

SAMS PHOTOFACT[®] AUTO RADIO SERIES



AR-28
28
JAN. 1965



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

\$3.25
\$4.10 IN CANADA
Cat. No. AR-28

SAMS PHOTOFAC[®] AUTO RADIO SERIES

VOLUME

28

by the *Howard W. Sams* ENGINEERING STAFF

STU TYSON TV
WEST BAY SHOPPING CENTER
PH. 946-3880 - TRAVERSE CITY, MICH.



HOWARD W. SAMS & CO., INC.
INDIANAPOLIS 6, INDIANA

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PHOTOFACT®
AUTO RADIO SERIES
VOLUME 28

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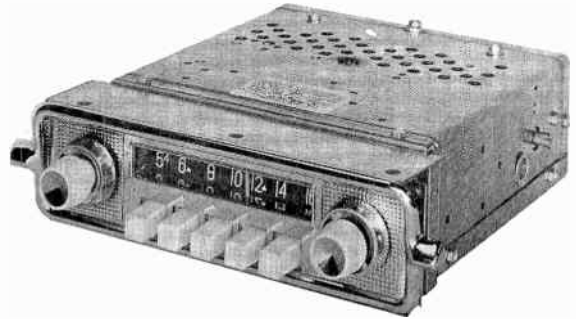
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PHOTOFACT[®]

TRADE NAME : Allstate Model 833.50930
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 6 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : 1.2 Amp. @ 12.6 Volts DC
 TUNING RANGE : BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

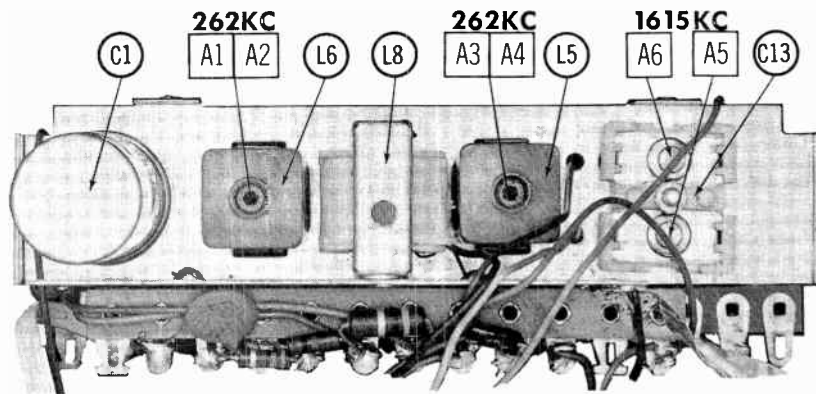
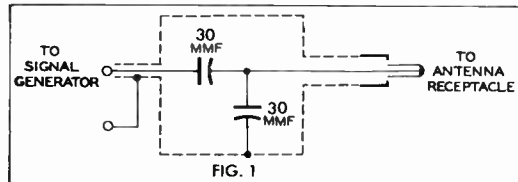
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	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1000KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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

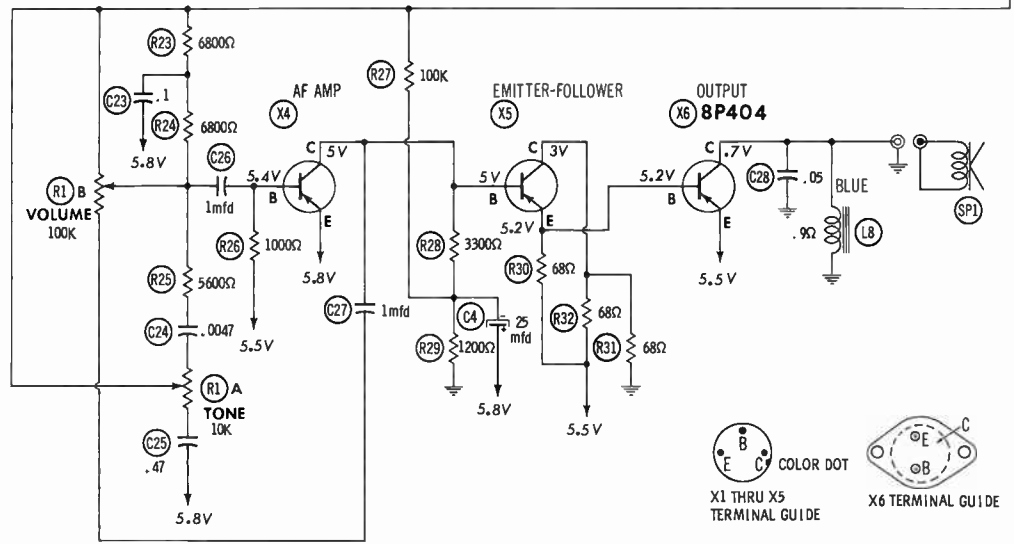
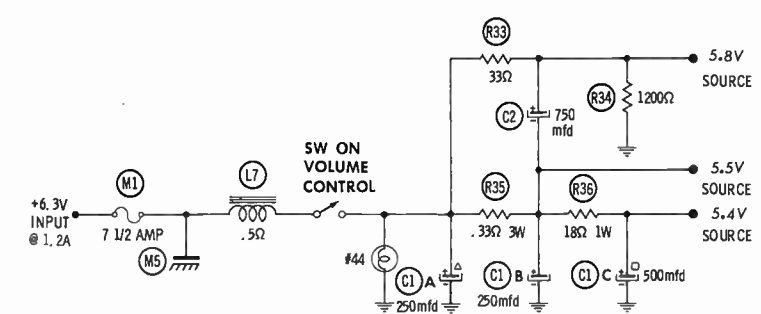
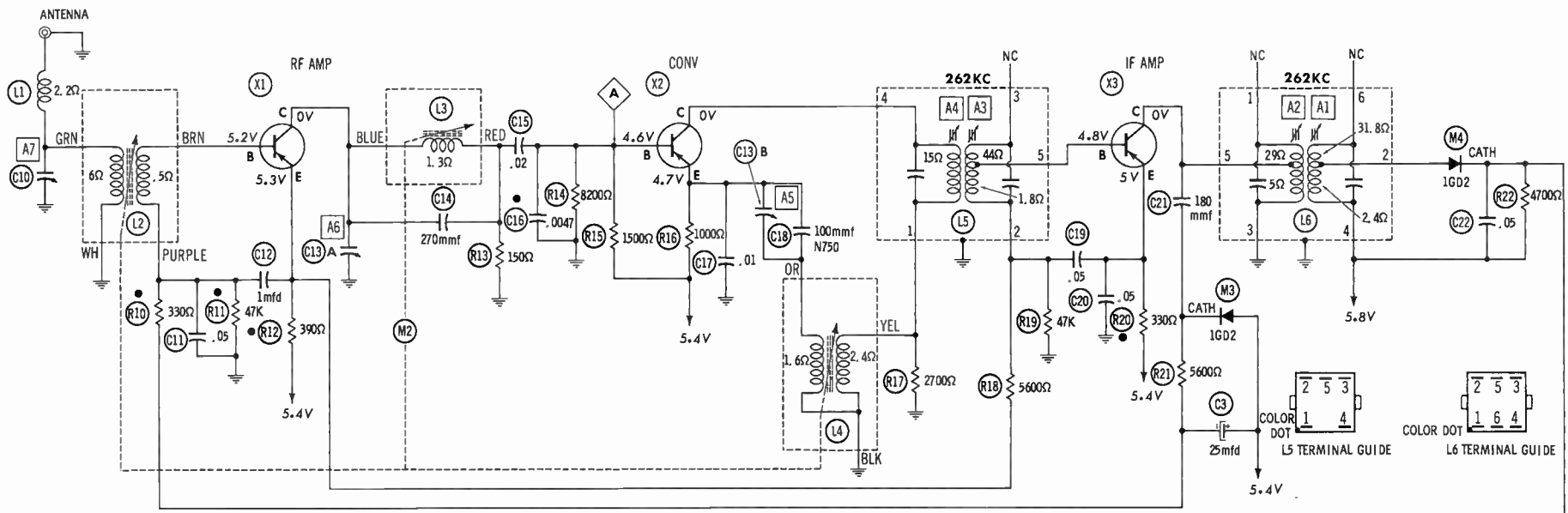


ALLSTATE MODEL 833.50930

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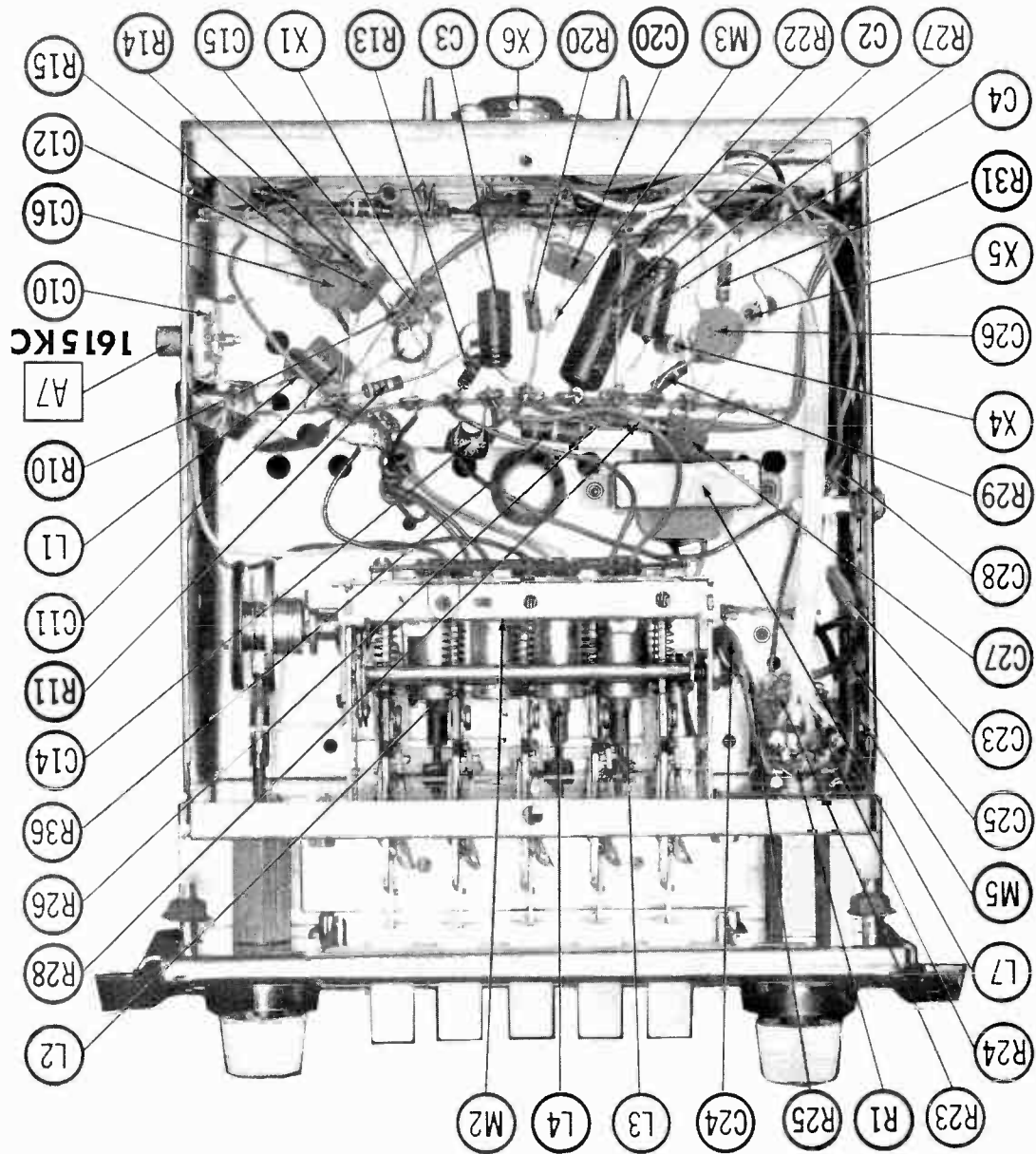
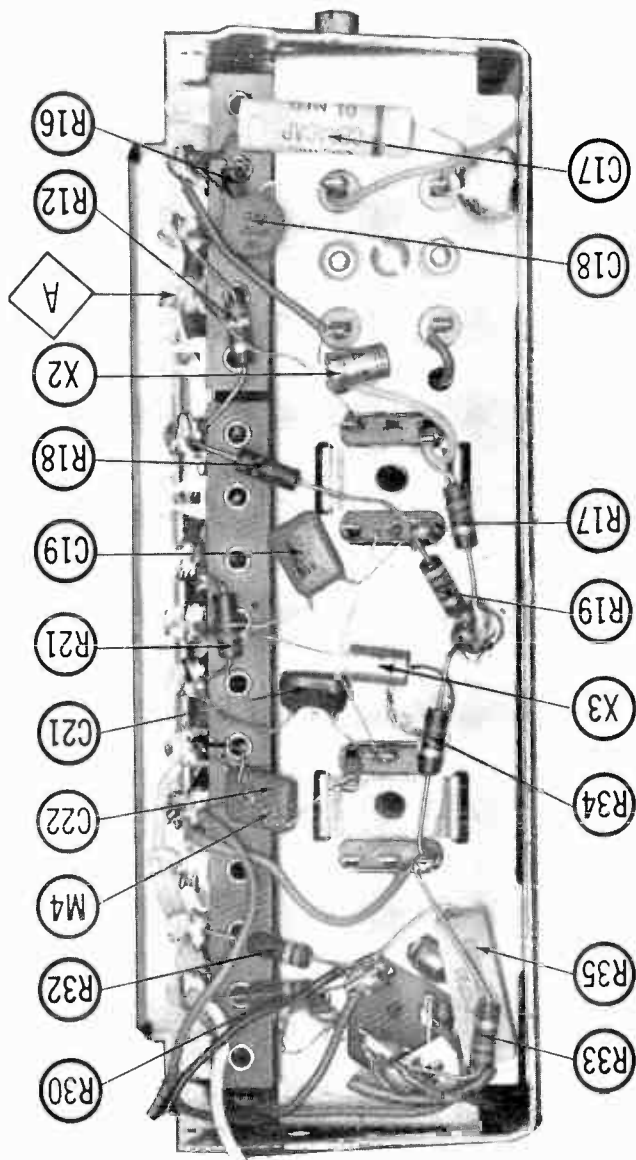
World Radio History



- NOMINAL VALUE MAY VARY
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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ALLSTATE MODEL 833.50930



PARTS LIST 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 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-80 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-81 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-82 (2N641)	IF Amp.	DS-25	GE-1	2N1636	PNP
X4	6-53 (2N591)	AF Amp.	DS-26	GE-2	2N591	PNP
X5	6-53 (2N591)	Emitter Follower	DS-26	GE-2	2N591	PNP
X6	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Allstate PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲ 250	15	20-328	PWH3-00-94	CCOO12	XC3-48.1		PWP-300.4A	PCL-3028.6
B	250	15							
C	■ 500	15	20-757-3	PRS1130	BR1000-6	QT1-32	BL2211	PETA190	TVAS-1097*
C2	750	3							
C3	25	15							
C4	25	15							

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	.05 50V	#28-800-2L	TTD-05	CK-503	H5	LA10T27-C4	CCD-271	GP327	5GA-T27
C11									
C12	1mfd	#28A1332	TTD-05	CK-503	H5	LA10T27-C4	CCD-203	B-247	5HK-D47
C13A									
B	270								
C14	.02 50V								
C15	.0047								
C16	.01 200V								
C17	100 N750								
C18	.05 50V								
C19	.05 50V								
C20	.05 50V								
C21	180								
C22	.05 50V								
C23	.1 16V								
C24	.0047								
C25	.47 3V								
C26	1mfd 3V								
C27	1mfd 3V								
C28	.05 50V								

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Allstate PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone Volume & Switch	10K	80A1977	F1-10K, R1-100K, FFS111, RFS202, KR-4, AK-26	P-10K-S, R-100K-S, CP-110, FR-202, SWE-13, XB-2	† QJ-1644A	■ UE4458S
B		100K					

† "CONCENTRIKIT" Equivalent: K-8 Kit with Base elements and shafts: B11-118, P17-118 (Panel)
"SNAPTROL" Equivalent: BU8*, CF9, CR8, SF13, SR13, GC B11-128, R1-130 (Rear)
(*Cut to required length) S8* (Bushing)
76-1 (Switch)

■ "STA-LOC" Equivalent: FF14L, RU15L, OS1687, IS2125, US41

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh) Ant. RF Osc. Input IF Output IF	14-6.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2							
L3							
L4		14-274	BC-690	6570	BC-691	8571	
L5							
L6							

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000-)	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	1.2A	.5Ω	10MH	75A1269	C-4095	TC-2	TR-155	TY-17XT	

CHOKE (AUDIO OUTPUT)

ITEM No.	INDUCTANCE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	20MH	75A2043					

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA							
			Allstate PART No.		LITTELFUSE PART No.		BUSS PART No.			
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER		
M1	SFE	7 1/2		12A2079		30707.5		15507.5	SFE 7 1/2	HME

MISCELLANEOUS

ITEM No.	PART NAME	Allstate PART No.	NOTES
M2	Tuner Tuner	78B2406	Push Button Manual
M3	AVC	75A2512	1GD2/1N295
M4	AF Det.		1GD2/1N295
M5	Spark Plate	43-215	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA	
		Allstate PART No.	QUAM PART No.
SP1	6 1/2" PM 8Ω	73A1982	6A2128

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Knob - Tuning, Volume	47-50	Knob - Dummy	48A1063-1
Knob - Tone	48A1063	Push Button	55A1179



PHOTOFACT[®]

TRADE NAME : Allstate Models 833. 50931, 833. 624211
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 6 Transistor AM Receiver
POWER SUPPLY : 6 Volt Storage Battery
RATING : 1 Amp. @ 6.3 Volts DC

TUNING RANGE : BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

A1 thru A4
A5, A6, A7

GENERAL CEMENT: 8606, 8606L, 8869
 GENERAL CEMENT: 8290, 8868, 9087

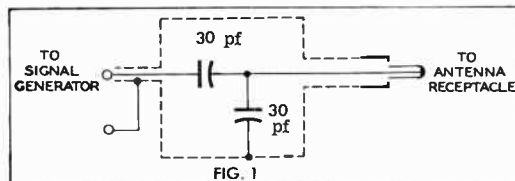
WALSCO: 2543, 2544, 2588
 WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mf to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

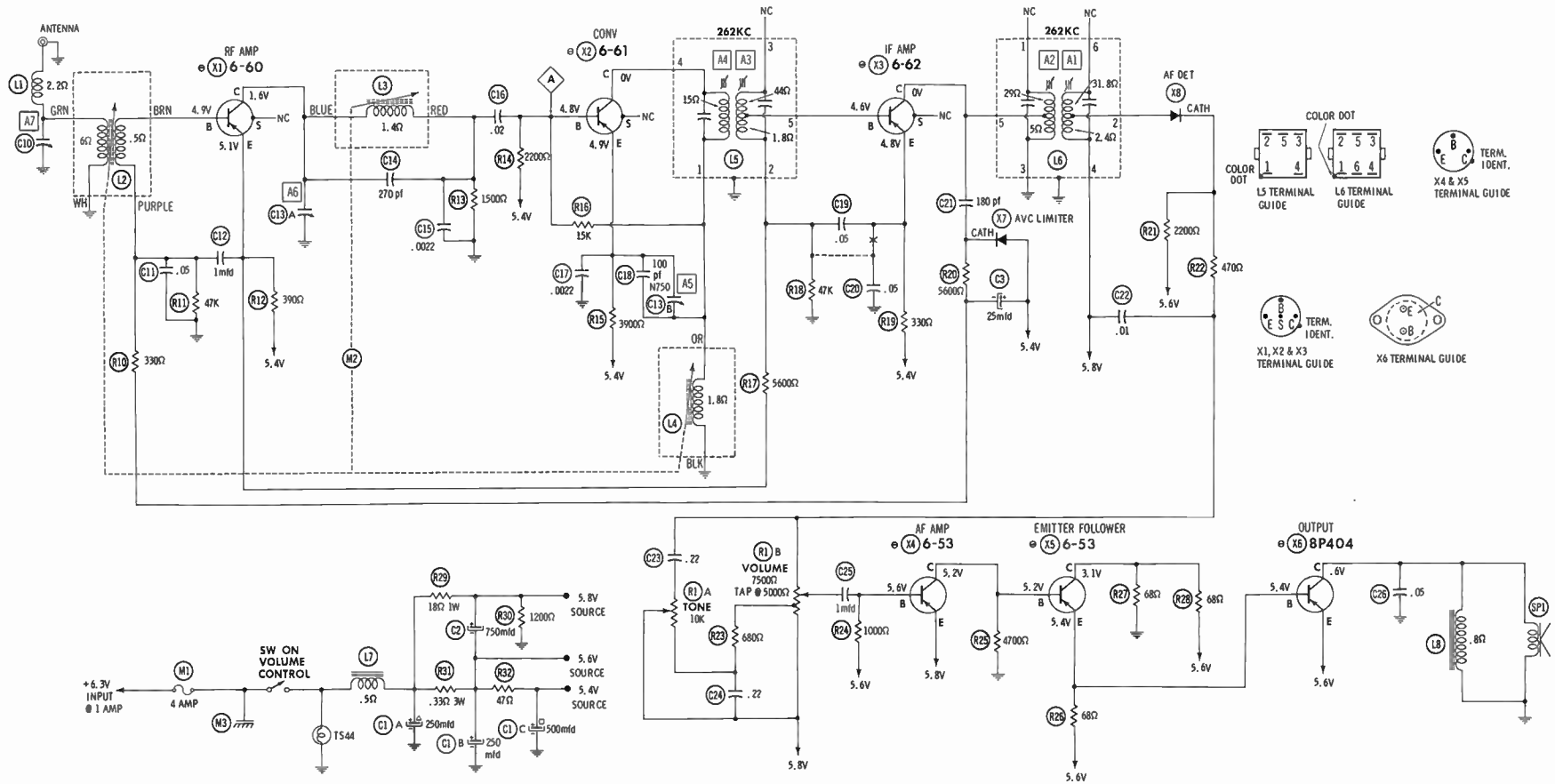
PUSH-BUTTON ADJUSTMENT

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



ALLSTATE MODELS 833.50931, 833.624211

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

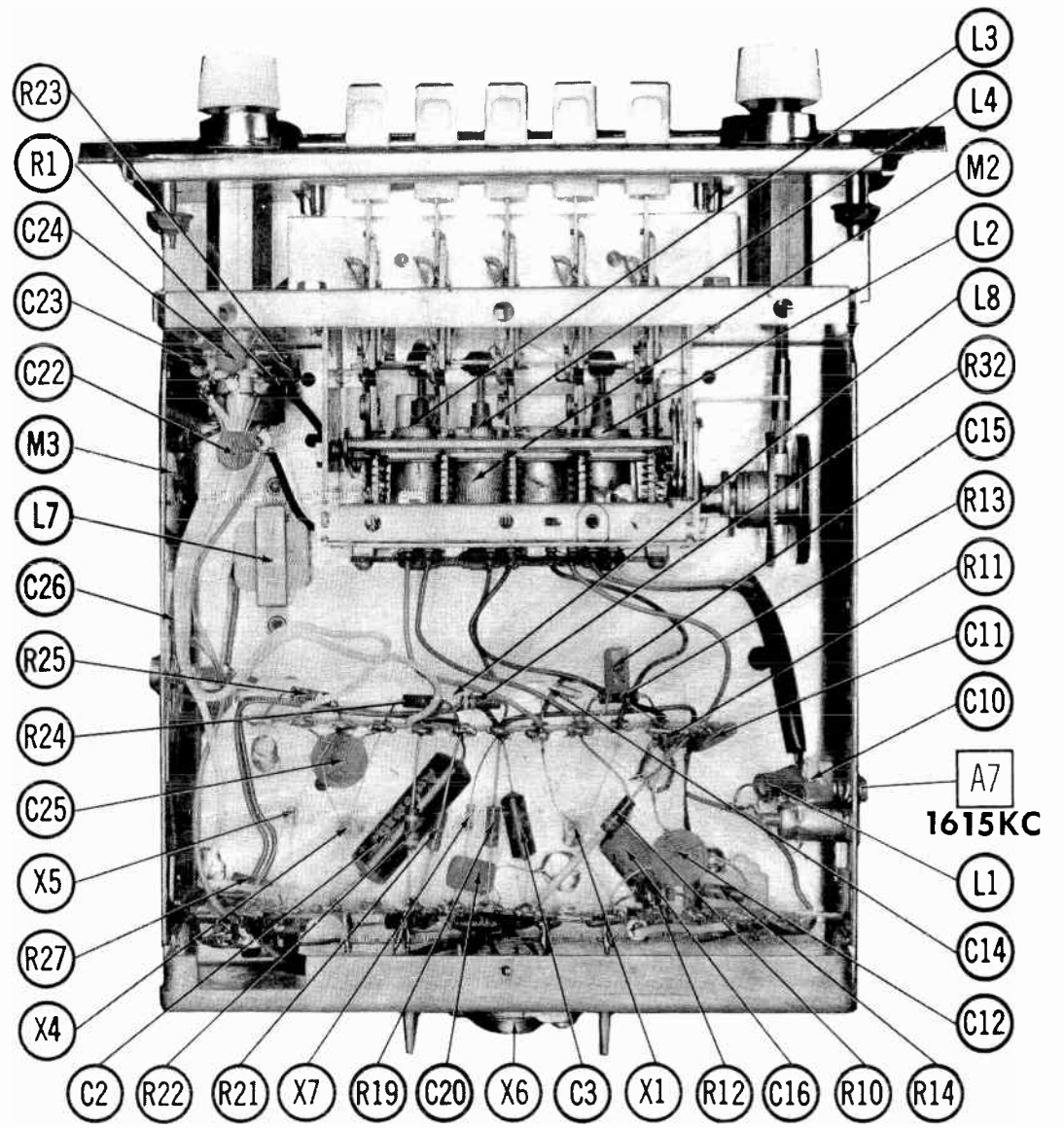
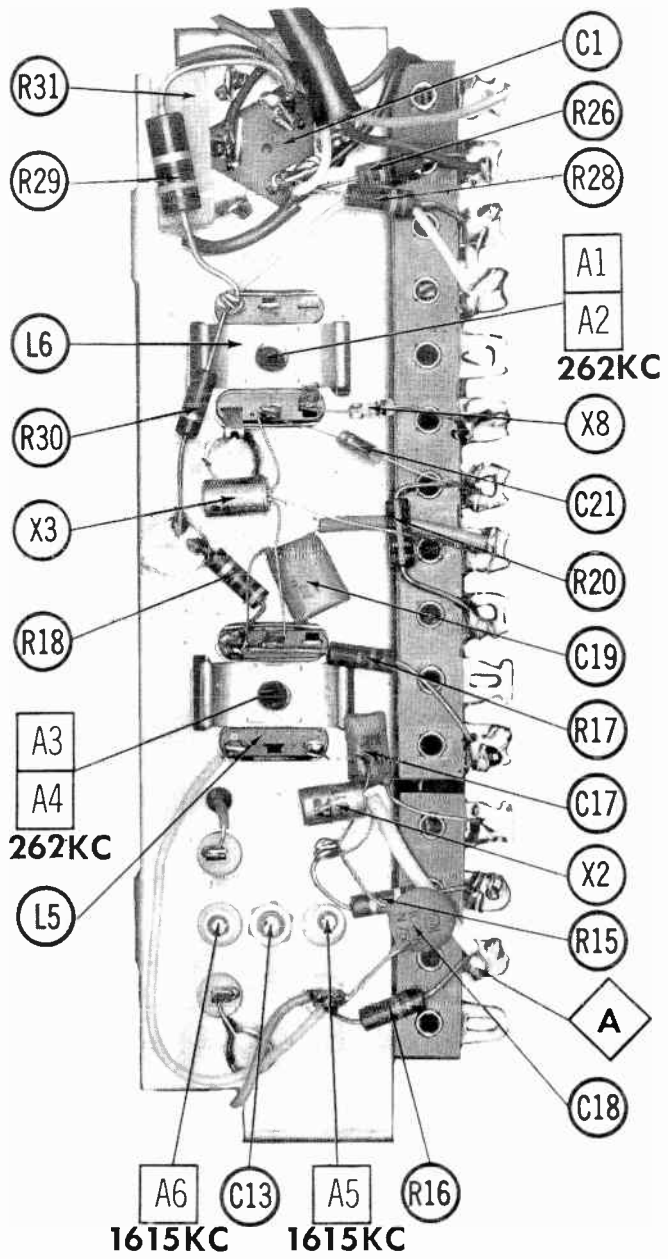


Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

- ⊙ See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

ALLSTATE MODELS 833.50931, 833.624211

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PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N1637)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N1639)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N1638)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	AF Amp.	DS-26	GE-2	2N591	PNP
X5	6-53 (2N591)	Emitter Follower	DS-26	GE-2	2N591	PNP
X6	8P404 (2N301)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1GD2					1N34AS
X8		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Allstate PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	250	15	20-328	AFH3-00-04	CCO012	XC3-48.1		PWH300.4A	PCL-3026.6
B	250	15							
C	500	15							
C2	750	3	20-753	PTT-138	BR1000-6	QT1-32	BL2211	PETA190	TVA-1097
C3	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	.05		#28-800-2L						
C11	.05			TTD-05	CK-503	H5		TA150	TG-S50
C12	1mfd	3V	#28A1332		UK-105	HCC3105P			HY-135
C13A									
B									
C14	270			DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27
C15	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C16	.02			BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C17	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C18	100	N750		N750-DI100	DTN-100	C10T1U	CCTN-101	CNT7310	10TCU-T10
C19	.05			TTD-05	CK-503	H5		TA150	TG-S50
C20	.05			TTD-05	CK-503	H5		TA150	TG-S50
C21	180			DI-180	DD-181	LA10T18-S3	CCD-181	GP318	5GA-T18
C22	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	.22	3V			UK20-204	HCC25224Z			HY-325
C24	.22	3V			UK20-204	HCC25224Z			HY-325
C25	1mfd	3V			UK-104	HCC3105P			HY-135
C26	.05			TTD-05	CK-503	H5		TA150	TG-S50

Allstate Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Allstate PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	Tone	10K	80A3610	F1-10K,			† QJ-1792A	
B	Volume/Switch	7500Ω Tap @ 5000Ω		R14-7500, RFS110, RFS203, AK26 ① KR-4				

† "CONCENTRIKIT" Equivalent: K8 Kit with Base Elements and Shafts: B11-116, P17-118 (Panel)

"SNAPTROL" Equivalent: BU8 ① CF9, CR48T, SF13, SR14, GC.

B81-115X, R9-202 (Rear)

S8 ① (Bushing)

76-1 (Switch)

① Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Allstate Part No.			IRC PART No.	WORKMAN PART No.	Allstate Part No.
R31	.33Ω 3W		WT33	60-.33-3S					

PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-8.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-274	BC-690	6570			
L6	Output IF	14-275	BC-691	6571			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	1A	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

CHOKE (AUDIO OUTPUT)

ITEM No.	INDUCTANCE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	20MH	75A2043					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Allstate PART No.	QUAM PART No.	
SP1	6" PM 8Ω	73A1982	6A21Z8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Allstate PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A	108-400	12A2079	303004	155009	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	Allstate PART No.	NOTES
M2	Tuner	78B3608	Pushbutton Manual
	Dial Glass (Manual 39-156)	78B3609	
M3	Spark Plate	43-215	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	54C1176	Knob, Tone	48A1063-1
Dial Glass (Manual 39-156)	39-110	Knob, Dummy	48A1063-LA
Knob, Tuning or Volume	47-50	Pushbuttons	55A1179

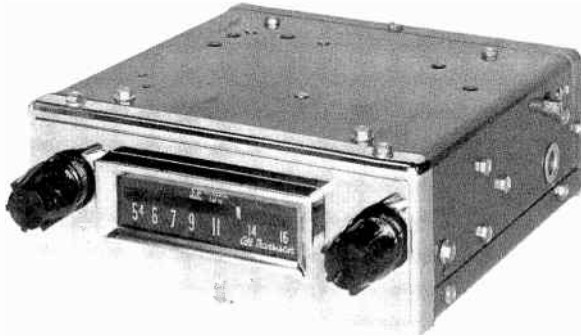
WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

ALLSTATE MODELS 833.50931, 833.624211



PHOTOFACT®



TRADE NAME : Allstate Model 833.627420
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 5 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .680 Amp. @ 12.6 Volts DC

 TUNING RANGE: BROADCAST 540-1615KC

ALLSTATE MODEL 833.627420

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Use only enough generator output to provide a usable indication.

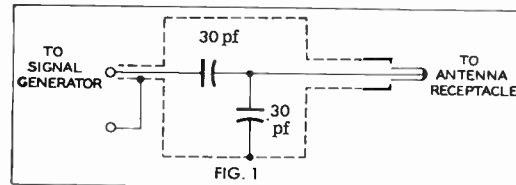
Suggested Alignment Tools:

A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869
A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087

WALSCO: 2543, 2544, 2588
WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfid to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.



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

PARTS LIST 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 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	Driver	DS-26	GE-2	2N591	PNP
X5	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1GD2					1N34AS
X7		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Allstate PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	#500	16	20-2653	AFH3-00-94.5		XC3-48.1		FP300.83	TVLS-3026.14*
B	#300	16							
C	100	16							
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152

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

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C9	.47	3V	#28-800-2L ①		UK10-404	HCC10474Z			HY-330
C11A			#28A1332						
B									
C12	270		(.003) †	DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T25
C13	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C14	.02			TTD-02	CK-203	H3		TA120	TG-S20
C15	.0047			BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C16	100	N750		N750-D1100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C17	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C18	.05			TTD-05	CK-503	H5		TA150	TG-S50
C19	.22				UK20-204	HCC25224Z			HY-325

Allstate Part Number.

† Alternate Value.

① Not used in some versions

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Allstate PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume	7500Ω	80A2916A (80A2916)	F2-10K,SFS212, AK-31, KR-4			B13-116, TM8, QCB4① 76-1 or (BU14②) CF61, SS4, GC)	

① Use QCB4 instead of Tab Mount Plate in TM8.

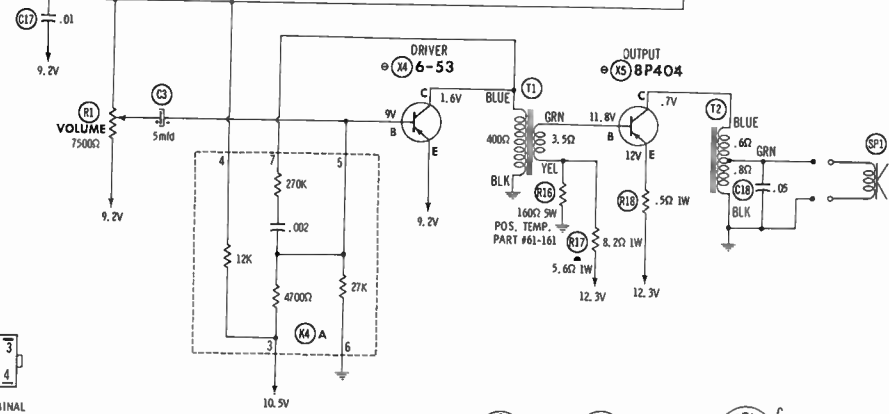
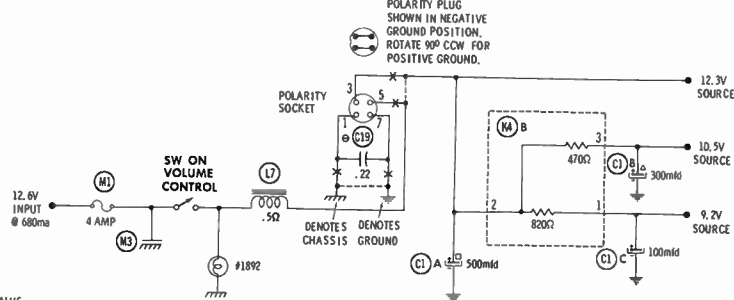
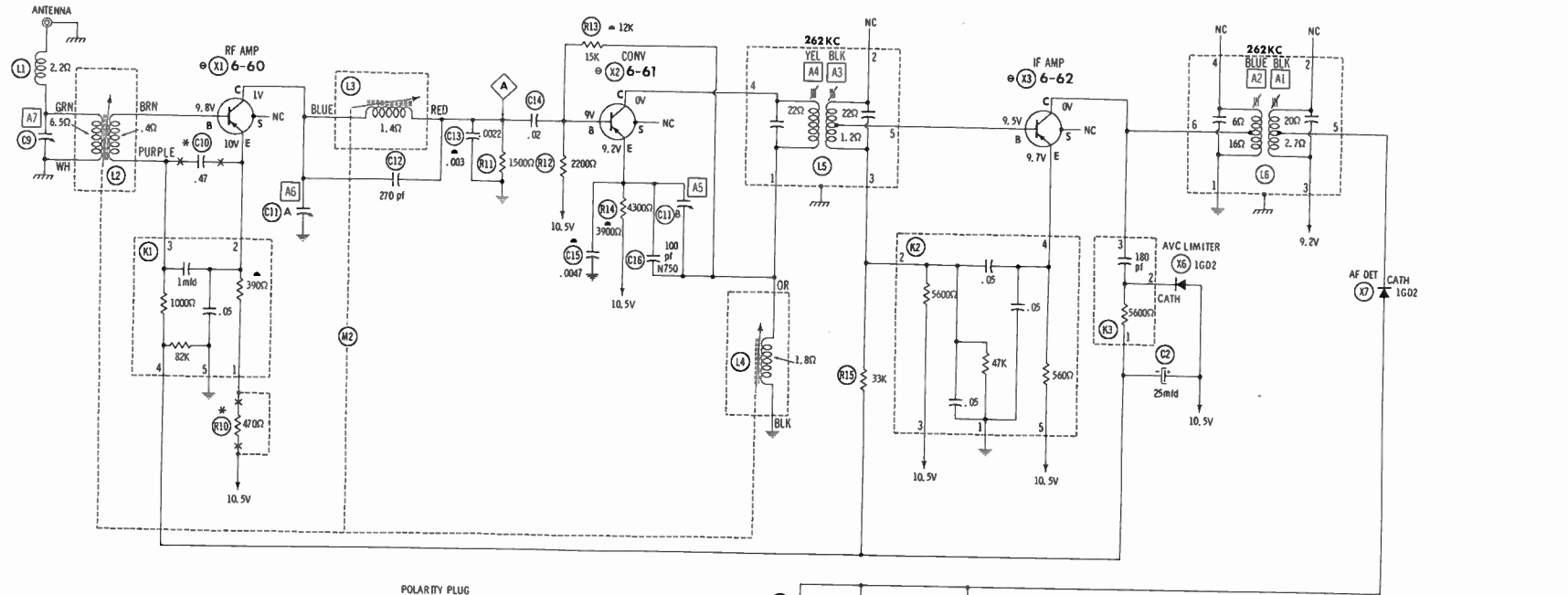
② Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Allstate Part No.			IRC PART No.	WORKMAN PART No.	Part No.
R16	160Ω 5W PTC			61-161					

Continued Page 18

ALLSTATE MODEL 833.627420



• NOMINAL VALUE MAY VARY.

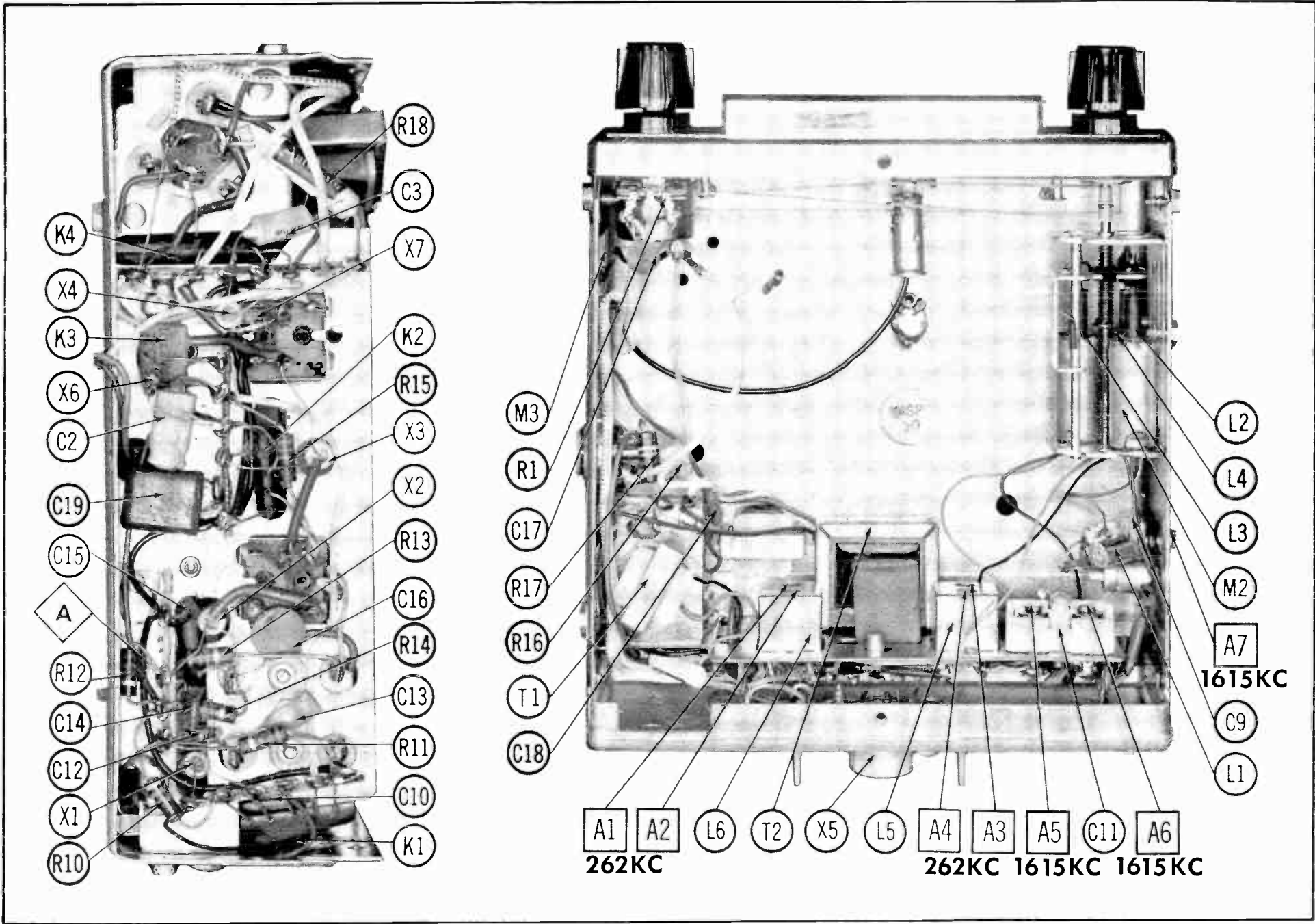
* NOT USED IN SOME VERSIONS.
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

- See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.



ALLSTATE MODEL 833.627420

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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ALLSTATE MODEL 833.627420

PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6, 2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	AnL.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-3233A					
L6	Output IF	14-3234A					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	.680	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	8:	1	75A2635			TR-184		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	24Ω Tap	@ 8Ω	75A2638 (75A2638)			TR-169		

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			Allstate PART No.	QUAM PART No.	
SP1	5" PM	8Ω	73A2163	5A05Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Allstate PART NO.	REPLACEMENT DATA
K1	RF Amplifier	390Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582C	
K2	IF Amplifier	560Ω, 5600Ω, 47K, .05mfd, .05mfd, .05mfd	89A2584B	
K3	AVC	5600Ω, 180pf	89A2701	
K4	A.F. Amp.	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Allstate PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A			303004	155004	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	Allstate PART No.	NOTES
M2	Tuner	78A3602	
M3	Spark Plate	43-216	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	55C3605	Knob, Tuning or Volume	47A1235
Dial Glass	39-78	Knob, Spacer	47A1249



PHOTOFACT[®]

TRADE NAME : Allstate Model 833.62741
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 5 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .530 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC



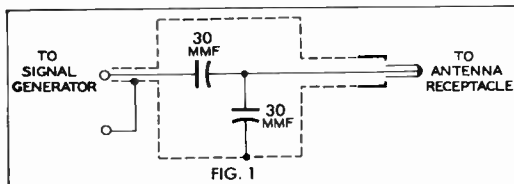
ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

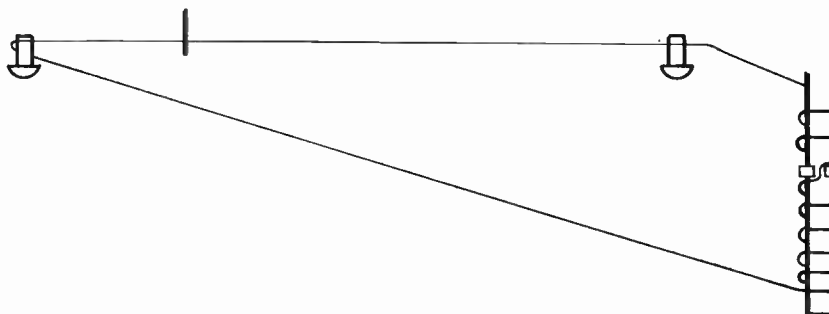
A1 thru A4..... GENERAL CEMENT #8608, 8608L, 8869
 WALSCO #2543, 2544, 2588
 A5, A6, A7..... GENERAL CEMENT #8290, 8868, 9087
 WALSCO #2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

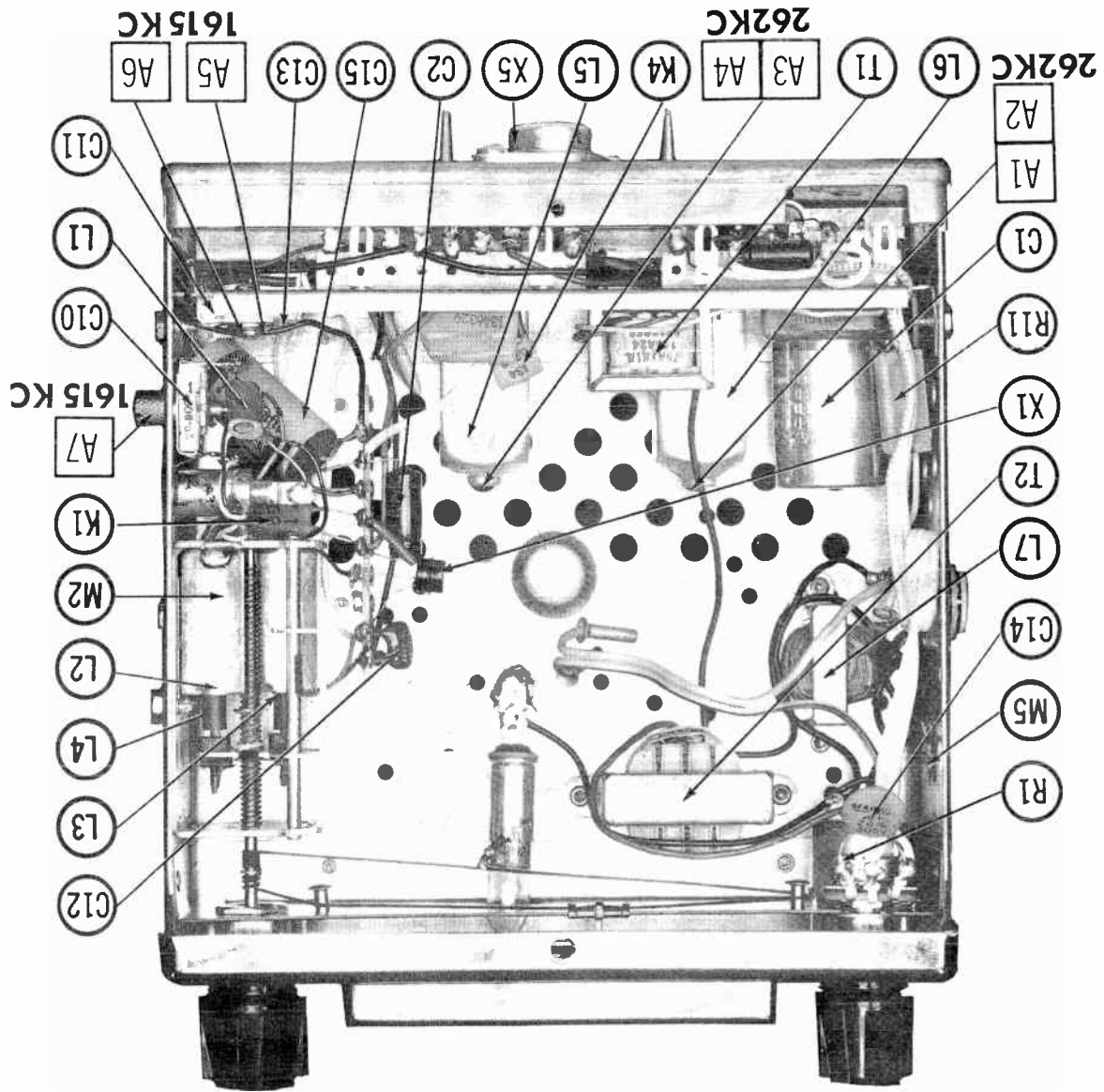
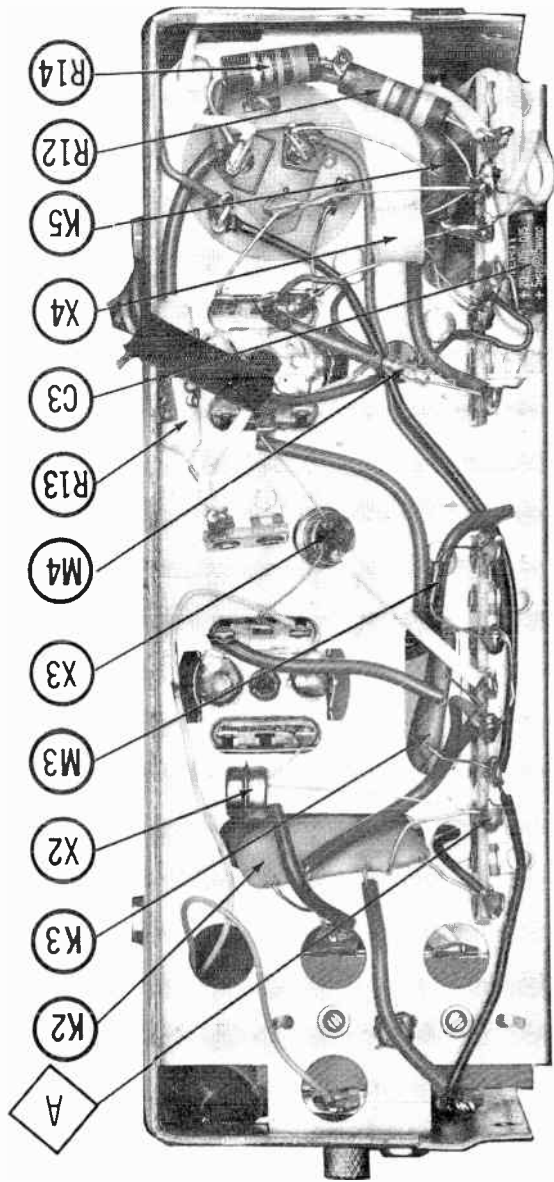
With radio installed in car and antenna fully extended, tune in a weak station near 1000KC and adjust A7 for maximum output.



DIAL CORD STRINGING



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



PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	Driver	DS-26	GE-2	2N591	PNP
X5	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screw securely.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Allstate PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	20-2653 ①	AFH3-00-94.5	CCOO12	XC3-48.1		FP-300.83	PCLS-3026.11
C1B	300	16							
C1C	100	16							
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C3	5	15	20-505	CRE454A	NLW5 15	MT1 3	MLV5 15	TT25X5	TE-1152

① Some versions may use 600-300-100mfd (Part #20-327).

