



# Trianco

## TRO Range

### Commissioning and Servicing Instructions



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

## Commissioning and Servicing Instructions

*With*  
SELECTOS.

TO BE RETAINED BY  
HOUSEHOLDER

TRO 12/14

\*TRO 15/19

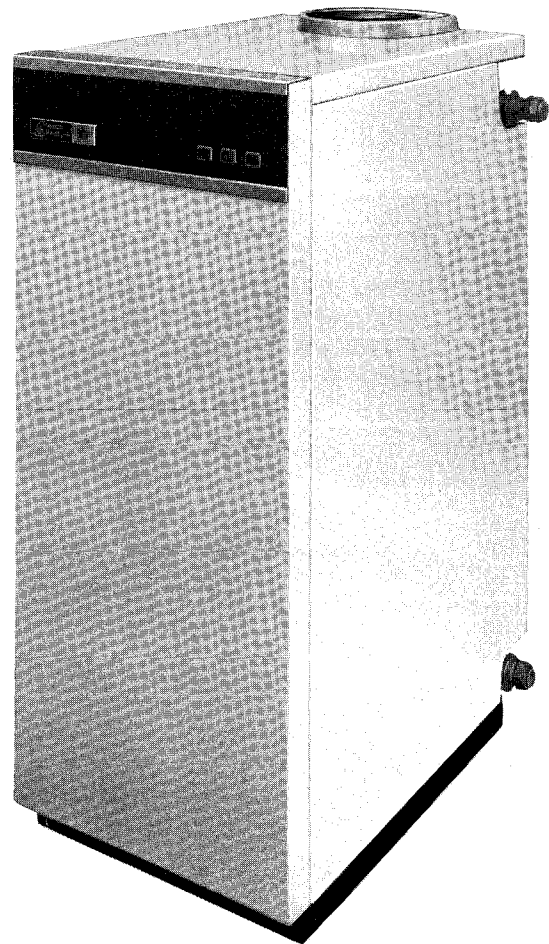
\*TRO 20/25

\*TRO 28/32

TRO 37/45

TRO 50/73

\*Mk. II Models.



### COMMISSIONING

1. Ensure that all the flue baffles are correctly located on their support brackets (See diagrams for arrangement). Remove cardboard transit spacers.
2. Switch off electricity supply at the mains.
3. Slacken off the two fixing screws on burner fixing flange and remove burner from boiler burner head.
4. Check electrodes, nozzle size and head settings by reference to appropriate diagram, ensuring that the nozzle is centrally positioned in the blast tube.
5. Check that the photo-cell is correctly located in its socket.
6. Replace burner in boiler, ensuring that the blast tube is pushed fully through fixing flange.
7. Air adjustment see Page 3.
8. Ensure that the boiler is full of water and that all valves are fully open.
9. Check that all oil and electrical connections are made.

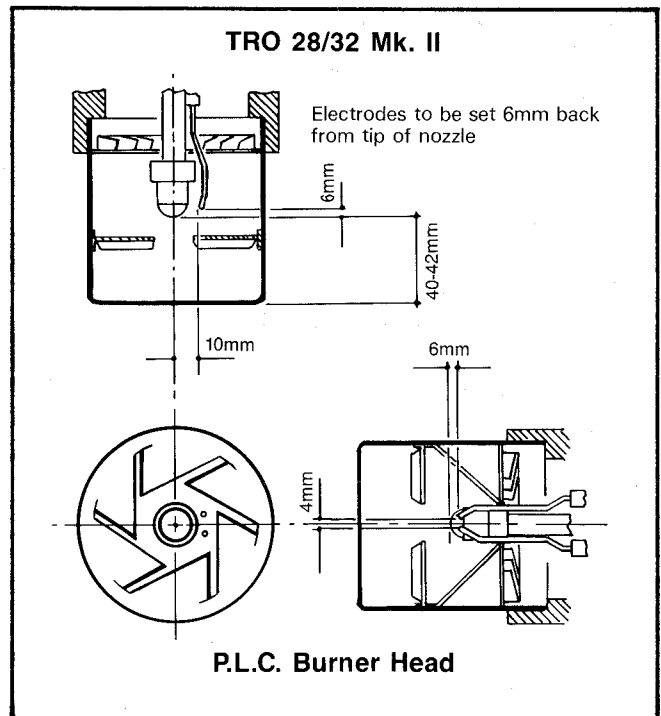
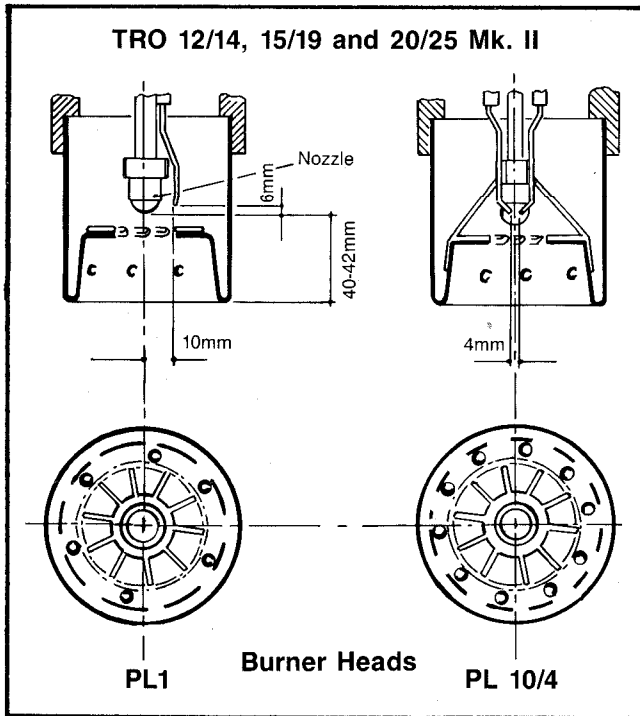
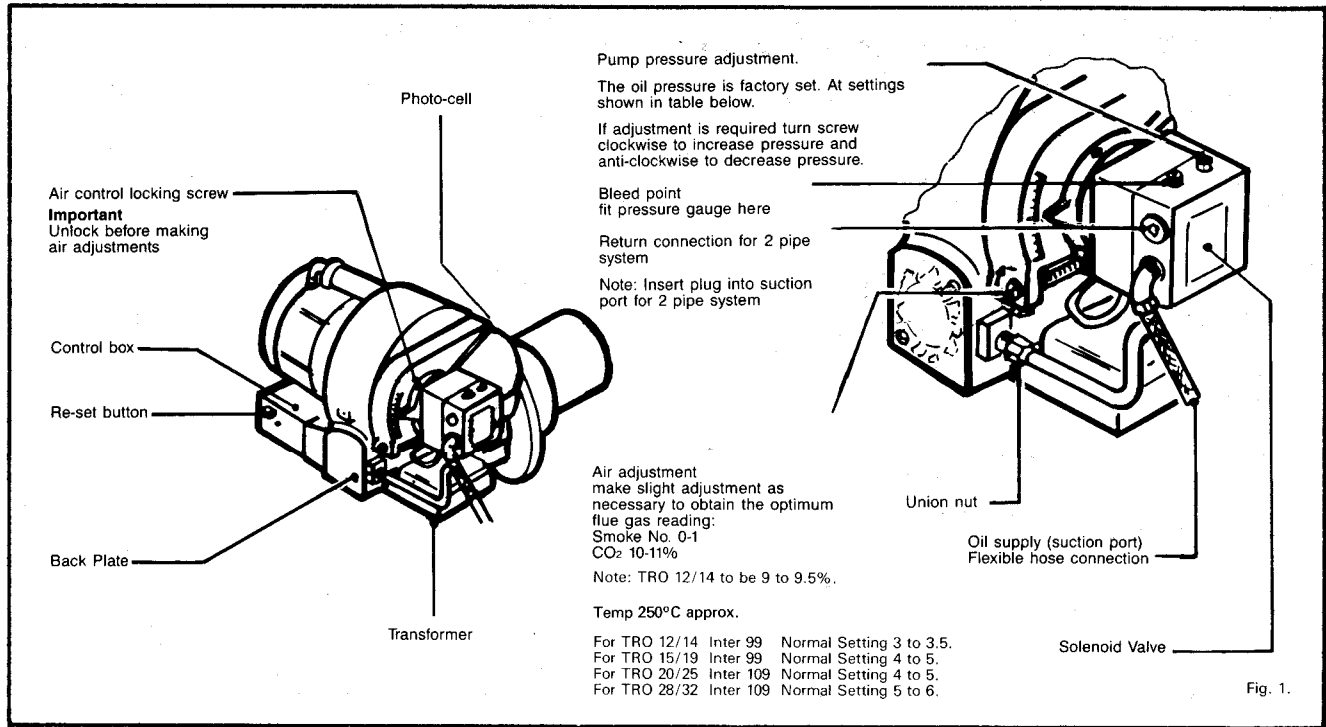
10. With single pipe systems disconnect the union of the flexible oil hose adjoining the oil pipe and open stop valves slowly. Run off some oil into a container to establish a clean and air-free supply to the pump.
  11. Vent air from oil pump through bleed point provided. (See burner diagram for tapping).
  12. Check that any room thermostat, time clock, etc., is in the 'ON' position, including the boiler thermostat.
  13. Switch on mains electrical supply and the burner will start.
- N.B. Until all air is purged from the oil lines the flame may be unstable, causing the burner to lock out. If so, wait one minute then press re-set button on control box.
14. Remove top casing from boiler and view flame through sight glass. Adjust air band if necessary to obtain a light orange flame with no visible smoke.
  15. Start and stop the burner several times until the flame shuts off sharply indicating that any remaining air bubbles have been dispersed.
  16. After 15 minutes running take smoke and CO<sub>2</sub> readings through sampling hole in top of boiler. Make further adjustments of air if necessary to obtain smoke No. 0-1 CO<sub>2</sub> 9-9.5% for TRO 12/14, 10-11% on TRO 15/19, 20/25 and 28/32 models, and a flue temperature of approximately 250°C.
  17. Set all systems controls as required and re-fit top casing and close the front doors of boiler.

