

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
	SEC. 2	SEC. 3				
PT	120V AC @ 335mA AC	21V AC @ 1.006A DC	S01P001-C/4774B			
	16.78V AC @ 410mA DC Tap @ 5.65V AC @ 450mA AC					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	PM, 8 Ohms			
SP2	PM, 8 Ohms			

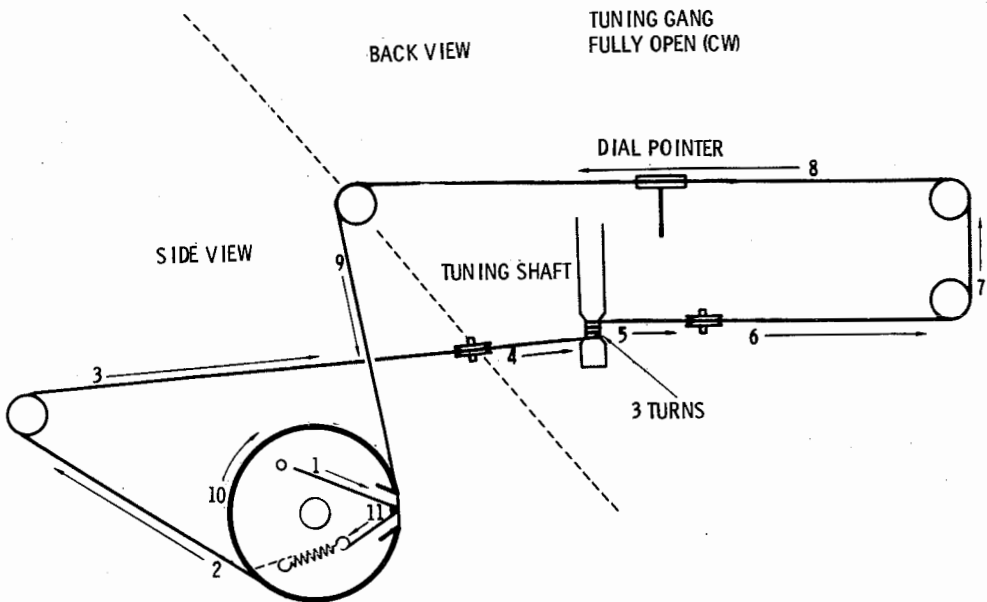
PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA						NOTES
	MFGR. PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		
	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1			N782-sd			3395DS	
M2							

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF	Ceramic Filter	SFE10.7MA5-Z	10.7MHz
M3	Tape Head		8-Track Stereo Play
M4	Solenoid	560-04-05	Headshift
M5	Motor	TP8-212	Changer
M6	Motor		Tape Transport (2500 rpm @ 13.80V DC)
P1	AC Cord	S01P025-4/4774B	
SW1	Switch	SUB54	Function, AM/FM/FM Stereo/Phono/Tape/Aux
SW2	Switch	SUE24	Speakers
SW3	Switch	SDG2P-J	AC Power
SW4	Switch	SW-9-R	Manual Program Select
SW5	Switch	560-05-00	Auto Program Select (Actuated by foil on tape)
SW6	Switch	560-01-06	Tape Transport (Actuated by insertion of tape cartridge)
	Printed Circuit Board	S01P017-A/4774B	Lamp
	Printed Circuit Board	S01P015-A/4774B	Main
	Printed Circuit Board	S01P016-A/4774B	Tone
	Hold Down Arm	B110406	
	Idler Wheel	A101623	E-V/GAME Replacement Number 1499-34. WALSCO Replacement Number 1499-34.
	Switch	B110982	
	Tone Arm	B106660	
	45 RPM Adaptor	PS899	

DIAL CORD STRINGING

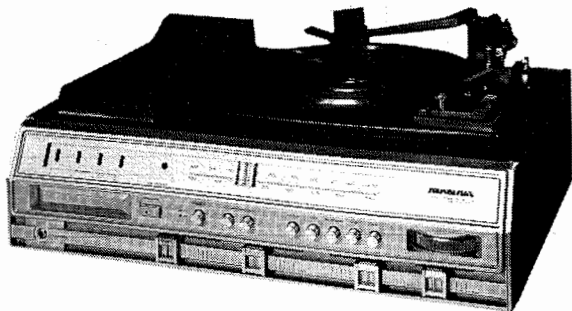


SET 1775 FOLDER 3

SOUNDESIGN MODELS  
4448B, 4774B

PHOTOFACT® Folder with CIRCUITRACE®

For Supplier Address See PHOTOFACT Index



MODEL 4774B

RECORD CHANGER SERVICING

BSR Record Changer Number C123R2D6

ADJUSTMENTS

TONE ARM SETDOWN

Adjust screw B1 so the needle sets down in the center of the lead-in groove on a 12-inch record. Turning the screw clockwise moves the set-down point outward.

TONE ARM HEIGHT

Adjust B2 so the top of the tone arm clears a 12-inch record on the center spindle shelf during the change cycle. Turning B2 clockwise decreases the lift-up height.

NEEDLE PRESSURE

Nominal pressure 3 to 4 grams. Adjust B3 to obtain correct needle pressure. Turning B3 clockwise decreases needle pressure.

CLEANING

Use a cloth dampened with isopropyl alcohol to clean the driving surfaces of the idler wheel, motor shaft and inside rim of the turntable.

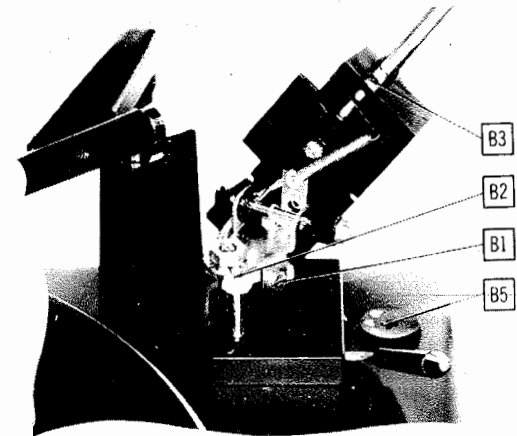
LUBRICATION

Apply light nonhardening grease to sliding cam surfaces and pivot points, light machine oil on the tone arm lift rod, idler wheel bearings, and motor bearings.

DO NOT lubricate turntable driving surface, the teeth on cycling gear or turntable hub.

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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 the particular type of replacement part listed. 8PL2120



