

DECCA DOUBLE DECCA ML

General Description : Four-valve, two-waveband, superheterodyne portable receiver for operation on A.C./D.C. mains or battery. The following information deals with Models Serial Nos. 5000 onwards.

Power Supplies : A.C./D.C. mains, 100-120 volts, 200-220 volts, 230-250 volts. Or H.T. battery, 90 volts (Ever Ready B107) and L.T. battery, 7.5 volts (Ever Ready "Alldry" 31).

Mains Consumption : 15 watts approx. on 240 volts; 12 watts approx. on 220 volts; 8 watts approx. on 110 volts.

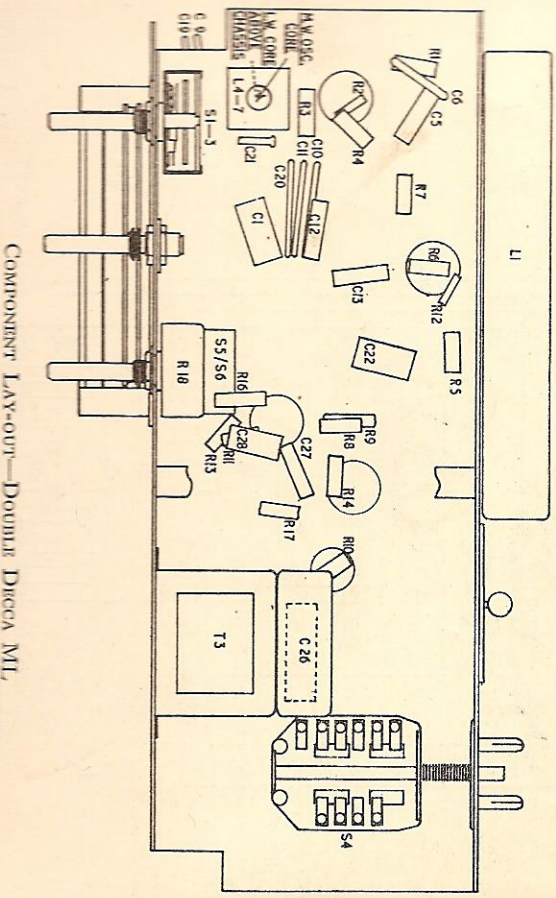
Battery Consumption : H.T. battery, 10 mA.; L.T. battery, 50 mA.

Wavebands : M.W. 190-550 m. (1578-546 kc/s.); L.W. 1000-2000 m. (300-150 kc/s.).

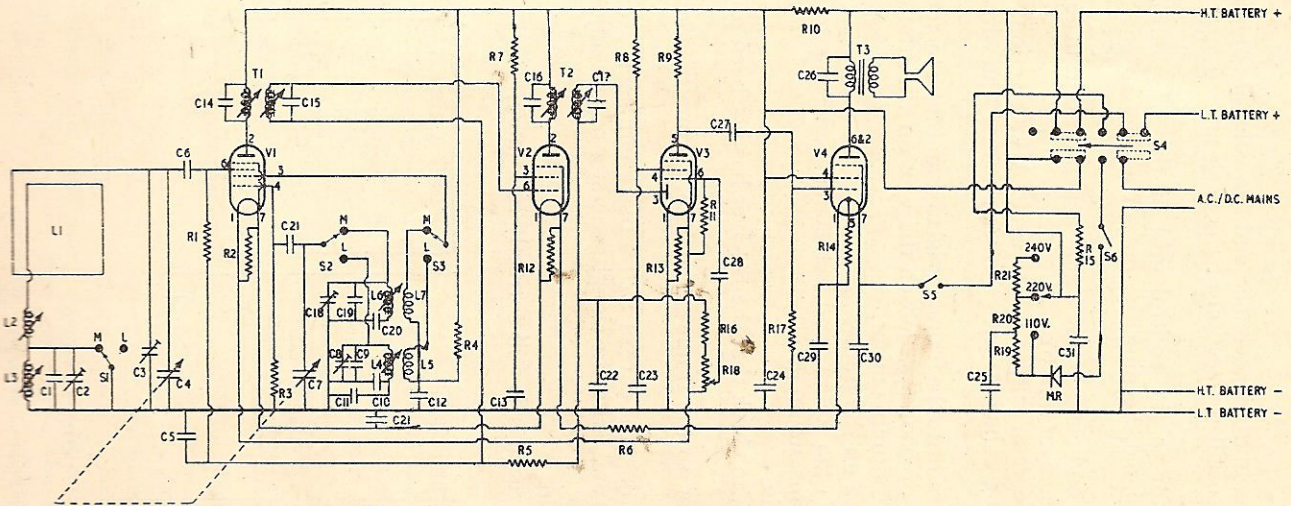
Intermediate Frequency : 380 kc/s.
Valve Analysis :

Valve	Anode Volts	Screen Volts	Filament Volts
V1 DK91 (1R5)	90	57	1.4
V2 DF91 (1T4)	90	57	1.35
V3 DAF91 (1S5)	87	90	1.4
V4 3Q4			2.8

* Useful measurements cannot be given owing to high-value resistors in anode and screen leads.



