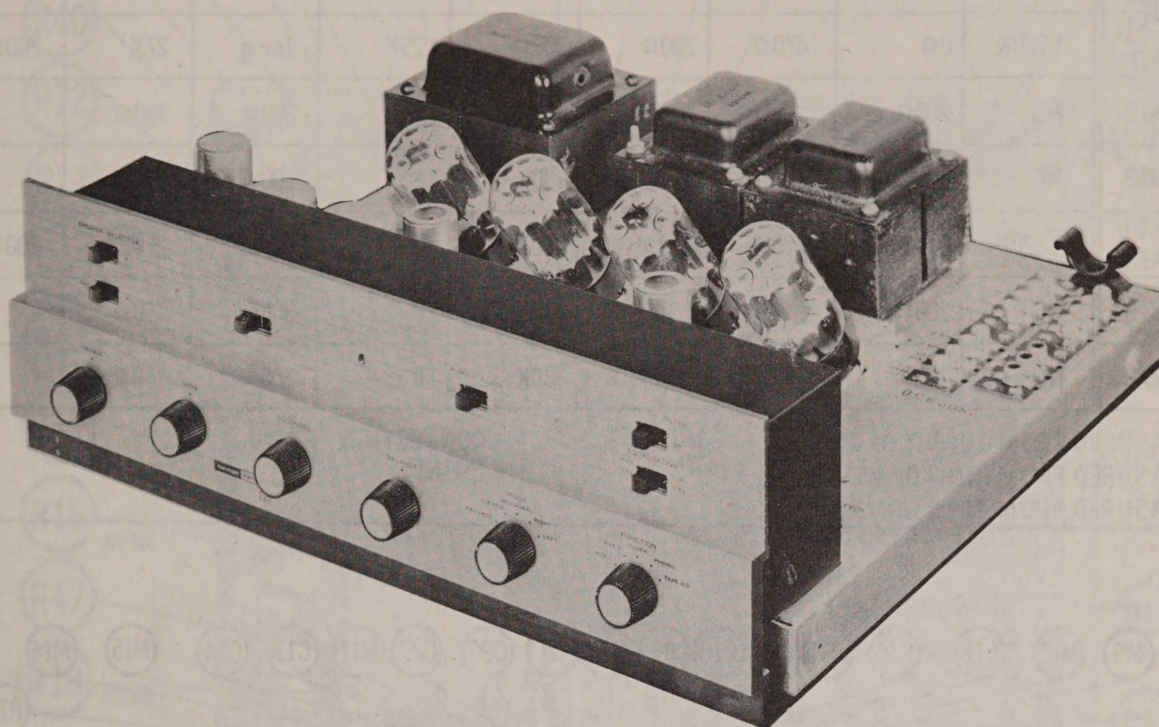


HARMAN-KARDON
MODEL A-250HARMAN-KARDON
MODEL A-250

TRADE NAME	Harman-Kardon Model A-250 (The Epic)		
MANUFACTURER	Harman-Kardon, Inc., 520 Main Street, Westbury, L. I., N. Y.		
TYPE SET	AC Operated 10 Tube Stereo Amplifier		
POWER SUPPLY	105-125 Volts AC, 50-60 Cycles	RATING	130 Watts, 1.4 Amp. @ 117 Volts AC

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

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JV428

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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	†300K	47K	1500Ω	2Ω	2Ω	†300K	47K	1500Ω	0Ω
V2	ECC83 12AX7	†300K	1meg	0Ω	5Ω	5Ω	†300K	1meg	0Ω	2Ω
V3	ECC82 12AU7	†60K	250K	1200Ω	8Ω	8Ω	†60K	250K	1200Ω	5Ω
V4	ECC82 12AU7	†76K	700K	820Ω	200Ω	200Ω	†76K	700K	820Ω	200Ω
V5	ECC81 12AT7	†220K	0Ω	470Ω	200Ω	200Ω	†25K	1meg	27K	200Ω
V6	6L6GB	NC	200Ω	†270Ω	†3400Ω	330K	TP	200Ω	150Ω	
V7	6L6GB	NC	200Ω	†270Ω	†3400Ω	330K	TP	200Ω	150Ω	
V8	ECC81 12AT7	†220K	0Ω	470Ω	200Ω	200Ω	†25K	1meg	27K	200Ω
V9	6L6GB	NC	200Ω	†270Ω	†3400Ω	330K	TP	200Ω	150Ω	
V10	6L6GB	NC	200Ω	†270Ω	†3400Ω	330K	TP	200Ω	150Ω	

