

# PHOTOFACT<sup>®</sup> with

# CIRCUITRACE<sup>®</sup>

For Supplier Address See PHOTOFACT Index



MODEL BM-1339

## 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.

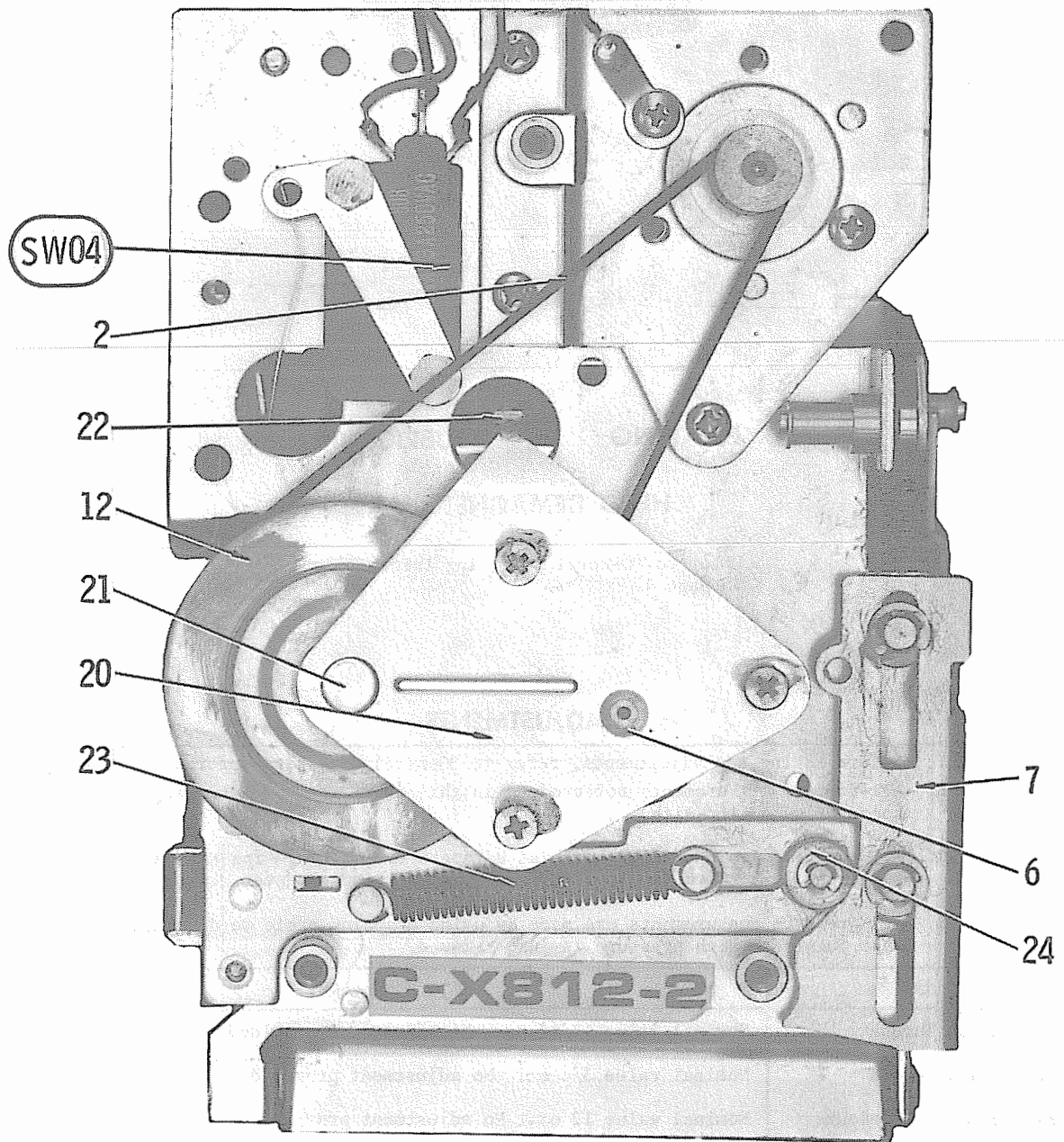
1. All voltage measurements referred to in this chart are made at a tape speed of        ips with
2. All torque measurements are made at a tape speed of 1-7/8 ips with a spring scale applied to a point 1 inch from spindle center.
3. All pressure measurements are made by using a spring scale to determine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

ADJUST	REMARKS
Play Take-up Torque	Nominal value 13/16 oz. No adjustment provided.
Fast Forward Torque	Nominal value 3/4 oz. No adjustment provided.
Pressure Roller Pressure	Nominal value 12 oz. No adjustment provided.
Head Azimuth	Connect meter across speaker, play an azimuth-test tape and adjust Screw 11 for maximum output.

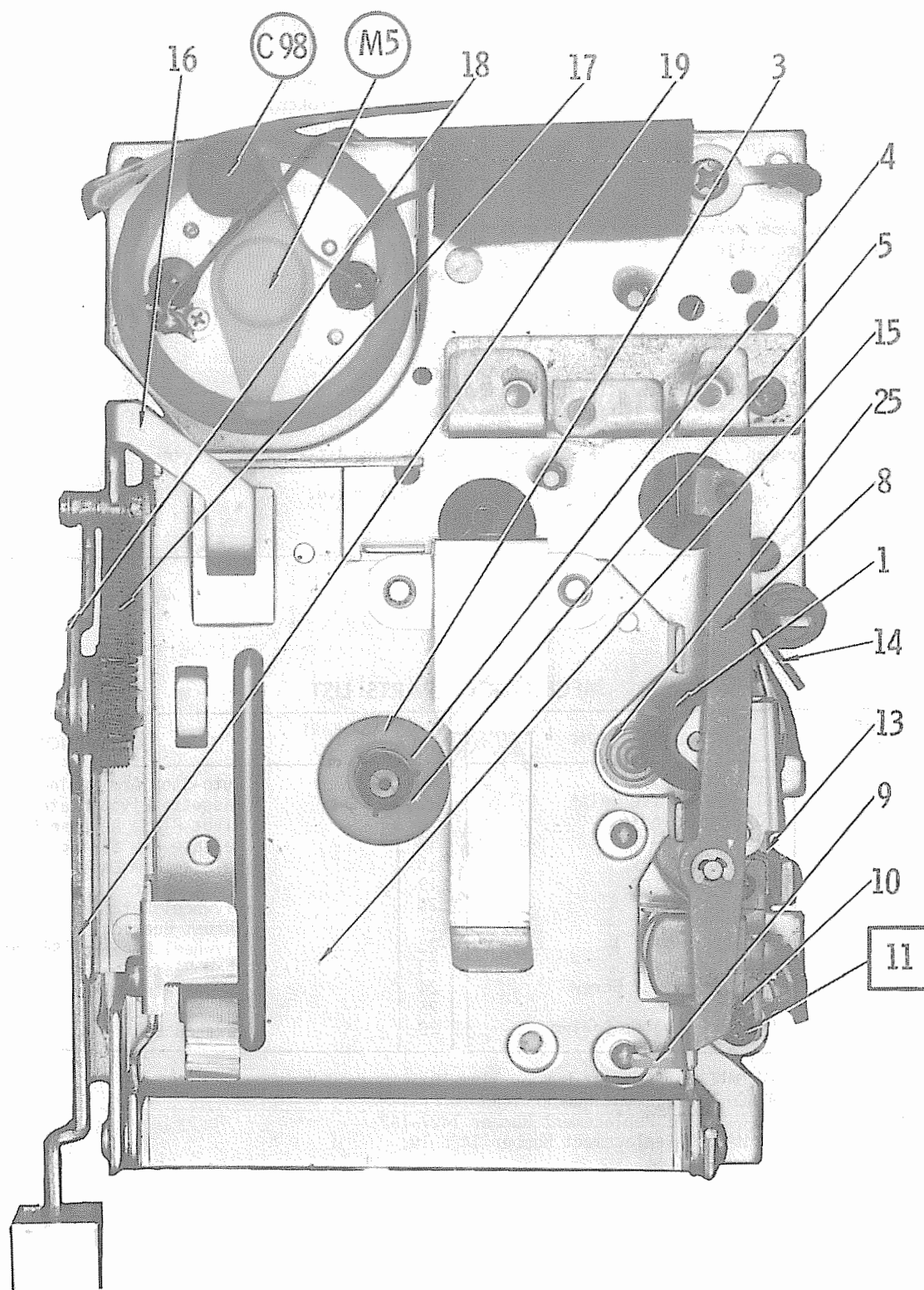
**HOWARD W. SAMS & CO., INC.** Indianapolis, Indiana 46206

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8AL1086



TAPE DECK-BOTTOM



TAPE DECK-TOP

## 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 3 dirty, worn or binding. Clutch 4 dirty or worn. Pulley 5 dirty, worn or binding. Spring 6 weak or out of place
Take-up erratic or inoperative in fast forward	Spindle 3 dirty, worn or binding. Belt 26 dirty, worn or broken.
Capstan does not rotate	Belt 2 dirty, worn or broken. Flywheel binding. Motor defective or not supplied with power.
Tape rides up and down between capstan and pressure roller.	Capstan bent. Roller 1 worn. Excessive take-up torque.
Wow or flutter	Roller 1 dirty or worn. Belt 2 dirty or worn. Bearing 25 binding. Cassette defective. Motor defective. Excessive take-up torque.
Sound weak or distorted	R/P head misadjusted, dirty or defective. Amplifier defective. Bias oscillator defective. Cassette defective. ARL defective.

