten knurled nut.
C. Boiler starts with pulsating sound and goes to lock-out.	Loud pulsation.	Air in pump or line. Electrodes dirty or incorrectly set. Photocell dirty or incorrectly set and open circuit. Air control incorrectly set or loose.	Clean and re-set Electrodes as per diagram in instructions. Clean and re-set Photocell. Bleed air from pump as per instructions. Re-set air control to give clean smoke and correct CO ₂ . Tighten knurled nut.
D. Limit Lamp alight.		Boiler Thermostat. Phial not in phial pocket. Boiler thermostat faulty.	Replace phial in pocket. Replace thermostat—Section 'H'.

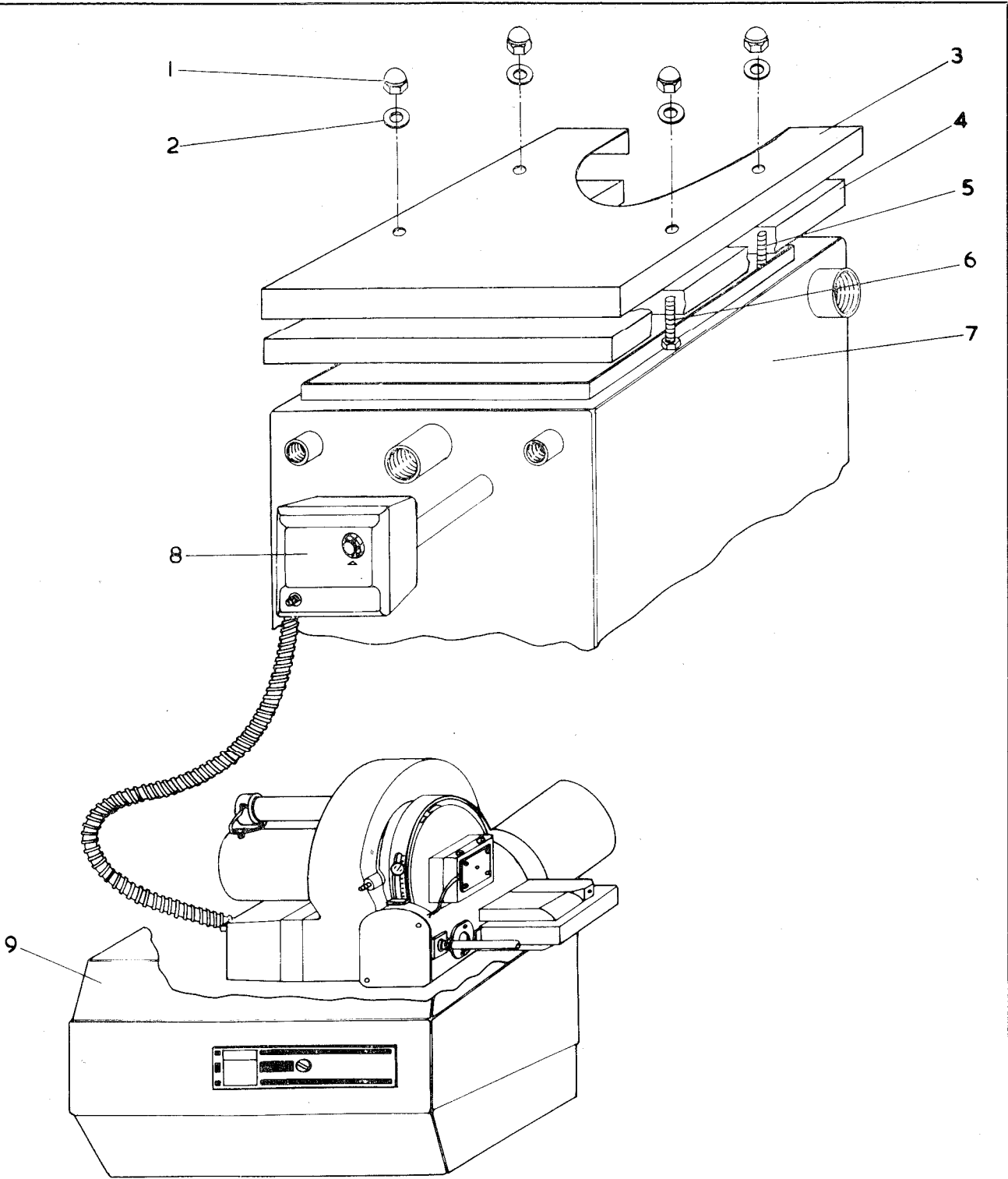
SECTION H

BOILER STAT

Remove top panel. The boiler thermostat is mounted behind the upper front panel (50 and 51) by a bracket (27A). To remove, pull off the knob from the front, carefully remove the two electrical connections, unscrew the two self-tapping screws on top of the panel and the nut from the stud at the rear. After removing the phial from its pocket the thermostat and bracket can be lifted clear, unscrewing the boiler stat retaining nut will separate the stat from its bracket. Replace in reverse order and ensure that the phial is fully immersed in the pocket.