### FAULT FINDING CHART

FAULT	POSSIBLE CAUSE	ACTION
THE BURNER WILL NOT START WHEN THE LOCK-OUT RESET BUTTON IS PUSHED.	The fuse has blown.	Fit new fuse (5 amp.) to boiler.
	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.
	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.
	Faulty photo-cell.	Change cell.
	Faulty control box.	Change control box.
FLAME BURNS ONE SIDED.	Nozzle partially blocked or damaged.	Replace nozzle.

**COMMISSIONING INSTRUCTIONS**

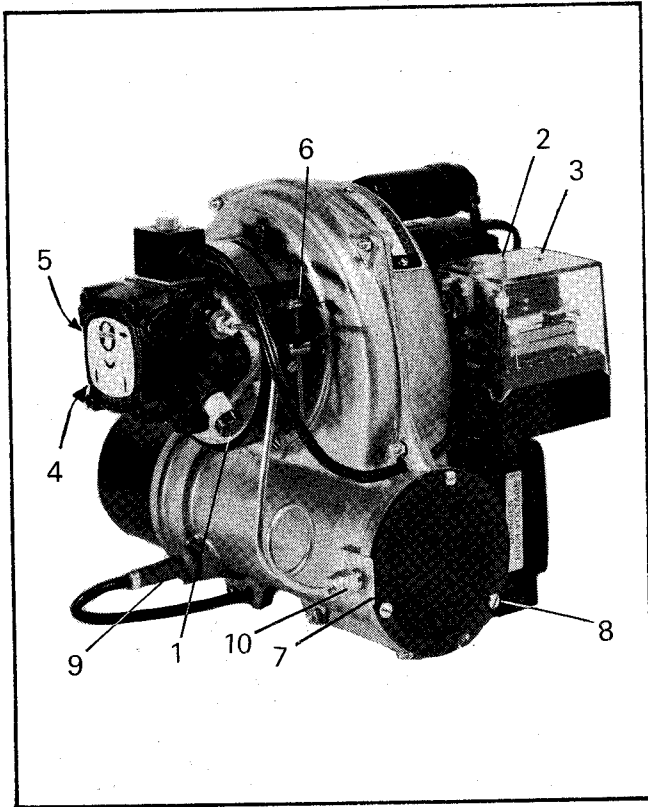
**Electro-Oil Inter 99 and 109 Oil Burners**



BOILER MODEL	RATED kW	OUTPUT BTU/HR	ELECTRO-OIL BURNER MODEL	BURNER HEAD	DANFOSS NOZZLE	PUMP PRESSURE p.s.i.	KEROSENE FIRING RATE ml/min.
TRO 12/14	14	48,000	INTER 99	PL.1	0.50 80°H	100	29.5
TRO 15/19	19	65,000	INTER 99	PL.10/4	0.60 80°H	120	40.5
TRO 20/25	25	85,000	INTER 109	PL.10/4	0.75 80°H	140	53.0
TRO 28/32	32	110,000	INTER 109	P.L.C.	1.00 80°S	150	68.0
TRO 37/45	45	154,000	RIELLO MECTRON 10	—	1.35 60°S	132	90
TRO 50/73	73	250,000	RIELLO MECTRON 10	—	2.25 60°S	132	150

# COMMISSIONING INSTRUCTIONS

## Selectos Model D.11 Oil Burners

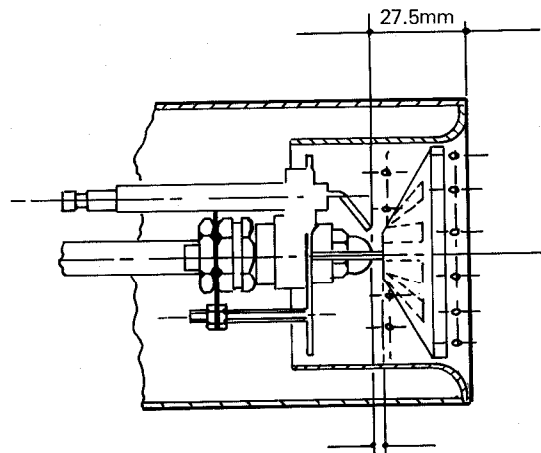


1. Pressure gauge plug.
2. Lock-out light
3. Reset button.
4. Bleed screw.
5. Oil pressure adjusting screw.
6. Air band adjusting screw.
7. Rotatable block.
8. Inspection disc screws.
9. Photo resistor.
10. Union nut.

# SELECTOS BURNER HEAD SETTINGS

## USED ON TRO12/14 BOILER

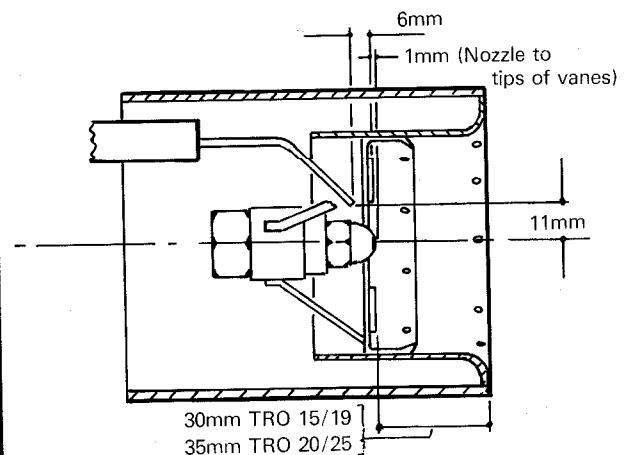
### D11/A20 HEAD SETTINGS



Electrodes to be set 3mm apart, flush with front of nozzle, 10mm above nozzle centre  
 3mm (nozzle to Flame ring)

