

THE 'STROLLER' III, MODEL MBPI83, is a four-valve, transportable, superheterodyne receiver for operation from either AC/DC mains or LT and HT batteries.

Utilising built-in frame aerials, this receiver offers free tuning on the M.W. and L.W. broadcast bands.

An external aerial will only be necessary for extended range, or in areas of low field strength.

CONTROLS: Two controls, (left) Volume—ON/OFF, and (right) Tuning, are placed at the scale ends, and two switches, (left) Mains/Battery and (right) Wavechange are along the lower edge of the scale.

MAINS OPERATION: As is customary with AC/DC receivers, the chassis is alive to one side of the mains, and care must therefore be taken to ensure that chassis connects to the "earthed" side of an A.C. supply. Test by connecting, with insulated leads, a neon lamp between chassis and a good earth. If the lamp glows, reverse the mains plug.

VALVES: V1—DK92—Frequency changer.

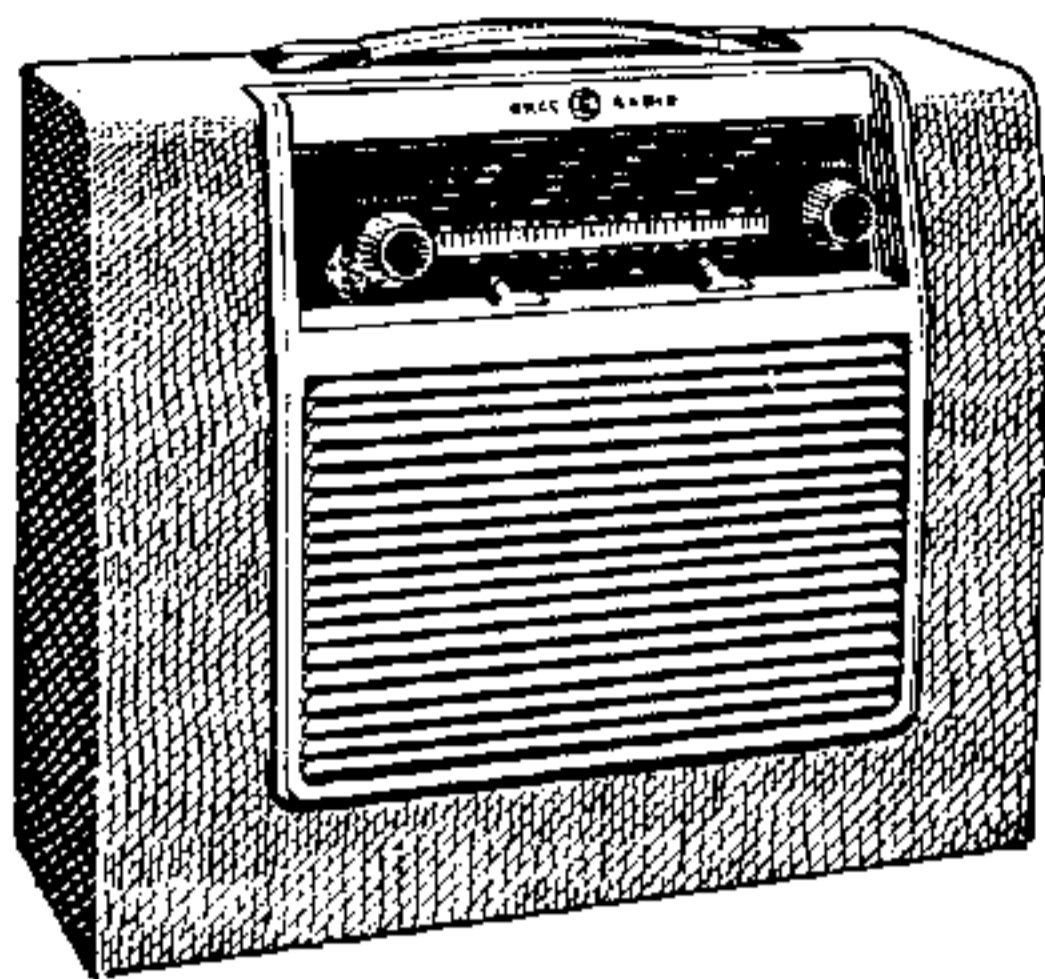
V2—DF91—I.F. Amplifier.

V3—DAF91—Demodulator, A.V.C. and A.F. Amplifier.