SOUNDESIGN MODELS  
4448B, 4774B

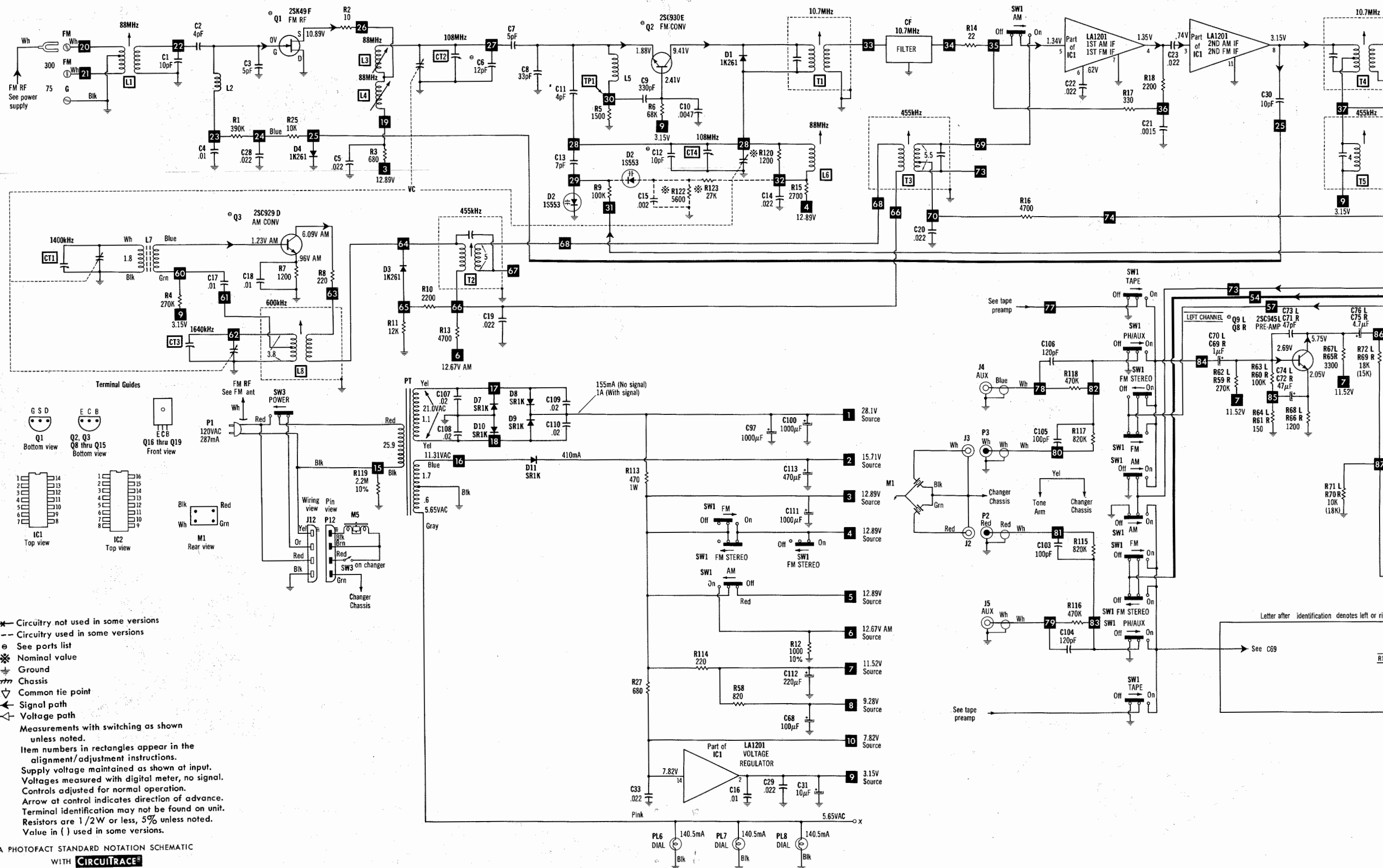
SOUNDESIGN MODELS  
4448B, 4774B

SET 1775 FOLDER 3

DATE 11-78

SET 1775 FOLDER 3

NOTE: DEMAGNETIZE HEADS AFTER SERVICING



PARTS LIST AND DESCRIPTION (CONTINUED)  
(When ordering parts, state Model, Part Number, and Description.)

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C24	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C25	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C31	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C36	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C40	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C41	.33 16V			TDC334M050EL	QDT1-14	SD50-R339
C42	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C43	.22 16V			TDC224M050EL	QDT1-10	SD50-R229
C44	.47 16V		PC1-50	VTT4R7A63	QV1-3	EV-1610
C48	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C49	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C56	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C57	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C62	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C63	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C65	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C66	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C68	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C69	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C70	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C72	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C74	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C75	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C76	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C89	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C90	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C91	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C92	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C93	220 25V		PC250-25	VTT220K25	QV1-119	EV-1340
C95	220 25V		PC250-25	VTT220K25	QV1-119	EV-1340
C97	1000 35V		WBR1000-50*Q	TC50100C*	QE1-594*	TVA-1316*
C98	470 25V		WBR500-25*	VTT470M25	QV1-153	EV-1350
C100	1000 35V		WBR1000-50*	TC50100C*	QE1-594*	TVA-1316*
C101	470 25V		WBR500-25*	VTT470M25	QV1-153	EV-1350
C111	1000 10V		PC1000-16	VTT1000L10	QV1-179	EV-1160
C112	220 25V		PC250-25	VTT220K25	QV1-119	EV-1340
C113	470 25V		WBR500-25*	VTT470M25	QV1-153	EV-1350

\* Axial replacement for radial device.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
						Q-LINE
C1	10 50V +.5		DTZ-10	NP010	CND410	10TCC-Q10
C2	4 50V +.5		DTZ-4R7	NP04P7	CND547	10TCC-V47
C3	5 25V +.5		DTZ-4R7	NP04P7	CND547	10TCC-V47
C4	.01 25V		UK50-103		MAG5011	
C5	.022 25V		UK25-223			
C6	10 25V +.5		DTZ-10	NP010	CND410	HY-725
C7	5 25V +.5		DTZ-4R7	NP04P7	CND547	10TCC-Q10
C8	33 25V 10%		DTZ-33	NP033	CND433	10TCC-V47
C9	330 25V 10%		00-331	GP330	GP333	10TCC-Q33
C10	.0047 25V		DO-472	GP4700	GP247	10TS-T33
C11	4 25V +.5		DTZ-4R7	NP04P7	CND547	5GA-D47
C12	10 25V +.5		DTZ-10	NP010	CND410	10TCC-V47
C13	7 25V +.5		DTZ-6R8	NP06P8	CND568	10TCC-Q10
C14	.022 25V		UK25-223			10TCC-V68
C15	.002 25V				GP220	HY-725
C16	.01 25V		UK50-103		MAG5011	10TS-D20
C17	.01 25V		UK50-103		MAG5011	
C18	.01 50V 10%			WMF1S1	EWFA110	
C19	.022 25V		UK25-223			QFT2-91
C20	.022 25V		UK25-223			1FT-S10
C21	.0015 25V		DO-152		GP215	HY-725
C22	.022 25V		UK25-223			10TS-D15
C23	.022 25V		UK25-223			HY-725
C26	.01 25V		UK50-103		MAG5011	HY-725
C27	.01 25V		UK50-103		MAG5011	
C28	.022 25V		UK25-223			
C29	.022 25V		UK25-223			
C30	10 25V +.5		DTZ-10	NP010	CND410	HY-725
C32	.01 25V		UK50-103		MAG5011	10TCC-Q10
C33	.022 25V		UK25-223			
C34	.01 25V		UK50-103		MAG5011	HY-725
C37	100 25V 10%		DTZ-100	NP0100	CND310	10TCC-T10
C38	100 25V 10%		DTZ-100	NP0100	CND310	10TCC-T10
C39	.022 25V		UK25-223			HY-725
C45	.0015 25V 10%			CD19FD152J03	SX215	MWC-152

PARTS LIST AND DESCRIPTION (CONTINUED)  
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C46	.015 50V 10%			WMF1S15	M192P1539R8	QFT2-105	1FT-S15
C47	.015 50V 10%			WMF1S15	M192P1539R8	QFT2-105	1FT-S15
C50	.0033 50V 10%			WMF1D33	M192P3329R8	QFT2-43	1FT-D33
C51	.0033 50V 10%			WMF1D33	M192P3329R8	QFT2-43	1FT-D33
C52	.0068 50V 10%			WMF1D68	EWFA268	QFT2-73	1FT-D68
C53	.0068 50V 10%			WMF1D68	EWFA268	QFT2-73	1FT-D68
C54	.001 50V 10%			DPM56D1	EWFA210	QFT2-1	1FT-D10
C55	.001 50V 10%			DPM56D1	EWFA210	QFT2-1	1FT-D10
C58	47 25V 10%		DTZ-47	NP047	CND447		10TCC-Q47
C59	47 25V 10%		DTZ-47	NP047	CND447		10TCC-Q47
C60	47 25V 10%		DTZ-47	NP047	CND447		10TCC-Q47
C61	47 25V 10%		DTZ-47	NP047	CND447		10TCC-Q47
C64	.0068 50V 10%			WMF1D68	EWFA268	QFT2-73	1FT-D68
C67	.0068 50V 10%			WMF1D68	EWFA268	QFT2-73	1FT-D68
C71	47 25V 10%		DTZ-47	NP047	CND447		10TCC-Q47
C73	47 25V 10%		DTZ-47	NP047	CND447		10TCC-Q47
C77	.0022 50V 10%			DPM56D22	M192P2229R8	QFT2-27	1FT-D22
C78	.022 50V 10%			DPM52S22	M192P2239R8	QFT2-127	1FT-S22
C79	.0022 50V 10%			DPM56D22	M192P2229R8	QFT2-27	1FT-D22
C80	.022 50V 10%			DPM52S22	M192P2239R8	QFT2-127	1FT-S22
C81	.022 50V 10%			DPM52S22	M192P2239R8	QFT2-127	1FT-S22
C82	.1 50V 10%			WMF05P1	EWFO510	QFT2-215	1FT-P10
C83	.022 50V 10%			DPM52S22	M192P2239R8	QFT2-127	1FT-S22
C84	.1 50V 10%			WMF05P1	EWFO510	QFT2-215	1FT-P10
C85	.001 50V 10%			DPM56D1	EWFA210	QFT2-1	1FT-D10
C86	.1 50V 10%			WMF05P1	EWFO510	QFT2-215	1FT-P10
C87	.001 50V 10%			DPM56D1	EWFA210	QFT2-1	1FT-D10
C88	.1 50V 10%			WMF05P1	EWFO510	QFT2-215	1FT-P10
C94	470 25V 10%		DD-471	GP470	GP347		10TS-T47
C96	470 25V 10%		DD-471	GP470	GP347		10TS-T47
C99	.047 25V		UK25-503		MAG2515		HY-735
C102	.047 25V		UK25-503		MAG2515		HY-735
C103	100 25V 10%		DTZ-100	NP0100	CND310		10TCC-T10
C104	120 25V 10%		DTZ-120	NP0100	CND312		10TCC-T12
C105	100 25V 10%		DTZ-100	NP0100	CND310		10TCC-T10
C106	120 25V 10%		DTZ-120		CND312		
C107	.02 50V		UK50-223		MAG5012		
C108	.02 50V		UK50-223		MAG5012		
C109	.02 50V		UK50-223		MAG5012		
C110	.02 50V		UK50-223		MAG5012		
CT1							
CT2							
CT3							
CT4							
VC		CTY112A C-145					

CONTROLS (All wattages 1/2 watt, or less, unless listed)

