

# SERVICE MANUAL

Price 6d.

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# EKCO



MODEL BAW69  
BATTERY ALL-WAVE RECEIVER

The BAW69 is a 4 valve all wave battery operated superheterodyne model.

**FEATURES:** Minimum number of battery leads, automatic bias. Local-distant switching (controlled by "cut-out" screw between aerial and earth sockets), variable tone control and provision for external L.S.

**WAVE RANGES:** S.W.—16.5-54 metres; M.W.—200-565 metres; and L.W.—880-2,000 metres.

**VALVES:** V1—FC2A Mullard frequency changer; V2—VP2B Mullard H.F. pentode; V3—TDD2A Mullard double diode triode; V4—OP230 Mazda duo-pentode output valve.

**BATTERIES:** 2v. L.T.—Exide CZ3, CZH3—L.T. cons. .7 amps. 135v. H.T.—Drydex H1131—H.T. cons. 10 MA.

**I.F. FREQUENCY:** 126.5 K.cs.

**CIRCUIT:** On the S.W. waveband, the aerial is coupled to the grid circuit of V1 through L7, L4.

On M.W., the aerial is connected by C14 to tapped M.W. B.P. coil L2, which is inductively coupled to V1 grid coil L5, and on L.W., the input passes through L1, which is connected to tapped coil L3; this in turn is inductively coupled to L6. Wave changing is accomplished with a wafer-type switch.

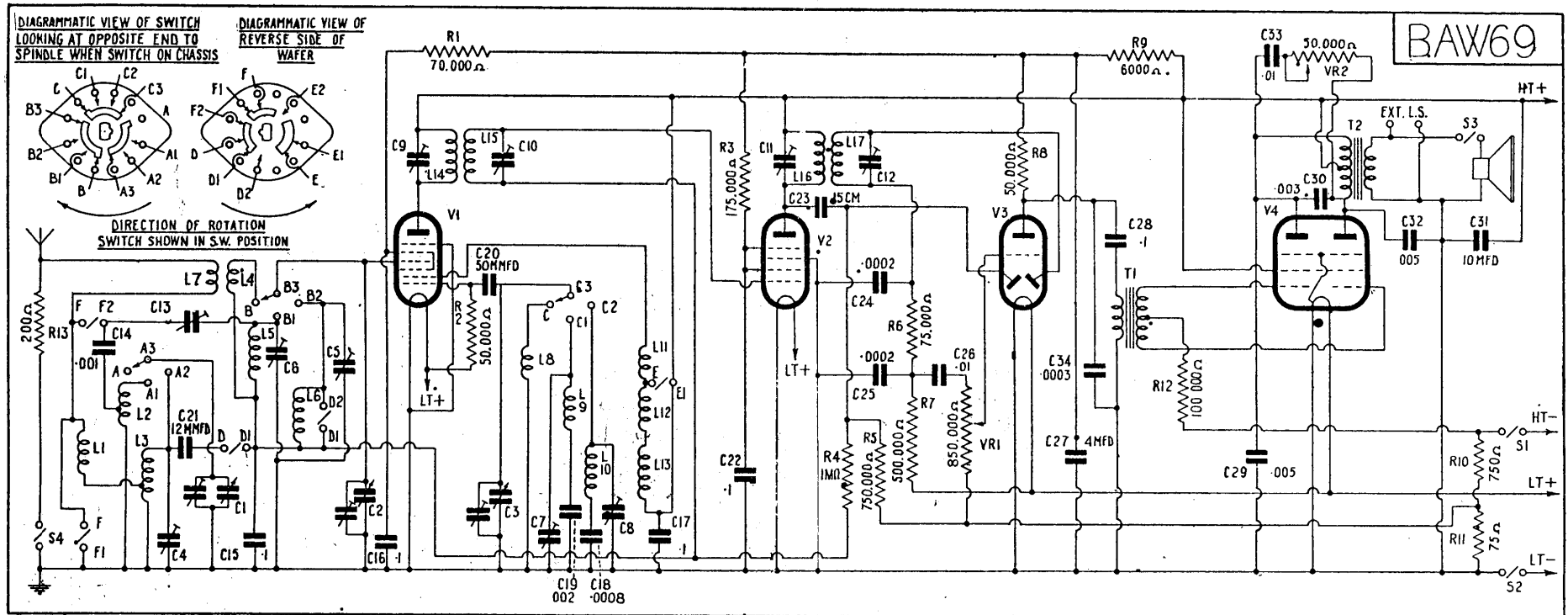
V1 acting as an electronic "mixer" produces the intermediate frequency of 126.5 K.cs. which is fed via the first I.F. transformer to V2, I.F. amplifier and thence to V3. The two diodes of V3 are used for demodulation and A.V.C. respectively, the triode section being the 1st L.F. amplifier. The L.F. output is transformer coupled to V4, the output of which is coupled to a permanent magnet speaker.

