

'TRADER' SERVICE SHEET

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K-B MODEL 560

3-BAND A.C. SUPERHET

OF the 3-band type, the Kolster-Brandes 560 receiver is a 4-valve (plus rectifier) A.C. superhet suitable for mains of 200-250 V., 40-60 C/S. The short-wave range is 19-52 metres, and provision is made for both a gramophone pick-up and an extension speaker, a plug and socket arrangement allowing the internal speaker to be cut out of circuit, if desired. Provision is also made for using various aerial systems.

CIRCUIT DESCRIPTION

Alternative aerial input connections. On S.W. band input is via coupling coil **L7** (for all-wave dipole or open aerials), or via centre-tapped coil **L8** (for dipole or low impedance systems such as the K-B Rejectostat) to single-tuned circuit, comprising **L9** and **C48**. On M.W. and L.W. bands input is via socket **D** to high impedance circuit **L1**, **L2** capacity-coupled by **C1** to band-pass filter, or via sockets **L** and **L** to low impedance circuits **L3** (M.W.) and **L5** (L.W.). Band-pass primary coils **L4** (M.W.) and **L6** (L.W.) are tuned by **C44**; secondary coils **L10** (M.W.) and **L11** (L.W.) are tuned by **C48**; bottom coupling by **C5**; L.W. top coupling by **C3**.

First valve (**V1**, Mullard metallised **TH4**) is a triode-hexode operating as frequency changer with internal coupling. Oscillator grid coils **L12** (S.W.), **L14** (M.W.), **L16** (L.W.) are tuned by **C49**; parallel trimming by **C50** (S.W.), **C51** (M.W.) and **C16**, **C17**, **C53** (L.W.); series tracking by **C14** (S.W.), **C15**, **C52** (M.W.), and **C18**, **C54** (L.W.); oscillator anode reaction coils **L13** (S.W.), **L15** (M.W.) and **L17** (L.W.).

Second valve, a variable-mu H.F. pentode (**V2**, Brimar 9D2) operates as intermediate frequency amplifier with tuned-primary tuned-secondary transformer couplings **C7**, **C55**, **L18**, **L19**, **C56**, **C10** and **C22**, **C57**, **L20**, **L21**, **C58**, **C24**. Small condensers **C11** and **C21** form capacitive I.F. couplings.

Intermediate frequency 484 KC/S.

Diode second detector is part of double diode triode valve (**V3**, Mullard metallised **TDD4**). Audio-frequency component in rectified output developed across load **R9** is passed via coupling condenser **C25**, I.F. stopper **R10**, and manual volume control, **R12** to C.G. of triode section which operates as L.F. amplifier. Provision for connection of gramophone pick-up in C.G. circuit by **S30**.

Second diode of **V3** fed via **C33** provides D.C. potential which is developed across **R19** and fed back through decoupling circuits as G.B. to P.C. and I.F. valves, giving automatic volume control. Delay

voltage is obtained from drop along **V3** cathode resistance **R13**.

Cathode-ray visual tuning indicator (**T.I.** Mullard **TV4**) is operated by A.V.C. potential.

Resistance-capacity coupling by **R21**, **C34** and **R22** between **V3** triode and pentode output valve (**V4**, Brimar 7A3). Fixed tone correction in anode circuit by **C35**; variable tone control by R.C. filter **R25**, **C37**. Provision for connection of low-impedance external speaker across secondary of output transformer **T1**. Plug and socket arrangement enables internal speaker speech coil circuit to be broken.

H.T. current is supplied by I.H.C. full-wave rectifying valve (**V5**, Brimar **R2**). Smoothing by speaker field coil **L24**, resistance **R26** and dry electrolytic condensers **C38**, **C39**, **C40**. Mains H.F. by-passing by **C41**.

COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	Scale lamp circuit ballast	4
R2	V1 hexode C.G. decoupling	1,000,000
R3	V1 fixed G.B. resistance	*140
R4	V1 hexode anode decoupling	5,000
R5	V1 osc. C.G. resistance	25,000
R6	V1 hexode S.G.'s H.T. feed	15,000
R7	V1 S.G.'s and osc. A. H.T. feed	10,000
R8	V2 fixed G.B. resistance	750
R9	V3 signal diode load	500,000
R10	I.F. stopper	100,000
R11	P.U. circuit H.F. stopper	100,000
R12	Manual volume control	500,000
R13	V3 G.B. resistance	1,000
R14	T.I. G.B. feed resistances	2,000,000
R15		1,000,000
R16		4,000,000
R17	T.I. anode H.T. feed	2,000,000
R18	A.V.C. line decoupling	100,000
R19	V3 A.V.C. diode load	1,000,000
R20	V3 triode anode decoupling	50,000
R21	V3 triode anode load	50,000
R22	V4 C.G. resistance	100,000
R23	V4 C.G. I.F. stopper	100,000
R24	V4 G.B. resistance	150
R25	Variable tone control	50,000
R26	H.T. smoothing	600

* May be 150 Ω.

CONDENSERS

		Values (μF)
C1	Capacitive aerial coupling	0.000018
C2	L.W. band-pass primary	0.000018
C3	trimmer	0.000018
C4	L.W. band-pass top coupling	0.000018
C5	L.W. band-pass sec. trimmer	0.000018
C6	Band-pass bottom coupling	0.02
C7	V1 hexode anode decoupling	0.1
C8	1st I.F. trans. pri. fixed tuning	0.0001
C9	V1 hexode anode by-pass	0.1
C10	(gram.)	0.1
C11	V1 hexode S.G.'s by-pass	0.1
C12	1st I.F. trans. sec. fixed tuning	0.0001
C13	1st I.F. cap. coupling	0.0000013
C14	V1 osc. C.G. condenser	0.0001
C15	V1 cathode by-pass	0.1
C16	Osc. S.W. tracker	0.01
C17	Osc. M.W. tracker	0.001
C18	Osc. L.W. trimmers	0.000018
C19	Osc. L.W. tracker	0.00008
C20*	V1 S.G.'s and osc. anode de-	0.01
C21	coupling	10.0
C22	2nd I.F. trans. cap. coupling	0.0000013
C23	2nd I.F. trans. pri. fixed tuning	0.0001
C24	V2 cathode by-pass	0.1
C25	2nd I.F. trans. sec. fixed tuning	0.0001
C26	L.F. coupling to V3 triode	0.02
C27	I.F. by-pass	0.0005
C28	P.U. circuit H.F. by-pass	0.0005
C29*	A.V.C. line decoupling	0.1
C30	V3 triode anode decoupling	2.0
C31*	V3 triode anode I.F. by-pass	0.0003
C32	V3 cathode by-passes	25.0
C33	V3 A.V.C. diode feed	0.000028
C34	V3 to V4 I.F. coupling	0.000012
C35	Fixed tone corrector	0.02
C36*	V4 cathode by-pass	0.0005
C37	Part of T.C. filter	25.0
C38		0.02
C39		8.0
C40*	H.T. smoothing	8.0
C41		8.0
C42	Mains H.F. by-pass	0.01
C43	L.W. band-pass pri. trimmer	—
C44	L.W. band-pass pri. trimmer	—
C45	Band-pass primary tuning	0.0005