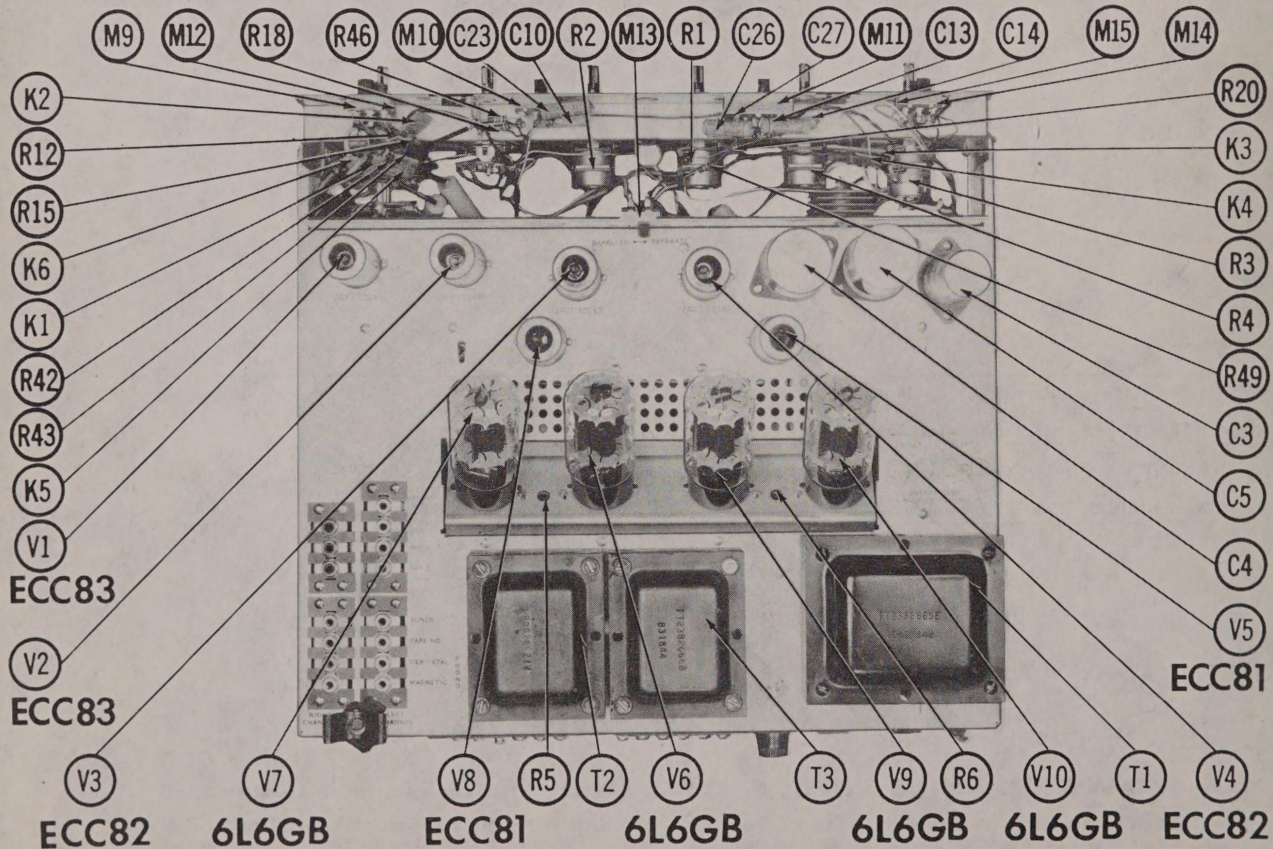
† MEASURED FROM OUTPUT OF M1.

■ MEASURED FROM PIN 8 OF V5.

