SAMS PHOTOFACT®

AUTO RADIO SERIES

AR-266

266

SEPTEMBER, 1978

CONTENTS

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

Cat. No. AR-266

SAMS PHOTOFACT®

AUTO RADIO SERIES

VOLUME

266

by the Howard W. Sams ENGINEERING STAFF

HOWARD W. SAMS & CO., INC.
INDIANAPOLIS INDIANA

FIRST EDITION
FIRST PRINTING—SEPTEMBER, 1978

PHOTOFACT®
AUTO RADIO SERIES
VOLUME 266

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AUTO RADIO SERIES

TABLE OF CONTENTS

GENERAL SERVICING INFORMATION

The following information applies to all tape units in this volume, and should be followed before any adjustments are made or trouble diagnosis is attempted. Any exceptions or additions will be found in the detailed servicing procedures for each tape unit.

POWER SOURCES

Many tape units require full supply voltage for proper operation. Be sure the supply voltage is maintained at the rated value under load while making adjustments.

CLEANING

All head faces should be cleaned with head cleaner or methyl alcohol to remove dust and accumulated oxide. (An applicator may be fashioned from absorbent cotton.) Do not use a screwdriver or any metallic object near the head faces.

CAUTION: *Avoid getting head cleaner on any plastic surface.*

Clean capstans, pressure rollers, and tape guides with alcohol using a soft lint-free cloth. Also use alcohol to remove oil and grease from drive belts and other driving surfaces.

LUBRICATING

Clean all surfaces before lubricating. Apply a few drops of #20 machine oil to all bearings and rotating bushings. Apply a thin film of light, nonhardening grease to all cam surfaces and pawls, if they have been factory lubricated. Always wipe excess oil or grease from parts that have been lubricated.

CAUTION: *Oil and grease must be kept off all driving surfaces as well as any parts which may transfer oil or grease to them.*

DEMAGNETIZING

Heads require demagnetizing at regular intervals to maintain high-frequency response, dynamic range, and low distortion. (Follow instructions included with the demagnetizing unit.) After demagnetizing the heads, keep all screwdrivers and other metallic objects away from the head faces. Tape guides may also require occasional demagnetizing.

IMPORTANT: *Be sure to demagnetize the heads after making resistance measurements in the head circuits.*

CARTRIDGES

Many problems associated with tape units result from defective cartridges. Always try a cartridge known to be good before attempting repairs.

NOTE

Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.
(Refer to FCC Rules and Regulations Part 95, Subpart C & D.)

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50-ohm dummy load or the normally used antenna system.

MODEL 4048077

MANUFACTURER'S SPECIFICATIONS

CB RADIO SPECIFICATIONS (1)

- Radio

Frequency Range:	AM 535-1610 KHz FM 88-108 MHz
Intermediate Frequency:	AM 455 KHz FM 10.7 MHz
Sensitivity:	AM 11 uV Min. FM 6 uV
Stereo Separation:	25 dB (at 400 Hz)

- Common

Power Supply Voltage:	12 VDC (11-16V), Negative Ground
Power Consumption:	
Radio AM:	Approximately 8.3W
Radio AM/FM-MX:	Approximately 8.3W
CB Transceiver:	Approximately 11.0W
Audio Power Output:	Greater than 4.0 Watts per channel for distortion less than 10%.
Speaker Impedance:	1.6-3.2 Ohms

- CB Receiver

Channels:	40
Frequency Range:	26.965 - 27.405 MHz
Intermediate Frequency:	1st (10.595 MHz) 2nd (455 KHz)
Sensitivity:	.7 uV input to produce at least 2 Watts audio output at 10 db S/N ratio or better
Adjacent Channel Rejection:	40 dB for less than 6 dB reduction in SINAD ratio.
Squelch Sensitivity (Full CW):	200 uV to 631 uV
AGC:	94 dB (output ± 2 db for inputs of 10 uV to 0.5 volts)

CB RADIO SPECIFICATIONS (1) (continued)

CB Transmitter

Channels:	40
Frequency Range:	26.965 - 27.405 MHz
Frequency Tolerance:	± 0.005%
RF Output Power:	4W (Maximum)
Modulation Capability:	80-100%
Spurious Suppression:	-60 dB or more
Antenna Impedance:	50 Ohms

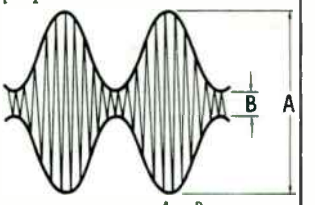
Courtesy of the Manufacturer

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

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment.
Maintain line voltage at 120V AC. Allow a 15-minute warm-up period.
Adjustments made with 13.80-volt DC input.
Connect low sides of test equipment to ground unless specified otherwise.
Connect 50-ohm dummy load or antenna before keying transmitter.

Suggested Alignment Tools:	GC ELECTRONICS:
C974	8276, 5000
L204, L206	9091, 8728A, 8728
T201, T202, T203, T301 thru T304, T906, T907, T908, IFT301 thru IFT305	5009, 8728A, 8728



Modulation Ratio = $\frac{A - B}{A + B}$ x 100 (%)

FIGURE 1

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter thru 5pF to TP10 (IC901 Pin 3).	Ch. 19	C974	Adjust for 10.240MHz.
Input of DC meter to TP1 (Junction of R967 & R968).	Ch. 19	T906	Adjust for 3.20 volts.
Input of oscilloscope to TP2 (Junction of T908 & R985).	Ch. 19	T907,T908	Adjust for Maximum.
Input of frequency counter to TP2 (Junction of T908 & R985).	Ch. 1		Check for 16.370MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP11 (IC901 Pin 2).	Ch. 1		Check for 1.010MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP12 (TR305 Base).	Ch. 19		Check for 10.140MHz.
Input of frequency counter thru 5pF to TP13 (TR207 Emitter).	Ch. 19, XMT		Check for 10.595MHz.
Input of frequency counter to antenna jack.	Ch. 19, XMT	C974	Check for 27.185MHz. If necessary readjust C974 for 27.185MHz.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Set generat r output low enough to prevent AGC limiting.
Squelch MINIMUM, NB Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP12 (TR305 Base). 455kHz,1000Hz @ 30% modulation.	Ch. 19	IFT305, IFT304, IFT303	Adjust for Maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation.	Ch. 19	IFT302, IFT301, T303,T302, T301	Adjust for Maximum output. If necessary readjust IFT303, IFT304, IFT305.
Inject a 100pps, pulse width 1uSec signal at antenna jack. Input of oscilloscope to TP3 (TR310 Collector).	Ch. 19 NB On	T304	Adjust for Maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Squelch MINIMUM, NB Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 500uV.	Ch. 19	VR302	AGC Adjust volume for 0db. Decrease generator output to 1uV. Adjust VR302 for 10db drop in audio.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 500uV.	Ch. 19 Squelch Maximum	VR303	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 100uV.	Ch. 19	VR301	S METER Adjust for 9 on s scale of meter.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 1uV. Input of AC VTVM to TP14 (CN301 Pin 1).	Ch. 19	VR305	AUDIO GAIN Adjust for 90mV audio.

TRANSMITTER ALIGNMENT

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	T203,T202, T201,L206, L204,VR203	Adjust for Maximum.
	Ch. 19	VR202	Adjust for 3.8 watts.

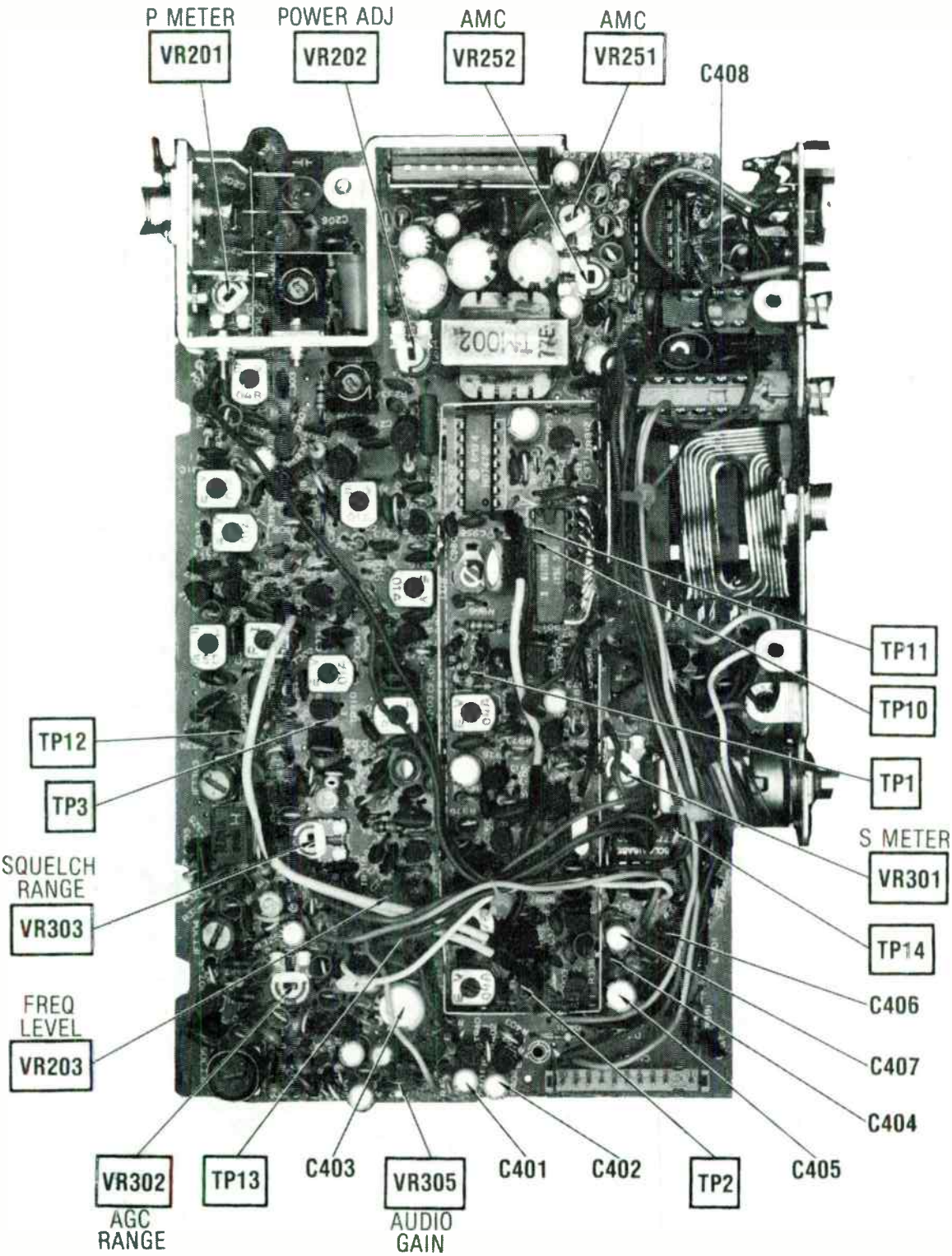
TRANSMITTER ADJUSTMENTS

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope or modulation meter to antenna jack. Inject a 1000Hz, 70mV signal at Mic input.	Ch. 19	VR251,VR252	AMC Adjust VR252 for maximum modulation. Adjust VR251 for 100% modulation maximum. See Figure 1.
Connect an RF wattmeter and 50-ohm 25-watt dummy load to antenna jack.	Ch. 19	VR201	P METER Adjust VR201 so that P meter agrees with RF wattmeter.

TRUTH CHART

CHANNEL	1 = 5.00 Volts 0 = 0 Volts IC901 PROGRAM DIVIDER PINS 11	12	13	14	15	16	17			REC & XMT SYNTHESIZER OUTPUT IN MHz AT TP2 (Junction T908 & R895)	DIVIDER INPUT VCO OUTPUT IN MHz AT TP11 (IC901, PIN 2)	
1	1	0	0	1	0	1				16.370	1.010	
2	1	0	0	1	1	0				16.380	1.020	
3	1	0	0	1	1	1				16.390	1.030	
4	1	0	1	0	0	1				16.410	1.050	
5	1	0	1	0	1	0				16.420	1.060	
6	1	0	1	0	1	1				16.430	1.070	
7	1	0	1	1	0	0				16.440	1.080	
8	1	0	1	1	1	0				16.460	1.100	
9	1	0	1	1	1	1				16.470	1.110	
10	1	1	0	0	0	0				16.480	1.120	
11	1	1	0	0	0	1				16.490	1.130	
12	1	1	0	0	1	1				16.510	1.150	
13	1	1	0	1	0	0				16.520	1.160	
14	1	1	0	1	0	1				16.530	1.170	
15	1	1	0	1	1	0				16.540	1.180	
16	1	1	1	0	0	0				16.560	1.200	
17	1	1	1	0	0	1				16.570	1.210	
18	1	1	1	0	1	0				16.580	1.220	
19	1	1	1	0	1	1				16.590	1.230	
20	1	1	1	1	0	1				16.610	1.250	
21	1	1	1	1	1	0				16.620	1.260	
22	1	1	1	1	1	1				16.630	1.270	
23	0	0	0	0	1	0				16.660	1.300	
24	0	0	0	0	0	0				16.640	1.280	
25	0	0	0	0	0	1				16.650	1.290	
26	0	0	0	0	1	1				16.670	1.310	
27	0	0	0	1	0	0				16.680	1.320	
28	0	0	0	1	0	1				16.690	1.330	
29	0	0	0	1	1	0				16.700	1.340	
30	0	0	0	1	1	1				16.710	1.350	
31	0	0	1	0	0	0				16.720	1.360	
32	0	0	1	0	0	1				16.730	1.370	
33	0	0	1	0	1	0				16.740	1.380	
34	0	0	1	0	1	1				16.750	1.390	
35	0	0	1	1	0	0				16.760	1.400	
36	0	0	1	1	0	1				16.770	1.410	
37	0	0	1	1	1	0				16.780	1.420	
38	0	0	1	1	1	1				16.790	1.430	
39	0	1	0	0	0	0				16.800	1.440	
40	0	1	0	0	0	1				16.810	1.450	



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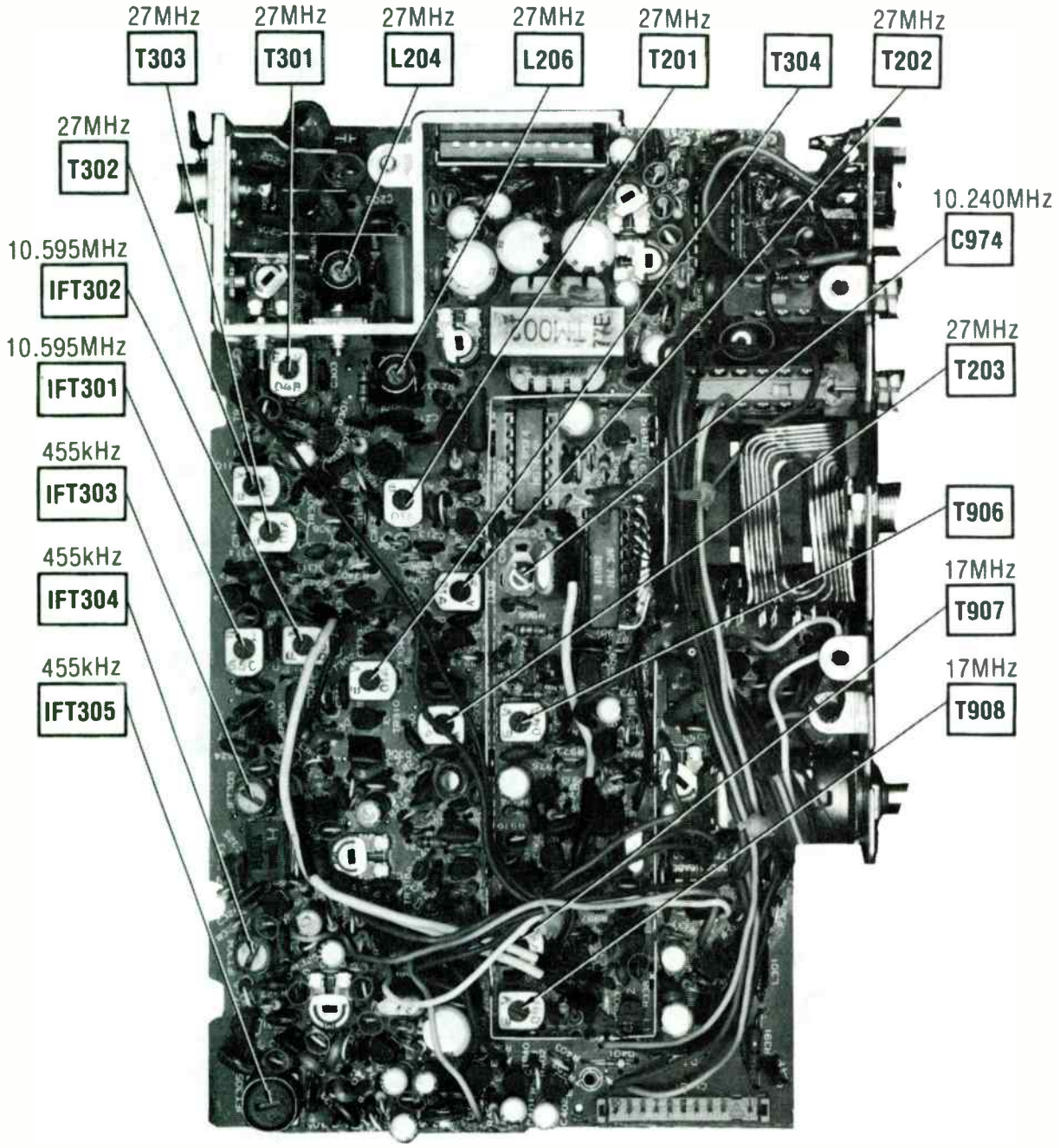

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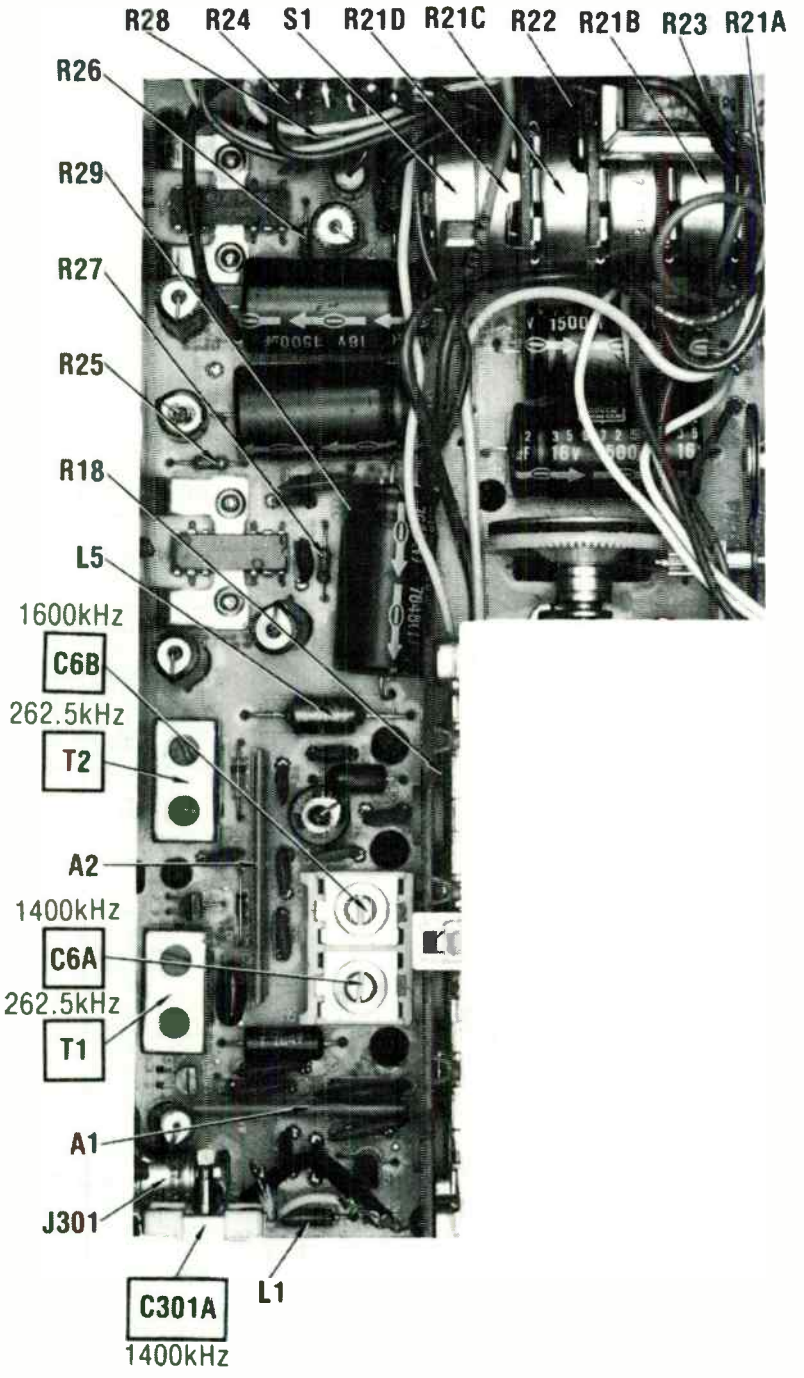


AM-AUDIO BOARD

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Connect low sides of generator and indicator to ground unless specified otherwise.
Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:	GC ELECTRONICS:
T1, T2, T103	5009, 8728A, 8728
C6, C301, C102, C108, C115	5000, 8276
T101, T102	9440

PUSH-BUTTON ADJUSTMENT

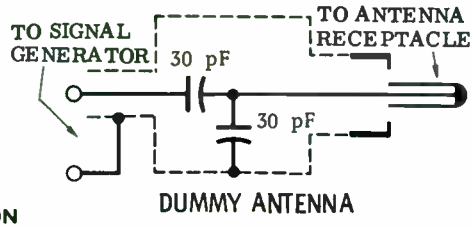
1. Pull button out.
2. Tune manually to desired station.
3. Press button in firmly.
4. Repeat for remaining buttons.

AM ALIGNMENT—SELECTOR IN AM POSITION FM Board must be removed to gain access to AM IF Coils.

Connect output meter across speaker voice coil.

GENERATOR COUPLING	GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST	REMARKS
High side thru .1uF to antenna	262.5kHz 400-Hz mod.	High freq end stop	T2 T1	Adjust for maximum.
Thru dummy antenna to antenna input.	600kHz	600kHz	L4	"
Thru dummy antenna to antenna input.	1600kHz	1600kHz	C6B	"
Thru dummy antenna to antenna input.	1400kHz	1400kHz	C6A,C301 L3,L2	Adjust for maximum. Repeat alignment until no further improvement is noted.

With radio installed in car and antenna extended 36", tune in a weak station near 1400kHz and adjust C301 for maximum output. Antenna adjustment is located right side of radio at rear.



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

High side of generator thru .001uF to TP17 (Q102, G2).
Use 60-hertz, frequency-modulated signal, 450kHz sweep.
Use 60-hertz sawtooth voltage in scope for horizontal deflection.

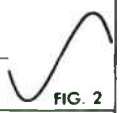


FIG. 2

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
"	"	Vert input of scope to TP15	T102 T101	Adjust T101 & T102 for maximum amplitude and straightness of line, similar to Fig. 2.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

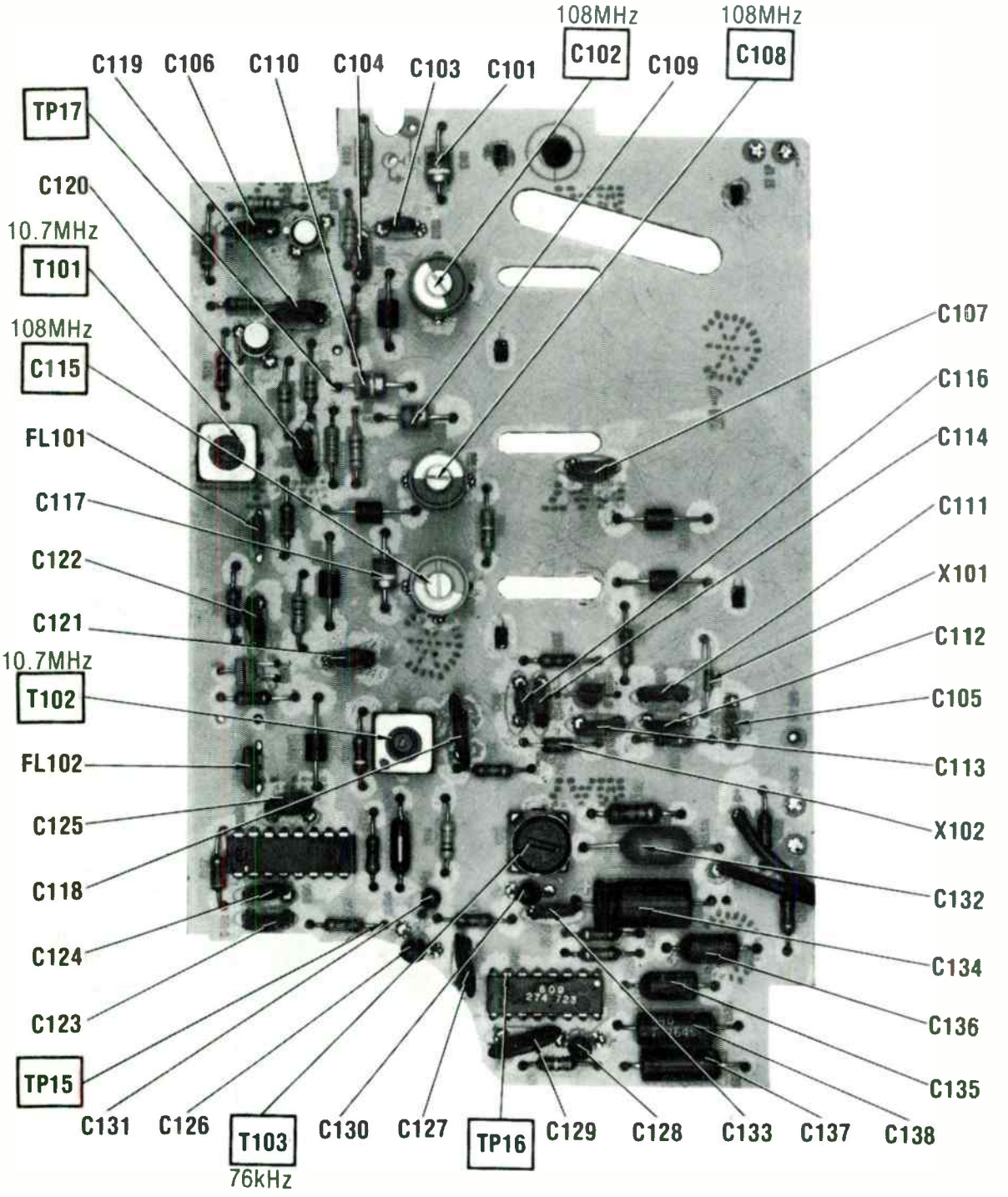
Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead.
Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
88MHz Modulated	88MHz	AC probe of VTVM to voice coil	L103,L102, L101	Adjust for maximum.
108MHz Modulated	108MHz	"	C115,C108, C102	Adjust for maximum. Repeat FM RF steps until no further improvement is noted.

FM STEREO ALIGNMENT

Connect a jumper from TP15 (junction of R125 and C126) to ground.

GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
	Input of frequency counter to TP16 (IC102 Pin 10).	T103	Adjust for 76kHz ±20Hz.



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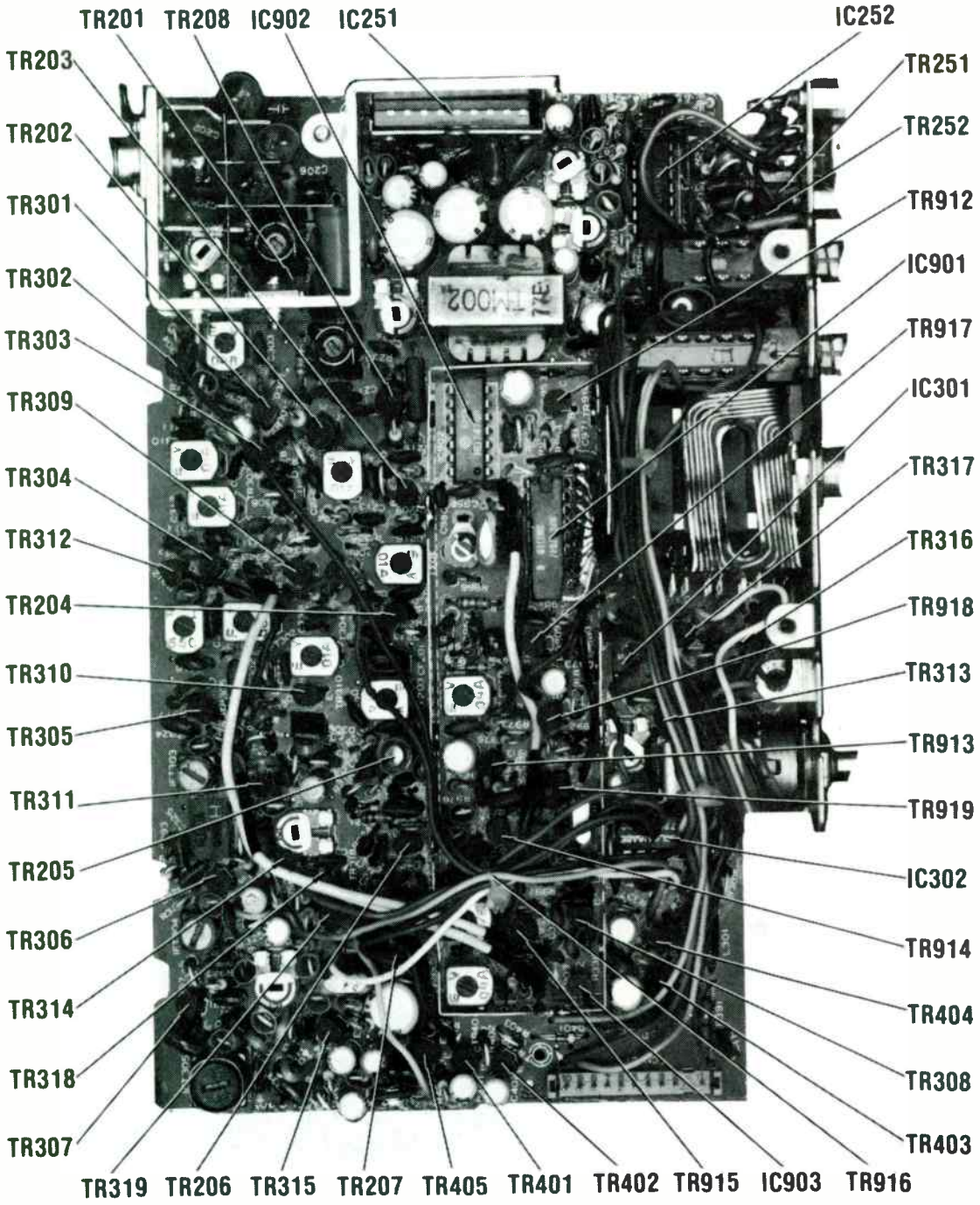

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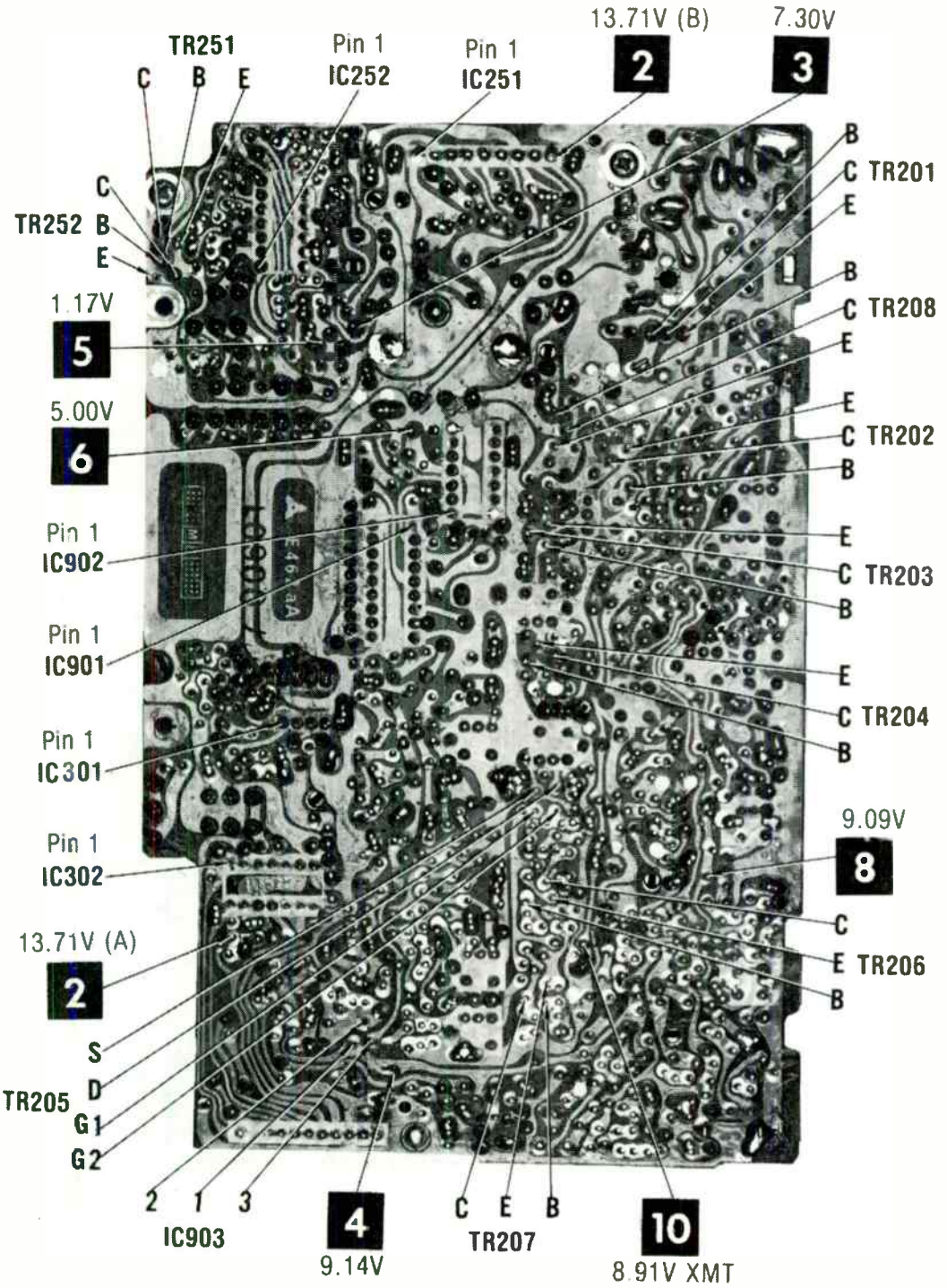

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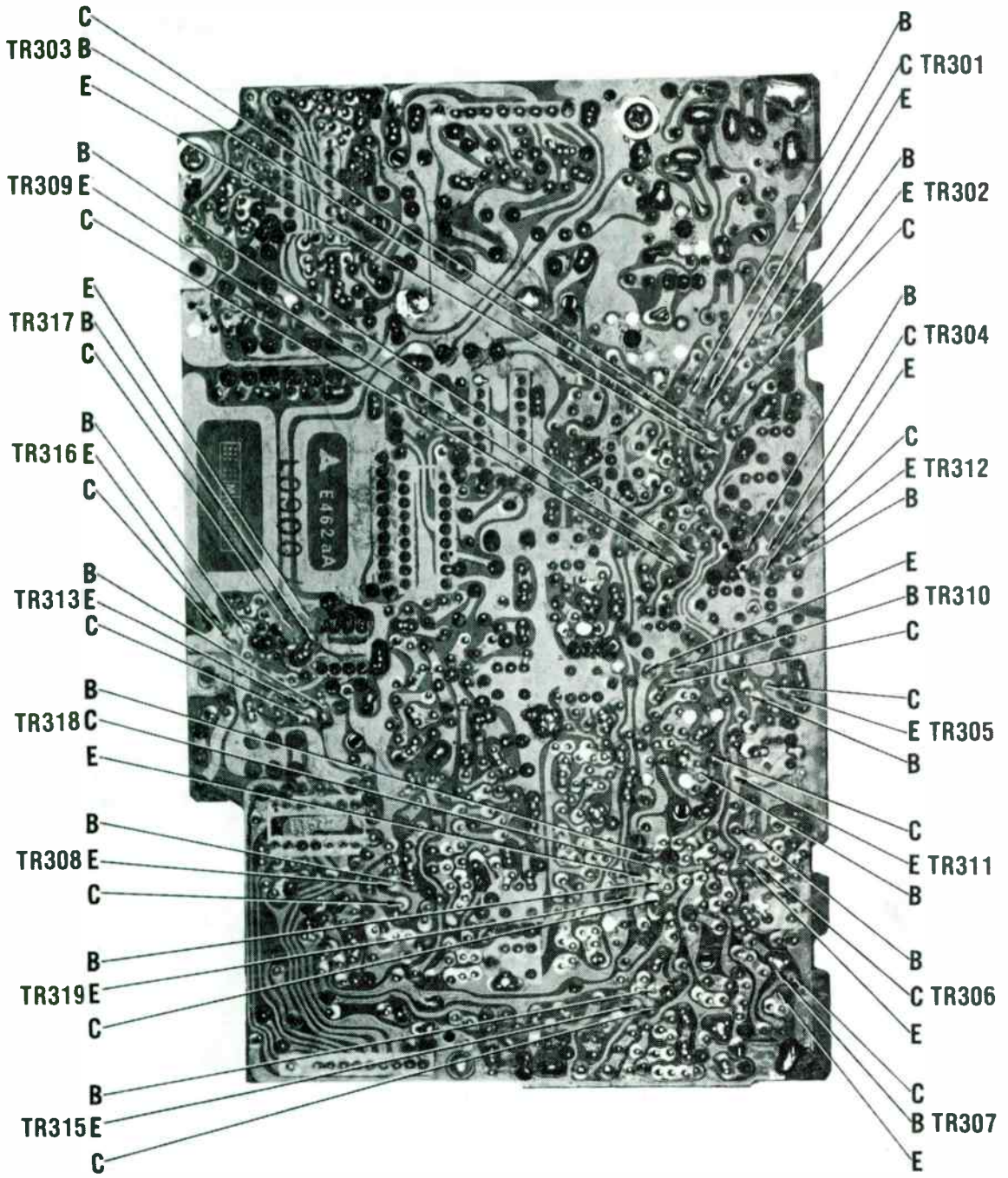

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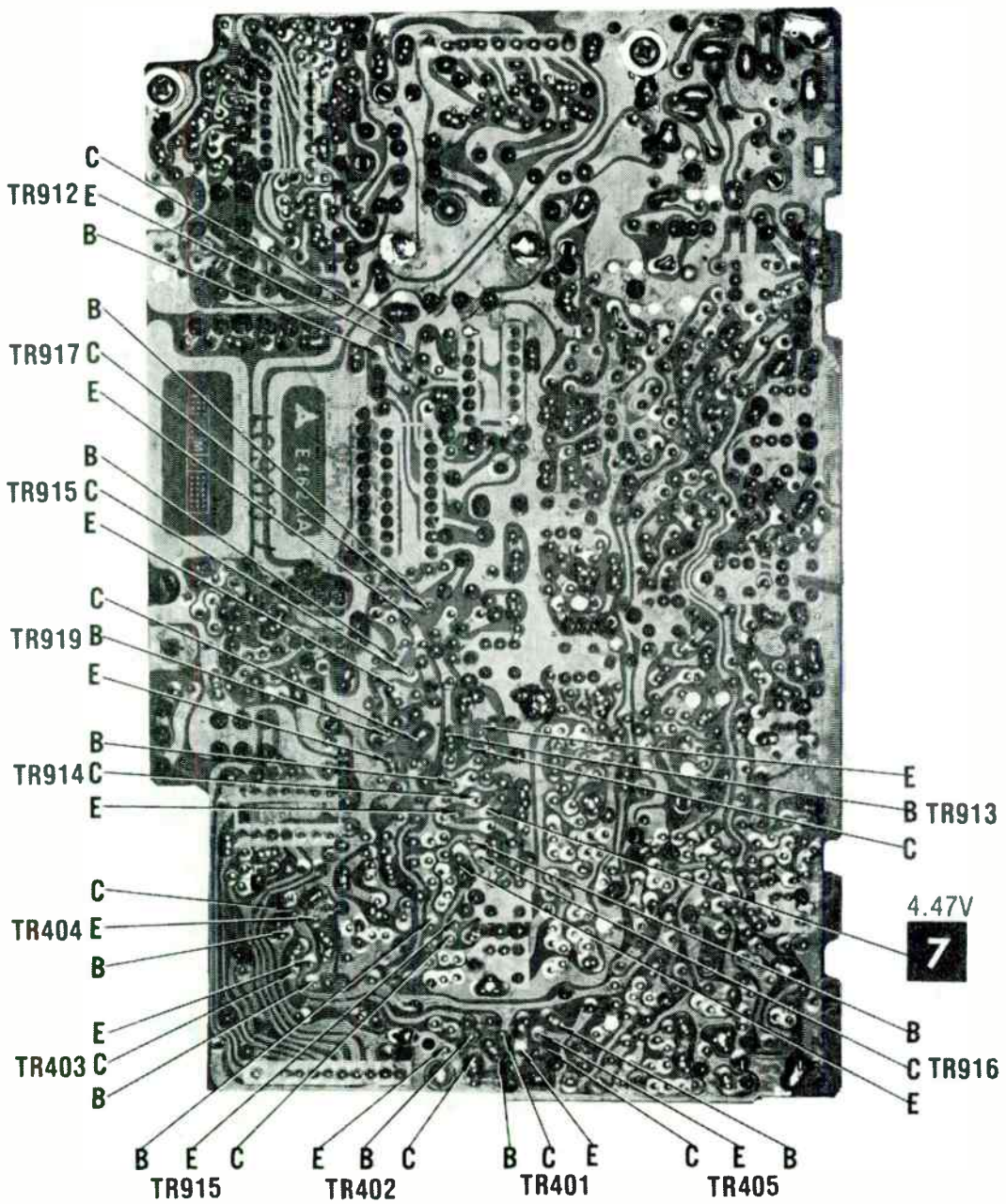

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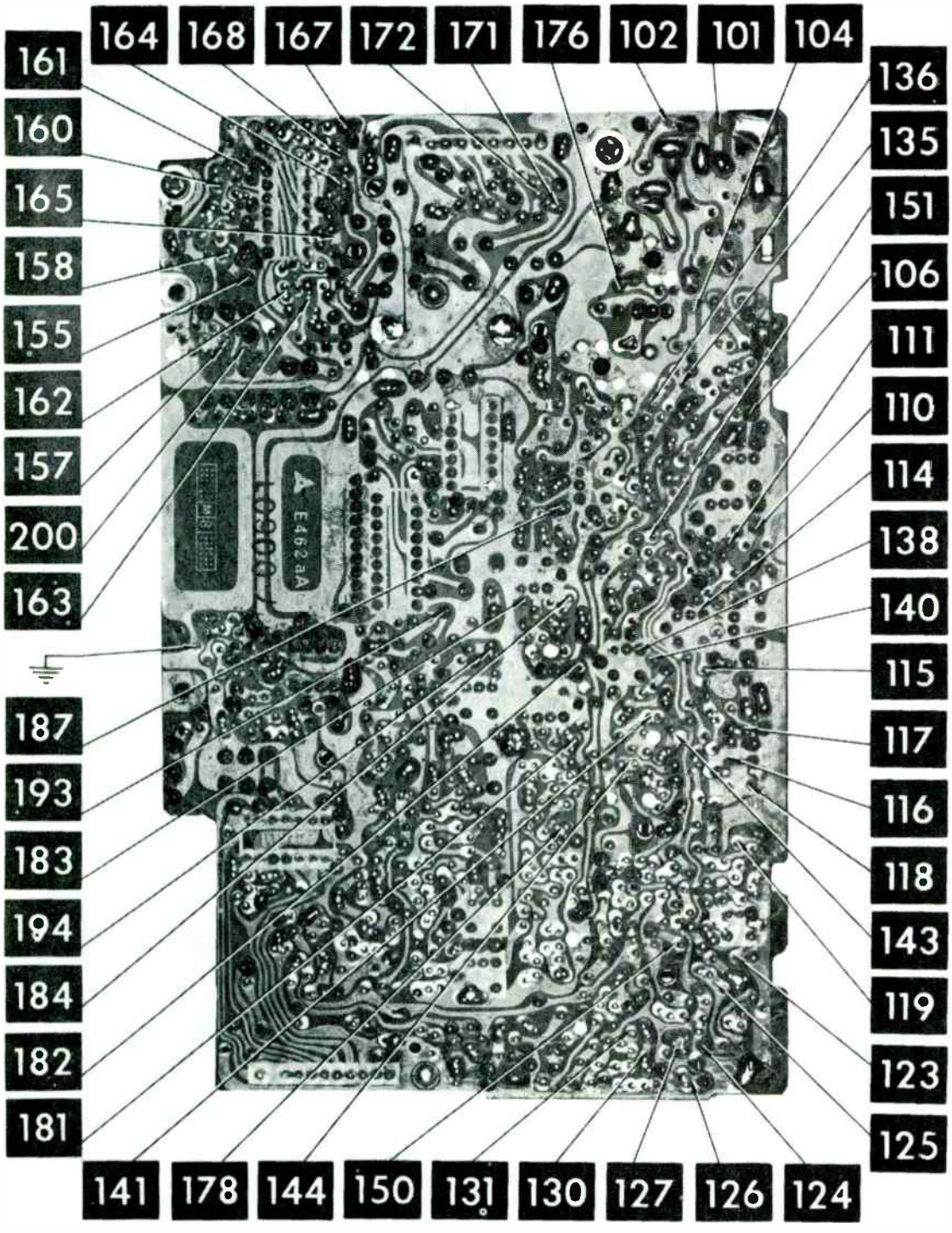

