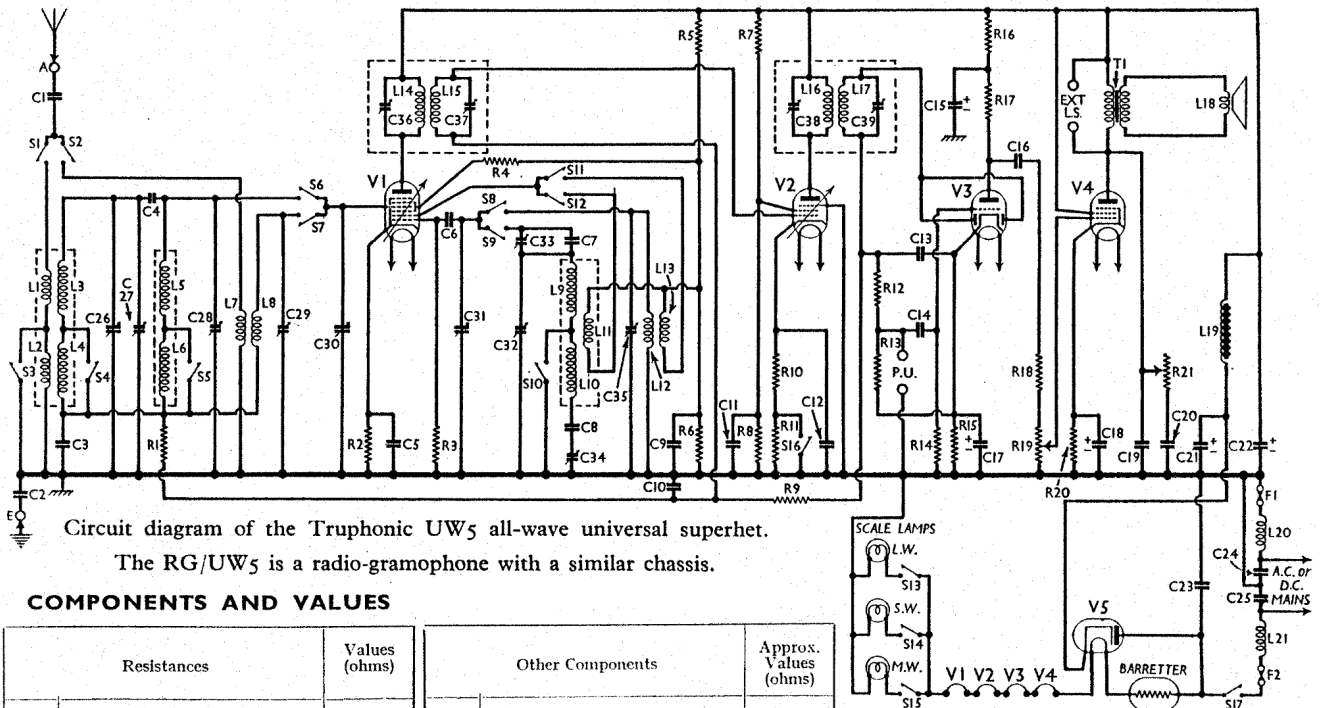


# TRUPHONIC - UW 5



Circuit diagram of the Truphonic UW5 all-wave universal superhet.

The RG/UW5 is a radio-gramophone with a similar chassis.

