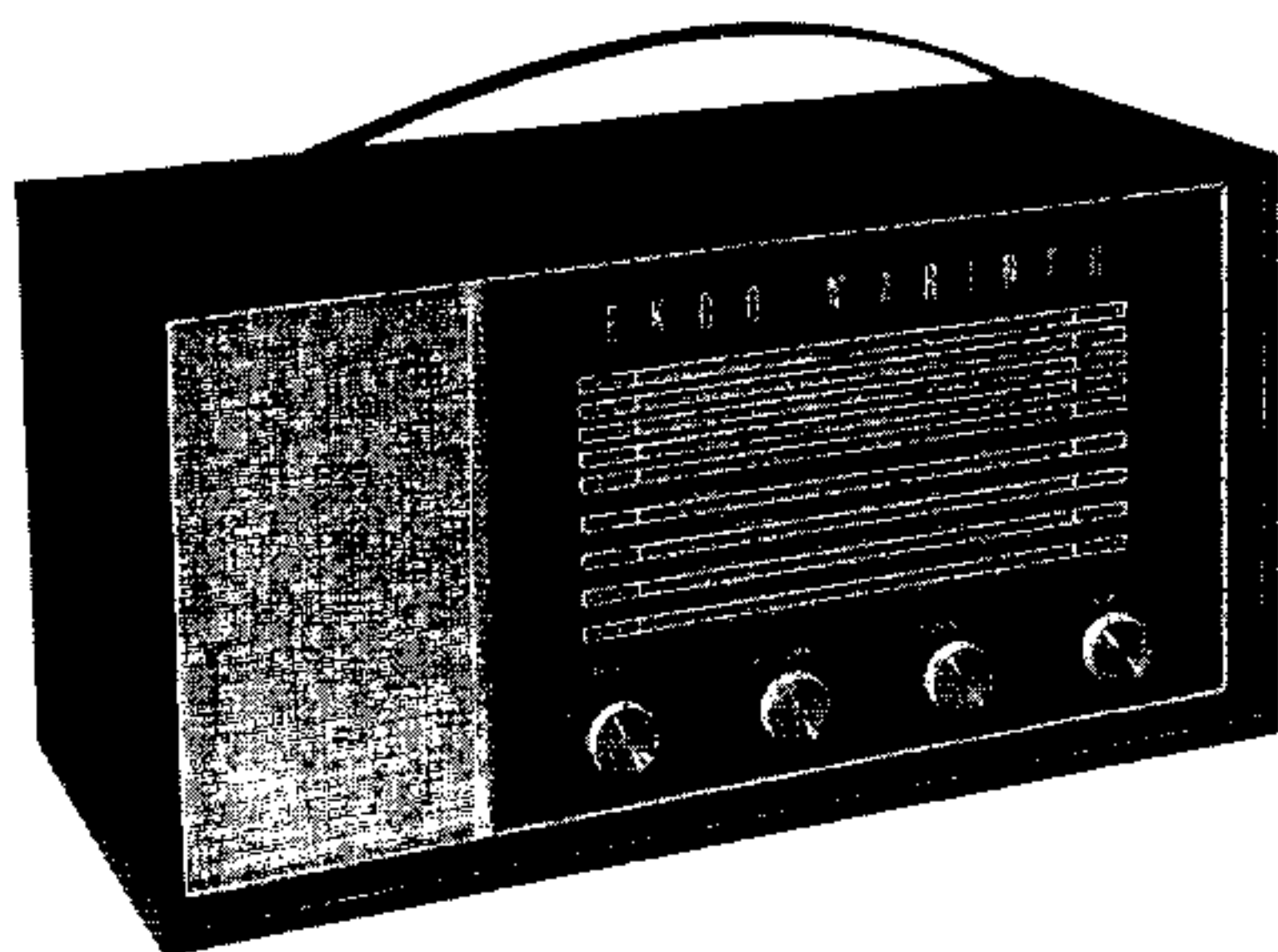


SERVICE SHEET FOR



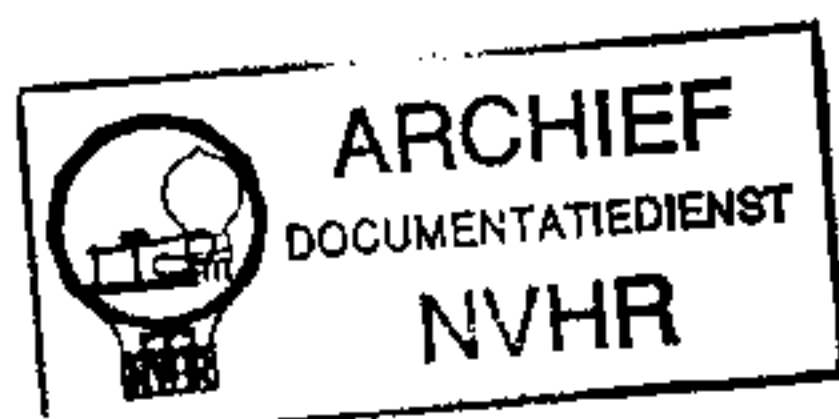
EKCO

MODEL U834

'Mariner'

9 Waveband Radio

Ned. Ver. v. Historie v/d Radio



TRIMMING PROCEDURE

		Mains Consumption		50 watts.		A.F. Output		2 watts.		
		Unsmoothed H.T.		165 volts, (74mA.)		Smoothed H.T.		144 volts.		
Valve	Mullard	Ea	Ia	Es	Is	Osc.		Ek	Ik	
						Ea	Ia			
V1	Frequency Changer	UCH.81	142	1.2	55	3.8	102	4.0	—	8.5
V2	I.F. Amplifier	UF.89	142	5.0	55	1.7	—	—	—	6.0
V3	Dec. and A.F. Amplifier	UBC.81	62.6	0.32	—	—	—	—	—	0.32
V4	Output	UL.84	144	52	142	5.8	—	—	10	57