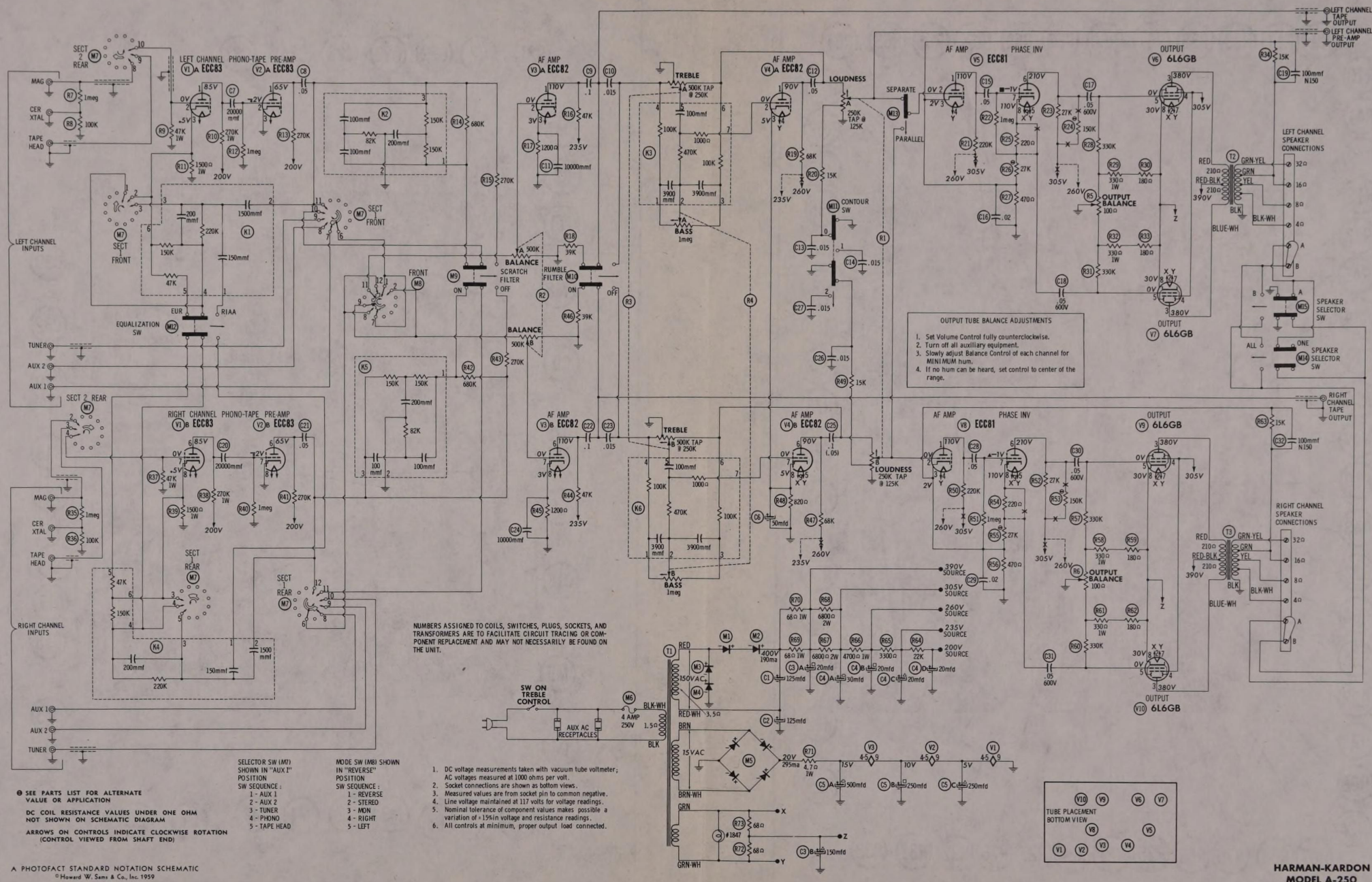
▲ MEASURED FROM PIN 8 OF V8.

