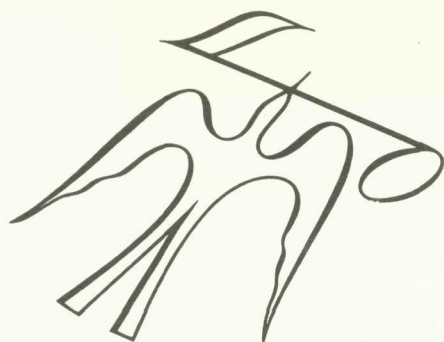


*Dup*



# THE FISHER 100-R SERVICE MANUAL



MODEL 100-R

CHASSIS SERIAL NUMBERS  
FROM 10001 TO 19999 INCLUSIVE

PRICE: \$1.00

FISHER RADIO CORPORATION • NEW YORK

# PARTS DESCRIPTION LIST

## CAPACITORS

10% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value.)

Symbol	Description	Part No.
C1	Ceramic, 3uuf, NPO, 1000V	C50070-28
C2	AM, variable	C799-119
C3	Ceramic, 8uuf, $\pm 5$ uuf, NPO, 500V	CC20CJ080D5
C4	Ceramic, 100uuf, N1500, 1000V	C50070-6
C5	Ceramic, 100uuf, GMV, N1500, 1000V	C50070-5
C6	Ceramic trimmer	C662-123
C7	Ceramic, 100uuf, N1500, 1000V	C50070-6
C8	FM, variable	C726-116
C9, 10	Ceramic, feedthru, .001uuf, GMV	C592-187
C11	Ceramic, 18uuf, 1000V	C50070-13
C12	Ceramic, .001uuf, 1000V	C50072-3
C13	Ceramic, feedthru, .001uuf, GMV	C592-187
C14	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C15	Ceramic, 5uuf, $\pm 5$ uuf, NPO, 1000V	CC20CJ050D5
C16	Ceramic trimmer	C662-123
C17	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C18	Ceramic, 100uuf, N1500, 1000V	C50070-6
C19	Ceramic, 68uuf, N750, 500V	CC20UJ680K5
C20	Ceramic, 100uuf, N1500, 1000V	C50070-6
C21	Ceramic, 5uuf, $\pm 5$ uuf, N150, 500V	CC20PJ050D5
C22	Ceramic, 5uuf, NPO, 1000V	C50070-24
C23	Ceramic, 5uuf, +5uuf, N220, 500V	CC20RH050D5
C24	Ceramic, 47uuf, N750, 1000V	C50070-4
C25	Ceramic, feedthru, .001uuf, GMV	C592-187
C26	Ceramic trimmer	C662-123
C27	Molded, .01uuf, 20%, 600V	C2747
C28	Ceramic, feedthru, .001uuf, GMV	C592-187
C29	Ceramic, 24uuf, 5%, N150, 1000V	C50070-8
C30	Ceramic, 100uuf, GMV, N1500, 1000V	C50070-5
C31	Ceramic, 100uuf, 5%, N1500, 1000V	C50070-19
C32	Ceramic, .001uuf, 1000V	C50072-3
C33	Ceramic, feedthru, .001uuf, GMV	C592-187
C34	Ceramic, 100uuf, GMV, N1500, 1000V	C50070-5
C35	Ceramic, 10uuf, $\pm 5$ uuf, NPO, 500V	CC20CH100D5
C36	Ceramic, .005uuf, 20%, 500V	C50089-1
C37	Electrolytic, three sections A — 40uuf 300V      C — 40uuf 250V B — 40uuf 250V	C670-125
C38	Ceramic, .0027uuf, 1000V	C50072-17
C39	Ceramic, .005uuf, 20%, 500V	C50089-1
C40	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C41	Ceramic, 330uuf, 1000V	C50072-1
C42	Ceramic, .005uuf, 20%, 500V	C50089-1
C43	Ceramic, 330uuf, 1000V	C50072-1
C44	Ceramic, .005uuf, 20%, 500V	C50089-1
C45	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C46	Ceramic, .68uuf, 500V	C50077-6N
C47	Ceramic, feedthru, .001uuf, GMV	C592-187
C48	Ceramic, .0027uuf, 1000V	C50072-17
C49	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C50, 51, 52, 53	Ceramic, .005uuf, 20%, 500V	C50089-1
C54	Mylar, .047uuf, 250V	C50197-52
C55	Ceramic, 220uuf, 1000V	C50072-20
C56	Ceramic, .0027uuf, 1000V	C50072-17
C57	Electrolytic, 20uuf, 250V	C746-145
C58	Ceramic, 330uuf, 1000V	C50072-1
C59	Mylar, .047uuf, 250V	C50197-52
C60	Mylar, .1uuf, 250V	C50197-54
C61	Ceramic, .0033uuf, 1000V	C50072-11
C62	Mylar, .047uuf, 250V	C50197-52
C63	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C64, 65	Ceramic, .005uuf, 20%, 500V	C50089-1
C66	Electrolytic, 8uf, 50V	C629-138
C67	Mylar, .1uuf, 250V	C50197-54
C68	Ceramic, .02uuf, +80 — 20%, 500V	C50089-4
C69	Ceramic, 2.2uuf, 500V	C3039
C70	Ceramic, .005uuf, 20%, 500V	C50089-1