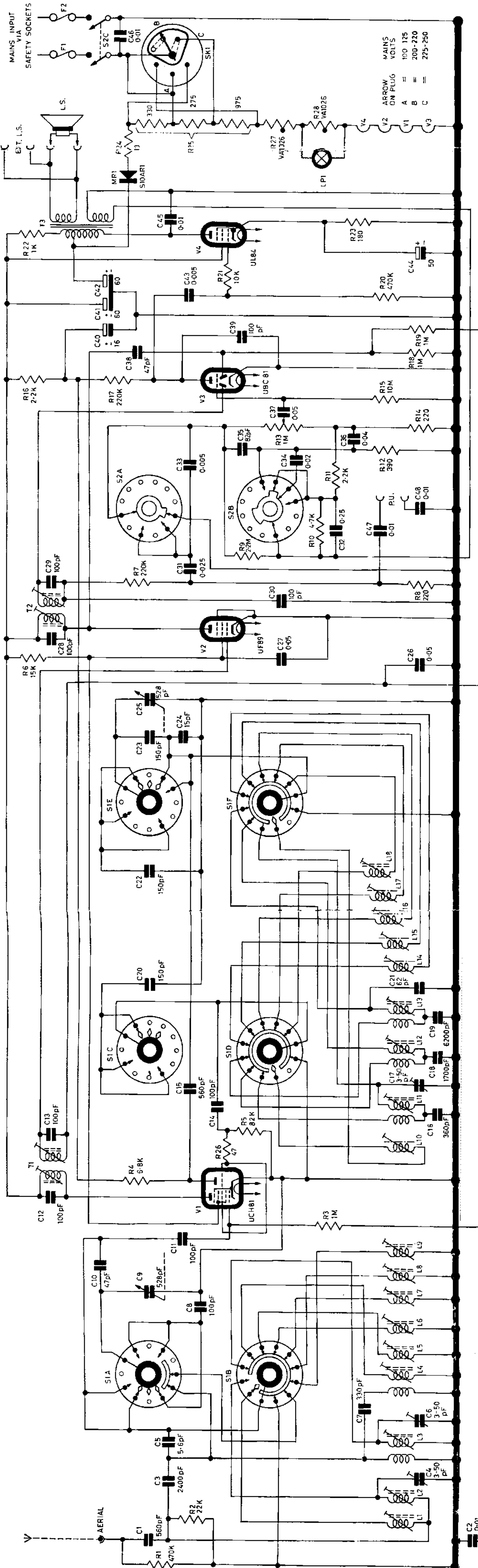
Note.—All measurements taken on M.W. band with gang fully meshed. No signal input. Mains input 210 V.A.C. into 200-220 volts tap. Measurements taken with an Avometer model 8 instrument. All voltages over 10 v. taken on 250 v. range. All voltages under 10 v. taken on 10 v. range.

Note.—Calibration of bandspread circuits should preferably be checked against broadcasting stations of known frequency. The calibration of most normal signal generators is not sufficiently accurate for this purpose.

Apply signal as below	Set Receiver Controls to	Adjust in order for Maximum Output
(1) 470 kc/s between control grid of V1 and chassis via a 0.1 μ F condenser	Low frequency end of medium waveband (565 metres)*	Iron dust cores of i.F. Transformers T2 and T1
(2) 214 kc/s between Aerial and Earth sockets via Standard Dummy Aerial	L.W. 1400 metres	Aluminium slug of LW10 and Iron dust core of L1
(3) As (2) but 600 kc/s (500 m.)	M.W. 500 m.	Iron dust cores of L11 and L2
(4) As (2) but 1500 kc/s (200 m.)	M.W. 200 m.	Trimmers C17 and C4
(5) Repeat (3) and (4) above until calibration and tracking are correct.		
(6) As (2) but 1500 kc/s (200 m.)	S1 band 200 m.	Iron dust cores of L12 and L3
(7) As (2) but 3.3 Mc/s.	S1 band 90.9 m.	Trimmer C6
(8) Repeat adjustments of L3 and C6 until tracking is correct.		
(9) 7.2 Mc/s between Aerial and Earth sockets via a 400 ohm resistor.	S2 band 41.7 m.	Iron dust cores of L13 and L4
(10) As (9) but 9.6 Mc/s.	31 m. band 9.6 Mc/s.	Cores of L14 and L5
(11) As (9) but 11.8 Mc/s.	25 m. band 11.8 Mc/s.	Cores of L15 and L6
(12) As (9) but 15.3 Mc/s.	19 m. band 15.3 Mc/s.	Cores of L16 and L7
(13) As (9) but 17.8 Mc/s.	16 m. band 17.8 Mc/s.	Cores of L17 and L8
(14) As (9) but 21.6 Mc/s.	13 m. band 21.6 Mc/s.	Cores of L18 and L9

* Pointer should be aligned with extreme end of calibration tracks.

CIRCUIT ANALYSIS



NOTE:— ALL SWITCHES SHOWN IN FULLY ANTI-CLOCKWISE POSITION, I.E. WAVECHANGE SWITCH S1 IN 'LW' POSITION AND TONE SWITCH S2 IN 'OFF' POSITION.
 ALL RESISTORS IN OHMS UNLESS OTHERWISE STATED.
 ALL CAPACITORS IN uF UNLESS OTHERWISE STATED.

