

PHOTOFACT® Folder

with CIRCUITRACE®

MAGNAVOX CHASSIS R320-01-AA/-AC thru 03-AA/-AC, R320-02-AB

For Supplier Address See PHOTOFACT Index

MAGNAVOX CHASSIS R320-01-AA/-AC thru 03-AA/-AC, R320-02-AB

RADIO CHASSIS	TAPE CHASSIS
R320-01-AA	VE15-02 or VE15-06
R320-01-AC	VE15-02 or VE15-06
R320-02-AA	VE15-02 or VE15-06
R320-02-AB	VE15-02 or VE15-06
R320-02-AC	VE15-02 or VE15-06
R320-03-AA	VE15-02 or VE15-06
R320-03-AC	VE15-02 or VE15-06



Representative model using Chassis R320-01-AA

RECORD CHANGER SERVICING

MAGNAVOX Record Changer W718/02/01

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.

Note: DO NOT adjust during record size check.

NEEDLE PRESSURE

Adjust B3 to obtain 3.5 grams nominal pressure. Turning B3 clockwise increases needle pressure.

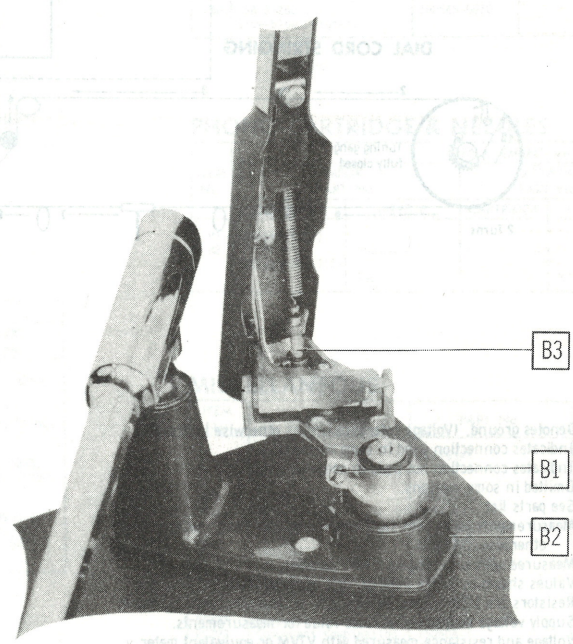
CLEANING

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.



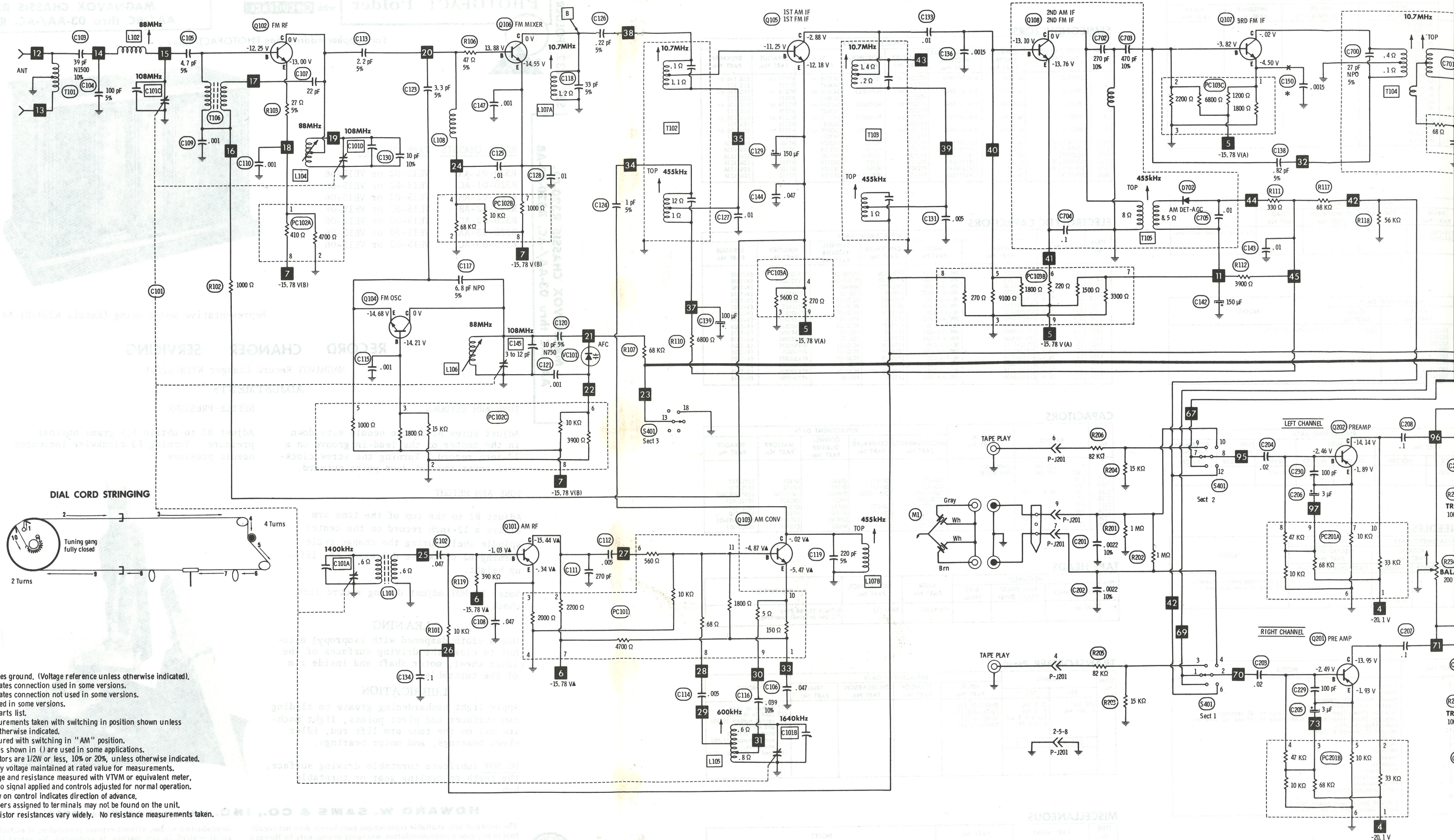
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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. 4PL1044

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MAGNAVOX CHASSIS R320-01-AA/-AC thru 03-AA/-AC, R320-02-AB



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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RADIO SCHEMATIC

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 Height	Play a test cartridge, follow instructions with cartridge, and adjust B1 for proper response.
Head Azimuth	Connect an AC VTVM across right output. Play a test cartridge and adjust B2 for maximum.

TROUBLE CHART

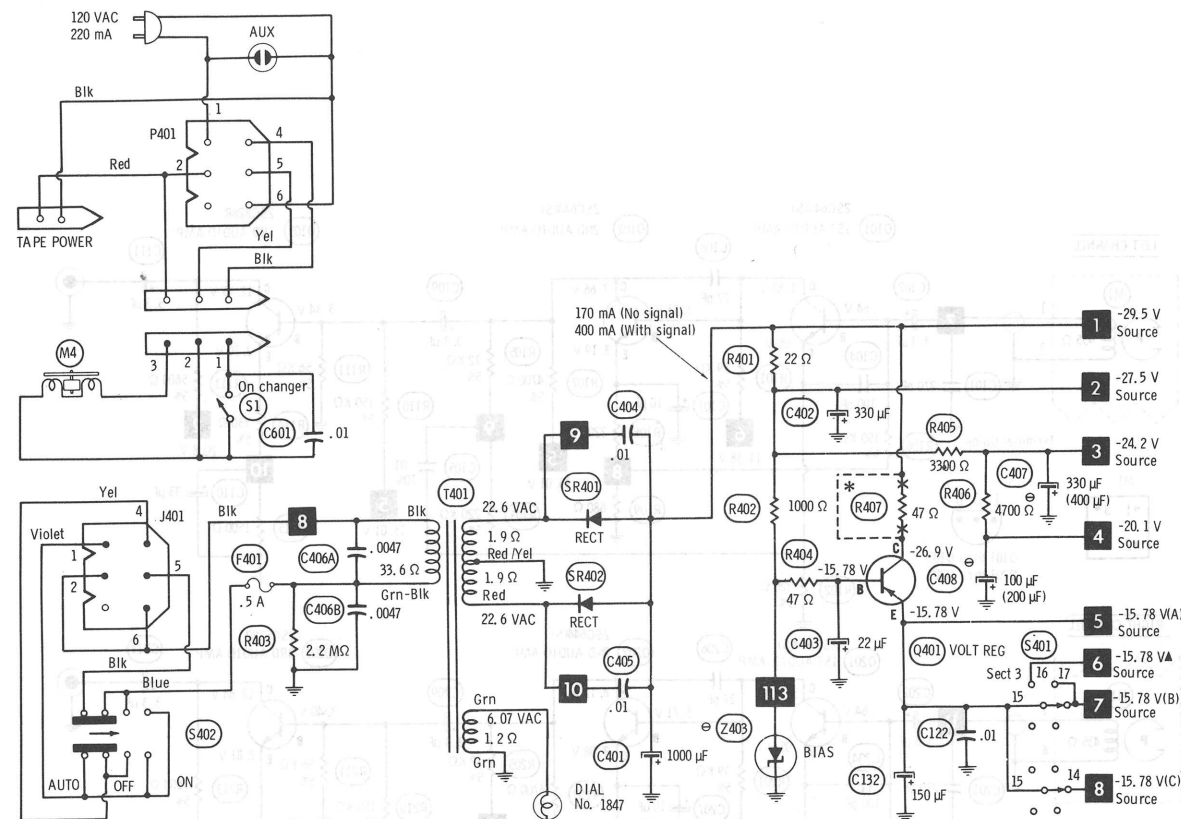
SYMPTOM	REMARKS
Capstan does not rotate.	Belt (1) dirty, worn, or broken. Assembly (10) binding. Motor defective or not supplied with power.
Track-shift mechanism inoperative.	Switch S3 dirty. Cam (3) binding or worn. Pawl (4) worn. Arm (6) binding. Solenoid K1 defective or not supplied with power. Cartridge defective.
Wow or Flutter.	Belt (1) 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
1*	64N001-20*	Flywheel Drive Belt*	11	73N006-5	Tape Guard
2	NT4756400A	Flywheel (Assembly)	12	NT4754100A	Flywheel Bracket
3	NT31466001	Track Changing Cam	13	10N003-2	Azimuth Adjustment Spring
4	73N002-20	Push Pawl	14	10N002-21	Head Plate Spring
5	NT47555001	Push-Pawl Guide	15	NT30301076	Height Adjustment Spring
6	NT4754800A	Head Mounting Assembly	16	10N006-5	Solenoid Plunger Spring
7	NT4755100A	Guide Bracket Assembly	17	(1)	Solenoid Plunger
8	NT31464001	Tape Guide	18	NT47561001	Head Plate Bracket
9	NT4755900A	Track Changing Cam Stop Spring	19	70N004-9	Pressure Roller
10	NT31463001	Flywheel Housing			

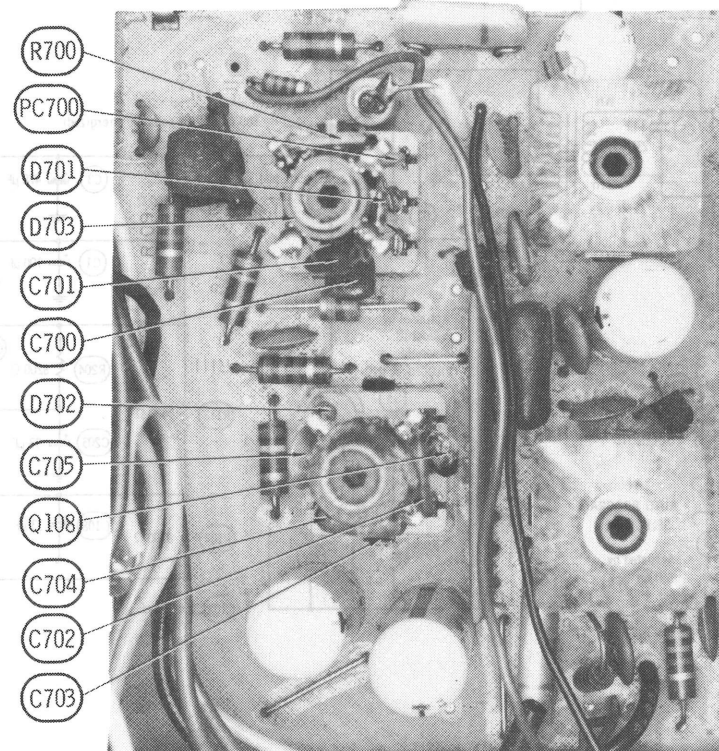
(1) Part of Head Shift Solenoid.