## COMPONENTS AND VALUES

| Resistances | Values (ohms)  |
|-------------|--|
| R1          | V1 tetrode C.G. decoupling .. 100,000                      |
| R2          | V1 fixed G.B. resistance .. 250                            |
| R3          | V1 oscillator C.G. resistance .. 50,000                    |
| R4          | V1 S.G.'s H.T. feed .. 1,000                               |
| R5          | V1 S.G.'s and oscillator anode potential divider .. 15,000 |
| R6          | V2 S.G. potential divider .. 25,000                        |
| R7          | V2 S.G. potential divider .. 10,000                        |
| R8          | V2 fixed G.B. resistance .. 50,000                         |
| R9          | A.V.C. line decoupling .. 1,000,000                        |
| R10         | V2 fixed G.B. resistance .. 500                            |
| R11         | Noise suppressor resistance .. 5,000                       |
| R12         | I.F. stopper .. 50,000                                     |
| R13         | V3 diode load .. 250,000                                   |
| R14         | V3 C.G. resistance .. 500,000                              |
| R15         | V3 G.B. resistance .. 1,000                                |
| R16         | V3 anode decoupling .. 5,000                               |
| R17         | V3 anode load .. 25,000                                    |
| R18         | V4 C.G. I.F. stopper .. 500,000                            |
| R19         | Manual volume control .. 500,000                           |
| R20         | V4 G.B. resistance .. 130                                  |
| R21         | Variable tone control .. 25,000                            |

| Other Components | Approx. Values (ohms)                            |
|------------------|--|
| L1               | Aerial coupling coils (M.W. and L.W.) .. 1.0     |
| L2               | V1 fixed G.B. resistance .. 2.5                  |
| L3               | Band-pass primary coils .. 1.2                   |
| L4               | Band-pass secondary coils .. 13.5                |
| L5               | Band-pass secondary coils .. 3.5                 |
| L6               | Band-pass secondary coils .. 22.0                |
| L7               | Aerial coupling coil (S.W.) .. 0.1               |
| L8               | Aerial tuning coil (S.W.) .. Very low            |
| L9               | Oscillator tuning coils (M.W. and L.W.) .. 2.6   |
| L10              | Oscillator reaction coil (M.W. and L.W.) .. 14.5 |
| L11              | Oscillator reaction coil (M.W. and L.W.) .. 7.0  |
| L12              | Oscillator tuning coil (S.W.) .. Very low        |
| L13              | Oscillator reaction coil (S.W.) .. 0.35          |
| L14              | 1st I.F. trans. Pri. .. 120.0                    |
| L15              | 1st I.F. trans. Sec. .. 120.0                    |
| L16              | 2nd I.F. trans. Pri. .. 120.0                    |
| L17              | 2nd I.F. trans. Sec. .. 120.0                    |
| L18              | Speaker speech coil .. 1.8                       |
| L19              | H.T. smoothing choke .. 300.0                    |
| L20              | Mains filter chokes .. 2.6                       |
| L21              | Mains filter chokes .. 2.6                       |
| T1               | Speaker input trans. (Pri. Sec.) .. 750.0 0.25   |
| S1-S12           | Waveband switches .. —                           |
| S13-S15          | Scale lamp switches .. —                         |
| S16              | Noise suppressor switch .. —                     |
| S17              | Mains switch, ganged R19 .. —                    |
| F1, F2           | Mains circuit fuses, 0.5 A .. —                  |

The individual switches cannot be indicated in the under-chassis view, but are shown in a separate diagram, which gives the switch positions in the three units as seen looking from the rear of the underside of the chassis. Note that some contacts are common to several switches, while others are blank. The table below gives the switch positions for the various control settings, O indicating open, and C closed.

| Switch | S.W. | M.W. | L.W. |
|--------|------|------|------|
| S1     | O    | C    | C    |
| S2     | C    | O    | O    |
| S3     | O    | C    | O    |
| S4     | O    | C    | O    |
| S5     | O    | C    | O    |
| S6     | O    | C    | C    |
| S7     | C    | O    | O    |
| S8     | C    | O    | O    |
| S9     | O    | C    | C    |
| S10    | O    | C    | O    |
| S11    | C    | O    | O    |
| S12    | O    | C    | C    |
| S13    | O    | O    | C    |
| S14    | O    | C    | O    |
| S15    | C    | O    | O    |