## MECHANICAL PARTS LIST

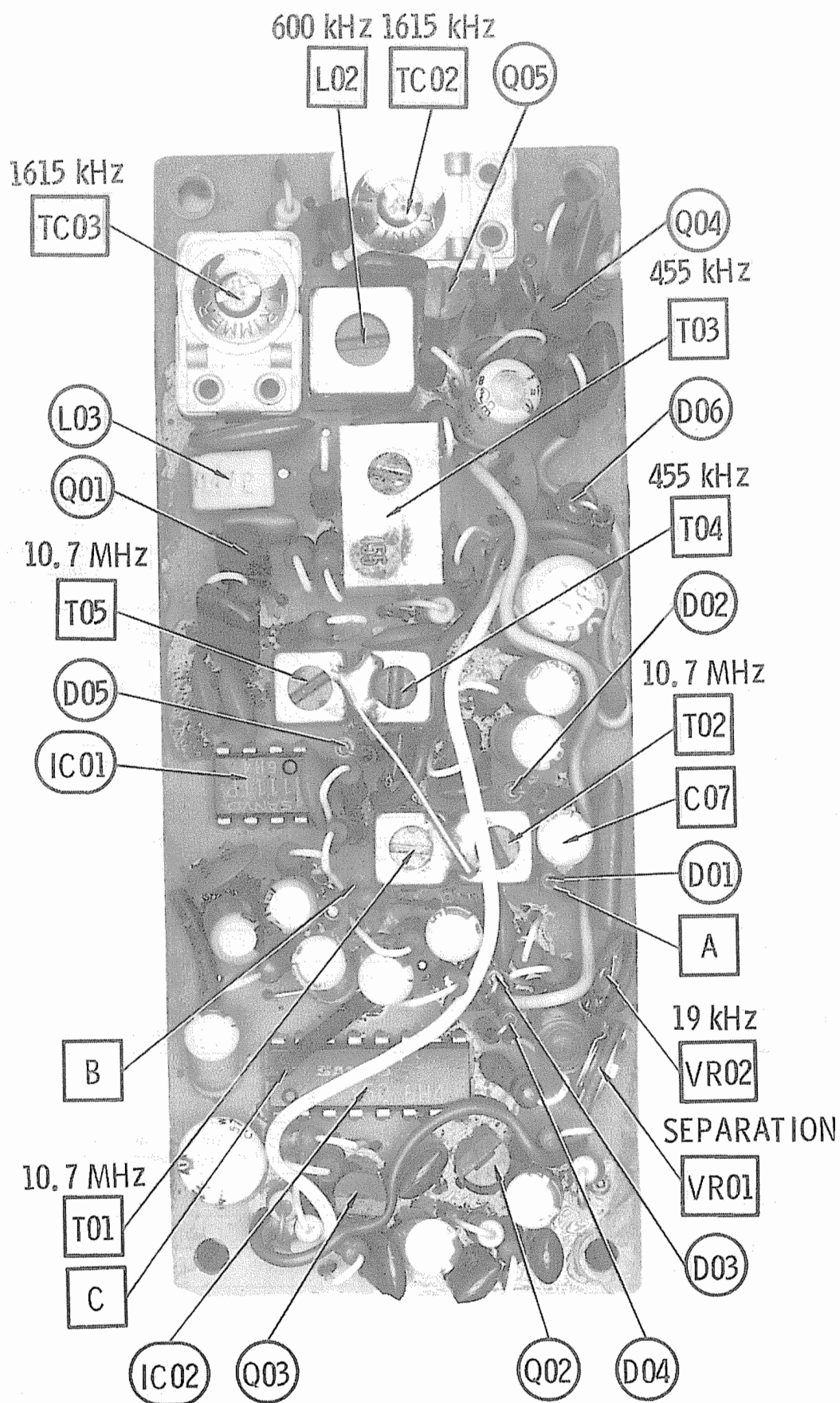
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1*	*	Pressure Roller*	14		Auto-Stop Arm Spring
2*	*	Flywheel Drive Belt*	15		Cassette Pivot Plate
3		Take-up Spindle	16		Pivot Plate Release Arm
4		Clutch Felt	17		Release Arm Spring
5		Take-up Pulley	18		Release Arm Lever
6		Take-up Spring	19		Eject Lever
7		Head Plate	20		Flywheel Retainer
8		Auto-Stop Arm	21		Thrust Bearing
9		Auto-Stop Tip	22		Flywheel Retainer Spring
10		Azimuth Spring	23		Head Plate Spring
11		Azimuth Adjust Screw	24		Head Plate Roller
12		Flywheel	25		Capstan Bearing
13		Pressure Roller Spring	26		Take-up Belt

\* Pressure Roller-E-V/GAME Replacement Number 1499-70.

WALSCO Replacement Number 1499-70.

\* Flywheel Drive Belt-E-V/GAME Replacement Number 1407-162.

WALSCO Replacement Number 1425-10.



MAIN 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.

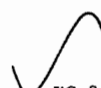
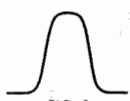
Suggested Alignment Tools

GC Electronics: FIG. 1

### PUSH-BUTTON ADJUSTMENT

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

TTC01, TTC02.....9089  
CBAT, RT.....9440  
T03.....8277, 9089  
TTC03.....5000, 8277  
TT01, TC01, TC02, TC03, L02, T01, T02, T04,  
T05, CB OSC, IFT.....5000, 8277, 9089

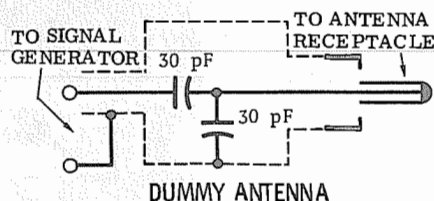


### AM ALIGNMENT—SELECTOR IN AM POSITION

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	T04, T03	Adjust for maximum.
Thru dummy antenna to antenna input.	1615kHz	"	TC03, TC02, TC01	"
Thru dummy antenna to antenna input.	600kHz	600kHz	L02	Adjust for maximum. Repeat alignment until no further improvement is noted.

With radio installed in car and antenna extended to desired height, tune in a weak station near 1400kHz and adjust TC01 for maximum output. Antenna adjustment TC01 is located in rear of tape compartment through cassette door.



### CB IF ALIGNMENT—SELECTOR IN AM POSITION

NOTE: AM Receiver must be properly aligned before proceeding with CB receiver alignment.  
CB Receiver - AM/FM switch in AM position, CB button depressed.

High side of generator thru .01mfd to TP low side to ground.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
455kHz Unmodulated	Point of non-interference	Output meter across speaker voice coil	IFT	Adjust for maximum.

### CB RF ALIGNMENT—SELECTOR IN AM POSITION

Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
26.965MHz Modulated	Low freq end of red line on dial	Output meter across voice coil	AT, RF	Adjust for maximum.
27.405MHz Modulated	Tune high freq end of red line	"	OSC	Adjust for maximum. Repeat until no further improvement is noted.

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

High side of generator thru .001uF to antenna.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non-interference	DC probe of VTVM to point A.	(1) T01, T05, TT01 (IFT)	Adjust for maximum.
"	"	DC probe of VTVM to point B.	T02	Adjust for zero reading. A positive or negative reading will be obtained on either side of correct setting.



