

# FERGUSON - 348BT

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 OC44 ..	1.0	0.97	7.6
TR2 OC45 ..	0.68	0.77	7.6
TR3 OC45 ..	1.04	1.15	7.6
TR4 OC78D ..	4.0	190mV <sup>1</sup>	6.8 <sup>1</sup>
TR5 OC78* ..	—	190mV <sup>1</sup>	6.0 <sup>2</sup>
TR6 OC78* ..	—	190mV <sup>1</sup>	6.0

<sup>1</sup>Positive meter terminal to emitter.

<sup>2</sup>Positive meter terminal to junction of R22, R23 and R25.

\*TR5 and TR6 must be a matched pair.

Intermediate frequency 466kc/s

## Resistors

R1	56kΩ	C1
R2	10kΩ	C2
R3	3.9kΩ	D2
R4	68kΩ	C1
R5	8.2kΩ	C1
R6	1.2kΩ	C2
R7	680Ω	C1
R8	22kΩ	C2
R9	4.7kΩ	B2
R10	3.9kΩ	C2
R11	750Ω	C1
R12	220Ω	B1
R13	470Ω	B1
R14	5kΩ	A1
R15	330Ω	B1
R16	12kΩ	B1
R17	18kΩ	B1
R18	10Ω	A2
R19	1kΩ	B2
R20	1.5kΩ	B1
R21	3.3kΩ <sup>1</sup>	B1
R22	120Ω <sup>1</sup>	B1
R23	3.3kΩ <sup>1</sup>	A1
R24	120Ω <sup>1</sup>	A2
R25	3.3Ω <sup>1</sup>	A1
R26	3.3Ω <sup>2</sup>	A2
R27	2.2kΩ	A2

## Capacitors

C1	157pF	D1
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C2	25pF	D1
C3	35pF	D2
C4	0.1μF	C2
C5	0.02μF	D2
C6	30pF	D2
C7	200pF <sup>1</sup>	C2
C8	111pF	D1
C9	25pF	C1
C10†	—	—
C11	400pF	C1
C12	400pF	C1
C13	0.01μF	B1
C14	8μF	C1
C15	56pF <sup>1</sup>	C2
C16	250pF	C2
C17	0.01μF	C2
C18	0.1μF	B2
C19	250pF	B2
C20	18pF <sup>1</sup>	C2
C21	0.1μF	B1
C22	0.02μF	B1
C23	0.02μF	B1
C24	100μF	B1
C25	8μF	B1
C26	100μF	A2
C27	100μF	A1
C28	0.01μF	B2
C29	0.04μF	§

## Coils\*

L1	2.2	C1
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L2	3.0	B1
L3	15.0	A1
L4	—	D2
L5	—	D2
L6	3.2	D2
L7	2.2	C1
L8	4.0	C1
L9	3.8	C1
L10	5.5	C2
L11	—	C2
L12	3.75	B2
L13	—	B2
L14	30.0	—

## Miscellaneous\*

W1	OA79 <sup>3</sup>	C1
W2	OA70 <sup>3</sup>	C2
T1	{ a 200.0 b 40.0 c 40.0 }	B2
S1-S5	—	D2
S6, S7	—	A1

\*Approximate D.C. resistance in ohms.

