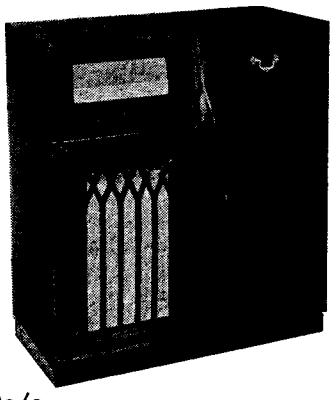
SERVICE DATA

MAS 1153L



MULLARD MASTER RADIO

RADIOGRAM MODEL MAS 1153L

SPECIFICATIONS

(Subject to alteration without notice)

Power Supply	220-260V 40-60c/s.
Tuning Ranges	B/C Band 530-1620kc/s. S/W Band 5.9-18.4Mc/s.
Intermediate Frequency	455kc/s.
Cabinet	De-luxe combination.
Gramo. Unit	Type 2508 Record Changer.

VALVE EQUIPMENT AND VOLTAGE ANALYSIS

Valve Function	Valve No.	Valve Type	Plate Volts	Screen Volts	Osc. P. Volts
Frequency Converter	V1	ECH35	240	65	107
I.F. Amplifier	V2	6SK7GT	246	75	—
Demodulator, A.V.C., and 1st Audio	V3	EBF35	19	22	—
Power Amplifier	V4	EL33A	230	246	—
Rectifier	V5	6X5GT	V5 Cathode to L12 C.T. — 276 volts		
Dial Lamps	V11, 12	6.3V. 0.32A. tubular screw			
Voltage across R12 –1.6V.; across R11 and R12, –8.3V.					

NOTE: These voltages are measured with an "1,000 ohms per volt" meter and may vary ± 10% from the figures quoted. They are measured from the socket points indicated to chassis, or across the resistors listed. The receiver should be in a "no signal" condition.

TO REMOVE CHASSIS FROM CABINET.

Remove the power plug from the mains outlet socket. Remove the knobs from the four front control spindles, the speaker plug from its socket and the chassis bottom cover. Disconnect the gramo. motor leads from the gramo. unit and insulate and tape the free ends.

The external volume control is removed as follows. Remove the housing with the potentiometer and knob mounted to it from the cabinet and by making use of the hole in the housing for grub screw access, remove the control knob. The potentiometer may then be unscrewed from the housing and passed back through the side hole of the cabinet to rest on top of the chassis.

Remove the four chassis mounting screws. Three of these screws are visible, the fourth one is located in front of the chassis on the right-hand side when looking from the rear of the cabinet. Access to the head of the screw with a screwdriver is possible, but this may not be necessary if a spanner is used on the nut underneath. Remove the two dial back plate mounting brackets.

The chassis may now be withdrawn from the cabinet.

In replacing the chassis, the hidden front screw may present some difficulty in positioning. The following procedure is recommended. While the chassis is out of the cabinet, position the screw and its washer in the tee nut, grommet and chassis mounting foot. As the chassis is being replaced and the screw approaches the front chassis supporting rail in the cabinet, push the screw up until the bottom of it rests on the rail. Then, as the chassis is pushed forward, it carries the screw with it. With the chassis in its normal position, the screw should fall down into its mounting hole. It may be necessary to "feel" with the chassis to locate the screw.

The remainder of the chassis replacement is a reversal of the removal procedure.

DIAL LAMP REPLACEMENT.

The two holders are readily accessible from the rear of the cabinet. A quarter counter-clockwise turn releases the holder from the dial back plate.

DIAL CALIBRATION.

If it is required to correct dial calibrations for an equal error on all stations, the cursor assembly can be moved on the dial cord. An access hole located near the middle of the dial back plate allows the clamping screw to be slackened for this purpose. Be sure to securely tighten the screw after the adjustment has been made.

MAINS VOLTAGE ADJUSTMENT.

The power transformer is provided with two mains voltage tappings, 220/240 volts and 250/260 volts. This receiver is adjusted at the factory to the 220/240 volts tapping.

ALIGNMENT.

Before commencing alignment, set the dial cursor with the tuning gang fully closed to the "S" mark at the bottom of the dial glass.

Alignment points are: broadcast band, 1,420 kc/s and 600 kc/s; short wave band, 18.4 Mc/s (gang fully open) and 17.8 Mc/s.

On the short wave band the receiver oscillator operates at a frequency above that of the incoming signal.

