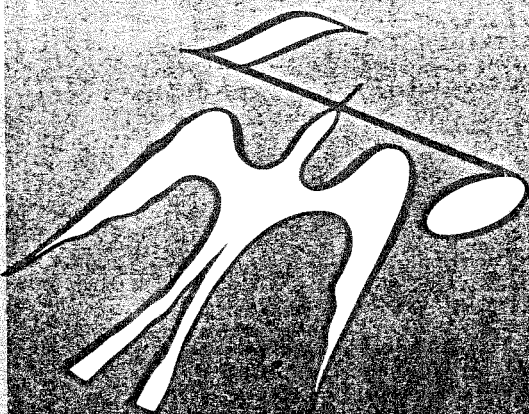


# Service Manual

# THE FISHER



**X-100-3**

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**X-100-A**

# PARTS DESCRIPTION LIST

## CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic, 100uF, 250V	C50180-15
C2	Electrolytic, 4-section A-100uF, 250V B- 40uF, 400V C- 20uF, 350V D- 20uF, 350V	C50180-77
C3	Electrolytic, 2-section A-20uF, 250V B-200uF, 70V	C50180-73
C4	Molded, .01uF, 600V, 20%	C2747
C5, 6	Ceramic, .01uF, 500V, 20%	C50089-3
C7, 8	Mylar, .022uF, 400V, 10%	C50B574-8
C9, 10	Ceramic, .001uF, 1000V, 10%	C50072-3
C11, 12	Ceramic, 3300pF, 1000V, 10%	C50072-11
C13, 14	Mylar, .033uF, 400V, 10%	C50B574-9
C15, 16	Ceramic, 680pF, 1000V, 10%	C50072-2
C17, 18	Ceramic, 33pF, N750, 1000V, 10%	C50070-15
C19, 20	Ceramic, .02uF, 500V, 20%	C50089-5
C21, 22	Ceramic, 220pF, 1000V, 10%	C50072-20
C23, 24	Mylar, .047uF, 630V, 10%	C50197-101
C25, 26	Mylar, .047uF, 400V, 10%	C50197-30
C27, 28	Ceramic, 680pF, 1000V, 10%	C50072-2

## RESISTORS

Deposited carbon in ohms, 5% tolerance, 1/3 watt, unless otherwise noted. K=Kilohms, M=Megohms.

Symbol	Description	Part No.
R1, 2	100K, 1/8W	R12DC104J
R3, 4, 5, 6	68K, 1/8W	R12DC683J
R7, 8	10K	R33DC103J
R9, 10	Glass, 330K, 1W	R30G334J
R11, 12	Glass, 2.2K, 1W	R30G222J
R13, 14	220K	R33DC224J
R15, 16	2.2M	R33DC225J
R17, 18	47K, 1/8W	R12DC473J
R19, 20, 21, 22	-Deleted-	---
R23, 24	Composition, 470K, 10%, 1/2W	RC20BF474K
R25, 26	Composition, 180K, 10%, 1/2W	RC20BF184K
R27, 28	2.7K	R33DC272J
R29, 30	22K	R33DC223J
R31, 32	Composition, 10K, 10%, 1/2W	RC20BF103K
R33, 34	1.2K	R33DC122J
R35, 36	220	R33DC221J
R37, 38	Composition, 470K, 10%, 1/2W	RC20BF474K
R39, 40	Composition, 10K, 10%, 1/2W	RC20BF103K
R41, 42	100K	R33DC104J
R43, 44	68K	R33DC683J
R45, 46	330K	R33DC334J
R47, 48, 49, 50	Composition, 330K, 10%, 1/2W	RC20BF334K

R51, 52, 53, 54	Composition, 1K, 10%, 1/2W	RC20BF102K
R55, 56	4.7K	R33DC472J
R57, 58	Wirewound, 60, 5W	R716-109
R59, 60	Composition, 220, 1/2W	RC20BF221K
R61	Glass, 2.2K, 5W	RPG5W222K
R62	Composition, 2.2K, 1/2W	RC20BF222K
R63	Composition, 4.7K, 1/2W	RC20BF472K
R64	Composition, 47K, 1W	RC30BF473K
R65	Composition, 22, 1W	RC30BF220K
R66	Glass, 2.2K, 10%, 3W	RPG3W222K
R67A, B	Pot., Dual, 500K, Bass	R50160B153
R68A, B	Pot., Dual, 500K, Treble	R50160B153
R69A, B	Pot., Dual, 500K, Volume Control	R50160B143
R70	Pot., 500K, Balance	R50160B149
R71	Composition, 100K, 10%, 1W	RC30BF104K
R72, 73	Pot., 500K, Phase Inverter Adjust	R50150-6

