

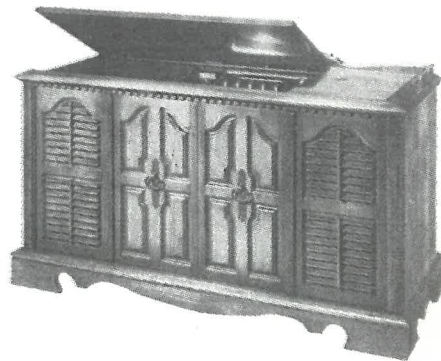
## PHOTOFACT® Folder

with CIRCUITRACE®

For Supplier Address See PHOTOFACT Index

RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

MODEL	RADIO CH.	AMP. CH.	TAPE UNIT	CHANGER
VTT310LX	RC-1245HX	RS-252N	TC-1E	RP234C-4
VTT320DX	RC-1245HX	RS-252N	TC-1E	RP234C-4
VTT320SX	RC-1245HX	RS-252N	TC-1E	RP234C-4
VTT510L	RC-1245F	RS-253M	TC-1E	RP234C-11
VTT520D,S	RC-1245F	RS-253M	TC-1E	RP234C-11
VTT530H	RC-1245F	RS-253M	TC-1E	RP234C-11
VTT540F	RC-1245F	RS-253M	TC-1E	RP234C-11
VTT610L	RC-1245F	RS-266H	TC-1E	RP234C-19
VTT620D,S	RC-1245F	RS-266H	TC-1E	RP234C-19



MODEL VTT510L

## RECORD CHANGER SERVICING

RECORD CHANGER -- RP234C-4/-11/-19

## 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 inward.

## 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.

## 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

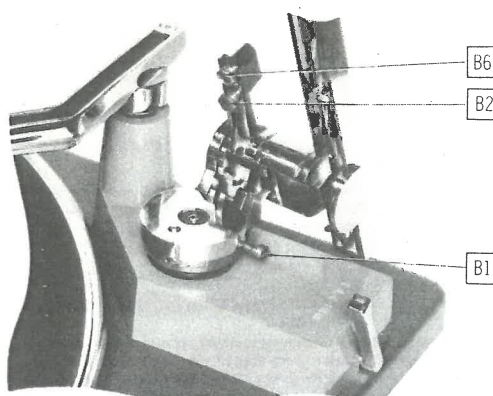
Apply light nonhardening grease to sliding cam surfaces and pivot points, light machine oil on the tone arm lift rod, idler wheel bearings, and motor bearings.

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

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. SPL1302

## CUEING HEIGHT

Adjust B6 so the needle clears the top record of a stack of six, 7-inch records on the turntable when the cueing lever is operated. Turning B6 clockwise decreases the lift-up height.

RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

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## RADIO PARTS LIST AND DESCRIPTION

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

## SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE / MFG. 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.
CR1	131501(973936-20)	GE-504A	8D4 or 5A4D	PTC201 or PTC202 PTC214	HEPR0052	SK3030 or SK3031 SK3100	RT213 or RT214 RT218
CR101	136163(1471872-16) 872-16 (1)	GE-300	D200		HEPR0602		
CR201	136164(1476689-1)(8)	GE-90 (8)	D201 (8)		HEPR2503(8)	SK3126 (8)	RT262 (8)
CR202	139328(1476690-2)	GE-300	D200	PTC214	HEPR0602	SK3100	RT218
CR203	136164(1476689-1)(8)	GE-90 (8)	D201 (8)		HEPR2503(8)	SK3126 (8)	RT262 (8)
CR204	136164(1476689-1)(8)	GE-90 (8)	D201 (8)		HEPR2503(8)	SK3126 (8)	RT262 (8)
CR206	131245(1472460-16)	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPR0052	SK3030 or SK3031 SK3146	RT213 or RT214
IC101	136145(1464437-3) 4437-3 (1)						
IC201	136146(1464438-3) 4438-3 (1)					SK3147	
IC202	140365(1465819-1) 819-1 (1)						
IC300	138380(1464460-2) 4460-3 (1)						
Q101	136165(1471115-13) 115-13 (1)	GE-20	TR-24	PTC121	HEPS0015	SK3018	RT102
Q201	136168(1473657-1) 3657-1 (1)	GE-20	TR-24	PTC121	HEPS0015	SK3018	RT102
Q202	136240(1473657-2) 3657-2 (1)	GE-20	TR-24	PTC121	HEPS0015	SK3018	RT102
Q203	136240(1473657-2) 3657-2 (1)	GE-20	TR-24	PTC121	HEPS0015	SK3018	RT102
Q204	136168(1473657-1) 3657-1 (1)	GE-20	TR-24	PTC121	HEPS0015	SK3018	RT102
Q401	136430(1471122-7) 122-7 (1)	GE-20	TR-87	PTC121	HEPS0015	SK3018	RT105
Q402	136430(1471122-7) 122-7 (1)	GE-20	TR-87	PTC121	HEPS0015	SK3018	RT105
Q403	136430(1471122-7) 122-7 (1)	GE-20	TR-87	PTC121	HEPS0015	SK3018	RT105
Q404	136430(1471122-7) 122-7 (1)	GE-20	TR-87	PTC121	HEPS0015	SK3018	RT105

(1) Number on unit.  
(8) Varactor

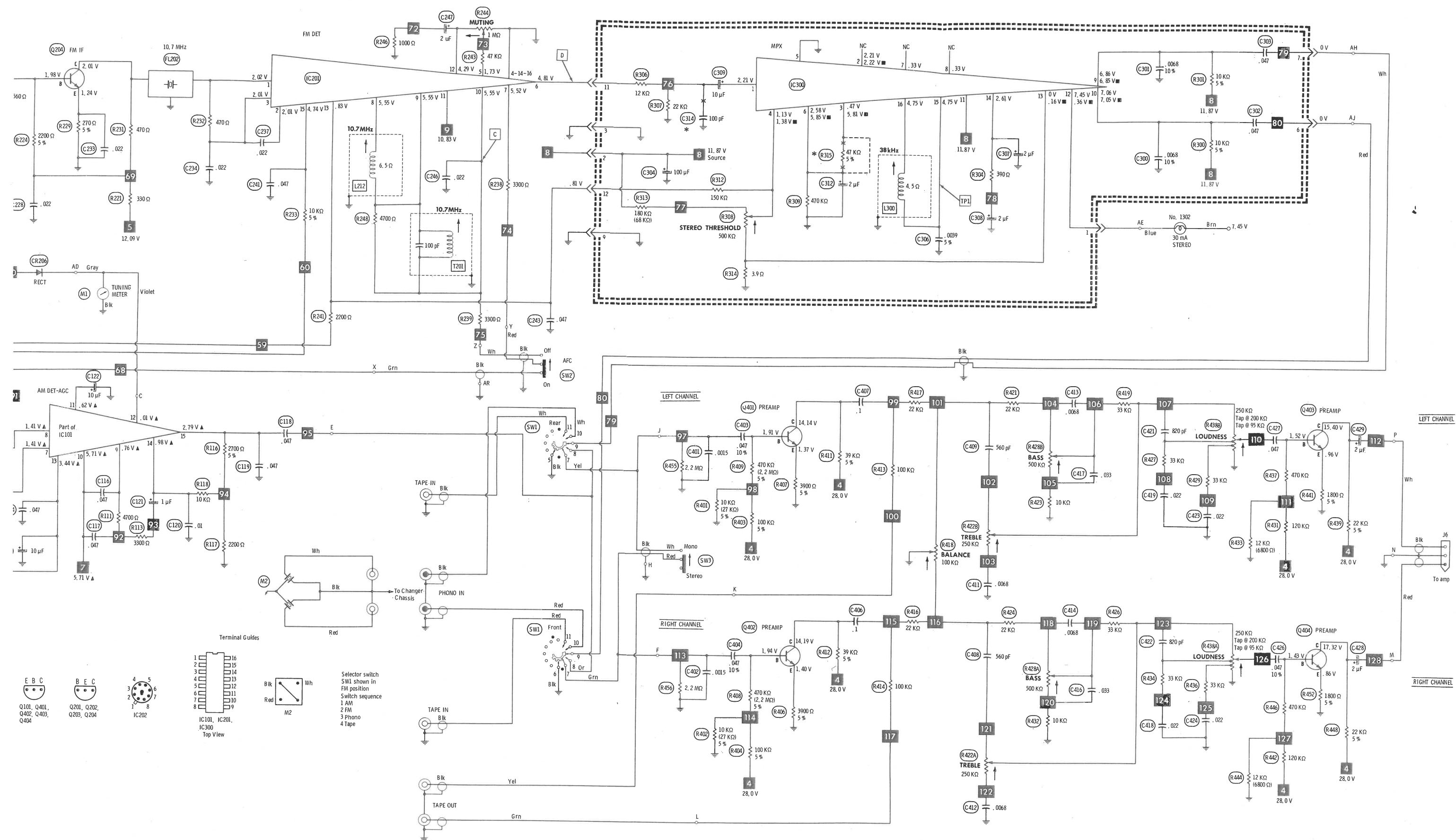
## ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFG. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100 15V	119358(1443418-9)	ME-4-E-100	EA15-100	MBR100-16	MTA100E15	TVA-1160
C2	100 35V	140450(1446562-771)	ME-J100	EA50-100	MBR100-35	MTA100F35	TVA-1310
C103	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1220
C121	1 50V	138923(1446550-181)	ME-1-J-001	EA50-1	MBR1-50	MTA1D50	TVA-1300
C122	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C231	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C232	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C236	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C239	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C242	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C247	2 50V	120083(1471882-10)	RME-A-J-002	EP50-2	PC2-100	VTT2R2A50	EV-1517
C248	100 15V	124814(1470494-9)	RME-E-E-100	EP15-100	PC100-16	MTV100CD15	EV-1230
C253	10	124814(1470494-9)	RME-E-E-100	EP15-100	PC100-16	MTV100CD15	EV-1230
C304	100 15V	124814(1470494-9)	RME-E-E-100	EP15-100	PC100-16	MTV100CD15	EV-1230
C307	2 50V	120083(1471882-10)	RME-A-J-002	EP50-2	PC2-100	VTT2R2A50	EV-1517
C308	2 50V	120083(1471882-10)	RME-A-J-002	EP50-2	PC2-100	VTT2R2A50	EV-1517
C309	10 15V	132543(1446556-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C312	2 50V	120083(1471882-10)	RME-A-J-002	EP50-2	PC2-100	VTT2R2A50	EV-1517
C428	2 50V	120083(1471882-10)	RME-A-J-002	EP50-2	PC2-100	VTT2R2A50	EV-1517
C429	2 50V	120083(1471882-10)	RME-A-J-002	EP50-2	PC2-100	VTT2R2A50	EV-1517

## CAPACITORS

ITEM No.	RATING	MFG. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C101	Tuning Gang	136161(1464434-1)					
C102	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C104	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C106	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C107	2-10 Trimmer	116501(945366-5)					
C108	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C109	200		CCD-201	DD-201	GP200	GP320	10TS-120
C111	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C112	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C113	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C114	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C116	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C117	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C118	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C119	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C120	.01		CCD-103	DD-103	GP10000	GP110	10TS-S10
C201	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C202	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C203	8 N150 ±.5	121226(1420354-209)					
C204	.01		CCD-103	DD-103	GP10000	GP110	10TS-S10
C206	39 N750 5%		CCD-102	DD-102		GP210	10TS-D10
C207	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C208	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C209	.01		CCD-103	DD-103	GP10000	GP110	10TS-S10
C211	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C212	8 N150 ±.5	121226(1420354-209)					
C213	39 N750 5%						
C214	3.3 NPD ±.25	130571(1408716-123)					
C216	.01		CCD-103	DD-103	GP10000	GP110	10TS-S10
C217	.01		CCD-103	DD-103	GP10000	GP110	10TS-S10
C218	.022		CCD-203	DD-203		GP120	5GA-S20
C219	82 10%	125842(1420354-117)	DM10-820J	CPR-82J	CD10EB820J03	5X482	424MC820J501
C221	18 N150 10%						
C222	.022		CCD-203				
C223	2-10 Trimmer	130129(1474578-5)					
C224	.001 10%		CCD-102	DD-102		GP210	10TS-D10
C226	.001 10%		CCD-203	DD-203		GP120	5GA-S20
C227	22 10%		CCD-203	DD-203		GP120	5GA-S20
C228	.022		CCD-203	DD-203		GP120	5GA-S20
C229	.022		CCD-203	DD-203		GP120	5GA-S20
C233	.022		CCD-203	DD-203		GP120	5GA-S20