V4—DL94—A.F. Amplifier.

All valves are Mullard and have B7G bases.

CAUTION: When operating from the mains supply, it is important that valve changing is only carried out with the set switched OFF, as the charge held by C30 may cause a damaging surge through the filament chain.



MODEL MBP183

WAVEBANDS: M.W.—190-570 metres. 1,580-527 Kc/s.

L.W.—1,000-2,100 metres. 300-143 Kc/s.

INTERMEDIATE FREQUENCY: 470 Kc/s.

LOUD-SPEAKER IMPEDANCE: 3 ohms at 400 cps.

MAINS INPUT: 200-250 volts, D.C. or A.C. 40-100 cps.

BATTERIES: L.T. 7.5 volts (Ever-Ready Alldry 31).

H.T. 90 volts (Drydex H1146).

CONSUMPTION: A.C. mains. 121 ma at 230 v. input.

D.C. mains. 61.5 ma at 230v. input.

L.T. battery. 48 ma at 7.5 v. input.

H.T. battery. 11 ma at 90v. input.

CIRCUIT DETAILS: Signals from the aerial pass via C1, then R27 or C23 to the M.W. or L.W. frame aerials respectively.

The M.W. aerial circuit is composed of the frame aerial L2, and the small series loading coil L1, both of which are shunted by C4, while for L.W., L3 shunted by C3. C16 is employed. Both circuits are tuned by C6.

The oscillator circuits comprise the familiar H.F. transformer design for M.W., and a Colpitts circuit for L.W., both tuned by C7.

Input to V1, at signal frequency, is heterodyned with the local oscillator to produce the I.F. signal at 470 Kc/s at V1 anode tuned circuit.

This signal is coupled by IFT1 to V2, amplified, then coupled by IFT2 to the diode of V3 for demodulation.

The rectified A.F. output developed across R28.R8 is taken off at the volume control and fed to the pentode section of V3, amplified, then R.C. coupled to V4, the output of which is transformer coupled to the permanent-magnet loud-speaker.

Negative feed-back from V4 anode to its grid is effected via R25.C25.

A.V.C.: The chain of resistors, R7.R1.R17.R28.R8, connect between C30.R18 and chassis, forming a bias potential divider, and appropriate bias voltages are taken from the junction points to V1.V2 and V3.

The signal diode of V3 connects to the junction of R28.R17, and produces negative voltages at this point, that are relative to signal strength. The remaining tapings in the chain are automatically varied by these changes, thus giving A.V.C. action.

MAINS/BATTERY SWITCHING: This comprises a double chain of switches with the double pole ON/OFF switch included to break each chain.

For "battery operation," H.T. L.T. negative is switched to chassis, while H.T. and L.T. positives are switched respectively to the filament and H.T. lines. Both sides of the mains are completely isolated.

For "mains operation" all battery leads are isolated. One side of the mains is switched to chassis, and the other side is connected via the surge limiter R16 to the half-wave metal rectifier, the output of which passes through the mains compensating R15.

At this point the supply passes to (a) the filament circuit via R14, with additional smoothing by C30 to ensure hum-free operation, (b) via R13 to the H.T. line, smoothed by C27.

CHASSIS REMOVAL: Remove the lower back cover, held by two wood screws.

Disconnect and remove the batteries—if used.

Remove the upper back cover, held by a screw at each lower corner. (Early models had an additional screw at each side centre of this cover.)

Remove the mains adjusting screw, then slide out the under-chassis cover.

Disconnect the loud-speaker if desired. The leads are left long enough for the chassis to clear the cabinet.

Remove the four screws securing the four corner flanges under the chassis.

The top front of the chassis is clamped under oversize washers screwed in place. Loosen and remove chassis.

Re-assemble in reverse order. Before fitting the covers, ensure that all wiring and components are clear of the speaker pot.

DRIVE CORD DETAILS: The diagram on page 4 gives full instruction for fitting a replacement cord.

Before using new cord, it should be stretched to prevent slack drive developing in later use.

Suspend a length of cord and to its lower end tie a 14 lbs. weight, and leave for 24 hours. Cord length required, including tie-off, is approximately 42.5 inches.

CURSOR ADJUSTMENT: With the tuning capacitors fully closed, the pointer should coincide with the datum mark which is positioned near to the L.F. end of the M.W. scale. Datum is a small inverted mark. To correct any error, simply slide the cursor along the cord as necessary.

