

# COMPONENTS AND VALUES

CONDENSERS	Values (μF)
C1	V1 CG condenser
C2	V1, V3 SG's RF by-pass
C3	V1 anode decoupling
C4	RF trans. SW coupling
C5	AVC line decoupling
C6	V2 pent. CG condenser
C7	V2 SG decoupling
C8	V2 pent. anode and T.T. decoupling
C9	1st IF transformer tuning condensers
C10	V2 osc. CG condenser
C11	Osc. circuit SW tracker
C12	Osc. circuit MW fixed tracker
C13	Osc. circuit LW fixed tracker
C14	V2 osc. anode coupling
C15	V3 CG decoupling
C16	V3 anode decoupling
C17	2nd IF transformer tuning condensers
C18	IF by-pass condensers
C19	Coupling to V4 AVC diode
C20	AF coupling to V4 triode
C21	V4 cathode by-pass
C22	V4 triode to V5 AF coupling
C23	Parts of tone control
C24	Fixed tone corrector
C25	HT smoothing condensers
C26	T.T. CG decoupling
C27	Aerial circuit SW trimmer
C28	Aerial circuit MW trimmer
C29	Aerial circuit LW trimmer
C30	RF trans. sec. MW trimmer
C31	RF trans. sec. LW trimmer
C32	Osc. circuit MW trimmer
C33	Osc. circuit LW trimmer
C34	Osc. circuit SW trimmer
C35	Osc. circuit MW trimmer
C36	Osc. circuit LW trimmer
C37	Oscillator SW reaction
C38	Oscillator MW reaction
C39	Oscillator LW reaction
C40	1st IF transformer tuning condensers
C41	2nd IF transformer tuning condensers
C42	IF by-pass condensers
C43	Coupling to V4 AVC diode
C44	AF coupling to V4 triode
C45	V4 cathode by-pass
C46	V4 triode to V5 AF coupling
C47	Parts of tone control

OTHER COMPONENTS	Approx. Values (ohms)
L1	Aerial SW coupling coil
L2	Aerial MW coupling coil
L3	Aerial LW coupling coil
L4	Aerial SW tuning coil
L5	Aerial MW tuning coil
L6	Aerial LW tuning coil
L7	RF trans. SW primary
L8	RF trans. MW primary
L9	RF trans. LW primary
L10	RF trans. SW secondary
L11	RF trans. MW secondary
L12	RF trans. LW secondary
L13	Oscillator SW reaction
L14	Oscillator MW reaction
L15	Oscillator LW reaction
L16	Osc. circuit SW tuning coil
L17	Osc. circuit MW tuning coil
L18	Osc. circuit LW tuning coil
L19	1st IF transformer tuning condensers
L20	2nd IF transformer tuning condensers
L21	IF by-pass condensers
L22	Coupling to V4 AVC diode
L23	AF coupling to V4 triode
L24	V4 cathode by-pass
L25	V4 triode to V5 AF coupling

OTHER COMPONENTS (Continued)	Approx. Values (ohms)
L26	Speaker field coil
L27	Speaker input trans.
L28	Mains Heater sec. trans.
L29	Mains Rect. heat. sec. trans.
L30	Waveband switches
L31	Radio/Gram. change switches
L32	Variable selectivity switches
L33	Tone control switches
L34	Internal speaker switch
L35	Mains switch

## VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 223 V, using the 230 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium band, and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 AC/VP2	260	7.8	212	2.3
V2 AC/TH1	238	7.8	100	6.5
V3 AC/VP2	253	8.5	212	2.4
V4 THD1	120	2.1	212	2.4
V5 AC/VP2	250	6.2	212	2.4
V6 UU4	322†	0.15	—	—
T.T. TV4A	238	0.4	—	—

† Each anode, AC.

RESISTANCES	Values (ohms)
R1	V1 CG resistance
R2	V1, V3 SG's HT feed
R3	V1 anode HT feed
R4	V2 pent. CG resistance
R5	V2 SG HT feed
R6	V2 SG stabiliser
R7	V2 pent. anode HT feed
R8	V2 osc. CG resistance
R9	V2 osc. CG stabiliser
R10	V2 osc. anode HT feed
R11	V3 CG decoupling
R12	V3 anode HT feed
R13	IF stopper
R14	Manual volume control
R15	V4 triode CG stopper
R16	V4 signal diode load
R17	V4 triode GB; AVC delay
R18	V4 triode anode load
R19	AVC line decoupling
R20	V4 AVC diode load resistances
R21	V5 CG resistance
R22	V5 CG stopper
R23	V5 GB resistance
R24	V5 anode stopper
R25	Feed-back feed potential
R26	divider resistances
R27	T.T. anode HT feed
R28	T.T. CG decoupling
R29	V7, V2, V3 fixed GB resistance
R30	—

\* Electrolytic. † Variable. ‡ Pro-sect.

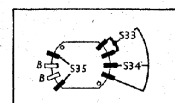
## GENERAL NOTES

Switches.—S1-S30 are the waveband switches, in three rotary units beneath the chassis, indicated in our under-chassis view, and shown in detail in the diagrams in col. 6, where they are drawn as seen looking in the directions of the

arrows in the under-chassis view. The table (Col. 5) gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates open, and C, closed.