## USED ON TRO 15/19 Mk. II & 20/25 Mk. II BOILER

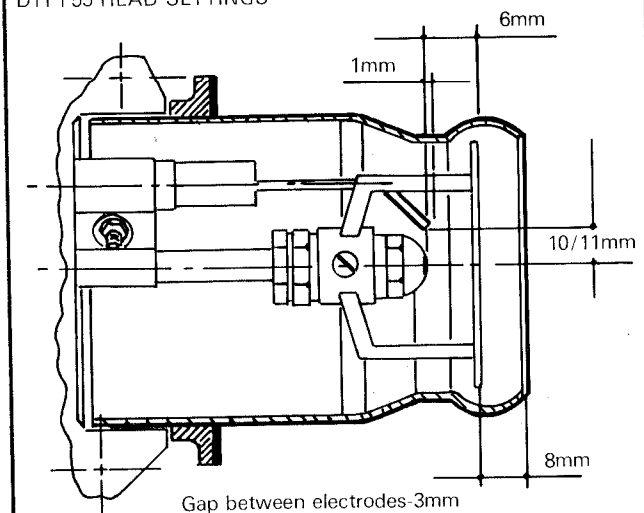
### D11/A86/4 HEAD SETTINGS



Gap between electrodes-3mm

## USED ON TRO 28/32 Mk. II BOILER

### D11 F55 HEAD SETTINGS



Gap between electrodes-3mm

Boiler Model	TRO 12/14	TRO 15/19	TRO 20/25	TRO 28/32
Rated kW	14	19	25	32
Output BTU/Hr	48,000	65,000	85,000	110,000
Selectos Burner Model	D.11	D.11	D.11	D.11
Burner Head	A.20	A.36/4	A.36/4	F.55
Danfoss Nozzle	0.50 80°H	0.60 80°H	0.75 80°H	1.1 60°S
Pump Pressure p.s.i.	100	120	140	110
Kerosene Firing Rate ml/min.	28.5	40.0	52.0	67.0

## SERVICING THE BURNER

1. Switch off electricity at the main.
2. Slacken off the two fixing screws on burner fixing flange and remove burner from boiler.
3. Thoroughly clean boiler in accordance with separate Users Instructions.
4. Remove back plate, disconnect oil pipe union nut and withdraw photo-cell.
5. Withdraw oil pipe assembly sufficiently to unclip ignition leads, then fully withdraw.
6. Clean ignition electrodes and combustion head, wiping other parts clean but NOT nozzle tip.
7. 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 rubber pump coupling).
8. 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.
9. Replace burner in boiler, and switch on electricity supply.
10. Switch on burner and check flame visually.
11. After ten minutes running take CO<sub>2</sub> and smoke readings, making any adjustments necessary. (Refer to Commissioning Instructions).
12. 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.
13. 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.

- (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.

To remove the fuel pump, unlock the screw securing the air control damper Fig. 1. Screw the air control damper to the fully closed position to obtain access to the pump mounting screws.

NOTE: After the pump has been re-fitted it is important that the air control damper is re-set to its correct position, and the combustion data is checked.

## 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.

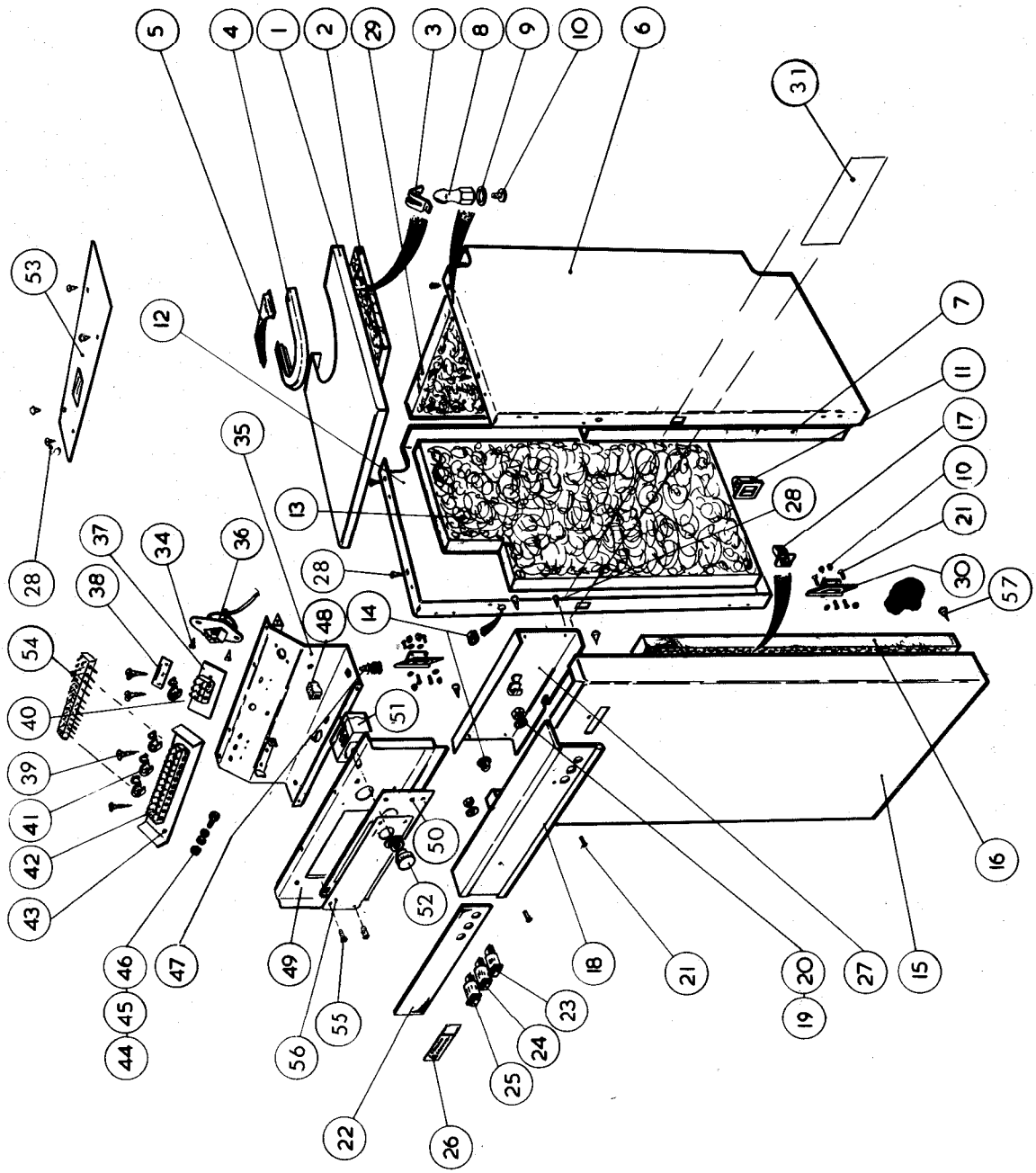
Boiler flueway cleaning may, by arrangement, be part of the annual service. The procedure for this operation is as follows:

1. Switch off the mains electricity supply.
2. Remove the casing top.
3. Remove the flueway cover by releasing the thumb screws.
4. Lift out the flue baffles.
5. Remove the burner by slackening off the two securing screws (leaving the flange in position).
6. Brush all deposits from the baffles and boiler internal surfaces.
7. Remove all deposits from the boiler refractory floor using a vacuum cleaner.
8. Wash the baffles and boiler internal surfaces with an anti-rust solution.
9. Re-assemble the parts, ensuring that the flue baffles are correctly located and the flue-cover is tightly sealed.

