

# 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.

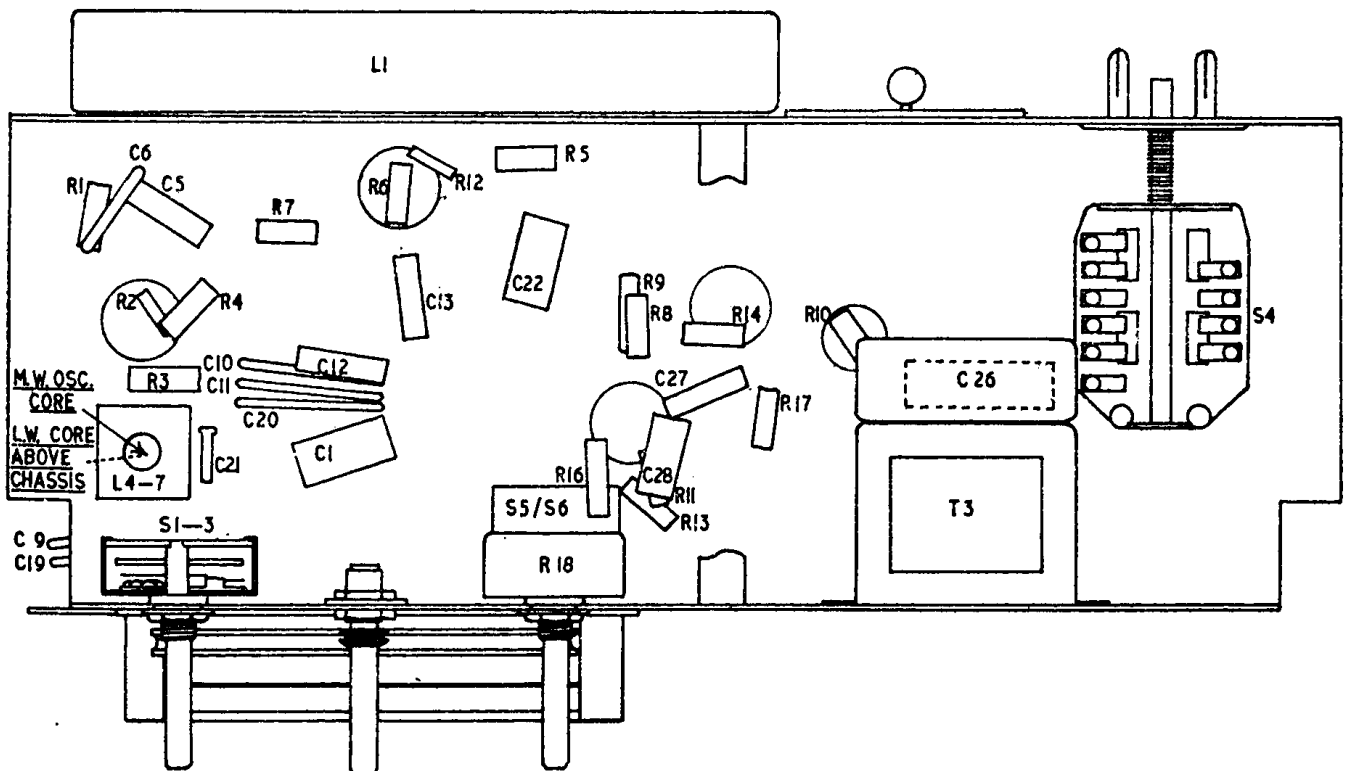
**Wavebands :** M.W. 190–550 m. (1578–546 kc/s.); L.W. 1000–2000 m. (300–150 kc/s.).

