



# THE FISHER X-101 SERVICE MANUAL



MODEL X-101

**CHASSIS SERIAL NUMBERS  
50001—59999 INCLUSIVE**

PRICE: \$1.00

**FISHER RADIO CORPORATION • NEW YORK**

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# PARTS DESCRIPTION LIST

## CHASSIS SERIAL NUMBERS 50001—59999 INCLUSIVE

### CAPACITORS

20% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value.)

Symbol	Description	Order No.
C1	Ceramic, 820uf 10%, 1000V	C50072-7
C2, 3	Ceramic, 390uf 10%, 1000V	C50072-6
C4	Ceramic, 1800uf 10%, 1000V	C50072-8
C5	Ceramic, 82uf 10%, N1500, 1000V	C50070-7
C6	Ceramic, 1800uf 10%, 1000V	C50072-8
C7, 8	Ceramic, 560uf 10%, 1000V	C50072-14
C9, 10		
11, 12	Molded, .01uf 10%, 250V	C50074-25
C13, 14	Ceramic, .005uf, 500V	C50089-1
C15, 16	Molded, .022uf 10%, 250V	C50074-26
C17	Ceramic, 7uf 10% NPO, 1000V	C50070-20
C18	Ceramic, 8uf 10% NPO, 1000V	C50070-14
C19, 20	Ceramic, 68uf 10%, 500V	CC21GP680K5
C21, 22	Electrolytic, 25uf, 6V	C639-114
C23, 24	Molded, .01uf 10%, 250V	C50074-25
C25	Ceramic, 1000uf 10%, 1000V	C50072-3
C26	Molded, .022uf 10%, 250V	C50074-26
C27	Ceramic, 1000uf 10%, 1000V	C50072-3
C28	Molded, .022uf 10%, 250V	C50074-26
C29	Electrolytic, 100uf, 100V	C663-143
C30	Ceramic, 150uf 10%, 500V	CC21GP151K5
C31	Molded, .0027uf 10%, 200V	C68P272K2
C32	Ceramic, 150uf 10%, 500V	CC21GP151K5
C33	Molded, .0027uf 10%, 200V	C68P272K2
C34	Electrolytic, three section: 40uf, 450V 20uf, 450V	C653-127
C35, 36	Molded, .01uf 10%, 250V	C50074-25
C37	Electrolytic, two section: 60uf, 450V 40uf, 450V	C663-136
C38, 39, 40, 41	Molded, .01uf 10%, 250V	C50074-25
C42, 43	Not used	
C44, 45	Ceramic, 68uf 10%, 500V	CC21GP680K5
C46, 47	Ceramic, 47uf 10%, 500V	CC21GP470K5
C48	Not used	
C49	Molded, .047uf 10%, 500V	C50074-37
C50	Not used	
C51, 52, 53	Molded, .047uf 10%, 500V	C50074-37
C54	Molded, .01uf, 600V	C2747

### RESISTORS AND POTENTIOMETERS

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

Symbol	Description	Order No.
R1, 2	Potentiometer, 250K 20%	R657-134
R3	Composition, 10K	RC20BF103K
R4	Composition, 100K	RC20BF104K
R5	Composition, 10K	RC20BF103K
R6	Composition, 100K	RC20BF104K
R7, 8	Composition, 2.7K, 1W	RC30BF272K
R9	Composition, 3.3M	RC20BF335K
R10	Composition, 2.2M	RC20BF225K
R11	Composition, 1.2M	RC20BF125K
R12	Composition, 270K	RC20BF274K
R13	Composition, 10M	RC20BF106K
R14	Composition, 270K	RC20BF274K
R15	Composition, 10M	RC20BF106K
R16, 17	Composition, 120K	RC20BF124K
R18, 19	Potentiometer, 250K 20%	R657-134
R20, 21	Composition, 330K, 1W	RC30BF334K
R22, 23	Composition, 220K	RC20BF224K
R24, 25	Composition, 10M	RC20BF106K
R26, 27	Composition, 3.3M	RC20BF335K
R28, 29	Composition, 3.3M	RC20BF225K
R30, 31	Composition, 3.3M	RC20BF335K
R32	Composition, 100K	RC20BF104K
R33	Composition, 1.2K	RC20BF122K
R34	Composition, 100K	RC20BF104K
R35	Composition, 1.2K	RC20BF122K
R36, 37	Composition, 15M	RC20BF156K
R38, 39	Composition, 180K	RC20BF184K
R40	Composition, 220K	RC20BF224K
R41	Potentiometer, Dual, 1M	R501160-9
R42	Composition, 15K	RC20BF153K
R43	Composition, 220K	RC20BF224K
R44	Composition, 15K	RC20BF153K
R45, 46	Composition, 47K	RC20BF473K
R47	Potentiometer, Dual, 1M	R501160-9
R48	Not used	
R49	Composition, 100K	RC20BF104K
R50	Composition, 1.2K	RC20BF122K
R51	Composition, 100K	RC20BF104K
R52	Composition, 1.2K	RC20BF122K
R53	Composition, 47K	RC20BF473K
R54	Potentiometer, Dual Volume 500K	R663-138
R55	Composition, 10K, 1W	RC30BF103K
R56, 57	Composition, 47K	RC20BF473K
R58, 59	Composition, 120K	RC20BF124K
R60	Composition, 4.7K, 1W	RC30BF472K
R61, 62	Composition, 270K	RC20BF274K

