

# HMV 1100

Four-valve, plus rectifier, push button superhet. There is no manual tuning on this receiver, there being seven push buttons for the selection of stations. Provision is made for the connection of extra loudspeakers and pick-up. For operation from AC mains, 195-255v, 50-60 cycles. Manufactured in 1939 by The Gramophone Co., Ltd., Hayes, Middlesex.

**WINDINGS.**—L1 and L2 are the LW and MW iron dust-cored aerial coils across which there are 7 press button switches for connecting pre-set trimmers. The aerial is coupled by a constant im-

pedance, bottom capacity coupling C1, R1; V1 is a triode-hexode which is AVC controlled and is biased by R3 decoupled by C3.

Iron dust-cored variable inductances L7, L8, etc., are in the grid circuit of the oscillator section, these being switched across fixed capacity C5, C23, which is temperature compensating to eliminate drift.

C6 is the oscillator coupling condenser. C8 in the anode circuit of V1 silences radio when pick-up plugs are inserted into the pick-up sockets.

IF signals are transferred by T1 and T2 to the IF amplifying valve V2 which is biased by R6, decoupled by C7.

A second IF transformer L5—L6 passes on the signals to the signal diode of the double-diode-triode V3. R8 is the signal load resistance filtered by C9, R9 and C20. C10 couples the signal to the volume control VR1 from which the signal is fed to the grid of the triode section of V3.

The AVC diode of this valve is fed from L6 via C13, the AVC load resistance being R14, R15, R16. From this network the grid circuits of V1 and V2 are controlled.

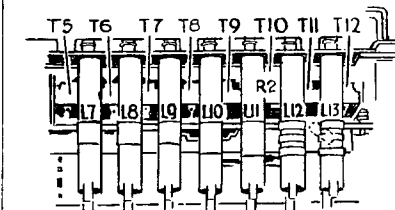
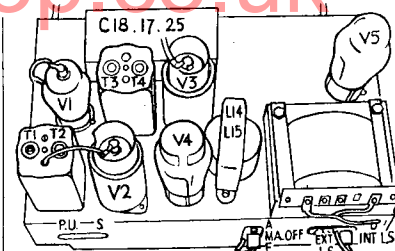
R12 and C12 couple the signal of V3 to the grid of the pentode output valve V4, R16 being the grid leak. V4 is biased by R17 and C19.

A fixed amount of tone correction is effected by C21 while a variable tone control comprises VR2 and C16 across the primary, L14, of the output transformer. The secondary winding, L15, couples the energised loudspeaker to the output valve.

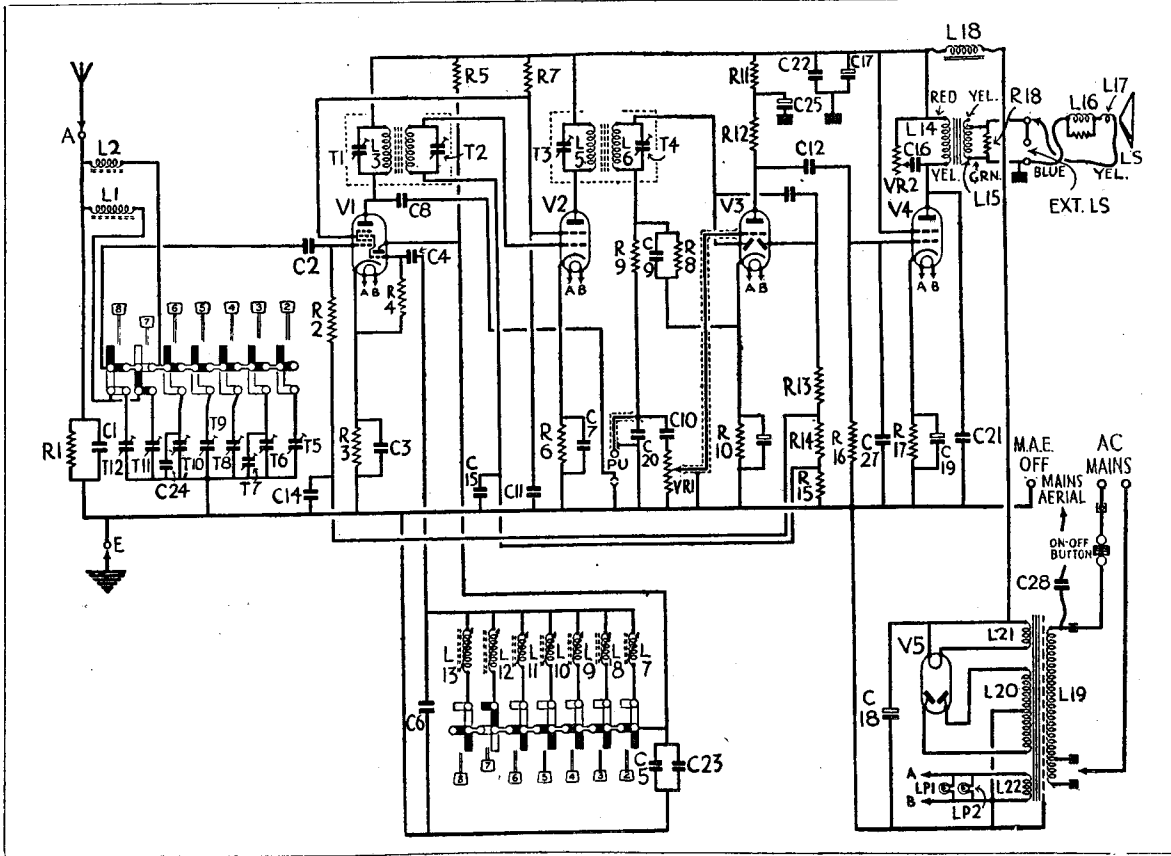
R18 is a safety load across the secondary in case the receiver is operated without any loudspeaker in circuit across the loudspeaker sockets.

