

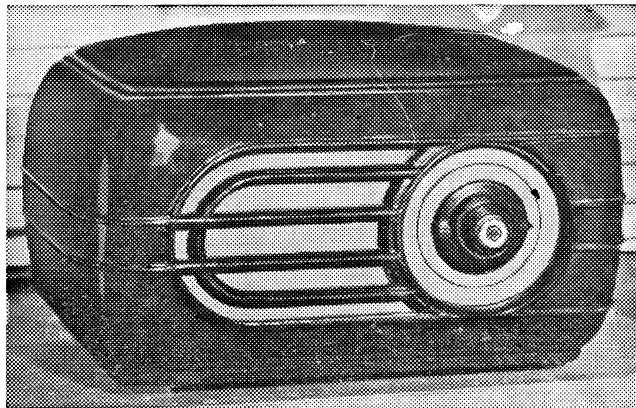
TECHNICAL INFORMATION
AND SERVICE DATA

AWA **RADIOLA**

MODEL 523-M

**FOUR VALVE, BROADCAST, VIBRATOR
OPERATED SUPERHETERODYNE**

**ISSUED BY
AMALGAMATED WIRELESS (A/SIA) LTD.**



ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGE 540-1600 Kc/s
(555-187.5M)
INTERMEDIATE FREQUENCY 455 Kc/s
BATTERY COMPLEMENT 1 4-volt Accumulator
BATTERY CONSUMPTION 0.8 amp.
VIBRATOR POWER UNIT 20420
DIAL LAMP 6.0 volts, 0.15 amp.
M.E.S.
FUSE 3 amp. cartridge

VALVE COMPLEMENT:

- (1) 1R5 Converter
- (2) 1T4 I.F. Amplifier
- (3) 1S5 Detector, A.V.C. A.F. Amplifier
- (4) 3V4 Output

VIBRATOR CARTRIDGE A.W.A.-OAK Type V5278
LOUDSPEAKER (Permanent Magnet):
5 inch—Code No. AC39
Transformer—XA8
V.C. Impedance—3 ohms at 400 C.P.S.

UNDISTORTED POWER OUTPUT 200 milliwatts

CONTROLS:

Tuning Control and Pointer

The large knob mounted concentric with the dial.

Volume/Power Control

The small knob mounted concentric with the dial.

Tone Switch

The slider switch on the rear of the chassis.

GENERAL DESCRIPTION.

The model 523-M is a vibrator operated mantel model housed in an attractively designed moulded cabinet. Features of design include: Tropic-proof construction, auto-

matic volume control, magnetite cores in I.F. Transformers and oscillator coil.

MECHANICAL SPECIFICATIONS.

	Height	Width	Depth	Carton Dimensions (ins.)	8 $\frac{1}{2}$	13 $\frac{1}{4}$	7 $\frac{3}{4}$
Cabinet Dimensions (ins.)	7 $\frac{1}{8}$	12 $\frac{3}{4}$	6 $\frac{7}{8}$	Weight (nett lbs.)	13		
Chassis Base Dimensions (ins.)	2	10 $\frac{1}{2}$	5 $\frac{1}{2}$	Cabinet Colours	Ivory, Walnut, Burgundy		

SOCKET VOLTAGES.

Valve	Bias Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Filament Volts
1R5 Converter	0	40	40	0.4	1.3-1.4
1T4 I.F. Amplifier	0	40	86	2.0	1.3-1.4
1S5 Det., A.V.C. A.F. Amplifier	0	25*	20*	0.07	1.3-1.4
3V4 Output	-6.5*	86	83	8.5	1.3-1.4

Total battery current—0.8 amp.

Measured with no signal input. Volume Control maximum clockwise.

*These readings may vary depending on the resistance of the voltmeter used.

D.C. RESISTANCE OF WINDINGS.

Winding	D.C. Resistance in Ohms
Aerial Coil—	
Primary (L2)	9.5
Secondary (L3)	3.5
Oscillator Coil—	
Primary (L4)	2
Secondary (L5)	6.5
I.F. Transformer Windings	10
I.F. Filter (L1)	17.5†
L.T. Choke (L12)	*
H.T. Choke (L13)	200
R.F. Choke (L10)	9
R.F. Choke (L11)	*
Loudspeaker Input Transformer (T2)	
Primary	425 or 510
Secondary	*
Vibrator Transformer (T1)—	
Primary	*
Secondary	500

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

*Less than 1 ohm.