R63	Wirewound, 2.2K, 7W	R663-148
R64	Composition, 68K	RC20BF683K
R65	Potentiometer, Balance 500K, 20%	R663-131
R66	Composition, 68K	RC20BF683K
R67	Wirewound, 250, 7W (Two Used in Parallel)	R539-121
R68	Composition, 390K	RC20BF394K
R69	Composition, 1.5K	RC20BF152K
R70	Composition, 390K	RC20BF394K
R71	Composition, 1.5K	RC20BF152K
R72	Composition, 100K	RC20BF104K
R73	Composition, 82K	RC20BF823K
R74	Potentiometer, 50K, 20%	R50103-3
R75	Composition, 100K	RC20BF104K
R76	Composition, 82K	RC20BF823K
R77	Potentiometer, 50K, 20%	R50103-3
R78, 79	Composition, 47K	RC20BF473K
R80, 81	Composition, 470K	RC20BF474K
82, 83		
R84	Composition, 2.2K	RC20BF222K
R85	Composition, 33K	RC20BF333K
R86	Composition, 2.2K	RC20BF222K
R87	Composition, 33K	RC20BF333K
R88, 89	Composition, 10	RC20BF100K
R90, 91	Composition, 100K	RC20BF104K
R92	Composition, 10K	RC20BF104K
R93	Composition, 6.8K	RC20BF682K

### TRANSFORMERS

Symbol	Description	Order No.
T1	Transformer, Output	T663-135
T2	Transformer, Output	T663-114
T3	Transformer, Power	T663-115

