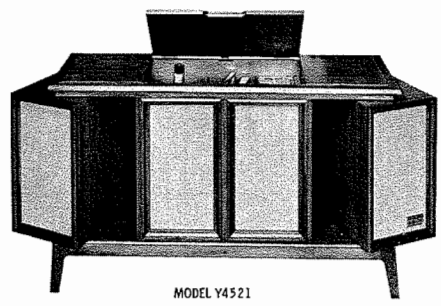


PHOTOFACT® Folder with CIRCUITRACE®

ADMIRAL CHASSIS  
3PA8, 8H2, 8H2A

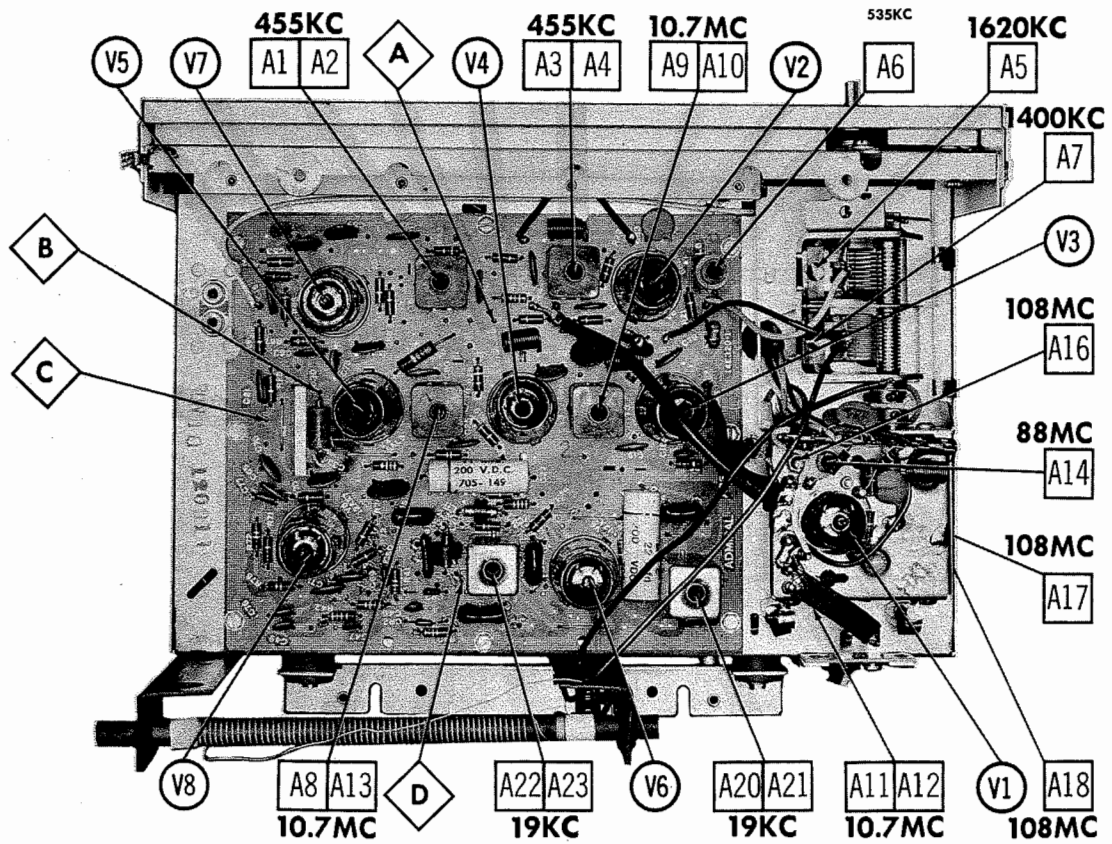


MODEL Y4521

TRADE NAME	Admiral Models Y4501, Y4519, Y4521, Y4525, Y4529 (Tuner Ch. 8H2, Amp. Ch. 3PA8) Y4501A, Y4519A, Y4521A, Y4525A, Y4529A (Tuner Ch. 8H2A, Amp. Ch. 3PA8)	
MANUFACTURER	Admiral Sales Corp., National Service Div., 903 Morrissey Drive, P. O. Box 845, Bloomington, Ill.	
TYPE SET	AC Operated 8 Tube AM-FM Tuner, 3 Tube Stereo Amplifier and 4 Speed Automatic Record Changer	
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles	RATING Amp: 78 Watts, .74 Amp. @ 117 Volts AC Tuner: 260VDC @ 138MA 6.3VAC @ 3A
TUNING RANGE - BROADCAST	535 - 1620KC	
FREQ. MOD.	88 - 108MC	

