

HMV 532A COLUMBIA 640A

Ten-valve, two waveband superhet (non-AVC) automatic radiogramophones with provision for extra loudspeakers and switching. Suitable for operation from mains supplies of 100-160v, 200-260v, 50-60 cycles. Manufactured in 1932 by the Gramophone Co., and the Columbia Graphophone Co., Ltd., Hayes, Middlesex.

IN the main, the circuits of the models 532A and 640A follow closely those of the models 532 and 640; the differences will be appreciated upon an examination of the circuit diagram, and may be summarised as follows:—

Trimmers are added to all long-wave coils.

The coupling between the HF stage

VALVE READINGS

(Radio chassis only)

V	Type	Electrode	Volts	Ma
1	VMS4 (Met)	Anode	210	.2
		Screen	165	5.0
		G.B. volts	90	.1
			50	1.0
			26	—
2	MHL4 (Clear)	Anode	90	4.2
		G.B. volts	50	2.4
			12	—
			7	—
			1	—
3	MS4 (Met)	Anode	210	1.7
		Screen	165	.8
		G.B. volts	90	.4
			50	—
			12	—
4	VMS4 (Met)	Anode	210	.2
		Screen	165	5.0
		G.B. volts	90	.1
			50	1.0
			26	—
5	VMS4 (Met)	Anode	210	.3
		Screen	165	2.5
		G.B. volts	90	.1
			24	.5
			2.5	—
6	ML4 (Clear)	Anode	170	.5
		G.B. volts	130	—
			19	—
			15	—
			1	—

Where two readings are given, the first is for vol. control at min., the second figure for vol. control at max.

(V1) and the mixer stage (V3) is changed from choke capacity to tuned transformer; in the accompanying circuit diagram L9 (MW) and L11 (LW) are the anode primary coils, while the tuned secondaries are L10 (MW) and L12 (LW).

The separate, oscillator valve, V2, employs tuned anode circuits L5 (MW) and L7 (LW) with L6 and L8 feed-back windings in the grid circuit, which are also in the cathode circuit of V3, thus effecting mixing. In the anode circuit of the second detector valve V6, an additional filter is provided by CK3, C20.

The amplifier and power pack are substantially the same as in the previous models, but it should be noted that the tone control circuit from C26 is taken to a socket on the amplifier and thence by means of a plug and lead to the tone control resistance VR3.

GANGING

IF Circuits.—These are trimmed as in the Models 532 and 640.

MW Band.—Adjust T7, T8, T9, as for Models 532 and 640. There is no series tracking condenser in the oscillator tuning circuits.

LW Band.—Adjust T10, T11, T12, T13 on a signal of about 1,100 m, and set the long-wave pointer to correct calibration at 1,500 m.

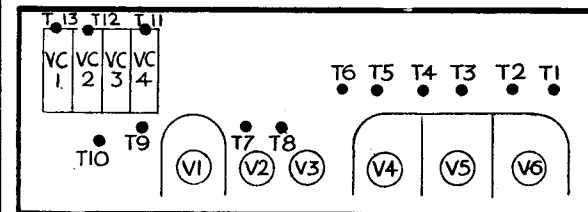
The aerial trimmer T14 should be adjusted for maximum output on about 250 m. when the model is connected to its aerial.

MAINS TRANSFORMER VOLTA ADJUSTMENTS FOR ALL MODELS

In all standard models the motor is connected across the outers of the transformer primary, and no adjustment need be made to the motor connections.

On non-standard instruments the manufacturers should be consulted, quoting the type number of the motor.

Between	95 and 102 volts, screws 4 and 5
"	103 " 110 " " 4 " 6
"	111 " 118 " " 3 " 5
"	119 " 127 " " 3 " 6
"	128 " 136 " " 2 " 5
"	137 " 145 " " 2 " 6



Between	146 and 155 volts, screws 1 and 5
"	156 " 164 " " 1 " 6
"	190 " 205 " " 4 " 7
"	206 " 222 " " 3 " 7
"	223 " 240 " " 2 " 7
"	241 " 260 " " 1 " 7

WINDINGS

(Radio chassis only)

L	Ohms	L	Ohms
1	3.5	12	24.5
2	3.5	13	44
3	15.5	14	44
4	15.5	15	44
5	3	16	44
6+L8	1.5	17	44
7	18.5	18	44
8+L6	1.5	CK1	85
9	7.5	CK2	85
10	3.5	CK3	350
11	26.5		

For power pack components see Model 532 review.

RESISTANCES

(Radio chassis only)

R	Ohms
1	2,000
2	40,000
3	500
4	14,000
5	40,000
6	60
7	18,000
8	1,000
9	110,000
10	10,000
11	5,000
12	25,000
13	2,000
VR1	3,500
VR2	100,000
VR3	50,000

For power pack components see Model 532 review.

Layout of the "A" chassis. Note the short gang condenser. In some sets the trimmers T7, T8 and T9 may be changed around, but this does not affect the sequence for adjustment.

FAULTY CALIBRATION

AN Ultra Model 309 was brought in for service, and it appeared that the trouble was faulty calibration, particularly

CONDENSERS

C	Mfds	C	Mfds
1	.5	11	1
2	.00005	12	.00022
3	1	13	.01
4	.00025	14	.001
5	.00022	15	.001
6	.00025	16	.001
7	.5	17	.001
8	.00022	18	.001
9	.1	19	1
10	.00025	20	.001

For power pack components see Model 532

on the top end of the medium waves. For example, the Home Service programme was received at about 500 metres instead of 449 metres, which is the highest wavelength on which this programme is radiated.

A fault in the RF tuning circuits was suspected. Close inspection revealed that the iron-dust core inside the aerial coil had slipped. This reduced the inductance of the coil and necessitated a corresponding increase of capacity to receive a required station.

On refixing the core in its correct position, and realigning, the set functioned correctly.

Trimmers for LW, tuned HF transformer coupling and a different oscillator arrangement are among the features found in this "A" circuit.