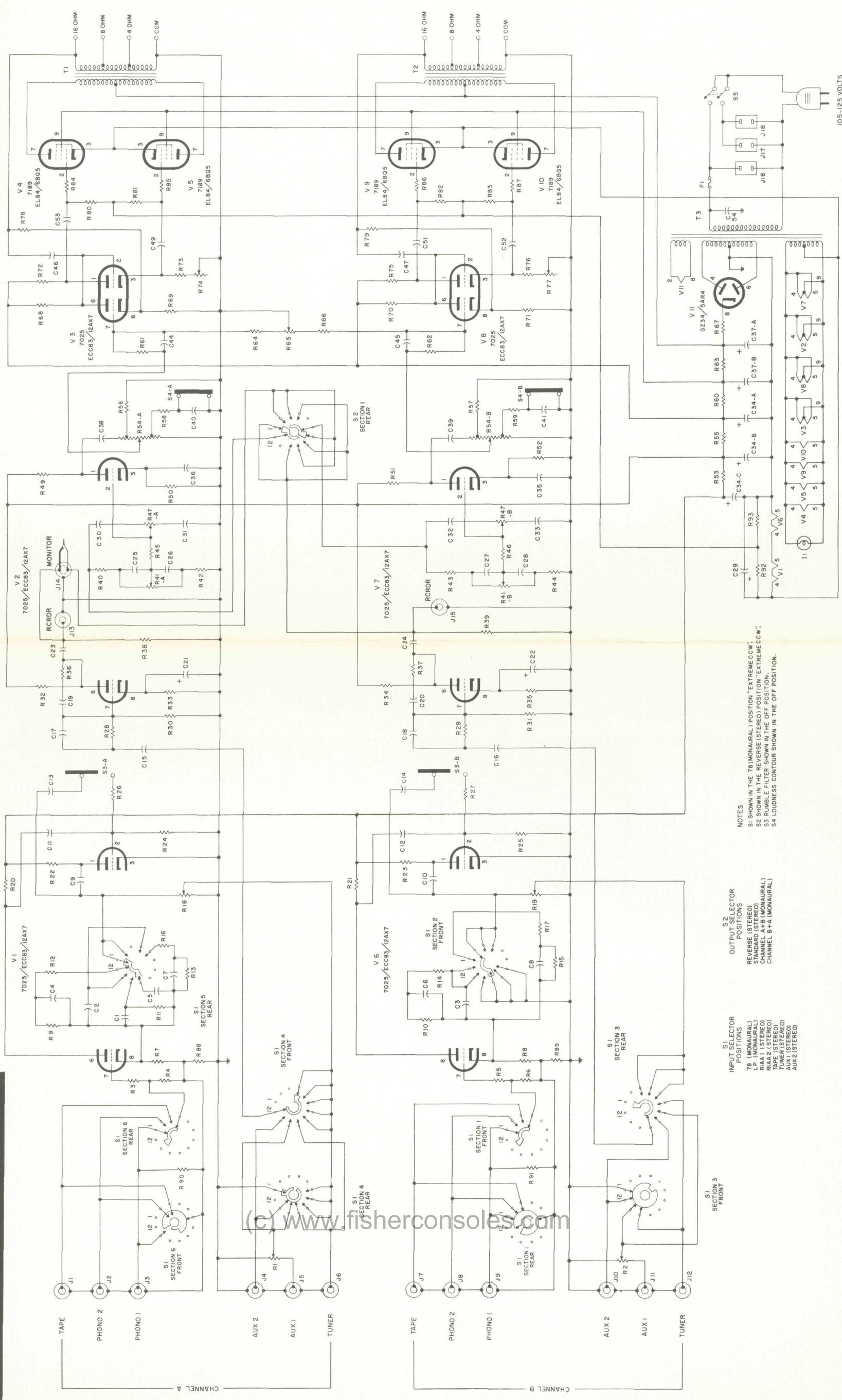
### MISCELLANEOUS

Symbol	Description	Order No.
F1	Fuse, 3.2 Ampere, Slo-Blo	F3319
I1	Lamp Panel	A50118
S1	Switch, Input Selector	S663-132
S2	Switch, Output Selector	S663-130
S3, 4	Switch, Slide	S663-133
S5	Switch, AC Power	Part of R54



# SCHEMATIC DIAGRAM

50001-59999



NOTES  
 S1 SHOWN IN THE 78 (MONAURAL) POSITION "EXTREME C.C.W."  
 S2 SHOWN IN THE REVERSE (STEREO) POSITION "EXTREME C.C.W."  
 S3 SIMILAR FILTER SHOWN IN THE OFF POSITION.  
 S4 LOUDNESS CONTOUR SHOWN IN THE OFF POSITION.

INPUT SELECTOR POSITIONS  
 78 (MONAURAL)  
 LP (MONAURAL)  
 RIAA 1 (STEREO)  
 RIAA 2 (STEREO)  
 TUNER (STEREO)  
 AUX 1 (STEREO)  
 AUX 2 (STEREO)

OUTPUT SELECTOR POSITIONS  
 REVERSE (STEREO)  
 STANDARD (STEREO)  
 CHANNEL A+B (MONAURAL)  
 CHANNEL B+A (MONAURAL)

105-125 VOLTS  
 50/60 CYCLES AC

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	R61	R62	R63	R64	R65	R66	R67	R68	R69	R70	R71	R72	R73	R74	R75	R76	R77	R78	R79	R80	R81	R82	R83	R84	R85	R86	R87	R88	R89	R90	R91	R92
C1	C2	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	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49	C50	C51	C52	C53																																							



# VOLTAGE MEASUREMENTS

All readings taken with vacuum tube voltmeter and, except where indicated, are with respect to chassis ground. Volume control at minimum setting. Bass and Treble tone controls at mid-position. 16-ohm load at speaker terminals. Line voltage 117 volts, 50-60 cycles. All readings are DC unless otherwise noted.

TUBE SYMBOL	TUBE SOCKET PINS								
	1	2	3	4	5	6	7	8	9
V1	86	-0.7	0	12	23.5	80	0	0.8	18.0
V2	147	0	1.1	3.1*	3.1*	147	0	1.1	3.1*
V3	210	105	105	3.1*	3.1*	105	0	1.1	3.1*
V4	NC	8.5	21.0	3.1*	3.1*	NC	400	NC	370
V5	NC	8.5	21.0	3.1*	3.1*	NC	400	NC	370
V6	86	-0.7	0	0	12.0	87	0	1.1	6.0
V7	150	0	1.1	3.1*	3.1*	150	0	1.1	3.1*
V8	210	105	105	3.1*	3.1*	105	0	1.1	3.1*
V9	NC	8.5	21.0	3.1*	3.1*	NC	400	NC	370
V10	NC	8.5	21.0	3.1*	3.1*	NC	400	NC	370
V11	NC	430	NC	360AC	NC	360AC	NC	430	—

CAPACITOR	TERMINAL SYMBOL	VOLTAGE	<p style="text-align: center;">NOTES</p> <p>NC No connection</p> <p>* AC voltage measured between center tap of filament and pin indicated.</p>
C34A	▲	305	
C34B	■	260	
C34C	◐	180	
C37A	◑	400	
C37B	▲	350	

# ADJUSTMENT INSTRUCTIONS

## PHASE INVERTER BALANCE ADJUSTMENT

The phase inverter balance adjustments for Channel A and Channel B are located on the top surface of the chassis. These adjustments should not be attempted unless you have an audio generator and a harmonic or intermodulation distortion analyzer. To make the adjustment, proceed as follows:

1. Connect the audio generator to the AUX or TUNER INPUT of the appropriate channel of the X-101 Master Control Amplifier.
2. Load the output of the amplifier and connect the distortion analyzer to it.
3. Set the audio generator to 1000 cycles or use an intermodulation analyzer. Adjust the output so that the amplifier is slightly (approx. 1 db) below the clipping point.
4. Keeping this output constant, adjust the phase inverter balance control (R74 or R77 on the Schematic Diagram) for minimum distortion as observed on the analyzer.



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