## RESISTORS AND POTENTIOMETERS

In ohms, 10% tolerance,  $\frac{1}{2}$  watt, unless otherwise noted. K=kilohm, M=megohm.

Symbol	Description	Part No.
R1	Composition, 270, $\frac{1}{2}$ W	RC20BF271K
R2, 3	Composition, 330K, $\frac{1}{2}$ W	RC20BF334K
R4	Composition, 100K, $\frac{1}{2}$ W	RC20BF104K
R5	Composition, 820K, $\frac{1}{2}$ W	RC20BF824K
R6	Composition, 100K, $\frac{1}{2}$ W	RC20BF104K
R7	Composition, 100, $\frac{1}{2}$ W	RC20BF101K
R8	Composition, 820K, $\frac{1}{2}$ W	RC20BF824K
R9	Composition, 22, $\frac{1}{2}$ W	RC20BF220K

R10	Composition, 2.2K, $\frac{1}{2}$ W	
R11	Composition, 47K, $\frac{1}{2}$ W	
R12	Composition, 470K, $\frac{1}{2}$ W	
R13	Composition, 820K, $\frac{1}{2}$ W	
R14	Composition, 1K, $\frac{1}{2}$ W	
R15	Composition, 22K, $\frac{1}{2}$ W	
R16	Composition, 18K, 1W	
R17	Composition, 100, $\frac{1}{2}$ W	
R18	Composition, 150, $\frac{1}{2}$ W	
R19	Composition, 47K, $\frac{1}{2}$ W	
R20	Wirewound, 220, 5W	
R21	Composition, 1K, $\frac{1}{2}$ W	
R22	Composition, 470, $\frac{1}{2}$ W	
R23	Composition, 1K, $\frac{1}{2}$ W	
R24	Wirewound, 220, 5W	
R25	Composition, 1.5M, $\frac{1}{2}$ W	
R26	Composition, 150, $\frac{1}{2}$ W	
R27	Composition, 180, $\frac{1}{2}$ W	
R28	Composition, 47K, $\frac{1}{2}$ W	
R29	Composition, 1K, $\frac{1}{2}$ W	
R30	Composition, 27K, $\frac{1}{2}$ W	
R31	Composition, 1K, $\frac{1}{2}$ W	
R32	Composition, 2.2M, $\frac{1}{2}$ W	
R33	Composition, 47K, $\frac{1}{2}$ W	
R34	Composition, 820K, $\frac{1}{2}$ W	
R35	Composition, 2.2M, $\frac{1}{2}$ W	
R36, 37	Composition, 82K, $\frac{1}{2}$ W	
R38	Composition, 47K, $\frac{1}{2}$ W	
R39	Composition, 4.7K, $\frac{1}{2}$ W	
R40, 41	Composition, 1M, $\frac{1}{2}$ W	
R42	Composition, 27K, $\frac{1}{2}$ W	
R43	Composition, 1K, $\frac{1}{2}$ W	
R44	Composition, 3.9M, $\frac{1}{2}$ W	
R45	Composition, 270, $\frac{1}{2}$ W	
R46, 47	Dep. carbon, 100K, 5%, $\frac{1}{3}$ W	
R48	Composition, 100K, $\frac{1}{2}$ W	
R49	Dep. carbon, 22K, 5%, $\frac{1}{3}$ W	
R50	Composition, 1.8M, 5%, $\frac{1}{2}$ W	
R51	Dep. carbon, 470K, 5%, $\frac{1}{3}$ W	
R52, 53	Composition, 6.8K, $\frac{1}{2}$ W	
R54, 55	Composition, 22M, $\frac{1}{2}$ W	
R56	Composition, 1.5M, $\frac{1}{2}$ W	
R57	Dep. carbon, 330K, 5%, $\frac{1}{3}$ W	
R58	Potentiometer, 250K, AM level set	
R59	Potentiometer, 250K, FM level set	
R60	Composition, 820K, $\frac{1}{2}$ W	
R61	Composition, 1.5K, $\frac{1}{2}$ W	
R62	Composition, 1K, $\frac{1}{2}$ W	