Note R8 should read 220K.

Mariner

model U834

OF ENGLAND

MISCELLANEOUS

Cabinet	AK 00403
Knob Assembly—Tuning, Volume and Wavechange	AK 01170
Knob Assembly—Tone	AK 01172
Mains Lead Assembly	733439
Wavechange Indicator Assembly	AG 00004
Pointer Assembly	AG 00005
Voltage Selector Plug Assembly	730326
Drive Drum Assembly	FD 00001
Drive Spindle	310951
Scale Backplate	BI 00013
Lampholder	720477
Scale; Tuning	EB 03099
Carrying Handle	BC 00001
Handle Escutcheon	EB 02117
Quick Release Runner Assembly	BD 01242
Wavechange Switch Unit—completely assembled and wired	073239
Back Cover	084246
Flywheel	EB 03561
Front Cover Assembly	590045
Lens	EC 01310
Lens Escutcheon	BA 06128
Trim, Vertical	EA 56159
Trim Surround	EA 56466
	EA 56465

CONDENSERS

Specification	Volts	±	Fig.	No.
C1	560 pF Ceramic	20%	4	666863
C2	0.01 uF Tubular	20%	4	669135
C3	2,400 pF Polystyrene	5%	4	653354
C4	3-30 pF Trimmer	20%	4	800076
C5	5-6 pF Ceramic	20%	4	866659
C6	3-30 pF Trimmer	20%	4	866659
C7	330 pF Ceramic	2%	4	853270
C8	100 pF Mica	2%	4	664100
C9	528 pF Swing Gang Condenser	2%	4	664048
C10	47 pF Mica	2%	4	666806
C11	100 pF Ceramic	2%	4	666776
C12*	100 pF Mica	2%	4	666806
C13*	100 pF Mica	2%	4	666806
C14	560 pF Ceramic	2%	4	666863
C15	360 pF Mica	2%	4	664222
C16	3-30 pF Trimmer	2%	4	800076
C17	1,700 pF Polystyrene	5%	4	653355
C18	6,200 pF Polystyrene	5%	4	653353
C19	150 pF Mica	2%	4	664072
C20	62 pF Mica	2%	4	664130
C21	150 pF Mica	2%	4	664130
C22	150 pF Mica	2%	4	666515
C23	150 pF Mica	10%	4	666515
C24	528 pF Swing Gang Condenser	2%	3	PV 01000
C25	0.05 uF Tubular	2%	4	669116
C26	0.05 uF Tubular	2%	4	669870
C27	100 pF Mica	2%	4	666776
C28*	100 pF Mica	2%	3	666776
C29	100 pF Mica	2%	4	666806
C30	0.025 uF Tubular	20%	4	669081
C31	0.025 uF Tubular	20%	4	669081
C32	0.005 uF Tubular	20%	4	669105
C33	0.02 uF Tubular	20%	4	666823
C34	82 pF Ceramic	20%	4	669106
C35	0.04 uF Tubular	20%	4	669106
C36	0.04 uF Tubular	20%	4	669106

CONDENSERS, Contd.

Specification	Volts	±	Fig.	No.
C37	0.05 uF Tubular	20%	4	669116
C38	47 pF Ceramic	20%	4	665676
C39	100 pF Ceramic	20%	4	666806
C40	16 uF Electrolytic	20%	3	667537
C41	60 + uF Electrolytic	20%	3	667503
C42	60 + uF Electrolytic	20%	4	669095
C43	90 uF Electrolytic	2%	4	667171
C44	0.01 uF Tubular	2%	3	PR14039
C45	0.01 uF Tubular	2%	4	669135
C46	0.01 uF Tubular	2%	4	669135
C47	0.01 uF Tubular	2%	4	669135
C48	0.01 uF Tubular	2%	4	669135

RESI

Specification	Volts	±	Fig.	No.
L1	L.W. Aerial Coil			780571
L2	M.W. Aerial Coil			780604
L3	S.1 Aerial Coil			780622
L4	S.2 Aerial Coil			780725
L5	31 m. Aerial Coil			780725
L6	25 m. Aerial Coil			780727
L7	19 m. Aerial Coil			780727
L8	13 m. Aerial Coil			780727
L9	13 m. Aerial Coil			780727
L10	L.W. Osc. Coil			780234
L11	M.W. Osc. Coil			780337
L12	S.1 Osc. Coil			780249
L13	S.2 Osc. Coil			780623
L14	31 m. Osc. Coil			780275
L15	25 m. Osc. Coil			780275
L16	19 m. Osc. Coil			780277
L17	16 m. Osc. Coil			780278
L18	13 m. Osc. Coil			780279

NOTES

- 1** When replacing the drive cord, the scale backplate should be taken off by removing the two screws at the front left-hand side, and the two nuts at the rear right-hand side.
- 2** A 100 division Trimming Scale is printed at the top of the scale backplate to facilitate trimming the receiver outside of the cabinet. One edge of the pointer carriage serves as an index for the scale.
- 3** Where no accurate frequency standard is available, the receiver should be calibrated against a reliable broadcasting station operating at a frequency close to that specified in the trimming instructions.

