

BELL SOUND
MODEL 2420



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TRADE NAME	Bell Sound Model 2420
MANUFACTURER	Bell Sound Div. , Thompson Ramo Wooldridge Inc. , 555 Marion Road, Columbus 7, Ohio
TYPE SET	AC Operated 10 Tube Stereo Amplifier
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 105 Watts, .94 Amp. @117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



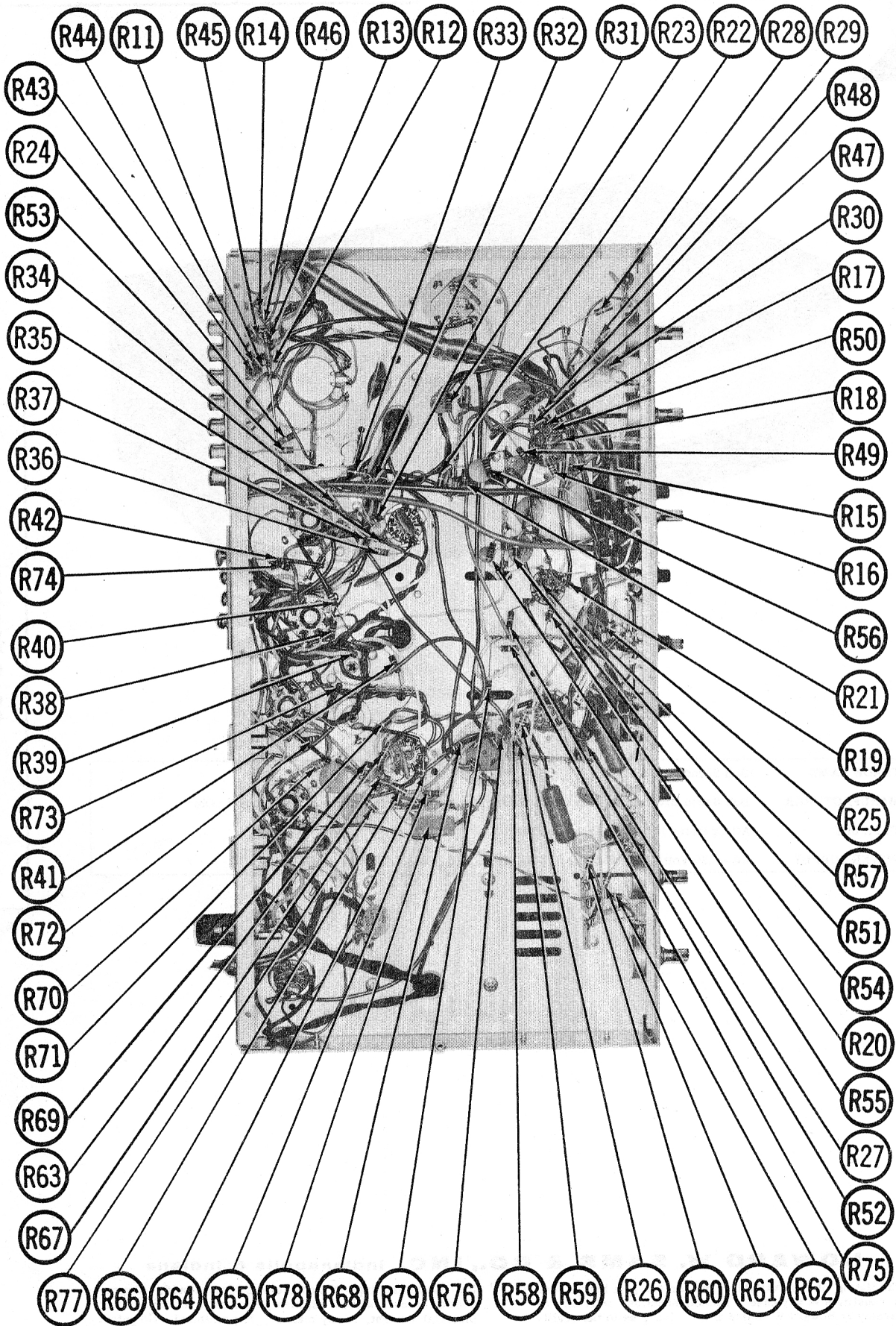
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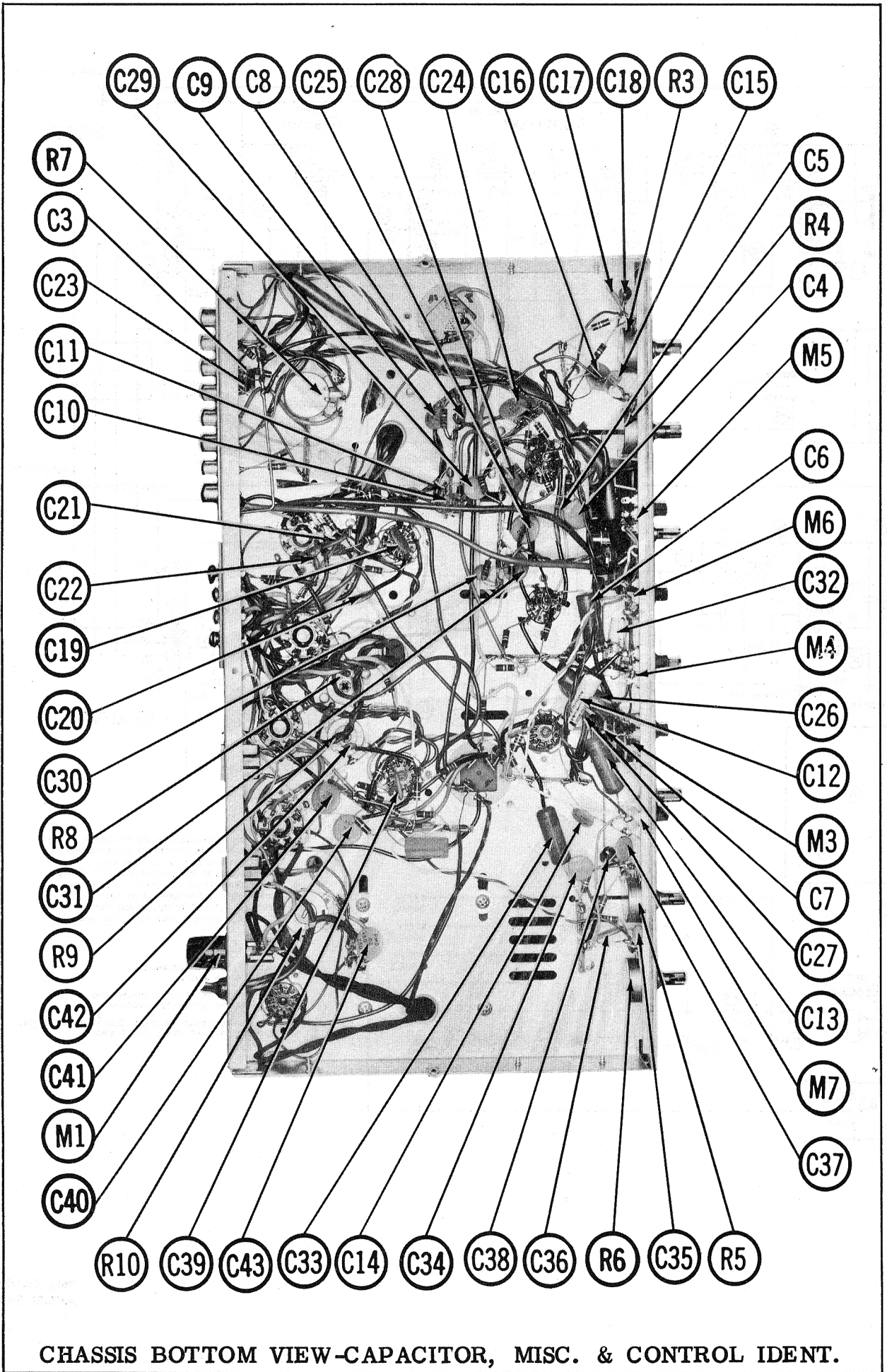
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SET 536

