

BUSH AC71

Four-valve, plus rectifier, three-waveband superhet. Sockets are provided for a high resistance pick-up and a low impedance extra loud-speaker. Suitable for operation from AC mains, 200-250v, 40-100 cycles. Manufactured by Bush Radio, Ltd., Power Road, Chiswick, London, W4.

THE aerial input may be injected via either of two sockets, the selective socket feeding the input via C1 to the coupling coils L1 (SW), L3 (MW), and L5 (LW). An internal aerial may be employed by placing the red plug of the internal aerial into the maximum sensitivity socket and the black plug into the earth socket.

From the aerial coupling coils the signals are passed to the tuning coils L2, L4, and L6, which are tuned by VC1. The signal is fed direct to the grid of the frequency changer V1, which is biased by R3, decoupled by C7.

The oscillator section of the valve employs tuned grid circuits with reaction

coils in the anode circuit, the combinations being L7, L8 (SW); L9, L10 (MW); L11, L12 (LW). The grid leak and condenser are R4 and C8, while the anode obtains its HT from the screen grid line which is fed from the HT supply via R1, decoupled by C6.

The IF transformer L13, L14, couples the IF signal from V1 to the grid of the IF amplifying valve V2, both valves having their grid circuits connected to the AVC line. V2 is biased by R9 decoupled by C20 and a second IF transformer L15, L16 hands on the signal to the signal diode of the double diode triode V3.

The LF load resistance is R11 with filtering by R10 and C23. The LF signal is coupled by C25 to the volume control VR1, from whence the signal is fed via a grid stopper R12 to the grid of the triode section of V3. Biasing is accomplished by R15, decoupled by C27.

The AVC diode of V3 is fed from a tapping on the primary, L15 of the second IF transformer, the coupling capacity being C21. The AVC load resistance is R16, from whence V1 and V2 grid circuits are fed via the usual decoupling components.

The anode circuit of V3 is resistance capacity coupled by R14, C30, and R17 to the grid of the pentode output valve V4. A tone correcting circuit comprising VR2

and C29 is provided across the anode by-pass condenser C28 of V3.

V4 is biased by R18, decoupled by C31 and the usual output transformer. L17, L18 couples the anode circuit of V4 to the energised moving coil loudspeaker, of which L19 is the speech coil and L20 the hum-bucking coil. An extra loud-speaker of low impedance may be connected across the secondary, L18, of the output transformer, and the internal speaker may be silenced by removing the plug in the INT LS socket.

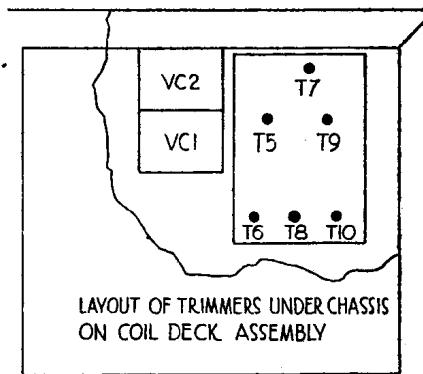
The HT circuit comprises the full-wave rectifying valve V5 with the field winding, L21, as a choke and smoothing condensers C33 and C34. The mains input is HF filtered by C35 and C36.

GANGING

IF Circuits.—Set volume control to maximum and tone control to low (anticlockwise). Check that the tuning pointer coincides with the top of the wavelength lines on the scale when the gang condenser is fully meshed. A damping circuit comprising a 30,000-ohm resistance in series with a .05 mfd condenser must be used where stated when adjusting the IF circuits.

Tune receiver to 300m and inject a 465 kcs signal to the control grid of V2,

Continued end col. opposite page

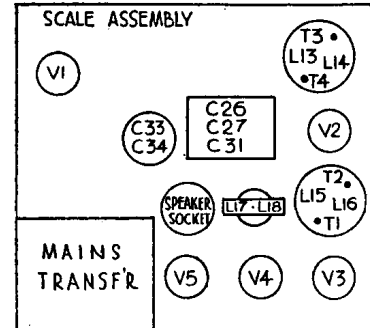


LAYOUT OF TRIMMERS UNDER CHASSIS ON COIL DECK ASSEMBLY

These two diagrams show the trimmer positions and identify the major components.