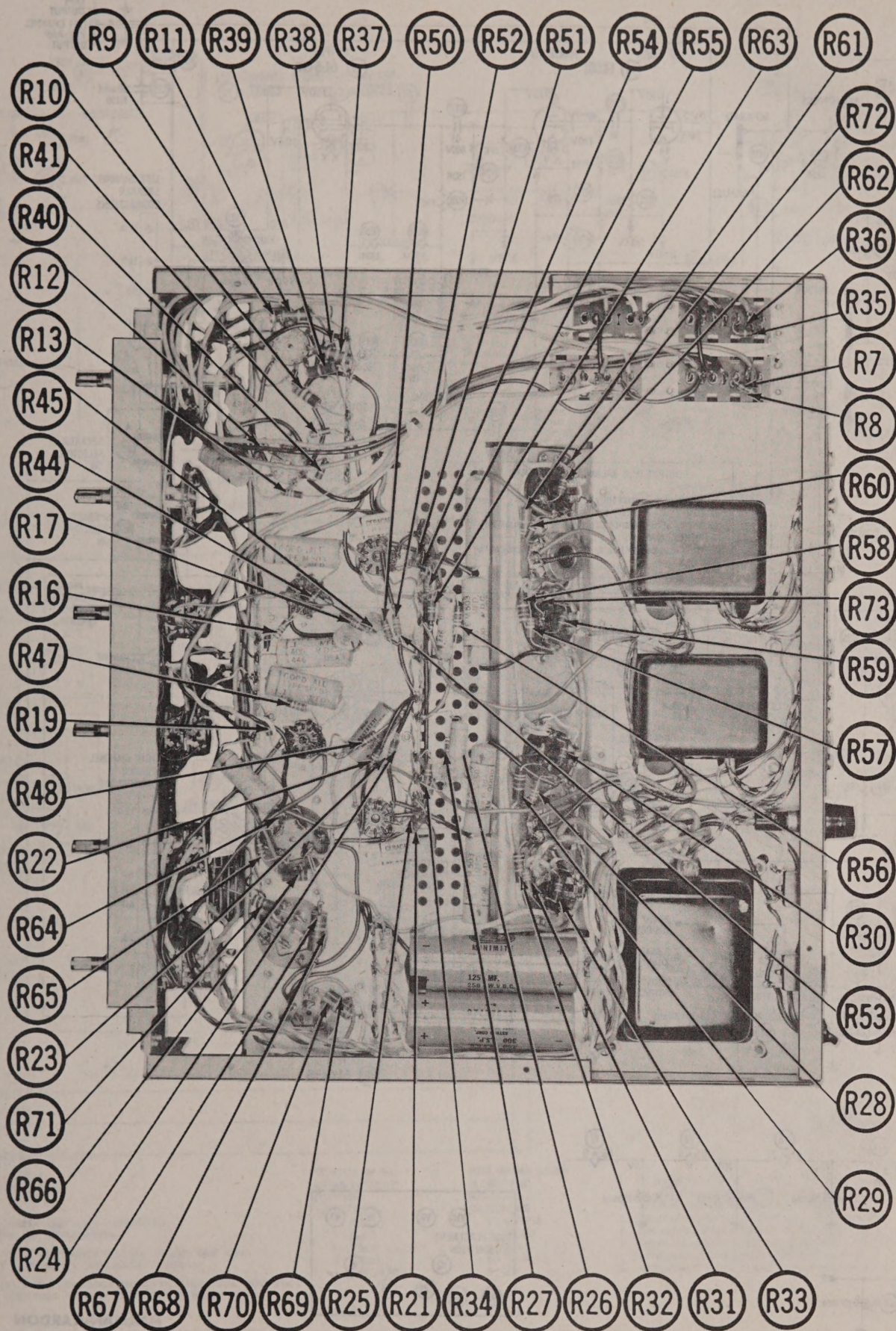
NC
TP

NO CONNECTION
TIE POINT

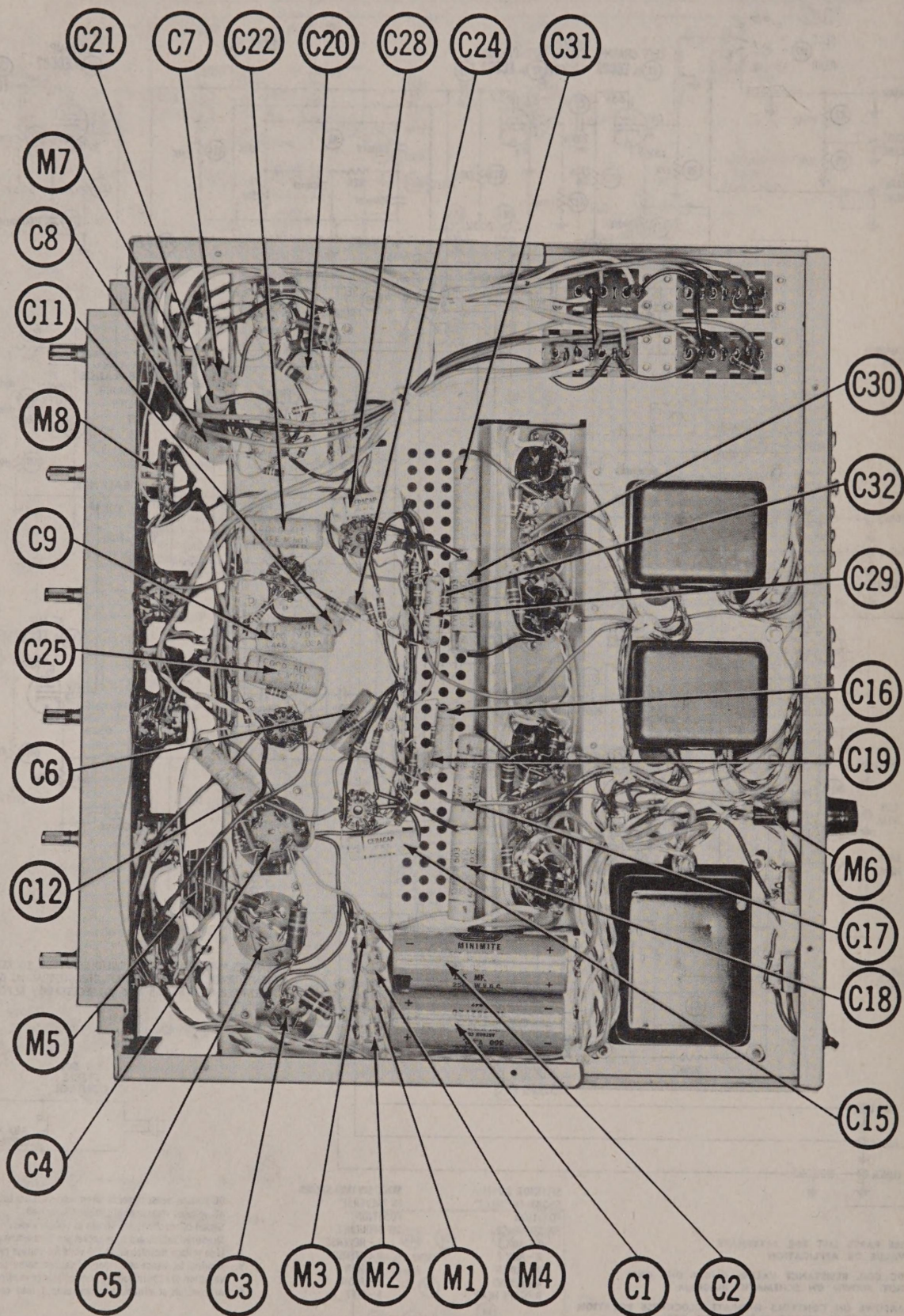


CHASSIS-TOP VIEW





CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



CHASSIS BOTTOM VIEW - CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

• CBS •		GENERAL ELECTRIC		• RAYTHEON •		• SYLVANIA •	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE		
V1	Left Channel Phono-Tape Preamp. - Right Channel Phono-Tape Preamp.	ECC83/12AX7	V5	Left Channel AF Amp. - Left Channel Phase Inv.	ECC81/12AT7		
V2	Left Channel Phono-Tape Preamp. - Right Channel Phono-Tape Preamp.	ECC83/12AX7	V6	Left Channel Output	6L6GB		
V3	Left Channel AF Amp. - Left Channel AF Amp.	ECC82/12AU7	V7	Left Channel Output	6L6GB		
V4	Left Channel AF Amp. - Right Channel AF Amp.	ECC82/12AU7	V8	Right Channel AF Amp. - Right Channel Phase Inv.	ECC81/12AT7		
			V9	Right Channel Output	6L6GB		
			V10	Right Channel Output	6L6GB		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	AEROVOX PART No.	CORNEILL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	
C1	125	250	PR51595	BBRTV4125	TVAS-1524 *		
C2	125	250	PR51595	BBRTV4125	TVAS-1524 *		
C3A	20	450	AFH3-166-15	CI300	TVL-1714		
C4A	150	50			TVL-1311		
C5A	30	400	AFH4-06	D0050	TVL-4769.4		
C6	20	300					
C7	20	300					
C8	20	300					
C9	20	300					
C10	20	300					
C11	20	300					
C12	20	300					
C13	20	300					
C14	20	300					
C15	20	300					
C16	20	300					
C17	20	300					
C18	20	300					
C19	20	300					
C20	20	300					