## MISCELLANEOUS

Symbol	Description	Part No.
F1	Fuse, 1 1/2A, Slo-Blo	F684-143
	*Fuse, 0.75A, Slo-Blo	F993-109
J1, 3	Jack, Input, 3-Pin	J50081-3
J2, 4	Jack, Input, 2-Pin	J50081-1B
J5	Jack, Input, 4-Pin	J50190-1A
I1	Lamp, Pilot, No. 18470F	I50009-8
PC1, 2	Printed Circuit, Equalization	PC50187-3
PC3, 4	Printed Circuit, Tone Control	PC50B187-17
S1	Switch, Rotary, Selector	S1109C124
S2	Switch, Rotary, Mode	S1109B118
S3, 4, 5, 6	Switch, Slide	S50C200-5
	*Switch, Rocker	S50C200-15-1
SD1	Silicon Diodes, 400 P.I.V., 750mA	SR50472
SS1, 2	Strip, Terminal, Speakers	E50161-3
T1	Output Transformer, Left Channel	T1109-114-1
T2	Output Transformer, Right Channel	T1109-114-2
T3	Transformer, Power	T1109C115
	*Transformer, Power, Multivoltage	TY1255-C115
V1, 2	Tube, 12AX7, Mullard	V12AX7-2
V3, 4, 5	Tube, 12AX7/EGC83	V12AX7-1
V6, 7, 8, 9	Tube, 7189, Mullard or ITT	V7189
---	Knob, Selector, Mode	E50B562-1
---	Knob, Dual, Top, Bass, Treble	E50B563
---	Knob, Dual, Bottom, Bass, Treble	E50B564
---	Knob, Volume Control	E50B566-1
---	Socket, Tube, 9-Pin Shielded	X50321-15
---	Socket, Tube, 9-Pin Unshielded	X50321-8
---	Fuse Holder	X563-151
---	Receptacle, AC	J546-129
---	Jack, Phones	J50B545A
---	Dress Panel Assembly	AS1369A140
---	*Dress Panel Assembly	AS1255A124

\*Used on Model X-100-A.

## REPLACING POWER LAMP

- Disconnect AC power cord.
- Gently pull all knobs off the front panel control shafts. Remove the hex nuts from the control shafts and lift off the front panel.
- CAUTION: On the Model X-100-A, pull off the nameplate and unscrew the bolt hidden behind the plate before attempting to lift off the front panel.
- Gently push in the lamp and turn it counterclockwise to remove. Place the new lamp in the socket, push in gently and turn it clockwise to lock it in place. Remove the fiberglass sleeve from the old lamp and place it on the new lamp.

- Replace the front panel and secure with the hex nuts removed previously. Replace the knobs on the control shafts.
- NOTE: On the Model X-100-A, screw the bolt into the hole behind the nameplate, and push the nameplate into the two mounting holes on the front panel.

## CLEANING FRONT PANEL

WARNING: Use only plain lukewarm water and a freshly laundered, soft lint-free cloth to clean the front dress panel.

# ADJUSTMENTS

**Equipment required:** Audio (AC) VTVM  
IM (Intermodulation Distortion) Analyzer  
8-ohm non-inductive load resistor  
(minimum rating 20 watts)

