

"TRADER" SERVICE SHEET
1579

MURPHY U572

A.M./F.M. Table Radio Receiver

FEATUREING piano-key waveband switches, Murphy U572 is an a.m./f.m. table radio receiver housed in a moulded plastics cabinet. It is designed to operate from a.c. or d.c. mains supplies of 200-250V, 50-100c/s in the case of a.c., and employs five valves plus a half-wave rectifier.

An internal ferrite rod aerial is fitted for reception on a.m. and sockets are provided for the connection of external a.m. and f.m. aerials.

Release date and original price: August 1960 £15 1s 2d. Purchase tax extra.

VALVE ANALYSIS

The table of valve voltages in col. 2 was compiled from information supplied by the receiver manufacturers. The readings were taken on a 20,000Ω/V meter with no signal input.

CIRCUIT ALIGNMENT

Alignment Notes.—With the tuning gang at maximum capacitance, check that the cursor lines up with the marks at the right-hand end of the tuning scale.

Coil cores should be adjusted to lie between the middle of the winding and the open end of the former except the

core of L4 which should be adjusted to the first peak when screwing in from the rear of the former.

Do not attempt to re-align the f.m. circuits without suitable test equipment.

A.M. CIRCUITS

Equipment Required.—An audio output meter or a 0-1.5V a.c. voltmeter; an r.f. coupling coil constructed by winding

about 20 turns of wire on a 6in diameter former; a 0.01μF capacitor and a hexagonal trimming tool for adjustment of the i.f. and oscillator coil cores.

During alignment adjust the signal input to maintain the receiver output at not more than 180mW (0.7V a.c. across the speech coil).

1.—Set the volume control at maximum output and rotate the tuning gang to maximum capacitance. Unscrew the cores of L21 (location reference C1) and L15 (B1).

2.—Switch to m.w. and connect the signal generator via the 0.01μF capacitor between V3 pin 2 and chassis. Connect the audio output meter across the loudspeaker connections or the a.c. voltmeter across the speech coil.

3.—Feed in a modulated 470kc/s signal and adjust the cores of L22, L21 (C1), L16, and L15 (B1) once only for maximum output.

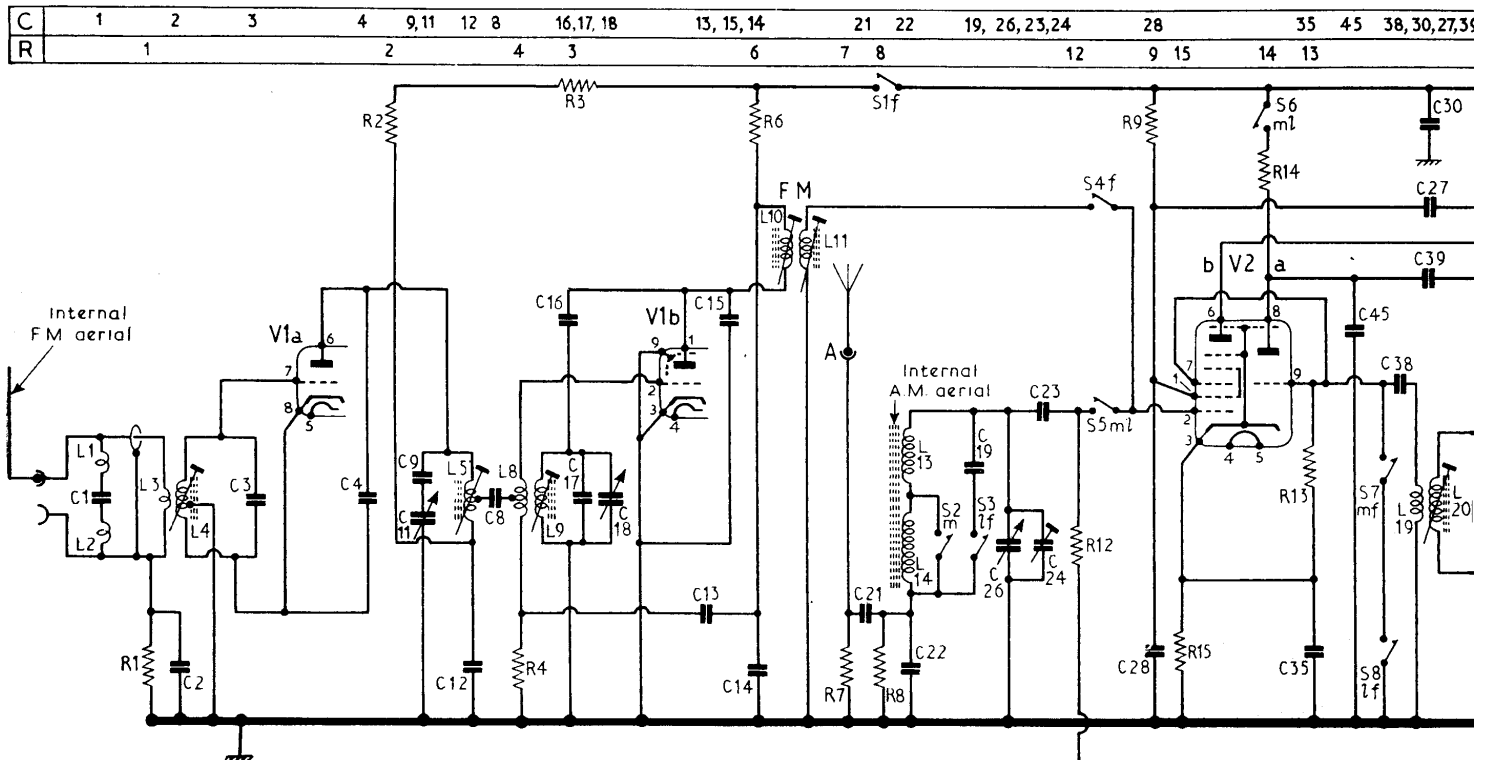
4.—Connect the signal generator output to the r.f. coupling coil and place the coil about one foot from the receiver coaxially in line with the ferrite rod aerial. Switch receiver to m.w. and tune to 500m (mark on scale).