C21	20	300					
C22	20	300					
C23	20	300					
C24	20	300					
C25	20	300					
C26	20	300					
C27	20	300					
C28	20	300					
C29	20	300					
C30	20	300					
C31	20	300					
C32	20	300					

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA				REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNEILL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
	CAP.	VOLT.											
C7	20000	50						BPD-02	DD-203	BYB652	CCD-203	B-120	5HK-S20
C8	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C9	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C10	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C11	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C12	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C13	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C14	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C15	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C16	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C17	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C18	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C19	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C20	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C21	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C22	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C23	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C24	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C25	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C26	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C27	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C28	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C29	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C30	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C31	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5
C32	20000	50						P488N-05	DD-203	CUB455	4DP-3-503	GEM-415	4TM-S5

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

† Alternate

FOLDER 7

HARMAN-KARDON
MODEL A-250

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESIST. ANCE	WATTS	HARMAN-KARDON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	
R1A	250K *		RV2382670	B-59	AD47-500K-S	Q11-133	Loudness, Left Channel
R2A	500K *		RV2382672	SR-59	Not Req.	M11-133	Loudness, Right Channel
R3A	500K *		RV2382671	BT-64	KSS-3	Not Req.	Balance, Left Channel
R4A	500K *		RV2382673	SR-64	Not Req.	Not Req.	Balance, Right Channel
R5A	500K *		RV2382673	KR-1	AD47-1meg-S	Q11-137	Treble, Left Channel
R6A	500K *		RV2382673	SR-69	Not Req.	M11-137	Treble, Right Channel
R7A	500K *		RV2382673	SR-69	Not Req.	Not Req.	Power Off-On
R8A	500K *		RV2382673	SR-69	Not Req.	Not Req.	Bass, Left Channel
R9A	500K *		RV2382673	SR-69	Not Req.	Not Req.	Bass, Right Channel
R10A	500K *		RV2382673	SR-69	Not Req.	Not Req.	Output Balance, Right Chan.
R11A	500K *		RV2382673	SR-69	Not Req.	Not Req.	Output Balance, Left Chan.

* Tap at 125K
† Tap at 250K
* "STA-LOC" equivalent: FA551L, RU551L, CS3500.
* "STA-LOC" equivalent: FA161L, RU161L, CS3500.

