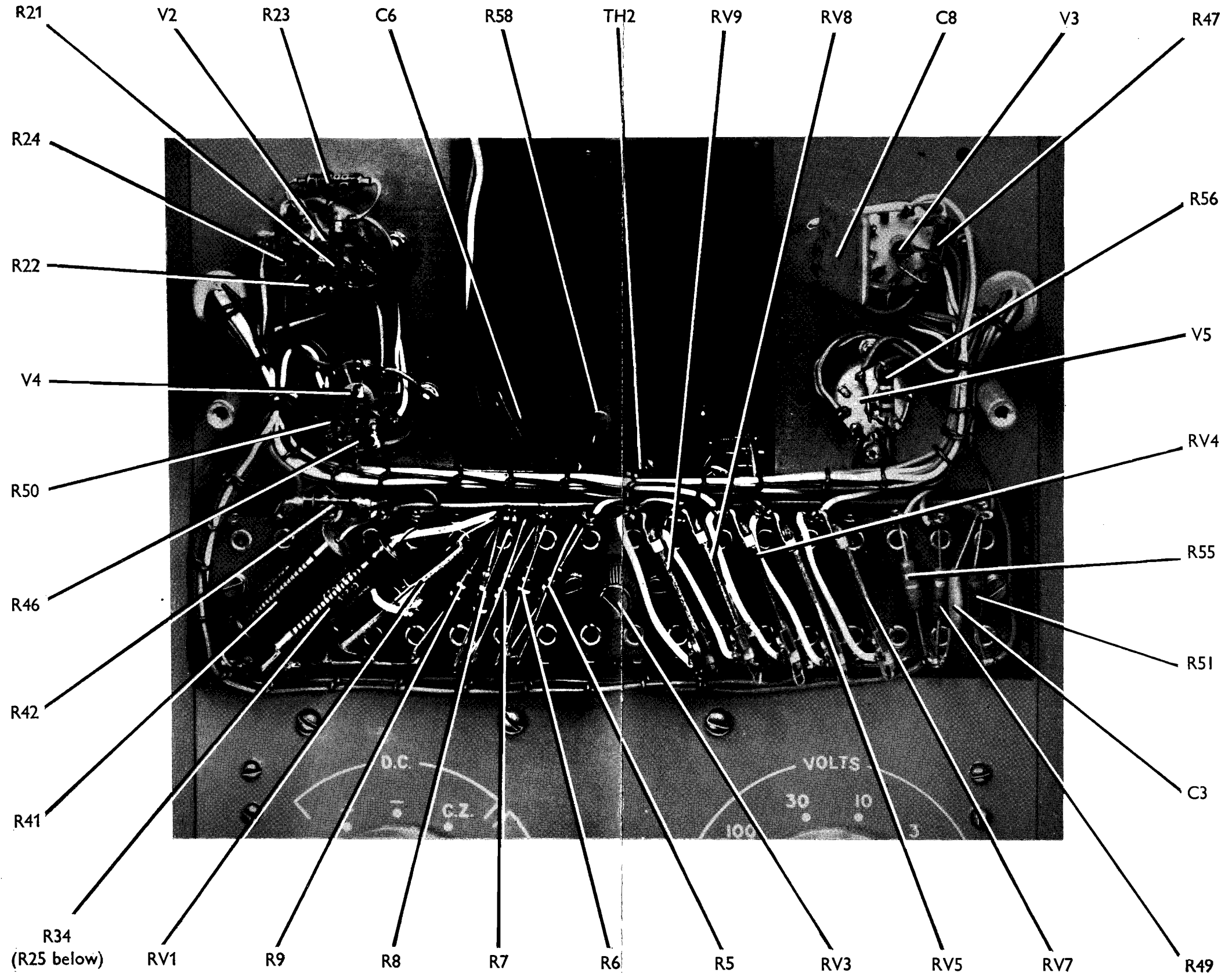