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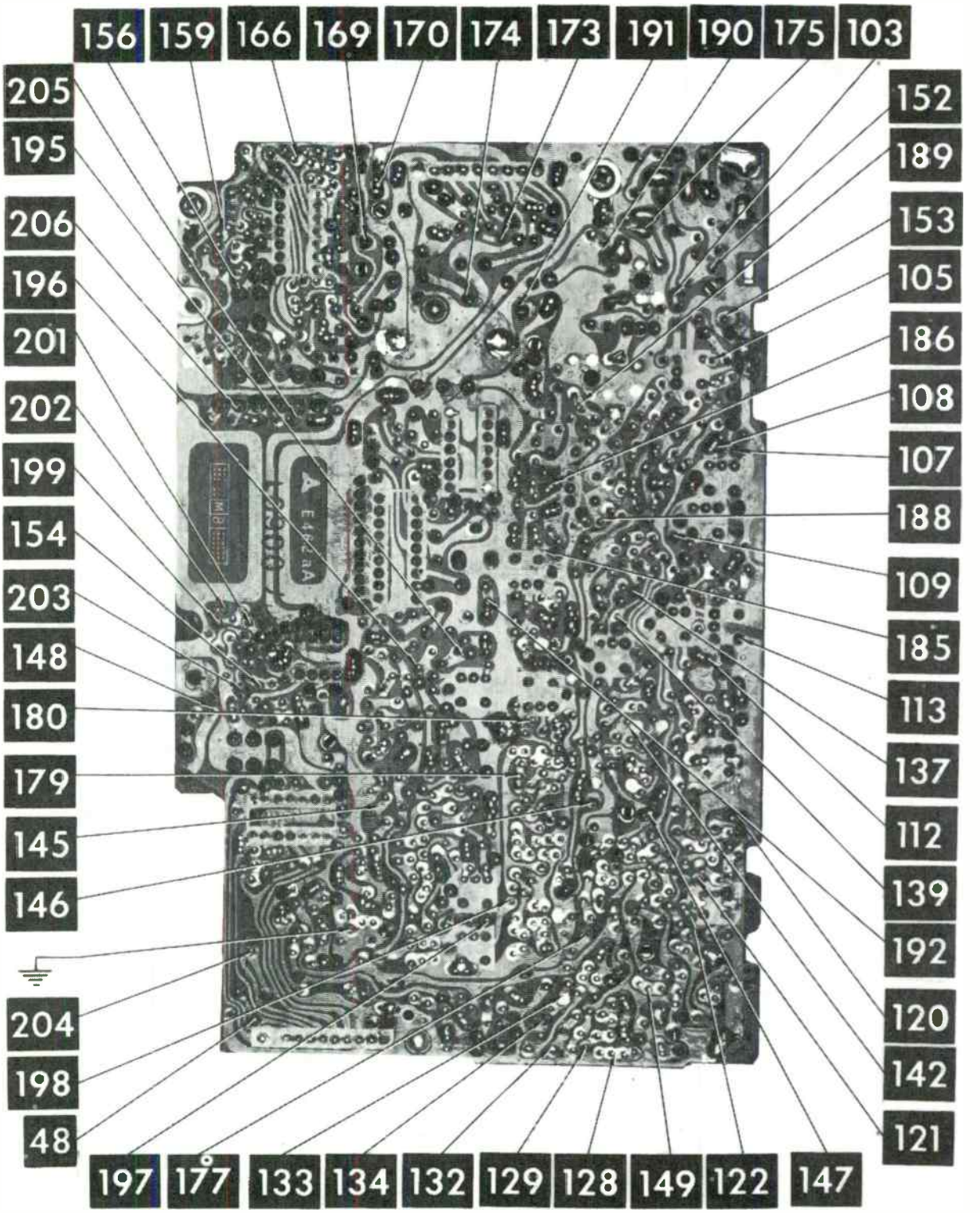

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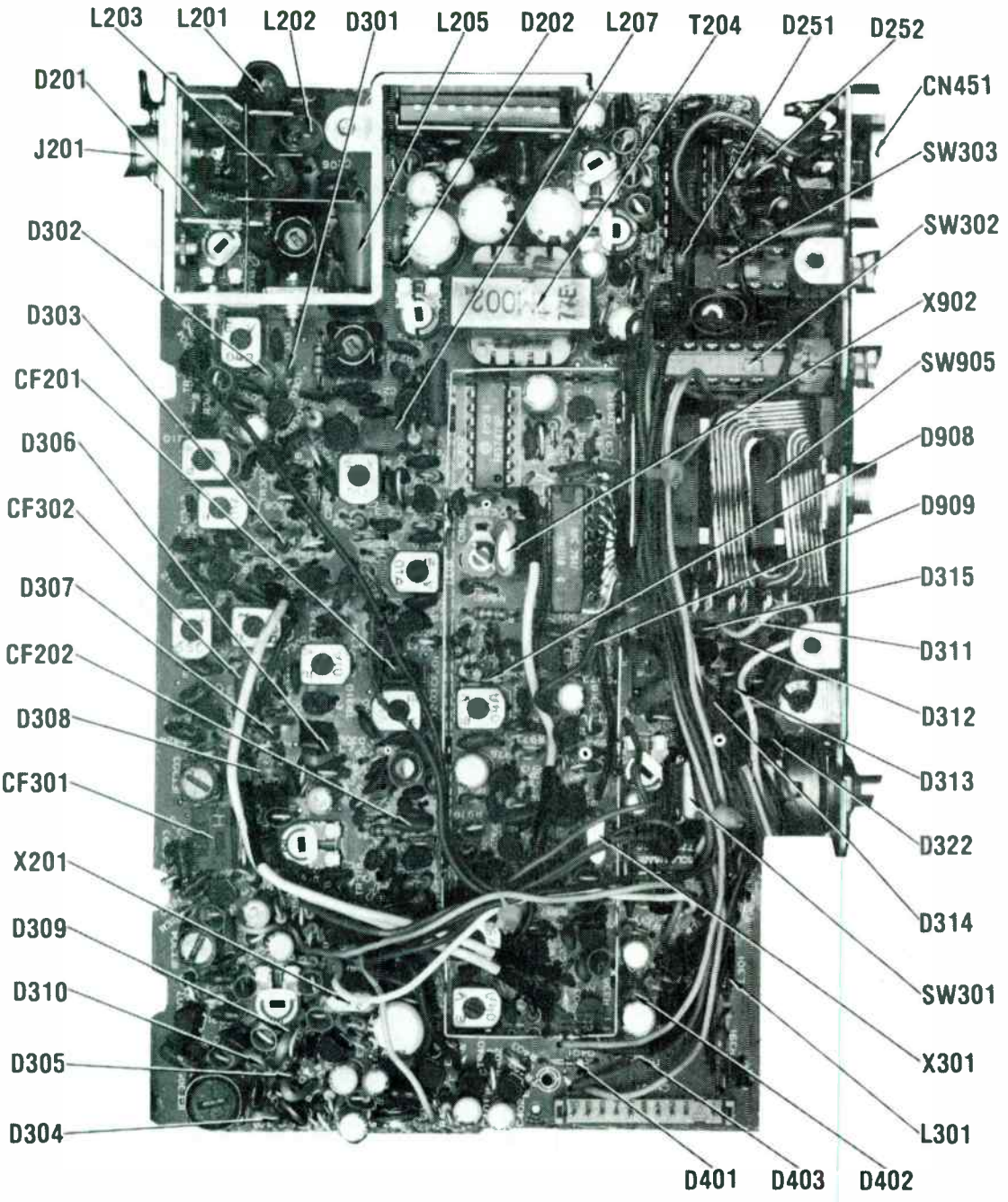

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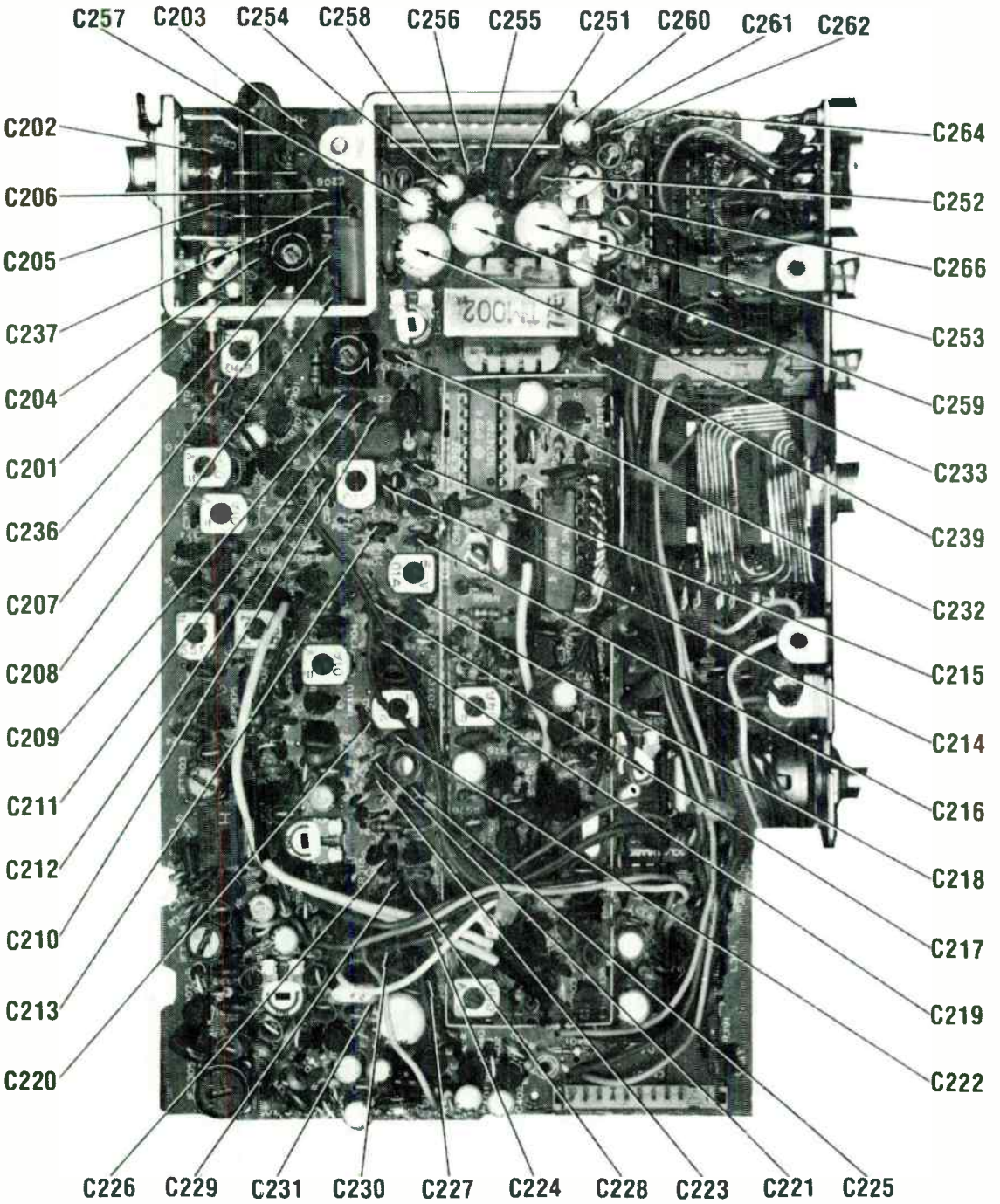

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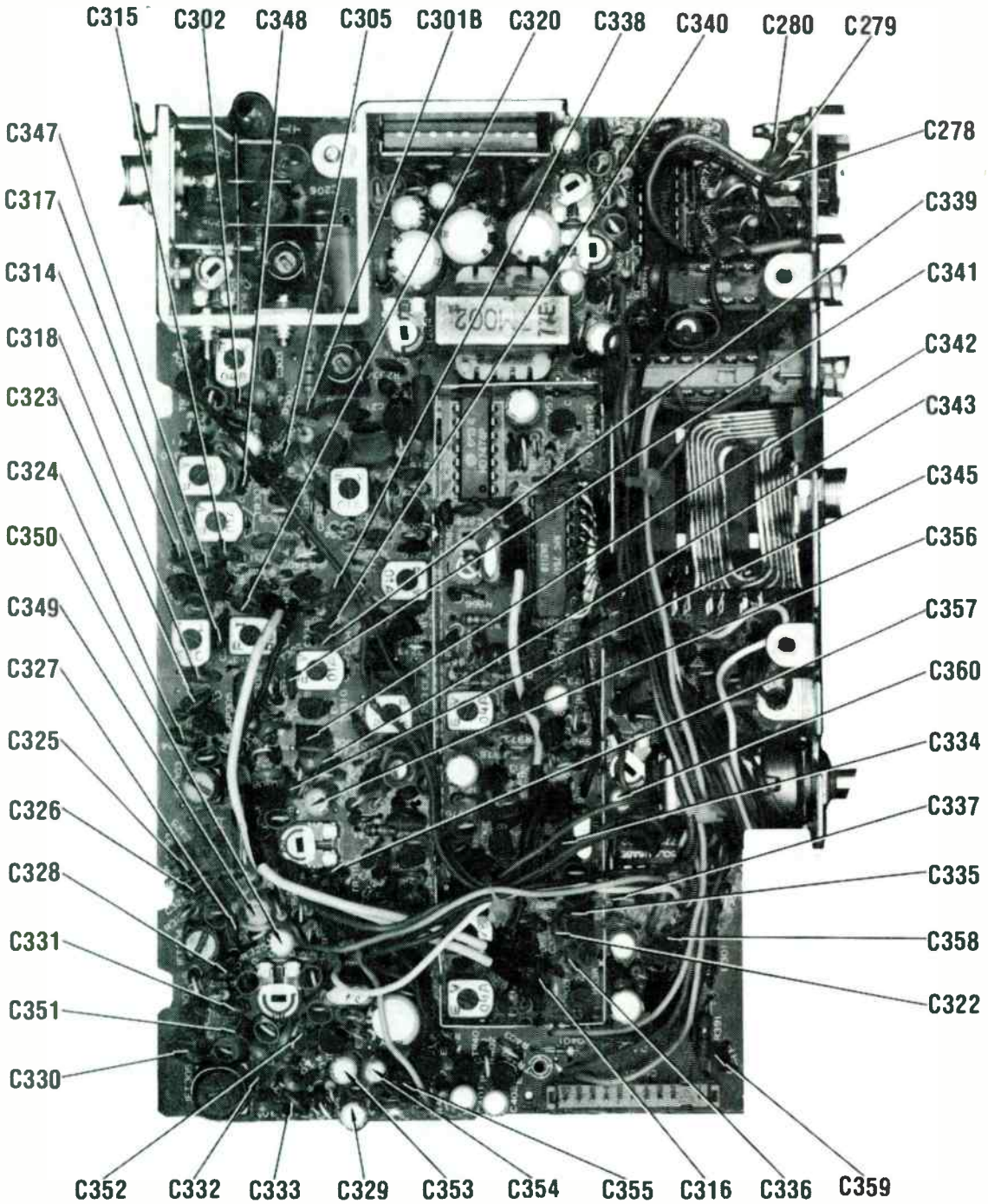

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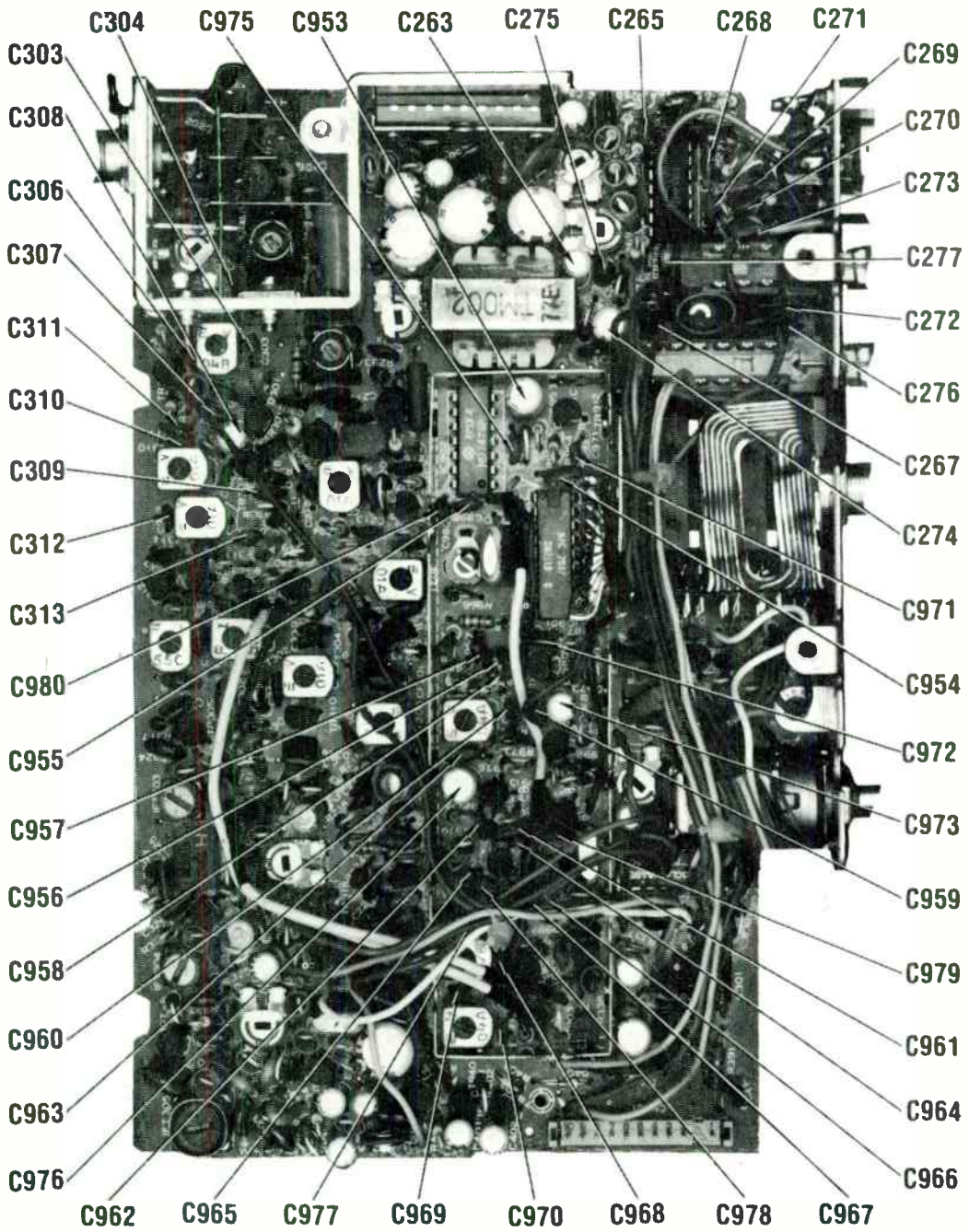

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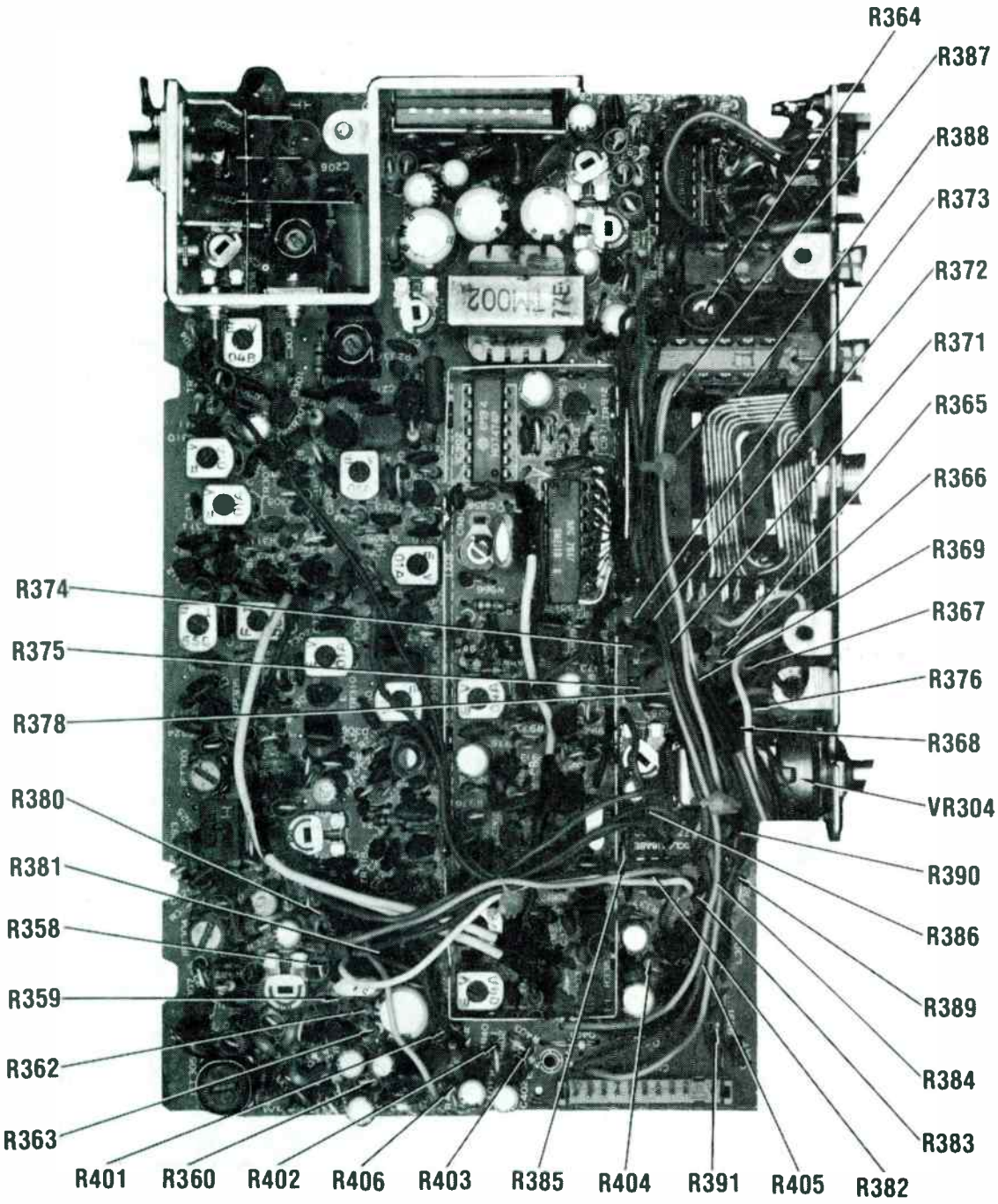

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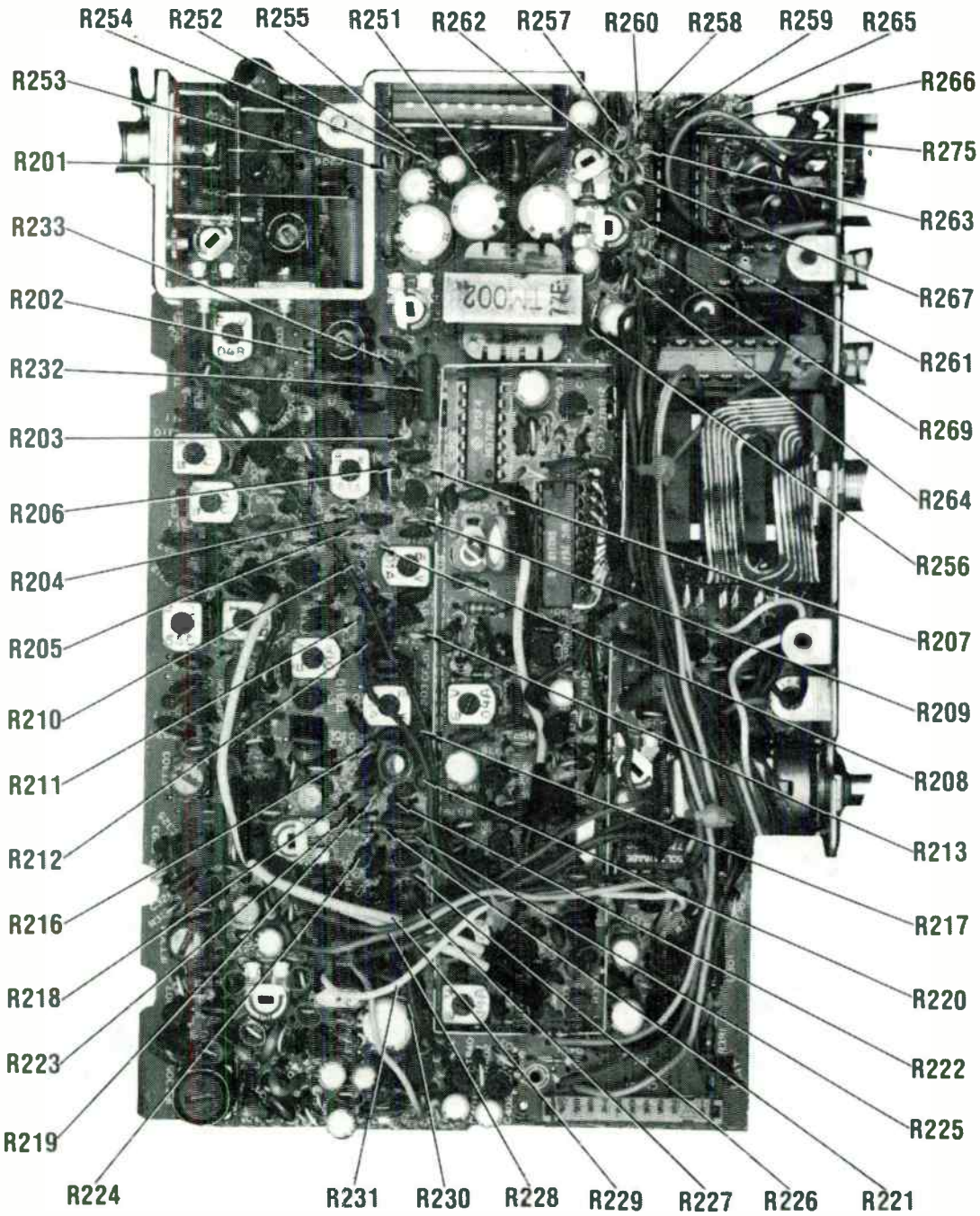

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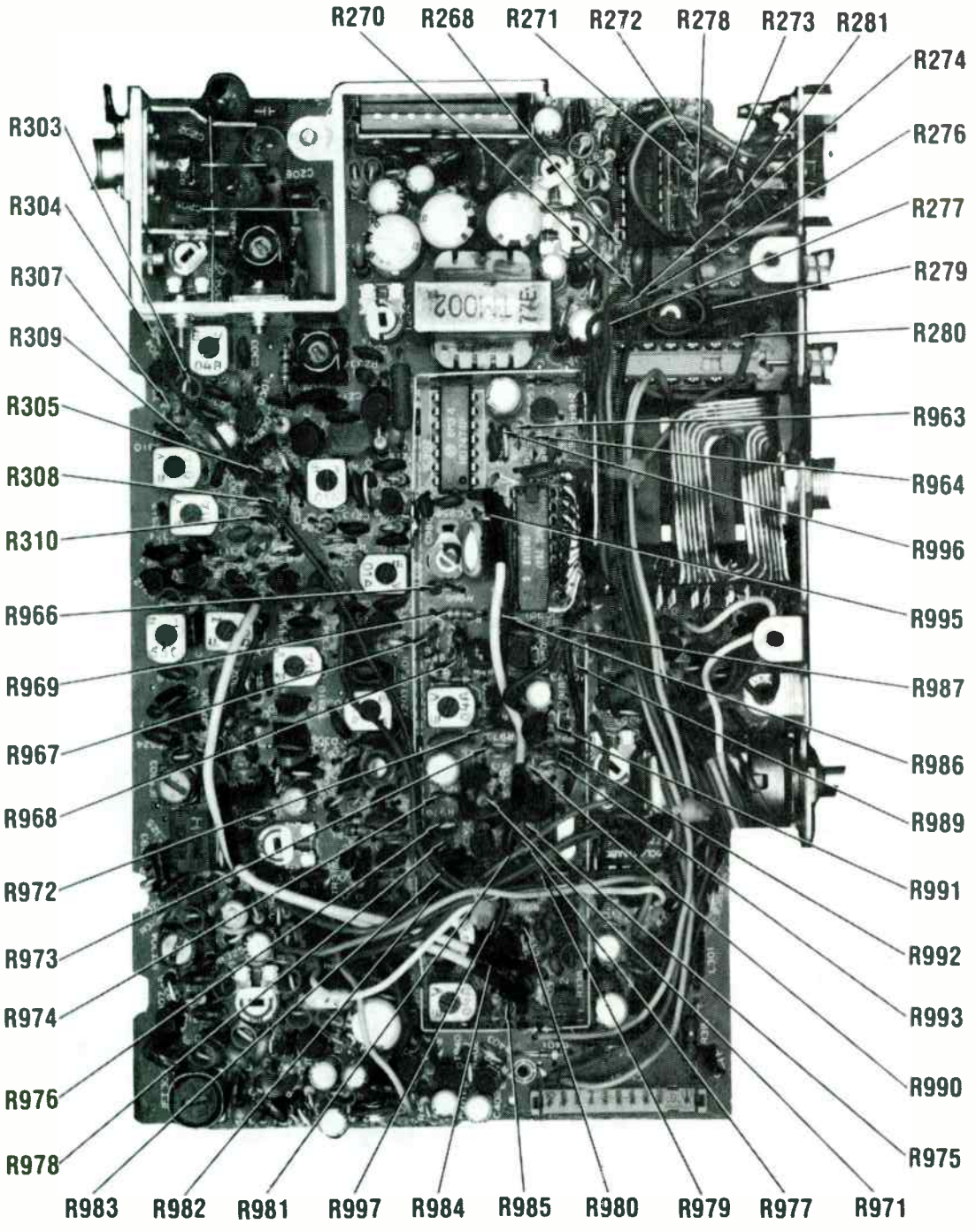

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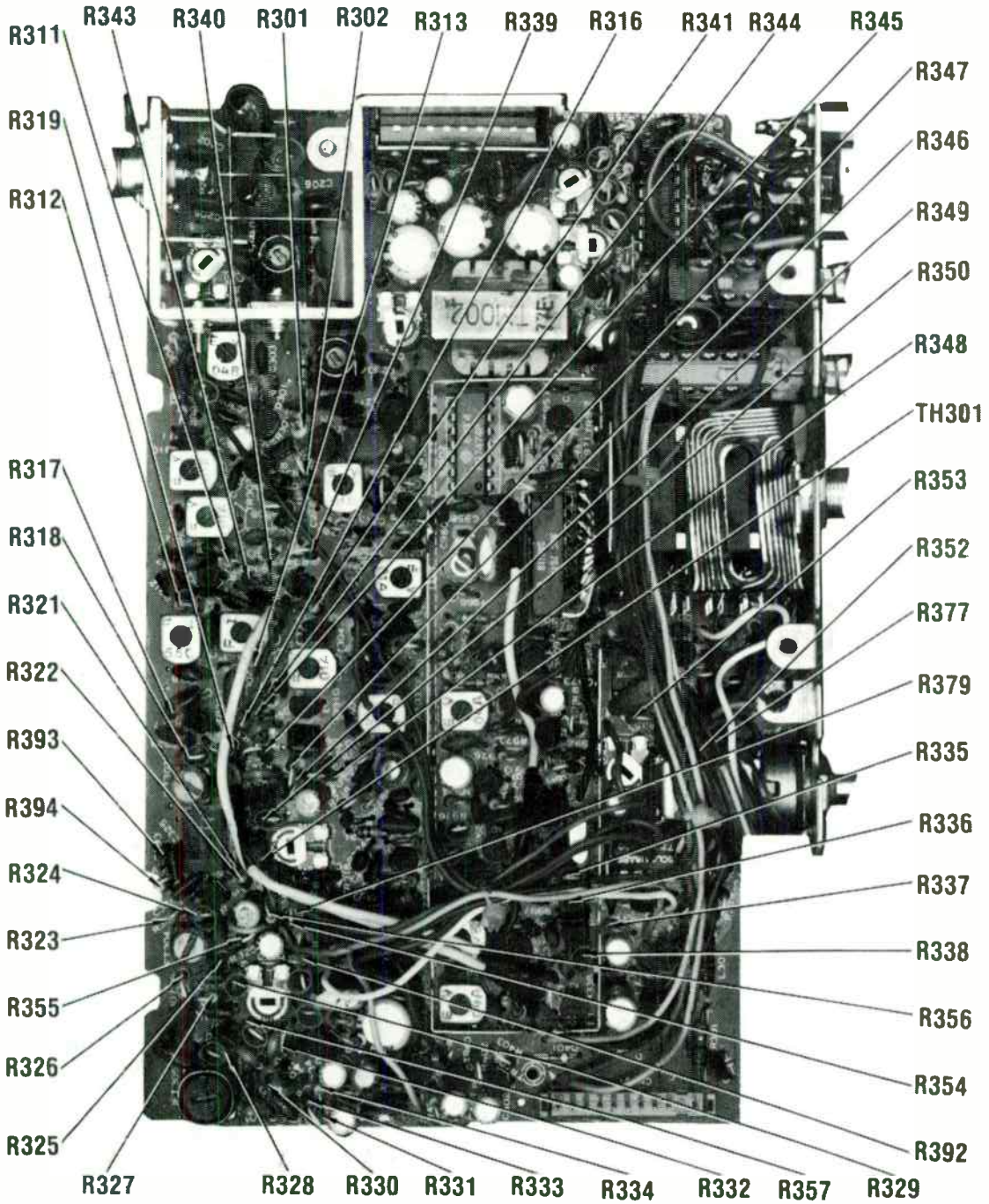

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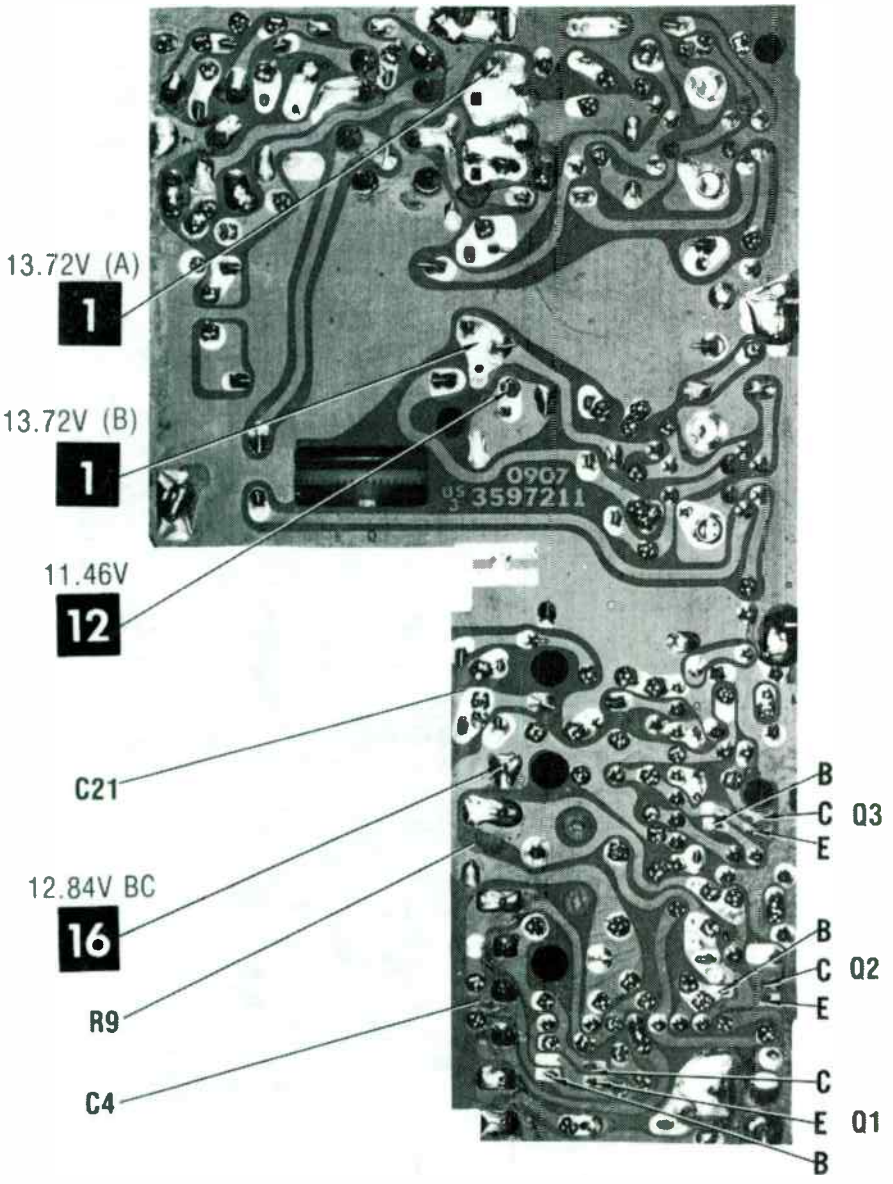

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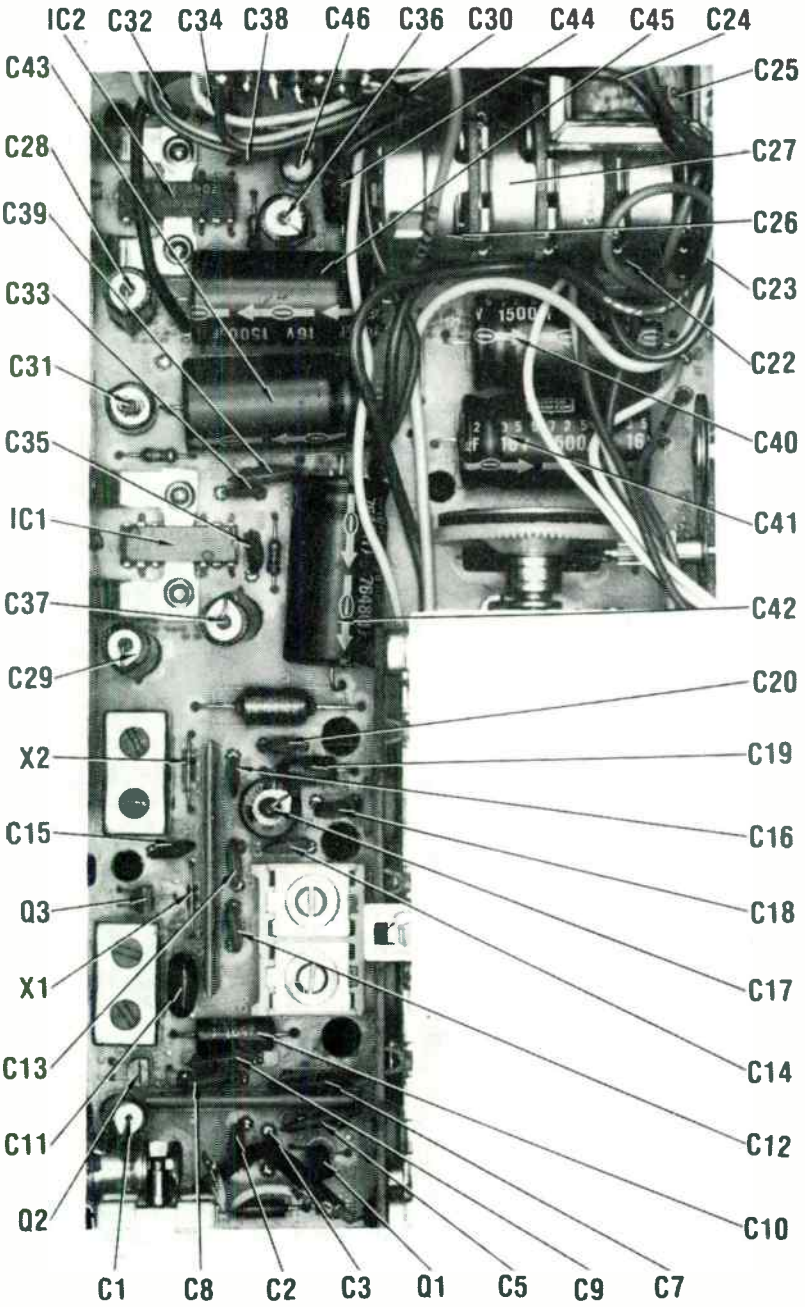

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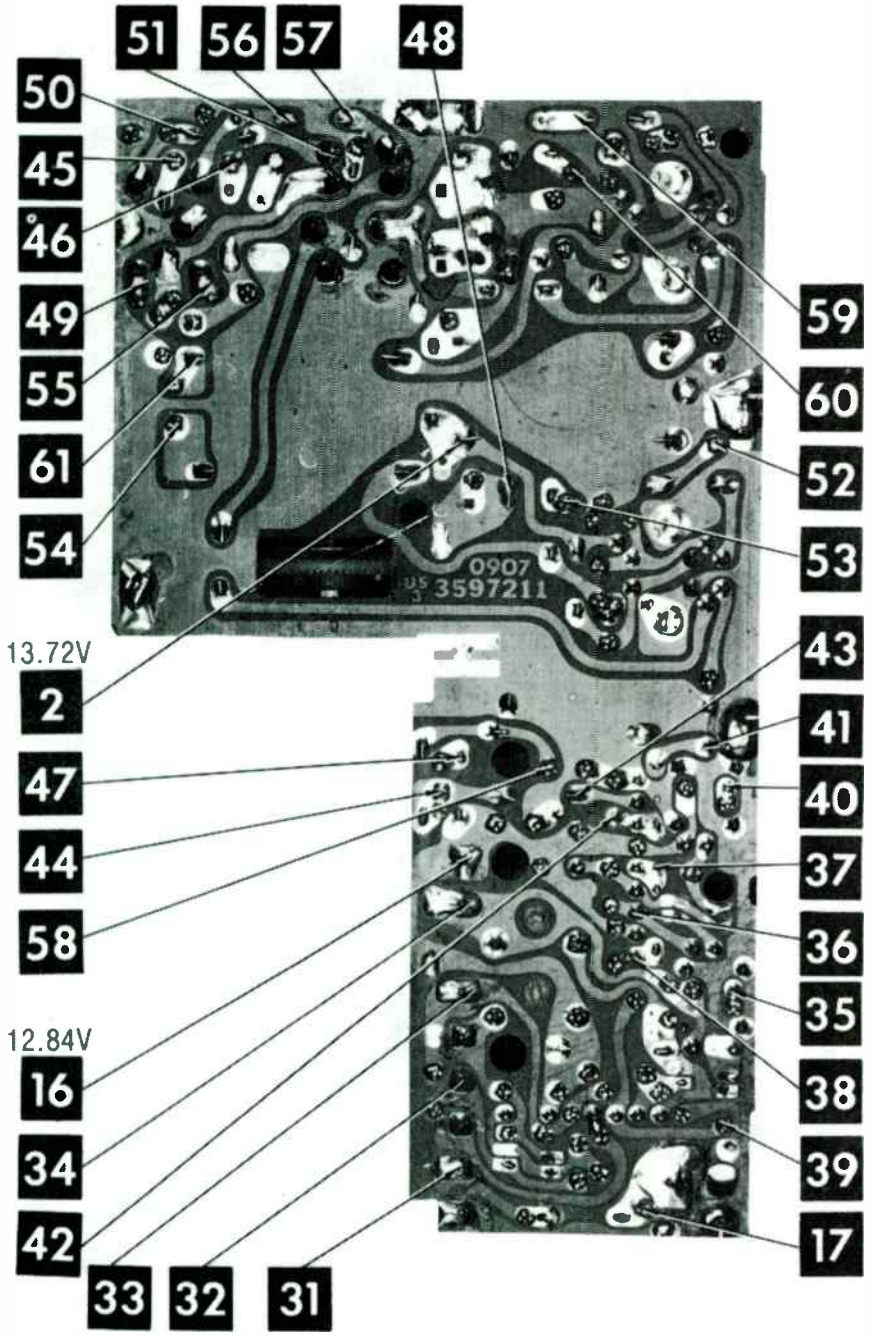

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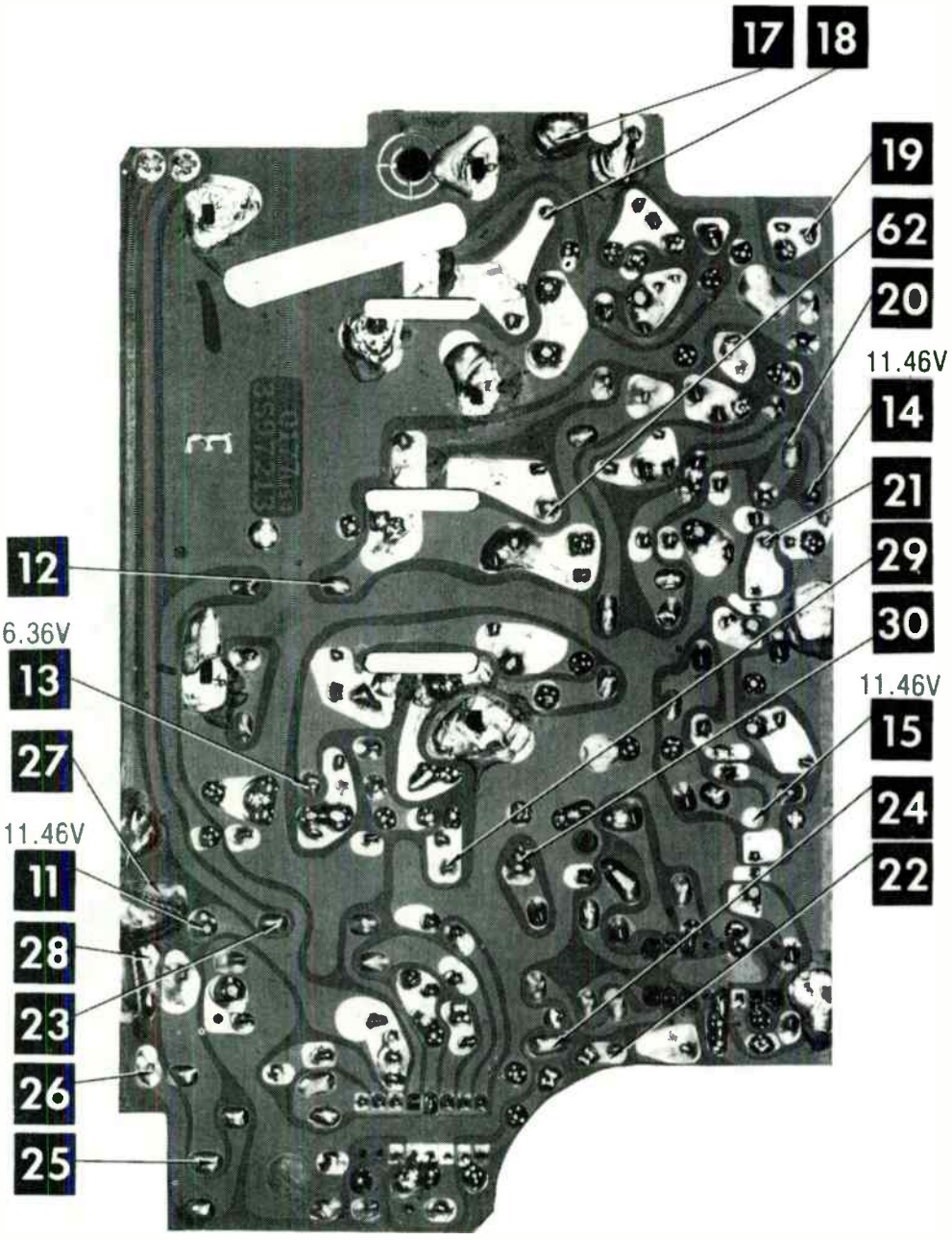