* Flywheel Drive Belt - E-V/GAME Replacement Number 1424-19.
WALSCO Replacement Number 1424-19.



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RADIO POWER SUPPLY SCHEMATIC



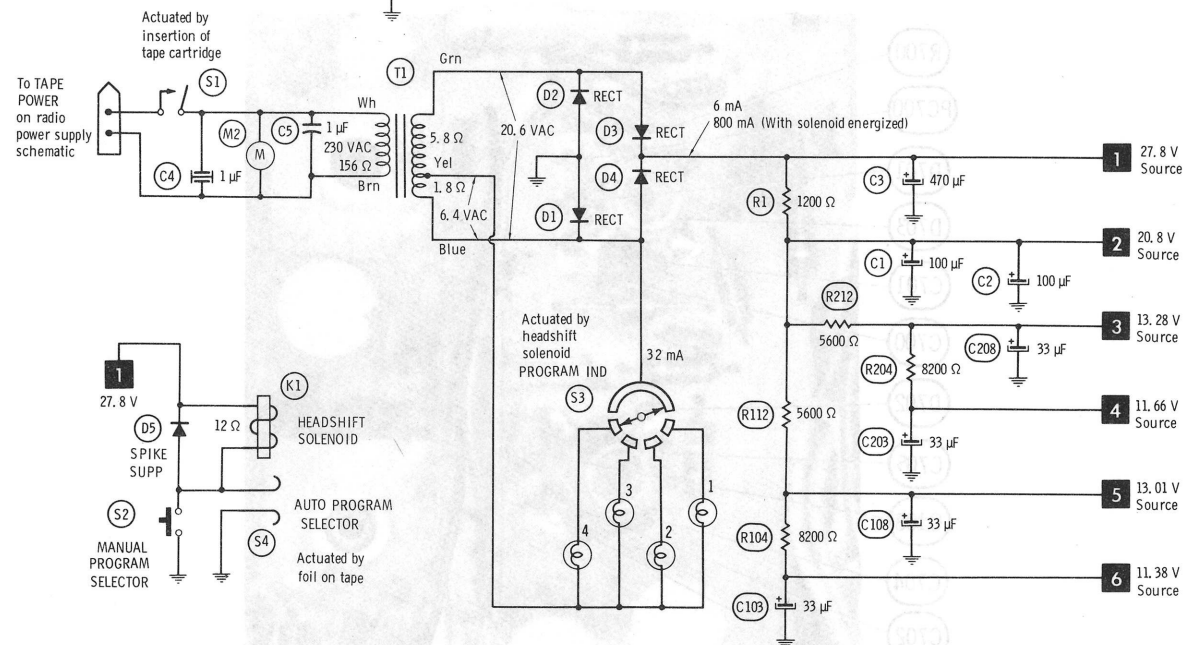
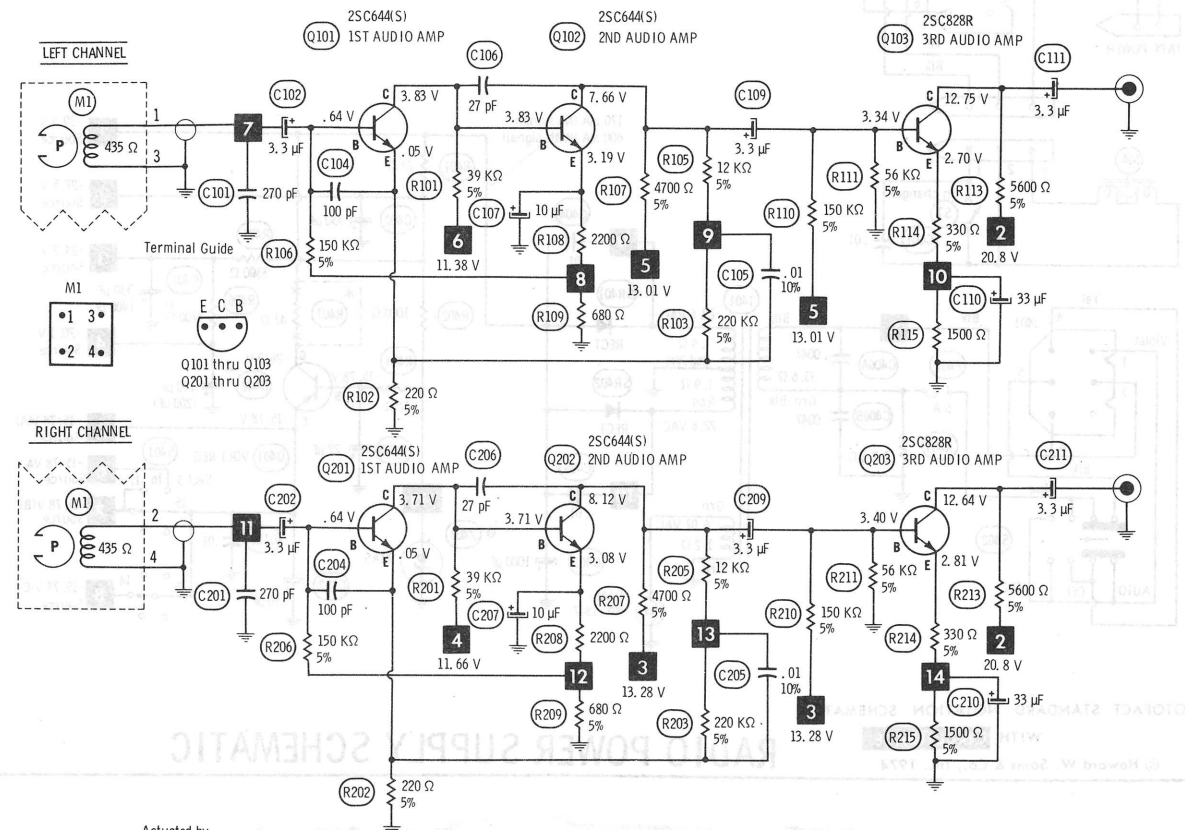
2ND IF - RATIO DETECTOR

SET 1432 FOLDER 4

MAGNAVOX CHASSIS R320-01-
AA/-AC thru 03-AA/-AC, R320-02-AB

FOLDER 4

NOTE: DEMAGNETIZE HEADS AFTER SERVICING

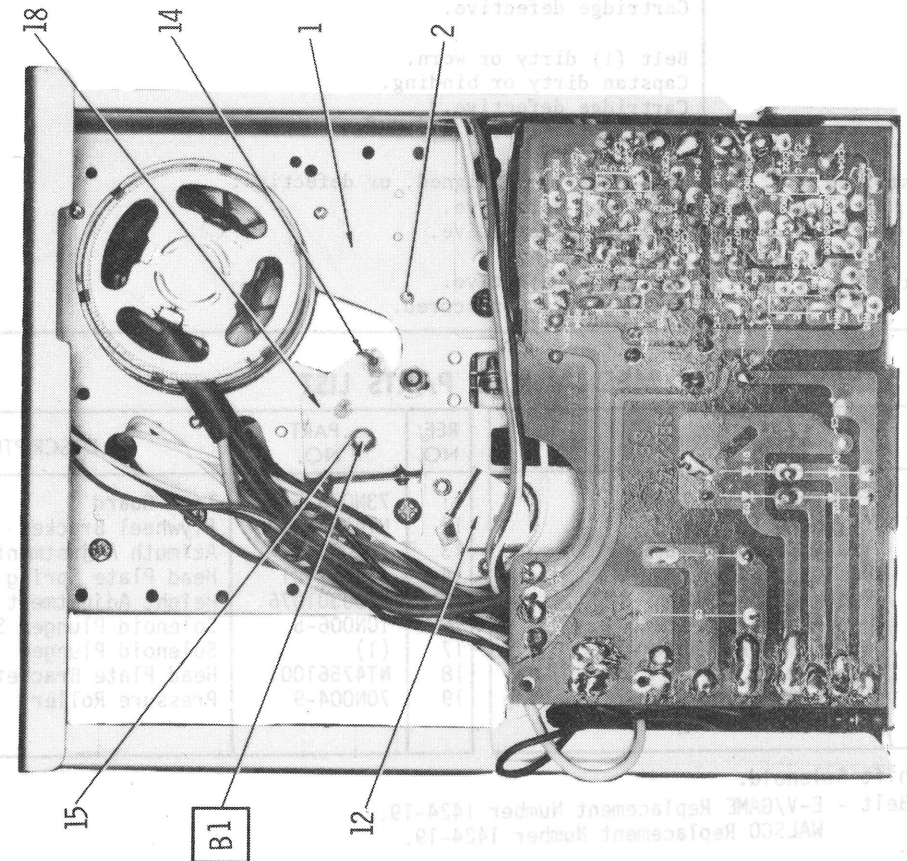
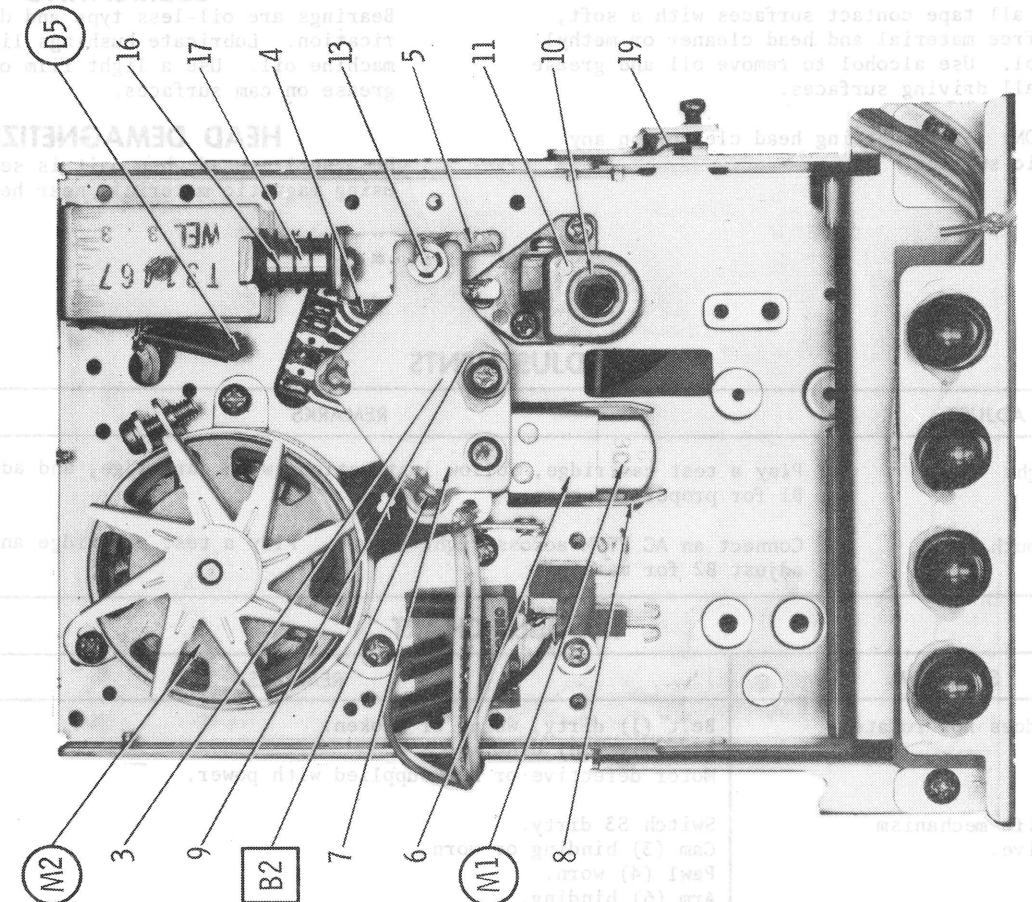