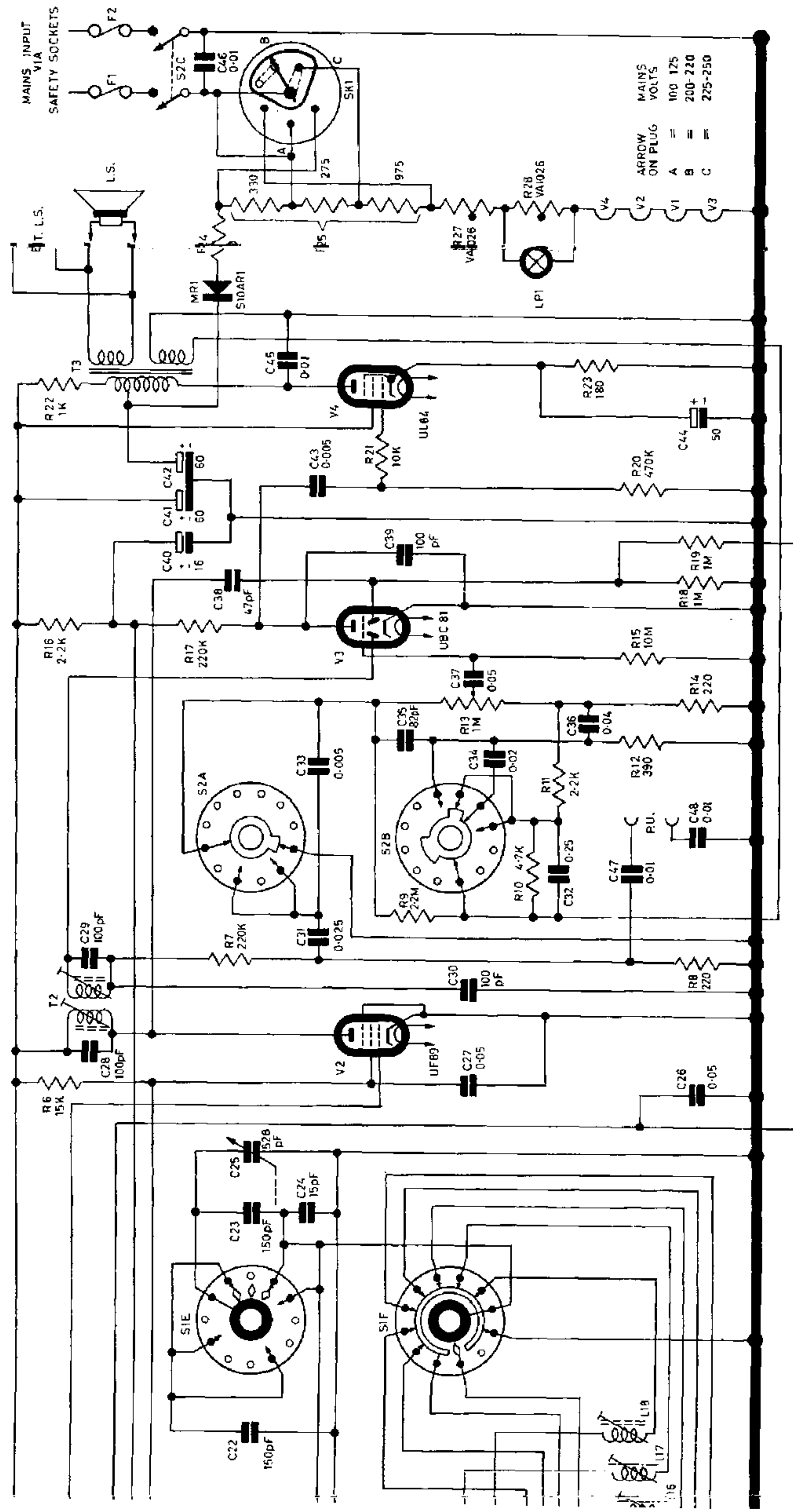
Make sure that the voltage adjuster is in the correct position to ensure (a) maximum valve and component life, and (b) full benefit of the "Fidelity" reproduction.

TO REMOVE CHASSIS

- The quick release permits removal of the chassis without turning the cabinet over, as follows:—
- 1** Remove all plugs from back of chassis.
 - 2** Remove back cover.
 - 3** Loosen grub screws and pull off knobs.
 - 4** Remove chassis fixing screws.
 - 5** Pull off indicator lampholder from its bracket and withdraw chassis.

TO FIT NEW TUNING SCALE

- 1** Remove receiver chassis as described above.
- 2** Unscrew nuts holding the two fixing brackets at top and bottom of scale, take out brackets and the two top and bottom fixing screws.
- 3** Turn cabinet on one side and remove insulating strips on underside of cabinet, also the quick release runners.
- 4** Push tuning scale inwards towards speaker, and withdraw.
- 5** Place new scale in cabinet aperture and refit runners, insulating strips, and top and bottom fixing brackets.
- 6** Replace chassis, ensuring that control spindles appear through the centre of their respective holes in the scale plate. If necessary, adjust position of scale in aperture.
- 7** Rotate Tuning Control until gang is fully meshed, and line up the pointer with the marker dots at the low frequency end of the scale.



SWITCH S1 IN 'LW' POSITION AND TONE SWITCH S2 IN 'OFF' POSITION. Note R8 should read 220K.