RESISTANCES

R	Ohms	R	Ohms
1	30,000	11	500,000
2	1 meg	12	100,000
3	200	13	10,000
4	30,000	14	50,000
5	50	15	1,000
6	1 meg	16	1 meg.
7	100,000	17	500,000
8	10,000	18	200
9	300	VR1	500,000
10	250,000	VR2	250,000



VALVE READINGS

V	Type	Electrode	Volts	Ma
1	ECH33 (Met)	Anode	265	1.6
		Osc anode	75	4
		Screen	75	2.6
2	EF39 (Met)	Cathode	1.5	—
		Screen	200	5
3	EBC33 (Met)	Cathode	75	1.6
		Screen	2	—
4	EL33	Anode	110	2.2
		Cathode	2.2	—
5	DW4/350	Anode	245	30
		Screen	265	.4
5	DW4/350	Cathode	6.5	—
		Cathode	375	51

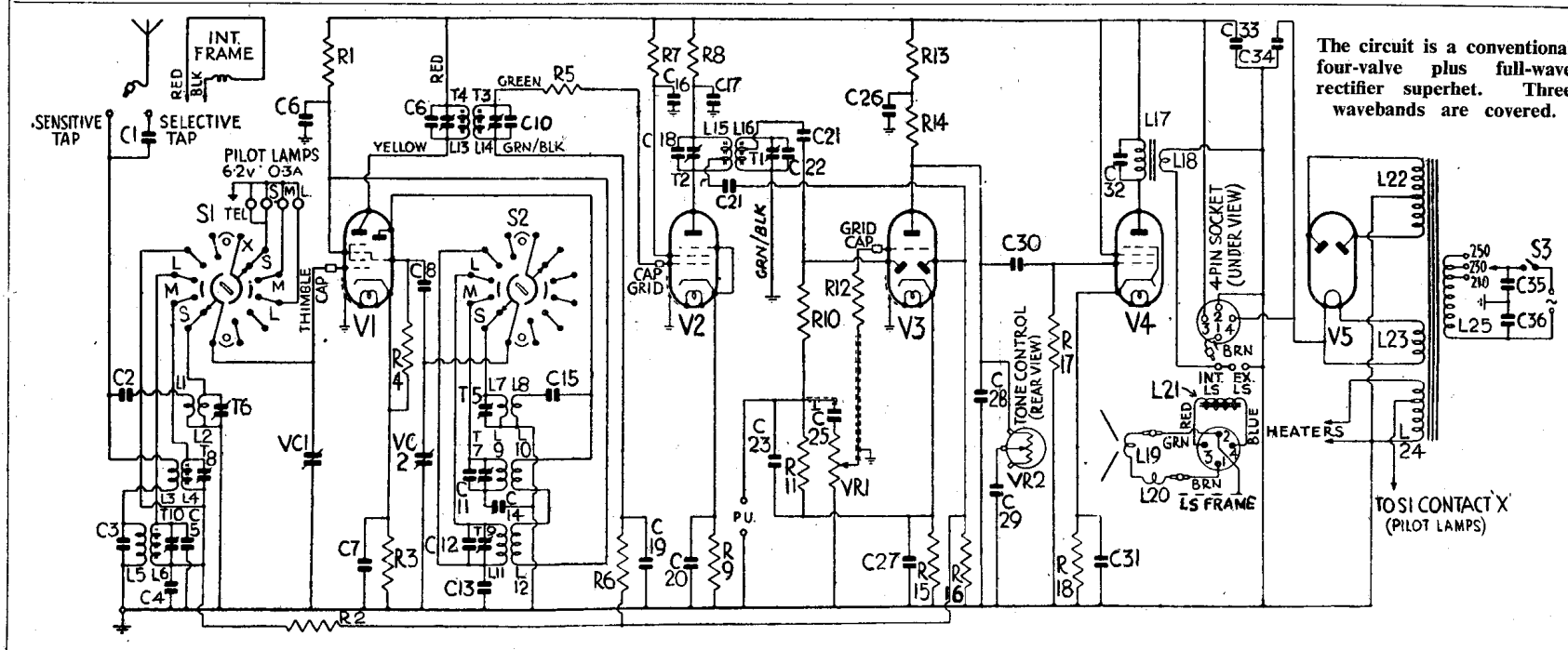
Voltage readings taken with a 1,000 opv meter, set tuned to 300m, no signal input. Pilot lamps 6.2v, .3 amp MES.