A PHOTOFACIT STANDARD NOTATION SCHEMATIC

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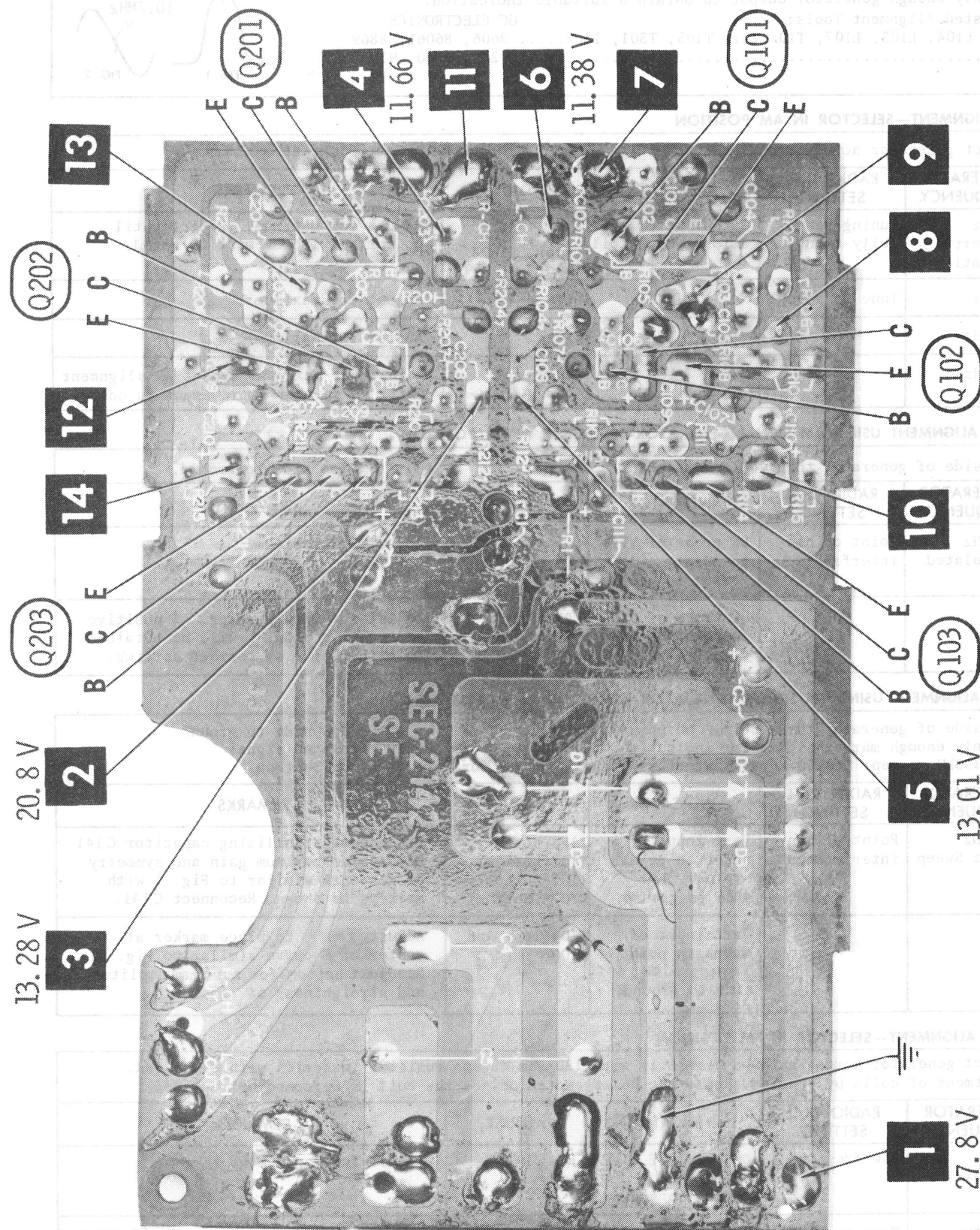
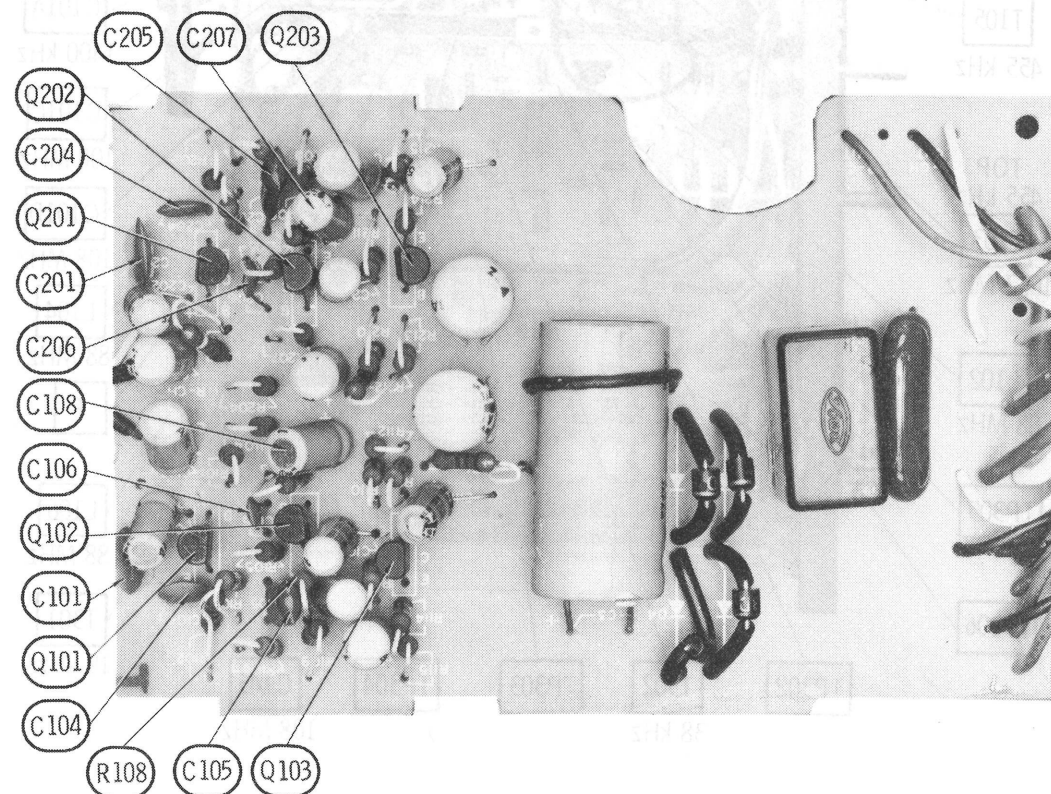
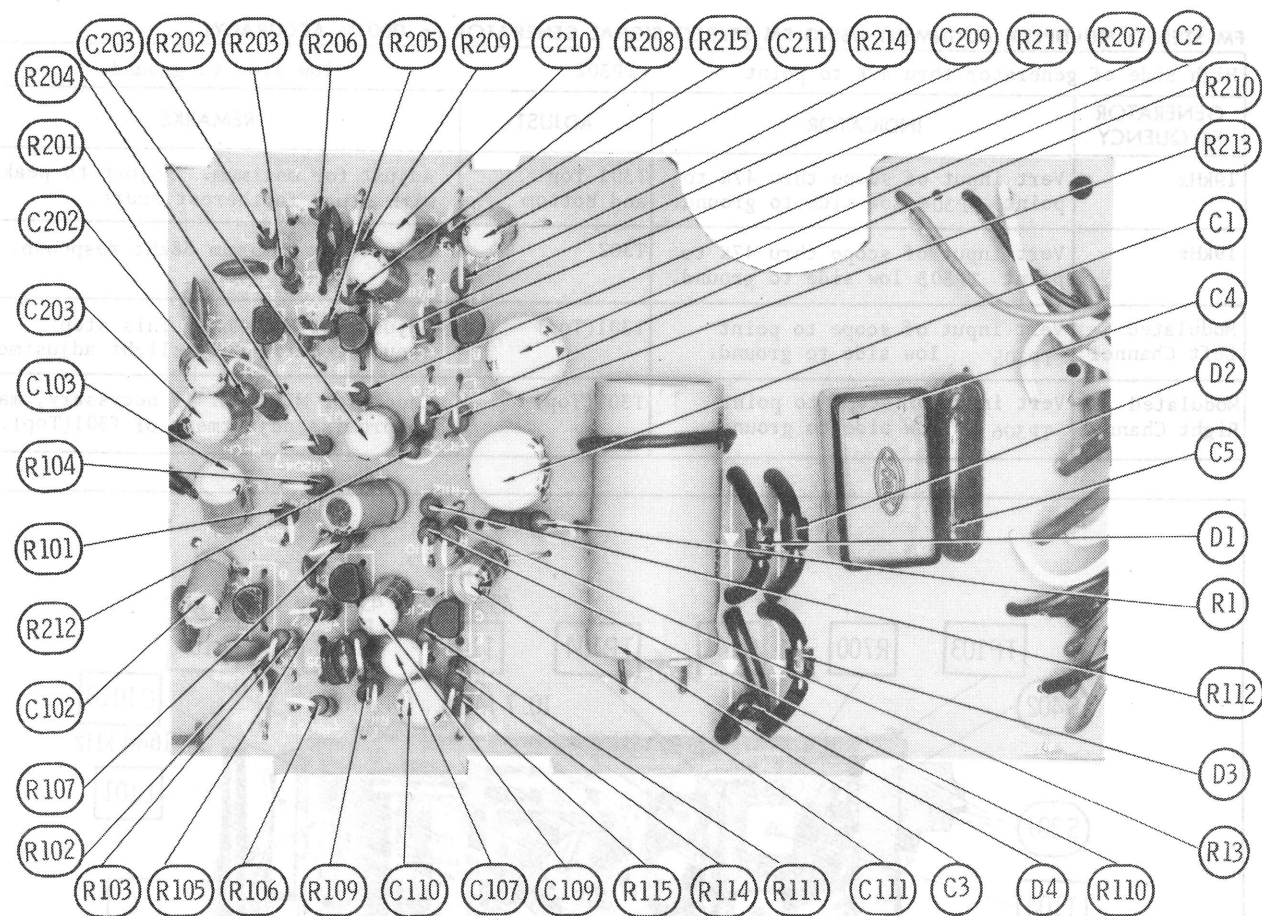
TAPE AMP SCHEMATIC



TAPE CHASSIS

MAGNAVOX CHASSIS R320-01-
AA/-AC thru 03-AA/-AC, R320-02-AB

FOLDER 4



TAPE AMP BOARD

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MAGNAVOX CHASSIS R320-01-
AA/-AC thru 03-AA/-AC, R320-02-AB

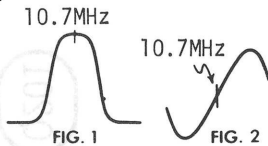
FOLDER 4

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120VAC. Allow a 15-minute warm-up period. Use only enough generator output to obtain a suitable indication.