CONDENSERS

No.	Fig.	±	Volts	Specification
C1	4	20%	300 A.C.	560 pF Ceramic
C2	4	5%	350	0.01 μF Tubular
C3	4	20%	350	2.400 pF Polystyrene
C4	4	20%	350	3.50 pF Trimmer
C5	4	20%	350	5.6 pF Ceramic
C6	4	20%	350	3.50 pF Trimmer
C7	4	20%	350	3.50 pF Ceramic
C8	4	2%	350	100 pF Mica
C9	4	2%	350	578 pF Swing Gang Condenser
C10	4	20%	350	47 pF Mica
C11	4	20%	350	100 pF Mica
C12*	3	20%	350	100 pF Mica
C13*	3	20%	350	100 pF Mica
C14	4	20%	350	100 pF Ceramic
C15	4	20%	350	560 pF Ceramic
C16	4	2%	350	360 pF Mica
C17	4	5%	350	1.50 pF Trimmer
C18	4	2%	350	1.700 pF Polystyrene
C19	4	2%	350	6.200 pF Polystyrene
C20	4	2%	350	150 pF Mica
C21	4	2%	350	62 pF Mica
C22	4	2%	350	150 pF Mica
C23	4	2%	350	150 pF Mica
C24	4	10%	350	15 pF Ceramic N750K
C25	4	10%	350	528 pF Swing Gang Condenser
C26	4	2%	1000	0.05 μF Tubular
C27	4	2%	1000	0.05 μF Tubular
C28*	4	2%	1000	100 pF Mica
C29*	4	2%	1000	100 pF Mica
C30	4	20%	350	100 pF Ceramic
C31	4	20%	350	0.025 μF Tubular
C32	4	20%	350	0.25 μF Tubular
C33	4	20%	350	0.005 μF Tubular
C34	4	20%	150	0.005 μF Tubular
C35	4	20%	150	0.02 μF Tubular
C36	4	20%	150	0.04 μF Tubular

CONDENSERS, Contd.

No.	Fig.	±	Volts	Specification
C37	4	20%	250	0.05 μF Tubular
C38	4	20%	250	47 pF Ceramic
C39	4	20%	350	100 pF Ceramic
C40	3	20%	350	16 μF Electrolytic
C41	3	20%	350	60 μF Electrolytic
C42	4	20%	350	60+ μF Electrolytic
C43	4	20%	350	50 μF Electrolytic
C44	4	20%	350	50 μF Electrolytic
C45	3	20%	1000 A.C.	0.01 μF Tubular
C46	4	20%	300 A.C.	0.01 μF Tubular
C47	4	20%	300 A.C.	0.01 μF Tubular
C48	4	20%	300 A.C.	0.01 μF Tubular

INDUCTANCES

No.	Fig.	Ref.	Specification
L1	4	L.W.10	L.W. Aerial Coil
L2	4	M.W.15	M.W. Aerial Coil
L3	4	T.B.4	T.B. Aerial Coil
L4	4	S.W.16	S.W. Aerial Coil
L5	4	S.W.6	31 m. Aerial Coil
L6	4	S.W.7	31 m. Aerial Coil
L7	4	S.W.5	19 m. Aerial Coil
L8	4	S.W.4	16 m. Aerial Coil
L9	4	S.W.3	13 m. Aerial Coil
L10	4	M.W.9	M.W. Osc. Coil
L11	4	M.W.1	M.W. Osc. Coil
L12	4	T.B.1	T.B. Osc. Coil
L13	4	S.W.17	S.W. Osc. Coil
L14	4	S.W.7	31 m. Osc. Coil
L15	4	S.W.6	31 m. Osc. Coil
L16	4	S.W.5	19 m. Osc. Coil
L17	4	S.W.4	16 m. Osc. Coil
L18	4	S.W.2	13 m. Osc. Coil

RESISTORS

No.	Fig.	±	Watts	Ohms
R1	4	20%	↓	470,000
R2	4	20%	↓	22,000
R3	4	20%	↓	22,000
R4	4	20%	↓	6,800
R5	4	20%	↓	82,000
R6	4	20%	↓	15,000
R7	4	20%	↓	220,000
R8	4	20%	↓	220,000
R9	4	20%	↓	2.2 meg.
R10	4	20%	↓	4,700
R11	4	20%	↓	2,200
R12	4	20%	↓	390
R13	4	20%	↓	220
R14	4	20%	↓	10 meg.
R15	4	20%	↓	2,200
R16	4	20%	↓	220,000
R17	4	20%	↓	220,000
R18	4	20%	↓	10 meg.
R19	4	20%	↓	10 meg.
R20	4	20%	↓	470,000
R21	4	20%	↓	10,000
R22	4	20%	↓	1,000
R23	4	20%	↓	180
R24	4	20%	↓	180
R25	4	20%	↓	1.580 Tapped at 330Ω and 605Ω
R26	3 & 4	20%	↓	47
R27	3	20%	↓	Mullard VA1026 Thermistor
R28	3	20%	↓	Mullard VA1026 Thermistor