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	270	#28-800-2L	DI-271	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27
C11		#28-431A						
C12								
C13		#28-461						
C14								
C15	.01	200V	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C15	.47		P288N-47		WMF1P47	IDP-4-474	PVC-1047	2PS-P47

Allstate Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Allstate PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	7500Ω	80A2916A	F2-10K,SFS212, AK-31, KR 4		B13-116, TM8, QCB4 ①, 76-1 ②, or (BU14 ③, CF61, SS4, GC)*	

① Use instead of TM plate in TM8. ② Use switch with metal housing. ③ Cut to proper length. * "SNAPTROL"

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2 uH)	14-8.2	BC-565	4610	RTC-8520	T859	① Part of M2
L2	Ant.	①					
L3	RF	②					
L4	Osc.	③					
L5	Input IF	14-2654	BC-690	6570			
L6	Output IF	14-2655	BC-691	6571		TF606	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	450ma	.5Ω	10MH	75A6001	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	6.5:1	75A1810			TR-183		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	24Ω Tap @ 8Ω	75A2638			TR-169		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Allstate PART No.	REPLACEMENT DATA
K1	RF Amp. Bias	220Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582-C	
K2	Converter Bias	150Ω, 1000Ω, 4700Ω, 47K, .005mfd, .015mfd, .02mfd	89A2583B	
K3	IF Amp. Bias	560Ω, 5600Ω, 47K, .05mfd, .05mfd, .05mfd	89A2584B	
K4	AVC	5600Ω, 180mmf	89A2701	
K5	Audio Bias	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Allstate PART No.		LITTELFUSE PART No.			
			FUSE	HOLDER	FUSE	HOLDER		
M1	SFE	7 1/2			30707.5	15507.5	SFE 7 1/2	HME

MISCELLANEOUS

ITEM No.	PART NAME	Allstate PART No.	NOTES
M2	Tuner AVC	78A2615	
M3	AVC		1GD2/1N295
M4	AF Det.		1GD2/1N295
M5	Spark Plate	43-215	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA	
		Allstate PART No.	QUAM PART No.
SP1	5" PM 8"	73A2163	5A05Z8

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	54C1233	Knob, Tuning or Volume	47A1235

WIRING DATA

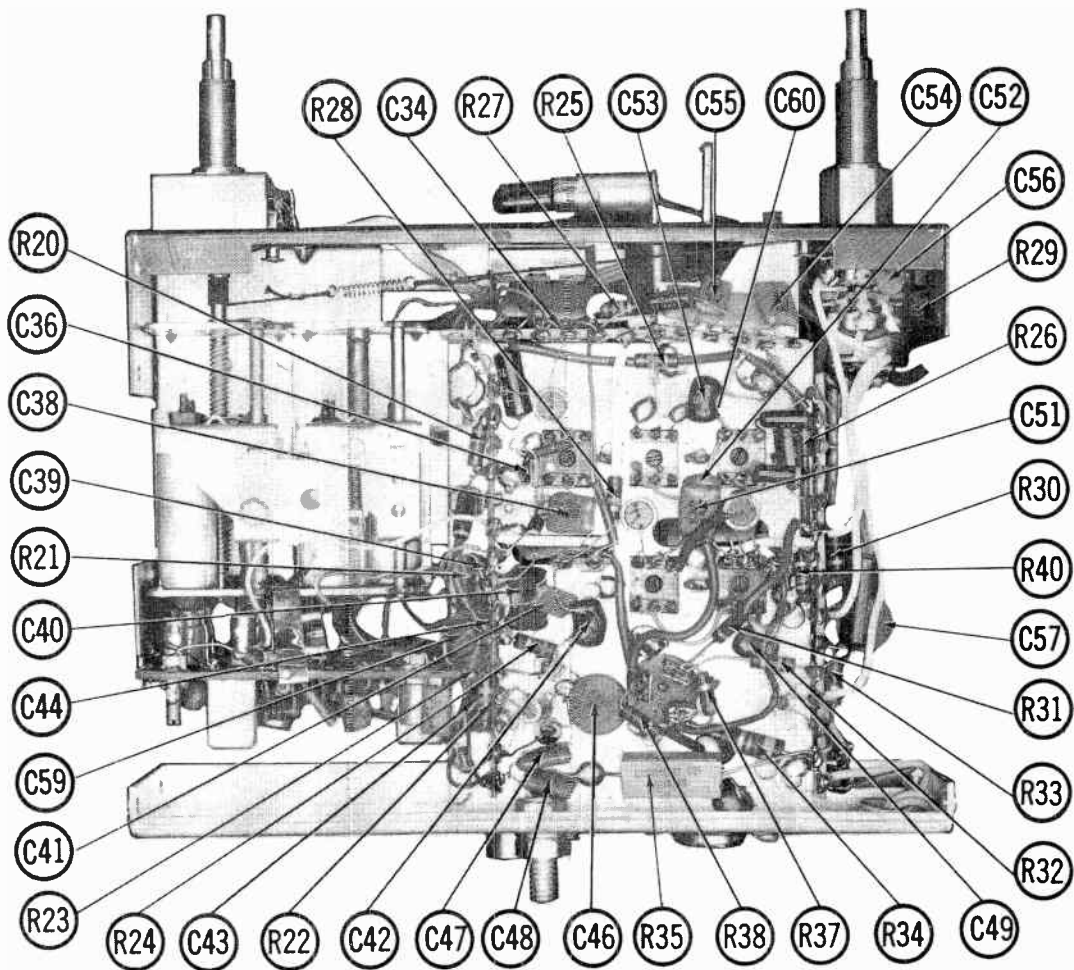
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
	8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 in.) or 8670 (3/4 in.)



PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Allstate Model 833.63070
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 9 Transistor AM-FM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .75 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC
 FREQ. MOD. 88-108MC



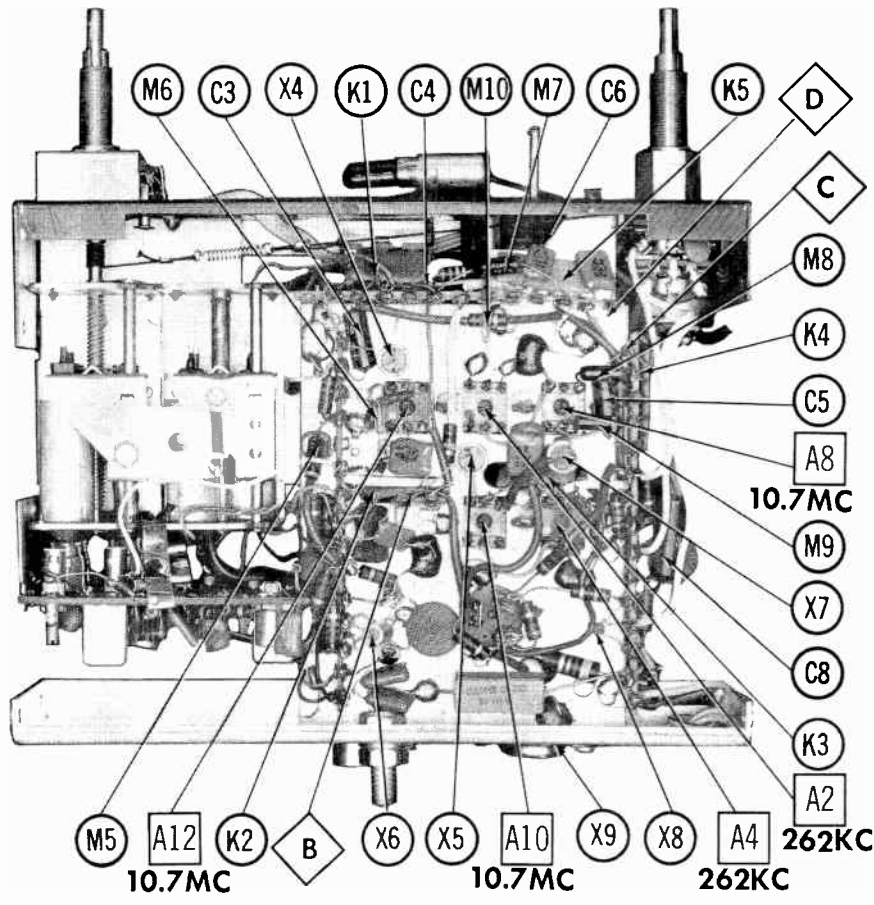
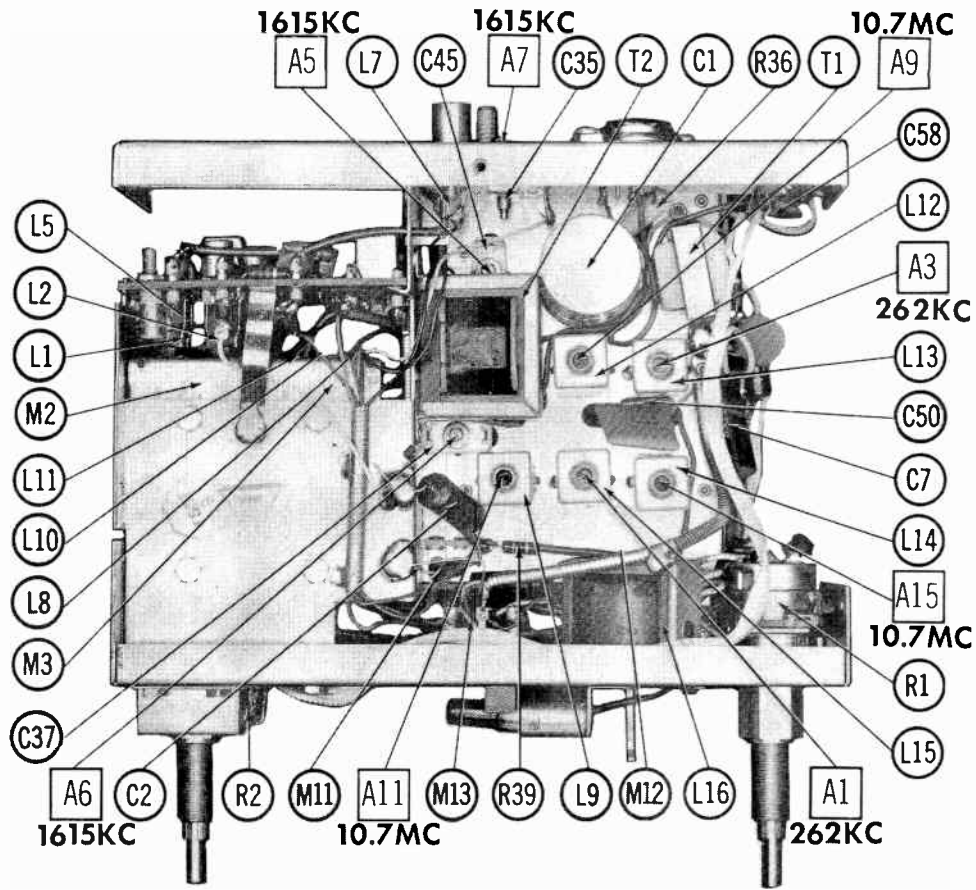
ALLSTATE MODEL 833.63070

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

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PD367R

World Radio History



ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:
 A1 thru A18..... GENERAL CEMENT #5009, 8728A, 8987
 WALSCO #2531X, 2536

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point \diamond , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1000KC and adjust A7 for maximum output.

FM ALIGNMENT USING AM SIGNAL GENERATOR - SELECTOR IN FM POSITION

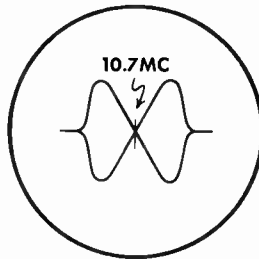
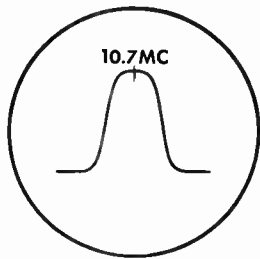
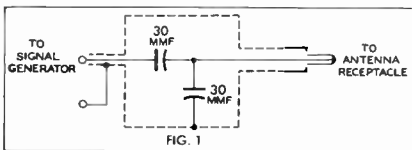
High side of generator thru .1mfd to point \diamond , low side to ground for IF.
 Across antenna input with 120 Ω carbon resistors in series with each lead for RF.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point \diamond ; common to ground.	A8 Thru A14	Adjust for maximum.
"	"	DC probe to point \diamond ; common to ground.	A15	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.
108MC	108MC	DC probe of VTVM to point \diamond ; common to ground.	A16, A17, A18	Adjust for maximum.

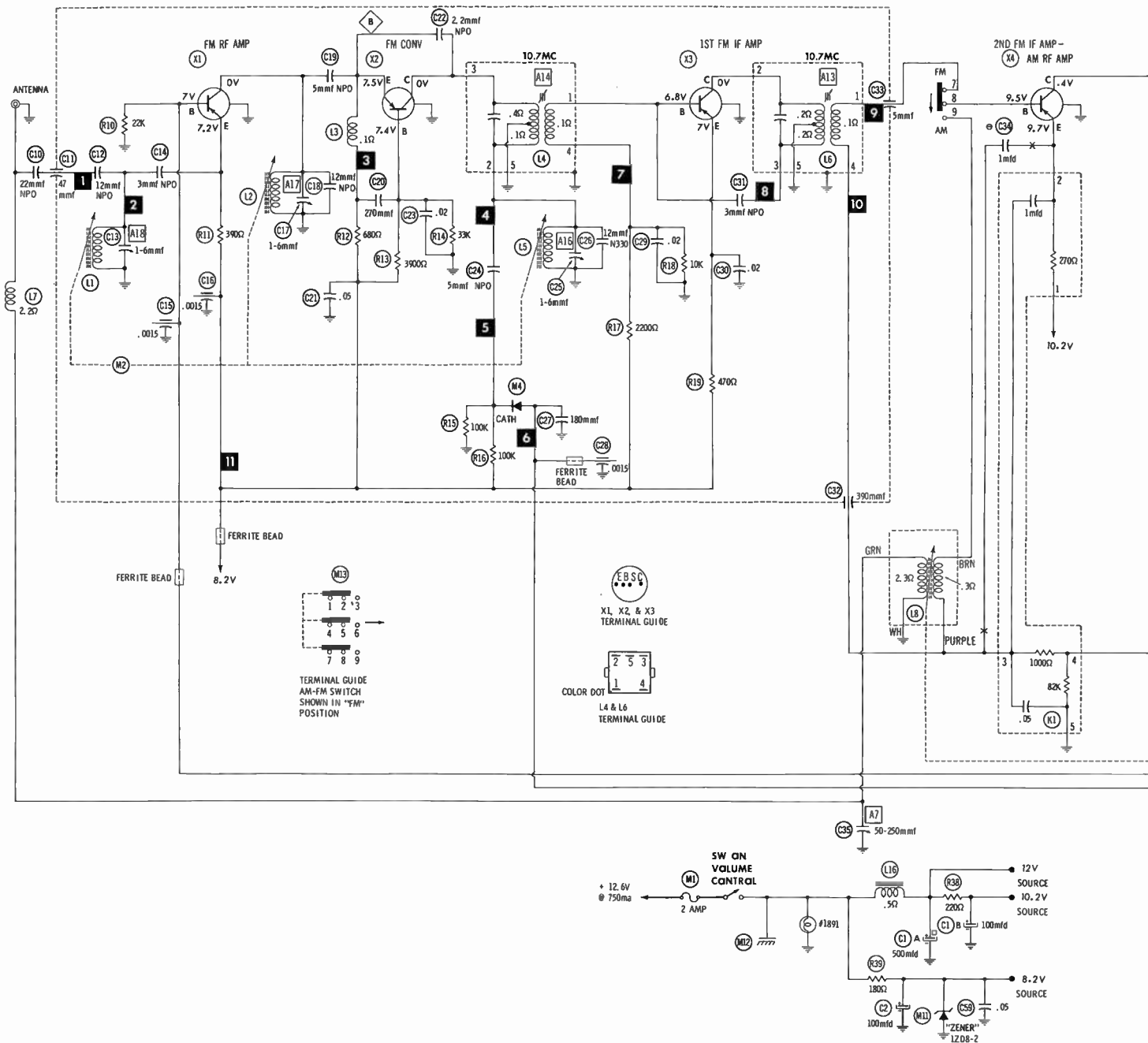
FM IF ALIGNMENT USING FM SIGNAL GENERATOR - SELECTOR IN FM POSITION

High side to point \diamond thru .1mfd, low side to ground.
 Use 60% frequency modulated signal with 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MC (450KC Swp.)	Point of non-interference.	Vert. amp. of scope to point \diamond ; low side to ground.	A8 Thru A14	Disconnect stabilizing capacitor C5. Adjust for maximum gain and symmetry of response similar to Fig. 2 with marker as shown. Reconnect C5.
"	"	Vert. amp. to point \diamond ; low side to ground.	A15	Adjust to place marker at center of crossover lines similar to Fig. 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.



ALLSTATE MODEL 833.63070

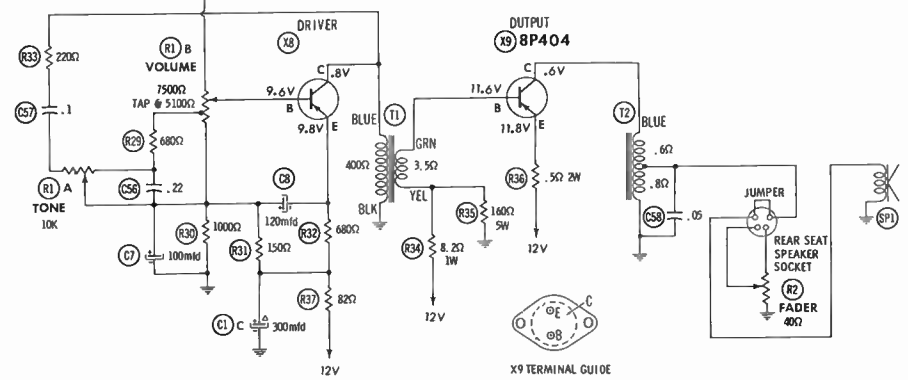
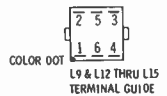
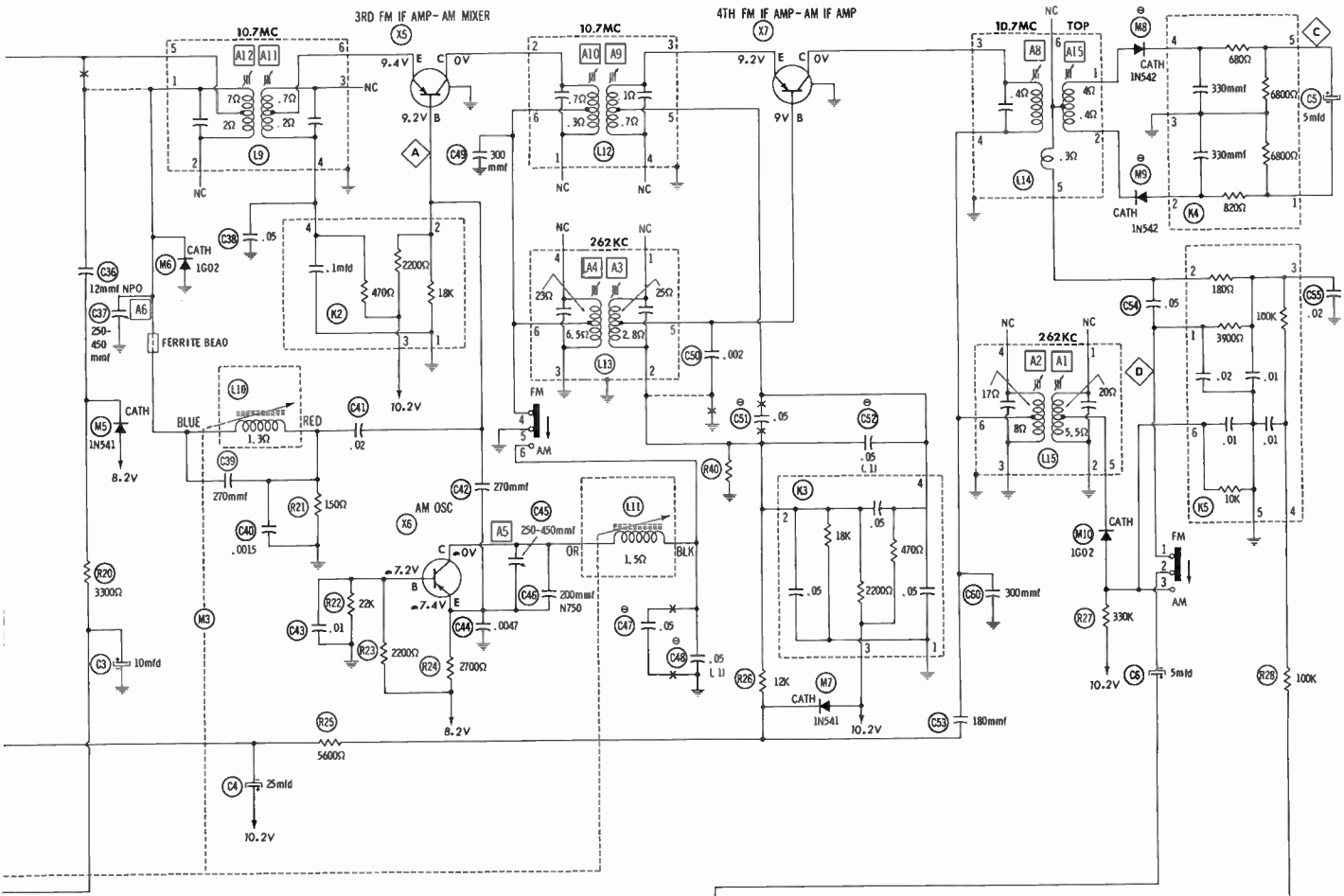


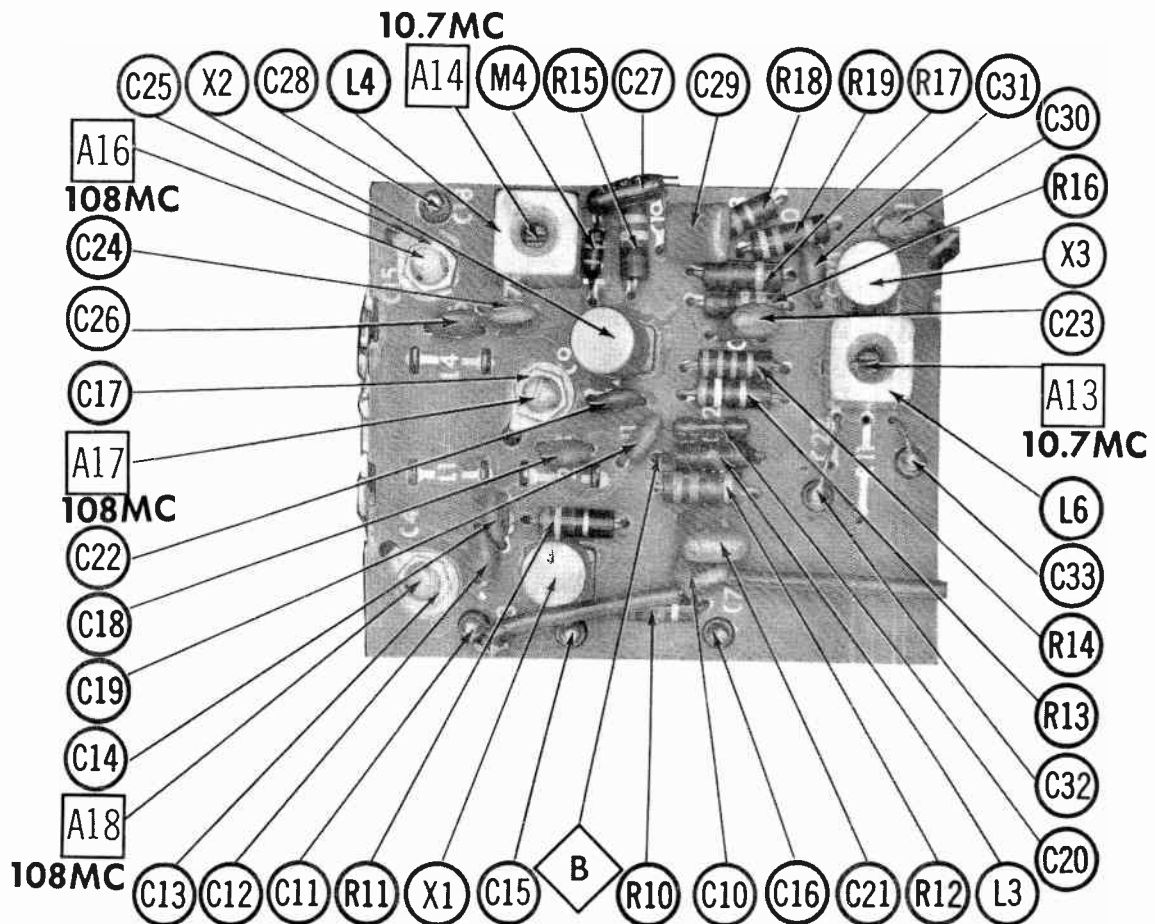
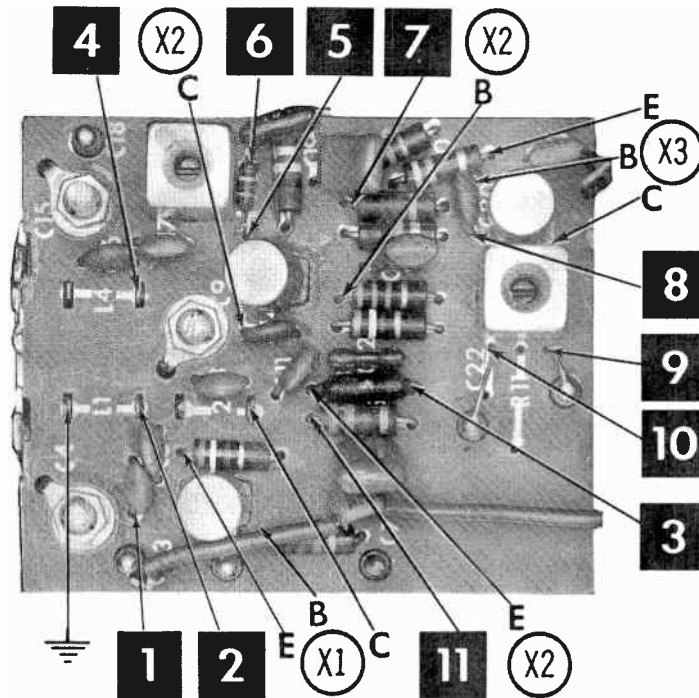
ALL VOLTAGES TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED
 • MEASURED IN "AM" POSITION

- ⊙ See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC
 with **CIRCUITRACE**

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PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-89 (2N2089)	FM RF Amp.	DS-41		2N1177	PNP
X2	6-89 (2N2089)	FM Conv.	DS-42		2N1179	PNP
X3	6-89 (2N2089)	1st FM IF	DS-34		2N1180	PNP
X4	6-69 (2N2091)	2nd FM IF Amp. -AM RF Amp.	DS-34		2N1180	PNP
X5	6-69 (2N2091)	3rd FM IF Amp. -AM Mixer	DS-35		2N1180	PNP
X6	6-60 (2N640)	AM Osc.	DS-25	GE-1	2N1639	PNP
X7	6-69 (2N2091)	4th FM IF Amp. -AM IF Amp.	DS-37		2N1180	PNP
X8	6-53 (2N591)	Driver	DS-26	GE-2	2N591	PNP
X9	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Allstate PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	20-2653	AFH3-00-94.5	CCOO12	XC3-48.1		FP-300.83	PCLS-3026.11*
B	100	18							
C	300	16							
C2	100	18	20-107	PTT86	NLW100-25	MT1 20	BL2050	TT25X100	TL-1162
C3	10	18	20-106	CRE457A	NLW10-15	MT1-5	MLV10-15	TT15X10	TE-1155
C4	25	18	20-256	PTT89	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C5	5	16	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152
C6	5	16	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152
C7	100	16	20-107	PTT86	NLW100-25	MT1 20	BL2050	TT25X100	TL-1162
C8	120	3	20-127	CRE226A	NLW125-3	MT1 21	BL1611	TT3X110	TL-1061

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	22 NPO		NPO-DI 22	DTZ-22	C10Q22C	CCTO-220	CNO-422	10TCC-Q22
C11	47							
C12	12 NPO			TCZ-12		CCTO-120	CNO-412	10TCC-Q12
C13	1-6							
C14	3 NPO		NPO-DI 3	DTZ-3R3	C10V33C	CCTO-3R3	CNO-533	10TCC-V30
C15	.0015		EF-001	MFT-1000		CCF-102	CT280A	
C16	.0015		EF-001	MFT-1000		CCF-102	CT280A	
C17	1-6							
C18	12 NPO			TCZ-12		CCTO-120	CNO-412	10TCC-Q12
C19	5 NPO		NPO-DI 5	DTZ-4R7	C10V47C	CCTO-050	CNO-547	10TCC-V50
C20	270		NPO-SI 270	TCZ-270	LA10T27-C4	CCD-271	CNO-327	10TCC-T27
C21	.05 50V		TTD-05	CK-503	H5	TA-150	TG-S50	
C22	2.2 NPO		NPO-DI 2.2	DTZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C23	.02 50V		BPD-02	DD-203	BYA6S2	CCD-203	B-120	5HK-S20
C24	5 NPO		NPO-DI 5	DTZ-4R7	C10V47C	CCTO-050	CNO-547	10TCC-V50
C25	1-6							
C26	12 N330							10TCS-Q12
C27	180		DI-180	DD-181	LA10T18-S3	CCD-181	GP318	5GA-T18
C28	.0015		EF-001	MFT-1000		CCF-102	CT280A	
C29	.02 50V		BPD-02	DD-203	BYA6S2	CCD-203	B-120	5HK-S20
C30	.02 50V		BPD-02	DD-203	BYA6S2	CCD-203	B-120	5HK-S20
C31	3 NPO		NPO-DI 3	DTZ-3R3	C10V33C	CCTO-3R3	CNO-533	10TCC-V30

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C32	390							
C33	5							
C34	1mfd 3V	Note 1		UK-105	HCC3105P			HY-135
C35	50-250	#28A3044						
C36	12 NPO			TCZ-12			CCTO-120	CNO-412
C37	250-450	#28A2547A						
C38	.05 50V		TTD-05	CK-503	H5			TA-150
C39	270		NPO-SI 270	TCZ-270	LA10T27-C4	CCD-271		CNO-327
C40	.0015		BPD-0015	DD-152	LA10D15-C4	CCD-152		B-215
C41	.02 50V		BPD-02	DD-203	BYA6S2	CCD-203		B-120
C42	270		NPO-SI 270	TCZ-270	LA10T27-C4	CCD-271		CNO-327
C43	.01		BPD-01	DD-103	BYA10S1	CCD-103		B-110
C44	.0047		BPD-0047	DD-472	BYA10D47	CCD-472		B-247
C45	250-450	#28A2547A						
C46	200 N750		N750-DI 200	DTN-200	C10T2U	CCTN-201		CN7-320
C47	.05 50V	Note 2	TTD-05	CK-503	H5			TA-150
C48	.05 50V	Note 2	TTD-05	CK-503	H5			TA-150
C49	300			DM-301				TG-S50
C50	.002							
C51	.05 50V	Note 3	TTD-05	CK-503	H5			TA-150
C52	.05 50V	Note 3	TTD-05	CK-503	H5			TA-150
C53	180		DI-180	DD-181	LA10T18-S3	CCD-181		GP318
C54	.05 50V		TTD-05	CK-503	H5			TA-150
C55	.02 50V		BPD-02	DD-203	BYA6S2	CCD-203		B-120
C56	.22 3V			UK20-204	HCC25224Z			HY-325
C57	.1 16V		TTD-1	CK-104	H6			TA-010
C58	.05 50V		TTD-05	CK-503	H5			TA-150
C59	.05 50V		TTD-05	CK-503	H5			TA-150
C60	300			DM-301				TG-S50

Allstate Part Number.

Note 1 Not used in some versions.

Note 2 When C48 is .1mfd, C47 is not used.

Note 3 When C52 is .1mfd, C51 is not used.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Allstate PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	10K	80A3001				
B	Volume & Switch	7500Ω Tap@ 5100Ω					
R2	Fader	40Ω	80A3002				

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Allstate PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	FM Ant.	①					① Part of M2, coil assembly, (Part #78A2991F) ② Part of M3.
L2	FM RF	①					
L3	RF Choke (.82uh)	14-.82					
L4	1st FM IF	14A2931	①	TV-189	4594		T804
L5	FM Osc.	①					
L6	2nd FM IF	14A2932	①				
L7	RF Choke (6.2uh)	14-6.2		BC-565	4610		RTC-8520
L8	AM Ant.	②					
L9	3rd FM IF	14A2933					
L10	AM RF	②					
L11	AM Osc.	②					
L12	4th FM IF	14A2934					
L13	1st AM IF	14A2935					
L14	Ratio Detector	14A2522					
L15	2nd AM IF	14A2936					

ALLSTATE MODEL 833.63070

PARTS LIST AND DESCRIPTION (CONTINUED)

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~)	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
L16	600ma	.5Ω	10MH	75A1269D	C-4095	TC-2	TR-155	TY17XT

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA				NOTES
	PRI.	SEC.	Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
T1	8:	1	75A2635			TR-184	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.		Allstate PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
T2	24Ω Tap@	8Ω	75A2636			TR-169	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Allstate PART No.	QUAM PART No.	
SP1	5" X 8" PM 8Ω	73B3113	58A1528	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Allstate PART No.	REPLACEMENT DATA
K1	X4 Bias -AVC	270Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582C	
K2	X5 Bias	470Ω, 2200Ω, 18K, .1mfd	89A3074	
K3	X7 Bias -AVC	470Ω, 2200Ω, 18K, .05mfd, .05mfd, .05mfd	89A2534	
K4	Ratio Det. Balance	680Ω, 820Ω, 6800Ω, 6800Ω, 330mmf, 330mmf	89A2538	
K5	Det. Bias-Tone-AVC	180Ω, 3900Ω, 10K, 100K, .01mfd, .01mfd, .01mfd, .02mfd	89A2536	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Allstate PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGA	2A	108-302	12-1912B	301002	155004	AGA 2	HMF

Some versions may use 3 Amp. Part #108-303

MISCELLANEOUS

ITEM No.	PART NAME	Allstate PART No.	NOTES	
M2	FM Tuner	78B2987A	1GD5X/1N3182 1N541 1N295 1N541/IGD2 1N542 1N542 1N295 1ZD8-2	
M3	AM Tuner			
M4	AFC Det.			
M5	AVC Det.			
M6	Overload			
M7	AFC Det.			
M8	Ratio Det.			
M9	Ratio Det.			
M10	AM Det.			
M11	Voltage Regulator			
M12	Spark Plate			43-215
M13	Selector Switch			94A3028

CABINETS & CABINET PARTS

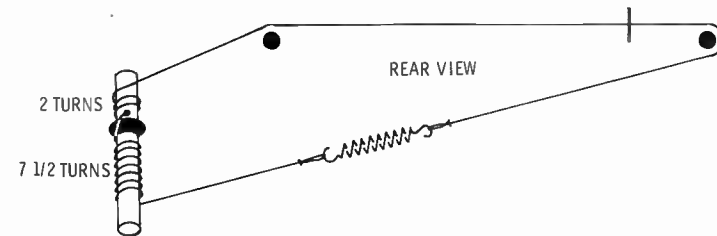
(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Dial Window	55A2997	Knob, Tuning or Volume	48A2225
Dial Pointer	84A2996	Knob, Tone or Fader	48A1522

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire Use BELDEN No. 8885
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.)

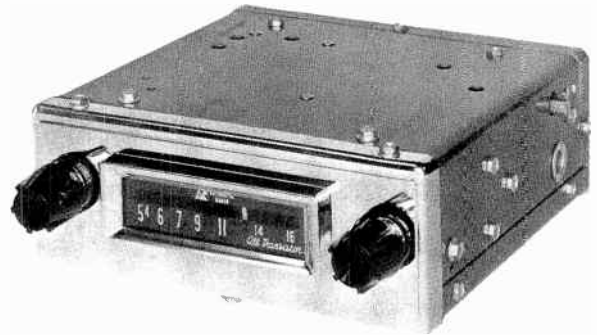
DIAL CORD STRINGING





PHOTOFACT[®]

TRADE NAME : Automatic Models NU-3107A, PUT-3108A,
 SUPPLIER : UE-4155A, UE4171A, UE-4655A, UE4671A
 For Current Address, See Master Index.
 TYPE SET : 5 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .680 Amp. @ 12.6 Volts DC
 TUNING RANGE : BROADCAST 540-1615KC



AUTOMATIC UNIVERSAL SERIES

ALIGNMENT INSTRUCTIONS

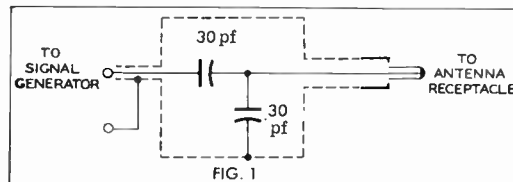
Check for specified source voltage.
 Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588
 A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087 WALSCO: 2525, 2528, 2587

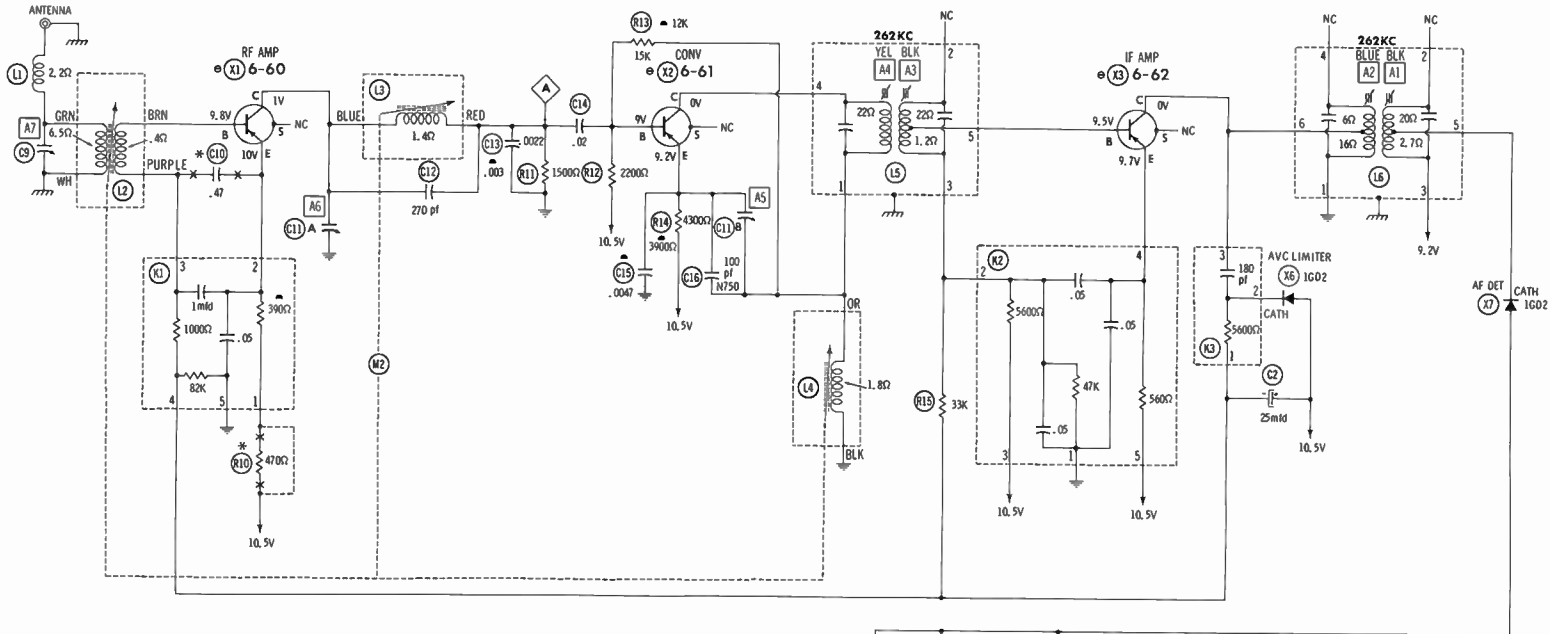
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

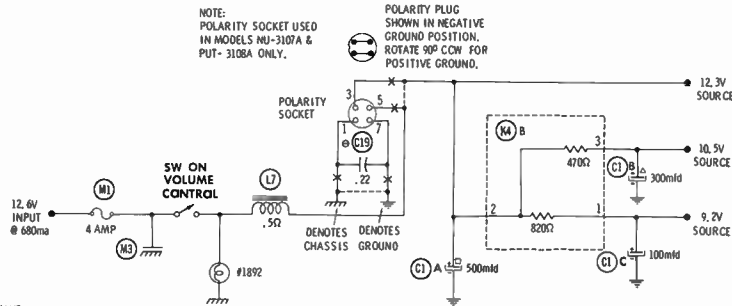


HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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NOTE: POLARITY SOCKET USED IN MODELS NU-3107A & PUT-3108A ONLY.



▲ NOMINAL VALUE MAY VARY.

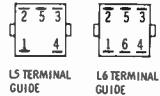
* NOT USED IN SOME VERSIONS.

Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

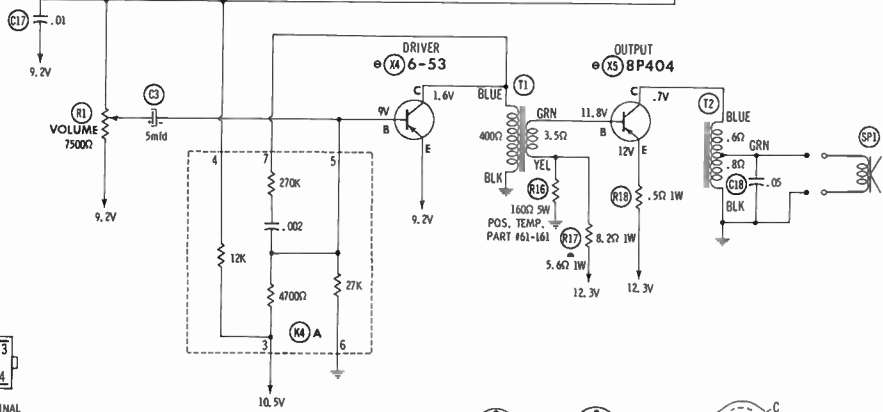
⊙ See parts list for alternate value or application.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

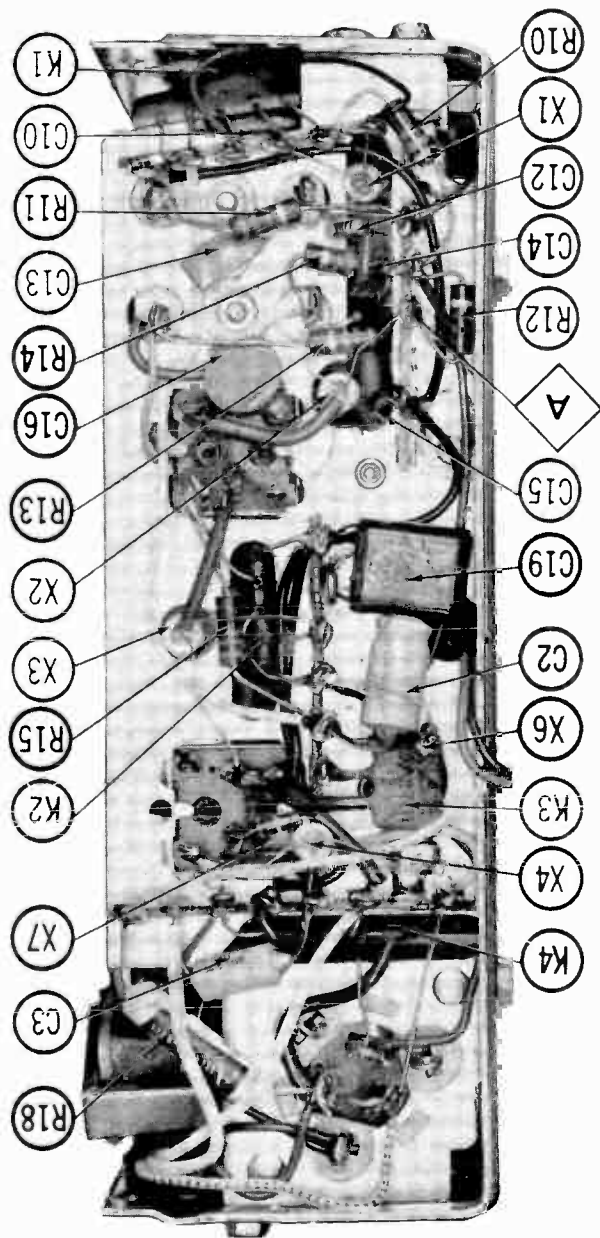
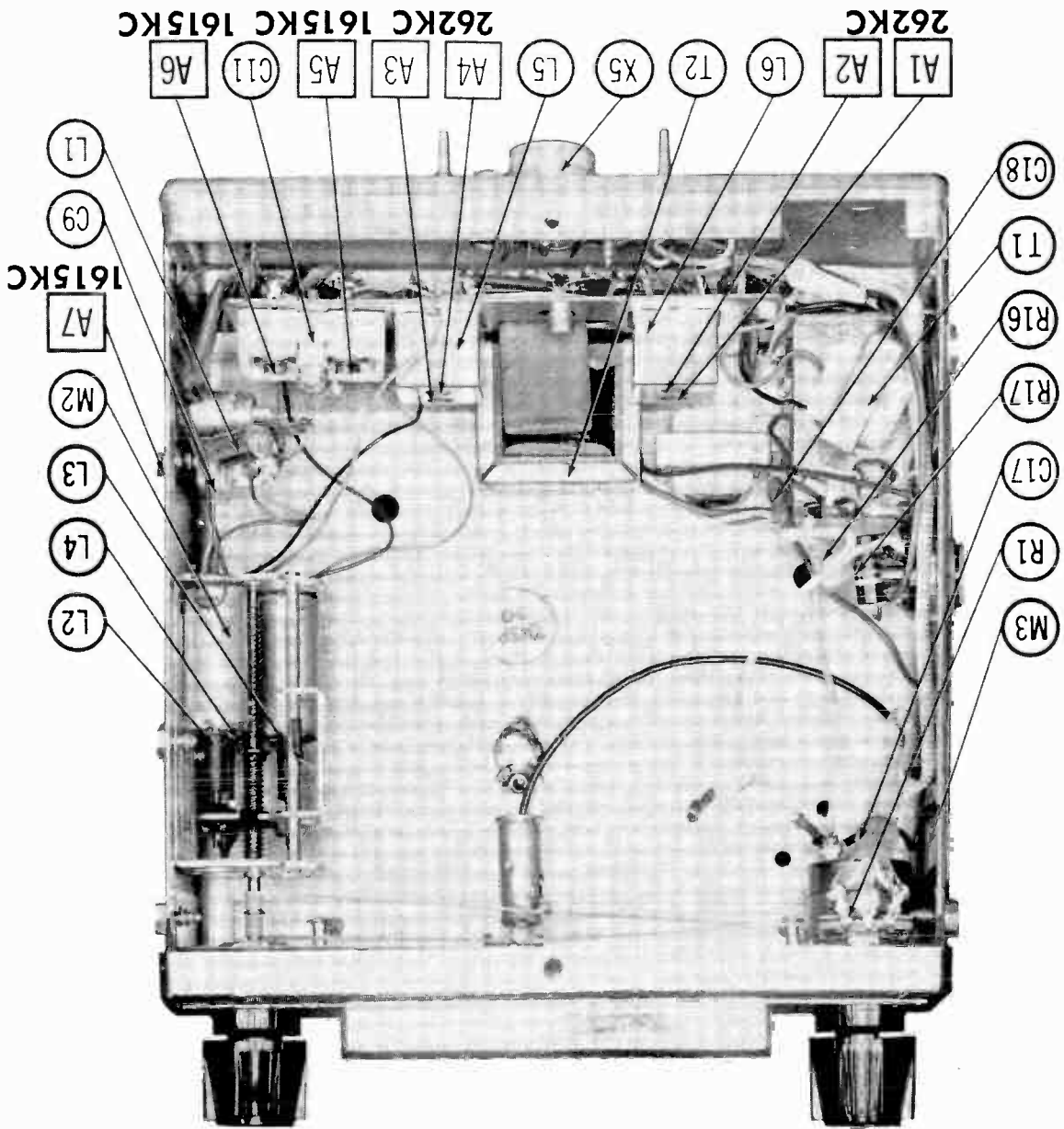
A PHOTOFAC STANDARD NOTATION SCHEMATIC
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AUTOMATIC UNIVERSAL SERIES



AUTOMATIC UNIVERSAL SERIES



PARTS LIST 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 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8861 (3/8 In.) or 8870 (3/4 In.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-81 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	Driver	DS-28	GE-2	2N591	PNP
X5	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1GD2					1N34AS
X7		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Automatic PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	20-2653	AFH3-00-04.5		XC3-48.1		FP300.83	TVLS-3028.1*
B	300	16							
C	100	16							
C2	25	15	20-256	PJT89	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C9		#28-800-2L							
C10	.47	3V	①		UK10-404	HCC10474Z			HY-330
C11A		#28A1332							
B									
C12	270			DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T25
C13	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C14	.02			TTD-02	CK-203	H3		TA120	TG-S20
C15	.0047			BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C16	100	N750		N750-DI100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C17	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C18	.05			TTD-05	CK-503	H5		TA150	TG-S50
C19	.22	②			UK20-204	HCC25224Z			HX-325

Automatic Part Number.
① Not used in some versions

† Alternate Value.
② Used in Models NU-3107A & PUT-3108A only.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Automatic PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume	7500Ω	80A2916A (80A2916)	F2-10K,SFS212, AK-31, KR-4			B13-118, TM8, QCB4 ① 76-1 or (BU14 ②) CF61, SS4, GC)	

① Use QCB4 instead of Tab Mount Plate in TM8.
② Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Automatic Part No.			IRC PART No.	WORKMAN PART No.	Automatic Part No.
R16	180Ω 5W PTC			81-161					

PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Automatic PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-3233A					
L6	Output IF	14-3234A					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	.680	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	8:	1	75A2635			TR-184		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	24Ω Tap	@ 8Ω	75A2638 (75A2636)			TR-169		

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				Automatic PART No.	QUAM PART No.	
SP1	5" PM	8Ω	73A2163	5A05Z8		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Automatic PART NO.	REPLACEMENT DATA
K1	RF Amplifier	390Ω, 1000Ω, 82K, .05mfd, 1mfd, 560Ω, 5600Ω, 47K, .05mfd, .05mfd, .05mfd	89A2582C 89A2584B	
K2	IF Amplifier			
K3	AVC	5600Ω, 180pf	89A2701	
K4	A.F. Amp.	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Automatic PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A			303004	155004	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	Automatic PART No.	NOTES
M2	Tuner	78A3602	
M3	Spark Plate	43-216	

CABINETS & CABINET PARTS

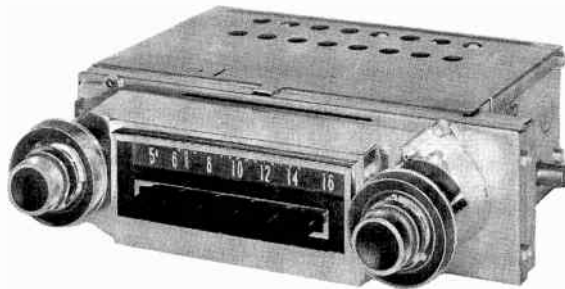
(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	55C3605	Knob, Tuning or Volume	47A1235
Dial Glass	39-78	Knob, Spacer	47A1249

AUTOMATIC UNIVERSAL SERIES



PHOTOFACT[®]



TRADE NAME :	BAP-4530	64 Buick	FPO-4028	64 F-85
	BP-4030	64 Buick	OAE-4531	64 Oldsmobile
	C-4049	64 Chevrolet	OE-4031	64 Oldsmobile
	CA-4549	64 Chevrolet	PAC-4529	64 Pontiac
	CAP-4550	64 Chevrolet	PC-4029	64 Pontiac
	CAV-4548	64 Chevelle	SBP-4027	64 Special
	CP-4050	64 Chevrolet	SPA-4527	64 Special
	CPA-4533	64 Corvair	TAC-4541	64 Chevy Truck
	CPV-4048	64 Chevelle	TAP-4526	64 Tempest
	CR-4034	64 Corvair	TAX-4542	64 Chevy Truck
	CRA-4534	64 Corvair	TCM-4041	64 Chevy Truck
	CRP-4033	64 Corvair	TCX-4042	64 Chevy Truck
	CY-4025	64 Chevy II	TPC-4026	64 Tempest
	CYP-4032	64 Chevy II	YAM-4525	64 Chevy II
FOP-4528	64 F-85	YP-4532	64 Chevy II	

SUPPLIER : For Current Address, See Master Index.

TYPE SET : 5 Transistor AM Receiver

POWER SUPPLY : 12 Volt Storage Battery

RATING : .870 Amp. @ 12.6 Volts DC

TUNING RANGE : BROADCAST 540-1615KC

AUTOMATIC GM CUSTOM SERIES

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools:

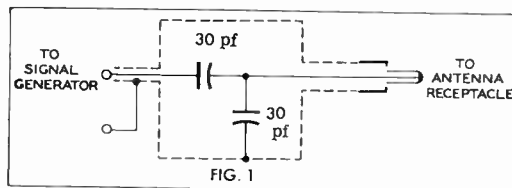
A1 thru A4	GENERAL CEMENT: 8606, 8606L, 8869	WALSCO: 2543, 2544, 2588
A5 thru A7	GENERAL CEMENT: 8290, 8868, 9087	WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



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

PARTS LIST AND DESCRIPTION

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

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	Driver	DS-26	GE-2	2N591	PNP
X5	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1GD2					1N34AS
X7		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Automatic PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	20-2653	AFH3-00-945		XC3-48.1		FP300.83	TVLS3026.1*
B	300	16							
C	100	16							
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-2257.1
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10		#28-806-2L							
C11A		#28A1332							
B									
C12	270		DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T25	
C13	100	N750	N750-DI100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10	
C14	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C15	.22			UK20-204	HCC25224Z			HY-325	
C16	.1	16V	TTD-1	CK-104	H6		TA010	TG-P10	
C17	.05		TTD-05	CK-503	H5		TA150	TG-850	

Automatic Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Automatic PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	Tone	10K	80A2772				↑ QJ-1687A	■ UE4459-S
B	Volume/Switch	750Ω Tap @ 500Ω						
	Tone	10K	80A3402①					
	Volume/Switch	750Ω Tap @ 500Ω						
	Tone	10K	80A3443 ②					
	Volume/Switch	750Ω Tap @ 500Ω						
	Tone	10K	80A3469 ③					
	Volume/Switch	750Ω Tap @ 500Ω						
R2	Fader	25Ω ZW	80A1137④				▲ QJ-1816A	
	Fader	40Ω ZW	80A2685⑤					
	Fader	40Ω ZW	80A2774⑥				↑↑ QJ-1806A	
	Fader	40Ω ZW	80A2879⑦				↑↑↑ QJ-1688A	
	Fader	40Ω ZW	80A3403①					
	Fader	40Ω ZW	80A3470③					

① Used in Models CPV-4048, CAV-4548.

