

BUSH DAC73

DUG73, PB73, SUG73

Four valve, plus rectifier, receiver covering medium and long waves, and with four band-spread short-wave ranges and two push-button stations. Suitable for 200-250 v., A.C./D.C. supplies (models DAC73 and DUG73) or 200-250 v., 40-100 cycle A.C. only (models PB73 and SUG73). Made by Bush Radio, Ltd., Power Road, Chiswick, London, W.4.

Circuit.—This service sheet covers both the PB73 and DAC73 chassis because the circuits are the same except for the mains input arrangements and a few minor details. As the PB73 has a perfectly conventional full-wave A.C. mains input, this sheet deals as a whole with the A.C./D.C. model, DAC73. The set has eight push-buttons providing L.

and M.W. bands, four band-spread short-wave ranges and two pre-selected stations. Aerial input is to three H.F. transformers for L., M. and S. bands. On short waves the grid circuit is not variably tuned, but the buttons switch in pre-set capacities which tune the S.W. grid coil to the middle of the band covered by the button. V1 is the frequency-changer. In the oscillator section a special, stabilised Colpitts arrangement is used. On S.W., the tuned circuits are between anode and chassis, feed-back to the grid being taken from the top of the paddler, C17. C15 is a special temperature compensating condenser and C16 is a capacity switched across the osc. gang section on band-spread. V1, V2 and V3 are coupled by trimmer-tuned, iron-cored I.F. coils. The A.V.C. diode of V3 is fed from I.F.2 primary and controls V1 on L. and M.W., and V2 on all bands. Demodulation arrangements are straightforward, with P.U. sockets switched across R13, the diode load. The triode section is resistance-capacity coupled to V4, the output pentode. This has a shunt tone control. H.T. is derived from V5, a half-wave rectifier with smoothing by the speaker field, L1, and two electrolytics. The valve heaters are run in series with the pilot lamps and with a voltage adjustment resistance. L6 and L7 are H.F. filter chokes in the mains input. Model PB73 has a straightforward full-wave rectifier circuit with similar smoothing arrangements. The pilot lamps are switched across a tapping on the L.T. winding. Condensers C34A and C34B, which isolate the P.U. sockets from chassis, and C1A, C1B, which isolate the A. and E. sockets are omitted. R21, R22, R23, R24 and C47 are omitted. In model PB73, C45 is 16 mfd. and C46 is 8 mfd. Provision is made for low-impedance (approx.

700 ohms) P.U. and for 2.5 ohm extension speaker.

GANGING
I.F. CIRCUITS.—Tune to 300 m., set volume to max., and tone to low. Inject 465 kc. and keep input low to prevent A.V.C. functioning. Connect a damping circuit consisting of 30,000 ohms in series with .05 mfd. across half of each transformer in turn while adjusting the other half.

M.W. BAND.—See that pointer registers with top wavelength mark with gang at maximum. Tune to 300 m., inject 1,000 kc. and adjust T1 and T2. Tune to 500 m., inject 600 kc. and check calibration.

L.W. BAND.—Tune to 1,500 m., inject 200 kc. and adjust T3 and T4. Check calibration at 1,900 m. (157.6 kc.).

S.W. BANDS.—The band-spread ranges cover: 16.45-17.2 m. (approx. centre of band 16.8 m.); 19.15-20.1 m. (centre 19.6 m.); 24.85-25.8 (25.4); 30.25-31.85 (31).

When the four bands require adjustment commence with 31 m. band.

On another S.W. receiver, tune in a station near the middle of the band to be adjusted. Utmost care must be used in establishing identity and wavelength of this station.

Press appropriate button on Bush set and turn pointer to correct place for receiving check station. If the station is heard below correct point, increase inductance by screwing oscillator adjustment anti-clockwise and vice versa.

Note when retightening the hexagon locking nut not to shift the screw again.

Then adjust corresponding aerial trimmer.