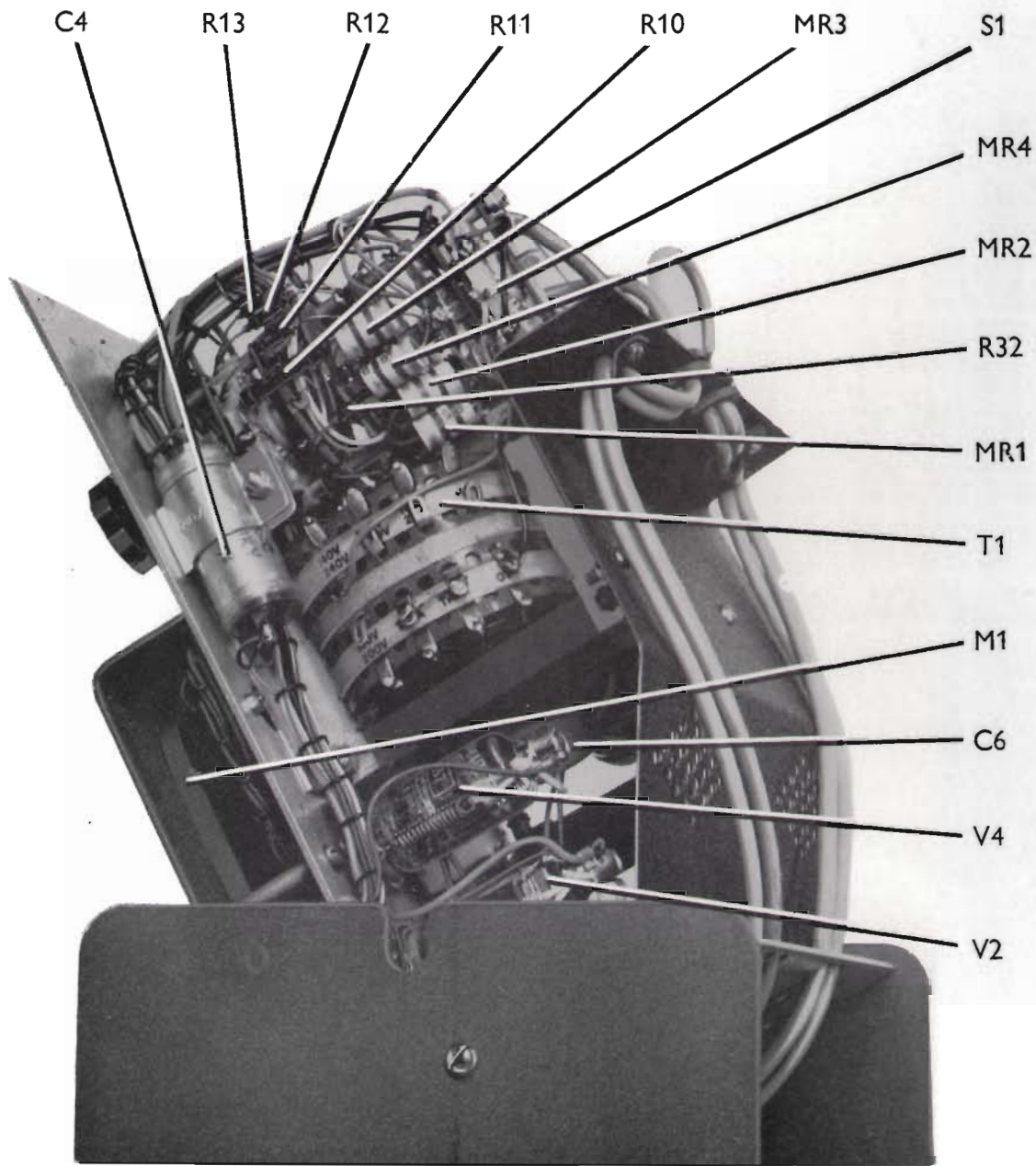


