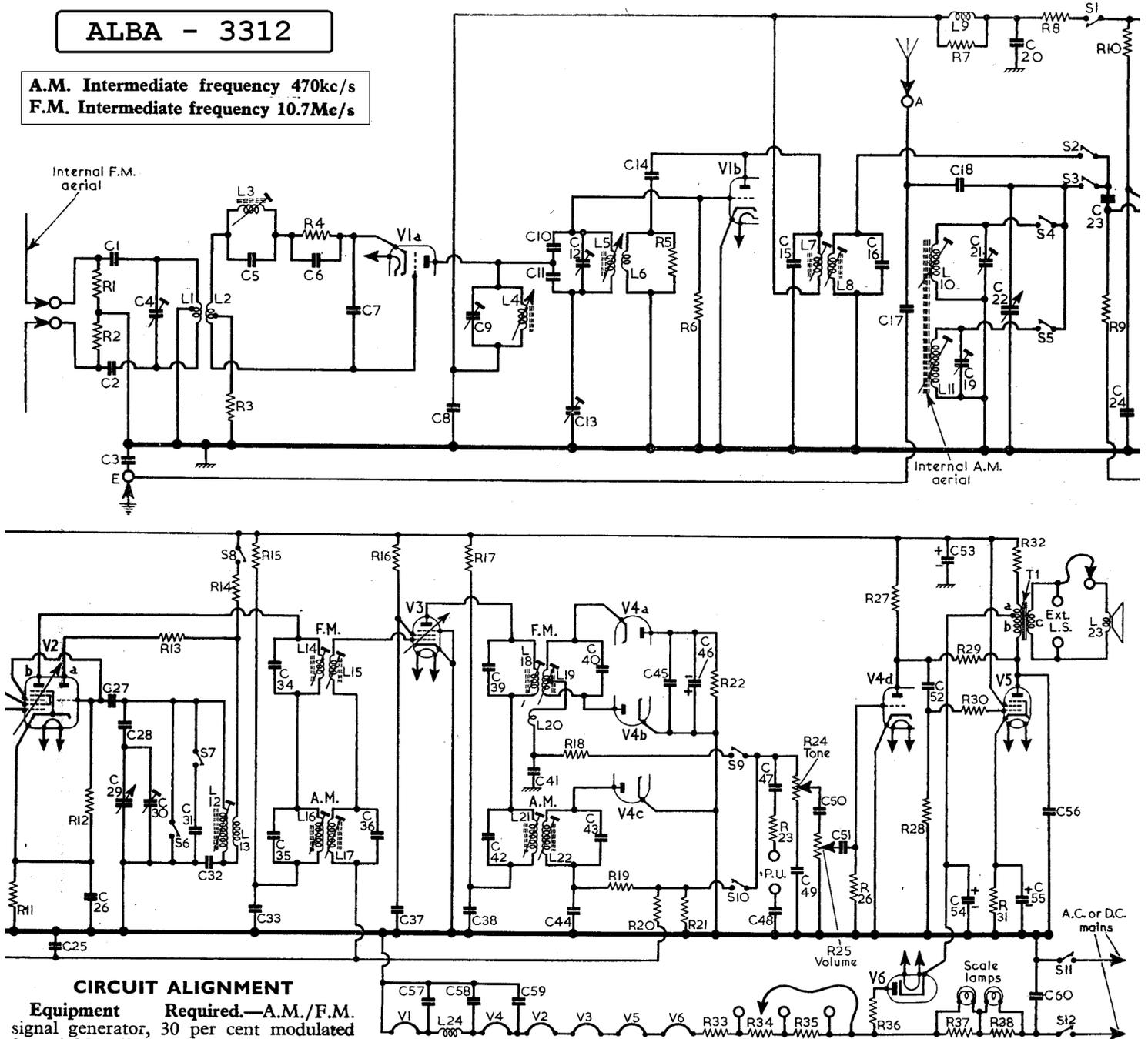


ALBA - 3312

A.M. Intermediate frequency 470kc/s
F.M. Intermediate frequency 10.7Mc/s



CIRCUIT ALIGNMENT

Equipment Required.—A.M./F.M. signal generator, 30 per cent modulated for A.M. (for F.M. alignment the 88.1Mc/s signal is deviated by ± 25 kc/s), an output meter; a valve-voltmeter or 20,000 Ω /V meter; and an insulated trimming tool for core adjustments.

As the tuning scale remains fixed to the cabinet when the chassis is removed for alignment purposes, the scale backing plate is marked with small holes which indicate alignment points. The corresponding frequency to each point is shown in the sketch in col. 4 overleaf.

Check that with the gang at maximum capacitance the cursor coincides with the points at the low-frequency end of the scale backing plate.

