



THE FISHER **FM-100**

SERVICE

MANUAL



MODEL FM-100

CHASSIS SERIAL NUMBERS
FROM 20001 TO 29999 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	Order No.
C1	Ceramic, 8uuf ± .5uuf, NPO, 500V	CC20CJ080D5
C2	Molded, .01uf 20%, 600V	C2747
C3	Ceramic, 100uuf N1500, 1000V	C50070-6
C4	Ceramic, Trimmer	C662-123
C5	FM Variable	C726-116
C6	Ceramic, 100uuf N1500, 1000V	C50070-6
C7, 8, 9, 10	Ceramic, Feedthru, .001uf GMV	C592-187
C11	Electrolytic, three section: A — 40uf, 300V B — 40uf, 250V C — 40uf, 250V	C670-125
C12	Ceramic, Feedthru, .001uf GMV	C592-187
C13	Ceramic, .001uf, 1000V	C50072-3
C14	Ceramic, Feedthru, .001uf GMV	C592-187
C15	Ceramic, 8uuf ± .5uuf NPO, 500V	CC20CJ080D5
C16	Ceramic, Trimmer	C662-123
C17	Ceramic, 100uuf N1500, 1000V	C50070-6
C18	Ceramic, .005uf 20%, 500V	C50089-1
C19	Ceramic, 68uuf N750, 500V	CC20UJ680K5
C20	Ceramic, 100uuf N1500, 1000V	C50070-6
C21	Ceramic, 5uuf ± .5uuf N150, 500V	CC20PJ050D5
C22	Ceramic, 5uuf ± .5uuf N220, 500V	CC20RH050D5
C23	Ceramic, 47uuf N750, 1000V	C50070-4
C24	Ceramic, Trimmer	C662-123
C25	Ceramic, .005uf 20%, 500V	C50089-1
C26	Ceramic, 24uuf 5% N150, 1000V	C50070-8
C27	Ceramic, Feedthru, .001uf GMV	C592-187
C28	Ceramic, 100uuf 5% N1500, 1000V	C50070-19
C29	Ceramic, .001uf, 1000V	C50072-3
C30	Ceramic, .005uf 20%, 500V	C50089-1
C31	Ceramic, Feedthru, .001uf GMV	C592-187
C32	Ceramic, .0027uf, 1000V	C50072-17
C33	Ceramic, .005uf 20%, 500V	C50089-1
C34	Ceramic, .02uf +80—20%, 500V	C50089-4
C35	Ceramic, .0027uf, 1000V	C50072-17
C36	Ceramic, .005uf 20%, 500V	C50089-1
C37	Ceramic, 47uuf N750, 1000V	C50070-4
C38	Ceramic, .001uf GMV, 500V	C50089-2
C39	Ceramic, 100uuf N1500, 1000V	C50070-6
C40	Molded, .1uf, 250V	C50074-28
C41	Ceramic, .0027uf, 1000V	C50072-17
C42	Ceramic, 100uuf N1500, 1000V	C50070-6
C43	Electrolytic, 20uf, 250V	C746-145
C44	Molded, .1uf, 250V	C50074-28
C45	Ceramic, .02uf +80—20%, 500V	C50089-4
C46	Ceramic, .005uf 20%, 500V	C50089-1
C47	Ceramic, 5uuf NPO, 500V	CC20CJ050D5
C48	Ceramic, .005uf 20%, 500V	C50089-1
C49	Ceramic, .001uf GMV, 500V	C50089-2
C50	Electrolytic, 2uf, 70V	C721-142
C51, 52	Ceramic, 12uuf NPO, 1000V	C50070-2
C53	Ceramic, .02uf +80—20%, 500V	C50089-4
C54	Molded, .1uf, 250V	C50074-28
C55	Ceramic, .02uf +80—20%, 500V	C50089-4
C56	Ceramic, 18uuf N470, 1000V	C50070-13

C57	Ceramic, .0027uf, 1000V
C58	Ceramic, .005uf 20%, 500V
C59	Ceramic, .02uf +80—20%, 500V
C60	Ceramic, 330uuf, 1000V
C61	Ceramic, .0033uf, 1000V
C62	Molded, .1uf, 250V
C63	Ceramic, .005uf 20%, 500V
C64, 65	Ceramic, 330uuf, 1000V
C66	Electrolytic, 8uf, 50V
C67	Ceramic, 18uuf N470, 1000V
C68	Ceramic, .005uf, 20%, 500V

RESISTORS AND POTENTIOMETERS

In ohms, 10% tolerance, 1/2 watt, unless otherwise noted: K = kilohm, M = megohm.