COMPONENT LAYOUT ILLUSTRATIONS

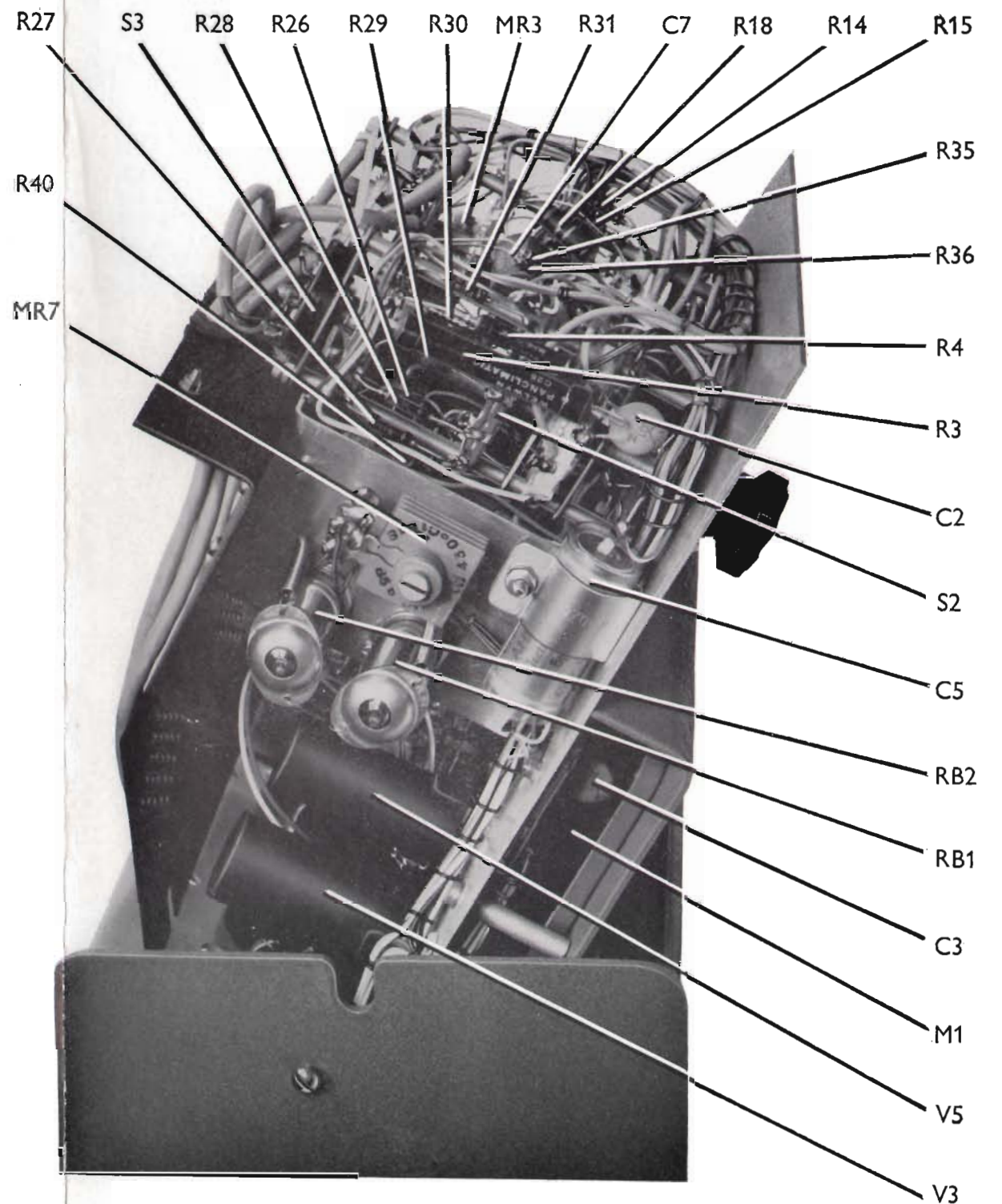


R59 is connected between Pins 1 and 6 of V3

FRONT
WITH METER PANEL REMOVED

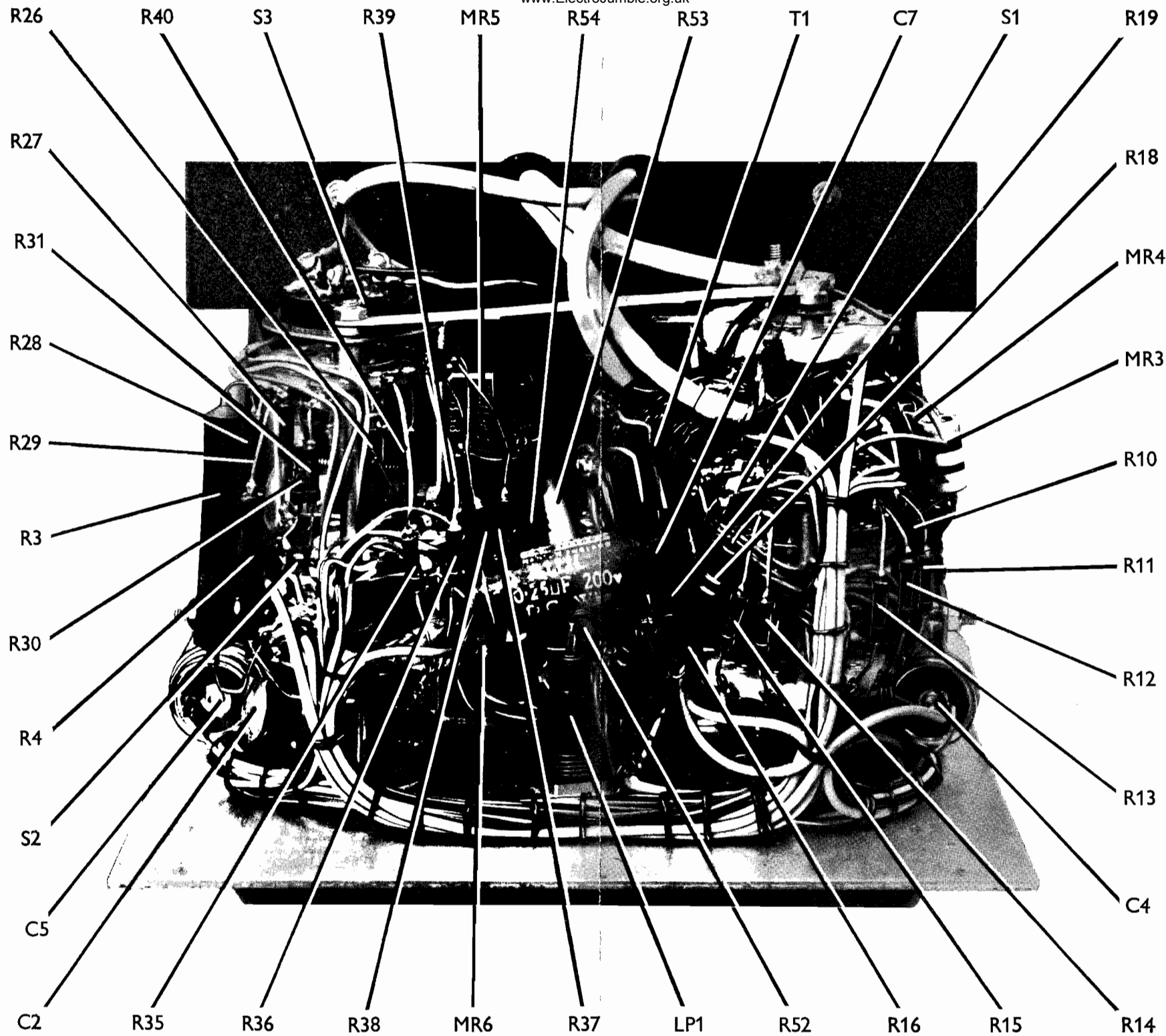


INTERIOR VIEW FROM LEFT



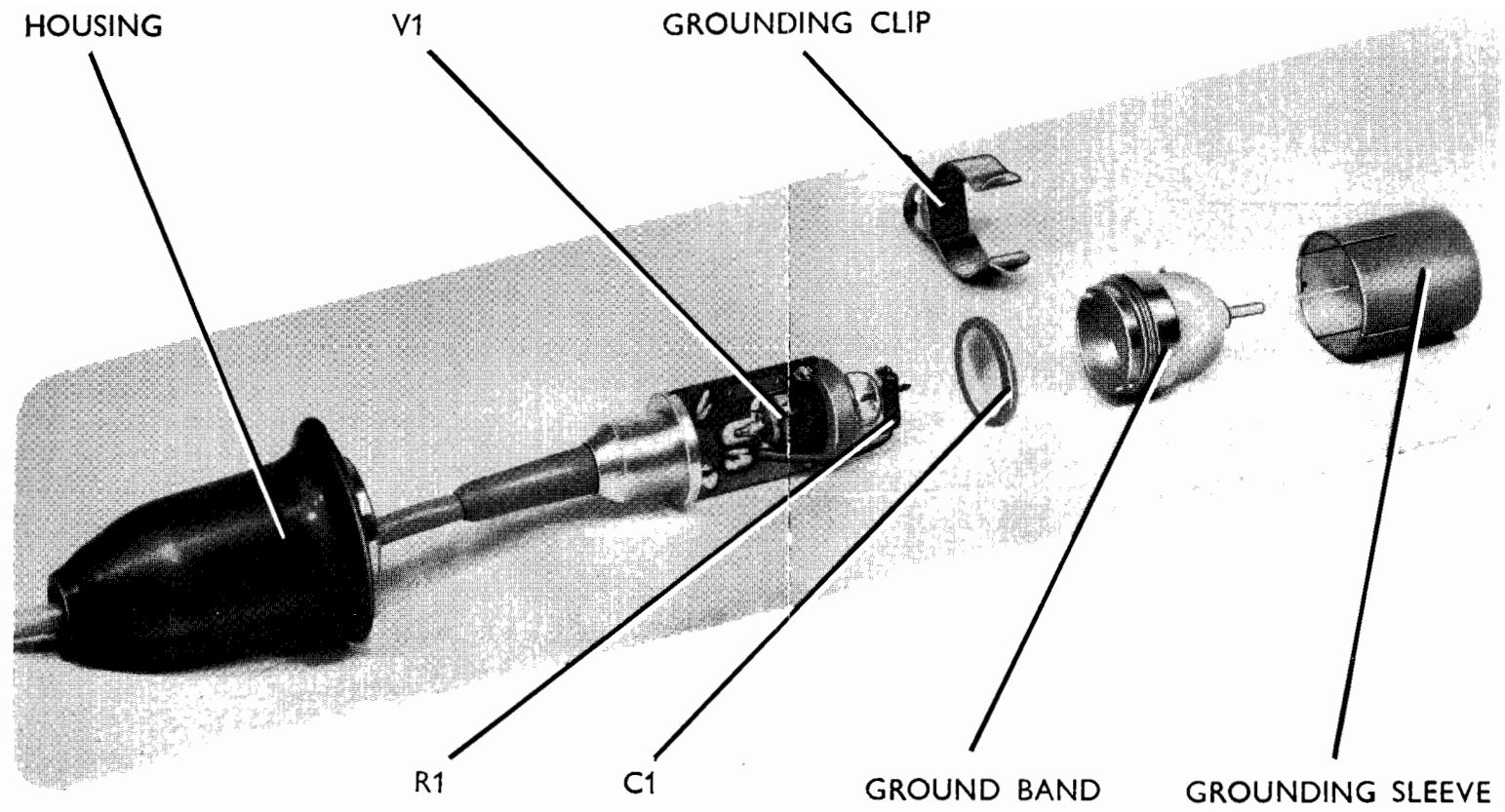
INTERIOR VIEW FROM RIGHT

INTERIOR VIEWS



INTERIOR VIEW FROM TOP

Fig. 6.3



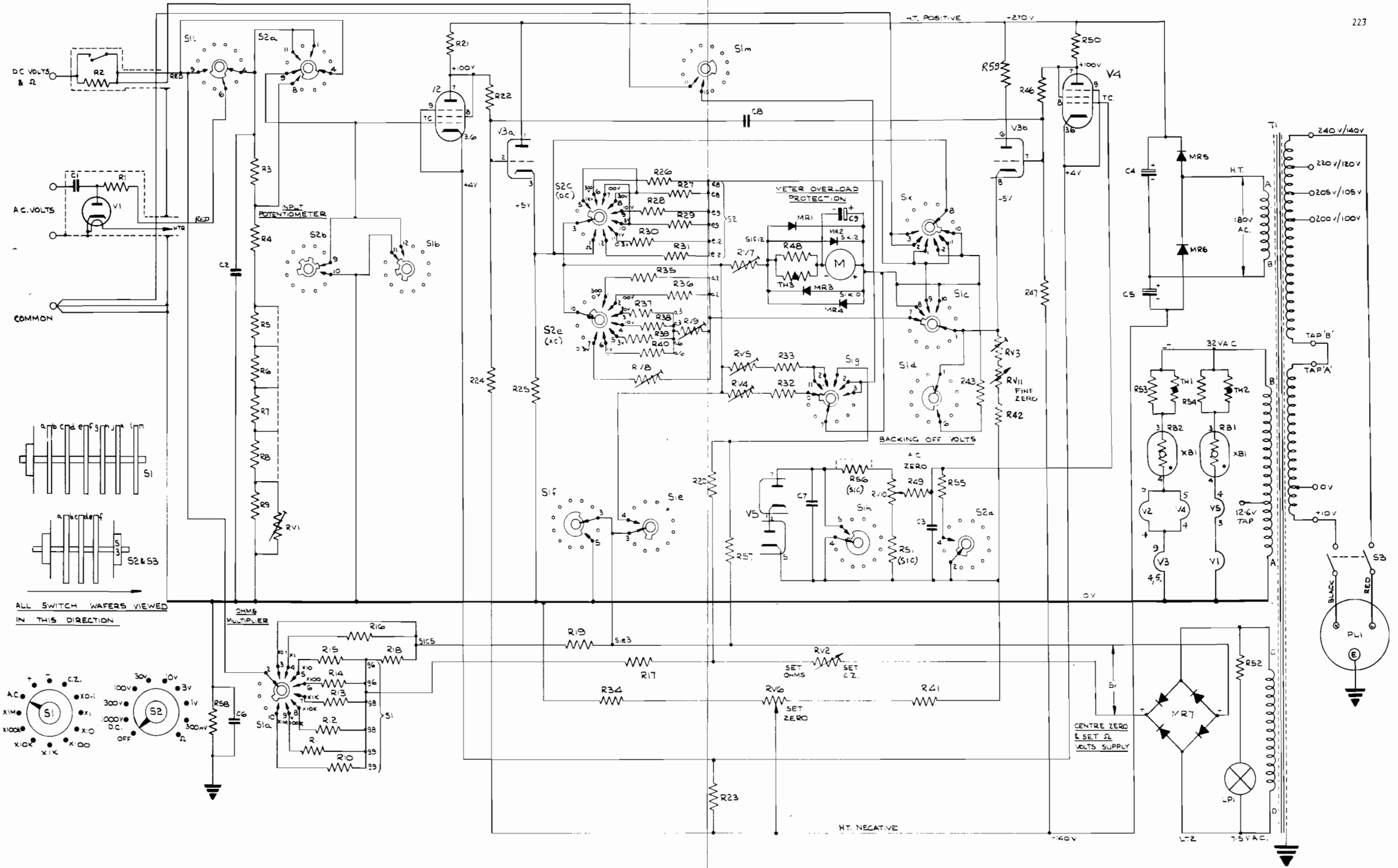
PROBE UNIT

Fig. 6.4

8 DRAWINGS

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ALL SWITCH WAFERS VIEWED IN THIS DIRECTION

- NOTES**
1. For component values see Spares Ordering Schedule.
 2. Earlier models have potentiometers RV3 and RV11 in the cathode circuit of V3a.

CIRCUIT DIAGRAM

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Fig. 8.1

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Spares Ordering Schedule

No. SOS/1041B

for VACUUM TUBE VOLTMETER, TYPE TF 1041B

When ordering replacement parts, always quote the TYPE NUMBER and SERIAL NUMBER of the instrument, the QUANTITY required and the appropriate SOS ITEM NUMBER.

For example, to order replacements for the 1-M Ω resistor, R2, and the 0.01- μ F capacitor, C6, quote as follows :—

Spares required for TF1041B, Serial No. 000000

1 off, SOS Item 2

1 off, SOS Item 78

It is important that the distinguishing code "SOS" preceding each item number should not be omitted.