LIMIT STAT

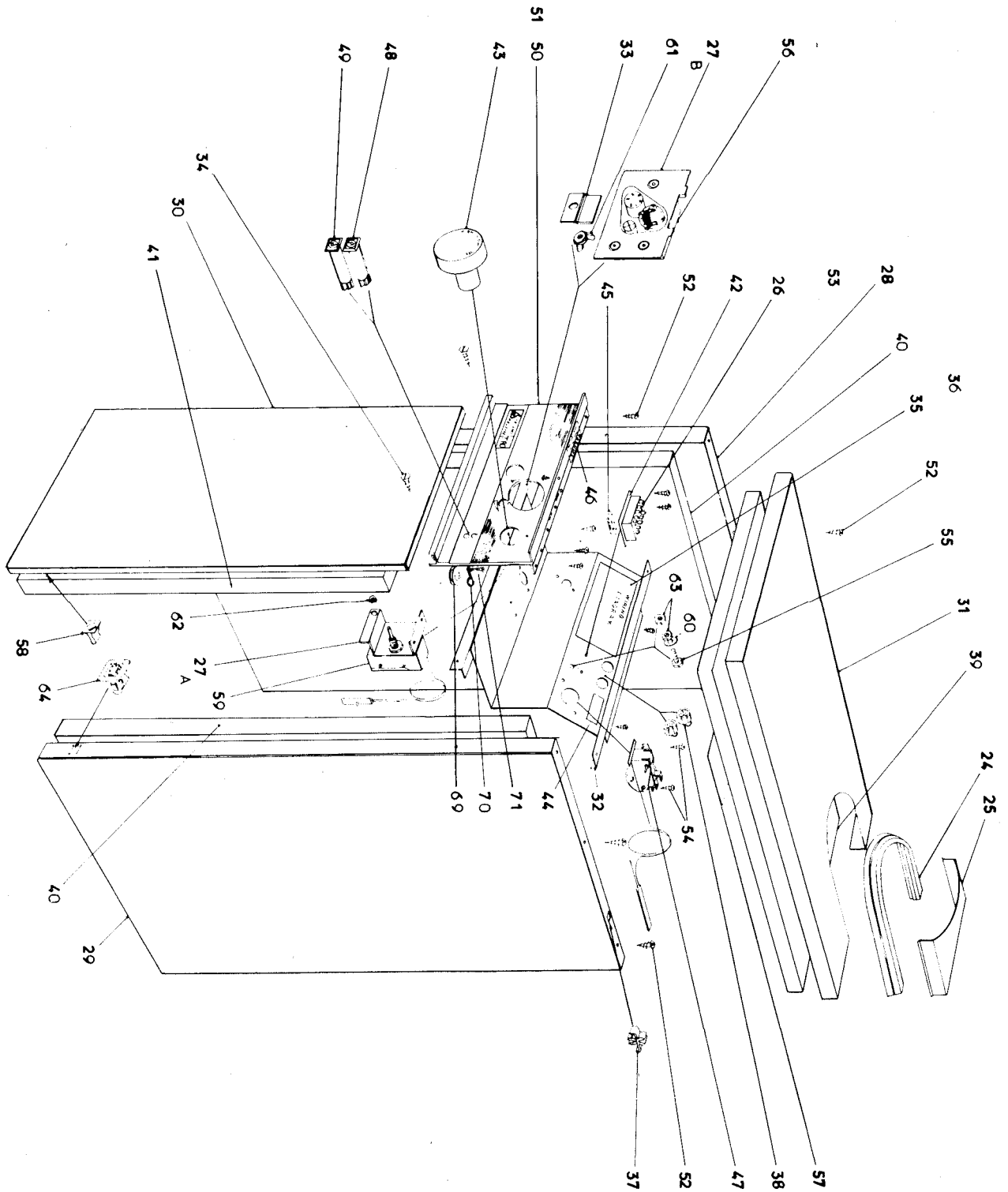
The limit stat is sited behind the upper front panel (50 and 51) on the mounting chassis (32). To remove, unscrew two self-tapping screws or unscrew the limit stat retaining nut, carefully disconnect the two electrical connections, remove the phial from its pocket and lift clear. Replace in reverse order and ensure that the phial is fully immersed in the pocket.