## ALIGNMENT INSTRUCTIONS (Continued)

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

High side of generator thru .001uF to antenna. 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 point A.	(1)T01, T05	Disconnect stabilizing capacitor C07 Adjust for maximum gain and symmetry of response similar to Fig. 1. Reconnect C07.
"	"	Vert input of scope to point B.	T02	Adjust T02 for maximum amplitude and straightness of line, similar to Fig. 2.

### FM RF ALIGNMENT—SELECTOR IN FM POSITION

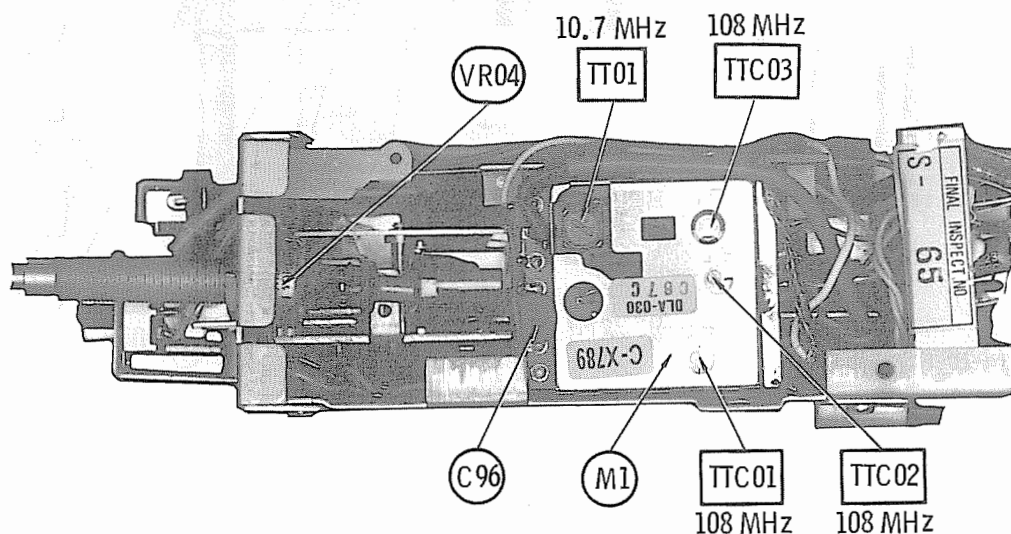
Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.				
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
108MHz Unmodulated	108MHz	DC probe of VTVM to point A.	TTC03 (OT) TTC02 (RT) TTC01 (AT)	Adjust for maximum.

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

### FM STEREO ADJUSTMENT

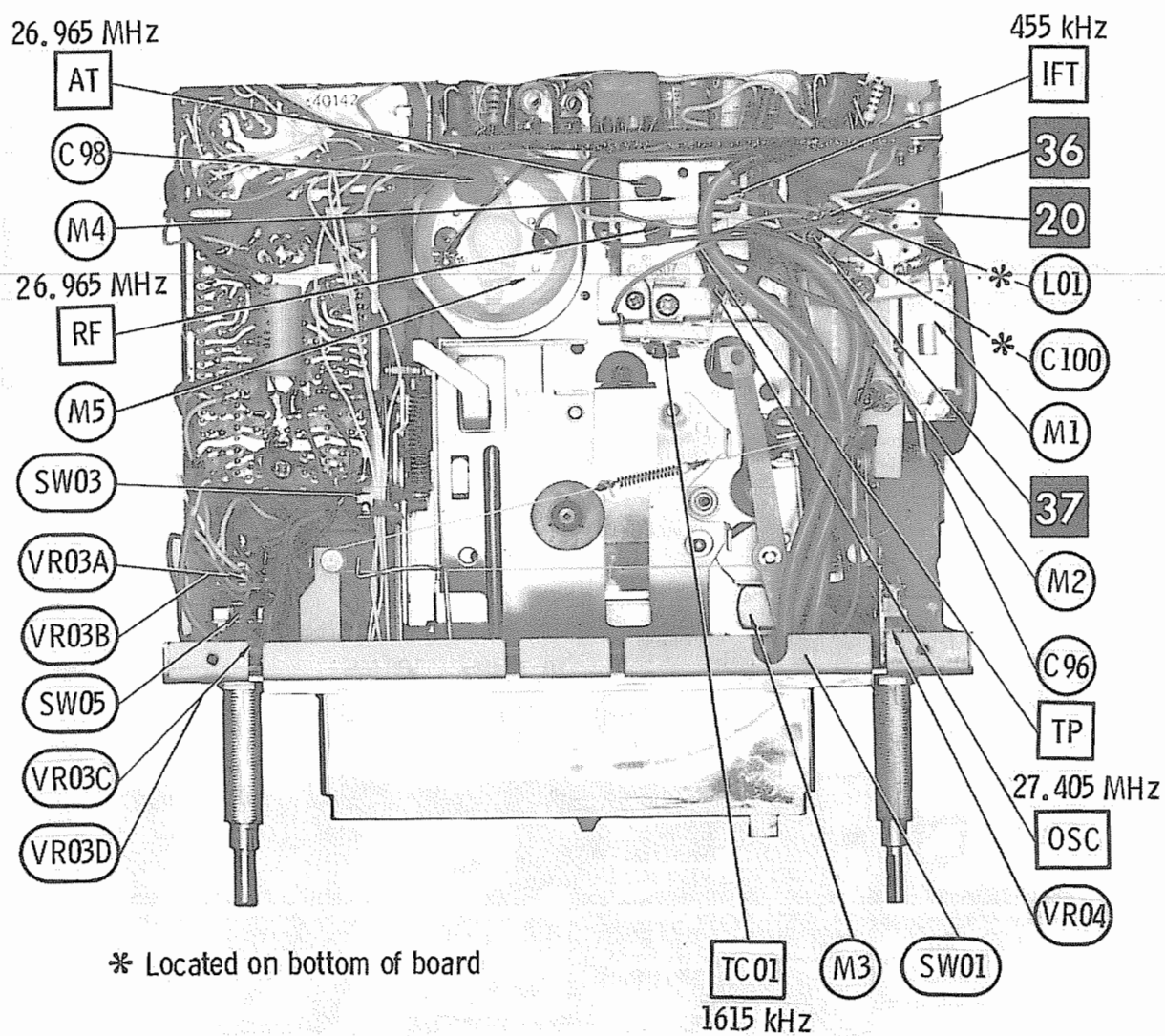
Tune receiver to stereo station.			
GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
	Frequency counter to point C.	VR02	Adjust for 19kHz $\pm 20$ Hz.

Tune receiver for a stereo signal. Adjust balance control for equal channel output. Adjust Separation control VR01 for best separation.



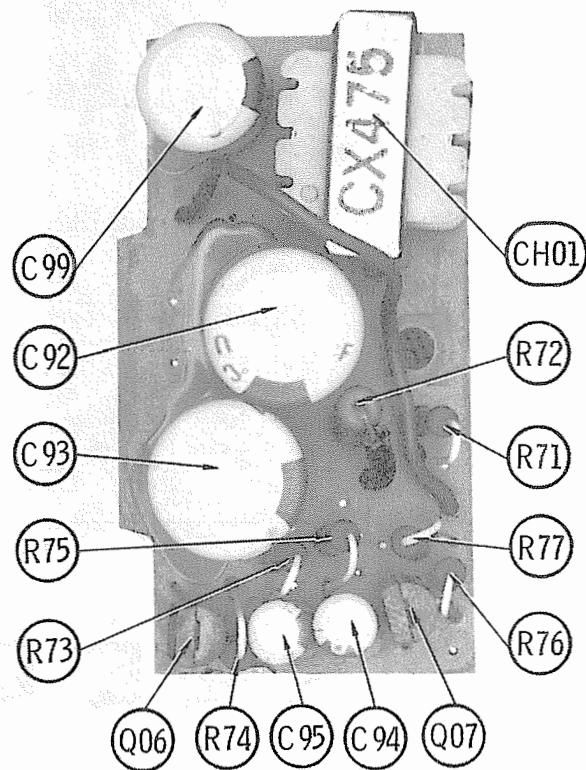
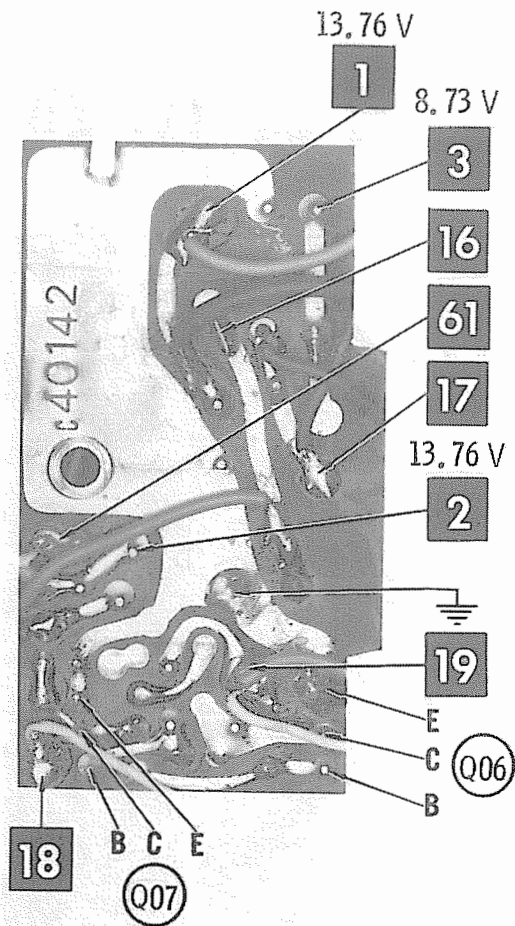
BOMAN ASTROSONIX MODEL BM-1339