<i>SOS Item No.</i>	<i>Circuit Ref.</i>	<i>Description</i>	<i>Works Ref.</i>
RESISTORS			
1	R1	Composition, 7.5 M Ω \pm 5%, $\frac{1}{2}$ W. Included in Item 121.	15-TM5776
2	R2	Composition, 1 M Ω \pm 10%, $\frac{1}{2}$ W. Included in Item 126.	10-TM5731
3	R3	Carbon, High-Stability, 100 M Ω \pm 5%, 2W.	43-TF1041B
4	R4	Carbon, High-Stability, 2.9 M Ω \pm 1%, $\frac{3}{4}$ W.	44-TF1041B
5	R5	Composition, 100 k Ω \pm 10%, $\frac{1}{2}$ W.	2-TM5730
6	R6	Composition, 100 k Ω \pm 10%, $\frac{1}{2}$ W.	2-TM5730
7	R7	Composition, 100 k Ω \pm 10%, $\frac{1}{2}$ W.	2-TM5730
8	R8	Composition, 47 k Ω \pm 10%, $\frac{1}{2}$ W.	3-TM5730
9	R9	Composition, 220 k Ω \pm 10%, $\frac{1}{2}$ W.	4-TM5730
10	R10	Carbon, High-Stability, 10 M Ω \pm 2%, $\frac{3}{4}$ W.	45-TF1041B
11	R11	Carbon, High-Stability, 1 M Ω \pm 2%, $\frac{1}{4}$ W.	46-TF1041B
12	R12	Carbon, High-Stability, 100 k Ω \pm 2%, $\frac{1}{4}$ W.	47-TF1041B
13	R13	Carbon, High-Stability, 10 k Ω \pm 2%, $\frac{1}{4}$ W.	48-TF1041B
14	R14	Carbon, High-Stability, 1 k Ω \pm 2%, $\frac{1}{4}$ W.	49-TF1041B
15	R15	Carbon, High-Stability, 95 Ω \pm 2%, $\frac{1}{4}$ W.	50-TF1041B
16	R16	Carbon, High-Stability, 9 Ω \pm 2%, $\frac{1}{4}$ W.	51-TF1041B
17	R17	Composition, 15 Ω \pm 5%, $\frac{1}{2}$ W.	52-TF1041B
18	R18	Wirewound, 5.1 Ω \pm 5%, $\frac{1}{2}$ W.	53-TF1041B
19	R19	Wirewound, 0.85 Ω \pm 0.05 Ω	54-TF1041B
20	R20	Composition, 22 k Ω \pm 5%, $\frac{1}{2}$ W.	55-TF1041B
21	R21	Carbon, High-Stability, 200 k Ω \pm 1%, $\frac{1}{4}$ W.	56-TF1041B
22	R22	Carbon, High-Stability, 680 k Ω \pm 1%, $\frac{1}{4}$ W.	57-TF1041B
23	R23	Carbon, High-Stability, 100 k Ω \pm 5%, $\frac{1}{4}$ W.	58-TF1041B

SECTION 7

SOS Item No.	Circuit Ref.	Description	Works Ref.
24	R24	Carbon, High-Stability, $1\text{ M}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	59-TF1041B
25a	R25	Carbon, High-Stability, $750\ \Omega \pm 2\%$, $\frac{1}{4}\text{W}$.	5-TM5730.
26	R26	Carbon, High-Stability, $34.8\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	60-TF1041B
27	R27	Carbon, High-Stability, $118\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	61-TF1041B
28	R28	Carbon, High-Stability, $38.75\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	62-TF1041B
29	R29	Carbon, High-Stability, $11.15\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	63-TF1041B
30	R30	Carbon, High-Stability, $3.29\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	64-TF1041B
31	R31	Carbon, High-Stability, $532\ \Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	65-TF1041B
32	R32	Carbon, High-Stability, $2\ \text{k}\Omega \pm 2\%$, $\frac{1}{4}\text{W}$.	66-TF1041B
33	R33	Carbon, High-Stability, $3.3\ \text{k}\Omega \pm 2\%$, $\frac{1}{4}\text{W}$.	67-TF1041B
34 a	R34	Carbon, High-Stability, $21\ \text{k}\Omega \pm 1\%$, 1W .	6-TM5730
35	R35	Carbon, High-Stability, $43.9\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	68-TF1041B
36	R36	Carbon, High-Stability, $14.1\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	69-TF1041B
37	R37	Carbon, High-Stability, $143\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	70-TF1041B
38	R38	Carbon, High-Stability, $45.76\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	71-TF1041B
39	R39	Carbon, High-Stability, $12.01\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	72-TF1041B
40	R40	Carbon, High-Stability, $2.68\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	73-TF1041B
41a	R41	Carbon, High-Stability, $21\ \text{k}\Omega \pm 1\%$, 1W .	6-TM5730
42a	R42	Composition, $300\ \Omega \pm 10\%$, $\frac{1}{2}\text{W}$.	7-TM5730
43	R43	Composition, $3\ \text{k}\Omega \pm 5\%$, $\frac{1}{2}\text{W}$.	75-TF1041B
44	R46	Carbon, High-Stability, $680\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	57-TF1041B
45	R47	Carbon, High-Stability, $1\ \text{M}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	59-TF1041B
46	R48	Composition, $100\ \Omega \pm 10\%$, $\frac{1}{2}\text{W}$.	78-TF1041B
47	R49	Composition, $1.5\ \text{M}\Omega \pm 10\%$, $\frac{1}{2}\text{W}$.	8-TM5730
48	R50	Carbon, High-Stability, $200\ \text{k}\Omega \pm 1\%$, $\frac{1}{4}\text{W}$.	56-TF1041B
49	R51	Composition, $2.7\ \text{M}\Omega^*$, $\frac{1}{2}\text{W}$.	15-TM5730
50	R52	Composition, $22\ \Omega \pm 10\%$, $\frac{1}{2}\text{W}$.	80-TF1041B
51	R53	Wirewound, $75\ \Omega \pm 5\%$, 6W .	81-TF1041B
52	R54	Wirewound, $75\ \Omega \pm 5\%$, 6W .	81-TF1041B
53	R55	Composition, $68\ \text{k}\Omega \pm 10\%$, $\frac{1}{2}\text{W}$.	9-TM5730
54	R56	Composition, $2.7\ \text{M}\Omega^*$, $\frac{1}{2}\text{W}$.	79-TF1041B
55	R57	Composition, $5.1\ \text{k}\Omega \pm 5\%$, $\frac{1}{2}\text{W}$.	82-TF1041B
56	R58	Composition, $50\ \text{M}\Omega \pm 20\%$, 1W .	84-TF1041B
57	R59	Carbon, High-Stability, $10\ \Omega \pm 20\%$, $\frac{1}{2}\text{W}$.	74-TF1041B