CONDENSERS

C	Mfids	C	Mfids
1	50 mmfd	19	.05
2	50 mmfd	20	.05
3	.0008	21	50 mmfd
4	.5	22	.0001
5	30 mmfd	23	.0001
6	.05	24	.0001
7	.05	25	.01
8	30 mmfd	26	2
9	.0001	27	50 mmfd
10	.0001	28	.001
11	20 mmfd	29	.02
12	.00013	30	.01
13	316 mmfd	31	50 mmfd
14	556 mmfd	32	.003
15	50 mmfd	33	16
16	.05	34	8
17	.05	35	.01
18	.0001	36	.01

WINDINGS

L	Ohms	L	Ohms
1	.1	14	3.8
2	Very low	15	3.8
3	.6	16	3.8
4	1.8	17	700
5	30	18	.3
6	15	19	2
7	Very low	20	.2
8	.1	21	2,000
9	1.7	22	700 (total)
10	1	23	.1
11	2.7	24	.1
12	2.1	25	.1
13	3.8		48+5+5



The circuit is a conventional four-valve plus full-wave rectifier superhet. Three wavebands are covered.

BUSH AC71

Continued from page vi

with the damping circuit between anode of V2 and chassis.

Adjust T1 for maximum output, keeping the input low.

With signal injected as before, connect the damping circuit between signal diode of V3 and chassis. Adjust T2 for maximum output.

Inject signal into control grid of V1 and connect damping circuit between hexode anode of V1 and chassis. Adjust T3 for maximum output.

With signal input as above connect damping circuit between control grid of V2 and chassis. Adjust T4 for maximum output.

SW Band.—Inject an 18m signal into the sensitive aerial socket *via* suitable dummy aerial. Switch to SW and tune receiver to 18m. Adjust T5 and T6 for maximum output. Check calibration at 50m.

MW Band.—Switch to MW, tune receiver to 300m and inject a 300m signal into the sensitive aerial socket. Adjust T7 and T8 for maximum output. Check calibration at 500m.

LW Band.—Switch to LW, tune receiver to 1,500m and inject a 1,500m signal into the sensitive aerial socket. Adjust T9 and T10 for maximum output. Check calibration at 1,900m.

CONDENSERS

C	Mfds	C	Mfds
1	.. .00005	8	.. .5
2	.. .0002	9	.. .0001
3	.. .5	10	.. .002
4	.. .0002	11	.. .1
5	.. .0001	12	.. .1
6	.. .0005	13	.. .2
7	.. .0003		

RESISTANCES

R	Ohms	R	Ohms
1	.. 100	6	.. 230,000
2	.. 50,000	7	.. 50,000
3	.. 1 meg	8	.. 500,000
4	.. 20,000	9	.. 5,000
5	.. 5,000	VR1	.. 100,000

WINDINGS

L	Ohms	L	Ohms
1	.. 13	8	.. 25
2	.. 4	9	.. 50
3	.. 2.5	10	.. 320
4	.. 6	11	.. 2,700
5	.. 4	12	.. 950
6	.. 2.5	13	.. 2.5+1
7	.. 25	14	.. 4
FAE1	.. 15	FAE2	.. 2