BUSH Models AC.2, DAC.2

General Description : Five-valve, including rectifier, three-waveband superheterodyne receiver with " Bush Bi-focal Tone " negative feedback. Released Autumn 1947. Price £25 4*s.* 0*d.* (including purchase tax).

Power Supplies :

Model AC.2 : A.C. mains only, 100–120, 200–250 volts, 40–100 c/s. Four tappings 110, 210, 230, 250. Consumption 40 watts.

Model DAC.2 : A.C./D.C. mains, 200–250 volts. Three tappings 210, 230, 250. Consumption 60 watts.

Wavebands : L.W. 900–2000 m. (333·3–150 kc/s.); M.W. 195–550 m. (1530–545·4 kc/s.); S.W. 16–50 m. (18·75–6 Mc/s.).

Intermediate Frequency : 465 kc/s.

Valves : Mullard (V1) CCH35, frequency changer; (V2) EF39, I.F. amplifier; (V3) EBC33, detector, A.V.C. diode, L.F. amplifier; (V4) CL33, output; (V5) CY31, mains rectifier.

Scale Lamps : One for each waveband—three in all.

Model AC.2 : 3·5 volts, 0·3 amp.

Model DAC.2 : 6·2 volts, 0·3 amp.

Modifications : In later models C31 is 0·005 μF., R11 is connected between second I.F. secondary and C24. Pick-up socket is connected to the junction of R11 and C24. A 10k resistor in series with a 0·01-μF. capacitor is connected across the output transformer primary.

Alignment Procedure : *Warning*—The chassis of these receivers are " Live ". A dummy aerial, consisting of a 400-ohm non-inductive resistor for the short waveband and a fixed capacitor of 200 pF. for medium and long wavebands, should be connected in series with the output of the signal generator.

I.F. : Connect the signal generator to V2 control grid and adjust L16 and L15 for maximum output. Transfer the signal to V1 control grid and adjust L8 and L7. With the signal applied to V1 control grid make a finer adjustment of L16, L15, L8 and L7 and repeat in the reverse order for final setting.

L.W. : Adjust TC6 oscillator, TC3 aerial, on 1000 m. (300 kc/s.) with the receiver tuned to 1000 m. Check calibration on 2000 m. (150 kc/s.).

M.W. : Adjust TC5 oscillator on 200 m. (1500 kc/s.) with the receiver tuned to 200 m. Adjust TC2 aerial on 300 m. (1000 kc/s.) with receiver tuned to 300 m. Check calibration on 500 m. (600 kc/s.).

S.W. : Adjust TC4 oscillator, TC1 aerial on 25 m. (12 Mc/s.) with receiver tuned to 25 m. Check calibration on 50 m. (6 Mc/s.).

D.C. Resistances :

L1, L2	Under ½ ohm	L3	0·6 ohm	L4	4·0 ohms	L5	32 ohms
L6	16 ohms	L9, 10	Under ½ ohm	L11	0·6 ohm	L12	3·2 ohms
L13	1·5 ohms	L14	4·0 ohms	L7 8, 15, 16	5·5 ohms each		

Mains transformer:

AC.2	110-volt tap	86 ohms
	210-volt tap	165 ohms
	230-volt tap	180 ohms
	250-volt tap	200 ohms
	3·5-volt tap	2·2 ohms
	Heater tap	58 ohms