## COILS, CHOKES AND TRANSFORMERS

Symbol	Description	Part No.
L1	Choke, 3.3 microhenries	L50066-8
L2	AM ferrite loop	L50210-26
L3	Coil, FM ant.	L726-124
L4, 5	Choke, .56 microhenry	L50066-19
L6	Choke, RF	L629-180
L7	Coil, FM, RF	L726-126
L8	Coil, FM, osc.	AS726-123
L9	Choke, 1 microhenry	L50066-2
L10	Choke, .56 microhenry	L50066-19
L11	Choke, 1.2 microhenry	L50066-3
L12	Coil, AM, osc.	L50210-22
L13, 14	Choke, 1 microhenry	L50066-2
L15, 16	Choke, filament, ferrite bead	L592-189
T1	Transformer, power	T796-115
Z1	Transformer, FM, IF	ZZ662-117
Z2	Transformer, FM, IF	ZZ2987
Z3	Coil, FM, Lim.	L670-145
Z4	Transformer, FM ratio det.	ZZ592-170
Z5	Transformer, AM, RF	L50210-23
Z6	Transformer, AM, IF	ZZ50210-1
Z7	Transformer, AM, IF	ZZ2984

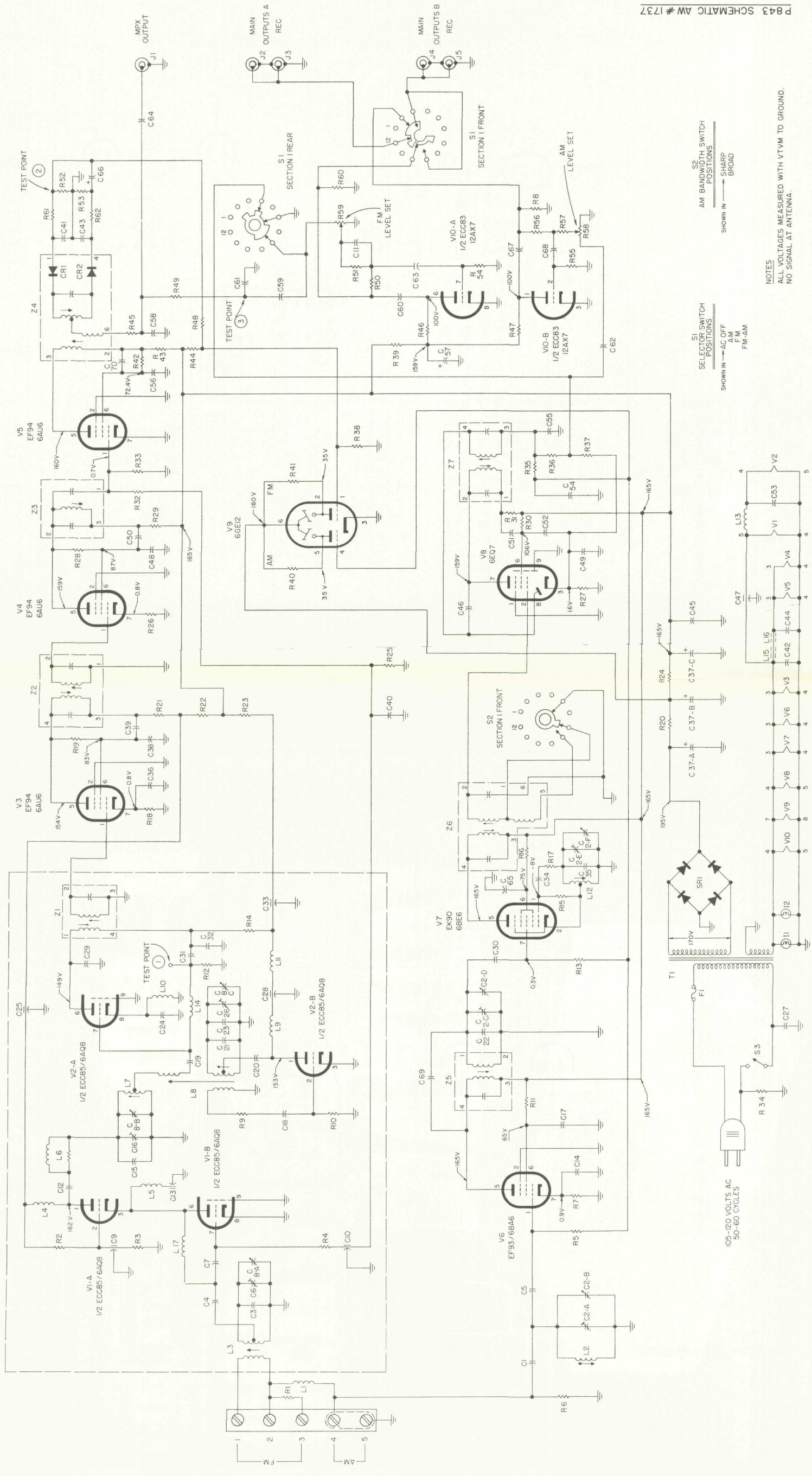
## MISCELLANEOUS

Symbol	Description	Part No.
CR1, CR2	Diode, 1N542	V-1N542
F1	Fuse, 1 amp. slo-blo	F629-132
I1, I2	Lamp, dial	I50082-6
S1	Switch, selector	S843-126
S2	Switch, AM, bandwidth	S843-124
S3	Switch, power	Part of S1
SR1	Rectifier, selenium	SR50253-3
—	Knob, tuning	E50133-1
—	Knob, switch	E50133-2