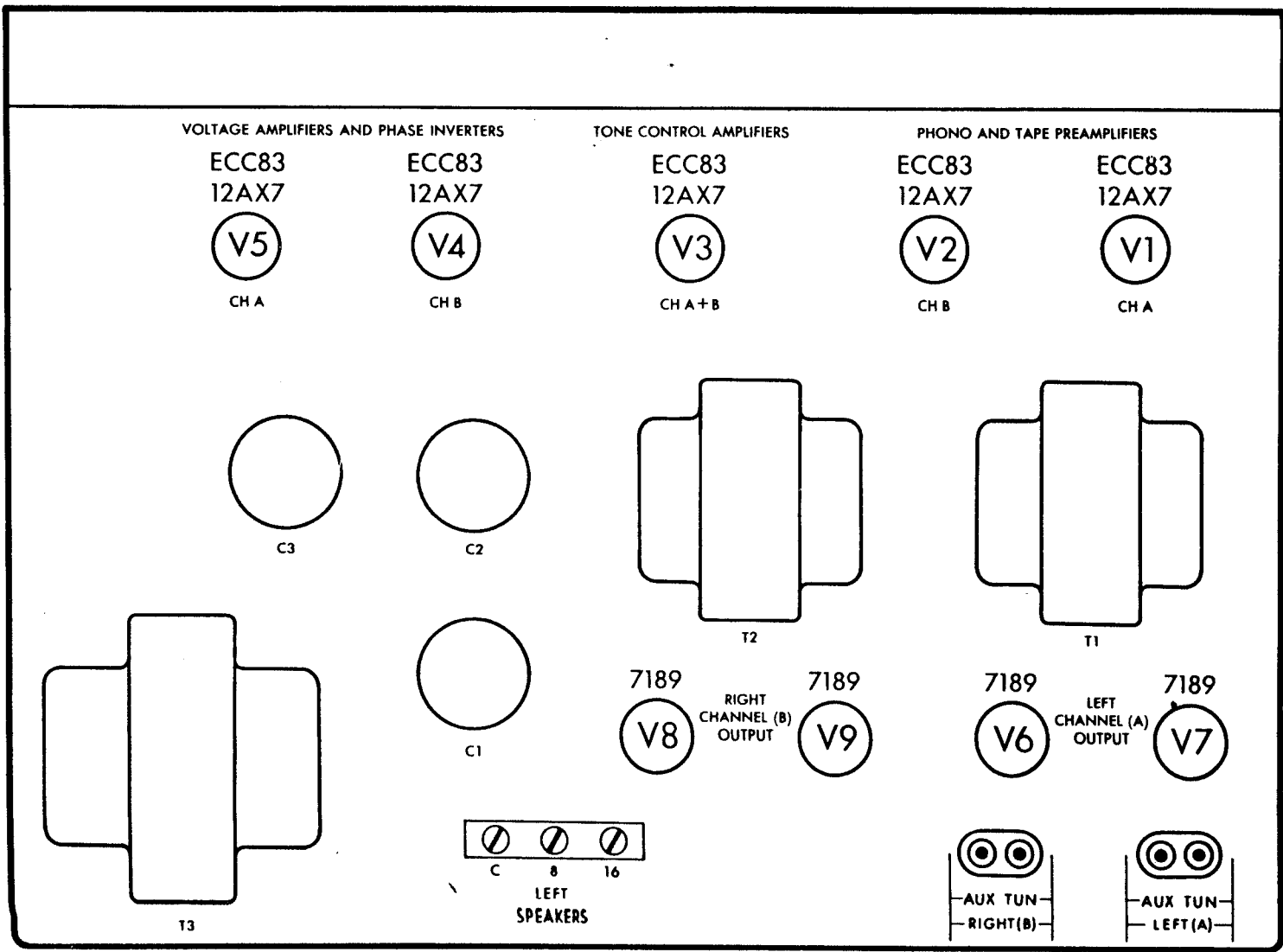
## **Channel A**

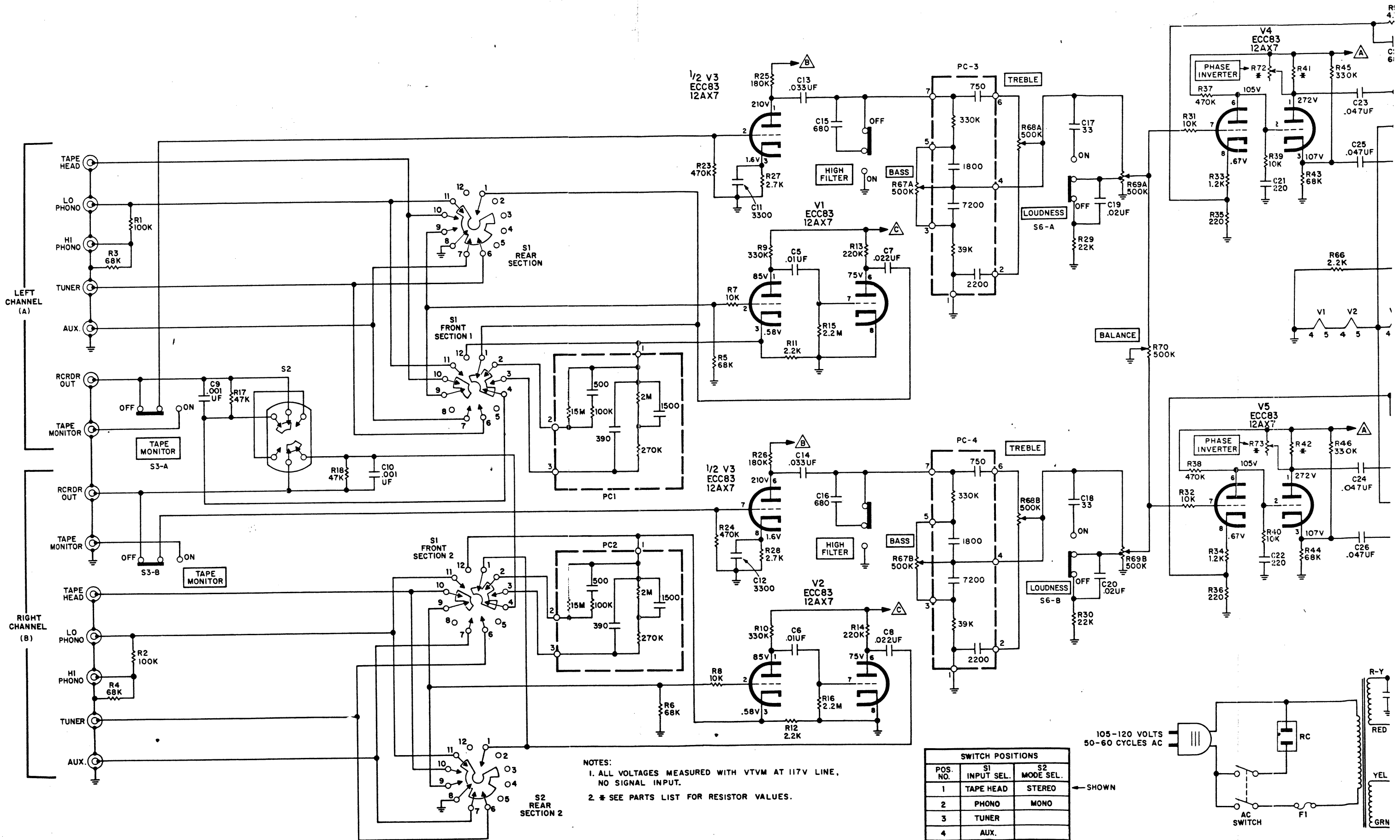
- Connect an 8-ohm load between C and 8 left-speaker terminals.
- Connect IM analyzer output to channel A AUX input.
- Connect the analyzer-input ground lead to the left-speaker C terminal.
- Connect the analyzer-input, "hot" lead to the left speaker 8-ohm terminal.
- Set the SELECTOR switch to AUX, the MODE switch to STEREO.
- Adjust the IM analyzer-output control for 9.5 volts across the 8-ohm load resistor.
- Adjust the CH A phase-inverter control for minimum IM distortion.  
(Control is under chassis near base of V5.)

## **Channel B**

- Connect an 8-ohm load between C and 8 right-speaker terminals.
- Connect IM analyzer output to channel B.
- Connect the analyzer-input ground lead to the right-speaker C terminal.
- Connect the analyzer-input, "hot" lead to the right speaker 8-ohm terminal.
- Set the SELECTOR switch to AUX, the MODE switch to STEREO.
- Adjust the IM analyzer-output control for 9.5 volts across the 8-ohm load resistor.
- Adjust the CH B phase-inverter control for minimum IM distortion.  
(Control is under chassis near base of V4.)