Symbol	Description	Order No.
R1, 2	Composition, 330	RC20BF331K
R3	Composition, 2.7K	RC20BF272K
R4	Composition, 100K	RC20BF104K
R5	Composition, 120	RC20BF121K
R6	Wirewound, 330 5W	R746-146
R7, 8	Composition, 2.2M	RC20BF225K
R9	Wirewound, 330 5W	R746-146
R10	Composition, 22	RC20BF220K
R11	Composition, 2.2K	RC20BF222K
R12	Composition, 470K	RC20BF474K
R13, 14	Composition, 1K	RC20BF102K
R15	Composition, 120	RC20BF121K
R16	Composition, 470	RC20BF471K
R17	Composition, 47K	RC20BF473K
R18	Composition, 82K	RC20BF823K
R19	Composition, 1K	RC20BF102K
R20	Composition, 120	RC20BF121K
R21	Composition, 82K	RC20BF823K
R22	Composition, 270K	RC20BF274K
R23	Potentiometer, Dual, 100K Muting Control and 100K Channel Separation	R50160-10
R24	Composition, 100K	RC20BF104K
R25	Composition, 1K	RC20BF102K
R26	Composition, 220K	RC20BF224K
R27	Composition, 1.8M	RC20BF185K
R28	Composition, 100K	RC20BF104K
R29	Composition, 220K	RC20BF224K
R30	Composition, 47K	RC20BF473K
R31	Composition, 4.7K	RC20BF472K
R32	Composition, 180K	RC20BF184K
R33	Composition, 1.8M	RC20BF185K
R34	Composition, 82K	RC20BF823K
R35	Composition, 1K	RC20BF102K
R36	Composition, 220K	RC20BF224K
R37	Composition, 100K	RC20BF104K
R38	Composition, 22M	RC20BF226K
R39	Composition, 330K	RC20BF334K
R40	Potentiometer, 500K Level Set	R50103-6
R41	Composition, 100K	RC20BF104K
R42	Composition, 15K	RC20BF153K
R43, 44	Composition, 220K	RC20BF224K
R45	Composition, 15M	RC20BF156K
R46	Composition, 68K	RC20BF683K
R47	Composition, 100K	RC20BF104K
R48	Composition, 22M	RC20BF226K
R49	Potentiometer, 500K Level Set	R50103-6

C50072-17	
C50089-1	
C50089-4	
C50072-1	
C50072-11	
C50074-28	
C50089-1	
C50072-1	
C629-138	
C50070-13	
C50089-1	

R50, 54	Composition, 2.2M
R51	Composition, 220K
R52	Composition, 330K
R53	Composition, 100
R55	Composition, 470K
R56	Composition, 1.8M
R57	Composition, 18K
R58	Composition, 27K, 1W
R59	Composition, 1K
R60	Composition, 270
R61	Composition, 33K
R62	Composition, 1K
R63, 64	Composition, 6.8K
R65	Composition, 1.5K
R66	Composition, 56K
R67	Composition, 1.8M

RC20BF225K
RC20BF224K
RC20BF334K
RC20BF101K
RC20BF474K
RC20BF185K
RC20BF183K
RC30BF273K
RC20BF102K
RC20BF271K
RC20BF333K
RC20BF102K
RC20BF682K
RC20BF152K
RC20BF563K
RC20BF185K

COILS, CHOKES AND TRANSFORMERS

Symbol	Description	Order No.
L1	Coil, FM Antenna	L726-124
L2	Choke, 1 Micro Henry	L50066-2
L3, 4	Choke, .56 Micro Henries	L50066-19
L5	Choke, RF	L629-180
L6	Coil, FM-RF	L726-126
L7	Coil, FM Oscillator	L726-125
L8	Choke, .56 Micro Henries	L50066-19
L9, 10	Choke, 1 Micro Henry	L50066-2
L11	Choke, 1.2 Micro Henries	L50066-3
L12	Coil, Muting Oscillator	L50210-21
L13	Choke, Filament	L520-156
L14	Choke, 1.2 Micro Henries	L50066-3
L15, 16, 17, 18	Choke, Filament Ferrite Bead	L592-189
T1	Transformer, Power	T746-115
Z1	Transformer, FM-IF	ZZ662-117
Z2	Transformer, FM IF	ZZ629-142
Z3	Transformer, FM-IF	ZZ50210-2
Z4	Coil, FM Limiter	L551-121
Z5	Transformer, FM Ratio Detector	ZZ592-170