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

## COMPLETE CASING ASSEMBLY—STANDARD MODELS

Item No.	Reference No.	Description	12/14	15/19	20/25	28/32	37/45	50/73
1	27101	TOP PANEL	1	1	—	—	—	—
1	27291	TOP PANEL	—	—	1	1	—	—
1	27710	TOP PANEL	—	—	—	—	1	1
2	27102	TOP PANEL INSULATION	1	1	—	—	—	—
2	27292	TOP PANEL INSULATION	—	—	1	1	—	—
2	27712	TOP PANEL INSULATION	—	—	—	—	1	1
3	95190	Spire Clip (latch) SCO 2130	4	4	4	4	6	6
4	27111	FLUE BEZEL	1	1	1	1	—	—
4	27720	FLUE BEZEL	—	—	—	—	1	1
5	27112	FLUE BEZEL TRIM	1	1	1	1	—	—
5	27722	FLUE BEZEL TRIM	—	—	—	—	1	1
6	27091	R.H. SIDE CASING	1	1	—	—	—	—
6	27281	R.H. SIDE CASING	—	—	1	1	—	—
6	27700	R.H. SIDE CASING	—	—	—	—	1	1
7	27092	R.H. SIDE CASING INSULATION	1	1	—	—	—	—
7	27282	R.H. SIDE CASING INSULATION	—	—	1	1	—	—
7	27702	R.H. SIDE CASING INSULATION	—	—	—	—	1	1
8	95191	Stud, Spire SBU 2141/17.	4	4	4	4	6	6
9	92211	4 B.A. Shakeproof washer	4	4	4	4	6	6
10	91171	4B.A. Round Hd. Screw x 3/16" long	4	4	4	4	6	6
11	95163	I.T.W. 162 EM 560-00 Latch	4	4	1	1	1	1
12	27081	L.H. SIDE CASING	1	1	—	—	—	—
12	27271	L.H. SIDE CASING	—	—	1	1	—	—
12	27690	L.H. SIDE CASING	—	—	—	—	1	1
13	27082	L.H. SIDE CASING INSULATION	1	1	—	—	—	—
13	27272	L.H. SIDE CASING INSULATION	—	—	1	1	—	—
13	27692	L.H. SIDE CASING INSULATION	—	—	—	—	1	1
14	99558	Snap Fit Grommet, Revite P2919	2	2	2	2	2	2
15	27071	DOOR CASING	1	1	—	—	—	—
15	27261	DOOR CASING	—	—	1	1	—	—
15	27681	DOOR CASING	—	—	—	—	1	1
16	27076	DOOR INSULATION	1	1	—	—	—	—
16	27265	DOOR INSULATION	—	—	1	1	—	—
16	27685	DOOR INSULATION	—	—	—	—	1	1
17	95162	I.T.W. 263 G.D. 0910-00 Strike	4	4	4	4	4	4
18	27077	FACIA PANEL	1	1	—	—	—	—
18	27262	FACIA PANEL	—	—	1	1	—	—
18	27682	FACIA PANEL	—	—	—	—	1	1
19	94263	6B.A. Nut	4	4	4	4	4	4
20	92211	6B.A. Washer	4	4	4	4	4	4
21	91169	Screw Csk. Hd. 6B.A. 3/8" Lq	4	4	4	4	4	4
22	27072	FACIA STRIP	1	1	—	—	—	—
22	27263	FACIA STRIP	—	—	1	1	—	—
22	27683	FACIA STRIP	—	—	—	—	1	1
23	96349	Red Light and Bezel Arco Electric SL184K	1	1	1	1	1	1
24	96350	Amber Light and Bezel Arco Electric SL184K	1	1	1	1	1	1
25	96351	Green Light and Bezel Arco Electric SL184K	1	1	1	1	1	1
26	35025	TRIANCO REDFYRE MOTIF	1	1	—	—	—	—
27	27073	COVER PANEL	1	1	—	—	—	—
27	27264	COVER PANEL	—	—	1	1	—	—
27	27684	COVER PANEL	—	—	—	—	1	1
28	91003	No. 6 Pan Hd. Pozi STS Type A	4	4	4	4	6	6
29	27173	BACK INSULATION	1	1	—	—	—	—
29	27343	BACK INSULATION	—	—	1	1	—	—
29	27754	BACK INSULATION	—	—	—	—	1	1
30	93172	Hinge	2	2	2	2	2	2
31	27075	WIRING DIAGRAM	1	1	1	1	1	1
34	91042	No. 6 x 10 Pan Hd. Pozi STS Type B	10	10	10	10	10	10
35	27151	MOUNTING CHASSIS	1	1	—	—	—	—
35	27321	MOUNTING CHASSIS	—	—	1	1	—	—
35	27741	MOUNTING CHASSIS	—	—	—	—	1	1
36	25157	Limit Stat Teddington AAM/B1/1 'D' Phial	1	1	1	1	1	1
37	27161	Insulation Film	1	1	1	1	1	1
38	96159	Mains Label	1	1	1	1	1	1
39	91079	Pan Hd. Pozi No. 4 x 16 STS Type Z	4	4	4	4	4	4
40	96275	3 Way Terminal Block	1	1	1	1	1	1
41	96806	Heyco S.R. 6P3-4 Cable Grip	5	5	5	5	5	5
42	96364	12 Way Terminal Socket	1	1	1	1	1	1
43	27157	Insulation Film	1	1	1	1	1	1
44	91033	M5 x 20 Pan Hd. Pozi Setscrew	1	1	1	1	1	1
45	92195	M5 Washer	1	1	1	1	1	1
46	94221	M5 Nut	2	2	2	2	2	2
47	96340	Fuse Holder	1	1	1	1	1	1
48	96359	Cap 6 Way Amp. 1-480705-0.	1	1	—	—	—	—
49	27121	CONTROL PANEL W.U.	1	1	—	—	—	—
49	27301	CONTROL PANEL W.U.	—	—	1	1	—	—
49	27731	CONTROL PANEL W.U.	—	—	—	—	1	1
50	27190	MOUNTING FACIA PLATE ASSEMBLY	1	1	1	1	1	1
51	25156	Boiler Stat Teddington TBB/80/1 'D' Phial (obsolete)	1	1	1	1	1	1
52	27131	Control Knob	1	1	—	—	—	—
53	27171	ELECTRICS COVER PLATE	1	1	—	—	—	—
53	27341	ELECTRICS COVER PLATE	—	—	1	1	—	—
53	27752	ELECTRICS COVER PLATE	—	—	—	—	1	1
54	96363	12 Way Terminal Block Plug	1	1	1	1	1	1
55	91317	M5 x 10 Pan Hd. Pozi Setscrew	4	4	4	4	4	4



