SERVICE MANUAL

Price 6d.

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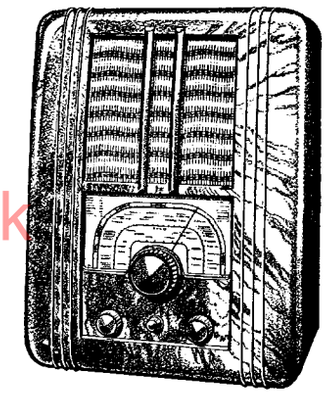
EKCO

SERVICE DEPT., E. K. COLE LTD., SOUTHEND-ON-SEA, ESSEX.

Telephone: Southend 49491.

MODEL BAW 71



Scottish Service Depot: 27, Cadogan Street, Glasgow, C.2. Telephone: Central 5357/8/9.

Manchester Service Depot: Bombay House, 59, Whitworth Street. (Goods address: 7, Bombay Street.) Telephone: Central 6711/2.

Bristol Service Depot: 14, Redcross Street. Telephone: Bristol 22269.

GENERAL DESCRIPTION: Model BAW71 is a 4-valve battery-operated all-wave superheterodyne receiver.

VALVES: V1—Mullard TH2 (frequency changer), **V2—Mullard VP2B** (I.F. amplifier), **V3—Mullard TDD2A** (AVC, demodulator, L.F. amplifier), **V4—QP22B Mullard** (Q.P.P. amplifier).

WAVE RANGES: Short waves 18-55 metres. Medium waves 190-560 metres. Long waves 900-2000 metres.

INTERMEDIATE FREQUENCY: 126.5 kcs.

H.T. CONSUMPTION: 10 m.a. (with 135v. H.T.).

L.T. CONSUMPTION: .75 amps.

BATTERIES: (135v. H.T.) Drydex H1131, Pertrix 494, Hellesens A230, Ever Ready 53, Siemens 1314. (2v. L.T.) Exide DMG or GKG5.

CIRCUIT DETAILS: For S.W. reception the aerial is aperiodically coupled to the tuned grid circuit of V1. On M.W. and L.W. bandpass input circuits are employed, the aerial being capacitively and inductively coupled respectively for M. and L.W. A conventional oscillator circuit includes the triode portion of V1.
The I.F. output of V1 is transformer coupled to V2, amplified, and again transformer coupled to V3. The two diodes of V3 are used for signal rectification and A.V.C. respectively, the triode section being the 1st L.F. amplifier.
From V3 anode, the L.F. signal is fed to the final amplifier (Q.P.P.), the output of which actuates a permanent magnet m/c speaker.
An external speaker to be used with this receiver should have an impedance of approximately 3 ohms, and if one only is wanted the type of speaker as fitted in the receiver is recommended.

CHASSIS REMOVAL: Switch OFF. Remove the back cover, disconnect and remove the batteries, then remove the battery shelf and control knobs. Unscrew the four 2BA screws in the base of the receiver and draw chassis clear. The speaker leads are of adequate length to enable the chassis to be withdrawn sufficiently for test purposes.

CIRCUIT ALIGNMENT: *This operation must only be carried out in conjunction with a service oscillator of known accuracy. To ensure reliable results, the calibration and output levels of service oscillators should be frequently checked, and in any event not less often than once every six months. The "on load" voltage of batteries in battery-driven oscillators should be regularly measured, and new batteries fitted as soon as the voltage falls below rated pressure.*

I.F. ALIGNMENT: The trimmers of both I.F. transformers are located at the bottoms of the coil assemblies and are adjustable from beneath the chassis.
Switch to L.W., close the gang, turn the volume control and tone control to maximum, and connect OP meter. Inject 126.5 kcs. signal between grid of TH2 and chassis using minimum signal input consistent with reliable meter reading. Adjust all I.F. trimmers for maximum output. Connect the service oscillator leads to "A" and "E" and repeat adjustments. The receiver controls should not be altered, any signal variation being made by adjusting the service oscillator.