Suggested Alignment Tools:
L102, L104, L105, L107, T102 thru T105, T301, T302..... 8606, 8606L, 8869
L106..... 9296, 9300, 9302

GC ELECTRONICS



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	T105, T103 (Top), T102 (Top), L107B (Top)	Adjust for maximum. Repeat until no further improvement is noted.
600kHz	Tune to signal	"	L105	Adjust for maximum.
1640kHz	"	"	C101B	Adjust for maximum.
1400kHz	"	"	C101A	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 .001 uF to point B low side to ground.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non- interference	DC probe of VTVM to point TP104 common to ground.	T104(Bottom), T103(Bottom), T102(Bottom), L107A(Bottom)	Adjust for maximum.
"	"	DC probe of VTVM to point TP103 common to ground.	T104(Top), and R700	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 .001 uF to point B low side to ground.
Use only enough marker signal for indication. Use 60-hertz frequency modulated signal
with 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 point TP104 low side to ground.	T104(Bottom), T103(Bottom), T102(Bottom), L107A(Bottom)	Disconnect stabilizing capacitor C141 Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C141.
"	"	Vert input of scope to point TP103 low side to ground.	T104(Top) and R700	Adjust top to place marker at center of S curve similar to Fig. 2. Readjust bottom for maximum amplitude and straightness of line.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

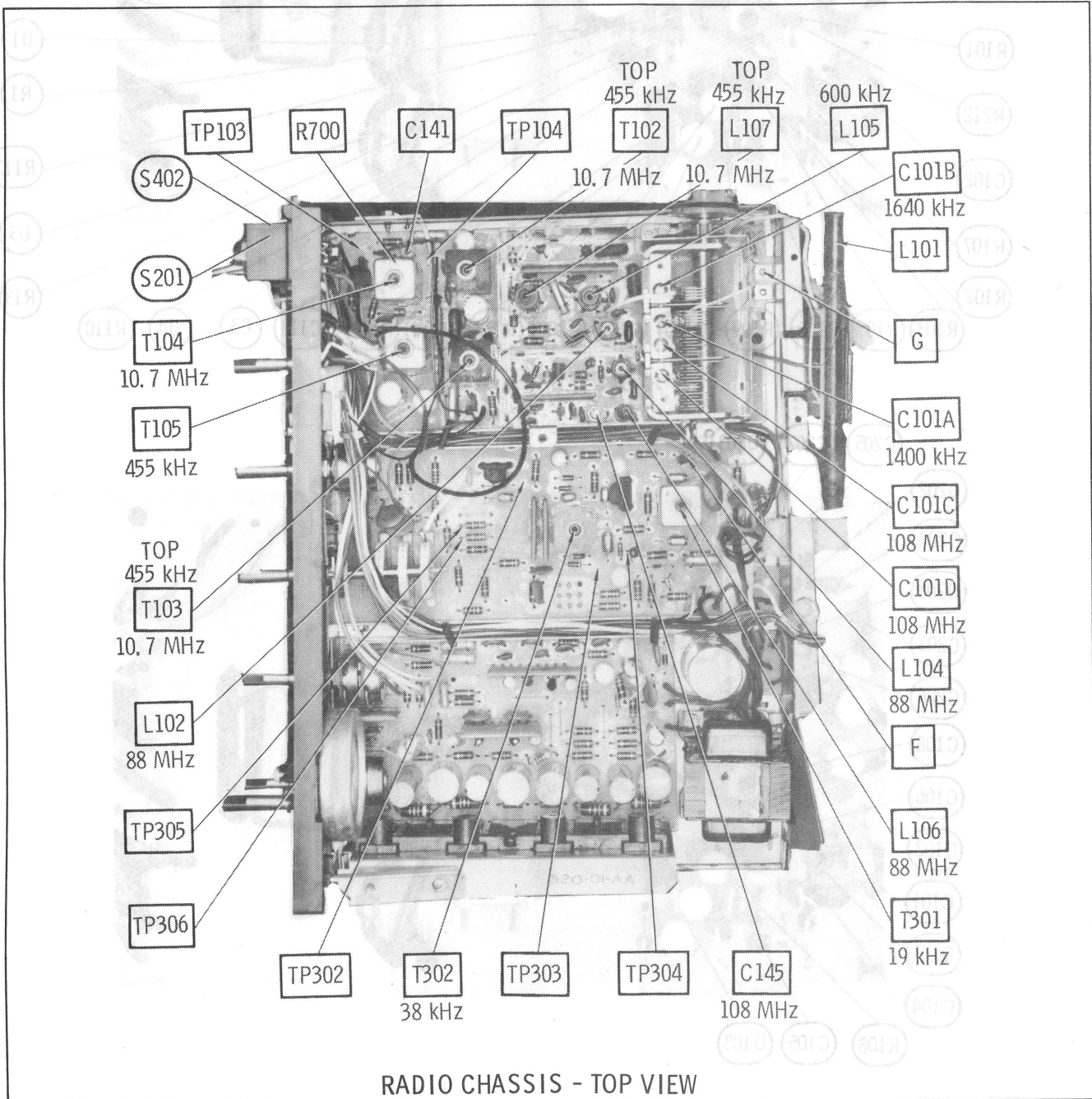
Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
88MHz Unmodulated	Low freq end	DC probe of VTVM to point common to ground.	L106, L104, L102	Adjust for maximum.
108 MHz Unmodulated	Tune to signal	"	C145, C101C, C101D	Adjust for maximum. Repeat FM RF steps until no further improvement is noted.

ALIGNMENT INSTRUCTIONS (Continued)

FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (± .0001% ACCURACY)

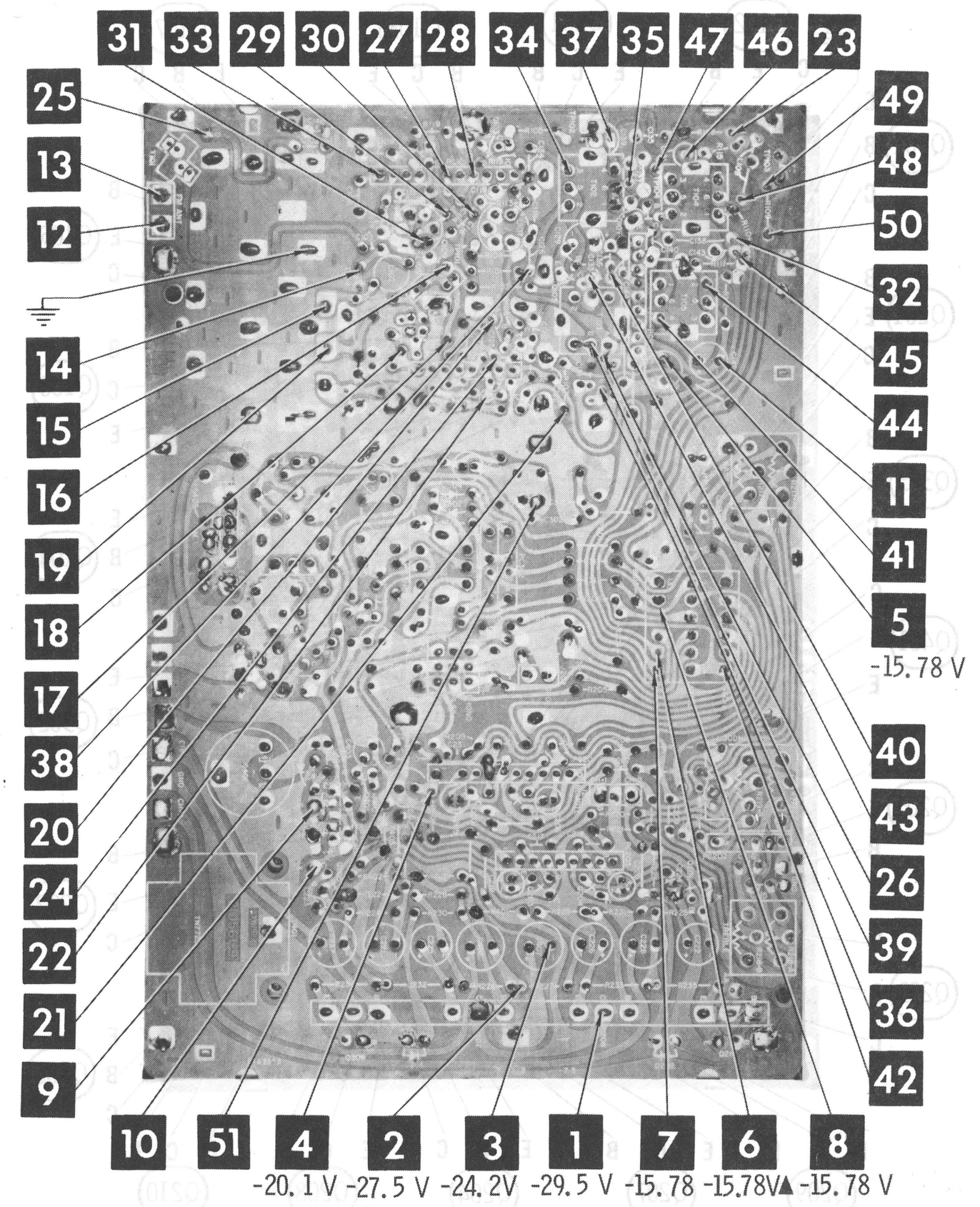
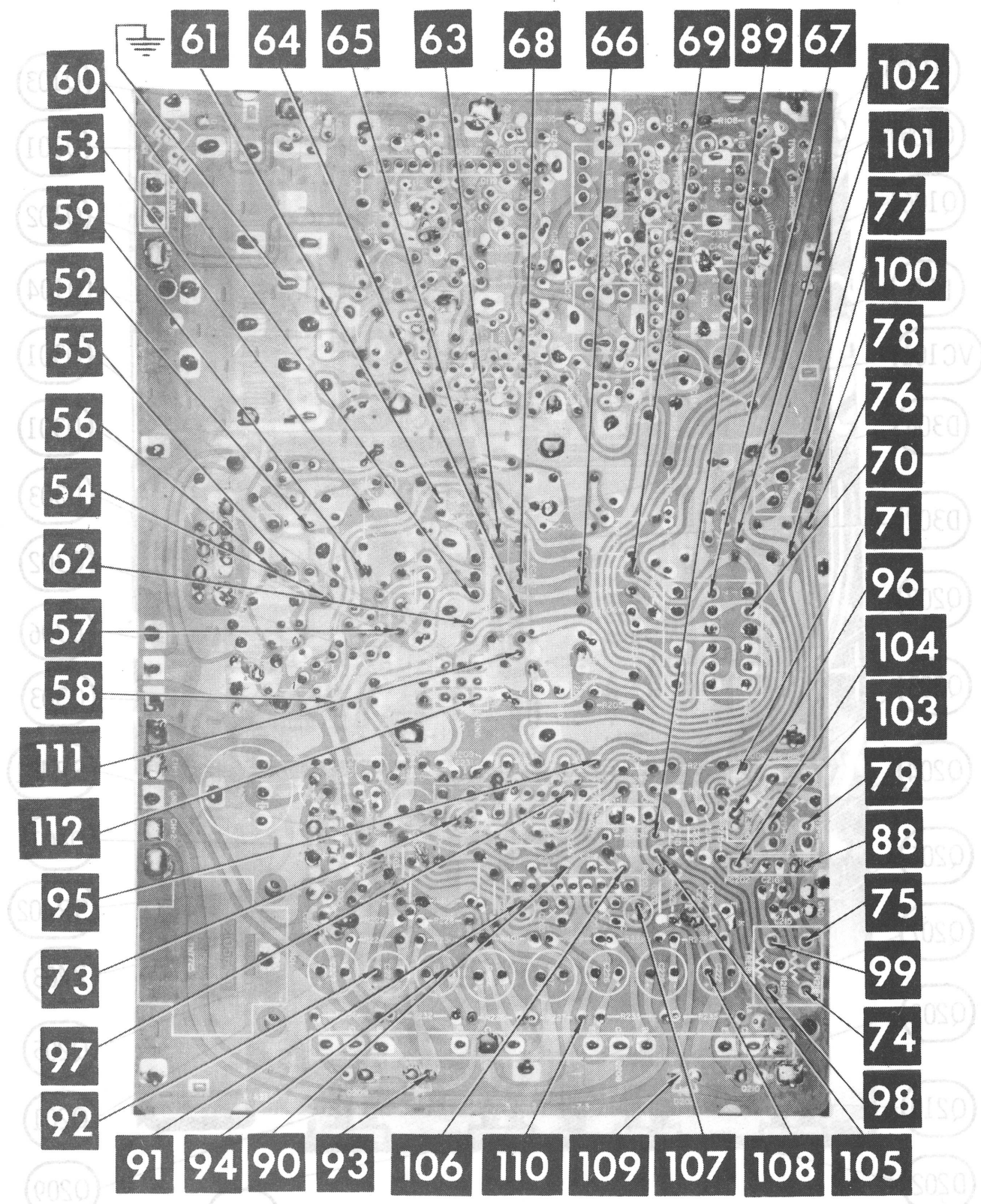
High side of generator thru 47K to point TP302 low side to ground.			
GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
19kHz	Vert input of scope thru 47K to point TP304 low side to ground.	T301 Top and Bottom	Adjust for maximum. Adjust to peak with slugs farthest apart.
19kHz	Vert input of scope thru 47K to point TP303 low side to ground.	T302	Adjust for maximum 38kHz response.
Modulated Left Channel	Vert input of scope to point TP305 low side to ground.	T301(Top)	Adjust for MINIMUM. This step should require only slight adjustment.
Modulated Right Channel	Vert input of scope to point TP306 low side to ground.	T301(Top)	Check for MINIMUM. If necessary, make compromise adjustment of T301(Top).