Extension speakers should have an input impedance of 4 ohms. approx.

**CHASSIS REMOVAL:** Set battery switch to OFF. Disconnect and remove batteries and shelf. Remove all four knobs, loosen anchorage of speaker leads. Remove four screws in base of cabinet and two screws securing scale. Hold rear of chassis, pull slightly, then raise rear of chassis to allow scale to clear the speaker housing. Draw clear.

**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 checked frequently, and in any event not less often than once every six months.* The trimmers undermentioned are shown in the diagrams. Open Local/Distant switch. Tune the set to 2000 metres (gang fully meshed on L.W.) and connect 0-5v. A.C. meter to "EXT. SPKR." sockets of chassis. Connect one lead of service oscillator to "E" of chassis and the other through a .02 mfd. condenser to the grid of FC2A leaving the existing grid lead in place. Set S.O. to 126.5 K.cs and adjust its attenuator to lowest level consistent with reliable reading of output meter, otherwise A.V.C. action will cause confusion. Adjust C12, C11 then C10, C9 for maximum meter reading, if necessary, progressively reducing output of S.O. to compensate for increased overall gain. Remove .02 mfd. condenser and, with suitable dummy aerial, connect S.O. lead to "A" of chassis. Readjust I.F. trimmers in same sequence.

**NOTE.**—It must be pointed out that the trimmers are accurately adjusted at the works and every precaution taken to ensure their constancy. Misadjusted preselector will result in loss of selectivity and sensitivity, and whistling will be noticeable at many points throughout the tuning ranges. These symptoms may also result from defective valves, and in some instances from faulty by-pass condensers, and it is suggested that these possible sources should be checked before re-alignment is attempted.