CALIBRATION: Fully mesh the gang and adjust the pointer level with the lines terminating the L.F. ends of the scale. Switch to S.W. and tune set to 18 metres. Inject an 18-metre signal from service oscillator and adjust C3 (gang trimmer) for maximum output coincident with correct calibration. Now tune the set to 20 metres, inject a signal of this frequency and adjust C6 for maximum output.
Switch to M.W. and tune set to 200 metres. Inject 1500 kcs. signal and trim oscillator circuit by means of C7 (alongside gang). Tune set to 250 metres, inject 1200 kcs. signal and adjust C2 and C1 (gang trimmers) for maximum output.
Switch to L.W. and tune set to 1300 metres. Inject 230 kcs. signal and adjust C8 for maximum output with correct calibration. then adjust both L.W. bandpass trimmers C4 and C5 for maximum output. Calibration should be checked at the L.F. ends of each wave-band which should be correct if the calibration adjustments are accurately carried out. If an error is present, re-alignment should be carried out again to check possible errors before suspecting components.

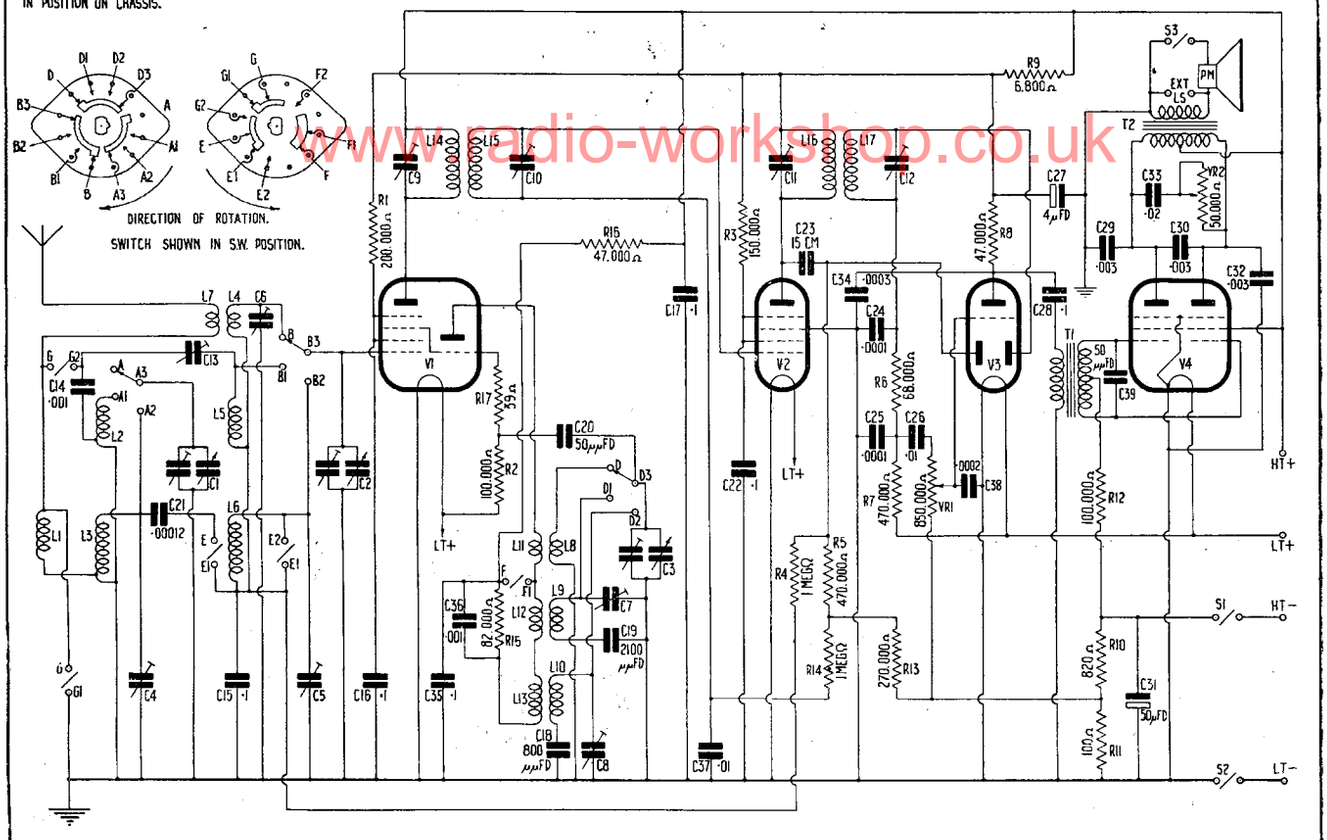
IMAGE REJECTION: C13 is provided for this purpose and can be adjusted from the front of the chassis. The trimmer should be adjusted for maximum rejection of 1000 kcs. input with the receiver tuned to 747 kcs.