CHASSIS-SIDE



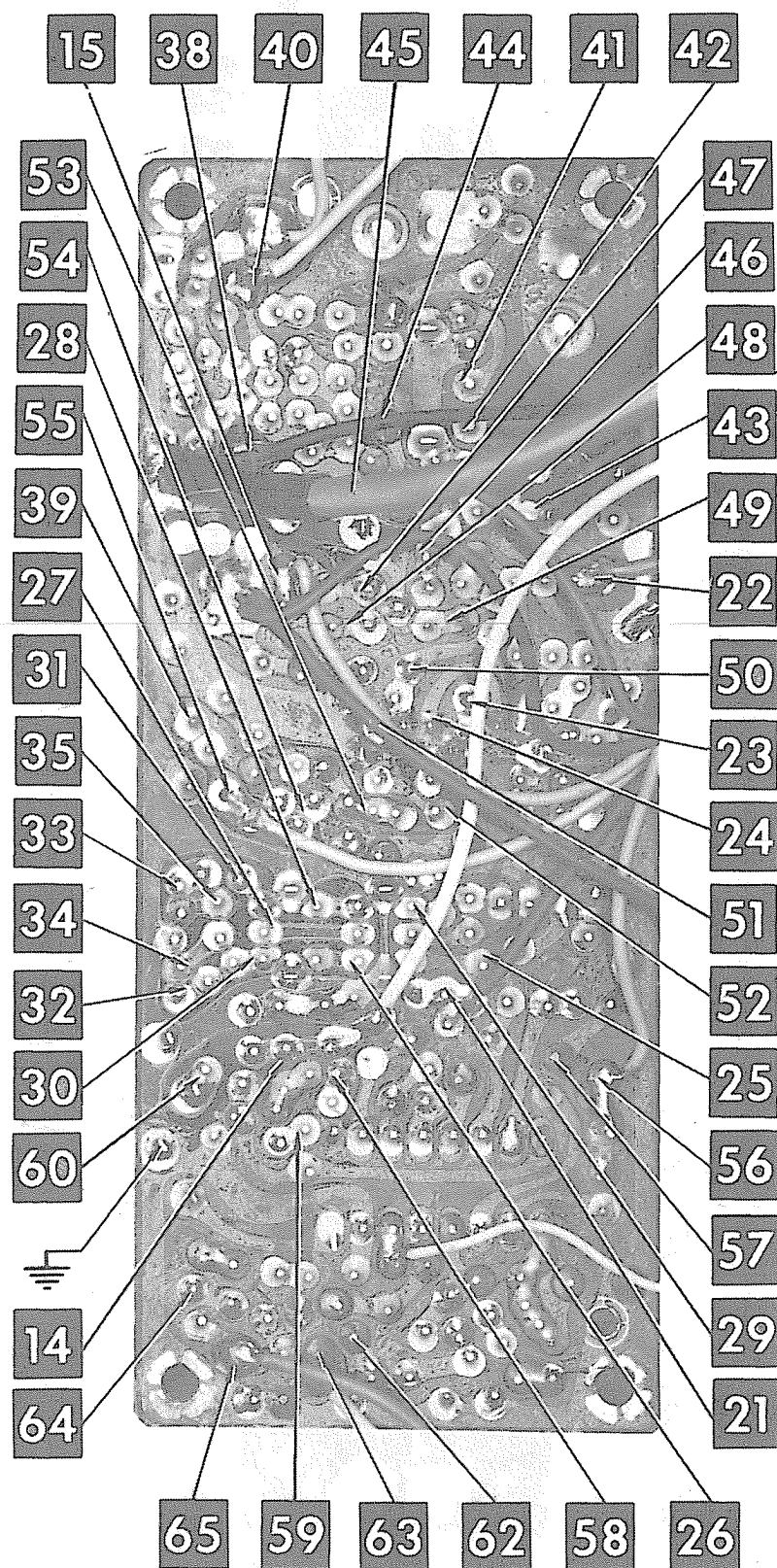
OVERALL-TOP



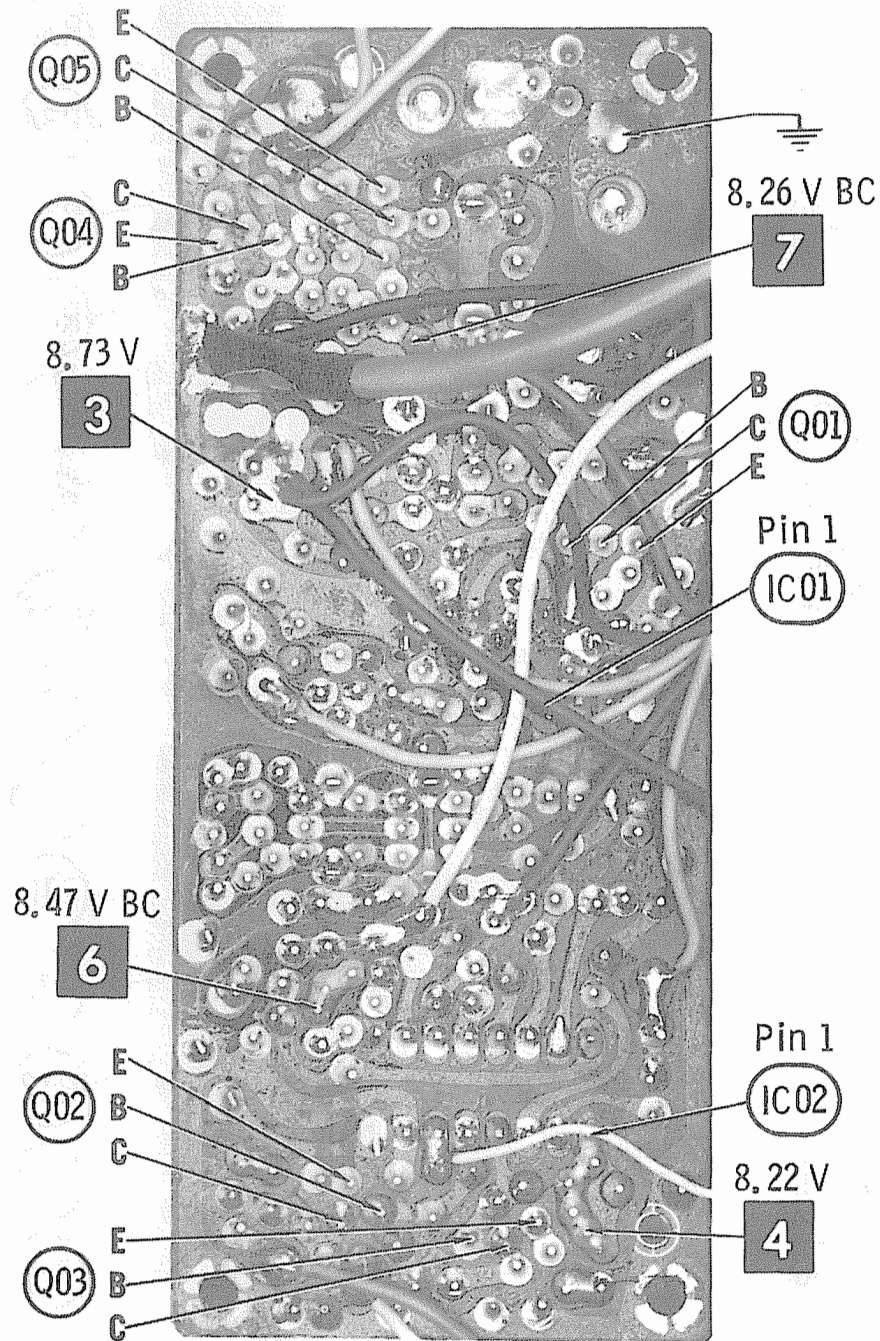


POWER SUPPLY BOARD

BOMAN ASTROSONIX MODEL BM-1339

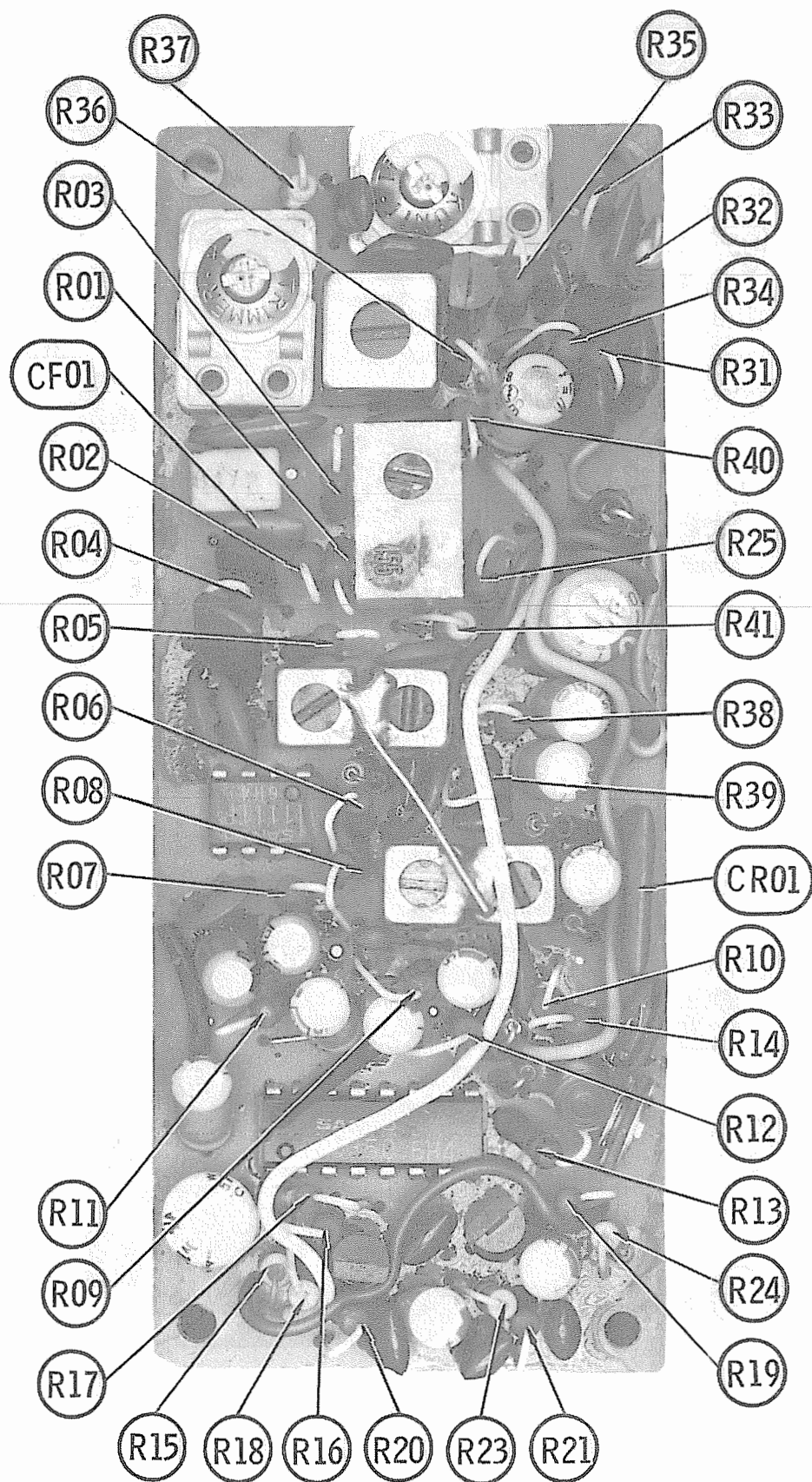


MAIN BOARD



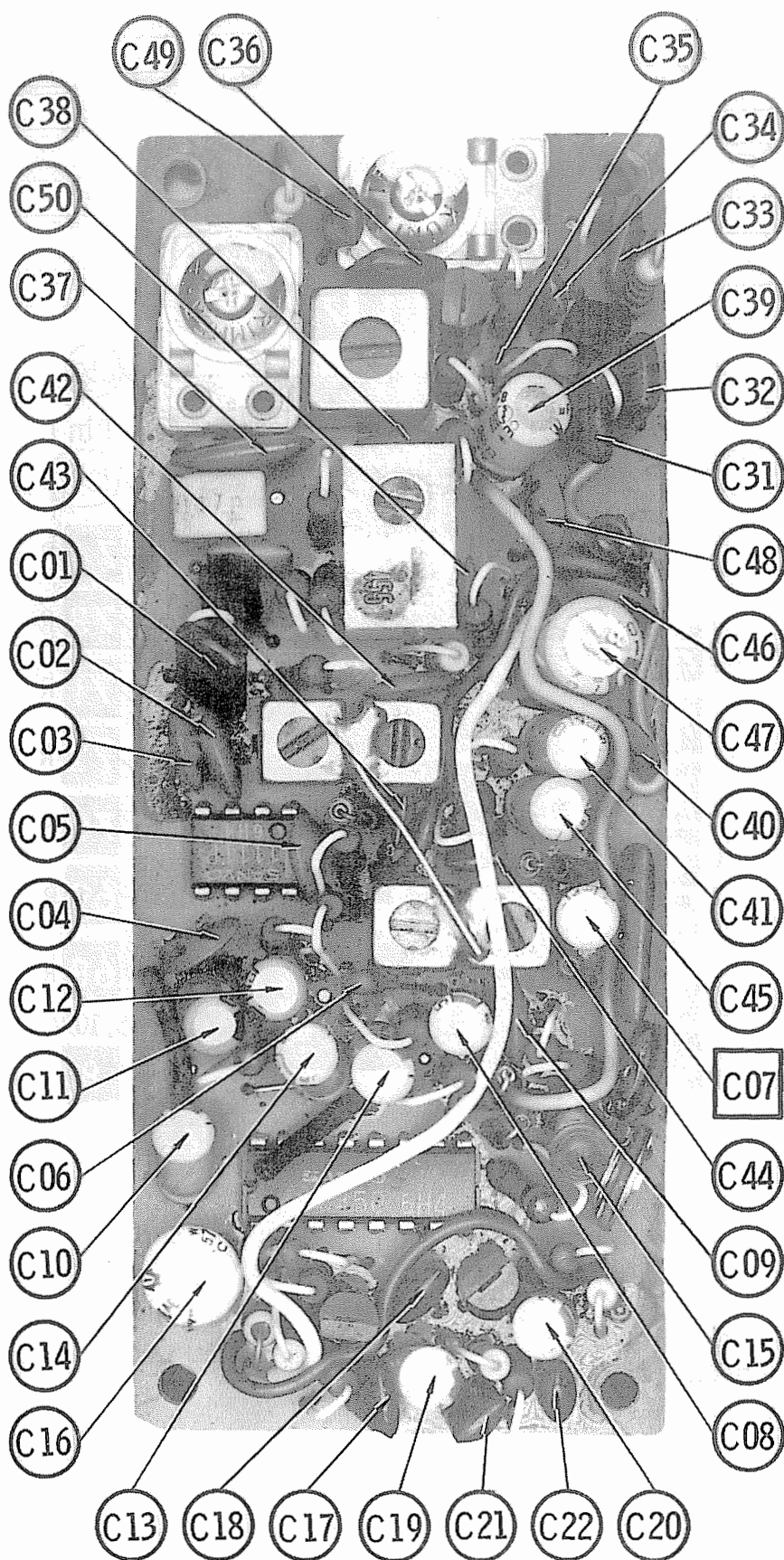
ROMAN ASTROSONIX MODEL BM-1339

MAIN BOARD

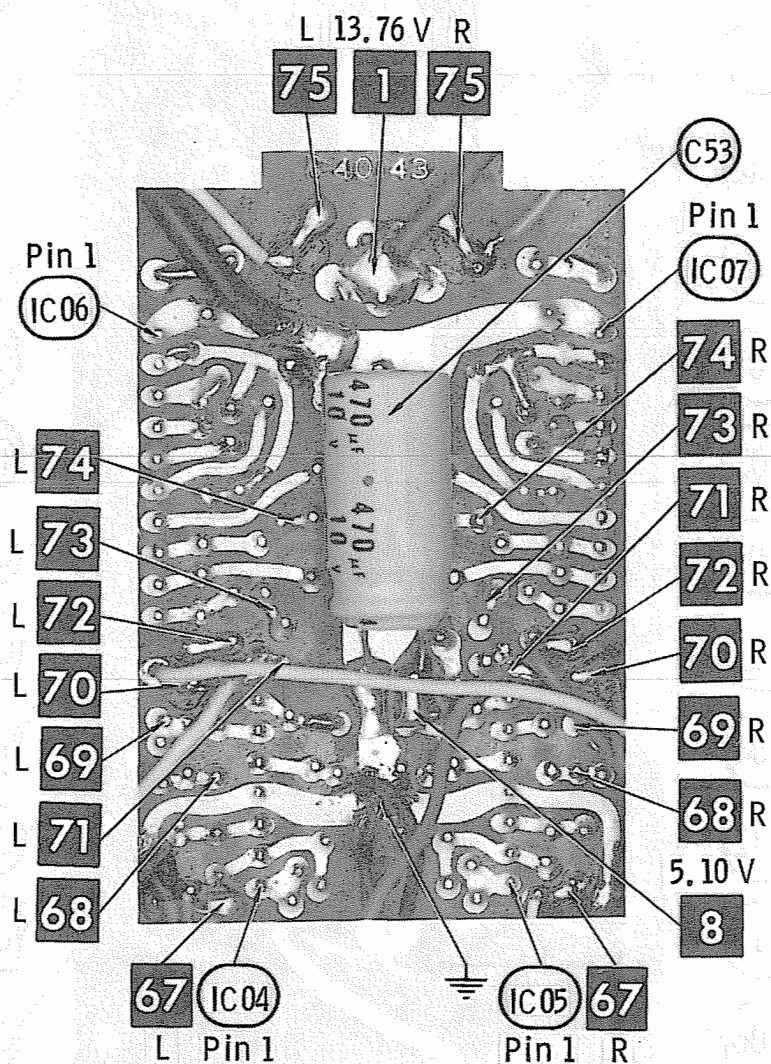


MAIN BOARD





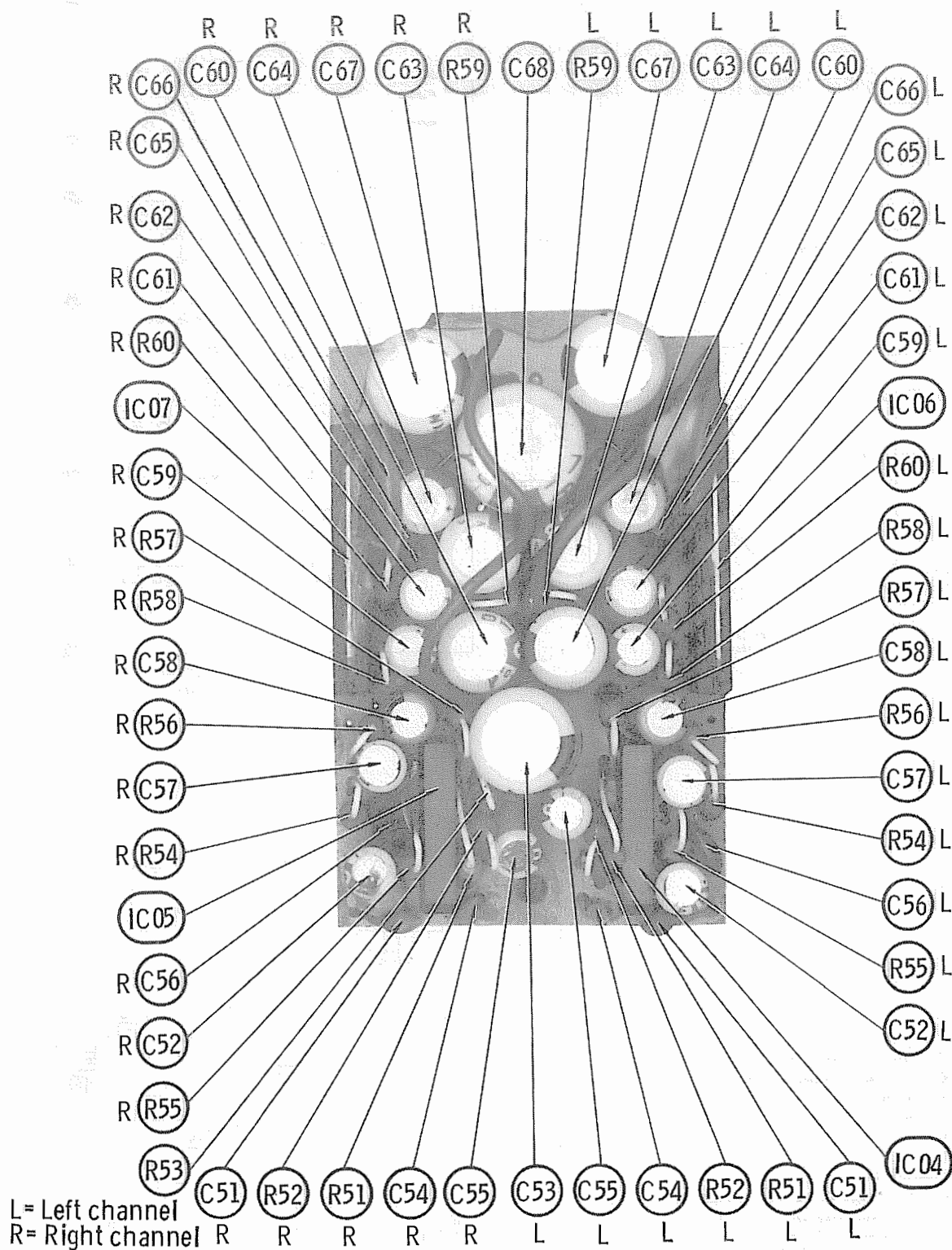
MAIN BOARD



L = Left channel  
R = Right channel

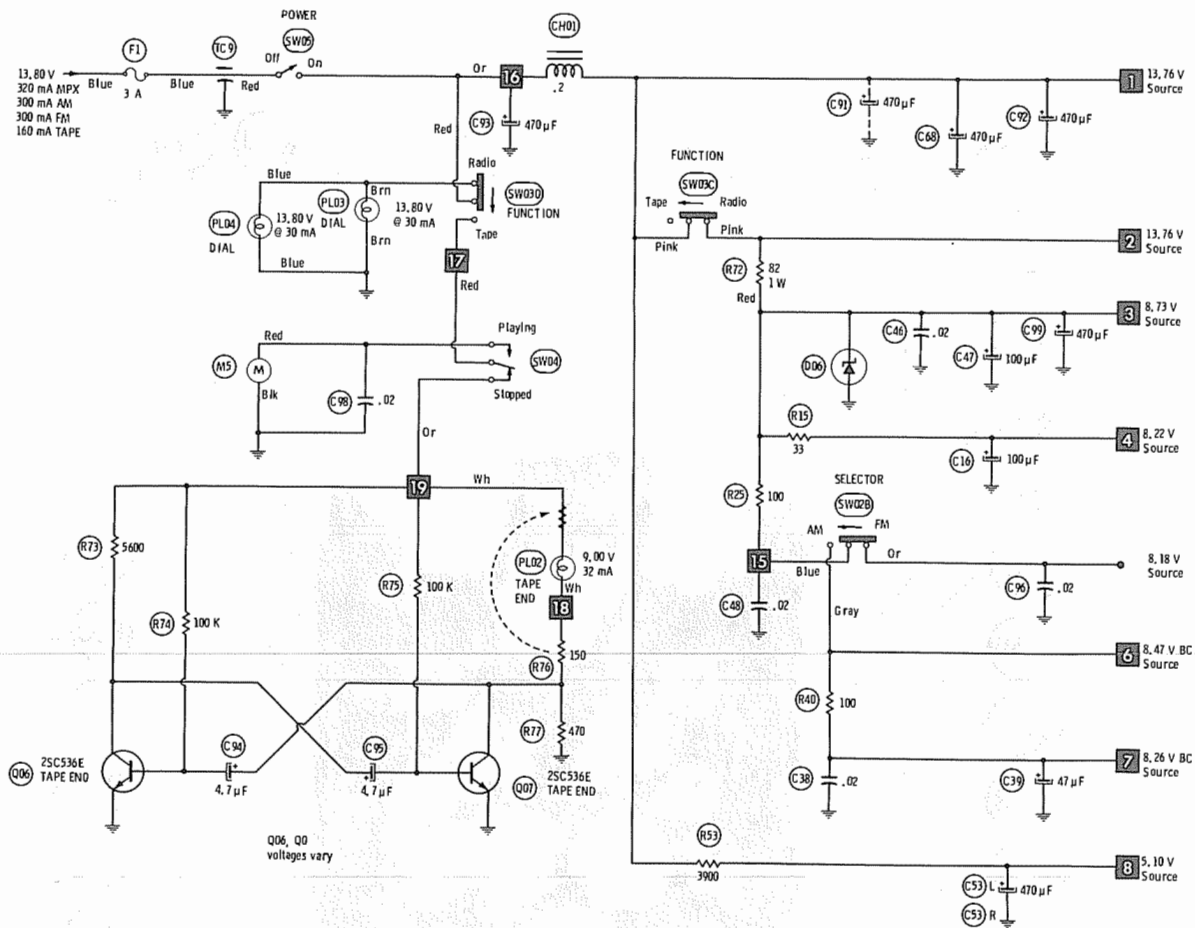
## TAPE/OUTPUT BOARD



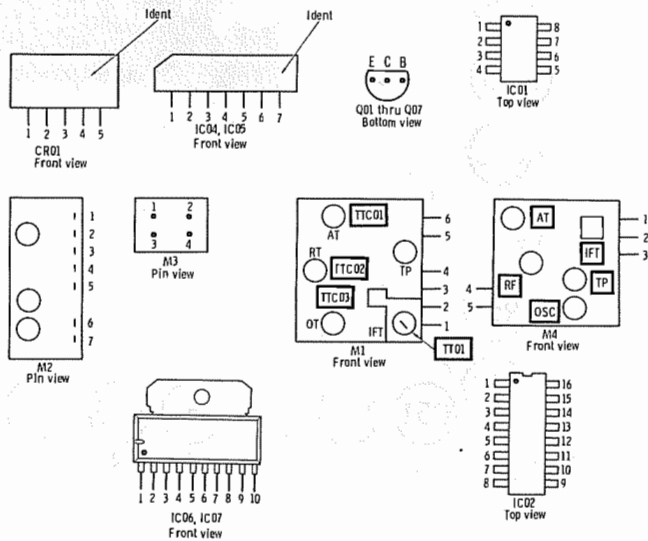









TAPE/OUTPUT BOARD

**NOTE: DEMAGNETIZE HEADS AFTER SERVICING**



## Terminal Guides



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

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 PHOTOFACIT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE®**