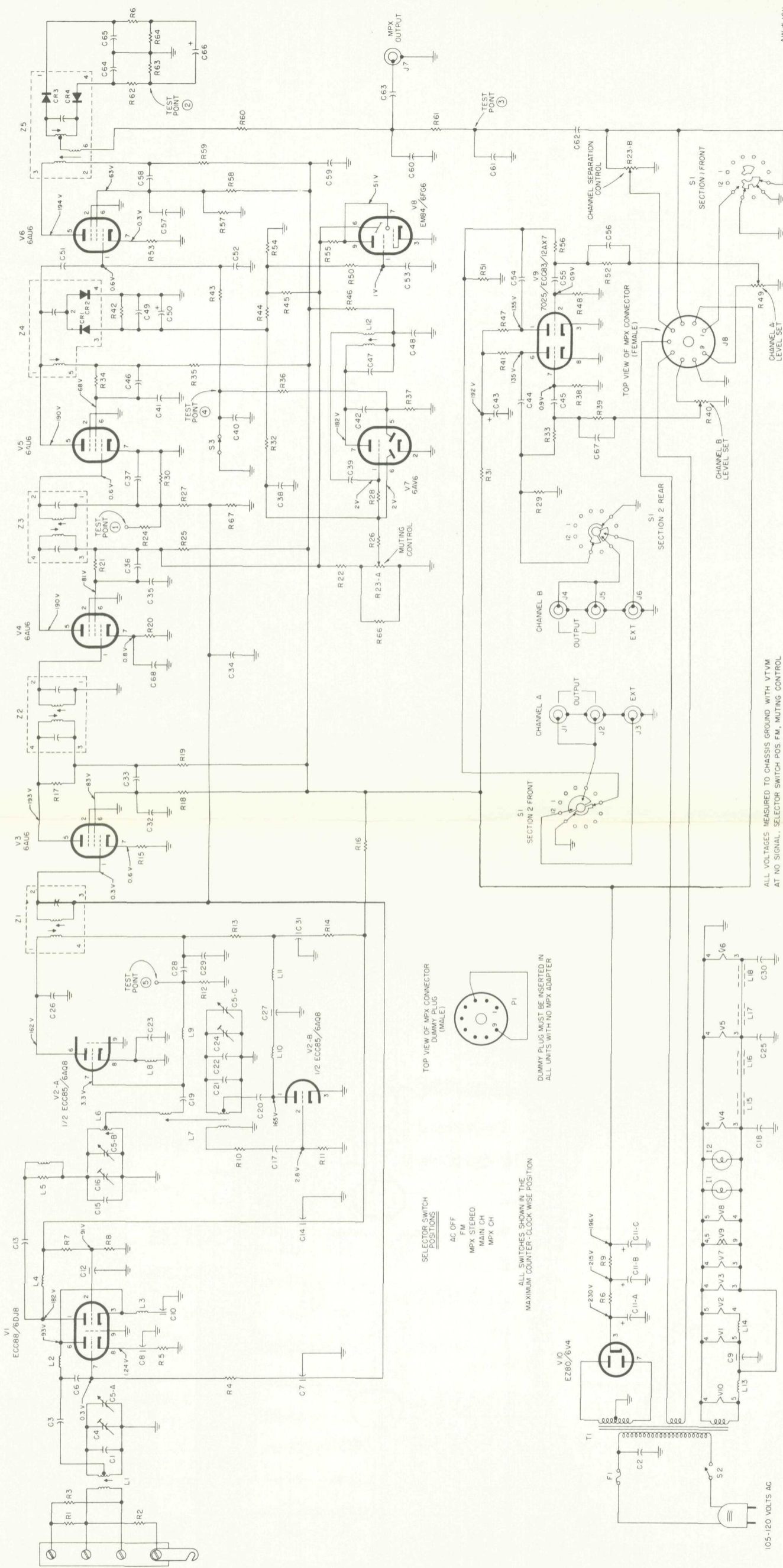
MISCELLANEOUS

Symbol	Description	Part No.
CR1, 2	Crystal Diode, Type 1N295	V-1N295
CR3, 4	Crystal Diodes, Matched Pair	V-1N542
F1	Fuse, 1.5 Ampere, Slo-Blo	F684-143
I1, 2	Lamp, Dial Panel	I50082-3
P1	Plug, 9 Pin	P50181
S1	Switch Selector	S746-118
S2	Switch, Power	Part of S1
S3	Switch, Muting	Part of R23