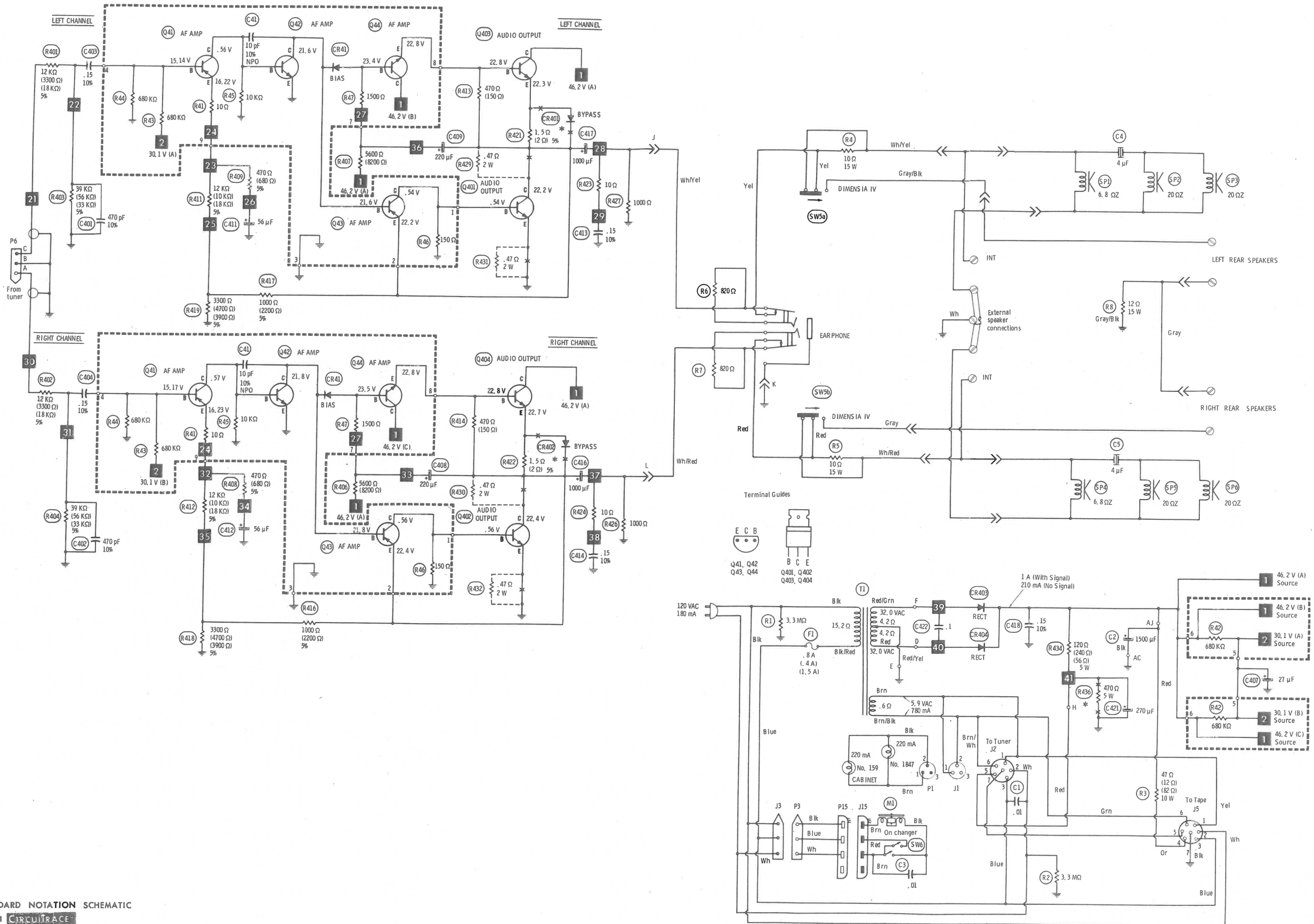




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POWER AMP

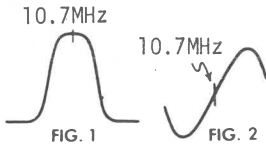
POWER AMP



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: GC ELECTRONICS  
L212, T101, T102, T201 .....9440  
T103, T104 .....9296  
L300 .....8728



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	T104, T103	Adjust for maximum. Repeat until no further improvement is noted.
600kHz	Tune to signal	"	T102, T101	Adjust for maximum.
1640kHz	"	"	C107	Adjust for maximum.
1400kHz	"	"	CT1, CT2	Adjust for maximum. Repeat AM alignment until no further improvement is noted.

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

High side of generator thru .001uF 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 C, low side to ground.	* L212	* Adjust only if L212 has been replaced. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
"	"	Vert input of scope to point D, low side to ground.	T201	Adjust T201 to place marker at center of S curve similar to Fig. 2. Check for MINIMUM movement of S Curve as AFC is switched on and off.

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	88MHz	DC probe of VTVM to point C, common to ground.	L202, L203, L206, L207, L209, L211	Adjust for maximum.
108MHz Unmodulated	108MHz	"	C223	Adjust for maximum. Repeat FM RF steps until no further improvement is noted.

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

High side of generator thru 47K to point D, low side to ground.

19kHz	Vert input of scope thru 47K to point TP1 low side to ground.	L300	Adjust for maximum 38kHz response.
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TRACKING ADJUSTMENT

Tune to low-end station and adjust Low-End Tracking Control (R204) for maximum signal. Tune to high-end station and adjust High-End Tracking Control (R226) for maximum sound.

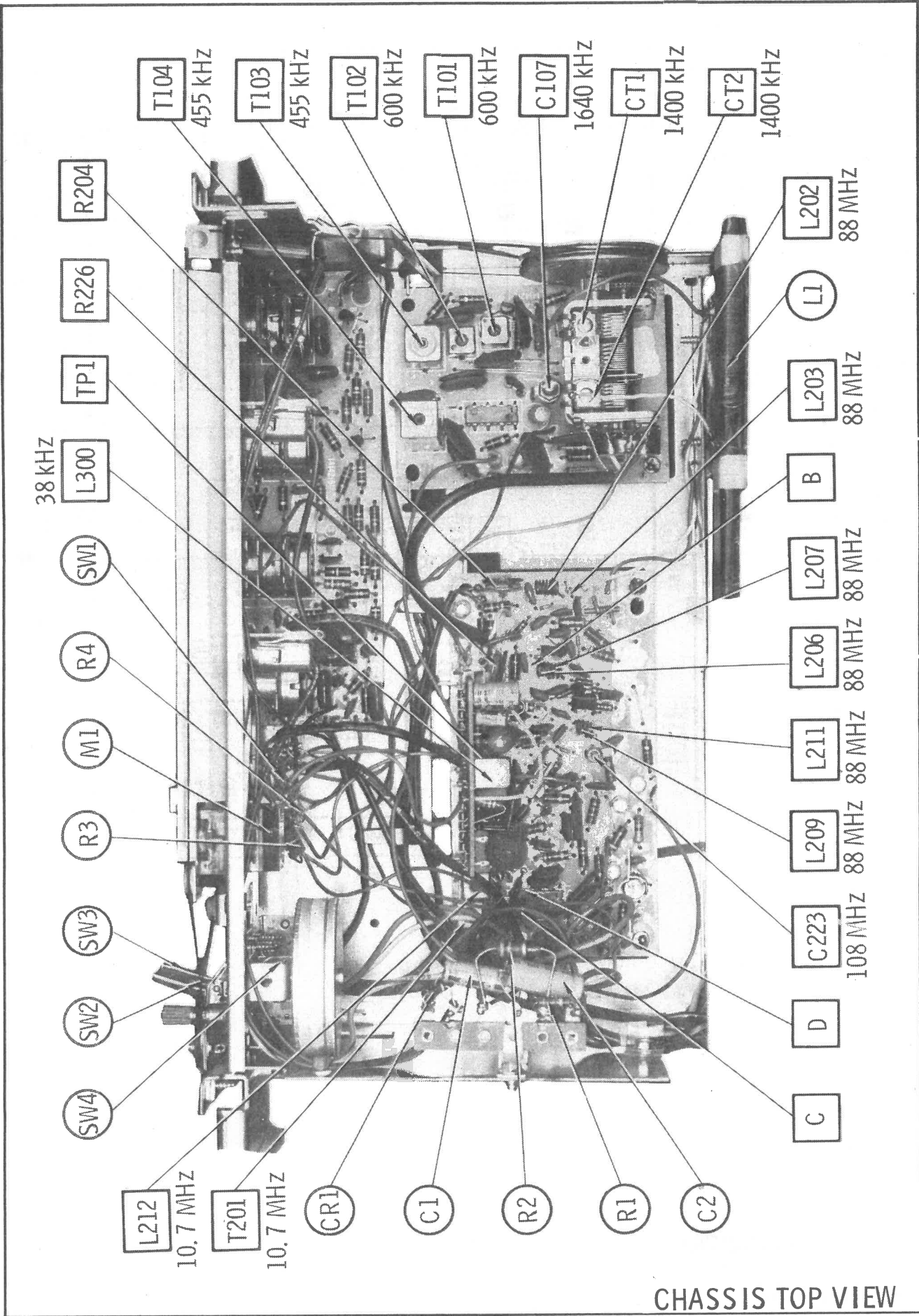
MUTE ADJUSTMENT

Tune between stations and adjust Muting Control

(R244) until noise is nearly eliminated. Do not eliminate all noise.