L16 is the hum-bucking coil and L17 the speech coil.

The HT comprises the full-wave rectifier valve V5, with smoothing effected by C18 C17 and the field of the loudspeaker L18. A mains aerial device is available via C28.



Top : A view identifying the main features of the chassis ; and, below : the situation of the trimmers.



## VALVE READINGS

Taken on 220 v. mains on No. 2 button, no aerial.

V	Type	Electrode	Volts	Mas
1	X65	Anode	265	1.6
		Osc. anode	95	2.1
		Screen	75	4.6
2	KTW63	Cathode	1.7	—
		Anode	265	4.5
		Screen	75	.8
3	DH63	Cathode	2.3	—
		Anode	100	.75
		Screen	1	—
4	KT63	Anode	253	38
		Screen	265	6
		Cathode	15	—
5	U50	Anode	345AC	—
		Cathode	370	—

## GANGING

**IF Circuits.**—Depress push button No. 2, making sure that the corresponding inductance trimmer is set at maximum (screw right in).

Set volume control to maximum and tone control to minimum top position (fully clockwise).

Inject a 465kc signal to the grid of V1 and chassis via a .1 mfd condenser, leaving grid connection made.

Adjust T1, T2, T3 and T4, in that order for maximum output.

## Push Button Circuits

With volume and tone controls as before, connect service oscillator to aerial and earth sockets. Depress button No. 2 and set oscillator to the wavelength of the desired station. Adjust L7 and T5 in that order for maximum output.

Continue in the same manner with the remaining buttons. The appropriate trimmers are indicated by red lines on the chassis.

With regard to button No. 3 it will be noted from the circuit diagram that there are two trimmers, T6 and T7. If it is desired to tune a station at about 198 metres, adjustment will be rendered more simple if the small loop of wire projecting from the lower bank of the push button switch is cut. This disconnects T7.

The push-button wave ranges are as follows :—

No. 1, on-off switch	No. 5.. 329—558
No. 2 .. 185—193	No. 6.. 420—604
No. 3 .. 198—410	No. 7 1020—1740
No. 4 .. 205—410	No. 8 1250—2450

## CONDENSERS

C	Mfd	C	Mfd
1	.0023	15	.1
2	.0001	16	.035
3	.1	17	.8
4	.0001	18	16
5	.0001	19	10
6	.0005	20	75 mmfd
7	.1	21	.0023
8	.01	22	.1
9	.0001	23	50 mmfd
10	.01	24	.0001
11	.1	25	.4
12	.05	26	50
13	75 mmfd	27	.00015
14	.1	28	.00023

## RESISTANCES

R	Ohms	R	Ohms
1	23,000	11	50,000
2	1 meg	12	150,000
3	230	13	1 meg
4	50,000	14	500,000
5	75,000	15	2.3 meg
6	500	16	350,000
7	35,000	17	350
8	500,000	18	50
9	230,000	VR1	2 meg
10	2,300	VR2	50,000

## WINDINGS

L	Ohms	L	Ohms
1	14.5	12	10.5
2	1.5	13	10.5
3	6	14	280
4	6	15	.6
5	4	16	3
6	4	17	3
7	3.7	18	1.660
8	3.7	19	26+4
9	3.7	20	312+312
10	6.5	21	—
11	6.5	22	—

## RADIO SERVICE CERTIFICATE

Details, including the syllabus, of the examination to be held by the Radio Trades Examination Board are given on page 61 of this issue of ELECTRICAL TRADING & RADIO MARKETING. Successful entrants will be awarded a Radio Servicing Certificate recognised by all trade organisations.