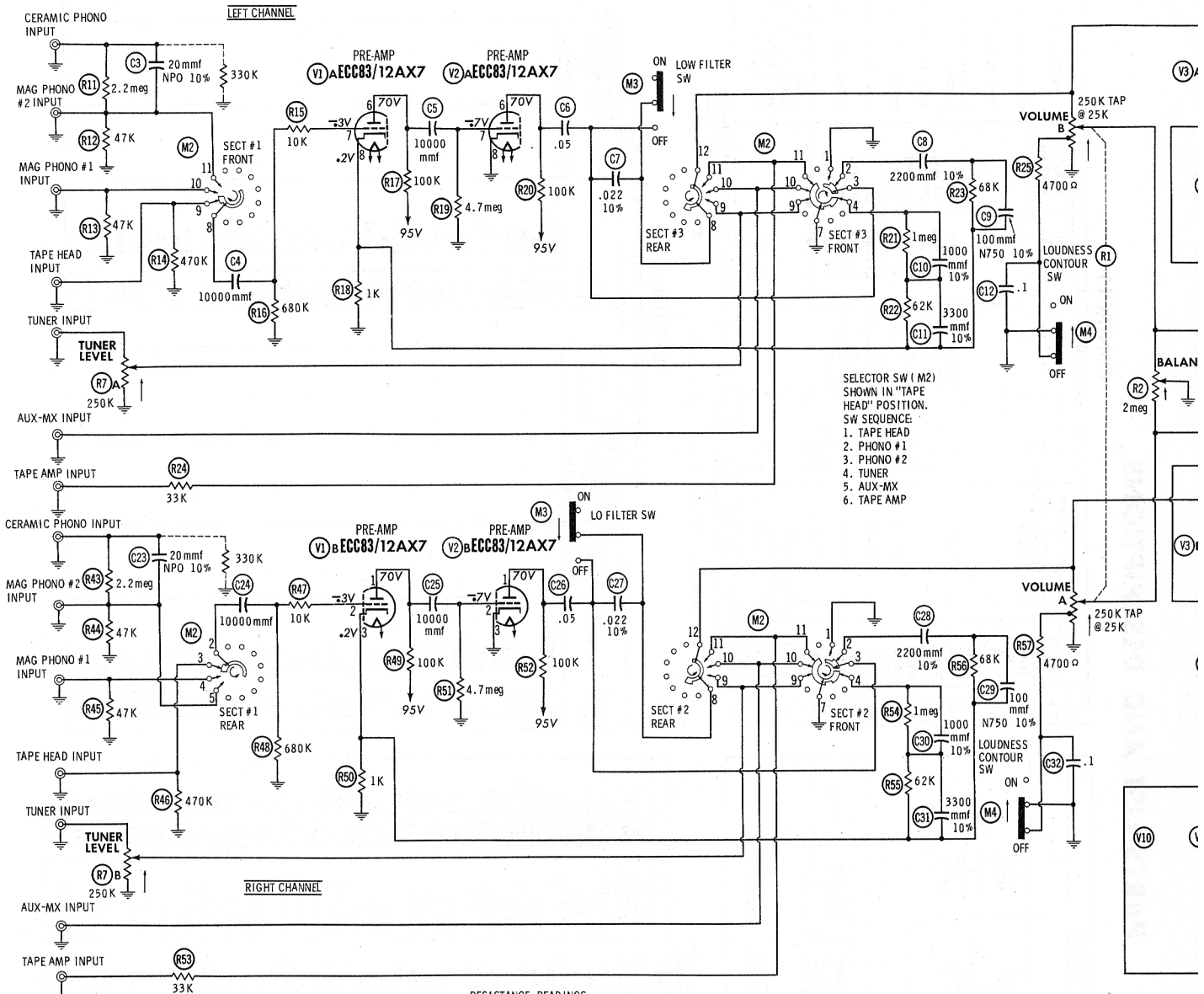
FOLDER 5



CHASSIS BOTTOM VIEW-FIXED RESISTOR IDENT.



CHASSIS BOTTOM VIEW-CAPACITOR, MISC. & CONTROL IDENT.