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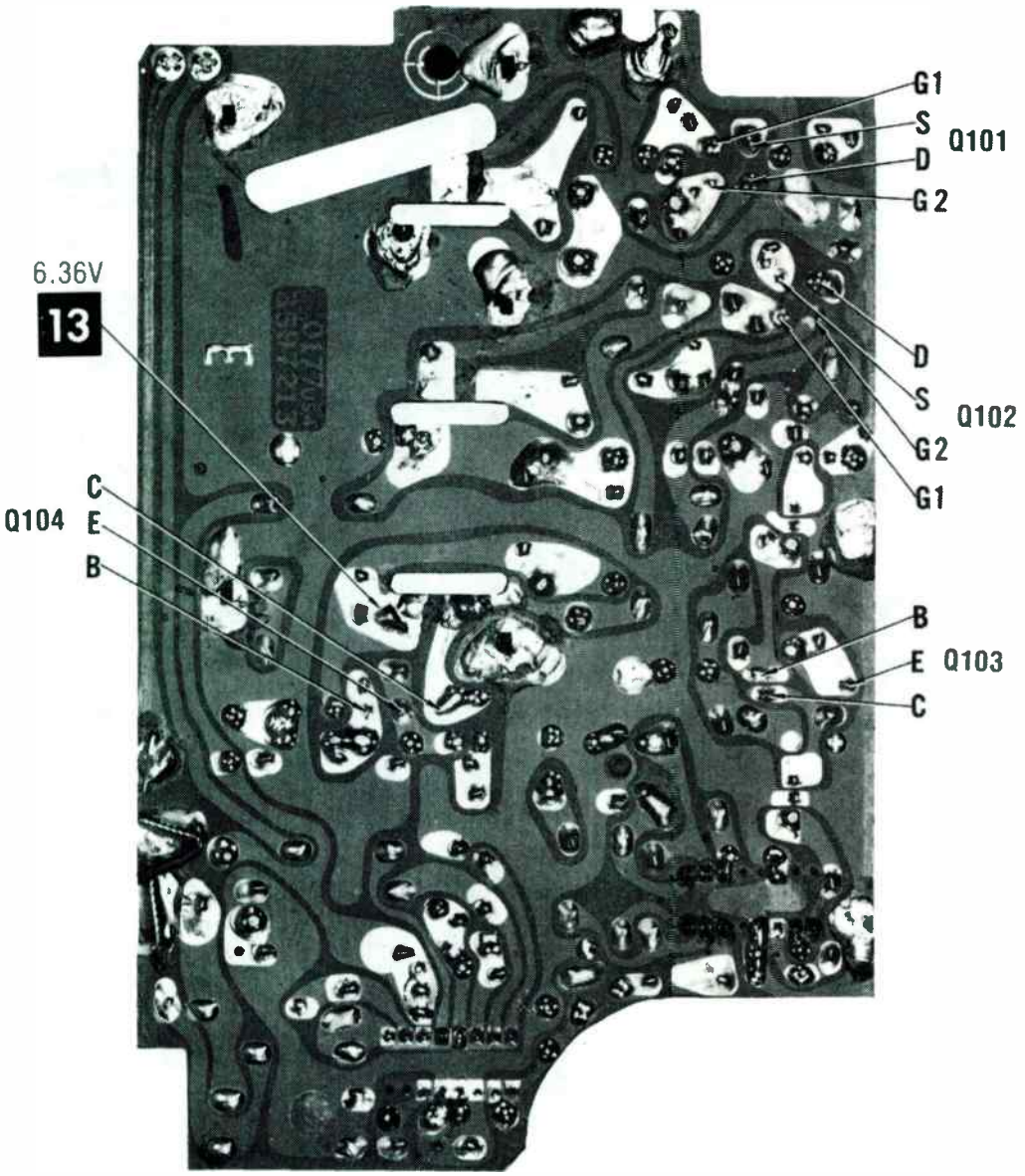
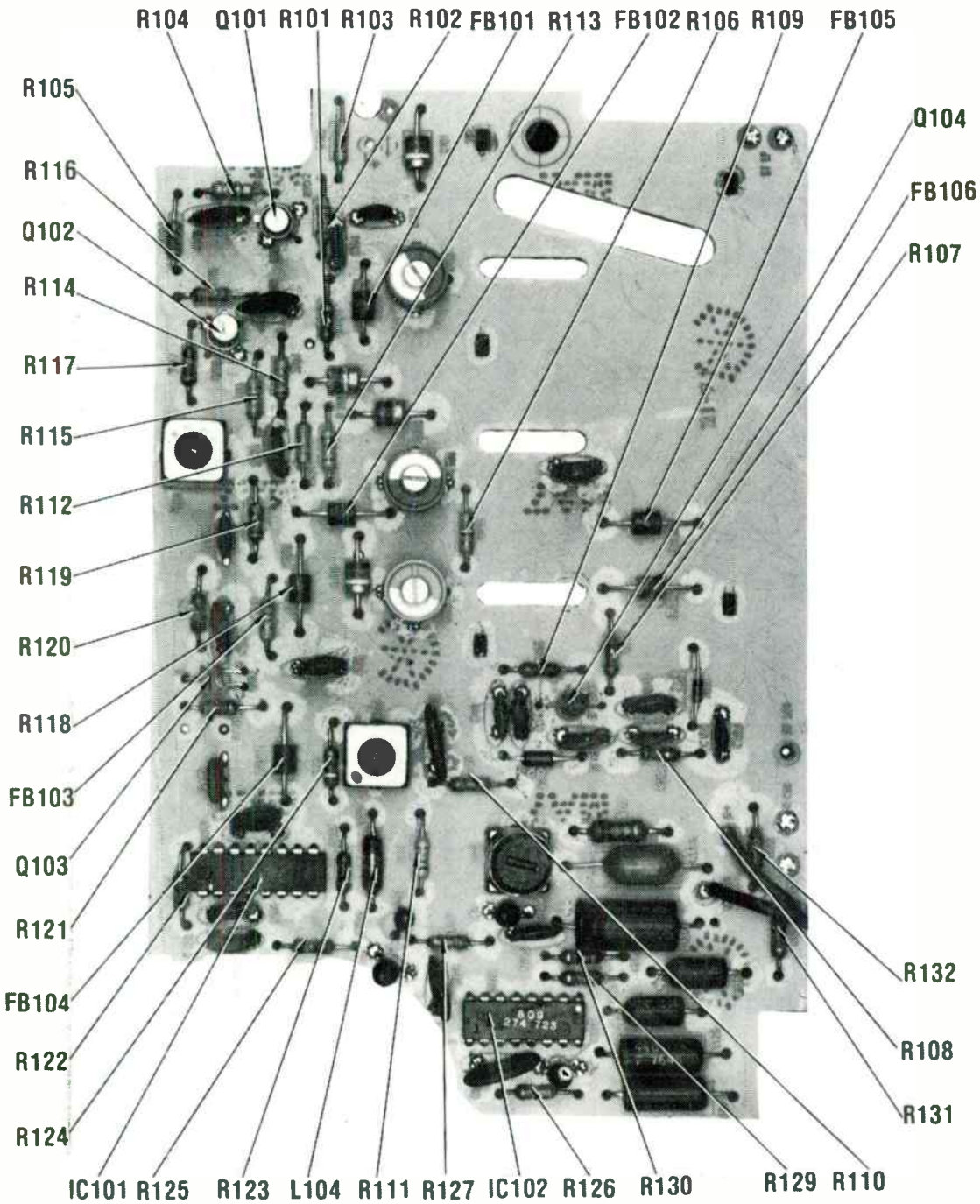
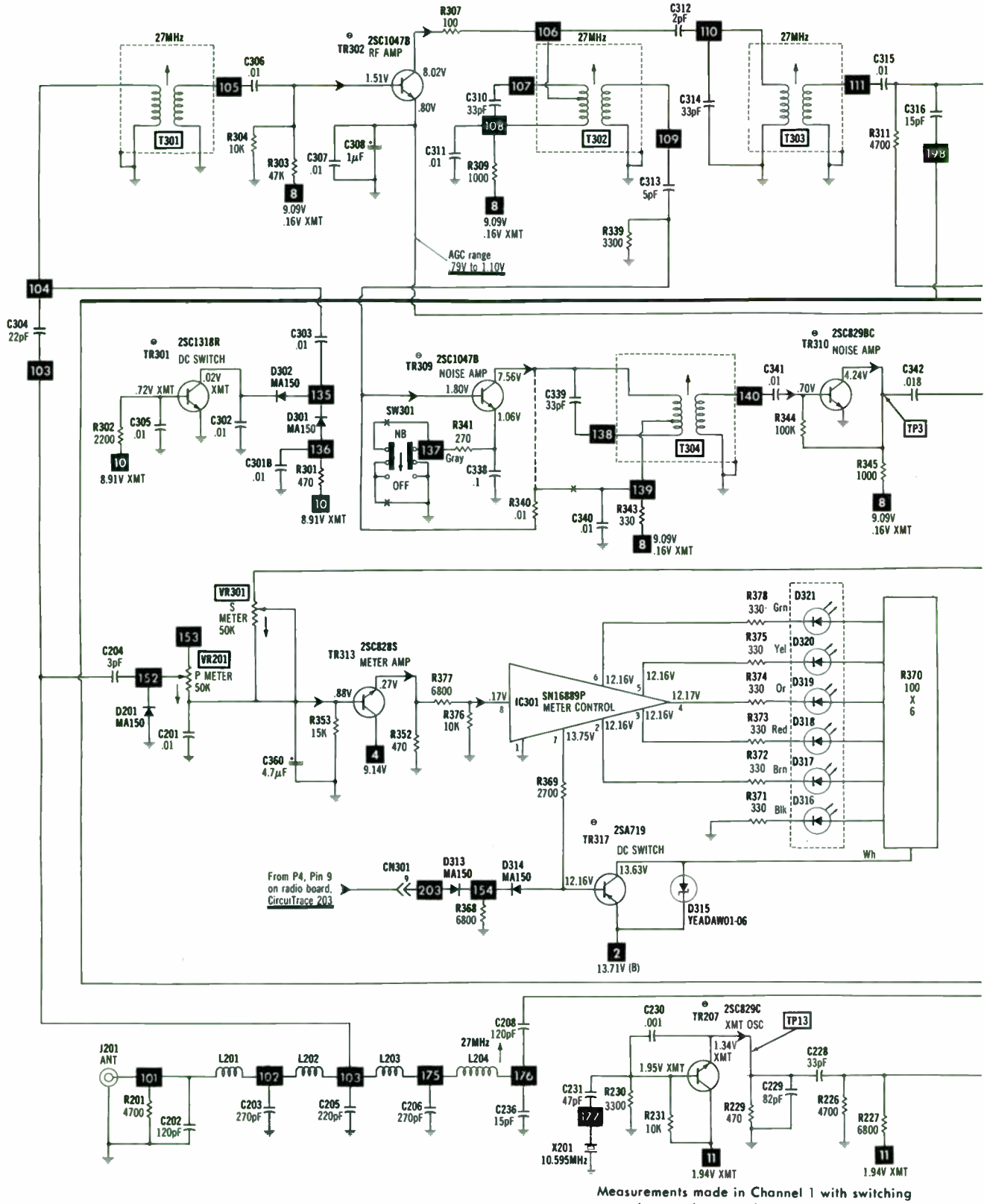


FM BOARD



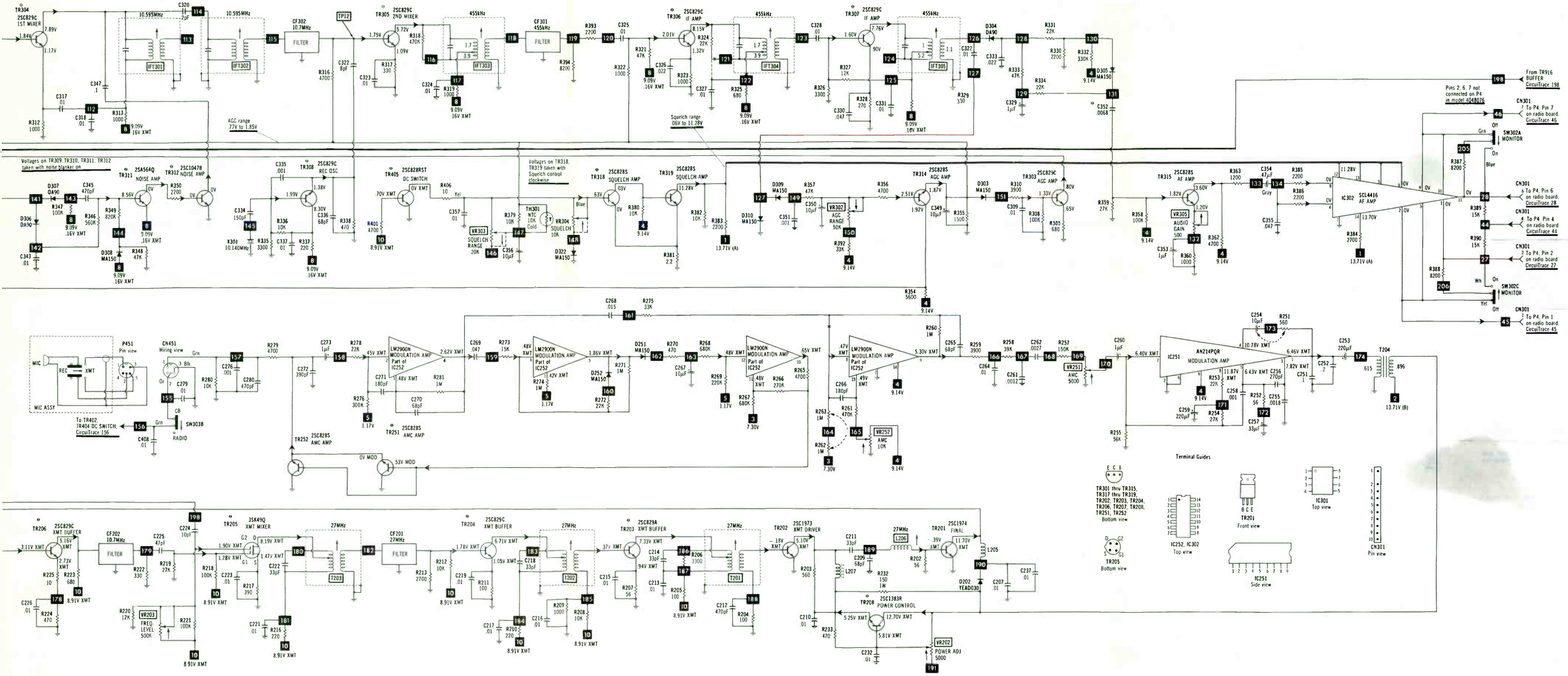
FM BOARD

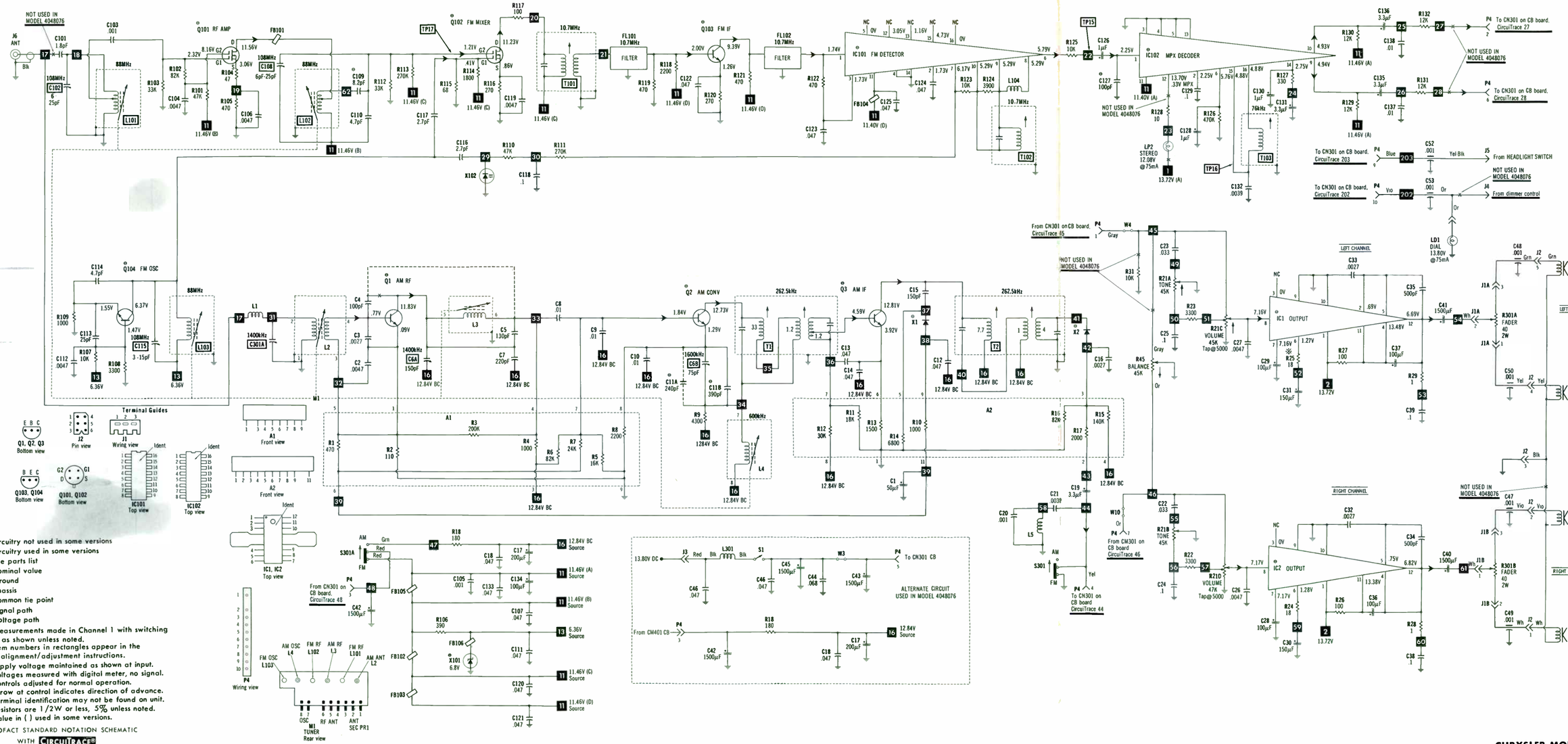


Measurements made in Channel 1 with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at cnt indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in ( ) used in some versions.

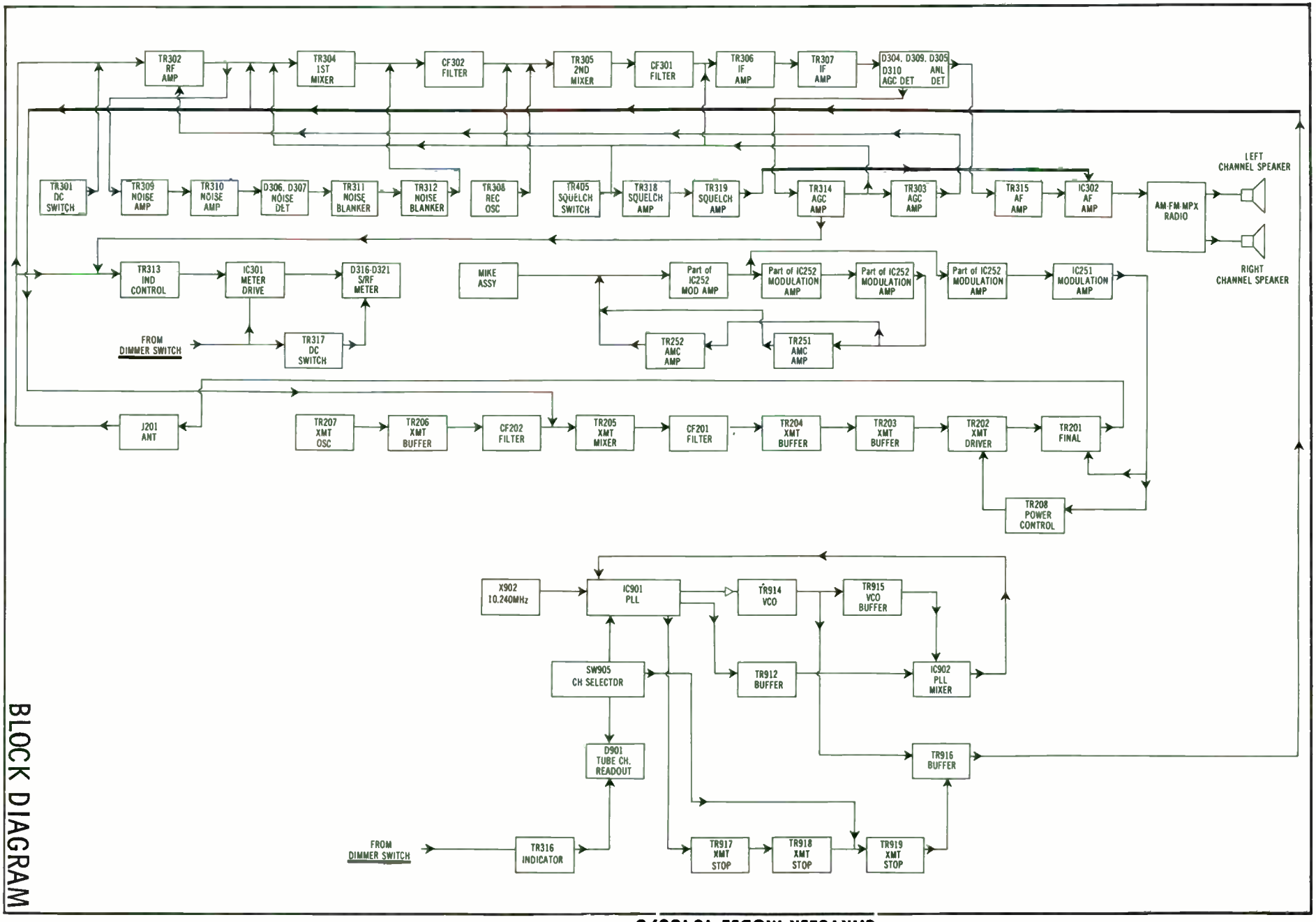
- Circuitry not used in some versions
- Circuitry used in some versions
- ⊖ See parts list
- Nominal value
- Ground
- Chassis
- Common tie point
- Signal path
- Voltage path

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

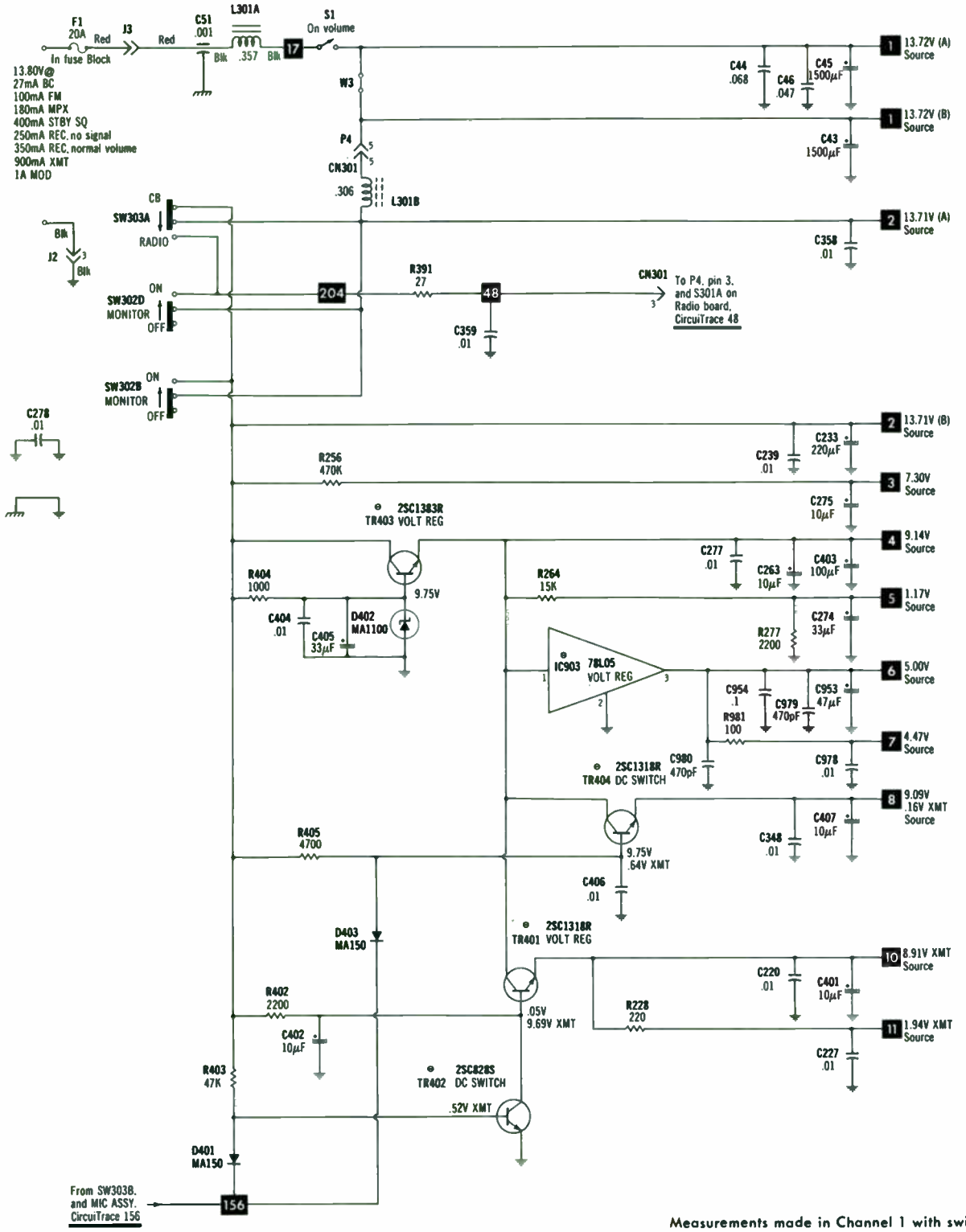




CHRYSLER MODEL 4048076



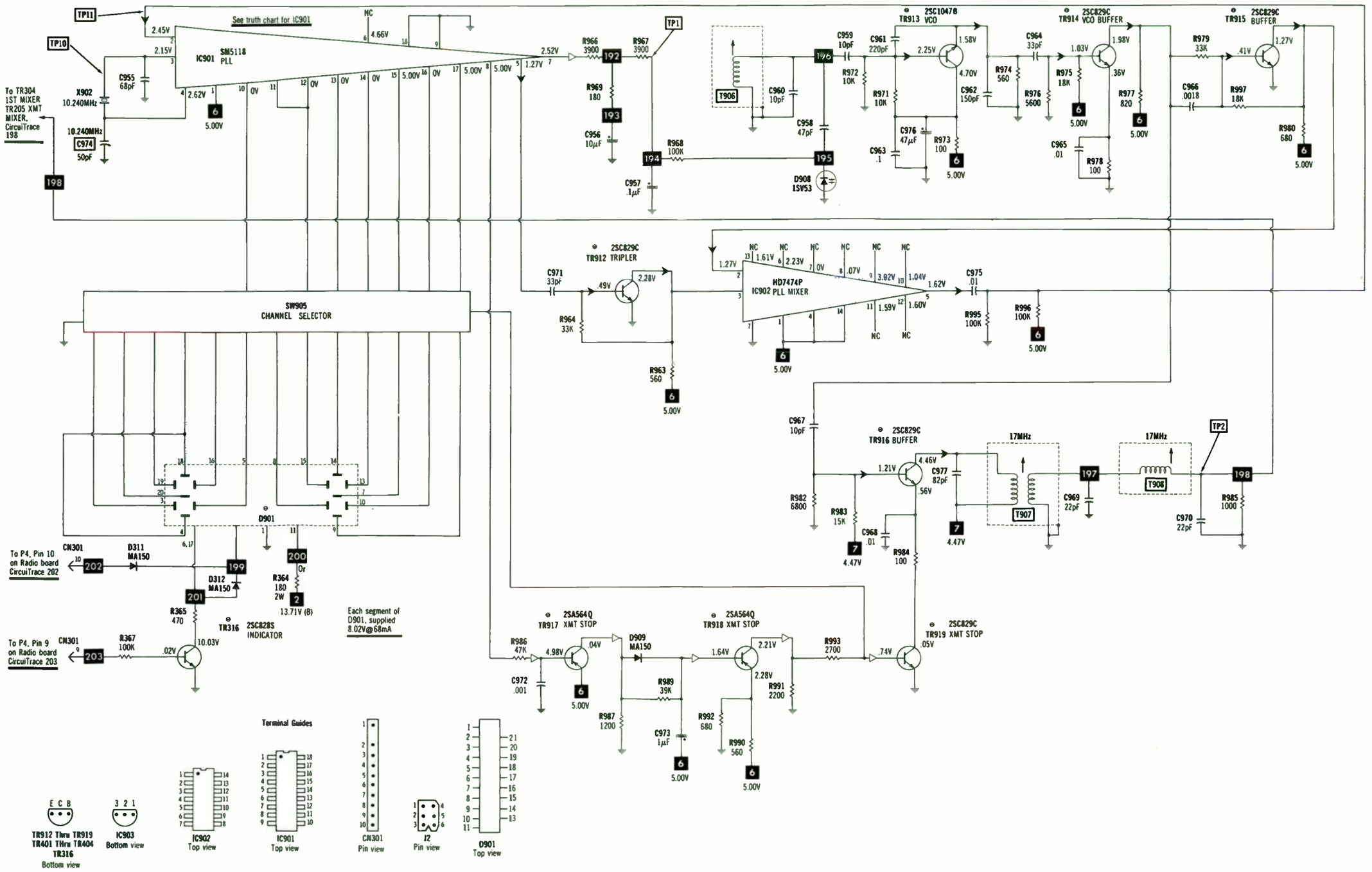
BLOCK DIAGRAM



Circuitry not used in some versions
Circuitry used in some versions
⊖ See parts list
Nominal value
Ground
Chassis
Common tie point
Signal path
Voltage path

Measurements made in Channel 1 with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in ( ) used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®



PARTS LIST AND DESCRIPTION

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. 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.
D201	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D202	YEAD030		GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	TM116	WEP156	212-76-02
D251	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D252	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D301	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D302	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D303	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D304	OA90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109	WEP134	103-Z9001
D305	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D306	OA90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109	WEP134	103-Z9001
D307	OA90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109	WEP134	103-Z9001
D308	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D309	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D310	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D311	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D312	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D313	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D314	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D315		YEADAW01-06	GEZD-6.2	ZB6.2A	HEPZ0408	REN 137	SK3058	RT-237	ECG137	TM137/**	WEP1154	103-Z9008
D322	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D401	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D402	MA1100		GEZ0-10	ZB10B		REN 140	SK3061	RT-241	ECG140A	1N4740A	WEP1110	103-Z9010
D403	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D908		YEAD1SV53	GE-90		HEPR2503	REN 614		RT-262	ECG614		WEP200	
D909	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
IC1		3597049										
		3598173										
IC2		3597049										
		3598173										
IC101		3596810										
IC102		3596809										
IC251	AN214PQR		GEIC-49	PTC757		REN 1058	SK3459	TVCM-74	ECG1058	AN214	WEP937	
	AN214		GEIC-49	PTC757		REN 1058	SK3459	TVCM-74	ECG1058	AN214	WEP937	
IC252	LM2900N											
		YEAMLM2900N										
IC301	SN16889P											
		YEAMSN16889										
IC302	SCL4416ABE											
		YEAMSCL4416										
IC901	SM5118G											
		YEAMSM5118										
IC902	HD7474P		GE-7474		HEPC7474P	REN 7474	SK7474		ECG7474		WEP7474	
		YEAMHD7474P	GE-7474		HEPC7474P	REN 7474	SK7474		ECG7474		WEP7474	
IC903	78L05A					REN 977	SK3462		ECG977			
		YEAMJM78L05				REN 977	SK3462		ECG977			
Q1		3596067	GE-86	PTC121	HEPS0016	REN 108	SK3452	RT-107	ECG108	TM108	WEP56	121-522
		3596070	GE-86	PTC121	HEPS0016	REN 108	SK3452	RT-107	ECG108	TM108	WEP56	121-522
Q2		3596068	GE-86	PTC121	HEPS0016	REN 108	SK3452	RT-107	ECG108	TM108	WEP56	121-522
		3596071	GE-86	PTC121	HEPS0016	REN 108	SK3452	RT-107	ECG108	TM108	WEP56	121-522
Q3		3597103	GE-86	PTC132	HEPS0014	REN 192	SK3018	RT-113	ECG108		WEP56	121-522
		3597104	GE-86	PTC132	HEPS0014	REN 192	SK3018	RT-113	ECG108		WEP56	121-522
Q101		3596401	GE-FET-4	PTC182	HEPF2007	REN 222	SK3065	RT-181	ECG222	TM222	WEP905	121-826
Q102		3596402	GE-FET-4	PTC182	HEPF2007	REN 222	SK3065	RT-181	ECG222	TM222	WEP905	121-826
Q103		3597260	GE-11	PTC115*	HEPS0011*	REN 108*	SK3018*	RT-113*	ECG108*	TM108*	WEP56*	121-522
		3597261	GE-11	PTC115*	HEPS0011*	REN 108*	SK3018*	RT-113*	ECG108*	TM108*	WEP56*	121-522
Q104		3596440	GE-17	PTC131	HEPS0016	REN 107	SK3018	RT-108A	ECG107	TM108	WEP736	121-522
Q104		3597114	GE-17	PTC131	HEPS0025	REN 107	SK3018	RT-108A	ECG107	TM108	WEP736	121-522
TR201	2SC1974		GE-337	PTC186		REN 235	SK3197	RT-146	ECG235	TM235	WEP785	121-Z9039
TR202	2SC1973		GE-335				SK3250		ECG315	TM315	WEP922	921-1008
TR203	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR204	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR205	3SK49Q		GE-FET-4	PTC182	HEPF2007	REN 222	SK3065	RT-181	ECG222	TM222	WEP905	121-826
	3SK49		GE-FET-4	PTC182	HEPF2007	REN 222	SK3065	RT-181	ECG222	TM222	WEP905	121-826
TR206	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR207	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-306	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR208	2SC1383R		GE-47	PTC143*	HEPS3001*	REN 293	SK3024*	RT-302	ECG293	TM293	WEP912	
	2SC1383		GE-47	PTC143*	HEPS3001*	REN 293	SK3024*	RT-302	ECG293	TM293	WEP912	
TR251	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR252	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR301	2SC1318R		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFGR. 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.
	2SC1318PQR		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
TR302	2SC1047B		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047BCD		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
TR303	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR304	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR305	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR306	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR307	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR308	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR309	2SC1047B		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047BCD		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
TR310	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR311	2SA564Q		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
	2SA564PQR		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
	2SA564		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
TR312	2SC1047B		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047BCD		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
TR313	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR314	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR315	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR316	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR317	2SA719P		GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019
	2SA719PQR		GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019
	2SA719		GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019
TR318	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR319	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR401	2SC1318R		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318PQR		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
TR402	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR403	2SC1383R		GE-47	PTC143*	HEPS3001*	REN 293	SK3024*	RT-302	ECG293	TM293	WEP912	
	2SC1383		GE-47	PTC143*	HEPS3001*	REN 293	SK3024*	RT-302	ECG293	TM293	WEP912	
TR404	2SC1318R		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318PQR		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318		GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
TR405	2SC828S		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828RST		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
TR912	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR913	2SC1047B		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047BCD		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
	2SC1047		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-Z9021
TR914	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR915	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829BC		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFGR. 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.
TR916	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC8298C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
TR917	2SA564Q		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
	2SA564PQR		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
	2SA564		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
TR918	2SA564Q		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
	2SA564PQR		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
	2SA564		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879
TR919	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC8298C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-Z9021*
X1		3596061	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
X2		3596062	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109	WEP134	103-Z9001
X101		3596398	GEZD-6.8	Z86.8A	HEPZ0409	REN 5071	SK3334	RT-238	ECG5071	TM5071/**	WEP1106	
X102		3596435	GE-90		HEPR2503	REN 614		RT-262	ECG614		WEP200	

* Lead configuration may vary from original.
/** Also available as exact type replacement.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C1	50 5V	3596823	W8R50-25	TT6X50A	QE1-351	TVA-1100
C17	200 16V	3597249	WBR250-16	TT15X200A	QE1-479	TVA-1160.6
C19	3.3 16V	3596255		TAC335K015P03	QDT1-41	SD15-3R39
C28	100 16V	3597043(1)	PC100-16	VTT100F16	QV1-95	EV-1230
C29	100 16V	3597043	PC100-16	VTT100F16	QV1-95	EV-1230
C30	150 8V	3597251(1)	NLW150-10	TT12X150A	QV1-103	EV-1135
C31	150 8V	3597250	NLW150-10	TT12X150A	QE1-457	TVA1180
C36	100 16V	3597043	PC100-16	VTT100F16	QV1-95	EV-1230
C37	100 16V	3597043	PC100-16	VTT100F16	QV1-95	EV-1230
C40	1500 16V	3597252(1)		TT15X1500A	QE1-609	TVA1175.2
C41	1500 16V	3597252		TT15X1500A	QE1-609	TVA1175.2
C42	1500 16V	3597252		TT15X1500A	QE1-609	TVA1175.2
C43	1500 16V	3597252		TT15X1500A	QE1-609	TVA1175.2
C45	1500 16V	3597252		TT15X1500A	QE1-609	TVA1175.2
C126	1 25V	3596256(1)		TDC105M035EL		SD35-19
C128	1 25V	3596256(1)		TDC105M035EL		SD35-19
C130	1 25V	3596256(1)		TDC105M035EL		SD35-19
C131	3.3 16V	3597231(1)		TDC335M015FL	QDT1-41	SD15-3R39
C134	100 16V	3597248(1)	WBR100-16	TT15X100A	QE1-423	TVA-1160
C135	3.3 15V	3596255(1)		TAC335K015P03	QDT1-41	SD15-3R39
C136	3.3 15V	3596255(1)		TAC335K015P03	QDT1-41	SD15-3R39
C233	220 16V	ECEA16V220L	PC250-25	VTT220H16	QV1-117	EV-1240
C253	220 16V	ECEA16V220L	PC250-25	VTT220H16	QV1-117	EV-1240
C254	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C257	33 10V	ECEA10V33L	PC30-25	VTT33B10	QV1-61	EV-1125
C259	220 16V	ECEA16V220L	PC250-25	VTT220H16	QV1-117	EV-1240
C260	1 50V	ECEA50V1L	PC1-50	VTT1A50	QV1-11	EV-1615
C263	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C267	10 10V	ECSZ10EF10Q		TDC106M025FL	QDT1-64	SD25-109
C273	1 50V	ECEA50V1L	PC1-50	VTT1A50	QV1-11	EV-1615
C274	33 10V	ECEA10V33L	PC30-25	VTT33B10	QV1-61	EV-1125
C275	10 10V	ECSZ10EF10Q		TDC106M025FL	QDT1-64	SD25-109
C308	1 50V	ECEA50V1L	PC1-50	VTT1A50	QV1-11	EV-1615
C329	1 50V	ECEA50V1L	PC1-50	VTT1A50	QV1-11	EV-1615
C350	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C353	1 50V	ECEA50V1L	PC1-50	VTT1A50	QV1-11	EV-1615
C354	.47 50V	ECEA50MR47	PC1-50	VTTR47A63	QV1-3	EV-1610
C356	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C360	4.7 25V	ECEA25V4R7L	PC5-50	VTT4R7B50	QV1-27	EV-1319
C401	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C402	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C403	100 16V	ECEA16V100L	PC100-16	VTT100F16	QV1-95	EV-1230
C405	33 16V	ECEA16V33L	PC30-25	VTT33D25	QV1-63	EV-1325
C407	10 16V	ECEA16V10L	PC10-25	VTT10B25	QV1-41	EV-1222
C953	47 10V	ECEA10V47L	PC50-16	VTT47D16	QV1-73	EV-1226
C956	10 10V	ECSZ10EF10Q		TDC106M025FL	QDT1-64	SD25-109
C957	.1 35V	ECSZ35EFR1Q		TDC104M050EL	QDT1-2	SD50-R109
C973	1 50V	ECEA50V1L	PC1-50	VTT1A50	QV1-11	EV-1615
C976	47 10V	ECEA10V47L	PC50-16	VTT47D16	QV1-73	EV-1226

(1) Not used in model 404B076.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C2	.0047 16V		DD-472	GP4700	GP247		5GA-047
C3	.0027 16V				GP227		10TS-D27
C4	100 NPO 100V		0TZ-100	NP0100	CN0310		10TCC-T10
C5	130 N22u 10% 100V	3597296			*		10TCR-T12
C6A	150	3597232					
C6B	75	3597232					
C7	220 N470 10%	3596237			*		10TCT-T22
C8	.01 10% 16V		UK16-103		MAG1611		HY-420
C9	.01 10% 16V		UK16-103		MAG1611		HY-420
C10	.01 10%	(2)		WMF1S1	EWF1A110	QFT2-91	1FT-S10
C11	390 5%	(2)		C015FD391J03	SX339	QW1-41	MWA-391
	130	(3)		CD15F0131J03	SX313	QW1-30	MWA-131
C11A	240	(3)					
C12	.047 16V		UK16-503		MAG1615		HY-635
C13	.047 16V		UK16-503		MAG1615		HY-635
C14	.047 16V		UK16-503		MAG1615		HY-635
C15	150		DD-151		GP315		10TS-T15
C16	.0027 16V				GP227		10TS-D27
C18	.047 16V		UK16-503		MAG1615		HY-635
C20	.001 16V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C21	.0039 50V			DPMS6D39	M192P3929R8	QFT2-51	1FT-039
C22	.033 16V		UK16-333		MAG16133		HY-630
C23	.033 16V		UK16-333		MAG16133		HY-630
C24	.1 12V		UK12-104		MAG1201		HY-360
C25	.1 12V		UK12-104		MAG1201		HY-360
C26	.0047	(1)		WMF1D47	M192P4729R8	QFT2-63	1FT-047
C27	.0047			WMF1D47	M192P4729R8	QFT2-63	1FT-D47
C32	.0027 16V	(1)			GP227		10TS-027
C33	.0027 16V				GP227		10TS-D27
C34	500	(1)	DD-501	GP500	GP350		10TS-T50
C35	500		0D-501	GP500	GP350		10TS-T50
C38	.1 16V	(1)	UK16-104		MAG1601		HY-650
C39	.1 16V		UK16-104		MAG1601		HY-650
C44	.068 50V			WMF1S68	EWF1A168	QF1-195	1PB-S68
C46	.047 100V			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C47	.001	3598133 (1)					
C48	.001	3598133					
C49	.001	3598133 (1)					
C50	.001	3598133					
C51	.001	3598133					
C52	.001	3598133					
C53	.001	3598133					
C101	1.8 10%	3596840 (1)					
C102	6-25	3596539 (1)					
C103	.001 16V	(1)	DD-102G	GP1000	GP210	QC2-81	5GA-D10
C104	.0047 16V	(1)	DD-472	GP4700	GP247		5GA-D47
C105	.001 16V	(1)	DD-102G	GP1000	GP210	QC2-81	5GA-D10
C106	.0047	(1)	DD-472	GP4700	GP247		5GA-D47
C107	.047 16V	(1)	UK16-503		MAG1615		HY-635
C108	6-25	3596539 (1)					
C109	8.2 10%	3596843 (1)			GP580		10TCC-V82
C110	4.7 10%	(1)	DTZ-4R7	NP04P7	CN0547		10TCC-V47
C111	.047 16V	(1)	UK16-503		MAG1615		HY-635
C112	.0047 16V	(1)	DD-472	GP4700	GP247		5GA-D47
C113	25 NPO 10%	(1)	DTZ-25	NP025	CN0425		10TCC-Q25
C114	4.7 +.5 N750 16V	(1)			CN7547		10TCU-V47
C115	3-15	3597108 (1)					
C116	2.7 +.5 N330 16V	3596415 (1)					
C117	2.7 10%	3596841 (1)					10TCC-V27
C118	.1 12V	(1)	UK12-104		MAG1201		HY-360
C119	.0047	(1)	DD-472	GP4700	GP247		5GA-D47
C120	.047 16V	(1)	UK16-503		MAG1615		HY-635
C121	.047 16V	(1)	UK16-503		MAG1615		HY-635
C122	.047 16V	(1)	UK16-503		MAG1615		HY-635
C123	.047 16V	(1)	UK16-503		MAG1615		HY-635
C124	.047 16V	(1)	UK16-503		MAG1615		HY-635
C125	.047 16V	(1)	UK16-503		MAG1615		HY-635
C127	100 NPO 100V	(1)	DTZ-100	NP0100	CN0310		10TCC-T10
C129	.1 12V	(1)	UK12-104		MAG1201		HY-360
C132	.0039 5%	(1)		CD19FD392J03	SX239		MWC-392
C133	.047 16V	(1)	UK16-503		MAG1615		HY-635
C137	.01 10% 50V	(1)		WMF1S1	EWF1A147	QFT2-91	1FT-S10
C138	.01 10% 50V	(1)		WMF1S1	EWF1A147	QFT2-91	1FT-S10
C201	.01		UK50-103		MAG5011		
C202	120 10%		DTZ-120		CN0312		10TCC-T12
C203	270 5%		DTZ-270				10TCC-T27
C204	3		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C205	220 10%		DD-221		GP322		10TS-T22
C206	270 5%		DTZ-270				10TCC-T27
C207	.01		UK50-103		MAG5011		
C208	120 10%		DTZ-120		CN0312		10TCC-T12
C209	68 NPO 10%		DTZ-68	NP068	CN0468		10TCC-Q68
C210	.01		UK50-103		MAG5011		
C211	33 NPO 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C212	470		DD-471	GP470	GP347		10TS-T47
C213	.01		UK50-103		MAG5011		
C214	33 N150 5%	YECCD1H330JP			*		10TCP-Q33
C215	.01		UK50-103		MAG5011		
C216	.01		UK50-103		MAG5011		
C217	.01		UK50-103		MAG5011		

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C218	33 N150 5%	YECCD1H330JP			*		10TCP-Q33
C219	.01		UK50-103		MAG5011		
C220	.01		UK50-103		MAG5011		
C221	.01		UK50-103		MAG5011		
C222	33 N150	YECCD1H330JP			*		10TCP-Q33
C223	.01		UK50-103		MAG5011		
C224	10		DTZ-10	NP010	CN0410		10TCC-Q10
C225	47		DTZ-47	NP047	CN0447		10TCC-Q47
C226	.01		UK50-103		MAG5011		
C227	.01		UK50-103		MAG5011		
C228	33		DTZ-33	NP033	CN0433		10TCC-Q33
C229	82		DD-820		GP482		10TS-Q82
C230	.001 10% 50V			DPMS6D1	EWF1A210	QFT2-1	1FT-D10
C231	47		DTZ-47	NP047	CN0447		10TCC-Q47
C232	.01		UK50-103		MAG5011		
C236	15		DTZ-15	NP015	CN0415		10TCC-Q15
C237	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C239	.01		UK50-103		MAG5011		
C251	.1 50V			WMF05P1	EWF05010	QFT2-215	1FT-P10
C252	.2 12V		UK16-204				HY-470
C255	.0018 10% 50V			DPMS602	PVC622		6PS-020
C256	270 5%		DTZ-270				10TCC-T27
C258	.001 10% 50V			DPMS6D1	EWF1A210	QFT2-1	1FT-D10
C261	.0012 10% 50V			DPMS6D12	PVC6212		6PS-D12
C262	.0027 10% 50V				M192P2729R8		192P2729R8
C264	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C265	68		DD-680	GP68	GP468		10TS-Q68
C266	180 10%		DD-181		GP318		10TS-T18
C268	.015 50V			WMF1S15	M192P1539R8	QFT2-105	1FT-S15
C269	.047 50V			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C270	68		DD-680	GP68	GP468		10TS-Q68
C271	180 10%		DD-181		GP318		10TS-T18
C272	390 10%		DD-391	GP390	GP339		10TS-T39
C276	.001 10% 50V			DPMS6D1	EWF1A247	QFT2-1	1FT-010
C277	.01		UK50-103		MAG5011		
C278	.01		UK50-103		MAG5011		
C279	.01		UK50-103		MAG5011		
C280	470		DD-471	GP470	GP347		10TS-T47
C301A		3598022					
		3596033 (4)					
C301B	.01		UK50-103		MAG5011		
C302	.01		UK50-103		MAG5011		
C303	.01		UK50-103		MAG5011		
C304	22 NPO		DTZ-22	NP022	CN0422		10TCC-Q22
C305	.01		UK50-103		MAG5011		
C306	.01		UK50-103		MAG5011		
C307	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C309	.01		UK50-103		MAG5011		
C310	33 NPO 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C311	.01		UK50-103		MAG5011		
C312	2 NPO		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C313	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C314	33 NPO 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C315	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C316	15		DTZ-15	NP015	CN0415		10TCC-Q15
C317	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C318	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C320	2 NPO		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C322	8	YECC01H080DM					
C323	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C324	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C325	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C326	.022 50V			DPMS2S22	EWF1A122	QFT2-127	1FT-S22
C327	.01		UK50-103		MAG5011		
C328	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C330	.047 50V			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C331	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C332	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C333	.022 50V			DPMS2S22	EWF1A122	QFT2-127	1FT-S22
C334	150 10%		DD-151		GP315		10TS-T15
C335	.001 10% 50V			DPMS6D1	EWF1A210	QFT2-1	1FT-D10
C336	68		DD-680	GP68	GP468		10TS-Q68
C337	.01		UK50-103		MAG5011		
C338	.1 12V		UK12-104		MAG1201		HY-360
C339	33		DTZ-33	NP033	CN0433		10TCC-Q33
C340	.01		UK50-103		MAG5011		
C341	.01		UK50-103		MAG5011		
C342	.018 50V				M192P1839R8		192P1839R8
C343	.01		UK50-103		MAG5011		
C345	470		DD-471	GP470	GP347		10TS-T47
C347	.1 12V		UK12-104		MAG1201		HY-360
C348	.01		UK50-103		MAG5011		
C351	.001 10% 50V			DPMS6D1	EWF1A210	QFT2-1	1FT-D10
C352	.0068 10% 50V			WMF1D68	EWF1A168	QFT2-73	1FT-D68
	.01			DPMS6D1	EWF1A210	QFT2-1	1FT-010