COMPLETE ASSEMBLY BOILER HOUSE MODELS

Item No.	Ref. No.	Description	15/19	20/25	28/32	Item No.	Ref. No.	Description	15/19	20/25	28/32
1	94259	M8 Domed Nut	4	4	4	7	26067	Boiler Body	1	-	-
2	92190	M8 Washer	4	4	4	7	26068	Boiler Body	-	1	-
3	26072	Top Cover	-	1	1	7	26069	Boiler Body	-	-	1
3	26083	Top Cover	1	-	-	8	26074	T'stat Satchwell TDK 3201	1	1	1
4	26073	Top Cover Insulation	-	1	1	9	26067	Burner Complete with Cover	1	-	-
4	26082	Top Cover Insulation	1	-	-	9	26068	Burner Complete with Cover	-	1	-
5	91057	M8 x 30mm Hex Hd Set Sc'w	2	2	2	9	26069	Burner Complete with Cover	-	-	1
6	91137	M8 x 40mm Hex Hd Set Sc'w	2	2	2						

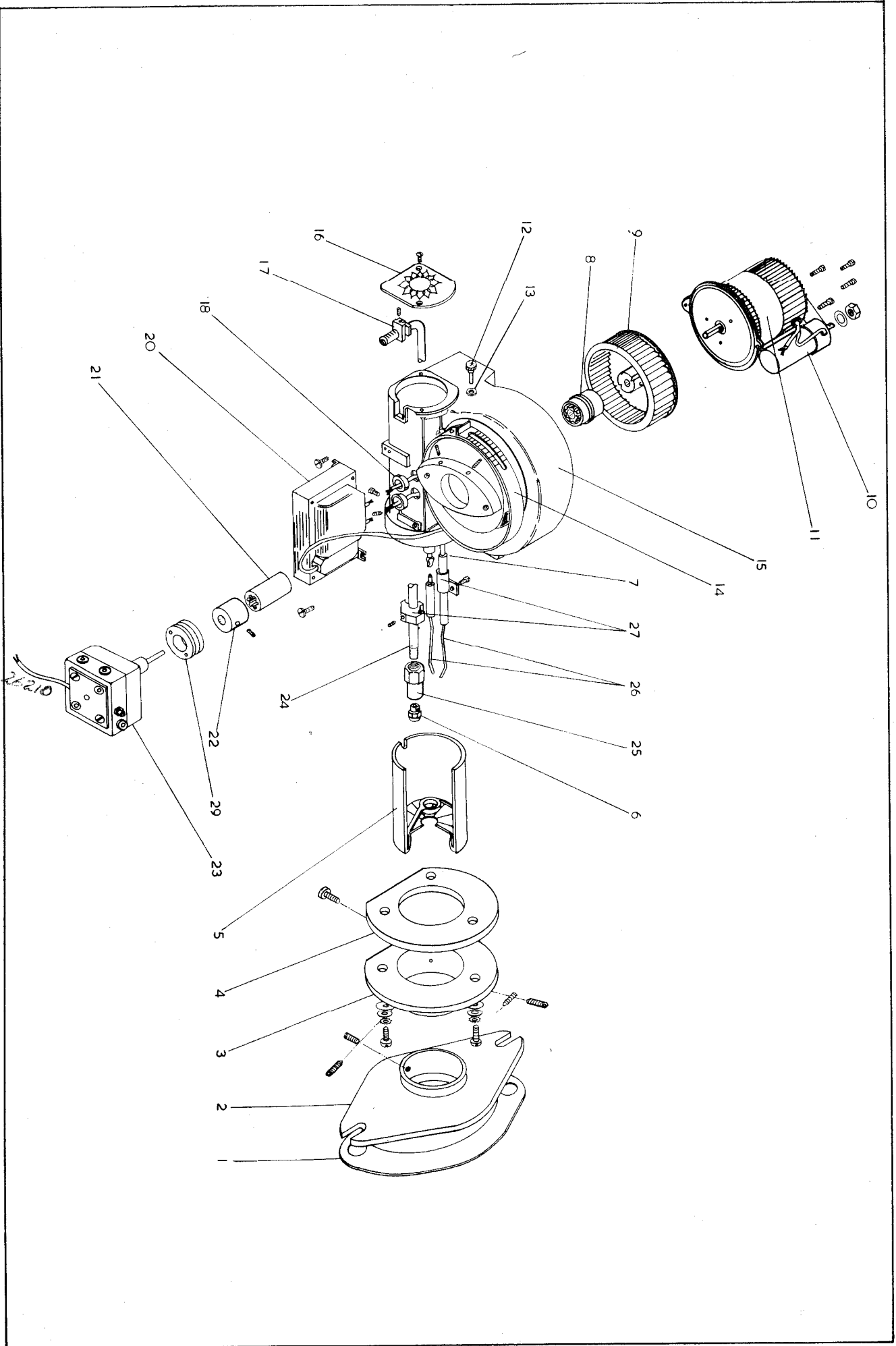
COMPLETE CASING ASSEMBLY



COMPLETE CASING ASSEMBLY

Item No.	Reference No.	DESCRIPTION	Total No. Off		
			15/19	20/25	28/32
24	26014	Flue Bezel	1	1	1
25	26015	Trim Bezel	1	1	1
26	96277	Terminal Block	1	1	1
27A	22054	Thermostat Bracket	1	1	1
27B	26107	Programmer Bracket	1	1	1
28	26034	L.H. Side Casing	1		
28	26039	L.H. Side Casing		1	1
29	26035	R.H. Side Casing	1		
29	26040	R.H. Side Casing		1	1
30	26037	Front Casing	1		
30	26042	Front Casing		1	1
31	26036	Top Casing	1		
31	26041	Top Casing		1	1
32	26038	Mounting Chassis	1		
32	26043	Mounting Chassis		1	1
33	26051	Programmer Clamp	1	1	1
34	91134	CSK. Hd. No. 8 x 10 'Pozi' S.T.S. Type Z	2	2	2
35	26044	Programmer Wiring Diagram	1	1	1
36	26057	Non Programmer Wiring Diagram	1	1	1
37	95161	ITW 237-ED585-06 Panel Fastener	2	2	2
38	96306	Hexco SR-6P3-4 Cable Grip	2	2	2