TRO Mk. II CASINGS

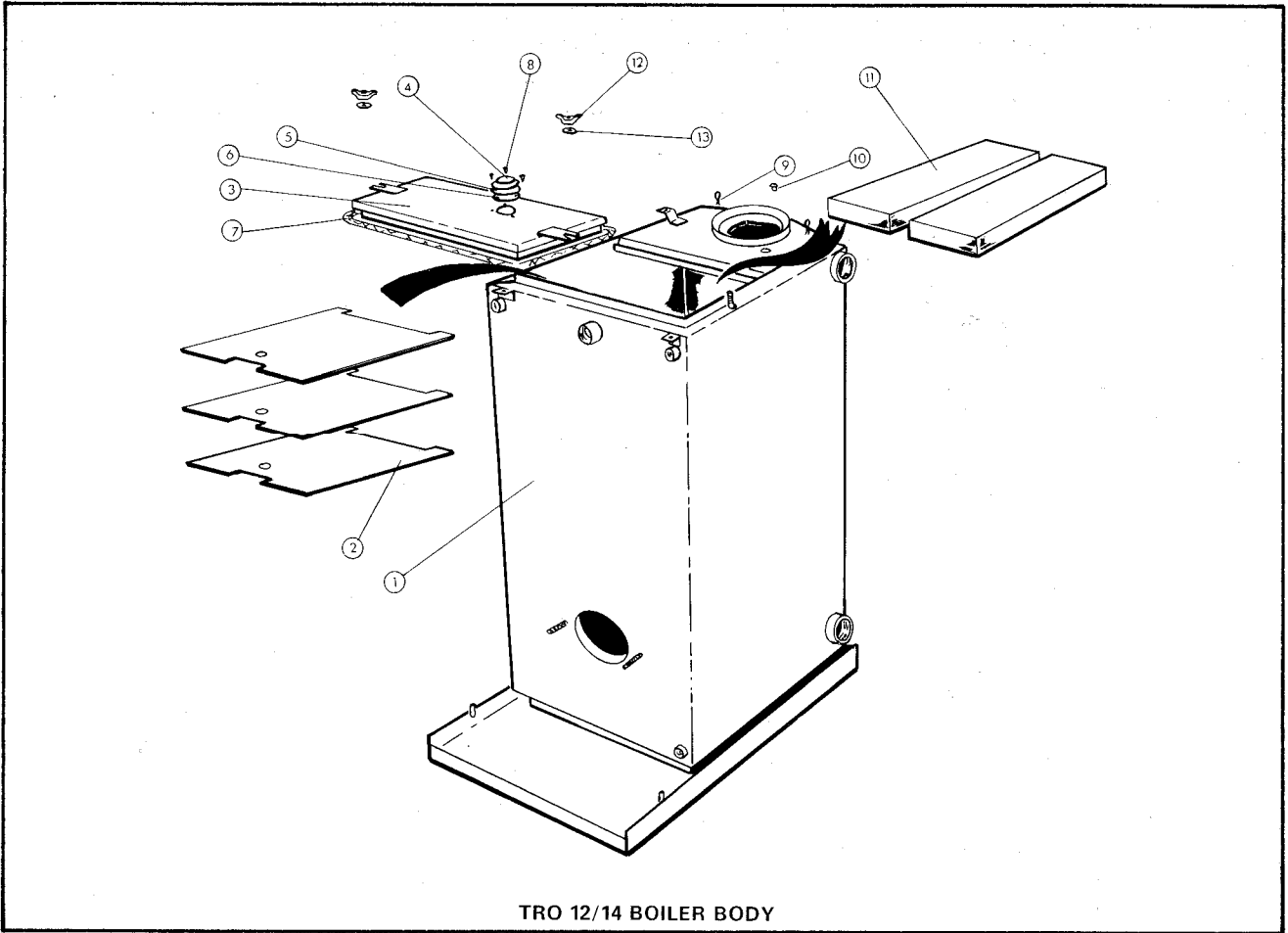
### COMPLETE BODY ASSEMBLY—STANDARD MODELS

Item No.	Reference No.	Description	12/14	15/19	20/25	28/32	37/45	50/73
1	27480	BOILER BODY . . . . .	1	—	—	—	—	—
1	27010	BOILER BODY . . . . .	—	1	—	—	—	—
1	27210	BOILER BODY . . . . .	—	—	1	—	—	—
1	27410	BOILER BODY . . . . .	—	—	—	1	—	—
1	27600	BOILER BODY . . . . .	—	—	—	—	1	—
1	27810	BOILER BODY . . . . .	—	—	—	—	—	1
2	27485	BAFFLES . . . . .	3	—	—	—	—	—
2	27063	BAFFLES . . . . .	—	6	—	—	—	—
2	27345	BAFFLES . . . . .	—	—	6	—	—	—
2	27415	BAFFLES . . . . .	—	—	—	9	—	—
2	27451	BAFFLES . . . . .	—	—	—	—	6	—
2	27821	BAFFLES . . . . .	—	—	—	—	—	9
3	27051	COVER PLATE . . . . .	1	1	—	—	—	—
3	27241	COVER PLATE . . . . .	—	—	1	1	—	—
3	27661	COVER PLATE . . . . .	—	—	—	—	1	1
4	26049	Sight Glass Retainer . . . . .	1	1	1	1	1	1
5	26009	Sight Glass . . . . .	1	1	1	1	1	1
6	26010	Sight Glass Gasket . . . . .	1	1	1	1	1	1
7	98184	Glass Fibre Rope Seal . . . . .	1	1	1	1	1	1
8	91003	No. 6 x 10 Pan Hd. Pozi STS . . . . .	3	3	3	3	3	3
9	93173	Split Pin . . . . .	2	2	2	2	2	2
10	95185	Plug, Flue Gas Test . . . . .	1	1	1	1	1	1
11	27061	REFRACTORY BASE . . . . .	1	2	—	—	—	—
11	27064	REFRACTORY BASE . . . . .	3	3	2	2	—	—
11	26695	REFRACTORY BASE . . . . .	—	—	—	—	2	2
12	94225	M6 Wing Nuts . . . . .	2	2	2	2	2	2
13	92189	M6 Washer . . . . .	1	2	2	2	2	2
14	27142	BOILER FRONT INSULATION . . . . .	2	1	—	—	—	—
14	27342	BOILER FRONT INSULATION . . . . .	—	—	1	1	—	—
14	27753	BOILER FRONT INSULATION . . . . .	—	—	—	—	1	1

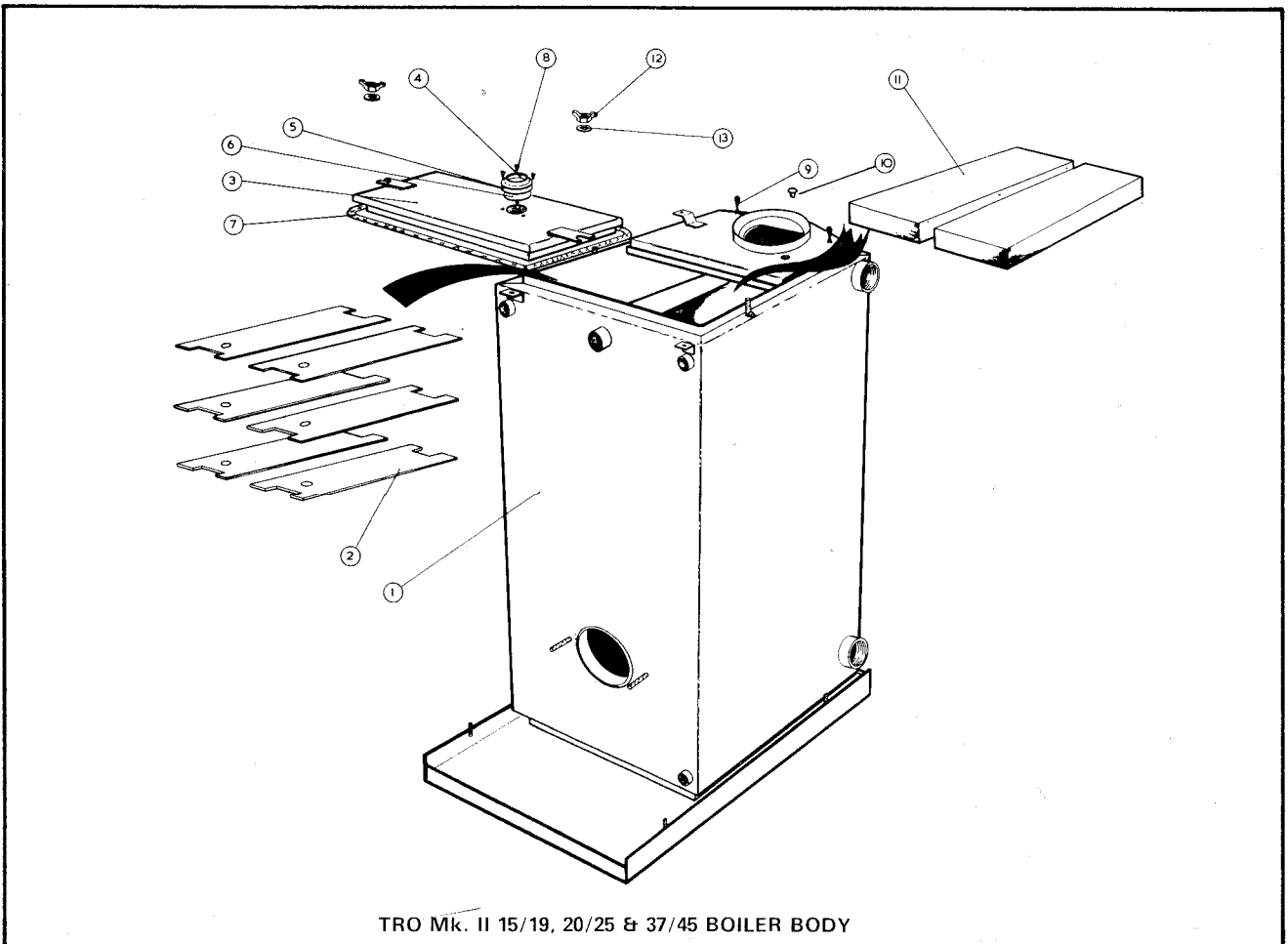
### COMPLETE BODY ASSEMBLY—BOILER HOUSE MODELS