BAW71

SWITCH WAFER VIEWED FROM THE REAR WHEN IN POSITION ON CHASSIS.

REVERSE SIDE OF WAFER.

SWITCH SHOWN IN S.W. POSITION.



D.C. RESISTANCE OF WIREWOUND COMPONENTS

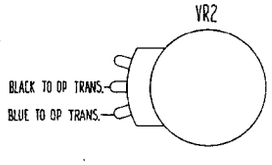
L.No	SET W/S TO	RES. Ω	MEASURE BETWEEN
1	L.W.	24	L1 TAGS
2	M.W.	2·5	C1 STATOR & CHASSIS
3	L.W.	27	" " & "
4	S.W.	NEGLIGIBLE	C2 STATOR & C15
5	M.W.	2·5	" " & "
6	L.W.	27	" " & "
7	S.W.	NEGLIGIBLE	AERIAL & CHASSIS
8	S.W.	"	C3 STATOR & CHASSIS
9	M.W.	4·5	" " & C19
10	L.W.	17	" " & C18
11	-	NEGLIGIBLE	L11 TAGS
12+13	L.W.	5	RED & RED/WHITE OSC COIL LEADS
14	-	70	PIN7 OF V1 & H.T.+
15	-	70	TOP CAP OF V2 & C37
16	-	70	PIN2 OF V2 & R8.R9
17	-	70	PIN5 OF V3 & C24.R6
I.V. TRANS. PRI.		420	C28 & CHASSIS
" " SEC. 1		1600	PIN2 OF V4 & R12
" " SEC. 2		1300	PIN1 OF V4 & "
O.P. TRANS. PRI. 1		740	PIN3 OF V4 & H.T.+
" " PRI. 2		680	PIN7 OF V4 & "
" " SEC.		NEGLIGIBLE	EXT. L.S. SOCKETS (WITH S3 OPEN)

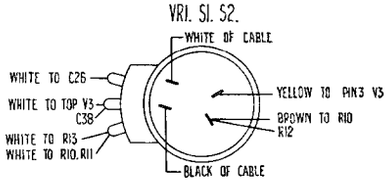
VOLTAGE & CURRENT READINGS.

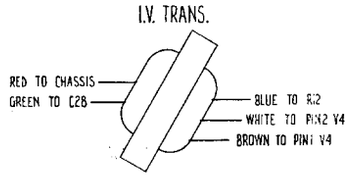
V	PIN		VOLTS	M.A.
V1	7	HEX. ANODE	126	·54
	1	OSC. ANODE	LW.MW. 35	·71
			SW. 61	1·32
	3	S.G.	58	·35
V2	2	ANODE	106	1·15
	6-7	S.G.	44	·45
V3	1	ANODE	81	·58
V4	3	ANODE	125	2·45
	7	ANODE	125	2·45
	6	S.G.	126	·82
BIAS VOLTAGE DEVELOPED ACROSS R11				1·0 V
" " " R10.R11				10·0 V

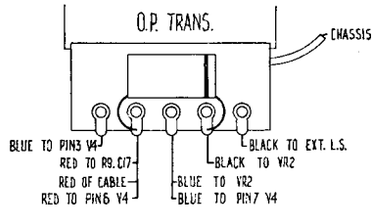
VOLTAGE READINGS TAKEN WITH HIGH RESISTANCE VOLTMETER USING CHASSIS AS NEGATIVE.

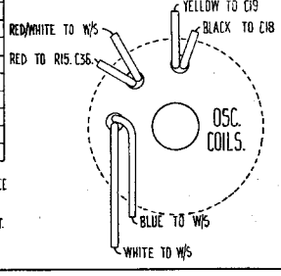
RECEIVER SET AT 1000 KCS. NO SIGNAL INPUT.