ALIGNMENT PROCEDURE: Set the volume control fully clockwise. Connect output meter across the loud-speaker tags. All adjustments to be made for maximum output.

I.F. ALIGNMENT: Switch to M.W. and fully close the ganged tuning capacitors. Inject a modulated 470 Kc/s signal via a 0.1 mfd capacitor to pin 6 of V1, then adjust all four I.F. cores in the following order. IFT2 upper and lower, then IFT1 upper and lower. Repeat if necessary. Check for symmetry of response.

R.F. ALIGNMENT: Check the pointer against the datum mark. (See above.) Switch to M.W. Make adjustments in the order given.

Adjust C14 and C4 at 1,500 Kc/s. Adjust L4 core at 600 Kc/s.

Repeat until calibration is correct.

Switch to L.W.

Adjust C15 and C3 at 250 Kc/s. Adjust L5 core at 166.6 Kc/s.

Repeat until calibration is correct.

VOLTAGE AND CURRENT DATA

VALVE	ANODE		SCREEN		VOLTS ACROSS FILAMENT
	VOLTS	M.A.	VOLTS	M.A.	
DK92 Mixer	90	0.6	55	0.1	1.35
Osc.	32	1.8	—	—	—
DF91	90	1.9	48	0.5	1.29
DAF91	—	0.1	—	0.03	1.3
DL94	85	5.8	90	1.2	1.11 + 1.2

Conditions : 230v. A.C. to 220/230 volts tap.

Set tuned to 550 Kc/s. No signal input.