S31, S32 are the radio/gram change switches, in a single QMB unit at the rear of the chassis, and are indicated in our under-chassis view. In the radio position (knob down) S31 is closed and S32 open, and in the gram position (up), S31 is open to mute radio, and S32 is closed. These two switches, and the pick-up sockets, may not be fitted on early models.

S33, S34 are the selectivity switches, and S35 one of the tone control switches, ganged together in a unit, which is also ganged with the QMB mains switch S39. The unit is indicated in our under-chassis view, and shown in detail in the diagram below, as seen from the rear of the underside of the chassis. In the fully anti-clockwise position of the control S39 is open, while in the three other positions it is closed. In the first of these, S34 is closed; in the second, S33 is closed; while in the third S33 and S35 are closed.



The S33-S35 unit, seen from the rear of the underside of the chassis.

Coils.—L1-L6, L7-L12, L13-L18 and the IF transformers L19-L21 and L22, L23 are in five screened units on the chassis deck. The adjustments for the cores of the IF transformers are at the sides of their cans, as indicated in our plan chassis view. The IF units also contain the associated fixed trimmers, while the L13-L18 unit also contains C15.

Scale Lamps.—These are five Philips MES types, rated at 6.2 V, 0.3 A. They have tubular bulbs.

## TABLE AND DIAGRAMS OF THE SWITCH UNITS

Switch	SW	MW	LW
S1	C	C	—
S2	—	—	C
S3	—	—	C
S4	—	—	C
S5	—	—	C
S6	—	—	C
S7	—	—	C
S8	—	—	C
S9	—	—	C
S10	—	—	C
S11	—	—	C
S12	—	—	C
S13	—	—	C
S14	—	—	C
S15	—	—	C
S16	—	—	C
S17	—	—	C
S18	—	—	C
S19	—	—	C
S20	—	—	C
S21	—	—	C
S22	—	—	C
S23	—	—	C
S24	—	—	C
S25	—	—	C
S26	—	—	C
S27	—	—	C
S28	—	—	C
S29	—	—	C
S30	—	—	C

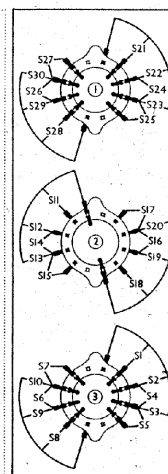
## CIRCUIT ALIGNMENT

IF.—Switch set to MW or LW and tune to minimum. Turn volume control to maximum, and selectivity

control to maximum selectivity (position 2). Connect signal generator, via a 0.0002 μF fixed condenser, to control grid (top cap) of V3, and chassis, and feed in a 465 KC/S signal. Adjust cores of L22 and L23 for maximum output. Transfer signal generator to control grid (top cap) of V2, and adjust cores of L19 and L21 for maximum output. Re-check the L22, L23 settings.

RF and Oscillator Stages.—With gang at maximum, pointer should be vertical (behind two dots on the scale). Connect signal generator to A and E sockets, via a suitable dummy aerial.

Diagrams of the wave-change switch units, as seen from the underside of the chassis in the directions of the arrows in the under-chassis view.



## RADIOGRAM MODEL 739

This has the same basic chassis as the 718 table model, but the radio/gram switching is different. A rotary switch arrangement is ganged with the wave-change switch control, which has an extra position for gram. In the gram position the feed to the screen of V1 is broken, to mute radio, while at the same time the top of R14 is disconnected from C25 and connected to the upper pick-up socket. On radio the connections are as in our diagram.

A 50,000 Ω resistor is connected across the two pick-up sockets.

There is an extra switch in the S33-S35 unit which closes, with S33, in the next to fully clockwise position of the selectivity—tone switch, connecting a 0.01 μF condenser from the bottom of C27 to chassis.

LW.—Switch set to LW, tune to 800 m on scale, feed in a 300 m (375 KC/S) signal and adjust C46, then C40 and C36, for maximum output. Feed in a 2,000 m (150 KC/S) signal, tune it in, and adjust C43 for maximum output, while rocking the gang for optimum results. Re-check at 800 m and 2,000 m until no further improvement can be made.

MW.—Switch set to MW, tune to 220 m on scale, feed in a 220 m (1,362 KC/S) signal, and adjust C45, then C39 and

C35, for maximum output. Feed in a 550 m (545 KC/S) signal, tune it in, and adjust C42 for maximum output, while rocking the gang for optimum results. Re-check at 220 m and 550 m until no further improvement can be made.

SW.—Switch set to SW, and tune to 6.5 m on scale. Feed in a 16.5 m (18.2 MC/S) signal and adjust C44 for maximum output on the peak involving the lesser trimmer capacity. Then adjust C38 and C34. If "pulling" occurs, shown by double-humped tuning when adjusting C38, set this trimmer to give minimum reading between the two humps, and then slightly re-adjust C44 for maximum output. Repeat two or three times until the pulling effect disappears. As a final check, increase the signal generator output and verify that the second channel signal comes in on the receiver dial at about 17.4 m. Check calibration at 50 m.