†In some receivers this reading may be as high as 60 ohms.

MECHANICAL REPLACEMENT PARTS.

Item	Part No.	Item	Part No.
Cabinet	22450	Knob, pointer	22448
Cable, battery	17644	Knob, Volume Control	24596
Cable, volume control	23907	Panel, fuse	19158
Chassis, strap	23476	Socket, valve	19965
Dial Scale—Standard	23348	Strip, tag—3-way	8821
Southern	23327	6-way	23474
Northern	23328	Terminal, spring	5458
Dial Scale, assembly	23465		

ALIGNMENT PROCEDURE.

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Realignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be readjusted unless by skilled operators using specialised equipment.

For all alignment operations connect the "low" side of the signal generator to the receiver chassis, and keep the

generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911, or
- (2) A.W.A. Modulated Oscillator, type J6726.
If the modulated oscillator is used, connect an 0.25 megohm non-inductive resistor across the output terminals.
- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE.

Order	Connect "high" side of Generator to:	Tune Generator to:	Set Receiver Dial to:	Adjust for maximum peak output
1	Aerial Section of Gang (Rear portion)	455 Kc/s	540 Kc/s	L9 Core
2	Aerial Section of Gang (Rear portion)	455 Kc/s	540 Kc/s	L8 Core
3	Aerial Section of Gang (Rear portion)	455 Kc/s	540 Kc/s	L7 Core
4	Aerial Section of Gang (Rear portion)	455 Kc/s	540 Kc/s	L6 Core
Repeat the above adjustments until the maximum output is obtained				
5	Aerial Terminal	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (L5)*
6	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C7)
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C4)

Repeat adjustments 5, 6 and 7.

*Rock the tuning control back and forth through the signal.

Dial Pointer Adjustment.

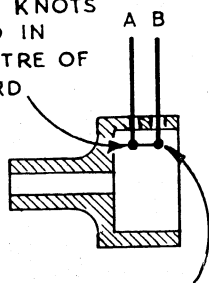
To shift the position of the dial pointer, loosen the set-screw in the combined tuning control and pointer, move the control in the required direction and retighten the set-screw.

Tuning Drive Cord Replacement.

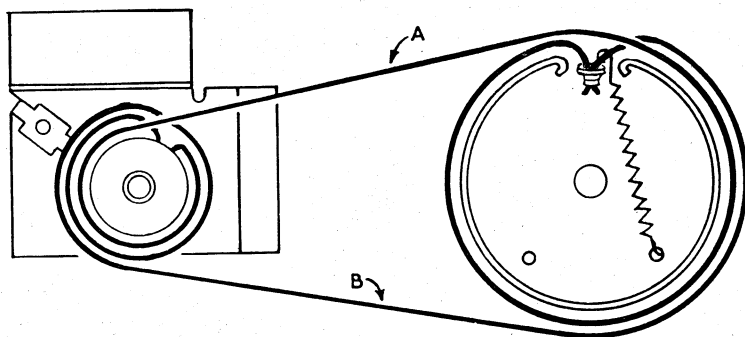
First remove the stop bracket and drive hub. Tie two knots in the centre of a replacement drive cord (cord