② Used in Models TPC-4026, TAP-4526.

③ Used in Models FPO-4028, FOP-4528.

④ Used in Models SPB-4027, SPA-4527.

⑤ Used in Models CP-4050, C-4049, CAP-4550, CA-4549.

⑥ Used in Models PC-4029, PAC-4529, OE-4031, OAE-4531.

⑦ Used in Models BP-4030, BAP-4530.

↑ "CONCENTRIKIT" Equivalent: K8 Kit with Base Elements and Shafts: B11-116, P17-129 (Panel)
"SNAPTROL" Equivalent: BU8, CF9, CR48T, SF16, SR51, GC.

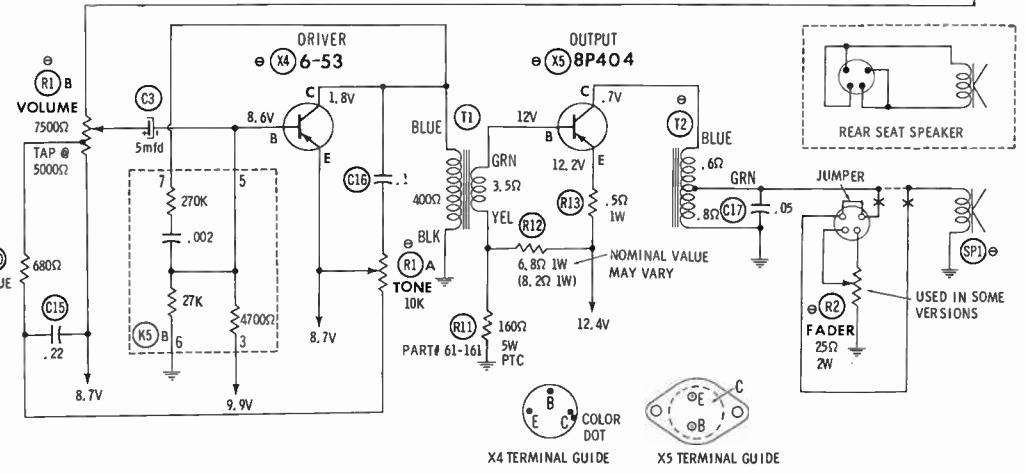
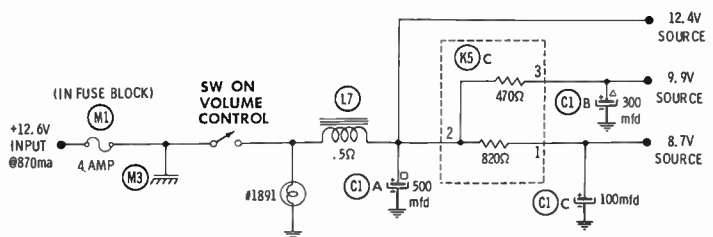
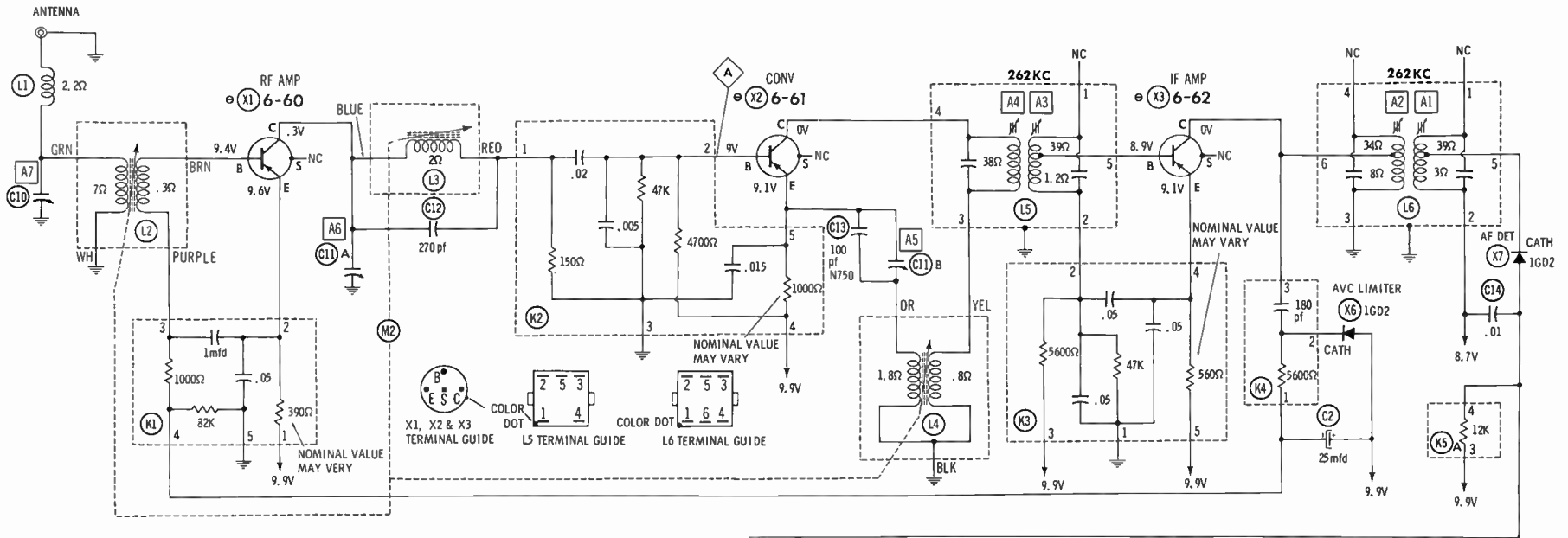
↑↑ "CONCENTRIKIT" Equivalent: K10 Kit with Base Elements and Shafts: W11-050, P3-100 (Panel)
None, None (Rear)
QCB6 (Bushing)

↑↑↑ "SNAPTROL" Equivalent: BU8, WF18, SF5

■ "STA-LOC" Equivalent: FG14L, RU752T53, OS2000, IS2437, US41.

▲ "CONCENTRIKIT" Equivalent: K13 Kit with Base Elements and Shafts: W11-020, P3-100 (Panel)
None, None (Rear)
QCB6 (Bushing)

Continued on Page 40



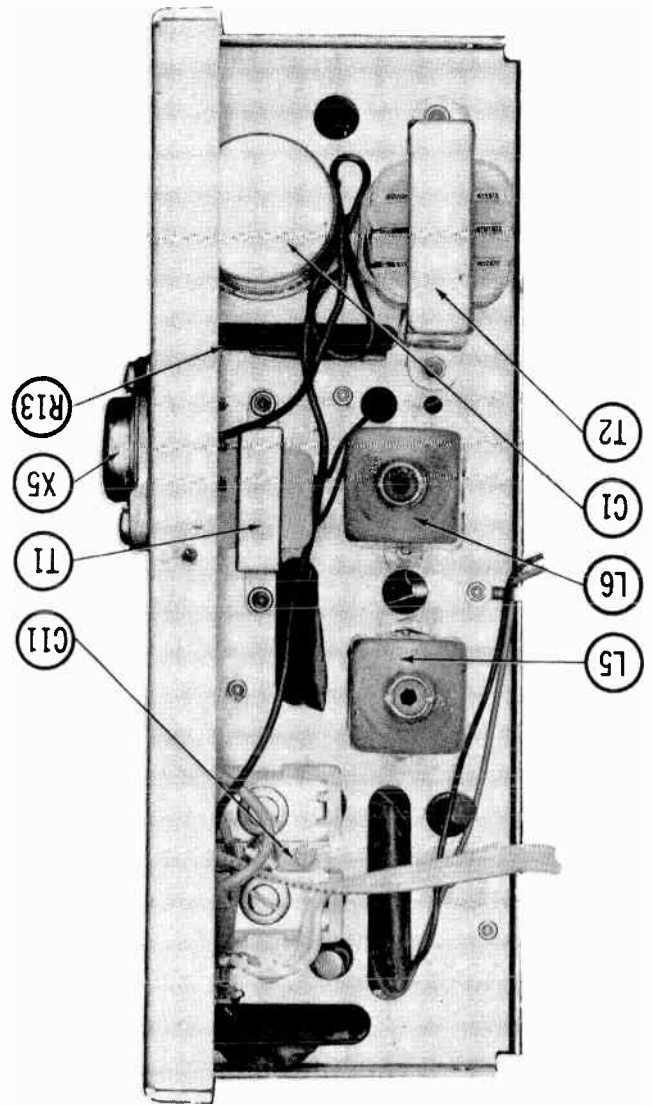
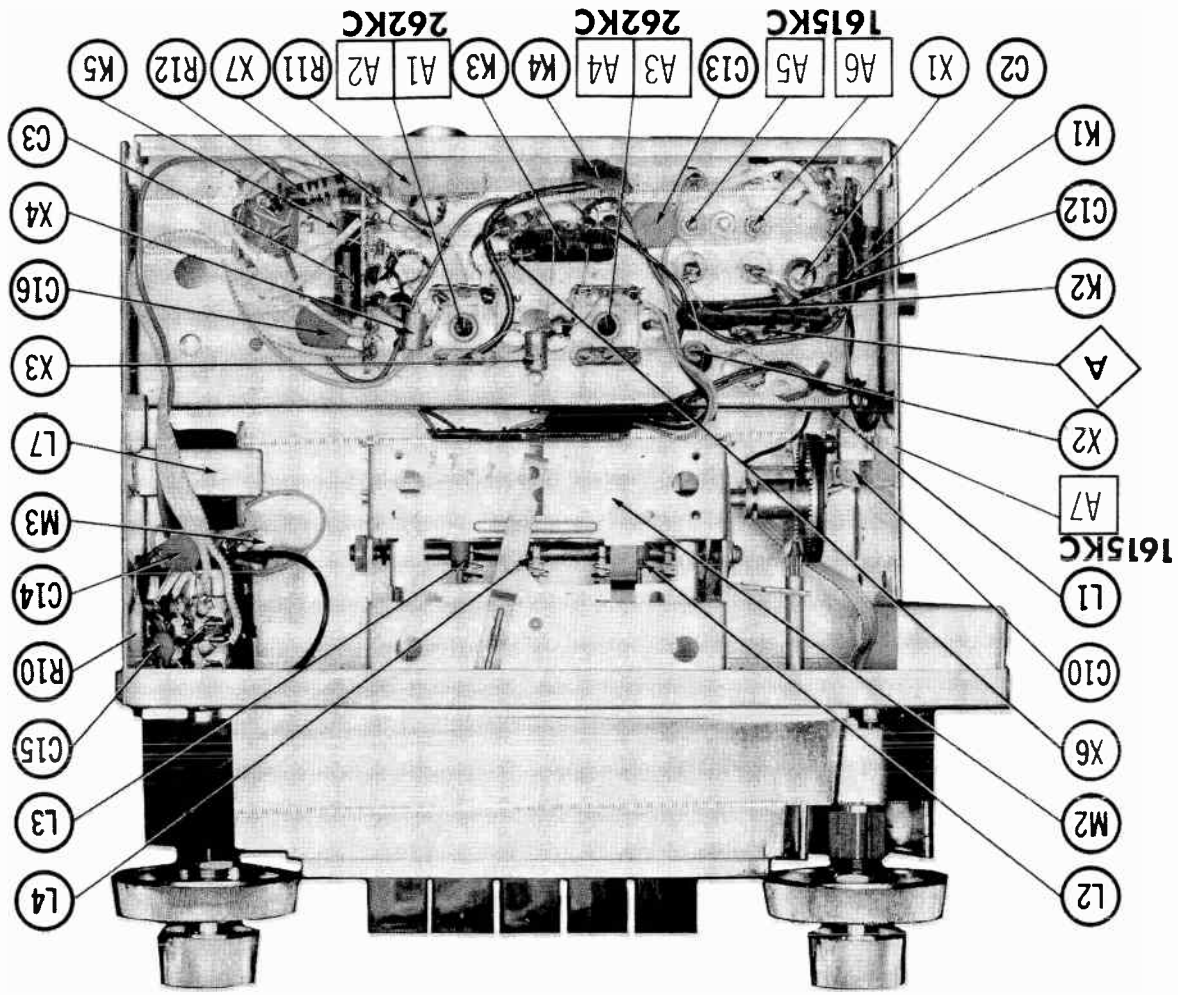
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

⊖ See parts list for alternate value or application.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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AUTOMATIC GM CUSTOM SERIES



PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Automatic PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-2654		6571			
L6	Output IF	14-2655					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	870ma	.5Ω	10MH	75A1269	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	8:	1	75A2635			TR-184		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	24Ω Tap	@ 8Ω	75A2636 ①			TR-169		① 75A2693, Alternate Part Number.

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			Automatic PART No.	QUAM PART No.	
SP1	6" PM	8Ω	73B3646	6A15Z8	Used in Models SPB-4027, SPA-4527.
	6" X 9" PM	8Ω	73B2871	69A3Z8	
	4" X 10" PM	8Ω	73B2737	410A2Z8	Used in Models PC-4029, PAC-4529, OE-4031, OAE-4531, FPO-4028, FOP-4528, TPC-4026, TAP-4526, CYP-4032, CY-4025, YAM-4525, YP-4532, BP-4030, BAP-4530, CPV-4048, CAV-4548, CP-4050, C-4049, CAP-4550, CA-4549.
	6" X 9" PM	8Ω	73B3374	69A3Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Automatic PART NO.	REPLACEMENT DATA
K1	Biasing	390Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582C	
K2	Biasing	150Ω, 1000Ω, 4700Ω, 47K, .005mfd, .015mfd, .02mfd	89A2583	
K3	Biasing	560Ω, 5600Ω, 47K, .05mfd, .05mfd	89A2584	
K4	AVC	5600Ω, 180pf	89A2701	
K5	Biasing	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd.	89A2585	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	AGW	4A		In Fuse Block	303004			AGW4	

MISCELLANEOUS

ITEM No.	PART NAME	Automatic PART No.	NOTES
M2	Tuner	78B2689	
M3	Spark Plate	43-216	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	54C2644	Knob, Tone or Fader	48B1872
Dial Glass	39-86	Pushbutton	55A2682
Knob, Tuning or Volume	48A2854		

WIRING DATA

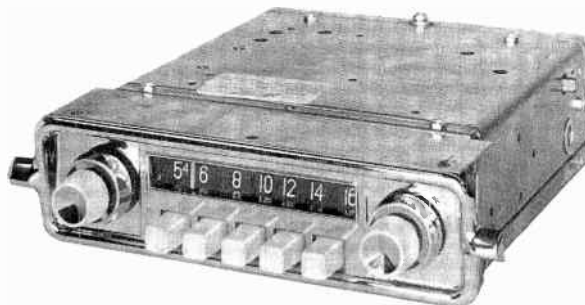
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)



PHOTOFACT®

TRADE NAME : Automatic Models WP-3039A, W-3040A
 (1964 Volkswagen)
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 6 Transistor AM Receiver
POWER SUPPLY : 6 Volt Storage Battery
RATING : 1 Amp @ 6.3 Volts DC

TUNING RANGE : BROADCAST 540-1615KC



AUTOMATIC MODELS WP-3039A, W-3040A

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

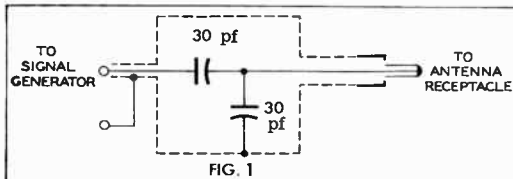
A1 thru A4	GENERAL CEMENT: 8606, 8606L, 8869	WALSCO: 2543, 2544, 2588
A5, A6, A7	GENERAL CEMENT: 8290, 8868, 9087	WALSCO: 2525, 2528, 2587

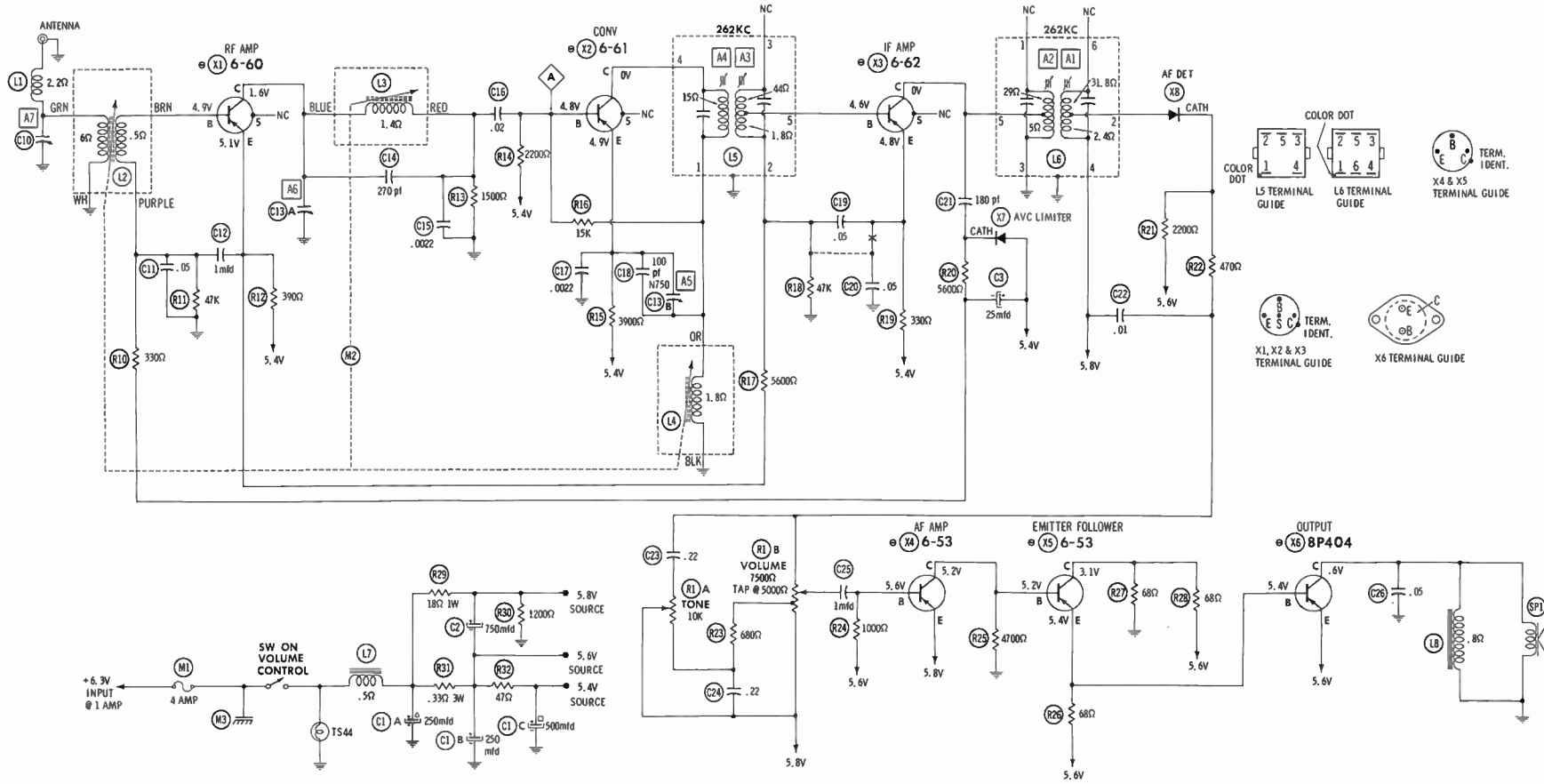
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mf to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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

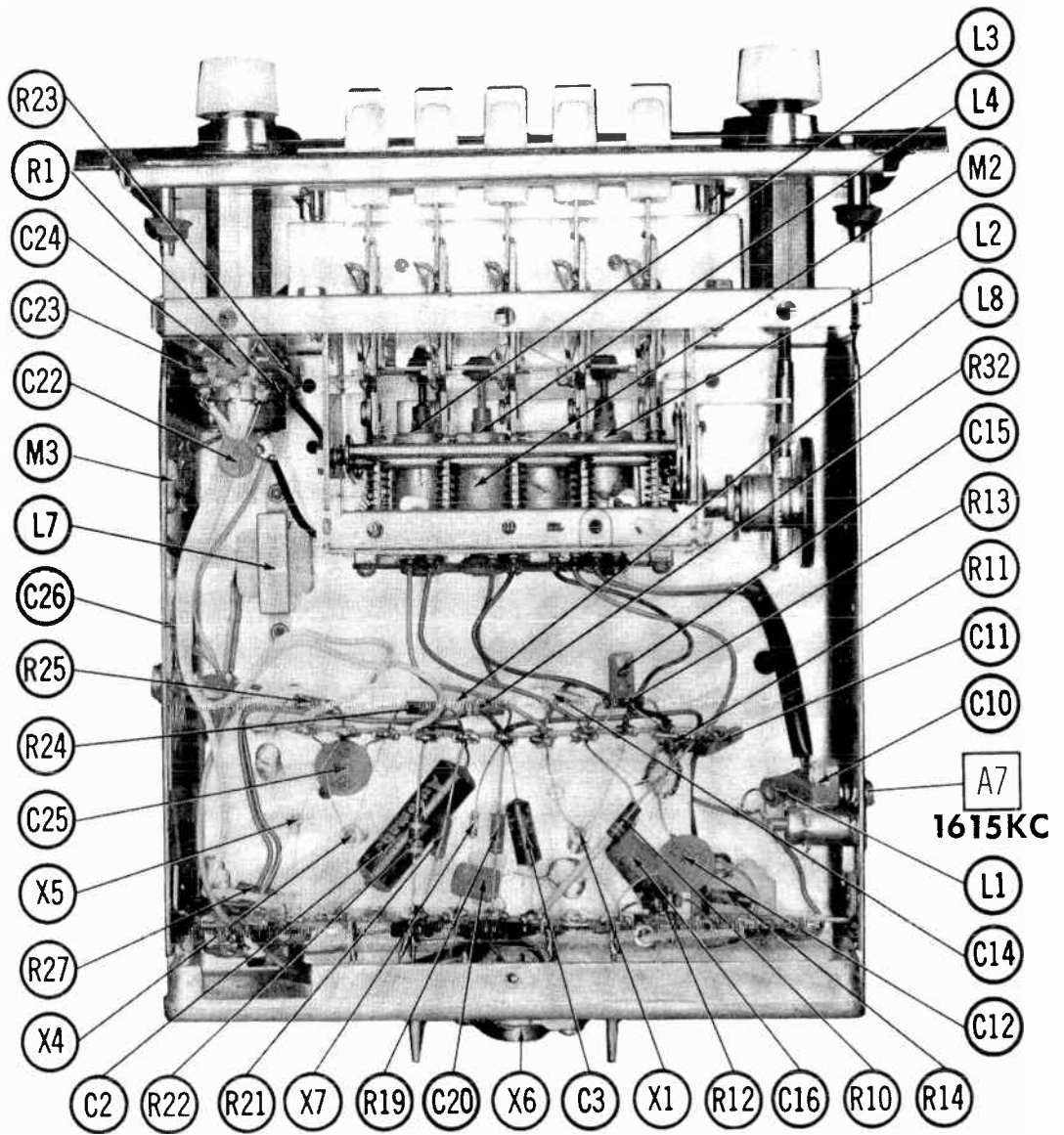
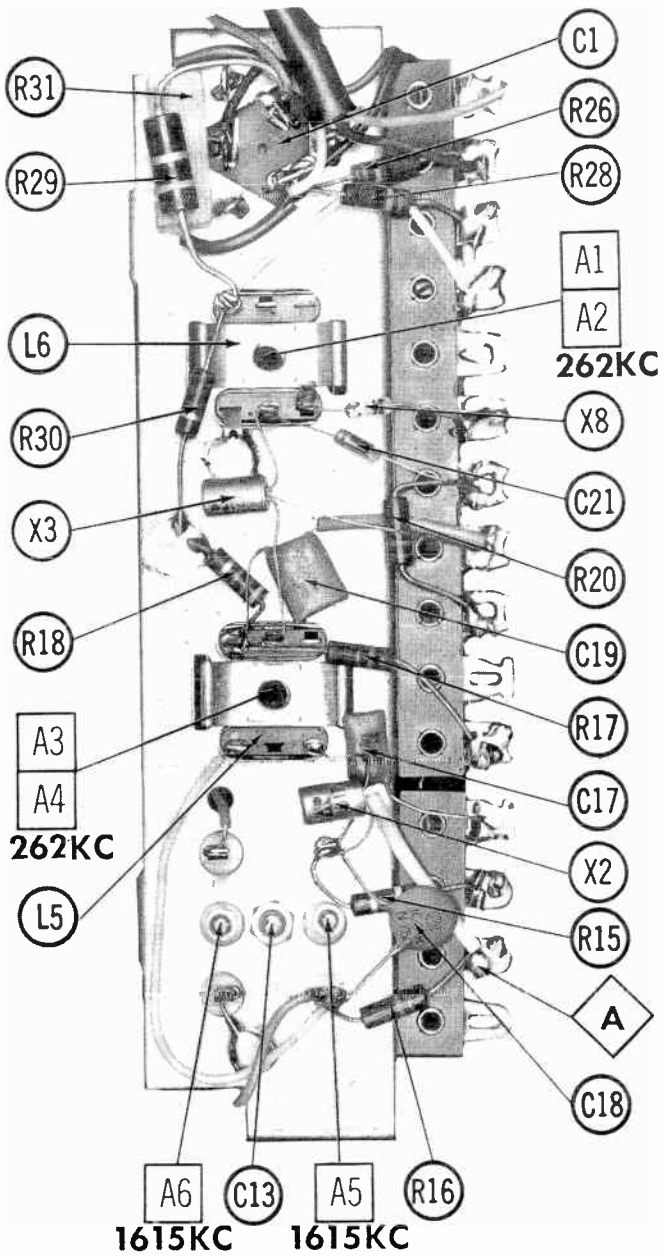




AUTOMATIC MODELS WP-3039A, W-3040A

- Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.
- ⊖ See parts list for alternate value or application.
 - 1. Voltage measurements taken with vacuum tube voltmeter.
 - 2. All controls set for normal operation, no signal applied.
 - 3. Measured values are from socket pin or terminal to common ground.
 - 4. All terminals viewed from bottom unless otherwise designated.
 - 5. Numbers assigned to terminals may not be found on the unit.
 - 6. Supply voltage maintained at rated value for voltage readings.
 - 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-80 (2N1637)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-81 (2N1639)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-82 (2N1638)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	AF Amp.	DS-26	GE-2	2N591	PNP
X5	6-53 (2N591)	Emitter Follower	DS-26	GE-2	2N591	PNP
X6	8P404 (2N301)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1GD2					1N34AS
X8		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Automatic Part No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	250	15	20-328	AFH3-00-94	CCOO12	XC3-48.1		PWH300.4A	PCL-3026.6
B	250	15							
C	500	15							
C2	750	3	20-753	PTT-138	BR1000-6	QT1-32	BL2211	PETA190	TVA-1097
C3	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALA8 PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	.05		#28-800-2L	TTD-05	CK-503	H5		TA150	TG-S50
C11	1mfd	3V	#28A1332		UK-105	HCC3105P			HY-135
C12									
C13A									
B									
C14	270			DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27
C15	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C16	.02			BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C17	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TCU-D22
C18	100	N750		N750-D1100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C19	.05			TTD-05	CK-503	H5		TA150	TG-S50
C20	.05			TTD-05	CK-503	H5		TA150	TG-S50
C21	180			DI-180	DD-181	LA10T18-S3	CCD-181	GP318	5GA-T18
C22	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	.22	3V			UK20-204	HCC25224Z			HY-325
C24	.22	3V			UK20-204	HCC25224Z			HY-325
C25	1mfd	3V			UK-104	HCC3105P			HY-135
C26	.05			TTD-05	CK-503	H5		TA150	TG-S50

Automatic Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Automatic Part No.	CENTRALA8 PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	Tone	10K	80A3610	F1-10K,			† QJ-1792A	
B	Volume/Switch	7500Ω Tap @ 5000Ω		R14-7500, FFS110, RFS203, AK26 ① KR-4				

† "CONCENTRIKIT" Equivalent: K8 Kit with Base Elements and Shafts: B11-116, P17-118 (Panel)

"SNAPTROL" Equivalent: BU8 ① CF9, CR48T, SF13, SR14, GC.

B21-115X, R9-202 (Rear)

S8 ① (Bushing)

76-1 (Switch)

① Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Automatic Part No.			IRC PART No.	WORKMAN PART No.	Automatic Part No.
R31	.33Ω 3W		WT33	60-.33-3S					

PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Automatic PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (8.2uh)	14-8.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-274	BC-690	6570			
L6	Output IF	14-275	BC-691	6571			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
L7	1A	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT

CHOKE (AUDIO OUTPUT)

ITEM No.	INDUCTANCE	REPLACEMENT DATA				NOTES
		Automatic PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
L8	20MH	75A2043				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Automatic PART No.	QUAM PART No.	
SP1	6" PM 8Ω	73A1982	6A21Z8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Automatic PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A	108-400	12A2079	303004	155009	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M2	Tuner	78B3608	Pushbutton Manual
	Tuner	78B3609	
M3	Spark Plate	43-215	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	54C1176	Knob, Tone	48A1063-1
Dial Glass (Manual 39-156)	39-110	Knob, Dummy	48A1063-1A
Knob, Tuning or Volume	47-50	Pushbuttons	55A1179

WIRING DATA

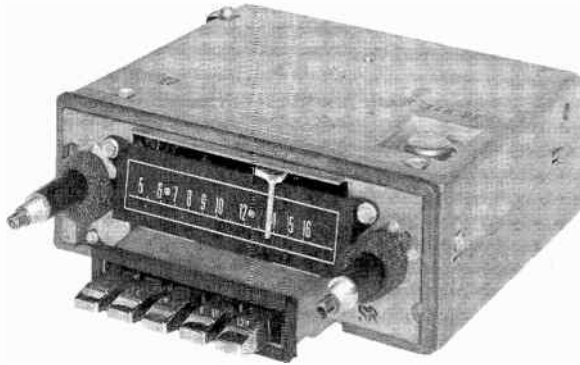
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)

AUTOMATIC MODELS WP-3039A, W-3040A



PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : Continental Model 5TMCF (C5VA-18806-A)
(1965 Continental)
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 6 Transistor AM Receiver
POWER SUPPLY : 12 Volt Storage Battery
RATING : 1 Amp. @ 12.6 Volts DC
TUNING RANGE : BROADCAST 540-1615KC

CONTINENTAL MODEL 5TMCF

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools:

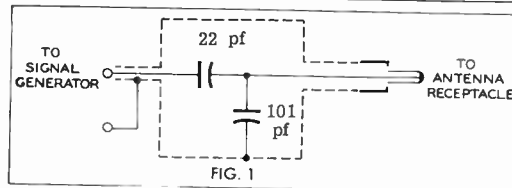
A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588
A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087 WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO

1. Pull off knobs.
2. Use allen wrench and remove heater knobs.
3. Use 9/16" wrench and remove nuts from radio control bushings.
4. Remove 3 phillips screws from each sun visor mounting. Remove sun visors.
5. Remove 2 phillips screws from windshield pillar mouldings. Remove mouldings.
6. Remove 7 phillips screws from upper instrument panel reinforcement bracket. Remove 5 phillips screws from upper instrument panel bezel mounting. Remove reinforcement bracket. Remove 5 phillips screws from lower instrument panel bezel mounting. Remove bezel.

7. Remove 4 phillips screws from upper front instrument panel. Lift panel and disconnect head-light dimmer lead. Remove panel.
8. Use 7/16" wrench and remove radio support mounting bolt from upper panel area.
9. Remove 4 phillips screws from face plate mounting. Remove plate.
10. Pull radio out front of instrument panel and disconnect Antenna, Speaker and "A" lead.

SPEAKER

1. Remove radio (See steps 1 thru 10 above.)
2. Remove 4 phillips screws from speaker mounting. Remove speaker.

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

PARTS LIST 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

CONTROLS

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

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA72	RF Amp.	DS-25	GE-9	2N1637	PNP
X2	2SA72	Conv.	DS-25	GE-9	2N1639	PNP
X3	2SA72	IF Amp.	DS-25	GE-9	2N1638	PNP
X4	M54	Driver	DS-46	GE-10	2N649	NPN
X5	2N176	Output	DS-520	GE-3	2N301	PNP*
X6	2N176	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1N139					1N34AS
X8		1N139					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Motorola PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	23C41979A01	PWH2-02-40				PPF200.65	PCLS-2177*
B	500	16							
C2	10	25	23C41928A18	CRE607A	NLW10-25	MT1-5	BL1460	TT25X10	TE-1204
C3	10	25	23C41928A18	CRE607A	NLW10-25	MT1-5	BL1460	TT25X10	TE-1204
C4	1.6	25	23C41928A05	CRE601A	NLW2-50	MT1-1	BL1180	TT50X2	TL-1201

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	110-380	#20C4094A05						
C11	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C12	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50
C13	.1 100V		DPE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10
C14A	250-390	#20C4025A08						
B	240-350							
C15	180 N750				C10T18U	1DP-1-103	CN7318	10TCU-T18
C16	.01 100V		DBE4S1	CPR-10000J	WMF1S1	1DP-1-502	PVC211	4PS-S10
C17	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50
C18	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50
C19	130 N750				C10T13U			
C20	.15 100V		DBE4S15		WMF2S15	4DP-1-153	PVC2115	4PS-S15
C21	.1 100V		DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10
C22	220		D1-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22
C23	.01 100V		DBE4S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10
C24	2.2mfd 3V			UK-225	HCC3225P			HY-150
C25	.15 100V		DBE4S15		WMF2S15	4DP-1-153	PVC2115	4PS-S15
C26	.05 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50
C27	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	SHK-S20

Motorola Part Number.

• Nominal value

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Motorola PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone Volume/Switch	20K 10K Tap @ 2200Ω 40Ω	18C42834A01				
B							
R2	Fader		18C42792A01				† QJ-1817A

† "SNAPTROL" Equivalent: BU7, W118, SF26.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Motorola PART No.			IRC PART No.	WORKMAN PART No.	Motorola PART No.
R27	75Ω 4W PTC			17C40259A01					

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Motorola PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant.						① Part of M2, coils & mounting plate assy., (Part #1V42700A77).
L2	RF						
L3	Osc.						
L4	Input IF	24D40074A19	BC-638	6555			
L5	Output IF	24D40075A19	BC-639	6554			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES	INDUCTANCE (0 CURRENT 1000~)	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L6	1A	.5Ω	10MH	25D42143A02	C-4095	TC-2	TR-154	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	0:	1	25D42045A13					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	12Ω CT	8Ω	25D42101A09					

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA			
			Motorola PART No.	LITTELFUSE PART No.	BUSS PART No.	
M1	SFE	7½A				
			FUSE	HOLDER	FUSE	HOLDER
			In Fuse Block		30107.5	SFE7½

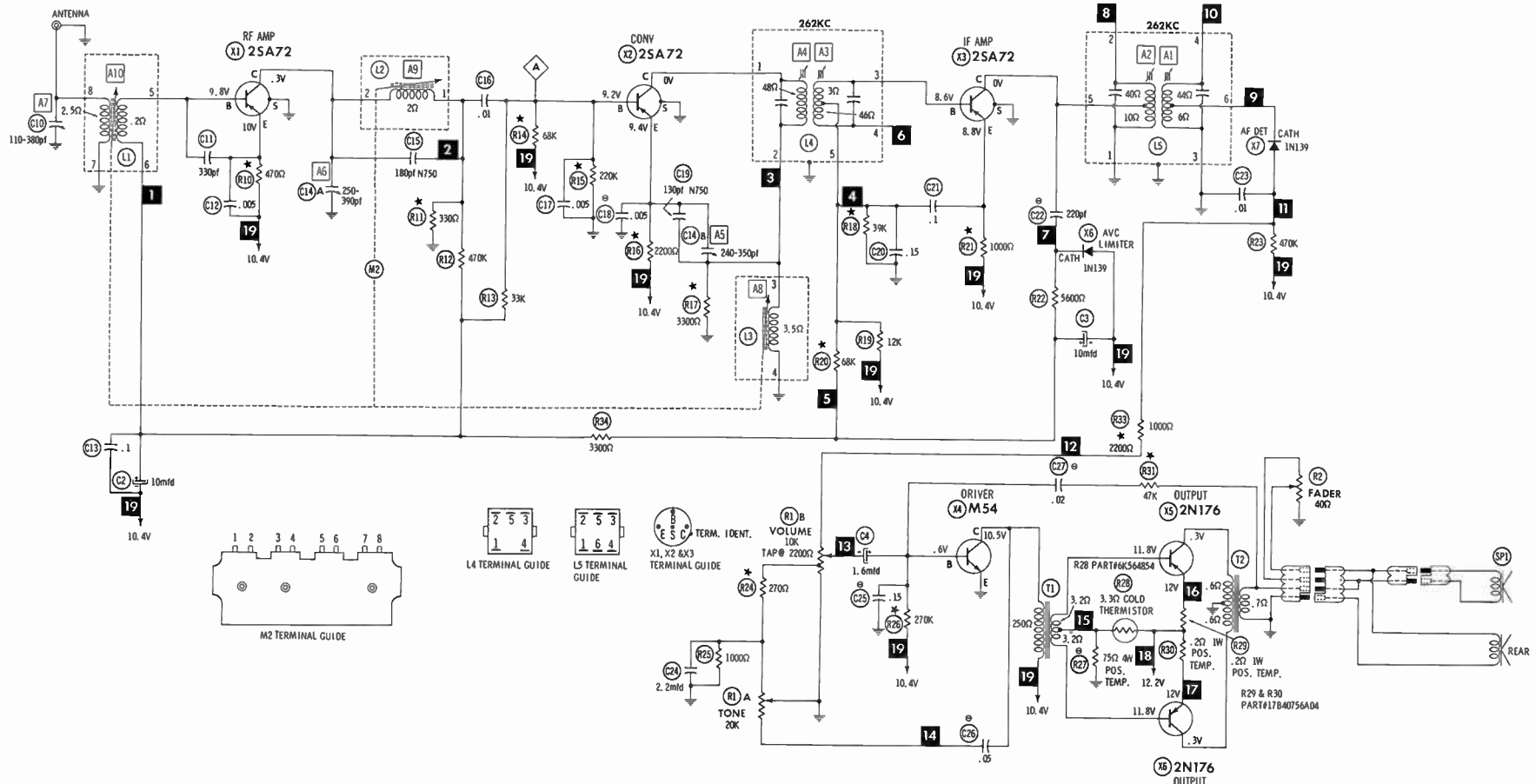
MISCELLANEOUS

ITEM No.	PART NAME	Motorola PART No.	NOTES
M2	Tuner	77D42148A02	AT-497
M3	Spark Plate	64A41668A03	
M4	Spark Plate	64A41668A03	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.
Dial Scale	34C41977A01
Pushbutton	38C41994A03
Pointer	52C42219A01

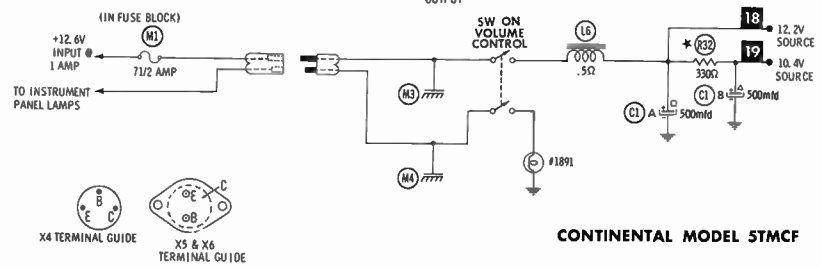


* NOMINAL VALUE MAY VARY

- Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.
 See parts list for alternate value or application.
 1. Voltage measurements taken with vacuum tube voltmeter.
 2. All controls set for normal operation, no signal applied.
 3. Measured values are from socket pin or terminal to common ground.
 4. All terminals viewed from bottom unless otherwise designated.
 5. Numbers assigned to terminals may not be found on the unit.
 6. Supply voltage maintained at rated value for voltage readings.
 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC with CIRCUITRACE

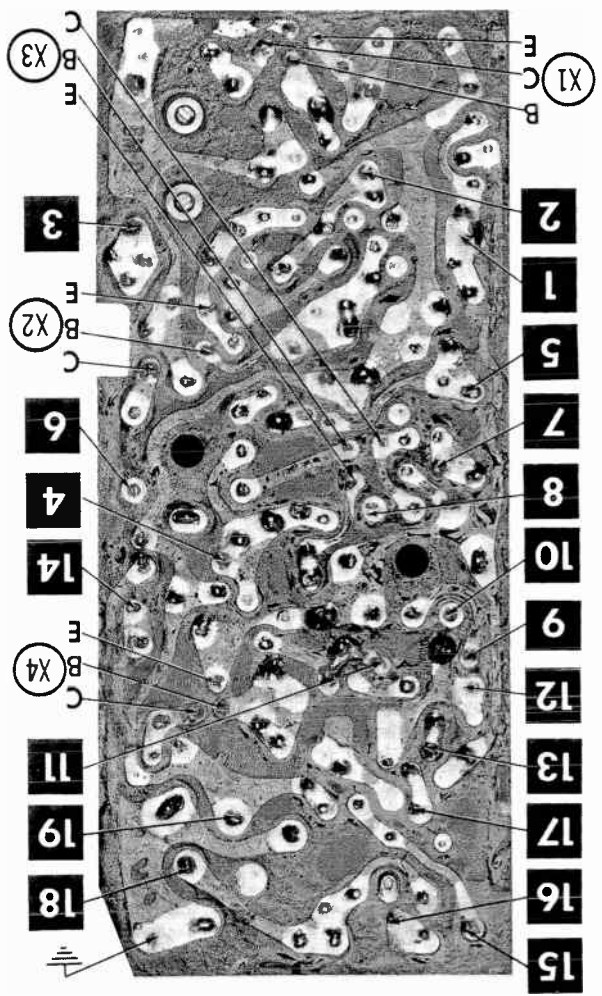
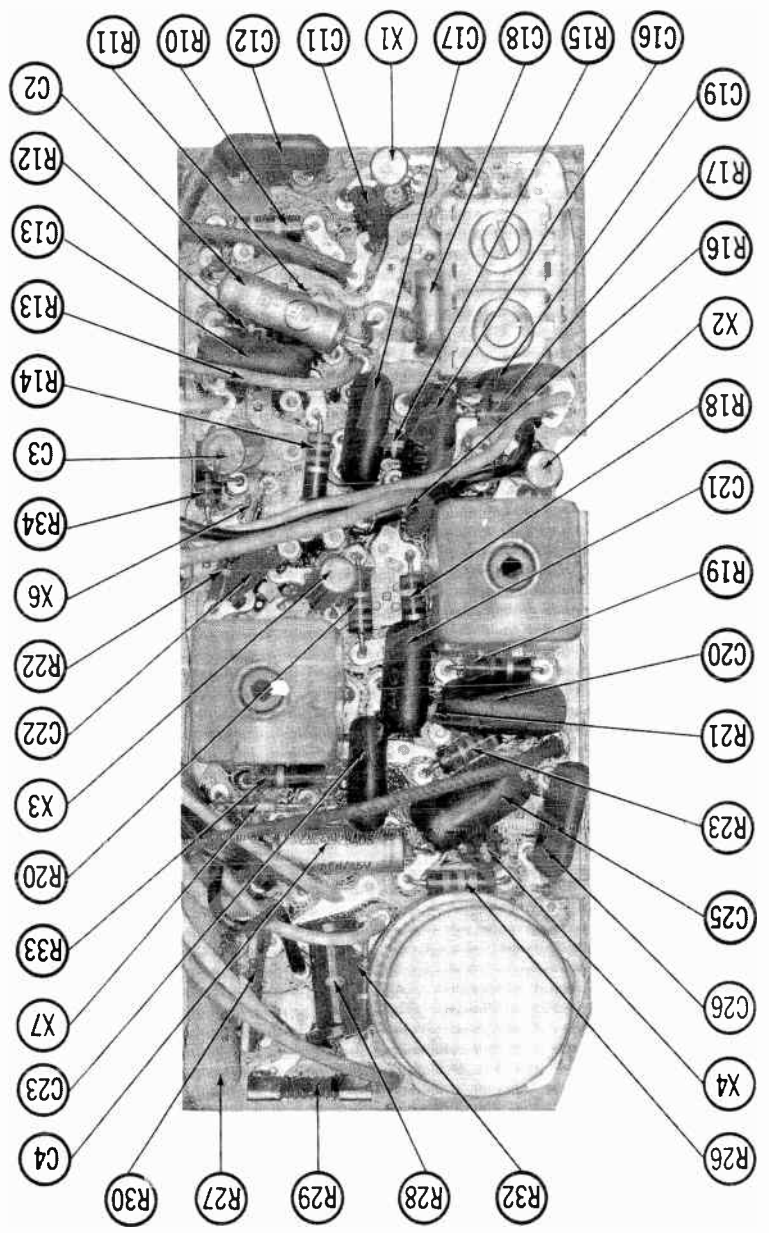
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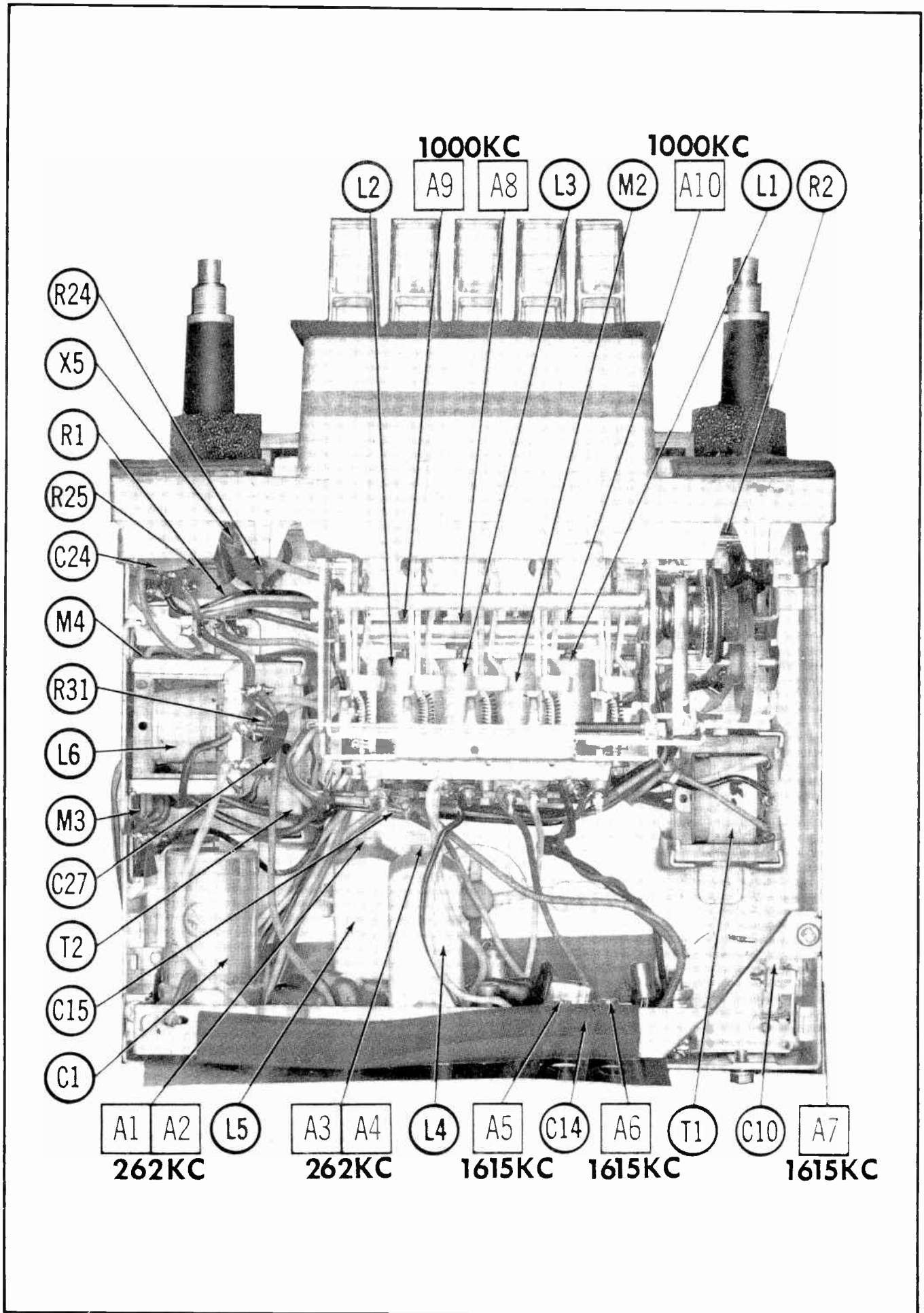


CONTINENTAL MODEL 5TMC

CONTINENTAL MODEL 5TMCF

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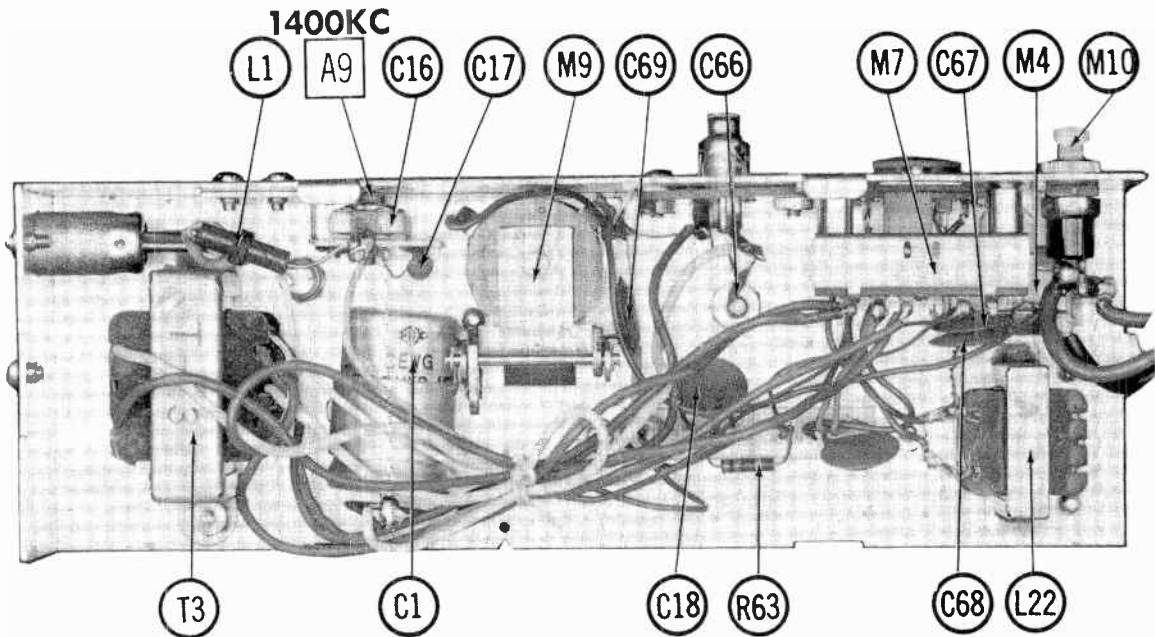




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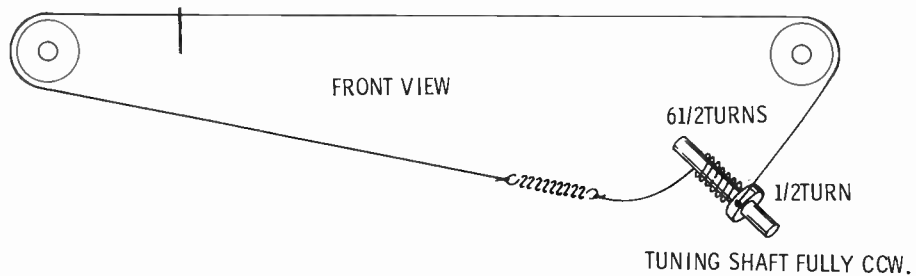
CIRCUITRACE[®]

TRADE NAME : Duo-Vox Model AMF-16B
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 10 Transistor AM-FM Receiver
 POWER SUPPLY : 6 or 12 Volt Storage Battery
 (4 Penlight Batteries)
 RATING : .115 Amp. @ 12.6 Volts DC, .08 Amp. @
 6.3 Volts DC, 13MA @ 6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC
 FREQ. MOD. 88-108MC