*Nominal value: actual value determined during calibration.

THERMISTORS

58	TH1	Brimistor Type CZ3, 200 mA.	108-TF1041B
59	TH2	Brimstor Type CZ3, 200 mA.	108-TF1041B
60	TH3	Mullard Varite Type VA1040.	109-TF1041B

<i>SOS Item No.</i>	<i>Circuit Ref.</i>	<i>Description</i>	<i>Works Ref.</i>
POTENTIOMETERS AND KNOBS			
61	RV1	Carbon, 100 k Ω \pm 20%, $\frac{1}{4}$ W, Linear.	13-TM5730
62	RV2	Wirewound, 50 Ω \pm 10%, 3W, Linear.	88-TF1041B
63a	RV3	Wirewound, 1 k Ω \pm 10%, 3W, Linear.	89-TF1041B
64	RV4	Wirewound, 2 k Ω \pm 10%, $\frac{1}{2}$ W, Linear.	14-TM5730
65	RV5	Wirewound, 2 k Ω \pm 10%, $\frac{1}{2}$ W, Linear.	14-TM5730
66a	RV6	Wirewound, 3 k Ω \pm 10%, 3W, Linear.	90-TF1041B
67	RV7	Wirewound, 330 Ω \pm 10%, $\frac{1}{2}$ W, Linear.	11-TM5730
68	RV8	Wirewound, 330 Ω \pm 10%, $\frac{1}{2}$ W, Linear.	11-TM5730
69	RV9	Wirewound, 1 k Ω \pm 10%, $\frac{1}{2}$ W, Linear.	12-TM5730
70	RV10	Carbon, 5 M Ω \pm 20%, $\frac{1}{2}$ W, Linear.	91-TF1041B
70/1	RV11	Wirewound, 10 Ω \pm 10%, 1W, Linear.	87-TF1041B
71		Knob Insulator for RV2 or RV6.	92-TF1041B
72		Knob Insulator for RV10.	85-TF1041B
72/1		Knob for RV11.	TB23920/1

CAPACITORS

73	C1	Ceramic, 0.01 μ F \pm 80% - 20%, 350 V d.c.; included in Item 121.	14-TM5776
74	C2	Ceramic, 0.01 μ F \pm 80% - 20%, 2 kV d.c.	95-TF1041B
75	C3	Ceramic, 0.01 μ F \pm 80% - 20%, 350 V d.c.	10-TM5730
76	C4	Electrolytic, 8 μ F \pm 50% - 20%, 450 V d.c.	96-TF1041B
77	C5	Electrolytic, 8 μ F \pm 50% - 20%, 450 V. d.c.	96-TF1041B
78	C6	Ceramic, 0.01 μ F \pm 25%, 2 kV d.c.	95-TF1041B
79	C7	Paper, 0.25 μ F \pm 20%, 200 V d.c.	98-TF1041B
80	C8	Ceramic, 0.03 μ F \pm 80% - 20%, 500 V d.c.	99-TF1041B
81	C9	Electrolytic, 50 μ F, 25 V d.c.	100-TF1041B

SEMICONDUCTORS

82	MR1	S.T.C. Unistor Type MQ8/1.	103-TF1041B
83	MR2	S.T.C. Unistor Type MQ8/1.	103-TF1041B
84	MR3	S.T.C. Unistor Type MQ8/1.	103-TF1041B
85	MR4	S.T.C. Unistor Type MQ8/1.	103-TF1041B
86	MR5	S.T.C. Type C2D, Selenium Rectifier.	104-TF1041B
87	MR6	S.T.C. Type C2D, Selenium Rectifier.	104-TF1041B
88	MR7	S.T.C. Type 430-SC-1B1-S (Series 400), Selenium Rectifier.	105-TF1041B