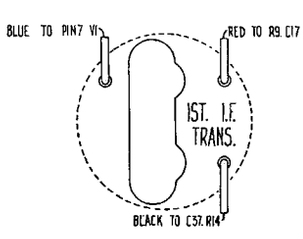


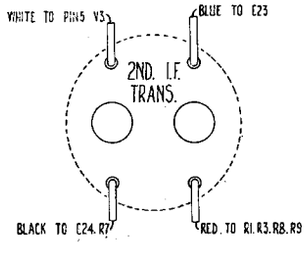












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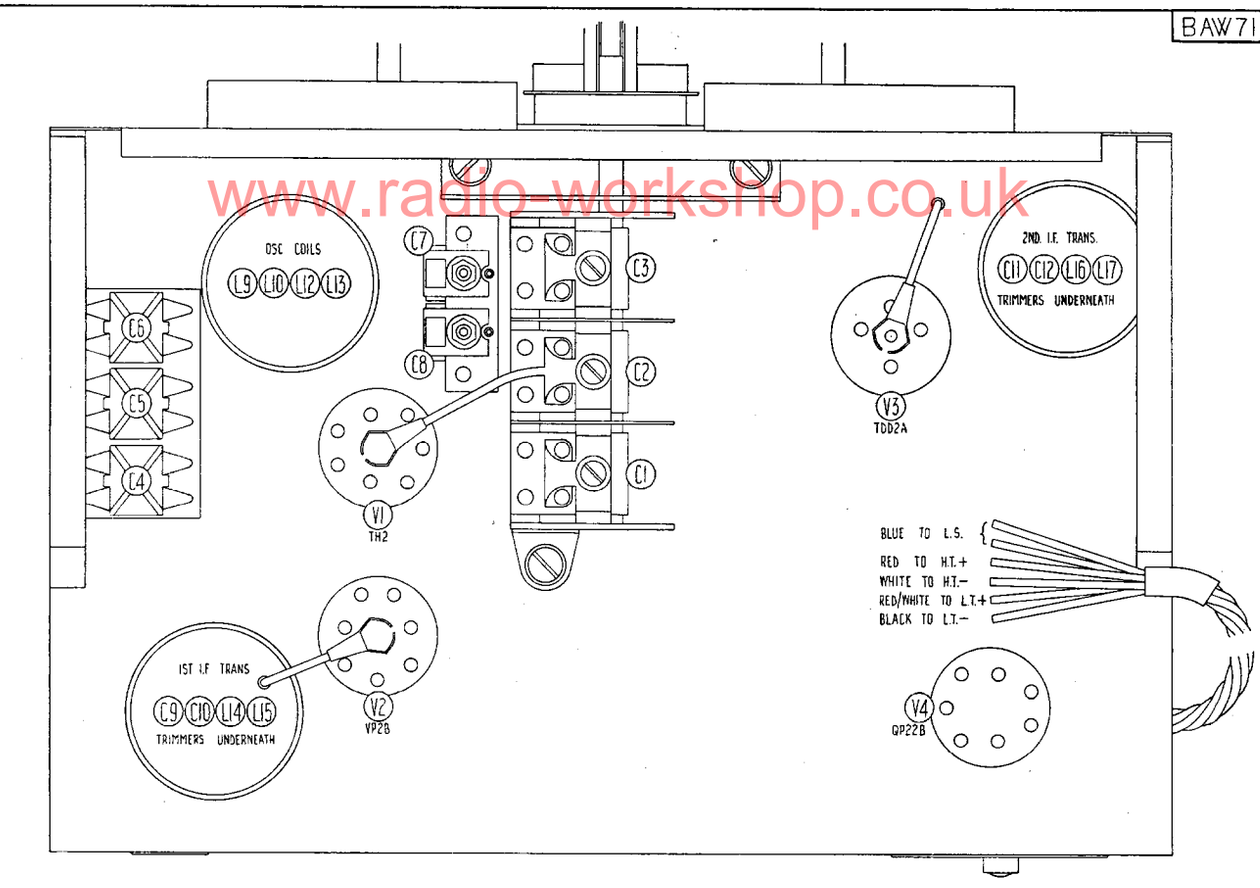