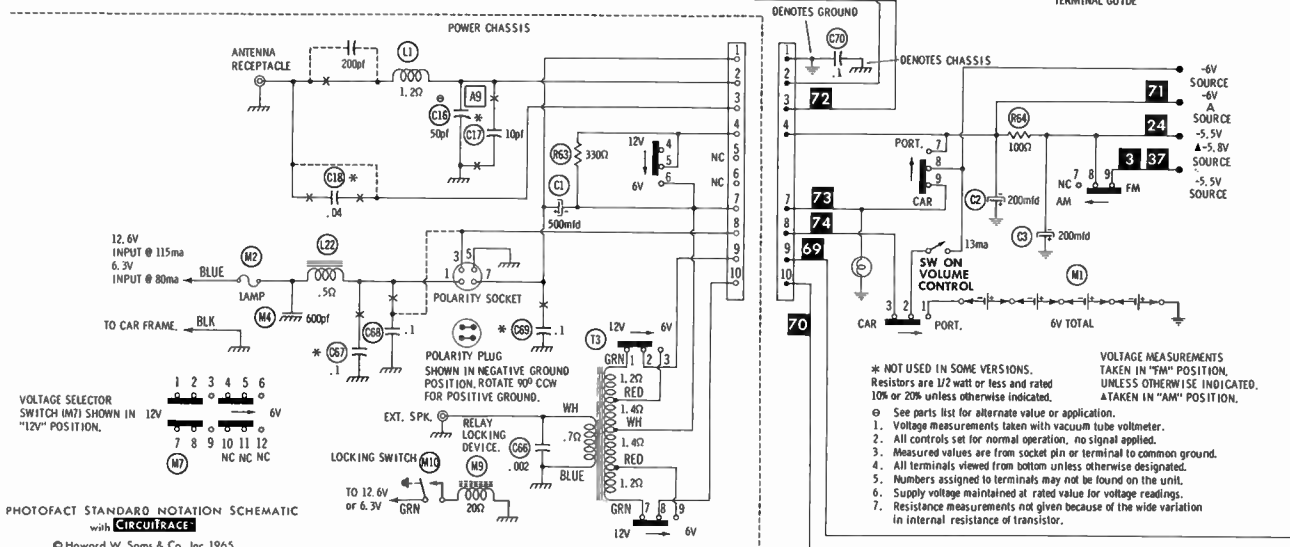
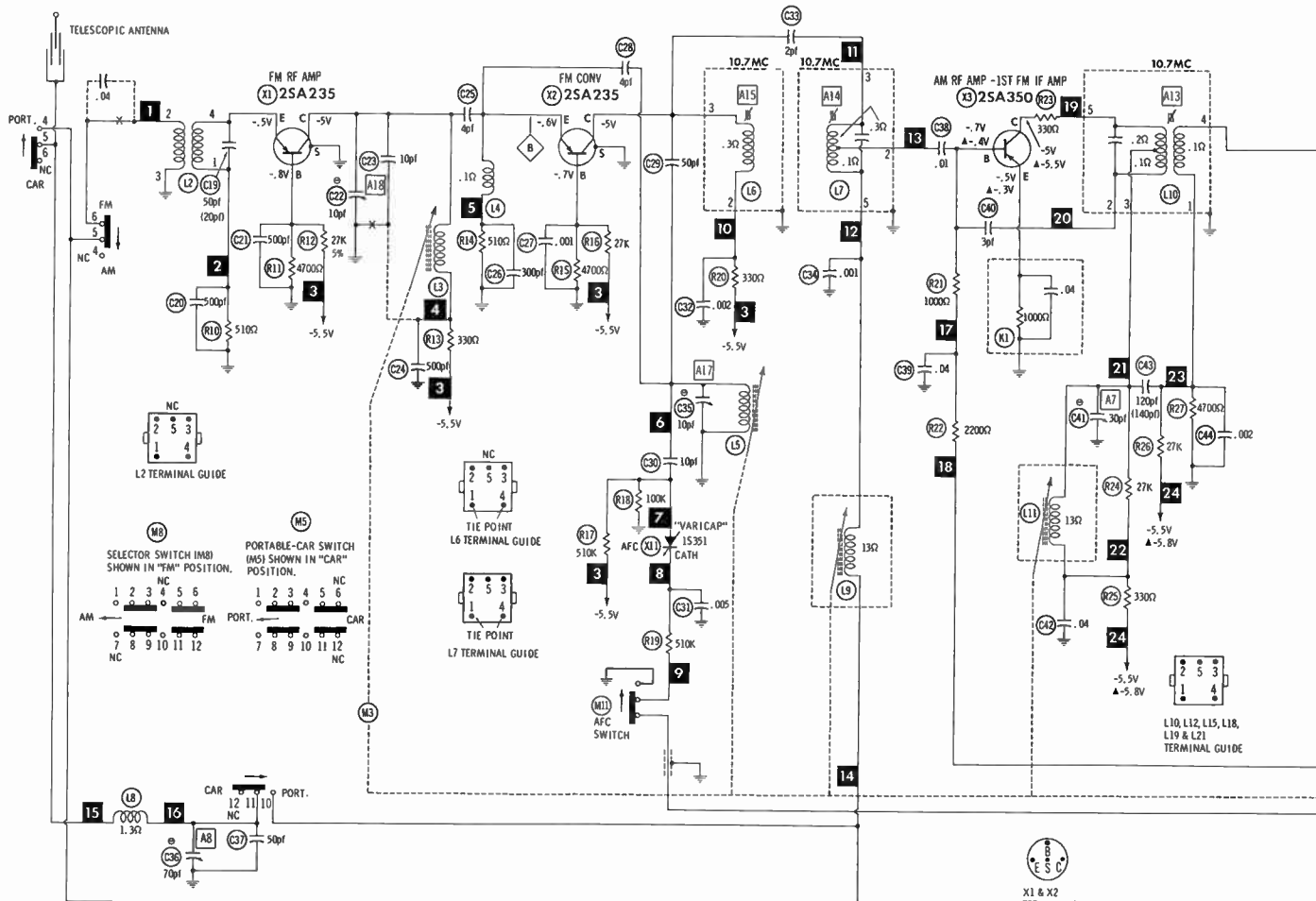


DUO-VOX MODEL AMF-16B

DIAL CORD STRINGING



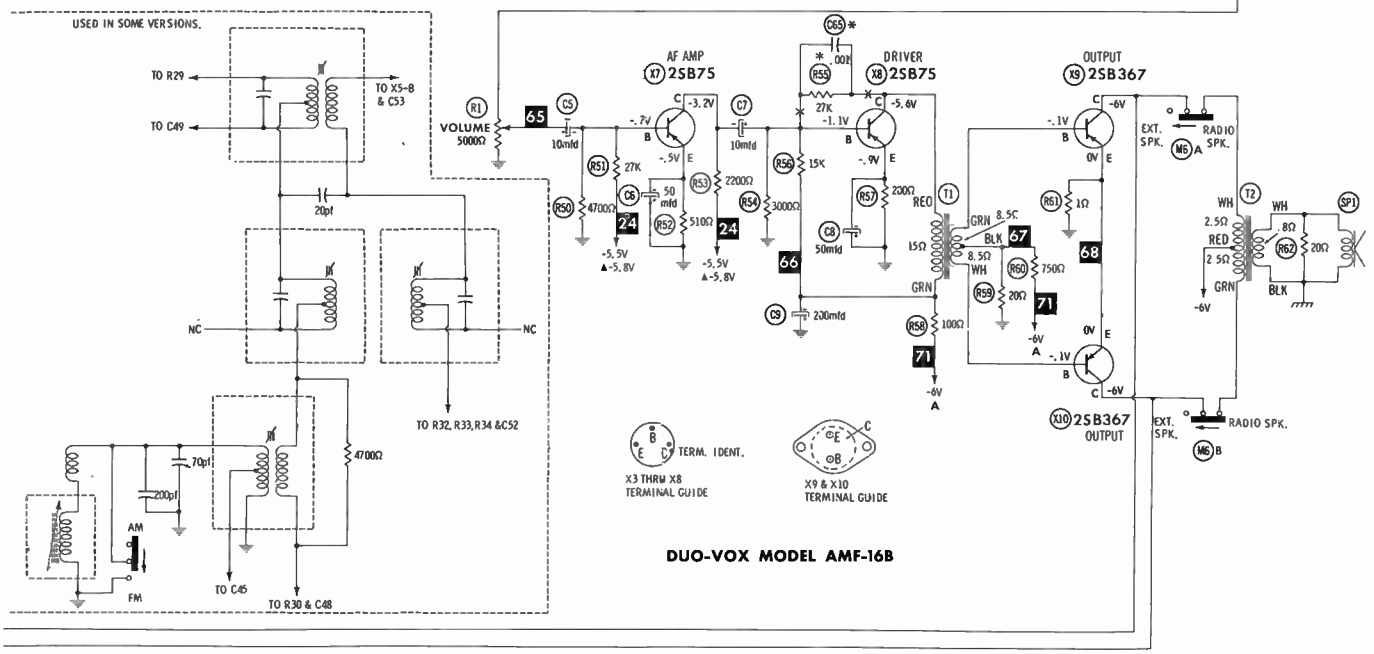
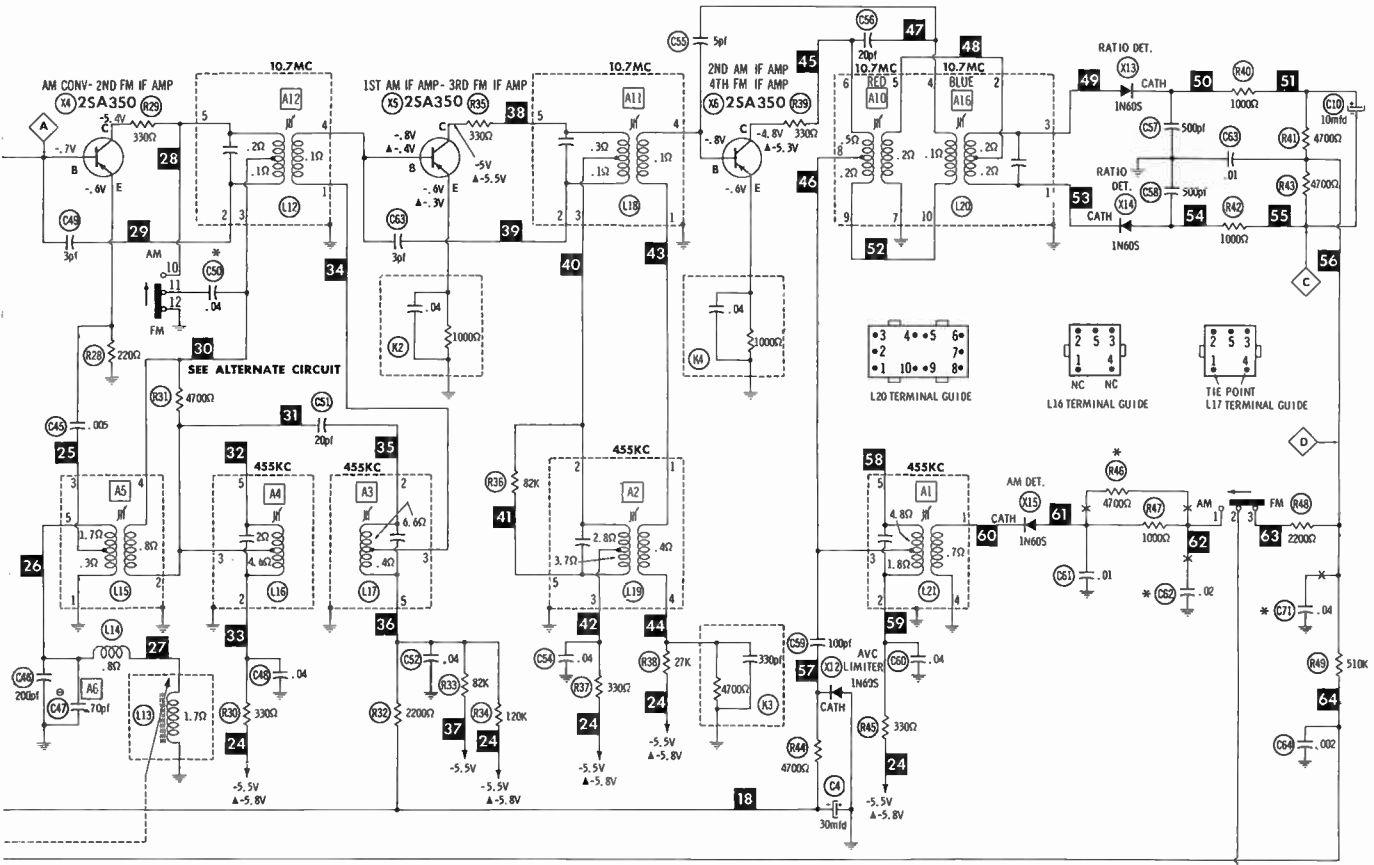
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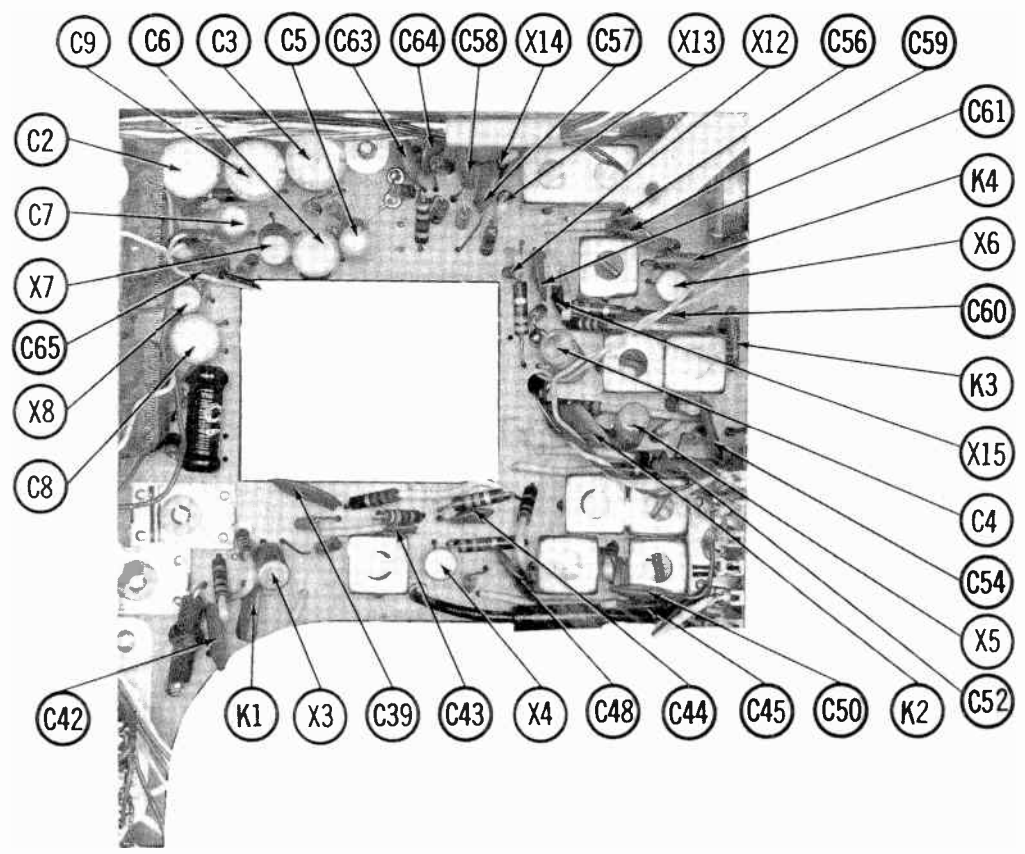
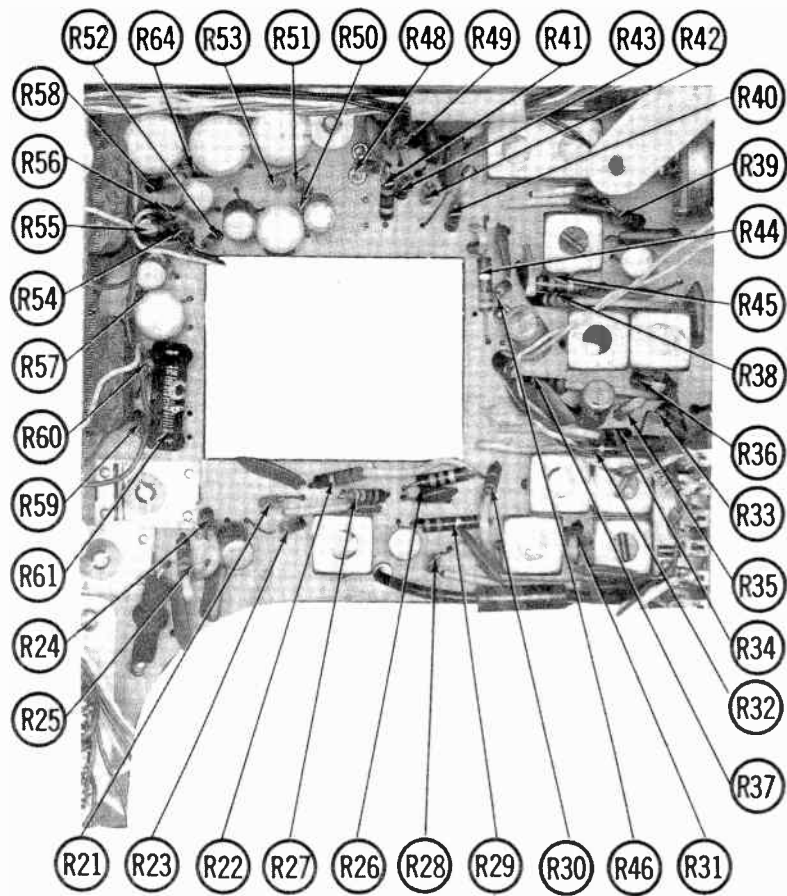
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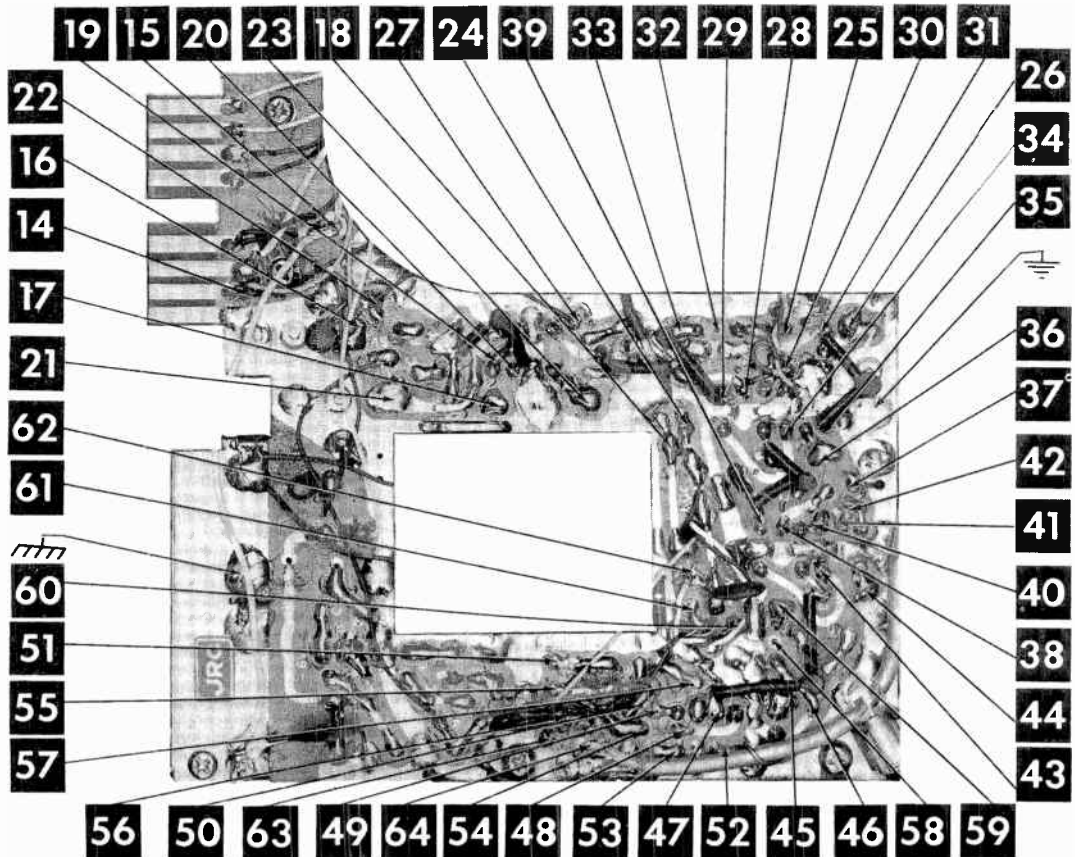
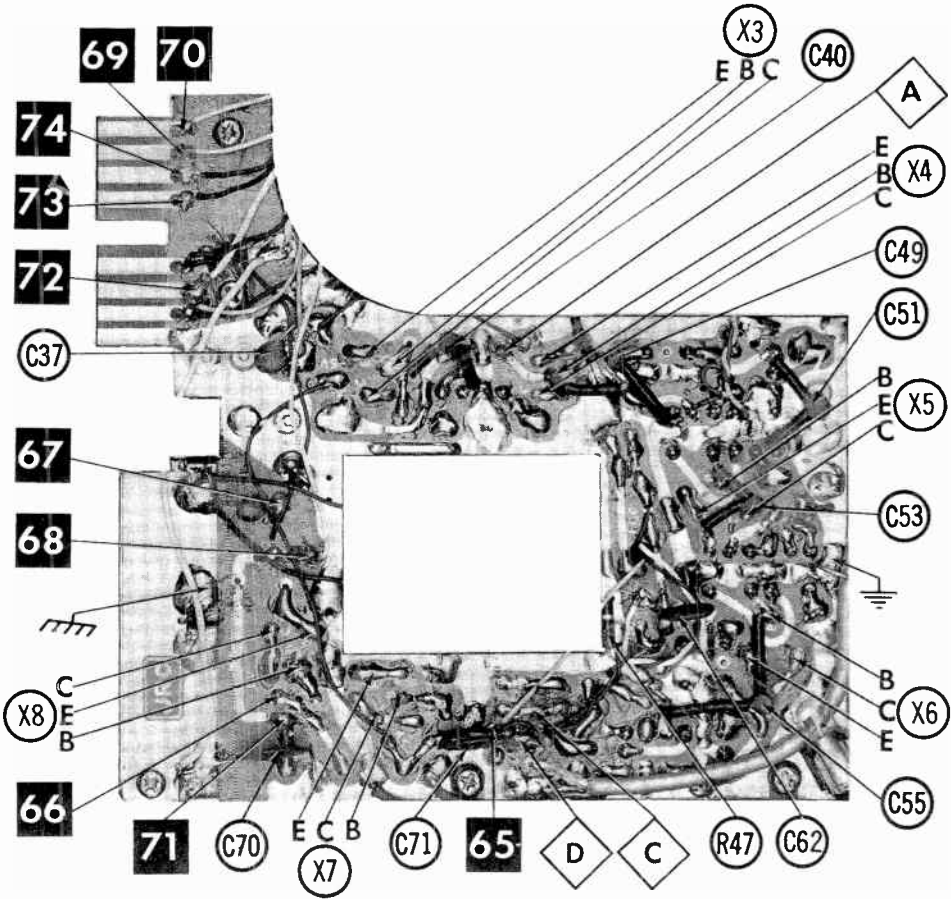
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- * NOT USED IN SOME VERSIONS. VOLTAGE MEASUREMENTS TAKEN IN "FM" POSITION. RESISTORS ARE 1/2 WATT OR LESS AND RATED UNLESS OTHERWISE INDICATED. ATAKEN IN "AM" POSITION.
1. Voltage measurements taken with vacuum tube voltmeter.
 2. All controls set for normal operation, no signal applied.
 3. Measured values are from socket pin or terminal to common ground.
 4. All terminals viewed from bottom unless otherwise designated.
 5. Numbers assigned to terminals may not be found on the unit.
 6. Supply voltage maintained at rated value for voltage readings.
 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.



DUO-VOX MODEL AMF-16B





A Howard W. Soms CIRCUITRACE® Photo

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools:

x A1 thru A8 GENERAL CEMENT: 9087 WALSCO: 2541

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. High side thru .1mfd to point \diamond , low side to ground.	455KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coll.	A1, A2, A3, A4	Adjust for maximum.
2. Thru dummy (Fig. 1) to antenna receptacle.	600KC	"	"	A5,	"
3. Thru dummy (Fig. 1) to antenna receptacle.	1615KC	High Freq. Stop	Output Meter across voice coll.	A6, A7, A8	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A9 for maximum output.

FM ALIGNMENT USING AM SIGNAL GENERATOR — SELECTOR IN FM POSITION

High side to Point \diamond thru .1mfd, low side to ground.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
4. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point \diamond ; common to ground.	A10, A11, A12, A13, A14, A15	Adjust for maximum.
5. "	"	DC probe to point \diamond ; common to	A16	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.

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

High side to Point \diamond thru .1mfd, low side to ground. Use only enough marker signal to obtain indication. Use 60% frequency modulated signal with 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
4. 10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of Scope to point \diamond ; low side to ground.	A10, A11, A12, A13, A14, A15	Disconnect stabilizing capacitor C 10. Adjust for maximum gain and symmetry of response similar to Fig. 2 with marker as shown. Reconnect C10.
5. "	"	Vert. amp. to point \diamond ; low side to	A16	Adjust A16 (Secondary) to place marker at center of crossover lines similar to Fig. 3. Adjust A10 (Primary) for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

Connect generator across antenna terminals with 120 Ω carbon resistors in series with each lead

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
6. 104MC	Set at high end.	DC probe of VTVM to point \diamond ; common to ground.	A17, A18	Adjust for maximum.

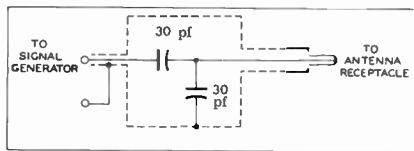


FIG. 1

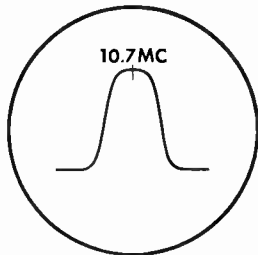


FIG. 2

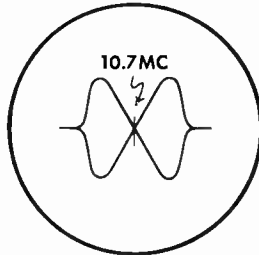
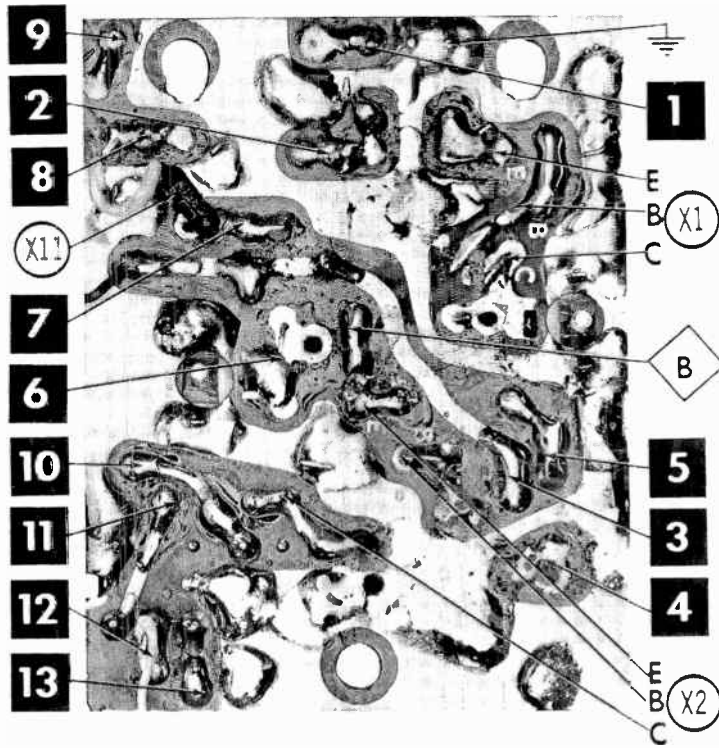
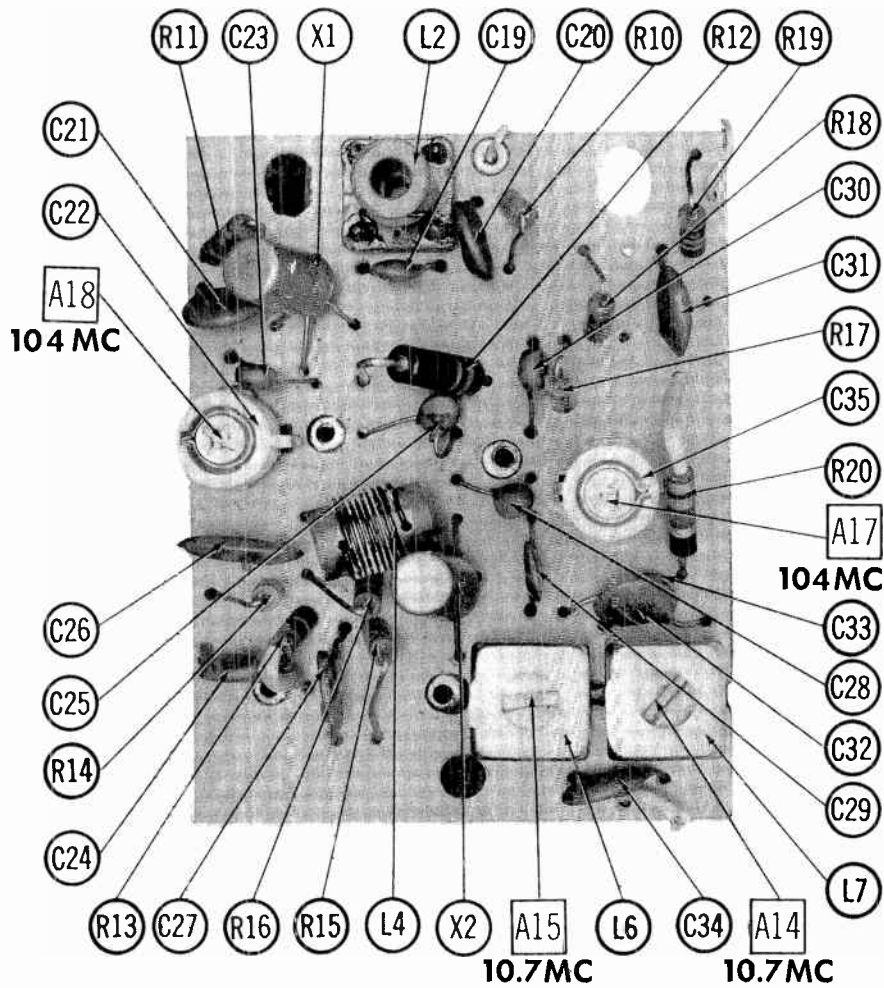


FIG. 3



A Howard W. Sams **CIRCUITRACE** Photo



PARTS LIST 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.

TRANSISTORS

FIXED CAPACITORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA235	FM RF Amp.	DS-41		2N1177	PNP
X21	2SA235	FM Conv.	DS-42		2N1179	PNP
X3	2SA350	1st FM IF/AM RF Amp.	DS-34		2N1180	PNP
X4	2SA350	2nd FM IF/AM Conv.	DS-34		2N1180	PNP
X5	2SA350	3rd FM IF/1st AM IF	DS-34		2N1180	PNP
X6	2SA350	4th FM IF/2nd AM IF	DS-34		2N1180	PNP
X7	2SB75	AF Amp.	DS-26	GE-2	2N591	PNP
X8	2SB75	Driver	DS-26	GE-2	2N591	PNP
X9	2SB367	Output				PNP
X10	2SB367	Output				PNP

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X11		1S351					
X12		1N60S					1N34AS
X13		1N60S					1N34AS
X14		1N60S					1N34AS
X15		1N60S					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	DUO-VOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	500	15	16/52	PRS1220	BR500-15	QT1-30	TC1505	BL2342	TVA-1162
C2	200	10	16/51	BCD10190	NLW200-15	MT1-25	TT15X200	BL2030	TE-1119, 6
C3	200	10	16/51	BCD10190	NLW200-15	MT1-25	TT15X200	BL2030	TE-1119, 6
C4	30	6	16/49	BCD6035	ECSP35-10	MT1-13	TT6X30	BL1321	VL-1092
C5	10	6	16/48	BCD6010	ECSP10-15	MT1-5	PET1340	BL1220	VL-1087
C6	50	6	16/50	BCD6050	ECSP50-10	MT1-15	PET1260	BL1520	VL-1094
C7	10	6	16/48	BCD6010	ECSP10-15	MT1-5	PET1340	BL1220	VL-1087
C8	50	6	16/50	BCD6050	ECSP50-10	MT1-15	PET1260	BL1520	VL-1094
C9	200	10	16/51	BCD10190	ECSP10-15	MT1-5	PET1340	BL1220	VL-1087
C10	10	6	16/48	BCD6010	ECSP10-15	MT1-5	PET1340	BL1220	VL-1087

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C16	50	#16/56						
C17	10	Ⓢ	NPO-DI 10	DTZ-10	C10QIC	CCTO-100	CNO410	10TCC-Q10
C18	.04	Ⓢ	TTD-05	CK-503	H5		TA150	TG-S50
C19	50	(20pf) †	DI-50	DD-500	LA10Q5-S3	CCD-500	GP450	5GA-Q50
C20	500			DM-501				
C21	500			DM-501				
C22	10	#16/53						
C23	10		NPO-DI 10	DTZ-10	C10QIC	CCTO-100	CNO410	10TCC-Q10
C24	500			DM-501				
C25	4pf							10TCC-V39
C26	300			DM-301				
C27	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C28	4pf							10TCC-V39
C29	50		DI-50	DD-500	LA10Q5-S3	CCD-500	GP450	5GA-Q50
C30	10		NPO-DI 10	DTZ-10	C10QIC	CCTO-100	CNO410	10TCC-Q10
C31	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C32	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C33	2pf		NPO-DI 2.2	DTZ-2R2	C10V22C	CCTO-2R2	CNO522	10TCC-V22
C34	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C35	10	#16/53						
C36	70	#16/55						
C37	50		DI-50	DD-500	LA10Q5-S3	CCD-500	GP450	5GA-Q50
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C39	.04		TTD-05	CK-503	H5		TA150	TG-S50
C40	3pf		NPO-DI 3.0	DTZ-3R3	C10V33C	CCTO-3R3	CNO533	10TCC-V30
C41	30	#16/54						
C42	.04		TTD-05	CK-503	H5		TA150	TG-S50
C43	120	(140pf) †	NPO-DI 120	DTZ-120	C10T12C	CCTO-121	CNO312	10TCC-T12
C44	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C45	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C46	200			DM-201				
C47	70	#16/55						
C48	.04		TTD-05	CK-503	H5		TA150	TG-S50
C49	3pf		NPO-DI 3.0	DTZ-3R3	C10V33C	CCTO-3R3	CNO533	10TCC-V30
C50	.04	Ⓢ	TTD-05	CK-503	H5		TA150	TG-S50
C51	20			DM-201				
C52	.04		TTD-05	CK-503	H5		TA150	TG-S50
C53	3pf		NPO-DI 3.0	DTZ-3R3	C10V33C	CCTO-3R3	CNO533	10TCC-V30
C54	.04		TTD-05	CK-503	H5		TA150	TG-S50
C55	5pf		NPO-DI 5.0	DTZ-4R7	C10V47C	CCTO-050	CNO547	10TCC-V50
C56	20		NPO-DI 20	DTZ-20	C10Q2C	CCTO-200	CNO442	10TCC-Q20
C57	500			DM-501				
C58	500			DM-501				
C59	100			DM-101				
C60	.04		TTD-05	CK-503	H5		TA150	TG-S50
C61	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C62	.02	Ⓢ	BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C63	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C64	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C65	.001	Ⓢ	BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C66	.002	Ⓢ	BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C67	.1	Ⓢ	TTD-1	CK-104	H6		TA010	TG-P10
C68	.1	Ⓢ	TTD-1	CK-104	H6		TA010	TG-P10
C69	.1	Ⓢ	TTD-1	CK-104	H6		TA010	TG-P10
C70	.1	Ⓢ	TTD-1	CK-104	H6		TA010	TG-P10
C71	.04	Ⓢ	TTD-05	CK-503	H5		TA150	TG-S50

Ⓢ Not used in some versions
† Alternate Value.

CONTROLS

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

DUO-VOX Part Number.
• Nominal Value.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			DUO-VOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume/Switch	5000Ω	16/27				

COILS (RF-IF)

ITEM No.	USE	RATING	REPLACEMENT DATA					NOTES
			DUO-VOX PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (2.4uh)	16/20						
L2	FM Ant.	16/16						
L3	FM RF	Ⓢ						
L4	FM IF Trap (.82uh)	16/17						
L5	FM Osc.	Ⓢ						
L6	1st FM IF Pri.	16/8						
L7	1st FM IF Sec.	16/9						
L8	RF Choke (2.4uh)	16/20						
L9	AM Ant.	Ⓢ						
L10	2nd FM IF	16/10						
L11	AM RF	Ⓢ						
L12	3rd FM IF	16/10						
L13	AM Osc. Tuning	Ⓢ						
L14	RF Choke (1.5uh)	16/19						
L15	AM Osc.	16/18						
L16	1st AM IF Pri.	16/12						
L17	1st AM IF Sec.	16/13						
L18	4th FM IF	16/10						
L19	2nd AM IF	16/14						
L20	Ratio Detector	16/11						
L21	3rd AM IF	16/15						

PARTS LIST 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 -)	Duo-Vox PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L22	115ma	.5Ω	10MH	16/24	C-4095	TC-2	TR-152	TY17XT	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Duo-Vox PART NO.	REPLACEMENT DATA
K1	Biassing	1000Ω, .04mfd	16/28	
K2	Biassing	1000Ω, .04mfd	16/28	
K3	A7C	4700Ω, 330pf	16/29	
K4	Biassing	1000Ω, .04mfd	16/28	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Duo-Vox PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	8:	1	16/21					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Duo-Vox PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	24Ω	8Ω	16/22					
T3	24Ω	8Ω	16/23					

BATTERIES

ITEM No.	VOLTAGE	Duo-Vox PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	6V		930 or (AL9 or Hg9)	1015 or (E91 or E9)	M15R or (Mn15000R, ZM9)	4 Required

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Duo-Vox PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	1A		16/70	362001	155014	AGX1	HDI	

MISCELLANEOUS

ITEM No.	PART NAME	Duo-Vox PART No.
M3	Tuner	16/25
M4	Spark Plate (600pf)	16/57
M5	Port-Car Switch	16/60
M6	Ext.-Radio Speaker	16/61
M7	Voltage Selector SW	16/82
M8	AM-FM Selector SW	16/58
M9	Locking Relay	16/65
M10	Locking Switch	16/63
M11	AFC Switch	16/59

SPEAKER

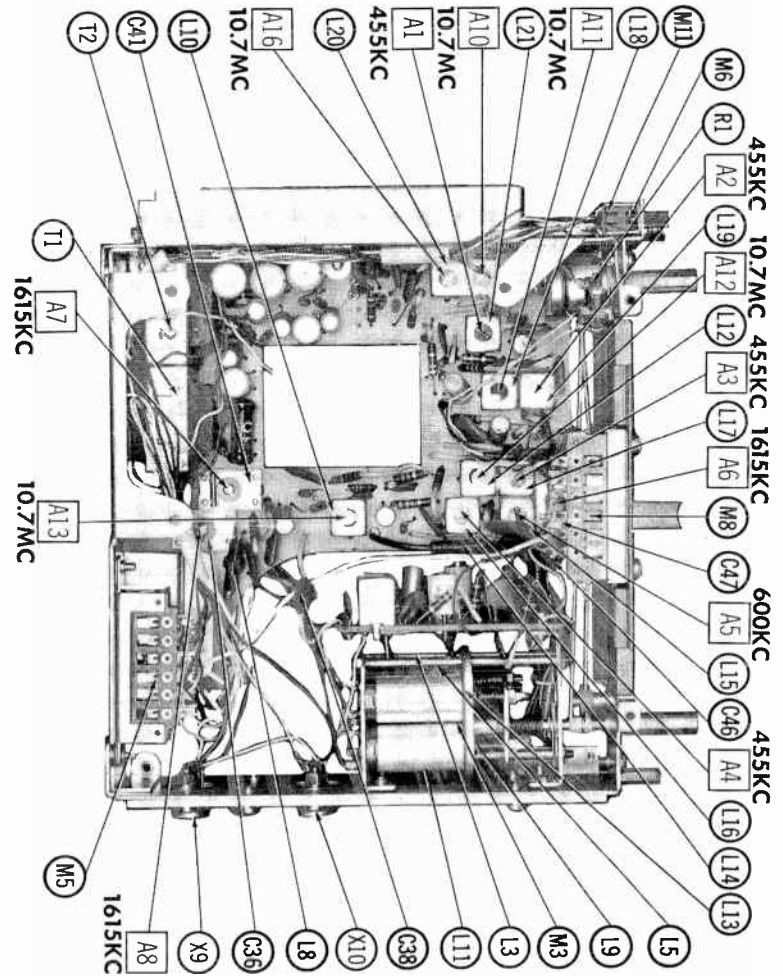
ITEM No.	TYPE	REPLACEMENT DATA	
		Duo-Vox PART No.	QUAM PART No.
SP1	3" X 5" PM	8Ω	16/73

CABINETS & CABINET PARTS (When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Rod Antenna	16/74	Knob, Tuning	16/96
Dial Pointer	16/88	Knob, Volume	16/97
Escutcheon	16/91		

WIRING DATA

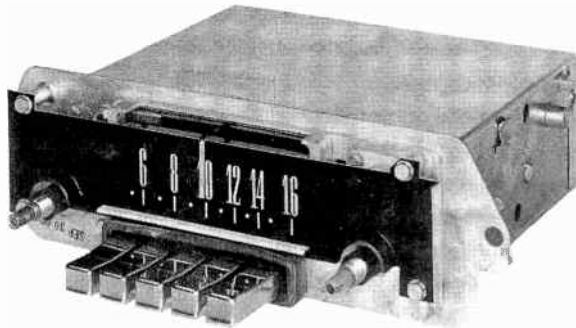
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8681 (3/8 In.) or 8670 (3/4 In.)





PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : Ford Models 5TBF (1965 Galaxie)
 5TBO (1965 Fairlane)
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 6 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .700 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1605KC

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

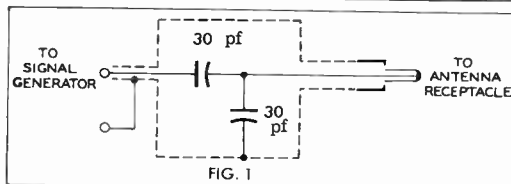
A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588
 A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087 WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfid to point Δ , low side to ground.	262.5KC (400 μ Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1605KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1600KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO Model 5TBO (1965 Fairlane)

1. Pull off knobs.
2. Use 9/16" wrench and remove 2 nuts from control bushings. Remove bezel. Use 9/16" wrench and remove 2 nuts from control bushings.
3. Disconnect "A", Antenna and Speaker leads.
4. Use 7/16" wrench and remove nut from rear brace.
5. Remove radio from under instrument panel.

SPEAKER

1. Remove 4 phillips screws from speaker grille.
2. Lift off speaker grille.
3. Use 3/8" wrench and remove 2 metal screws from each end of speaker
4. Remove speaker from top of instrument panel.

RADIO Model 5TBF (1965 Galaxie)

1. Pull off knobs.
2. Disconnect "A", Speaker, & Ant. Leads.
3. Use 7/16" wrench to remove nut from rear brace and 2 bolts holding radio to rear of instrument panel.
4. Remove radio from under instrument panel

SPEAKER REMOVAL

1. Use phillips screw driver and remove glove box.
2. Use 5/16" wrench and remove 4 screws from speaker mounting.
3. Remove speaker thru glove box opening.

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

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES	BENDIX PART No.
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
X1		RF Amp.	DS-25	GE-1	2N1637	PNP	2091241-15
X2		Conv.	DS-25	GE-1	2N1639	PNP	2091241-13
X3		IF Amp.	DS-25	GE-1	2N1638	PNP	2091241-14
X4		1st AF Amp.	DS-26	GE-2	2N591	PNP	2090924-8
X5		2nd AF Amp.	DS-46	GE-10	2N649	NPN	2092609-0706
X6	2N1227	Output	DS-520	GE-3	2N301	PNP*	2091859-0713

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X7		2092055-0001					1N34AS
X8		2092055-0001					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	#400	16	2092983-0001	PWH2-02-08				FPF300.65	PCLS-2174.1*
B	1300	16							
C2A	1000	1.5	2092246-0702						
B	50	3							

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMenco PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	25-200	#2091504-0006							
C11	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C12	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50	
C13	39 N750			TCN-39	C10Q39U	CCTN-390	CN7439	10TCU-Q39	
C14	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C15	.0082 100V		DBE8D82	CPR-8200J	DPMS8D82	6DP-2-822	PVC628	6PS-D82	
C16A	300-400	#219092-28							
B	180								
	325-390'								
C17	.01 100V		DBE4S1	CPR-10000J	WMF1S1	IDP-1-103	PVC211	4PS-S10	
C18	82 N1500	#2093030-0759							
C19	.1 10V		TTD-1	CK-104	H6		TA010	TG-P10	
C20	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C21	.05 100V	DB	DBE8S5		DPMS2S5	IDP-2-503	PVC215	2PS-S50	
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C23	.002		BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20	
C24	.2			UK20-204	HCC25224Z			HY-325	
C25	.05 100V		DBE6S5		DPMS2S5	IDP-2-503	PVC215	2PS-S50	
C26	.2			UK20-204	HCC25224Z			HY-325	
C27	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10	

Bendix Part Number.

▲ Nominal Value.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	100K	2093706-0702				
	Volume/Switch	40K Tap @ 10K	①				
	Tone	100K	2092097-0708				
	Volume/Switch	40K Tap @ 10K	②				

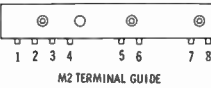
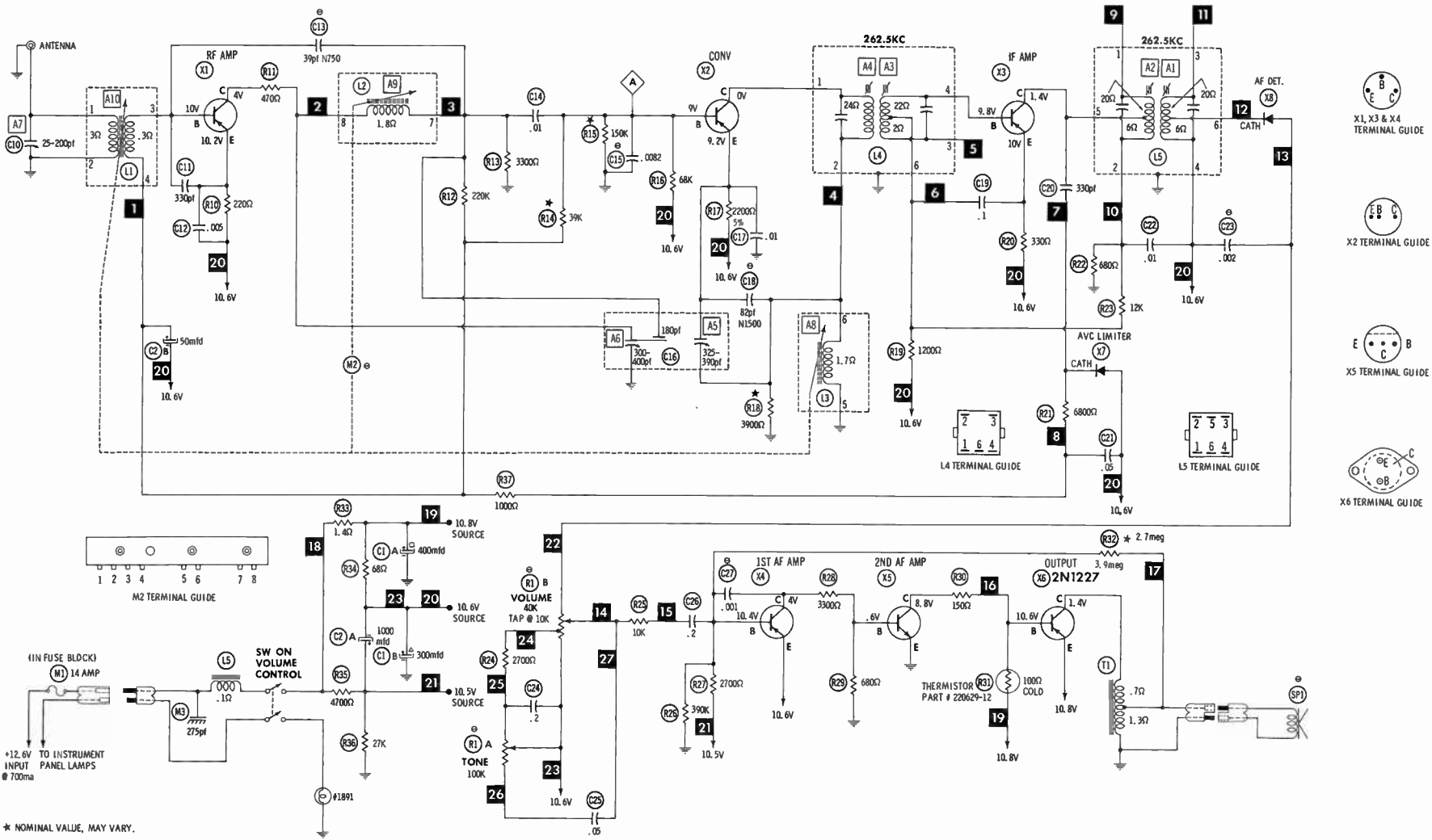
① Used in Model 5TBF.

② Used in Model 5TBO.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		BENDIX PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant	①					① Part of M2.
L2	RF	①					
L3	Osc.	①					
L4	Input IF	2093183-0002		6522			
L5	Output IF	2093184-0003		6523			

FORD MODELS 5TBF, 5TBO

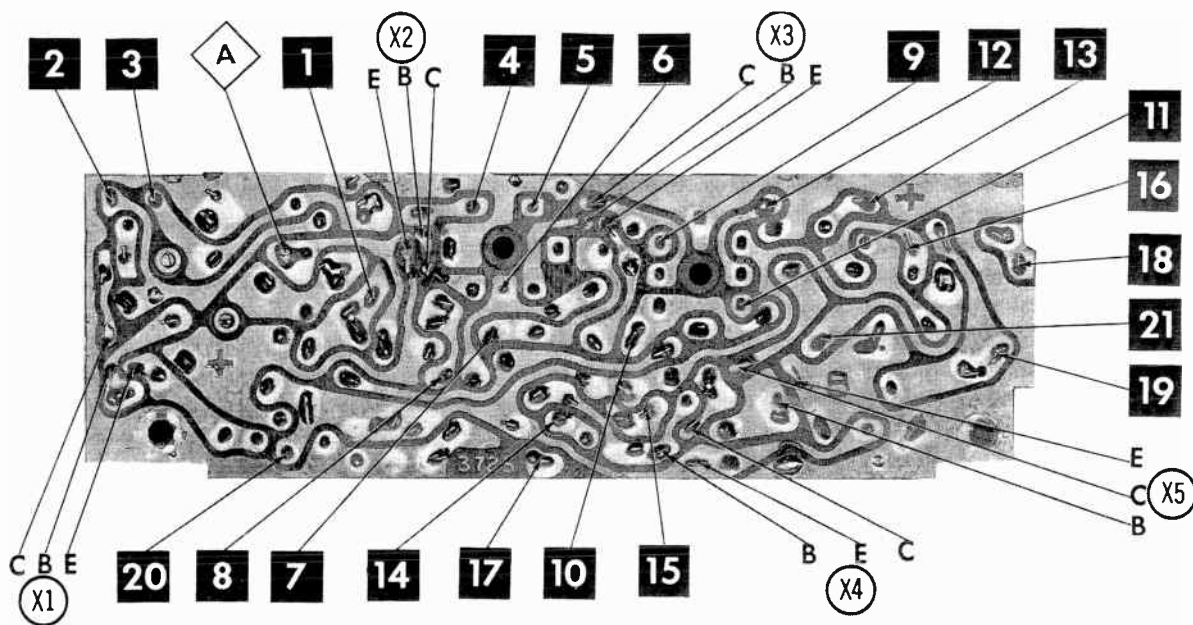
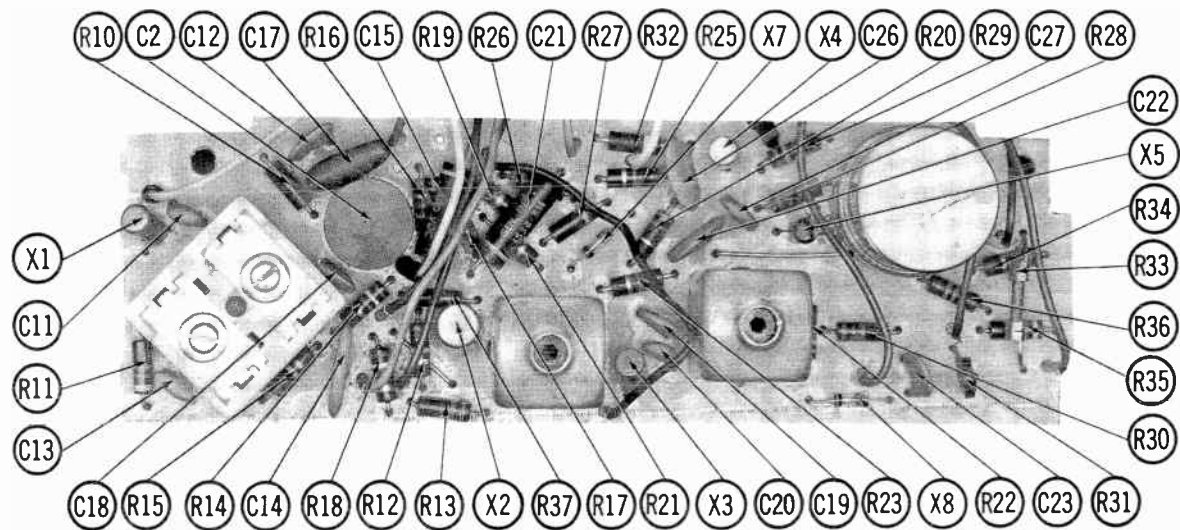


- * NOMINAL VALUE, MAY VARY.
- ⊖ See parts list for alternate value or application.
 - 1. Voltage measurements taken with vacuum tube voltmeter.
 - 2. All controls set for normal operation, no signal applied.
 - 3. Measured values are from socket pin or terminal to common ground.
 - 4. All terminals viewed from bottom unless otherwise designated.
 - 5. Numbers assigned to terminals may not be found on the unit.
 - 6. Supply voltage maintained at rated value for voltage readings.
 - 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

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FORD MODELS 5TBF, 5TBO



PARTS LIST AND DESCRIPTION (CONTINUED)

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~)	BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.		TRIAD PART No.
L8	700ma	.1Ω	1.2MH	2092050-0719	C-4095 ①	TC-1 ①	TR-159 ①	TY16XT ①	① Fabricate mounting

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
T1	12Ω Tap	@ 8Ω	2092138, 0712			TR-164	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		BENDIX PART No.	QUAM PART No.	
SP1	4" X 10" PM	8Ω	410A2Z8	Model 5TBF. Model 5TBO.
	5" X 8" PM	8Ω	58Z15Z8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				
			BENDIX PART No.		LITTELFUSE PART No.		BUSS PART No.
			FUSE	HOLDER	FUSE	HOLDER	
M1	SFE	14A	In Fuse Block		207014	SFE-14	

MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M2	Tuner	2093703-0702	(Model 5TBF)
	Tuner	2093716-0702	(Model 5TBO)
M3	Spark Plate	2093050-0705	(275pf)

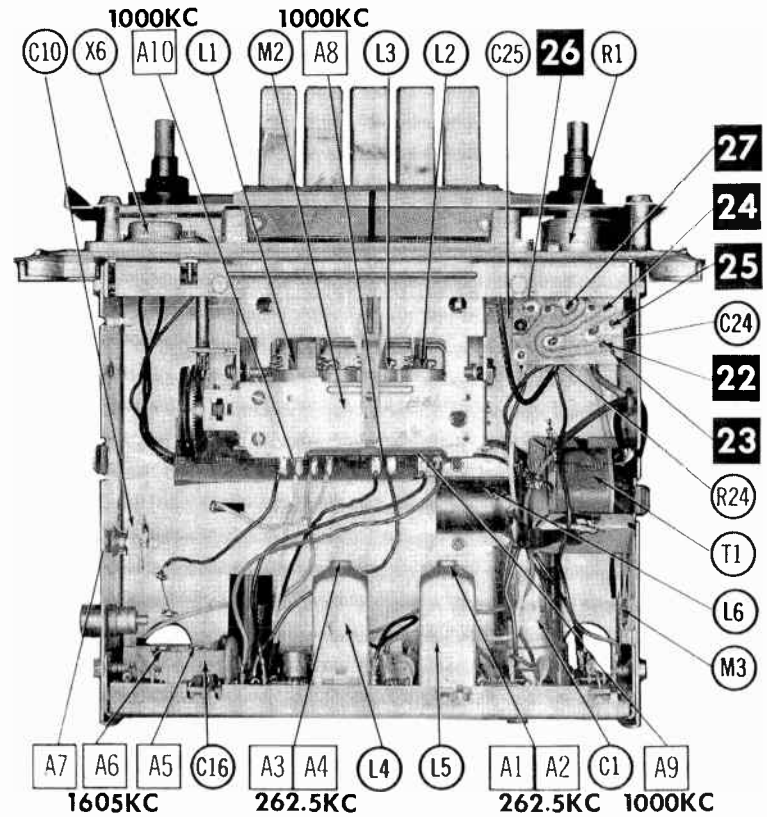
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon-Model 5TBF	2093701-0001	Pushbutton-Model 5TBF	2093702-0001
Escutcheon-Model 5TBO	2093711-0501	Pushbutton-Model 5TBO	2093722-0001
Dial/Calibrated-Model 5TBF	2093704-0001	Pointer Assembly-Model 5TBF	2090129-0080
Dial/Calibrated-Model 5TBO	2093719-0001	Pointer Assembly-Model 5TBO	2090129-0059

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8861 (3/8 In.) or 8870 (3/4 In.)