FOR SERVICE INFORMATION ON RECORD CHANGER RC7FOG-17W - SEE ADMIRAL RC7 SERIES -  
PHOTOFACT SET 529 FOLDER 30

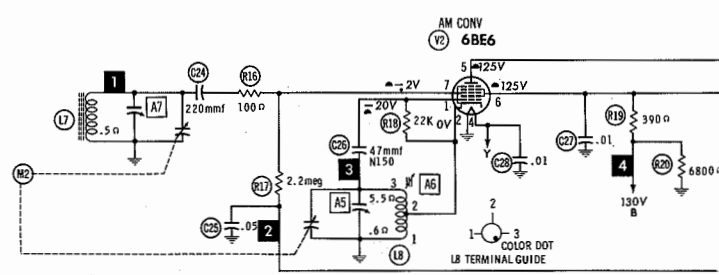
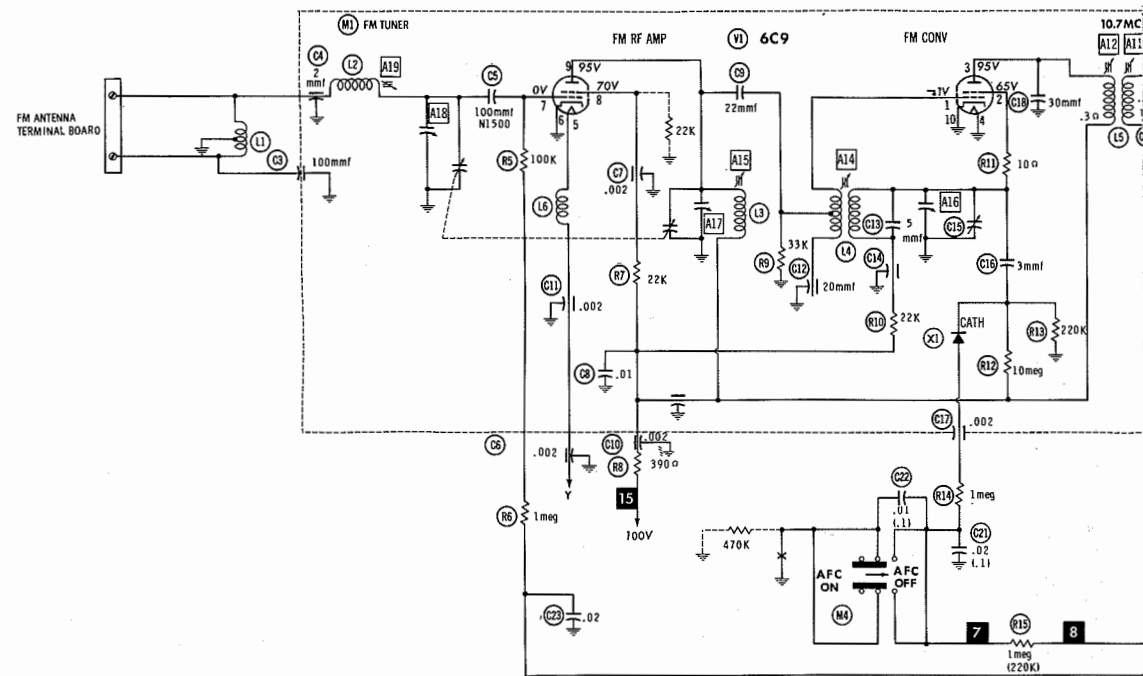
ADMIRAL CHASSIS  
3PA8, 8H2, 8H2A



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. ©1963 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana.

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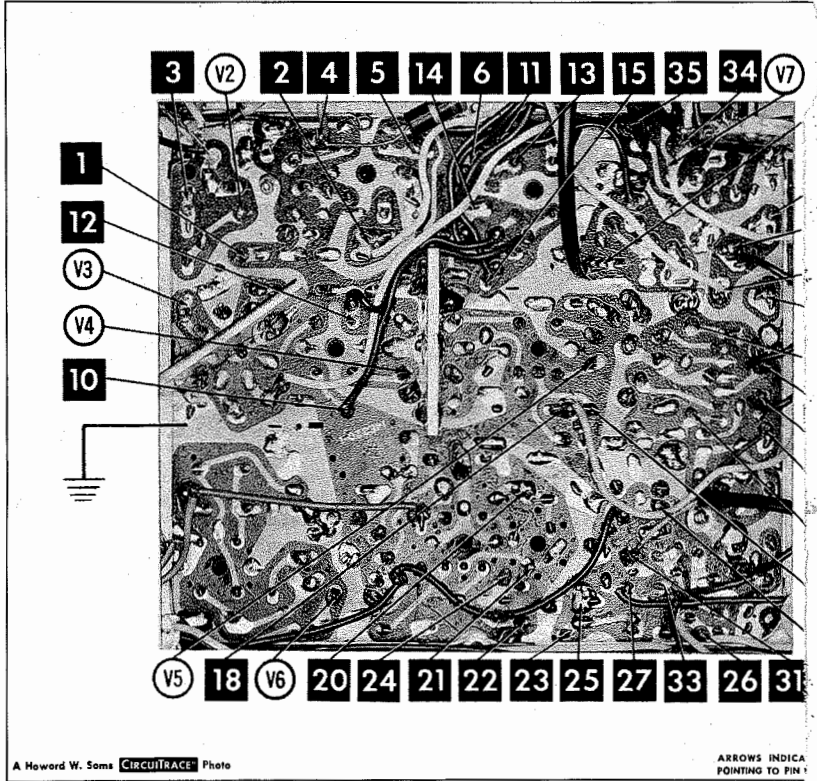


NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

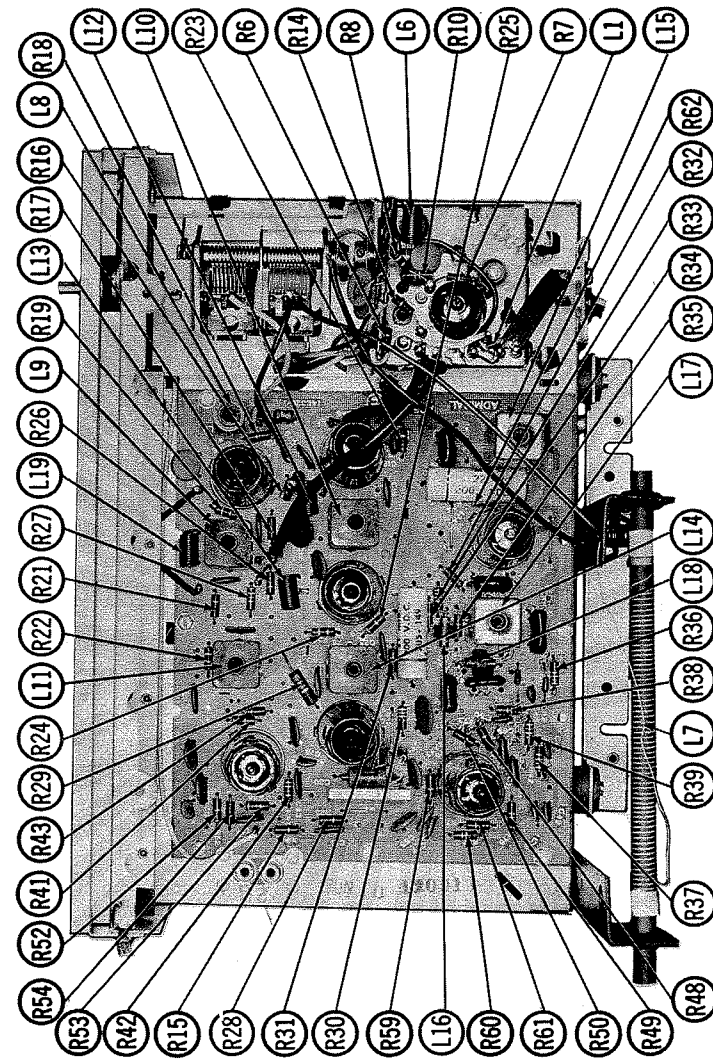
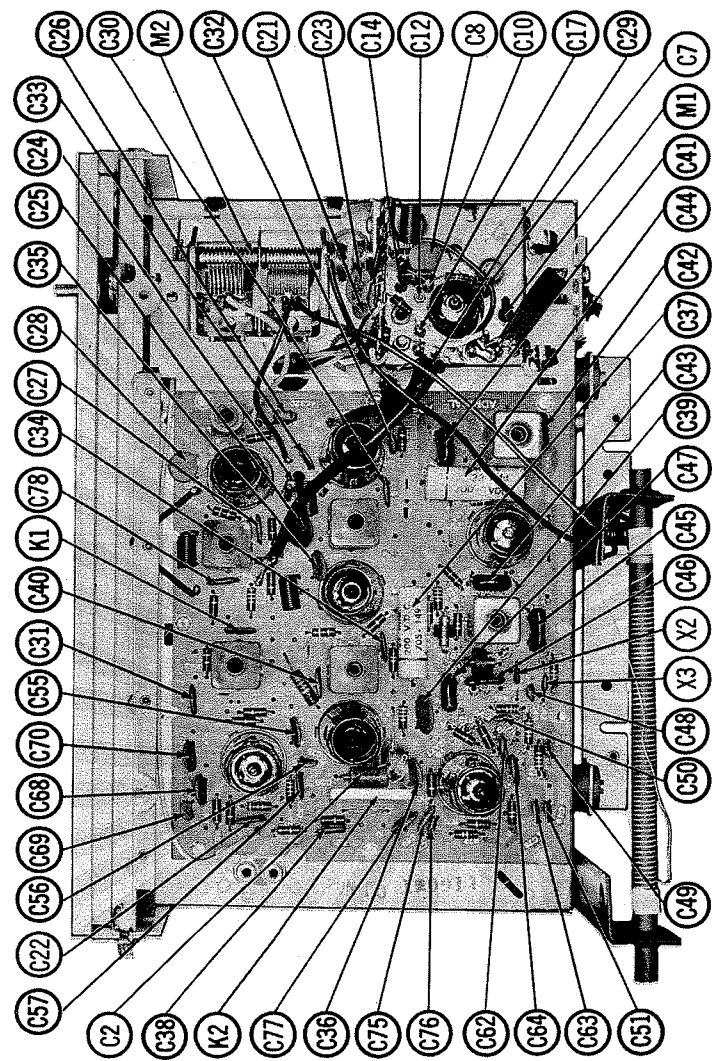
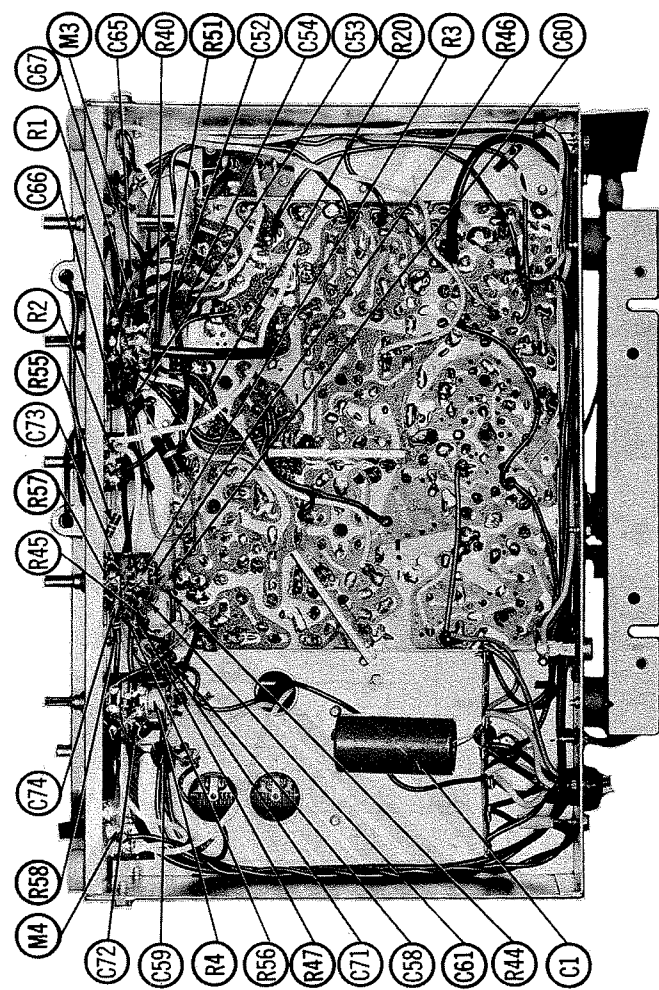
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of  $\pm 15\%$  in voltage and resistance readings.