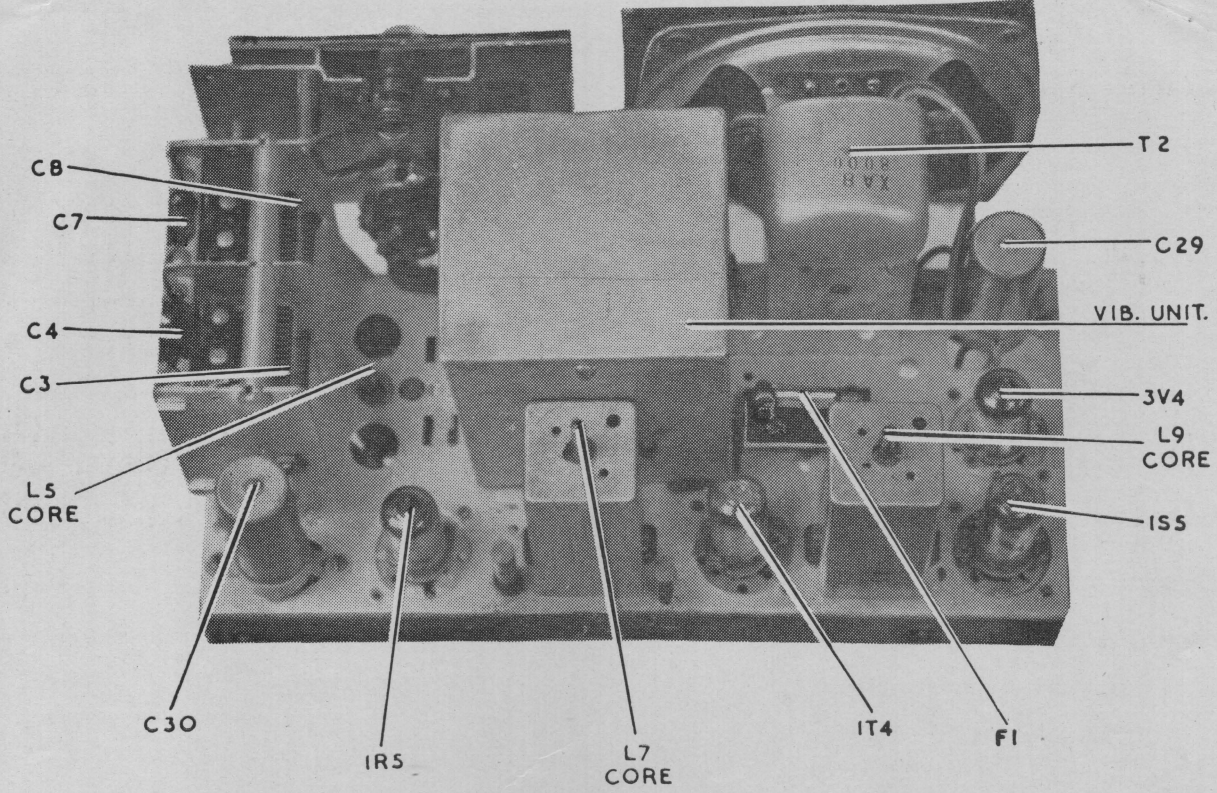
approximately 16" long) and thread through the holes in the drive hub as shown in the accompanying diagram. Then, replace the hub and stop bracket. Turn the drive hub to its extreme clockwise position and bring the tuning gang plates into full mesh. Now replace the drive cord by following the route as shown in diagram.

