

# BEETHOVEN Models U2038, U2030C, A2030ARG

**General Description :** Four-valve (including rectifier), two-waveband superheterodyne receiver. The chassis of Model U2038 was re-designed after Serial No. 2626. Model U2030C is a console receiver fitted with a U2038 chassis. Model A2030ARG is an auto-change radiogramophone for use on A.C. mains only; it incorporates a U2038 chassis and a Collaro auto-change assembly type RC500.

## Power Supplies :

*Model U2038 :* A.C./D.C. mains, 200–250 volts.

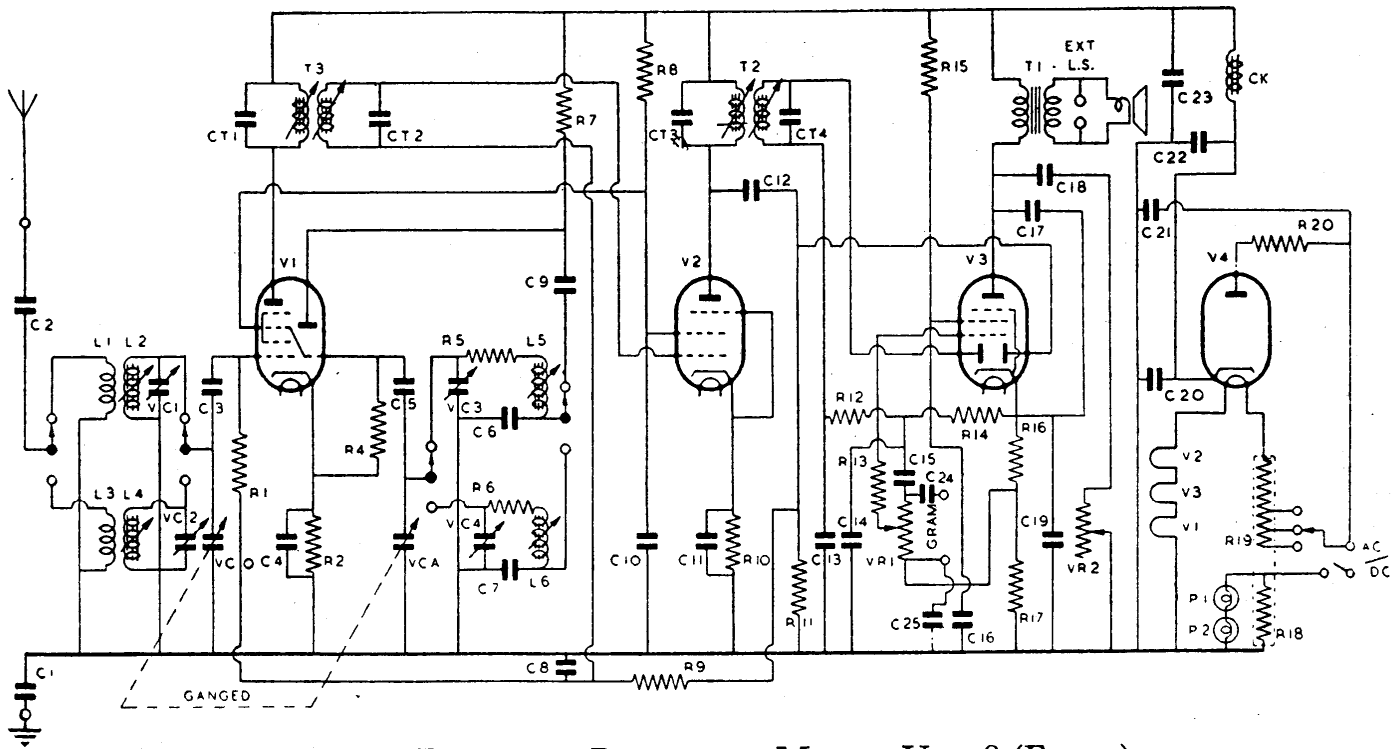
*Model A2030ARG :* A.C. mains, 200–250 volts.