39	26025	Top Panel Insulation	1		
39	26028	Top Panel Insulation		1	1
40	26026	Side Panel Insulation	1		
40	26029	Side Panel Insulation		1	1
41	26027	Front Casing Insulation	1		
41	26030	Front Casing Insulation		1	1
42	25467	Terminal Block Insulation	1	1	1
43	22055	Thermostat Knob	1	1	1
44	22078	Fuse Label	1	1	1
45	96159	Mains Label	1	1	1
46	26086	Warning Label	1	1	1
47	25157	Teddington AAM/B1/1 'D' Phial Limit Stat (Alternative Limit Stat Satchwell TF1026 (Round Phial)	1	1	1
48	96266	Arcoelectric SL 187 Neon Light	1	1	1
49	96269	Arcoelectric SL 187 Neon Light	1	1	1
50	26002	Programmer Upper Front Panel	1		
50	26004	Programmer Upper Front Panel		1	1
51	26001	Non Programmer Upper Front Panel	1		
51	26003	Non Programmer Upper Front Panel		1	1
52	91133	Pan Hd. No. 8 x 10 'Pozi' S.T.S. Type Z	11	11	11
53	91079	Pan Hd. No. 4 x 16 'Pozi' S.T.S. Type Z	2	2	2
54	90983	Pan Hd. No. 6 x 10 'Pozi' S.T.S. Type Z	2	2	2
55	91033	M5 x 20 Pan Hd. 'Pozi' Setscrew	1	1	1
56	26107	Horstmann Diamond 423 Programmer	1	1	1
57	26017	Reflector	1	1	1
58	95162	ITW 263 GD 0910-00 Strike	2	2	2
59	25156	Teddington TBB/80/1 'D' Phial Alternative Thermostat TF1027 Satchwell (Round Phial)	1	1	1
60	92195	M5 Washer	2	2	2
61	94225	M6 Wing Nut	1	1	1
62	94217	M6 Hex. Nut	1	1	1
63	94221	M5 Hex. Nut	2	2	2
64	95163	ITW 162-EM 560-00 Latch	2	2	2
65	92190	M8 Washer	2	2	2
66	94257	M8 Hex. Nut	2	2	2
67	94217	M6 Hex. Nut	4	4	4
68	26216	Pump Plug Label	1	1	1
69	99501	3/4" Grommet	1	1	1
70	96304	Cable Clamp	1	1	1
71	90983	No.6 S.T. Screw	1	1	1