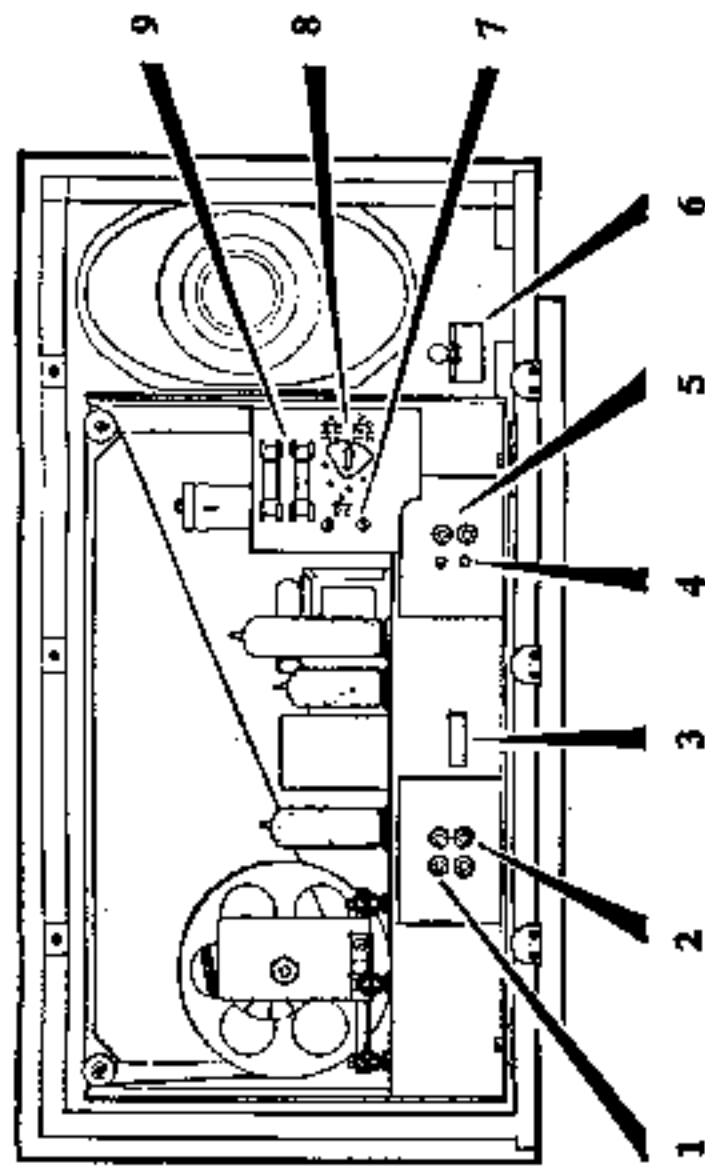
TRANSFORMERS

No.	Fig.	Specification
T1	3	1st L.F. Trans. { Prim. 12-2Ω Sec. 12-2Ω }
T2	3	2nd L.F. Trans. { Prim. 12-2Ω Sec. 12-2Ω }
T3	3	Output Trans. { Prim. Start to Tap 18-5Ω Prim. Start to Finish 500Ω Feedback Winding 13-5Ω }

SWITCHES, LAMPS, ETC.

No.	Fig.	Specification
S1A	4	Rear Bank 3
S1B	4	Front Bank 3
S1C	4	Rear Bank 2
S1D	4	Front Bank 2
S1E	4	Rear Bank 1
S1F	4	Front Bank 1
S2A	4	Mains ON/OFF Switch
S2B	4	Dial Lamp, 6 v. 0.1 amp.
FL1	4	Cartridge Fuse, 1 amp.
FL2	4	Cartridge Fuse, 1 amp.
SK1	4	Mains Voltage Adjuster Socket
MR1	4	Rectifier, Westinghouse 50AR1
LS1	4	Loudspeaker; 7" x 5"

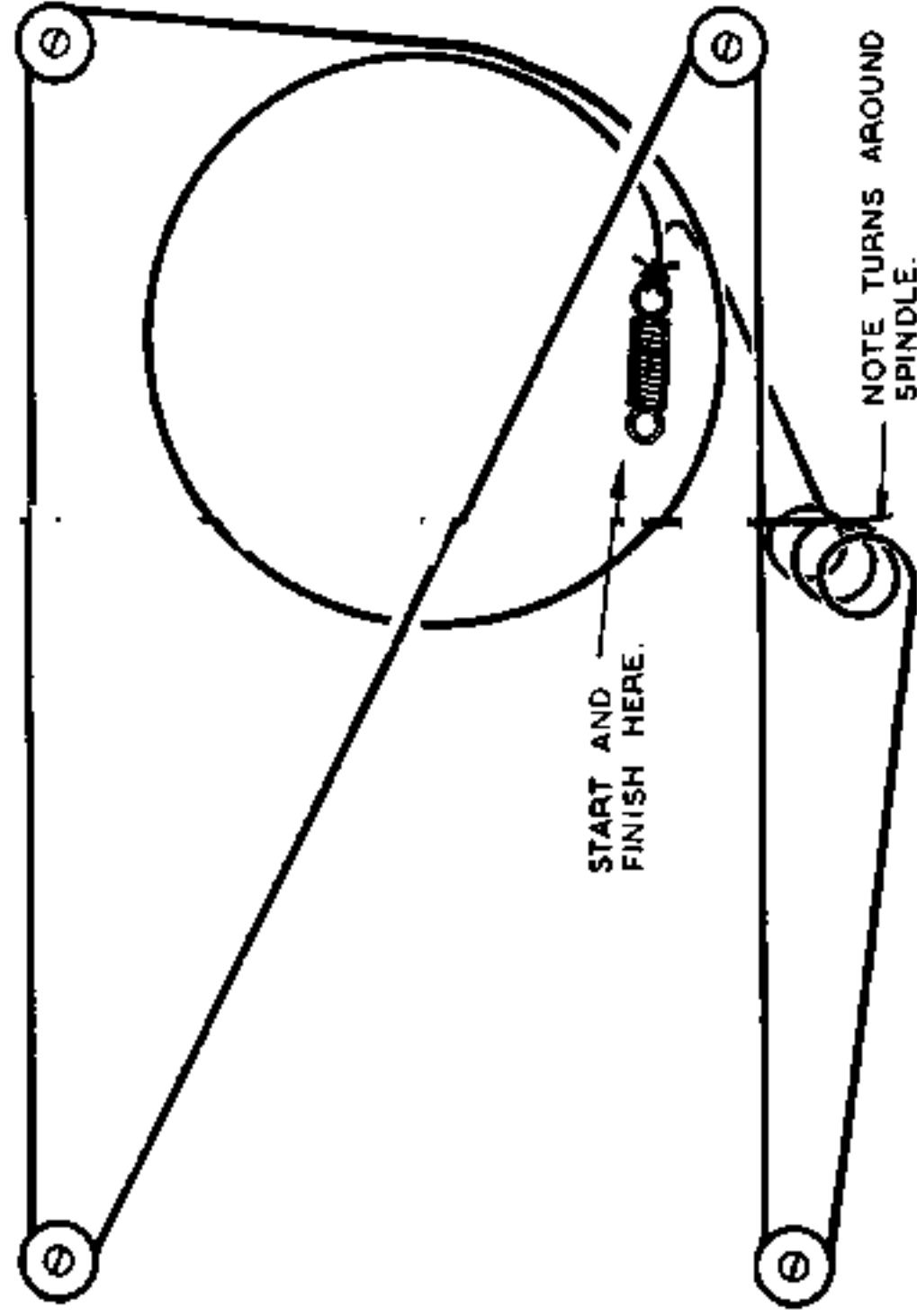
Note.—* Integral Part of I.F. Transformer.