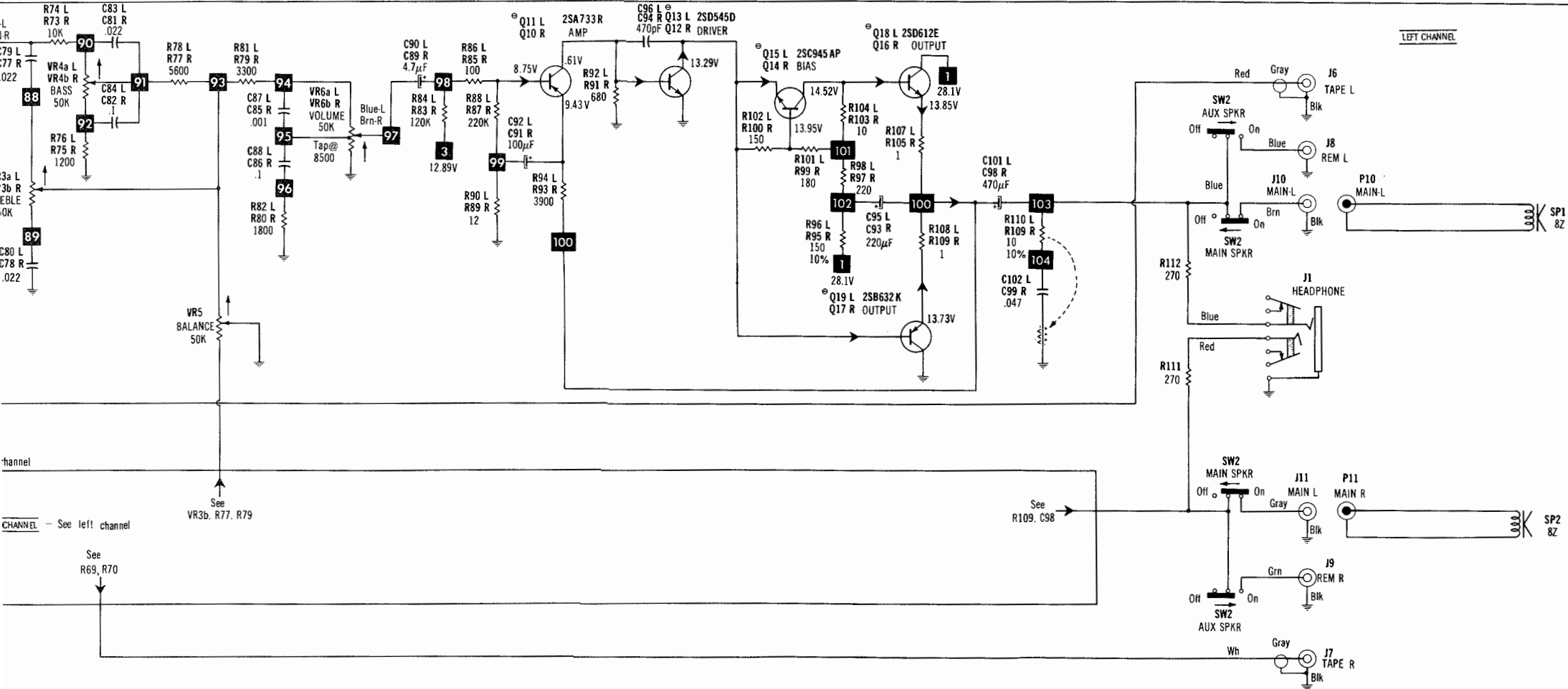
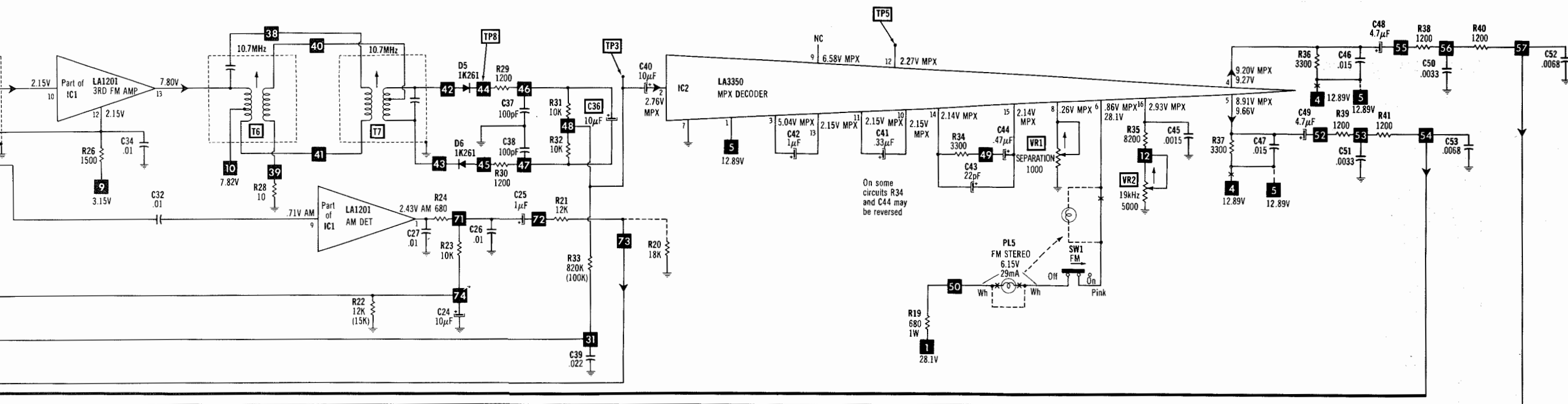
ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	Separation	1000				
VR2	19kHz	5000	VRFR-085B			U260R102B
VR3a	Treble-Left	50K	MEJ3R501-50KA			U260R502B
b	Treble-Right	50K				
VR4a	Bass-Left	50K	MEJ3R501-50KA			
b	Bass-Right	50K				
VR5	Balance	50K	LEE3R502-50KW			
VR6a	Volume-Left	50K Tap @ 8500	MEJ3B500-5DKA			
b	Volume-Right	50K Tap @ 8500				

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	FM Antenna	S01P018-A/1/2-2/2/477B	LA-001FM		
L2	FM Antenna	S01P019-A/477B	L-001		
L3	FM RF	S01P013-A/477B	L-002		
L4	FM RF	S01P021-A/477B	L-005		
L5	RF Choke	S01P020-A/477B	L-003		
L6	FM Oscillator	S01P012-A/477B	L-004		
L7	AM Antenna	S01P014-B/4798	LA-001MM		
L8	AM Oscillator	S01P003-A/477B	41K-097-414		
T1	1st FM IF	S01P007-A/477B	02K542		
T2	1st AM IF	S01P004-A/477B	194A		
T3	1st AM IF	S01P005-A/477B	194B		
T4	2nd FM IF	S01P008-A/477B	SB126		
T5	2nd AM IF	S01P006-A/477B	HAS-311		
T6	Ratio Detector (Pri.)	S01P009-A/477B	SB127		
T7	Ratio Detector (Sec.)	S01P010-A/477B	SB128		

SOUNDSECTION MODELS  
44AB, 477AB

FOLDER 3



# PARTS LIST AND DESCRIPTION

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## WIRING DATA

General-use Unshielded Hook-up Wire .....	Use BELDEN No. 8528 (Solid) Available in 13 Colors
Power Cord .....	Use BELDEN No. 8522 (Stranded) Available in 13 Colors
Power Cord (Interlock Type) .....	Use BELDEN No. 17106 (Plastic) -6 Ft.
Low-loss Shielded Lead (Interconnecting) .....	Use BELDEN No. 17109 (Plastic) -9 Ft.
Phono Pick-up Arm Cable .....	Use BELDEN No. 8874 (Rubber), 8895 (Plastic) or 8873 (Plastic)
	Use BELDEN No. 8401 or 8421
	Use BELDEN No. 8430 (Two-Conductor-Unshielded)
	8429 (Two-Conductor-Shielded)
	8419 (Three-Conductor-Shielded)

## SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D1	1K261		1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-29001
D2	1S553				HEPR2502	REN 612			ECG612			103-176
D3	1K261		1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-29001
D4	1K261		1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-29001
D5	1K261		1N34AS(7)	PTC207M(6)	HEPR9134A(7)	REN 110(6)	SK3087(7)	RT-200(7)	ECG110(6)	TM110(6)/**	WEP134(7)	103-29001(7)
D6	1K261											
D7	SR1K		GE-504A	PTC201	HEPRO052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D8	SR1K		GE-504A	PTC201	HEPRO052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D9	SR1K		GE-504A	PTC201	HEPRO052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D10	SR1K		GE-504A	PTC201	HEPRO052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D11	SR1K		GE-504A	PTC201	HEPRO052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D12			GE-504A	PTC201	HEPRO052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
IC1	LA1201		GEIC-43		HEPC6063P	REN 1003	SK3288	TVM-75	ECG1003	TM1003/**	WEP2122	221-48
IC2	LA3350		GEIC-76				SK3700		ECG1217	TM1217		
Q1	2SK49F		GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	TM312		121-756
	2SK49		GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	TM312		121-756
Q2	2SC930E		GE-60*	PTC132*	HEPS0016*	REN 229	SK3018	RT-308	ECG229*	TM229*/**	WEP956*	121-29021*
	2SC930		GE-60*	PTC132*	HEPS0016*	REN 229	SK3018	RT-308	ECG229*	TM229*/**	WEP956*	121-29021*
Q3	2SC929D		GE-86	PTC132*	HEPS0016*	REN 229*	SK3039*	RT-108*	ECG229*	TM229*	WEP956*	121-29021*
	2SC929		GE-86	PTC132*	HEPS0016*	REN 229*	SK3039*	RT-108*	ECG229*	TM229*	WEP956*	121-29021*
Q4	2SC900F		GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-302	ECG199	TM199/**	WEP66	121-972
	2SC900		GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-302	ECG199	TM199/**	WEP66	121-972
Q5	2SC900F		GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-302	ECG199	TM199/**	WEP66	121-972
	2SC900		GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-302	ECG199	TM199/**	WEP66	121-972
Q6	2SC945L		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945AK		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q7	2SC945L		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945AK		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q8	2SC945L		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945AK		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q9	2SC945L		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945AK		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q10	2SA733R		GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP916	121-952
	2SA733		GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP916	121-952
Q11	2SA733R		GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP916	121-952
	2SA733		GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP916	121-952
Q12	2SD545D		GE-243	PTC144*	HEPS3002*	REN 293	SK3024*	RT-114	ECG293	TM293	WEP912	121-792
	2SD545		GE-243	PTC144*	HEPS3002*	REN 293	SK3024*	RT-114	ECG293	TM293	WEP912	121-792
Q13	2SD545D		GE-243	PTC144*	HEPS3002*	REN 293	SK3024*	RT-114	ECG293	TM293	WEP912	121-792
	2SD545		GE-243	PTC144*	HEPS3002*	REN 293	SK3024*	RT-114	ECG293	TM293	WEP912	121-792
Q14	2SC945AP		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q15	2SC945AP		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q16	2SD612E		GE-57	PTC163	HEPS5000	REN 184	SK3190	RT-162	ECG184	TM184	WEP701	121-29002
	2SD612K		GE-57	PTC163	HEPS5000	REN 184	SK3190	RT-162	ECG184	TM184	WEP701	121-29002
	2SD612		GE-57	PTC136	HEPS5000	REN 184	SK3190	RT-162	ECG184	TM184	WEP701	121-29002
Q17	2SB632K		GE-58	PTC162	HEPS5006	REN 185	SK3191	RT-163	ECG185	TM185	WEP700	121-988-02
	2SB632E		GE-58	PTC162	HEPS5006	REN 185	SK3191	RT-163	ECG185	TM185	WEP700	121-988-02
	2SB632		GE-58	PTC162	HEPS5006	REN 185	SK3191	RT-163	ECG185	TM185	WEP700	121-988-02
Q18	2SD612E		GE-57	PTC163	HEPS5000	REN 184	SK3190	RT-162	ECG184	TM184	WEP701	121-29002
	2SD612K		GE-57	PTC163	HEPS5000	REN 184	SK3190	RT-162	ECG184	TM184	WEP701	121-29002
	2SD612		GE-57	PTC163	HEPS5000	REN 184	SK3190	RT-162	ECG184	TM184	WEP701	121-29002
Q19	2SB632K		GE-58	PTC162	HEPS5006	REN 185	SK3191	RT-163	ECG185	TM185	WEP700	121-988-02
	2SB632E		GE-58	PTC162	HEPS5006	REN 185	SK3191	RT-163	ECG185	TM185	WEP700	121-988-02
	2SB632		GE-58	PTC162	HEPS5006	REN 185	SK3191	RT-163	ECG185	TM185	WEP700	121-988-02



ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Connect low sides of generator and indicator to ground unless specified otherwise. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period. Use only enough generator output to obtain a suitable indication.

Suggested Alignment Tools:

T1 thru T7, L8	9293-9394
CT1 thru CT4	5000
VR1, VR2	8606

FIG. 1      FIG. 2

AM ALIGNMENT—SELECTOR IN AM POSITION

Connect generator across loop fashioned of several turns of wire. Set volume at maximum.				
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
455kHz 400-hertz Modulation	Tuning gang fully open	Output meter across voice coil	T5,T3,T2	Adjust for maximum. Repeat until no further improvement is noted.
600kHz	600kHz	"	L8	Adjust for maximum.
1640kHz	1640kHz	"	CT3	Adjust for maximum.
1400kHz	1400kHz	"	CT1	Adjust for maximum. Repeat AM alignment until no further improvement is noted.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001uF to TP1.				
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non-interference	DC probe of VTVM to TPB.	(1)T6,T4,T1	Adjust for maximum.
"	"	DC probe of VTVM to TP3.	T7	Adjust for zero reading. A positive or negative reading will be obtained on either side of correct setting.

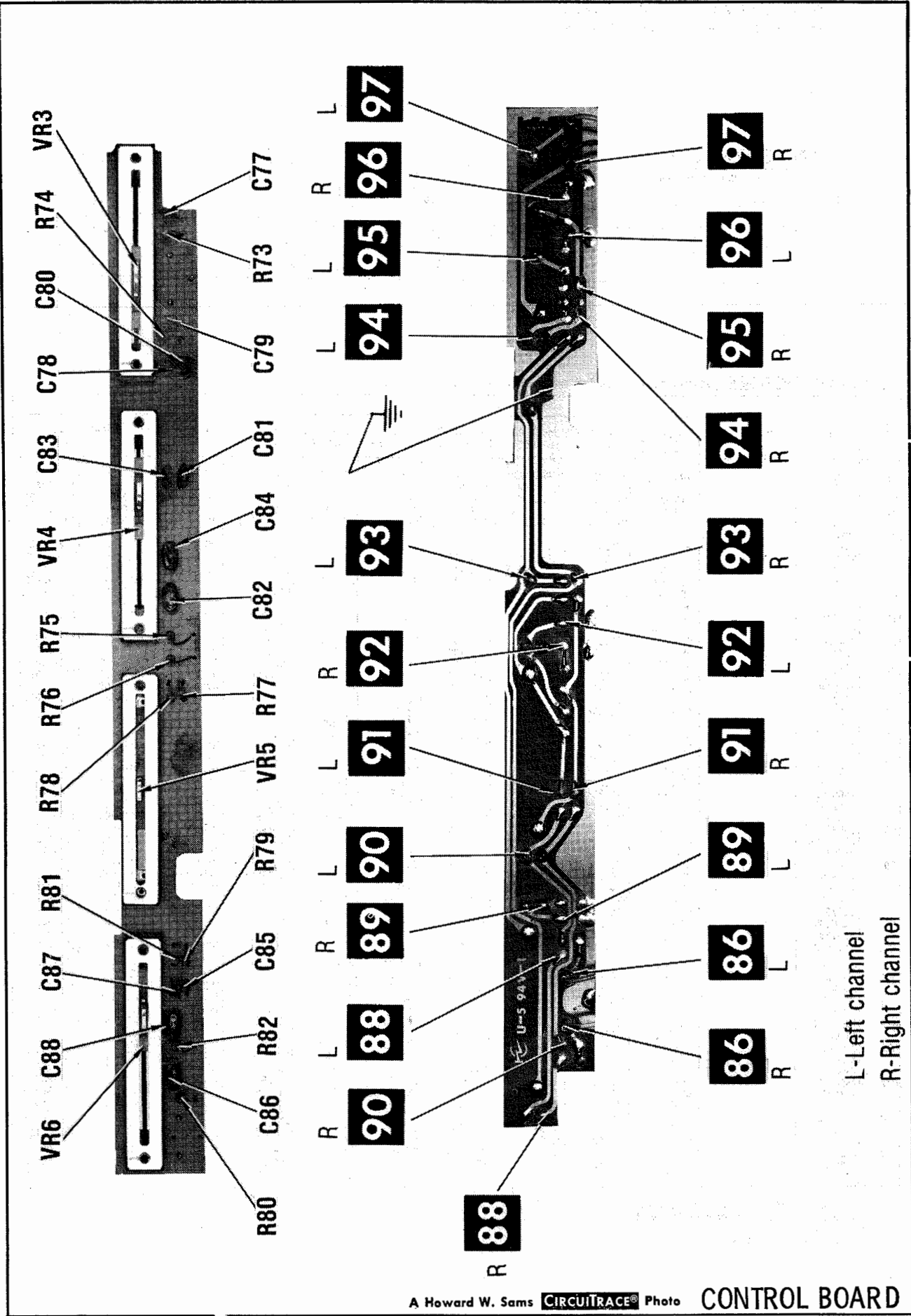
FM IF ALIGNMENT USING FM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001uF to TP1. Use 60-hertz, frequency-modulated signal, 450kHz sweep. Use 60-hertz sawtooth voltage in scope for horizontal deflection.				
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz 450kHz Sweep	Point of non-interference	Vert input of scope to TPB.	(1)T6,T4,T1	Disconnect stabilizing capacitor C36. Adjust for maximum gain and symmetry of response similar to Fig. 1. Reconnect C36.
"	"	Vert input of scope to TP3.	T7	Adjust T7 for maximum amplitude and straightness of line, similar to Fig. 2.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