**Intermediate Frequency :** 380 kc/s.

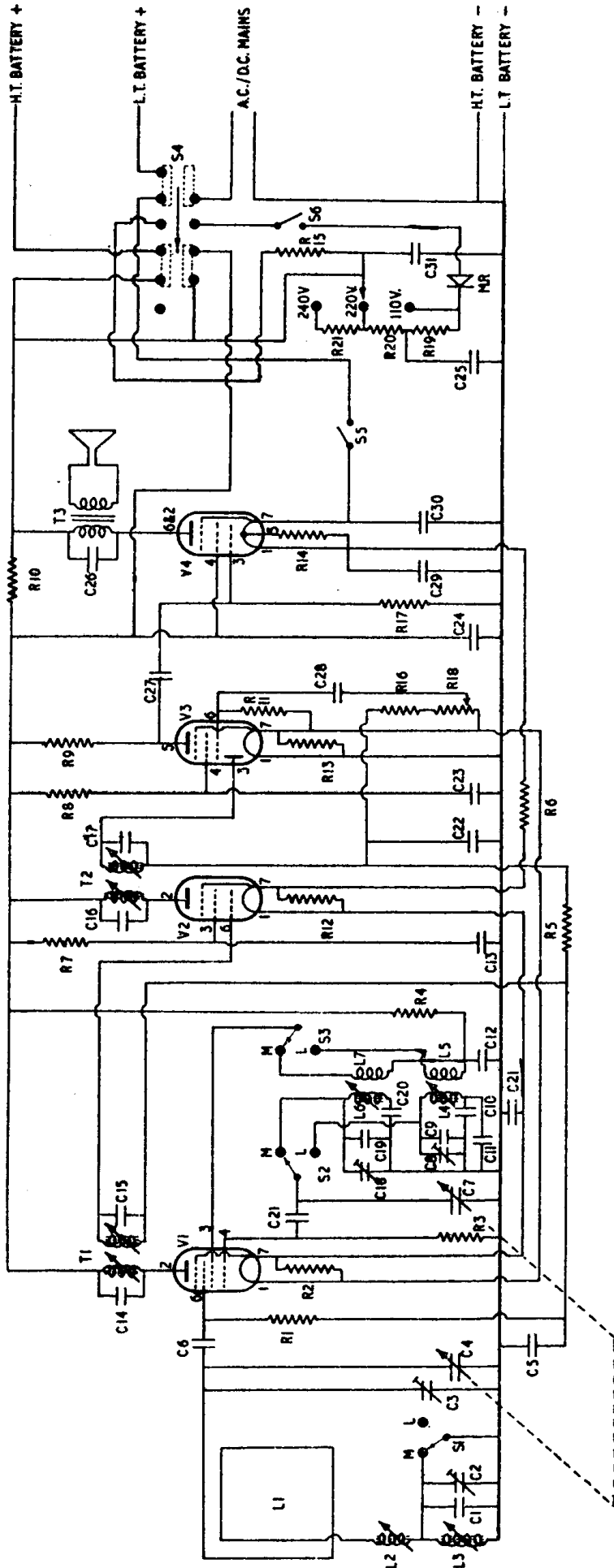
**Valve Analysis :**

Valve	Anode Volts	Screen Volts	Filament Volts
V1 DK91 (1R5)	90	57	1.4
V2 DF91 (1T4)	90	57	1.35
V3 DAF91 (1S5)	*	*	1.4
V4 3Q4	87	90	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 483 pF.
  - C5 0.01 (500 v.)
  - C6 100 pF.
  - C7 483 pF.
  - C8 3-30 pF.
  - C9 170 pF.
  - C10 47 pF.
  - C11 260 pF.
  - C12 0.01 (500 v.)
  - C13 0.01 (500 v.)
  - C14 100 pF.

- C15 100 pF.
- C16 100 pF.
- C17 220 pF.
- C18 3-30 pF.
- C19 15 pF.
- C20 670 pF.
- C21 60 pF.
- C22 150 pF.
- C23 0.01 (500 v.)
- C24 16 (350 v.)
- C25 8 (350 v.)
- C26 0.005 (500 v.)
- C27 0.01 (500 v.)
- C28 0.001 (500 v.)

- Resistors.**
- R1 2M (½ W.)
  - R2 180 (½ W.)
  - R3 100k (½ W.)
  - R4 11k (½ W.)
  - R5 3.9M (½ W.)
  - R6 10 (½ W.)
  - R7 22k (½ W.)
  - R8 6.8M (½ W.)

- C29 100 (12 v.)
  - C30 100 (12 v.)
  - C31 16 (350 v.)
- Resistors.**
- R9 1M (½ W.)
  - R10 5.1k (½ W.)
  - R11 10M (½ W.)
  - R12 180 (½ W.)
  - R13 150 (½ W.)
  - R14 330 (½ W.)
  - R15\* 2.2k
  - R16 100k (½ W.)
  - R17 2M (½ W.)
  - R18 1M
  - R19\* 200 + 12,200 + 400
  - R20\* 200 + 12,200 + 400
  - R21\* 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.

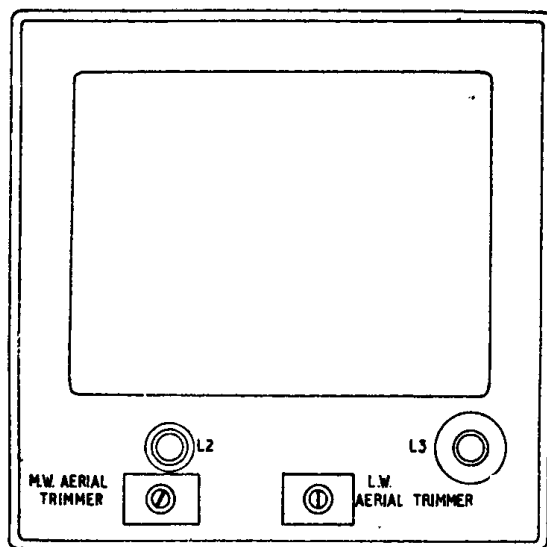
*L.W.:* Clip signal generator to the frame-aerial case. Tune to 2000 m. (150 kc/s.).

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

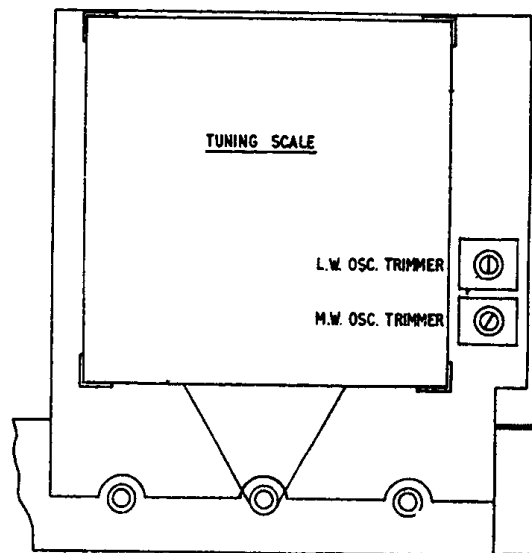
Tune to 1200 m. (250 kc/s.) and, with the signal-generator output adjusted to this frequency, adjust  $C_8$ .

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