



Resistors

R1	56kΩ
R2	22kΩ
R3	4.7kΩ
R4	6.8kΩ
R5	1.8kΩ
R6	1.5kΩ
R7	680Ω
R8	120kΩ
R9	680Ω
R10	56kΩ
R11	470Ω
R12	22kΩ
R13	4.7kΩ
R14	8.2kΩ
R15	1kΩ
R16	470kΩ
R17	4.7kΩ
R18	820Ω
R19	18kΩ
R20	390kΩ
R21	6.8kΩ
R22	180Ω
R23	470Ω
R24	12Ω
R25	4.7Ω

Capacitors

C1	393pF
C2	25pF
C3	2,000pF
C4	100pF
C5	2,000pF
C6	140pF

C7	300pF
C8	5,000pF
C9	0.02μF
C10	200pF
C11	250pF
C12	200pF
C13	75μF
C14	0.01μF
C15	0.02μF
C16	315pF
C17	393pF
C18	25pF
C19	25pF
C20	315pF
C21	0.02μF
C22	0.02μF
C23	200pF
C24	200pF
C25	5,000pF
C26	0.02μF
C27	180pF
C28	0.02μF
C29	0.02μF
C30	150μF
C31	25μF
C32†	100pF
C33	75μF
C34	0.01μF
C35	0.01μF
C36	75μF

Coils*

L1	17.9
L2	2.7

L3	9.3
L4	2.6
L5	—
L6	2.5
L7	—
L8	—
L9	3.8
L10	1.5
L11	—
L12	5.8
L13	3.8
L14	1.5
L15	—
L16	5.8
L17	5.5
L18	—
L19	35.0

Transformers*

T1	a 160.0
	b 35.0
	c 35.0
T2	a 1.6
	b 1.8

Miscellaneous

PL1	8V 0.15A
SI-S9	—
W1	0A90

*Approximate d.c. resistances in ohms.
†C32 is 47pF or 50pF in some receivers.

CIRCUIT ALIGNMENT

Throughout alignment the signal input level should be adjusted to maintain an output from the receiver of 50mW with the volume control at maximum, to avoid a.g.c. action.

Equipment Required.—An a.m. signal generator modulated 30 per cent; an audio output meter with an impedance of 30-40Ω or, alternatively, a model 8 Avometer switched to its 2.5V a.c. range; an r.f. coupling loop and a 0.1μF capacitor.

1.—Connect the audio output meter in place of the loudspeaker across the l.s. winding of T2, or connect the Avometer (switched to its 2.5V a.c. range) in parallel with the loudspeaker. Connect the signal generator via the 0.1μF capacitor, across the tuning gang aerial section C1. Turn the volume control to maximum.

2.—Switch receiver to m.w. and turn the tuning gang to maximum capacitance. Feed in a 475kc/s signal, and adjust L17, L16, L13/L14, L12 and L9/L10 in that order for maximum output. Repeat in the same order until no further improvement is obtained.

3.—Check that with the gang at maximum, the cursor coincides with the pip at the left-hand end of the scale window. Adjust if necessary by sliding the cursor along the cord. Connect the signal generator to the r.f. coupling loop, and loosely couple the loop to the ferrite rod aerial.

4.—Tune receiver to 500m (marker). Feed in a 600kc/s signal and adjust L6 and L4 for maximum output.

5.—Tune receiver to 200m (marker). Feed in 1,500kc/s signal and adjust C18 and C2 for maximum output.

6.—Switch receiver to l.w. and tune to the l.w. calibration marker. Feed in a 220kc/s signal and adjust C19 and L3 for maximum output.

Note: If the loudspeaker has been removed to give easier access to coil cores, it should be replaced before the final alignment of L4, C2 and L3 because its position has

some effect on tuning. C2 and C18 adjustments are accessible through an aperture (normally covered by adhesive tape) in the underside of the case.

7.—Switch receiver to m.w. and depress the car press-button. Set L2 adjusting screw (cam follower) so that an equal amount of thread appears at each end of its moulded support. Connect the signal generator to the car aerial socket via a dummy aerial comprising an 18pF capacitor in series with the signal generator "live" lead followed by a 60pF capacitor across the inner and outer connections of the aerial socket.

8.—Feed in a 1,500kc/s signal and tune the receiver to this signal (approximately 200m) for maximum output. Adjust L2 (m.w. car aerial adjusting screw) for maximum output.

9.—Feed in a 600kc/s signal and tune receiver to this signal (approximately 500m). Adjust C6 for maximum output.

10.—Switch receiver to l.w. (and car). Feed in a 220kc/s signal and tune receiver to this signal (approximately 1,400m). Adjust L1 for maximum output.

11.—Repeat operations 8, 9 and 10 as necessary for maximum output and correct calibration.

After assembling the chassis in the case, C2 should be adjusted for maximum output on a radiated signal at approximately 1,500 kc/s. C6 should be finally peaked after the car aerial has been plugged in.

FERGUSON - 3140