THRESHOLD ADJUSTMENT

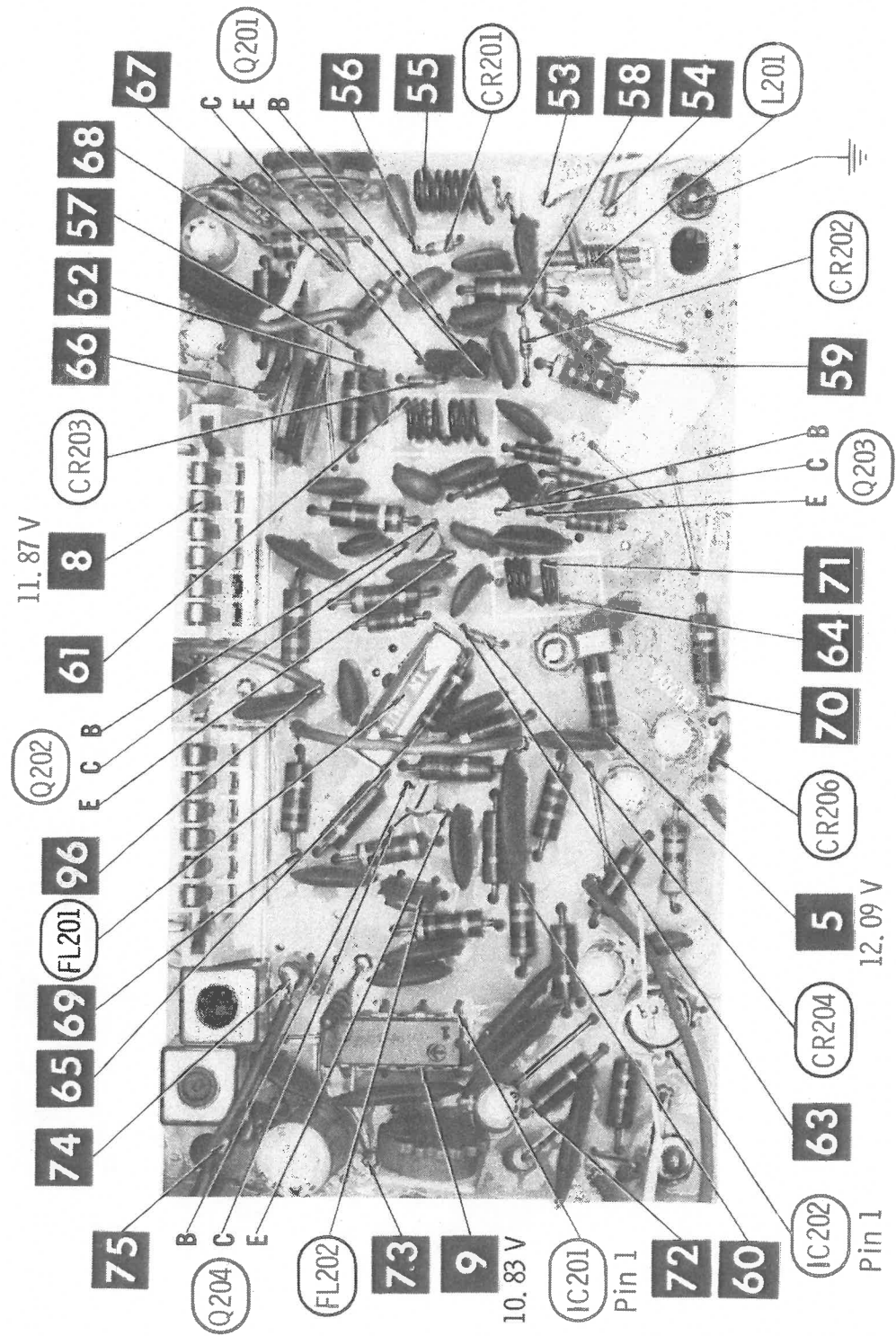
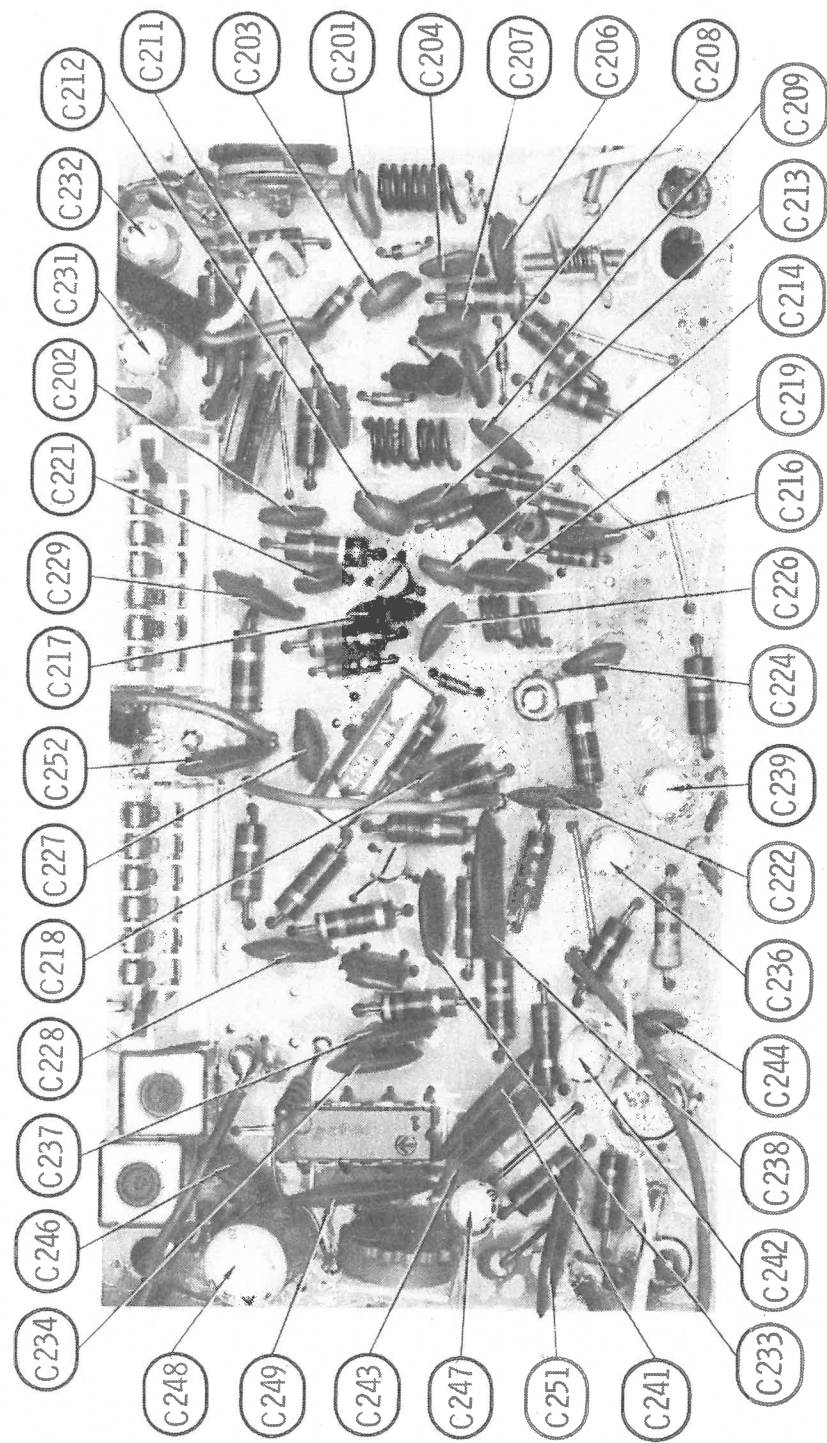
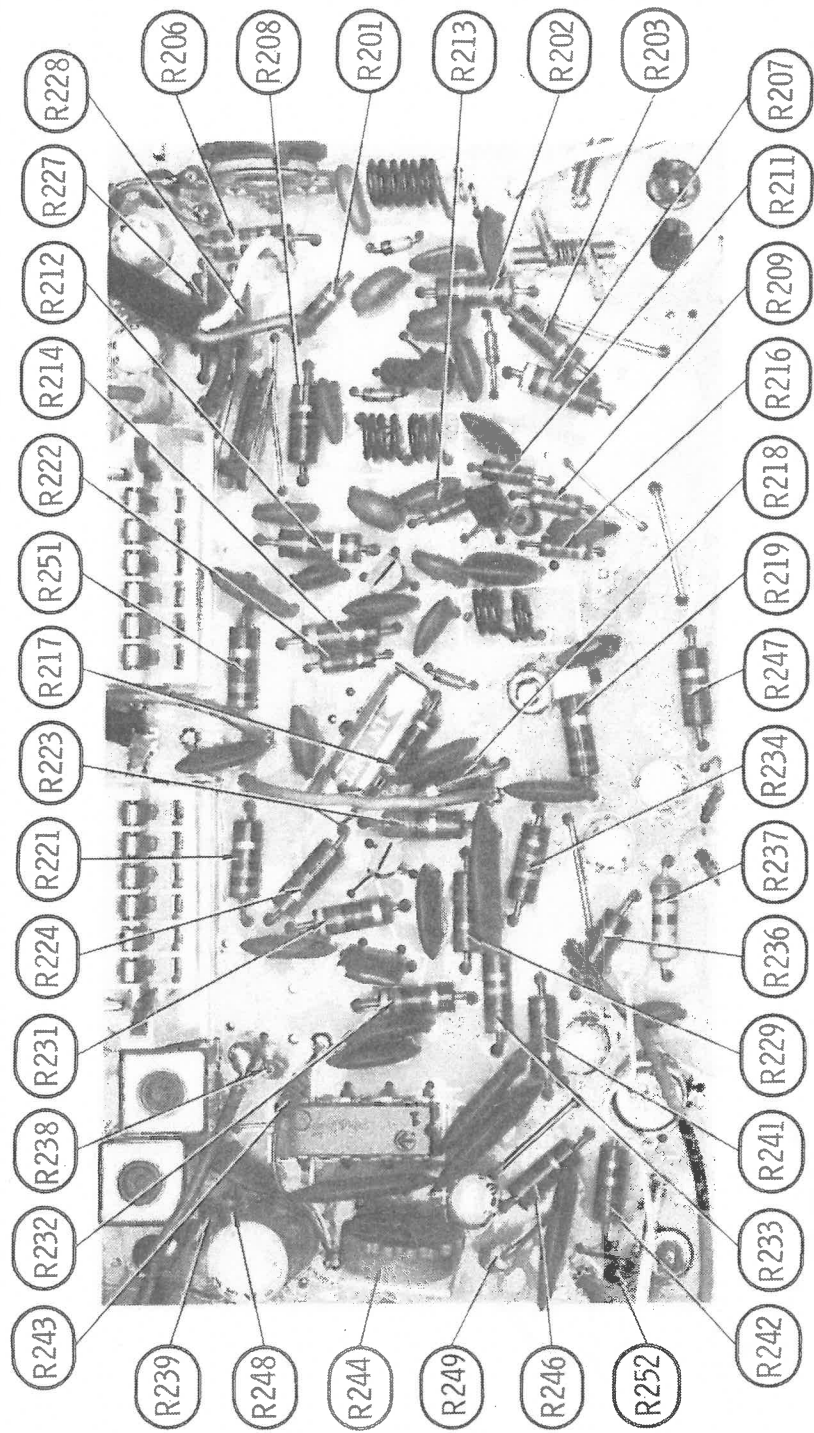
Tune in a weak station and adjust Stereo Threshold Control (R308) for stereo indication.



CHASSIS TOP VIEW



# FM BOARD



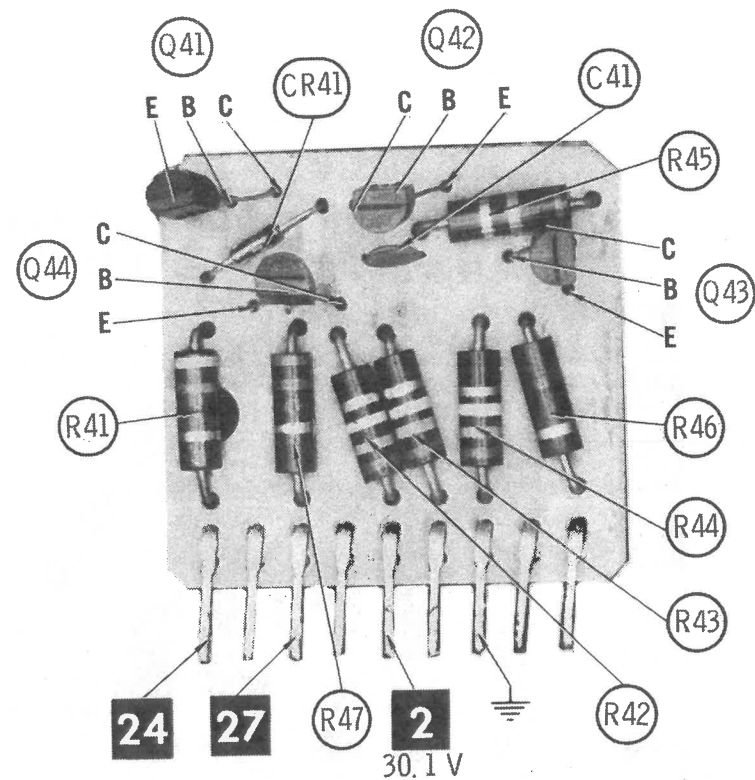
RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

