MARCONIPHONE
278, 280, 262 DC, 286 DC
HMV
404, 505, 440 DC, 540 DC

These models are the DC versions of the receivers reviewed on the opposite page. They are suitable for 200-250 DC supplies and make provision for both a pickup and a low-impedance extension speaker. Marketed in 1933-4 by the Gramophone Co., Ltd., and the Marconiphone Co., Ltd., Hayes, Middlesex.

Circuit.—The following are the variations from the AC models :—

Extra aerial condenser C1.

Isolating condensers C8 and C9 for the pick-up circuit. In some models a condenser is used to isolate the screening of the pick-up leads from the cathode circuit of V3. Where fitted this condenser is C12.

The LF coupling unit employs a similar high-note rejector circuit comprising L16 and C13, but the transformer has separate windings L17 and L18, instead of the auto-transformer arrangement used in the AC models.

Permanent tone correction for the output valve is effected by R16 and C20 in series.

The extra loudspeaker terminals are those numbered 1 and 2, and the extra loudspeaker should have an impedance of about 11 ohms (9 ohms DC).

The HT supply circuit follows usual DC practice. The mains input is filtered by HF chokes L24 and L25 and condensers C26 and C27. Smoothing for the HT feed is effected by an LF choke, L22, in the table models with an additional choke and condenser, L26, and C28 in the radiograms.

The heaters of the valves are connected in series across the mains with the necessary voltage dropping resistances in the positive supply lead.

An interesting feature of the models 404, 505, 278, and 280 is the provision of a conversion plug and socket which breaks the HT positive feed line. By withdrawing the conversion plug from its socket and inserting a similar plug fitted to a metal rectifier and condenser the model can be converted for use from AC mains. The motor in the radiograms is of the universal type and, therefore, runs satisfactorily from AC or DC without adjustment.

GANGING

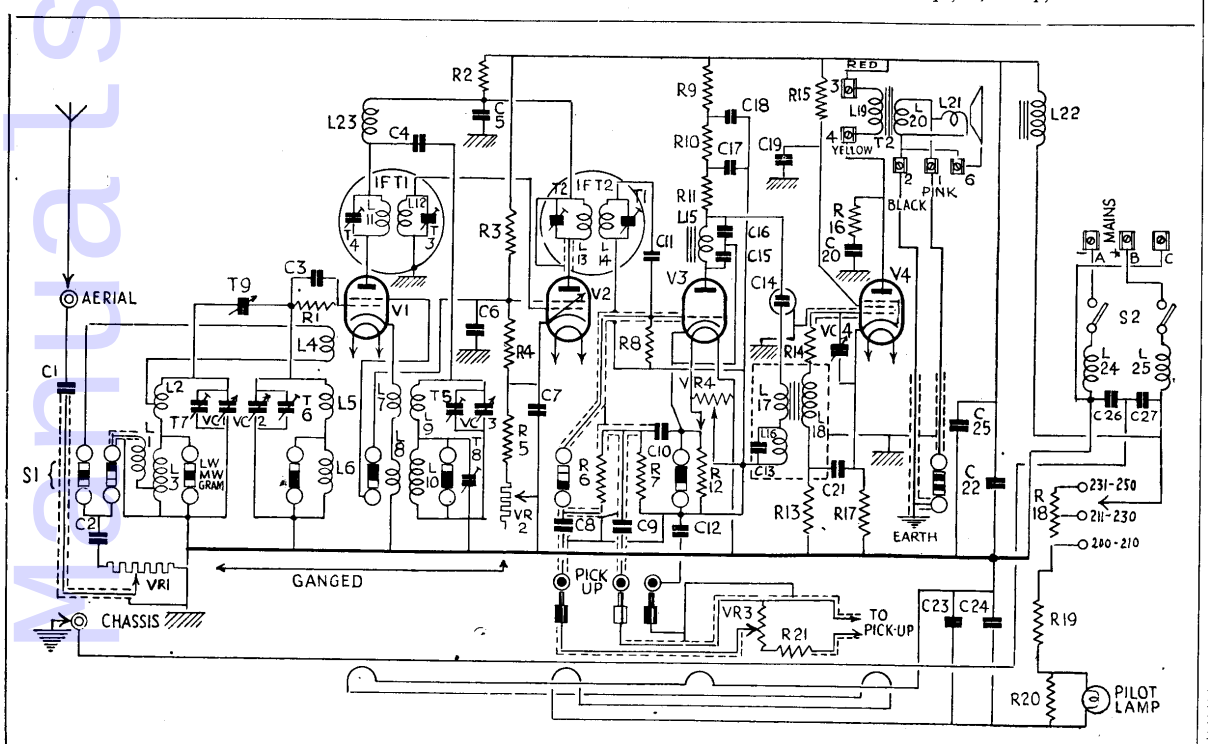
The ganging instructions given in the review of the AC models apply also to the DC instruments. The trimmers are positioned as shown in the chassis layout diagram covering the AC models.