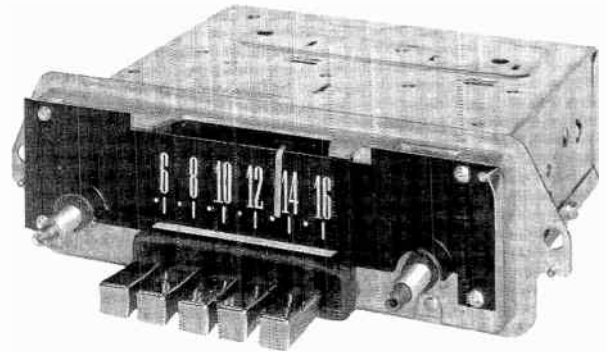




PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Ford Models 5TMF (1965 Ford Galaxie)
 5TMZ (1965 Ford Mustang)
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 5 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .680 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

Check for specified source voltage. Use only enough generator output to provide a usable indication. Suggested Alignment Tools: A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588 A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087 WALSCO: 2525, 2528, 2587					PUSH-BUTTON ADJUSTMENT 1. Pull button out. 2. Tune manually to desired station. 3. Press button in firmly. 4. Repeat for remaining buttons.	
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfid to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.
With radio installed in car and antenna fully extended, tune in a weak station near 1600KC and adjust A7 for maximum output.						

REMOVAL INSTRUCTIONS

RADIO MODEL 5TMZ (1965 Mustang)

1. Pull off knobs.
2. Use 9/16" wrench and remove nuts from control bushings.
3. Models with console: Use phillips screw driver & remove glove box.
4. Disconnect "A", Speaker, Antenna & Pilot Lite leads.
5. Use 7/16" wrench and remove nut from rear brace.
6. Remove radio from under instrument panel. Models with console: Remove thru glove box opening.

SPEAKER REMOVAL

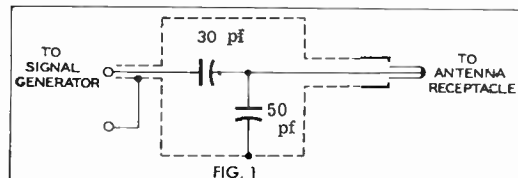
1. Use phillips screw driver and remove speaker grill.
2. Use 5/16" wrench and remove screws from speaker mounting.
3. Remove speaker thru top of instrument panel.

RADIO MODEL 5TMF (1965 Galaxie)

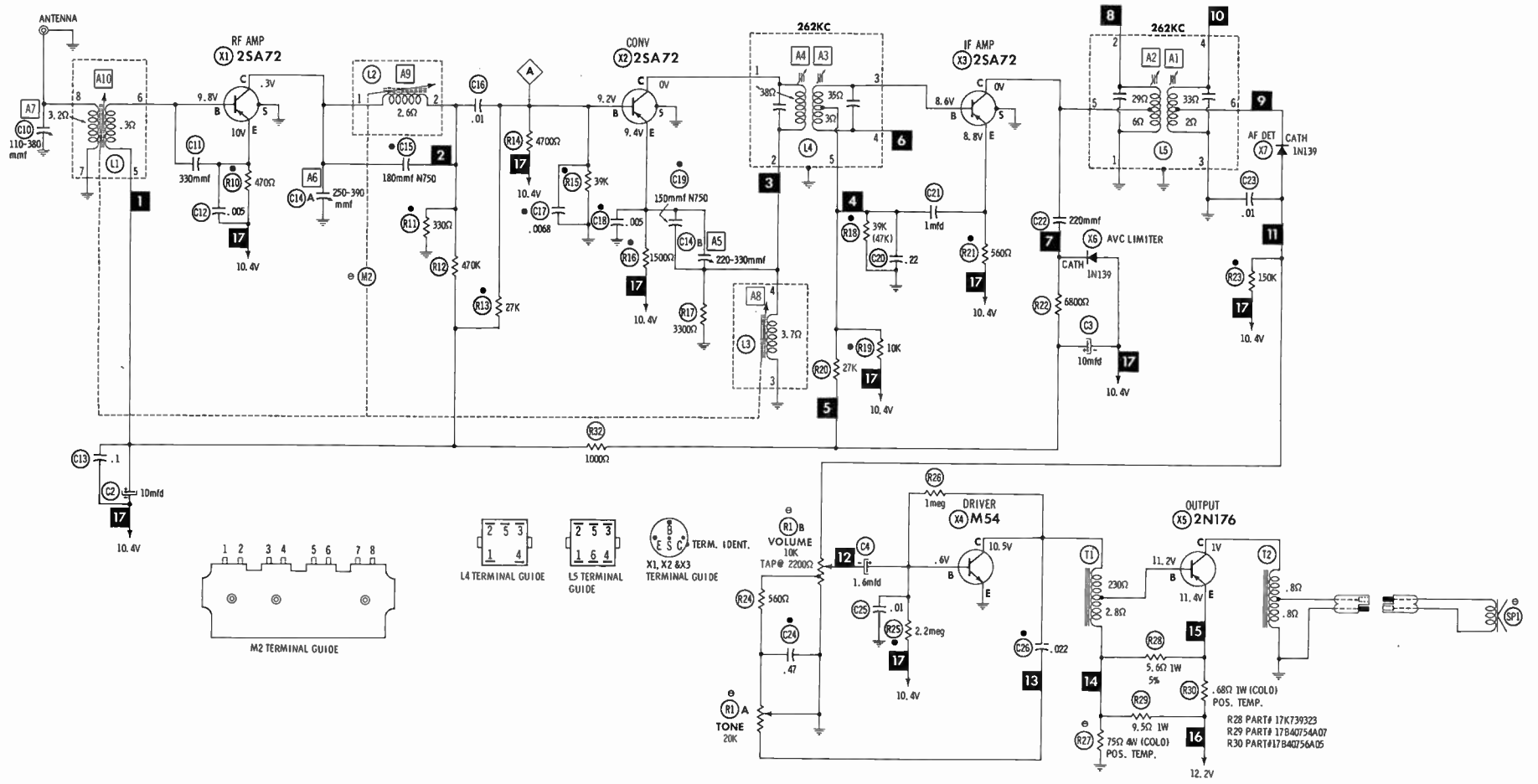
1. Pull off knobs.
2. Disconnect "A", Speaker and Antenna leads.
3. Use 7/16" wrench to remove nut from rear brace, and 2 bolts holding radio to rear of instrument panel.
4. Remove radio from under instrument panel.

SPEAKER REMOVAL

1. Use phillips screw driver and remove glove box.
2. Use 5/16" wrench and remove 4 screws from speaker mounting.
3. Remove speaker thru glove box opening.



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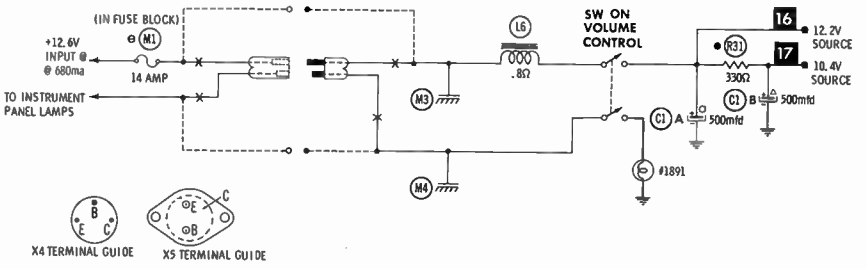


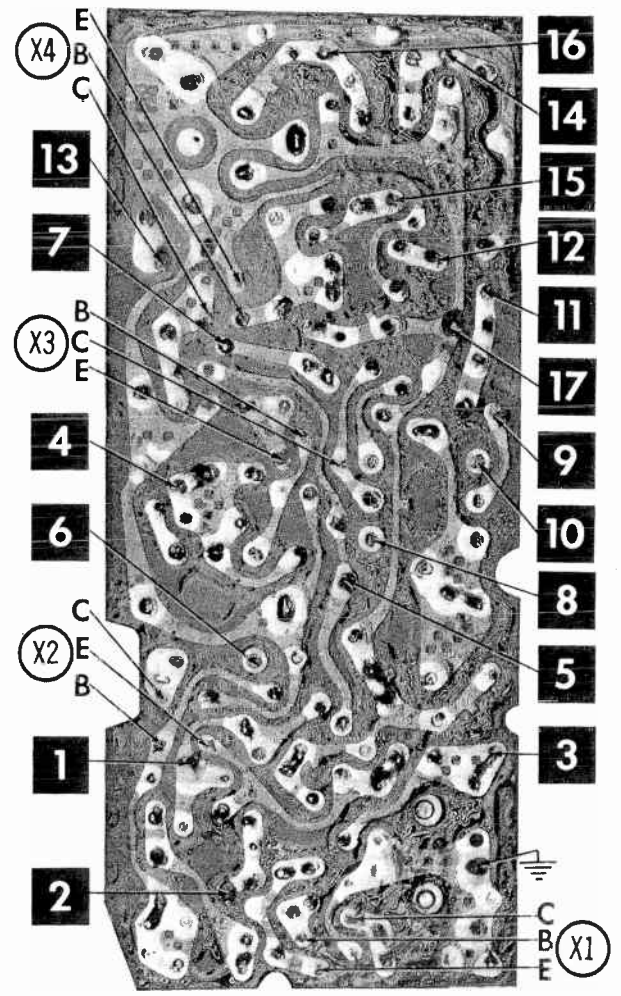
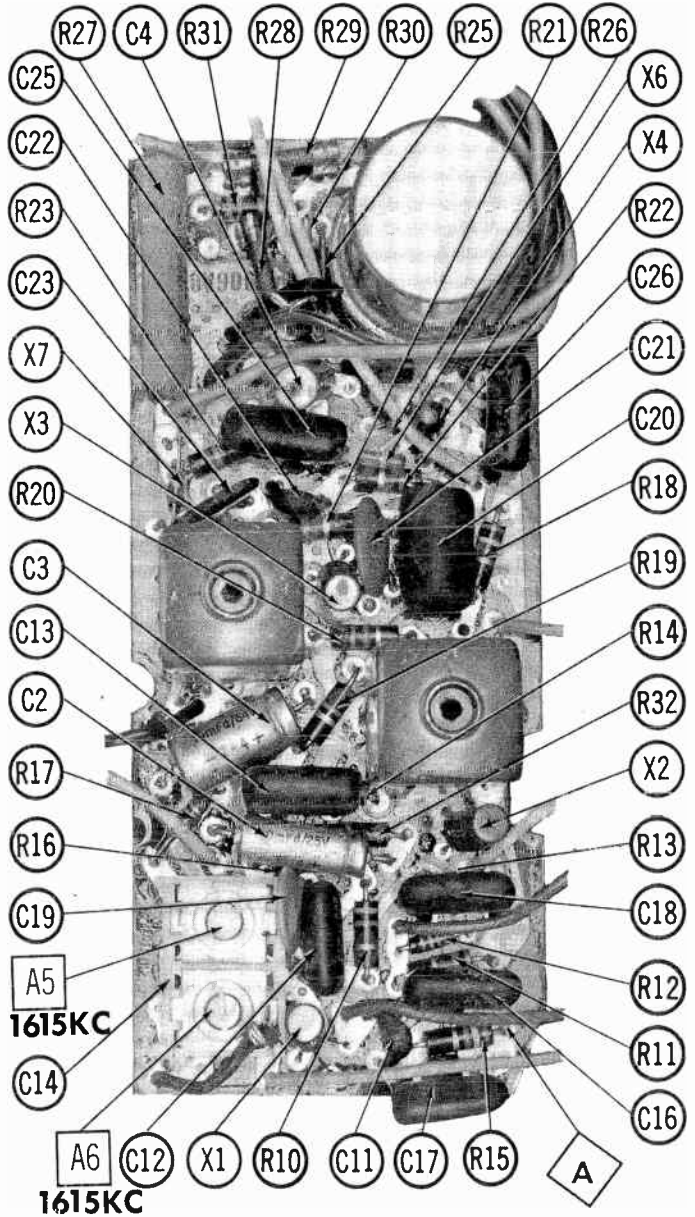
- NOMINAL VALUE MAY VARY
- Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.
- ① See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
 2. All controls set for normal operation, no signal applied.
 3. Measured values are from socket pin or terminal to common ground.
 4. All terminals viewed from bottom unless otherwise designated.
 5. Numbers assigned to terminals may not be found on the unit.
 6. Supply voltage maintained at rated value for voltage readings.
 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

FORD MODELS 5TMF, 5TMZ

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PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA72	RF Amp.	DS-25	GE-9	2N1637	PNP
X2	2SA72	Conv	DS-25	GE-9	2N1639	PNP
X3	2SA72	IF Amp.	DS-25	GE-9	2N1638	PNP
X4	M54	Driver	DS-46	GE-10	2N649	NPN
X5	2N176	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1N139					1N34AS
X7		1N139					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	Motorola PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	
C1A	500	16	23C41979A01	PWH2-02-40	CC0012			FPF200.65	PCLS-2177*
B	500	16							
C2	10	25	23C41928A18	CRE607A	NLW10-25	MT1-5	BL1460	TT25X10	TE-1204
C3	10	64	23C42957A01	CRE907A	NLW10-100	MT1-7	MLV10-100	TT100X10	TE-1407
C4	1.6	25	23C41928A05	CRE601A	NLW2-50	MT1-1	BL1160	TT50X2	TL-1201

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENC0 PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	110-380	#20C40944A05							
C11	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C12	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	IDP-1-502	PVC625	6PS-D50	
C13	.1 100V		DBE2P1		WMF1P1	IDP-2-104	PVC101	2PS-P10	
C14A	250-390		#20C40254A09						
B	220-330								
C15	180 N750					C10T18U		CN7318	10TCU-T18
C16	.01 100V			DBE4S1	CPR-10000J	WMF1S1	IDP-1-103	PVC211	4PS-S10
C17	.0068 100V			DBE6D68	CPR-6800J	WMF2D68	6DP-1-682	PVC4268	6PS-D68
C18	.005 100V			DBE6D5	CPR-5000J	DPMS6D5	IDP-1-502	PVC625	6PS-D50
C19	150 N750			N750-D1150	DTN-150	C10T15U	CCTN-151	CN7315	10TCU-T15
C20	.22 100V			DBE2P22		DPMS2P22	IDP-3-224	PVC1022	2PS-P22
C21	1 3V				UK-105	HCC3105P			HY-135
C22	220			DD-220	LA10T22-S3	CCD-221	GP322	10TS-T22	
C23	.01	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10		
C24	.47 3V		UK10-404	HCC10474Z			HY-330		
C25	.1 100V	DBE2P1		WMF1P1	IDP-2-104	PVC101	2PS-P10		
C26	.022 100V	DBE2S22		WMF1S22	IDP-1-223	PVC1122	2PS-S22		

Motorola Part Number.

CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA			
			Motorola PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.
RIA	Tone	20K	18C42662A01			
B	Volume	10K Tap @ 2200Ω	18C42662A02			
	Tone Volume-Switch	20K 10K Tap @ 2200Ω				

① Used in Model 5TMF.

② Used in Model 5TMZ.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Motorola PART No.			IRC PART No.	WORKMAN PART No.	Motorola PART No.
R27	75Ω 4W PTC			17C40259A01					

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Motorola PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant.						① Part of M2, coil & mounting plate assy., (Part #1V42801A14)
L2	RF						
L3	Osc.						
L4	Input IF	24D40074A15	BC-038	6555			
L5	Output IF	24D40075A15	BC-639	6554			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L6	.680A	.8Ω	11MH	25D42032A01	C-4095	TC-2	TR-154	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	16:	1	25D42045A09					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	40Ω Tap	@ 8Ω	25C41878A01					

PARTS LIST AND DESCRIPTION (CONTINUED)

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.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Motorola PART No.	QUAM PART No.	
SP1	4" X 10" PM 8Ω	50D42931A01		Model 5TMF. Model 5TMZ.
	4" X 10" PM 8Ω	50D42946A01		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				BU55 PART No.
			Motorola PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	SFE	14A	In Fuse Block	307014	30707.5	SFE14	
	SFE	7½A Ⓡ					In Fuse Block

Ⓡ Used in Model 5TMZ.

MISCELLANEOUS

ITEM No.	PART NAME	Motorola PART No.	NOTES
M2	Tuner	77D42629A01	AT-48"-Model 5TMF. AT-505-Model 5TMZ.
M3	Tuner	77D42216A04	
M4	Spark Plate	64A41668A02	
M4	Spark Plate	64A41668A02	

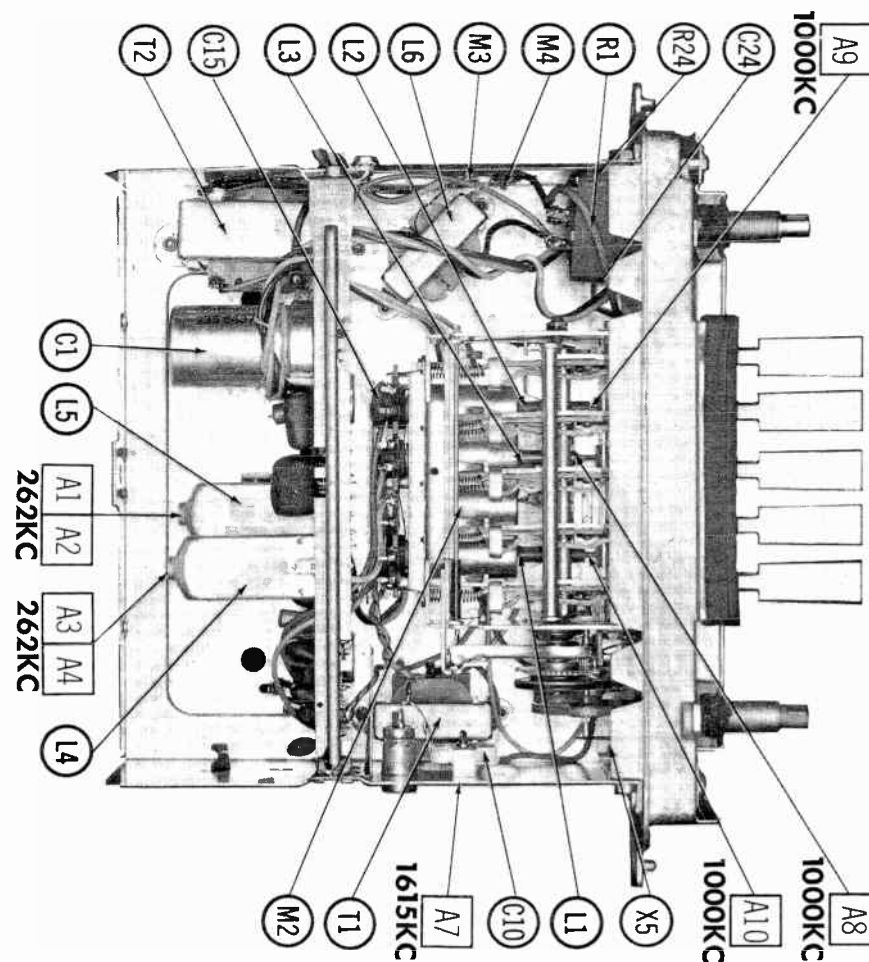
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Bezel-Model 5TMZ	1V42801A39	Knob, Tone or Dummy-Model 5TMZ	36C42355A01
Dial Scale-Model 5TMF	34C42521A01	Pushbutton-Model 5TMF	38C42908A01
Dial Scale-Model 5TMZ	34B42072A05	Pushbutton-Model 5TMZ	38B42070A02
Knob, Tuning or Volume-Model 5TMF	36B42932A01	Pointer Assy-Model 5TMF	52C42062A13
Knob, Tuning or Volume-Model 5TMZ	1B42286A01	Pointer Assy-Model 5TMZ	52C42062A03
Knob, Tone or Dummy-Model 5TMF	36C42952A01		

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

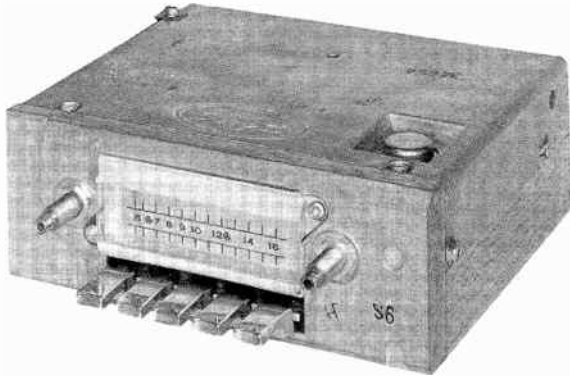


FORD MODELS 5TMF, 5TMZ



PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : Ford Models 5TMS, 5TMSF
(1965 Thunderbird)
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 5 Transistor AM Receiver
POWER SUPPLY : 12 Volt Storage Battery
RATING : .680 Amp. @ 12.6 Volts DC
TUNING RANGE : BROADCAST 540-1615KC

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools:

A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588
A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087 WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

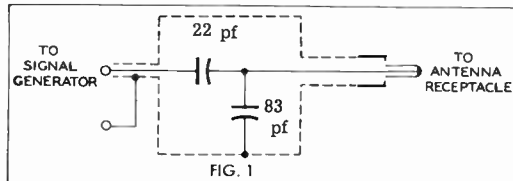
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.

3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.
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With radio installed in car and antenna fully extended, tune in a weak station near 1600KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO 5TMS, 5TMSF (1965 Thunderbird)

1. Pry off the right side console molding. Remove the right console molding retainers.
2. Remove 2 phillips screws from right side instrument panel chrome molding.
3. Remove 4 phillips screws and 2-7/16" bolts from instrument panel. Remove 3 phillips screws from upper finish panel and remove panel.
4. Pull off knobs.
5. Use 9/16" wrench and remove nuts from control bushings.
6. Remove trim plate.

7. Repeat step 5.
8. Use 7/16" wrench and remove bolts from rear braces.
9. Disconnect "A", Antenna and Speaker leads.
10. Remove radio through right side.

SPEAKER

1. Remove the 4 knobs and 4 phillips screws from clock housing and position the clock housing down and out of the way.
2. Remove 4 wing nuts from speaker mount.
3. Remove speaker through clock opening.

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

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA72	RF Amp.	DS-25	GE-9	2N1637	PNP
X2	2SA72	Conv.	DS-25	GE-9	2N1639	PNP
X3	2SA72	IF Amp.	DS-25	GE-9	2N1638	PNP
X4	M54	Driver	DS-46	GE-10	2N649	PNP
X5	2N176	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X6		1N139					1N34AS
X7		1N139					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Motorola PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	23C41979A01	PWH2-02-40	CCO012			PFP200.65	PCLS-2177 *
B	4500	16							
C2	10	15	23C41928A18	CRE607A	NLW10-25	MT1-5	BL1460	TT25X10	TE-1204
C3	10	15	23C41928A18	CRE607A	NLW10-25	MT1-5	BL1460	TT25X10	TE-1204
C4	6.4	40	23C41928A04	CRE755A	NLW6-50	MT1-5	BL1471	TT100X6	TE-1303.1

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	110-380	#20C40944A05							
C11	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C12	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50	
C13	.1 100V		DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C14A	250-390	#20C40254A01							
B	240-350								
C15	180 N750			DTZ-180	C10T16U		CN7318	10TCU-T18	
C16	.01 100V		DBE4S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10	
C17	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50	
C18	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50	
C19	130 N750				C10T13U				
C20	.15 100V		DBE4S15		WMF2S15	4DP-1-153	PVC2115	4PS-S15	
C21	.1 100V		DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C22	220		DI 220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22	
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C24	1mf 3V			UK-105	HCC3105P			HY-135	
C25	.1 100V		DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C26	.033 100V		DBE4S33		WMF1S33	1DP-1-333	PVC1133	4PS-833	

Motorola Part Number.

• Nominal value

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Motorola PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	20K	18C42837A01				
B	Volume	10K Tap @ 2200Ω	①				
R2	Fader	40Ω	18B42804A01				† QJ-1818A

① Some versions may use Part # 18C42036A01.

† "SNAPTROL" Equivalent: BU15, WF18, None, SF12, None.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Motorola Part No.			IRC PART No.	WORKMAN PART No.	Motorola Part No.
R27	75Ω 4W			17C40259A01					

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Motorola PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant.	①					① Part of M2, coil & mounting plate assy., (Part #1V42700A77).
L2	RF Osc.	①					
L3	Osc.	①					
L4	Input IF	24D40074A19	BC-638	6555			
L5	Output IF	24D40075A19	BC-639	6554			

FILTER CHOKE

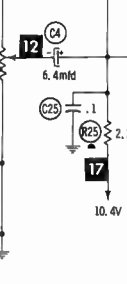
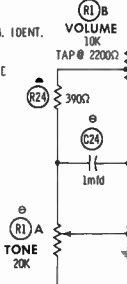
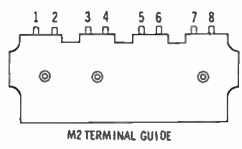
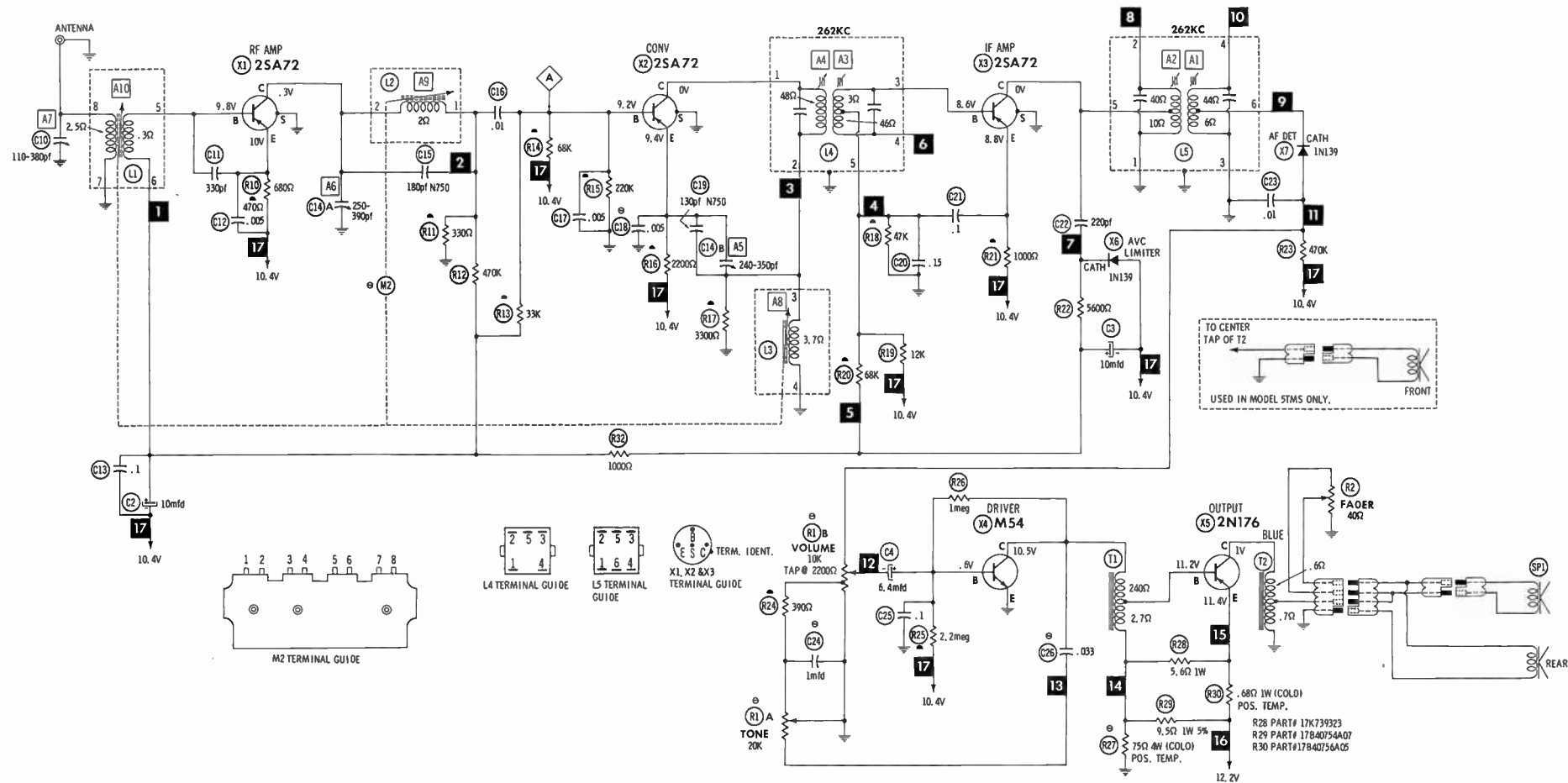
ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000-)	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L6	680ma	.8Ω	11MH	25D42032A02	C-4095	TC-2	TR-154	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA					NOTES
		Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	16: 1	25D42045A12					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	40Ω Tap	@ 8Ω	25D42101A02					



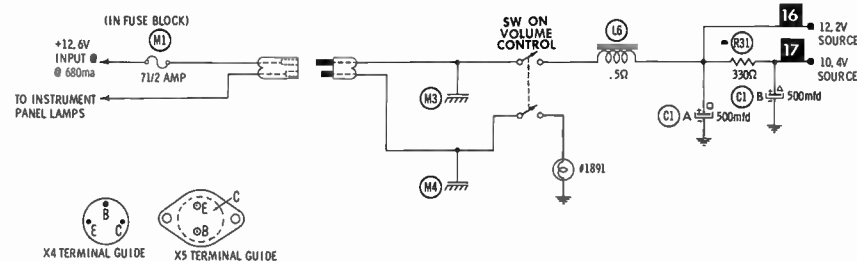
= NOMINAL VALUE MAY VARY

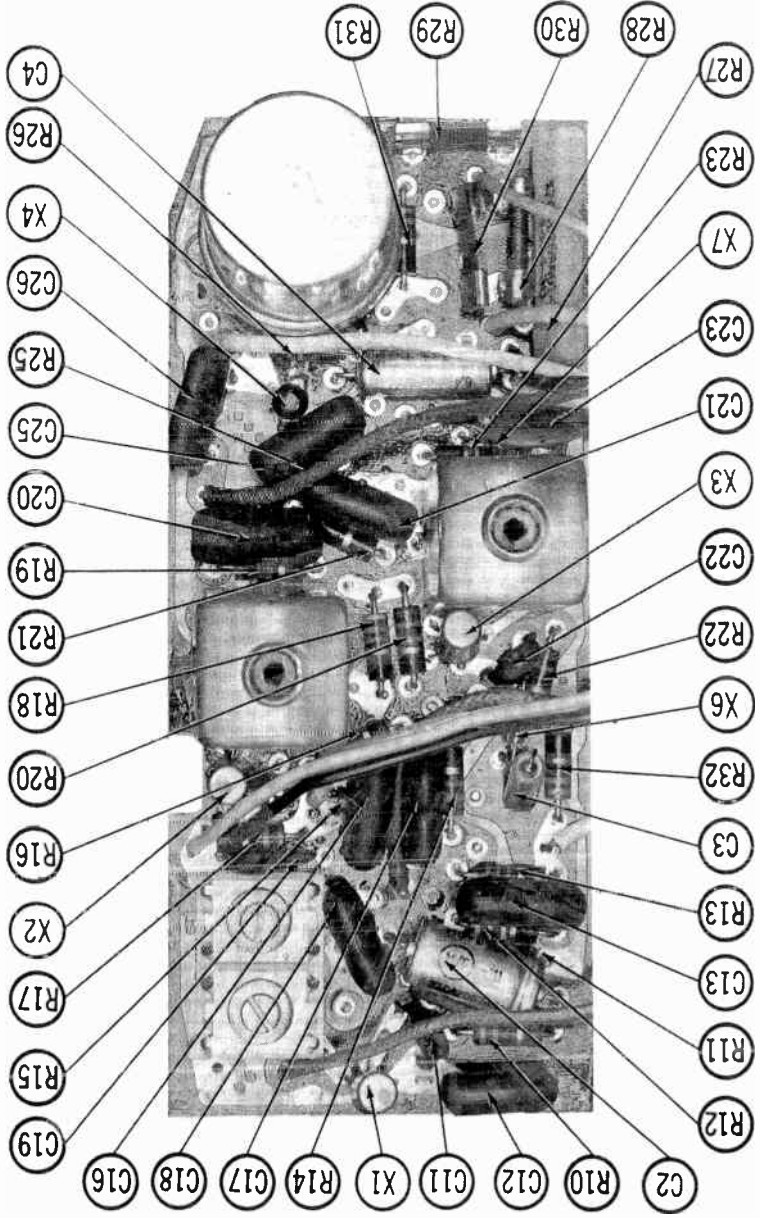
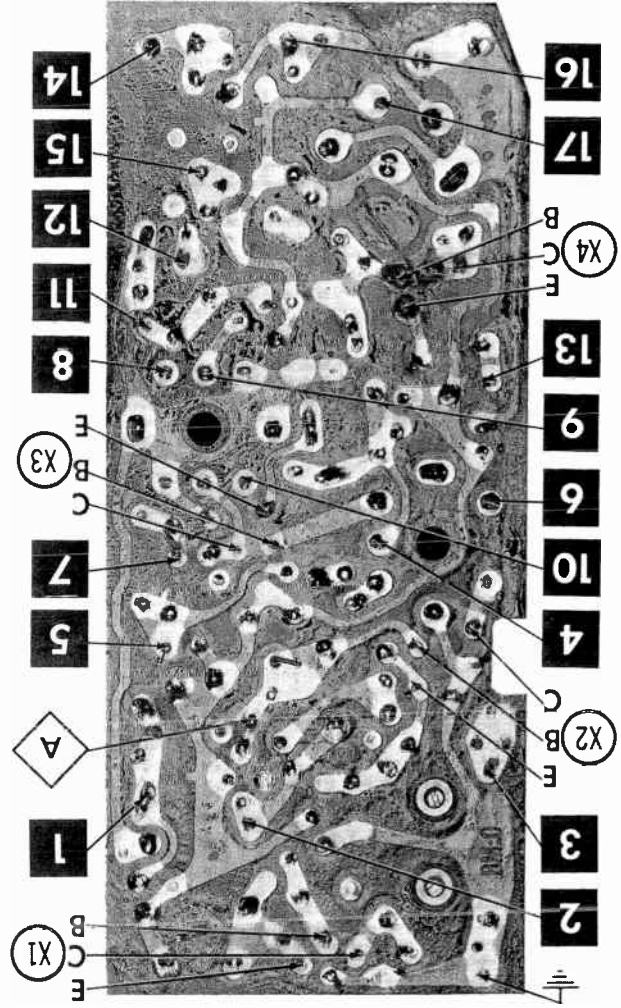
FORD MODELS 5TMS, 5TMSF

- Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.
- See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC T STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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PARTS LIST AND DESCRIPTION (CONTINUED)

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.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Motorola PART No.	QUAM PART No.	
SP1	4" X 10" PM 8Ω	50D42925A01		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				8USS PART No.	
			Motorola PART No.		LITTELFUSE PART No.		FUSE	HOLDER
			FUSE	HOLDER	FUSE	HOLDER		
M1	SFE	7½A		In Fuse Block	30707, 5		SFE7½	

MISCELLANEOUS

ITEM No.	PART NAME	Motorola PART No.	NOTES
M2	Tuner	77D42095A03	AT-498 (5TMSF)
M3	Tuner Spark Plate	77D42095A04	AT-499 (5TMS)
M4	Spark Plate	64A41668A03	
	Spark Plate	64A41668A03	

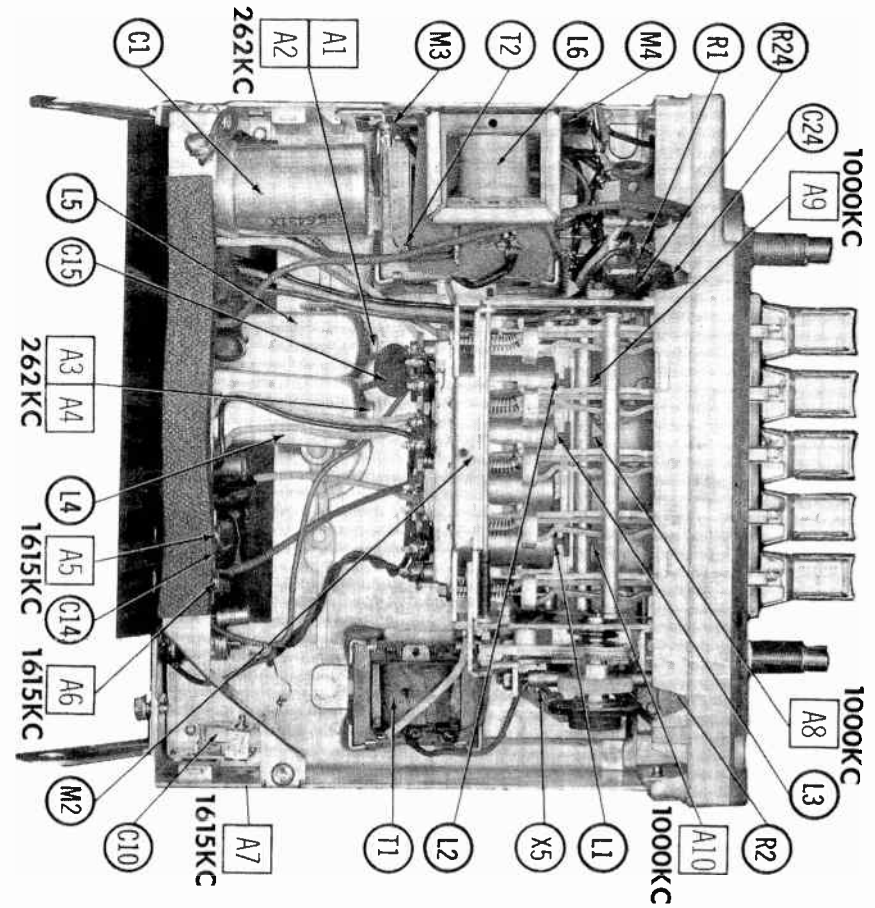
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Bezel	13B42477A01	Knob, Tone or Fader	36C41992A01
Dial Scale	34C41970A01	Pushbutton	38B41993A01
Dial Glass	61C41954A01	Dial Pointer	52C42062A04
Knob, Tuning or Volume	36B42471A01		

WIRING DATA

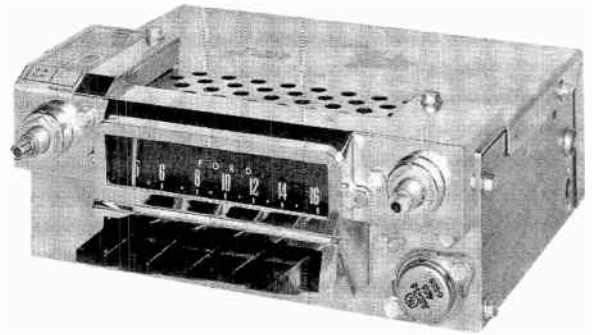
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8870 (3/4 In.)





PHOTOFACT[®] with CIRCUITRACE[®]

TRADE NAME : Ford Models 5TPD (1965 Falcon), 5TPO (1965 Fairlane), 5TPZ (1965 Mustang)
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 6 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .540 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC



FORD MODELS 5TPD, 5TPO, 5TPZ

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:
 A1 thru A7 GENERAL CEMENT: 9440
 WALSCO: 2501

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mf to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum. Remove top slug to adjust A1 and A3.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.

3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.
----	--	--------	-----------------	---------------------------------	-------------	---

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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

REMOVAL INSTRUCTIONS

RADIO Model 5TPZ (1965 Mustang)

1. Pull off knobs.
2. Use 9/16" wrench and remove nuts from control bushings.
3. Models with console: Use phillips screw driver & remove glove box.
4. Disconnect "A", Speaker, Antenna & Pilot Lite leads.
5. Use 7/16" wrench and remove nut from rear brace.
6. Remove radio from under instrument panel. Models with console: Remove thru glove box opening.

SPEAKER

1. Use phillips screw driver and remove speaker grille.
2. Use 5/16" wrench and remove screws from speaker mounting.
3. Remove speaker thru top of instrument panel.

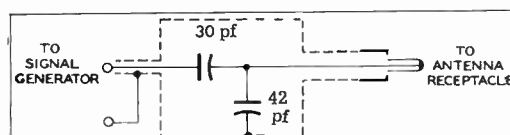
RADIO Model 5TPD (1965 Falcon)
 5TPO (1965 Fairlane)

1. Pull off knobs.
2. Use 9/16" wrench and remove 2 nuts from control bushings. Remove bezel. Use 9/16" wrench and remove 2 nuts from control bushings.
3. Disconnect "A", Antenna & Speaker leads.
4. Use 7/16" wrench and remove nut from rear brace.
5. Remove radio from under instrument panel.

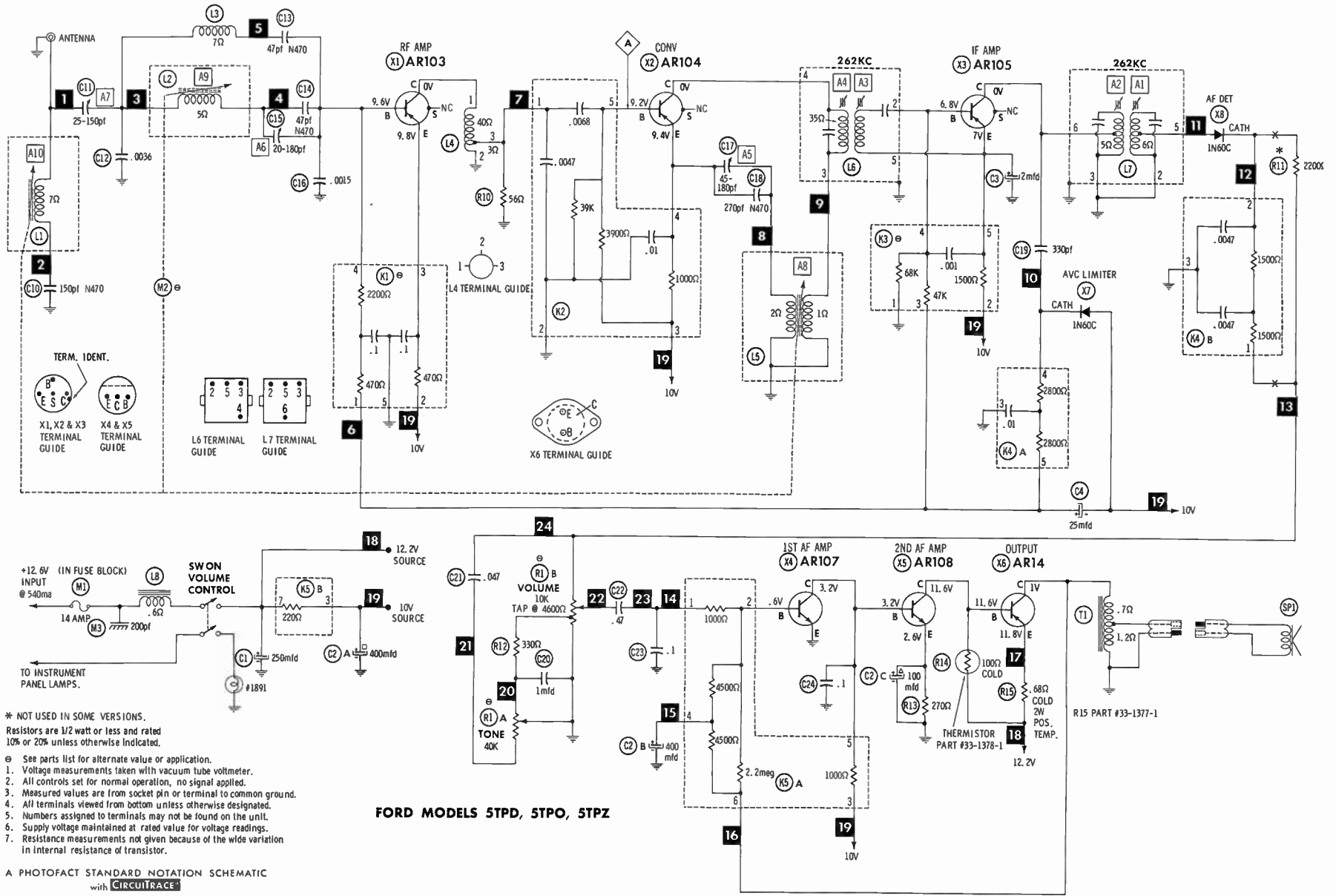
SPEAKER

1. Remove 4 phillips screws from speaker grille.
2. Lift off speaker grille.
3. Use 3/8" wrench and remove 2 metal screws from each end of speaker
4. Remove speaker from top of instrument panel.