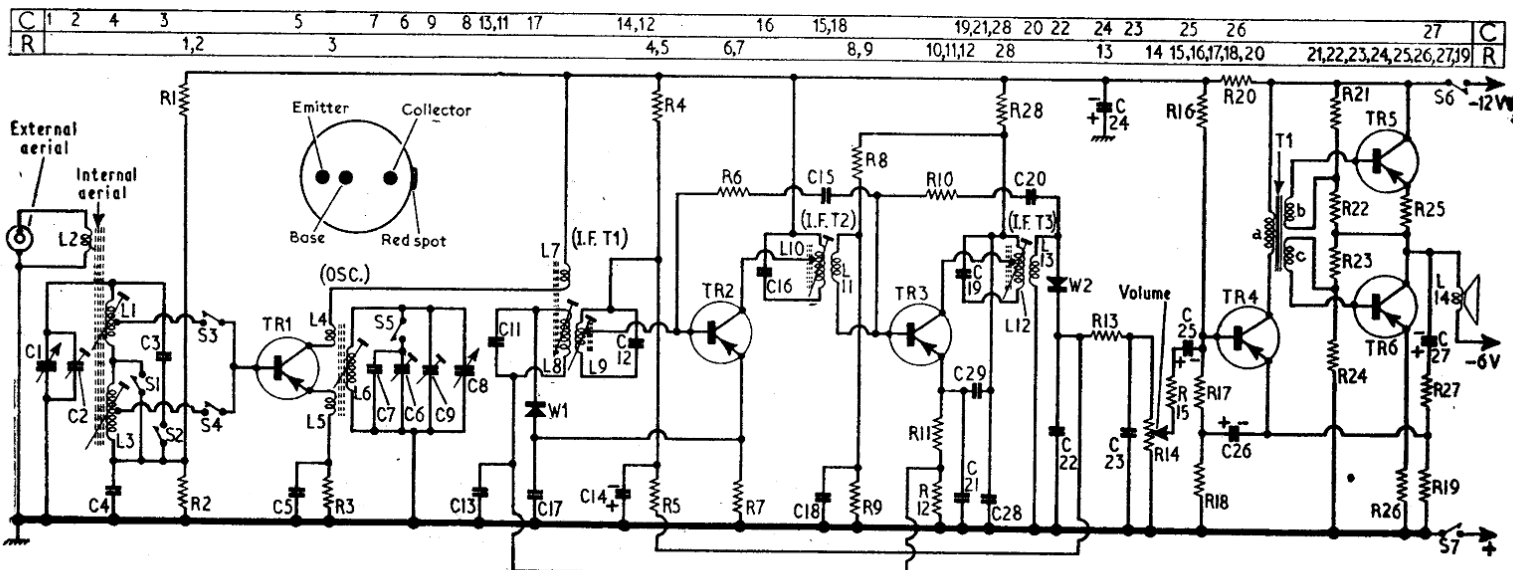
†No component.

§On printed circuit side of panel.

<sup>1</sup>5 per cent.

<sup>2</sup>±0.5Ω.

<sup>3</sup>Mullard.

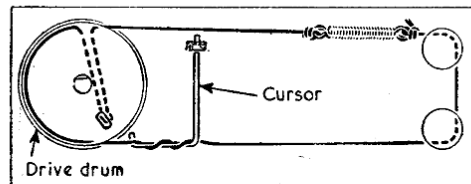


## CIRCUIT ALIGNMENT

**Equipment Required.**—A signal generator, modulated 30 per cent at 400c/s; an A.C. voltmeter for use as output meter; a 0.1μF capacitor; and a screwdriver-type trimming tool.

As the tuning scale remains fixed to the cabinet when the chassis is removed for alignment purposes, calibration notches are provided on the front edge of the scale backing plate. Considered from the tuning drive drum end of the backing plate, the first notch marks the cursor datum position and the remaining three indicate the 600kc/s, 220kc/s and 1,300kc/s calibration points, in that order.

Maintain the signal generator output as low



Sketch of the tuning drive system drawn as seen with the gang at maximum.

as possible at all times during the alignment procedure.

- 1.—Connect the output meter across the speaker speech coil L14. Connect the signal generator output, via the 0.1μF capacitor in its live output lead, across the aerial section of the tuning gang C1.
- 2.—Switch the receiver to M.W. Turn the tuning gang to minimum and the volume control to maximum.
- 3.—Feed in a modulated 466kc/s signal and adjust the cores of L12 (B2), L10 (C2), L9 (C1) and L8 (C1), in that order, for maximum output. Repeat these adjustments.
- 4.—With the tuning gang at maximum capacitance check that the cursor coincides with the cursor datum notch.
- 5.—Loosely couple the signal generator output via a loop of wire to the ferrite rod aerial. Tune the receiver to the 1,300kc/s calibration notch. Feed in a modulated 1,300kc/s signal and adjust C9 (C1) and C2 (D1) for maximum output.
- 6.—Tune the receiver to the 600kc/s calibration notch. Feed in a modulated 600kc/s signal and adjust the core of L6 (D2) for maximum output. Then slide the former of L1 (C1) along the ferrite rod for maximum output.
- 7.—Switch the receiver to L.W. and tune it to the 220kc/s calibration notch. Feed in a modulated 220kc/s signal and adjust C6 (D2) for maximum output. Then slide the former of L3 (A1) along the ferrite rod for maximum output.

**Switches.**—S1-S5 are the waveband switches ganged in a single slide-type unit. The unit is shown in the rear view illustration of the chassis (location reference D2), where the individual switch contacts are identified. S1 and S3 are closed on M.W.; S2, S4 and S5 are closed on L.W.

**Drive Cord Replacement.**—About 20in of nylon-braided glass yarn is required for a new drive cord. It should be run as indicated in the sketch in col. 1, where it is drawn as seen from the top of the chassis, with the tuning gang at maximum capacitance.