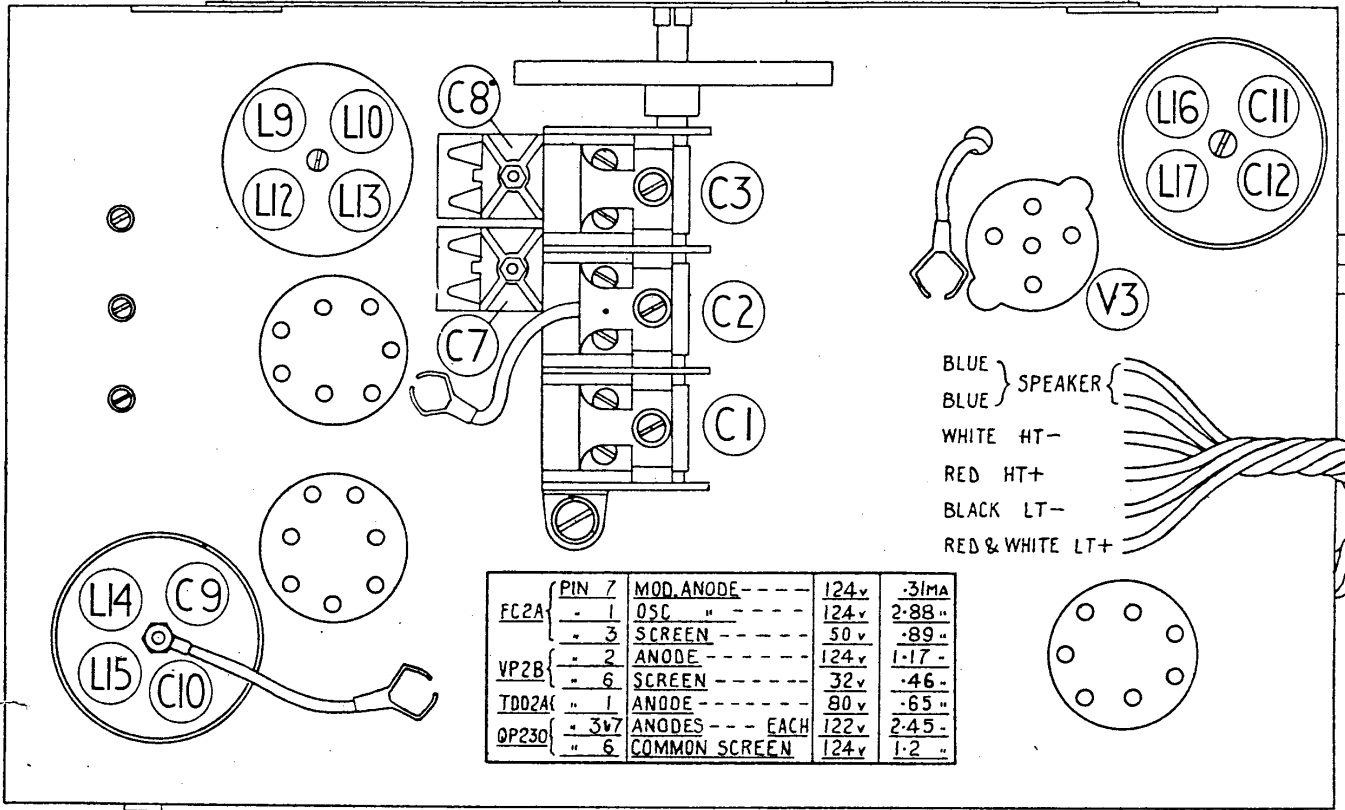


**PRICE LIST.**

Ref.	Description	Part No.	Price	Ref.	Description	Part No.	Price each	Ref.	Description	Part No.	Price
L1, L2, L3, L5, L6, C13 & Band pass assembly	...	SA252/1	8/6	R5	750,000Ω Res.	A6121	9d.	R10	750Ω Res.	A6121	9d.
L4, L7. S.W. aerial transformer	...	SA258	2/6	R6	75,000Ω	A6122	9d.	R11	75Ω	A6122	9d.
L8, L11. S.W. oscillator coils	...	DP1825	5/6	R7	500,000Ω	A6122	9d.	R12	100,000Ω	A6126	9d.
L9, L10, L12, L13. Oscillator coil assembly	...	DP1825	5/6	R8	50,000Ω	A6126	9d.	R13	200Ω	A6126	9d.
L14, L15, C9, C10. 1st I.F. transformer	...	DP1824	5/6	VR1 and S1, S2. Volume control and on-off switch	...	C8501	5/-				
L16, L17, C11, C12. 2nd I.F. transformer	...	DP1705	5/6	VR2. Tone Control	...	C8528	4/6				
C1, C2, C3. Gang cond. assembly	...	D8148	11/6	T1. Intervalve transformer	...	DP1290	6/6				
C4-8. Preset conds. mounted on chassis	...			T2. Output transformer	...	SA260	7/6				
C14 .001 A5274	9d.	C28 .1	A3844 1/-	S3. Speaker cut-out screw	...	DP1101	3d.				
C15-C17 .1 B7070	9d.	C29 .005	B6824 9d.	Wavechange switch assembly	...	C8121	6/-				
C18 800 mmfd. B8411	1/3	C30 .003	B7050 9d.	Loudspeaker unit	...	D6522	30/-				
C19 2000 " B8412	1/3	C31 10mfd. 150v.	A6016 2/3	Station scale	...	D8525	2/-				
C20 50 " B7738	1/3	C32 .005	B6824 9d.	Pointer	...	DP1809	6d.				
C21 12 " A3841	9d.	C33 .02	R4147 9d.	Glass window	...	C8179	9d.				
C16, C22.1 A3844	1/-	C34 .0003	A5747 9d.	Cabinet (less baffle assembly)	...	DP1720	30/-				
C23 15cm. A5925	1/-	R1 70,000Ω	A6122 9d	Baffle assembly	...	E8508	1/3				
C26 .01 A3846	1/-	R2 50,000Ω		Tuning knob	} Walnut	DP969	1/6				
C27 4 mfd. A4280	2/3	R3 175,000Ω		V/C knob		DP967	9d.				
C24, C25 .002 A5274	9d.	R4 1 MΩ		W/C knob		DP1810	9d.				
				T/C knob		DP1124	9d.				