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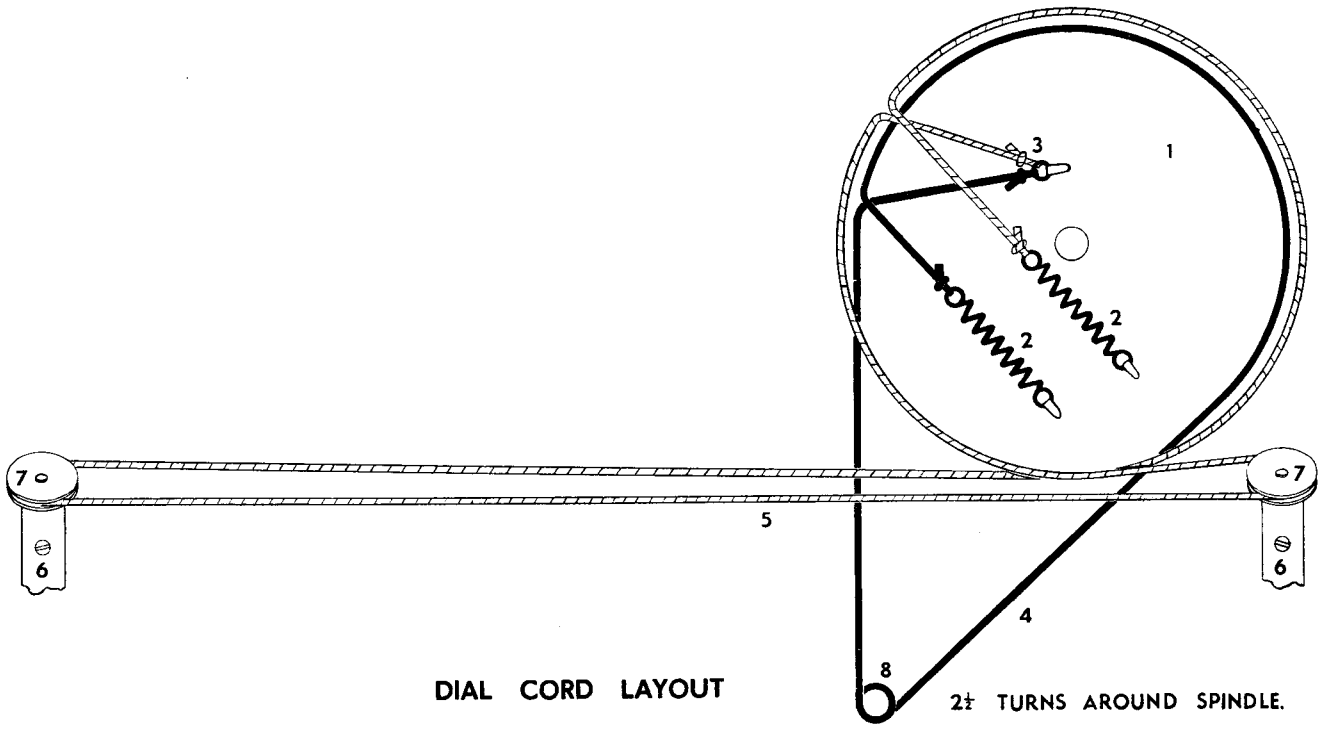
MISCELLANEOUS COMPONENTS

No. on Dial Parts Diagram	Description	Code No.
—	Assembly, cursor	CR.480.635
—	Assembly, dial	CR.272.613
1	Assembly, dial drum	CR.382.804
—	Assembly, drawer dash-pot	CR.200.204
—	Assembly, lampholder	CZ.367.900
6	Assembly, pulley spindle	CR.436.204
—	Assembly, sound diffuser	CR.004.000
—	Assembly, T/C—on/off switch	CZ.200.209
—	Assembly, W/C switch	CZ.200.033
—	Assembly, T/C clicker	CR.450.013
—	Assembly, W/C clicker	CR.450.025
—	Assembly, terminal	CZ.376.201
—	Badge, Mullard	CR.531.409
—	Bank, T/C switch	CZ.200.204
—	Bank, W/C switch, A2	CZ.200.032
—	Bank, W/C switch, A1	CZ.200.031
—	Brace, end (W/C switch)	CS.219.000
—	Bracket, dial plate clamping	CS.228.541
—	Bracket, tuning spindle	CS.224.607
—	Clamp, dial glass	CS.231.802
—	Cloth, speaker baffle	CE.081.83
5	Cord, dial	CS.361.820
4	Cord, drum	CS.361.812