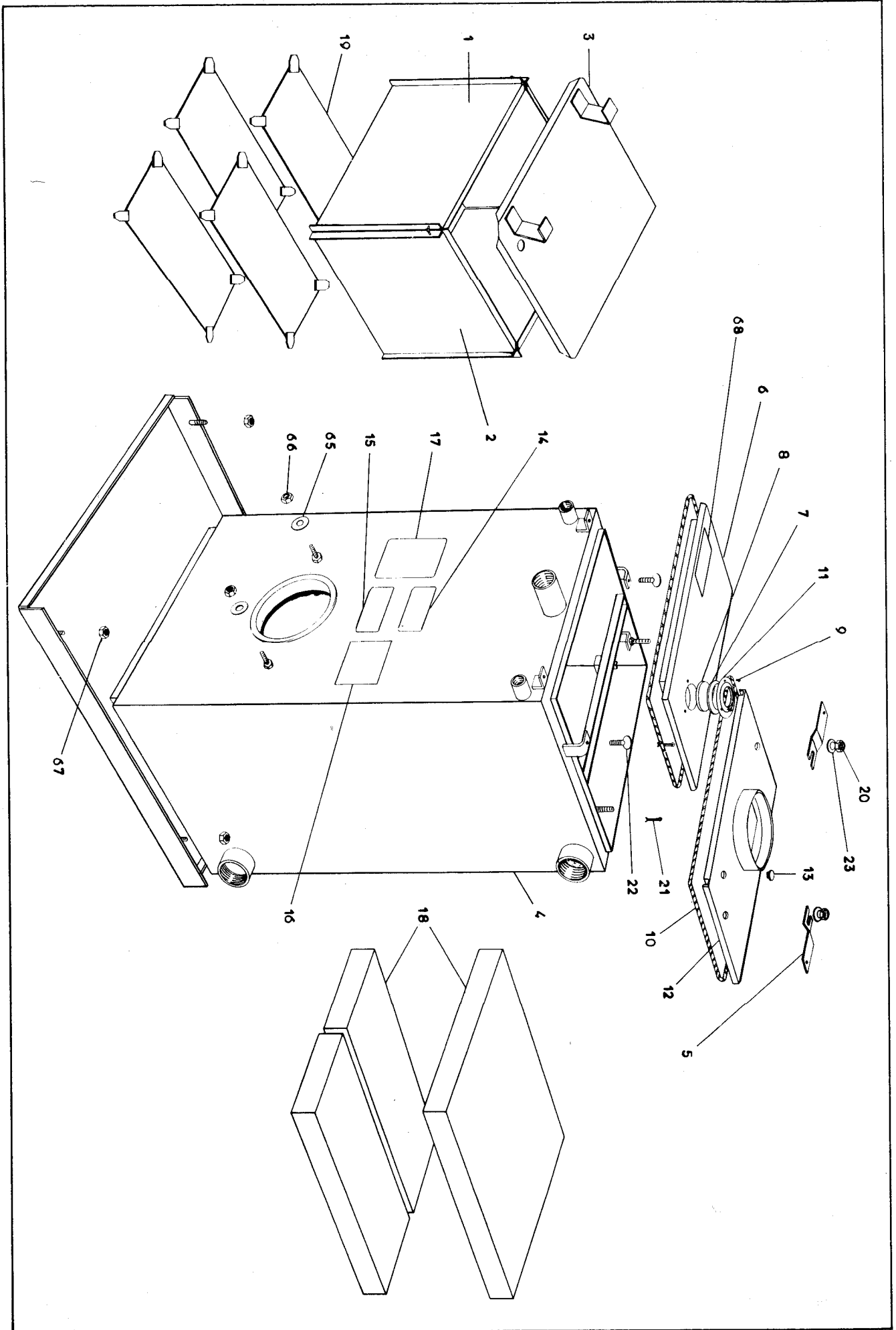
COMPLETE BURNER ASSEMBLY TRO BOILERS



COMPLETE BURNER ASSEMBLY TRO BOILERS

Item No.	Reference No.	DESCRIPTION	15/19	20/25	28/32
1	25470	Mounting Flanged Gasket	1	1	1
2	25471	Mounting Flange	1	1	1
3	25472	Burner Tube Spacer	1		
4	25473	Burner Tube Spacer Gasket	1		
5	26203	P4, 10/4 Head 70/90 mm Long	1	1	
5	26204	F.B.H. Head 70/90 Long			1
6	26213	Danfoss 0.60 x 80 °H Nozzle	1		
6	26214	Danfoss 0.75 x 80 °H Nozzle		1	
6	26215	Danfoss 1.00 x 60 °H			1
7	25477	High Tension Leads	1	1	1
8	25478	Coupling Motor Dog	1	1	1
9	25479	Motor Impellor			
10	25480	Capacitor	1	1	1
11	25480	Motor	1	1	1
12		Air Adjusting Screw			
13	25481	Washer	1	1	1
14		Air Band Regulator			
14	26219	Air Band Regulator (Black Cylindrical)	1	1	1
15	26220	Burner Housing	1		
15	26221	Burner Housing		1	1
16	25482	Back Plate	1	1	1
17	25483	Locating Block	1	1	1
18	25484	Grommet	1	1	1
19	25485	Photocell Holder	1	1	1
20	25486	Transformer	1	1	1
21	25487	Coupling Drive Rubber	1	1	1
22	25488	Coupling Dog Pump	1	1	1
23	26076	Oil Pump M.S.L.A. Integral Solenoid	1	1	1
24	25490	Nozzle Oil Tube	1		
24	26200	Nozzle Oil Tube		1	1
25	25491	Nozzle Holder	1	1	1
26	25492	Electrodes	2	2	2
27	25493	Electrode Holder	1	1	1
29	25504	Oil Pump Mounting Flange	1	1	1
	26199	Flexible Oil Pipe (Not Shown)	1	1	1

COMPLETE BOILER BODY ASSEMBLY



COMPLETE BOILER BODY ASSEMBLY

Item No.	Reference No.	DESCRIPTION	Total No. Off		
			15/19	20/25	28/32
		Complete Boiler Body Assembly	1		
		Complete Boiler Body Assembly		1	
		Complete Boiler Body Assembly			1