ALL PRICES SHOWN ARE RETAIL AND ARE SUBJECT TO ALTERATION WITHOUT NOTICE.

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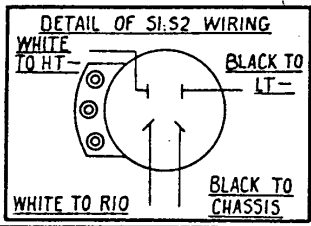
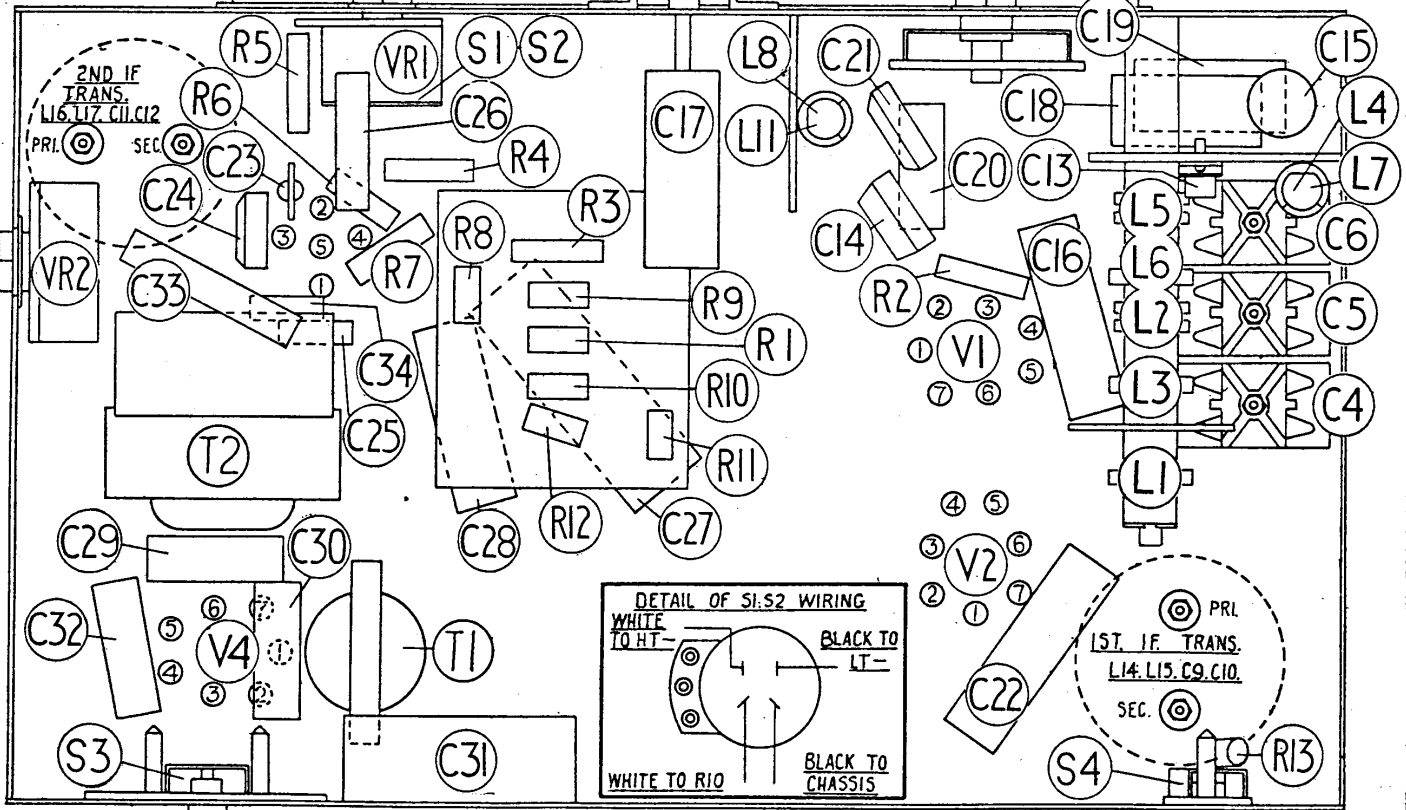