TWO KNOTS
TIED IN
CENTRE OF
CORD

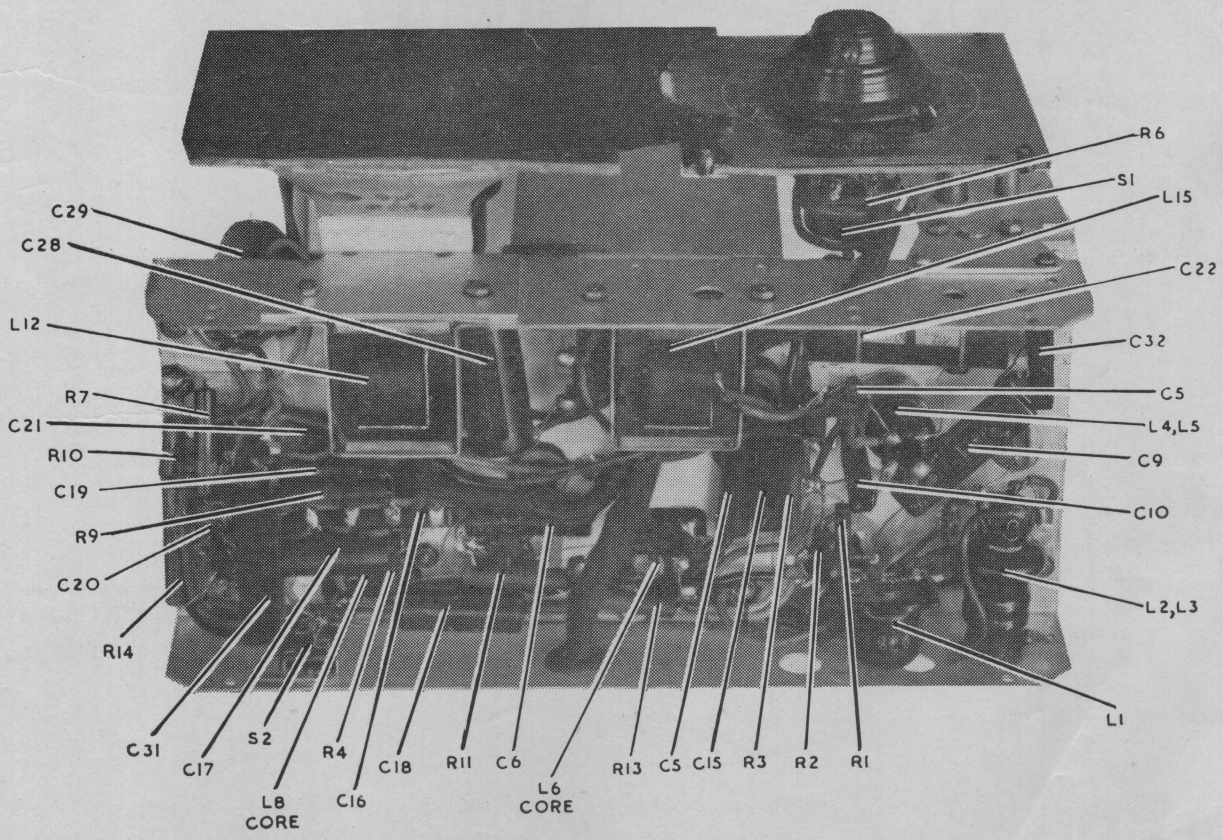


CORD THREADED
THROUGH HOLES
IN DRIVE HUB

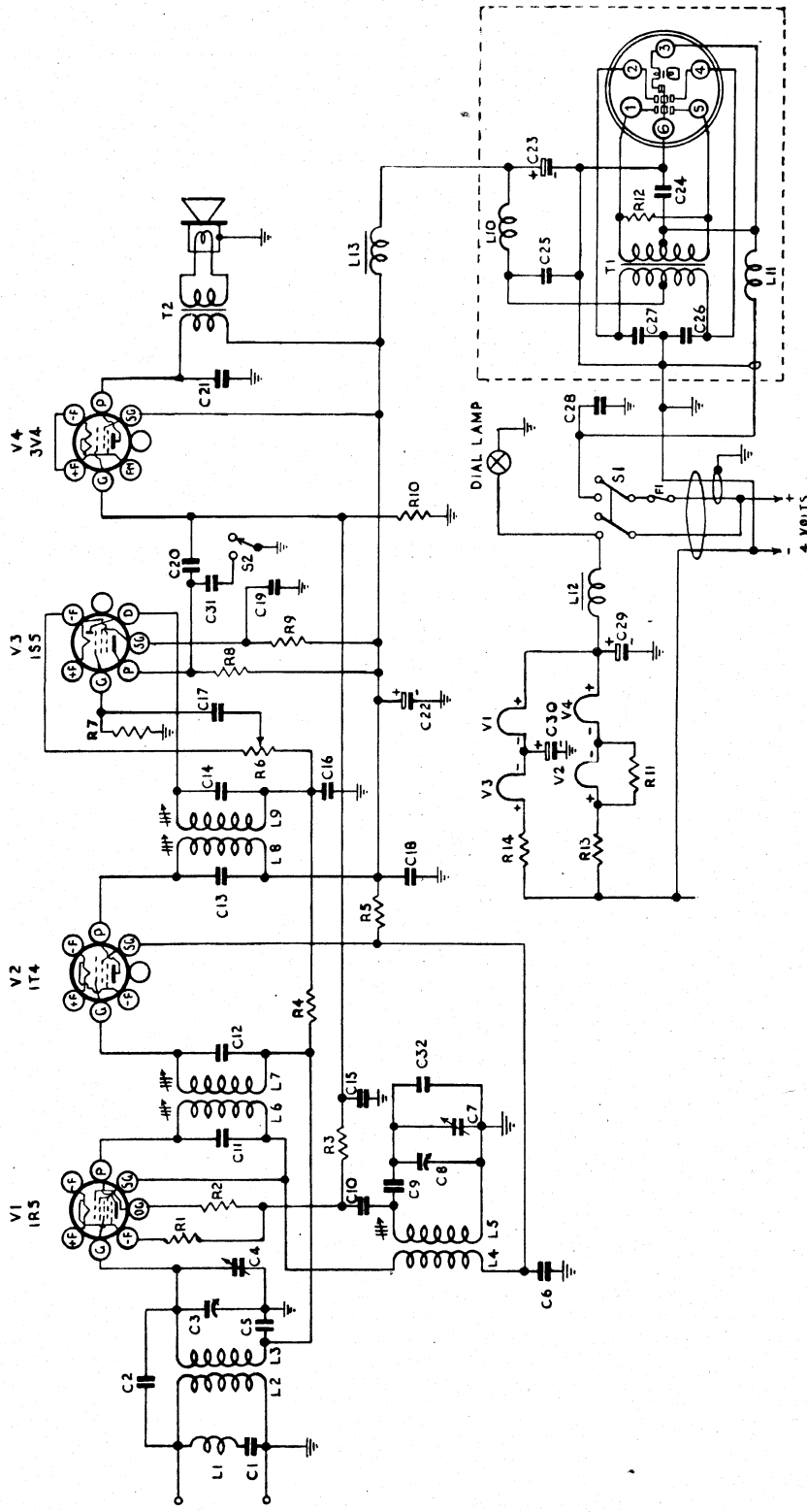




CHASSIS TOP VIEW MODEL 523-M



CHASSIS UNDERNEATH VIEW MODEL 523-M



CIRCUIT CODE — MODEL 523-M.

INDUCTORS

- L1 Filter Unit (including C1) 9382
- L2, L3 Aerial Coil, 1600-540 Kc/s 7647A
- L4, L5 Oscillator Coil, 1600-540 Kc/s 7638
- L6, L7 1st I.F. Transformer 22700
- L8, L9 2nd I.F. Transformer 22703
- L10 R.F. Choke 3149
- L11 R.F. Choke 19155
- L12 Low Tension Filter Choke 8321
- L13 High Tension Filter Choke

RESISTORS

- R1 0.1 megohm, ½ watt
- R2 2000 ohms, ½ watt
- R3 3.2 megohms, 1 watt
- R4 1.6 megohms, ½ watt
- R5 16,000 ohms, ½ watt
- R6 0.5 megohm, Volume Control (with switch) 23475
- R7 10 megohms, 1 watt
- R8 1 megohm, ½ watt
- R9 3.2 megohms, 1 watt
- R10 1.0 megohms, ½ watt
- R11 22 ohms, 1 watt
- R12 500 ohms, ½ watt
- R13 12 ohms, 1 watt
- R14 25 ohms, 1 watt
- R15 500 ohms, 1 watt
- R16 25 ohms, 1 watt
- R17 25 ohms, 1 watt
- R18 25 ohms, 1 watt
- R19 25 ohms, 1 watt
- R20 25 ohms, 1 watt
- R21 25 ohms, 1 watt
- R22 25 ohms, 1 watt
- R23 25 ohms, 1 watt
- R24 25 ohms, 1 watt
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- R31 25 ohms, 1 watt
- R32 25 ohms, 1 watt
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- R39 25 ohms, 1 watt
- R40 25 ohms, 1 watt
- R41 25 ohms, 1 watt
- R42 25 ohms, 1 watt
- R43 25 ohms, 1 watt
- R44 25 ohms, 1 watt
- R45 25 ohms, 1 watt
- R46 25 ohms, 1 watt
- R47 25 ohms, 1 watt
- R48 25 ohms, 1 watt
- R49 25 ohms, 1 watt
- R50 25 ohms, 1 watt