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering ports, state Model, Port Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C355	.047 50V			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C357	.01		UK50-103		MAG5011		
C358	.01		UK50-103		MAG5011		
C359	.01		UK50-103		MAG5011		
C404	.01		UK50-103		MAG5011		
C406	.01		UK50-103		MAG5011		
C408	.01		UK50-103		MAG5011		
C954	.1 12V		UK12-104		MAG1201		HY-360
C955	68		DD-680	GP68	GP468		10TS-Q68
C958	47		DTZ-47	NP047	CN0447		10TCC-Q47
C959	10 N470	YECCD1H100KT			*		10TCT-Q10
C960	10 N470	YECCD1H100KT			*		10TCT-Q10
C961	220 10%		DD-221		GP322		10TS-T22
C962	150 10%		DD-151		GP315		10TS-T15
C963	.1 12V		UK12-104		MAG1201		HY-360
C964	33		DTZ-33	NP033	CN0433		10TCC-Q33
C965	.01		UK50-103		MAG5011		
C966	.0018 10% 50V			DPMS6D2	PVC622		6PS-D20
C967	10		DTZ-10	NP010	CN0410		10TCC-Q10
C968	.01		UK50-103		MAG5011		
C969	22		DTZ-22	NP022	CN0422		10TCC-Q22
C970	22		DTZ-22	NP022	CN0422		10TCC-Q22
C971	33		DTZ-33	NP033	CN0433		10TCC-Q33
C972	.001 10% 50V			DPMS601	EWF1A210	QFT2-1	1FT-D10
C974	50	ECV1ZW50X32					
C975	.01		UK50-103		MAG5011		
C977	82		DD-820		GP482		10TS-Q82
C978	.01		UK50-103		MAG5011		
C979	470		DD-471	GP470	GP347		10TS-T47
C980	470		DD-471	GP470	GP347		10TS-T47

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
(1) Not used in model 4048076.
(2) Used with GI Tuner.
(3) Used with SHOJI Tuner
(4) Used in some versions.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
R21	Tone	45K	3598024(18)			
	Volume-Power Switch	45K Tap @ 15K				
R21	Tone	45K	3598223(19)			
	Volume-Power Switch	45 Tap @ 15K				
R21A	Tone-Left	45K	3598228(18)			
B	Tone-Right	45K	(22)			
C	Volume-Left	45K Tap @ 15K				
D	Volume-Right/Power Switch	45K Tap @ 15K				
R21A	Tone-Left	45K	3598140(19)			
B	Tone-Right	45K	(22)			
C	Volume-Left	45K Tap @ 15K				
D	Voluem-Right/Power Switch	45K Tap @ 15K				
R301	Fader	40 2W	3598131(19)			
R301	Fader-L	40 2W	3598132(21)			
R301A	Fader-R	40 2W	3596258(19)(22)			
B	Fader-L	40 2W				
R301A	Fader-L	40 2W	3596795(22)(20)			
B	Fader-R	40 2W				
R302	Balance	45K	3597192(19)		MSD54L	US503L
R302	Balance	45K	3597216(18)		MSD54L	US503L
VR201	P Meter	50K	EVNK4AA00B54			U260R503B
VR202	Power ADJ	5000	EVNK4AA00B53			U260R502B
VR203	Freq Level	500K	EVNJ0AA00B55			U260R504B
VR251	AMC	5000	EVNK4AA00B53			U260R502B
VR301	S Meter	50K	EVNK4AA00B54			U260R503B
VR302	AGC Range	50K	EVNK4AA00B54			U260R503B
VR303	Squelch Range	20K	EVNK4AA00B24			U260R253B
VR304	Squelch/Switch	10K	EVHY93022B14			
VR305	Audio Gain	500	EVNJ0AA00B52			X260R501B

(18) Mallory part number.
(19) CTS part number.
(20) Centralab part number.
(21) Clarostat part number.
(22) Used in model 4048077.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
A1	Resistor Network		3597230(1)
A2	Resistor Network		3597229(2)
R370	Resistor Network		EXBP86101K(3)
TH301	10K Cold		ERTD2ZHK103S

(1) Consists of one each 470, 110, 200K, 1K, 16K, 82K, 24K, 2.2K resistors.
(2) Consists of one each 1K, 18K, 30K, 1.5K, 6.8K, 140K, 82K, 2K resistors.
(3) Consists of six 100 ohm resistors.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
IFT301	Rec Mixer (10.595MHz)	EIF7S755C			(1) Part of M1 (Tuner).
IFT302	Rec Mixer (10.595MHz)	EIF7S755C			
IFT303	Rec Mixer (455kHz)	YEIA07S7075D			
IFT304	Rec IF (455kHz)	YEIA07S7075D			
IFT305	Rec IF (455kHz)	YEIA10S7086	EIA086		
L1	RF Choke (2.2uH)	3596331			
L2	AM Antenna	(1)			
L3	AM RF	(1)			
L4	AM Osc.	(1)			
L5	RF Choke (50mH)	3596247			
L101	FM Antenna	(1)			
L102	FM RF	(1)			
L103	FM Osc.	(1)			
L104	RF Choke (27uH)	3597235			
L201	Antenna Matching	YELT04N017			
L202	Pi Filter	YELT04N017			
L203	Pi Filter	YELT04N017			
L204	Final Tuning (27MHz)	EIV10H43			
L205	RF Choke	YELT04N018			
L206	XMT Driver (27MHz)	EIV10H43			
L207	RF Choke	YELQ04N009			
L3018	RF Choke	YELT04C021			
T1	AM IF (262.5kHz)	3597234			
T2	AM IF (262.5kHz)	3597247			
T101	FM IF (10.7MHz)	3596400	7703HK		
T102	FM Detector (10.7MHz)	3596807			
T103	FM MPX Coil (76kHz)	3596806			
T201	XMT Buffer (27MHz)	EIV7E701A			
T202	XMT Buffer (27MHz)	EIV7E701A			
T203	XMT Mixer (27MHz)	EIV7E701A			
T301	Rec Antenna (27MHz)	EIV7E7048			
T302	Rec RF (27MHz)	EIV7E701A			
T303	Rec RF (27MHz)	EIV7E701A			
T304	Noise Blanker	EIV7E701A			
T906	VCO	EIV7E704A			
T907	VCO Buffer (17MHz)	EIF7S7578			
T908	VCO Buffer (17MHz)	EIV7E704A			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
L301	1A	.306	3.8mH	YELT04N021 3597201(1)			(1) Number on unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T204	8	38.42	YETM124X002 TM002(1)			(1) Number on unit.

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFGR. PART No.	GC PART No.	GC NOISE CANCEL	GC POWER	GC CONNECTOR	GC Red	GC Shield	GC Yellow	GC Blue	GC White	GC Black
MIC	WM2291X	18-032	18-034	18-010	18-105	1	3	2	NC	NC	5

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF201	Filter	EFCS27MT1	27MHz
CF202	Filter	YEIN09N5004D	10.7MHz
CF301	Filter	YEIC07D2006A	455kHz
CF302	Filter	YEIN09N5004D	10.7MHz
CN301	Connector	EMCS1001	10 Pin, on CB board.
CN451	Jack	YEAT07022	Mic
D316-D321	LED	YEADMV5274B	Meter S/RF
FB101	Ferrite Bead	3596355	
FB102	Ferrite Bead	3596355	
FB103	Ferrite Bead	3596355	
FB104	Ferrite Bead	3596355	
FB105	Ferrite Bead	3596355	
FB106	Ferrite Bead	3596355	
FL101	Filter	3598430	10.7MHz
	Filter	3597298	10.7MHz, Optional
FL102	Filter	3598430	10.7MHz
	Filter	3597298	10.7MHz, Optional
J2	Cable Assembly	3598127	Speakers, Model 4048076
	Cable Assembly	3598134	Speakers, Model 4048077
J3	Cable Assembly	3598139	DC Power
J4	Cable Assembly	3598135	Dial Lamp
J5	Cable Assembly	3598229	Display Dimmer
J6	Socket	3597202	Radio Antenna
J201	Connector	YEAE01096	CB Antenna
LP1	Lamp	3598235	Dial, #1815 (13.80V @ 75mA)
LP2	Lamp	3598270	Stereo Indicator #73 (12.08V @ 75mA)
M1	Tuner	3598031	Model 4048076
	Tuner	3598338	Model 4048076, Optional
	Tuner	3598032	Model 4048077
	Tuner	3598339	Model 4048077, Optional
	Coil Deck Assembly	3598056	Model 4048076
	Coil Deck Assembly	3598057	Model 4048077
M2	Digital Display	YEAL992BT04	Channel Readout, 7-Segment Gas Tube
P4	Cable Assembly	3598138	10 Pin; Radio-to-CB Subassembly, Model 4048076
	Cable Assembly	3598137	Radio-to-CB Subassembly, Model 4048077

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

MISCELLANEOUS (cont)

ITEM No.	PART NAME	PART No.	NOTES
S1	Switch		Power (Part of volume control)
S301	Switch	3597167	AM/FM
	Switch	3597168	AM/FM, Optional
SW301	Switch		NB (Part of squelch control)
SW302	Switch	YEAS09066	Monitor
SW303	Switch	YEAS09067	CB/Radio
SW905	Switch	YEAS07051	Channel Selector
X201	Crystal	YEXLHC18U016	10.595MHz
X301	Crystal	YEXLHC18U018	10.140MHz
X902	Crystal	YEXLHC18U015	10.240MHz
	Printed Circuit Board	3598231	AM/Audio, Model 4048076
	Printed Circuit Board	3598232	AM/Audio, Model 4048077
	Printed Circuit Board	YEAP464	Flexible (Channel Display)
	Printed Circuit Board	3598234	FM
	Subassembly	3598011	CB, Complete

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

ITEM	PART No.
Cover, Bottom, CB Subassembly	YEFA05137
Cover, Top, Main Chassis	3597182
Cover, Upper, CB Subassembly	YEFA03243
Escutcheon Assembly	3598044 (1)
Escutcheon Assembly	3598043 (2)
Front Plate, CB Subassembly	YEFA07027

ITEM	PART No.
Knob, AM/FM	3598048 (2)
Knob, Balance Control	3598049
Push-button, CB + Monitor	3598050
Push-button, Tuner	3596860
Sub-escutcheon Assembly	3598046 (1)
Sub-escutcheon Assembly	3598047 (2)
Tuner Pointer Assembly	3598052

(1) Model 4048076.
(2) Model 4048077.

WIRING DATA

General-use Hook-up Wire (available in 5 colors)		BELDEN No. 8523	Coiled Microphone Cable		
Shielded Hook-up Wire (spiral wrapped)		BELDEN No. 8421	3-conductor (1 shielded)	23AWG	BELDEN No. 9471 (5')
(braided)		BELDEN No. 8401			BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)		BELDEN No. 8782			BELDEN No. 9472 (7-1/2')
Bonding Strap		BELDEN No. 8672		28AWG	BELDEN No. 9466 (6')
AC Power Cord	(6')	BELDEN No. 17106		31AWG	BELDEN No. 9468 (10')
	(9')	BELDEN No. 17109	4-conductor (unshielded)	23AWG	BELDEN No. 8415 (6')
			5-conductor (1 shielded)	28AWG	BELDEN No. 9467 (6')
					BELDEN No. 9465 (7-1/2')

MODEL D8DF-19A198AA, AB(78 Ford, Mercury)

ALIGNMENT INSTRUCTIONS

Check for specified source voltage
Connect low sides of generator and
indicator to ground unless specified otherwise.
Use only enough generator output
to provide a usable indication.
Suggested Alignment Tools: GC ELECTRONICS:
T101, T102, T103, T201, T202 ..... 9296, 9297, 9300
T104, T105 9440
VC101, VC102, VC103 ..... 5000, 8277, 9089

PUSH-BUTTON ADJUSTMENT

1. Pull button out.
2. Tune manually to desired station.
3. Press button in firmly.
4. Repeat for remaining buttons.

FM STEREO ALIGNMENT USING AUDIO GENERATOR

High side of generator to junction of D202, Pin 1 of N202

GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
400Hz	Output meter on VTVM from J202 (71) to J202 (72).	VR504	Adjust for MINIMUM.

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

AM ALIGNMENT

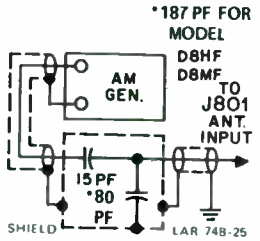
AM-FM STEREO RADIO/TAPE PLAYER MODEL D8DF

PRELIMINARY INFORMATION

1. Disassemble radio as required.
2. Connect +14 VDC output from power supply to A+ cable lead, and negative lead of power supply to chassis ground.
3. Connect VTVM or scope to R203 for indication of AM audio output (junction of C212, C213 and R203). (See step 5.)
4. Connect AM signal generator as directed in AM ALIGNMENT procedure. (See diagram D for the dummy antenna circuit and for value of shunt capacitor to be used to obtain desired antenna pre-trim.)
5. Depress AM mode push button for AM operation.

NOTE: Antenna trimmer VC104 is preset using a dummy antenna of total series and shunt capacitance as specified in diagram D. No further adjustment in the vehicle is recommended.

AM ALIGNMENT PROCEDURE

STEP	SPECIAL INSTRUCTIONS	SIGNAL GENERATOR		RECEIVER	
		CONNECTION TO RECEIVER	DIAL SETTING	DIAL SETTING	ADJUST
1	Follow preliminary instructions.	To Q202 base (converter) thru .1MF capacitor.	262.5KHz	1000KHz	T202 for max.
2	Same as step 1.	Same as step 1.	262.5KHz	1000KHz	T202 for max.
3	Same as step 1.	Same as step 1.	262.5KHz	1000KHz	T201 for max.
4	Same as step 1.	Same as step 1.	262.5KHz	1000KHz	T201 for max.
5	Reassemble radio with exception of cover. Connect +14 VDC to A+ cable lead of radio. Remove J202 from P401 on fader panel & connect a 3.2 ohm load resistor between the blue or yellow lead of J202 & black leads or set fader control to mid-range & connect the 3.2 ohm load resistor between either pin 4 or pin 5 of output socket P804 & chassis gnd. Connect VTVM or scope across load resistor. Set volume control to max. & adjust generator as the alignment proceeds to maintain 1.8V RMS across the load resistor.	Thru dummy antenna (diagram D) to antenna input  DIAGRAM D. AM DUMMY ANTENNA	1610KHz	1610KHz	1. VC201 (osc.) max. 2. VC202 (R.F.) max. 3. VC104 (ant.) max. (Repeat)
PERFORM THE FOLLOWING ALIGNMENT PROCEDURE ONLY IF TUNING COIL OR CORES HAVE BEEN REPLACED. FACTORY INSTALLED TUNER ASSEMBLIES ARE FACTORY ALIGNED.					
1 - 4	Same as above.				
5	Remove bezel & sub dial. Rotate screw part of all three AM cores counterclockwise as much as possible; then follow step 5 above except do not reassemble bezel and sub dial. **	Thru dummy antenna to antenna input. (Refer to diagram D for dummy antenna.)	1610KHz	1610KHz	1. VC201 (osc.) max. 2. VC202 (R.F.) max. 3. VC104 (ant.) max. (Repeat)
6	Tune coils by adjusting screw part of each core.	Same as step 5.	1000KHz	1000KHz	1. L302 (osc.) max. 2. L303 (R.F.) max. 3. L301 (ant.) max. (Repeat)
7	Repeat adjustments in steps 5 and 6, if necessary, to improve dial tracking.				
8	After dial tracking is completed, cement brass screw part of each core to its grommet on carriage housing. Reassemble sub dial, bezel, and cover.				

**CAUTION: Avoid scratching sub dial on removal.

Courtesy of the Manufacturer

ALIGNMENT INFORMATION

FM ALIGNMENT
AM-FM STEREO RADIO/TAPE PLAYER MODEL D8DF

EQUIPMENT

1. Power Supply — Hewlett Packard 6285A or equivalent.
2. A-C VTVM — Hewlett Packard 400H or equivalent.
3. FM Generator — Boonton 202H or equivalent.
4. Oscilloscope — Tektronix 504 or equivalent.
5. RF Voltmeter or Detector Probe (See diagram A for information on building an RF detector probe.).
6. Varactor supply voltage from AM tuner panel.
7. Distortion Analyzer — Hewlett Packard 330B or equivalent.

SERVICE NOTES

Before proceeding with the FM alignment, read the Service Notes and follow preliminary information steps 1 through 3 under VARACTOR POWER SUPPLY ALIGNMENT to determine whether the varactor voltages are within acceptable limits.
Use a VTVM with an input impedance of 1 megohm or greater for voltage measurements.
A wiring method as shown in Figure 22 can be used when performing FM alignment.

PRELIMINARY INFORMATION

1. Connect RF signal generator through dummy antenna to antenna input jack J801. (Refer to Diagram C for dummy antenna configuration.) Use 400 Hz modulation, ±25 kHz deviation signal at frequency indicated and keep generator output at 1 millivolt in complete FM alignment procedure (except where otherwise indicated).
2. Use test point P102 (22) for indication of FM audio output.

PARTIAL FM ALIGNMENT PROCEDURE FOLLOWING PARTS REPLACEMENT

When replacing a component on the FM tuner panel, alignment should be performed only on the component replaced. The procedure in each case is shown in simplified chart form below.

PART REPLACED	GENERATOR SETTING	ADJUSTMENT FOR MAX. OUTPUT
T103	88MHz	T103
VC103	108 MHz	VC103
VC101, VC102	108 MHz	Only the capacitor or capacitors replaced
T101, T102	88 MHz	Only the coil or transformer replaced
VRAC103	108 MHz	VC103
	88 MHz	T103
VRAC101 VRAC102	108MHz	The associated capacitor (VC101 or VC102)
	92MHz	The associated coil or transformer (T101 or T102)
T105 FM Detector Coil	Follow procedure as explained in step 14 of COMPLETE FM ALIGNMENT PROCEDURE.	

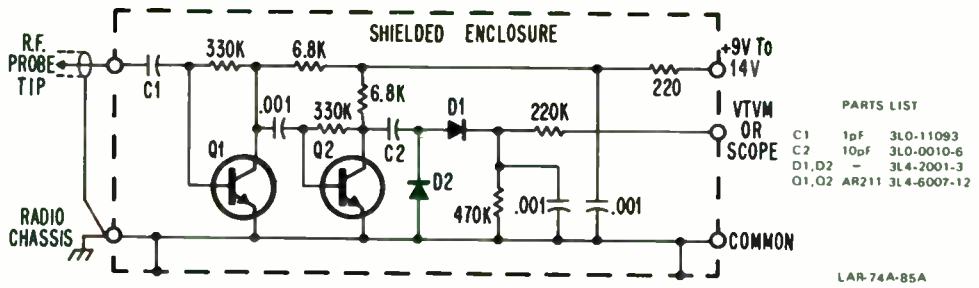


DIAGRAM A. RF DETECTOR PROBE SCHEMATIC

Courtesy of the Manufacturer

COMPLETE FM ALIGNMENT PROCEDURE

STEP	PROCEDURE
1	Connect VTVM or scope to test point P102 (22) for indication of FM audio output.
2	Apply 1.8 to 2.0 VDC from low impedance source (50 ohms or less) to base of Q101 to defeat AGC or ground collector of Q104.
3	Connect RF voltmeter or scope to output of F102 (junction of F102 and R132). (If RF voltmeter is not available, use detector probe suggested in Diagram A.)
4	Pull out high end pushbutton to unlock. Manually tune radio to 108 MHz for varactor tuning voltage into FM panel P101 (14) of +6.5 VDC on VTVM. Push the button in to lock-in voltage setting.
5	Set generator to 108MHz.
6	Adjust oscillator trimmer VC103, antenna trimmer VC101, and RF trimmer VC102 for max. output on scope or meter. Adjust generator output as needed to prevent limiting in N101.
7	Pull out low end pushbutton to unlock. Manually tune radio to 88MHz for varactor tuning voltage of 0.75 VDC on VTVM. Push the button in to lock-in voltage setting.
8	Set generator to 88MHz.
9	Adjust oscillator transformer T103, antenna coil T101 and RF transformer T102 for max. output on scope or meter.
10	Repeat steps 5 and 6. If output reading on scope or meter is within 1 dB of max. output, no further tuning is required. If output reading is not within limit specified, repeat steps 6 through 10 until output is within the limit.
11	Tune radio to 98MHz. Set generator to 98MHz, 75KHz deviation, and 1 millivolt output. Record audio output level.
12	Align FM detector as follows: a. Adjust generator frequency for max. output at pin 4 of IC101. b. Set generator to 75KHz deviation, 400Hz modulated signal at 1 millivolt output. c. Adjust FM detector coil T105 for max. output on scope of meter. d. Adjust generator frequency for min. distortion in output indication. e. At null point, readjust T105 for max. output on scope or meter.

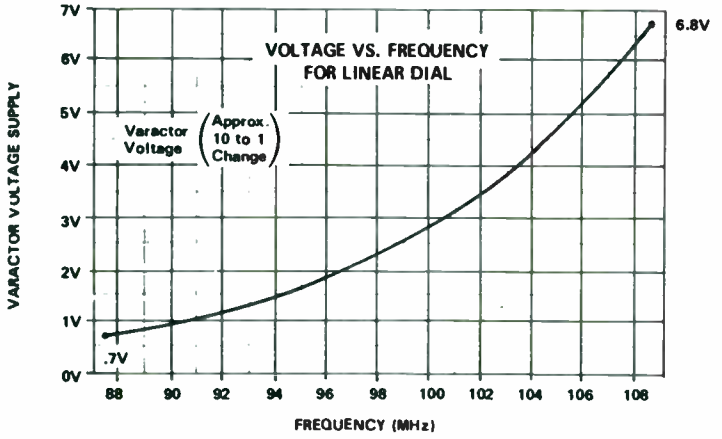


DIAGRAM B. FM VOLTAGE TUNING CHART

Courtesy of the Manufacturer

VARACTOR POWER SUPPLY ALIGNMENT

AM-FM STEREO RADIO/TAPE PLAYER MODEL D8DF

SERVICE NOTES

Follow preliminary information steps 1 through 3 below to determine whether the varactor power supply requires complete alignment.

The FM voltage tuning chart in Diagram B can be used as a visual aid to determine whether complete alignment is required.

PRELIMINARY INFORMATION

1. Disconnect J301 from FM panel and connect +14 VDC output from power supply to A+ cable lead, and negative lead of power supply to radio chassis.
2. Depress FM mode push button for FM operation.
3. To determine whether varactor power supply alignment is necessary, use VTVM to measure VRAC tuning voltage at P101 (14) under conditions listed below. (If any voltage measured is not within limits specified, proceed with COMPLETE VARACTOR ALIGNMENT procedure.)
   a. Dial pointer set to extreme high end (at stop) — output on VTVM should be 6.6VDC or greater.
   b. Dial pointer set to 94MHz — output on VTVM should be 1.4 to 1.6 VDC.
   c. Dial pointer set to extreme low end (at stop) — output on VTVM should be 0.72 VDC or less.

STEP	PROCEDURES
1	Dissassemble radio as required
2	Set pointer to 98 MHz (lightly press a push button to release clutch).† Adjust core of L304 for 2.30 VDC on VTVM at J301 (14).
3	Check voltages at extreme ends of tuner travel. These voltages should be 0.72 VDC, or less at low end, and 6.6 VDC, or greater at the high end.
4	Adjustment of the core can be made at 98 MHz to meet this minimum tuning voltage range or to center the tuning voltage range.

† It is necessary to release the clutch in order to remove the spring tension on the paddle bar at the extreme ends of the dial. This is done to get repeatability of dial end setting.

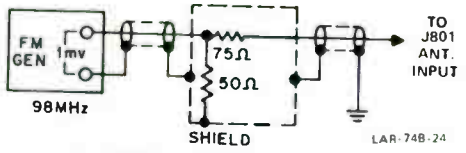


DIAGRAM C. FM DUMMY ANTENNA

Courtesy of the Manufacturer

MPX ALIGNMENT
AM-FM STEREO RADIO/TAPE PLAYER MODEL D8DF

EQUIPMENT

Frequency Counter — Itron 600 or equivalent.

SERVICE NOTES

Good multiplex operation requires proper alignment of FM RF, I. F., and detector circuits.

This phase-locked loop IC multiplex decoder system is quite simple to align as only adjustment of the 76KHz oscillator is required. This system also provides inherent rejection of unwanted signals, such as SCA, and rejection of supply line transients since the IC has an internal power supply regulator.

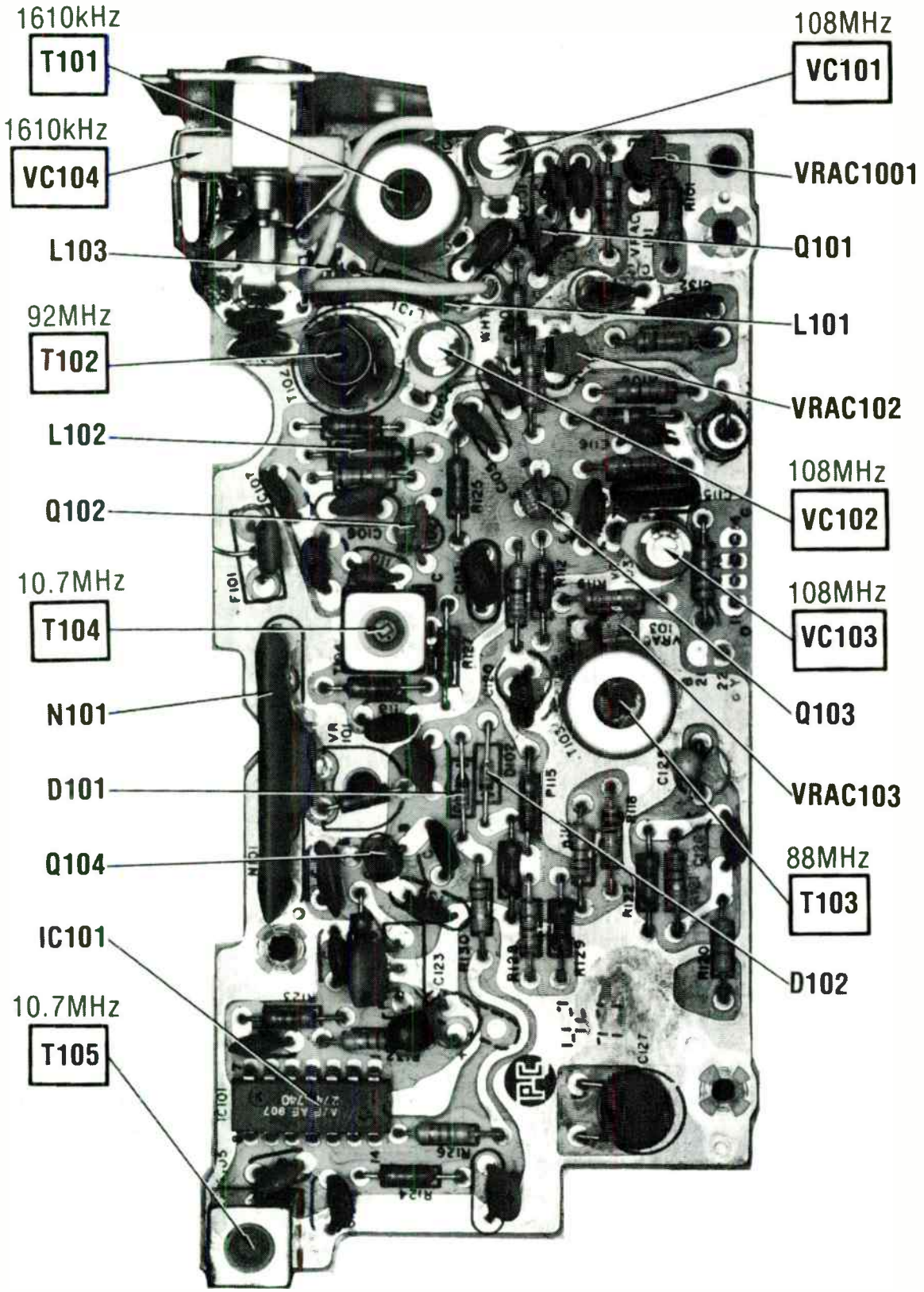
PRELIMINARY INFORMATION

1. Connect +14 VDC output from power supply to A+ cable lead, and negative lead of power supply to radio chassis.
2. Use 76KHz oscillator test point (pin 11, IC201) for indication of oscillator output. (Do not short to adjacent pins when using pin 11 as test point.) (FM Mode)
3. Tune radio to unmodulated FM signal of about 1.0 mv (to quiet FM noise) or disconnect J201 (21 and 22) connector from FM panel.

MPX ALIGNMENT PROCEDURE

STEP	PROCEDURE
1	Connect frequency counter to 76KHz osc. test point.
2	Adjust 76KHz osc. control VR201 for 18, 950 to 19, 050 Hz on frequency counter.

Courtesy of the Manufacturer



FM BOARD

CLEANING LUBRICATING HEAD DEMAGNETIZING

Refer to "General Servicing Information" on page 4.

ADJUSTMENTS

IMPORTANT: Before making any adjustments, refer to "General Servicing Information" on page 4.

1. All voltage measurements referred to in this chart are made at a tape speed of 1 7/8 ips with Digital Meter.
2. All torque measurements are made at a tape speed of 1 7/8 ips with a spring scale applied to a point 1 in. from spindle center.
3. All pressure measurements are made by using a spring scale to determine that point at which pressure is just removed.

ADJUST	REMARKS
Play Take-up Torque	Nominal value 3/4 oz. No adjustment provided.
Fast Forward Torque	Nominal value 1 oz. No adjustment provided.
Rewind Torque	Nominal value 1 oz. No adjustment provided.
Pressure Roller Pressure	Nominal value 14 oz. No adjustment provided.
Head Azimuth	Connect meter across left (right) output; play an azimuth-test tape and adjust screw 8 for maximum output.

TROUBLE CHART

IMPORTANT: Before consulting this chart, refer to "General Servicing Information" on page 4.

SYMPTOM	REMARKS
Take-up erratic or inoperative in play	Spindle 2 dirty, worn or binding. Gears 16C, 16D dirty, worn or binding. Pulley 16E dirty, worn or binding.
Take-up erratic or inoperative in fast forward	Spindle 2 dirty, worn or binding. Gear 16A dirty, worn or binding.
Rewind erratic or inoperative	Spindle 3 dirty, worn or binding. Gears 16A, 16B dirty, worn or binding.
Capstan does not rotate	Belt 1 dirty, worn or broken. Flywheel binding. Motor defective or not supplied with power.
Wow or flutter	Roller 16H dirty or worn. Belt 1 dirty or worn. Bearing 16G binding. Cassette defective. Motor defective. Excessive take-up torque.

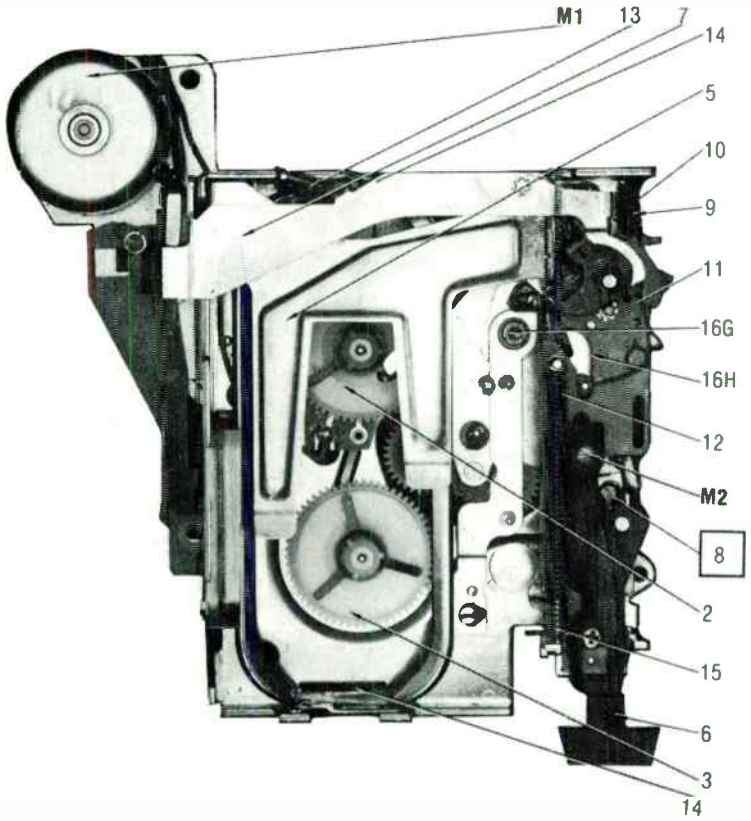
MECHANICAL PARTS LIST

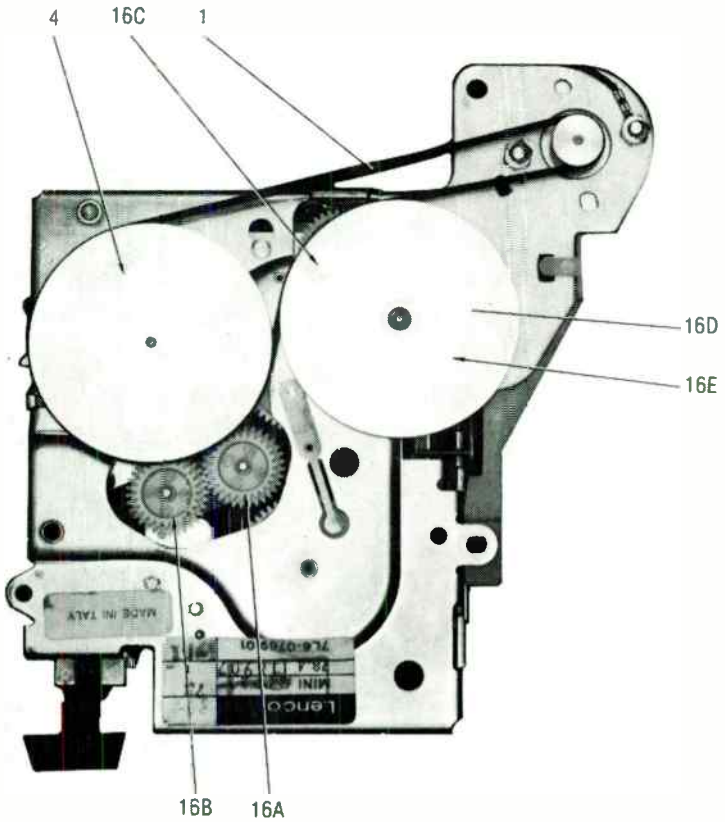
REF. NO.	PART NO.	DESCRIPTION
1*	7L6-0742-17*	Flywheel Drive Belt*
2	7L6-0742-14	Take-up Spindle
3	7L6-0742-14	Supply Spindle
4	7L6-0742-16	Flywheel Assembly
5	7L6-0742-31	Cassette Lever
6	7L6-0742-21	Puase Lever
7	7L6-0742-15	Latch Lever
8	7L6-0742-30	Azimuth Adjust Screw
9	7L6-0742-10	Eject Spring
10	7L6-0742-29	Idler Spring
11	7L6-0742-10	Bracket Spring
12	7L6-0742-7	Pause Lever Spring
13	7L6-0742-7	Latch Lever Spring
14	7L6-0742-9	Lifting Arm Springs (2 Used)
15	7L6-0742-23	Slide Spring
16	7L6-0688-1	Cassette Assembly
16A	(1)	Fast Forward Idler Gear
16B	(1)	Rewind Idler Gear
16C	(1)	Take-up Drive Gear
16D	(1)	Take-up Gear
16E	(1)	Take-up Flywheel Pulley
16G	(1)	Capstan Bearing
16H*	(1)*	Pinch Roller*

(1) Part of Assembly #16.

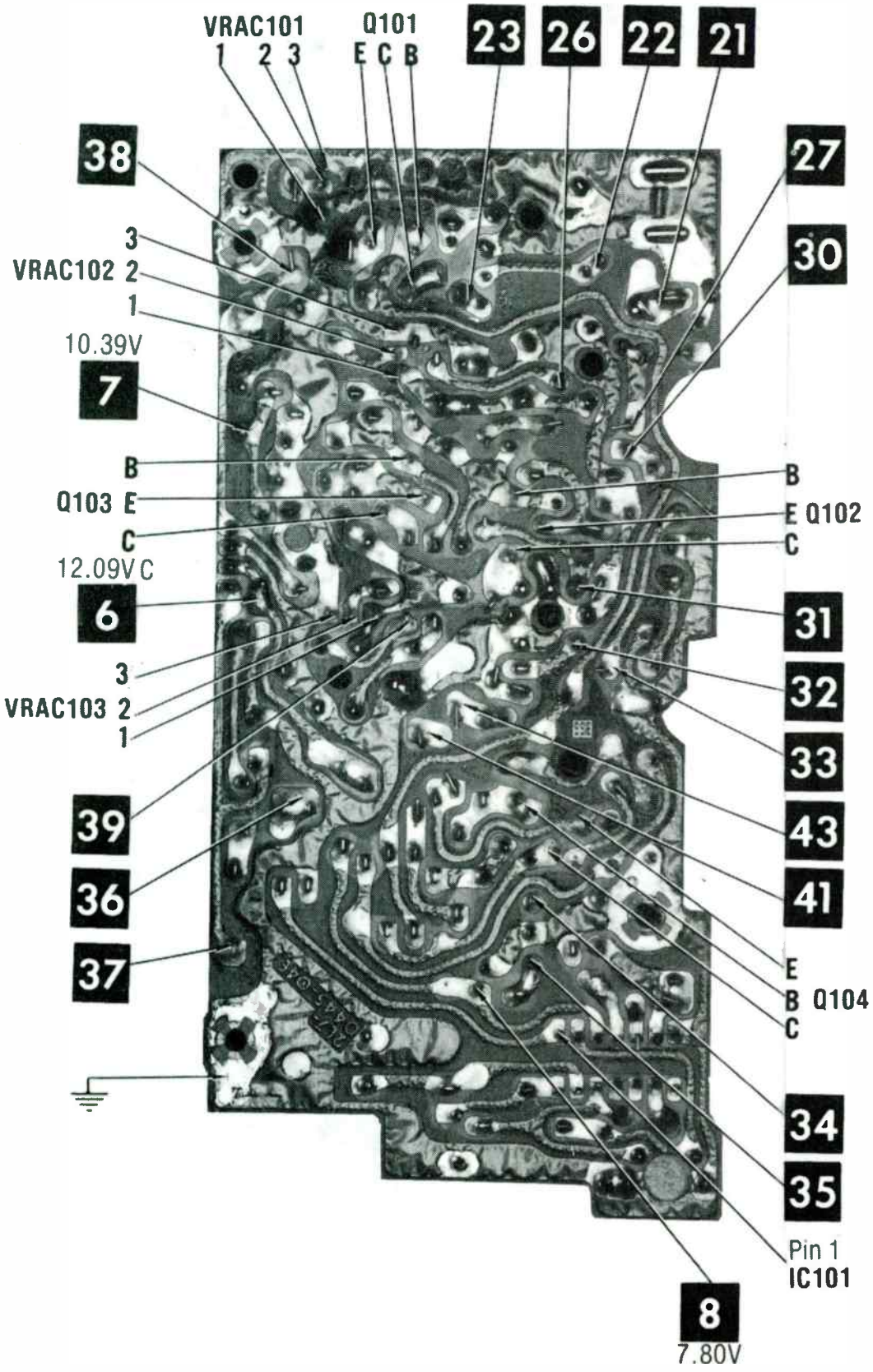
* Flywheel Drive Belt E-V/Game Replacement Number 1407-49.
Walsco Replacement Number 1425-34.

* Pinch Roller E-V/Game Replacement Number 1499-70.
Walsco Replacement Number 1499-70.