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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	MFG. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C01	.022				M192P2239R8	QFT2-127	1FT-S22
C02	.02		UK50-223		MAG5012		
C03	.02		UK50-223		MAG5012		
C04	.02		UK50-223		MAG5012		
C05	.02		UK50-223		MAG5012		
C06	390			CD15FD391J03	SX339	QW1-41	MMA-391
C09	.02		UK50-223		MAG5012		
C15	.0015 50V			CD19FD152J03	SX215		MMA-152
C17	.015 50V 10%				M192P1539R8	QFT2-105	1FT-S15
C18	.015 50V 10%				M192P1539R8	QFT2-105	1FT-S15
C21	.01 50V 10%			WMF1S1	ENF1A110	QFT2-91	1FT-S10
C22	.01 50V 10%			WMF1S1	ENF1A110	QFT2-91	1FT-S10
C31	.01 50V 10%			WMF1S1	ENF1A110	QFT2-91	1FT-S10
C32	.02 50V 10%			DPMS252	PVC212		2PS-S20
C33	150 10%			CD15FD151J03	SX315	QW1-31	MMA-151
C34	.001 50V 10%			DPMS601	ENF1A210	QFT2-1	1FT-D10
C35	.01			CD19FD502J03	SX250		
C36	.022 50V 10%				M192P2239R8	QFT2-127	1FT-S22
C37	200 N330 5%				*		10TCS-T20
C38	.02		UK50-223		MAG5012		