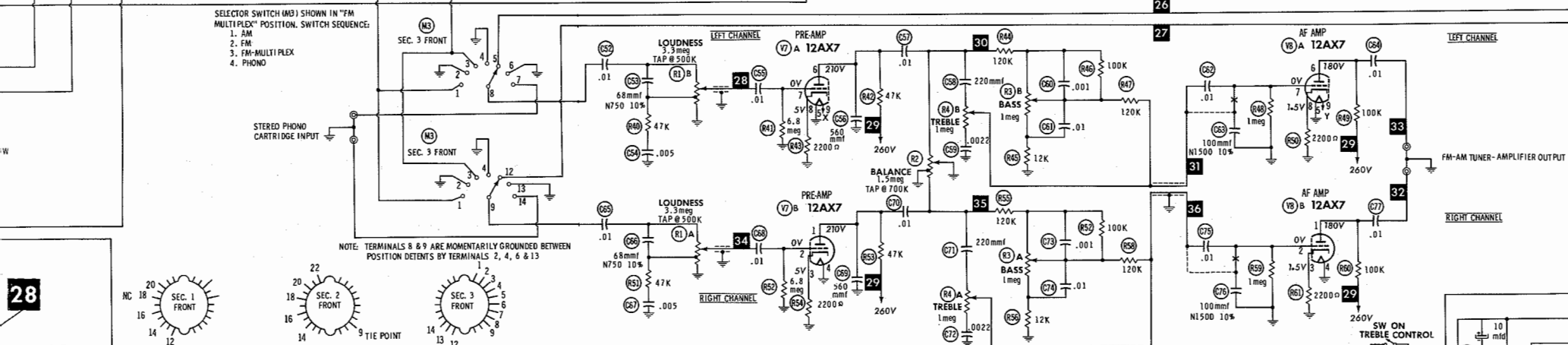
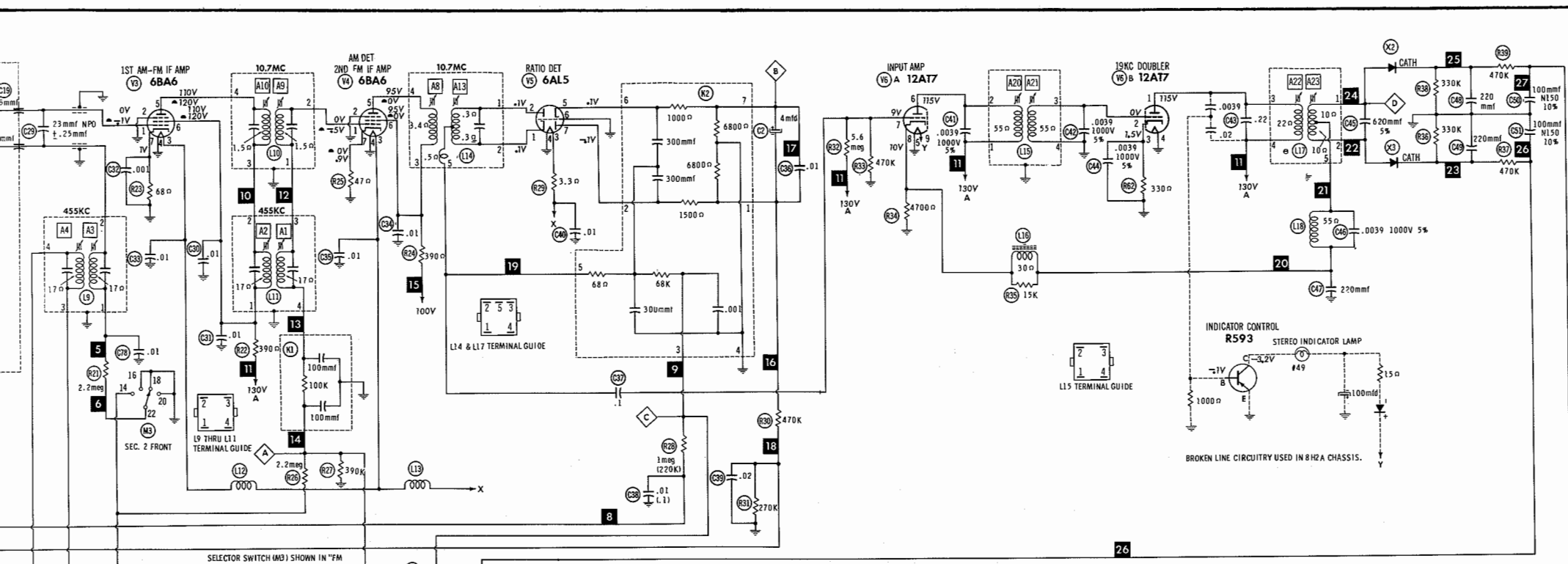
ALL CONTROLS SET FOR NORMAL OPERATION  
A PHOTOFACT STANDARD NOTATION SCHEMATIC  
with CIRCUITRACE  
©Howard W. Sams & Co., Inc. 1963