COMPONENT LAY-OUT—DOUBLE DECCA ML



CIRCUIT DIAGRAM—DOUBLE DECCA ML (SERIAL NOS. 5000 ONWARDS)

- Capacitors.**
- C1 30 pF.
 - C2 3-30 pF.
 - C3 3-30 pF.
 - C4 45 pF.
 - C5 0.01 (500 v.)
 - C6 180 pF.
 - C7 45 pF.
 - C8 3-30 pF.
 - C9 15 pF.
 - C10 670 pF.
 - C11 60 pF.
 - C12 150 pF.
 - C13 0.01 (500 v.)
 - C14 16 (350 v.)
 - C15 8 (350 v.)
 - C16 0.005 (500 v.)
 - C17 0.01 (500 v.)
 - C18 100 pF.
 - C19 100 pF.
 - C20 220 pF.
 - C21 3-30 pF.
 - C22 15 pF.
 - C23 60 pF.
 - C24 150 pF.
 - C25 0.01 (500 v.)
 - C26 16 (350 v.)
 - C27 8 (350 v.)
 - C28 0.005 (500 v.)
 - C29 0.01 (500 v.)
 - C30 100 pF.

- C31 100 pF.
- C32 100 pF.
- C33 220 pF.
- C34 3-30 pF.
- C35 15 pF.
- C36 670 pF.
- C37 60 pF.
- C38 150 pF.
- C39 0.01 (500 v.)
- C40 16 (350 v.)
- C41 8 (350 v.)
- C42 0.005 (500 v.)
- C43 0.01 (500 v.)
- C44 100 pF.

- C45 100 pF.
- C46 100 pF.
- C47 220 pF.
- C48 3-30 pF.
- C49 15 pF.
- C50 670 pF.
- C51 60 pF.
- C52 150 pF.
- C53 0.01 (500 v.)
- C54 16 (350 v.)
- C55 8 (350 v.)
- C56 0.005 (500 v.)
- C57 0.01 (500 v.)
- C58 100 pF.

- Resistors.**
- R1 2M (1/2 W.)
 - R2 180 (1/2 W.)
 - R3 100k (1/2 W.)
 - R4 11k (1/2 W.)
 - R5 3.9M (1/2 W.)
 - R6 10 (1/2 W.)
 - R7 22k (1/2 W.)
 - R8 6.8M (1/2 W.)
 - R9 100 (12 v.)
 - R10 100 (12 v.)
 - R11 16 (350 v.)

- R12 100 (12 v.)
- R13 16 (350 v.)
- R14 2M (1/2 W.)
- R15 100k (1/2 W.)
- R16 2M (1/2 W.)
- R17 1M
- R18 1M
- R19* 200 + 12,200 + 400
- R20* 200 + 12,200 + 400
- R21* 200 + 12,200 + 400

- R22* 200 + 12,200 + 400
- R6 1M (1/2 W.)
- R10 5.1k (1/2 W.)
- R11 10M (1/2 W.)
- R12 180 (1/2 W.)
- R13 150 (1/2 W.)
- R14 330 (1/2 W.)
- R15* 2.2k (1/2 W.)
- R16 100k (1/2 W.)
- R17 2M (1/2 W.)
- R18 1M
- R19* 200 + 12,200 + 400
- R20* 200 + 12,200 + 400
- R21* 200 + 12,200 + 400

- R22* 200 + 12,200 + 400

*Part of Wellwyn BTB3531.

Alignment Procedure: Note that the chassis is "Live" when mains operated.

I.F.: Turn the gang to maximum capacitance and the volume control to maximum. Short-circuit the oscillator section of the gang and remove the top iron core of T_1 .

Connect the signal generator to the control grid of the I.F. amplifier (pin 6) and inject 380-kc/s. signal, keeping the output as low as possible. Adjust the cores of T_2 .

Replace the iron core of T_1 and connect the signal-generator output to the control grid of the frequency changer (pin 6).

Align T_1 , keeping signal-generator output low to avoid A.V.C. action.

R.F.: Ensure that the pointer coincides with the scale-cursor line with the gang at maximum capacitance.

M.W.: Clip the signal generator to the frame-aerial case and tune to 500 m. (600 kc/s.). Feed in a signal of 600 kc/s., loosen the wax on the iron core of L_6 and adjust the core for maximum output.

Loosen the wax and tune L_2 on the frame. Tune receiver to 200 m. (1500 kc/s.), and set signal generator to this frequency and adjust C_{18} for maximum gain.

Adjust C_3 for maximum gain. Return the tuning to 500 m. to check that the receiver has not been pulled out of calibration.

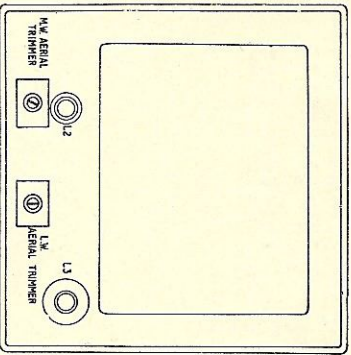
L.W.: Clip signal generator to the frame-aerial case. Tune to 2000 m. (150 kc/s.).

Inject 150 kc/s. signal and adjust the core of L_4 for maximum gain.

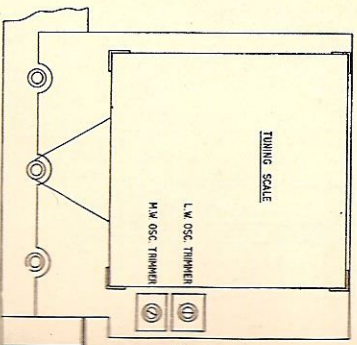
Tune to 1200 m. (250 kc/s.) and, with the signal-generator output adjusted to this frequency, adjust C_8 .

Adjust C_2 for maximum gain.

Check that at 150 kc/s. the receiver is still correctly calibrated.



TWO VIEWS OF FRAME
AERIAL FORMER AND
TUNING SCALE, SHOWING
COIL AND TRIMMER
POSITIONS.



TRIMMER LAY-OUT