5.—Feed in a 600kc/s signal and adjust

Valve Table

Valve	Anode (V)	Screen (V)	Cathode (V)
V1a 10L14	—	—	—
V1b 10L14	60	—	—
V2a 10C14	97	—	—
V2a 10C14	60	—	1.3
V2b 10C14	—	—	1.3
V2b 10C14	148	84	1.3
V2b 10C14	124	84	1.3
V3 10F18	135	72	0.7
V3 10F18	124	67	0.7
V4d 10LD12	72	—	—
V4d 10LD12	68	—	—
V5 10P18	172	155	10.0
V5 10P18	172	140	8.8
V6 U381	202†	—	187.0

*Receiver switched to m.w.
†Receiver switched to f.m.
‡A.c. reading

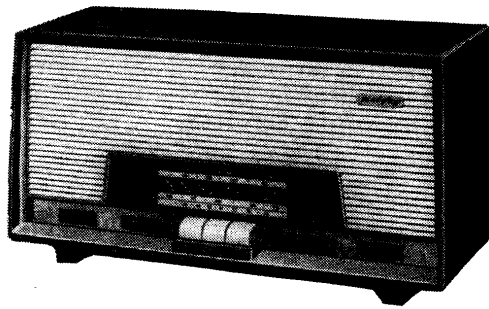


Circuit diagram of Murphy U572. Waveband switch numbers are followed by letters which indicate the band(s) on which they close when m.w., "l" means l.w. and "f" means f.m.

L20 (B3) and L13 (A1) for maximum output. L13 is adjusted by sliding the aluminium tuning ring along the ferrite rod.

- Tune receiver to 220m (mark on scale). Feed in a 1,364kc/s signal and adjust C36 (C3) and C24 (B2) for maximum output.
- Switch receiver to l.w. Feed in a 176.5kc/s signal and check that the calibration is correct at 1,700m.

(Continued overleaf col. 3)



C70	100pF	†	C2
C71	—	†	C2
C72, C73	68pF	—	—
C74	—	—	—
Coils*			
L1§	—	—	A2
L2§	—	—	A3
L3	—	—	F4
L4	—	—	†
L5	—	—	F4
L6	—	—	†
L7	—	—	F4
L8	—	—	†
L9	—	—	F4
L10	—	—	E4
L11	—	—	†
L12	—	—	A1
L13	—	—	B1
L14	5.0	—	B1
L15	10.6	—	B1
L16	10.6	—	B1
L17	1.0	—	C1
L18	1.6	—	B3
L19	1.0	—	†
L20	2.6	—	B3
L21	10.6	—	C1
L22	5.3	—	—
L23	1.6	—	C1
L24	—	—	—
L25	—	—	—
L26	3.0	—	D1
Transformers*			
T1	a	18.0	D3
	b	260.0	
	c	—	
Miscellaneous			
PL1	19V, 0.097A	—	C1
S1-S13	—	—	C3
S14, S15	—	—	B3
FB1	—	—	G5
F1	250mA	—	A1