RESISTORS

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

ITEM No.	RATING		REPLACEMENT DATA				REMARKS
	ITEM No.	RATING	ITEM No.	RATING	ITEM No.	RATING	
R7	R30	180Ω	R30	180Ω	R30	180Ω	Note 1
R8	R31	330K	R31	330K	R31	330K	Note 2
R9	R32	330Ω 1W	R32	330Ω 1W	R32	330Ω 1W	
R10	R33	180Ω	R33	180Ω	R33	180Ω	
R11	R34	15K	R34	15K	R34	15K	
R12	R35	1meg	R35	1meg	R35	1meg	
R13	R36	100K	R36	100K	R36	100K	
R14	R37	47K 1W	R37	47K 1W	R37	47K 1W	
R15	R38	270K 1W	R38	270K 1W	R38	270K 1W	
R16	R39	150Ω 1W	R39	150Ω 1W	R39	150Ω 1W	
R17	R40	1meg	R40	1meg	R40	1meg	
R18	R41	270K	R41	270K	R41	270K	
R19	R42	680K	R42	680K	R42	680K	
R20	R43	270K	R43	270K	R43	270K	
R21	R44	47K	R44	47K	R44	47K	
R22	R45	120Ω	R45	120Ω	R45	120Ω	
R23	R46	39K	R46	39K	R46	39K	
R24	R47	68K	R47	68K	R47	68K	
R25	R48	820Ω	R48	820Ω	R48	820Ω	
R26	R49	15K	R49	15K	R49	15K	
R27	R50	220K	R50	220K	R50	220K	
R28	R51	1meg	R51	1meg	R51	1meg	
R29	R52	27K	R52	27K	R52	27K	

Note 1. Not used in some versions.
Note 2. R26, & R55 matched within 2%.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Harman-Kardon PART No.	REPLACEMENT DATA
K1	Left Channel Equalization Comp.	150mmf, 200mmf, 1500mmf, 47K, 150K, 220K	PC2382926	Sprague TC-21
K2	Left Channel Scratch Filter Comp.	100mmf, 100mmf, 200mmf, 82K, 150K, 150K	PCCOM2927	Sprague TC-19
K3	Left Channel Tone Comp.	100mmf, 3900mmf, 3900mmf, 1000K, 100K, 100K, 470K	PC2382890	Sprague TC-20
K4	Right Channel Equalization Comp.	150mmf, 200mmf, 1500mmf, 1000K, 100K, 220K	PC2382926	Sprague TC-21
K5	Right Channel Scratch Filter Comp.	100mmf, 100mmf, 200mmf, 82K, 150K, 150K	PCCOM2927	Sprague TC-19
K6	Right Channel Tone Comp.	100mmf, 3900mmf, 3900mmf, 1000K, 100K, 100K, 470K	PC2382890	Sprague TC-20

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	Harman-Kardon PART No.	Holldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.
T1	117V @ 1.4A	150V @ .8A (AC)	15V @ .3A	FT2382865				
	SEC. 3	SEC. 4	SEC. 5					
	6.3V @ 4.5A							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Harman-Kardon PART No.	Holldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	
T2	7000Ω 32Ω CT	Tap @ 16Ω, 8Ω, 4Ω	FT2382866					
T3	7000Ω 32Ω CT	Tap @ 16Ω, 8Ω, 4Ω	FT2382866					

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA					NOTES
		Harman-Kardon PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.190A	22382924 ①	5E4 ①	HA154 ①	40K ①	SR500 ①	① Silicon Type
M2	.190A	22382924 ①	5E4 ①	HA154 ①	40K ①	SR500 ①	② Selenium Type
M3	.190A	22382924 ①	5E4 ①	HA154 ①	40K ①	SR500 ①	
M4	.190A	22382924 ①	5E4 ①	HA154 ①	40K ①	SR500 ①	
M5	.295A	22382779 ②	B1B ②	1016 ②	304B ①		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				
			Harman-Kardon PART No.	HOLDER	FUSE	HOLDER	BUSS PART No.
M6	3AG	4A 250V			312004 (3AG 4A 250V)	342001	MTH 4 HKP

MISCELLANEOUS

ITEM No.	PART NAME	Harman-Kardon PART No.	NOTES
M7	Switch	ER2382722	Function
M8	Switch	ER2383123	Mode
M9	Switch	ESCOM2727	Scratch Filter (DPDT, Slide Type)
M10	Switch	ESCOM2727	Rumble Filter (DPDT, Slide Type)
M11	Switch	ES1021117	Contour (DPDT, Slide Type)
M12	Switch	ESCOM2727	Equalization (DPDT, Slide Type)
M13	Switch	ES7713172	Separate-Parallel (SPDT, Slide Type)
M14	Switch	ESCOM2727	Speaker, All-One (DPDT, Slide Type)
M15	Switch	ESCOM2727	Speaker, A-B (DPDT, Slide Type)

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

NAME	PART NO.	DESCRIPTION
Knob	PCCM2840	

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)