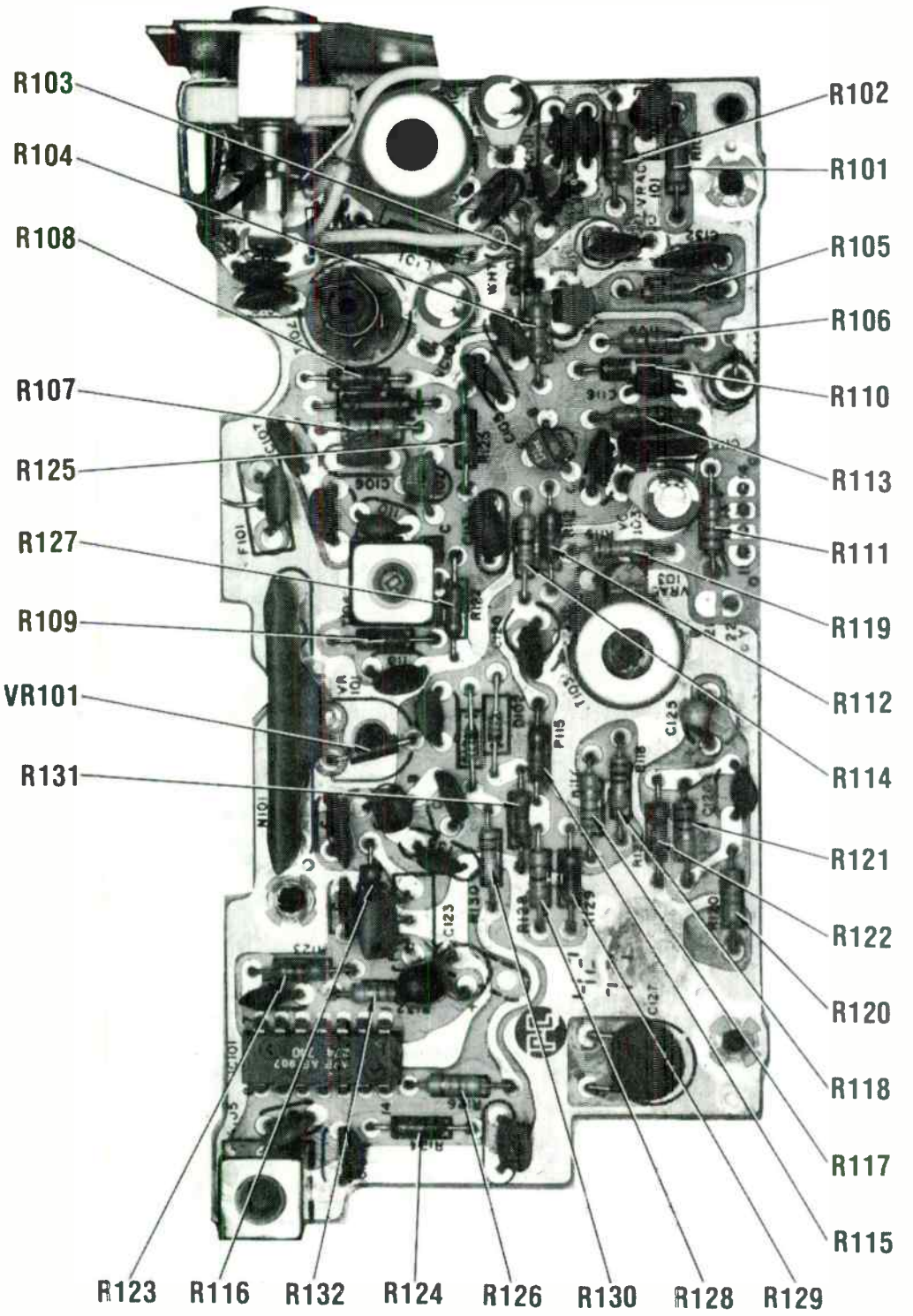




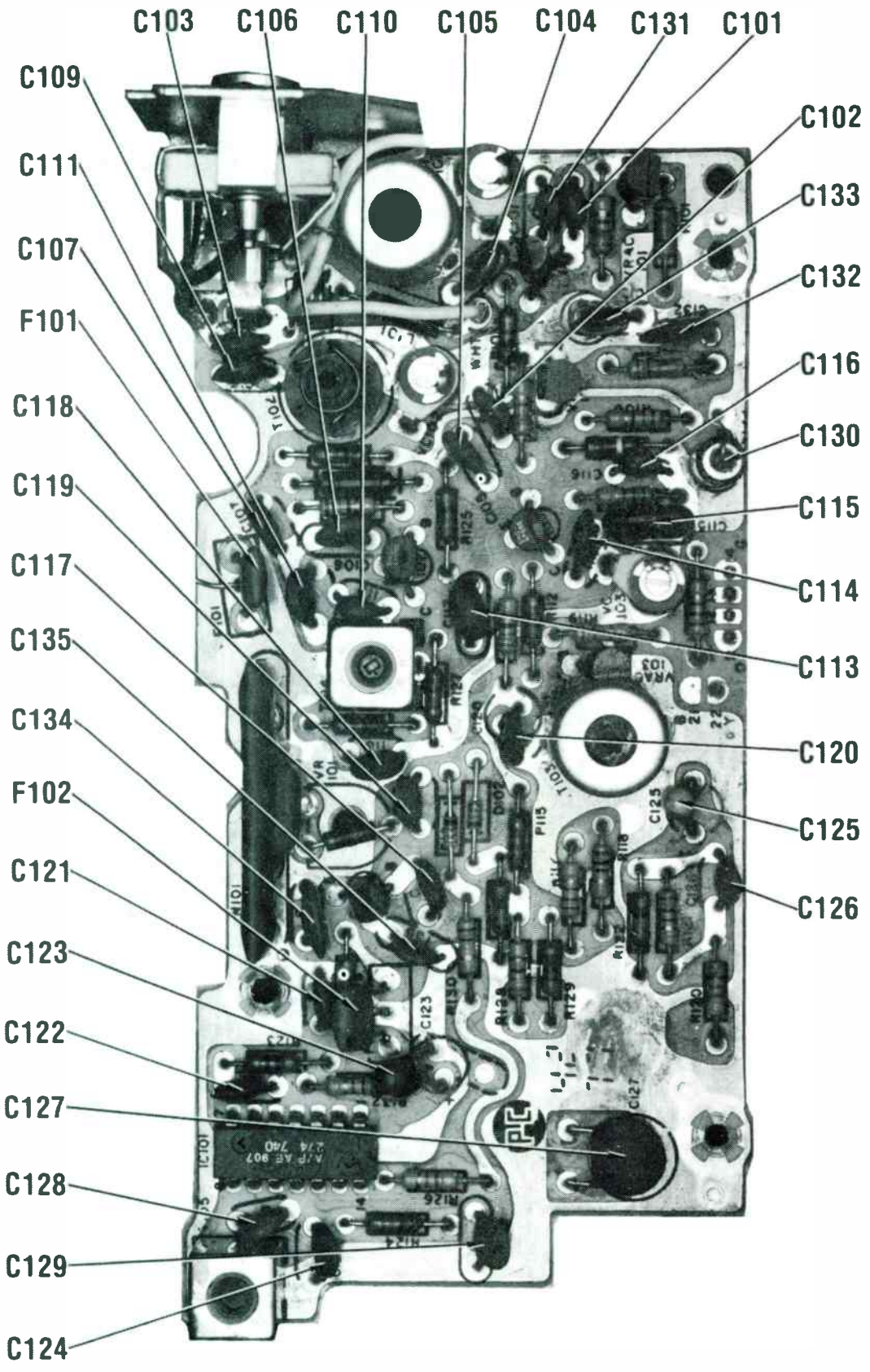
TAPE DECK-TOP/BOTTOM



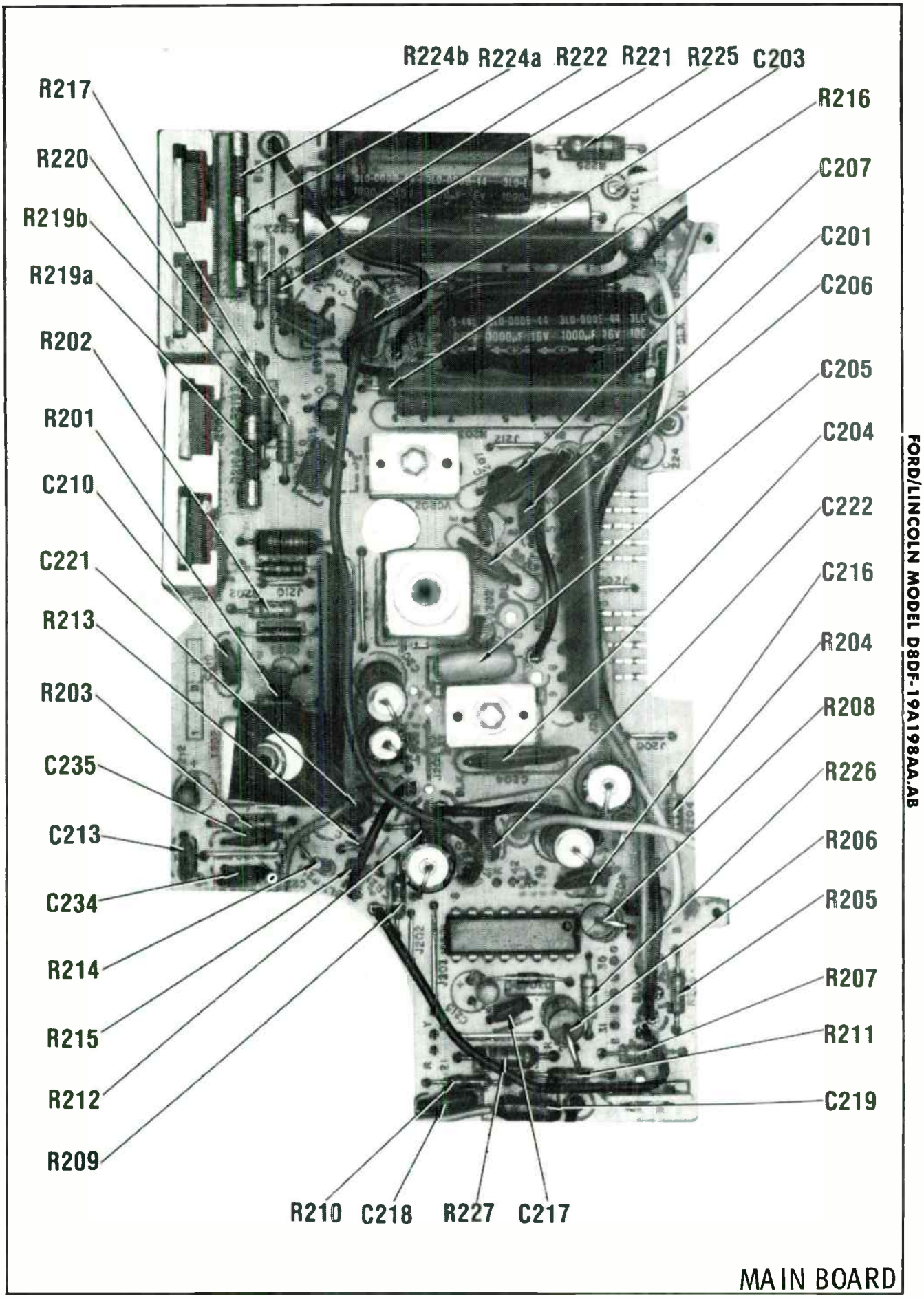
FM BOARD



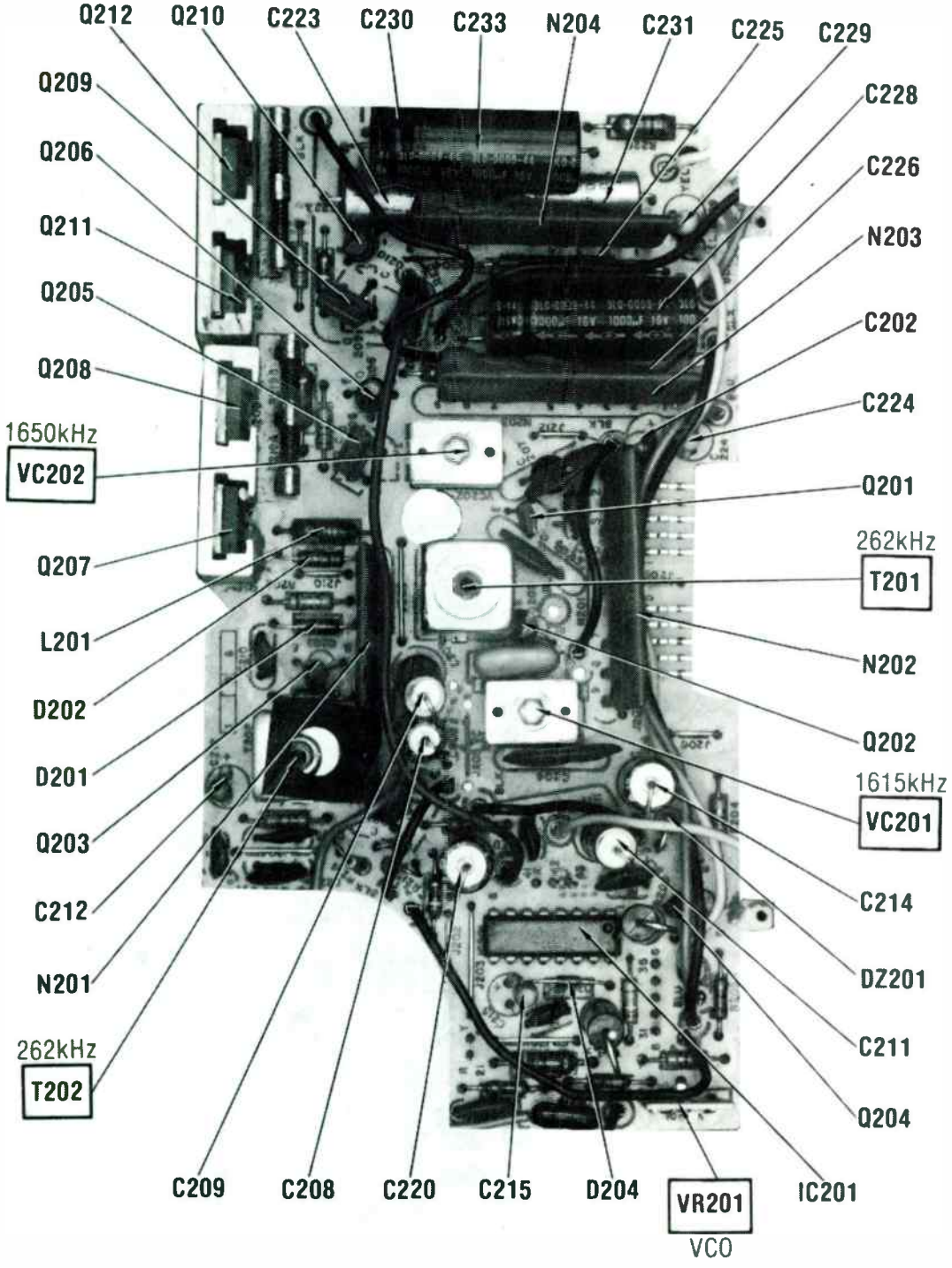
FM BOARD



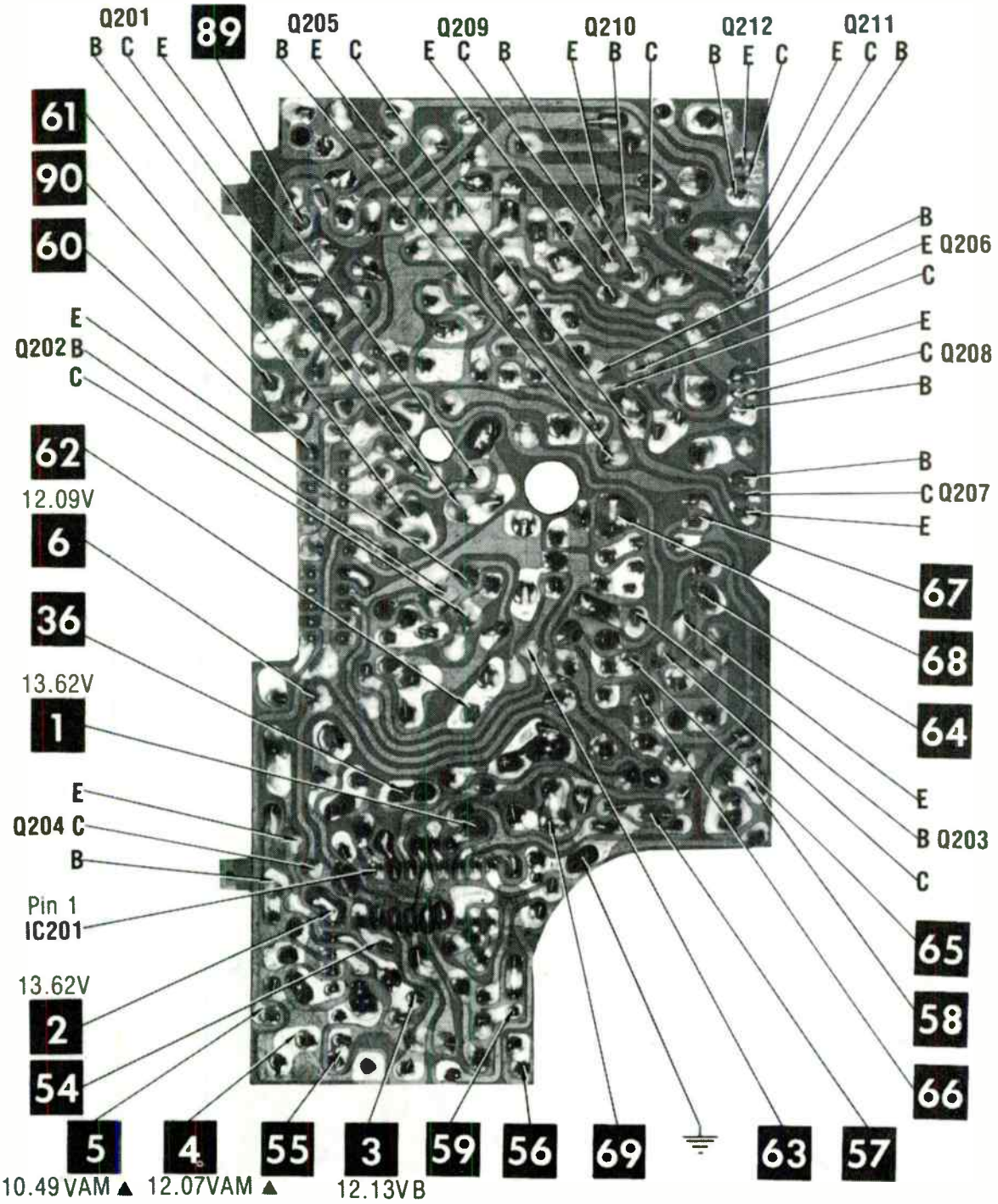
FM BOARD



MAIN BOARD

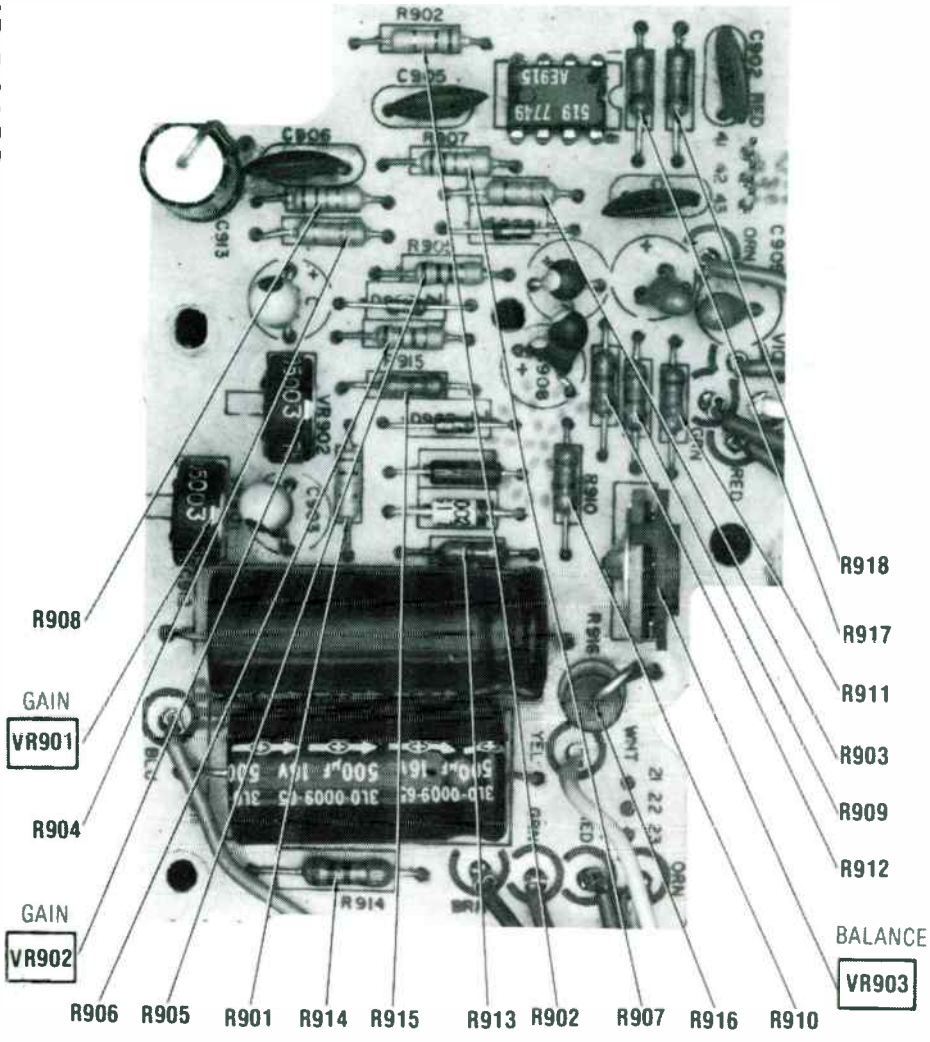


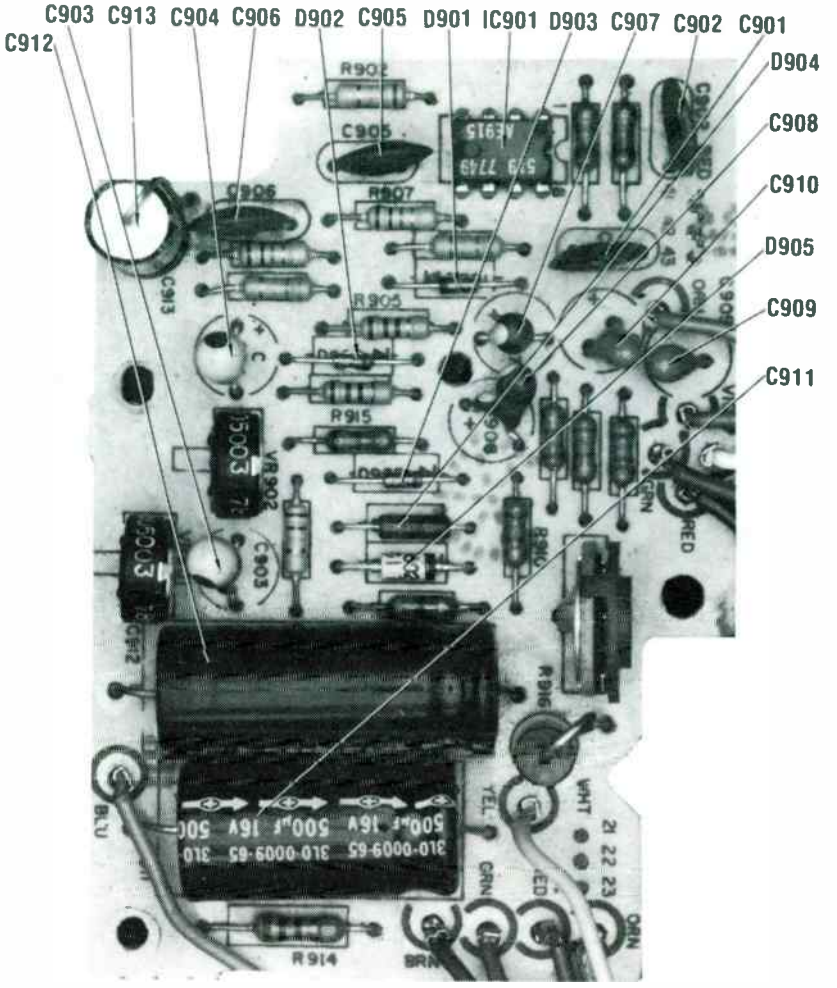
MAIN BOARD

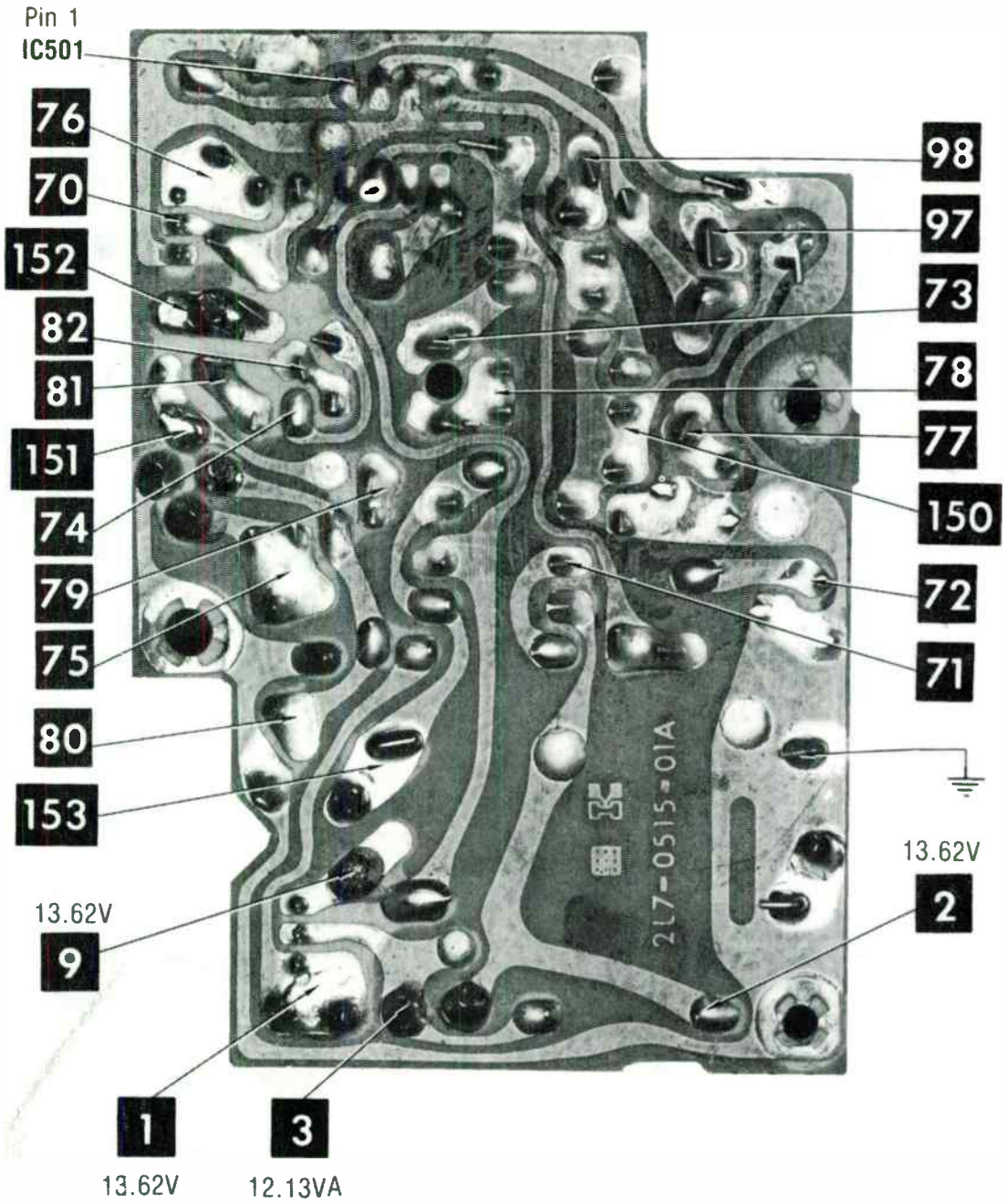


MAIN BOARD

PREAMP BOARD

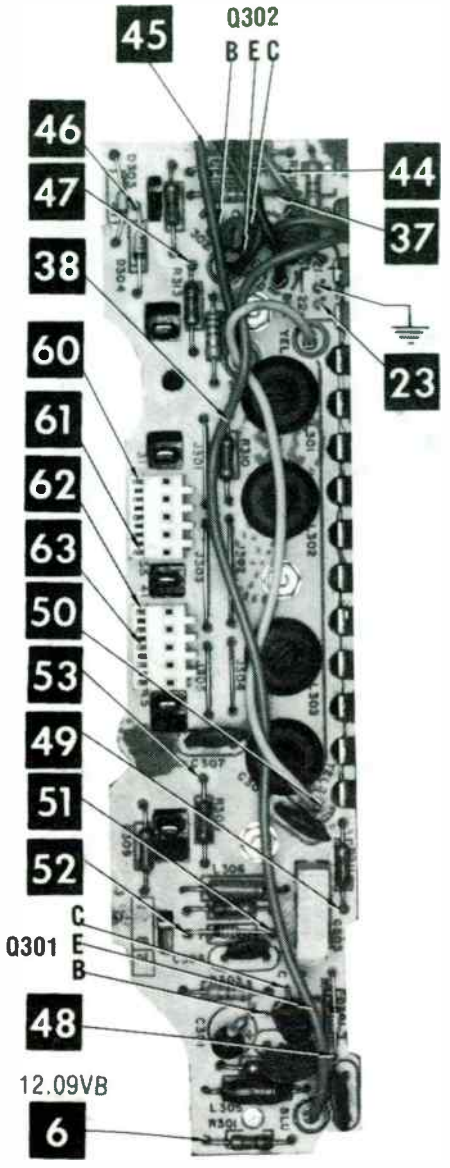


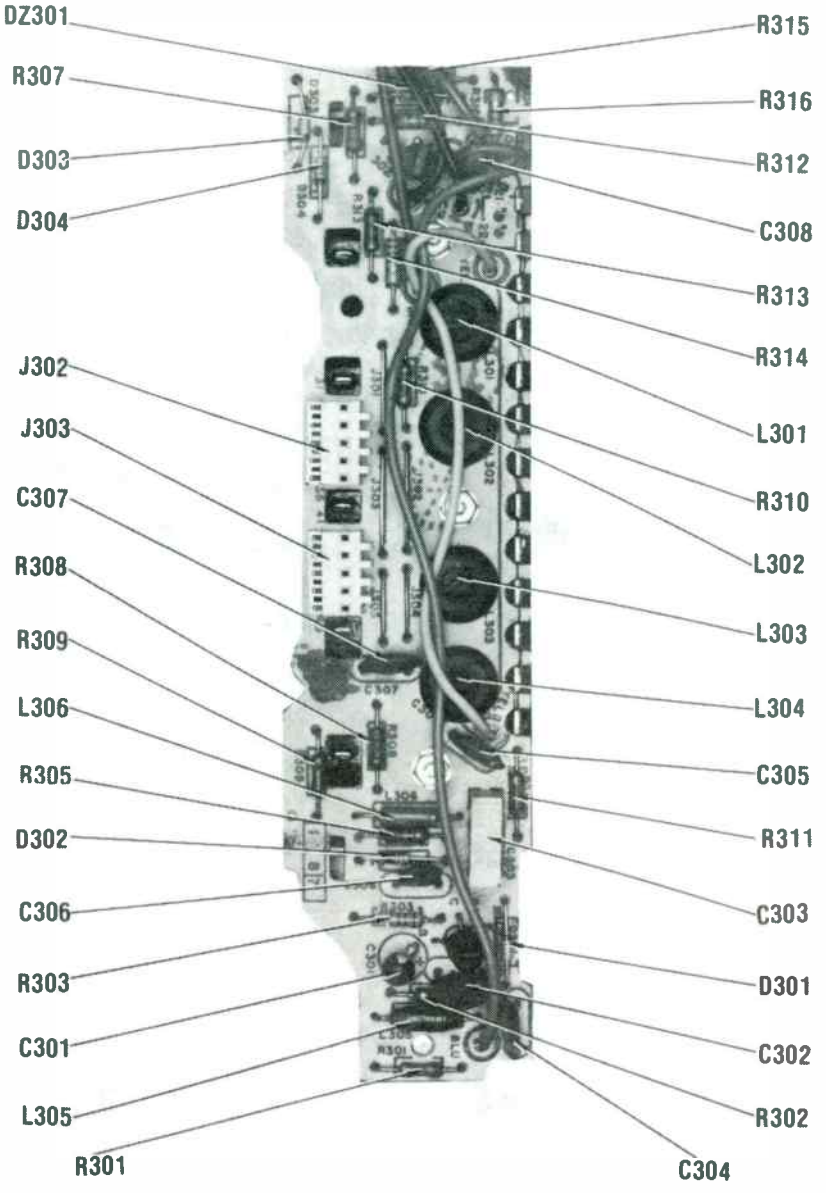


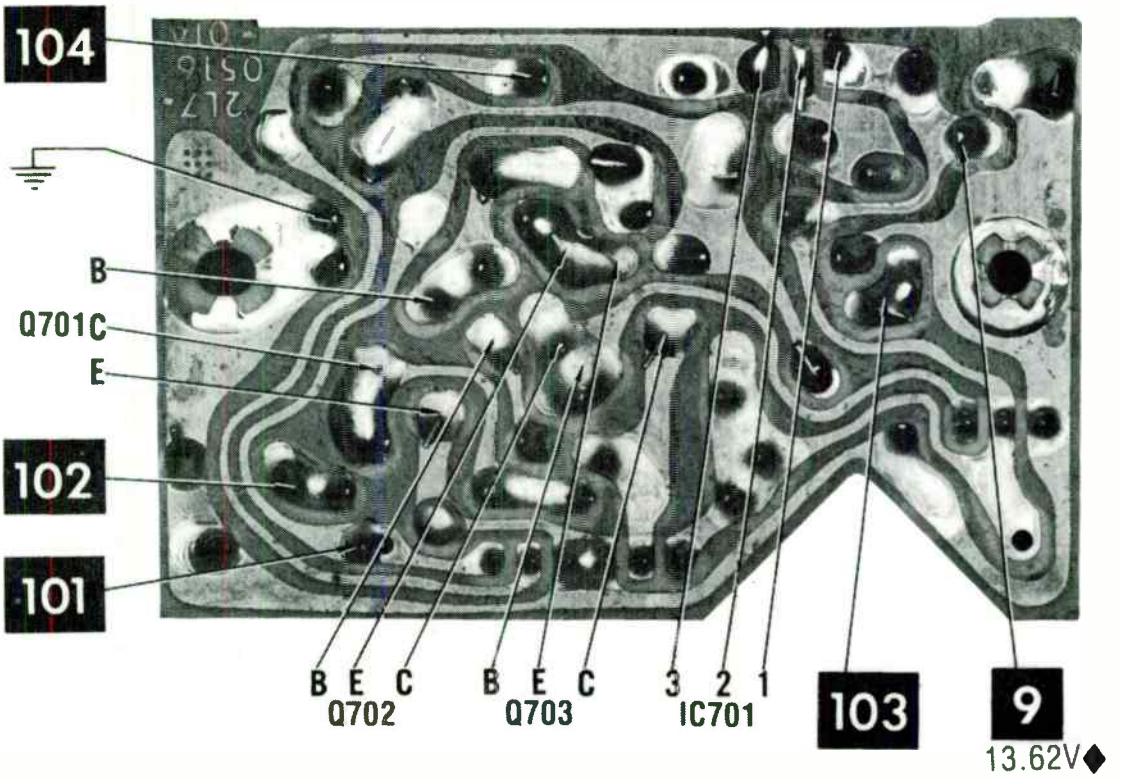


PREAMP BOARD

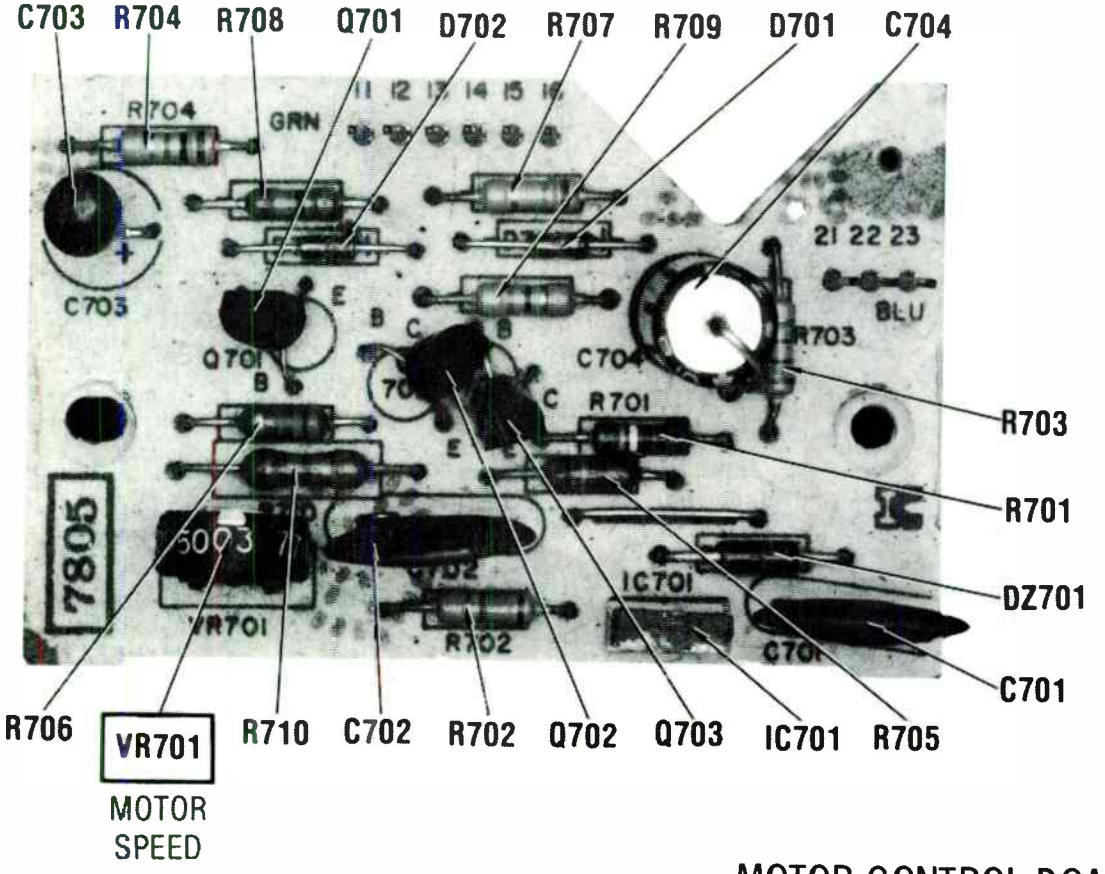
POWER SUPPLY BOARD





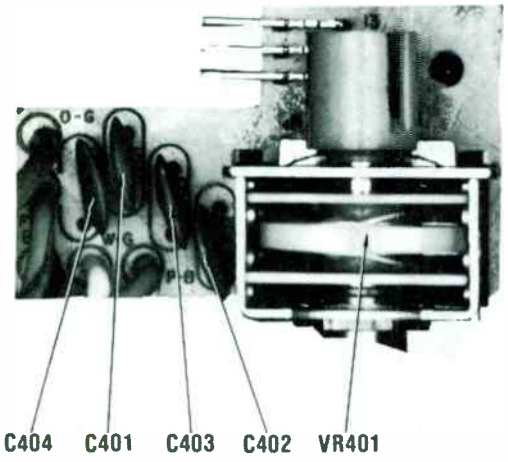


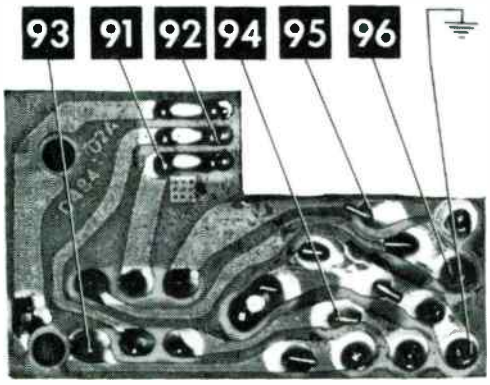
◆ TAPE



MOTOR CONTROL BOARD

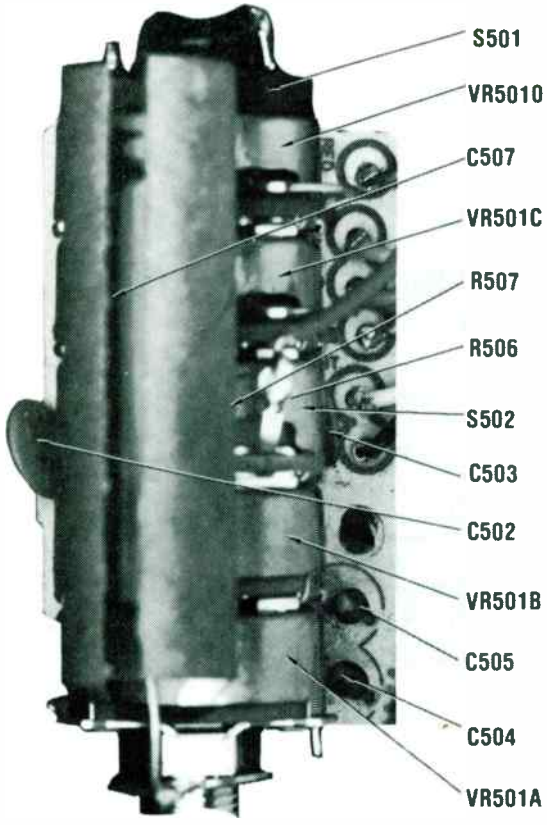
A Howard W. Sams CIRCUITRACE® Photo

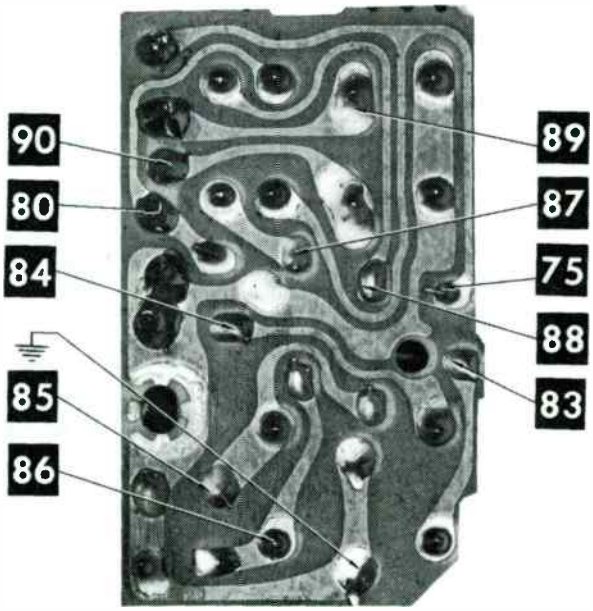




FADER BOARD

A Howard W. Sams CIRCUITRACE® Photo





VOLUME CONTROL BOARD

PARTS LIST AND DESCRIPTION

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

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

WIRING DATA

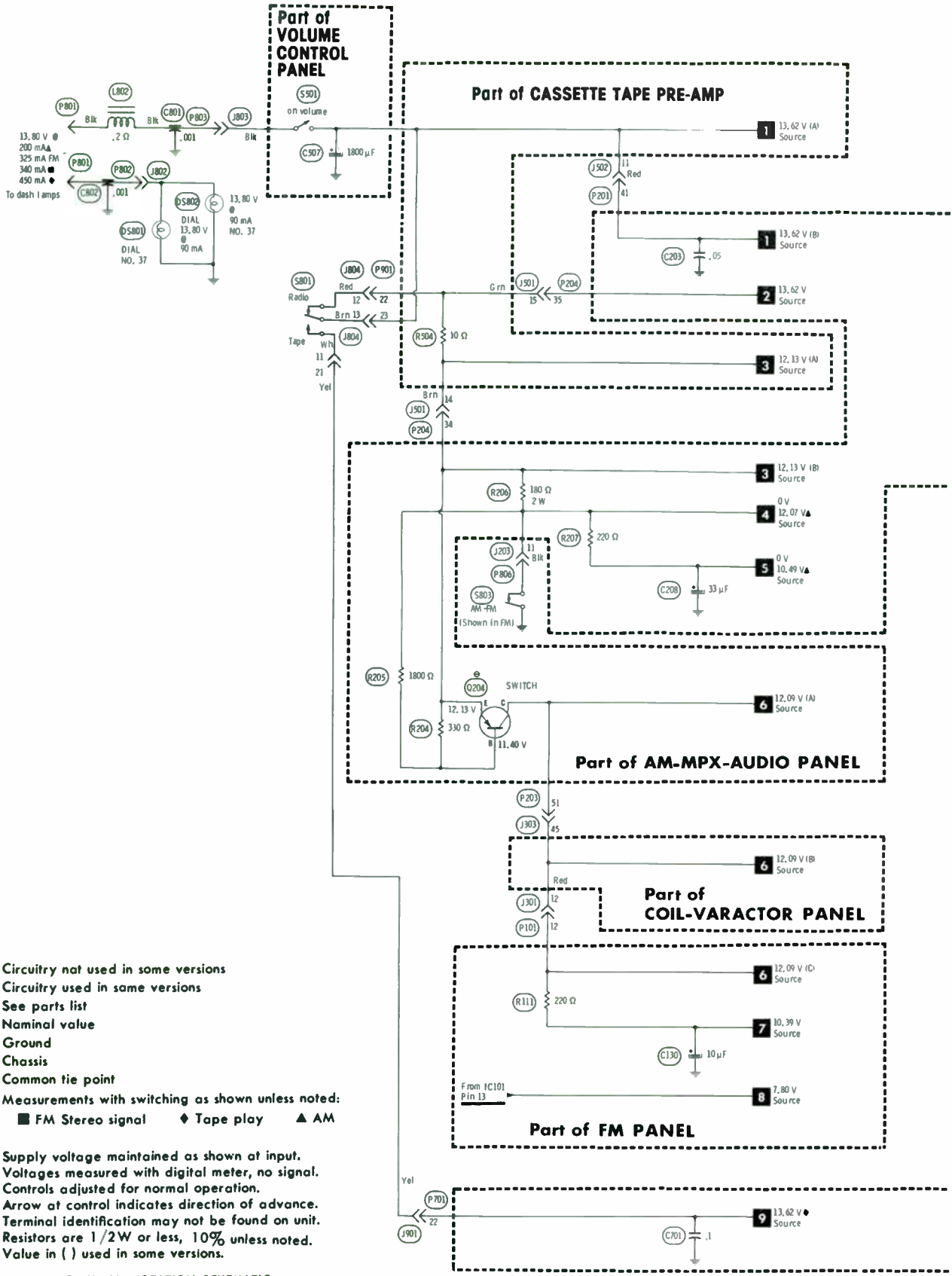
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 13 Colors 8524 (Stranded) Available in 13 Colors
Shielded Hook-up Wire	Use BELDEN No. 8401 or 8421
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. 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.
D101		3L4-3002-31	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D102		3L4-3002-31	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D201		3L4-2003-1	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D202		3L4-2003-1	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D204		3L4-3002-10	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D301		3L4-3002-32	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D302		3L4-3002-32	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D303		3L4-3002-7	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D304		3L4-3002-7	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D701		3L4-3002-30	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76-02
D702		3L4-3002-30	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76-02
D901		3L4-3002-30	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D902		3L4-3002-30	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D903		3L4-3002-30	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D904		3L4-2003-7	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D905		3L4-3002-20	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
DZ201		3L4-3506-49	GEZD-27	ZB27A	HEPZ0424		SK3064	RT-249	ECG146	1N4750A	WEP1120	
DZ301		3L4-3506-43	GEZD-6.8	ZB6.8A	HEPZ0409	REN 5071	SK3334	RT-238	ECG5071	1N4736A	WEP1106	
DZ701		3L4-3506-45	GEZD-18	ZB18A	HEPZ0420	REN 5077	SK3145	RT-258	ECG5077	1N4746A	WEP1116	
IC101	AE907	3L4-9007-1	GEIC-16			REN 737	SK3144	TVCM-18	ECG737		WEP2015	
IC201	AE904-04											
	AE904-4	3L4-9004-4										
	AE904-6	3L4-9004-6										
IC701	AE922	3L4-9022-1										
IC901	AE915	3L4-9015-1										
Q101		3L4-6007-35	GE-11	PTC121	HEPS0025	REN 107	SK3018	RT-108A	ECG107	2SC535	WEP535	121-925
Q102		3L4-6007-21	GE-11	PTC121	HEPS0025	REN 107	SK3018	RT-108A	ECG107	2SC535	WEP535	121-925
Q103		3L4-6007-23	GE-11	PTC121	HEPS0025	REN 107	SK3018	RT-108A	ECG107	2SC535	WEP535	121-925
Q104		3L4-6007-4	GE-243	PTC144	HEPS5014	REN 128	SK3024	RT-114	ECG128		WEP59	121-792
Q201		3L4-6007-1	GE-20	PTC110	HEPS0014*	REN 108	SK3444	RT-102	ECG123A		WEP736	
Q202		3L4-6007-2	GE-20	PTC121	HEPS0014*	REN 108	SK3444	RT-102	ECG123A		WEP736	
Q203		3L4-6007-3	GE-20	PTC121	HEPS0014*	REN 108	SK3444	RT-102	ECG123A		WEP736	
Q204		3L4-6010-8	GE-82	PTC144	HEPS5013	REN 129	SK3025	RT-115	ECG129		WEP754	
		3L4-6010-4	GE-244	PTC141	HEPS5013	REN 129	SK3025	RT-115	ECG129		WEP60	
Q205		3L4-6011-9	GE-69	PTC111	HEPS5028	REN 153	SK3084	RT-153	ECG153		WEP746	121-969
		3L4-6011-14	GE-69	PTC111	HEPS5028	REN 153	SK3084	RT-153	ECG153		WEP746	121-969
Q206		3L4-6010-6	GE-20	PTC121	HEPS0033	REN 123A	SK3444	RT-172	ECG123A		WEP736	
Q207	AR24	3L4-6012-5	GE-241	PTC110	HEPS3060	REN 196	SK3041	RT-154	ECG196		WEP756	
	AR28	3L4-6012-6	GE-241	PTC110	HEPS3060	REN 196	SK3041	RT-154	ECG196		WEP756	
	AR38	3L4-6012-8	GE-241	PTC110	HEPS3060	REN 196	SK3041	RT-154	ECG196		WEP756	
Q208	AR25	3L4-6013-5	GE-69	PTC111	HEPS3054	REN 197	SK3084	RT-196	ECG153		WEP746	
	AR27	3L4-6013-6	GE-250	PTC111	HEPS3055	REN 197	SK3084	RT-196	ECG197		WEP757	
	AR37	3L4-6013-8	GE-250	PTC111	HEPS3055	REN 153	SK3084	RT-196	ECG197		WEP757	
Q209		3L4-6011-9	GE-69		HEPS5028	REN 153	SK3084	RT-153	ECG153		WEP746	
		3L4-6011-14	GE-69		HEPS5028	REN 153	SK3084	RT-153	ECG153		WEP746	
Q210		3L4-6010-6	GE-20	PTC121	HEPS0033	REN 123A	SK3444	RT-172	ECG123A		WEP736	
Q211	AR24	3L4-6012-5	GE-242	PTC110	HEPS3060	REN 196	SK3041	RT-154	ECG196		WEP756	
	AR28	3L4-6012-6	GE-242	PTC110	HEPS3060	REN 196	SK3041	RT-154	ECG196		WEP756	
	AR38	3L4-6012-8	GE-242	PTC110	HEPS3060	REN 196	SK3041	RT-154	ECG196		WEP756	
Q212	AR25	3L4-6013-5	GE-69	PTC111	HEPS3054	REN 153	SK3084	RT-196	ECG153		WEP746	
	AR27	3L4-6013-6	GE-250	PTC111	HEPS3055	REN 197	SK3084	RT-196	ECG197		WEP757	
	AR37	3L4-6013-8	GE-250	PTC111	HEPS3055	REN 153	SK3084	RT-196	ECG197		WEP757	
Q301		3L4-6007-14	GE-39	PTC121	HEPS0040	REN 161	SK3018	RT-187	ECG161		WEP63	
Q302		3L4-6007-41	GE-63		HEPS5014	REN 128	SK3024		ECG229		WEP753	
Q701		3L4-6007-9										
Q702		3L4-6007-15	GE-62			REN 199			ECG199		WEP66	
Q703		3L4-6010-3							ECG153			
VRAC101		3L4-3508-2										
VRAC102		3L4-3508-2										
VRAC103		3L4-3508-1										

* Lead configuration may vary from original.