Item No.	Reference No.	Description	12/14	15/19	20/25	28/32	37/45	50/73
1	27510	BOILER BODY . . . . .	1	—	—	—	—	—
1	27180	BOILER BODY . . . . .	—	1	—	—	—	—
1	27460	BOILER BODY . . . . .	—	—	1	—	—	—
1	27350	BOILER BODY . . . . .	—	—	—	1	—	—
1	27840	BOILER BODY . . . . .	—	—	—	—	1	—
1	27860	BOILER BODY . . . . .	—	—	—	—	—	1
2	27485	BAFFLES . . . . .	3	—	—	—	—	—
2	27063	BAFFLES . . . . .	—	6	—	—	—	—
2	27345	BAFFLES . . . . .	—	—	6	—	—	—
2	27415	BAFFLES . . . . .	—	—	—	9	—	—
2	27451	BAFFLES . . . . .	—	—	—	—	6	—
2	27821	BAFFLES . . . . .	—	—	—	—	—	9
3	27051	COVER PLATE . . . . .	1	1	—	—	—	—
3	27241	COVER PLATE . . . . .	—	—	1	1	—	—
3	27661	COVER PLATE . . . . .	—	—	—	—	1	1
4	26049	Sight Glass Retainer . . . . .	1	1	1	1	1	1
5	26009	Sight Glass . . . . .	1	1	1	1	1	1
6	26010	Sight Glass Gasket . . . . .	1	1	1	1	1	1
7	98184	Glass Fibre Rope Seal . . . . .	1	1	1	1	1	1
8	91003	No. 6 x 10 Pan Hd. Pozi STS . . . . .	3	3	3	3	3	3
9	93173	Split Pin . . . . .	2	2	2	2	2	2
10	95185	Plug, Flue Gas Test . . . . .	1	1	1	1	1	1
11	27061	REFRACTORY BASE . . . . .	1	2	—	—	—	—
11	27064	REFRACTORY BASE . . . . .	3	3	2	2	—	—
11	26695	REFRACTORY BASE . . . . .	—	—	—	—	2	2
12	94225	M6 Wing Nuts . . . . .	2	2	2	2	2	2
13	92189	M6 Washer . . . . .	1	2	2	2	2	2

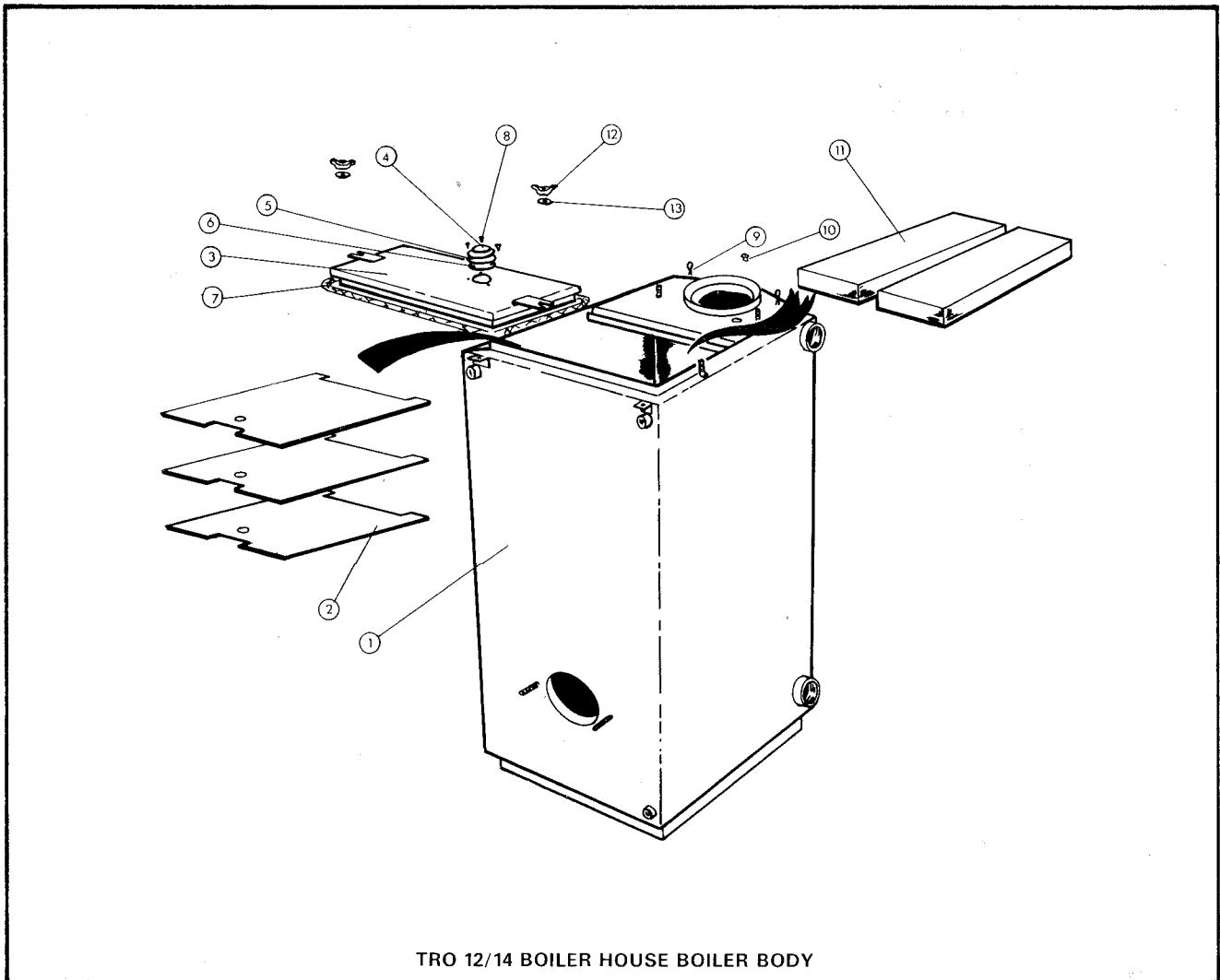
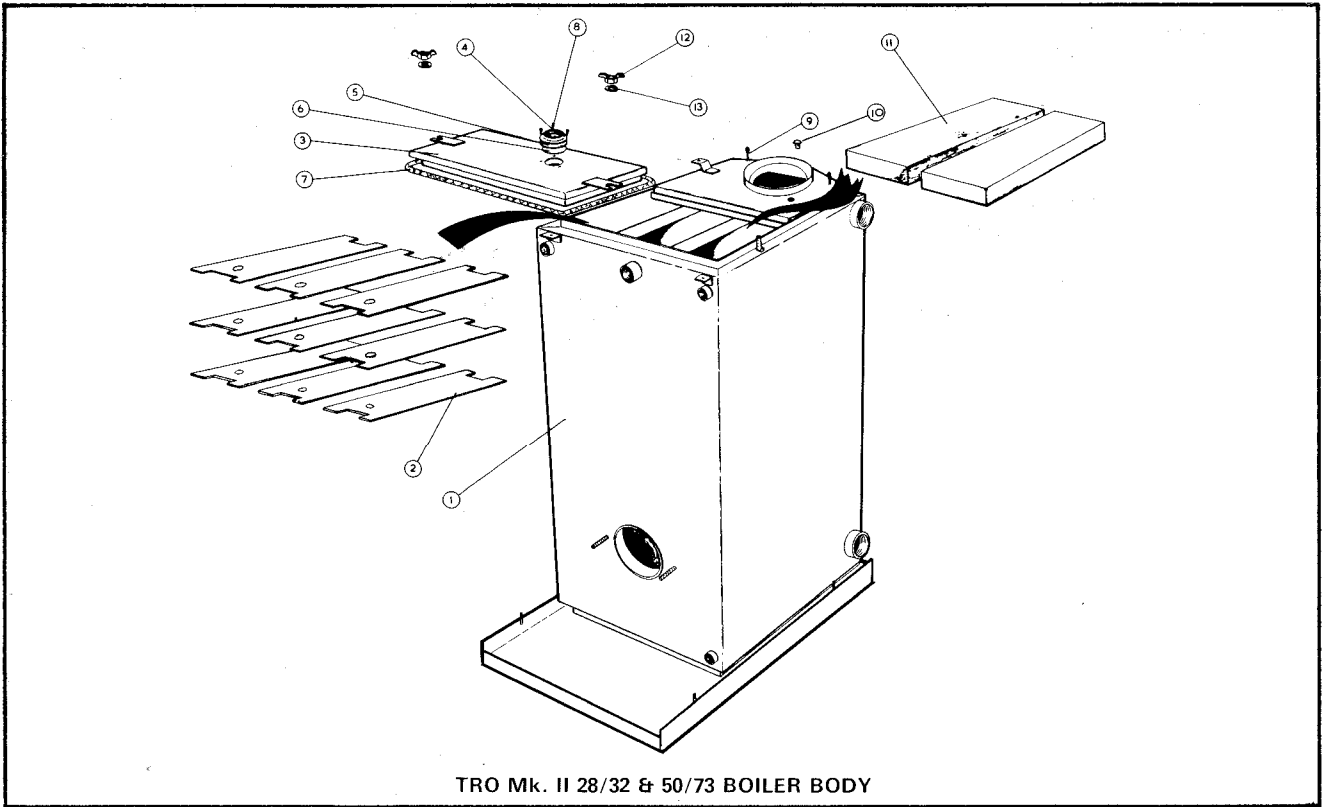