RADIO CHASSIS - TOP VIEW

VA VC 03-78/-AC R320-02-AB
MAGNAVOX CHASSIS R320-01

FOLDER 4

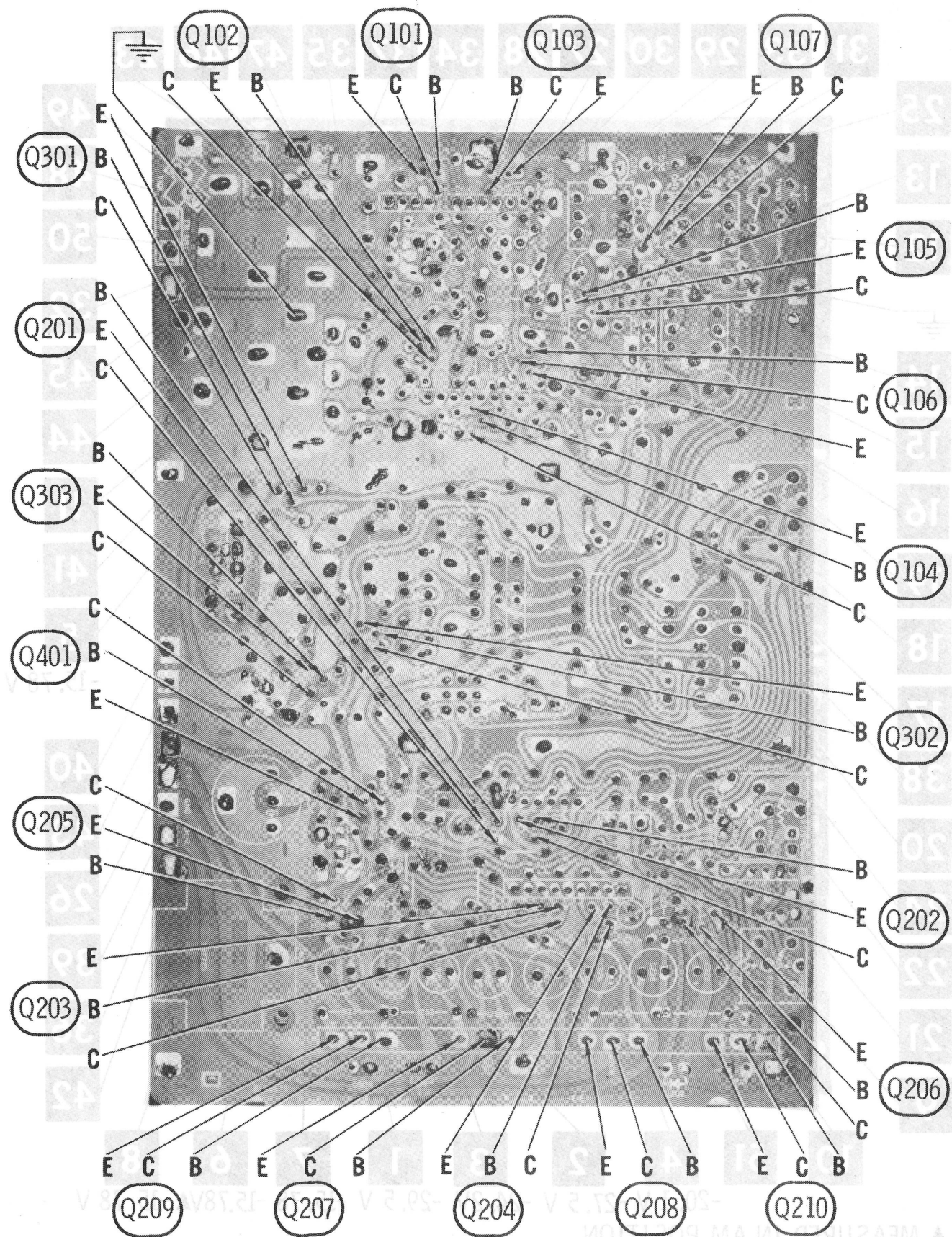


RADIO BOARD

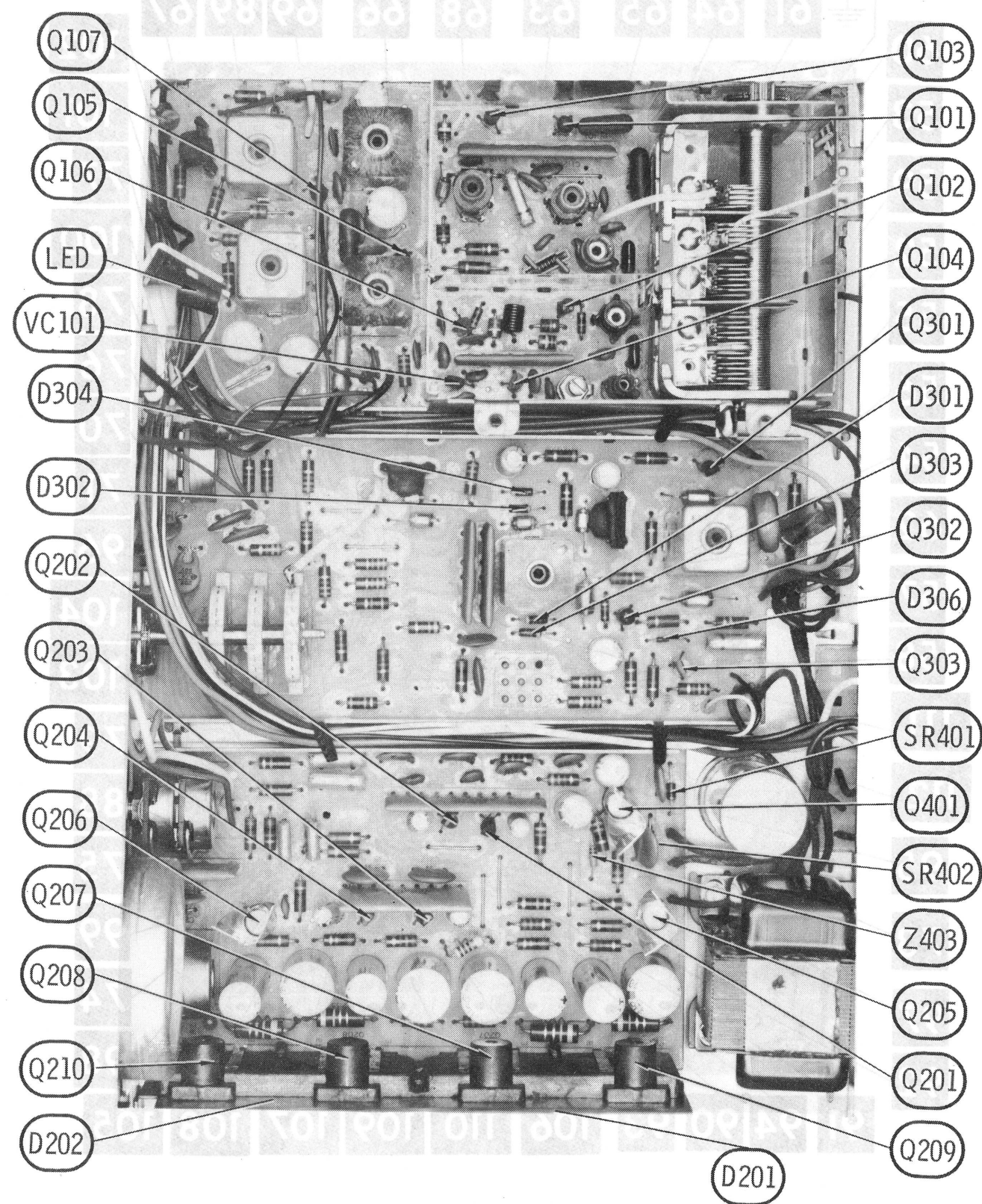
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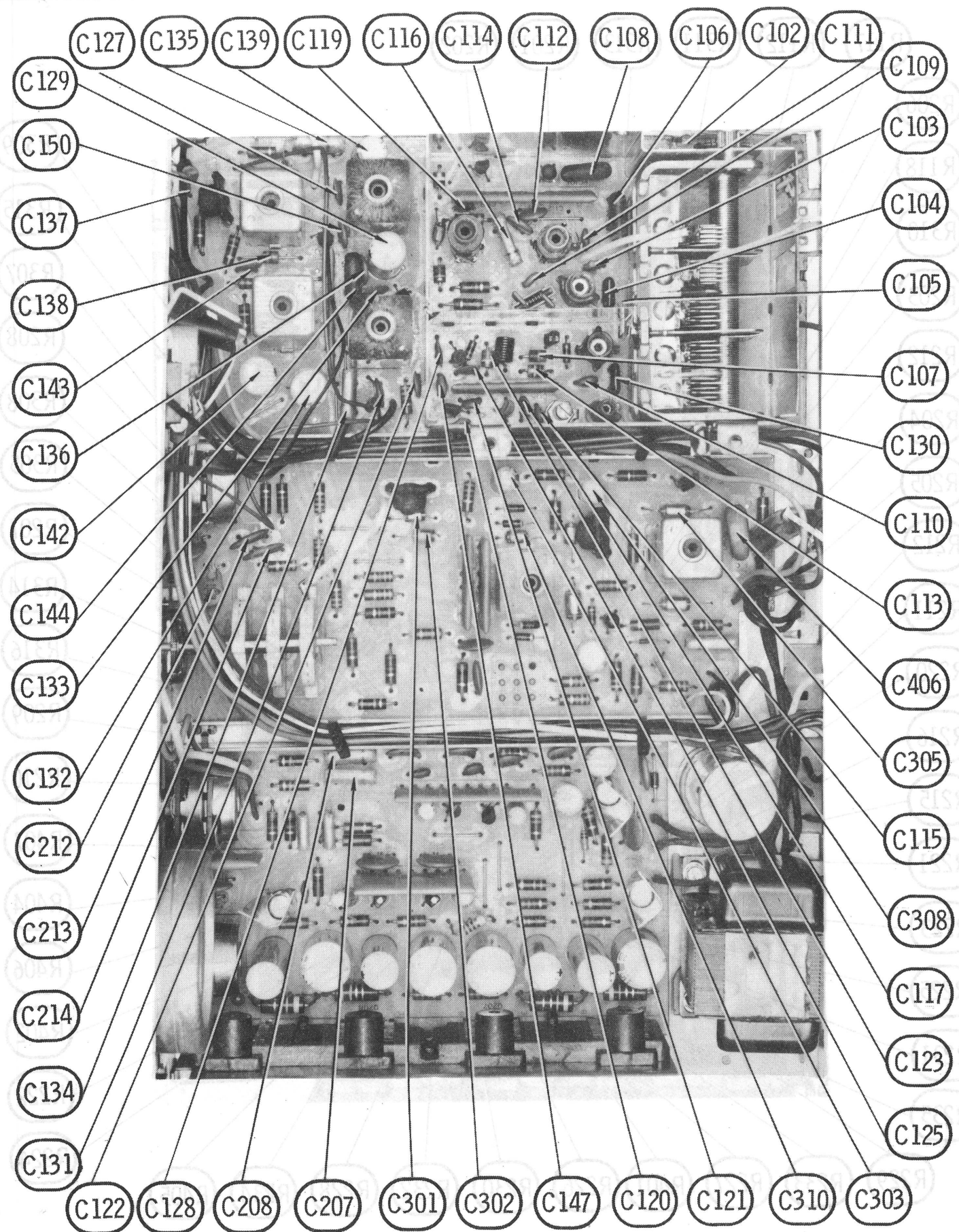
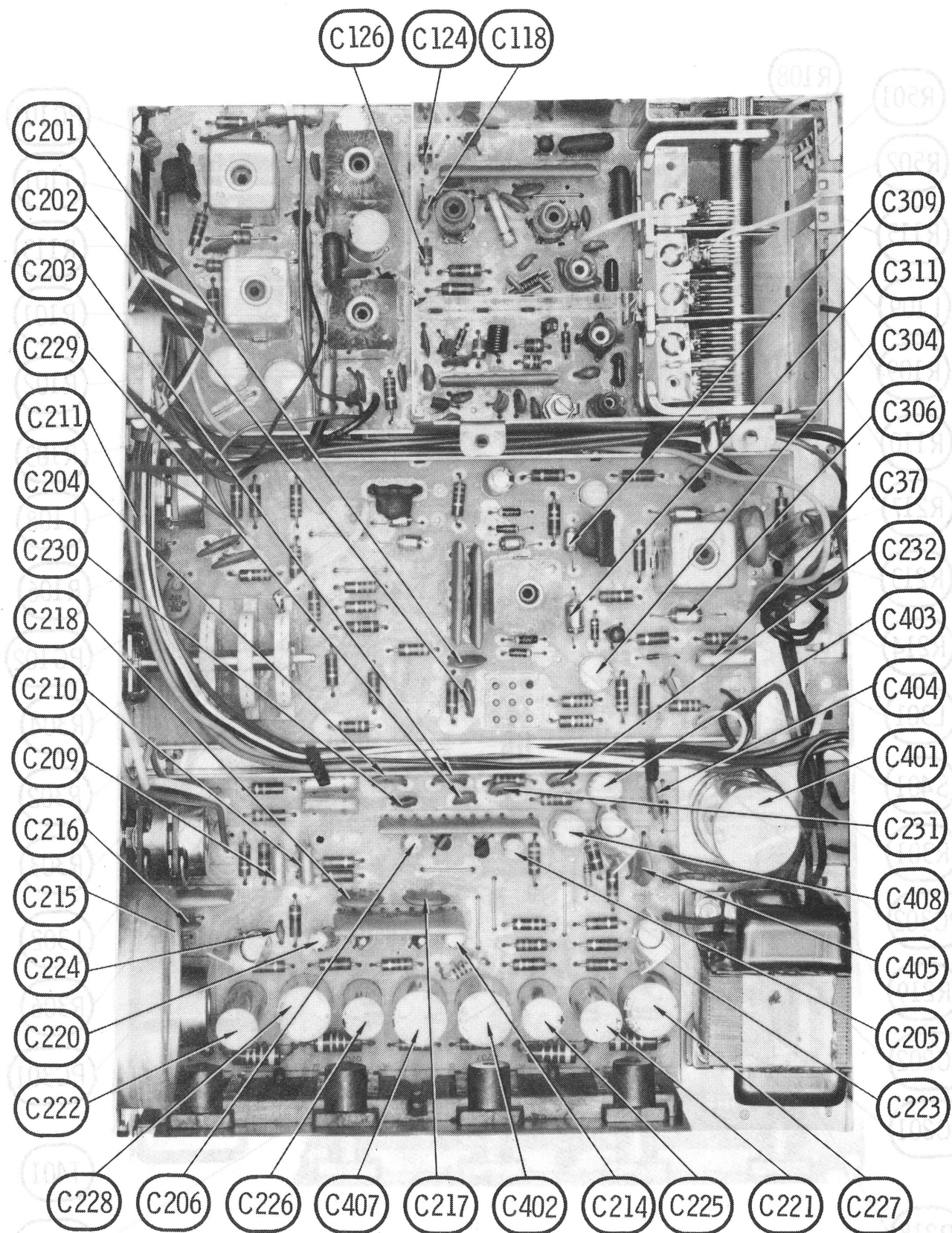
MAGNAVOX CHASSIS R320-01-
AA/-AC thru 03-AA/-AC, R320-02-AB