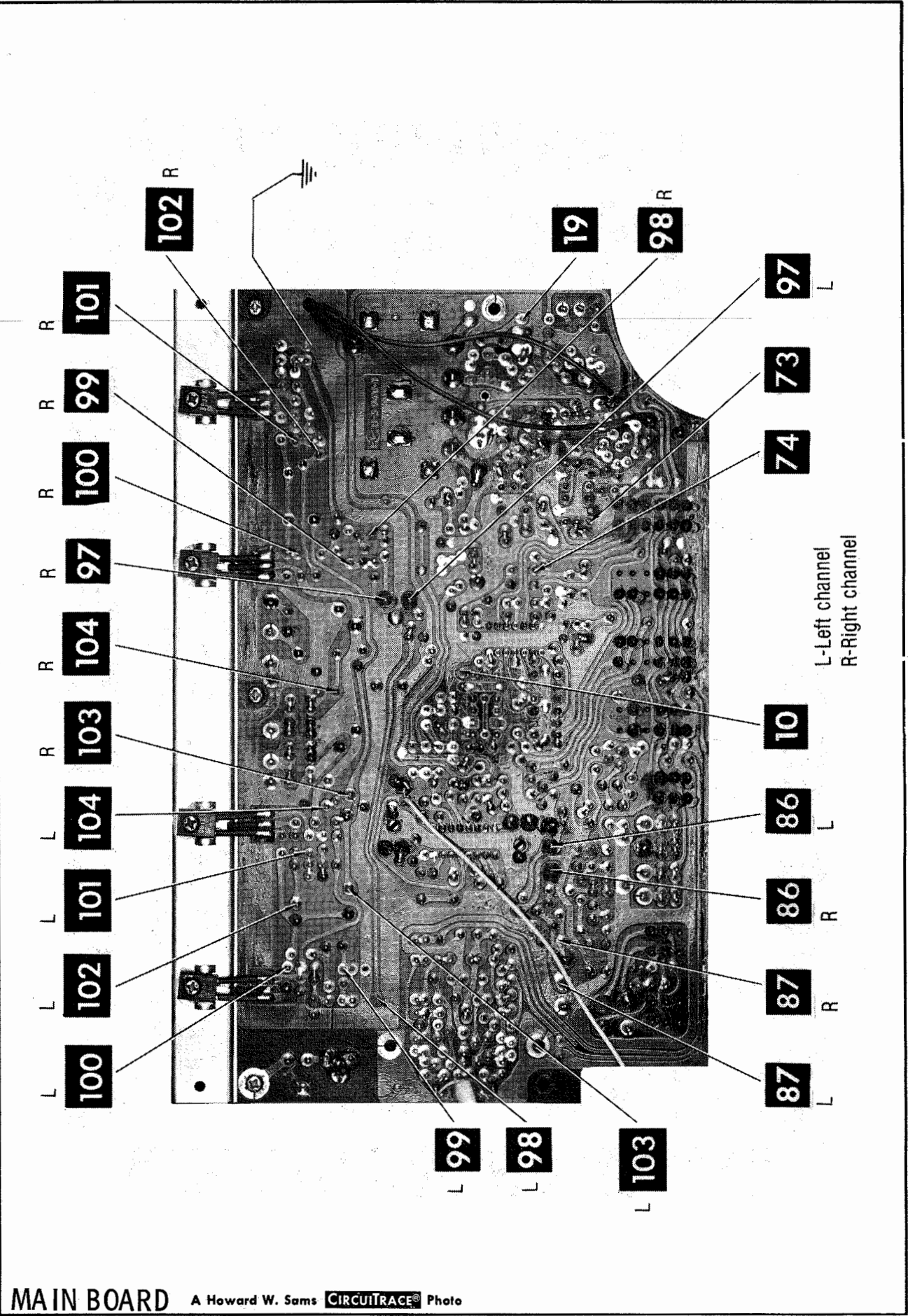
Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.				
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
88MHz Unmodulated		DC probe of VTVM to TPB.	L1,L3,L4,L6	Adjust for maximum.
108MHz Unmodulated		"	CT4,CT2	Adjust for maximum. Repeat FM RF steps until no further improvement is noted.

(1) Before adjusting, vary generator frequency slightly. Maximum output indicates exact IF.



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FOLDER 3



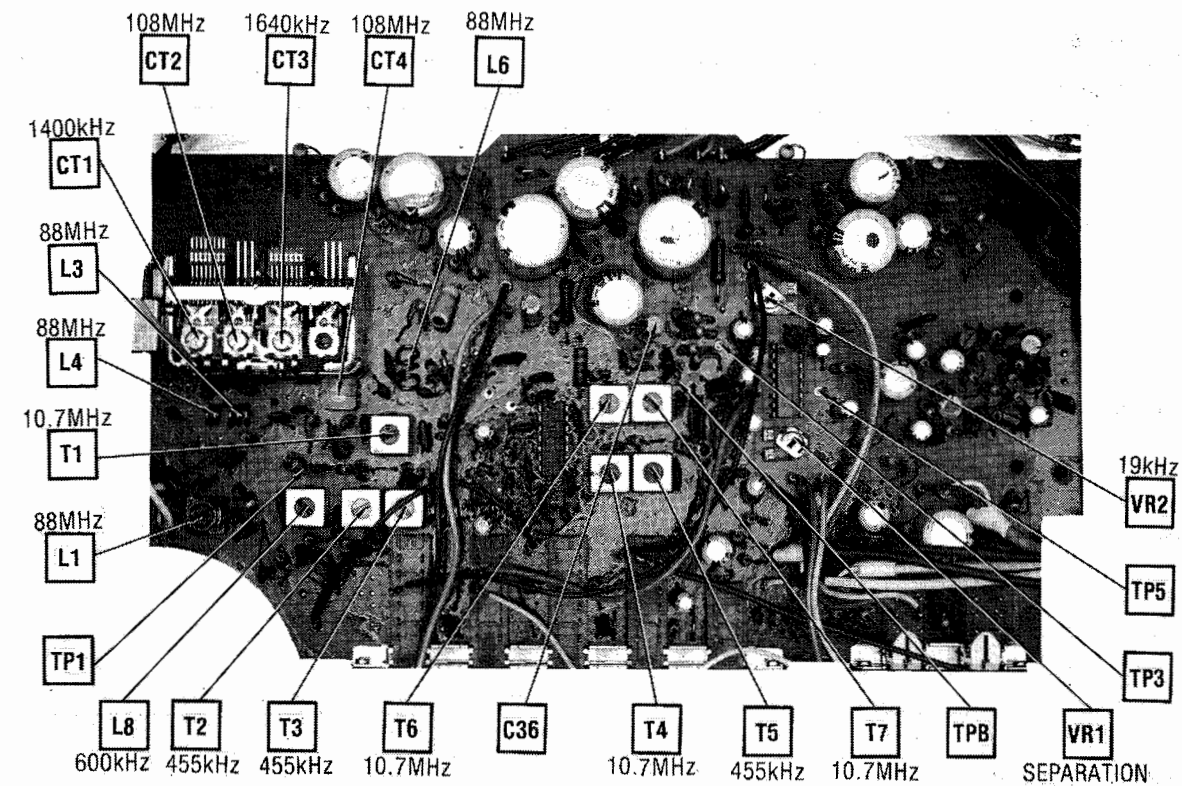
MAIN BOARD A Howard W. Sams CIRCUITRACE® Photo

# ALIGNMENT INSTRUCTIONS (Continued)

## FM STEREO ALIGNMENT USING AUDIO GENERATOR

Ground TP3.			
GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
	Connect frequency counter to TP5.	VR2	Adjust for 19kHz $\pm$ 20Hz.

Tune receiver for a stereo signal. Adjust balance control for equal channel output. Adjust Separation control VR1 for best separation.



SOUND DESIGN MODELS  
4448B, 4774B

FOLDER 3  
MAIN BOARD 3

### CLEANING

Clean all tape contact surfaces with a soft, lint-free material and head cleaner or methyl alcohol. Use alcohol to remove oil and grease from all driving surfaces.

CAUTION: Avoid getting head cleaner on any plastic surface.

### LUBRICATING

Bearings are oil-less type and do not need lubrication. Lubricate bushings lightly with #20 machine oil. Use a light film of nonhardening grease on cam surfaces.

### HEAD DEMAGNETIZING

Demagnetize head when unit is serviced. Avoid using magnetic materials near head.

### ADJUSTMENTS

ADJUST	REMARKS
Head Azimuth	Play a test cartridge and adjust Screw 54 for maximum on meter across output.
Head Height	Play a test cartridge, follow instructions with cartridge, and adjust Screw 39 for proper response.