FOLDER 4

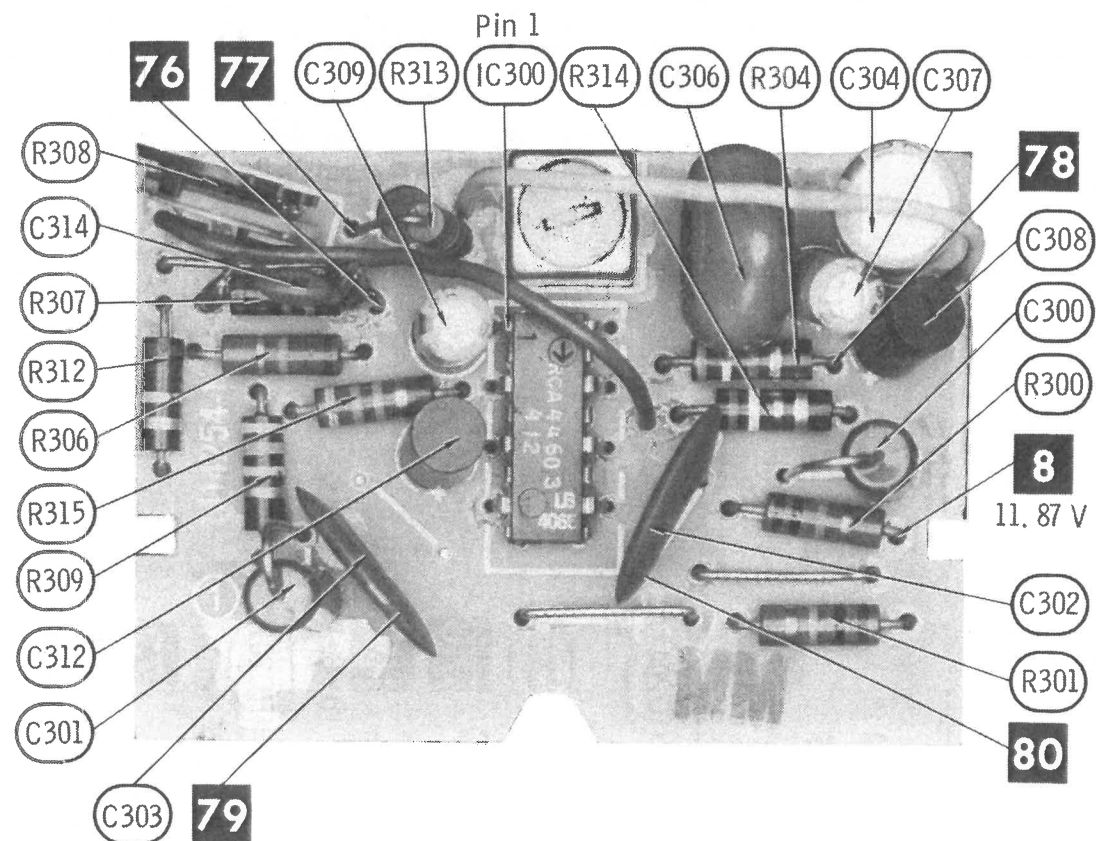
# FM BOARD

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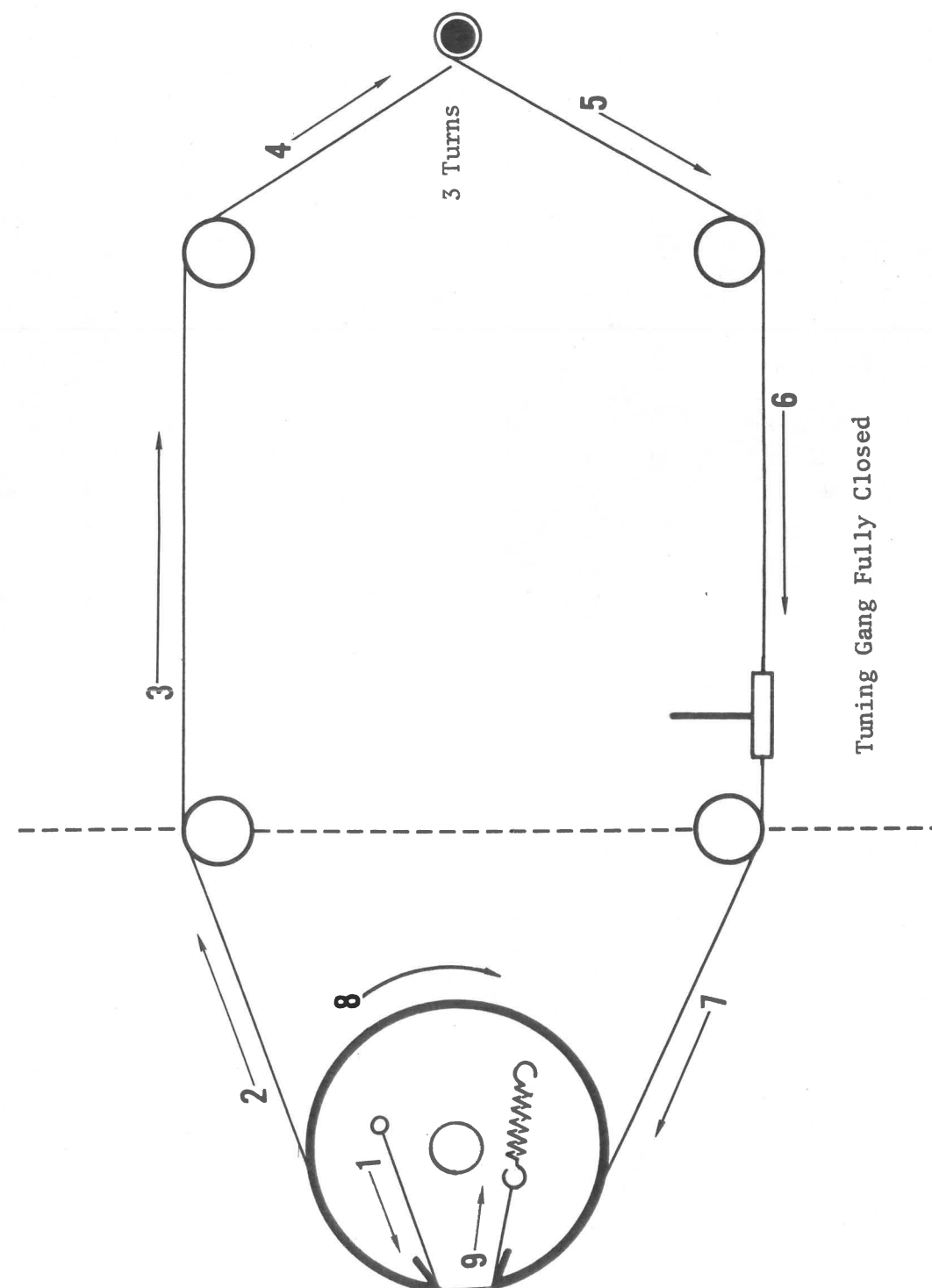
SET 1489 FOLDER 4