FOLDER 4

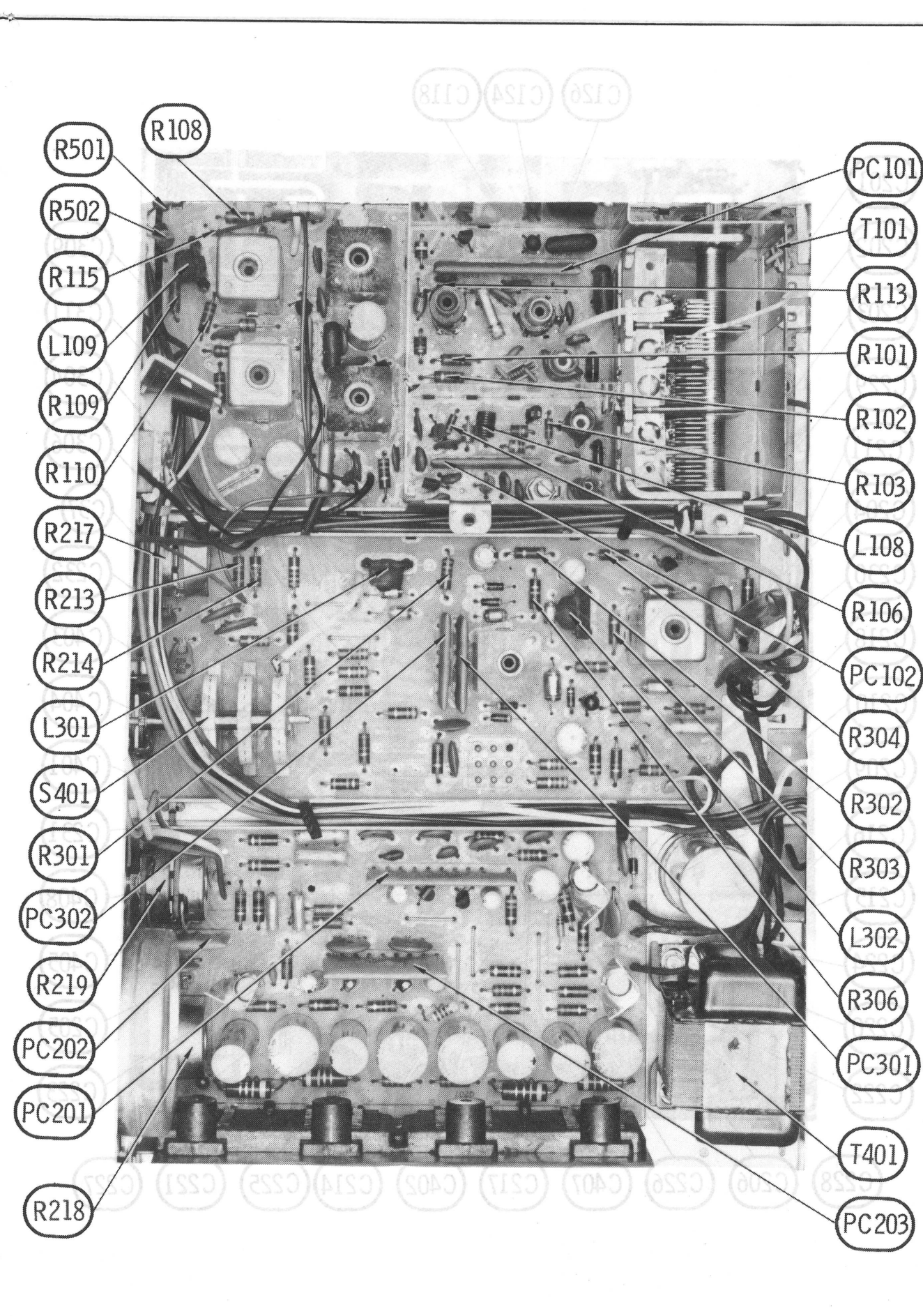
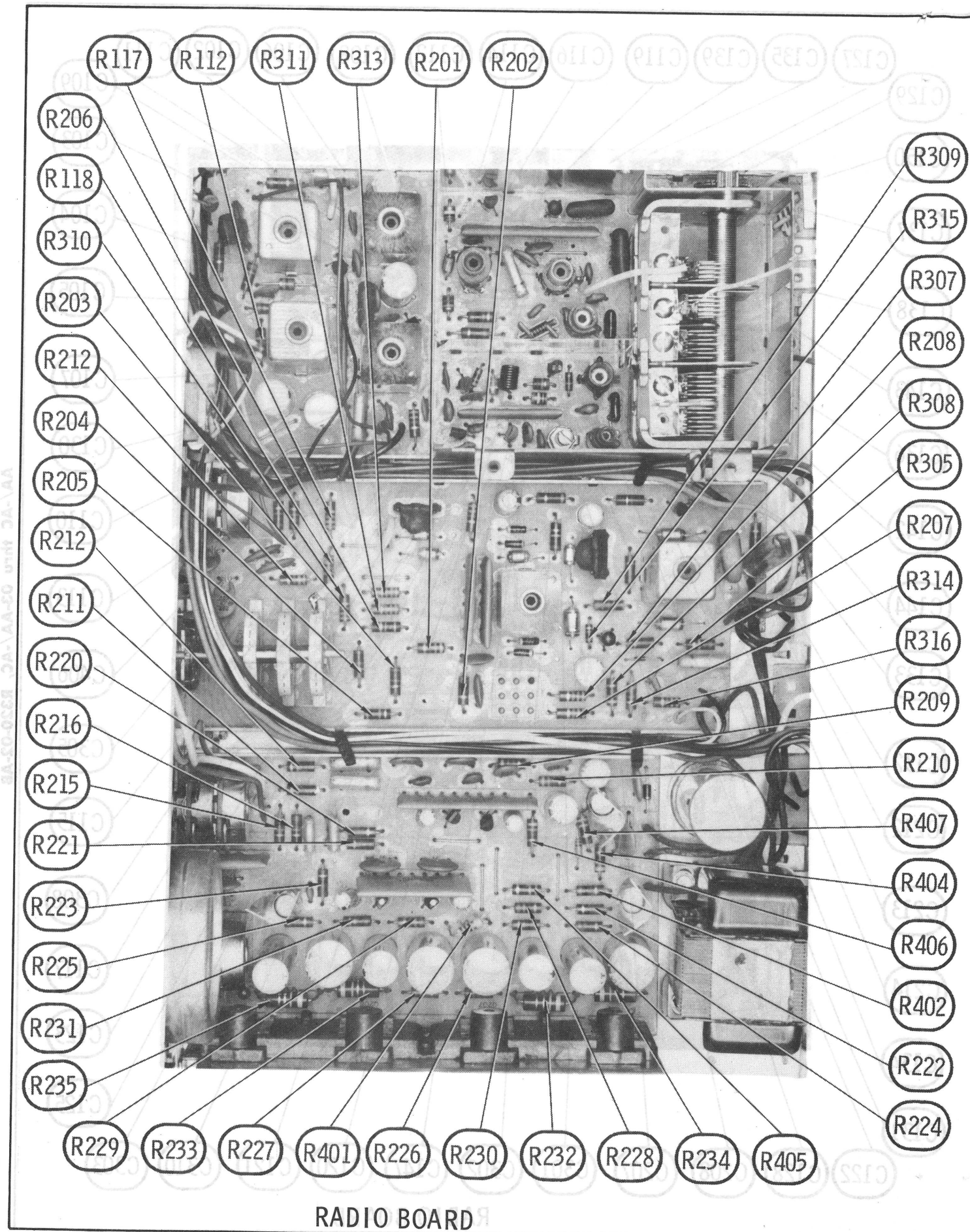