A Howard W. Sams CIRCUITRACE Photo ARROWS INDICATE POINTING TO PIN 1



TUNER CHASSIS PHOTOS



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ING TUBE LOCATIONS ARE  
UNLESS OTHERWISE INDICATED

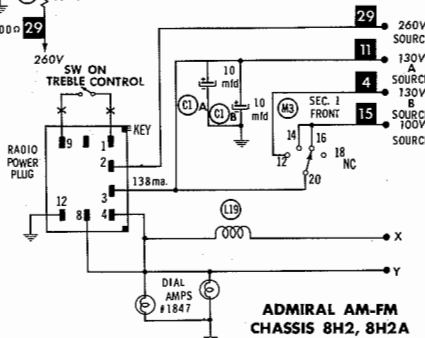
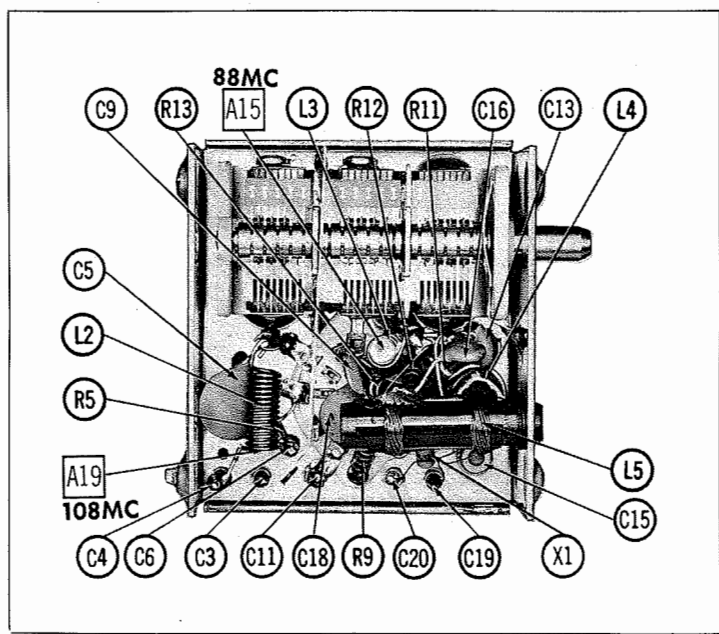
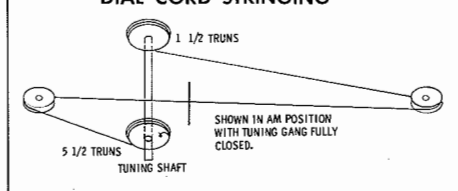
NO TERMINAL NUMBERING GUIDE