C40	.02		UK50-223		MAG5012		
C42	.02		UK50-223		MAG5012		
C43	.01 50V 10%			WMF1S1	ENF1A110	QFT2-91	1FT-S10
C44	.01 50V 10%			WMF1S1	ENF1A110	QFT2-91	1FT-S10
C46	.02		UK50-223		MAG5012		
C48	.02		UK50-223		MAG5012		
C49	.001			OPMS601	ENF1A210	QFT2-1	1FT-D10
C50	50		DTZ-50		CN0450		10TCC-Q50
C51	560			NP050	SX356		MMA-561
C54	220			CD19FD561J03	SX322	QW1-35	MMA-221
C56	.0068 50V 10%			CD15F0221J03	ENF1A268	QFT2-73	1FT-D68
C62	.0022			WMF1D68	GP222		10TS-D22
C65	56				SX456	QW1-21	MMA-560
C66	.1 16V		UK16-104	CD15ED560J03	MAG1601		HY-650
C96	.02		UK50-223		MAG5012		
C98	.02		UK50-223		MAG5012		
C100	.001		DD-102		GP210		10TS-D10
TC01	60pF						
TC02							
TC03	50pF						
TC7							
TC8							
TC9							

ROMAN ASTROSONIX MODEL BM-1339

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.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFG. PART No.	THORDARSON PART No.	TRIAD PART No.	