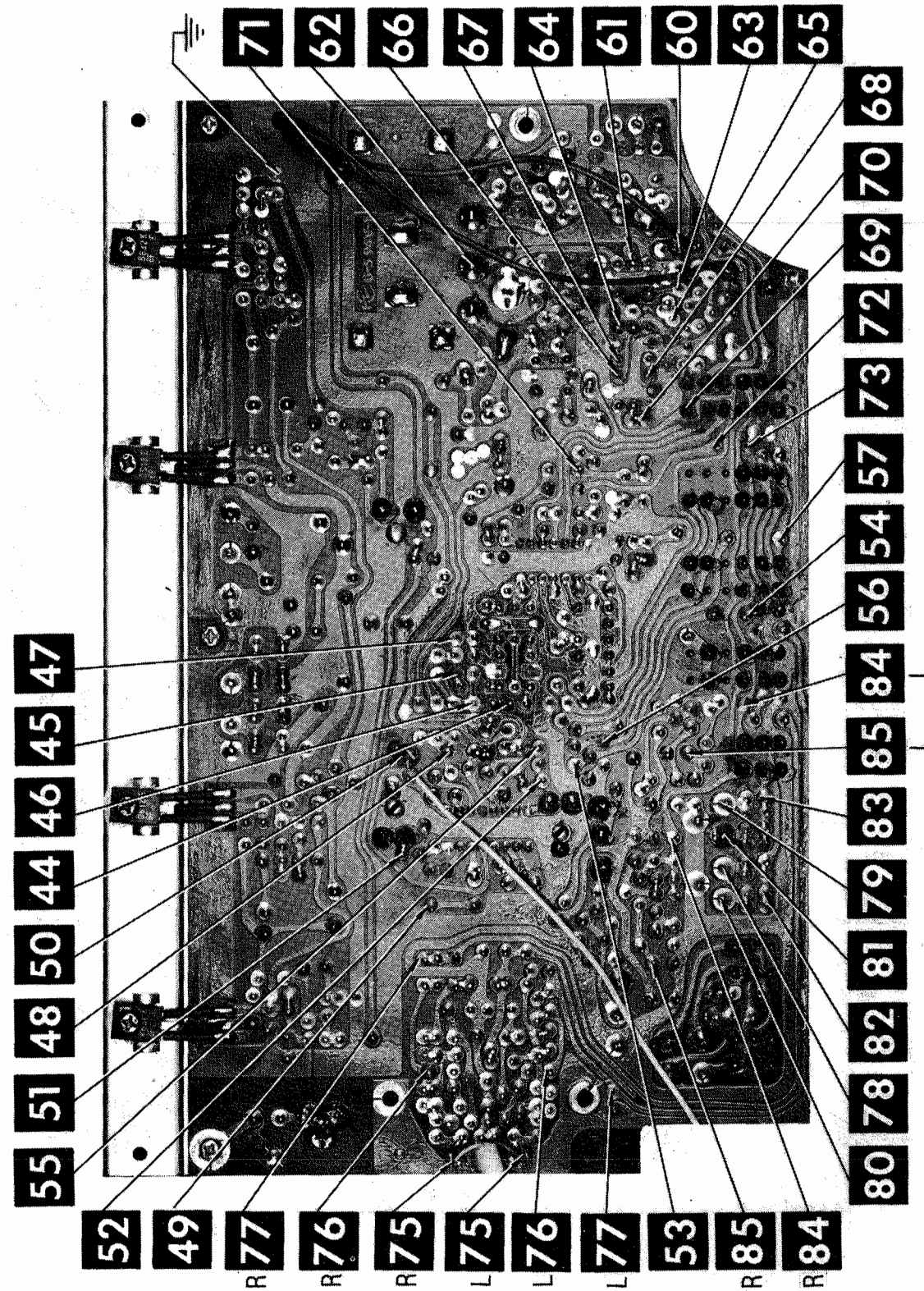
### TROUBLE CHART

SYMPTOM	REMARKS
Capstan does not rotate.	Belt 44 dirty, worn, or broken. Assembly 20 binding. Motor defective or not supplied with power.
Track-shift mechanism inoperative	Switch SW5 dirty. Cam 7 binding or worn. Pawl 28 worn. Assembly 37 binding. Solenoid M4 defective or not supplied with power. Cartridge defective.
Wow or flutter	Belt 44 dirty or worn. Capstan dirty or binding. Cartridge defective. Motor defective.
Sound weak or distorted	Head dirty, misaligned, or defective. Cartridge defective. Amplifiers defective.
Tape is pulled from cartridge.	Cartridge defective. Capstan dirty or scored.

### MECHANICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
7	560-02-02	Track Changing Cam	34	560-06-04	Detent Spring
11	560-02-05	Tension Spring	35	11-03-05	Detent Roller
13	151-02-21	Cam Tension Spring	37	560-08-01	Head Shifting Assembly
17	151-03-01B	Flywheel	39		Height Adjust Screw
18	560-03-02	Channel Cam	41	151-08-07	Head Lifting Spring
20	560-03-04	Capstan Bearing	42	11-06-08	Azimuth Spring
28	560-04-07	Pawl	43	560-09-01	Motor Pulley
29	560-04-08	Pawl Spring	44*	561-09-02*	Flywheel Drive Belt*
31	560-06-01	Detent Arm	54		Azimuth Adjust Screw

\* Flywheel Drive Belt: E-V/GAME Replacement Number 1407-71.  
WALSCO Replacement Number 1424-21.