- 1 Aerial Socket (top)
Earth Socket (bottom)
- 2 Pick-up Sockets
- 3 Serial Number
- 4 External Loudspeaker Sockets
- 5 Internal Loudspeaker Sockets
- 6 Indicator Lamp
- 7 Mains Safety Pins
- 8 Voltage Selector
- 9 Fuses

FIG. 1

THE DRIVE CORD SHOULD BE OF NYLON BRAIDED GLASS YARN.
LENGTH $7\frac{1}{2}$ " BETWEEN CENTRE OF LOOPS.



DRIVE CORD VIEWED FROM FRONT OF CHASSIS WITH GANG FULLY CLOSED.

FIG. 2

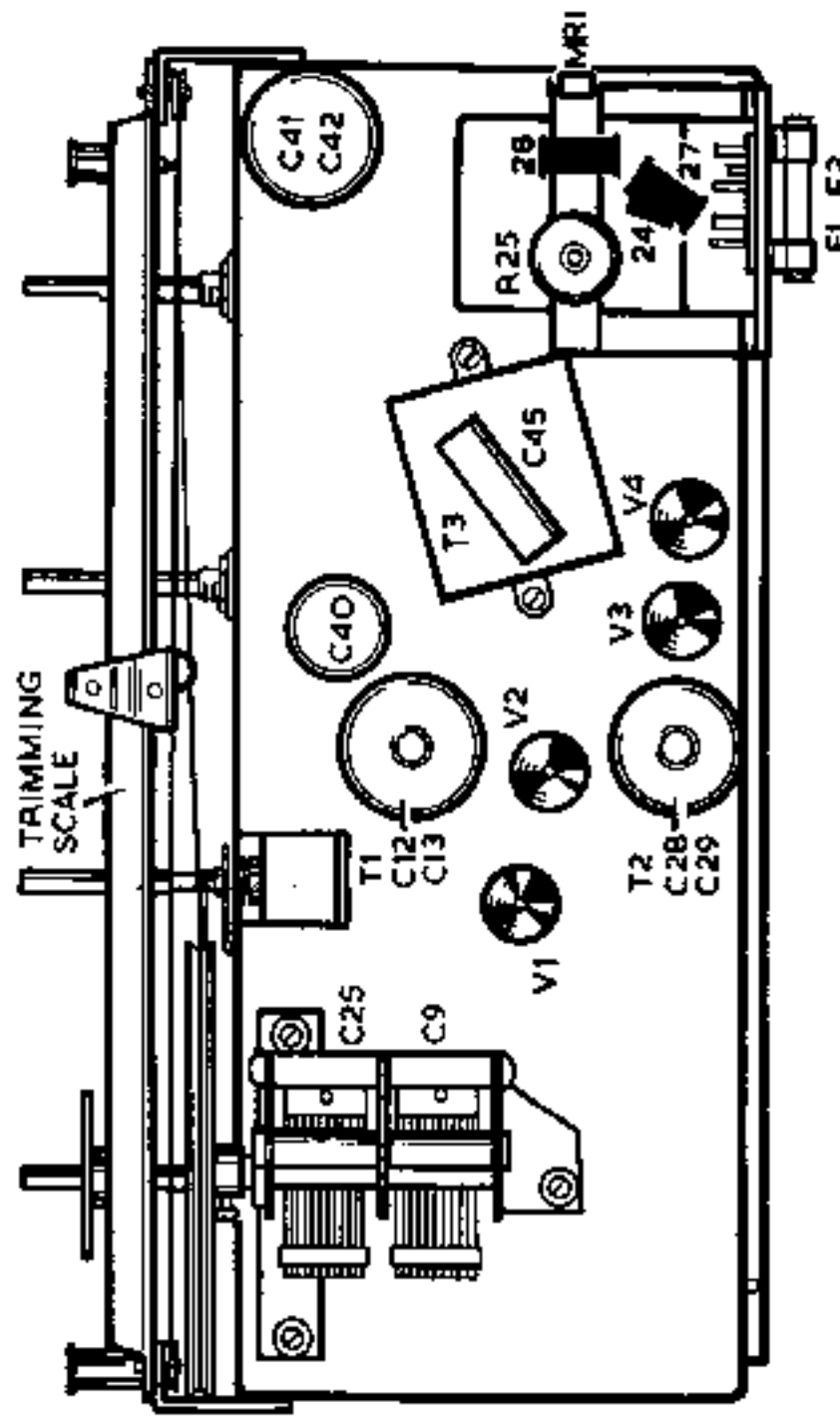