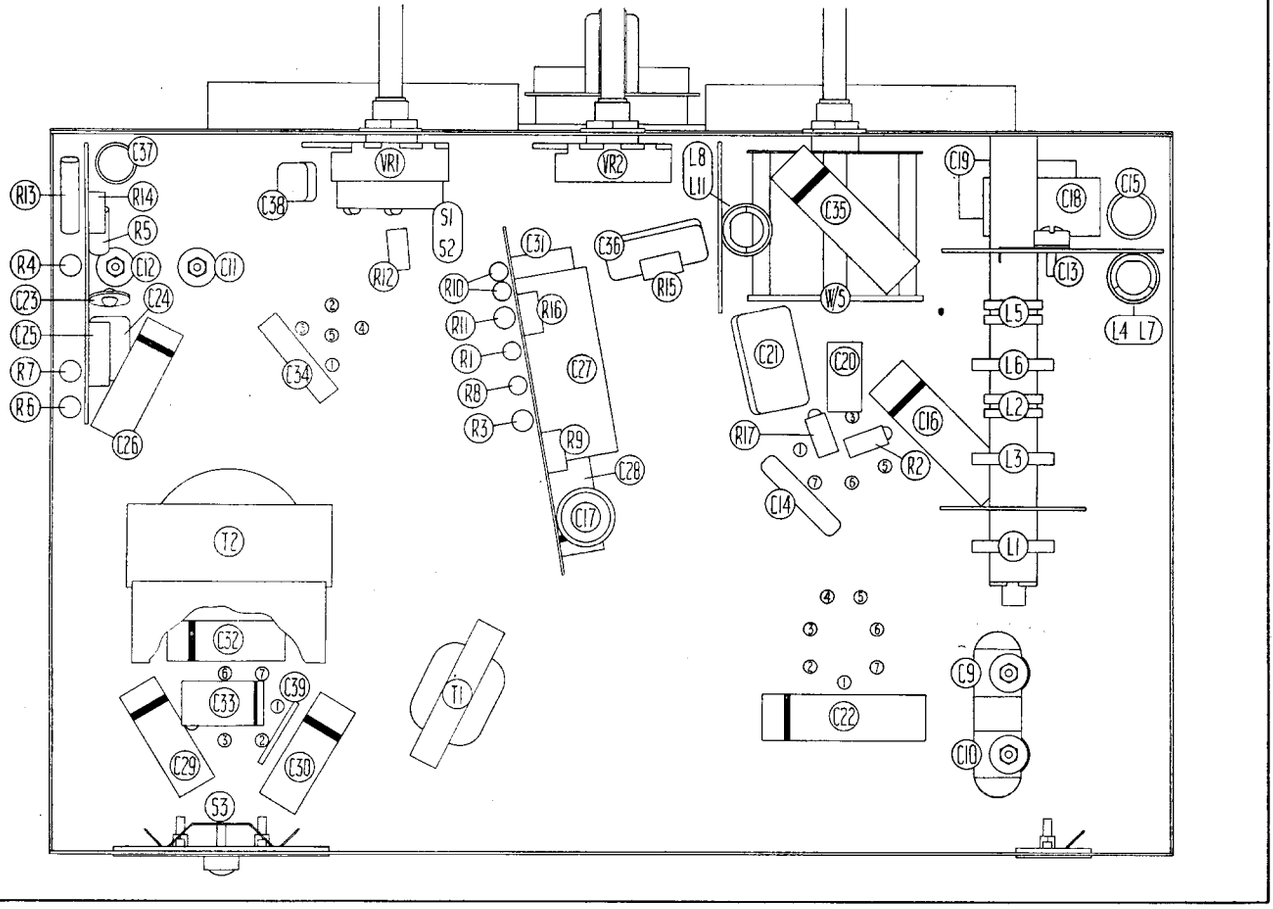

PRICE LIST.

MISCELLANEOUS.