CH01	320mA	.2	1.43mH	CX475 (1)			(1) Number on unit.

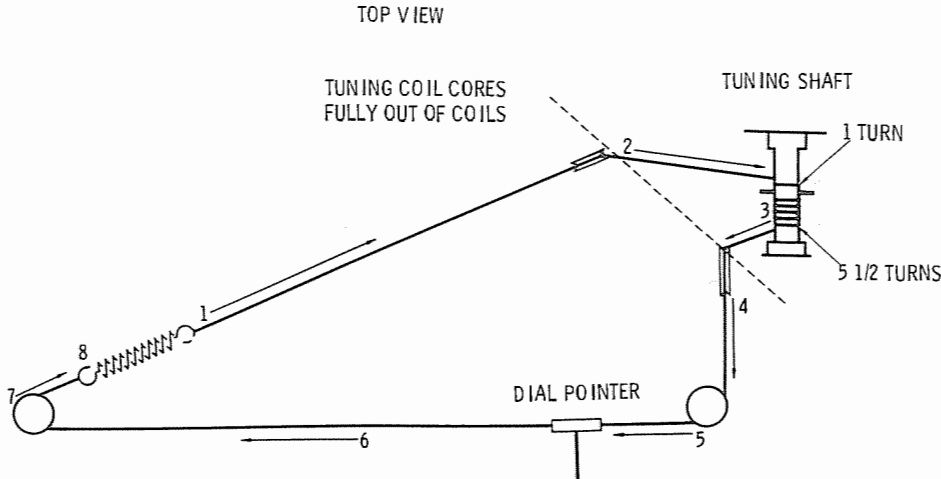
FUSE DEVICES

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			AGC3	HDJ	312003	150145	F63-2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF01	Filter		10.7MHz
M1	Tuner		FM
M2	Tuner		AM
M3	Head		4-Track Stereo Cassette Play
M4	Converter		CB
M5	Motor		Tape Transport (2400rpm @ 13.78V)
SW01	Switch		CB On/Off
SW02	Switch		AM/FM
SW03	Switch		Radio/Tape
SW04	Switch		Playing/Stopped
SW05	Switch		Power On/Off

DIAL CORD STRINGING



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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFG. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR01	Separation	1000	C-X701-1 (5)				X260R102B (2)
VR02	19kHz	5000					
VR03A	Volume-Left	20K					
B	Volume-Right	20K					
C	Tone-Left	5000					
D	Tone-Right	5000	C-X754-2 (5)				
VR04	Power Switch	10K					
	Balance						