**Wavebands :** M.W. 192–550 m.; L.W. 900–2150 m.

**Intermediate Frequency :** 465 kc/s.

**Valves :** (V1) CCH35; (V2) EF39; (V3) CBL31; (V4) CY31.

**Alignment Procedure :** Connect live lead of signal generator to signal grid of V1 and adjust I.F. transformer cores for maximum response at 465 kc/s. Connect the signal generator to the aerial terminal through an all-



CIRCUIT DIAGRAM—BEETHOVEN MODEL U2038 (EARLY)

### Capacitors.

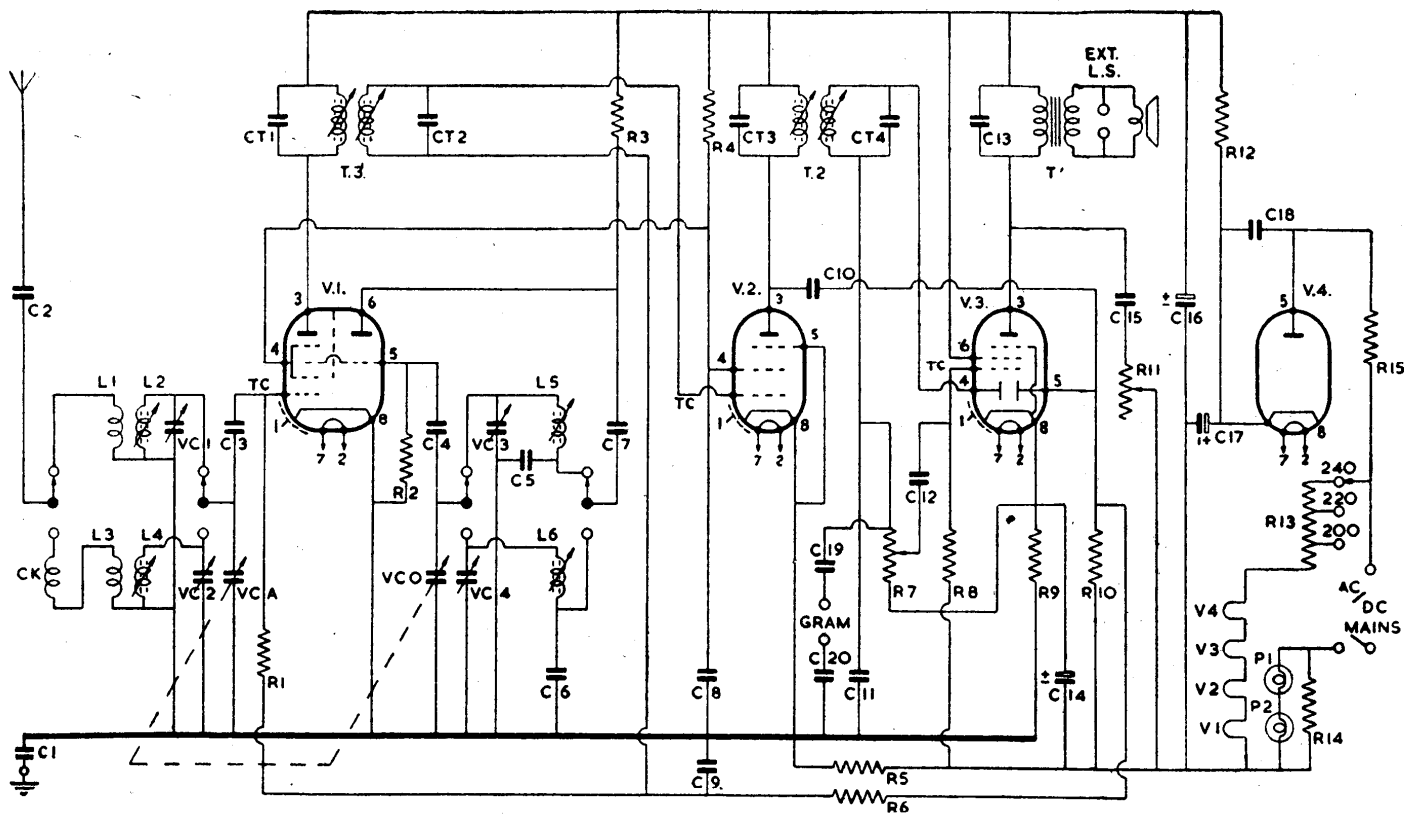
C1	0.1 (1000 v.)
C2	0.01 (1000 v.)
C3	100 pF.
C4	0.1
C5	100 pF.
C6	555 pF. (1%)
C7	180 pF. (1%)
C8	0.1
C9	0.01 (1000 v.)
C10	0.1
C11	0.1
C12	10 pF.
C13	100 pF.
C14	100 pF.
C15	0.01 (1000 v.)
C16	4 (350 v.)
C17	0.002 (1000 v.)
C18	0.05 (1000 v.)