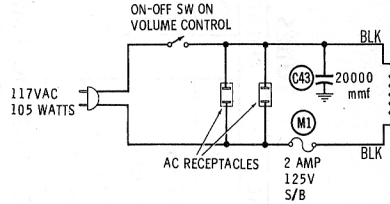


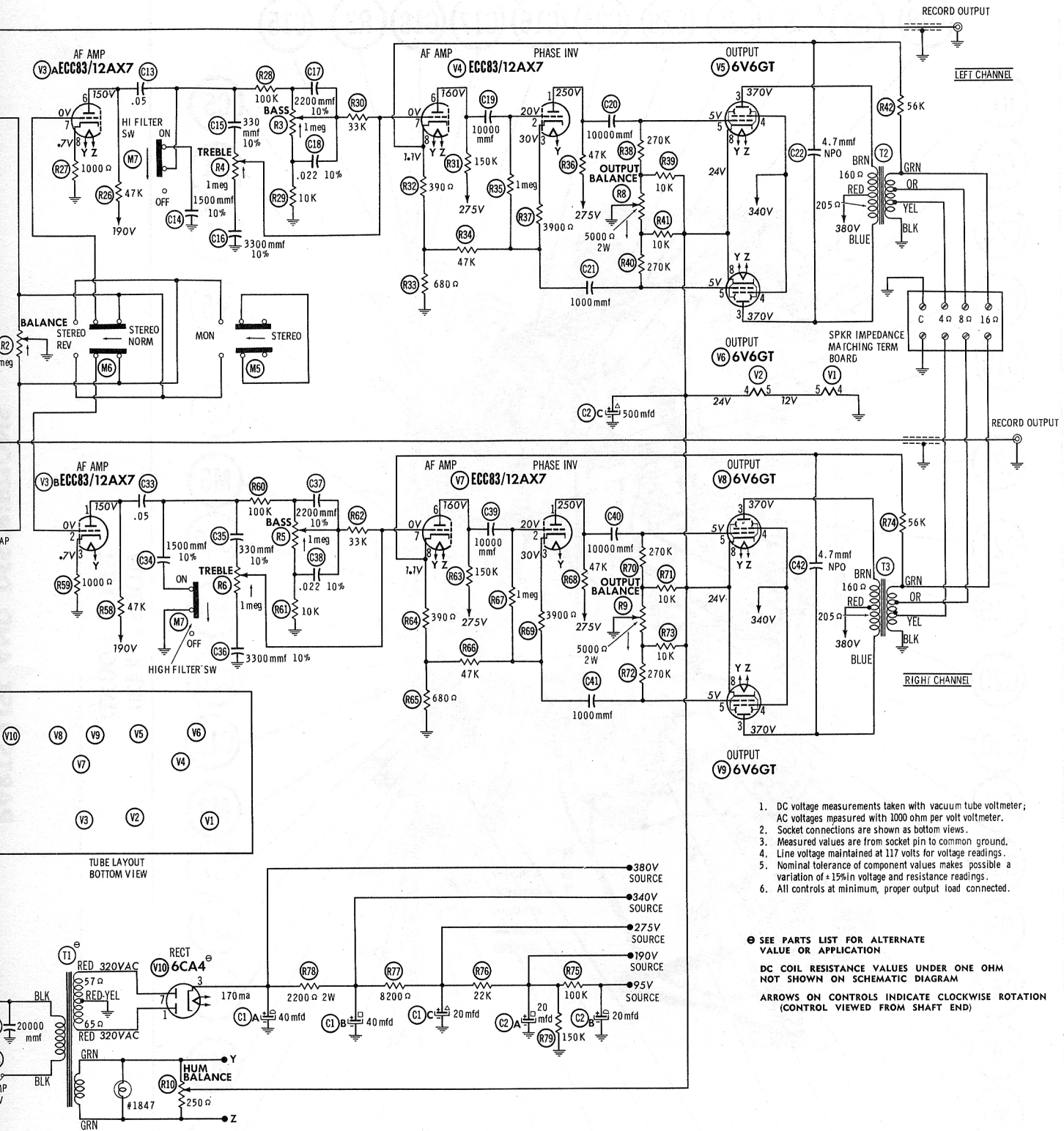
SELECTOR SW (M2) SHOWN IN "TAPE HEAD" POSITION. SW SEQUENCE:
 1. TAPE HEAD
 2. PHONO #1
 3. PHONO #2
 4. TUNER
 5. AUX-MX
 6. TAPE AMP