RADIO BOARD





RADIO BOARD



RADIO PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Low-loss Shielded Lead (Interconnecting)	Use BELDEN No. 8524 (Stranded) Available in 12 Colors
Phono Pick-up Arm Cable	Use BELDEN No. 8401 or 8421 (Two Conductor-Unshielded)
	8430 (Two Conductor-Shielded)
	8429 (Two Conductor-Shielded)
	8419 (Three Conductor-Shielded)

SEMICONDUCTORS

ITEM No.	TYPE / MFR. No. / PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D201	530135-2	GE-300	D200	PTC214	HEPR0602	SK3100	RT218	ECG 177
D301	530135-2	GE-300	D200	PTC214	HEPR0602	SK3100	RT218	ECG 177
D302	530092-1001	1N34AS (7)	1N34A (7)	PTC207 (7)	HEP134 (7)	SK3087 (7)		ECG 110 (6)
D303	530092-1001	1N34AS (7)	1N34A (7)	PTC207 (7)	HEP134 (7)	SK3087 (7)		ECG 110 (6)
D304	530092-1001	1N34AS (7)	1N34A (7)	PTC207 (7)	HEP134 (7)	SK3087 (7)		ECG 110 (6)
D306	530072-1015	GE-300	D200	PTC214	HEPR0602	SK3100	RT218	ECG 177
D701	1N542 (6)	1N34AS (7)	1N34A (7)	PTC207 (7)	HEP134 (7)	SK3087 (7)		ECG 110 (6)
D702	1N60	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
LED	530160-1 (1)							
Q101	610125-1	GE-11	TR-21	PTC103	HEP715	SK3114	RT115	ECG 159
Q102	610180-1 (2)	GE-11	TR-21	PTC123	HEP56	SK3018	RT113	ECG 108
Q103	610092-1 (3)	GE-11	TR-21	PTC123	HEP56	SK3018	RT113	ECG 108
Q104	610150-1	GE-20	TR-21	PTC115	HEP54	SK3018	RT113	ECG 161
Q105	610041-2	GE-11	TR-21	PTC123	HEP729	SK3018	RT113	ECG 161
Q106	610041-3	GE-11	TR-21	PTC123	HEP729	SK3018	RT113	ECG 123A
Q107	610041-2	GE-11	TR-21	PTC123	HEP729	SK3018	RT113	ECG 161
Q108	610041-2	GE-11	TR-21	PTC123	HEP729	SK3018	RT113	ECG 161
Q201	610083-1	GE-22	TR-20	PTC103	HEP57	SK3114	RT115	ECG 159
Q202	610083-1	GE-22	TR-20	PTC103	HEP57	SK3114	RT115	ECG 159
Q203	610094-1	GE-20	TR-24	PTC123	HEP726	SK3124	RT102	ECG 123A
Q204	610094-1	GE-20	TR-24	PTC123	HEP726	SK3124	RT102	ECG 123A
Q205	610099-2	GE-11	TR-88	PTC103	HEP57	SK3025	RT115	ECG 129
Q206	610099-2	GE-11	TR-88	PTC103	HEP57	SK3025	RT115	ECG 129
Q207	170890-1 (9)	GE-74 (9)	TR-29 (9)	HEP248 (9)	HEP248 (9)	RT148 (9)	ECG 219 (9)	
Q208	170890-1 (9)	GE-74 (9)	TR-29 (9)	HEP248 (9)	HEP248 (9)	RT148 (9)	ECG 219 (9)	
Q210	610083-2	GE-22	TR-54	PTC103	HEP57	SK3025	RT115	ECG 159
Q302	610086-4	GE-20	TR-21	PTC123	HEP54	SK3124	RT102	ECG 123A
Q303	610110-1	GE-20	TR-21	PTC103	HEP51	SK3025	RT115	ECG 159
Q401	610099-3	GE-1	TR-85	PTC102	HEP254	SK3004	RT121	ECG 102A
SR401	530111-1001	GE-504A	804 or 5A4D	PTC201 or PTC202	HEPR0053	SK3016 or SK3031	RT214 or RT215	ECG 116 or ECG 117
SR402	530111-1001	GE-504A	804 or 5A4D	PTC201 or PTC202	HEPR0053	SK3016 or SK3031	RT214 or RT215	ECG 116 or ECG 117
VC101	530104-2 (8)	GE-90 (8)	D201 (8)	ZB16	HEPR2503(8)	SK3126 (8)	RT246	ECG 5075
Z403	530073-1017 (16 V Zener)	GEZD-15	Z-1214		HEP20419	SK3063		

- (1) Light emitting diode.
(2) Late production.
(3) Early production.
(6) Matched pair.
(7) Two required - select matched pair.
(8) Varactor.
(9) Complementary pair.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C129	150 20 V	270068-521	ME-G150	EP50-150	PC150-25	MTV150DE35	EV-1335	
C132	150 20 V	270068-521	ME-G150	EP50-150	PC150-25	MTV150DE35	EV-1335	
C139	100 25 V	270109-1225	RME-G-G-100	EP30-100	PC100-25	MTV100DB25	EV-1330	
C141	5 25 V	270082-603	ME-1-G-005	EA30-5	WBR5-50	MTA5050	TVA-1203	
C142	150 20 V	270068-521	ME-G150	EP50-150	PC150-25	MTV150DE35	EV-1335	
C205	20 V	270068-501	RME-A-H-003	EP30-5	PC5-50	VTT3R3A50	EV-1618	
C206	3 20 V	270068-501	RME-A-H-003	EP30-5	PC5-50	VTT3R3A50	EV-1618	
C219	3 20 V	270068-501	RME-A-H-003	EP30-5	PC5-50	VTT3R3A50	EV-1618	
C220	3 20 V	270068-501	RME-A-H-003	EP30-5	PC5-50	VTT3R3A50	EV-1618	
C221	200 20 V	270068-523	ME-G200	EP30-250	PC200-35	MTV200DE25	EV-1340	
C222	200 20 V	270068-523	ME-G200	EP30-250	PC200-35	MTV200DE25	EV-1340	
C225	200 20 V	270068-523	ME-G200	EP30-250	PC200-35	MTV200DE25	EV-1340	
C226	200 20 V	270068-523	ME-G200	EP30-250	PC200-35	MTV200DE25	EV-1340	
C227	470 25 V	270109-5225	RME-N-G-500	EP30-500	WBR500-25	MTA500G25	EV-1350	
C228	470 25 V	270109-5225	RME-N-G-500	EP30-500	WBR500-25	MTA500G25	EV-1350	
C303	22 25 V	270109-2125	ME-3-G-020	EA30-25	WBR25-25	MTV20CB50	EV-1324	
C304	100 10 V	270109-1210	RME-E-D-100	EP15-100	PC100-10	MTV100CB10	EV-1130	
C308	22 25 V	270109-2125	ME-3-G-020	EA30-25	WBR25-25	MTV20CB50	EV-1324	
C401	1000 30 V	270093-1	CTM-1275		AA0174A	FP066.5	TVLP-1249.8	
C402	330 50 V	270109-3250	RME-N-J-250	EP50-250	WBR350-150	MTA300G50	EV-1545	
C403	22 50 V	270109-2150	ME-4-J-020	PC20-50	WBR20-50	MTV20CB50	EV-1624	
C407	330 50 V	270109-3250	RME-N-J-250	EP50-250	WBR350-150	MTA300G50	EV-1545	
C408	100 25 V	270109-1225	RME-G-G-100	EP30-100	PC100-25	MTV100DB25	EV-1330	
C501	16 25 V NP					TCN25168	TVAN-1204.3	
C502	16 25 V NP					TCN25168	TVAN-1204.3	

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C101	Tuning Gang	260194-8					
C101A	Trimmer	(1)					
C101B	Trimmer	(1)					
C101C	Trimmer	(1)					
C101D	Trimmer	(1)					
C102	.047						
C103	39 100 V N1500	10% 250529-3909	1DP-2-473		DPMS6547	ENF1A147	225P47391W03

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C104	100 300 V 5%		DM-15-101J	CPR-100J	CD15FD101J03	SX310	424MC1000J501
C105	4.7 100 V 5%		1DP-2-473	DTZ-4R7	NP047	CN0547	10TCC-V47
C106	.047 100 V		1DP-2-473	DTZ-200	DPMS6547	ENF1A147	225P47391W03
C107	.047 100 V		1DP-2-473	DTZ-200	NP020	CN0420	10TCC-Q20
C108	.001 100 V		1DP-2-473	DD-102	DPMS6547	ENF1A147	225P47391W03
C109	.001 100 V		1DP-2-473	DD-102	GP1000	GP210	10T5-D10
C110	.001 100 V		1DP-2-473	DD-102	GP1000	GP210	10T5-D10
C111	.001 100 V		1DP-2-473	DD-270	GP270	GP327	10T5-T27
C112	.005 100 V		1DP-2-473	DD-502	GP5000	JF250	10T5-D50
C113	.005 100 V		1DP-2-473	DD-502	NP022	CN0522	10TCC-V22
C114	.005 100 V		1DP-2-473	DD-502	GP5000	JF250	10T5-D50
C115	.001 100 V		1DP-2-473	DD-102	GP1000	GP210	10T5-D10
C116	.039 100 V 10%	250555-223					
C117	6.8 NPO 5%						
C118	33 100 V 5%						
C119	220 100 V 5%						
C120	10 N750 5%						
C121	.001 50 V						
C122	.01 50 V						
C123	3.3 50 V 5%						
C124	1 50 V 5%						
C125	.01 50 V						
C126	.22 pF	250221-5					
C127	.01 50 V						
C128	.01 50 V						
C130	10 300 V 10%						
C131	.005 50 V						
C133	.01 50 V						
C134	.1 100 V	250555-183					
C135	.1 100 V	250555-183					
C136	.0015 100 V						
C137	.390 100 V						
C138	.52pF	250221-13					
C143	.01 50 V						
C144	.047 100 V						
C145	3-12 pF Trimmer	250371-4					
C147	.001 50 V						
C150	.0015 100 V						
C201	.0022 10%						
C202	.0022 10%						
C203	.02 50 V						
C204	.02 50 V						
C207	.1 100 V						
C208	.1 100 V						
C209	.001 100 V						
C210	.001 100 V						
C211	.01 50 V						
C212	.01 50 V						
C213	.05 50 V						
C214	.05 50 V						
C215	.01 50 V						
C216	.01 50 V						
C217	.05 50 V						
C218	.05 50 V						
C223	.470 100 V	10%					
C224	.470 100 V	10%					
C229	100 100 V						
C230	100 100 V						
C231	.0015 100 V	10%					
C232	.0015 100 V	10%					
C301	.470 100 V						
C302	.560 100 V						
C305	.0047 100 V	10%					
C306	.0047 100 V	10%					
C307	.1 100 V						
C309	.560 100 V						
C310	.270 100 V						
C311	.001 100 V	10%					
C404	.01 1.4 KV						
C405	.01 1.4 KV						
C406	.01 1.4 KV						
C408	.0047 1.4 KV						
C601	.01						
C700	27	5%					
C701	47	5%					
C702	270	10%					
C703	470	10%					
C704	.1						
C705	.01						