CAPACITORS

- C1 50 uuF Mica
- C2 4 uuF Mica
- C3 12-430 uuF Tuning
- C4 3-25 uuF Trimmer (on gang)
- C5 0.05 uuF Paper, 200 v. working
- C6 0.05 uuF Paper, 200 v. working
- C7 3-25 uuF Trimmer (on gang)
- C8 12-430 uuF Tuning
- C9 470 uuF ± 2½%, Padder
- C10 10 uuF Mica
- C11 1 megohm, ½ watt
- C12 3.2 megohms, 1 watt
- C13 1.0 megohms, ½ watt
- C14 22 ohms, 1 watt
- C15 500 ohms, ½ watt
- C16 12 ohms, 1 watt
- C17 25 ohms, 1 watt
- C18 25 ohms, 1 watt
- C19 25 ohms, 1 watt
- C20 25 ohms, 1 watt
- C21 25 ohms, 1 watt
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- C45 25 ohms, 1 watt
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- C49 25 ohms, 1 watt
- C50 25 ohms, 1 watt

TRANSFORMERS

- T1 Vibrator Transformer 17568
- T2 Loudspeaker Transformer XA8

LOUDSPEAKER

- 5 inch Permanent Magnet AC39

FUSES

- F1 3 amp. Cartridge

V1	IR3	6X4	300 v. working
V2	1T4	250 v. working	
V3	1S5	250 v. working	
V4	3V4	300 v. working	
L1	Filter Unit (including C1)	9382	
L2, L3	Aerial Coil, 1600-540 Kc/s	7647A	
L4, L5	Oscillator Coil, 1600-540 Kc/s	7638	
L6, L7	1st I.F. Transformer	22700	
L8, L9	2nd I.F. Transformer	22703	
L10	R.F. Choke	3149	
L11	R.F. Choke	19155	
L12	Low Tension Filter Choke	8321	
L13	High Tension Filter Choke		
R1	0.1 megohm, ½ watt		
R2	2000 ohms, ½ watt		
R3	3.2 megohms, 1 watt		
R4	1.6 megohms, ½ watt		
R5	16,000 ohms, ½ watt		
R6	0.5 megohm, Volume Control (with switch)	23475	
R7	10 megohms, 1 watt		
R8	1 megohm, ½ watt		
R9	3.2 megohms, 1 watt		
R10	1.0 megohms, ½ watt		
R11	22 ohms, 1 watt		
R12	500 ohms, ½ watt		
R13	12 ohms, 1 watt		
R14	25 ohms, 1 watt		
R15	500 ohms, 1 watt		
R16	25 ohms, 1 watt		
R17	25 ohms, 1 watt		
R18	25 ohms, 1 watt		
R19	25 ohms, 1 watt		
R20	25 ohms, 1 watt		
R21	25 ohms, 1 watt		
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R23	25 ohms, 1 watt		
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R44	25 ohms, 1 watt		
R45	25 ohms, 1 watt		
R46	25 ohms, 1 watt		
R47	25 ohms, 1 watt		
R48	25 ohms, 1 watt		
R49	25 ohms, 1 watt		
R50	25 ohms, 1 watt		
C1	50 uuF Mica		
C2	4 uuF Mica		
C3	12-430 uuF Tuning	17298	
C4	3-25 uuF Trimmer (on gang)		
C5	0.05 uuF Paper, 200 v. working		
C6	0.05 uuF Paper, 200 v. working		
C7	3-25 uuF Trimmer (on gang)		
C8	12-430 uuF Tuning	17298	
C9	470 uuF ± 2½%, Padder		
C10	10 uuF Mica		
C11	1 megohm, ½ watt		
C12	3.2 megohms, 1 watt		
C13	1.0 megohms, ½ watt		
C14	22 ohms, 1 watt		
C15	500 ohms, ½ watt		
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C17	25 ohms, 1 watt		
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C21	25 ohms, 1 watt		
C22	25 ohms, 1 watt		
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T1	Vibrator Transformer	17568	
T2	Loudspeaker Transformer	XA8	