



MURPHY-VOXSON - MR750

Transistor Table

Transistor	Emitter (v)	Base (v)	Collector (v)
TR1 PXA102	1.31	1.23	8.9
TR2 PXA101	0.22	0.32	8.7
TR3 PXA101	0.50	0.49	8.5
TR4 XB113	0.84	0.92	8.5
TR5 XC141	0.63	0.93	10.8

CIRCUIT ALIGNMENT

Equipment Required.—An a.m. signal generator; an audio output meter; an aerial coupling coil comprising about 20 turns of wire wound on a 6-inch diameter former; a 0.1μF isolating capacitor and a narrow-bladed trimming tool.

Alignment Notes.—If external interference is troublesome during alignment, operate the receiver from a 12V battery in preference to a mains-driven power unit. Before connecting the signal generator to the receiver ensure that its case or output leads are properly earthed or that the receiver chassis is not earthed, to prevent the possibility of damaging the transistors. The "earthy" signal generator lead should be connected to the rear frame of the tuning gang. Make all adjustments for maximum output with the volume control at maximum and during alignment maintain the output at not greater than 50mW by adjusting the input signal. The correct peak when adjusting the i.f. coil cores is the first which occurs when screwing the core in from the top of the former.

Receivers which are not fitted with an external aerial socket on the rear of the tuning head are aligned to 470kc/s i.f.; those with an external socket are aligned to 460kc/s i.f. It may not be possible on some receivers to obtain correct calibration in the centre of the tuning scale due to the fitment of tuning gang assemblies and tuning scales with dissimilar laws. On some receivers the calibration marks on the cursor guide rail may occupy slightly different positions (see illustration at top of page 3).

1.—Switch receiver to m.w. and short-circuit C2. Rotate the tuning gang to maximum capacitance and check that the edge of the cursor is ¼in from the adjacent pulley rivet. Leave the gang at maximum. Connect the signal generator via the 0.1μF capacitor to C1.

Resistors

R1	4.7k Ω
R2	27k Ω
R3	3.9k Ω
R4	680 Ω
R5	180k Ω
R6	1k Ω
R7	1k Ω
R8	1k Ω
R9	1.5k Ω
R10	22k Ω
R11	6.8k Ω
R12	820 Ω
R13	1k Ω
R14	5k Ω
R15	560 Ω
R16	33k Ω
R17	4.7k Ω
R18	1.8k Ω
R19	470 Ω
R20	390 Ω
R21	15 Ω
R22	120 Ω
R23	100 Ω
R24	1 Ω
R25	180k Ω †

Capacitors

C1	118pF
C1a	10pF
C2	71pF
C2a	10pF
C3	30pF
C4	120pF
C5	30pF
C6	0.01 μ F
C7	0.01 μ F
C8	250pF
C9	22pF§
C10	250pF
C11	0.05 μ F
C12	10 μ F
C13	0.05 μ F
C14	0.1 μ F
C15	33pF§
C16	250pF
C17	0.05 μ F
C18	0.05 μ F
C19	0.05 μ F
C20	0.04 μ F
C21	10 μ F
C22	50 μ F
C23	0.1 μ F

C24	32 μ F
C25	500 μ F
C26	0.1 μ F
C27	1,200 μ F
C28	0.1 μ F
C29	5,000pF
C30	0.05 μ F§
C31	22pF
C32	0.01 μ F§

Miscellaneous

MR1	XD201
MR2	XD202
F1	2A
S1-S4	—
S5	—

Coils and Transformers*

L1		—
L2		—
L3		—
L4§		—
L5		3.0
T1	{ a	5.5
	{ b	9.5
	{ c	9.5
	{ d	—
T2	{ e	—
	{ a	—
T3	{ b	3.5
	{ a	4.2
T4	{ b	—
	{ a	4.2
T5	{ b	—
	{ a	3.7
T6	{ b	—
	{ a	1700.0
T7	{ b	6.0
		—

2.—Feed in a 470kc/s signal (460kc/s in the case of receivers with an external aerial socket) and adjust **T5**, **T4** and **T3** for maximum output. Repeat until there is no further improvement.

3.—Remove the short-circuit from **C2**. Disconnect the signal generator from **C1** and connect its output leads across the aerial coupling coil. Place the coil about a foot from the receiver coaxially in line with the ferrite rod aerial coils.

4.—Tune receiver to the 500m mark on the cursor guide rail. Feed in a 600kc/s signal and adjust **T2** for maximum output.

5.—Tune receiver to 200m mark on the cursor guide rail. Feed in a 1,500kc/s signal and adjust **C2a** and **C1a** for maximum output.

6.—Repeat operations 4 and 5.

7.—Switch receiver to l.w. and tune to the 1,300m mark on the cursor guide rail. Feed in a 231kc/s signal and adjust **C5** and **C3** for maximum output.

MODIFICATIONS

Neutralizing Components.—In early receivers various values of components were used in the neutralizing circuits: **C9** was 4.7pF, 6.8pF or 12pF; **C15** was 3.3pF or 12pF; **R4** was 1.5k Ω and **R8** was 2.2k Ω . If any of these components are changed they should be replaced with the values shown in the component tables.

On/off Switch Connections.—In some receivers the on/off switch is incorrectly wired and the supply voltage is still connected to the tuning head when the switch is in the off position. To correct this condition it is necessary to transpose the yellow and green leads at the socket of the multi-core cable.

R22.—In some early receivers **R22** was 180 Ω and was transposed with **R23**.

C30.—**C30** is an additional component which is fitted on the foil side of the printed circuit panel in later receivers to prevent instability on l.w.

External Aerial Socket.—Later receivers are fitted with a coaxial socket for the connection of an external car aerial. It is connected to **TR1** base via **C32** and **L4** which are additional components in these receivers. The intermediate frequency of receivers fitted with the external aerial socket is 460kc/s. A rear tuning head moulding with a hole for fitting a coaxial socket is available from the manufacturers and this together with **C32** and **L4** can be ordered to modify early receivers. It is also permissible to change the i.f. from 470kc/s to 460kc/s if necessary to avoid heterodyne interference. The oscillator and aerial circuits should be re-aligned accordingly.

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