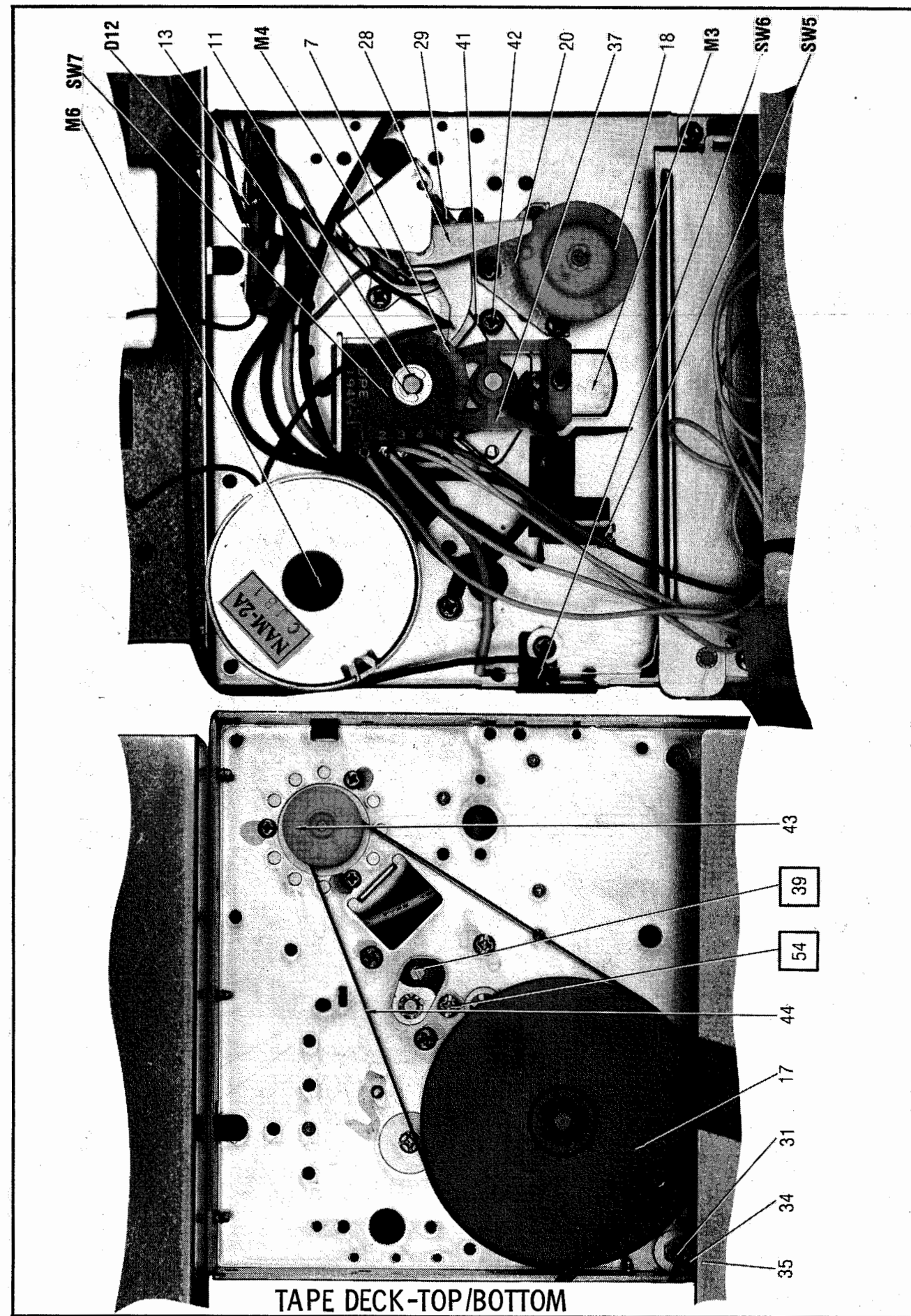
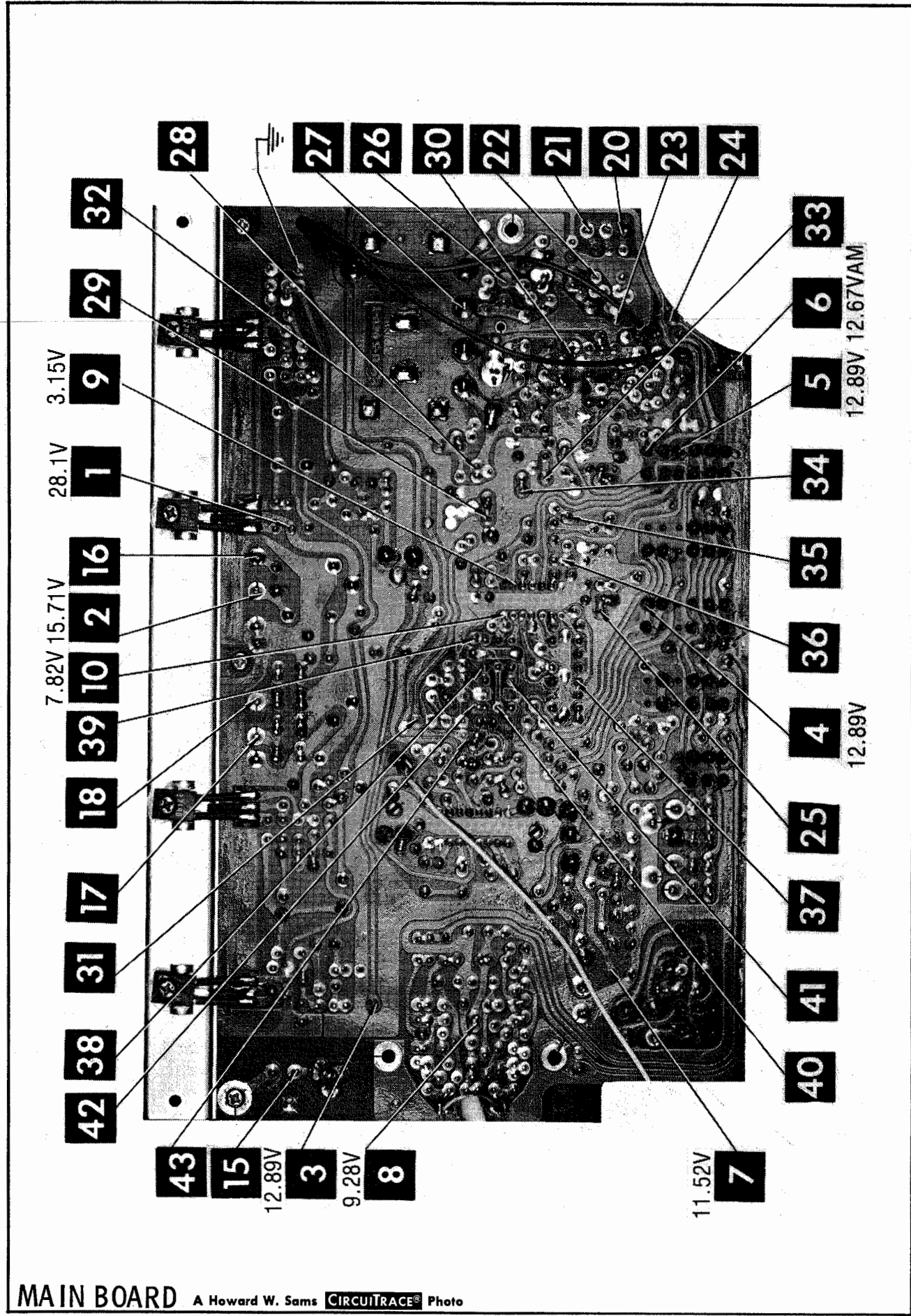
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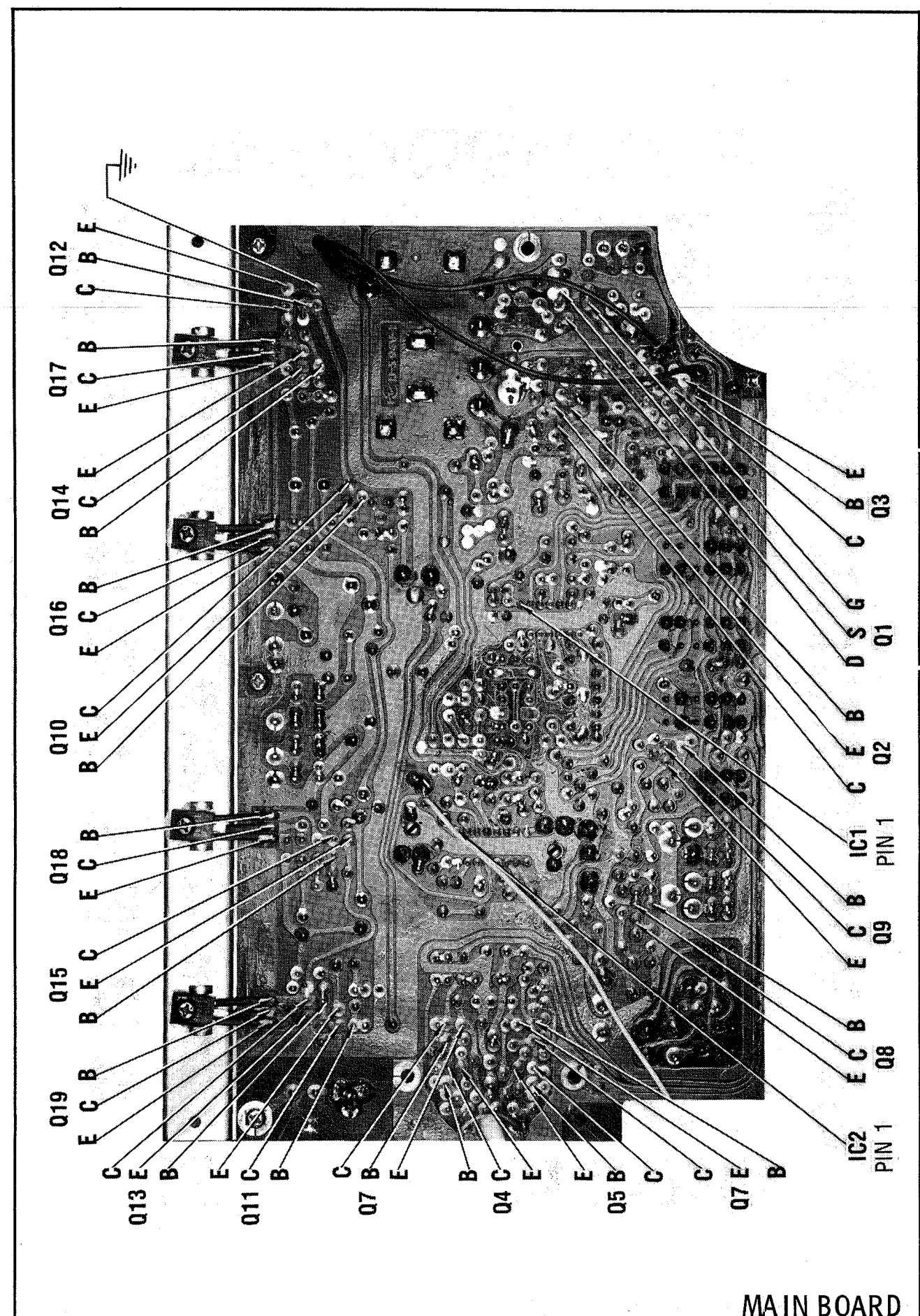
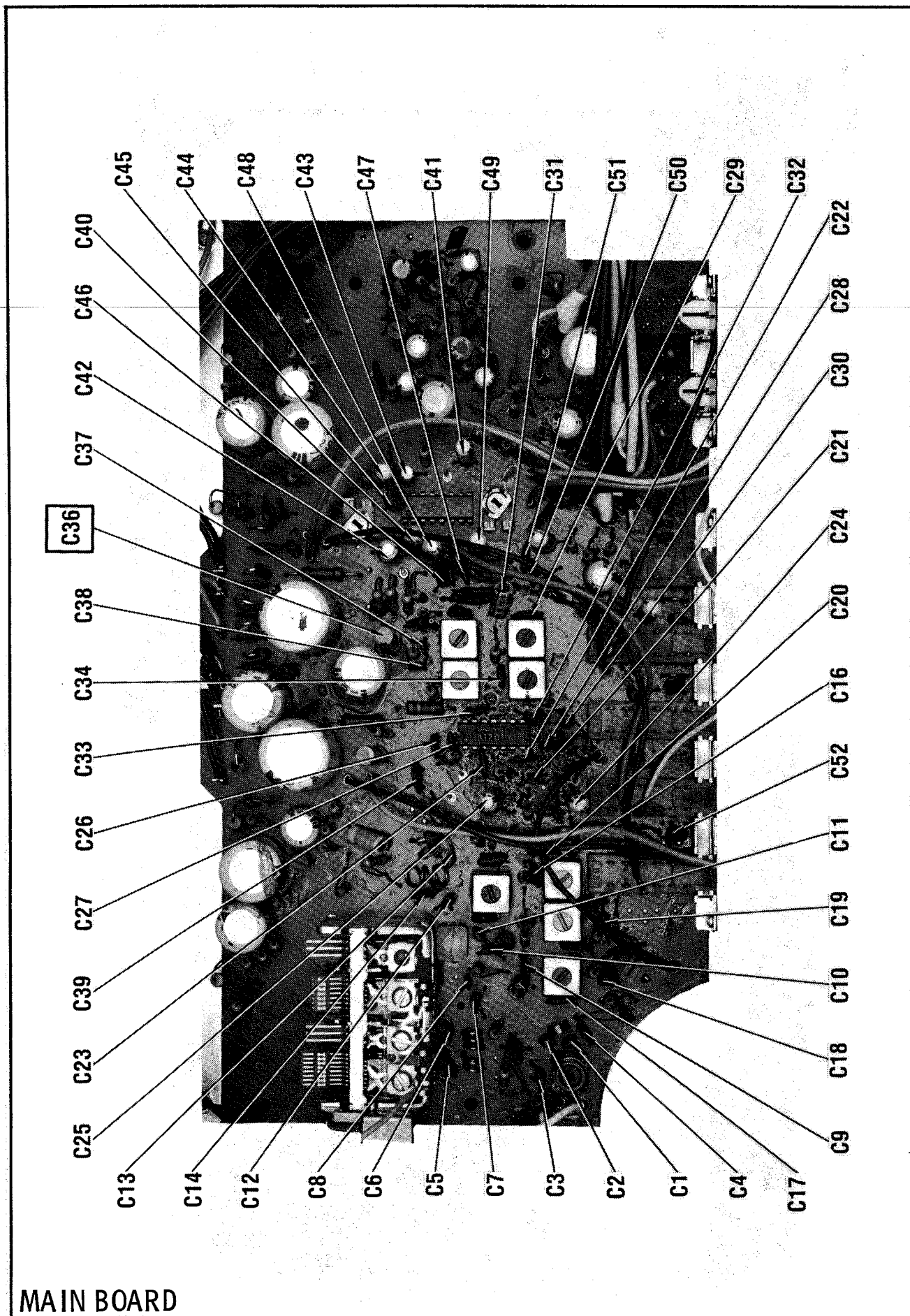
FOLDER 3