1	26056	Front and Rear Flue Baffle		2	
1	26048	Flue Baffle	1		
2	26055	L.H. and R.H. Side Flue Baffle		2	
3	26054	Top Flue Baffle		1	
3	26047	Top Flue Baffle	1		
4	26045	Boiler Body	1		
4	26052	Boiler Body		1	
4	26060	Boiler Body			1
5	26050	Side Casing Fixing Bracket	2	2	2
6	26053	Flue Cover		1	1
6	26046	Flue Cover	1		
7	26010	Sight Glass Gasket	1	1	1
8	26009	Sight Glass	1	1	1
9	90983	Rd. Head Self Tapping Screw No. 6 $\frac{3}{8}$ " long - Type Z	1	1	1
10	98137	Asbestos String $\frac{5}{16}$ " dia. x 1080 mm. long		1	1
10	98137	Asbestos String $\frac{5}{16}$ " dia. x 1000 mm. long		1	1
10	98137	Asbestos String $\frac{5}{16}$ " dia. x 790 mm. long	2		
11	26049	Sight Glass Retainer	1	1	1
12	26016	Top Flue Plate Cover	1		
12	26021	Top Flue Plate Cover		1	1
13	95185	Flue Gas Test Plug Ref.	1	1	1
14	26023	Kerosene Domestic Fuel Oil to B.S. 2869 Class C Fuel Instruction Label	1	1	1
15	26024	35 sec. Heating Oil to B.S. 2869 Class D Fuel Instruction Label	1	1	1
16	26031	Information Plate	1		
16	26032	Information Plate		1	
16	26033	Information Plate			1
18	26012	Refractory Base	1		
(17)	26008	Dobeta Approval Label	1	1	1
18	26019	Base Refractory		1	
18	26022	Base Refractory			1
19	26061	Gas Retarder			4
20	94219	M.8 Full Hex. Nut		2	2
20	94218	M.6 Full Hex. Nut	2		
21	93131	$\frac{1}{16}$ " dia. x 1" long Split Pin	1	2	2
22	91131	$\frac{1}{4}$ " B.S.W. x 1" long Thumb Screw	2	2	2
23	92190	M.8 Plain Washer		4	4
23	92193	M.6 Plain Washer	2		

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



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