No. on Dial Parts Diagram	Description	Code No.
—	Glass, dial, printed	CS.412.301
—	Grommet, baffle mounting	CS.422.444
—	Grommet, chassis mounting	CS.422.421
—	Grommet, power cord	CS.422.414
—	Housing, ext. vol. control	CS.461.808
—	Key, W/C clicker	CS.365.803
—	Knob, control	CR.523.685
—	Mask, dial scale, rear	CS.050.406
—	Mask, dial scale, side	CS.050.407
—	Nut, tee (chassis mounting)	CH.603.214
—	Plug, 2-pin polarised	CR.102.200
7	Pulley, wooden	CS.360.202
3	Ring, dial cord	CS.281.807
—	Shield, dial lamp	CS.050.204
—	Socket, 2-pin polarised	CR.102.401
8	Spindle, tuning	CS.351.410
—	Spring, cursor slider	CS.211.811
2	Spring, dial drum	CS.210.010
—	Spring, slide rod	CS.255.001
—	Spring, tuning spindle	CS.212.001
—	Spring, W/C clicker key	CS.211.802
—	Switch, mains on/off	28.650.25
—	Washer, cup (drawer dash-pot)	CS.366.219
—	Washer, felt (knobs)	CS.424.018



DIAL CORD LAYOUT

2½ TURNS AROUND SPINDLE.

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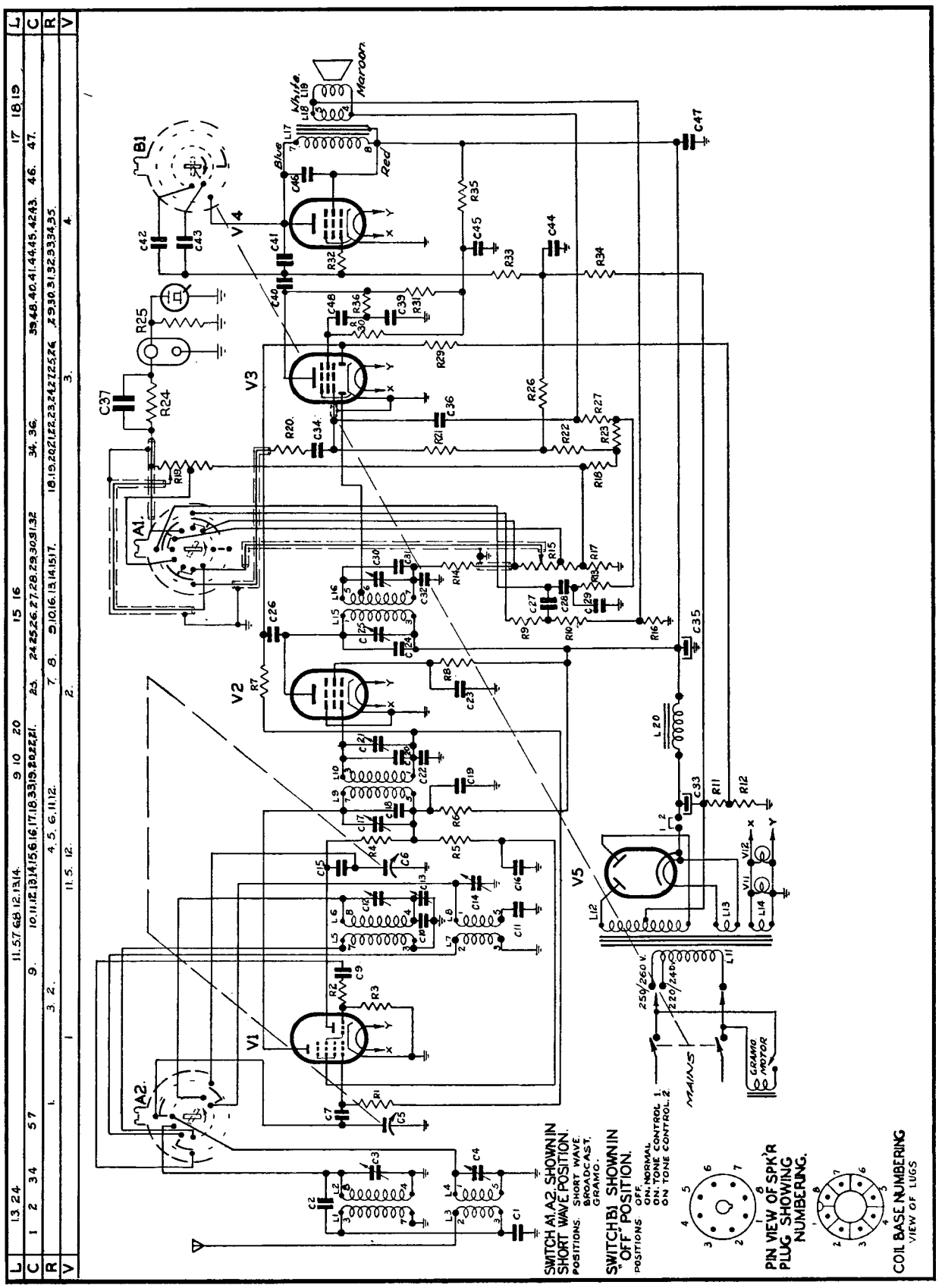