FIG. 1



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



* NOT USED IN SOME VERSIONS.
 Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

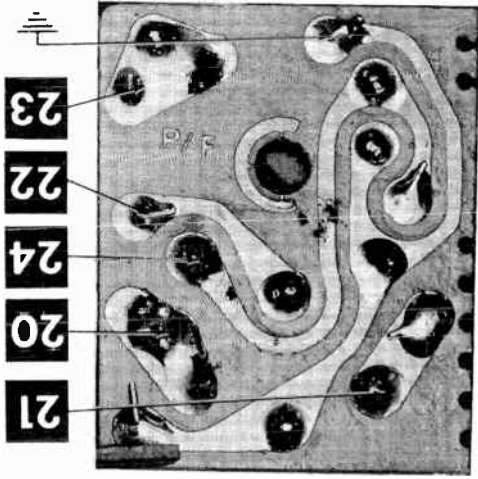
⊖ See parts list for alternate value or application.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

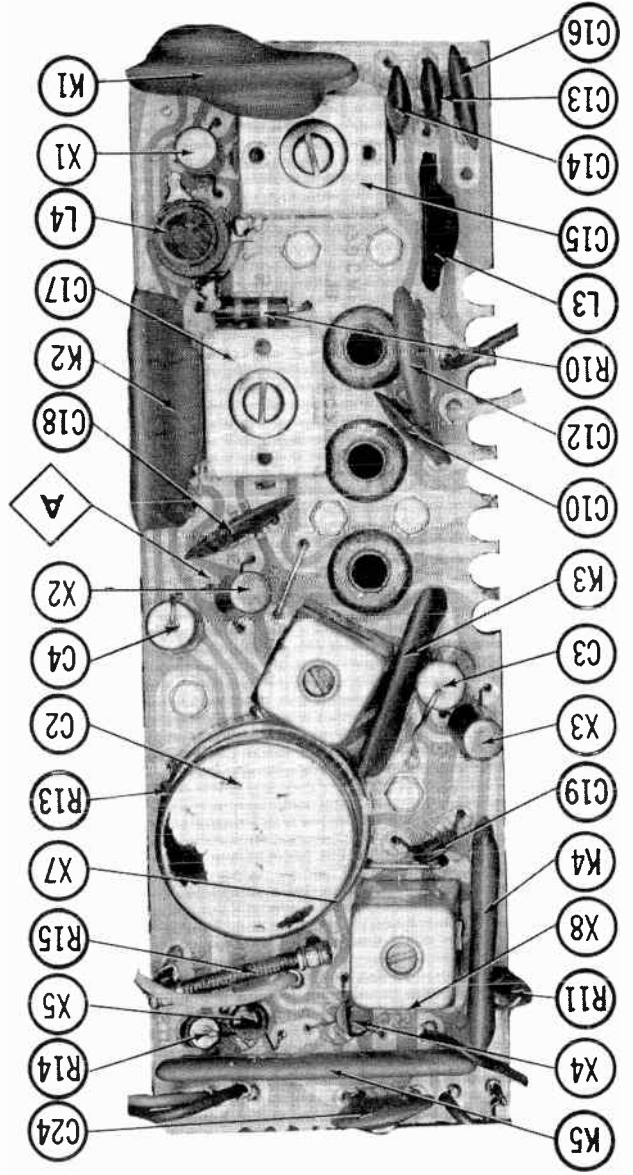
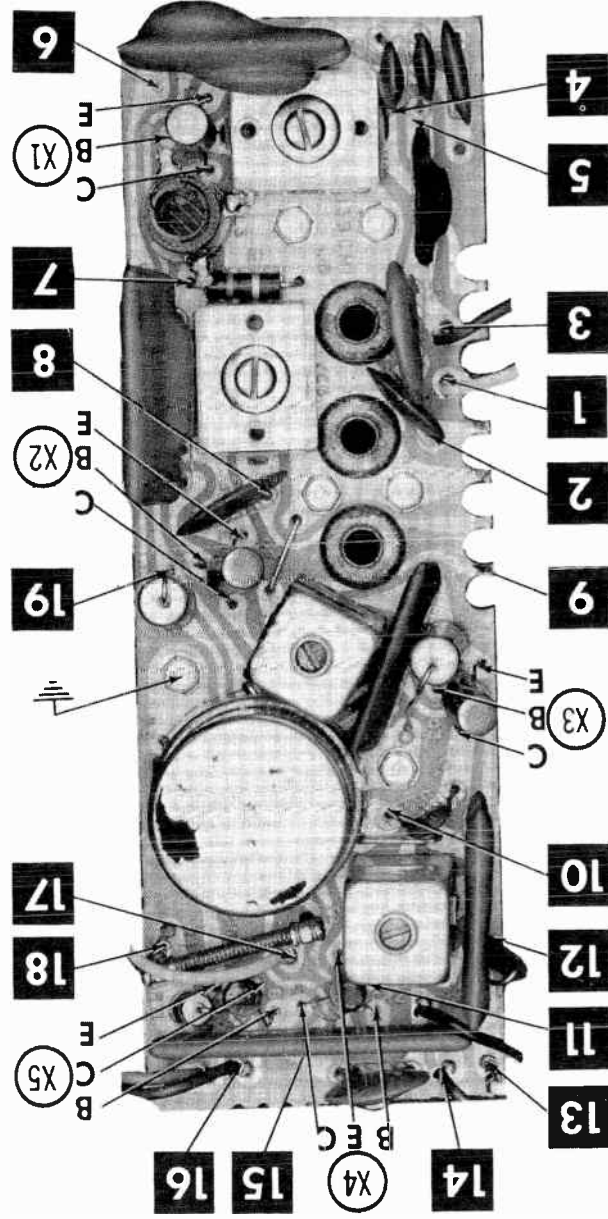
A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

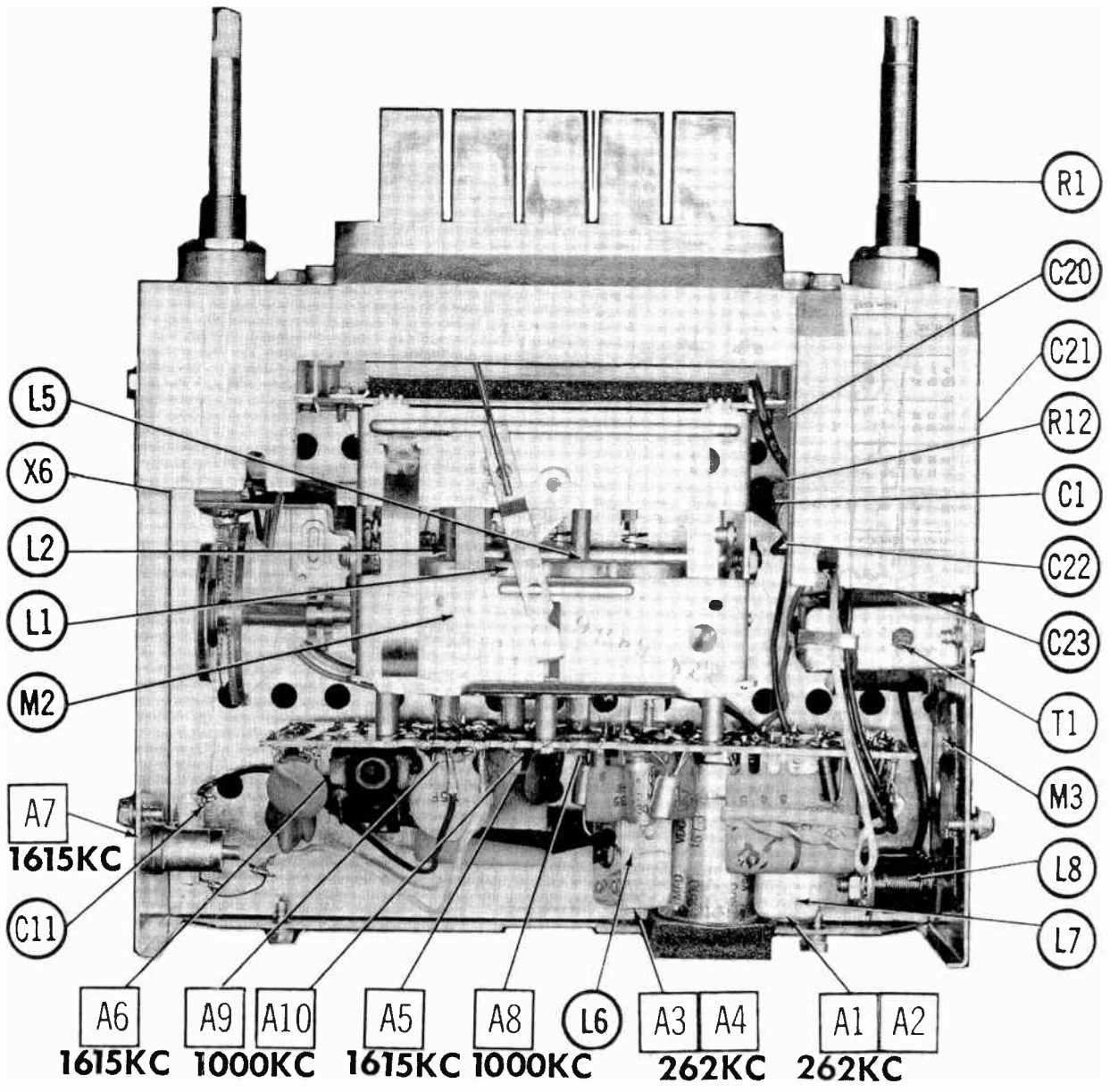
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FORD MODELS 5TPD, 5TPO, 5TPZ



▲ Howard W. Sams CIRCUITRACE® Photo





PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	AR103	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	AR104	Conv.	DS-25	GE-1	2N1639	PNP
X3	AR105	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	AR107	1st AF Amp.	DS-46	GE-10	2N649	NPN
X5	AR108	2nd AF Amp.	DS-46	GE-10	2N649	NPN
X6	AR114	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1N60C					1N34AS
X8		1N60C					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Philco PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	250	16	30-2608-3	PRS1210	BR250-15	QT1-28	BL2141	TC1502	PCLS-3020.2*
C2A	400	16	30-2594-9						
B	400	3							
C	100	16							
C3	2	16	30-2608-1	CRE451A	NLW3-15	MT1-1	BL1050	TT50X2	TL-1149
C4	25	6	30-2608-2	CRE312A	NLW30-6	MT1-13	BL1320	TT6X25	TL-1091

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	150 N470	#31-6534-9						10TCT-T15
C11	25-150							5HK-D33
C12	.0036		BPD-0033	DD-332	BYA10D33	CCD-332	B233	10TCT-Q47 10TCT-Q47
C13	47 N470	#31-6534-7						
C14	47 N470							
C15	20-180		BPD-0015	DD-152	LA10D15-C4	CCD-152	B215	10TS-D15
C16	.0015	#31-6543-8						
C17	45-180							
C18	270 N470		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TCT-T27 10TS-T33
C19	330							
C20	1mfd 3V							
C21	.047 3V		TTD-05	UK-105	HCC3105P		TA150	HY-135 TG-S50
C22	.47 3V			CK-503	H5			HY-330
C23	.1 16V			UK10-404	HCC10474Z		TA010	TH-P10
C24	.1 16V			CK-104	H6		TA010	TH-P10

Philco Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Philco PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA	Tone	40K	33-5610-7 ①				
B	Volume/Switch	10K Tap @ 4600Ω					
	Tone	40K	33-5610-9 ②				
	Volume	10K Tap @ 4600Ω					

① Used in Models 5TPD, 5TPZ.

② Used in Models 5TPO.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Philco PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	1st Ant.	32-4843-1 ①					① Part of M2.
L2	2nd Ant.	32-4843-2 ①					
L3	RF Choke (80uh)	32-4762-21	BC-668	72F825AP	RTC-9171	TA813	
L4	RF	32-4845-2					
L5	Osc.	32-4843-3 ①					
L6	Input IF	32-4882-1					
L7	Output IF	32-4882-2					

FORD MODELS 5TPD, 5TPO, 5TPZ

PARTS LIST AND DESCRIPTION (CONTINUED)

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~)	Philco PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	540ma	.6Ω	.5MH	32-4842-2	C-4124 ①	TC-1 ①	TR-159 ①	TY16XT ①	① Fabricate mounting

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Philco PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	18Ω Tap	@ 8Ω	32-10021-2			TR-169		

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			Philco PART No.	QUAM PART No.	
SP1	5" X 8" PM	8Ω	36-1700-5	58Z15Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Philco PART No.	REPLACEMENT DATA
K1	Biasing	470Ω, 470Ω, 2200Ω, .1mfd., .1mfd	30-6054-6 ①	
K2	Biasing	1000Ω, 3900Ω, 39K, .0047mfd, .0068mfd, .01mfd	30-6054-2	
K3	Biasing	1500Ω, 47K, 68K, .001mfd	30-6054-7 ②	
K4	Biasing	1500Ω, 1500Ω, 2800Ω, 2800Ω, .0047mfd, .0047mfd, .01mfd	30-6054-4	
K5	Biasing	220Ω, 1000Ω, 1000Ω, 4500Ω, 4500Ω, 2.2meg	30-6054-5	

- ① Early production Part Number 30-6054-1 used in conjunction with two (2) .2mfd 16V capacitors. If replacement is necessary, use Part Number 30-6054-6 and remove two (2) .2mfd 16V capacitors.
② Early production Part Number 30-6054-3 used in conjunction with 47K resistors. If replacement is necessary, use Part Number 30-6054-7 and remove 47K resistors.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			Philco PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	SFE	14A	45-2559	In Fuse Block	307014			SFE14	

MISCELLANEOUS

ITEM No.	PART NAME	Philco PART No.	NOTES
M2	Tuner	76-13606-3	Models 5TPD, 5TPZ.
M3	Tuner Spark Plate	76-13606-1 30-1254-1	Models 5TPO. (200pt)

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon-Model 5TPD, 5TPZ	28-14675-3	Pushbutton-Models 5TPD, 5TPZ	27-11078-1
Escutcheon-Model 5TPO	28-14991-1	Pushbutton-Model 5TPO	28-14995-1
Dial Glass-Models 5TPD, 5TPZ	27-10791-3	Pointer Assembly-Models 5TPD, 5TPZ	76-13804-12
Knob, Tuning or Volume-Models 5TPD, 5TPZ	76-13406-6	Pointer Assembly-Model 5TPO	76-13804-15
Knob, Tone or Dummy-Model 5TPD, 5TPZ	28-14705-17		

WIRING DATA

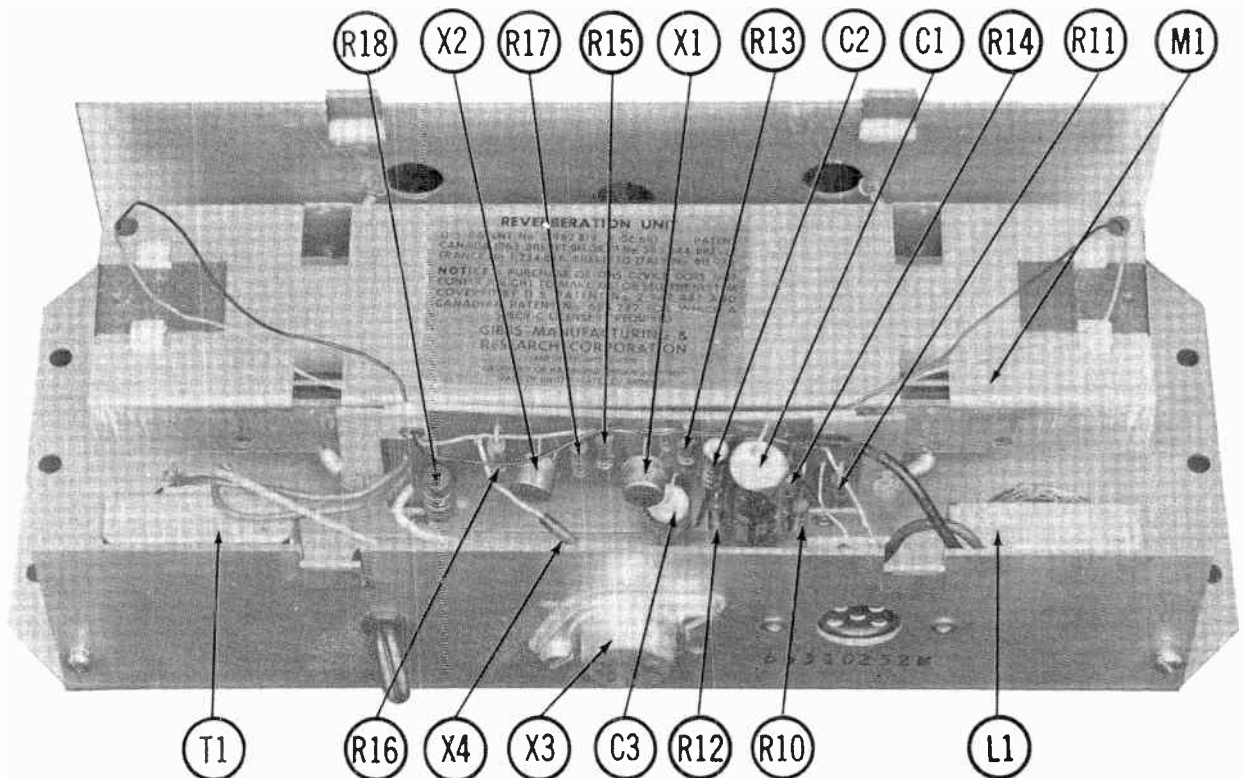
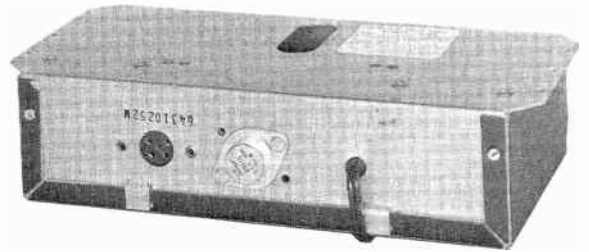
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)



PHOTOFACT[®] with

CIRCUITRACE[®]

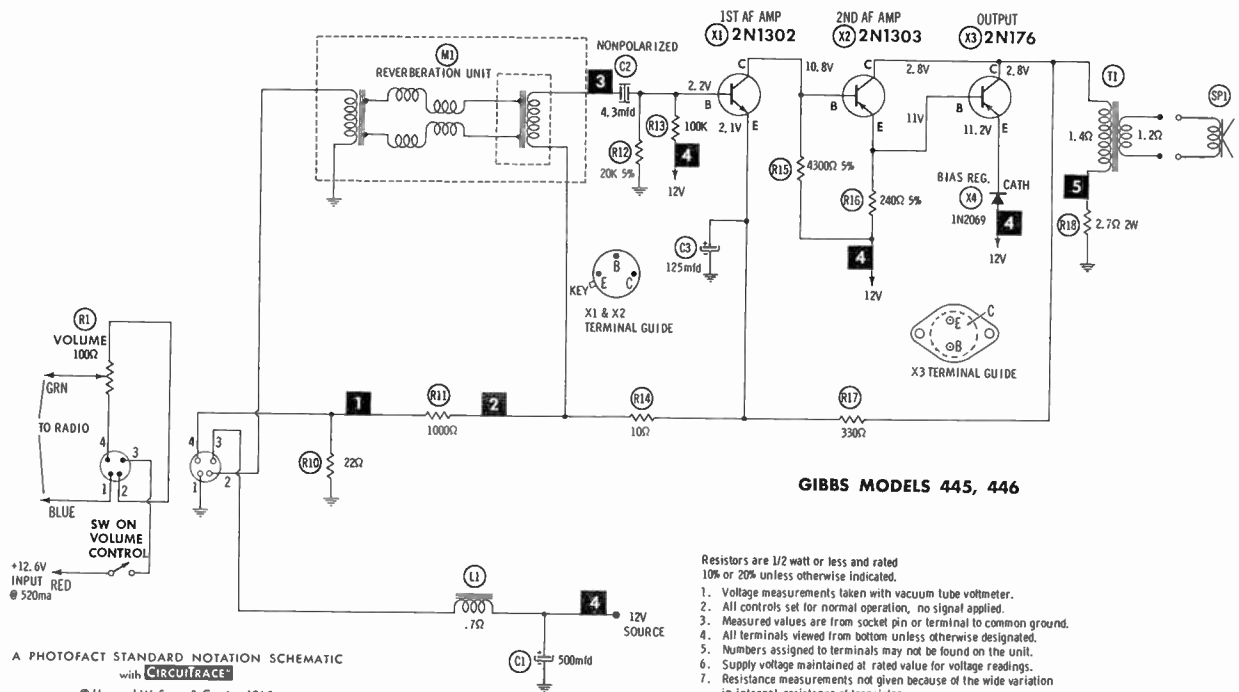
TRADE NAME : Gibbs Model 445, 446
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 3 Transistor Reverberation Unit
POWER SUPPLY : 12 Volt Storage Battery
RATING : .520 Amp. @ 12.6 Volts DC



GIBBS MODELS 445, 446

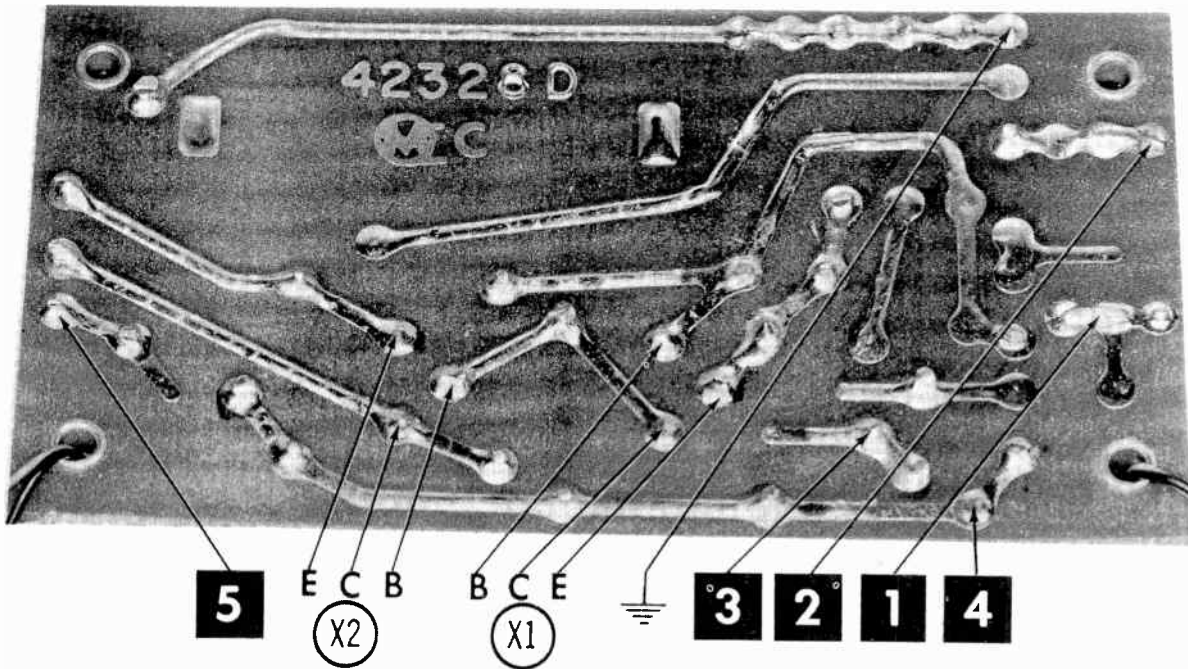
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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with **CIRCUITRACE**

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A Howard W. Sams **CIRCUITRACE** Photo

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2N1302	AF Amp.	DS-46	GE-10	2N649	NPN
X2	2N1303	AF Amp.	DS-25	GE-2	2N591	PNP
X3	2N176	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X4		1N2069					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	GIBBS PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	500	15	70278	PRS1220	BR500-15	QT1-30	BL2342	TC1505	TVA-1162
C2	4.3	10NP	70276	NP-PRS7405	BRNP5-400	NPQT-1		TCN105	TVANS-1110*
C3	125	10	70277	CRE426A	NLW125-15	MT1-23	BL1830	TT12X150	TE-1136

* 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					
			GIBBS PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume/Switch	100Ω	70280-1	F1-100,SSK010, KR-4 or (B1, KR-4)			B11-084, SK1, 76-1 or (BU1, CF1, SS1, GC)	UA12L, SK1000, US41 or (RU12L, SL38, SK1000, US41) or (U1, US26)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Mcosured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	GIBBS PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L1	.520A	.7Ω	11MH	70359 (70284)	C-4095	TC-2	TR-154	TY17XT	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	GIBBS PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	16Ω	8Ω	70285					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		GIBBS PART No.	QUAM PART No.	
SP1	6" X 9" PM 8Ω	70356	69A3Z8	

MISCELLANEOUS

ITEM No.	PART NAME	GIBBS PART No.	NOTES
M1	Reverb Unit	AO-24600-7	

WIRING DATA

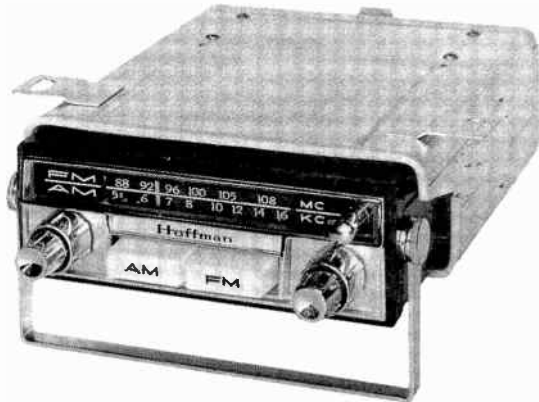
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 in.) or 8670 (3/4 in.)

GIBBS MODELS 445, 446



PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : Hoffman Model 769

SUPPLIER : For Current Address, See Master Index.

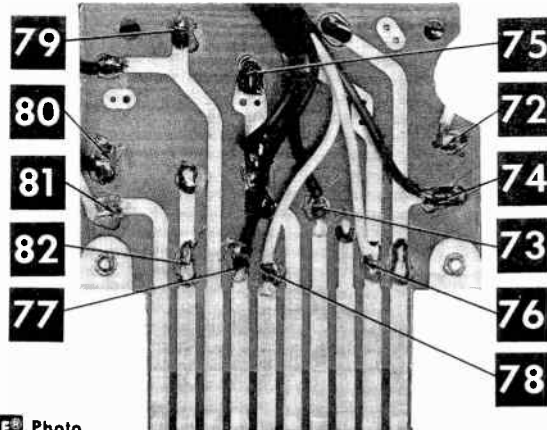
TYPE SET : 9 Transistor AM-FM Auto-Portable Receiver

POWER SUPPLY : 6 or 12 Volt Storage Battery (4 Penlight Batteries)

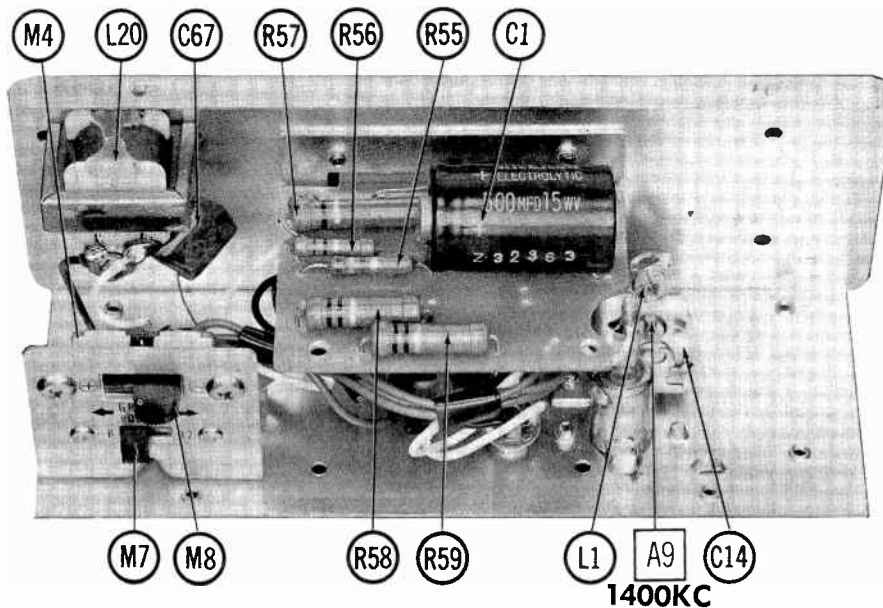
RATING : .220 Amp. @ 6.3 Volts DC, .250 Amp. @ 12.6 Volts DC, 8MA @ 6 Volts DC

TUNING RANGE: BROADCAST 540-1615KC
FREQ. MOD. 88-108MC

HOFFMAN MODEL 769



A Howard W. Sams **CIRCUITRACE[®]** Photo



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

ALIGNMENT INSTRUCTIONS

Maintain line voltage at 117 volts. Use only enough generator output to obtain a suitable indication. Allow a 15 minute warmup for receiver and equipment.
CAUTION: Use isolation transformer, if available. If not, observe polarity when connecting test equipment.
 Suggested Alignment Tools:
 A1 thru A21 GENERAL CEMENT: 8290, 8868, 9089 WALSCO: 2525, 2528, 2587

AM ALIGNMENT – SELECTOR IN AM POSITION

Fashion loop of several turns of wire and connect generator across loop. Set volume control at maximum.

	GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	460KC (400v Mod.)	Tuning gang fully open.	Output Meter across Voice coil.	A1, A2, A3, A4	Adjust for maximum. Repeat until no further improvement can be made.
2.	600KC	"	"	A5	Adjust for maximum.
3.	1400KC	Tune to signal.	"	A6, A7	"
4.	600KC	"	"	A8	Adjust for maximum. (Must be assembled as Auto Radio).

With radio installed in car and antenna fully extended, tune in a weak station near 1000KC and adjust A9 for maximum output.

FM ALIGNMENT USING AM SIGNAL GENERATOR – SELECTOR IN FM POSITION

High side to point $\diamond A$, low side to ground.

	GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5.	10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point $\diamond B$; common to ground.	A10, A11, A12, A13, A14	Adjust for maximum.
6.	"	"	DC probe to point $\diamond C$ common to	A15	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.
7.	"	"	DC probe to point $\diamond B$; common to	A16	Adjust for minimum.

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

High side to point $\diamond A$, low side to ground. Use only enough marker signal to obtain indication. Use 60v frequency modulated signal with 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

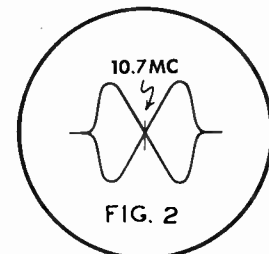
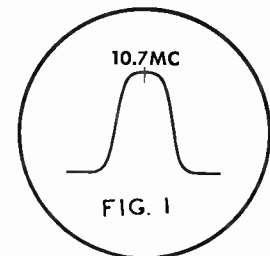
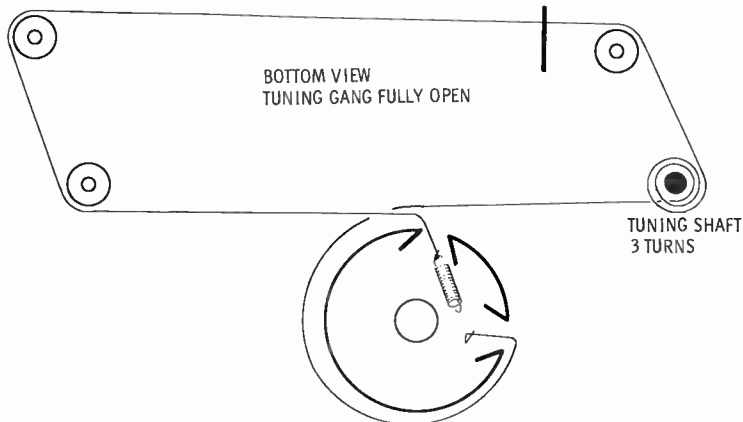
	GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5.	10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of Scope to point $\diamond B$; low side to ground.	A10, A11, A12, A13, A14	Disconnect stabilizing capacitor C 6. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C 6.
6.	"	"	Vert. amp. to point $\diamond C$; low side to	A15	Adjust A15 (Secondary) to place marker at center of crossover lines similar to Fig. 2. Adjust A10 (Primary) for maximum amplitude and straightness of crossover lines.

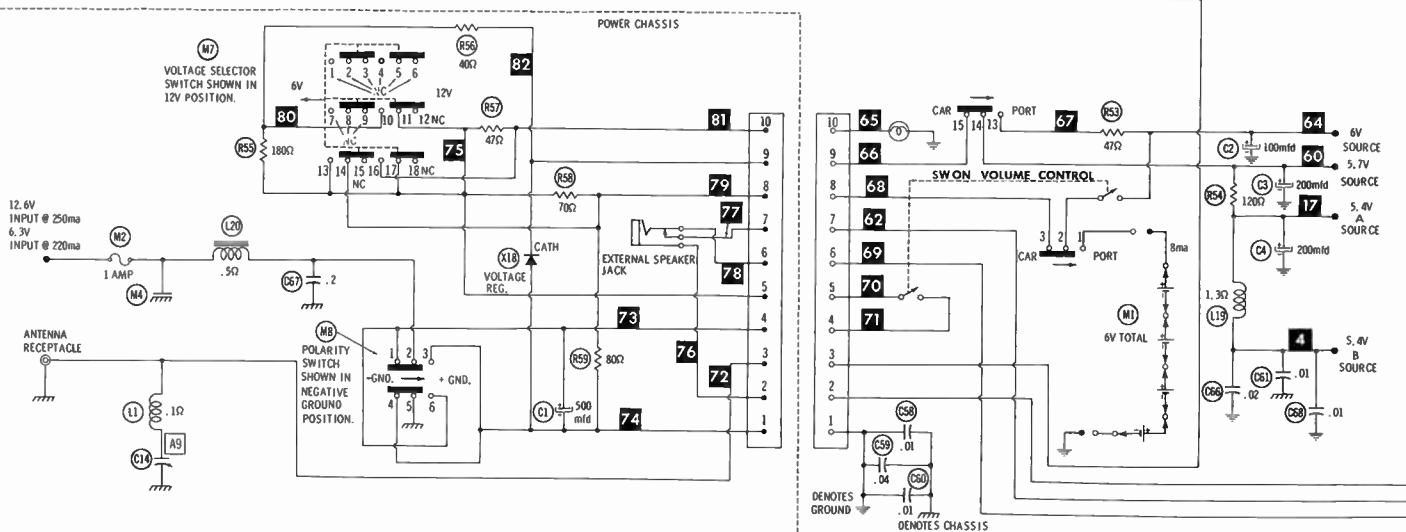
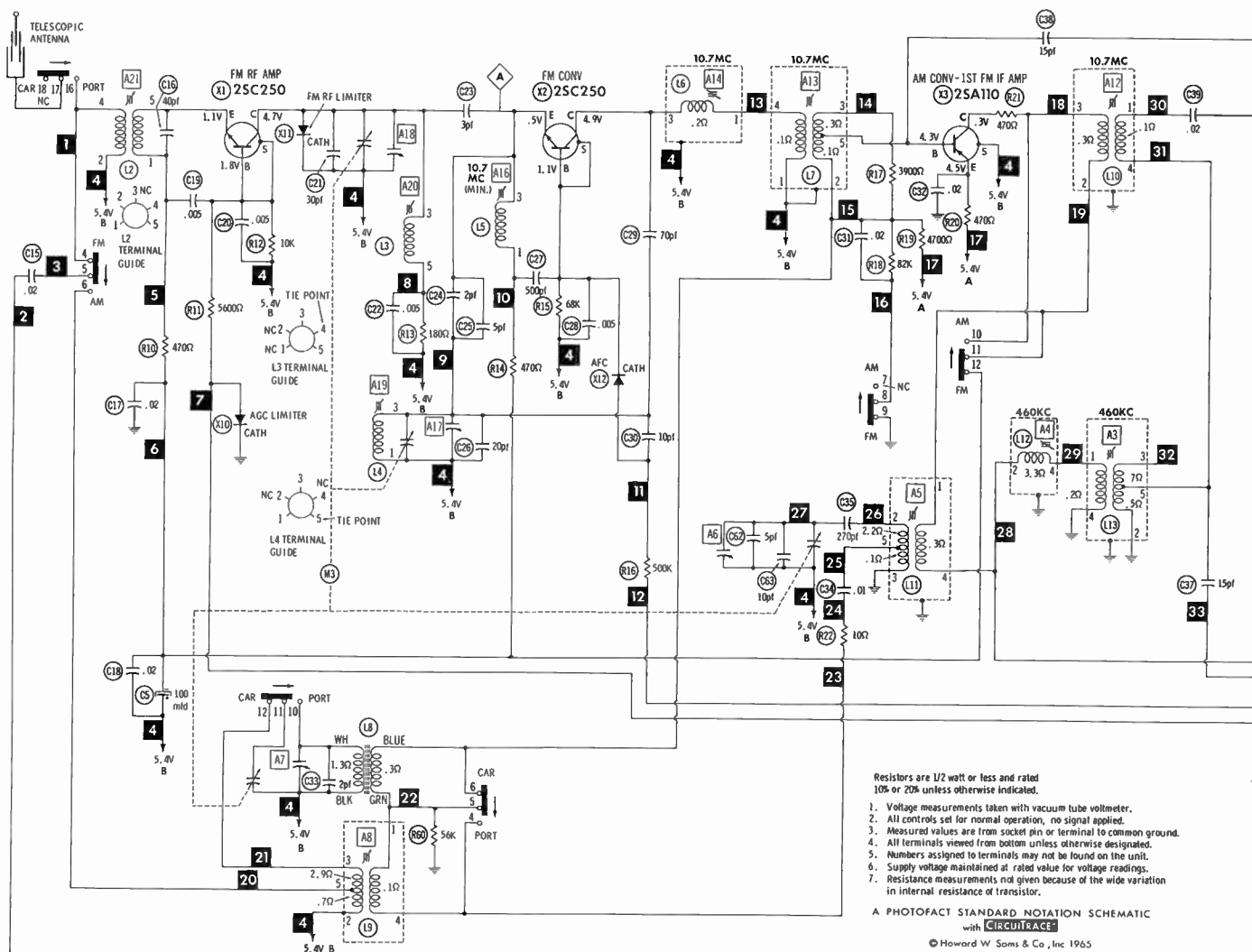
FM RF ALIGNMENT

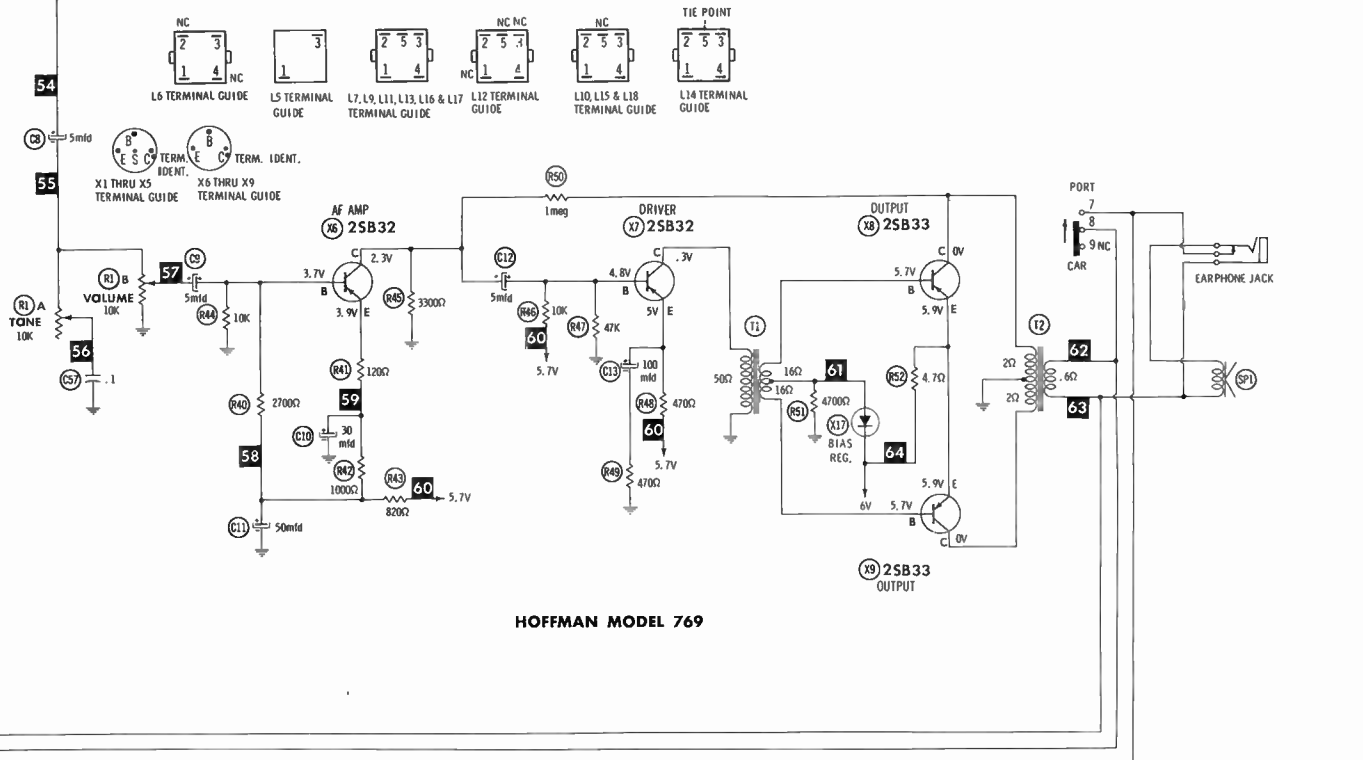
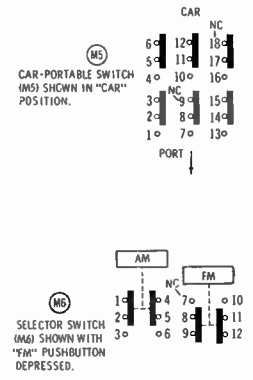
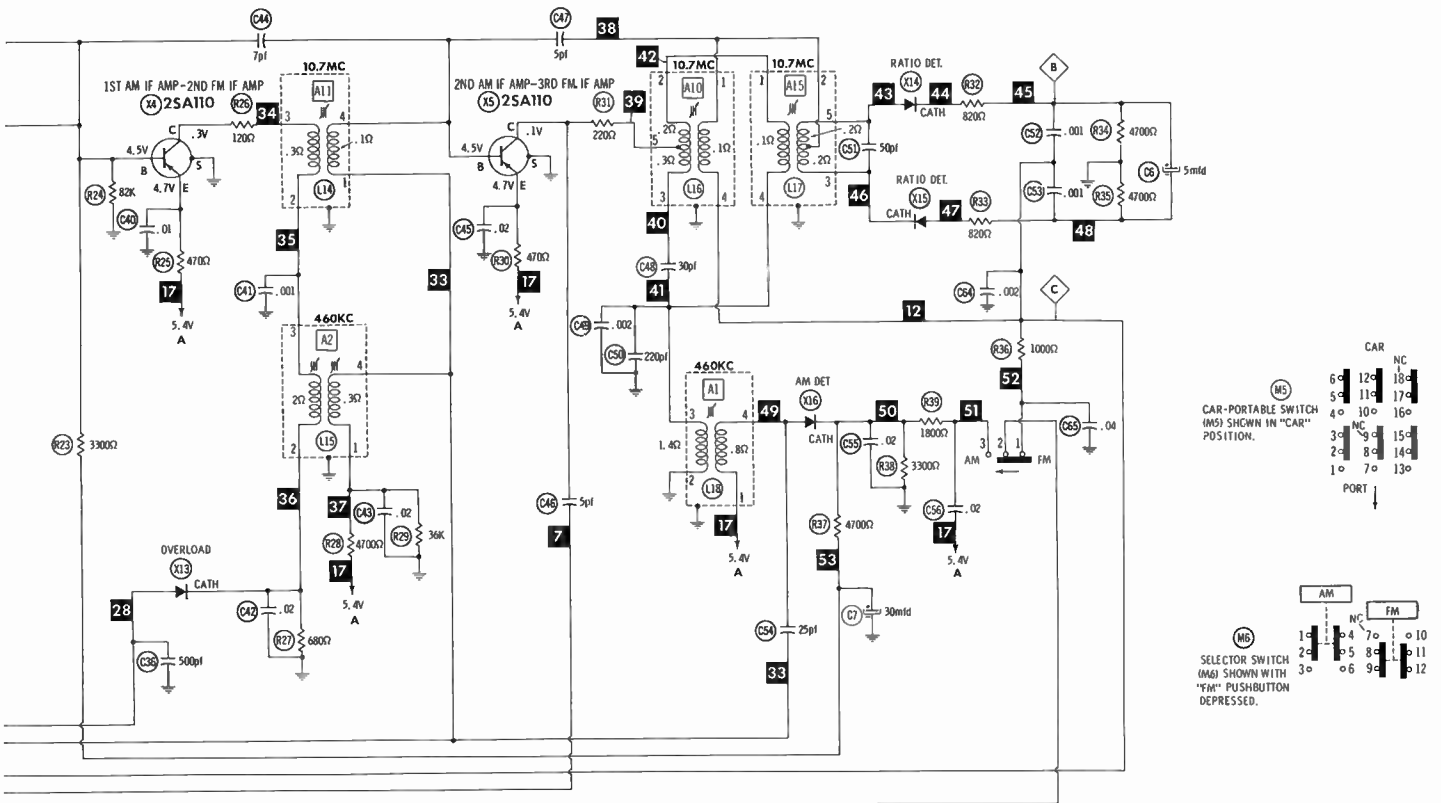
Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

	GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
8.	104MC	Set at high end.	DC probe of VTVM to point $\diamond B$; common to ground.	A17, A18	Adjust for maximum.
9.	90MC	Tune to signal.	"	A19, A20, A21	Rock tuning and adjust for maximum. Repeat steps 8 and 9 until no further improvement can be made.

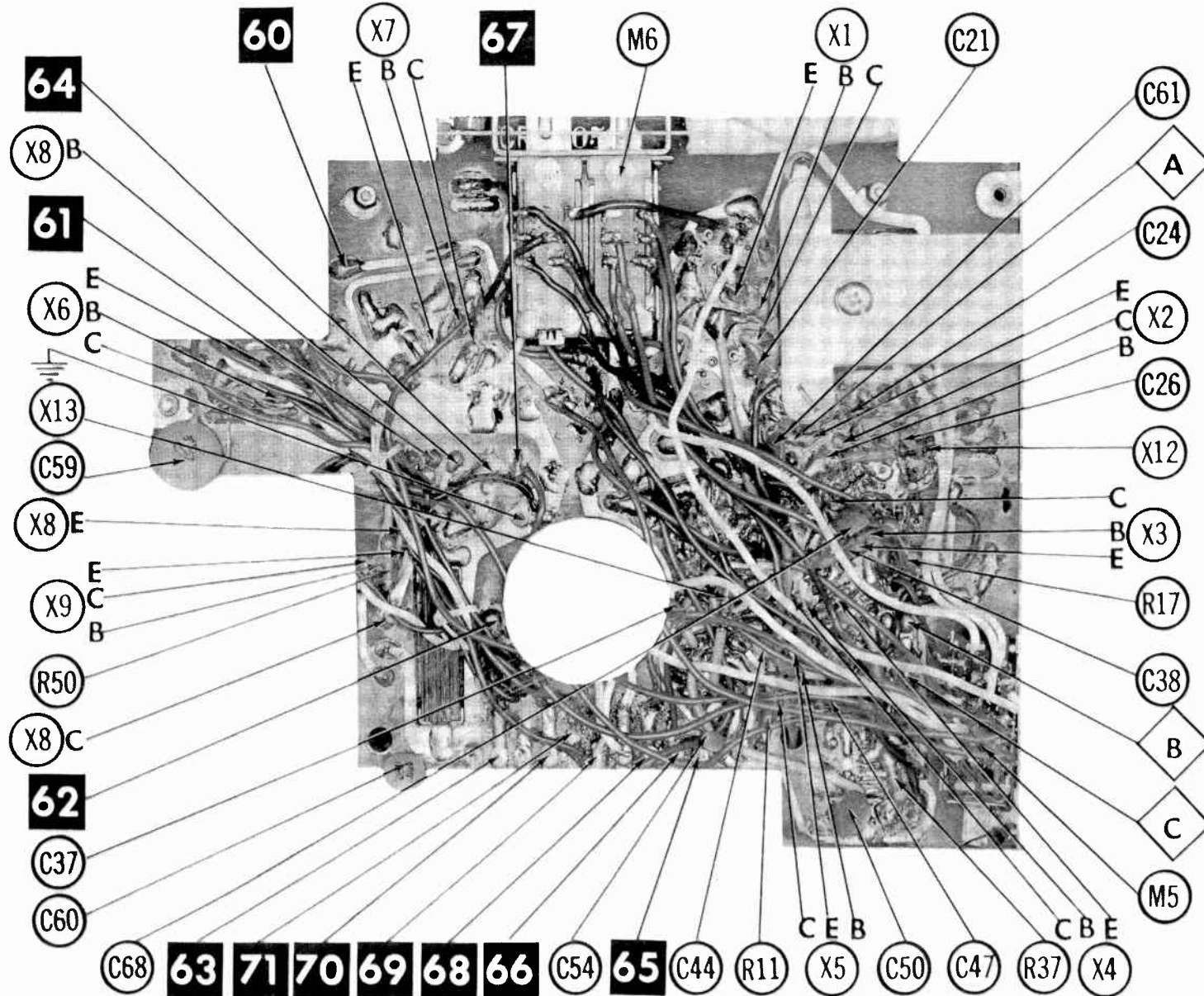
DIAL CORD STRINGING



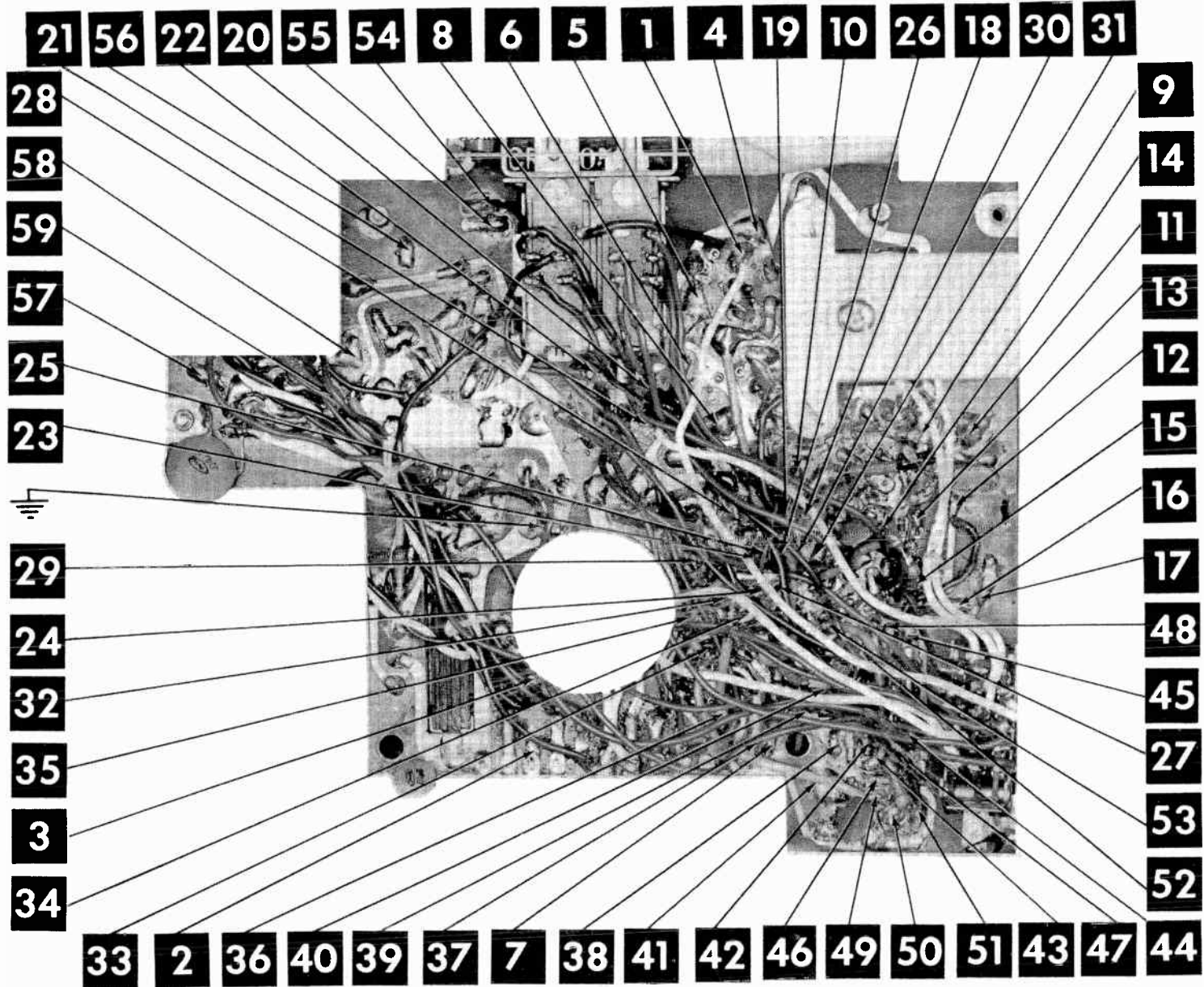




HOFFMAN MODEL 769

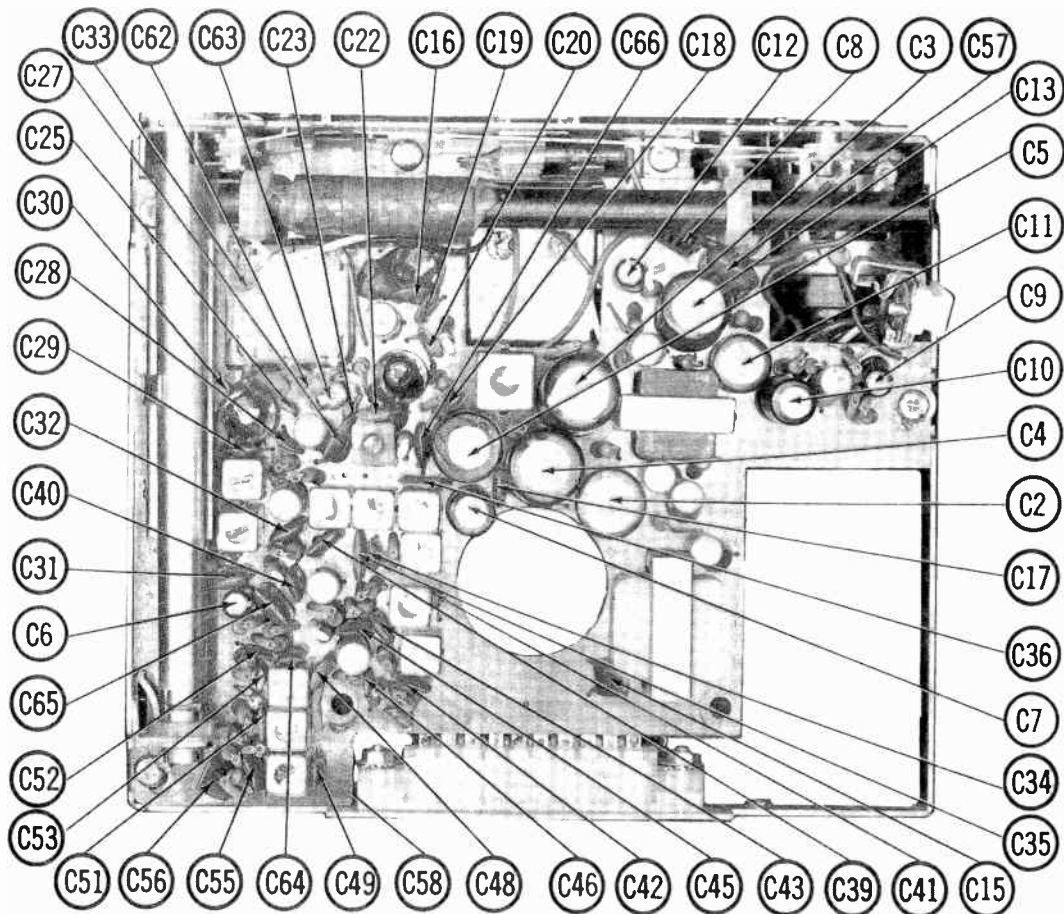
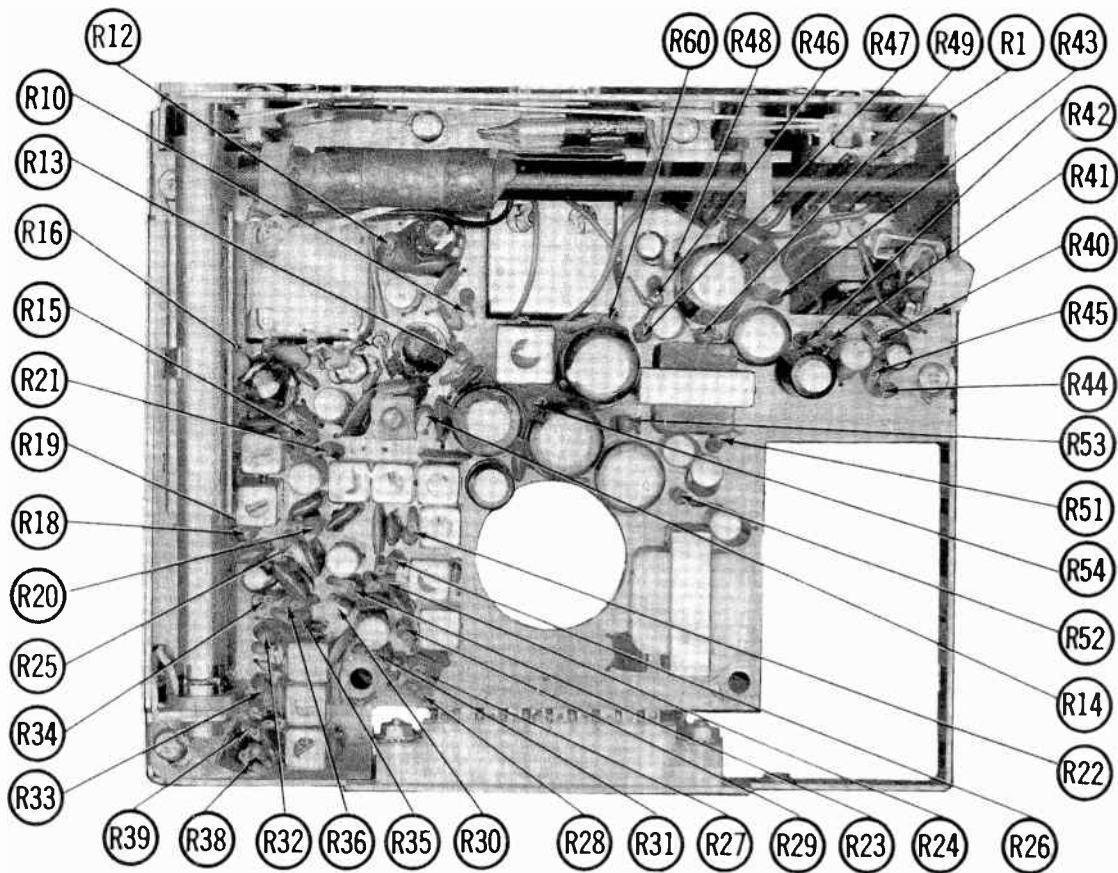


A Howard W. Sams CIRCUITRACE® Photo



A Howard W. Sams **CIRCUITRACE**® Photo

HOFFMAN MODEL 769



PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L15	3rd AM IF						
L16	Ratio Det. Pri.						
L17	Ratio Det. Sec.						
L18	4th FM IF						
L19	RF Choke						

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Hoffman PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L20	250ma	.5Ω	8MH		C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Hoffman PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	1.3:	1						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Hoffman PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	50Ω CT	8Ω						

BATTERIES

ITEM No.	VOLTAGE	Hoffman PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	6V		930 (or AL9 or Hg9)	1015 (or E91 or E9)	M15R (or MN1500 or ZMB)	(4 Required)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Hoffman PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2		1A			362001	155014	AGX1	HDI

MISCELLANEOUS

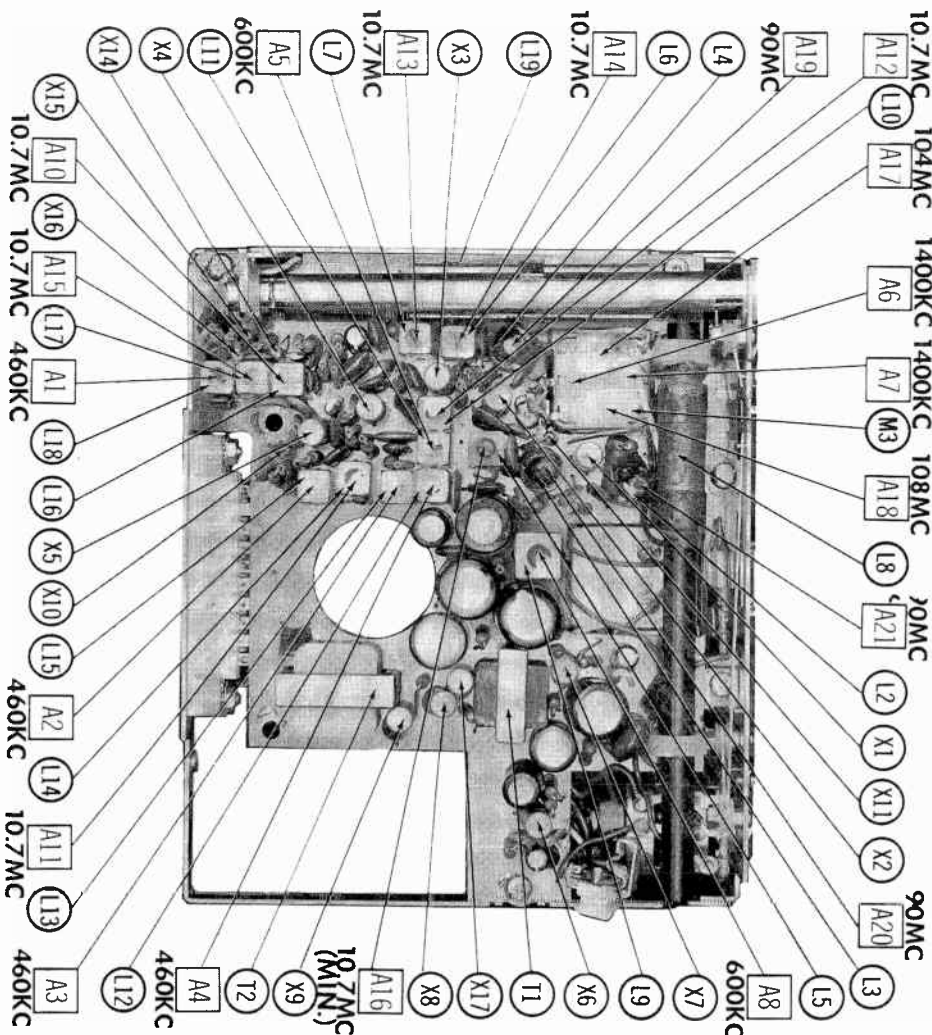
ITEM No.	PART NAME	Hoffman PART No.
M3	Tuning Gang	
M4	Spark Plate	
M5	Switch (Auto-Port)	
M6	Selector Switch (AM-FM)	
M7	Voltage Selector Switch	
M8	Polarity Selector Switch	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA	
		Hoffman PART No.	QUAM PART No.
SP1	2 3/4" PM 8Ω		

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)



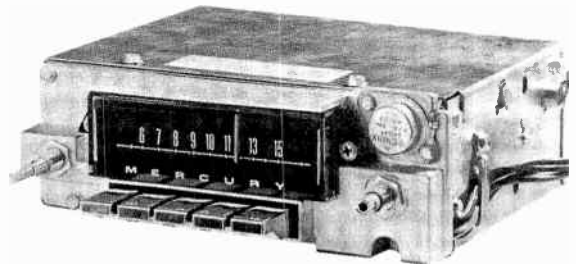


PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Mercury Models 5TBM, 5TBM,
(1965 Mercury)
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 6 Transistor AM Receiver
POWER SUPPLY : 12 Volt Storage Battery
RATING : .700 Amp. @ 12.6 Volts DC

TUNING RANGE : BROADCAST 540-1605KC



ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
Use only enough generator output to provide a usable indication.
Suggested Alignment Tools:

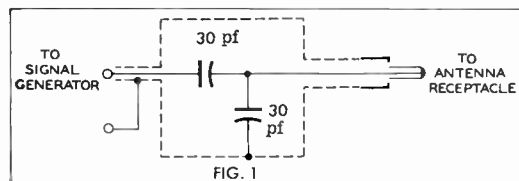
A1 thru A4	GENERAL CEMENT: 8606, 8606L, 8869	WALSICO: 2543, 2544, 2588
A5, A6, A7	GENERAL CEMENT: 8290, 8868, 9087	WALSICO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfcd to point A , low side to ground.	262.5KC (400 μ Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1605KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tune cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1600KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO

1. Pull off knobs.
2. Use 5/8" wrench and remove nuts from control bushings.
3. Disconnect Antenna, "A", and Speaker leads.
4. Use 3/8" wrench and remove bolt from rear brace.
5. Remove radio from under instrument panel.