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC83 12AX7	†230K	690K	1000Ω	0Ω	20Ω	†230K	690K	1000Ω	NC
V2	ECC83 12AX7	†230K	4.7meg	0Ω	40Ω	20Ω	†230K	4.7meg	0Ω	NC
V3	ECC83 12AX7	†80K	10Ω	1000Ω	80Ω	80Ω	†80K	10Ω	1000Ω	80Ω
V4	ECC83 12AX7	†57K	1meg	51K	80Ω	80Ω	†160K	40K	1000Ω	80Ω
V5	6V6GT	TP	80Ω	†160Ω	†2200Ω	270K	NC	80Ω	40Ω	
V6	6V6GT	TP	80Ω	†205Ω	†2200Ω	270K	NC	80Ω	40Ω	
V7	ECC83 12AX7	†57K	1meg	51K	80Ω	80Ω	†160K	40K	1000Ω	80Ω
V8	6V6GT	TP	80Ω	†160Ω	†2200Ω	270K	NC	80Ω	40Ω	
V9	6V6GT	TP	80Ω	†205Ω	†2200Ω	270K	NC	80Ω	40Ω	
V10	6CA4	65Ω	NC	†100K	80Ω	80Ω	NC	57Ω	NC	NC

† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
 † MEASURED FROM PIN 3 OF V10. NC NO CONNECTION TP TIE POINT





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC		RAYTHEON		SYLVANIA	
	USE	TYPE	USE	TYPE	USE	TYPE
V1	Left Channel Preamp. - Right Channel Preamp.	ECC83/12AX7	Left Channel Output	6V6GT		
V2	Left Channel Preamp. - Right Channel Preamp.	ECC83/12AX7	Right Channel AF Amp. - Right Channel Phase Inv.	6V6GT		
V3	Left Channel AF Amp. - Right Channel AF Amp.	ECC83/12AX7	Right Channel Output	6V6GT		
V4	Left Channel AF Amp. - Right Channel Phase Inv.	ECC83/12AX7	Rectifier	6CA4 (E28)	*	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA		REMARKS	NOTES
	CAP.	VOL.	AEROVOX PART No.	MALLOY PART No.		
C1A	.40	450	AFP3-43-50	C0830	FP376-9	TMT-3745
B	.40	450				
C	.20	450				
C2A	.20	350		B0500	FP282-5	TMD-2640
B	.20	350		BR5002	TC2505	TD-500-25
C	.50	25				

* Alternate

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA				SPRAGUE PART No.
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	CENTRALAB PART No.	ELMOCO PART No.	
C3	20 NPO 10%		NFO-DI 20	DTZ-20	C10Q200	CNO-422	10TCC-Q20
C4	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C5	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C6	.05 400V		P488N-05	DD-503	4DP-3-503	GEM-415	
C7	.022 50V 10%		V94C2S22-10%		IDP-1-223		
C8	2200 10%		DI-2200	PM6D22	CCD-222	GP222	10TS-D22
C9	100 N750 10%		N750-DI 100	DTN-100	CCTN-101	CNT-310	10TS-U-T10
C10	1000 10%		DI-1000	DD-102	CCD-102	GP210	10TS-D10
C11	3300 10%		DI-3300	DD-330	CCD-332	JL-233	10TS-D33
C12	.1 200V		P288N-1	DF-104	2DP-3-104	GEM-201	10TS-D33
C13	.05 400V		P488N-05	DD-503	4DP-3-503	GEM-415	10TS-D33
C14	1500 10%		DI-1500	DD-152	CCD-152	GP215	10TS-D15
C15	330 10%		DI-330	DD-331	CCD-331	GP333	10TS-T33
C16	3300 10%		DI-3300	DD-331	CCD-332	JL-233	10TS-D33
C17	2200 10%		DI-2200	DD-220	CCD-222	GP222	10TS-D22
C18	.022 50V 10%		V94C2S22-10%		IDP-1-223		
C19	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C20	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C21	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C22	4.7 NPO		NFO-DI 4.7	DTZ-4R7	C10V47C	CNO-547	10TCC-V47
C23	20 NPO 10%		NFO-DI 20	DTZ-20	C10Q200	CNO-422	10TCC-Q20
C24	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C25	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C26	.05 400V		P488N-05	DD-503	4DP-3-503	GEM-415	10TS-D33
C27	.022 50V 10%		V94C2S22-10%		IDP-1-223		
C28	2200 10%		DI-2200	PM6D22	CCD-222	GP222	10TS-D22
C29	100 N750 10%		N750-DI 100	DTN-100	CCTN-101	CNT-310	10TS-U-T10
C30	1000 10%		DI-1000	DD-102	CCD-102	GP210	10TS-D10
C31	3300 10%		DI-3300	DD-330	CCD-332	JL-233	10TS-D33
C32	.1 200V		P288N-1	DF-104	2DP-3-104	GEM-201	10TS-D33
C33	.05 400V		P488N-05	DD-503	4DP-3-503	GEM-415	10TS-D33
C34	1500 10%		DI-1500	DD-152	CCD-152	GP215	10TS-D15
C35	330 10%		DI-330	DD-331	CCD-331	GP333	10TS-T33
C36	3300 10%		DI-3300	DD-331	CCD-332	JL-233	10TS-D33
C37	2200 10%		DI-2200	DD-220	CCD-222	GP222	10TS-D22
C38	.022 50V 10%		V94C2S22-10%		IDP-1-223		
C39	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C40	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C41	10000		BFD-01	DD-103	CCD-103	B-110	5HK-S10
C42	4.7 NPO		NFO-DI 4.7	DTZ-4R7	C10V47C	CNO-547	10TCC-V47
C43	20000		BFD-02	DD-203	CCD-203	B-120	5HK-S20

