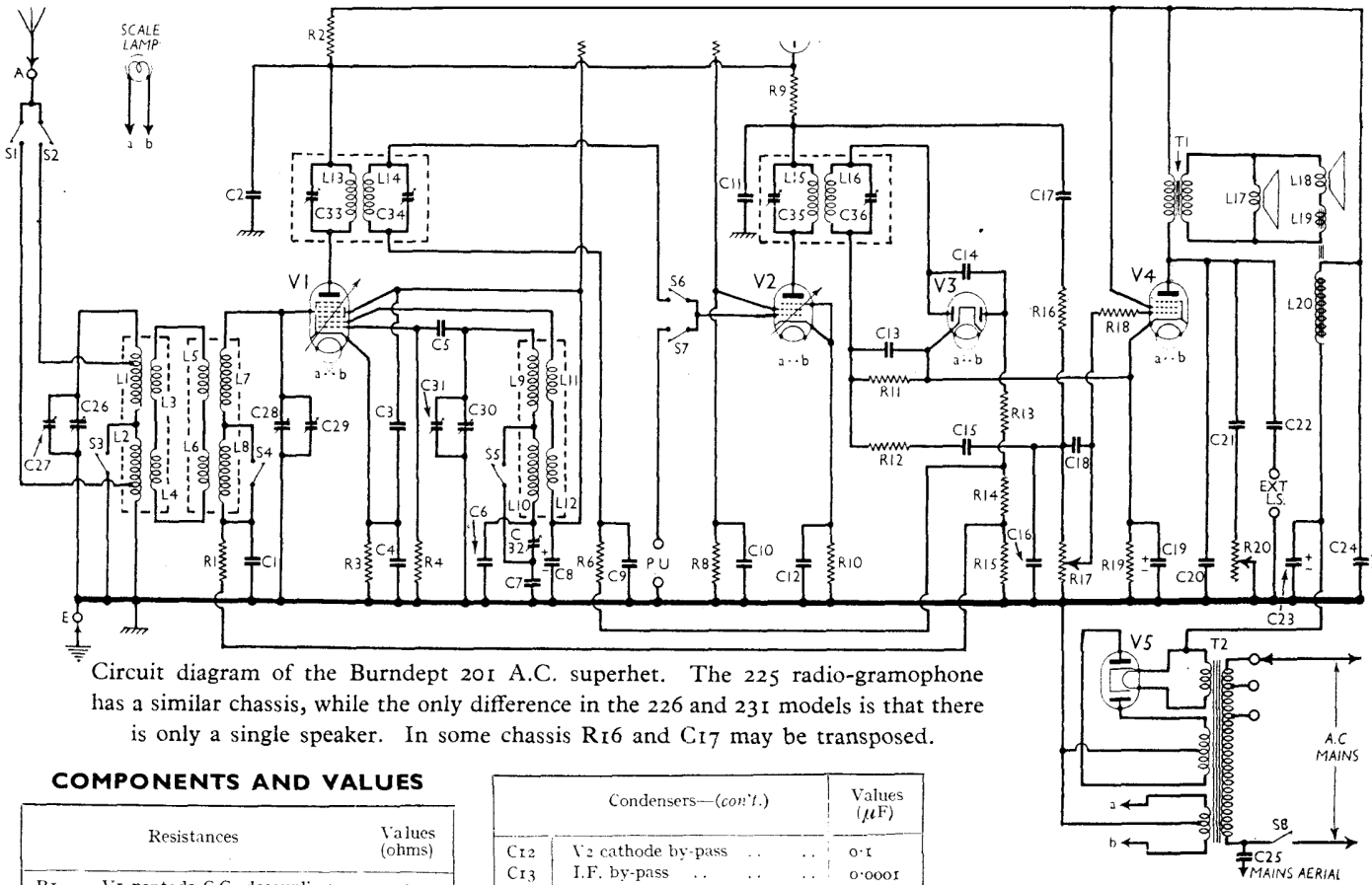
# BURNDEPT - 201 & 225 & 231




Circuit diagram of the Burndept 201 A.C. superhet. The 225 radio-gramophone has a similar chassis, while the only difference in the 226 and 231 models is that there is only a single speaker. In some chassis R16 and C17 may be transposed.

## COMPONENTS AND VALUES

| | Resistances | Values (ohms) |
|---|---|---|
| R1 | V1 pentode C.G. decoupling | 100,000 |
| R2 | V1 pentode anode and V2 anode H.T. feed | 5,000 |
| R3 | V1 fixed G.B. resistance | 250 |
| R4 | V1 oscillator grid resistance | 50,000 |
| R5 | V1 S.G.'s and oscillator anode H.T. feed | 30,000 |
| R6 | V2 C.G. decoupling | 250,000 |
| R7 | V2 S.G. potential divider | 25,000 |
| R8 | | 20,000 |
| R9 | V2 anode load (for gram.) | 10,000 |
| R10 | V2 fixed G.B. resistance | 200 |
| R11 | V3 signal diode load | 1,000,000 |
| R12 | I.F. stopper | 100,000 |
| R13 | | 500,000 |
| R14 | V3 A.V.C. diode load | 500,000 |
| R15 | | 250,000 |
| R16 | Limiting resistance | 250,000 |
| R17 | Manual volume control | 500,000 |
| R18 | V4 C.G. I.F. stopper | 100,000 |
| R19 | V4 G.B. and V3 delay voltage resistance | 150 |
| R20 | Variable tone control | 250,000 |