—	Dress panel	AS843-108
—	Dipole assembly	AS50227-1
—	Dial glass	N843-109

RC20BF222K
RC20BF473K
RC20BF474K
RC20BF824K
RC20BF102K
RC20BF223K
RC20BF183K
RC20BF101K
RC20BF151K
RC20BF473K
R551-137
RC20BF102K
RC20BF471K
RC20BF102K
R551-137
RC20BF155K
RC20BF151K
RC20BF181K
RC20BF473K
RC20BF102K
RC20BF273K
RC20BF102K
RC20BF225K
RC20BF473K
RC20BF824K
RC20BF225K
RC20BF823K
RC20BF473K
RC20BF472K
RC20BF105K
RC20BF273K
RC20BF102K
RC20BF395K
RC20BF271K
R33DC104J
RC20BF104K
R33DC223J
RC20BF185J
R33DC474J
RC20BF682K
RC20BF226K
RC20BF155K
R33DC334J
R50103-1
R50103-1
RC20BF824K
RC20BF152K
RC20BF102K



# SCHEMATIC DIAGRAM



RESISTORS	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42	R43	R44	R45	R46	R47	R48	R49	R50	R51	R52	R53	R54	R55	R56	R57	R58	R59	R60												
CAPACITORS	C1	C2-A	C2-B	C2-C	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36	C37-A	C37-B	C37-C	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49	C50	C51	C52	C53	C54	C55	C56	C57	C58	C59	C60	C61	C62	C63	C64	C65	C66	C67	C68

NOTES  
ALL VOLTAGES MEASURED WITH VTVM TO GROUND.  
NO SIGNAL AT ANTENNA.