Output transformer

Primary	180 ohms
Secondary	0·22 ohm
Ratio	45·4 : 1

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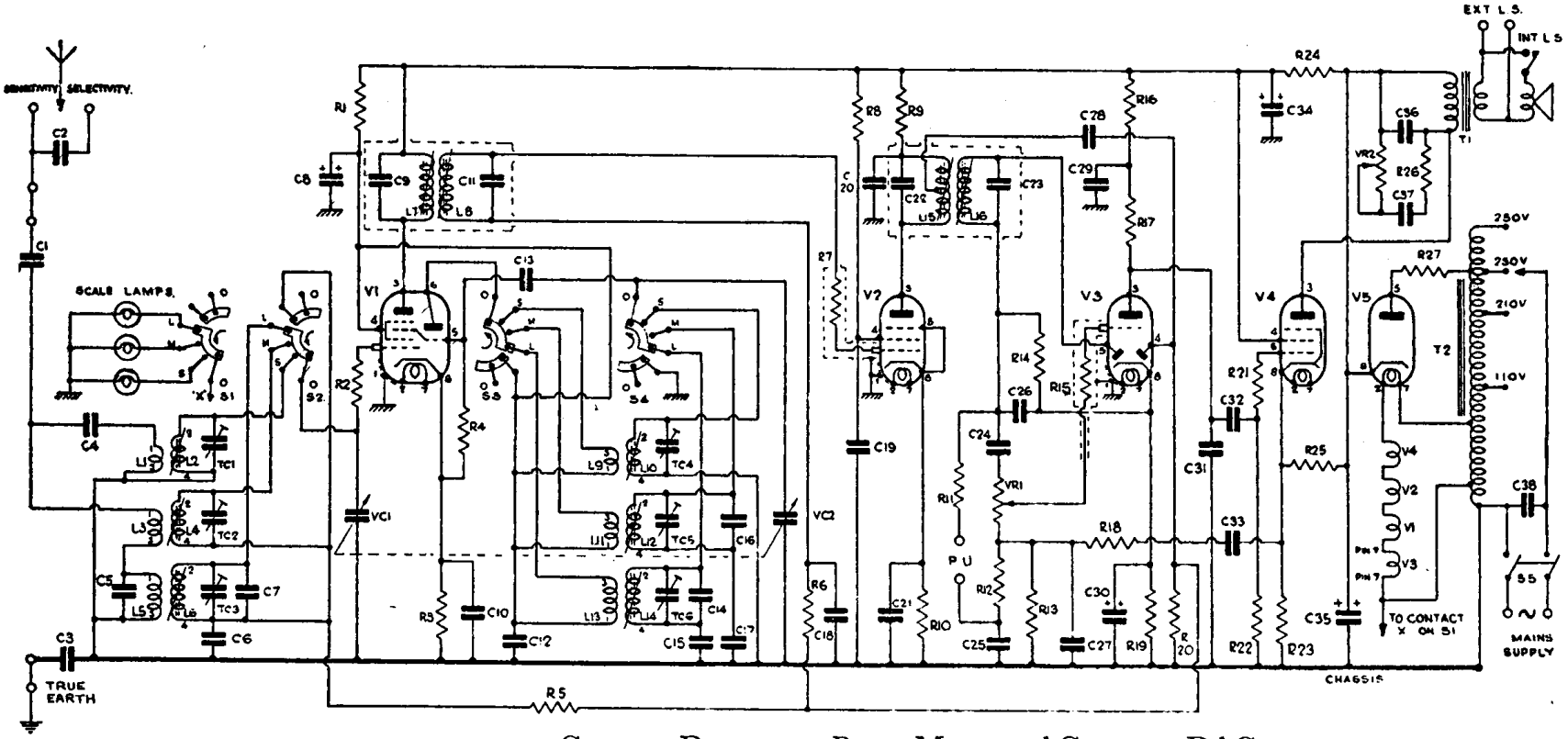
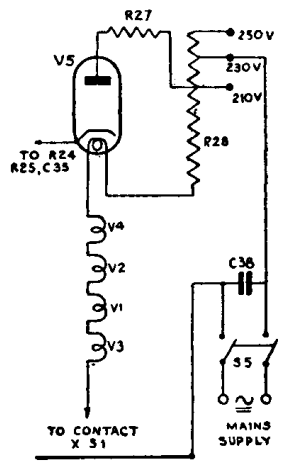
Voltage Checks : Operating on 230 volts A.C.

CCH_{35}	Hex. anode	174	EBC_{33}	Anode	39
	Screen	79		Cathode	0·7
	Osc. anode	79	CL_{33}	Anode	235
	Cathode	0·7		Screen	175
EF_{39}	Anode	131		Cathode	6·5
	Screen	59	CY_{31}	Anode	219 A.C.
	Cathode	1·0		Cathode	243

Pick-up Sockets : Pick-up sockets are provided, but no switching facilities are available, and the tuning must be set away from a station in order to avoid break-through. The D.C. resistance should be between 1000 and 2000 ohms unless a crystal pick-up is used, when a correction circuit is necessary.



Mains Input Circuit—DAC.2



Circuit Diagram—Bush Models AC.2 and DAC.2

Capacitors.

C1	0·005
C2	50 pF.
C3	0·005
C4	50 pF.
C5	800 pF.
C6	0·1
C7	30 pF.
C8	2
C9	110 pF.
C10	0·05
C11	110 pF.
C12	0·05
C13	50 pF.
C14	180 pF.
C15	390 pF.
C16	10 pF.
C17	605 pF.
C18	0·05
C19	0·5
C20	0·05
C21	0·05
C22	110 pF.
C23	110 pF.
C24	0·01
C25	0·1
C26	100 pF.
C27	0·1
C28	50 pF.
C29	0·5
C30	50
C31	0·001
C32	0·05
C33	0·05
C34	16
C35	32
C36	0·001
C37	0·05
C38	0·05

Resistors.

R1	15k
R2	47
R3	100
R4	33k
R5	1M
R6	1M
R7	47
R8	100k
R9	10k
R10	220
R11	47k
R12	47k
R13	4700
R14	330k
R15	100k
R16	100k
R17	100k
R18	1000
R19	1500
R20	1M
R21	47k
R22	470k
R23	130
R24	3300
R25	150k
R26	2200
R27	130
R28	600 + 100 + 100 (DAC.2 only)
VR1	2M
VR2	50k

Variable Capacitors.

VC1} 2 × 528 pF. Ganged
VC2}
TC1–6 3–40 pF.