BLUE } SPEAKER  
 BLUE }  
 WHITE HT-  
 RED HT+  
 BLACK LT-  
 RED & WHITE LT+

FC2A	PIN 7	MOD. ANODE	124v	.31mA
	- 1	OSC	124v	2.88 "
	- 3	SCREEN	50v	.89 "
VP2B	- 2	ANODE	124v	1.17 "
	- 6	SCREEN	32v	.46 "
TDD2A	" 1	ANODE	80v	.65 "
OP230	" 3V7	ANODES	122v	2.45 "
	" 6	COMMON SCREEN	124v	1.2 "

TOP VIEW OF CHASSIS

BAW69



UNDERSIDE VIEW OF CHASSIS

**CALIBRATION:** Pointer should be level with datum line, i.e., horizontal on the right side of scale with gang fully meshed, and adjustment if necessary should be made previous to calibration. Tune set and adjust S.O. to 15 M.C.s. Adjust C3—gang trimmer—until maximum signal coincides with scale position 15 M.C.s. This adjustment is very critical and the greatest care should be taken. Adjust C2 gang trimmer for maximum signal output. Of the two possible settings choose the one with the least trimmer capacity. Adjustment here must not be attempted by bending the gang vanes, as, apart from possible damage, the calibration of M.W. and L.W. will be affected.

Tune set and adjust S.O. to 200 metres. Adjust C8 until maximum signal coincides with 200 M. mark on scale.

Tune set and adjust S.O. to 250 metres. Adjust C6 and C1—gang trimmer—for maximum output. Check calibration at 500 metres. If incorrect, M.W. osc. coil possibly in error.

Tune set and adjust S.O. to 1,200 metres. Adjust C7 for maximum output coincident with 1,200 M. mark. Adjust C5 and C4 for maximum output and check calibration at 1,700 M. If incorrect, L.W. osc. coil possibly in error.

**IMAGE REJECTION:** C13 trimmer for image rejection is located on the B.P. coil assembly. Adjustment can be made with chassis still in cabinet by means of a long (10in.) screwdriver-type trimming tool.

**SERVICE NOTES:** If H.T. consumption is well in excess of 10 M.A. check valves for possible inter-electrode s/c. Also check C31 10 mfd. condenser as this may develop internal partial s/c if H.T. leads are reversed. Overheating of R10 and R11 may also result. The L.D. switch, S4, if closed will cause set to be insensitive, whilst total absence of signals may be due to S.3 speaker switch not closed.

**DISTORTION:** This might be traced to a damaged surround in speaker cone or inoperative A.V.C. circuits, including faulty TDD2A.

**SERVICE PROCEDURE:** Before consigning a receiver to any Ekco service depot, make quite certain that the trouble is not due to a faulty valve or other very minor defect, otherwise a minimum charge of 7/6 will be made for expenses in testing, handling, packing and carriage.

If it proves necessary to return a receiver or component part, the customer's guarantee registration card must be enclosed. Free repairs to a receiver, or replacement of a component part, cannot be effected if the guarantee has expired or the instrument has not been registered by the customer. In the latter connection please note that cards forwarded to us must be those originally issued with the receiver concerned. If they are not available for any reason, application should be made to us for duplicates. Altered cards taken from other receivers will not be accepted by us for registration purposes.

Stock receivers, or parts thereof, returned for repair must include the instruction booklet and blank guarantee card.

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## NOTES.

"SERVICE," E. K. COLE LTD., EKCO WORKS, SOUTHEND-ON-SEA.

Scottish Service Depot: 27, Cadogan Street, Glasgow, C.2.

Manchester Service Depot: Bombay House, 59, Whitworth Street.  
(Goods address: 7, Bombay Street.)

Bristol Service Depot: 14, Redcross Street.

Telephone: Southend 49491.

Telephone: Central 5357/8.

Telephone: Central 6711/2.

Telephone: Bristol 22269.