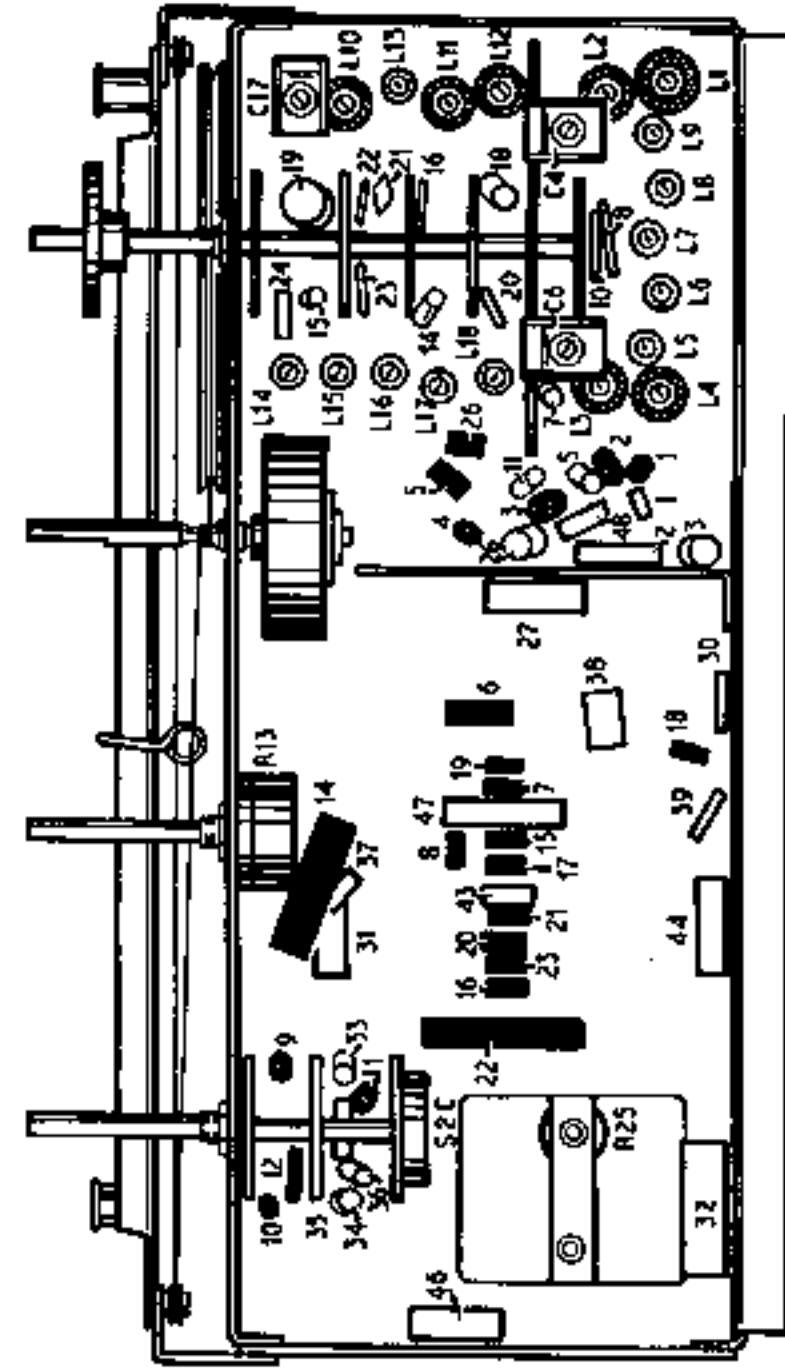


FIG. 3



NOTE:- RESISTORS SHOWN SOLID BLACK.

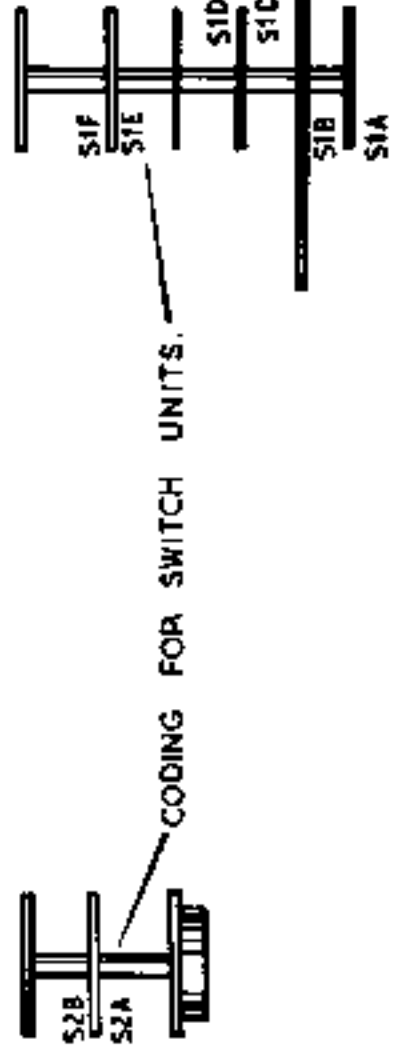


FIG. 4

0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
13M	mc/s				22.6			22.2		21.8		21.4		21.0		20.6					
16M	mc/s																				
19M	mc/s																				
25M	mc/s																				
31M	mc/s																				
SW2	mts																				
SW1	mts																				
MW	mts																				
LW	mts																				

CALIBRATION CHART