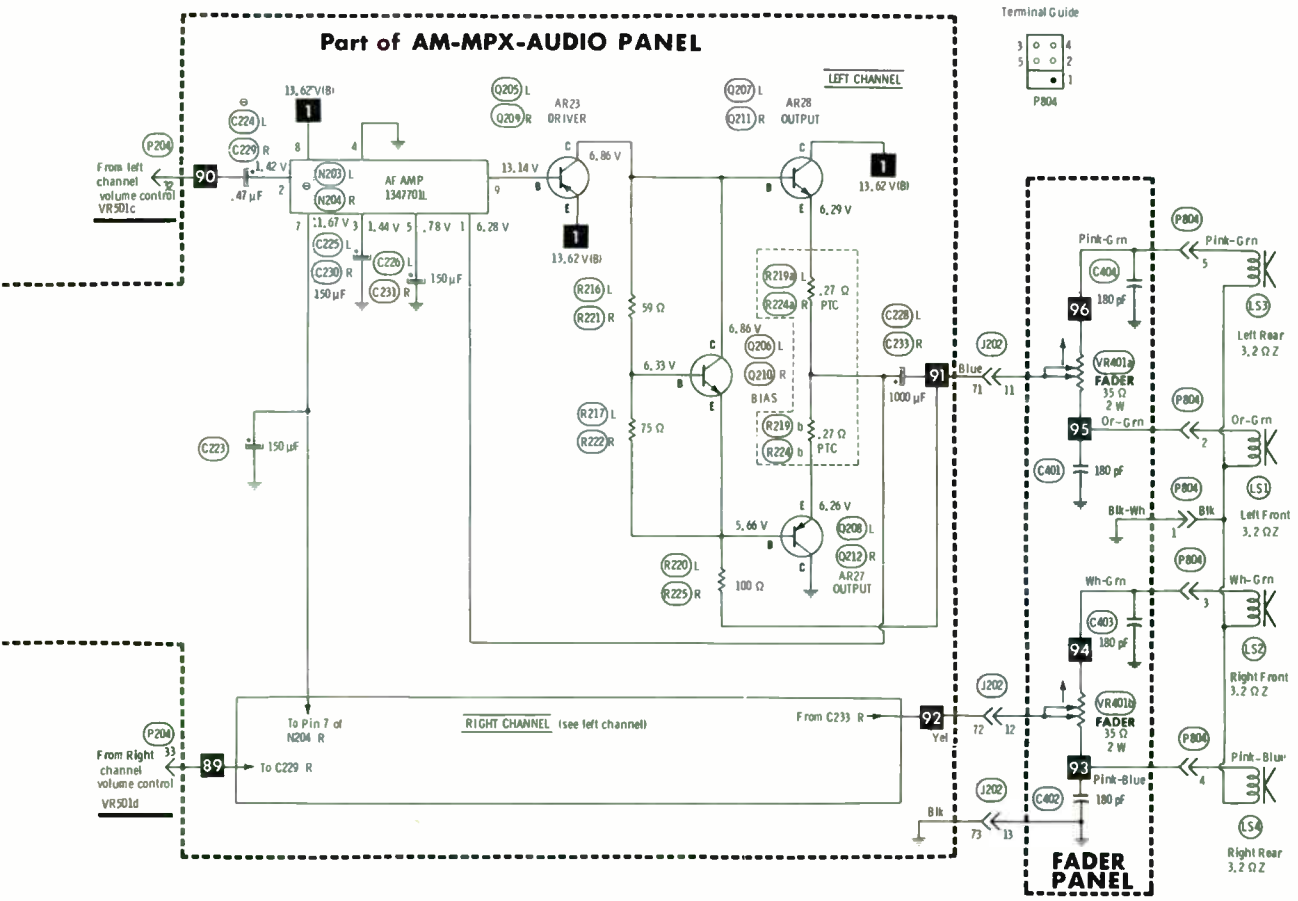
NOTE: DEMAGNETIZE HEADS AFTER SERVICING

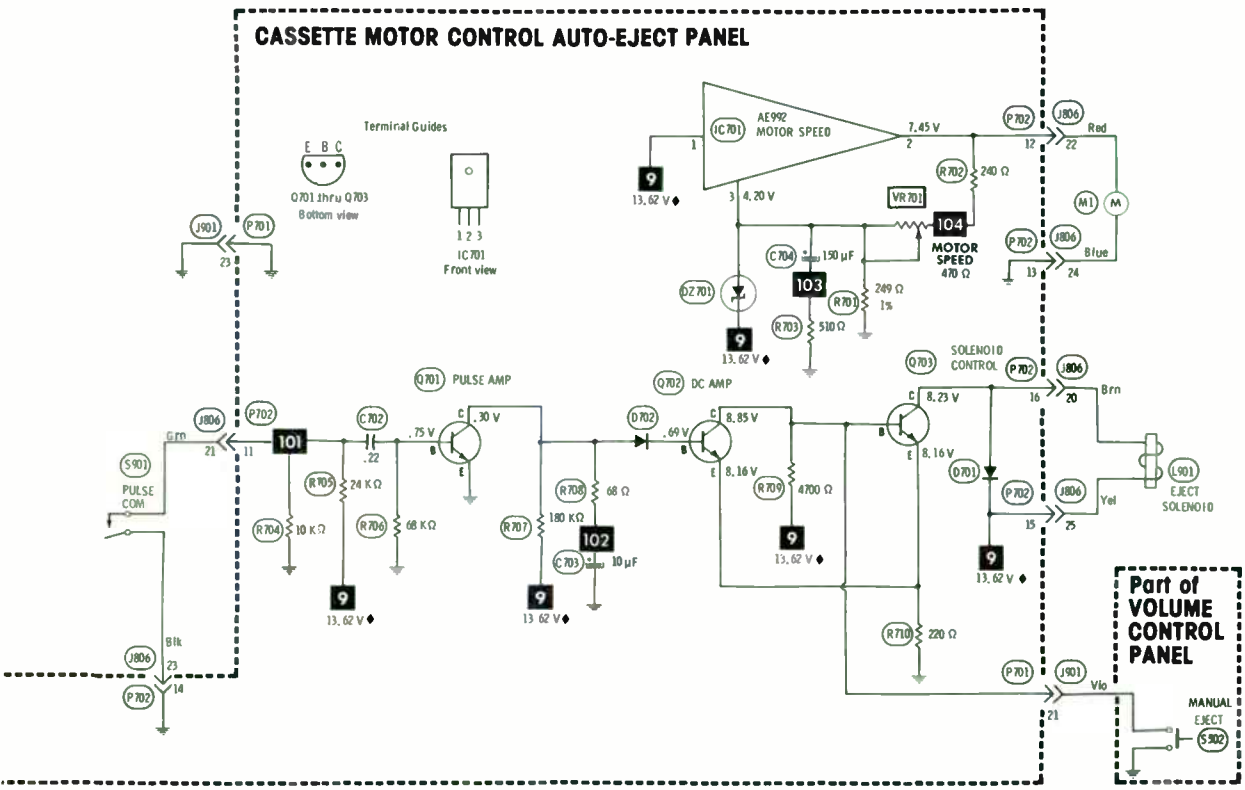


Circuitry not used in some versions
Circuitry used in some versions
⊖ See parts list
※ Naminal value
Ground
Chassis
Common tie point

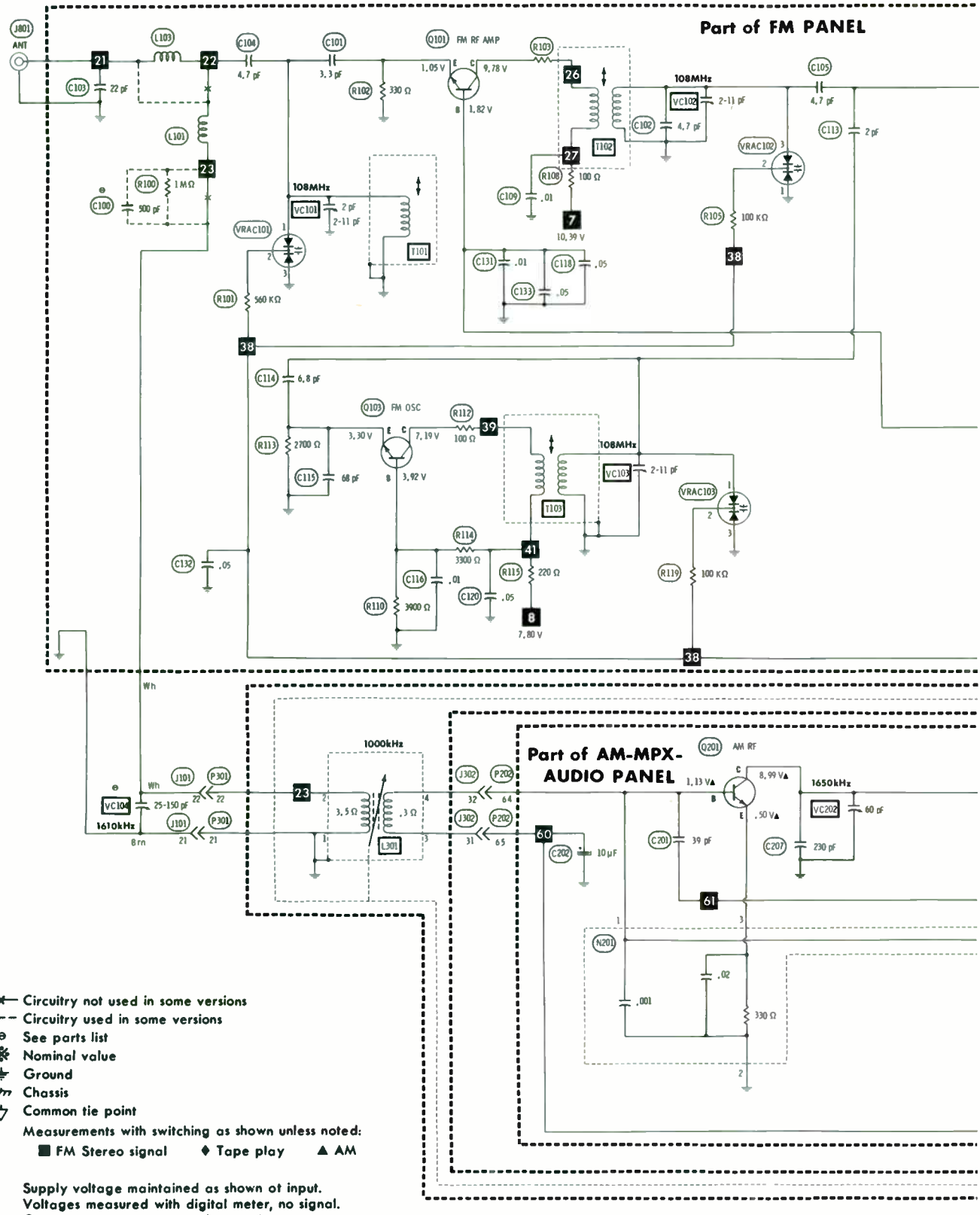
Measurements with switching as shown unless noted:
■ FM Stereo signal ♦ Tape play ▲ AM

Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 10% unless noted.
Value in ( ) used in some versions.





NOTE: DEMAGNETIZE HEADS AFTER SERVICING

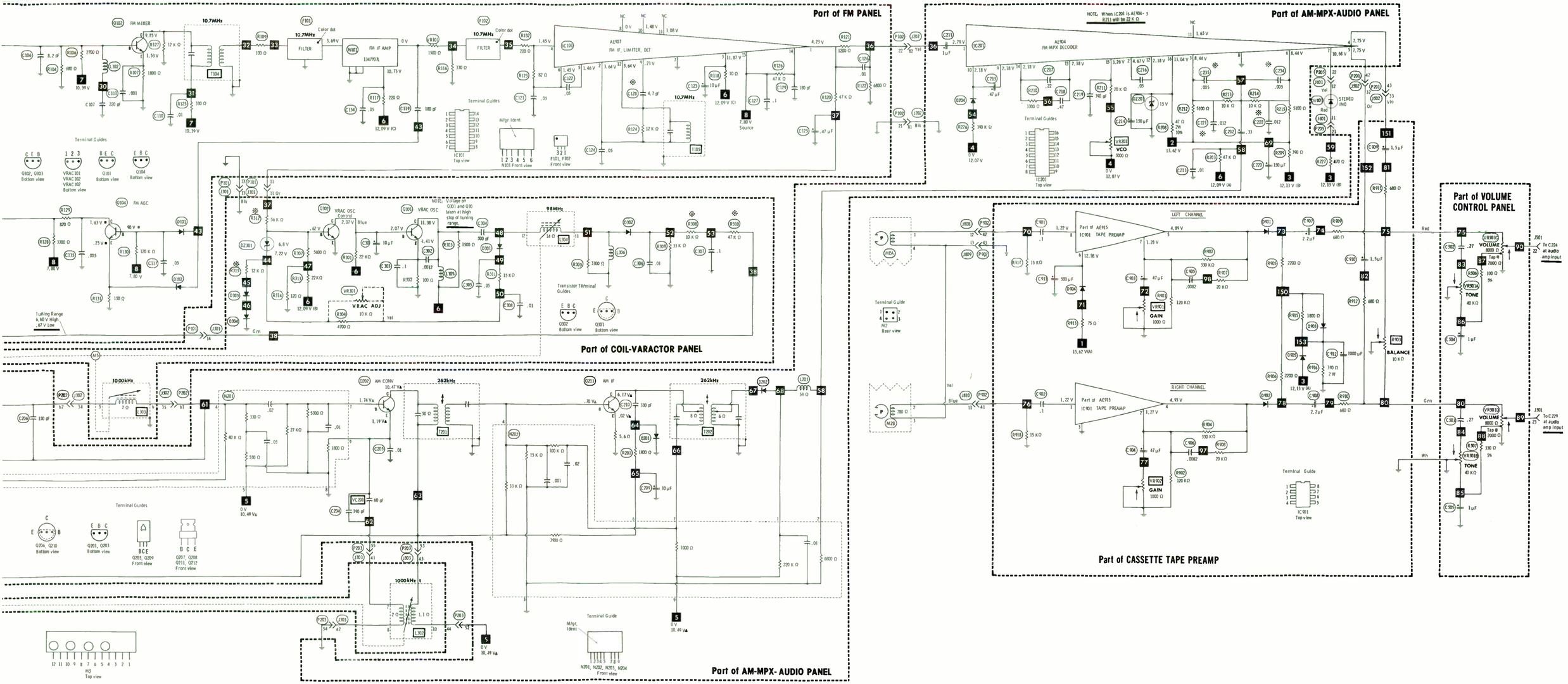


—✕— Circuitry not used in some versions
– – – Circuitry used in some versions
⊖ See parts list
❋ Nominal value
⏚ Ground
Chassis
▽ Common tie point

Measurements with switching as shown unless noted:
■ FM Stereo signal ♦ Tape play ▲ AM

Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 10% unless noted.
Value in ( ) used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®



PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C123	10 20V	3L0-0011-04		TDC106M025FL	QDT1-64	SD25-109
C125	.47 35V			TDC474M050EL	QDT1-19	SD50-R479
C130	10 16V	3L0-0024-1	WBR10-25	TT15X10	QE1-177	TVA-1145
C202	10 20V	3L0-0011-04		TDC106M025FL	QDT1-64	SD25-109
C208	33 16V	3L0-0009-37 (3)	PC30-25	VTT33D25	QV1-63	EV-1325
C209	10 6V	3L0-0009-64	WBR10-25	TT6X10	QE1-177	TVA-1145
C211	1 16V	3L0-0009-10	WBR1-50	TT15X1	QE1-11	TVA-1300
C212	.33 35V			TDC334M050EL	QDT1-14	SD50-R339
C214	150 16V	3L0-0009-45	WBR250-16	TT15X200A	QE1-479	TVA-1160.6
C215	.47 35V			TDC474M050EL	QDT1-19	SD50-R479
C220	150 16V	3L0-0009-45	WBR250-16	TT15X200A	QE1-479	TVA-1160.6
C223	150 16V	3L0-0009-45	WBR250-16	TT15X200A	QE1-479	TVA-1160.6
C224	.47 35V			TDC474M050EL	QDT1-19	SD50-R479
C225	150 6V	3L0-0009-50	WBR250-16	TT6X200B		TVA-1101.7
C226	150 6V	3L0-0009-50	WBR250-16	TT6X200B		TVA-1101.7
C228	1000 16V	3L0-0009-44	WBR1000-16	TT15X1000B	QE1-591	TVA-1163
C229	.47 35V			TDC474M050EL	QDT1-19	SD50-R479
C230	150 6V	3L0-0009-50	WBR250-16	TT6X200B		TVA-1101.7
C231	150 6V	3L0-0009-50	WBR250-16	TT6X200B		TVA-1101.7
C233	1000 16V	3L0-0009-44	WBR1000-16	TT15X1000B	QE1-591	TVA-1163
C301	10 20V	3L0-0011-4		TDC106M025FL	QDT1-64	SD25-109
C504	1 35V	3L0-0011-29		TDC105M035EL		SD35-19
C505	1 35V	3L0-0011-29		TDC105M035EL		SD35-19
C507	1800 16V	3L0-0009-60	WBR2000-16	TC1520C	QE1-627	TVA-1170
C703	10 25V	3L0-0011-24		TDC106M025FL	QDT1-64	SD25-109
C704	150 16V	3L0-0009-45	WBR250-16	TT15X200A	QE1-479	TVA-1160.6
C903	47 6V	3L0-0011-11		TDC476M006EL	QDT1-97	SD6-479
C904	47 6V	3L0-0011-11		TDC476M006EL	QDT1-97	SD6-479
C907	2.2 20V	3L0-0011-34		TDC225M035FL		SD35-2R29
C908	2.2 20V	3L0-0011-34		TDC225M035FL		SD35-2R29
C909	1.5 25V			TDC155M035EL	QDT1-29	SD35-1R59
C910	1.5 25V			TDC155M035EL	QDT1-29	SD35-1R59
C911	500 16V	3L0-0009-65	WBR500-16	TT15X500	QE1-549	TVA-1162
C912	1000 16V	3L0-0009-44	WBR1000-16	TT15X1000B	QE1-591	TVA-1163
C913	150 16V	3L0-0009-45	WBR250-16	TT15X200A	QE1-479	TVA-1160.6

(3) Radial used as axial.

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C101	3.3 NPO 500V +.5		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C102	4.7 NPO 500V +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C103	22 500V 10%		DTZ-22	NP022	CN0422		10TCC-Q22
C104	4.7 NPO 500V +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C105	4.7 NPO 500V +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C106	8.2 N220 500V +.5	3L0-0006-20		*			10TCR-V82
C107	220 500V 10%		DD-221		GP322		10TS-T22
C109	.01 16V		UK16-103		MAG1611		HY-420
C110	.01 16V		UK16-103		MAG1611		HY-420
C111	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C113	2 500V +.25	3L0-0006-52			*		10TCT-V68
C114	6.8 N470 500V +.5	3L0-0006-16		CD15ED680J03	SX468	QW1-23	MA-680
C115	68 100V 10%				MAG1611		HY-420
C116	.01 16V		UK16-103		MAG5015		
C117	.05 10V		UK50-503		MAG5015		
C118	.05 10V		UK50-503		GP318		10TS-T18
C119	180 500V		DD-181		MAG5015		
C120	.05 10V		UK50-503		MAG5015		
C121	.05 10V		UK50-503		MAG5015		
C122	.05 10V		UK50-503		MAG5015		
C124	.05 10V		UK50-503		MAG1611		HY-420
C126	.01 16V		UK16-103		MAG1201		HY-360
C127	.1 10V		UK12-104	NP04P7	CN0547		10TCC-V47
C128	4.7 NPO 500V +.5		DTZ-4R7		GP318		10TS-T18
C129	180 500V		DD-181		MAG1611		HY-420
C131	.01 16V		UK16-103		MAG5015		
C132	.05 25V		UK50-503		MAG5015		
C133	.05 10V		UK50-503		MAG5015		
C134	.05 16V		UK50-503		TA250	QC2-123	TG-D50
C135	.005 100V		DC-502	MGP005	CN0439		10TCC-Q39
C201	39 50V 10%		UK50-503		MAG5015		
C203	.05 25V				*		10TCS-T39
C204	390 N330 100V 5%	3L0-0006-47		WMF1S1	EWF1A110	QFT2-91	1FT-S10
C205	.01 50V 10%			N150	CN7315		10TCU-T15
C206	150 N750 500V 10%	3L0-0006-5	DTN-150				

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C207	230 N470 100V 5%	3L0-0006-46					
C210	330 500V 10%		DD-331	GP330	GP333		10TS-T33
C213	.01 25V		UK25-103		MAG2511		HY-520
C216	.05 25V		UK50-503		MAG5015		
C217	.22 3V		UK12-204		MAG12022		HY-370
C218	.47 3V		UK12-474		MAG12047		HY-380
C219	390 100V 3%	3L0-0010-17					
C221	.012 16V				MAG25115		HY-720
C222	.012 16V				MAG25115		HY-720
C234	.005 16V		DC-502	MGP005	TA250	QC2-123	TG-D50
C235	.005 16V		DC-502	MGP005	TA250	QC2-123	TG-D50
C302	.0012 500V 10%		DD-122		GP212		10TS-D12
C303	.1 50V 10%			WMF05P1	EMF05010		431P1049R5
C304	500 N5250 150V 10%	3L0-0006-23					
C305	.05 25V		UK50-503		MAG5015		
C306	.01 25V		UK25-103		MAG2511		HY-520
C307	.1 12V		UK12-104		MAG1201		HY-360
C308	.01 25V		UK25-103		MAG2511		HY-520
C401	180 50V	3L0-0006-25					
C402	180 50V	3L0-0006-25					
C403	180 50V	3L0-0006-25					
C404	180 50V	3L0-0006-25					
C502	.27 3V	3L0-0008-45			MAG12033		HY-375
C503	.27 3V	3L0-0008-45			MAG12033		HY-375
C701	.1 50V		CK-104		MAG5001		
C702	.22 12V		UK12-204		MAG12022		HY-370
C801	.001	7L6-0536-1					
C802	.001	7L6-0536-1					
C901	.1 10V		UK12-104		MAG1201		HY-360
C902	.1 12V		UK12-104		MAG1201		HY-360
C905	.0082 50V	3L0-0007-75					
C906	.0082 50V	3L0-0007-75					
VC101		3L1-0004-1					
VC102		3L1-0004-1					
VC103		3L1-0004-1					
VC104		3L1-0003-11					
VC201		3L1-0003-9					
VC202		3L1-0003-8					

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR201	VCO	5000	3L3-0027-5	T-5000	MTC53L1	X201R5028
VR401a	Fader-Left	35 2W	3L3-0023-4			
b	Fader-Right	35 2W				
VR501a	Tone-Left	40K	3L3-0039-2			
b	Tone-Right	40K				
c	Volume-Left	8000 tap @ 2000				
d	Volume-Right	8000 tap @ 2000				
	Track Sel. Switch/ Power Switch					
VR701	Motor Speed	470	3L3-0050-3 005003(5)	T-500	MTC52L1	X201R5018
VR901	Gain-Left	470	3L3-0050-3 005003(5)	T-500	MTC52L1	X201R5018
VR902	Gain-Right	470	3L3-0050-3 005003(5)	T-500	MTC52L1	X201R5018
VR903	Balance	10K	3L3-0040-1	T-10K	MTC14L1	X260R1038

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R219A,B	.27 10% P.T.C.		3L3-0004-6

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R224A,B	.27 10% P.T.C.		3L3-0004-6

FORD/LINCOLN MODEL D8DF-19A198AA,AB

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L101	RF Choke (2.7uH)	3L2-0023-7			
L102	RF Choke (1uH)	3L2-0023-1			
L103	RF Choke	3L2-0037-6			
L201	RF Choke (2.7uH)	3L2-0023-5		70F273AI	
L301	AM OSC (1000kHz)	3L2-0007-11			
L302	AM OSC (1000kHz)	3L2-0002-8			
L303	AM OSC (1000kHz)	3L2-0007-10			
L304	VRAC OSC (98MHz)	3L2-0027-1			
L305	RF Choke (2.7mH)	3L2-0023-5		70F273AI	
L306	RF Choke (33mH)	312-0023-4		72F335AP	
T101	Rec RF	3L2-0043-1			
T102	RF Amp	3L2-0028-3			
T103	OSC	3L2-0028-2			
T104	IF (10.7MHz)	3L2-0022-1	7746HK		
T105	IF (10.7MHz)	3L2-0030-3	119A-77-52		
T201	IF (262kHz)	3L2-0014-4	273F7748		
T202	IF (262kHz)	3L2-0014-5	119A7747		

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Meosured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
L802	650mA	.2	.52mH	7L6-0479-9			

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
DS801	Lamp	3L40001-9	Dial (13.80V @ 90mA)
DS802	Lamp	3L40001-9	Dial (13.80V @ 90mA)
DV601	LED	3L4-3004-2	Stereo Ind. (2.10V @ 11mA)
F101	Filter	3L5-5003-1(2)	10.7MHz
F102	Filter	3L5-5003-1(2)	10.7MHz
J801	Jack	2L7-0139-3	Antenna
L901	Solenoid	7L6-0742	Eject
M1	Motor	7L6-0742-13	Tape Transport (2100rpm @ 7.45V)
M2	Head	7L6-0742-26	4 Track Stereo Cassette Play
N101	Network	3L5-0020-1	FM IF Amp
N201	Network	3L5-1002-4	AM RF/Conv
N202	Network	3L5-0021-1	AM IF/Det
N203	Network	3L5-0011-7	Audio Pre Amp (Left Channel)
N204	Network	3L5-0011-7	Audio Pre Amp (Right Channel)
S501	Switch	(1)	On/Off
S502	Switch	(1)	Manual Eject
S801	Switch	3L8-0952	Radio/Tape
S803	Switch	4L2-0022-1	AM/FM
S901	Switch		Tape/Radio (activated by cassette)
S902	Switch	7L6-0742-20	Auto Eject
	Cable Assembly	7L6-0479-9	A+ Choke/P.L.
	Cable Assembly	4L1-0093-15	Audio (to fader panel)
	Cable Assembly	4L1-0093-16	Audio (to FM panel)
	Cable Assembly	4L1-0093-17	Antenna Trim (to coil panel)
	Cable Assembly	4L1-0093-11	Coil panel (to FM panel)
	Cable Assembly	4L1-0158-2	Volume Control (to MPX panel)
	Cable Assembly	4L1-0158-1	Pre Amp (to MPX panel)
	Cable Assembly	3L8-0886	Spk
	Cable Assembly	4L1-0158-4	PA/VC panel (to ME panel)
	Cable Assembly	4L1-0158-3	Radio/Tape Switch
	PC Boards	3L8-0793	AM/MPX/Audio (with components)
	PC Boards	3L8-0928	Cassette pre amp/Volume
	PC Boards	3L8-0799	Coil/Varacter (with components)
	PC Boards	3L8-0800	Fader (with components)
	PC Boards	3L8-0803	FM (with components)
	PC Boards	3L8-0802	LED (stereo indicator)
	PC Boards	3L8-0949	Motor Control/Auto Eject (with components)

(1) Part of VR501
(2) When replacing F101, F102 should also be replaced.

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

ITEM	PART No.
Bezel Assembly	3L8-0926
Button (AM Switch)	2L7-0406-4
Button (FM Switch)	2L7-0406-3
Button (Push, 5 used)	2L7-0270-1

ITEM	PART No.
Cover Assembly, Bottom	7L6-0702-1
Cover Housing (Top)	2L8-0652-1
Door, Cassette Tape	2L8-0759-1
Escutcheon Assembly	3L8-0927

MODEL 871

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Connect low sides of generator and indicator to ground unless specified otherwise.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools: GC ELECTRONICS:
All Coils and Trimmers 5000, 8277, 9089

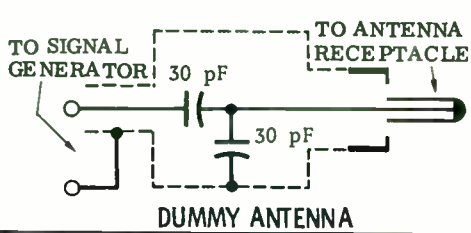

FIG. 2

AM ALIGNMENT—SELECTOR IN AM POSITION

Connect output meter across speaker voice coil.

GENERATOR COUPLING	GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST	REMARKS
High side thru .1uF to antenna	262kHz 400-Hz mod.	High freq end stop	ITT-201	Adjust for maximum.
Thru dummy antenna to antenna input.	1610kHz 400Hz Mod.	1610kHz	CT-202	"
Thru dummy antenna to antenna input.	530kHz 400Hz Mod.	530kHz	L201	"
Thru dummy antenna to antenna input.	1400kHz 400Hz Mod.	1400kHz	CT201, CT401	Adjust for maximum. Repeat alignment until no further improvement is noted.

With radio installed in car and antenna extended 36", tune in a weak station near 1400kHz and adjust CT401 for maximum output. Antenna adjustment is located inside tape compartment at right rear.



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

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

High side of generator thru .001uF to TP3.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non-interference	DC probe of VTVM to TP1	IFT101 IFT	Adjust for maximum.

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

High side of generator thru .001uF to TP3.
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
"	"	Vert input of scope to TP1	(1) IFT101 IFT	Adjust IFT101 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
108MHz Unmodulated	108MHz	DC probe of VTVM to speaker	OT,AT,RT	Adjust for maximum.

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

FM STEREO ADJUSTMENT

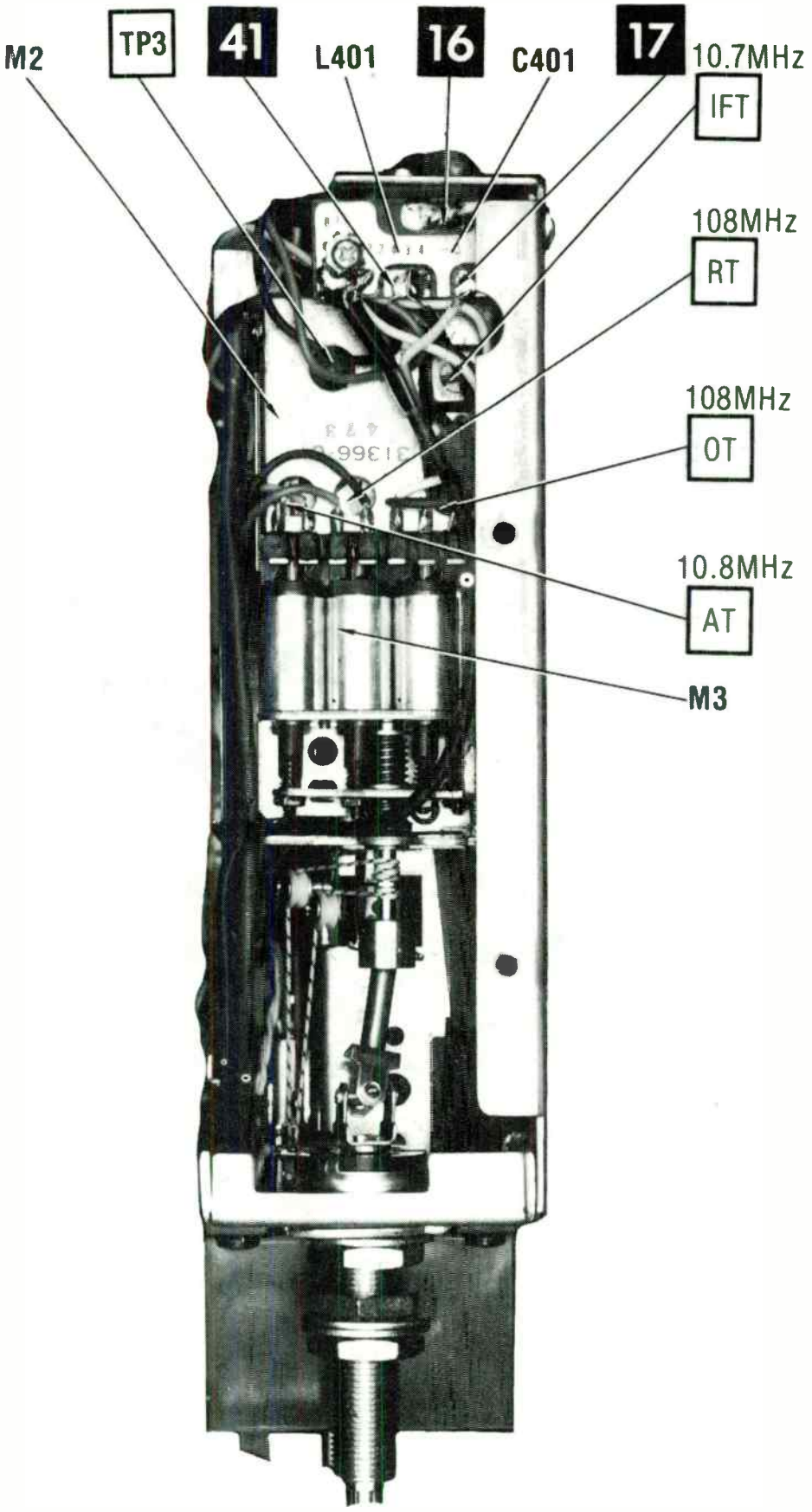
Tune receiver for a stereo signal. Adjust balance control for equal channel output. Adjust Separation control VR101 for best separation.

FM STEREO ALIGNMENT USING AUDIO GENERATOR

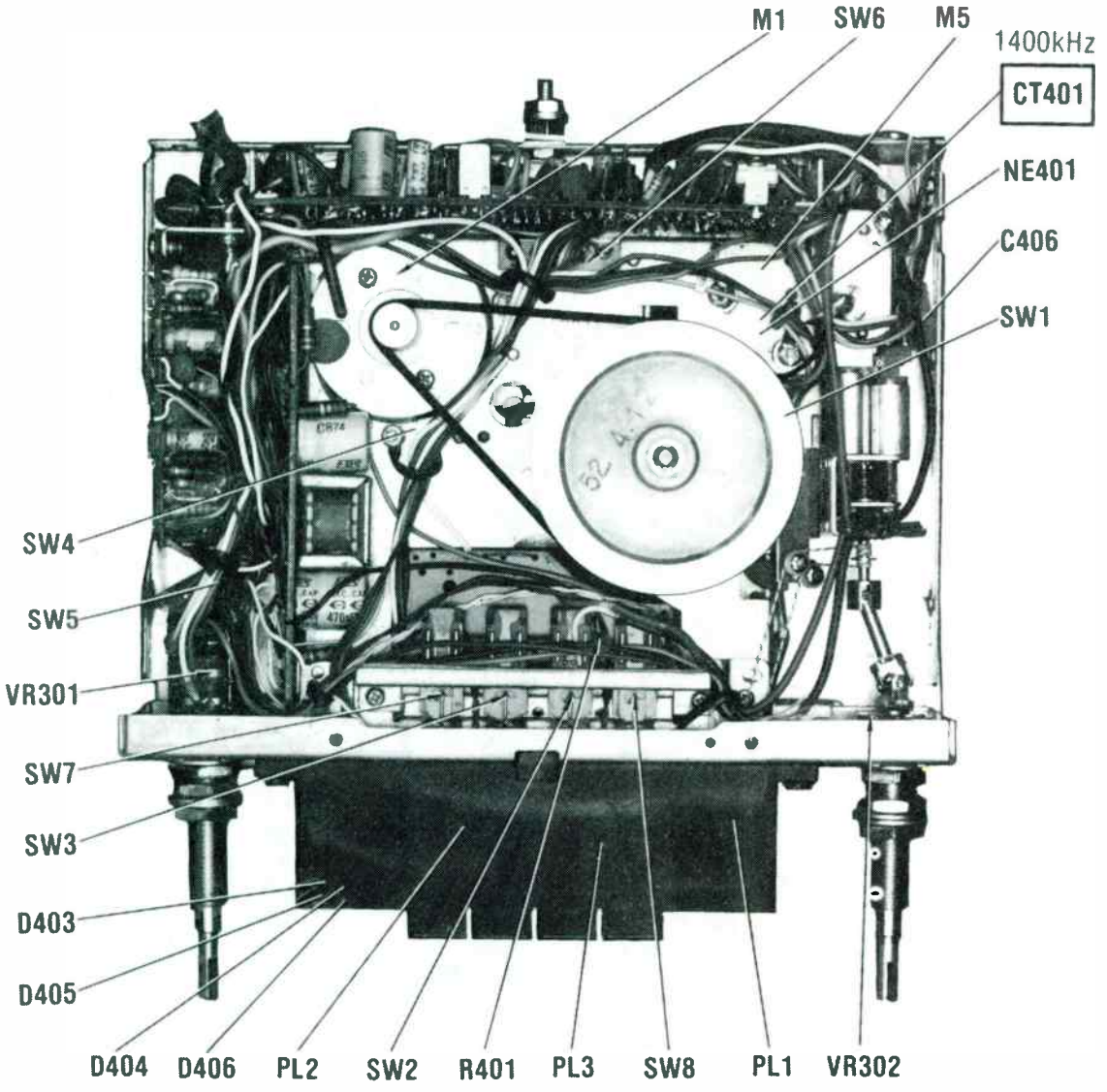
Tune in stereo signal.

GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
	Frequency counter to TP2	VR103	Adjust for 19kHz ±20Hz.
		VR102	Adjust till stereo light comes on.

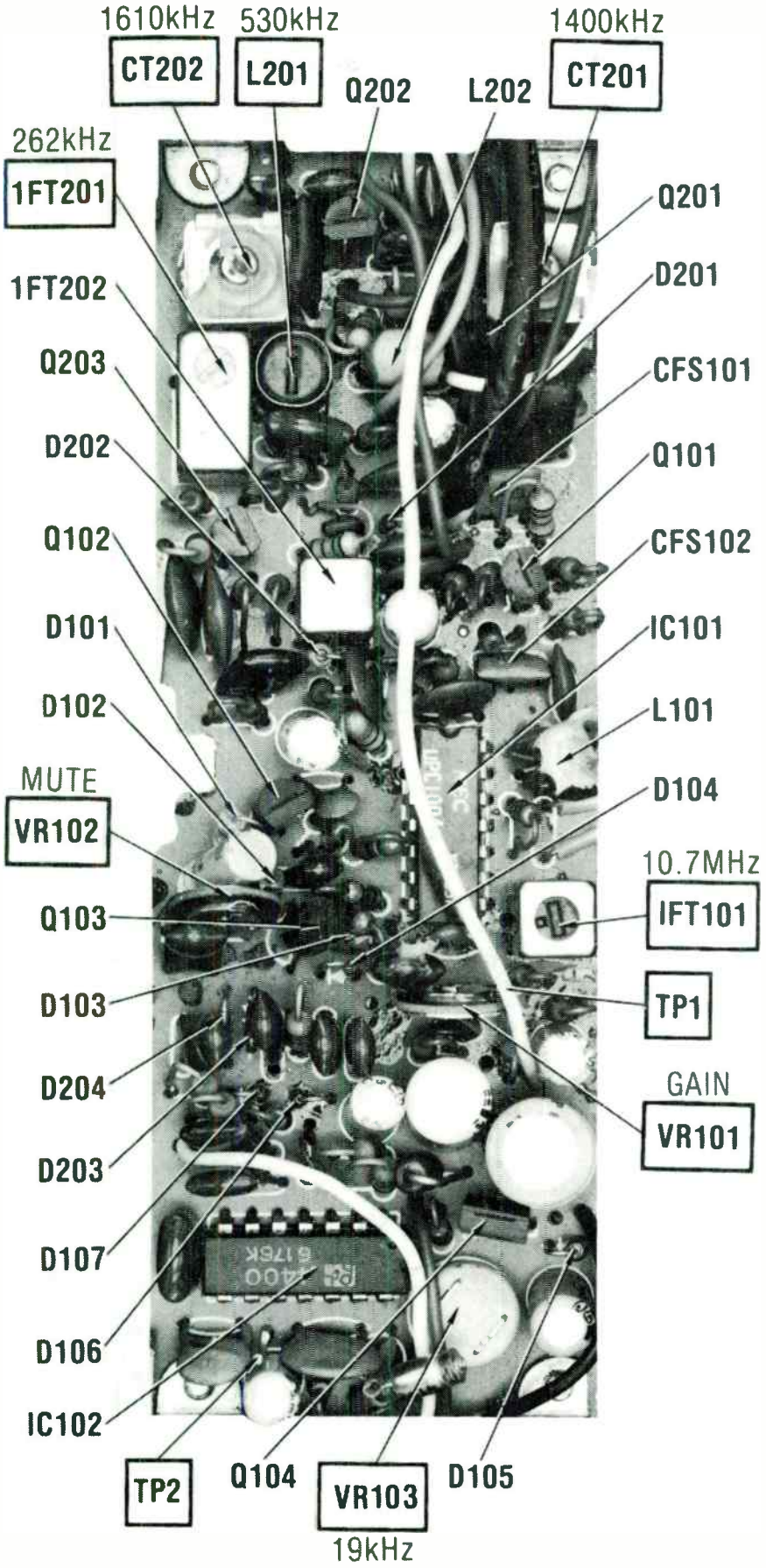
A Howard W. Sams CIRCUITRACE® Photo



CHASSIS-SIDE



CHASSIS-TOP



MAIN BOARD

CLEANING LUBRICATING
HEAD DEMAGNETIZING

Refer to
"General Servicing Information"
on page 4.

ADJUSTMENTS

ADJUST	REMARKS
Head Azimuth	Play a test cartridge and adjust S13 for maximum on meter across output.
Head Height	Play a test cartridge, follow instructions with cartridge, and adjust S10 for proper response.

