

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 4s. od. (including purchase tax).

Power Supplies :

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

Model DAC.2 : A.C./D.C. mains, 200-250 volts. Three tapplings 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 μ F., 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- μ F. 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 $\frac{1}{2}$ ohm	L3	0.6 ohm	L4	4.0 ohms	L5	32 ohms
L6	16 ohms	L9, 10	Under $\frac{1}{2}$ 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:				Output transformer		
	AC.2	110-volt tap	86 ohms		Primary	180 ohms	
		210-volt tap	165 ohms		Secondary	0.22 ohm	
		230-volt tap	180 ohms		Ratio	45.4 : 1	
		250-volt tap	200 ohms				
		3.5-volt tap	2.2 ohms				
		Heater tap	58 ohms				

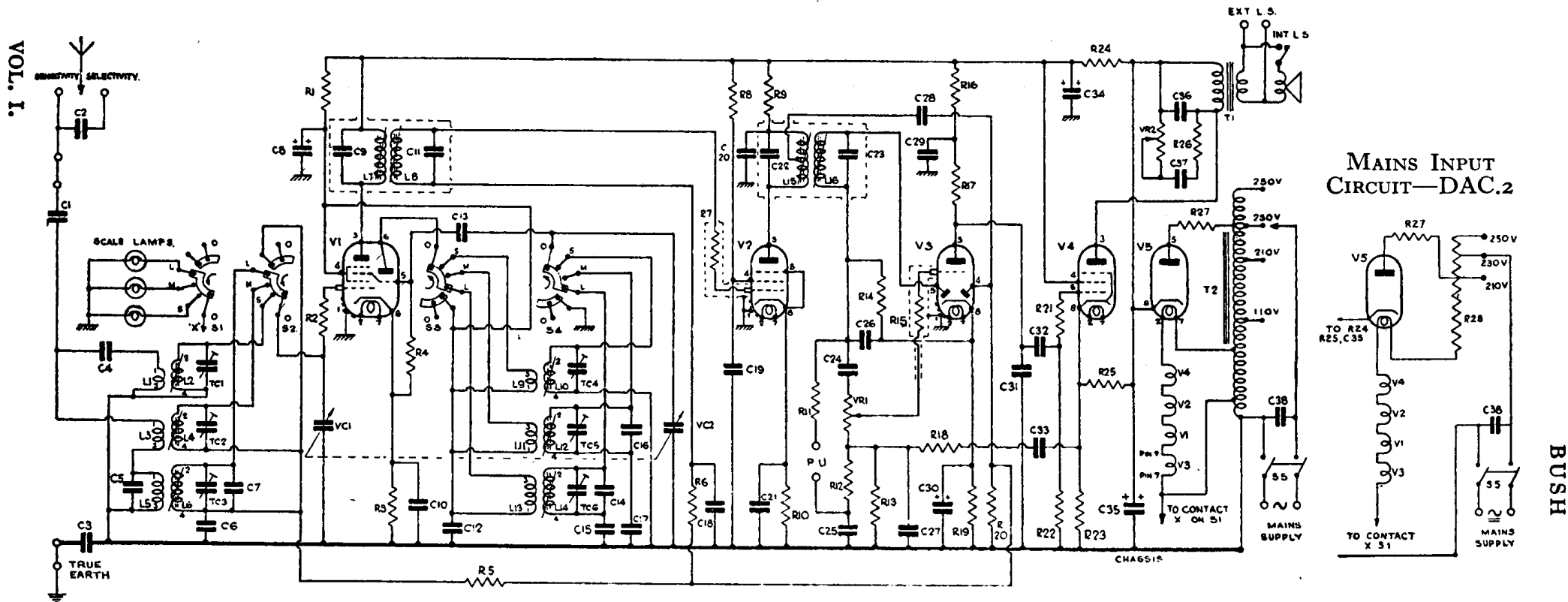
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Voltage Checks : Operating on 230 volts A.C.

CCH35	Hex. anode . . .	174	EBC33	Anode . . .	39
	Screen . . .	79		Cathode . . .	0.7
	Osc. anode . . .	79		CL33	Anode . . .
EF39	Cathode . . .	0.7		Screen . . .	175
	Anode . . .	131		Cathode . . .	6.5
	Screen . . .	59	CY31	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.



CIRCUIT DIAGRAM—BUSH MODELS AC.2 AND DAC.2

Capacitors.

C1	0.005	C17	605 pF.
C2	50 pF.	C18	0.05
C3	0.005	C19	0.5
C4	50 pF.	C20	0.05
C5	800 pF.	C21	0.05
C6	0.1	C22	110 pF.
C7	30 pF.	C23	110 pF.
C8	2	C24	0.01
C9	110 pF.	C25	0.1
C10	0.05	C26	100 pF.
C11	110 pF.	C27	0.1
C12	0.05	C28	50 pF.
C13	50 pF.	C29	0.5
C14	180 pF.	C30	50
C15	390 pF.	C31	0.001
C16	10 pF.	C32	0.05

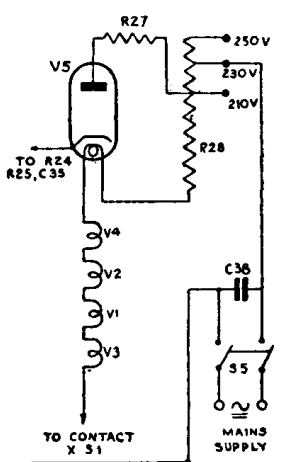
Resistors.

R1	15k	R8	100k
R2	47	R9	10k
R3	100	R10	220
R4	33k	R11	47k
R5	1M	R12	47k
R6	1M	R13	4700
R7	47	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)

Variable Capacitors.

VC1	2 × 528 pF.
VC2	Ganged
TCr-6	3-40 pF.

MAINS INPUT CIRCUIT—DAC.2



BUSH