AUDIO AMP BOARD A Howard W. Sams CIRCUITRACE® Photo

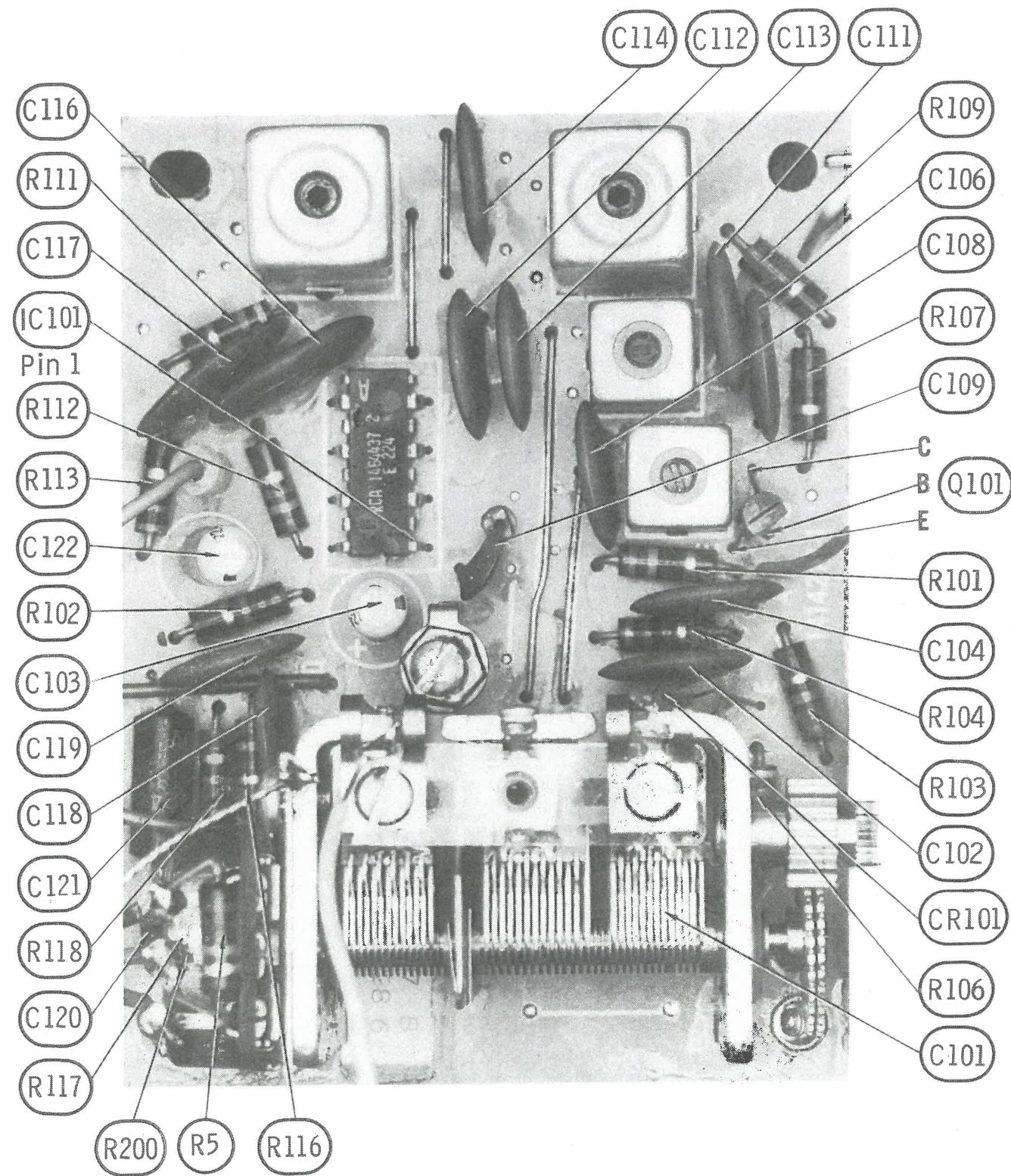


MPX BOARD A Howard W. Sams CIRCUITRACE® Photo

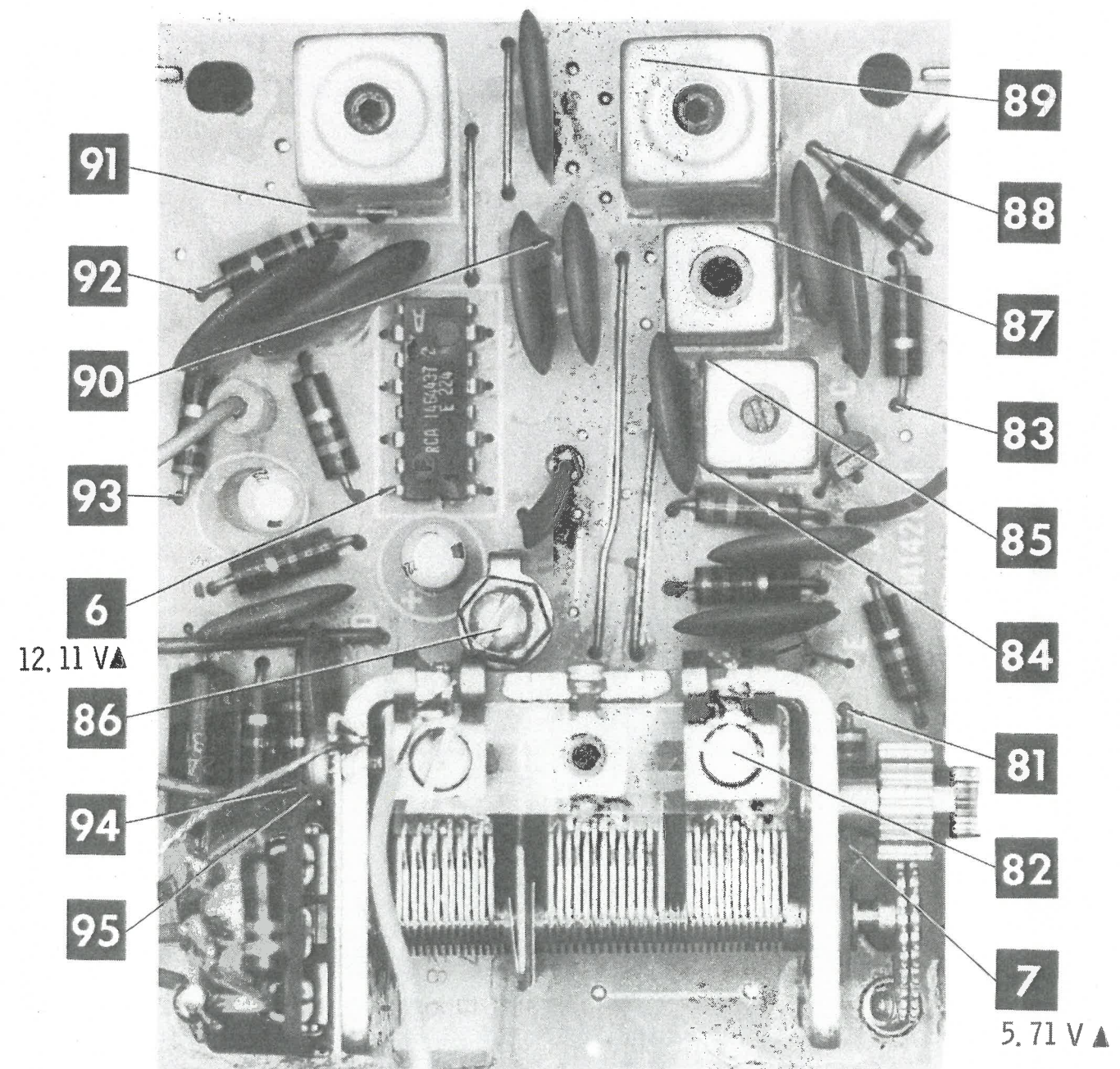


DIAL CORD STRINGING





AM BOARD



▲ MEASURED IN AM POSITION

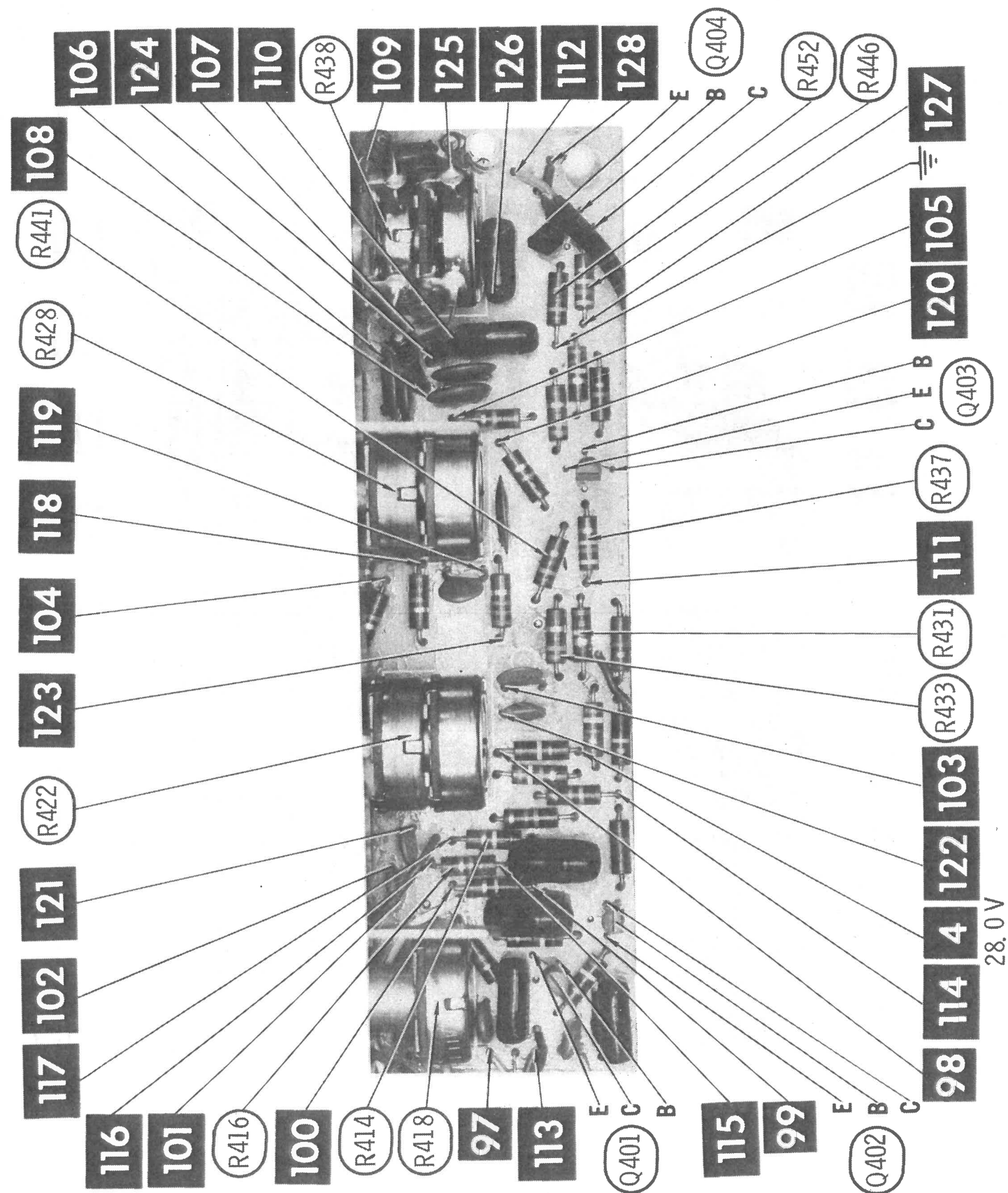
RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

FOLDER 4

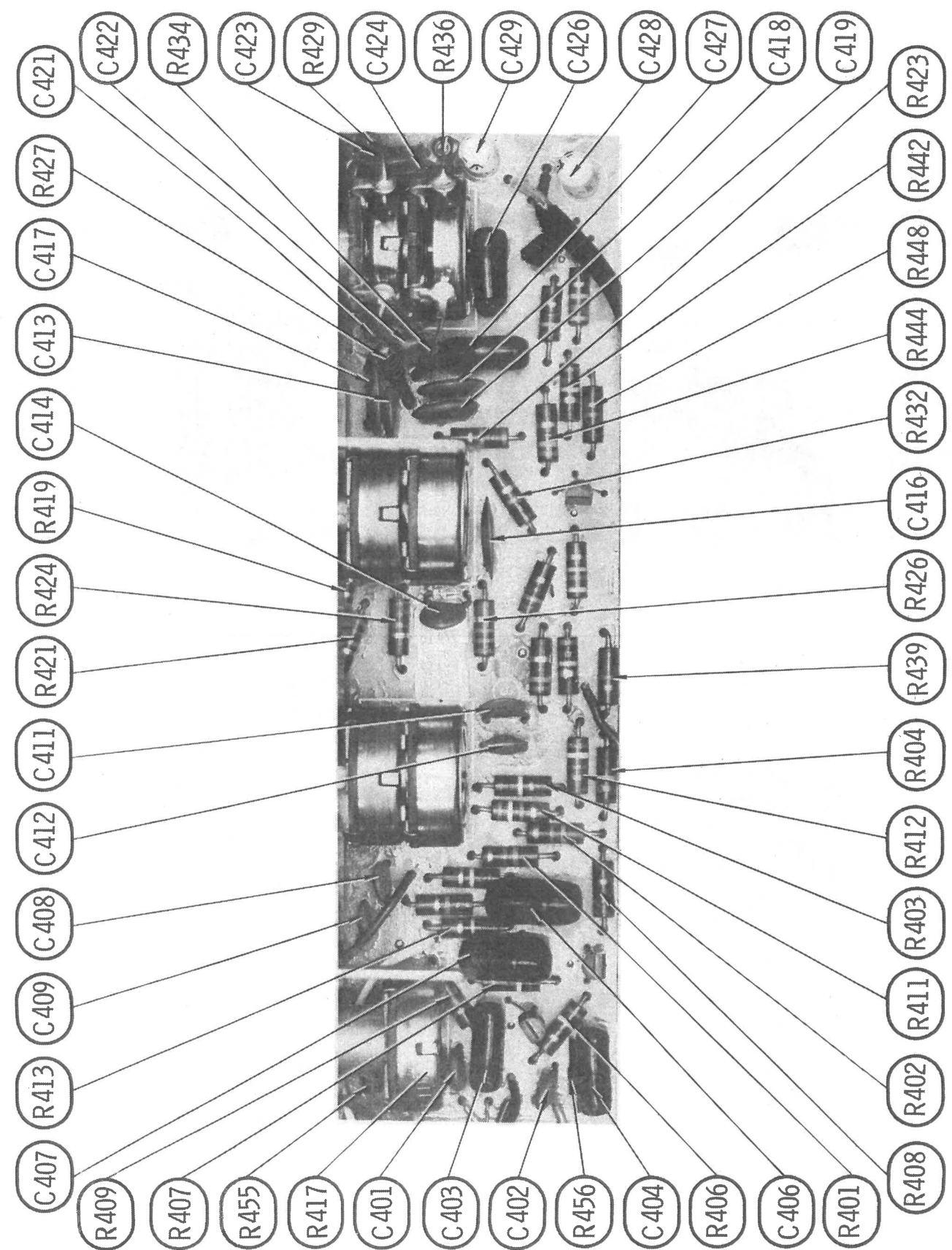
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AM BOARD