Resistors

R1	1MΩ	A1
R2	4.7kΩ	E4
R3	4.7kΩ	E4
R4	1MΩ	E4
R5	—	†
R6	12kΩ	E4
R7	1MΩ	A1
R8	22kΩ	A1
R9	15kΩ	B2
R10	—	†
R11	3.3kΩ	G5
R12	470kΩ	G5
R13	47kΩ	B2
R14	39kΩ	G5
R15	150Ω	B2
R16	3.3kΩ	C2
R17	39kΩ	C2
R18	180Ω	G5
R19	39kΩ	C2
R20	82Ω	C2
R21	22kΩ	H5
R22	10kΩ	H5
R23	470kΩ	G5
R24	100kΩ	C2
R25	100kΩ	C2
R26	2.2MΩ	G5
R27	330kΩ	C3
R28	1.5MΩ	C3
R29	220Ω	H5
R30	—	†
R31	10MΩ	D2

R32	—	†	D3
R33	220kΩ	—	C2
R34	—	—	—
R35	—	—	—
R36	470kΩ	—	D2
R37	10kΩ	—	D2
R38	10kΩ	—	H5
R39	10kΩ	—	H5
R40	100kΩ	—	D3
R41	180Ω	—	D2
R42	1,350Ω	—	D2
R43	100Ω	—	B1
R44	150Ω	—	B1
R45	—	—	†
R46	CZ1†	—	B1
R47	CZ1†	—	B1
R48	2.7kΩ	—	B1

Capacitors

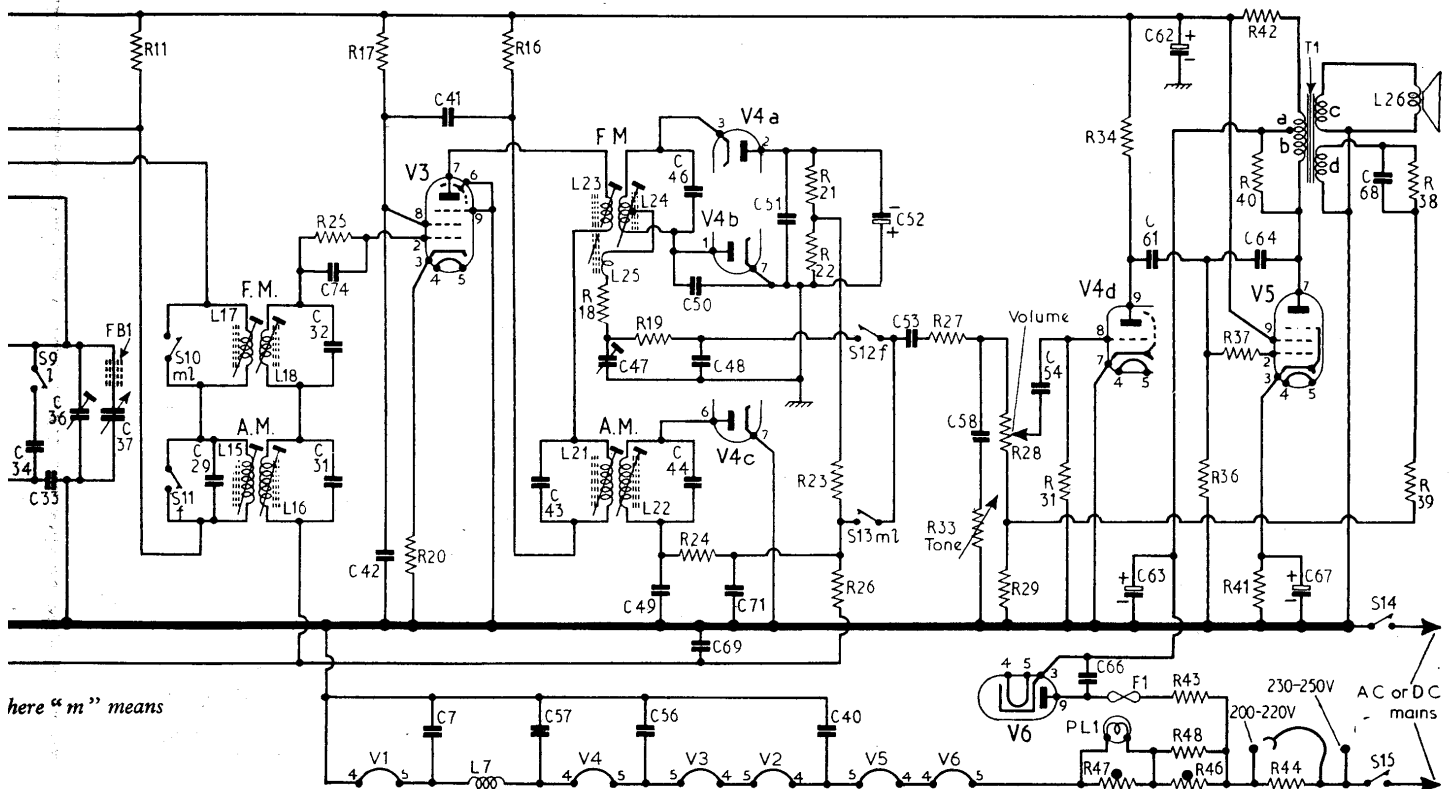
C1	22pF	A1
C2	470pF	A3
C3	18pF	E4
C4	1.8pF	E4
C5, C6	—	†
C7	1,800pF	E4
C8	22pF	E4
C9	150pF	E4
C10	—	†
C11	11pF	B3
C12	1,000pF	E4
C13	15pF	E4
C14	91pF	E4