| Condensers | Values (μF)                                     |
|------------|---|
| C1         | Aerial series condenser .. 0.0001               |
| C2         | Earth blocking condenser .. 0.001               |
| C3         | Band-pass coupling condenser .. 0.02            |
| C4         | Band-pass top coupling .. Very low              |
| C5         | V1 cathode by-pass .. 0.1                       |
| C6         | V1 oscillator C.G. condenser .. 0.00005         |
| C7         | Oscillator M.W. tracker, fixed .. 0.001         |
| C8         | Oscillator L.W. tracker, fixed .. 0.002         |
| C9         | V1 S.G.'s and osc. anode decoupling .. 0.1      |
| C10        | A.V.C. line decoupling .. 0.005                 |
| C11        | V2 S.G. by-pass .. 0.01                         |
| C12        | V2 cathode by-pass .. 0.1                       |
| C13        | I.F. by-pass .. 0.0002                          |
| C14        | L.F. coupling to V3 triode .. 0.01              |
| C15        | V3 triode anode decoupling .. 2.0               |
| C16        | V3 to V4 L.F. coupling .. 0.1                   |
| C17        | V3 cathode by-pass .. 50.0                      |
| C18        | V4 cathode by-pass .. 50.0                      |
| C19        | Fixed tone corrector .. 0.002                   |
| C20        | Part of tone control filter .. 0.05             |
| C21        | H.T. smoothing .. 24.0                          |
| C22        | H.T. smoothing .. 8.0                           |
| C23        | H.T. smoothing .. 0.1                           |
| C24        | Mains circuit by-passes .. 0.01                 |
| C25        | Mains circuit by-passes .. 0.01                 |
| C26        | Band-pass primary tuning .. 0.0005              |
| C27        | Band-pass primary trimmer .. 0.00005            |
| C28        | Band-pass secondary trimmer .. 0.00005          |
| C29        | Aerial circuit trimmer (S.W.) .. 0.00005        |
| C30        | B.P. secondary and S.W. aerial tuning .. 0.0005 |
| C31        | Oscillator tuning .. 0.0005                     |
| C32        | Oscillator trimmer (M.W. and L.W.) .. 0.00005   |
| C33        | Oscillator M.W. tracker .. 0.002                |
| C34        | Oscillator L.W. tracker .. 0.002                |
| C35        | Oscillator trimmer (S.W.) .. 0.00005            |
| C36        | 1st I.F. trans. pri. tuning .. —                |
| C37        | 1st I.F. trans. sec. tuning .. —                |
| C38        | 2nd I.F. trans. pri. tuning .. —                |
| C39        | 2nd I.F. trans. sec. tuning .. —                |

## VALVE ANALYSIS

Valve voltages and currents given in the table overleaf were measured with the receiver operating on A.C. mains of 225 V. The volume control was at maximum and the receiver was tuned to the lowest wavelength on the medium band, but there was no signal input. The sensitivity control was also in the maximum position ("A.V.C." position). Voltages were measured on the 1,200 V scale of an Avometer, with chassis as negative.

| Valve     | Anode Volts | Anode Current (mA) | Screen Volts | Screen Current (mA) |
|-----------|-------------|--------------------|--------------|---------------------|
| V1 FC13C* | 248         | 1.1                | 80           | 3.4                 |
| V2 VP13C  | 248         | 6.1                | 185          | 2.1                 |
| V3 TDD13C | 140         | 3.4                | —            | —                   |
| V4 7D6    | 220         | 35.0               | 250          | 6.2                 |
| V5 1D5†   | —           | —                  | —            | —                   |

\* Osc. anode (G2) 90 V, 3.0 mA.  
† Cathode to chassis, 268 V, D.C.

## GENERAL NOTES

**Switches.**—The waveband and scale lamp switches, S1-S15, are in three ganged rotary units beneath the chassis.

**S16**, the noise suppressor switch, is a Q.M.B. single pole shorting type at the rear of the chassis. It is closed in the "A.V.C." position (knob down).

**S17** is the Q.M.B. mains switch, ganged with the volume control **R19**.

**Coils.**—All the tuning coils, except those for the S.W. band, are in five screened units on the chassis deck. **L7**, **L8** and **L12**, **L13** are on small un-screened tubular formers beneath the chassis. **L20** and **L21**, the mains filter chokes are two multi-layer windings fitted to the inside of the front of the chassis.

**Scale Lamps.**—There are three of these, one for each waveband. They are all of the Osram M.E.S. type, rated at 4.5 V, 0.3 A.