CAPACITORS

No.	Description	Code No.
C1–42	150 pF mica	
C2	5 pF glass	CZ.102.303
C3–4–12–14–17–21–25–30	30 pF air trimmer	CZ.113.700
C5–6	2 gang tuning	CZ.107.720
C7	0.001 mF mica	
C9–15	100 pF mica	
C10	400 pF mica	
C11	0.0045 mF mica	
C13	125 pF ceramic trimmer	CZ.118.200
C16–19–23–40	0.01 mF 600V paper	
C18–20–24–31	80 pF mica	
C22–44	0.1 mF 200V paper	
C26–36	30 pF mica	
C27–46	0.006 mF 600V paper	
C28	0.03 mF 400V paper	
C29	0.002 mF 600V paper	
C32	100 pF ceramic	CZ.096.602
C33–35	16 mF 525V electrolytic	
C34	0.005 mF 600V paper	
C37	300 pF mica	
C39–48	0.02 mF 400V paper	
C41	20 pF mica ± 5%	
C43	50 pF mica	
C45	0.1 mF 400V paper	
C47	0.1 mF 600V paper	

RESISTORS

No.	Description	Code No.
R1–7–26–29	1 megohm ½W carbon	
R2	150 ohms ½W carbon	
R3	25,000 ohms ½W carbon	
R4	30,000 ohms 1W carbon	
R5–35	100,000 ohms 1W carbon	
R6	1,000 ohms 1W carbon	
R8	50,000 ohms 1W carbon	
R9–25–33–36	0.5 megohm ½W carbon	
R10	20,000 ohms ½W carbon 5%	
R11	150 ohms 1W W/W	
R12	35 ohms 1W W/W	
R13	10,000 ohms ½W carbon 5%	
R14–20–32	50,000 ohms ½W carbon	
R15	0.5 megohm tapped carbon potentiometer	Radio Vol. Control 3" spindle
R16	65 ohms ½W W/W	
R17–18–23	25 ohms ½W W/W	
R19	0.5 megohm tapped carbon potentiometer	Gramo. Vol. Control 29/32" spindle
R21	2 megohms ½W carbon	
R22–34	250,000 ohms ½W carbon	
R24	100,000 ohms ½W carbon	
R27	75 ohms ½W W/W	
R30	1 megohm 1W carbon	
R31	250,000 ohms 1W carbon	

COILS

No.	Ohms	Description	Code No.
L1	21		
L2	3.5	Aerial Coil	CZ.320.021
L3	1.3		
L4	<0.5		
L5	2		
L6	4.6	Oscillator Coil	CZ.321.017
L7	<0.5		
L8	<0.5		
L9	4.8	1st I.F. Transformer	CZ.326.205
L10	4.8		
L11	30		
L12	500	Power Transformer	CZ.344.021
L13	<0.5		
L14	<0.5		
L15	4.8	2nd I.F. Transformer	CZ.326.204
L16	5.1		
L17	600		
L18	<0.5	Speaker and Transformer, 7,000 ohms	CZ.161.305
L19	2		
L20	450	Filter Choke	CZ.340.406

IMPORTANT! In ordering spare parts, quote CODE NUMBER of part and MODEL NUMBER of Receiver. In claiming free replacement under GUARANTEE, return defective part PROMPTLY and quote MODEL and SERIAL NUMBER of Receiver and DATE OF PURCHASE.