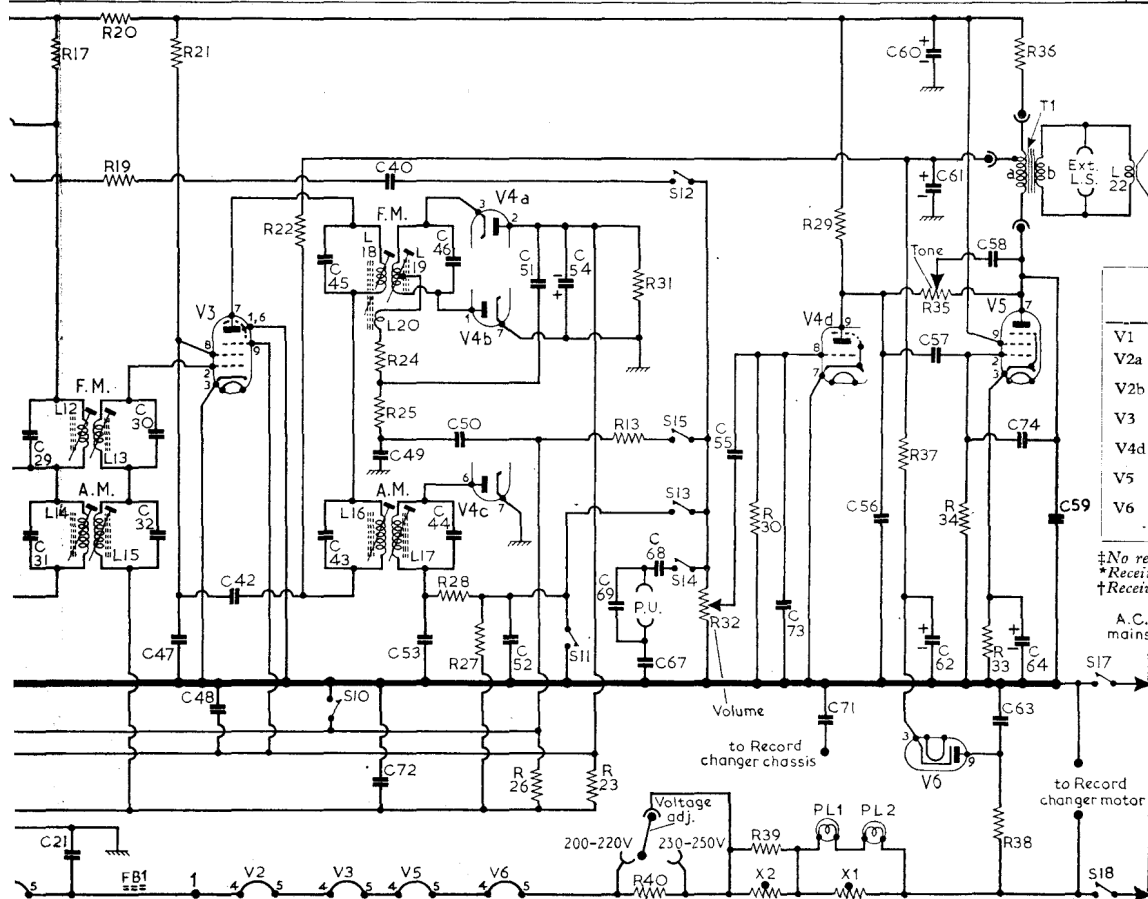


| | | | | | | | | | | | | | | | | | |
|-------|-------|----------|-------|-------|----------|----------------|----|----|----------|-------|----|----|----|----|----------------------------|-------------|---|
| 29,31 | 21 | 30,32,47 | 48,42 | 45,43 | 49,72,40 | 53,46,44,50,52 | 51 | 54 | 69 | 67,68 | 55 | 73 | 71 | 56 | 62,60,61,57,58,63,74,64,59 | C | |
| 17 | 20,19 | 21 | 22 | 24,25 | 28 | 27 | 26 | 23 | 13,40,31 | 32 | 30 | 39 | 29 | 37 | 35 | 34,33,38,36 | R |



Valve Table

| Valve | Anode (V) | Screen (V) | Cathode (V) |
|------------|-----------|------------|-------------|
| V1 UCC85 | ± 97 | — | — |
| V2a UCH81 | 42 | — | — |
| V2b UCH81 | 187 | 74 | — |
| V3 UF89 | 146 | 75 | — |
| V4a UABC80 | 182 | 72 | — |
| V4b UABC80 | 173 | 65 | — |
| V4c UABC80 | 90 | — | — |
| V4d UABC80 | 85 | — | — |
| V5 UL84 | 190 | 190 | 14.1 |
| V6 UY85 | 180 | 178 | 12.8 |
| | ± | — | 247.0 |
| | ± | — | 242.0 |