| | Condensers | Values (μF) |
|---|---|---|
| C1 | V1 C.G. decoupling | 0·1 |
| C2 | V1 pentode anode and V2 anode decoupling | 0·1 |
| C3 | V1 S.G.'s by-pass | 0·1 |
| C4 | V1 cathode by-pass | 0·1 |
| C5 | V1 oscillator C.G. condenser | 0·001 |
| C6 | Osc. M.W. trackers, fixed | 0·0005 |
| C7 | | 0·01 |
| C8* | V1 S.G.'s and oscillator anode decoupling | 8·0 |
| C9 | V2 C.G. decoupling | 0·1 |
| C10 | V2 S.G. by-pass | 0·1 |
| C11 | V2 anode by-pass | 0·002 |
| C12 | V2 cathode by-pass | 0·1 |
| C13 | I.F. by-pass | 0·0001 |
| C14 | Coupling to V3 A.V.C. diode | 0·0001 |
| C15 | L.F. coupling to V4 | 0·01 |
| C16 | I.F. by-pass | 0·0001 |
| C17 | L.F. coupling (gram.) | 0·01 |
| C18 | Vol. control shunt | 0·0001 |
| C19* | V3 cathode by-pass | 50·0 |
| C20 | Tone corrector | 0·002 |
| C21 | Tone control condenser | 0·1 |
| C22 | Ext. L.S. coupling | 0·5 |
| C23* | H.T. smoothing | 8·0 |
| C24* | | 16·0 |
| C25 | Mains aerial coupling | 0·0001 |
| C26† | Band-pass primary tuning | — |
| C27‡ | Band-pass primary trimmer | — |
| C28† | Band-pass secondary tuning | — |
| C29‡ | Band-pass secondary trimmer | — |
| C30† | Oscillator tuning | — |
| C31‡ | Oscillator trimmer | — |
| C32‡ | Oscillator L.W. tracker | — |
| C33‡ | 1st I.F. trans. pri. tuning | — |
| C34‡ | 1st I.F. trans. sec. tuning | — |
| C35‡ | 2nd I.F. trans. pri. tuning | — |
| C36‡ | 2nd I.F. trans. sec. tuning | — |

* Electrolytic. †Variable. ‡Pre-set.

| | Other Components | Approx. Values (ohms) |
|---|---|---|
| L1 | Band-pass primary coils | 4·9 |
| L2 | | 9·5 |
| L3 | | |
| L4 | Band-pass coupling coils (in parallel) | 0·2 |
| L5 | | |
| L6 | | |
| L7 | Band-pass secondary coils | 4·9 |
| L8 | | 9·5 |
| L9 | Oscillator grid tuning coils | 4·1 |
| L10 | | 5·75 |
| L11 | Oscillator anode reaction coils | 0·8 |
| L12 | | 1·9 |
| L13 | 1st I.F. trans. Pri. | 26·0 |
| L14 | 1st I.F. trans. Sec. | 26·0 |
| L15 | 2nd I.F. trans. Pri. | 26·0 |
| L16 | 2nd I.F. trans. Sec. | 26·0 |
| L17 | P.M. speaker speech coil | 2·6 |
| L18 | Energised speaker speech coil | 2·6 |
| L19 | Hum neutralising coil | 0·1 |
| L20 | Speaker field coil | 2,000·0 |
| T1 | Speaker input trans. Pri. | 750·0 |
| | Speaker input trans. Sec. | 0·4 |
| T2 | Mains trans. Pri. total | 21·5 |
| | Mains trans. Heater sec. | 0·03 |
| | Mains trans. Rect. heat. sec. | 0·05 |
| | Mains trans. H.T. sec. total | 400·0 |
| S1-S5 | Waveband switches | — |
| S6 | Radio muting switch (gram.) | — |
| S7 | Gram. pick-up switch | — |
| S8 | Mains switch, ganged R17 | — |
| T.I. | Tuning indicator | 2,000·0 |

Osc. anode (G2) 80 V, 2·2 mA.
Each anode, A.C.
2·4 mA at top of tuning scale.

| Switch | M.W. | L.W. | Gram. |
|---|---|---|---|
| S1 | O | C | O |
| S2 | C | O | O |
| S3 | C | O | O |
| S4 | C | O | O |
| S5 | C | O | O |
| S6 | C | C | O |
| S7 | O | O | C |

S8 is the Q.M.B. mains switch, ganged with the volume control R17.

## GENERAL NOTES

Switches.—S1-S5 are the waveband switches, S6 the radio muting switch (gram.) and S7 the gramophone pick-up switch. These are all ganged in a single unit beneath the chassis, seen in our under-chassis view. The table below gives the switch positions for the various control settings, O indicating open, and

## VALVE ANALYSIS

The voltages and currents given in the table below are those measured in the receiver when it was operating on mains of 225 V, using the 230 V tapping on the mains transformer. 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.

Voltages were measured on the 1,200 V range of an Avometer, with chassis as negative.

| Valve | Anode Volts | Anode Current (mA) | Screen Volts | Screen Current (mA) |
|---|---|---|---|---|
| VP4* | 280 | 0·3‡ | 80 | 5·1 |
| VP4A | 220 | 4·9 | 95 | 2·1 |
| VP4A | — | — | — | — |
| PEN4VB | 255 | 42·0 | 290 | 5·3 |
| U13 | 380† | — | — | — |