CONTROLS

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		RESIST-ANCE	Bell Sound PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	
R1A	250K Tap	1/2	15A90			Volume, Right Channel
B	250K Tap	1/2				Volume, Left Channel
C	Switch	1/2	15A87	B-75	A47-2meg-S	Push-Pull Off-On Balance
R2A	2meg	1/2	15A92	Not Req.	KSS-3	Bass, Left Channel
R3A	1meg	1/2	15A92	Not Req.	A47-1meg-Z	Treble, Left Channel
R4A	1meg	1/2	15A92	Not Req.	A47-1meg-Z	Bass, Right Channel
R5A	1meg	1/2	15A92	Not Req.	KSS-3	Treble, Right Channel
R6A	1meg	1/2	15A92	Not Req.	A47-1meg-Z	Tuner Level, Left Channel
R7A	250K	1/2	15A96	Not Req.	KSS-3	Tuner Level, Right Channel
R8	5000Q	2(WW)	15A94	Not Req.	F1-35	Output Balance, Left Channel
R9	250Q	1/2	15B95	Not Req.	R2-35	Output Balance, Right Channel
R10A	250Q	1/2		TT-2		Hum Balance
B	Shunt	1/2				

† "CONCENTRIKIT" Equivalent: K-8 Kit with Base Elements and Shafts: R13-130, P9-018 (Panel) R13-130, RL-028 (Rear) R5

‡ "STA-LOC" Equivalent: FA254A, RU254A, OK500, 1K975.