MECHANICAL PARTS

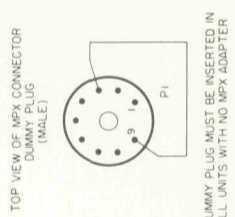
Symbol	Description	Part No.
—	Dress Panel Screened	A5746-114
—	Dial Pointer	A746-143
—	Shield, Tube, 7 Pin	E3330
—	Shield, Tube, 9 Pin	E3287
—	Knob Selector	E50154-1
—	Knob, Tuning	E50154-2
—	Knob, Dual Front	E50152
—	Knob, Dual Rear	E50153-1
—	Insulating Cap for Dummy Plug P1	E50182
—	Plastic Leg	H657-145
—	Dial Glass	N746-113
—	Fuse Holder	X1036

SCHEMATIC DIAGRAM



AW# 1611
P746 SCHEMATIC FM-100

ALL VOLTAGES MEASURED TO CHASSIS GROUND WITH VTVM AT NO SIGNAL. SELECTOR SWITCH POS. FM, MUTING CONTROL POS. OFF, DUMMY PLUG IN PLACE OF MPX ADAPTOR. LINE 117V AC, TOLERANCE ±10%.



SELECTOR SWITCH POSITIONS

- AC OFF
- FM
- MPX STEREO
- MAIN CH
- MPX CH

ALL SWITCHES SHOWN IN THE MAXIMUM COUNTER-CLOCK WISE POSITION

RESISTORS	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23-A	R23-B	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	R61	R62	R63	R64	R65	R66				
CAPACITORS	C1	C2	C3	C4	C5-A	C5-B	C6	C7	C8	C9	C10	C11-A	C11-B	C11-C	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	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

ALIGNMENT INSTRUCTIONS

Read These Instructions With Extreme Care Before Attempting Alignment.

TEST EQUIPMENT: FM Signal Generator, DC VTVM, Oscilloscope.

CHASSIS: 1 — For the entire alignment procedure, set the Selector Switch to FM position, the Muting Control to OFF position, the Channel A Level Set to MAXIMUM, and connect the oscilloscope to the Channel A output.

2 — Turn the Tuning knob maximum counterclockwise. (Dial pointer should line up with calibration mark at the beginning of the dial. Reset the dial pointer if necessary.)

3 — Allow the tuner and test equipment at least 15 minutes warm-up time. Adjust the line voltage for 117 volts AC 50-60 cps. Use fully insulated tools: a small screw-driver for trimmer capacitors C4, C16 and C24; a K-Tran tool for Z1, Z2 and Z3; a hex tool for all L1, L6, L7 and Z5.

STEP	DIAL	SIGNAL GENERATOR			DC VTVM	ADJUST	INDICATION
		GENERATOR COUPLING	FREQ.	MOD.			
1	{ Set dial pointer for extreme C.C.W. position. }	Pin 1, V4	10.7 MC	None	Test Point 2	Z4 Z5 top and bottom	Maximum negative voltage below 5 volts.
2		Pin 1, V4	10.7 MC	None	Test Point 3	Z5 top	Zero indication on zero center dial.
3		Ungrounded tube shield of V2	10.7 MC	None	Test Point 1	Z1, Z2, Z3 top and bottom	Maximum negative voltage below 2 volts.
4	90 MC	{ Two 120 ohm carbon resistors in series with generator leads to antenna terminals 2 and 3. }	90 MC	±22.5 KC deviation at 400 cps.	Test Point 1	L1, L6 and L7	{ Adjust for maximum negative voltages and check for sine wave-form. }
5	106 MC		106 MC	±22.5 KC deviation at 400 cps.	Test Point 1	C4, C16 and C24	

NOTE: (Steps 1 and 2): Decrease signal generator output while aligning IF transformers so that the VTVM indicates not more than specified voltages. Repeat steps 4 and 5 to obtain proper dial calibration and maximum sensitivity.



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