(2) Cut off one of the end terminals and bend to fit PC board.  
(5) Number on unit.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L01	Antenna Match				
L02	AM Convergence(600kHz)				
L03	RF Choke (1615kHz)				
T01	FM IF (10.7MHz)				
T02	FM IF (10.7MHz)				
T03	AM IF (455kHz)				
T04	AM IF (455kHz)				
T05	FM RF (10.7MHz)				

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.	MFR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D01			1N60	PTC205	HEPR9135	RE 47	SK3088	RT-253	ECG109	1N60	WEP134	ZEN-430
D02			1N60	PTC206	HEPR9135	RE 47	SK3088	RT-253	ECG109	1N60	WEP134	ZEN-430
D03			GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D04			GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D05			1N60	PTC205	HEPR9135	RE 47	SK3088	RT-253	ECG109	1N60	WEP134	ZEN-430
D06			GE2D-8.2	Z88.28		RE 112		RT-257	ECG5072A	1N4738A	WEP1108	
IC01	1111P		GEIC-69						ECG1002			
	LA1111P		GEIC-69						ECG1002			
IC02	A3350		GEIC-76						ECG1217			
	LA3350		GEIC-76						ECG1217			
IC04	TA7063P		GEIC-94						ECG1103	TA7063P	WEP943	
	TA7360P											
IC05	TA7063P								ECG1103	TA7063P	WEP943	
	TA7360P											
IC06	TA7204P		GEIC-182						ECG1153		WEP948	
	TA7204P		GEIC-182						ECG1153		WEP948	
IC07	25C930E		GE-60*	PTC132*	HEPS0016*	RE 9	SK3122*	RT-308	ECG229*	25C930	WEP956*	ZEN-127
Q01	25C930		GE-60*	PTC132*	HEPS0016*	RE 9	SK3122*	RT-308	ECG229*	25C930	WEP956*	ZEN-127
	25A608E		GE-82*	PTC103*	HEPS0013*	RE 26*	SK3466	RT-103A*	ECG159*		WEP62	121-933
Q02	25A608		GE-82*	PTC103*	HEPS0013*	RE 26*	SK3466	RT-103A*	ECG159*		WEP62	121-933
	25A608E		GE-82*	PTC103*	HEPS0013*	RE 26*	SK3466	RT-103A*	ECG159*		WEP62	121-933
Q03	25A608		GE-82*	PTC103*	HEPS0013*	RE 26*	SK3466	RT-103A*	ECG159*		WEP62	121-933
	25C929E		GE-86	PTC132*	HEPS0016*	RE 28*	SK3039*	RT-108*	ECG229*	25C828	WEP956*	121-29000
Q04	25C929		GE-86	PTC132*	HEPS0016*	RE 28*	SK3039*	RT-108*	ECG229*	25C828	WEP956*	121-29000
	25C929E		GE-86	PTC132*	HEPS0016*	RE 28*	SK3039*	RT-108*	ECG229*	25C828	WEP956*	121-29000
Q05	25C929		GE-86	PTC132*	HEPS0016*	RE 28*	SK3039*	RT-108*	ECG229*	25C828	WEP956*	121-29000
	25C536E		GE-212	PTC121*	HEPS0016*	RE 192	SK3122	RT-107A	ECG199	25C945	WEP536	ZEN-119
Q06	25C536		GE-212	PTC121*	HEPS0016*	RE 192	SK3122	RT-107A	ECG199	25C945	WEP536	ZEN-119
	25C536E		GE-212	PTC121*	HEPS0016*	RE 192	SK3122	RT-107A	ECG199	25C945	WEP536	ZEN-119
Q07	25C536		GE-212	PTC121*	HEPS0016*	RE 192	SK3122	RT-107A	ECG199	25C945	WEP536	ZEN-119

\* Lead configuration may vary from original.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.		
					Q-LINE	GENERAL LINE	
C07	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222	
C08	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C10	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C11	.22 50V		PC1-50	VTT4R7A63	QV1-3	EV-1610	
C12	.22 50V		PC1-50	VTT4R7A63	QV1-3	EV-1610	
C13	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C14	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C16	100 10V		PC100-10	VTT10OE10	QV1-93	EV-1130	
C19	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C20	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C39	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226	
C41	22 10V		PC25-25	VTT22B16	QV1-55	EV-1224	
C45	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C47	100 10V		PC100-10	VTT10OE10	QV1-93	EV-1130	
C52	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C53	470 10V		PC500-16	VTT470K16	QV1-149	EV-1150	
C55	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C57	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222	
C58	.22 50V		PC1-50	VTT4R7A63	QV1-3	EV-1610	
C59	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C60	100 10V		PC100-10	VTT10OE10	QV1-93	EV-1130	
C61	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222	
C63	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226	
C64	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226	
C67	470 10V		PC500-16	VTT470K16	QV1-149	EV-1150	
C68	470 16V		PC500-16	VTT470K16	QV1-151	EV-1250	
C92	470 16V		PC500-16	VTT470K16	QV1-151	EV-1250	
C93	470 16V		PC500-16	VTT470K16	QV1-151	EV-1250	
C94	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C95	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319	
C99	470 10V		PC500-16	VTT470K16	QV1-149	EV-1150	

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	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C01	.022		UK50-223		M192P2239R8	QFT2-127	1FT-S22
C02	.02		UK50-223		MAG5012		
C03	.02		UK50-223		MAG5012		
C04	.02		UK50-223		MAG5012		
C05	.02		UK50-223		MAG5012		
C06	390			CD15FD391J03	SX339	QW1-41	MWA-391
C09	.02		UK50-223		MAG5012		
C15	.0015 50V			CD19FD152J03	SX215		MWC-152
C17	.015 50V 10%				M192P1539R8	QFT2-105	1FT-S15
C18	.015 50V 10%				M192P1539R8	QFT2-105	1FT-S15
C21	.01 50V 10%			WMF1S1	EMF1A110	QFT2-91	1FT-S10
C22	.01 50V 10%			WMF1S1	EMF1A110	QFT2-91	1FT-S10
C31	.01 50V 10%			WMF1S1	EMF1A110	QFT2-91	1FT-S10
C32	.02 50V 10%			DPMS2S2	PVC212		2PS-S20
C33	150 10%			CD15FD151J03	SX315	QW1-31	MWA-151
C34	.001 50V 10%			OPMS6D1	EMF1A210	QFT2-1	1FT-D10
C35	.01			CD19FD502J03	SX250		
C36	.022 50V 10%				M192P2239R8	QFT2-127	1FT-S22
C37	200 N330 5%				*		10TCS-T20
C38	.02		UK50-223		MAG5012		
C40	.02		UK50-223		MAG5012		
C42	.02		UK50-223		MAG5012		
C43	.01 50V 10%			WMF1S1	EMF1A110	QFT2-91	1FT-S10
C44	.01 50V 10%			WMF1S1	EMF1A110	QFT2-91	1FT-S10
C46	.02		UK50-223		MAG5012		
C48	.02		UK50-223		MAG5012		
C49	.001		DTZ-50		OPMS6D1	QFT2-1	1FT-D10
C50	50				NP050		10TCC-Q50
C51	560				CD19FD561J03		MWC-561
C54	220				CD15FD221J03	QW1-35	MWA-221
C55	.0068 50V 10%			WMF1D68	EMF1A268	QFT2-73	1FT-D68
C62	.0022				GP222		10TS-D22
C65	56			CD15ED560J03	SX456	QW1-21	MWA-560
C66	.1 16V		UK16-104		MAG1601		HY-650
C96	.02		UK50-223		MAG5012		
C98	.02		DD-102		MAG5012		
C100	.001				GP210		10TS-D10
TC01	60pF						
TC02							
TC03	50pF						
TC7							
TC8							
TC9							

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR01	Separation	1000					X260R102B (2)
VR02	19kHz	5000					X260R502B (2)
VR03A	Volume-Left	20K	C-X701-1 (5)				
B	Volume-Right	20K					
C	Tone-Left	5000					
D	Tone-Right	5000					
VR04	Power Switch						
	Balance	10K	C-X754-2 (5)				

(2) Cut off one of the end terminals and bend to fit PC board.  
(5) Number on unit.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L01	Antenna Match				
L02	AM Convergence(600kHz)				
L03	RF Choke (1615kHz)				
T01	FM IF (10.7MHz)				
T02	FM IF (10.7MHz)				
T03	AM IF (455kHz)				
T04	AM IF (455kHz)				
T05	FM RF (10.7MHz)				