C15	2.7pF	E4
C16	22pF	F4
C17	5.6pF	F4
C18	11pF	B3
C19	110pF	G5
C20	—	†
C21	470pF	A1
C22	3,900pF	A1
C23	470pF	G5
C24	30pF	B2
C25	—	†
C26	392pF	B3
C27	1,800pF	B2
C28	2,000pF	B2
C29	100pF	C1
C30	0.01μF	B2
C31	100pF	C1
C32	15pF	B1
C33	330pF	H5
C34	320pF	H5
C35	0.04μF	B2
C36	30pF	C3
C37	392pF	B3
C38	100pF	G5
C39	100pF	G5
C40	1,000pF	B2
C41	1,800pF	C2

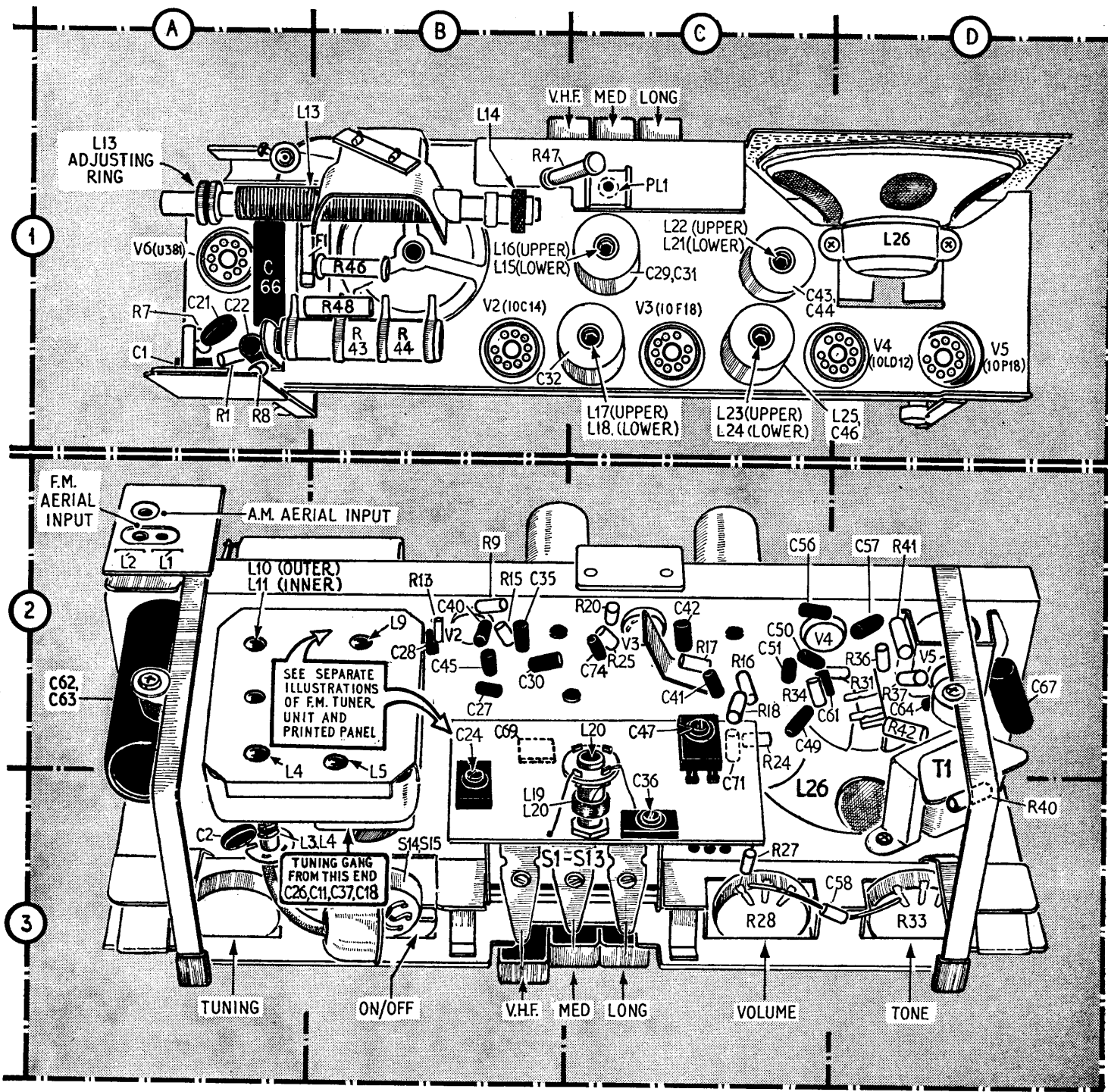
C42	5,000pF	C2
C43	100pF	C1
C44	330pF	C1
C45	5.6pF	B2
C46	56pF	C1
C47	250pF	C2
C48	1,800pF	G5
C49	100pF	C2
C50	1.5pF	C2
C51	0.01μF	C2
C52	4μF	H5
C53	0.01μF	G5
C54	0.01μF	H5
C55	—	†
C56	0.01μF	C2
C57	0.01μF	D2
C58	1,200pF	D3
C59, C60	—	†
C61	4,700pF	C2
C62	50μF	A2
C63	50μF	A2
C64	10pF	D2
C65	—	†
C66	0.05μF	A1
C67	25μF	D2
C68	0.04μF	H5
C69	0.03μF	B2

*Approximate d.c. resistance in ohms.
†Thermistor.
‡Formed by C1 connecting leads.
†No component.

7,39,34,33,36,37	29	32,31,74,42	7 41	43,57	47	56,49,46,44,50,48,69,71,51,40	52	53	58	54	66	63,61,62	64	67	68	C