PUSH-BUTTONS
Both buttons cover 325-550 m. Adjust oscillator and aerial cores in that order to receive

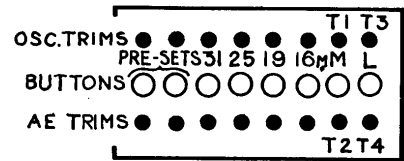
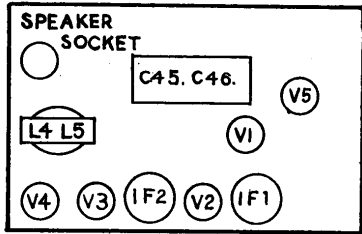
required station, checking against manual reception. Turn clockwise to increase wavelength.

NOTE.—Adjust of T3 and T2 will affect these two P.B. circuits. After replacement of V1 the P.B. and band-spread adjustments should be checked.

Valve readings are those obtained with model DAC73 on 230v. A.C. mains. On 200v. D.C. readings are approximately 25 per cent. lower. With model PB73, readings are about 30 per cent. higher.

CONDENSERS

C	Mfds.	C	Mfds.
1A	.. .005	24	.. 556 mmfds.
1B	.. .005	25	.. 50 mmfds.
1	.. 50 mmfds.	26	.. 33 mmfds.
2	.. 50 mmfds.	27	.. 47 mmfds.
3	.. 800 mmfds.	28	.. 11 mmfds.
4	.. 33 mmfds.	29	.. .05
5	.. 1.5 mmfds.	30	.. .05
6	.. 20 mmfds.	31	.. .05
7	.. 80 mmfds.	32	.. .05
8	.. 150 mmfds.	33, 34	.. 100 mmfds.
9	.. .5 mmfds.	34A	.. .03
10	.. .05	34B	.. .1
11	.. .05	35	.. 50 mmfds.
12	.. 100 mmfds.	36	.. 100 mmfds.
13	.. 100 mmfds.	37	.. 100 mmfds.
14	.. 500 mmfds.	38	.. .01
15	.. 100 mmfds.	39	.. 2
16	.. 200 mmfds.	40	.. 50
17	.. 175 mmfds.	41	.. .01
18	.. 50 mmfds.	42	.. .50
19	.. 200 mmfds.	43	.. .001
20	.. 316 mmfds.	44	.. .03
21	.. 125 mmfds.	45	.. .24
22	.. 340 mmfds.	46	.. .16
23	.. 15 mmfds.	47	.. .01



The Bush trimmers are readily accessible and are in pairs above and below their respective station and waveband buttons.

VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	CCH33	Anode	200	1.7
	or CCH35	Screen	70	2.5
2	EF39	Osc. anode	90	5
		Cathode	1.2	9.2
3	EBC33	Anode	160	4
		Cathode	60	1.2
4	CL33	Anode	1.5	5.2
		Cathode	80	2
5	UR3C	Screen	2	2
		Anodes (A.C.)	180	36
6	UR3C	Screen	200	6
		Cathode	8	42
7	UR3C	Anodes (A.C.)	230	—
		Cathode	265	54.5

Pilot lamps, 6.2 v., .3 amp.

See note at end of text

RESISTANCES

R	Ohms.	R	Ohms.
1	.. 1 meg.	14	.. 100,000
2	.. 100,000	15	.. 10,000
3	.. 100,000	16	.. 10,000
4	.. 50,000	17	.. 50,000
5	.. 30,000	18	.. 1,000
6	.. 30,000	19	.. 1 meg.
7	.. 150	20	.. 500,000
8	.. 150	21	.. 200
9	.. 100,000	22	.. 100,000
10	.. 10,000	23	.. 75
11	.. 1 meg.	24	.. 75
12	.. 300	25	.. 750
13	.. 250,000	VR1	.. 500,000
		VR2	.. 50,000

WINDINGS

L	Ohms.	L	Ohms.
1	.. 1,000	4	.. 700
(D.A.C73)	.. 2,000	5	.. .7
(PB73)	.. 2,000	6	.. .6
2	.. 2.6	7	.. .6
3	.. .1		