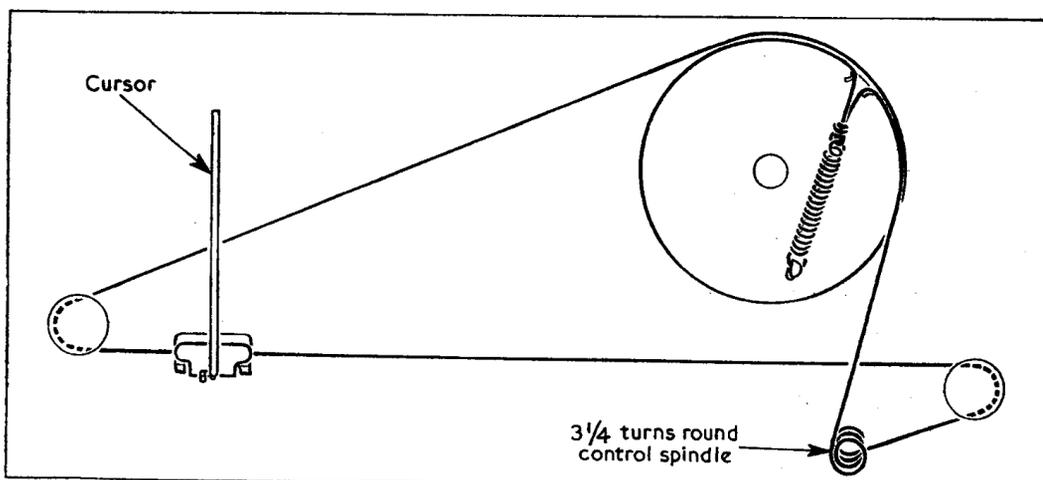
L10 (A1) and L11 (A2) are ferrite rod tuned and should be adjusted for maximum output by sliding the formers along the ferrite rod and securing them to the rod with an adhesive after alignment to prevent them from moving.

A.M. Alignment

- 1.—Connect output meter across external speaker sockets.
- 2.—Switch receiver to M.W. and turn tuning gang and volume control to maximum, and the tone control fully anticlockwise (without operating switch). Short-circuit oscillator section of gang C29 (A1). Connect signal generator to C22 on gang (A1) and via a 0.1 μ F capacitor to chassis. Feed in a 470kc/s signal, modulated 30 per cent at 400 c/s and adjust L16 (E4), L17 (B2), L21 (E4) and L22 (C2) for maximum output. Repeat adjustments until no improvement can be obtained.
- 3.—Tune receiver to 500m and connect signal generator via dummy aerial to the A.M. aerial socket and chassis. Feed in a 600kc/s signal and adjust L12 (B1) and L10 (A1) for maximum output.
- 4.—Tune receiver to 200m, feed in a 1,500kc/s signal and adjust C30 (B1) and C21 (B1) for maximum output.
- 5.—Repeat operations 3 and 4 for optimum calibration.
- 6.—Switch receiver to L.W. and tune to 1,950m. Feed in a 154kc/s signal and adjust L11 (A2) for max. output.
- 7.—Tune receiver to 1,200m, feed in a

Resistors			Capacitors			Coils*			Miscellaneous*		
R1	1MΩ	G5	C1	0.001μF	G5	L1	—	G4	T1	{ a 85.0	C1
R2	1MΩ	G5	C2	0.001μF	G5	L2	—	G4		{ b 305.0	
R3	120Ω	G4	C3	0.002μF	F5	L3	—	G4		{ c —	
R4	220Ω	G3	C4	30pF	A2	L4	—	A1	S1—S10	—	F4
R5	2.2kΩ	G3	C5	47pF	G3	L5	—	A1	S11, S12	—	D3
R6	1MΩ	G3	C6	0.001μF	G4						
R7	4.7kΩ	G4	C7	8.2pF	G3						
R8	470Ω	F4	C8	570pF	G3						
R9	1MΩ	F4	C9	30pF	G3						
R10	16kΩ	F4	C10	39pF	G3						
R11	220Ω	F4	C11	39pF	G3						
R12	47kΩ	F4	C12	30pF	G3						
R13	8.2kΩ	E4	C13	30pF	G4						
R14	27kΩ	F3									
R15	470Ω	E4									
R16	22kΩ	E4									
R17	470Ω	E4									
R18	12kΩ	E5									
R19	100kΩ	E5									
R20	1MΩ	E5									
R21	330kΩ	E5									
R22	27kΩ	D4									
R23	56kΩ	E5									
R24	500kΩ	D3									
R25	500kΩ	E3									
R26	10MΩ	D4									
R27	220kΩ	D5									
R28	1MΩ	D5									
R29	1.2MΩ	D4									
R30	10kΩ	D5									
R31	180Ω	D5									
R32	700Ω	E4									
R33	285Ω	C2									
R34	155Ω	C2									
R35	170Ω	C2									
R36	70Ω	C2									
R37	24Ω	B1									
R38	24Ω	B1									
C14	18pF	G3	C27	100pF	F4	C51	0.1μF	E3	L16	—	B2
C15	12pF	G3	C28	665pF	F3	C52	0.01μF	D5	L17	9.0	B2
C16	15pF	A1	C29	—	A1	C53	100μF	B2	L18	—	C2
C17	47pF	F5	C30	65pF	B1	C54	100μF	B2	L19	—	C2
C18	8.2pF	F5	C31	600pF	F3	C55	100μF	D5	L20	—	C2
C19	65pF	B1	C32	4,700pF	E3	C56	0.002μF	D4	L21	9.0	C2
C20	0.0022μF	G4	C33	0.005μF	E4	C57	0.002μF	G1	L22	9.0	C2
C21	65pF	B2	C34	12pF	B2	C58	0.005μF	D5	L23	2.7	—
C22	—	A1	C35	100pF	B2	C59	0.005μF	D5	L24	—	G3
C23	100pF	F4	C36	100pF	B2						
C24	0.005μF	F4	C37	0.01μF	E4						
C25	0.1μF	E4	C38	0.02μF	E4						
C26	0.05μF	F4	C39	12pF	C2						
C27	100pF	F4	C40	47pF	C2						