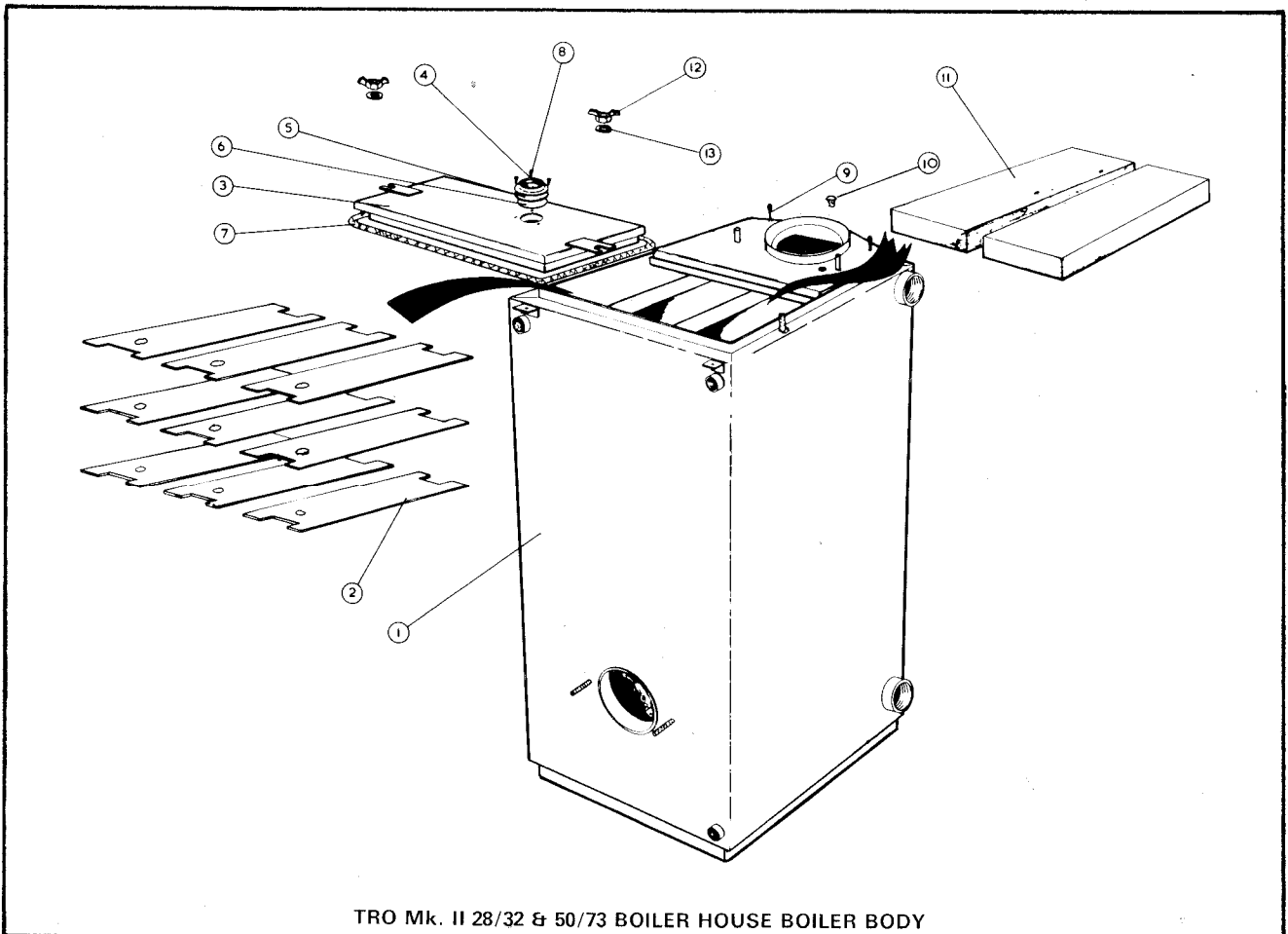
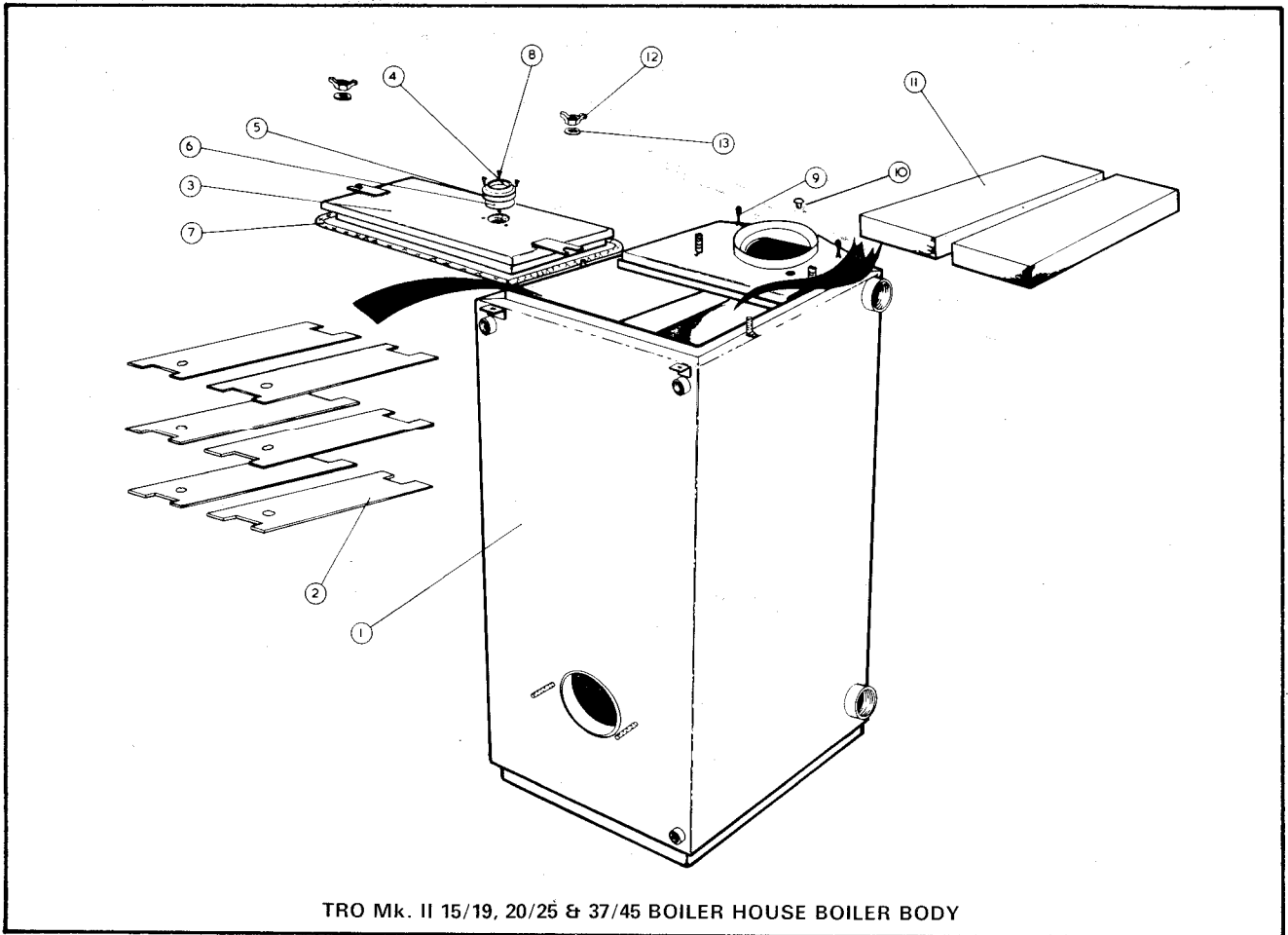