- (1) Part of Tuning Gang.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

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

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA					
			ARCO/ELMENC PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C104	100 300 V		DM-15-101J	CPR-100J	CD15FD101J03	SX310	424ME1000J501	
C105	4.7 5%			DTZ-4R7	NP04P7	CN0547	10TCC-V47	
C106	.047 100 V		1DP-2-473		DPMS6547	ENF1A147	22SP47391WD3	
C107	22 100 V		CCT0-200	DTZ-20	NP020	CN0420	10TCC-Q20	
C108	.047 100 V		1DP-2-473		DPMS6547	ENF1A147	22SP47391WD3	
C109	.001 10%		CCD-102	DD-102	GP1000	GP210	10T5-D10	
C110	.001 10%		CCD-102	DD-102	GP1000	GP210	10T5-D10	
C111	.270 10%		CCD-270	DD-271	GP327	JP250	10T5-T27	
C112	.005 5%		CCD-502	DD-502	NP02P2	CN0522	10TCC-V50	
C113	2.2 5%		CCD-502	DD-502	GP5000	JP250	10T5-D50	
C114	.005 5%		CCD-102	DD-102	GP1000	GP210	10T5-D10	
C115	.001 10%	250555-223						
C116	.039 100 V							
C117	6.8 NPO							
C118	33 100 V		DM-15-330J	CPR-33J	CD15ED330J03	SX433	10TCC-V68	
C119	220 5%		CCT0-220	DTZ-220	NP020	CN0420	10TCC-Q20	
C120	10 N750		CCTN-100	DTN-10	N10	CN7410	10TCC-Q10	
C121	.001 5%		CCD-102	DD-102	GP1000	GP210	10T5-D10	
C122	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C123	3.3 5%		DTZ-3R3	NP03P3	CN0533	TA110	10TCC-V33	
C124	1 5%							
C125	.22 pF	250221-5	CCD-103	CK-103	MGP01	TA110	TG-S10	
C126	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C127	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C128	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C130	10 300 V	250555-183	DM-15-100J	DD-502	CD15CD100J03	SX410	10T5-D50	
C131	.005 5%		CCD-502	CK-103	GP5000	JP250	TG-S10	
C133	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C134	.1 100 V	250555-183						
C135	.1 100 V							
C136	.0015 10%		CCD-152	DD-152	GP380	GP215	10T5-D15	
C137	390 10%		CCD-391	DD-391	NP082	CN0482	10TCC-Q82	
C138	.82pF	250221-13	CCT0-820	DTZ-82	MGP01	TA110	TG-S10	
C143	.01 50 V		CCD-103	CK-103	DPMS6547	ENF1A147	22SP47391WD3	
C144	.047 100 V		1DP-2-473					
C145	3-12 pF Trimmer	250371-4						
C147	.001 10%		CCD-102	DD-102	GP1000	GP210	10T5-D10	
C150	.0015 10%	250555-183	CCD-152	DD-152	GP215	JP250	10T5-D15	
C201	.0022 10%		CCD-222	DD-222	GP2200	GP222	10T5-D22	
C202	.0022 10%		CCD-222	DD-222	GP2200	GP222	10T5-D22	
C203	.02 50 V		CCD-203	CK-203	MGP02	TA120	TG-S20	
C204	.02 50 V		CCD-203	CK-203	MGP02	TA120	TG-S20	
C207	.1 100 V	250555-183						
C208	.1 100 V							
C209	.001 100 V		DM-19-102J	CPR-1000J	CD19F102J500	SX210	424ME1001J501	
C210	.001 100 V		DM-19-102J	CPR-1000J	CD19F102J500	SX210	424ME1001J501	
C211	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C212	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C213	.05 50 V		CCD-503	CK-503	MGP05	TA150	TG-S50	
C214	.05 50 V		CCD-503	CK-503	MGP05	TA150	TG-S50	
C215	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C216	.01 50 V		CCD-103	CK-103	MGP01	TA110	TG-S10	
C217	.05 50 V		CCD-503	CK-503	MGP05	TA150	TG-S50	
C218	.05 50 V		CCD-503	CK-503	MGP05	TA150	TG-S50	
C219	.470 10%		CCD-471	DD-471	GP470	GP347	10T5-T47	
C224	470 10%		CCD-471	DD-471	GP470	GP347	10T5-T47	
C229	100 10%		CCD-101	DD-101	GP100	GP310	10T5-T10	
C230	100 10%		CCD-101	DD-101	GP100	GP310	10T5-T10	
C231	.0015 10%		CCD-152	DD-152	GP215	JP250	10T5-D15	
C232	.0015 10%		CCD-152	DD-152	GP215	JP250	10T5-D15	
C301	470 100 V		DM-16-471	CPR-470J	CD15F471J500	SX347	MS-347	
C302	560 100 V		DM-19-561J	CPR-560J	CD19FD561J03	SX356	424ME5600J501	
C305	.0047 100 V	250555-183	DM-30-472J	CPR-4700J	CD19FD472J03	SX247	424ME4701J501	
C306	.0047 100 V		DM-30-472J	CPR-4700J	CD19FD472J03	SX247	424ME4701J501	
C307	.1 100 V							
C309	560 100 V							
C310	270 100 V							
C311	.001 100 V	250625-3	DM-19-102J	CPR-1000J	CD19F102J500	SX210	424ME1001J501	
C404	.01 10%		CCD-103	DD-103	GP10000	JP110	10T5-S10	
C405	.01 10%		CCD-103	DD-103	GP10000	JP110	10T5-S10	
C406A	.0047 1.4 KV		AC-5002	AC-5000	UAC250	125L-D47	125L-D47	
C406B	.0047 1.4 KV		CI-502	CI-502	UAC250	125L-D47	125L-D47	
C601	.01 5%		CCD-103	DD-103	GP10000	JP110	10T5-S10	
C700	27 5%		DM-15-270J	CPR-27J	CD15ED270J03	SX427	MS-427	
C701	47 5%		DM-15-470J	CPR-47J	CD15ED470J03	SX447	424ME4780J501	
C702	270 10%		DM-19-271J	CPR-270J	CD15FD271J03	GP347	424ME2700J501	
C703	470 10%		CCD-471	DD-471	GP470	GP347	10T5-T47	
C704	.1 10%		1DP-2-104		DPMS2P1	ENF1A101	22SP10491WD3	
C705	.01 10%		CCD-103	DD-103	GP10000	JP110	10T5-S10	

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA					
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R217A	Bass (Right)	100 K	220279-13	F1-100K, R1-100K, UP-B-400, DC2	NP-100K-S, NR-100K-S, UP-B-400, DC2	BU2, CF13, CR8, SS1, SS7A, DC1	P15L, 3038, RU15L, CS3500	
R218A	Treble (Right)	100 K	220279-13	F1-100K, R1-100K, UP-B-400, DC2	NP-100K-S, NR-100K-S, UP-B-400, DC2	BU2, CF13, CR8, SS1, SS7A, DC1	P15L, 3038, RU15L, CS3500	
R219A	Loudness (Right)	250 K Tap @ 150 K	220206-24	F112, CPL2	F16-250K, R16-250K, SF112, CPL2		P254T1253, 3038, RU254T1253, CS3500	
R236	Balance	250 K Tap @ 50 K	220263-11	F1-200K, SF112	A47-200K-S, FS-3 or [NP-200K-S, UP-B-400]	BU2, CF14, SS1, DC1	UA25L, SK3500 or [P25L, 3038, SF3000] or U43	
R700	Det. Balance	1200						

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.			WORKMAN PART No.	MFGR. PART No.
R232	.47 2 W,WW	HS.47	230164-46	R502	120 2 W,WW	230164-46	230164-75
R233	.47 2 W,WW	HS.47	230164-46	R503	6 10 W,WW	240082-23	240082-23
R234	.47 2 W,WW	HS.47	230164-46	R504	33 5 W,WW	240080-37	240080-37
R235	.47 2 W,WW	HS.47	230164-46	R505	2 10 W,WW	240082-9	240082-9
R401	22 1/2 W,F11m		230190-2205	R506	2 10 W,WW	10W-SQ2	10W-SQ2
R501	120 2 W,WW		230164-75				

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			
		MFGR. PART No.	OTHER IDENTIFICATION	MEISSNER PART No.	MILLER PART No.
L101	Loopstick	361165-1 (1)			
L102	Loopstick	361314-2 (2)			
L104	FM RF	22SP47391WD3			
L105	AM Oscillator	361235-1			
L106	FM Oscillator	361101-2			
L107	AM IF/FM IF	361237-1			
L108	RF Choke	360996-2			
L109	RF Choke	361007-4			
L301	Peaking (10 mH)	361007-2			4672
L302	Peaking (10 mH)	361007-2			4672
T101	FM Antenna	361108-1			
T102	FM Input IF/AM Input IF	361115-1			
T103	FM Interstage IF/AM Interstage IF	361239-1			
T104	Ratio Detector	361236-1			
T105	AM Output IF	361168-1			
T106	Neutralizing	361108-2			
T301	19 kHz Doubler	361147-1			
T302	38 kHz Output	360993-4			

(1) Used in -.01, -.02 versions.
(2) Used in -.03 versions.

TRANSFORMER (Power)

ITEM No.	RATING			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T401	120 VAC	45.2 VAC	6.07 VAC	300254-7001				(1) Used in some versions.
	.22 AAC	CT 0	.4 ADC	300254-7002 (1)				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	10" PM, 8 ohms	581013-1	10C528	(1) Number on unit.
SP2	3-1/2" PM, 4 ohms	581013 (1)		
SP3	10" PM, 8 ohms	580309 (1)	10C528	
SP4	3-1/2" PM, 4 ohms	581013 (1)		

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
F401	.5A @ 250 V Slow-blow, Pigtail	180865-5050		MDV1/2		315.500	

PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	ASTATIC PART No.	ELECTRO-VOICE PART No.		
	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	560347-1 (1)		5097D (1)		(1) Cartridge/needle assembly.
M2	14-330-389-1(2)	560336-2		2647D	(2) Used in some versions.
		330	N736-sd	3314DS	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M3	Meter	701263-1	Tuning Phono
M4	Motor		Power, On-Off (On changer)
S1	Switch		Speaker (Int-Off-Ext)
S201	Switch	160504-5	Selector (Phono-Tape-FM AFC-FM-AM), Used in -.01 versions
S401	Switch	160428-6	Selector (Phono-Tape-FM AFC-FM-AM), Used in -.02 and -.03 versions
S402	Switch	160504-4	Power (Auto-On-Off)
S501	Switch	160436-13	Decoder (2 Channel-4 Channel)
PC101	Component Combination	250560-3	AM RF
PC102	Component Combination	250563-1	FM RF
PC103	Component Combination	250564-1	AM/FM IF
PC201	Component Combination	250540-2	Preamp
PC202	Component Combination	250496-8	Loudness
PC203	Component Combination	250604-1	Pre-driver
PC301	Component Combination	250538-1	FM Demodulator
PC302	Component Combination	250538-1	FM Demodulator
PC700	Component Combination	523713-3	Ratio Detector (Part of T104)
	45 Adapter		
	Idler Wheel		

E