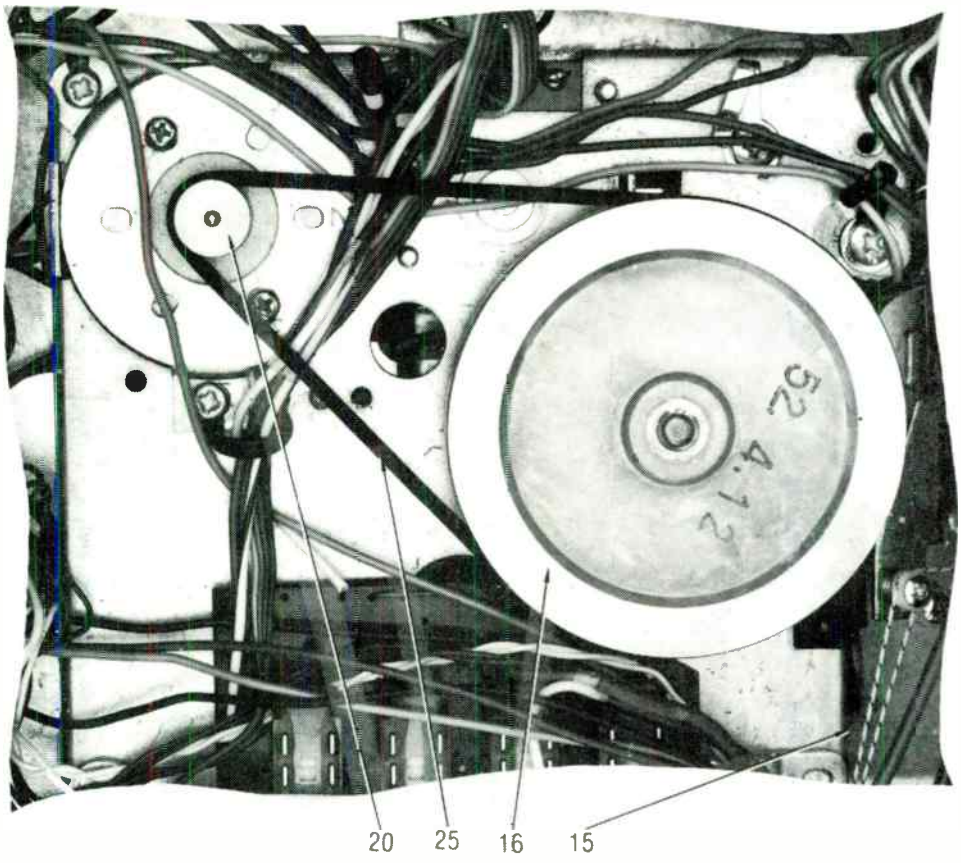
TROUBLE CHART

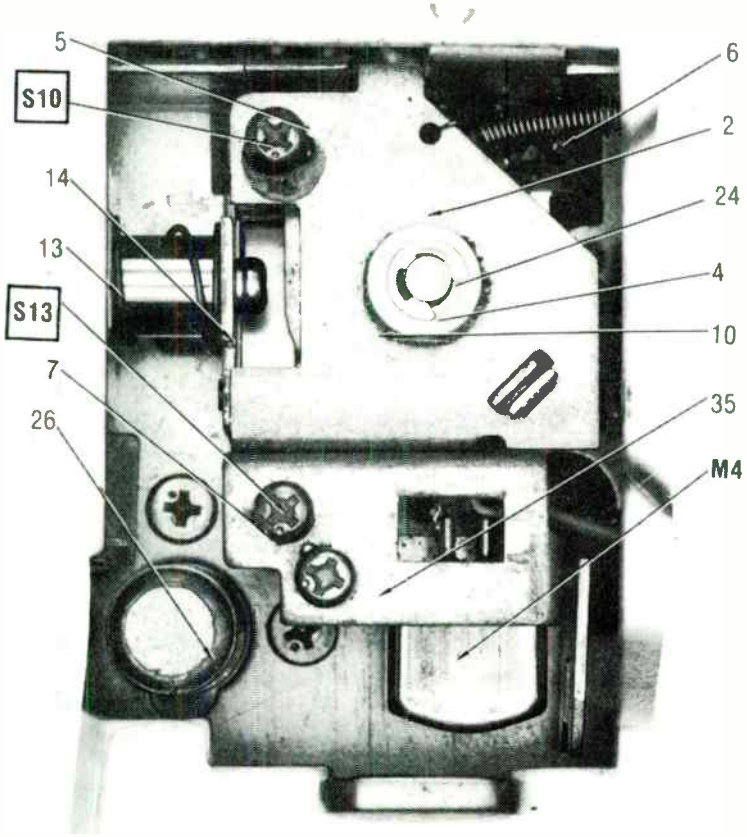
SYMPTOM	REMARKS
Capstan does not rotate.	Belt 25 dirty, worn, or broken. Assembly 26 binding. Motor defective or not supplied with power.
Track-shift mechanism inoperative	Switch SW4 dirty. Cam 10 binding or worn. Pawl 14 worn. Assembly 2 binding. Solenoid M5 defective or not supplied with power. Cartridge defective.
Wow or flutter	Belt 25 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
2	21380	Head Shifting Assembly
4	23589	Head Lifting Spring
5	23600	Height Spring
6	23605	Head Assembly Spring
7	23588	Azimuth Spring
10	21372	Track Changing Cam
13	23585	Solenoid Spring
14	21381	Pawl Assembly
15	21390	Detent Arm

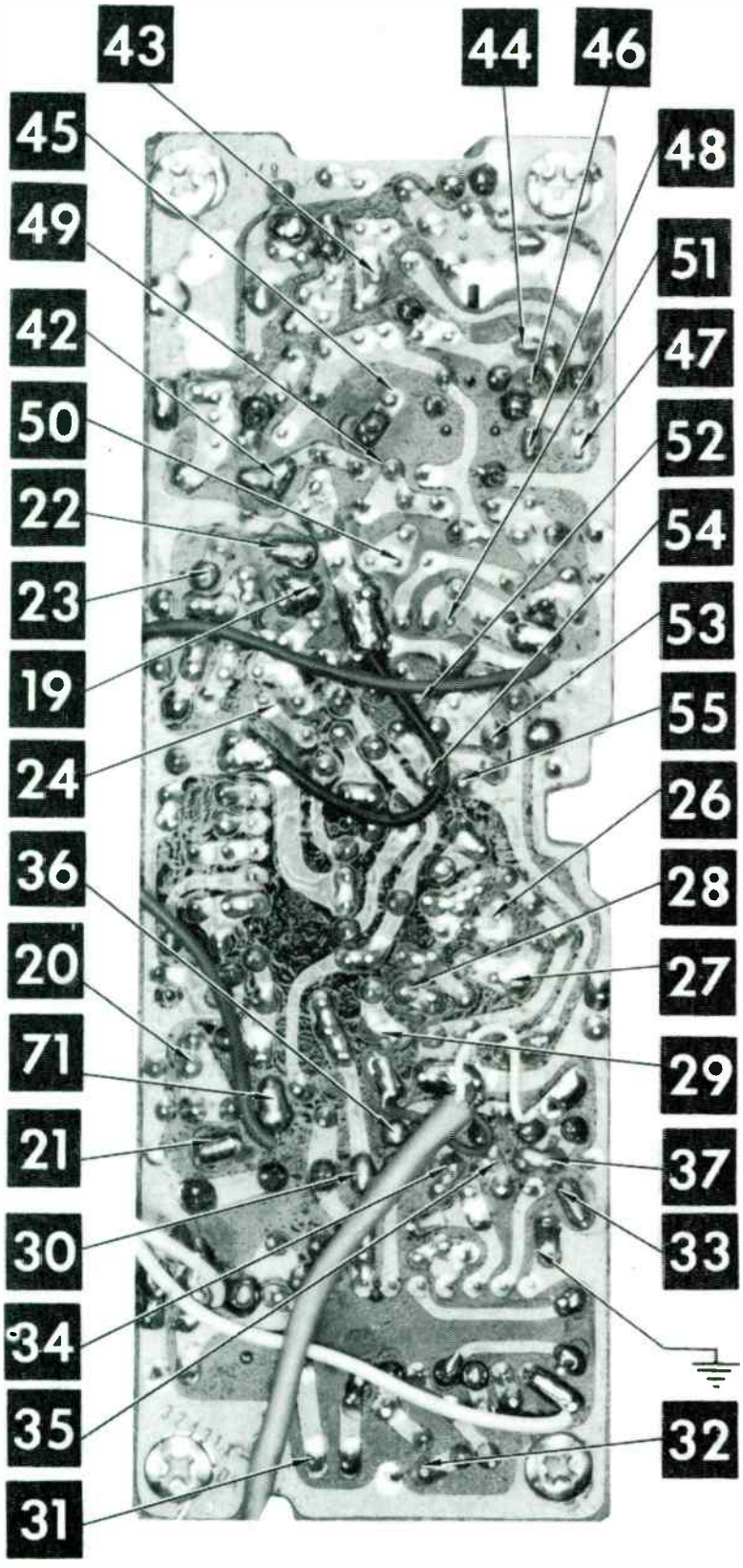
REF. NO.	PART NO.	DESCRIPTION
16	21375	Flywheel
20	23580	Motor Pulley
24	23586	Head Bracket Spring
25	23590	Flywheel Drive Belt
26	23592	Flywheel Bearing Assembly
35	23575	Head Clamp
S10	023042	Height Adjust Screw
S13	023052	Azimuth Adjust Screw



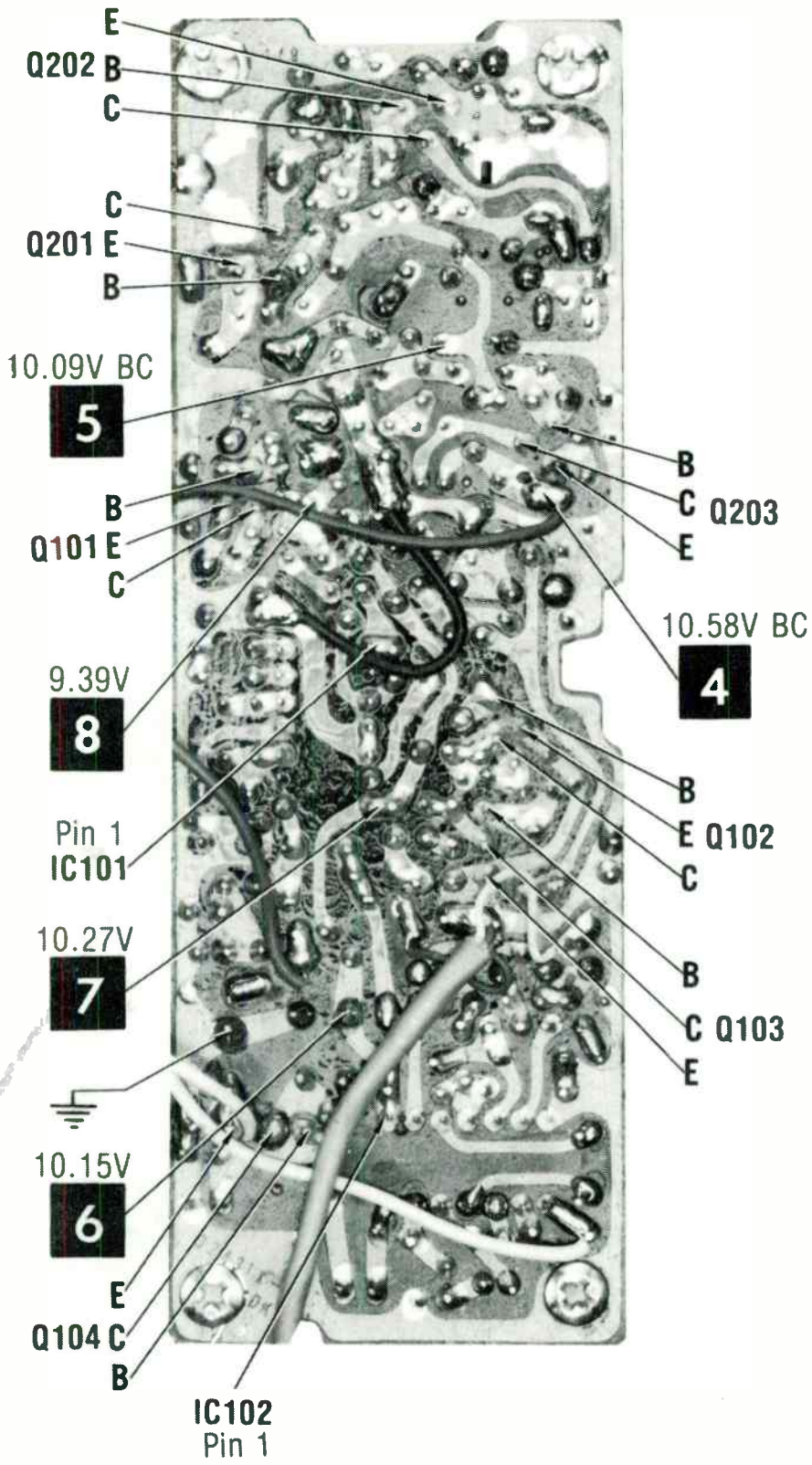


TAPE DECK-BOTTOM/TOP

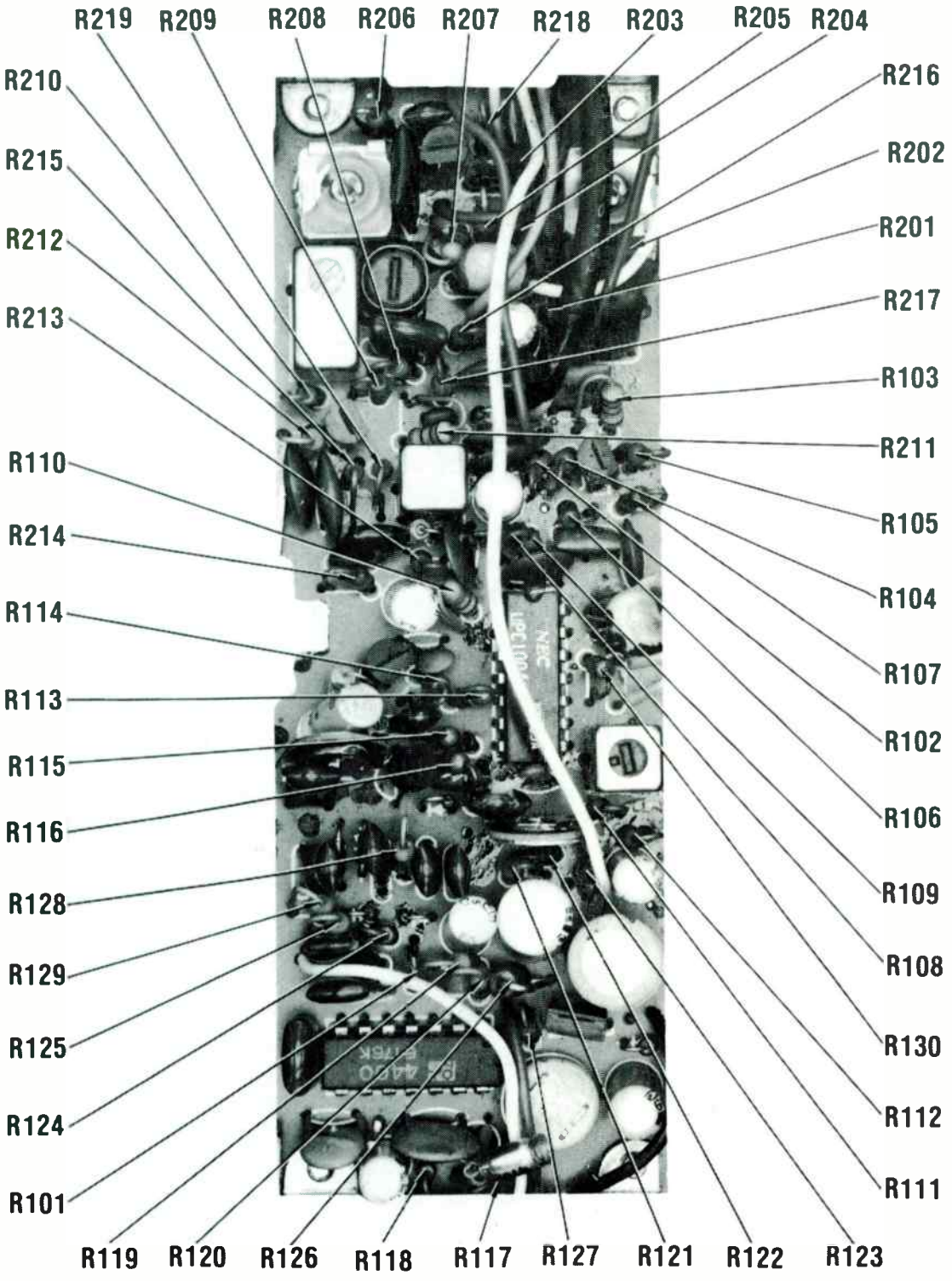
A Howard W. Sams CIRCUITRACE® Photo



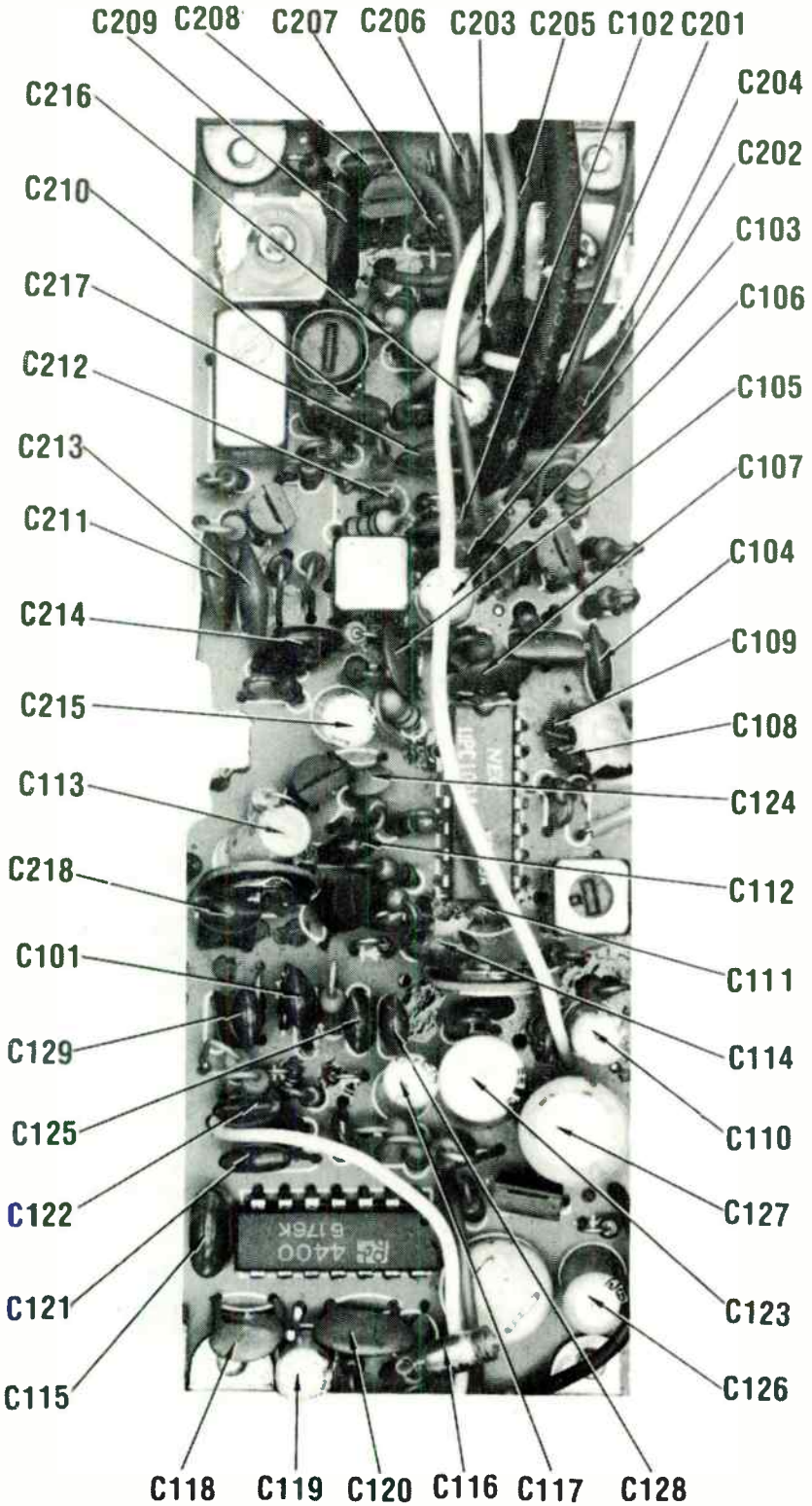
MAIN BOARD



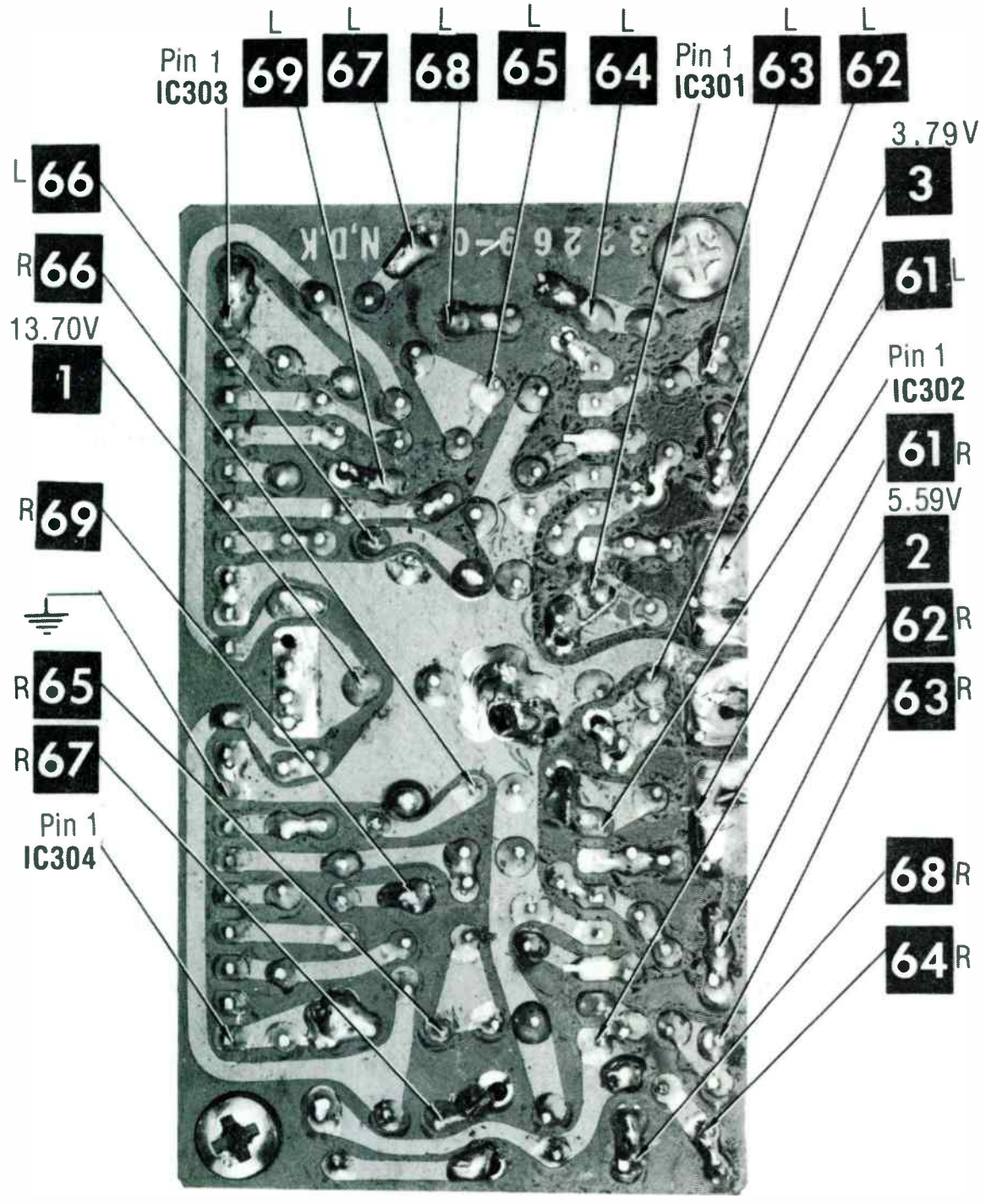
MAIN BOARD



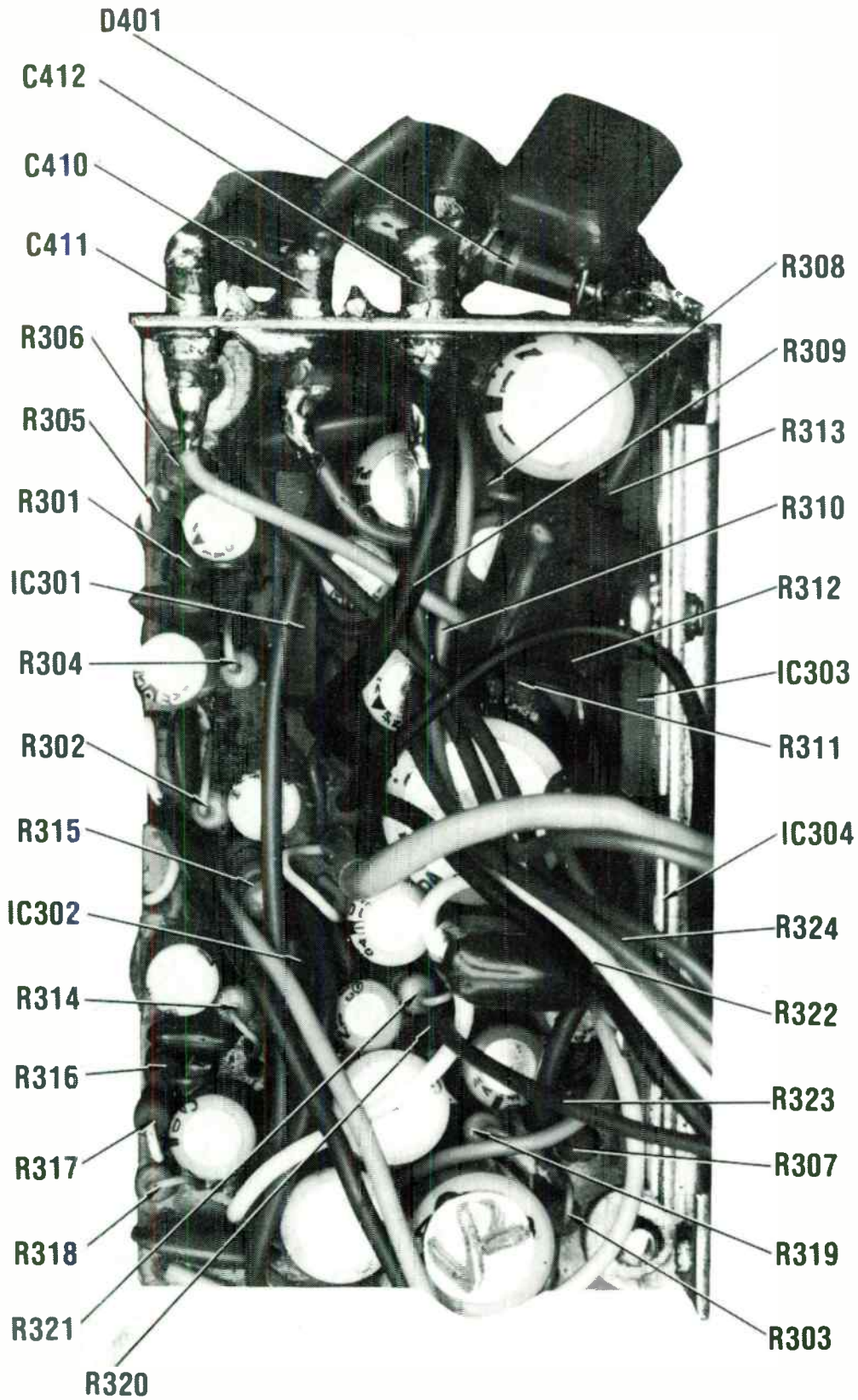
MAIN BOARD



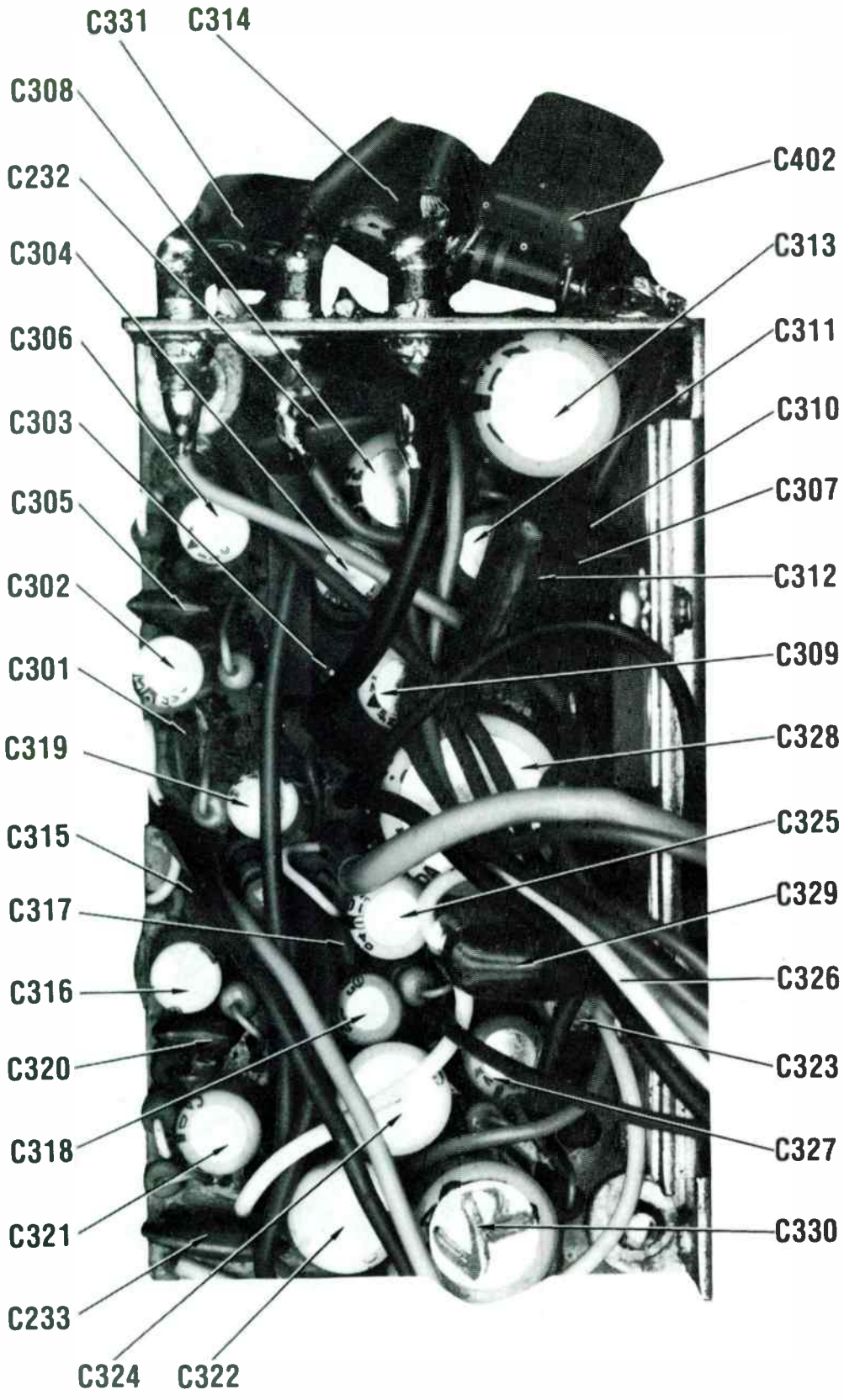
MAIN BOARD



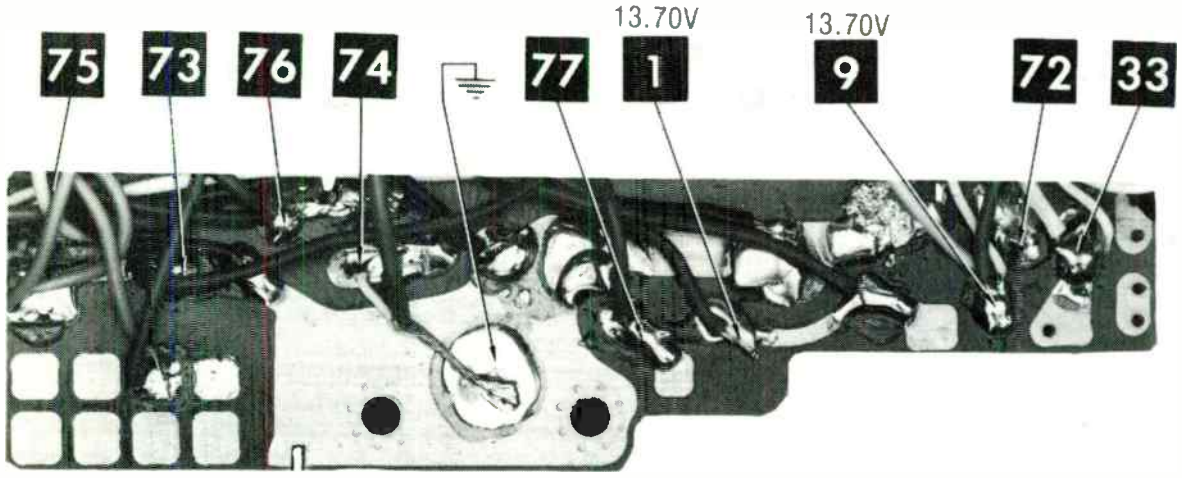
AUDIO BOARD

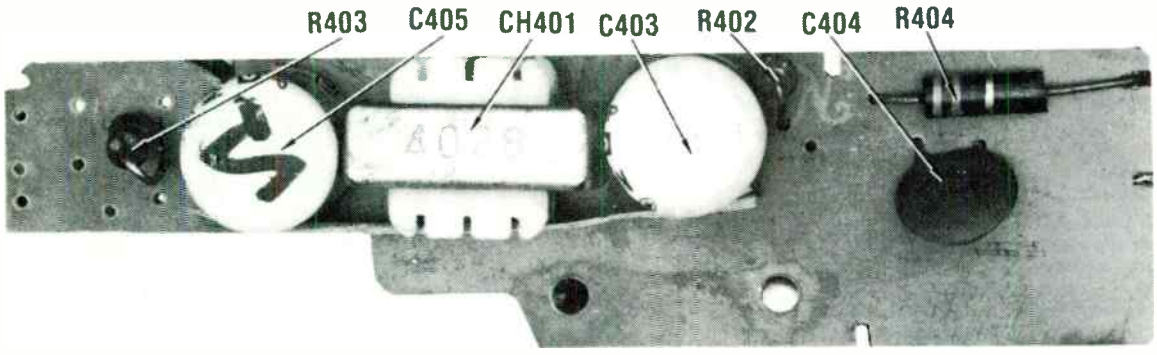


AUDIO BOARD



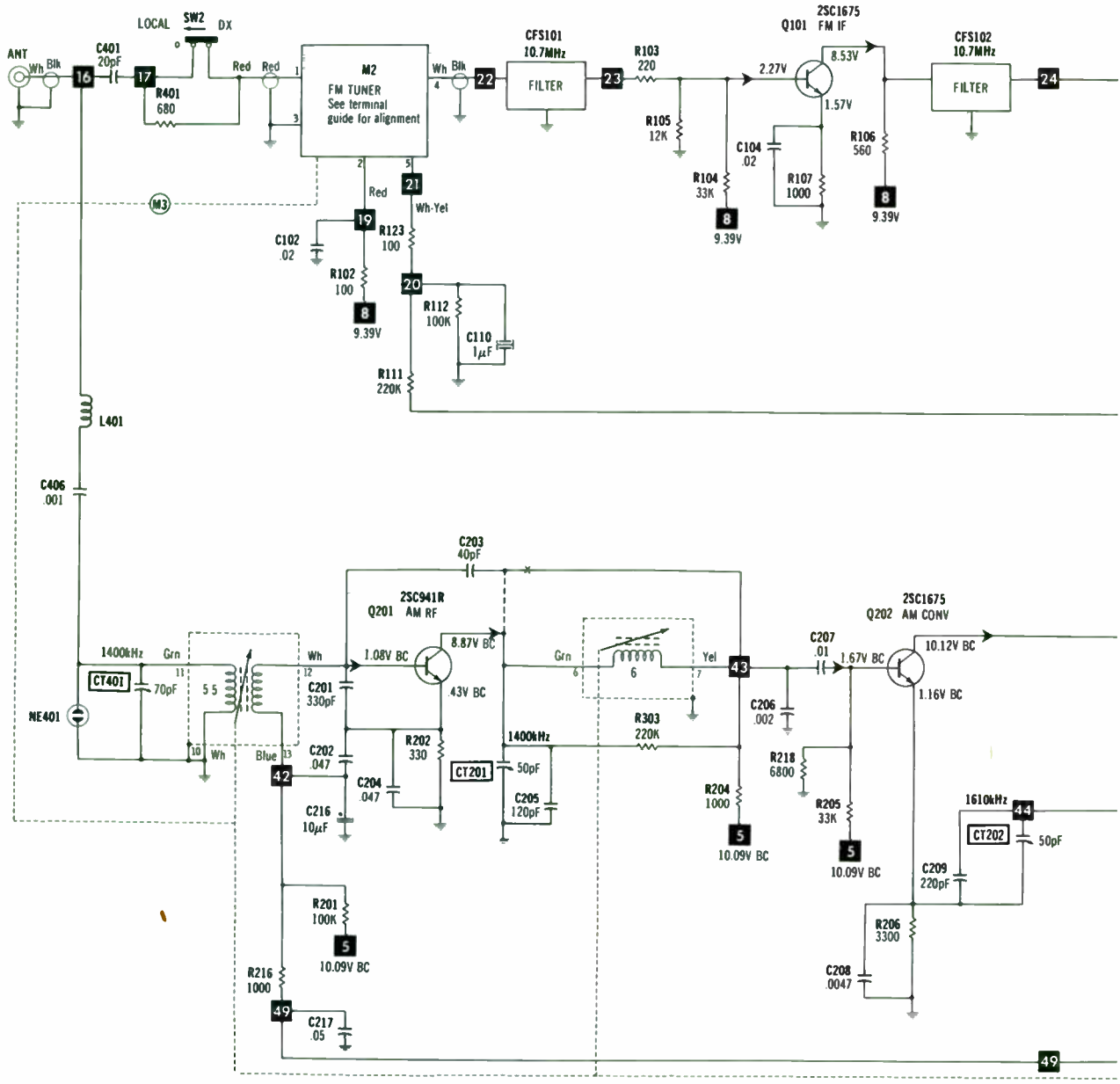
AUDIO BOARD





POWER BOARD

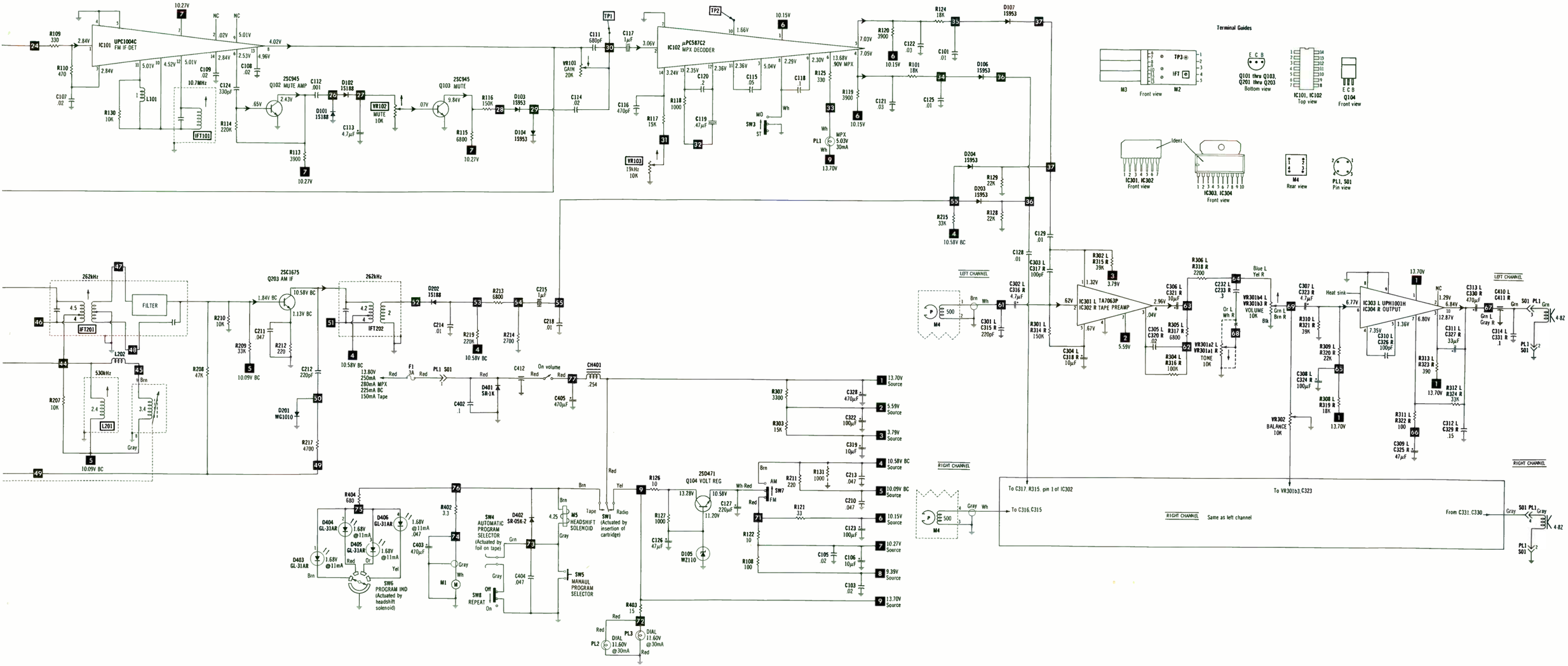
NOTE: DEMAGNETIZE HEADS AFTER SERVICING



- Circuitry nat used in some versions
- Circuitry used in some versions
- See parts list
- Nominal value
- Ground
- Chassis
- Common tie point
- Signal path
- Voltage path

Measurements with switching as shown unless noted.
Item numbers in rectangles oppear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages meosured with digital meter, no signal.
Controls adjusted for normol operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in ( ) used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®



PARTS LIST AND DESCRIPTION

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 13 Colors 8524 (Stranded) Available in 13 Colors
Shielded Hook-up Wire	Use BELDEN No. 8401 or 8421
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. 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.
D101	1S188	922604	1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109	WEP134	103-Z9001
D102	1S188	922604	1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109	WEP134	103-Z9001
D103	1S953	923147	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D104	1S953	923147	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D105	WZ110	923233	Z811B			REN 5074	SK3139	RT-242	ECG6074A	1N4741A	WEP1156	
D106	1S953	923147	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D107	1S953	923147	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D201	WG1010	922433	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D202	1S188	922604	1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109	WEP134	103-Z9001
D203	1S953	923147	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D204	1S953	923147	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D401	S81K-1	922860	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D402	SR05K-2	922799	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
IC101	UPC1004C	916154										
IC102	4400											
	UPC587C2	916155										
IC301	TA7063P	916067	GEIC-94			REN 1103	SK3281	TVCM-79	ECG1103	TM1103	WEP943	
IC302	TA7063P	916067	GEIC-94			REN 1103	SK3281	TVCM-79	ECG1103	TM1103	WEP943	
IC303	UPC1001H	916101	GEIC-197			REN 1122	SK3243		ECG1127	TM1127		
IC304	UPC1001H	916101	GEIC-197			REN 1122	SK3243		ECG1127	TM1127		
Q101	2SC1675	916144	GE-213	PTC132*	HEPS0025*	REN 123A*	SK3246	RT-308	ECG229*	TM229*	WEP956*	121-Z9021
Q102	2SC945	916033	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q103	2SC945	916033	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q104	2SD471	916126	GE-268	PTC144*	HEPS3001*	REN 289	SK3124	RT-114*	ECG289	TM289	WEP910	121-773
Q201	2SC941R	916127	GE-210*	PTC132*	HEPS0016*	REN 123A*	SK3122	RT-107A	ECG123A*	TM123A*	WEP66	121-Z9000A*
Q202	2SC1675	916144	GE-213	PTC132*	HEPS0025*	REN 123A*	SK3246	RT-308	ECG229*	TM229*	WEP956*	121-Z9021
Q203	2SC1675	916144	GE-213	PTC132*	HEPS0025*	REN 123A*	SK3246	RT-308	ECG229*	TM229*	WEP956*	121-Z9021

* Lead configuration may vary from original.
/** Also available as exact type replacement.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C106	10 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C110	1 NP 50V	913349	WNP1-50	TCN501A	QEN1-20	TVAN-1560
C113	4.7 25V	913148	PC5-50	VTT4R7B50	QV1-27	EV-1319
C117	1 NP 50V	913349	WNP1-50	TCN501A	QEN1-20	TVAN-1560
C119	.47 NP 50V	913348	PC1-50	VTTR47A63	QV1-3	EV-1610
C123	100 16V	913097	PC10D-16	VTT100F16	QV1-95	EV-1230
C126	47 16V	913180	PC50-16	VTT47D16	QV1-73	EV-1226
C127	220 16V	913069	PC250-25	VTT220M16	QV1-117	EV-1240
C215	1 NP 50V	913349	WNP1-50	TCN501A	QEN1-20	TVAN-1560
C216	10 1 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C302	4.7 16V	913148	PC5-50	VTT4R7B50	QV1-27	EV-1319
C304	10 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C306	10 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C307	4.7 16V	913148	PC5-50	VTT4R7B50	QV1-27	EV-1319
C308	100 10V	913013	PC100-10	VTT100E10	QV1-93	EV-1130
C309	47 10V	913196	PC50-16	VTT47D16	QV1-73	EV-1226
C311	33 10V	913035	PC30-25	VTT33B10	QV1-61	EV-1125
C313	470 16V	913156	PC500-16	VTT470K16	QV1-151	EV-1250
C316	4.7 16V	913148	PC5-50	VTT4R7B50	QV1-27	EV-1319
C318	10 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C319	10 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C321	10 16V	913175	PC10-25	VTT10B25	QV1-41	EV-1222
C322	100 10V	913013	PC100-10	VTT100E10	QV1-93	EV-1130
C323	4.7 16V	913148	PC5-50	VTT4R7B50	QV1-27	EV-1319
C324	100 10V	913013	PC100-10	VTT100E10	QV1-93	EV-1130
C325	47 10V	913196	PC50-16	VTT47D16	QV1-73	EV-1226
C327	33 10V	913035	PC30-25	VTT33B10	QV1-61	EV-1125
C328	470 16V	913030	PC500-16	VTT470K16	QV1-151	EV-1250
C330	470 16V		PC500-16	VTT470K16	QV1-151	EV-1250
C403	470 16V	913030	PC500-16	VTT470K16	QV1-151	EV-1250
C405	470 16V	913030	PC500-16	VTT470K16	QV1-151	EV-1250

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C101	.01 50V			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C102	.022		UK25-223				HY-725
C103	.022		UK25-223				HY-725
C104	.022		UK25-223				HY-725
C105	.022		UK25-223				HY-725
C107	.022		UK25-223				HY-725
C108	.022		UK25-223				HY-725
C109	.022		UK25-223				HY-725
C111	680		DD-681	GP68D	GP368		10TS-T68
C112	.001			DPMS6D1	EWF1A210	QFT2-1	1FT-D10
C114	.022			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C115	.047			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C116	470 5%			CD15FD471J03	SX347	QW1-42	MWA-471
C118	.1 12V		UK12-104		MAG1201		HY-360
C120	.2 12V		UK16-204				HY-470
C121	.033			DPMS6S33	M192P3339R8	QFT2-149	1FT-S33
C122	.033			DPMS6S33	M192P3339R8	QFT2-149	1FT-S33
C124	330		DD-331	GP330	GP333		10TS-T33
C125	.01			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C128	.01			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C129	.01			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C201	330		DD-331	GP330	GP333		10TS-T33
C202	.047 50V 10%			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C203	40 N330 10%	913172			*		10TCS-Q47
C204	.047		UK50-503		MAG5015		
C205	120	913115			GP312		5GA-T12
C206	.002 10%			DPMS6D2	PVC622		6PS-D20
C207	.01			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C208	.0047			WMF1D47	M192P4729R8	QFT2-63	1FT-D47
C209	220 10%			CD15FD221J03	SX322	QW1-35	MWA-221
C210	.047			DPMS2S47	EWF1A147	QFT2-171	1FT-S47
C211	.047		UK5D-503		MAG5015		
C212	220		DD-221		GP322		10TS-T22
C213	.047		UK5D-503		MAG5015		
C214	.022		UK25-223				HY-725
	.01		UK50-103		MAG5011		
C217	.047		UK5D-503		MAG5015		
C218	.01			WMF1S1	EWF1A110	QFT2-91	1FT-S10
C301	220 10%		DD-221		GP322		10TS-T22
C303	100		DD-101	GP100	GP310		10TS-T10
C305	.022			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C310	100		DD-101	GP100	GP310		10TS-T10
C312	.1 100V ±10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
	.15			WMF05P15	EWF05015		431P1549R5
C314	.1 100V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C315	220 10%		DD-221		GP322		10TS-T22
C317	100		DD-101	GP100	GP310		10TS-T10
C320	.02		UK50-223		MAG5012		
C326	100		DD-101	GP100	GP310		10TS-T10
C329	.1 100V ±10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
	.15			WMF05P15	EWF05015		431P1549R5
C331	.1 100V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C401	20 NPO 10%		DTZ-20	NP020	CN0420		10TCC-020
C402	.1 50V			WMF05P1	EWF05010	QFT2-215	1FT-P10
C404	.047		UK5D-503		MAG5015		
C406	.001		DD-102		GP210		10TS-D10
C410							
C411							
C412							
CT201	50	913511					
CT202	50	913511					
CT401	70	913271					

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR101	Gain	20K	915451			X260R253B(2)
VR102	Mute	10K	915398			X260R103B(2)
VR103	19kHz	10K	915381			U260R103B
VR301a1	Tone-Right	10K	915278(18)			
VR301a2	Tone-Left	10K				
VR301b3	Volume-Right	10K				
VR301b4	Volume-Left	10K				
	Man Prog. Switch/On-Off Switch					
VR302	Balance	10K	915294			

(2) Cut off one of the end terminals and bend to fit PC board.
(18) Includes VR301a1, VR301a2, VR301b3, VR301b4 and SW5.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
IFT101	FM IF (10.7MHz)	923133	923133		
IFT201	AM Conv	922496	671D S0805		
IFT202	AM IF (262kHz)	922390	922489		
L101	FM IF	923170			
L201	AM Osc (530kHz)	922592			
L202	RF Choke (4.7uH)	913346			
L401	RF Choke (5.1uH)	913112			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
CH401	280mA	.254	1.06mH	914016 4028(1)			(1) Number on unit.

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	3A Quick Acting			AGC	HDJ-A	312003	150145	FG3-2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CFS101	Filter	922484(1)	(10.7MHz)
CFS102	Filter	922484(1)	(10.7MHz)
D403	Lamp	922878	GL31AR (1.68V @ 11mA)
D404	Lamp	922878	GL31AR (1.68V @ 11mA)
D405	Lamp	922878	GL31AR (1.68V @ 11mA)
D406	Lamp	922878	GL31AR (1.68V @ 11mA)
M1	Motor	911019	Tape Transport (2400rpm @ 13.55V)
M2	Tuner	31303	FM
M4	Head	917005	8-Track Stereo Player
M5	Solenoid	920013	Headshift
PL1	Lamp	922319	MPX (5.03V @ 30mA)
PL2	Lamp	922836	Dial (11.60V @ 30mA)
PL3	Lamp	922836	Dial (11.60V @ 30mA)
SW1	Switch	912043	Tape/Radio (Actuated by insertion of Tape).
SW2	Switch	912063	LOC/OX
SW3	Switch	912063	Mono/Stereo
SW4	Switch	21367	Automatic Program Selector (Actuated by foil on Tape)
SW5	Switch		Manual Program Selector (Part of Volume Control).
SW6	Switch	41900	Program Indicator (Actuated by Headshift Solenoid).
SW7	Switch	912063	AM/FM
SW8	Switch	912063	Repeat On/Off
	Jack	922795	Antenna Connector
	Receptacle	41500	5P Connector Cord
	Connector	41501	5P Connector Cord
	Printed Circuit Board	21378	Power Supply
	Printed Circuit Board	30691	Power Amp
	Printed Circuit Board	30690	IF Amp

(1) When replacing CFS101, CFS102 should also be replaced.