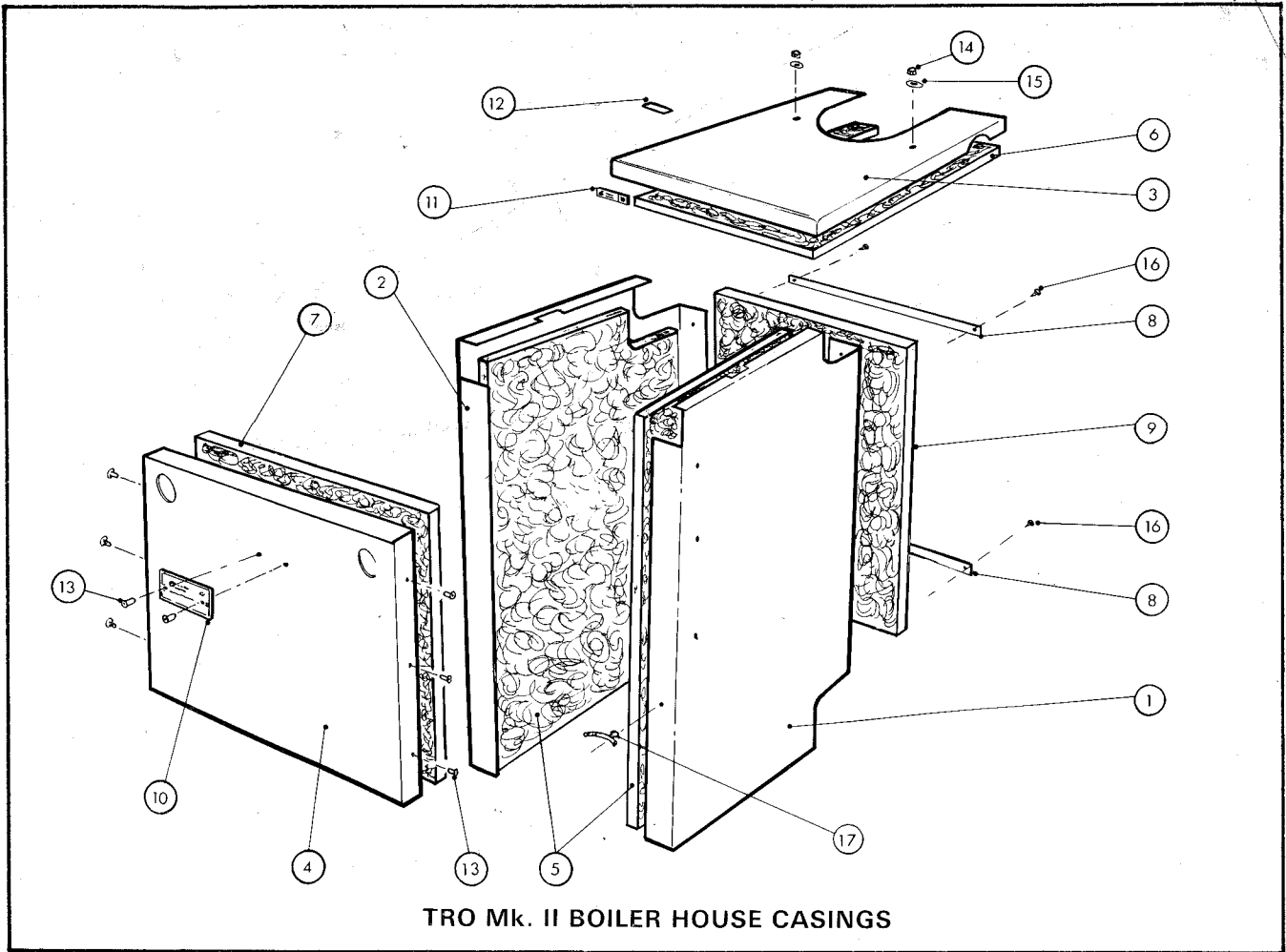
TRO 12/14 BOILER BODY



TRO Mk. II 15/19, 20/25 & 37/45 BOILER BODY







**TRO Mk. II BOILER HOUSE CASINGS**

**TRO Mk. II BOILER HOUSE CASINGS**

Item No.	No. Off	Description	Part No.'s					
			12/14	15/19	20/25	28/32	37/45	50/73
1	1	RIGHT HAND PANEL . . . . .	27363	27363	27373	27373	27901	27901
2	1	LEFT HAND PANEL . . . . .	27361	27361	27371	27371	27891	27891
3	1	TOP CASING W.U. . . . .	27356	27356	27357	27357	27358	27358
4	1	FRONT PANEL . . . . .	27366	27366	27376	27376	27911	27911
5	2	SIDE INSULATION . . . . .	27362	27362	27372	27372	27892	27892
6	1	TOP INSULATION . . . . .	27386	27386	27387	27387	27388	27388
7	1	FRONT INSULATION . . . . .	27367	27367	27377	27377	27912	27912
8	2	BACK SUPPORT . . . . .	27368	27368	27378	27378	27921	27921
9	1	BACK INSULATION . . . . .	27369	27369	27379	27379	27922	27922
10	1	SERIAL NUMBER PLATE . . . . .						
11	1	MOTIF . . . . .	35025	35025	35025	35025	35025	
12	1	FROST STAT LABEL . . . . .						
13	8	POP RIVET D/44 B.S. . . . .	93194	93194	93194	93194	93194	93194
14	2	M.8 DOMED NUT . . . . .	94259	94259	94259	94259	94259	94259
15	2	M.8 WASHER . . . . .	92190	92190	92190	92190	92190	92190
16	4	No. 6 PAN HD. POZI S.T.S. . . . .	91003	91003	91003	91003	91003	91003
17	1	FASTEX STRAP . . . . .	95203	95203	95203	95203	95203	95203

IMPORTANT WHEN THE T.R.O. 15/19, 20/25, & 28/32 BOILERS ARE FITTED WITH THE T.R. FLUE TERMINAL SILENCER ONLY KEROSENE CLASS C2 FUEL SHOULD BE USED.

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



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