11	25	17 20	16	18	19	24	21,22,23,26	27	33, 28,29	31	47,34	43,48,46,36,37,42,40,41,44,38,39				R



here "m" means



Two views of the chassis, from above and below, giving component locations and alignment adjustments. Components obscured by the f.m. unit screening cover and those wired on the switch unit panel (lower drawing) are reproduced in detail in separate illustrations on the opposite page. The two tags prominent on R44 (upper drawing) comprise the mains voltage adjustment

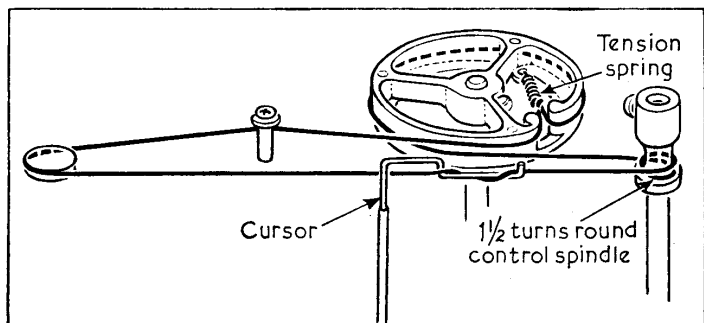
(Continued from overleaf)

F.M. CIRCUITS

Equipment Required.—A reliable a.m. signal generator (an f.m. signal generator is not necessary); an audio output meter; a high resistance d.c. voltmeter with 2V and 25V ranges; a matched pair of 180kΩ resistors; a 0.01uF capacitor and a hexagonal trimming tool. L5 and L9 adjusting screws can be set, using a conventional screwdriver.