# RESISTANCE MEASUREMENTS

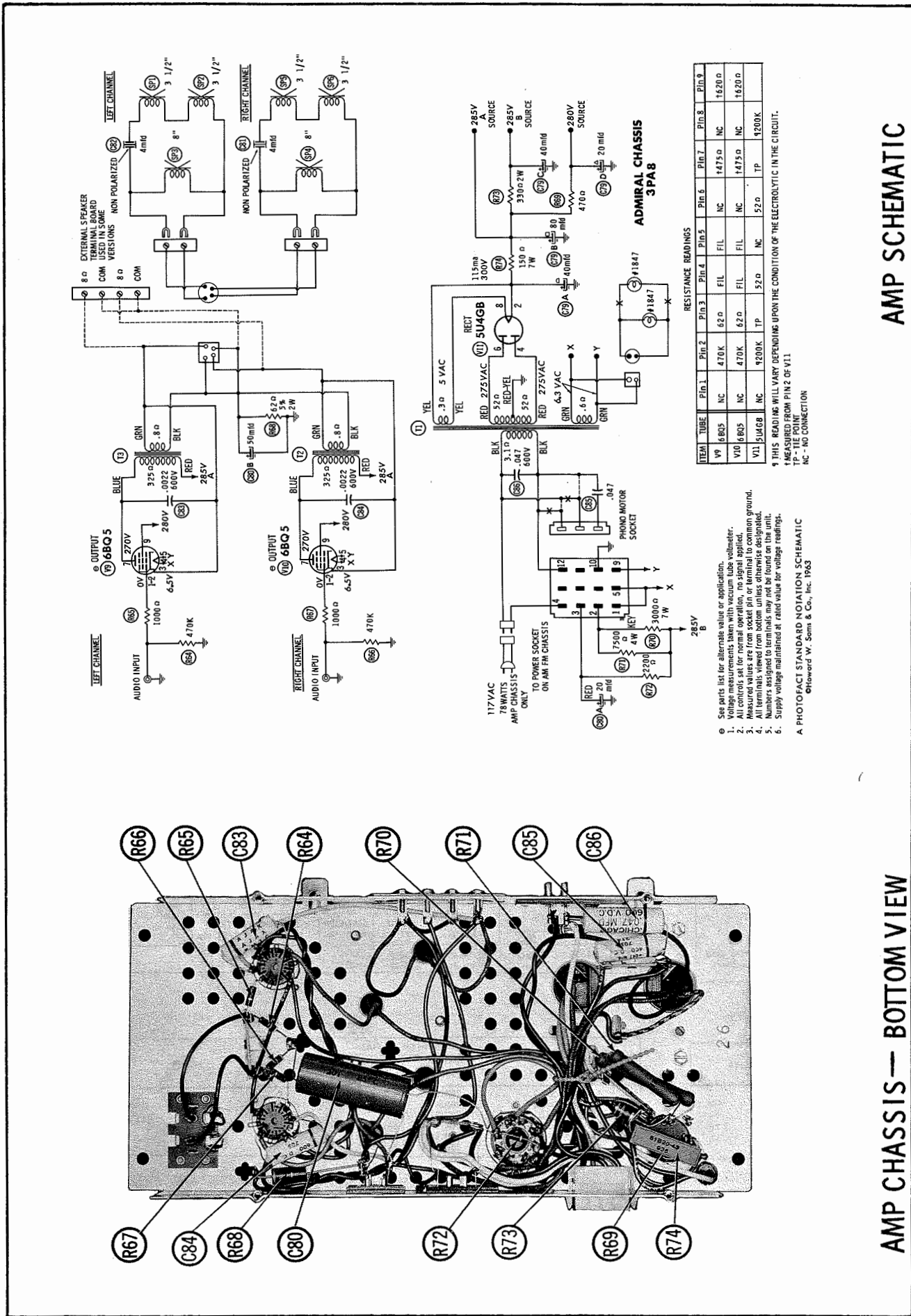
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	PIN 10
V1	6C9	33K	422K	1390Ω	FIL	FIL	0Ω	1.3meg	422K	1390Ω	0Ω
V2	6BE6	22K	.6Ω	FIL	FIL	+1390Ω	+1390Ω	5meg			
V3	6BA6	2.2meg	0Ω	FIL	FIL	1390Ω	1390Ω	68Ω			
V4	6BA6	490K	0Ω	FIL	FIL	1390Ω	1390Ω	47Ω			
V5	6AL5	7meg	7meg	FIL	FIL	7800Ω	0Ω	8300Ω			
V6	12AT7	122Ω	55Ω	330Ω	FIL	FIL	155Ω	470K	4700Ω	FIL	
V7	12AX7	47K	6.8meg	2200Ω	FIL	FIL	47K	6.8meg	2200Ω	FIL	
V8	12AX7	100K	1meg	2200Ω	FIL	FIL	100K	1meg	2200Ω	FIL	

ALL MEASUREMENTS TAKEN IN FM MULTIPLEX POSITION UNLESS OTHERWISE DESIGNATED.  
† MEASURED FROM PIN 3 OF PLUG.  
• MEASURED IN AM POSITION.  
Δ MEASURED FROM PIN 2 OF PLUG.

## DIAL CORD STRINGING







## ALIGNMENT INSTRUCTIONS

### AM ALIGNMENT — SELECTOR IN AM POSITION

Use only enough generator output to provide a usable indication.