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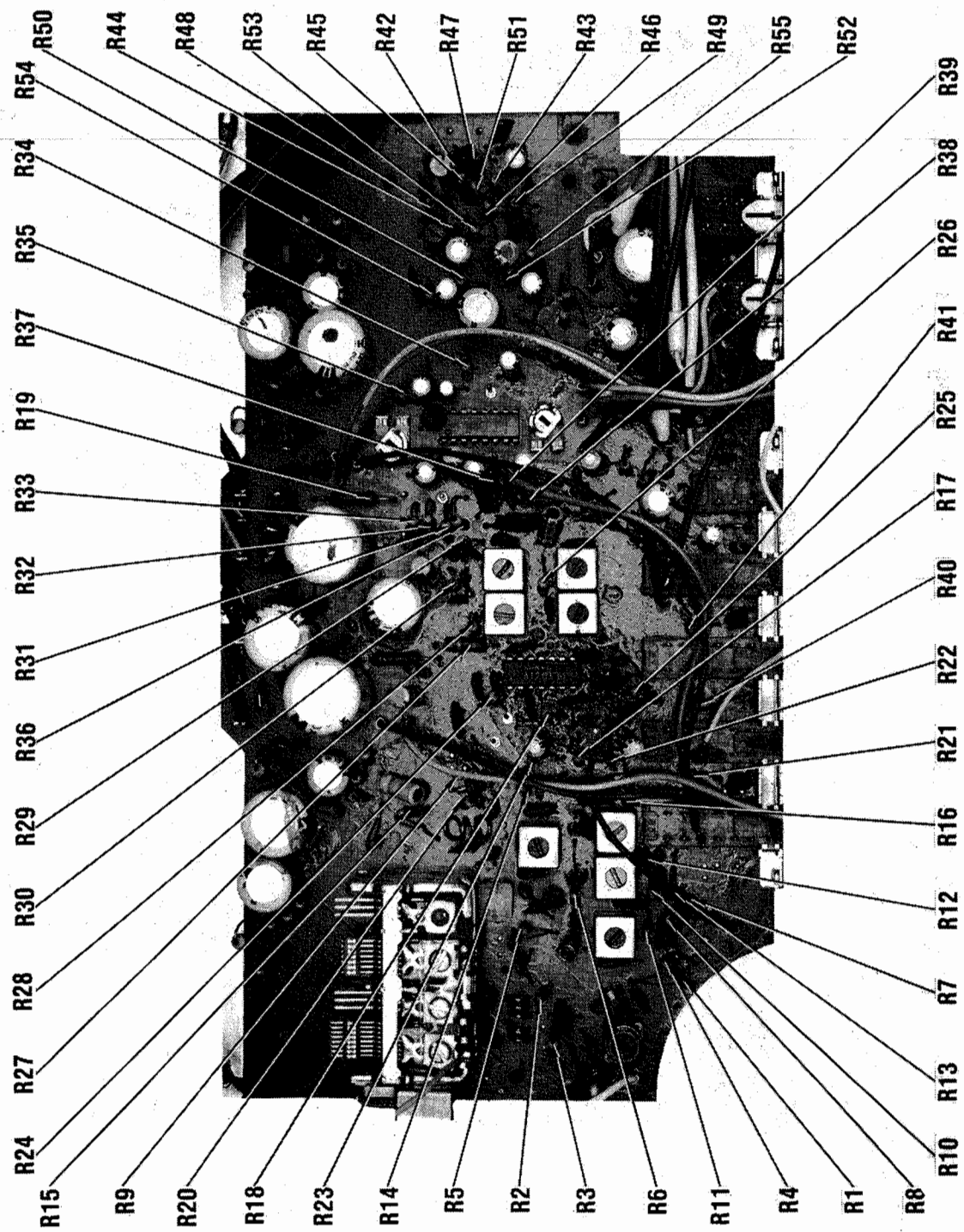
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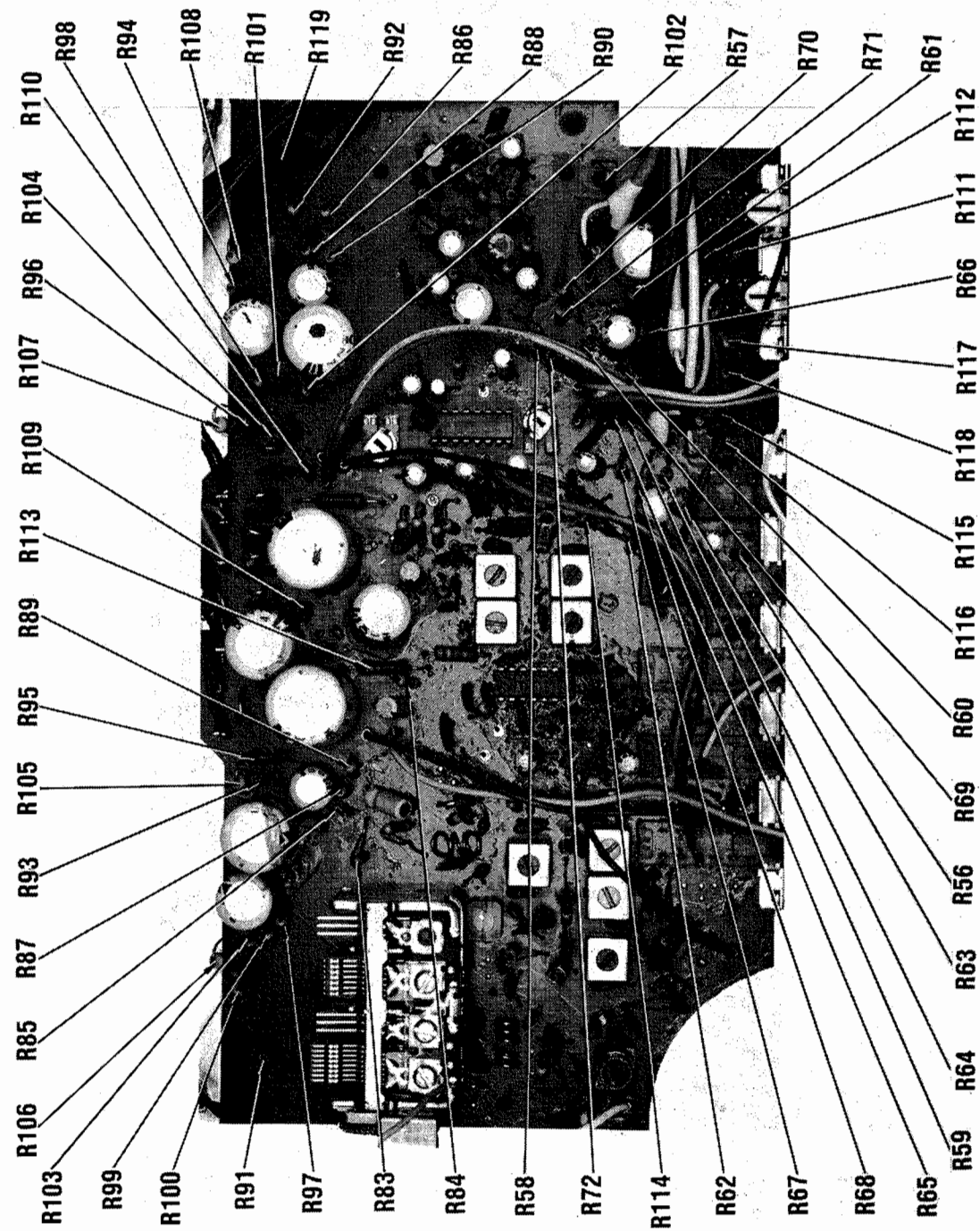




MAIN BOARD



MAIN BOARD



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