During alignment the f.m. unit screening cover should be in position and interference from external signals should be eliminated by slight alteration of the tuning gang setting if necessary.

- 1.—Switch receiver to f.m., set the tuning gang to maximum capacitance and set the volume control to minimum output.
- 2.—Connect the d.c. voltmeter between



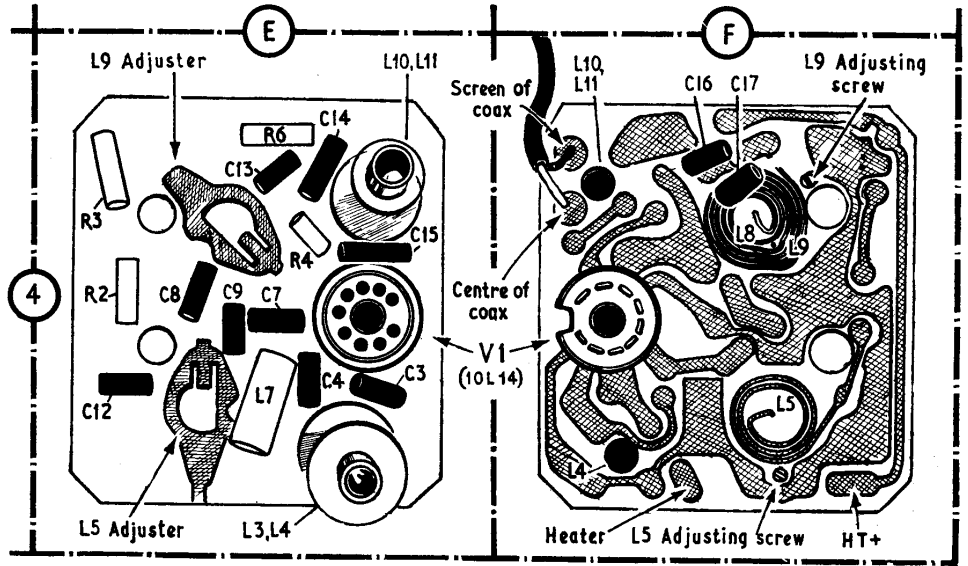
Drive cord assembly shown with the tuning gang fully closed. Approximately 33 inches of cord is required for replacement

- V4 pin 2 and chassis, i.e. across C52. Connect the audio output meter across the loudspeaker connections. Connect the signal generator via the 0.01 μ F capacitor between V3 pin 2 and chassis.
- 3.—Feed in a 10.7 Mc/s unmodulated signal and while regulating the signal input to maintain a reading of 5V on the d.c. meter, adjust L23 (location reference C1) for maximum output. Leave the signal generator attenuator in the final position for the next operation.
 - 4.—Disconnect the d.c. meter from V4 pin 2. Connect the two 180k Ω resistors in series between V4 pin 2 and chassis and connect the d.c. meter between their junction and the junction R18, R19 and C47. Feed in a 10.7 Mc/s unmodulated signal at the same level as in operation 3 and adjust L24 (C1) for zero reading on the d.c. meter, i.e. between positive and negative peaks. Make the final adjustment on the 2V range.
 - 5.—Transfer the signal generator to V2 pin 2 and re-connect the d.c. meter between V4 pin 2 and chassis. Feed in a 10.7 Mc/s unmodulated signal and maintaining a 5V reading on the d.c. meter adjust L18 (C1) and L17 (C1) for maximum output. Then adjust the signal input to give a 15V reading on the d.c. meter and leave the signal generator attenuator in this position for the next operation.
 - 6.—With the d.c. meter connected between the junction of the two 180k Ω resistors and the junction of R18, R19 and C47, adjust L24 as in operation 4 for zero output. Remove the two 180k Ω resistors.
 - 7.—Re-connect the d.c. meter between V4 pin 2 and chassis. Rotate the volume control to maximum output. Feed in a 10.7Mc/s signal to produce 15V on the d.c. meter, then switch to modulation and adjust C47 (C2) for minimum output on the audio output meter. If C47 will not swing through minimum audio output or if it is necessary to turn the adjusting screw more than one complete turn for minimum audio, re-adjust L24 as in operation 6 then adjust C47 again.
 - 8.—Transfer the signal generator to the f.m. aerial sockets. Feed in a 10.7 Mc/s unmodulated signal and adjust L11 and L10 (E4) for maximum output on the d.c. meter.
 - 9.—Feed in a 92.5 Mc/s signal, set the cursor to 92.5 Mc/s (mark on scale) and adjust L9 (F4), L5 (F4) and L4 (A3) for maximum output. Rock the tuning control while adjusting L5. L4 should be set to the peak which occurs nearer the base of the former.