# TUBE LAYOUT

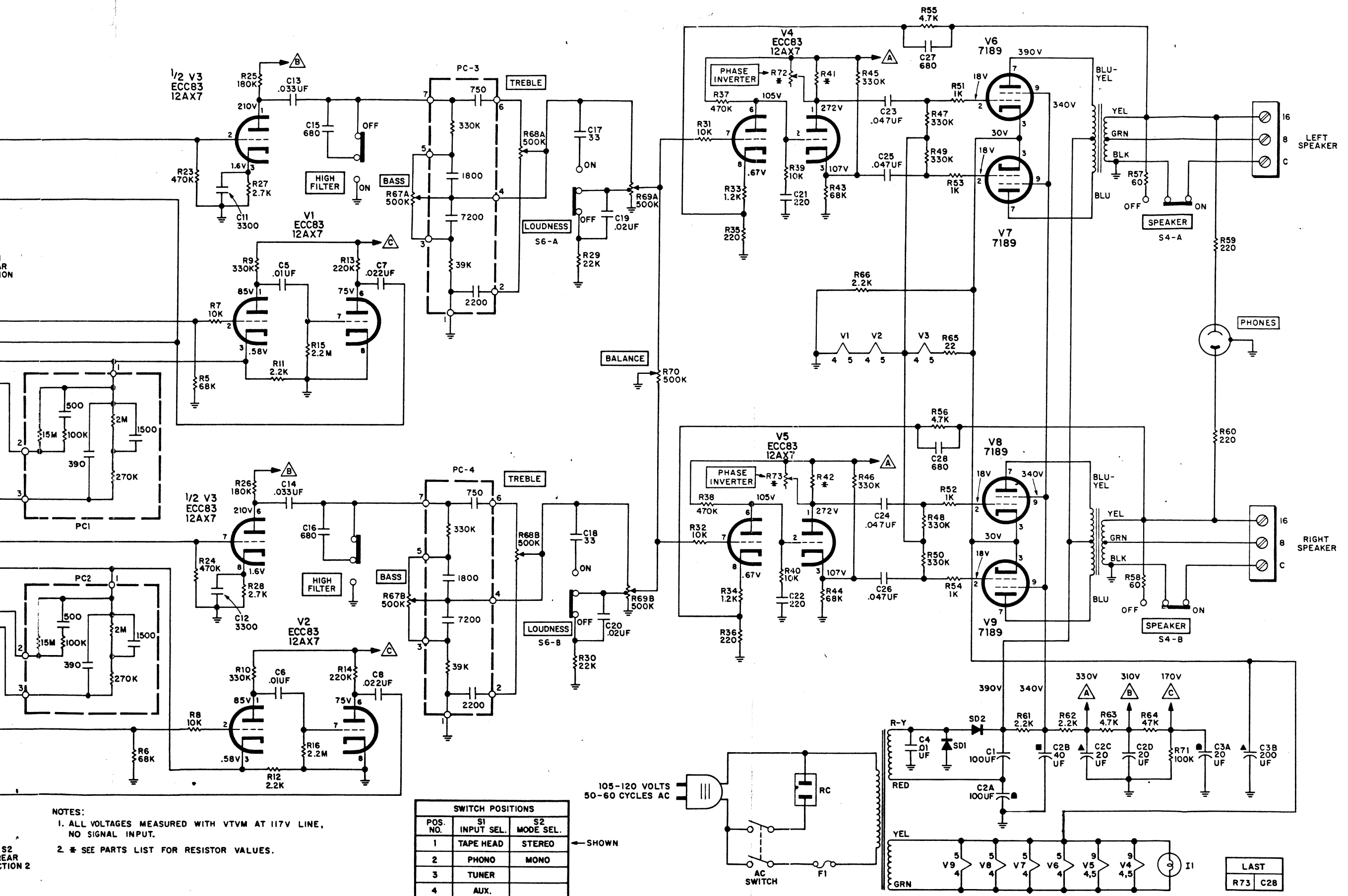




NOTES:  
 1. ALL VOLTAGES MEASURED WITH VTVM AT 117V LINE, NO SIGNAL INPUT.  
 2. \* SEE PARTS LIST FOR RESISTOR VALUES.

SWITCH POSITIONS		
POS. NO.	S1 INPUT SEL.	S2 MODE SEL.
1	TAPE HEAD	STEREO
2	PHONO	MONO
3	TUNER	
4	AUX.	

BECAUSE ITS PRODUCTS ARE SUBJECT TO CONTINUOUS IMPROVEMENT, FISHER RADIO CORPORATION RESERVES THE RIGHT TO MODIFY ANY DESIGN OR SPECIFICATION WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION.



NOTES:  
 1. ALL VOLTAGES MEASURED WITH VTVM AT 117V LINE, NO SIGNAL INPUT.  
 2. \* SEE PARTS LIST FOR RESISTOR VALUES.

SWITCH POSITIONS		
POS. NO.	S1 INPUT SEL.	S2 MODE SEL.
1	TAPE HEAD	STEREO
2	PHONO	MONO
3	TUNER	
4	AUX.	

LAST  
R73 C28