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1. High side thru .1 mfd to grid (pin 7) AM Converter. Low side to chassis.	455KC (Unmod.)	(AM) Tuning gang fully open	DC probe to point (A). Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2. Fadion loop of several turns of wire and radiate signal into loop of receiver.	1620KC	"	"	A5	"
3. "	535KC	535KC	"	A6	"
4. "	1400KC	1400KC	"	A7	"

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

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5. High side to ungrounded tube shield placed over FM Converter. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference	DC probe to point (B). Common to chassis.	A8, A9, A10, A11, A12	Adjust for maximum deflection.
6. "	"	"	DC probe to point (C). Common to chassis.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

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

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5. High side to ungrounded tube shield placed over FM Converter. Low side to chassis.	10.7MC (450KC Sweep)	(FM) Point of non-interference	Vert. Amp. to point (B). Low side to chassis.	A8, A9, A10, A11, A12	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
6. "	"	"	Vert. Amp. to point (C). Common to chassis.	A13	Adjust to place marker at the center of crossover lines similar to Fig 2. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

### FM RF ALIGNMENT — SELECTOR IN FM POSITION

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7. Across antenna terminal board with 120Ω resistor in each lead.	88MC (Unmod.)	88MC	DC probe to point (B). Common to chassis.	A14, A15	Adjust for maximum deflection.
8. "	108MC	108MC	"	A16, A17, A18	"
9. "	"	"	"	A19	Adjust for maximum undistorted sound.

### MULTIPLEX ALIGNMENT USING FM STEREO GENERATOR AND AUDIO OSCILLATOR

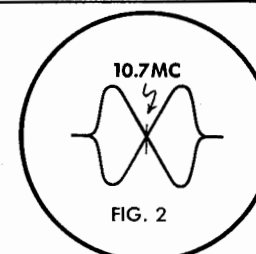
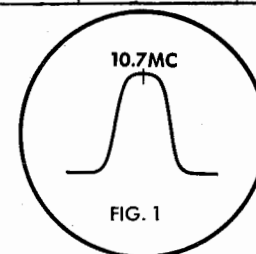
Use only enough generator output to provide a usable indication.

SIGNAL GENERATOR	CONNECT SCOPE	ADJUST	REMARKS
10. 19KC to pin 7 of V6A. Low side to chassis.	Vert. Amp. to pin 2 of V6B. Low side to chassis.	A20, A21	Adjust for maximum deflection. Set sweep on scope to lock in 2 cycles.
11. "	Vert. Amp. to point (D). Low side to chassis.	A22, A23	Adjust for maximum deflection of 4 Cycle Waveform.

### MULTIPLEX ALIGNMENT USING AM SIGNAL

Make sure FM Selector is properly aligned.

SIGNAL GENERATOR	CONNECT SCOPE	ADJUST	REMARKS
10. Tune in strong FM Stereo signal.	Vert. Amp. to pin 2 of V6B. Low side to chassis.	A20, A21	Adjust for maximum deflection. Set sweep on scope to lock in 2 cycles.
11. "	Vert. Amp. to point (D). Low side to chassis.	A22, A23	Adjust for maximum deflection of 4 Cycle Waveform.



## PARTS LIST AND DESCRIPTION

## TUBES

• AMPEREX •		GENERAL ELECTRIC		RCA		RAYTHEON		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V1	FM RF Amp. - FM Conv.	6C9		V5	Ratio Detector	6AL5			
V2	AM Converter	6BE6		V6	Input Amp. - 19KC Doubler	12AT7			
V3	1st AM-FM IF Amp.	6BA6		V7	Preamp.	12AX7			
V4	2nd FM IF Amp. - AM Det.	6BA6		V8	AF Amp.	12AX7			

## POWER RECTIFIERS &amp; SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS			NOTES
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1		1N3182				AFC Diode
X2		93B27-3				RC Detector
X3		93B27-3				LC Detector

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	10	350	6TD457-705	PRS2380	BBRD145	QT2-3	TCD82	TDL2-26
B	10	350						TVA-2722
C2	4	50	6TD4-54	PRS1400	BBR4-50	MT1-3	TT50X4	TE-1302.1

## FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C3	100	#65D10-84	EF-0001	MFT-1000				
C4	2							
C5	100 N1500							
C6	.002							
C7	.002							
C8	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C9	.22		DI-22	DD-220	LIQ22	CCD-220	GP422	10TS-Q22
C10	.002							
C11	.002							
C12	.20							
C13	5	#65D10-123	NPO-DI 5.0	DTZ-4R7	C10V5C	CCD-050	GP550	10TS-V50
C14								
C15								
C16	3		NPO-DI 5.0	DTZ-4R7	C10V5C	CCD-050	GP550	10TS-V50
C17	.002							
C18	.30		DI-30	DD-300	LIQ3	CCD-300	GP430	10TS-Q30
C19	1.5							
C20	1.5							
C21	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C22	.01		BPD-01	DD-102	BYA10S1	CCD-103	B-110	5HK-S10
C23	.02	(.) ↑ (.) ↑	BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C24	.220		SI-220	D6-221	LIOT22	CCD-221	B-322	10TS-T22
C25	.05		BPD-05	DD-503	CUB6S5	6CP-4-503	GP150	5HK-S50
C26	47 N150							
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	.23							
C30	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C31	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C32	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C33	.01	(.) ↑	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C36	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C37	.1 200V		P288N-1	DF-104	CUB2P1	2CP-4-104	GEM-201	2TM-P10
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C41	.0039 1000V 5%							
C42	.0039 1000V 5%							
C43	.0039 1000V 5%	#65D10-84	P288N-22		CUB2P22	2CP-5-224	GEM-2022	2TM-P22
C44	.22 200V		1469-00062	CPR-620J	5R5T62	CM-20B-62LJ		MS-362
C45	.0039 1000V 5%							
C46	.620 5%							
C47	.0039 1000V 5%							
C48	.220		DI-220	DD-221	LIOT22	CCD-221	B-322	10TS-T22
C49	.220		DI-220	DD-221	LIOT22	CCD-221	B-322	10TS-T22
C50	100 N150 10%							
C51	100 N150 10%							
C52	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C53	.68 N750 10%	#65D10-84	N750-DI 68	DD-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C54	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C55	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C56	.560		DI-560	DD-561	LIOT56	CCD-561	B-356	10TS-T56
C57	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C58	.220		DI-220	D6-221	LIOT22	CCD-221	B-322	10TS-T22
C59	.0022		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C60	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C61	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C62	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C63	100 N1500 10%	#65D10-84	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C64	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C65	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C66	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

## FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C66	.68 N750 10%	#65D10-84	N750-DI 68	DD-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C67	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C68	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C69	.560		DI-560	DD-561	LIOT56	CCD-561	B-356	10TS-T56
C70	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C71	.220		DI-220	D6-221	LIOT22	CCD-221	B-322	10TS-T22
C72	.0022		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C73	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C74	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C75	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C76	100 N1500 10%	#65D10-84	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C77	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C78	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C79	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

# Admiral Part Number  
\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

## CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA	Loudness, Right Channel	3.3meg, 500K Tap	75D46-34				
B	Loudness, Left Channel	3.3meg, 500K Tap					
R2	Balance	1.5meg, 700K Tap	75D1-140	ABT-78, AK-33, or (F1-2meg, SFS212)			RU16T85, SL-38, SD3500
R3A	Bass, Right Channel	1meg	75D46-37	F1-1meg, R2-1meg, TFS212	AD47-1meg-Z, RS-3/16		FB16A, RU16A, SL-45
B	Bass, Left Channel	1meg					
R4A	Treble, Right Chan.	1meg	75D46-38	F2-1meg, R2-1meg, TFS212, KR-1	AD47-1meg-Z, RS-3/16, SWE-12		FB16A, RU16A, SL-45, US41
B	Treble, Left Channel	1meg					

## RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R20	6800Ω 3W		3G-6800						

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ADMIRAL PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	FM Ant.						
L2	TV Trap						
L3	FM RF						
L4	FM Osc.						
L5	1st FM IF						
L6	Fl. Choke (1.5uh)						
L7	Loopstick	69B229-2	BC-418	4804	RTC-8516	T856	
L8	AM Osc.	69C243-4			RTC-8915	T532	
L9	1st AM IF	72D227-2	BC-356	13-PC1	RTC-8641	T614	
L10	2nd FM IF	72D225-3	FM-256	1463-PC	RTC-9046	T654	
L11	2nd AM IF	72D227-2	BC-357	13-PC2	RTC-8642	T615	
L12	Fl. Choke (1.5uh)		BC-562	4604	RTC-8516	T856	
L13	Fl. Choke (1.5uh)		BC-562	4604	RTC-8516	T856	
L14	Ratio Detector	72D196-5	FM-257	1465-PC	RTC-9053	T659	
L15	19KC Interstage	69C274-2					
L16	RF Choke (4.5MH)	73B8-14	BC-552	70F473A1	RTC-9167	T881	
L17	38KC Doubler	72C237-4					
L18	RF Choke (10MH)	73B8-12	BC-553	70F102A1	RTC-8534	T682	
L19	Fl. Choke (1.5uh)		BC-562	4604	RTC-8516	T856	

## COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ADMIRAL PART No.	REPLACEMENT DATA
K1	Diode RF Filter	100mmf, 100mmf, 100K	63A3-2	Aerovox PA-655 Centralab PC-326 Sprague D-4
K2	Ratio Detector Network	300mmf, 300mmf, 300mmf, .001mf, 68K, 68Ω, 1500Ω, 6800Ω, 6800Ω, 1000Ω	63D6-25	Centralab PC-342 Sprague C-12

## MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M1	FM Tuner	53D4-1	
M2	Tuning Cap AM	68C91-1	
M3	Switch	77B129-1	Complete Assembly
M4	Switch	77C1-51	2 Gang (Ant. 355.4mmf - Osc. 104.7mmf) Function AFC

## AMP PARTS LIST AND DESCRIPTION

## TUBES

• AMPEREX •		GENERAL ELECTRIC		RCA		RAYTHEON		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V9	Output	6BQ5 (EL84)*		V11	Rectifier	5U4GB			
V10	Output	6BQ5 (EL84)*							

\* Alternate

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING	
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