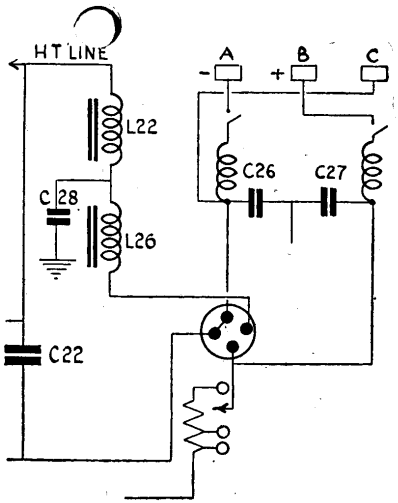
VALVE READINGS

Measured on 235v. mains. Volume control at minimum on radio.

V	Type	Electrode	Volts	Ma
1	DSB	Anode	140	1
		Screen	60	.25
2	VDS	Anode	140	4
		Screen	50	.75
		Cathode	2.5	—
3	DH	Anode	60	2.5
4	DPT	Anode	160	24
		Screen	127	4
		Cathode	6	—

Pilot lamps, 6v, .3 amp, MES.





Models 505 and 280 RGs incorporate a plug and socket for conversion to AC by means of a metal rectifier unit. Models 404 and 278 have two PLs and no L26, C28.

RESISTANCES

R		Ohms	R		Ohms
1	..	2 meg.	14	..	230,000
2	..	5,000	15	..	10,000
3	..	35,000	16	..	10,000
4	..	20,000	17	..	230
5	..	350	18	..	80+80
6	..	10,000	19	..	500
7	..	100,000	20	..	100
8	..	230,000	21	..	2,000
9	..	10,000	VR1	..	25,200
10	..	10,000	VR2	..	18,000
11	..	23,000	VR3	..	1,500
12	..	500	VR4	..	3,000
13	..	230,000			

CONDENSERS

C		Mfds	C		Mfds
1	..	.001	15	..	.002
2	..	.0005	16	..	.002
3	..	.00005	17	..	2
4	..	.0001	18	..	1
5	..	1	19	..	1
6	..	1	20	..	.004
7	..	.1	21	..	2
8	..	.5	22	..	3
9	..	.5	23	..	2
10	..	1	24	..	2
11	..	.00005	25	..	2
12*	..	.01	26	..	.005
13	..	.0003	27	..	.005
14	..	.1	28	..	2

* Omitted in some models.

WINDINGS

L		Ohms	L		Ohms
1	..	72	14	..	100
2	..	3.5	15	..	240
3	..	13	16	..	1,000
4	..	.1	17	..	400
5	..	3.5	18	..	2,350
6	..	13	19	..	750
7	..	.25	20	..	2
8	..	.5	21	..	9
9	..	5	22	..	(Table) 1,200
10	..	5			(RGs) 230
11	..	100	23	..	100
12	..	100	24	..	2.5
13	..	100	25	..	2.5
			26		(RGs) 230

MARCONI and HMV AC MODELS

Continued from page v

contacts when the wavechange switch is operated.

HT is provided by a normal arrangement of full-wave rectifier, V5, smoothing condensers C18, C19 and speaker field. The heater supply to the receiving valves is earthed via VR4.

A condenser, C20, connected to the mains input provides a mains aerial device.

GANGING

IF Circuits.—Short V1 cathode to chassis. Inject 125kc signal into grid circuit of V1 and adjust T1, T2, T3, T4 for maximum reading on output meter.

If quality is more important than selectivity, T4 and T2 may be adjusted to 128kc and then T3 to 123kc and T1 to 125.5kc.

MW Band.—Remove short across V1 cathode coils. Connect service oscillator to aerial and earth sockets employing dummy aerial. Unscrew T9 several turns.

Inject and tune to 210m signal.

Screw T6 up and adjust T5 for maximum output and then T7.

Unscrew T6 until maximum output is obtained.

LW Band.—Inject and tune to 1,000 metre signal.

Adjust T8 for maximum output.

Image Suppression Circuits.—Tune in powerful 250m signal at its image point (315m). Adjust T9 for minimum output. Tune in powerful 350m signal at its image point (496m) and adjust bracket holding L4 to position giving minimum output.

Check over adjustments as they are interdependent.

In later models the image suppressor is an assembly of two bobbin-wound coils and a fixed condenser on a bracket. The position of the whole assembly may be varied to give minimum output from the " image " signal.

Hum in Pye Portable

A PYE mains portable was tested for a complaint of hum and noise. The hum was found to be due to mains modulation of the HF end of the set and was cured by putting a .1 mfd condenser across the mains input.

The other fault was more or less intermittent in that it took a long time to occur, and when the wave-change switch was operated it sometimes stopped the fault. Testing the valves by gently tapping each in turn, it was found that the ECH3 valve was faulty, apparently having a bad electrode.