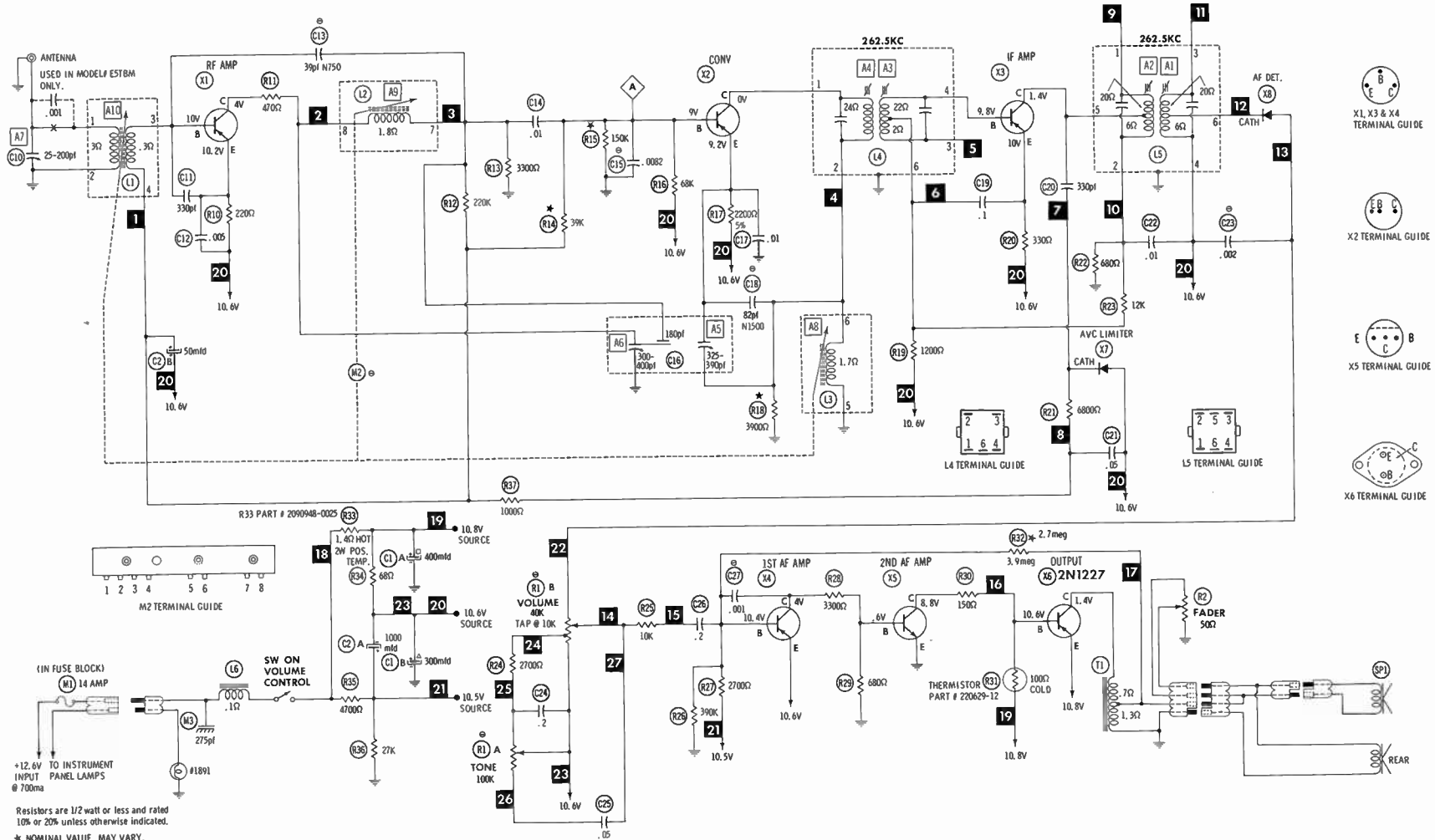
SPEAKER

1. Use 3/8" wrench and remove 4 nuts from speaker mounting.
2. Remove speaker from under instrument panel.

MERCURY MODELS 5TBM, 5TBM

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

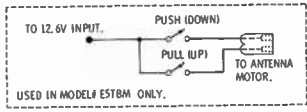
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Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

* NOMINAL VALUE, MAY VARY.

- ⊙ See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.



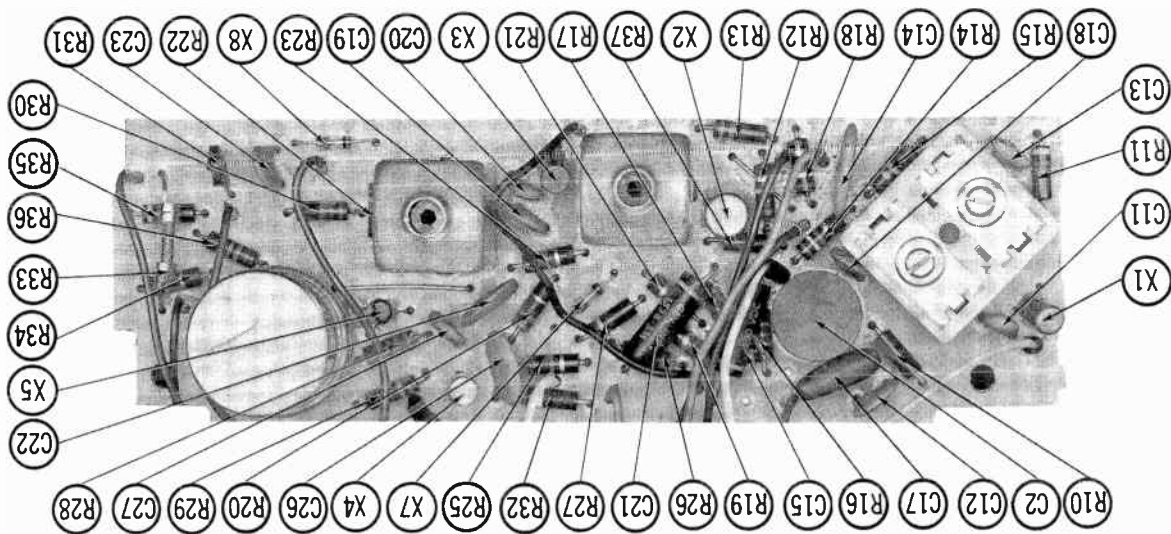
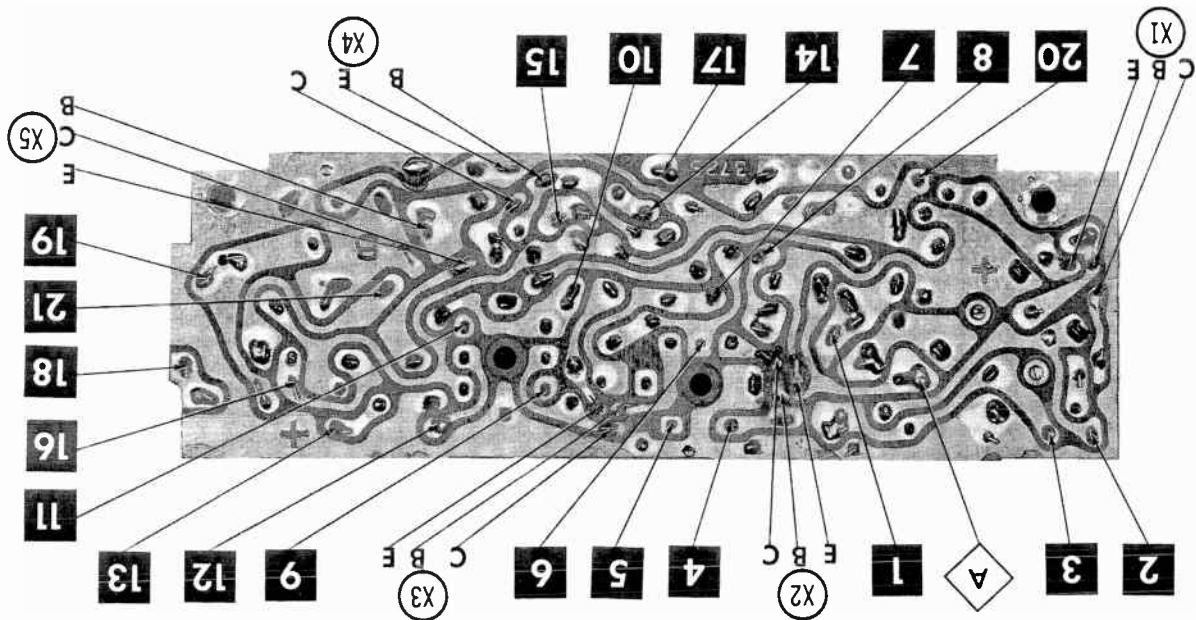
A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITACE

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MERCURY MODELS ESTBM, 5TBM

MERCURY MODELS E5TBM, 5TBM

A Howard W. Sams CIRCUITRACE® Photo



PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES	BENDIX PART No.
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
X1		RF Amp.	DS-25	GE-1	2N1637	PNP	2091241-15
X2		Conv.	DS-25	GE-1	2N1639	PNP	2091241-13
X3		IF Amp.	DS-25	GE-1	2N1638	PNP	2091241-14
X4		1st AF Amp.	DS-26	GE-2	2N591	PNP	2090924-8
X5		2nd AF Amp.	DS-46	GE-10	2N649	NPN	2092609-0706
X6	2N1227	Output	DS-520	GE-3	2N301	PNP*	2091859-0713

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		2092055-0001					1N34AS
X8		2092055-0001					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		BENDIX PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	400	16	2092983-0001	PWH2-02-08				PPF300.65	PCLS-2174.1*
B	300	16							
C2A	1000	1.5	2092246-0702						
B	50	3							

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

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	25-200		#2091504-0005						
C11	330			DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C12	.005			BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C13	39	N750			TCN-39	C10Q39U	CCTN-390	CN7439	10TCU-Q39
C14	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C15	.0082	100V		DBE6D82	CPR-8200J	DPMS6D82	6DP-2-822	PVC628	6PS-D82
C16A	300-400		#219092-28						
B	180								
	325-390'								
C17	.01	100V		DBE4S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10
C18	82	N1500	#2093030-0759						
C19	.1	10V		TTD-1	CK-104	H6		TA010	TG-P10
C20	330			DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C21	.05	100V	DB	DBE6S5		DPMS2S5	1DP-2-503	PVC215	2PS-S50
C22	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C23	.002			BPD-002	DD-202	BYA10D2	CCD-202	B220	5HK-D20
C24	.2				UK20-204	HCC25224Z			HY-325
C25	.05	100V		DBE6S5		DPMS2S5	1DP-2-503	PVC215	2PS-S50
C26	.2				UK20-204	HCC25224Z			HY-325
C27	.001			BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10

Bendix Part Number.

• Nominal Value.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	100K	2093705-0701				
B	Volume	40K Tap @ 10K	①				UE4547-S
C	On-Off Switch						
D	Ant. Up-Switch						
C	Ant. Down-Switch						
	Tone	100K	203706-0701				
	Volume/Switch	40K Tap @ 10K	②				
R2	Fader	50Ω	2093807-0701				

* This control cannot be constructed using STA-LOC components. Ordered by "UE" number thru local distributor.

① Used in Model E5TBM.

② Used in Model 5TBM.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		BENDIX PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant	①					① Part of M2.
L2	RF	①					
L3	Osc.	①					
L4	Input IF	2093163-0002		6522			
L5	Output IF	2093164-0003		6523			

PARTS LIST AND DESCRIPTION (CONTINUED)

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~)	BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L6	700ma	.1Ω	1.2MH	2092050-0719	C-4095 ①	TC-1 ①	TR-159 ①	TY16XT ①	① Fabricate mounting

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	12Ω Tap	@ 8Ω	2092138-0712			TR-164		

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		BENDIX PART No.	QUAM PART No.	
SP1	4" X 10" PM	8Ω	410A2Z2	Model 5TBF.
	5" X 8" PM	8Ω	58Z15Z3	Model 5TBO.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			BENDIX PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	SFE	14A		In Fuse Block	307014			SFE-14	

MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M2	Tuner	2093703-0702	(Model 5TBF)
	Tuner	2093716-0702	(Model 5TBO)
M3	Spark Plate	2093050-0705	(275pf)

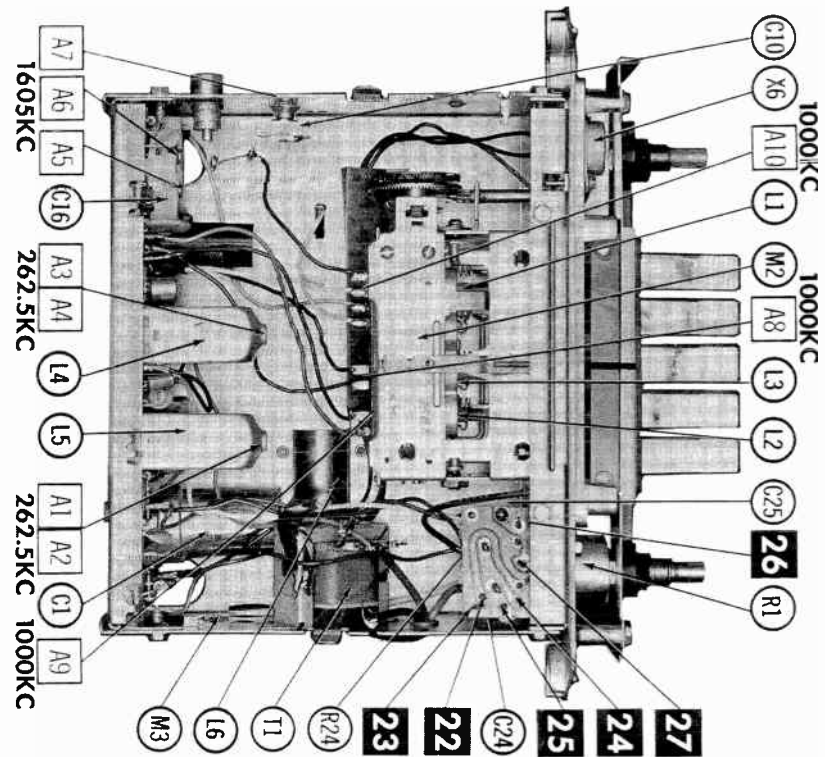
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	2093709-0501	Pushbutton	2093697-0001
Dial Glass	2093695-0001	Pointer Assembly	2090129-0055

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8861 (3/8 In.) or 8870 (3/4 In.)



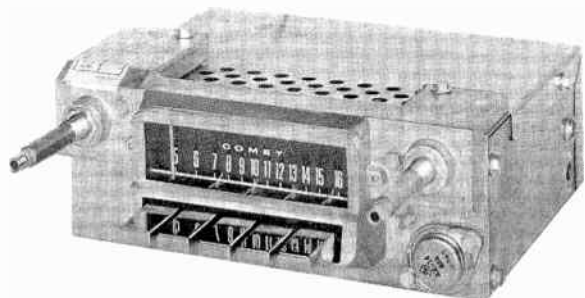
A Howard W. Sams CIRCUITRACE® Photo

MERCURY MODELS ESTBM, STBM



PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : Mercury Model 5TPE (1965 Comet)
 SUPPLIER : For Current Address, See Master Index
 TYPE SET : 6 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .540 Amp. @ 12.6 Volts DC
 TUNING RANGE : BROADCAST 540-1615KC

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

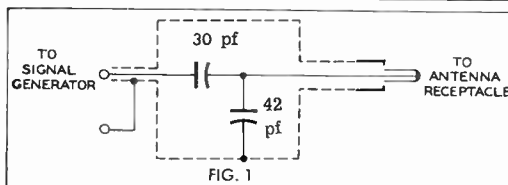
A1 thru A7 GENERAL CEMENT: 9440 WALSCO: 2501

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum. Remove top slug to adjust A1 and A3.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO

1. Pull off knobs.
2. Use 9/16" wrench and remove nuts from control bushings.
3. Disconnect "A", Antenna & Speaker leads.
4. Use 7/16" wrench and remove nut from rear bracket.
5. Remove radio from under instrument panel.

SPEAKER

1. Remove 4 phillips screws holding speaker grille.
2. Lift speaker grille up.
3. Use 3/8" wrench and remove metal screws from speaker mounting.
4. Lift speaker out top of instrument panel.
5. Disconnect speaker leads.

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

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	AR103	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	AR104	Conv.	DS-25	GE-1	2N1639	PNP
X3	AR105	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	AR107	1st AF Amp.	DS-46	GE-10	2N649	NPN
X5	AR108	2nd AF Amp.	DS-46	GE-10	2N649	NPN
X6	AR14	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1N60C					1N34AS
X8		1N60C					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Philco PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	250	16	30-2608-3	PRS1210	BR250-15	QT1-28	BL2141	TC1502	PCL5-3020.2*
C2A	400	16	30-2594-9						
B	400	3							
C	100	16							
C3	2	16	30-2608-1	CRE451A	NLW3-15	MT1-1	BL1050	TT50X2	TL-1149
C4	25	6	30-2608-2	CRE312A	NLW30-6	MT1-13	BL1320	TT6X25	TL-1091

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	150 N470	#31-6534-9							10TCT-T15
C11	25-150								
C12	.0036		BPD-0033	DD-332	BYA10D33	CCD-332	B233	5HK-D33	10TCT-Q47
C13	47 N470	#31-6534-7							10TCT-Q47
C14	47 N470								
C15	20-180		BPD-0015	DD-152	LA10D15-C4	CCD-152	B215	10TS-D15	
C16	.0015	#31-6543-8							
C17	45-180								
C18	270 N470		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TCT-T27	10TS-T33
C19	330		UK-105	HCC3105P			HY-135		
C20	1mfd 3V		CK-503	H5		TA150	TG-S50		
C21	.047 3V		UK10-404	HCC10474Z			HY-330		
C22	.47 3V		CK-104	H6		TA010	TH-P10		
C23	.1 16V		TTD-1	CK-104	H6	TA010	TH-P10		
C24	.1 16V		TTD-1	CK-104	H6	TA010	TH-P10		

Philco Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Philco PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	40K	33-5610-5				
B	Volume/Switch	10K Tap @ 4600Ω					

COILS (RF-IF)

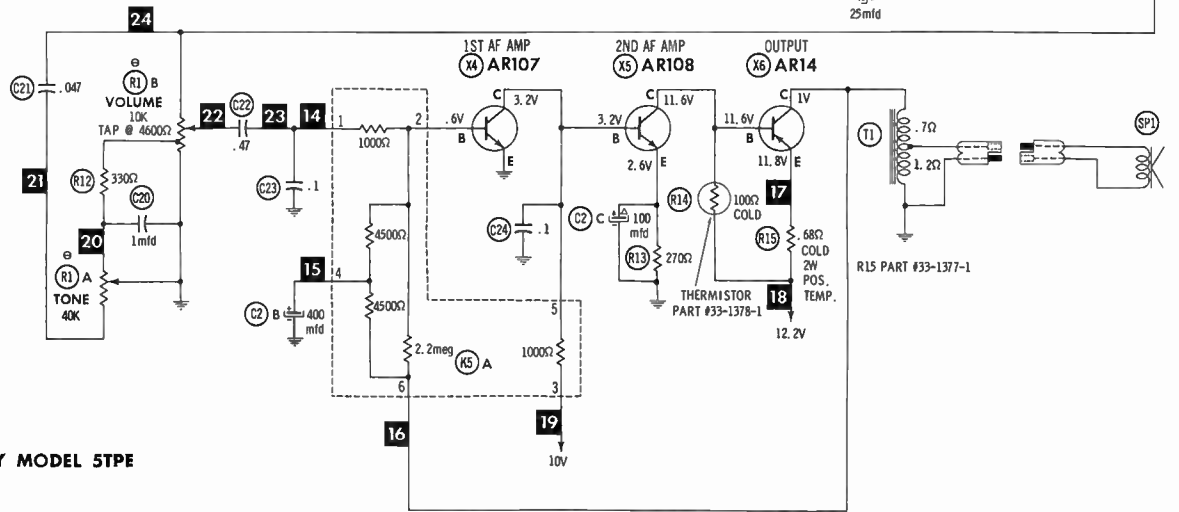
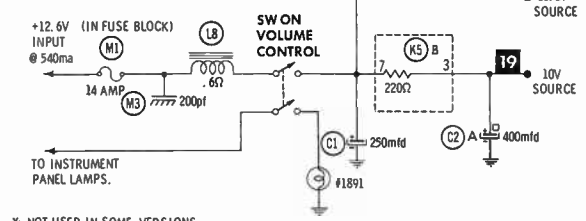
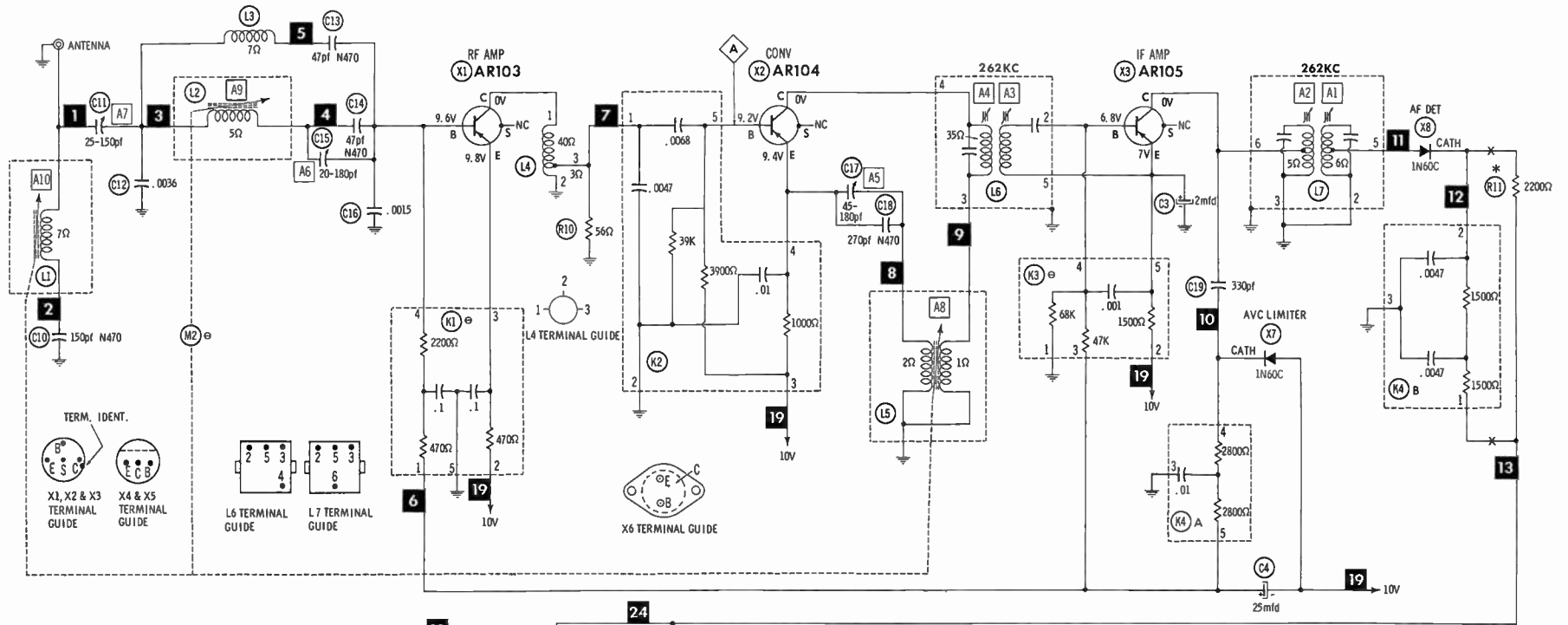
ITEM No.	USE	Philco PART No.	REPLACEMENT DATA				NOTES
			MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	1st Ant.	32-4843-1 ①					① Part of M2.
L2	2nd Ant.	32-4843-2 ①					
L3	RF Choke (80uh)	32-4762-21	BC-668	72F625AP	RTC-9171	TA813	
L4	RF	32-4845-2					
L5	Osc.	32-4843-3 ①					
L6	Input IF	32-4882-1					
L7	Output IF	32-4882-2					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Philco PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	540ma	.6Ω	.5MH	32-4842-2	C-4124 ①	TC-1 ①	TR-159 ①	TY16XT ①	① Fabricate mounting.

CONTINUED ON PAGE 102

MERCURY MODEL STPE

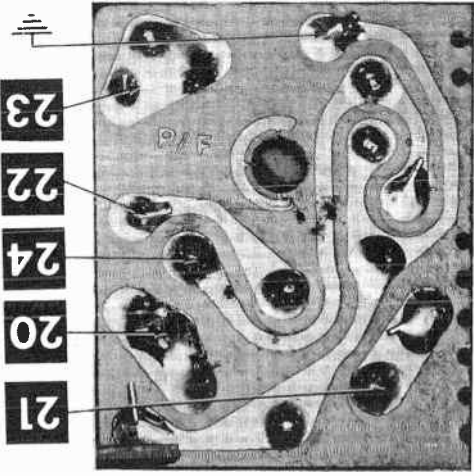
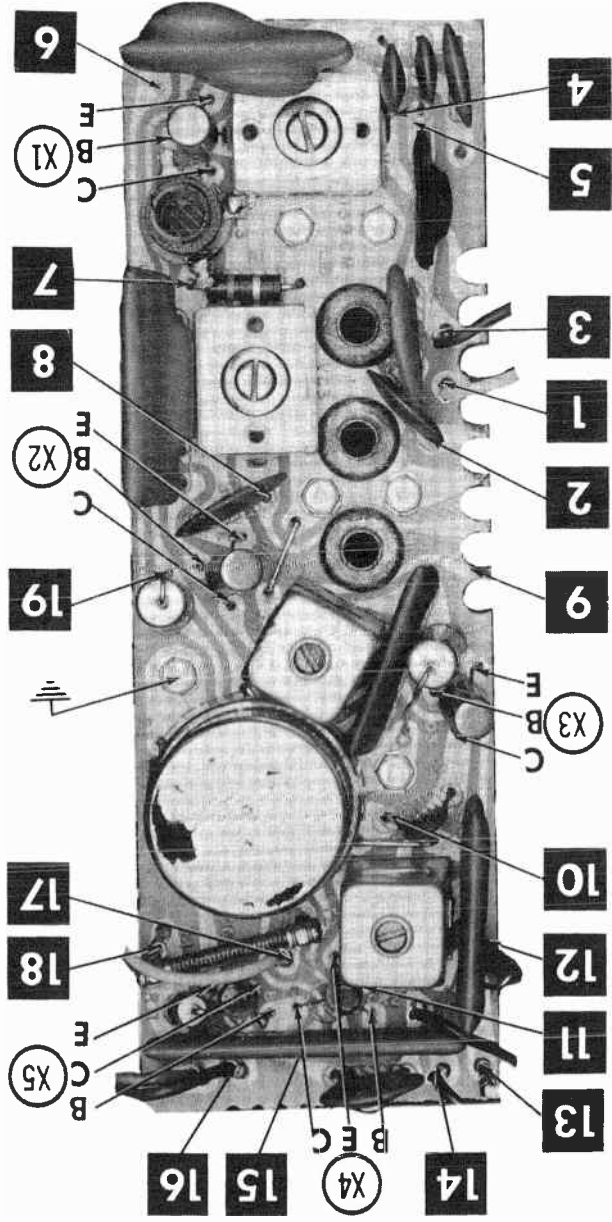
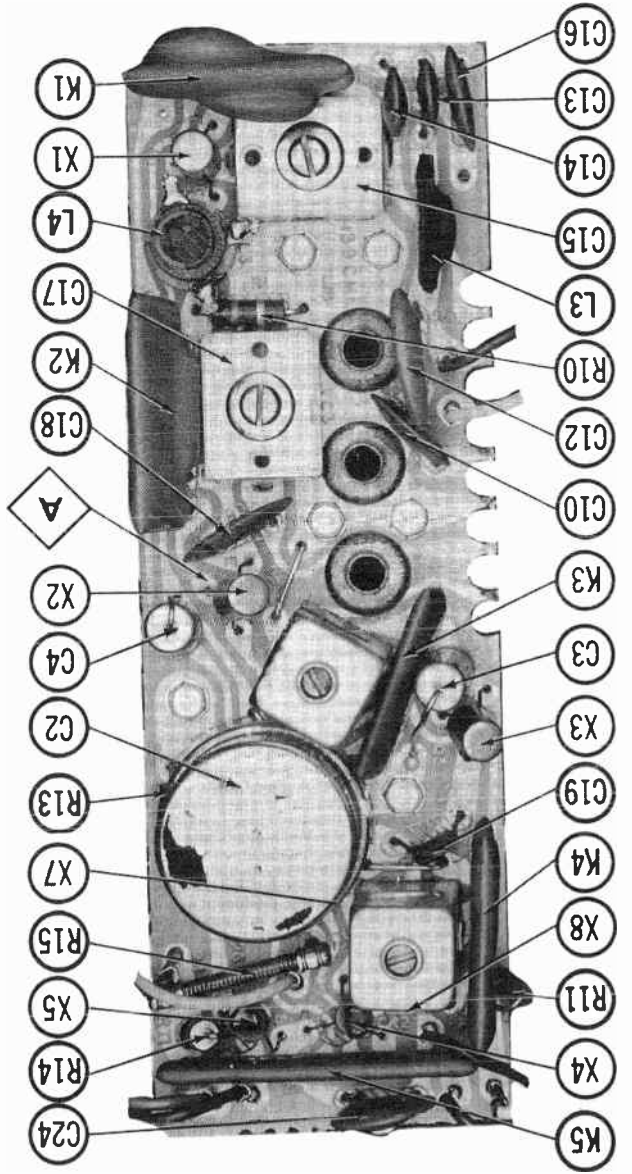


- * NOT USED IN SOME VERSIONS.
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.
- ⊖ See parts list for alternate value or application.
1. Voltage measurements taken with vacuum tube voltmeter.
 2. All controls set for normal operation, no signal applied.
 3. Measured values are from socket pin or terminal to common ground.
 4. All terminals viewed from bottom unless otherwise designated.
 5. Numbers assigned to terminals may not be found on the unit.
 6. Supply voltage maintained at rated value for voltage readings.
 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

MERCURY MODEL 5TPE

A PHOTOFAC STANDARD NOTATION SCHEMATIC with **CIRCUTRACE**
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MERCURY MODEL 5TPE



A Howard W. Sams CIRCUITRACE® Photo

PARTS LIST AND DESCRIPTION (CONTINUED)

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
			Philco PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRL	SEC.						
T1	18Ω Tap	@ 8Ω	32-10021-2				TR-169	

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			Philco PART No.	QUAM PART No.	
SP1	5" X 8" PM	8Ω	36-1700-5	58A15Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Philco PART NO.	REPLACEMENT DATA
K1	Biasing	470Ω, 470Ω, 2200Ω, .1mfd, .1mfd.	30-6054-6 ①	
K2	Biasing	1000Ω, 3900Ω, 39K, .0047mfd, .0068mfd, .01mfd	30-6054-2	
K3	Biasing	1500Ω, 47K, 68K, .001mfd	30-6054-7 ②	
K4	Biasing	1500Ω, 1500Ω, 2800Ω, 2800Ω, .0047mfd, .0047mfd, .01mfd	30-6054-4	
K5	Biasing	220Ω, 1000Ω, 1000Ω, 4500Ω, 4500Ω, 2.2meg.	30-6054-5	

- ① Early production Part Number 30-6054-1 used in conjunction with two (2) .2mfd 16V capacitors. If replacement is necessary use Part number 30-6054-6 and remove two (2) .2mfd 16V capacitors.
② Early production Part Number 30-6054-3 used in conjunction with 47K resistors. If replacement is necessary, use Part Number 30-6054-7 and remove 47K resistors.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			Philco PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	SFE	14A	45-2559	In Fuse Block	307014			SFE14	

MISCELLANEOUS

ITEM No.	PART NAME	Philco PART No.	NOTES
M2	Tuner	76-13606-2	
M3	Spark Plate	30-1254-1	(200pf)

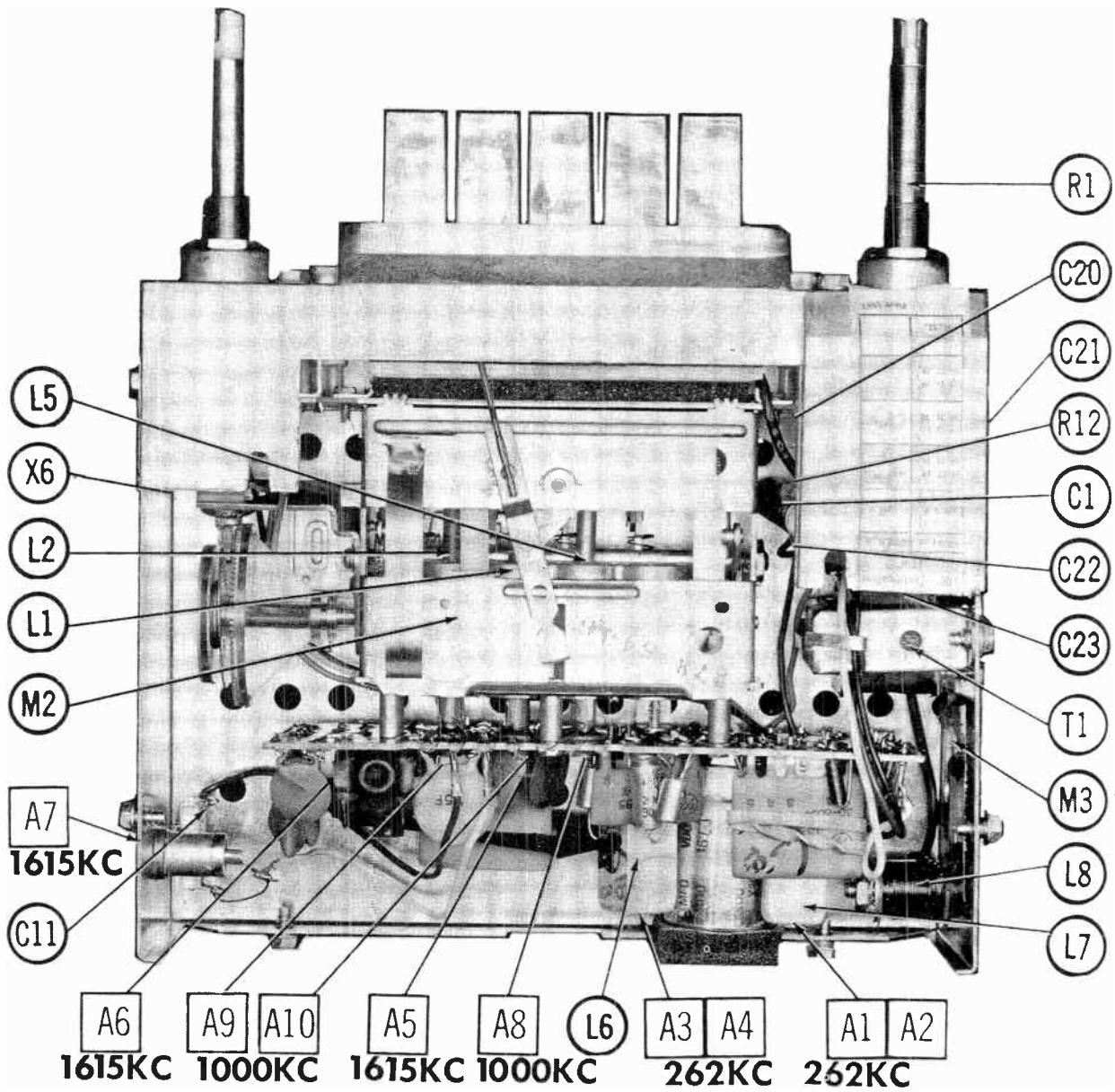
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	28-14675-7	Knob, Tone or Dummy	28-14994-1
Dial Glass	27-10791-3	Pointer Assembly	76-13804-12
Knob, Tuning or Volume	76-13406-5		

WIRING DATA

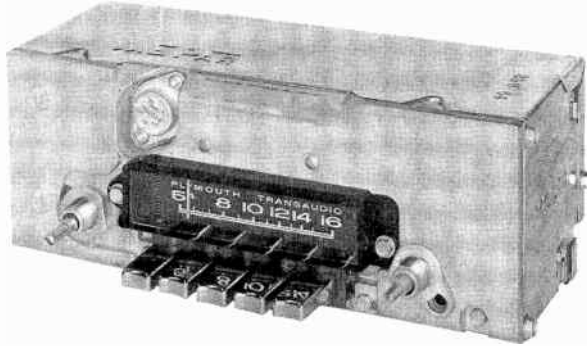
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8681 (3/8 In.) or 8670 (3/4 In.)





PHOTOFACT® with

CIRCUITRACE®



TRADE NAME : MoPar Models 222 (5BVE 1965 Valiant)
 224 (5PB 1965 Plymouth, Standard)
 225 (5BPD 1965 Plymouth, Deluxe)
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 6 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .700 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1605KC

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

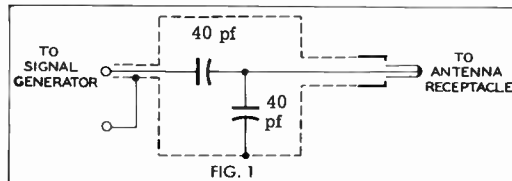
A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588
 A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087 WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfid to point Δ , low side to ground.	262.5KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1605KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO

1. Pull off knobs.
2. Use 11/16" wrench and remove nuts from control bushings.
3. Disconnect "A", Antenna and Speaker leads.
4. Remove phillip screw from rear brace.
5. Remove radio from under instrument panel.

SPEAKER

1. Use 3/8" wrench and remove nuts from speaker mounting bracket.
2. Remove speaker from under instrument panel.

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

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES	BENDIX PART No.
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
X1		RF Amp.	DS-25	GE-1	2N1637	PNP	2091241-0015
X2		Conv.	DS-25	GE-1	2N1639	PNP	2091241-0013
X3		IF Amp.	DS-46	GE-10		NPN	2093308-0703
X4		1st AF Amp.	DS-26	GE-2	2591	PNP	2090924-0008
X5		2nd AF Amp.	DS-46	GE-10	2N649	NPN	2092609-0001
X6	(2N1227)	Output	DS-520	GE-3	2N301	PNP*	2091859-0715

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		2092055-0001					1N34AS
X8		2092055-0001					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	1000	16	2092983-0703	PWH2-02-60	BPC010	XC2-43.1		PFP200.19	TVL-2185
B	200	16							
C2A	500	3	2092246-0001	BCD3X50050				PET290	VLS-2116*
B	50	3							

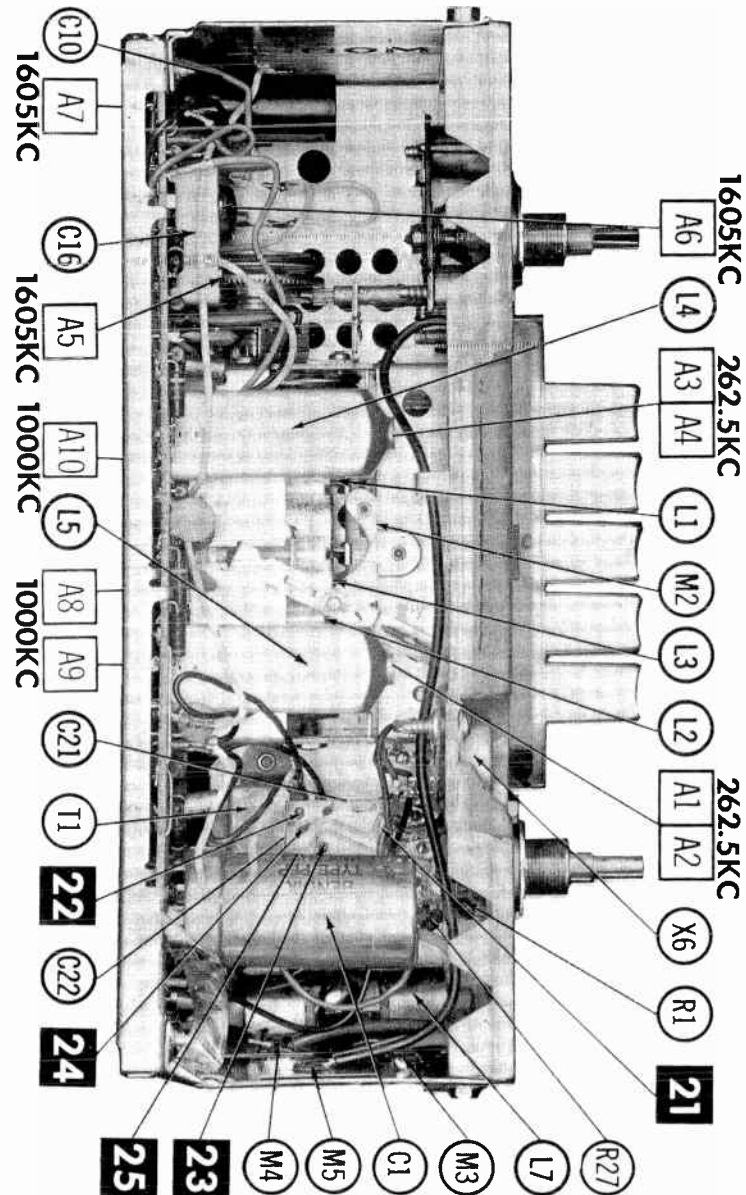
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

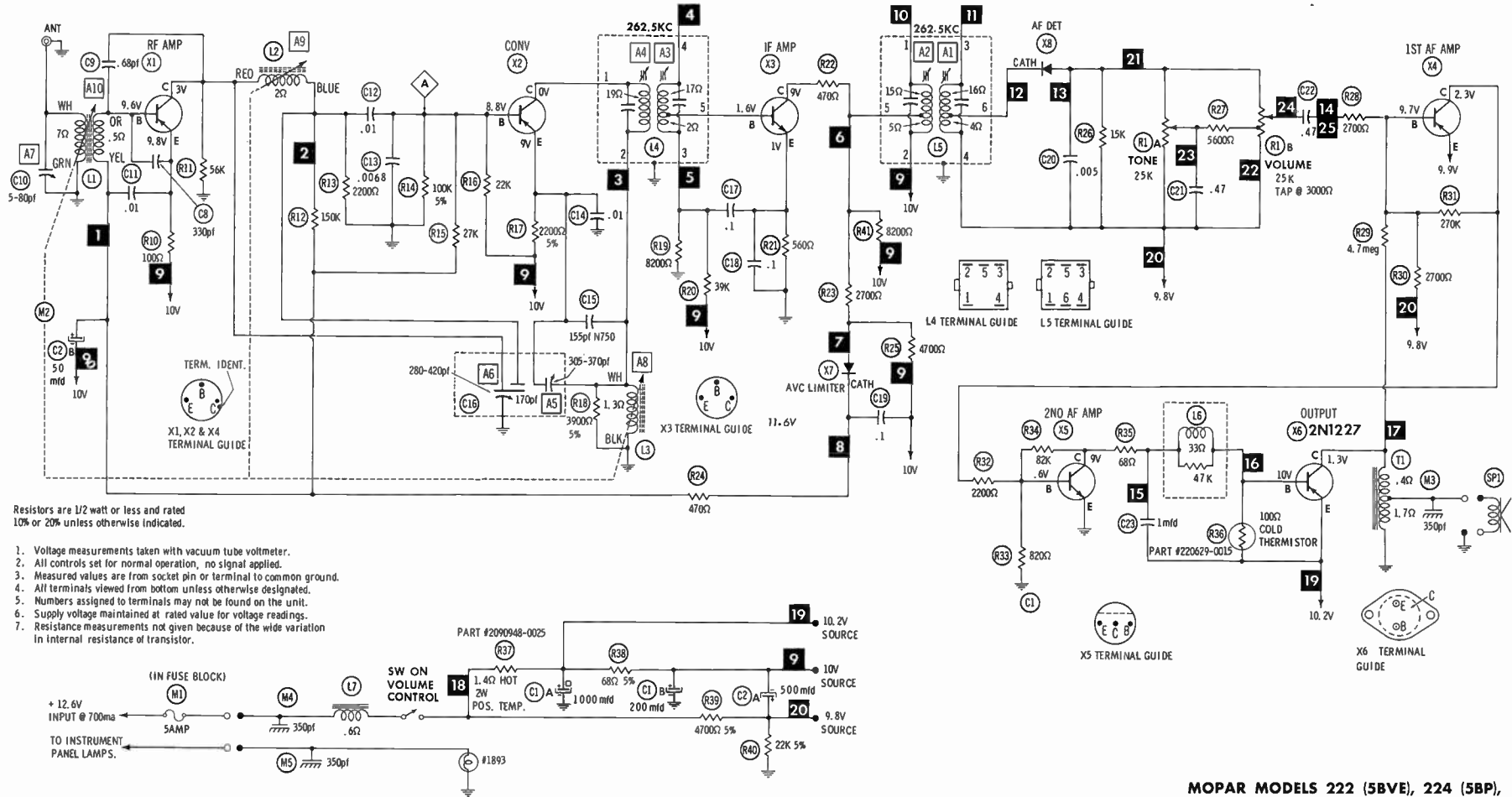
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALLAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33
C9	.68pf			TCZ-R68				
C10	5-80	#2091221-0005						
C11	.01 100V		DBE4S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10
C12	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C13	.0068		DI-6800	DD-682	BYA10D68	CCD-682	GP268	30GA-D68
C14	.01 100V		DBE4S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10
C15	155 N750		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7315	10TCU-T15
C16A	280-420	#219092-0032						
B	170							
C	305-370							
C17	.1 10V		TTD-1	CK-104	H6		TA010	TG-P10
C18	.1 10V		TTD-1	CK-104	H6		TA010	TG-P10
C19	.1 10V		TTD-1	CK-104	H6		TA010	TG-P10
C20	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C21	.47 3V			UK10-404	HCC10474Z			HY-330
C22	.47 3V			UK10-404	HCC10474Z			HY-330
C23	1mfd 3V			UK-105	HCC3105P			HY-135

Bendix Part Number.