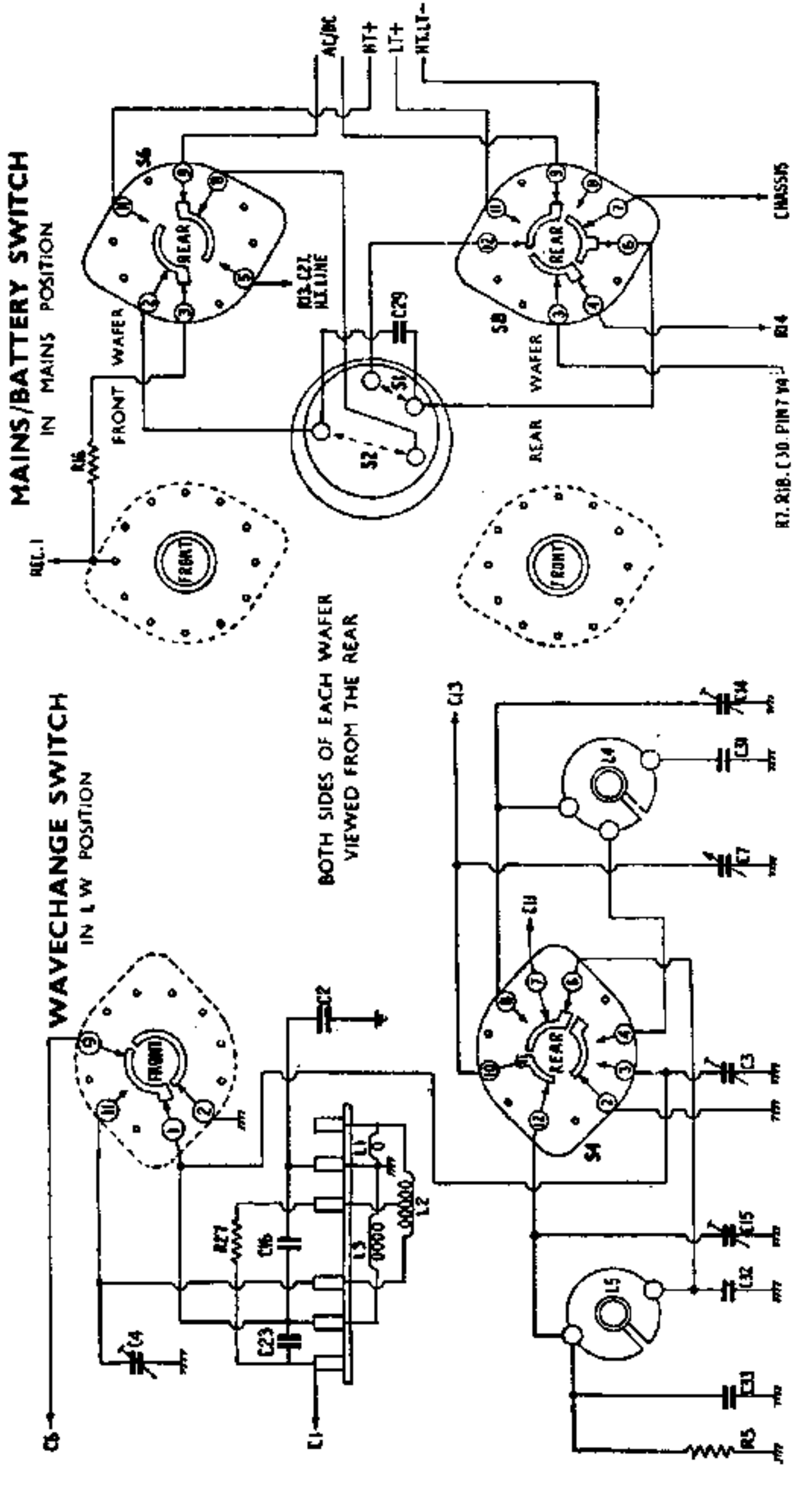
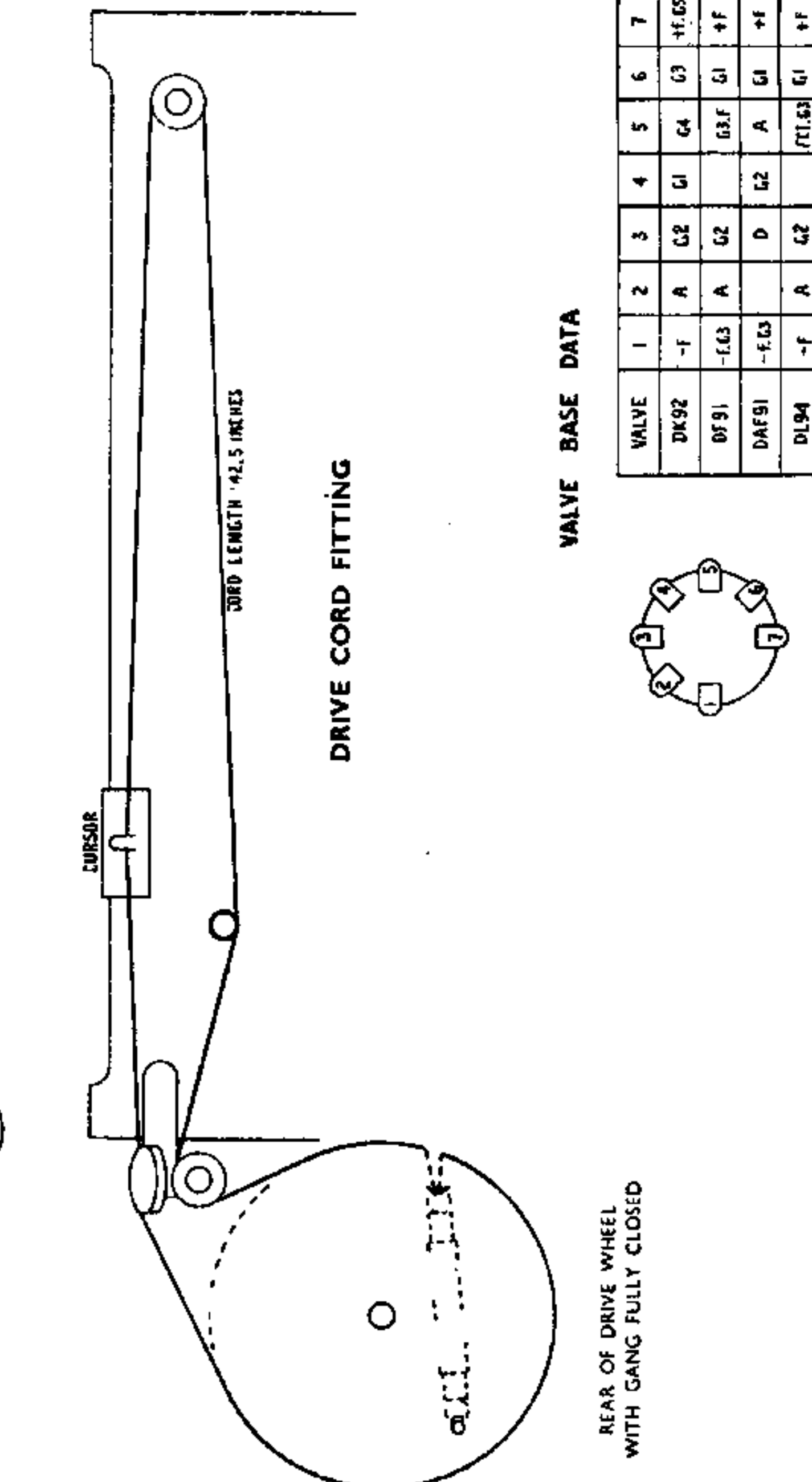
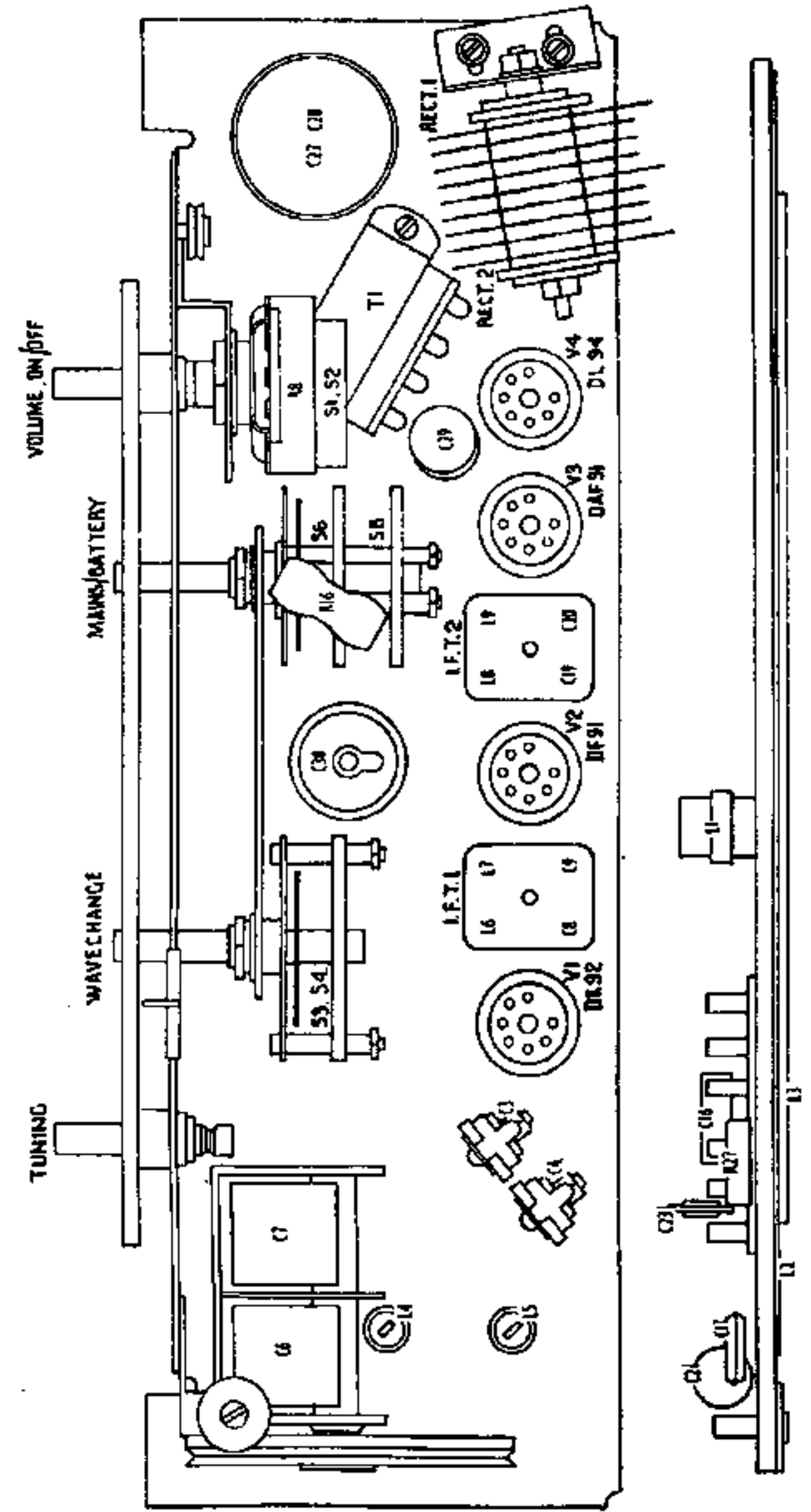
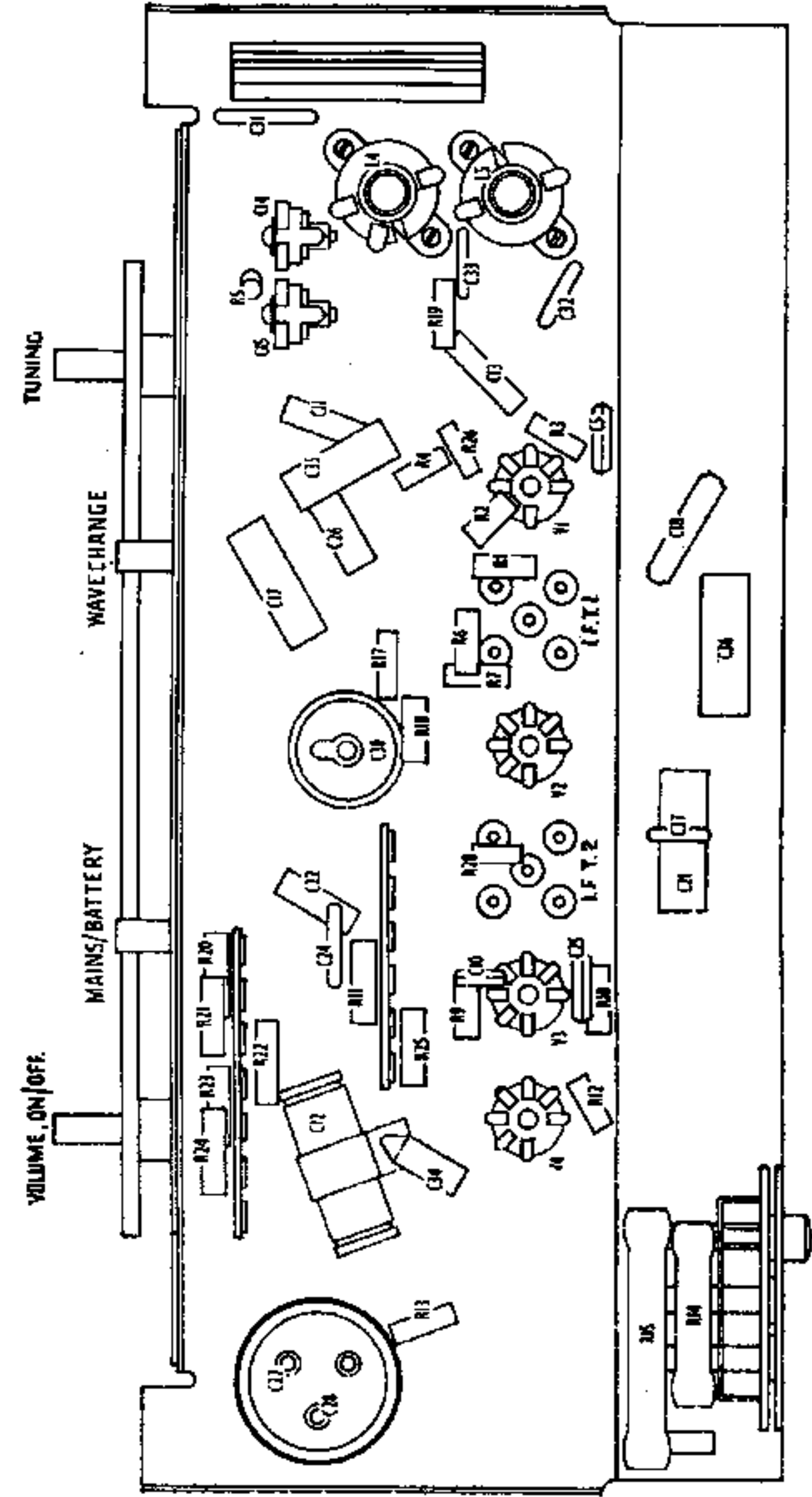
Model 40 AVO. Chassis as negative.

RESISTANCE OF WINDINGS

WINDING	OHMS
L1	.02*
L2	1.3
L3	8.0
L4 Grid	2.4
L4 Anode	0.3
L5	5.6

WINDING	OHMS
L6	33
L7	33
L8	33
L9	33
T1 PRI.	697
T1 SEC.	0.3

* This is approximate, as L1 is adjusted to correct L2 inductance.



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