±No reading quoted.
 *Receiver switched to A.M.
 †Receiver switched to F.M.

| Resistors | | | | | |
|-----------|---------------|----|------------|---------------|----|
| R1 | 1-8M Ω | A2 | R34 | 680k Ω | D1 |
| R2 | 1-8M Ω | A2 | R35 | 1M Ω | D1 |
| R3 | 1-8M Ω | B2 | R36 | 680 Ω | D2 |
| R4 | 68 Ω | A2 | R37 | 500 Ω | D2 |
| R5 | 680k Ω | F4 | R38 | 100 Ω | D1 |
| R6 | 1-5M Ω | F4 | R39 | 2-2k Ω | D2 |
| R7 | 2-2k Ω | F4 | R40 | 250 Ω | D2 |
| R8 | 6-8k Ω | F4 | | | |
| R9 | 680k Ω | F3 | Capacitors | | |
| R10 | 100 Ω | B1 | C1 | 470pF | A2 |
| R11 | 22k Ω | B1 | C2 | 470pF | A2 |
| R12 | 22k Ω | B2 | C3 | 47pF | F4 |
| R13 | 2-2M Ω | B1 | C4 | 220pF | F4 |
| R14 | 1M Ω | B2 | C5 | 15pF | F4 |
| R15 | 68k Ω | B2 | C6 | 47pF | F4 |
| R16 | 47k Ω | B1 | C7 | 7pF | F4 |
| R17 | 2-7k Ω | C2 | C8 | 47pF | E4 |
| R18 | 15k Ω | B2 | C9 | — | B1 |
| R19 | 220k Ω | B2 | C10 | 18-5pF | F3 |
| R20 | 470 Ω | C2 | C11 | 5pF | E3 |
| R21 | 47k Ω | C2 | C12 | 5pF | E3 |
| R22 | 3-3k Ω | C2 | C13 | 12pF | E3 |
| R23 | 2-7M Ω | B1 | C14 | 88pF | E3 |
| R24 | 220 Ω | C1 | C15 | 11-5pF | F3 |
| R25 | 100k Ω | B2 | C16 | 50pF | F3 |
| R26 | 4-7M Ω | C1 | C17 | — | B2 |
| R27 | 1M Ω | C1 | C18 | 1,500pF | E4 |
| R28 | 100k Ω | C1 | C19 | 40pF | E3 |
| R29 | 120k Ω | D1 | C20 | 1,000pF | E3 |
| R30 | 10M Ω | D1 | C21 | 1,000pF | E3 |
| R31 | 27k Ω | D1 | C22 | 100pF | B2 |
| R32 | 1M Ω | C1 | C23 | 40pF | B2 |
| R33 | 270 Ω | D2 | C24 | — | B2 |

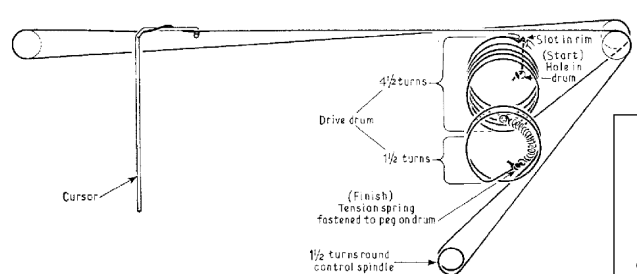


Diagram of the tuning drive system drawn as seen from the front of the chassis

CIRCUIT ALIGNMENT

Equipment Required.—An A.M. signal generator, modulated 30 per cent at 400c/s; an F.M. signal generator, deviated by ± 25 kc/s; an output meter; a 0.1 μ F capacitor and a 400pF capacitor; and two trimming tools, a hexagonal type and a non-metallic screwdriver type.

The chassis should be connected to the mains via an isolating transformer. Where this is not available ensure that the chassis is connected to the neutral side of the mains. No earth connection, either direct or through earthed equipment, should be made to the receiver. Connect the signal generator to the receiver via an isolating capacitor in its live output lead.

To facilitate accurate tuning of the receiver to the alignment frequencies, calibration markers are provided along the top edge of the scale backing plate. Reading from left to right these indicate the following positions: 1,400kc/s (M.W.), 220kc/s (L.W.), 91Mc/s (F.M.), 580kc/s (M.W.) and "set cursor." Adjust the signal generator to maintain an output of 100mW during alignment.