The drive cord system, drawn as seen from the front of the chassis.



- 5.—Connect signal generator to F.M. aerial socket, feed in a 10.7 Mc/s signal and adjust L3 (A1) for minimum output.
- 6.—Connect A.C. valve-voltmeter to junction of C10 (G3) and C11 (G3) with the negative lead connected to chassis via a 0.1μF isolating capacitor. Set the cores of L4 (A1) and L5 (A1) to minimum (i.e., fully in). Fully screw in C13 (G4), set C9 and C12 to their mid-positions, then unscrew C13 until a second dip in the valve-voltmeter reading is obtained.
- 7.—Reconnect valve-voltmeter across C46

(E5). Tune receiver to 88.1 Mc/s calibration mark. (First hole at low-frequency end of backing plate.) Connect signal generator to F.M. aerial socket. Feed in a 88.1 Mc/s signal deviated by ± 25 kc/s. Adjust C12 (G3) and C9 (G3) for maximum output.

- 8.—Disconnect signal generator. Set cursor to mid-scale position and re-adjust C9 for maximum background noise level.
- 9.—Seal all trimmers with wax on completion of alignment.

Finally, C4 (A2) should be adjusted for maximum output at the customer's house, using his aerial, while receiving a transmission.

Drive Cord Replacement.—A little more than a yard of nylon braided glass yarn is required for a new drive cord. This should be fitted as shown in the sketch seen below, in which it is drawn as seen when viewed from the front of the chassis with the gang at maximum capacitance.

Remove the scale back-plate by unscrewing the two nuts. Tie both ends of the length of yarn together at the tension spring so as to form a loop of yarn which measures thirty-six and a half inches from end to end, not including the fastening knots. Hook the other end of the tension spring to the anchor tag on the drive drum.

Now lead one cord over the left-hand edge

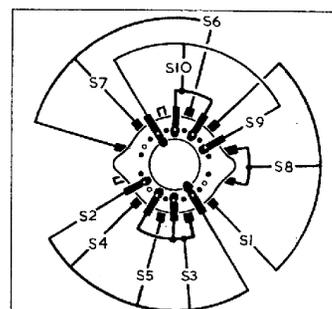
250 kc/s signal and adjust C19 (B1) for maximum output.

F.M. Alignment

- 1.—Switch receiver to F.M. and turn gang to maximum. Connect D.C. valve-voltmeter or 20,000Ω/V meter across C46 (E5) with the meter positive lead connected to chassis. Connect signal generator output to the control grid (pin 2) of V2b, and feed in an unmodulated 10.7 Mc/s signal. Adjust L18 (C2), L15 (B2) and L14 (E4) for maximum output. Note meter reading.
- 2.—Connect valve-voltmeter across C41 (E5) and adjust L19 (E4) for exactly half the output obtained at the end of operation 1.
- 3.—Reconnect valve-voltmeter across C46 (E5). Couple signal generator output via a tight loop of wire round V1 envelope and feed in an unmodulated 10.7 Mc/s signal. Adjust L7 (A1) and L8 (A1) for maximum output.
- 4.—Check I.F. bandwidth by swinging signal generator frequency each side of 10.7 Mc/s until output falls by 3 dB. The bandwidth covered by this means should not be less than 200 kc/s.

SWITCH TABLE

Switch	F.M.	M.W.	L.W.
S1	..	C	—
S2	..	—	—
S3	..	C	—
S4	..	—	—
S5	..	C	—
S6	..	—	—
S7	..	C	—
S8	..	—	—
S9	..	C	—
S10	..	—	—



Above: Diagram of the waveband switch unit.

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