Description.	*Part No.*	*Retail*	*Description.*	*Part No.*	*Retail*
Back Cover	DP2396	2/6	Knob—Tuning	DP2409	1/6
Baffle	E10205	1/6	Knob—T/C	DP2399	6d.
Battery Lead Assembly	DP1830	2/–	Knob—V/C	DP2091	9d.
Battery Shelf	C8509	1/–	Knob—W/C	DP2400	9d.
Cabinet	DP2397	30/–	Loudspeaker	E6522/1	30/–
Coil Assembly—Bandpass L1, 2, 3, 4, 5, 6, 7, C13	SA355/1	14/6	Pointer	A10186	6d.
Coil Assembly — Oscillator (M.W. & L.W.) L9, 10, 12, 13	SA352	6/–	Scale	C10247	2/–
Coil Assembly — Oscillator (S.W.) L8, 11	SA258	1/6	Screened Lead	DP1728	3d.
Coil Assembly—1st I.F. L14, 15, C9, 10, R3	DP2414	5/6	Shield Can (for I.F. Coils) ...	DP2393	9d.
Coil Assembly—2nd I.F. L16, 17, C11, 12	DP2415	5/6	Tone Control, VR2	C10202	2/6
Insulated Screw	P1531	2d.	Transformer Intervalve T1 ...	DP2385	6/6
			Transformer Output T2 ...	SA260	6/6
			Volume Control & Switch VR1, S1, S2	C10203	5/–
			Wavechange Switch	C10208	5/–
			Window	C10152	9d.

CONDENSERS.

	Description.	*Part No.*	*Retail*		*Description.*	*Part No.*	*Retail*
C1, 2, 3	Gang Condenser and Drive	C10171	15/–	C26 ...	.01 mfd.	A3846	1/–
C7, 8 ...	Dual Ceramic Presets	B10204	3/–	C27 ...	4 mfd.	B10229	2/6
C14 ...	.001 mfd.	A5274	1/–	C28 ...	.1 mfd.	A3844	1/4
C15 ...	.1 mfd.	B7070	1/9	C29 ...	.003 mfd.	B7050	1/–
C16 ...	.1 mfd.	A3844	1/4	C30 ...	.003 mfd.	B7050	1/-
C17 ...	.1 mfd.	B7070	1/9	C31 ...	50 mfd.	A5982	2/3
C18 ...	800 pf.	B8411	1/6	C32 ...	.003 mfd.	B7050	1/–
C19 ...	2100 pf.	B10353	1/6	C33 ...	.02 mfd.	B4147	1/–
C20 ...	50 mmfd.	B7738	1/–	C34 ...	.0003 mfd.	B5747	8d.
C21 ...	.00012 mfd. ...	A3841	8d.	C35 ...	.1 mfd.	A3844	1/4
C22 ...	.1 mfd.	A3844	1/4	C36 ...	.001 mfd.	A5274	1/–
C23 ...	15 cms.	A5925	1/–	C37 ...	.01 mfd.	A3846	1/–
C24 ...	.0001 mfd.	A5274	8d.	C38 ...	.0002 mfd.	A5274	8d.
C25 ...	.0001 mfd.	A5274	8d.	C39 ...	50 mmfd.	A5747	8d.

RESISTORS.

	Description.	*Part No*	*Retail*		*Description.*	*Part No.*	*Retail*
R1 ...	200,000 ohms ...	89/9	3d.	R10 ...	820 ohms	157/9	3d.
R2 ...	100,000 ohms ...	86/9	3d.	R11 ...	100 ohms	135/9	3d.
R3 ...	150,000 ohms ...	88/9	3d.	R12 ...	100,000 ohms ...	86/9	3d.
R4 ...	1 megohm	98/9	3d.	R13 ...	270,000 ohms ...	91/9	3d.
R5 ...	470,000 ohms ...	94/9	3d.	R14 ...	1 megohm	98/9	3d.
R6 ...	68,000 ohms ...	84/9	3d.	R15 ...	82,000 ohms ...	85/9	3d.
R7 ...	470,000 ohms ...	94/9	3d.	R16 ...	47,000 ohms ...	82/9	3d.
R8 ...	47,000 ohms ...	82/9	3d.	R17 ...	39 ohms	45/9	3d.
R9 ...	6,800 ohms	72/9	3d.				

NOTE.—All prices are retail and are subject to 33⅓% discount only to EKCO Registered Dealers. Prices are liable to alteration without notice.