GENERAL NOTES

Dismantling Chassis.—To remove the chassis from the cabinet, loosen two screws at the rear underside of the cabinet and withdraw the chassis complete with back cover.

Removal of F.M. Unit.—If access is required to the component side of the f.m. unit printed panel, the panel can be withdrawn from its metal screen and if necessary the complete unit can be re-



Top side (left) and underside views of the f.m. tuner unit printed panel

moved from the tuning gang.

Disconnect the heater, h.t. and coaxial leads from the panel. Disconnect the aerial lead and ceramic capacitor from L3 on the underside of the unit.

To remove the unit from the tuning gang, remove the two securing screws and unsolder the three tuning gang connections in rotation while lifting the unit from the tuning gang.

To remove the printed panel from its metal screen, first twist the anchoring lugs into alignment with their slots in the panel. Unsolder the remaining connections in rotation while lifting the panel by the edges, repeating until the panel is released.

Piano-key Press-buttons.—To remove a press-button knob, break away the bottom surface. Some knobs are fixed with adhesive, others with a retaining spring. Replacement knobs supplied by the manufacturers will be the latter type.

Switches.—S1-S13 are the waveband switches combined in a press-button and printed panel assembly shown at the foot of the page. If it becomes necessary to replace the switches the whole assembly will be supplied complete with printed panel and components except L19/L20. This coil should be removed from the printed panel by rotating it in a clockwise direction. All external leads and components (except R27) should be disconnected at the panel. The tuning scale should be removed to give access to the two screws securing the switch assembly to the chassis.

S14 and S15 are the mains on/off switches shown in location reference B3.

MODIFICATION

In some receivers C4 is 2.2pF not 1.8pF. If replacement of C4 becomes necessary a 1.8pF capacitor should be used and the f.m. unit re-aligned.

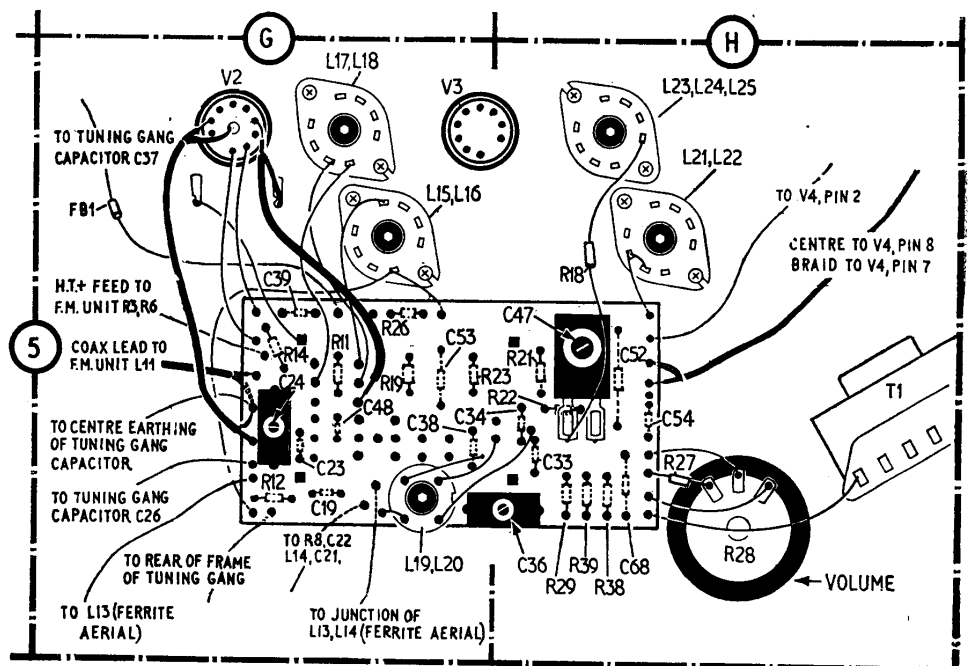


Illustration of the switch unit printed panel and its associated external connections