■ "UE4079" Equivalent: UE4079

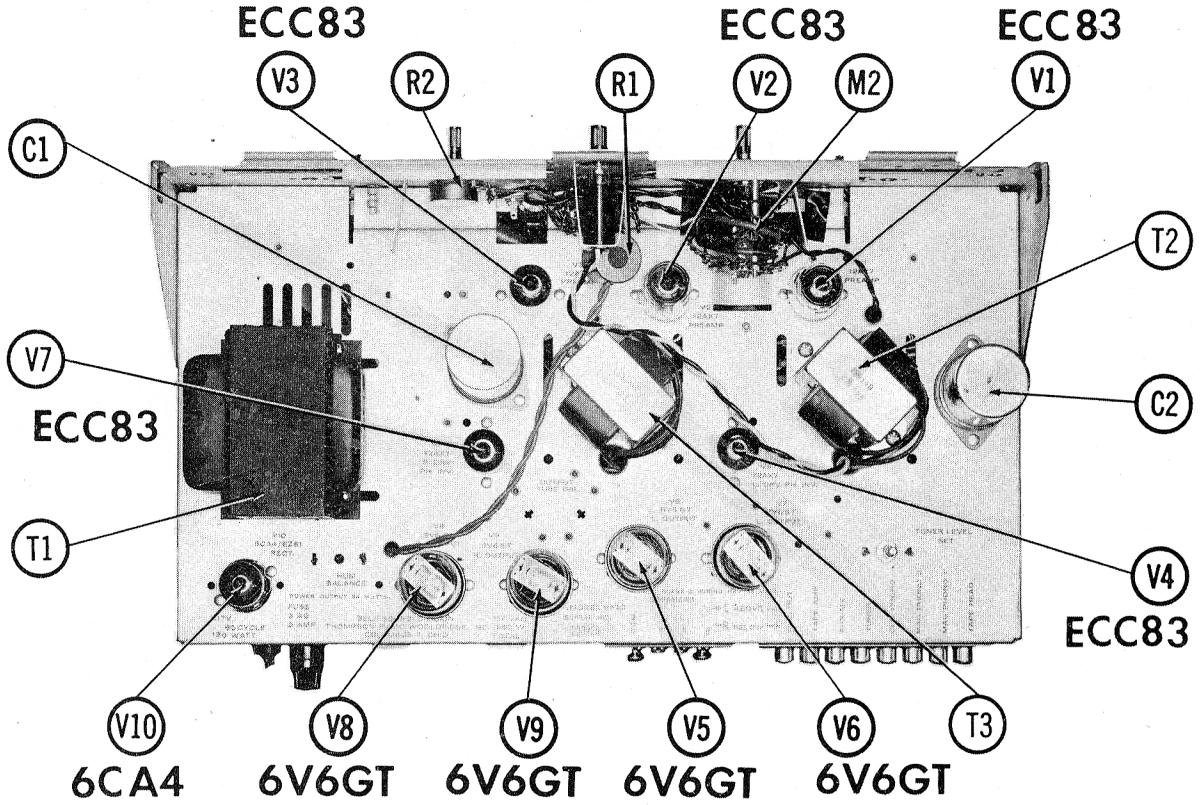
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		IRC PART No.	WORKMAN PART No.			IRC PART No.	WORKMAN PART No.
R11	2.2meg			R46	470K		
R12	47K			R47	10K		
R13	47K			R48	680K		
R14	470K			R49	100K		
R15	10K			R50	1000Q		
R16	680K			R51	4.7meg		
R17	100K			R52	100K		
R18	1000Q			R53	33K		
R19	4.7meg			R54	33K		
R20	100K			R55	62K		
R21	1meg			R56	68K		
R22	62K			R57	4700Q		
R23	68K			R58	47K		
R24	33K			R59	1000Q		
R25	4700Q			R60	100K		
R26	47K			R61	10K		
R27	1000Q			R62	33K		
R28	100K			R63	150K		
R29	10K			R64	390Q		
R30	33K			R65	680Q		
R31	150K			R66	47K		
R32	390Q			R67	1meg		
R33	680Q			R68	47K		
R34	47K			R69	3900Q		
R35	1meg			R70	270K		
R36	47K			R71	10K		
R37	3900Q			R72	270K		
R38	270K			R73	10K		
R39	10K			R74	56K		
R40	270K			R75	100K		
R41	10K			R76	22K		
R42	56K			R77	8200Q 2W		
R43	2.2meg			R78	2200Q 2W		
R44	47K			R79	150K		
R45	47K						

PARTS LIST AND DESCRIPTIONS (Continued)

CHASSIS—TOP VIEW



TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	Bell Sound PART No.	Meritt PART No.	Stancor PART No.	Thordarson PART No.	
T1	117V @ .94A	6.3V @ .170A DC	32B123 ①				① Part #32B124 is used in 50% version.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	Bell Sound PART No.	Meritt PART No.	Stancor PART No.	Thordarson PART No.	
T2	9500Ω CT 16Ω Tap @ 8Ω, 4Ω		32B140		24S19		
T3	9500Ω CT 16Ω Tap @ 8Ω, 4Ω		32B140		24S19		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA			
			Bell Sound PART No.	Holder	Fuse	Holder
M1	3AG	2A 125V S/B	53A8	53A8	313002 (3AG 2A 125V) S/B	342001 MDL 2

MISCELLANEOUS

ITEM No.	PART NAME	Bell Sound PART No.	NOTES
M2	Switch	43A82	Function Selector (Rotary Type)
M3	Switch	43A45	Lo-Filter (DPDT Slide Type)
M4	Switch	43A45	Loudness Contour (DPDT Slide Type)
M5	Switch	43A45	Mono-Stereo (DPDT Slide Type)
M6	Switch	43A45	Normal-Reverse (DPDT Slide Type)
M7	Switch	43A45	Hi-Filter (DPDT Slide Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	84A59	With Indicator; Volume, Balance
Knob	84A61	Tone
Knob	84A70	Function Selector
Panel	72D437	F front

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors
Power Cord	8524 (Stranded) Available in Ten Colors
	1725-K (7½ Ft. Length)