SECTION 7

<i>SOS Item No.</i>	<i>Circuit Ref.</i>	<i>Description</i>	<i>Works Ref.</i>
VALVES, VALVEHOLDERS AND RETAINERS			
89	V1	Diode, Type EA52; included in Item 121.	26--TM5776
90		Holder and Lock Ring for V1; included in Item 121	1--TM5776
91		Anode Connector for V1; included in Item 121	9--TM5776
92	V2	Pentode, Type 6BS7.	123--TF1041B
93		Holder for V2, B9A, less skirt.	30--TF1041B
94		Retainer for V2.	38--TF1041B
95		Top-Cap Connector for V2.	39--TF1041B
96	V3	Double Triode, Type 12AT7.	124--TF1041B
97		Holder for V3, B9A with skirt.	29--TF1041B
98		Screening Can for V3.	33--TF1041B
99	V4	Pentode, Type 6BS7.	123--TF1041B
100		Holder for V4, B9A, less skirt.	30--TF1041B
101		Retainer for V4.	38--TF1041B
102		Top-Cap Connector for V4.	39--TF1041B
103	V5	Double Diode, Type EB91.	125--TF1041B
104		Holder for V5, B7G with skirt.	31--TF1041B
105		Screening Can for V5.	34--TF1041B

BARRETTERS

106	RB1	Hivac Type XB1.	107--TF1041B
107		Holder for RB1, B7G less skirt.	28--TF1041B
108		Retainer for RB1.	37--TF1041B
109	RB2	Hivac Type XB1.	107--TF1041B
110		Holder for RB2, B7G less skirt.	28--TF1041B
111		Retainer for RB2.	37--TF1041B

SWITCHES AND KNOBS

112	S1	Rotary, 12 section, 12 way.	TC4428/472
113	S2 and S3	Rotary, 6 section, 10 way.	TC4428/471
114		Rotary, double-pole, on-off; fitted to rear of S2 Knob for S1 or S2.	22--TF1041B

TRANSFORMER

115	T1	Mains Transformer.	TM5149/7
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<i>SOS Item No.</i>	<i>Circuit Ref.</i>	<i>Description</i>	<i>Works Ref.</i>
METER ASSEMBLY			
116	M1	Moving-Coil Panel Meter, 200 μ A f.s.d., 500 Ω .	TM4702/6
PILOT LAMP AND HOLDER			
117 118	LP1	Tubular, 6.3-volt, 0.15-ampere, M.C.C. Holder for LP1, M.C.C.	117-TF1041B TB25073/2
CONNECTORS, PROBES AND LEADS			
119 120 121 122 123	PL1	Mains Plug, 3-pin, 5-ampere; included in Item 131. Crocodile Clip; included in Item 130. A.C. Probe; includes Items 1, 73, 89, 90, 91, 122, 123 and 124. Prod Tip for A.C. Probe; included in Item 121. Connecting Lead for A.C. Probe, 54 inches long, 2-core, anti-microphonic; included in Item 121.	1-TM2560/AQ TB27958 TM5776 TB28720 21-TM5776
124 125 126 127 128		Grounding Clip Assembly; included in Item 121. Grounding Sleeve; for use with a.c. probe. D.C./ Ω Probe; includes Items 2, 127, 128 and 129. Prod Tip for D.C./ Ω Probe; included in Item 126. Finger Push Moulding for D.C./ Ω Probe; included in Item 126.	TC23535/3C TC23533/3 TM5731 TB28052 TB28053
129		Connecting Lead for D.C./ Ω Probe, 4 ft long, 2-core, anti-microphonic; included in Item 126.	15-TM5731
130 131		COMMON Lead Assembly; 4 ft long; includes Item 120. Mains Lead, 3-core, 6 ft long; includes Item 119.	110-TF1041B TM2560/AQ
MISCELLANEOUS			
132 133 134 135 136		Front Panel, Aluminium Alloy. Case Back, Aluminium Alloy. Case Lid, Aluminium Alloy. Side Panel (left or right), Aluminium Alloy. Lid Clip, Mild Steel.	17-TF1041B 12-TF1041B 16-TF1041B TC27948 TB27960
137 138 139		Meter Panel, Aluminium Alloy. 2-BA Hexagonal Socket Wrench in Linen Bag. Operating and Maintenance Handbook.	TC28046 102-TF1041B OM1041B

SECTION 7

<i>SOS Item No.</i>	<i>Circuit Ref.</i>	<i>Description</i>	<i>Works Ref.</i>
OPTIONAL ACCESSORIES			
140		Coaxial " T " Connector; includes Items 141 and 142.	TM5031A
141		Fixed Plug, Coaxial, 50-ohm; included in Item 140.	3-TM5031A
142		Fixed Socket, Coaxial, 50-ohm; included in Item 140.	2-TM5031A
143		A.C. Multiplier.	TM5032
144		D.C. Multiplier; includes Item 145.	TM5033A
145		Connector for D.C. Multiplier.	TM5749
146		Dummy Load, 5-watt; includes Items 147 and 148.	TM5582
147		Fixed Socket, Coaxial, 50-ohm; included in Item 146.	1-TM5582
148		Resistor, Carbon, 50 $\Omega \pm 5\%$, linear to within $\pm 10\%$; included in Item 146.	6-TM5582
149		Carrying Case, polished hardwood, for stowage of Multipliers and " T " Connector; includes Items 150, 151 and 152.	TM4935
150		Case Handle; included in Item 149.	TB22190
151		Case Catch; included in Item 149.	TC10433/8
152		Case Foot (one of eight); included in Item 149.	17-TM4935