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

ITEM	PART No.
Case, Top	45132
Case, Bottom	44202
Case, Front	43967
Cover, Bottom Case	44075
Escutcheon	45021
Knob FM/AM/ST/MO/LOCAL/REPEAT	45017/051

ITEM	PART No.
Knob, K, Outer	44683
Knob, C, Inner	44717
Knob, G, Outer	45116/122
Knob, G, Inter	45115
Dial Pointer	43974

MODEL AR-1730CR-B

Models AR-1730CR-B (Plymouth Arrow)
AR-1730CE (Plymouth Arrow)

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206
 Printed in U. S. of America 8AK1131

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Connect low sides of generator and indicator to ground unless specified otherwise.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools: GC ELECTRONICS:
ALL Coils and Trimmers 5000,8277,9089

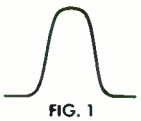


FIG. 1


FIG. 2

PUSH-BUTTON ADJUSTMENT

1. Pull button out.
2. Tune manually to desired station.
3. Press button in firmly.
4. Repeat for remaining buttons.

AM ALIGNMENT—SELECTOR IN AM POSITION

Connect output meter across speaker voice coil.

GENERATOR COUPLING	GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST	REMARKS
High side thru .1uF to antenna.	455kHz 400-Hz mod.	High freq end stop	T11,T10, T9,T8	Adjust for maximum.
Thru dummy antenna to antenna input.	1615kHz 400-Hz mod.	"	TC6	"
Thru dummy antenna to antenna input.	540kHz 400-Hz mod.	Low end stop	T7	"
Thru dummy antenna to antenna input.	1400kHz 400-Hz mod.	1400kHz	TC5,TC4	Adjust for maximum. Repeat alignment until no further improvement is noted.

With radio installed in car and antenna extended 36", tune in a weak station near 1400kHz and adjust TC4 for maximum output. Antenna adjustment is located thru front plate at left end of dial plate.

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.

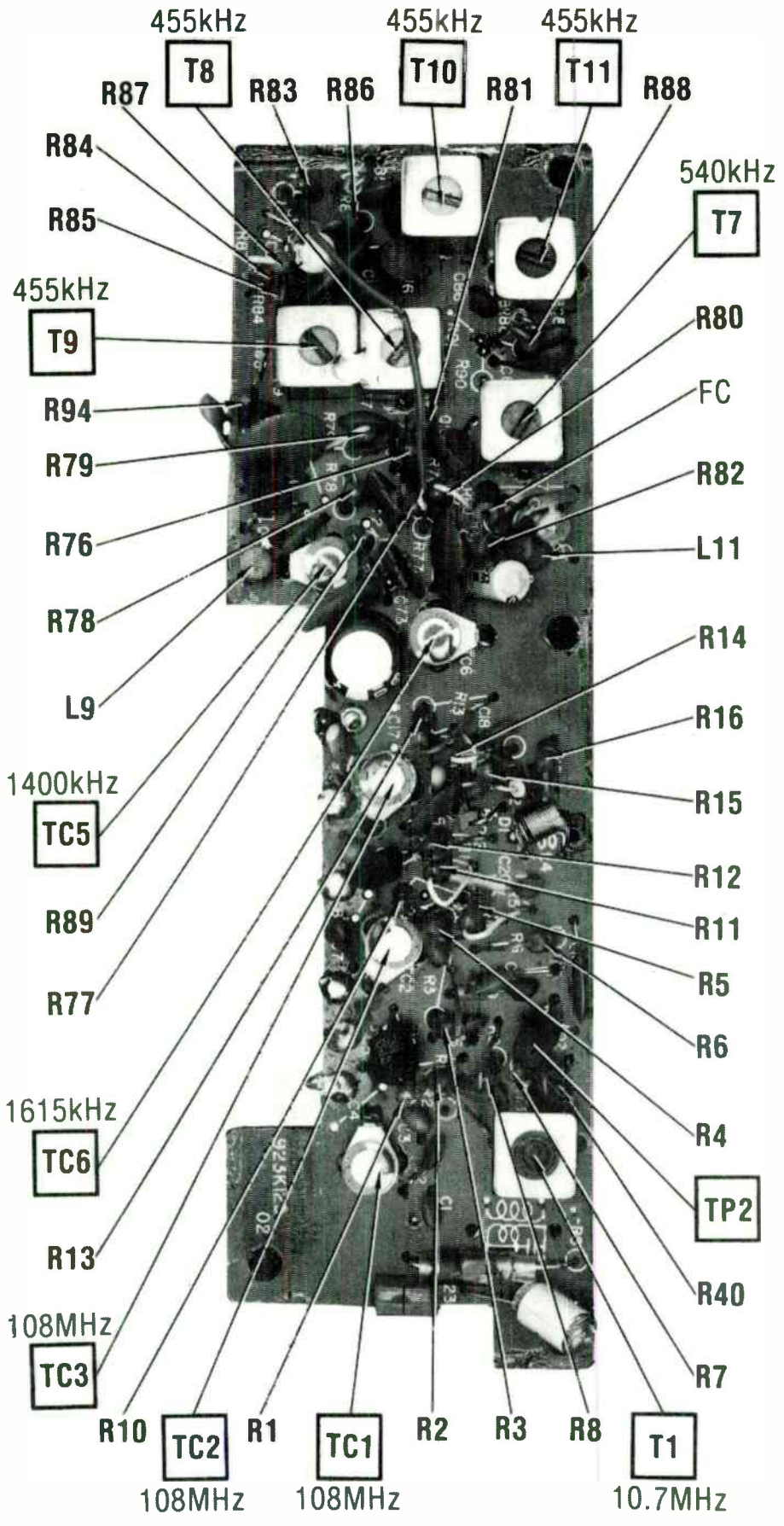
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz 450kHz Sweep	Point of non-interference	Vert input of scope to TP2.	(1)T3,T2,T1, VR1	Disconnect stabilizing capacitor Adjust for maximum gain and symmetry of response similar to Fig. 1. Reconnect
"	"	Vert input of scope to TP3.	T4,VR2	Adjust T4 for maximum amplitude and straightness of line, similar to Fig. 2.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

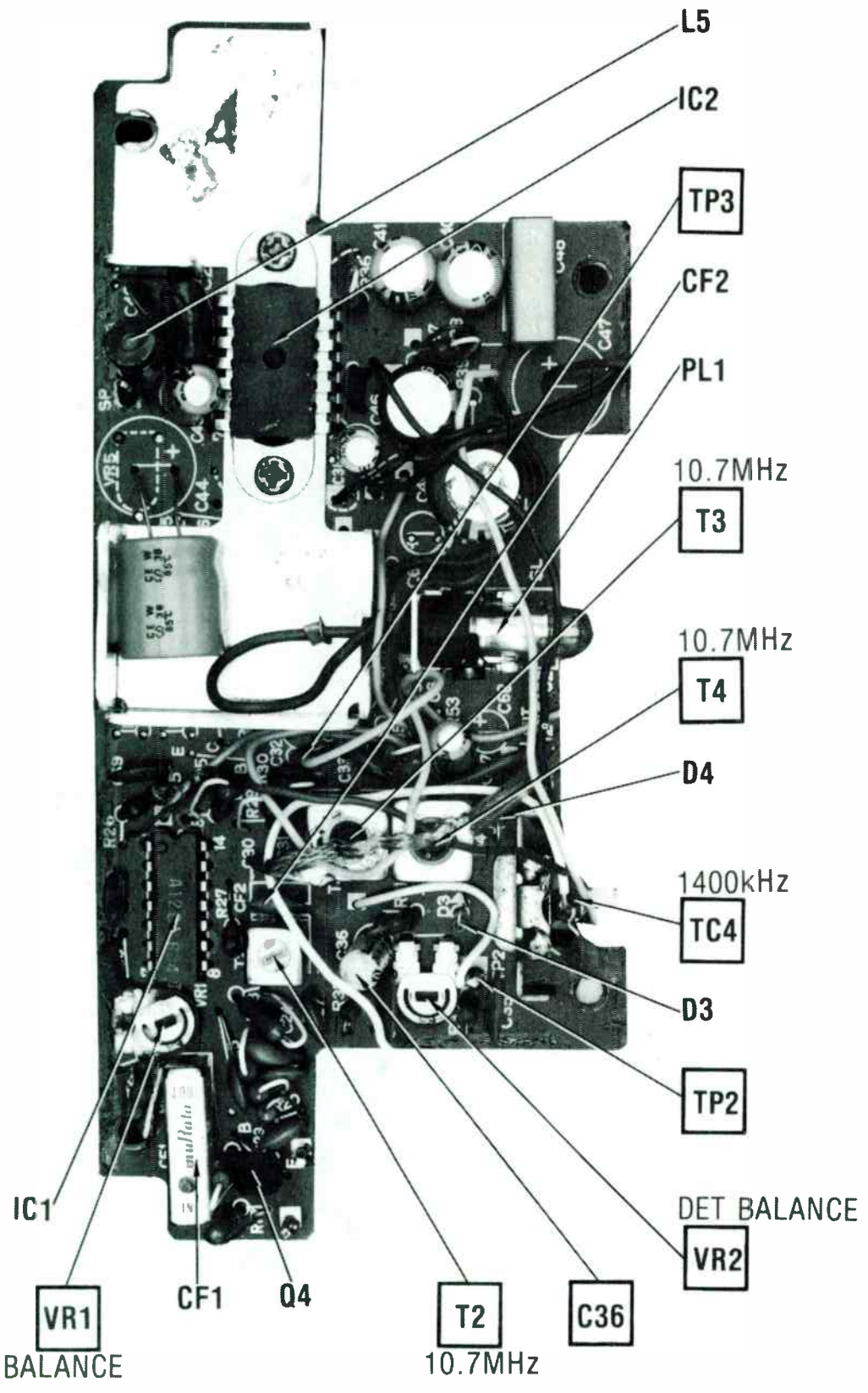
Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead.
Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
108MHz Modulated	108MHz	DC probe of VTVM to speaker.	TC3,TC2,TC1	Adjust for maximum.

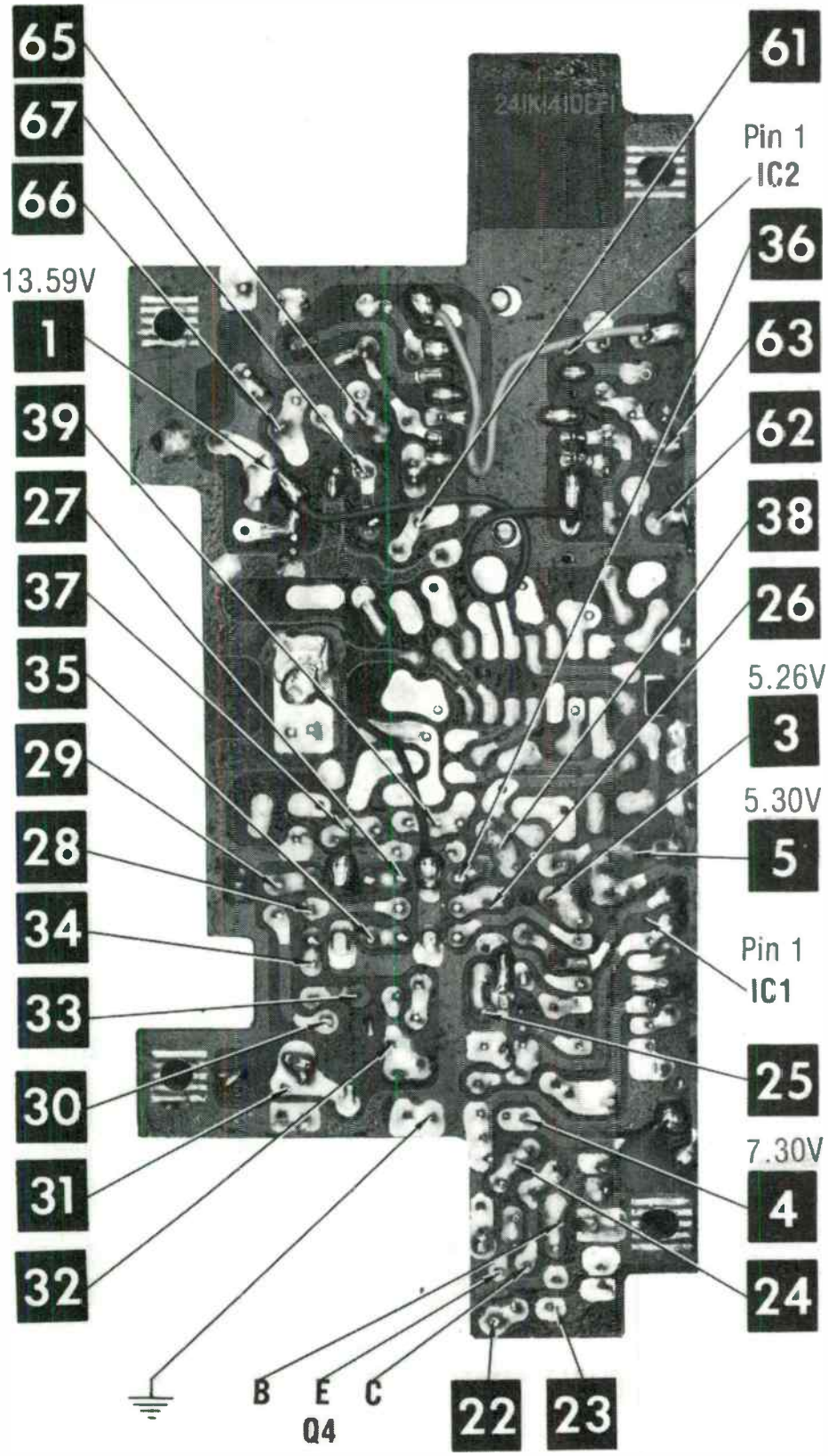
(1) Before adjusting, vary generator frequency slightly. Maximum output indicates exact IF.



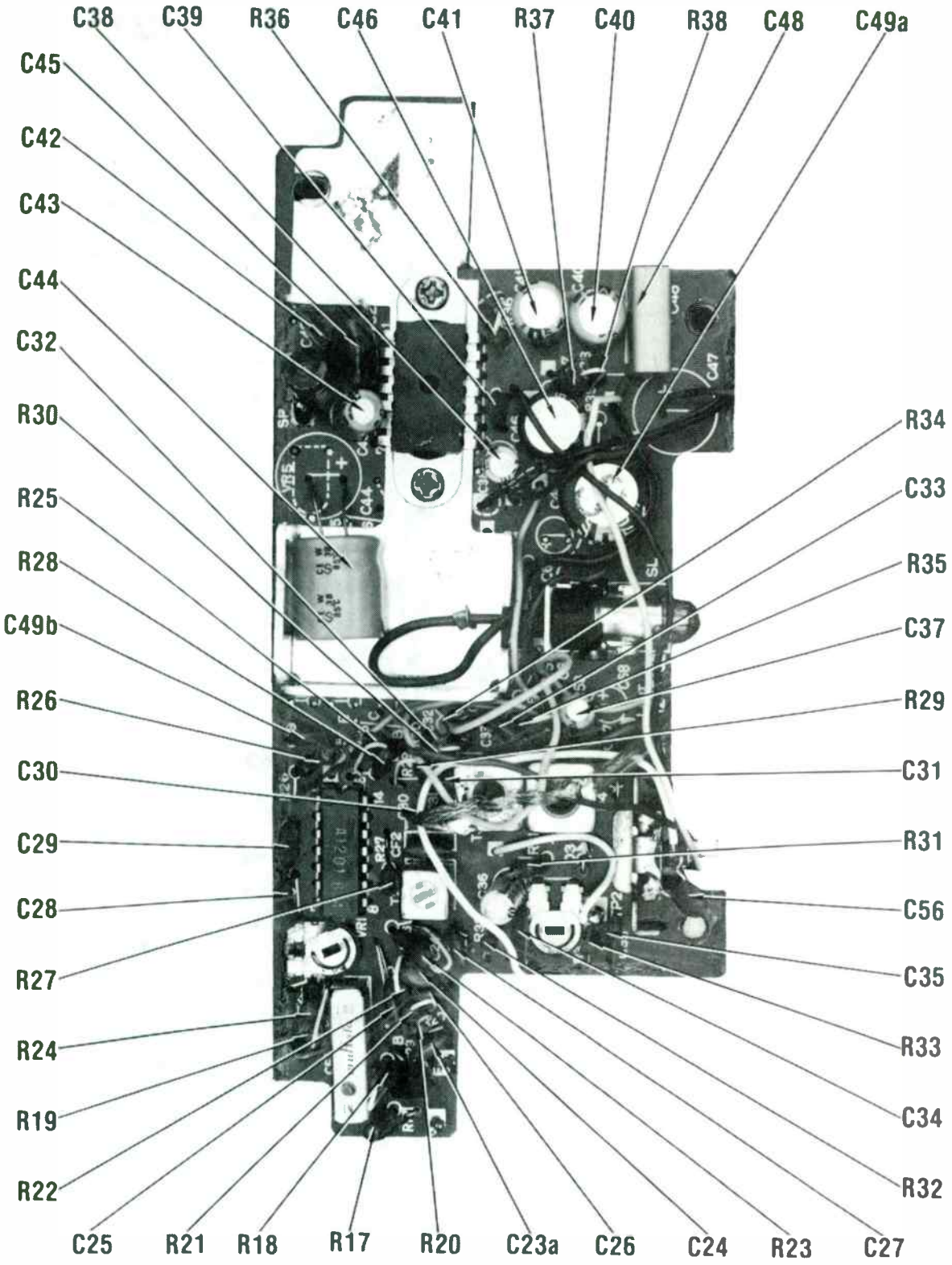
MAIN BOARD



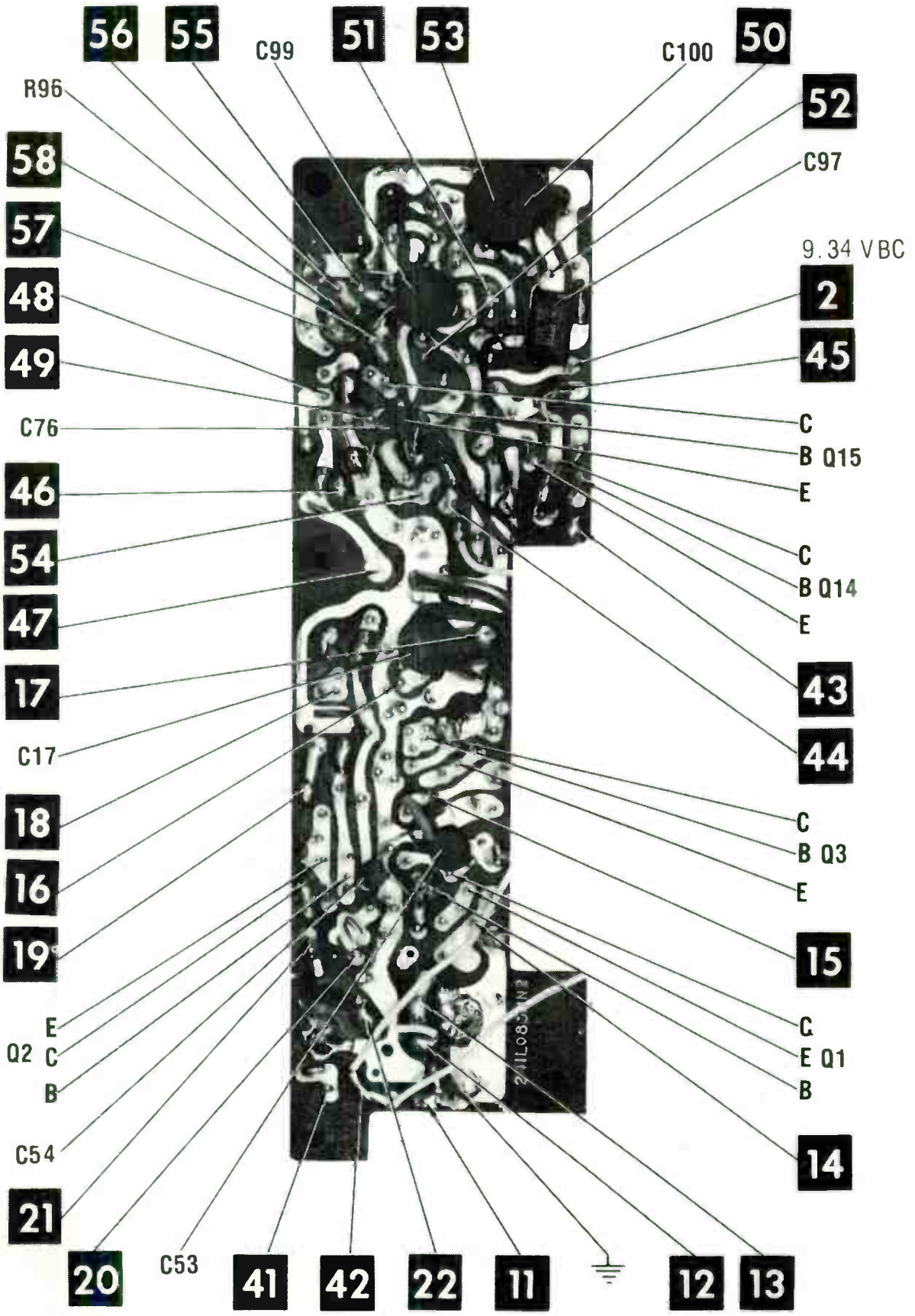
IF/AUDIO BOARD



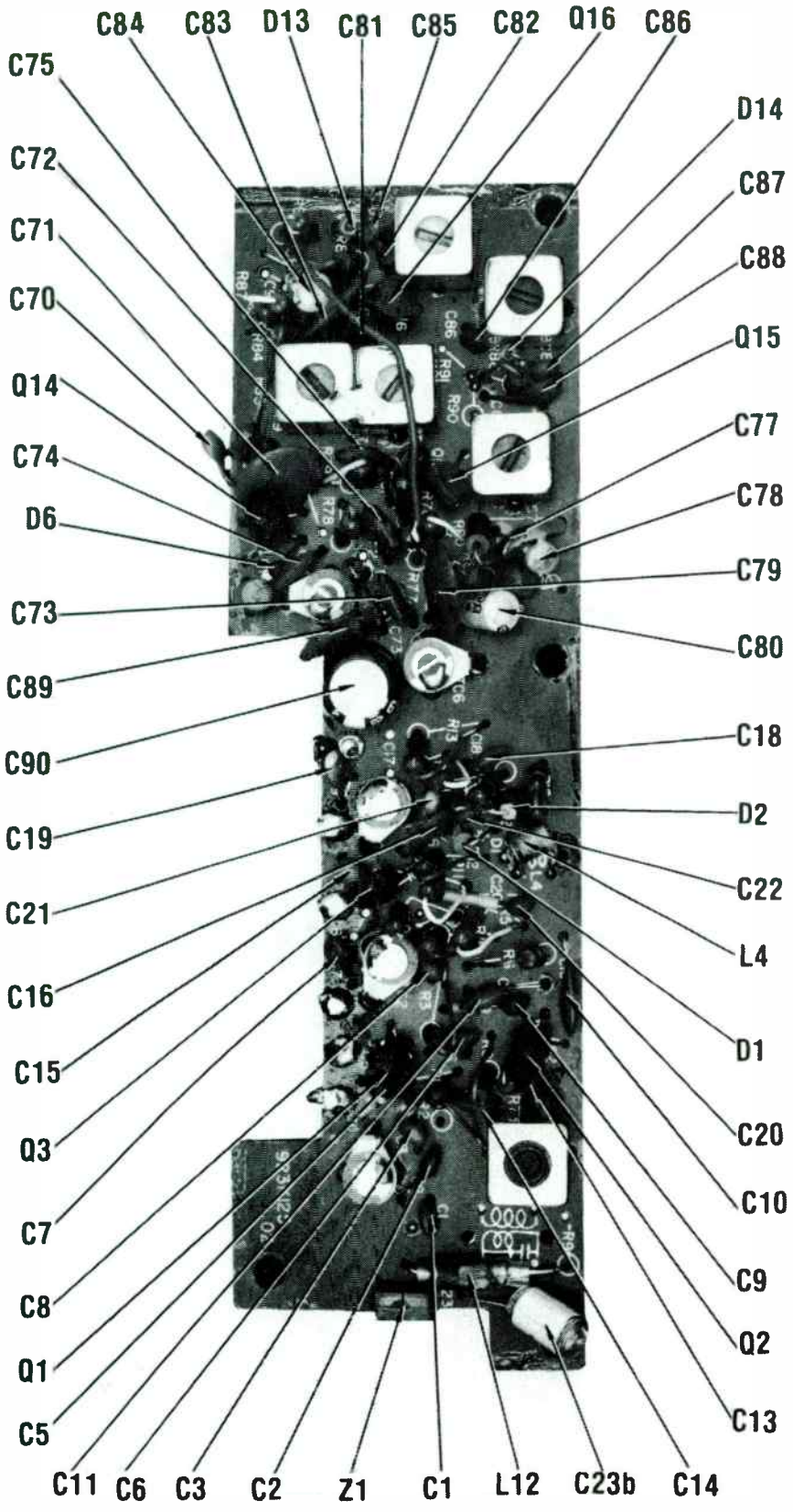
IF/AUDIO BOARD



IF/AUDIO BOARD



MAIN BOARD



MAIN BOARD

PARTS LIST AND DESCRIPTION

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 13 Colors 8524 (Stranded) Available in 13 Colors
Shielded Hook-up Wire	Use BELDEN No. 8401 or 8421
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)

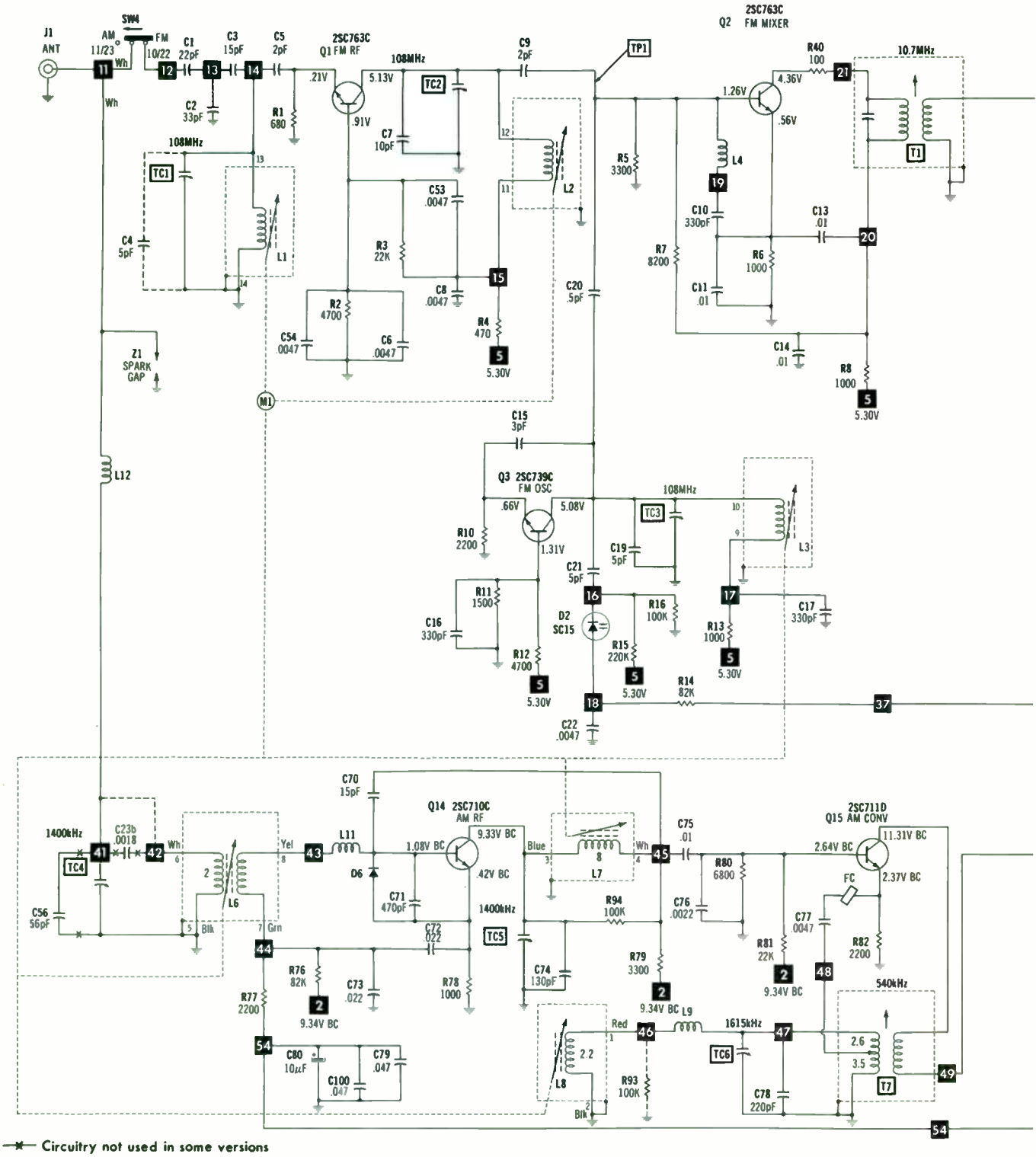
SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. 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	EQA01-05T	264P11001	GEZD-5.6	ZB5.6B		REN 136	SK3057	RT-236	ECG136A	1N4734A	WEP1104	103-79007
D2	SC-15	264P07501	GE-90		HEPR2503	REN 614		RT-262	ECG614		WEP200	
D3	MD-60A	264P03802	1N34AS(7)	PTC207M(6)	HEPR9134A(7)	REN 110(6)	SK3087(7)	RT-200(7)	ECG110(6)	TM110(6)	WEP134(7)	103-Z9001(7)
D4	MD-60A	264P03802										
D6	MV-1	265P03301		PTC301		REN 601	SK3463		ECG601			
D13	MD-34	264P00401	1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109	WEP134	103-Z9001
D14	MD-34	264P00401	1N34AS	PTC207	HEPR9134A	REN 109	SK3087	RT-200	ECG109	TM109	WEP134	103-Z9001
IC1	LA1201		GEIC-43		HEPS6063P	REN 1003	SK3288	TVCM-75	ECG1003	LA1201	WEP2122	221-48
	LA1201FM-C	266P30402	GEIC-43		HEPC6063	REN 1003	SK3288	TVCM-75	ECG1003	LA1201	WEP2122	221-48
IC2	M5151RE	266P30801										
Q1	2SC763C	260P17603	GE-61*	PTC115	HEPS0020*	REN 229*	SK3018*	RT-309	ECG229*	TM229*	WEP56	121-Z9021
Q2	2SC763C	260P17603	GE-61*	PTC115	HEPS0020*	REN 229*	SK3018*	RT-309	ECG229*	TM229*	WEP56	121-Z9021
	2SC763B	260P17602	GE-61*	PTC115	HEPS0020*	REN 229*	SK3018*	RT-309	ECG229*	TM229*	WEP56	121-Z9021
Q3	2SC739C	260P10403	GE-61*	PTC115	HEPS0016*	REN 107	SK3122	RT302	ECG107	TM107	WEP56*	121-522
Q4	2SC710C	260P17103	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	
Q14	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	
	2SC710BC	260P17101	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	
Q15	2SC711D	260P17503	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP66*	121-972
Q16	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	
	2SC710CD	260P17102	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	

* Lead configuration may vary from original.
/** Also available as exact type replacement.
(6) Matched pair.
(7) Two required - select matched pair.

ELECTROLYTIC CAPACITORS

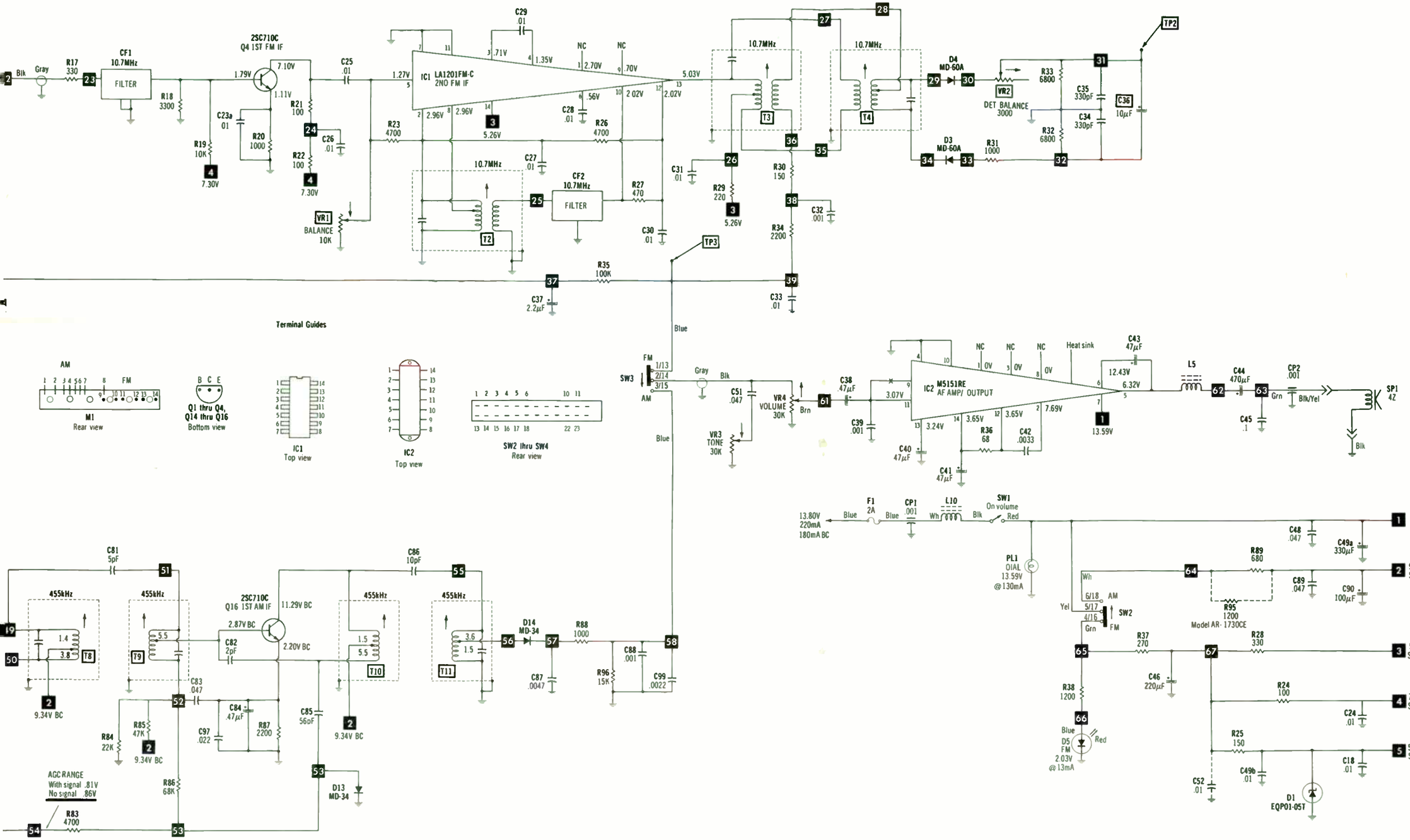
ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C36	10 16V	181P06709	PC10-25	VTT10B25	QV1-41	EV-1222
C37	2.2 50V	181P06200	PC2-100	VTT2R2A50	QV1-19	EV-1517
C38	.47 16V	181P06600	PC1-50	VTTR47A63	QV1-3	EV-1610
C40	47 16V	181P06206	PC50-16	VTT47D16	QV1-73	EV-1226
C41	47 16V	181P06206	PC50-16	VTT47D16	QV1-73	EV-1226
C43	47 10V	181P06009	PC50-16	VTT47D16	QV1-73	EV-1226
C44	470 10V	181L01102	PC500-16	VTT470K16	QV1-149	EV-1150
C46	220 16V	181L01206	PC250-25	VTT220H16	QV1-117	EV-1240
C49a	330 16V		WBR300-35*	VTT330H16	QV1-133	EV-1245
C80	10 16V	181P06709	PC10-25	VTT10B25	QV1-41	EV-1222
C84	.47 50V	181P06600	PC1-50	VTTR47A63	QV1-3	EV-1610
C90	100 16V	181L01202	PC100-16	VTT100F16	QV1-95	EV-1230



—✕— Circuitry not used in some versions
– – – Circuitry used in some versions
⊖ See parts list
※ Nominal value
⏚ Ground
Chassis
▽ Common tie point

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in ( ) used in some versions.



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering ports, state Model, Port Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C1	22 5%		DTZ-22	NP022	CN0422		10TCC-Q22
C2	33 5%		DTZ-33	NP033	CN0433		10TCC-Q33
C3	15 5%		DTZ-15	NP015	CN0415		10TCC-Q15
C4	5 +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C5	2 +.5		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C7	10 +1	154P02509					
C8	.0047		DD-472	GP4700	GP247		5GA-D47
C9	2 +.5		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C10	330 5%			CD15FD331J03	SX333	QW1-39	MWA-331
C11	.01		UK50-103		MAG5011		
C13	.01		UK50-103		MAG5011		
C14	.01		UK50-103		MAG5011		
C15	3 +.25	154P13005					
C16	330 10%		DD-331	GP330	GP333		10TS-T33
C17	330 10%		DD-331	GP330	GP333		10TS-T33
C18	.01		UK50-103		MAG5011		
C19	5 N220 +.5	154P14505					
C20	.5 +.5	154D01009					
C21	5 N220 +.5	154P14505					
C62	.0047		DD-472	GP4700	GP247		5GA-D47
C23a	.01		UK50-103		MAG5011		
C23b	.0018 50V 5%			CD19FD182J03	SX218		MWC-182
C24	.01		UK50-103		MAG5011		
C25	.01		UK50-103		MAG5011		
C26	.01		UK50-103		MAG5011		
C27	.01		UK50-103		MAG5011		
C28	.01		UK50-103		MAG5011		
C29	.01		UK50-103		MAG5011		
C30	.01		UK50-103		MAG5011		
C31	.01		UK50-103		MAG5011		
C32	.001		DD-102		GP210		10TS-D10
C33	.01 50V 10%			WMF1S1	EWF1A110	QF1-91	1PB-S10
C34	330 5%			CD15FD331J03	SX333	QW1-39	MWA-331
C35	330 5%			CD15FD331J03	SX333	QW1-39	MWA-331
C39	.001		DD-102		GP210		10TS-D10
C42	.0033		DD-332	GP3300	GP233	QC2-107	5GA-D33
C45	.1 50V 10%			WMF05P1	EWF05010		431P1049R5
C48	.047 100V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C49b	.01		UK50-103		MAG5011		
C51	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C52	.01		UK50-103		MAG5011		
C53	.0047		DD-472	GP4700	GP247		5GA-D47
C54	.0047		DD-472	GP4700	GP247		5GA-D47
C56	56 10%				CN0456		10TCC-Q56
C70	15 5%		DTZ-15	NP015	CN0415		10TCC-Q15
C71	470 10%		DD-471	GP470	GP347		10TS-T47
C72	.022 50V				M192P2239R8		192P2239R8
C73	.022 50V				M192P2239R8		192P2239R8
C74	130 5%						
C75	.01		UK50-103		MAG5011		
C76	.0022				GP222		10TS-D22
C77	.0047 10%			WMF1047	EWF1A247	QF1-57	1PB-D47
C78	220 5%		DTZ-220				10TCC-T22
C79	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C81	5 +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C82	2 +.5		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C83	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C85	56 10%				CN0456		10TCC-Q56
C86	10 +1	154P02509					
C87	.0047			WMF1D47	EWF1A247	QF1-57	1PB-D47
C88	.001		DD-102		GP210		10TS-D10
C89	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C97	.022 50V 10%				M192P2239R8		192P2239R8
C99	.0022				GP222		10TS-D22
	.022				M192P2239R8		192P2239R8
C100	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
CP1	.001	141P02001					
CP2	.001	141P02001					
TC1	10	202P10402					
TC2	10	202P10402					
TC3	10	202P10402					
TC4	60	202L00201					
TC5	50	202P10401					
TC6	50	202P10401					

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering ports, state Model, Port Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements. Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	Balance	10K	127M02101			U260R103B
VR2	Det Balance	3000	127M02103			U260R502B
VR3	Tone	30K	122C13005(19)			
VR4	Volume/Power Switch	30K	2C13005(5)			

(5) Number on unit.
(19) Includes VR3, VR4 and SW1.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Tuner	(1)			(1) Part of M1 (Tuner).
L2	Tuner	(1)			
L3	Tuner	(1)			
L4	RF Choke	320D04601			
L5	RF Choke	351L00102			
L6	Tuner	(1)			
L7	Tuner	(1)			
L8	Tuner	(1)			
L9	RF Choke	351D02103			
L10	RF Choke	351P00106			
L11	RF Choke	321P00106			
L12	RF Choke	351M00201			
T1	IF (10.7MHz)	374D02402			
T2	IF (10.7MHz)	374L00202			
T3	IF (10.7MHz)	374C00401			
T4	IF (10.7MHz)	374C00402			
T7	AM Conv (540kHz)	373D03502			
T8	IF (455kHz)	374C00105			
T9	IF (455kHz)	374C00102			
T10	IF (455kHz)	374C00105			
T11	IF (455kHz)	374D02106			

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2A Quick Acting	283P00102		AGC2	HDJ	312002	150145	FG2-2

MISCELLANEOUS

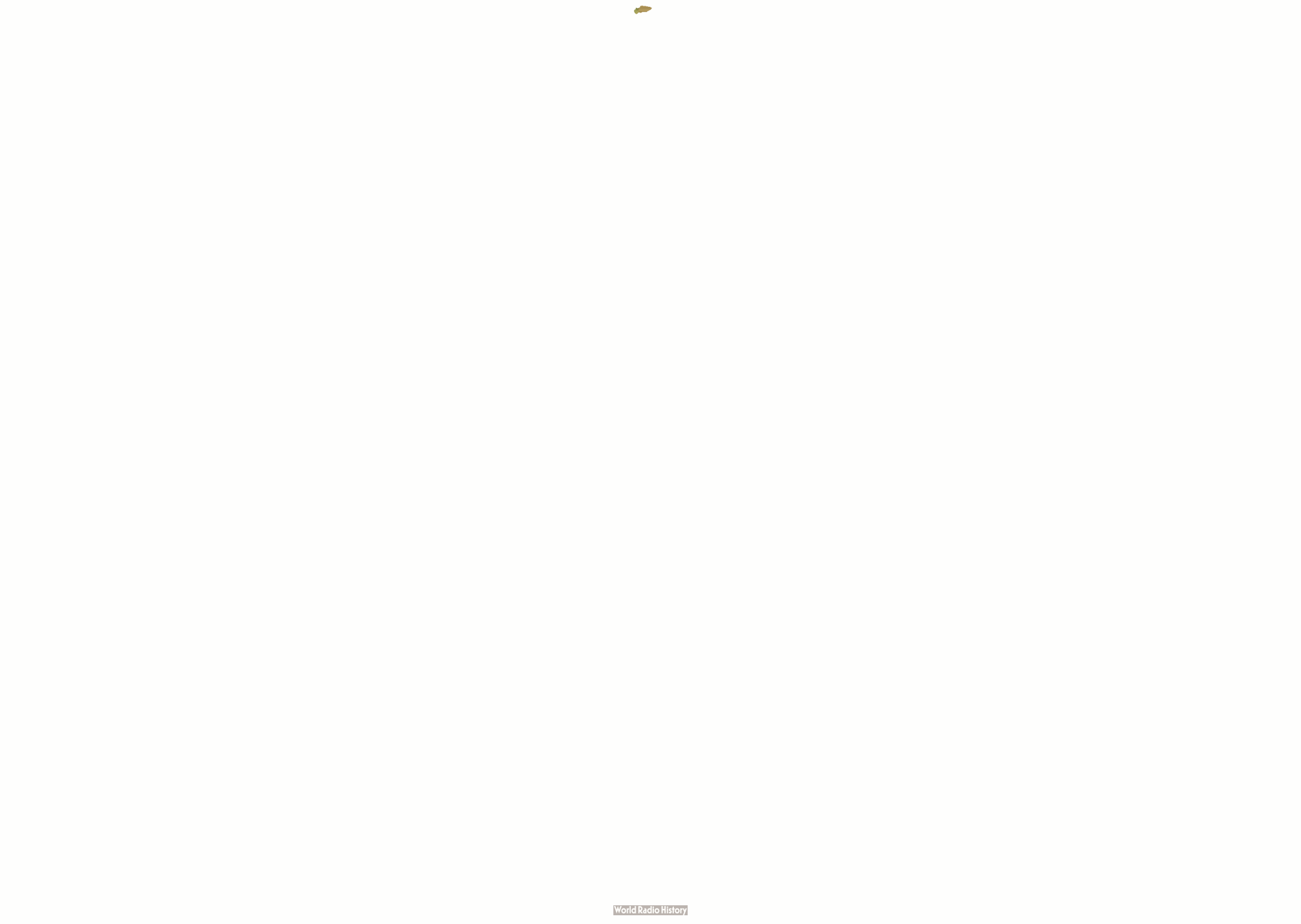
ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	296M00102(1)	10.7MHz
CF2	Filter	296M00102(1)	10.7MHz
D5	LED	264P13901	FM (2.03V @ 13mA)
J1	Socket	449L00302	Antenna
M1	Tuner	295K02901	AM/FM
PL1	Lamp	253D003D1	Dial (13.59V @ 130mA)
SW1	Switch		Power (On Volume Control)
SW2	Switch	(2)	AM/FM
SW3	Switch	(2)	AM/FM
SW4	Switch	(2)	AM/FM
Z1	Spark Gap	224D01901	
	Printed Circuit Board	923K12502	RF Assembly
	Printed Circuit Board	923K12402	AF Assembly

(1) When replacing, CF1 and CF2 should also be replaced.
(2) Gang together.

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

ITEM	PART No.
Knob, Tone	704M01902

ITEM	PART No.
Knob, Tuning Volume	704D91802



INDEX

Listing all models in PHOTOFACT Auto Radio Series volumes from 1970 (AR-70).
For models covered before 1970, see the Annual Index.

Abbreviations used: (EP) Early Production (LP) Late Production (SN) Serial Number (Rev) Revised (PCB) Production Change Bulletin

Listing all models in PHOTOFACT Auto Radio Series volumes from 1970 (AR-70).
For models covered before 1970, see the Annual Index.

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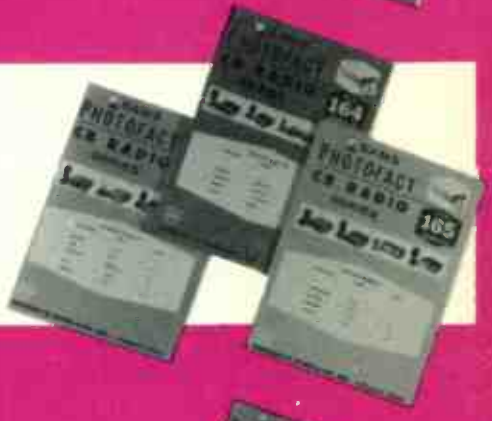

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