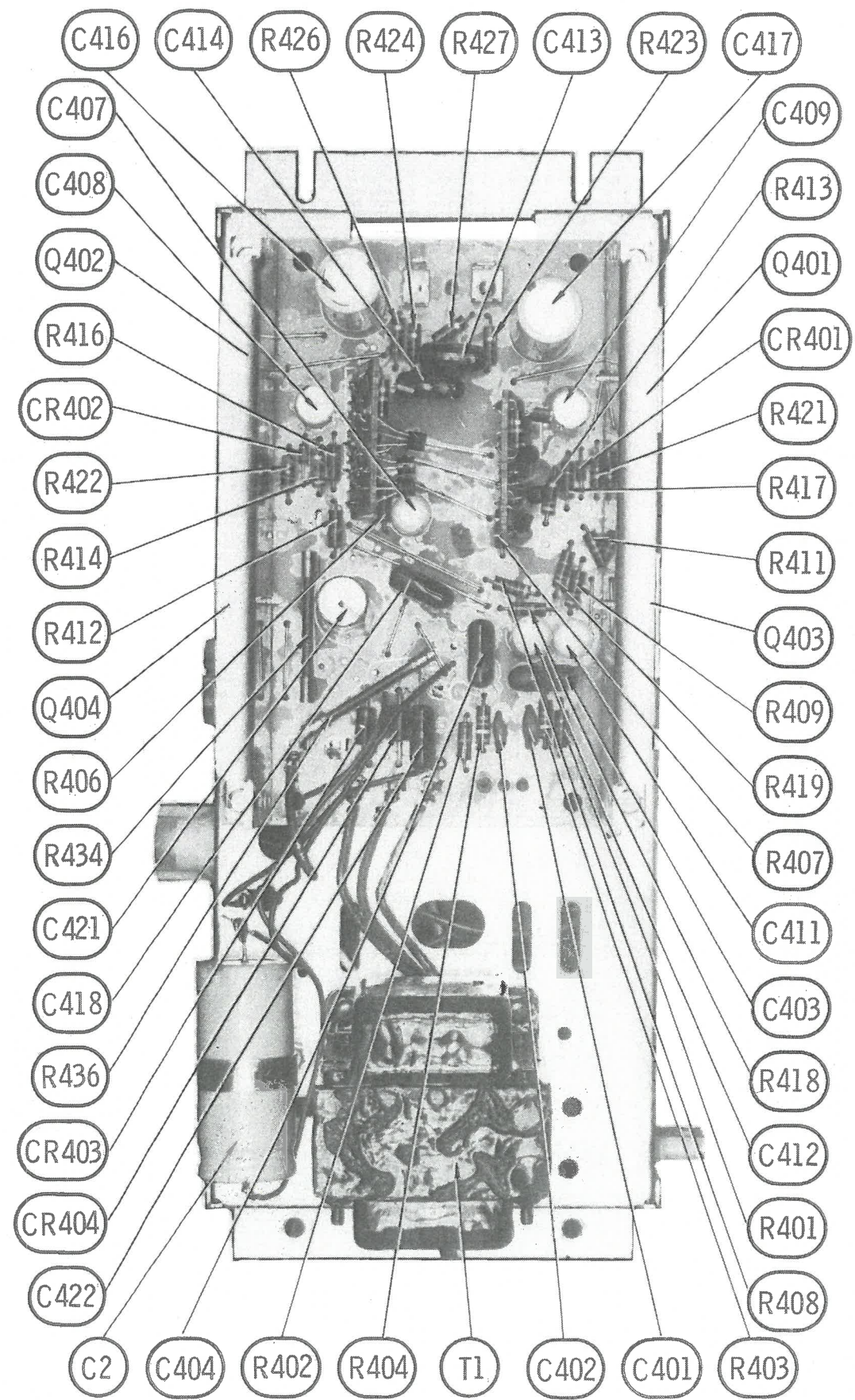


## AUDIO PREAMP BOARD

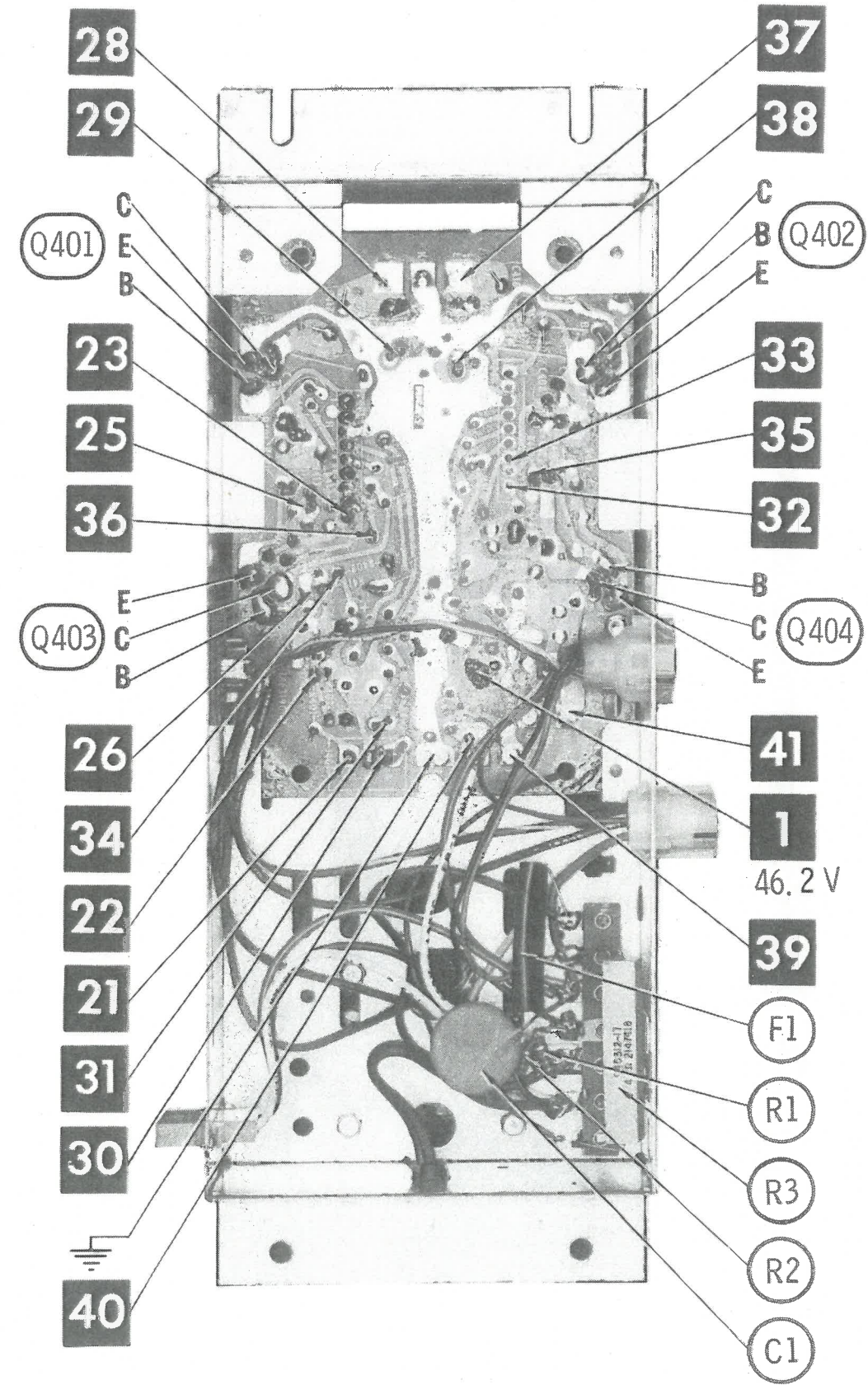
A Howard W. Sams **CIRCUITRACE** Photo

## AUDIO PREAMP BOARD





AUDIO OUTPUT CHASSIS/BOARD



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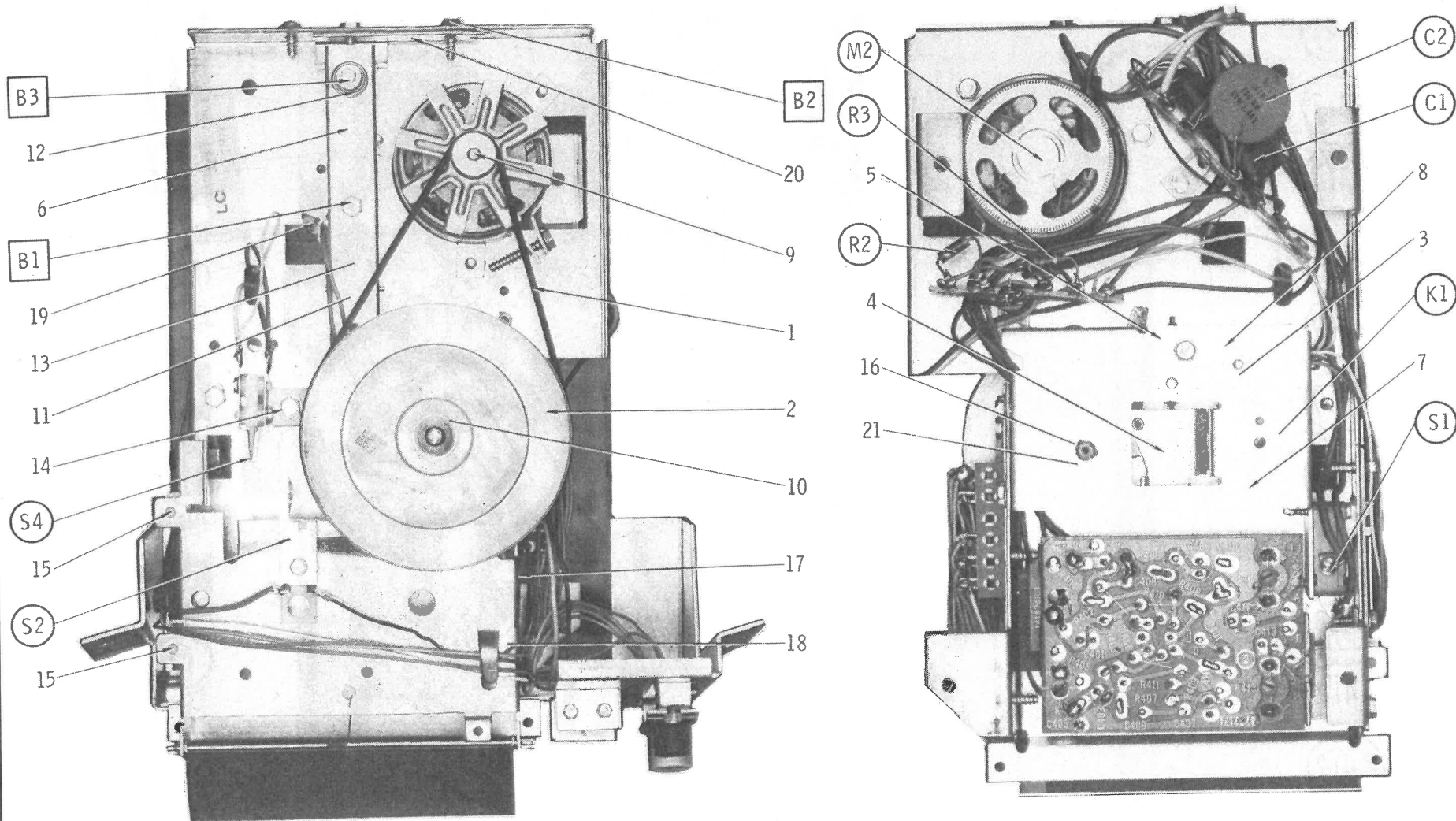
AUDIO OUTPUT CHASSIS/BOARD

RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

FOLDER 4



TAPE CHASSIS



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

SEMICONDUCTORS (Select replacement transistor for best results)

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.
Z401	138681(1464846-1) 4846-1 (1)							ECG 949

(1) Number on unit.

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.	
C401	30 15V	133661(1471882-19)	ME-3-E-030	EP15-25	PC30-25	MTV30C825	EV-1325	
C402	10 15V	132543(1446656-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222	
C403	10 15V	132543(1446656-441)	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222	
C406	30 15V	133661(1471882-19)	ME-3-E-030	EP15-25	PC30-25	MTV30C825	EV-1325	
C407	30 15V	133661(1471882-19)	ME-3-E-030	EP15-25	PC30-25	MTV30C825	EV-1325	
C412	10 10V	116159(1443265-6)	RME-A-D-010	EP15-10	PC10-25	VTT10A25	EV-1222	
C413	10 10V	116159(1443265-6)	RME-A-D-010	EP15-10	PC10-25	VTT10A25	EV-1222	

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENDO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1uF 250V AC	138692(1448422-1)					
C2	.01 1.4KV		CCD-103	C1-103	AC-10000	UAC110	125L-S10
C3	.01		CCD-681	DD-1032	GP10000	GP110	10TS-S10
C404	680		CCD-681	DD-681	GP680	GP368	10TS-T68
C405	680		CCD-681	DD-681	GP680	GP368	10TS-T68
C408	.0082		CCD-822	DD-822			10TS-D82
C409	.0082		CCD-822	DD-822			10TS-D82
C410	.0047		CCD-472	DD-472			10TS-D47
C411	.0047		CCD-472	DD-472			10TS-D47

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R412	Level - Right	10K	138680 1472271-19(5)			MT14L4	U201R103B
R413	Level - Left	10K	138680 1472271-19(5)			MT14L4	U201R103B

(5) Number on unit.

TAPE HEADS

ITEM No.	MEASURED			MFR. PART No.	NORTONICS PART No.	DESCRIPTION
	INDUCTANCE	BIAS/ERASE VOLTS (RMS)	BIAS FREQ.			
M1	405mH			171883	5800 (1)	8-Track Stereo Play

(1) Use original mounting.

MISCELLANEOUS

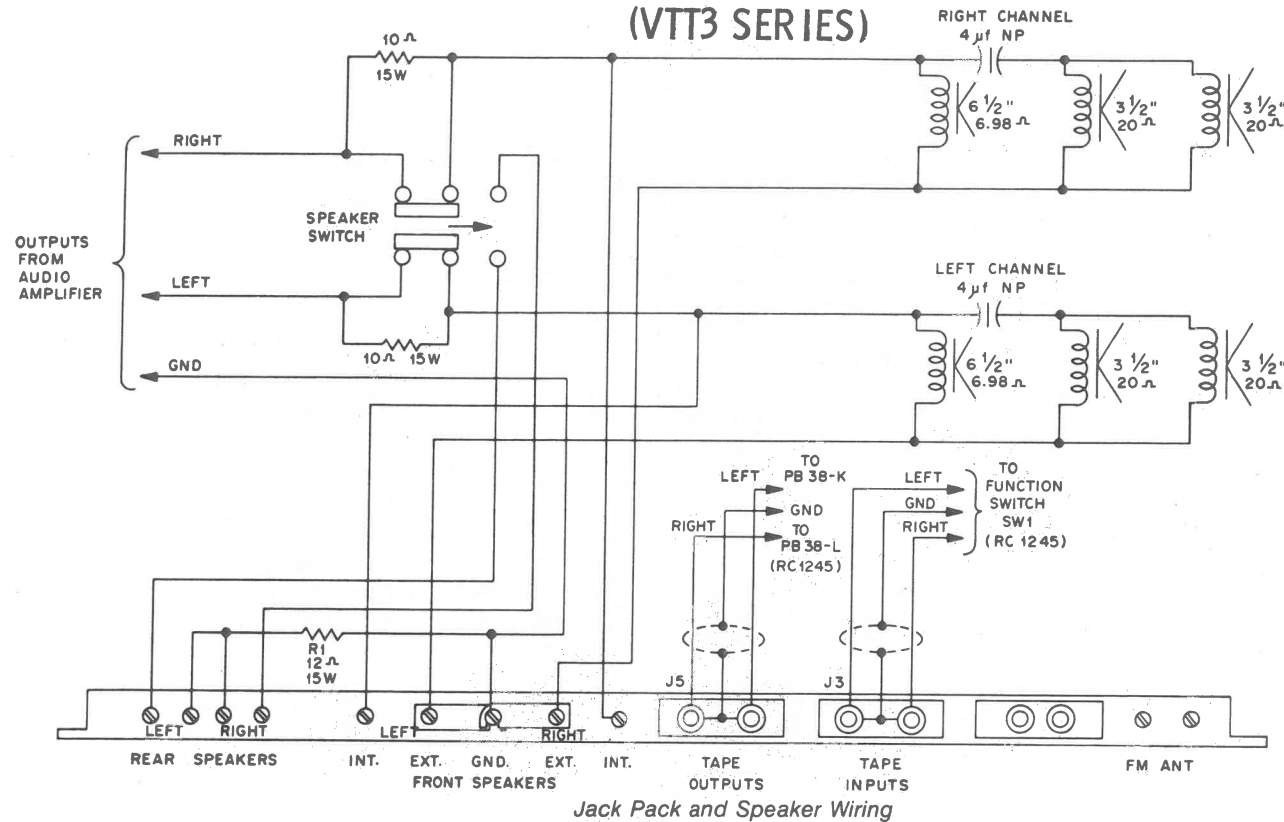
ITEM No.	PART NAME	PART No.	NOTES
M2	Motor	171884(1464813-1)	120V AC @ 1800 rpm
S1	Switch	138663(1464828-1)	Power On/Off
S2	Switch	138330(938351-797)	Lamp Power On/Off
S3	Switch	138658(1475954-501)	Manual Program Select
S4	Switch	138331(1475906-1)	Auto Program Select
S6	Switch	138660(1475930-502)	Program Ind.
	Printed Circuit Board	138681(1464846-1)	Tape Preamp

RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

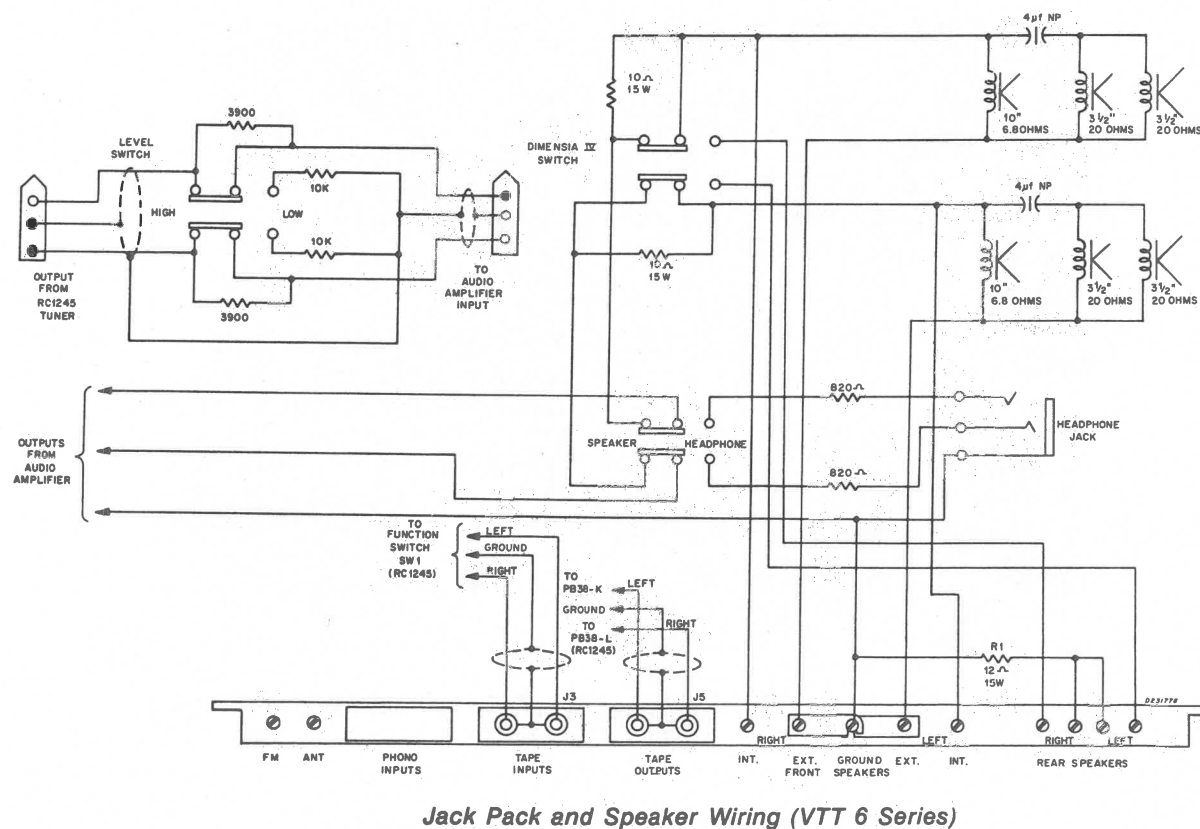
FOLDER 4

# AUDIO POWER AMPLIFIER CIRCUIT BOARD AND JACK PACK ASSEMBLY

## (VTT3 SERIES)



# AUDIO POWER AMPLIFIER CIRCUIT BOARD AND JACK PACK ASSEMBLY (VTT 6 SERIES)



## 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.
Head Tension	Adjust B3 for 16 oz. measured at head clamping screw.
Play Level	Apply .01V rms, 1000Hz, through 100K resistor across left (right) channel section of R/P head. Adjust R413 (R412) for .64V rms at point S (T).

## 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 (S4) dirty. Cam (3) binding or worn. Pawls (4) and (5) worn. Arms (7) and (8) 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*	138672*	Flywheel Drive Belt*	12	138667	Head Tension Spring
2	138669	Flywheel	13		Head Height Arm
3	138660 (1)	Track Changing Cam	14	138673	Tape Guide
4	138664	Track Changing Pawl (Assembly)	15	138665	Guide Roller (2 used)
5	140554	Pull Pawl	16	138711	Capstan Bearing
6		Head Mounting Arm	17	138655	Pressure Roller Spring
7	138661	Track Changing Pawl Spring	18	138656	Pressure Roller
8	138661	Pull Pawl Spring	19	102402	Head Mounting Spring
9	138671	Motor Pulley (Assembly)	20		Head Arm Bracket
10	138668	Flywheel Housing	21		Channel Indicator Cam
11	138666	Head Height Spring			

\* Flywheel Drive Belt - E-V/GAME Replacement Number 1425-03.  
WALSCO Replacement Number 1425-03.

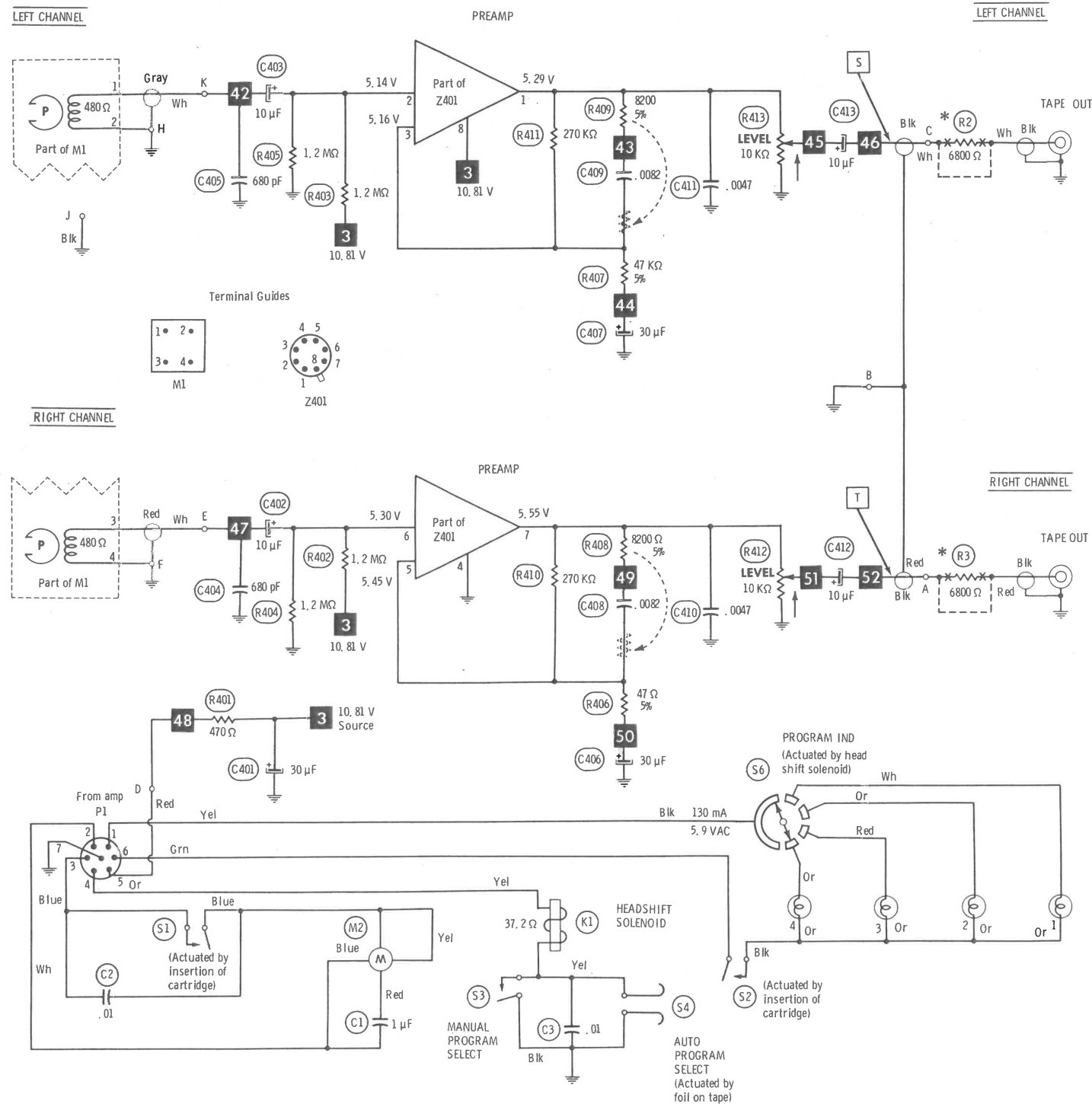
(1) Part of Switch (S6) assembly.

RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

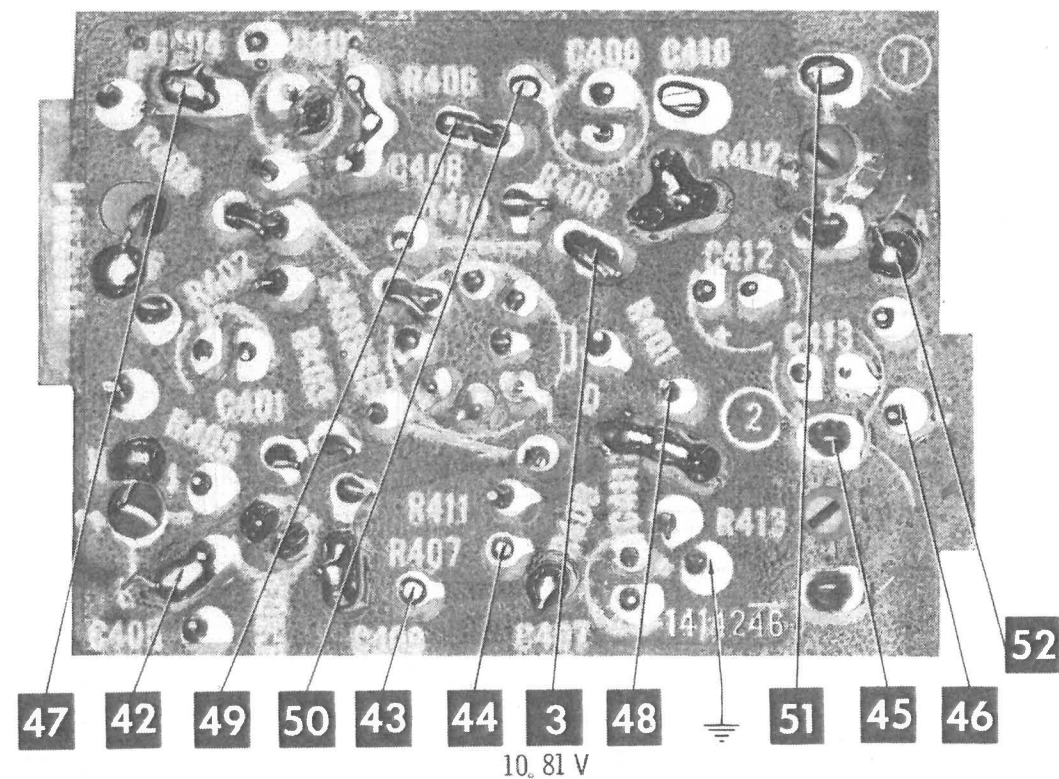
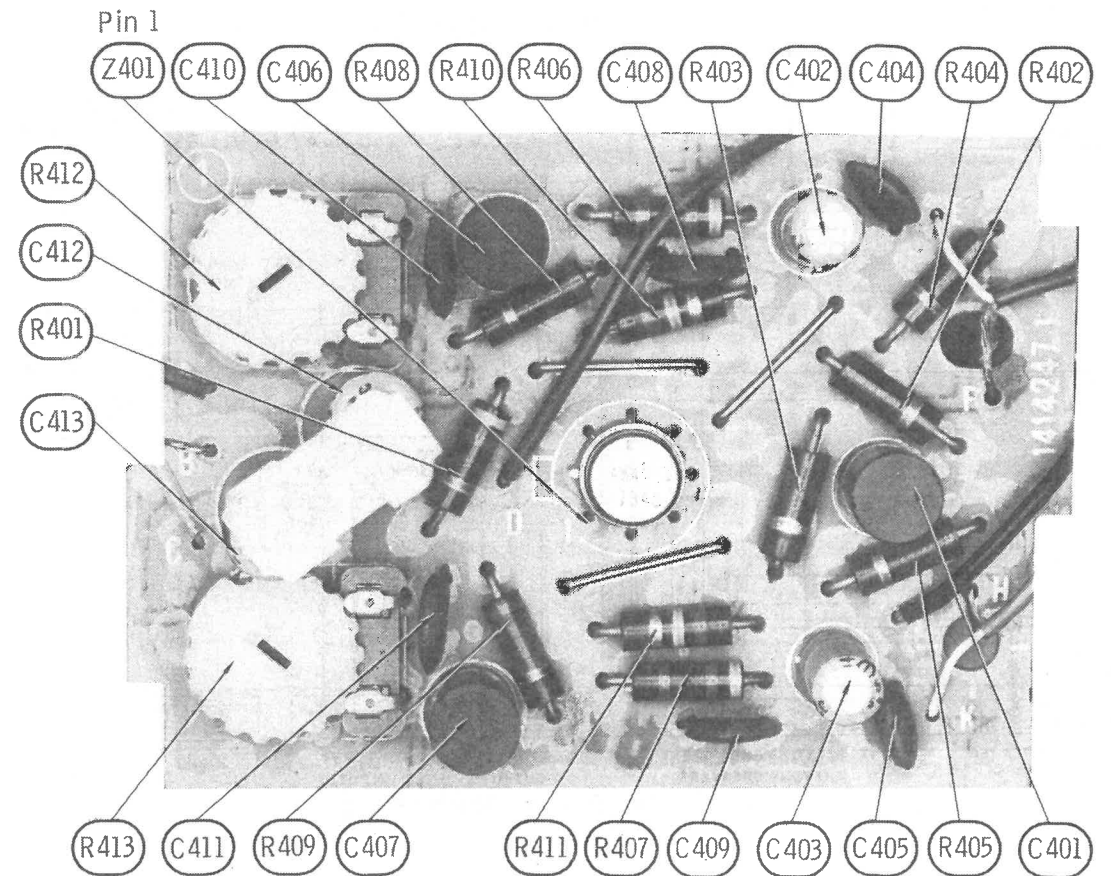
FOLDER 4