S1 SWITCH POSITIONS  
AC OFF  
AM  
FM  
FM-AM  
SHOWN IN →

S2 SWITCH POSITIONS  
SHARP  
BROAD  
SHOWN IN →



# ALIGNMENT INSTRUCTIONS

Read These Instructions With Extreme Care Before Attempting Alignment.

**CHASSIS:** Turn the station selectors completely counterclockwise, without forcing. Dial pointers should be at zero index mark on logging scale. If not, reset the dial pointers. Disconnect the external antennas and the antenna link. Set Ferrite Loop to normal position, parallel to rear panel. When using an oscilloscope for alignment, set the output level controls for no overload, as shown by the proper waveform shape.

**SIGNAL GENERATORS:** The signal generator equipment must be able to supply the following: FM RF modulated 30% ( $\pm 22.5$  KC deviation) at 400 cps; AM RF modulated 30% at 400 cps;

AM IF with 30KC sweep for AM bandwidth adjustment.

**INDICATOR:** DC VTVM, AC VTVM, and scope for alignment. AC VTVM for 10 KC AM whistle filter adjustment.

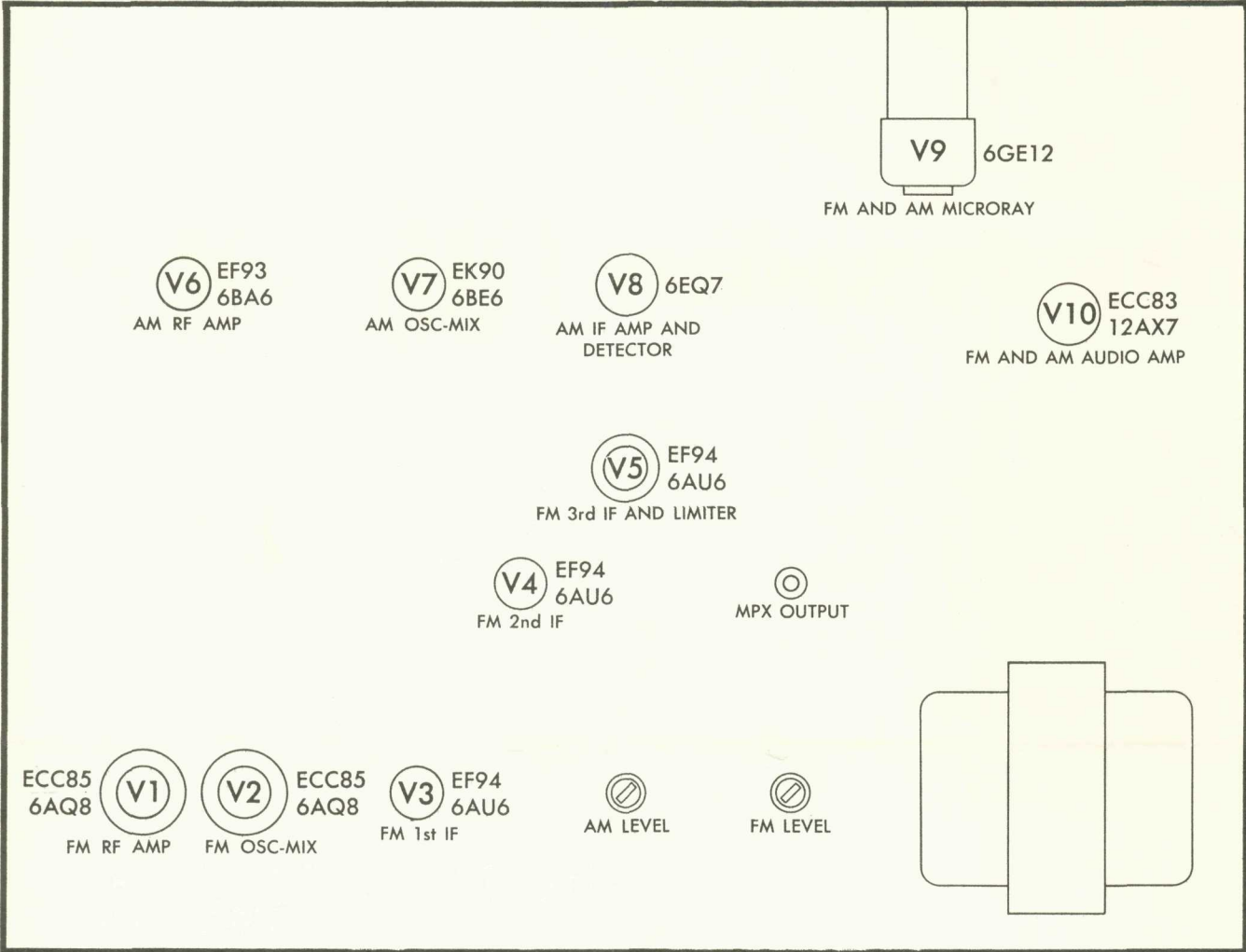
**ALIGNMENT:** Allow the chassis and test instruments to warm up for at least fifteen minutes. Adjust the line voltage for 117 volts AC, 50-60 cycles. Use fully insulated tools: a small screwdriver for all trimming capacitors; a K-Tran tool for Z1, Z2, Z5, Z6 and Z7; a hex tool for Z3, Z4, L1, L8 and L9. For AM alignment, short test point AVC to ground.