C19	25 (25 v.)
C20	0.01 (1000 v.)
C21	0.01 (1000 v.)
C22	16 (350 v.)
C23	16 (350 v.)
C24	0.01 (1000 v.)
C25	0.01 (1000 v.)
CT1	100 pF. (2%)
CT2	100 pF. (2%)
CT3	100 pF. (2%)
CT4	200 pF. (2%)

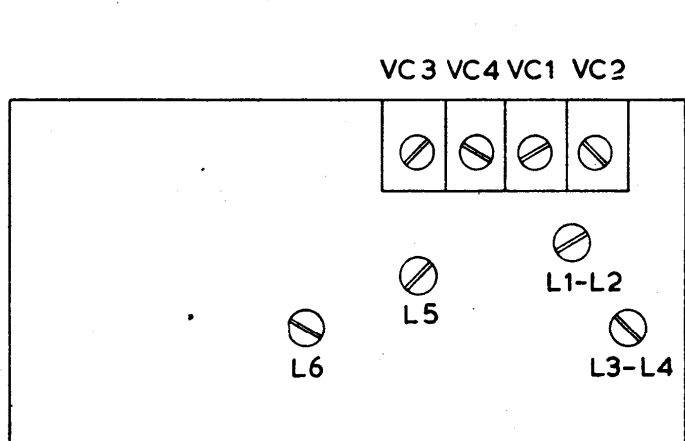
### Resistors.

R1	1M
R2	220
R3	—
R4	47k

R5	50
R6	180
R7	33k (½ W.)
R8	33k (½ W.)
R9	1M
R10	270
R11	1M
R12	47k
R13	47k
R14	0.47M
R15	6.8k
R16	180 (1 W.)
R17	180 (1 W.)
R18	100
R19	625 + 50 + 50
R20	100 (1 W.)
VR1	1M
VR2	50k



CIRCUIT DIAGRAM—BEETHOVEN MODEL U2038 (REDESIGNED CHASSIS).



TRIMMER AND CORE LAY-OUT

- | Capacitors. |                | Resistors. |                          |
|-------------|----------------|------------|--------------------------|
| C1          | 0.1 (1000 v.)  | R1         | 1M                       |
| C2          | 0.01 (1000 v.) | R2         | 47k                      |
| C3          | 100 pF.        | R3         | 33k (1/4 W.)             |
| C4          | 100 pF.        | R4         | 33k (1/4 W.)             |
| C5          | 555 pF. (1%)   | R5         | 33                       |
| C6          | 180 pF. (1%)   | R6         | 1M                       |
| C7          | 0.01           | R7         | 1M                       |
| C8          | 0.1            | R8         | 0.47M                    |
| C9          | 0.1            | R9         | 180 (1 W.)               |
| C10         | 10 pF.         | R10        | 1M                       |
| C11         | 250 pF.        | R11        | 50k (Pot.)               |
| C12         | 0.01           | R12        | 1200 (7 W.)              |
| C13         | 0.002          | R13        | 725 tapped 50<br>and 100 |
| C14         | 25 (25 v.)     | R14        | 100 (10 W.)              |
| C15         | 0.05 (1000 v.) | R15        | 100 (1 W.)               |
| C16         | 32 (350 v.)    | PI-2       | 6.5 v. 0.3 amp.          |
| C17         | 16 (350 v.)    |            |                          |
| C18         | 0.01 (1000 v.) |            |                          |
| C19         | 0.01 (1000 v.) |            |                          |
| C20         | 0.01 (1000 v.) |            |                          |

wave dummy aerial, set wave-change switch to "long" and the pointer to 150 kc/s. (2000 m.). Adjust core of L6 to tune receiver to test signal and align the aerial circuit by adjusting core L4. Set the pointer to 300 kc/s. (1000 m.) and tune to that frequency by adjusting VC4; align aerial circuit with VC2. Check again at 150 kc/s. and re-align if necessary. Repeat procedure on M.W. at 600 kc/s. (500 m.), adjusting L5 and L2, and at 1400 kc/s. (214 m.), adjusting VC3 and VC1.

**Valve Analysis :**

Valve	Grids	Control	Screen	Cathode
V1	Osc. anode (pin 6) 80 v., 4 mA.	Anode (pin 3) 208 v., 5 mA.	Screen (pin 4) 100 v., 1.6 mA.	Cathode (pin 8) 2.5 v.
V2	Anode (pin 3) 208 v., 6 mA.	Screen (pin 4) 100 v., 1.8 mA.	Cathode (pin 8) 2.3 v.	—
V3	Anode (pin 3) 195 v., 40 mA.	Screen (pin 4) 180 v., 5 mA.	Cathode (pin 8) 15 v.	—
V4	Anode (pin 5) 210 v. (A.C.)	Cathode (pin 8) 225 v.	—	—