NOTE: DEMAGNETIZE HEADS AFTER SERVICING



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
WITH CIRCUITRACE<sup>®</sup>  
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**TAPE PREAMP**



A Howard W. Sams CIRCUITRACE<sup>®</sup> Photo

**TAPE PREAMP**

RCA CHASSIS RC-1245F/-1245HX,  
RS-252N/-253M/-266H, TC-1E

FOLDER 4

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.	
C234	.022	133535(1447121)	CCD-203			GP120	5GA-S20	
C237	.022		CCD-203			GP120	5GA-S20	
C238	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C241	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C243	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C244	100		CCD-101	DD-101	GP100	GP310	10TS-T10	
C246	.022		CCD-203			GP120	5GA-S20	
C249	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C251	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C252	.022		CCD-203			GP120	5GA-S20	
C300	.0068 630V 10%		DM30-682J	CPR-6800J	CD20FD682J03	SX268		
C301	.0068 630V 10%		DM30-682J	CPR-6800J	CD20FD682J03	SX268		
C302	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C303	.047		CCD-503	DC-503	MGPO5	MAG5015	TGL-S50	
C306	.0039 5%							
C314	100		CCD-101	DD-101	GP100	GP310	10TS-T10	
C401	.0015		CCD-152	DD-152		GP215	10TS-D15	
C402	.0015		CCD-152	DD-152		GP215	10TS-D15	
C403	.047 100V 10%		1MDF-2-473		DPMS2547	EWF1A147	1PB-S47	
C404	.047 100V 10%		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10	
C406	.1 100V		1MDF-3-104		DPMS2P1	EWF1A010	1PB-P10	
C407	.1 100V		CCD-561	DD-561		GP356	10TS-T56	
C408	560		CCD-561	DD-561		GP356	10TS-T56	
C409	560		CCD-682	DD-682	GP6800	GP268	10TS-D68	
C411	.0068		CCD-682	DD-682	GP6800	GP268	10TS-D68	
C412	.0068		CCD-682	DD-682	GP6800	GP268	10TS-D68	
C413	.0068		CCD-682	DD-682	GP6800	GP268	10TS-D68	
C414	.0068		CCD-682	DD-682	GP6800	GP268	10TS-D68	
C416	.033		CCD-303	DC-303		GP130	TG-S30	
C417	.033		CCD-303	DC-303		GP120	5GA-S20	
C418	.022		CCD-203			GP120	5GA-S20	
C419	.022		CCD-203			GP120	5GA-S20	
C421	820		CCD-821	DD-821	GP820	GP382	10TS-T82	
C422	820		CCD-821	DD-821	GP820	GP382	10TS-T82	
C423	.022		CCD-203			GP120	5GA-S20	
C424	.022		CCD-203			GP120	5GA-S20	
C426	.047 100V 10%		1MDF-2-473		DPMS2547	EWF1A147	1PB-S47	
C427	.047 100V 10%		1MDF-2-473		DPMS2547	EWF1A147	1PB-S47	
CT1	Trimmer	(1)						
CT2	Trimmer	(1)						

(1) Part of Tuning Gang.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R200	Varactor Tuning	10K	136152 1476675-1 (5) 126347				
R204	FM Tracking - Low End	7500	1473359-6 (5) 126347	T-7500 or TSV-10K	C-103	MTC14L1	X201R752B
R226	FM Tracking - High End	7500	1473359-6 (5) 126347	T-7500 or TSV-10K	C-103	MTC14L1	X201R752B
R244	Muting	1Meg	132628 1473359-9 (5) 138145	TSV-1M or T-1Meg TSV-500K or T-500K	C-105	MTC16L1	X201R105B
R308	Stereo Threshold	500K	138145 1472272-18 (5)		C-504	MTC55L1	X201R504B
R418	Balance	100K	137272 1472223-2 (5)	F1-100K, SFS212, BA006, CA005		P15L, 3058 SH3375, S01500	BU3, CF13, SS4, DC1, QCN
R422a	Treble - Right	250K	137323	F2-250K, RZ-250K, SFS212, CPL2	NP-250K-Z, NP-250K-Z, SE-F-400, DC2	P254A, 3014, RU254A, SL45	BU1, CF23, CR18, SS4, SS7A, DC1
R422b	Treble - Left	250K	1472229-7 (5)				
R428a	Bass - Right	500K	137274	F2-500K, RZ-500K, SFS212, CPL2	NP-500K-Z, NP-500K-Z, SE-F-400, DC2	P55A, 3014, RU55A, SL45	BU1, CF25, CR20, SS4, SS7A, DC1
R428b	Bass - Left	500K	1472229-6 (5)				
R438a	Loudness - Right	250K Taps 95K, 200K	136148				BU1, CF10777, CR72TT, SS4, SS7A, DC1
R438b	Loudness - Left	250K Taps 95K, 200K	1472229-5 (5)				

(5) Number on unit.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Loopstick	136180	1476673-1		
L201	RF Choke	130291	1443286-2		
L202	FM Antenna				
L203	FM Antenna				
L206	FM RF				
L207	FM RF				
L209	FM Oscillator				
L211	FM Oscillator				
L212	FM Interstage	137267	1445873-1		
L300	19KHz Input	136169	1445867-1		
T101	AM RF	136174	962975-5		
T102	AM Oscillator	136173	962981-10		
T103	AM Input IF	136172	1444829-7		
T104	AM Interstage	136171	1444829-8		
T201	Quadrature	136170	1445872-1		

PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA					NOTES
	MFR. PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.	
	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	
M2	138262				5624D	
M3		131780		N576sd	2918DS	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
FL201	Ceramic Filter	170610(1410750-1)	
FL202	Ceramic Filter	170610(1410750-1)	
M1	Meter	140363(1479335-1)	
SW1	Switch	140364(1448453-1)	
SW2	Switch	136175(1463166-9)	
SW3	Switch	136176(1463166-10)	
SW4	Switch	136179(1464440-1)	
	Printed Circuit Board	136141(1454936-502)	
	Printed Circuit Board	136142(1454937-507)	
	Printed Circuit Board	138368(1454938-507)	
	Printed Circuit Board	140373(1454957-503)	

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Knob, Function Switch	138528 (1464477-2)	Knob, Track Selector	138523 (1475993-1)
Knob, Tuner Controls	138527 (1464477-1)	Window, AM-FM Tuning (Models VTT510L, VTT520D/S, VTT530H, VTT540F, VTT610L, VTT620D,S)	138516 (1436236-1)
Knob, Tuning	138529 (1464479-1)	Window, AM-FM Tuning (Models VTT310LX, VTT320DX, VTT320SX)	138541 (1436236-3)
Knob, Dimension IV	138530 (1464458-1)		

WIRING DATA

General-use Unshielded Hook-up Wire .....	Use BELDEN No. 8528 (Solid) Available in 12 Colors
Power Cord .....	Use BELDEN No. 8522 (Stranded) Available in 12 Colors
Low-loss Shielded Lead (Interconnecting) ..	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft.
Phono Pick-up Arm Cable .....	Use BELDEN No. 17109 (Plastic) or 17129 (Rubber) - 9 Ft.
	Use BELDEN No. 8401 or 8421
	Use BELDEN No. 8430 (Two-Conductor-Unshielded)
	Use BELDEN No. 8429 (Two-Conductor-Shielded)
	Use BELDEN No. 8419 (Three-Conductor-Shielded)

AMP PARTS LIST AND DESCRIPTION

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

SEMICONDUCTORS (Select replacement transistor for best results)

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.
CR41	131245(1472460-16) AP074 (1)	GE-504A	D200	PTC214	HEPRO602	SK3030	RT218	ECG 116
CR401	127993(1474778-7)	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR402	127993(1474778-7)	GE-300	D200	PTC214	HEPRO602	SK3100	RT218	ECG 177
CR403	132148(1474778-8)	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPRO052	SK3030 or SK3031	RT213 or RT214	ECG 116 or ECG 117
	132814(99203-4) (2)	GE-504A	8D4 or 5A4D	PTC202	HEPRO052	SK3030 or SK3031	RT213 or RT214	ECG 116 or ECG 117
CR404	132148(1474778-8)	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPRO052	SK3030 or SK3031	RT213 or RT214	ECG 116 or ECG 117
	132814(99203-4) (2)	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPRO052	SK3030 or SK3031	RT213 or RT214	ECG 116 or ECG 117
Q41	131242(1471112-8) 112-8 (1)	GE-21	TR-30'	PTC103	HEPS0031	SK3025	RT115	ECG 159
Q42	131243(1471120-8) 120-8 (1)	GE-18	TR-25	PTC125	HEPS0015	SK3024	RT114	ECG 123A
Q43	131241(1471112-7) 112-7 (1)	GE-67	TR-28	PTC142	HEPS0019	SK3025	RT115	ECG 129
Q44	126334(1471120-7) 120-7 (1)	GE-63	TR-25	PTC144	HEPS0015	SK3122	RT102	ECG 123A
Q401	131161(1471132-5) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	132-5 (1)	GE-28	TR-55	PTC110	HEPS5000	SK3054	RT133	ECG 152
Q402	131075(1471132-4) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	131161(1471132-5) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	132-5 (1)	GE-28	TR-55	PTC110	HEPS5000	SK3054	RT133	ECG 152
Q403	131075(1471132-4) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	131161(1471132-5) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	132-5 (1)	GE-28	TR-55	PTC110	HEPS5000	SK3054	RT133	ECG 152
Q404	131075(1471132-4) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	131161(1471132-5) (10)	GE-66	TR-76	PTC110	HEPS5000	SK3054	RT152	ECG 184
	132-5 (1)	GE-28	TR-55	PTC110	HEPS5000	SK3054	RT133	ECG 152
	131075(1471132-4) (10)	GE-28	TR-55	PTC110	HEPS5000	SK3054	RT133	ECG 152

(1) Number on unit. (2) Used in some versions.  
(10) Half of matched pair (Q401 and Q403; Q402 and Q404).

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.
C2	1500 50V	140420(1478997-3)	ME-J2000		WBRI500-50	TC50150A	TWA-1318
C4	4 25V NP	125565(1444818-3)	CTA-7405		WNP4-50	TCN504A	TWN-1202.2
C5	4 25V NP	125565(1444818-3)	CTA-7405		WNP4-50	TCN504A	TWN-1202.2
C407	27 50V	135247(1446666-981)	ME-4-J-030		MTV300B75	EV-1525	(1432733-1)
C408	220 10V	135249(1446668-231)	RME-G-D-250		MTV2500B10	EV-1145	134486
C409	220 10V	135249(1446668-231)	RME-G-D-250		MTV2500B10	EV-1145	(1474355-2)
C411	56 25V	136746(1446667-461)	CTA-1255		MTV60CD25	EV-1527	133727
C412	56 25V	136746(1446667-461)	CTA-1255		MTV60CD25	EV-1527	(1474335-502)
C416	1000 35V	134376(1096517-3)	RME-R-H-1000		TC50100C	TVA-1316	138261
C417	1000 35V	134376(1096517-3)	RME-R-H-1000		TC50100C	TVA-1316	(1432734-9)
C421	270 35V	132778(1472503-15)	ME-J250		WBR300-150	MTA300G50	136252(1454940-502)

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.
C1	.01 1.4KV			C1-103	AC-10000	UAC110	125L-S10
C3	.01 1.4KV			C1-103	AC-10000	UAC110	125L-S10
C41	10 NP0 10%		CC70-100	DT-10	NP010	CN0410	10T05-S10
C601	470 10%		CCD-471	DD-471	NP470	GP347	10T5-T47
C402	470 10%		CCD-471	DD-471	DP470	GP347	10T5-T47
C403	.15 75V 10%		1MDF-3-154		DPMS2P15	EMF1A015	1PB-P15
C404	.15 75V 10%		1MDF-3-154		DPMS2P15	EMF1A015	1PB-P15
C41	.15 75V 10%		1MDF-3-154		DPMS2P15	EMF1A015	1PB-P15
C414	.15 75V 10%		1MDF-3-154		DPMS2P15	EMF1A015	1PB-P15
C418	.15 75V 10%		1MDF-3-154		DPMS2P15	EMF1A015	1PB-P15
C422	.1 100V		1MDF-3-104		DPMS2P1	EMF1A010	1PB-P10