A.M. ALIGNMENT

- 1.—Connect the output meter across the speaker. Connect the A.M. signal generator between chassis and the control grid of V2b (tags 7 and 8, location reference B2) via the 0.1 μ F capacitor in its live output lead. Switch the receiver to M.W. Turn the tuning gang to minimum capacitance and the volume control to its maximum clockwise position.
- 2.—Feed in a modulated 470kc/s signal and adjust the cores of L17, L16 (location reference C2) and L15, L14 (location reference C2) for maximum output.
- 3.—With the tuning gang at maximum capacitance check that the cursor coincides with the extreme right-hand (set cursor) calibration marker.

- 4.—Loosely couple the signal generator to the ferrite rod aerial via a loop of insulated wire. Tune the receiver to the calibration dot at 580kc/s. Feed in a 580kc/s signal and adjust the core of L10 (B1) for maximum output. Then slide the adjusting ring adjacent to L8 along the ferrite rod for maximum output.
- 5.—Tune the receiver to the calibration marker at 1,400kc/s. Feed in a 1,400kc/s signal and adjust C36 (B1) and C23 (B2) for maximum output.
- 6.—Switch the receiver to L.W. and tune to the calibration marker at 220kc/s. Feed in a 220kc/s signal, adjust C38 and slide the former of L9 (D2) along the ferrite rod for maximum output.

*Approximate D.C. resistance in ohms.
†Mounted on loudspeaker.

Transformers*

| | | |
|--------|-------|---|
| T1 { a | 400-0 | † |
| b | — | |

Miscellaneous

| | | |
|----------|----------|----|
| X1 | V1010 | D1 |
| X2 | V1010 | D2 |
| FB1 | — | E4 |
| FB2 | — | F4 |
| S1—S16 | — | B1 |
| S17, S18 | — | D1 |
| PL1, PL2 | 12V 0-1A | — |

A.M. intermediate frequency 470 Kc/s

F.M. ALIGNMENT

- 1.—Connect the output meter across the speaker and the F.M. signal generator to V2b control grid (tags 7 and 8, location reference B2) via the 400pF capacitor in its live output lead. Switch the receiver to F.M. and allow it to warm up for at least ten minutes. Set the volume control 90 deg. back from its fully clockwise position and set the tone control to the maximum treble position.
- 2.—Feed in a 10.7 Mc/s signal, deviated by ± 25 kc/s and adjust the cores of L18, L19 (location reference C1), and L13, L12 (location reference B2) for maximum output. Remove the F.M. signal generator.
- 3.—Connect the A.M. signal generator to tags 7 and 8. Feed in a modulated 10.7Mc/s signal and adjust the core of L19 (C1) for minimum output. Disconnect the A.M. generator.
- 4.—Reconnect the F.M. signal generator to tags 7 and 8 and check that the level of F.M. output has been retained. If maximum A.M. rejection does not coincide with maximum F.M. output, L19 should be adjusted for maximum A.M. rejection at the expense of a slight reduction in F.M. output.
- 5.—Unscrew the core of L7 (location reference E3) so that it protrudes from the former by approximately $\frac{3}{16}$ in. Transfer the F.M. signal generator to test point X on the tuner unit (location reference A2). Feed in a 10.7Mc/s signal and adjust the cores of L6 and L7 (location reference A2) for maximum output.
- 6.—Rotate the tuning gang to set the cursor at the 91Mc/s calibration marker. Connect the signal generator to the F.M. aerial sockets and feed in a 91Mc/s signal. Tune in this signal by adjusting L5 (F3). If two peaks can be obtained, the one with the core nearer L4 at the top end of the former is correct.
- 7.—Adjust L3 (E4) for maximum audio output with the core towards the bottom end of the coil former. Check the calibration over the range.

Switch Table

| Switches | Gram | L.W. | M.W. | F.M. |
|----------|------|------|------|------|
| 1 | — | — | — | C |
| 2 | — | — | — | C |
| 3 | C | C | — | C |
| 4 | — | — | — | — |
| 5 | — | — | — | C |
| 6 | C | C | — | C |
| 7 | — | C | C | — |
| 8 | — | — | — | C |
| 9 | — | C | C | — |
| 10 | C | C | C | — |
| 11 | — | — | — | C |
| 12 | — | — | — | C |
| 13 | — | C | C | — |
| 14 | C | — | — | — |
| 15 | — | C | — | C |
| 16 | — | — | — | C |