## AM ALIGNMENT

STEPS	CHASSIS			SIGNAL GENERATOR			INDICATOR		ALIGNMENT	
	AM BANDWIDTH	SELECTOR	SELECTOR STATION	COUPLING	FREQ.	MOD.	TYPE	CONNECTION	ADJUST	INDICATION
1	SHARP	AM	Point of no signal and no interference	AM Gen. connected thru .01-uF cap. in series with hot lead to V7, Pin 7	455 KC	30% AM at 400 cps	AC VTVM to Ch. A Output		Z6, Z7 top and bottom	Maximum voltage
2	BROAD	AM	Point of no signal and no interference	AM Gen. connected thru .01-uF cap. in series with hot lead to V7, Pin 7	455 KC	30 KC sweep	Scope to Ch. A Output		Z6 Bottom	Adjust slightly for symmetrical curve
3	SHARP	AM	600 KC	AM Gen. connected thru 220-uF cap. in series with hot lead to antenna terminal 4 Disconnect link between 4 & 5	600 KC	30% AM at 400 cps	AC VTVM to Ch. A Output		L12, Z5 L2	Maximum voltage
4	SHARP	AM	1400 KC	AM Gen. connected thru 220-uF cap. in series with hot lead to antenna terminal 4 Disconnect link between 4 & 5	1400 KC	30% AM at 400 cps	AC VTVM to Ch. A Output		C2E, C2C, C24	Maximum voltage
5	Repeat steps 3 and 4 for proper dial calibration and maximum output.									
6		FM	Point of no signal and no interference	FM Gen. connected to ungrounded tube shield of V2	10.7 MC	None	DC VTVM to test point 2		Z1, Z2, Z3 and Z4, top & bottom	Maximum negative voltage
7		FM	Point of no signal and no interference	FM Gen. connected to ungrounded tube shield of V2	10.7 MC	None	Connect VT VM to test point 3		Z4 top	Zero reading on zero center scale
8		FM	90 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to antenna terminals 4 and 5	90 MC	30% FM (22.5 KC Dev.) at 400 cps	DC VTVM to the junction of R32 and R25 and scope to Ch. A. Output		L8, L7 and L3	Check for sine waveform and adjust for maximum negative voltage
9		FM	106 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to antenna terminals 4 and 5	106 MC	30% FM (22.5 KC Dev.) at 400 cps	DC VTVM to the junction of R32 and R25 and scope to Ch. A. Output		C26, C16 and C6	Check for sine waveform and adjust for maximum negative voltage
10	Repeat steps 8 and 9 for proper dial calibration and maximum output.									
<b>NOTE:</b> For calibrating both the AM and FM, use as low an output voltage as possible from your signal generator.										

## FM ALIGNMENT

# TUBE LAYOUT



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