CONTINUED ON PAGE 108



MOPAR MODELS 222 (5BPE), 224 (5BPD), 224 (5BP), 224 (5BPD)



Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

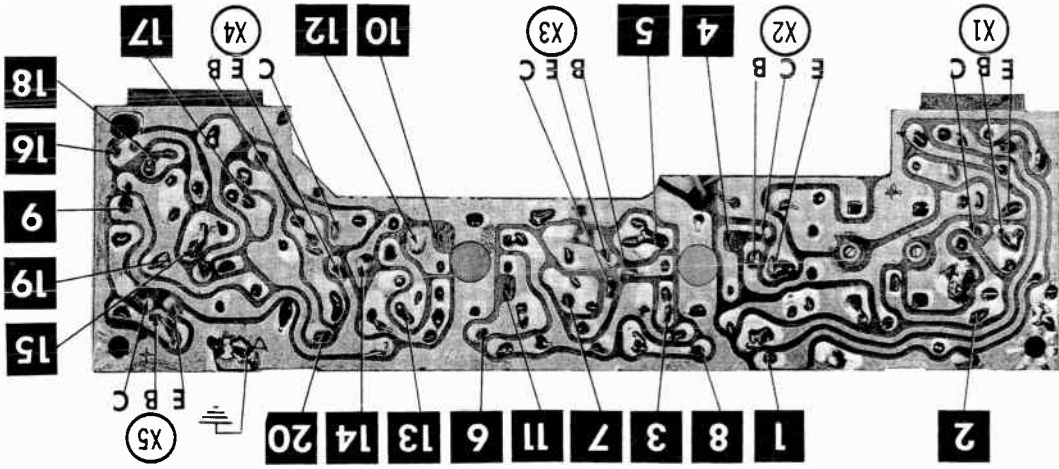
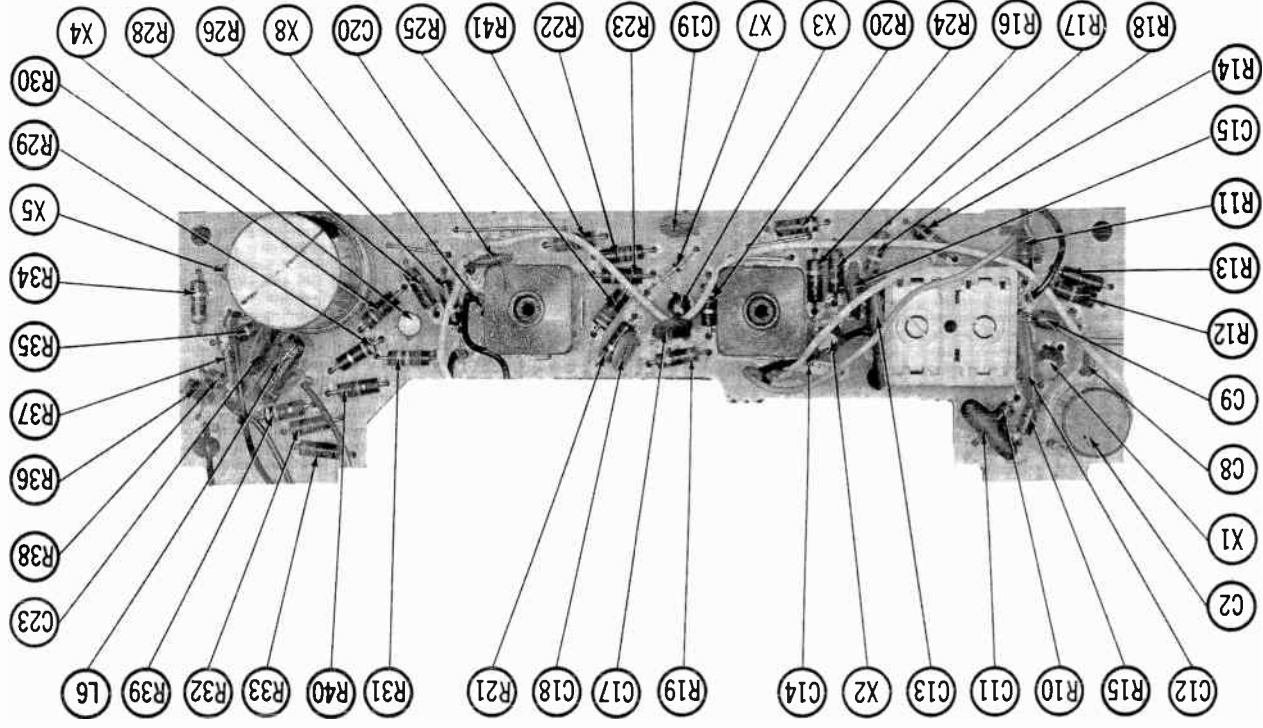
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC with **CIRCUITRACE**

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MOPAR MODELS 222 (5BVE), 224 (5BP), 224 (5BPD)

MOPAR MODELS 222 (5BVE), 224 (5BP), 224 (5BPD)



▲ Howard W. Sams CIRCUITRACE® Photo

PARTS LIST AND DESCRIPTION (CONTINUED)

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 otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA					
			BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A B	Tone Volume/Switch	25K 25K Tap @ 3000Ω	2093614-0701	F2-25K ① R14-25K, FFS102, RFS109, KR-4			† QJ-1799A	

① Use original spring mounting clip.

† "CONCENTRIKIT" Equivalent: K8 ① Kit with Base Elements and Shafts: B13-120, P23-103 (Panel)
B19-119X, R9-115 (Rear)
76-1 (Switch)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		BENDIX PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1 L2 L3 L4 L5 L6	Ant. RF Osc. Input IF Output IF Tone Choke (1.4MH)	① ① ① 2093163-0705 2093164-0705 2090088-0720 ②	BC-636 BC-682*	6555 6523 70F123A1*	RTC-9161*	T842*	① Part of M2. ② Includes 47K resistor. * Shunt with 47K resistor.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	700ma	.6Ω	1.9MH	2092050-0011	C-4095 ①	TC-1 ①	TR-153 ①	TY16XT ①	① Fabricate mounting

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	T1	12Ω Tap	@ 8Ω	2092138-0010			TR-164	

SPEAKER

ITEM No.	TYPE	RATING	REPLACEMENT DATA		NOTES
			BENDIX PART No.	QUAM PART No.	
SP1	4" X 10" PM	8Ω	2093913-0701	410A2Z6	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BENDIX PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5A 32V	2091811-0018	In Fuse Block	311005		AGC5	

MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M2	Tuner	2093492-0704	Coil Assembly Part #2090131-0076 (GIC) Part #2090131-0077 (RCC). (350pf) (350pf) (350pf)
M3	Spark Plate	2093050-0705	
M4	Spark Plate	2093050-0705	
M5	Spark Plate	2093050-0705	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

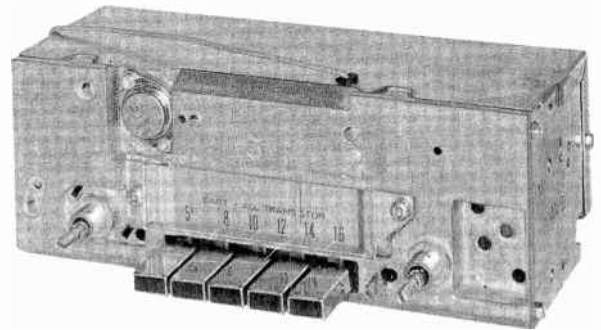
ITEM	PART No.	ITEM	PART No.
Escutcheon	2093461-0001	Pushbutton	2093467-0001
Dial Glass-Models 222, 224	2093462-0001	Pointer Assembly (GIC)	2090139-0057
Dial Glass-Model 225	2093463-0001	Pointer Assembly (RCC)	2090129-0061

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)



TRADE NAME : MoPar Models 223 (1965 Dodge Dart)
 226 (1965 Dodge Coronet)
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 5 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .680 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

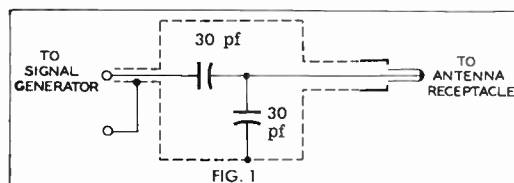
Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

A1 thru A4	GENERAL CEMENT: 8606, 8606L, 8869	WALSCO: 2543, 2544, 2588
A5, A6, A7	GENERAL CEMENT: 8290, 8868, 9087	WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mf to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.
With radio installed in car and antenna fully extended, tune in a weak station near 1000KC and adjust A7 for maximum output.						

PUSH-BUTTON ADJUSTMENT

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



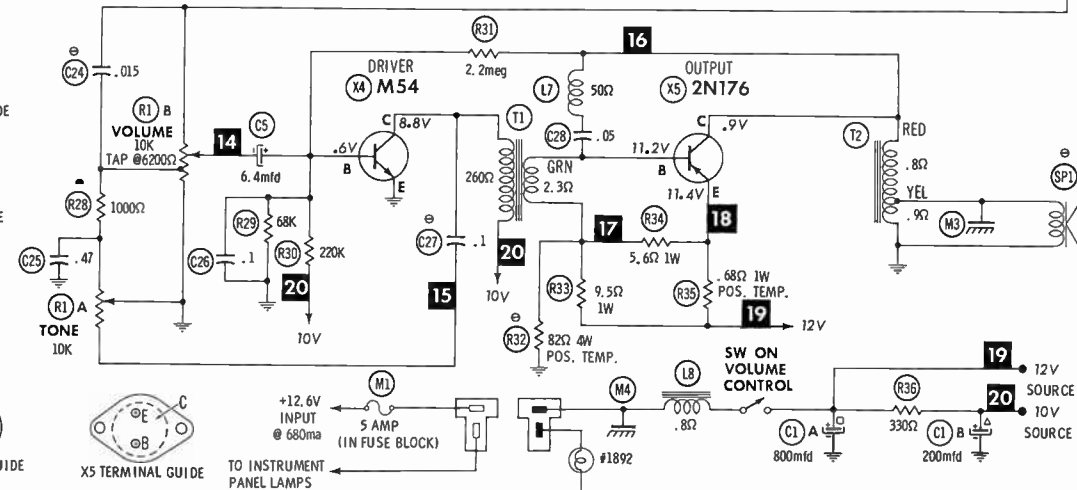
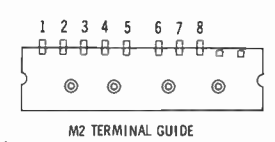
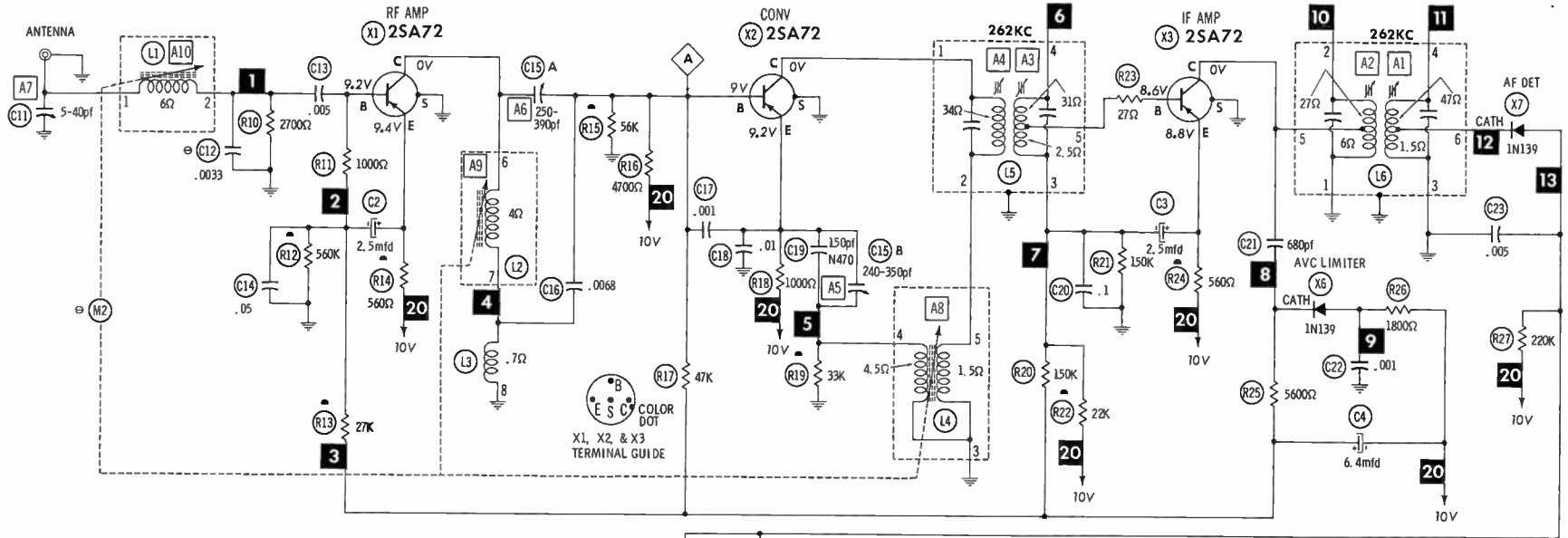
REMOVAL INSTRUCTIONS

RADIO

1. Pull off knobs.
2. Use 5/8" wrench and remove nuts from control bushings. Remove trim plate.
3. Disconnect Antenna, Speaker and A leads.
4. Use phillips screw driver and remove screw from rear brace.
5. Remove radio from under instrument panel.

SPEAKER

1. Use 3/8" wrench and remove (2) nuts from speaker mounting.
2. Remove speaker from under instrument panel.



Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

▲ NOMINAL VALUE MAY VARY

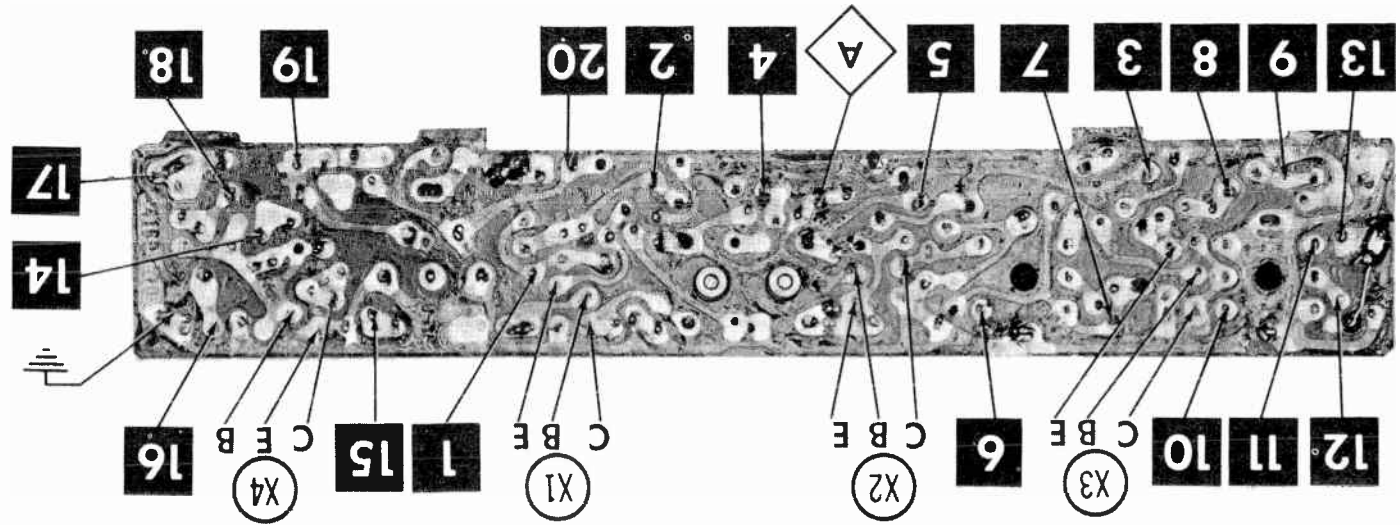
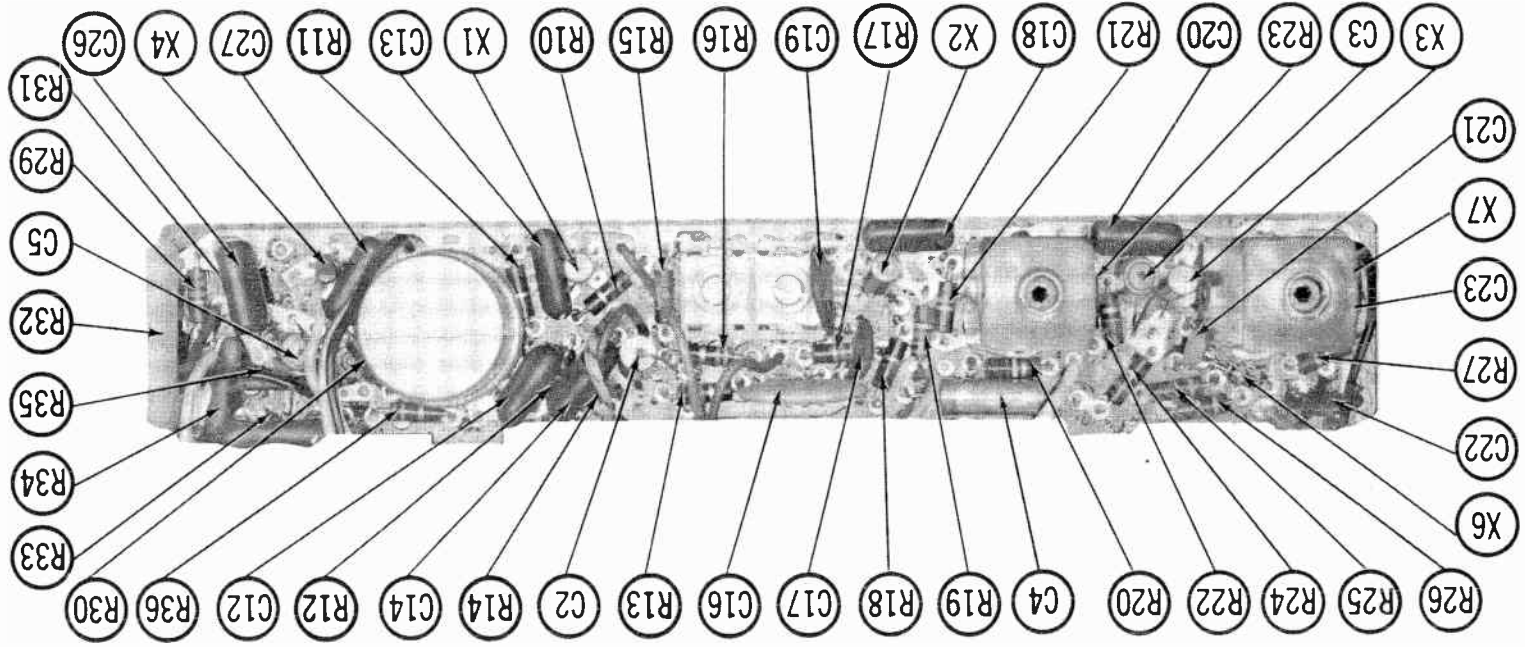
- ⊙ See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC with CIRCUITRACE™

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MOPAR MODELS 223 (56ML), 226

R33 PART #17B40754A07
 R34 PART #17B40754A06
 R35 PART #17B40756A05



A Howard W. Sams CIRCUITRACE® Photo

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA72	RF Amp.	DS-25	GE-9	2N1637	PNP
X2	2SA72	Conv.	DS-25	GE-9	2N1639	PNP
X3	2SA72	IF Amp.	DS-25	GE-9	2N1638	PNP
X4	M54	Driver	DS-46	GE-10	2N649	PNP
X5	2N176	Output	DS-52 [†]	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1N139					1N34AS
X7		1N139					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Motorola PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	800	16	23C40302A05					PPF200.45	PCLS-2181*
B	200	16							
C2	2.5	16	23C41928A08	CRE602A	NLW3-25	MT1-3	BL1150	TT50X3	TL-1150
C3	2.5	16	23C41928A08	CRE602A	NLW3-25	MT1-3	BL1150	TT50X3	TL-1150
C4	6.4	40	23C41928A07	CRE755A	NLW6-50	MT1-5	BL1471	TT100X6	TE-1303.1
C5	6.4	40	23C41928A07	CRE755A	NLW6-50	MT1-5	BL1471	TT100X6	TE-1303.1

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C11	5-40	#20B40903A02						
C12	.0033	100V	DBE6D33	CPR-3300J	WMF1D33	6DP-1-332	PVC4233	6PS-D33
C13	.005	100V	DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50
C14	.05	100V	DBE6S5		DPMS2S5	1DP-2-503	PVC215	2PS-S50
C15A	250-390	#20C40481A07						
B	240-350							
C16	.0068		DI-6800	DD-682	BYA10D68	CCD-682	GP268	10TS-D68
C17	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C18	.01	100V	DBE4S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10
C19	150	N470						10TCT-T15
C20	.1	100V						2PS-P10
C21	680		DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10
C22	.001		DI-680	DD-681	JB6T68	CCD-681	GP368	10TS-T68
C22	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C23	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50
C24	.015		DBE4S15		WMF1S15	1DP-1-153	PVC2115	4PS-S15
C25	.47	3V		UK10-404	HCC10474Z			HY-330
C26	.1	100V	DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10
C27	.1	100V	DBE2P1		WMF1P1	1DP-2-104	PVC101	2PS-P10
C28	.05	100V	DBE6S5		DPMS2S5	1DP-2-503	PVC215	2PS-S50

▲ Nominal Value.
 # Motorola Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Motorola PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	10K	18C41524A05	F1-10K① R16-10K, FFS102, RFS110, KR-4		† QJ-1793A	FA14A ①, RUI4T53, OS1125, ISI625, US41
	Volume/Switch	10K Tap @ 6200Ω					

† "CONCENTRIKIT" Equivalent: K8① Kit with Base Elements and Shafts: B13-116, P17-105 (Panel)
 B19-116X, R26-121 (Rear)
 76-1 (Switch)

① Use original spring mounting clip.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Motorola PART No.			IRC PART No.	WORKMAN PART No.	Motorola PART No.
R32	82Ω 4W PTC			17C40259A03					

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Motorola PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant.	①					① Part of M2 & coil & mounting plate assembly, (Part #1V42700A26).
L2	RF	①					
L3	Image Trap	①					
L4	Osc.	①					
L5	Input IF	24D40074A14	BC-638	6555			
L6	Output IF	24D40075A11	BC-639	6554			
L7	Tone Choke (5MH)	24K565244	BC-552	6304	RTC-9253	T881	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	680ma	.8Ω	11MH	25D42032A10 (25D42032A01)	C-4095	TC-2	TR-154	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	15:	1	25D42045A05			TR-187		

PARTS LIST AND DESCRIPTION (CONTINUED)

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
			Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	40Ω Tap	@ 8Ω	25C41878A03					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES	
		Motorola PART No.	QUAM PART No.		
SP1	6" X 9" PM	8Ω	50D42828A01	69A2Z8	Model 223 Model 226
	7" PM	8Ω	50D42224A02	7A21Z8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			Motorola PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	AGC	5A 32V	65S134265	In Fuse Block	311005			AGC5	

MISCELLANEOUS

ITEM No.	PART NAME	Motorola PART No.	NOTES
M2	Tuner	77D42585A01	AT-494 Model 223
M3	Tuner Spark Plate	77D42585A02	AT-481 Model 226
M4	Spark Plate	64K530177	
M4	Spark Plate	64K530177	

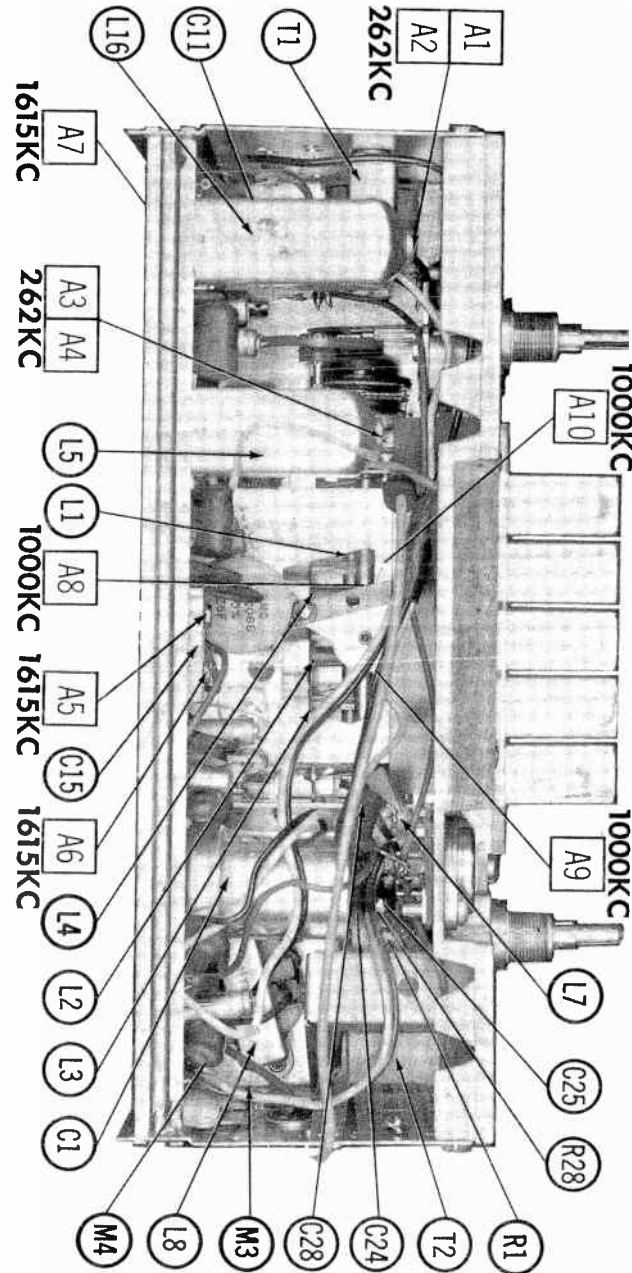
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Bezel-Model 223	13D42830A01	Knob, Tuning or Volume	36C42824A01
Bezel-Model 226	13D42838A01	Knob, Tone or Dummy	36B42829A01
Dial Scale-Model 223	34C42505A07	Pushbutton	38A42583A01
Dial Scale-Model 226	34C42505A05	Pointer Assembly	1B40514A07
Dial Glass	61B42484A01		

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
	8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

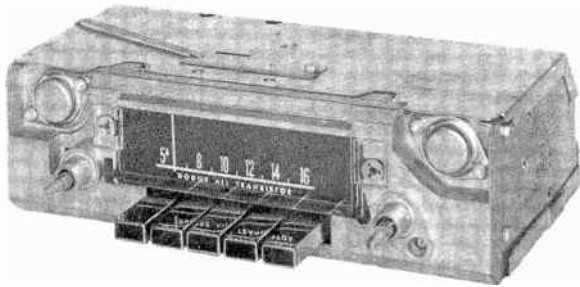


MOPAR MODELS 223 (56ML), 226



PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : MoPar Models 363 (1965 Dodge 880)
 365 (1965 Chrysler)
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 6 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .600 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

A1 thru A4
A5, A6, A7

GENERAL CEMENT: 8606, 8606L, 8869
GENERAL CEMENT: 8290, 8868, 9087

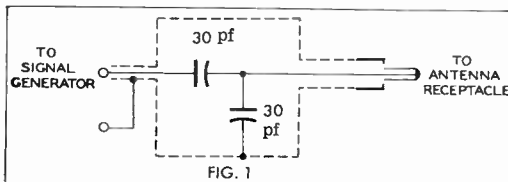
WALSCO: 2543, 2544, 2588
WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mf to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A8, A9, A10) out of coils but not out of forms. Repeat step 2.						
3.	Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A8, A9, A10	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



REMOVAL INSTRUCTIONS

RADIO

1. Pull of knobs.
2. Use 5/8" wrench and remove nuts from control bushings.
3. Disconnect "A", Pilot Lite, Antenna & Speaker leads.
4. Use 3/8" wrench and remove nut from rear brace.
5. Remove radio from under instrument panel.

SPEAKER Model 363 (1965 Dodge 880)

1. Use phillips screw driver and remove screws from speaker grille. Remove speaker grille.
2. Use 5/16" wrench and remove screws from speaker mounting plate.
3. Remove speaker thru top of instrument panel.

SPEAKER Model 365 (1965 Chrysler)

1. Use 5/16" wrench and remove screws from speaker mounting plate.
2. Remove speaker from under instrument panel.

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

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA72	RF Amp.	DS-25	GE-9	2N1637	PNP
X2	2SA72	Conv.	DS-25	GE-9	2N1639	PNP
X3	2SA72	IF Amp.	DS-25	GE-9	2N1638	PNP
X4	M54	Driver	DS-46	GE-10	2N649	NPN
X5	2N176	Output	DS-520	GE-3	2N301	PNP*
X6	2N176	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKIS TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1N139					1N34AS
X8		1N139					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Motorola PART No.	REPLACEMENT DATA						
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	#800	16	23C40302A05						PPF200, 45	PCLS-2181*
B	Δ300	16								
C2	2.5	16	23C41928A08	CRE602A	NLW3-25	MT1-3	BL1150	TT50X3		TL-1150
C3	2.5	16	23C41928A08	CRE602A	NLW3-25	MT1-3	BL1150	TT50X3		TL-1150
C4	6.4	40	23C41928A07	CRE755A	NLW6-50	MT1-5	BL1471	TT100X6		TE-1303.1
C5	6.4	40	23C41928A07	CRE755A	NLW6-50	MT1-5	BL1471	TT100X6		TE-1303.1
C6	2.5	16	23C41928A08	CRE602A	NLW3-25	MT1-3	BL1150	TT50X3		TL-1150

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	10-40	#20B#2152A01							
C11	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625		6PS-D50
C12	.005 100V		DBE6D5	CPR-5000J	DPMS6D5	1DP-1-502	PVC625		6PS-D50
C13	.05 100V		DBE6S5		DPMS2S5	1DP-2-503	PVC215		6PS-S50
C14A	250-390	#20C40481A07							
B	240-350								
C15	.0068		DI-6800	DD-682	BYA10D68	CCD-682	GP268		10TS-D68
C16	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210		5HK-D10
C17	.01 100V		DBE4S1	CPR-1000J	WMF1S1	1DP-1-103	PVC211		4PS-S10
C18	150 N470								10TCT-T15
C19	.1 100V								2PS-P10
C20	680		DBE2P1	DD-681	WMF1P1	1DP-2-104	PVC101		10TS-T68
C21	.005 100V		DI-680	CPR-5000J	DPMS6D5	1DP-1-502	GP368		6PS-D50
C22	.005		DBE6D5	DD-502	BYA10D5	CCD-502	PVC625		5HK-D50
C23	.47 3V		BPD-005	UK10-404	HCC10474Z		B250		HY-330
C24	.068 100V		DBE4S68		WMF1S68	1DP-2-683	PVC1168		4PS-S68
C25	.15 100V		DBE2P15		WMF1P15	1DP-3-154	PVC1015		2PS-P15
C26	.5 100V		BE2P5		DPMS2P5	1DP-4-504	PVC105		2PS-P50

Motorola Part Number.

CONTROLS

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

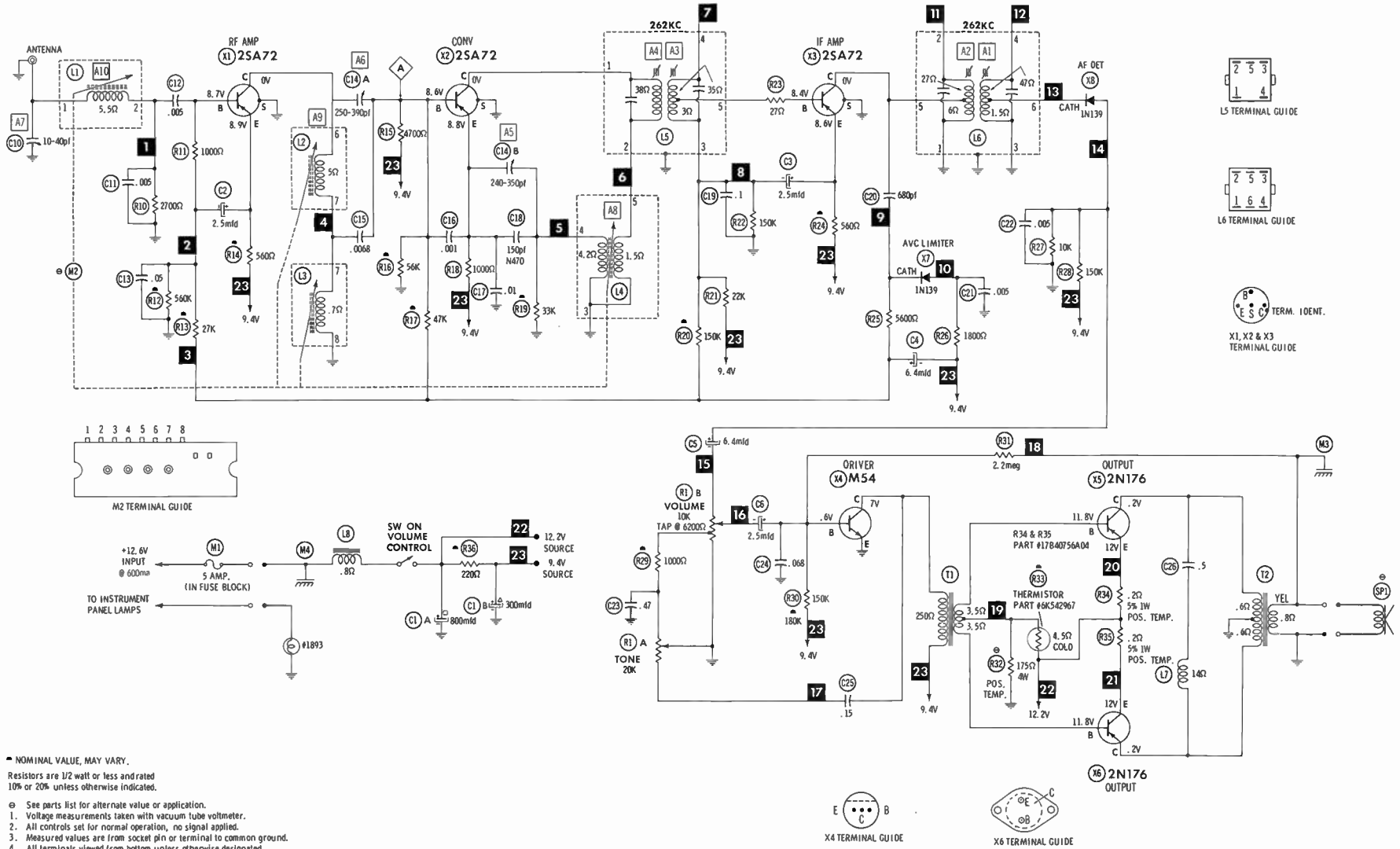
ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA					
			Motorola PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	Tone	20K	18C41524A06	F1-25K①			† QJ-1797A	
B	Volume	10K Tap @ 6200Ω		R16-10K, FFS106, RFS114, KR-4				

† "CONCENTRIKIT" Equivalent: K8① Kit with Base Elements and Shafts: B11-119, P23-112 (Panel)
B19-116X, R16-127 (Rear)
76-1 (Switch)

① Use original spring clip mounting.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Motorola Part No.			IRC PART No.	WORKMAN PART No.	Motorola Part No.
R32	175Ω 4W PTC			17C40259A05					



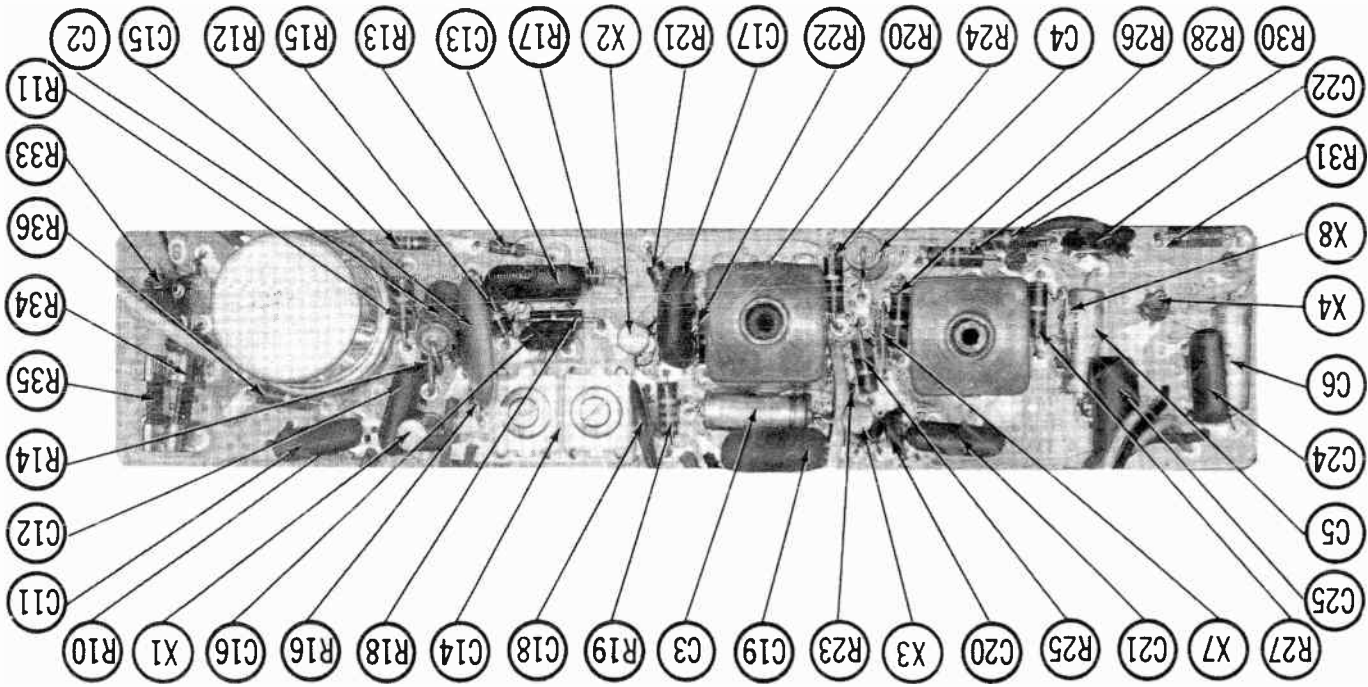
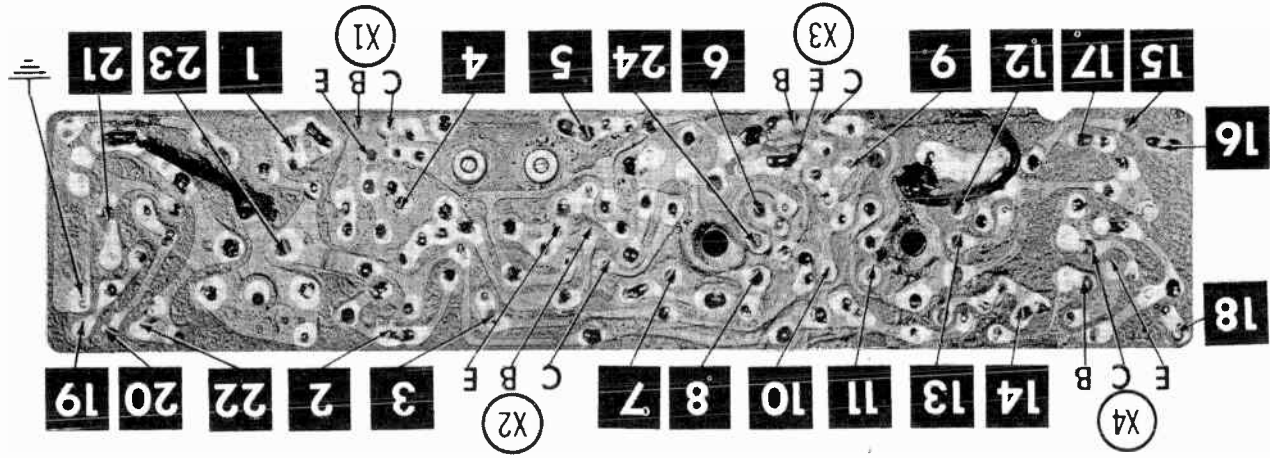
• NOMINAL VALUE, MAY VARY.
 Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

• See parts list for alternate value or application.

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE
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MOPAR MODELS 363 (58MD), 365



PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Motorola PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant.	①					① Part of M2, coil & mounting plate assy., (Part #1V42700A26).
L2	RF	①					
L3	Image Trap	①					
L4	Osc.	①					
L5	Input IF	24D40074A13	BC-638	6555			
L6	Output IF	24D40075A11	BC-639	6554			
L7	Tone Choke (600uh)	24K565199	BC-677	6174	RTC-8592	T353	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	600ma	.8Ω	11MH	25D42032A1C	C-4095	TC-2	TR-154	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES	
			Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.		
	PRI.	SEC.							
T1	8:	1	25D42917A01						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES	
			Motorola PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.		
	PRI.	SEC.							
T2	16Ω	8Ω	25D42101A07						

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			Motorola PART No.	QUAM PART No.	
SP1	4" X 10" PM	8Ω	50D42859A01		Model 363
	6" X 10" PM	8Ω	50D42304A02		Model 365

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			Motorola PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	AGC	5A	65S134265	In Fuse Block	311005			AGC5	

MISCELLANEOUS

ITEM No.	PART NAME	Motorola PART No.	NOTES
M2	Tuner	77D42595A02	AT-488 Model 363
M3	Tuner	77D42595A01	AT-479 Model 365
M4	Spark Plate	64K561877	
M4	Spark Plate	64A41668A03	

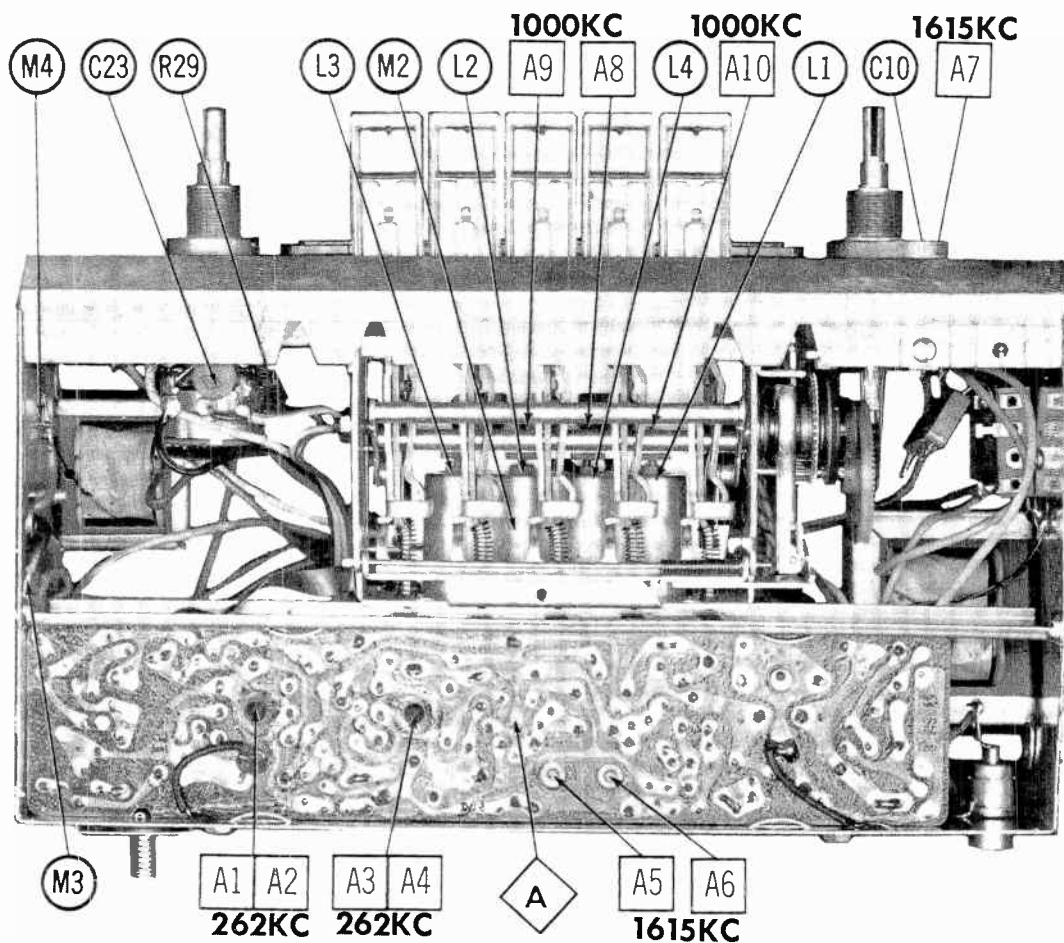
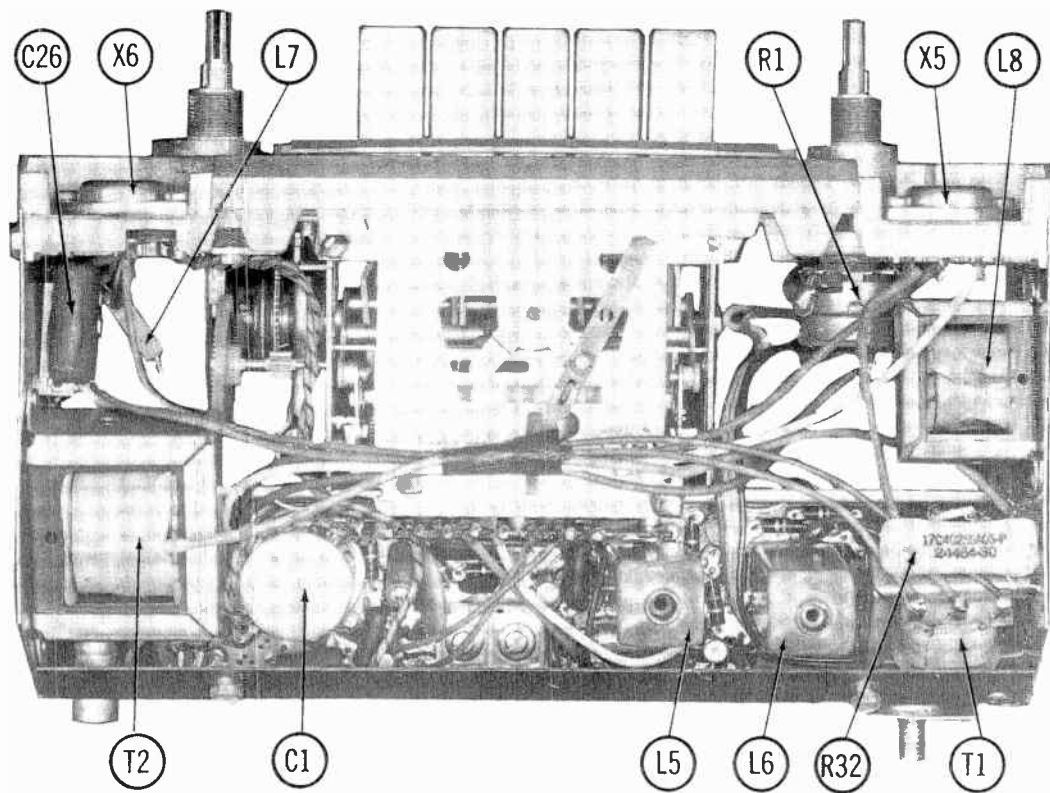
CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Bezel	13D42860A01	Knob, Tone or Dummy-Model 365	36B42852A01
Dial Scale-Model 363	34C42776A01	Pushbuttons-Model 363	38A42583A02
Dial Scale-Model 365	34B42463A01	Pushbuttons-Model 365	38A42553A01
Knob, Tuning or Volume-Model 363	36C42824A01	Pointer Assembly-Model 363	52C42062A14
Knob, Tuning or Volume-Model 365	36B42827A01	Pointer Assembly-Model 365	52C42062A12
Knob, Tone or Dummy-Model 363	36B42829A01		

WIRING DATA

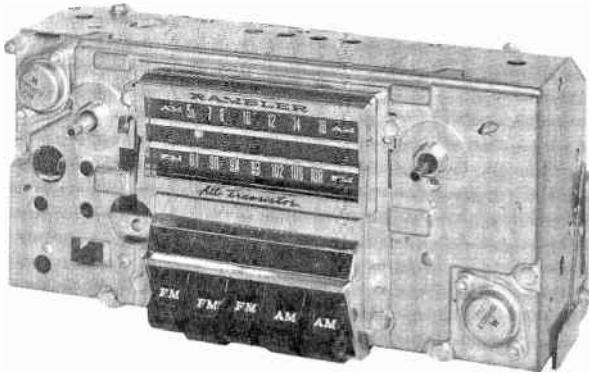
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)





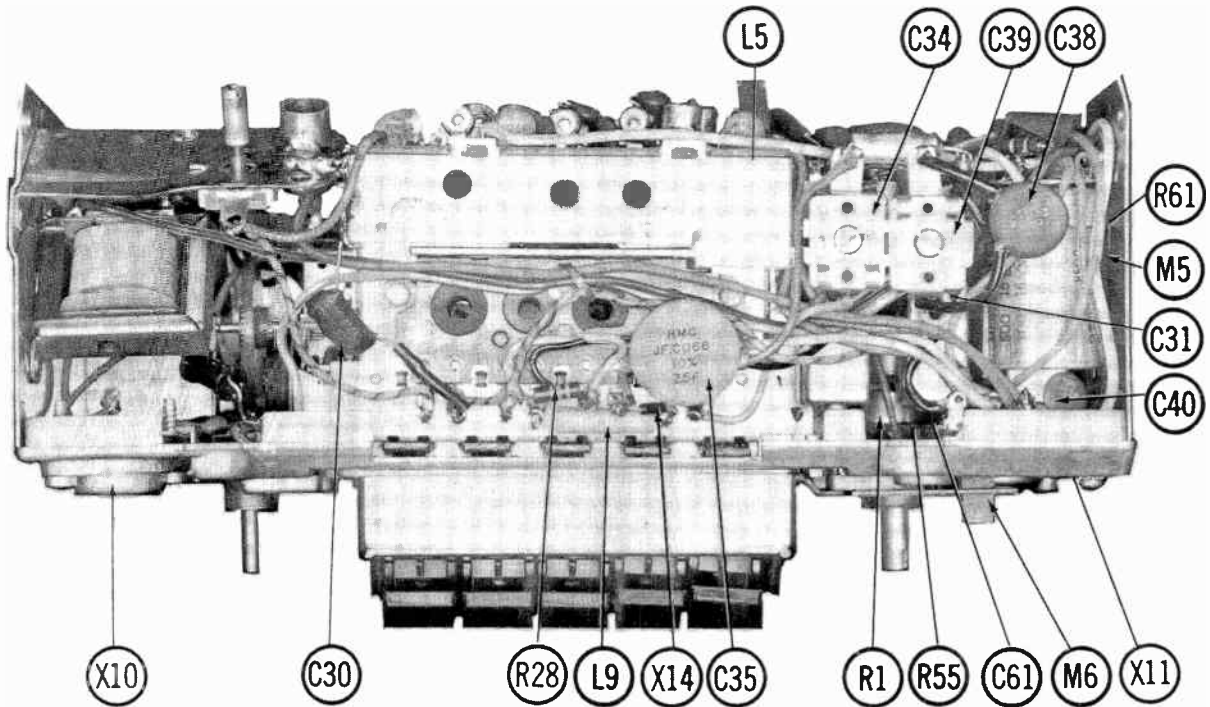
PHOTOFACT[®] with

CIRCUITRACE[®]



TRADE NAME : Rambler Model AF5TMR
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 11 Transistor AM-FM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .750 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC
 FREQ. MOD. 88-108MC

RAMBLER MODEL AF5TMR



REMOVAL INSTRUCTIONS

RADIO

1. Pull off knobs.
2. Disconnect Antenna, "A", and Speaker leads.
3. Use 5/8" wrench and remove nuts from control bushing.
4. Remove radio from under instrument panel.

SPEAKER

1. Use 3/8" wrench & remove nuts from Speaker bracket.
2. Remove speaker from under instrument panel.

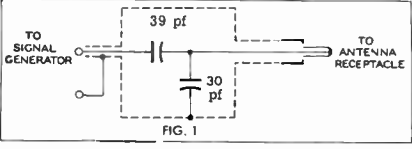
HOWARD W. SAM'S & CO., INC. Indianapolis 6, Indiana

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:
 A1 thru A12, A14 thru A19, A21 thru A26 GENERAL CEMENT: 5009, 8987, 8728A WALSCO: 2531X, 2536
 A13, A20 GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. High side thru .1mfd to point A , low side to ground.	282KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4, A5, A6	Adjust for maximum.
2. Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A7, A8, A9	"
Step 3 is not necessary unless tuner has been tampered with or associated components have been replaced. IF necessary, back tuning cores (A10, A11, A12) out of coils but not out of forms. Repeat step 2.					
3. Thru dummy (Fig. 1) to antenna receptacle.	1000KC	Tune to Signal.	Output Meter across voice coil.	A10, A11, A12	Adjust for maximum. Repeat steps 2 & 3 until no further improvement is noted.
With radio installed in car and antenna extended 30", tune in a weak station near 1000KC and adjust A9 for maximum output.					

- PUSH-BUTTON ADJUSTMENT**
1. Pull button up.
 2. Tune manually to desired station.
 3. Press button down.
 4. Repeat for remaining buttons.



FM ALIGNMENT USING AM SIGNAL GENERATOR – SELECTOR IN FM POSITION

High side thru dummy (Fig. 2) to Ant. Receptacle, low side to ground.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
4. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point B ; common to ground.	A13, A14, A15, A16, A17, A18, A19	Adjust for maximum.
5. "	"	DC probe to point C ; common to	A20	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.

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

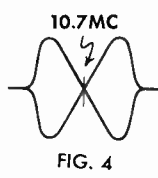
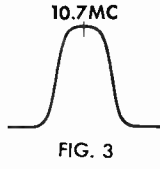
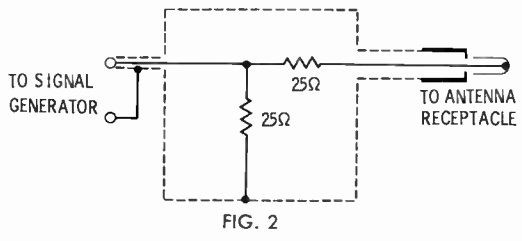
High side thru dummy (Fig. 2) to Ant. Receptacle, low side to ground. Use only enough marker signal to obtain indication. Use 60v frequency modulated signal with 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
4. 10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of Scope to point B ; low side to ground.	A13, A14, A15, A16, A17, A18, A19	Disconnect stabilizing capacitor C 4. Adjust for maximum gain and symmetry of response similar to Fig. 3 with marker as shown. Reconnect C 4.
5. "	"	Vert. amp. to point C ; low side to	A20	Adjust A20 (Secondary) to place marker at center of crossover lines similar to Fig. 4. Adjust A 13 (Primary) for maximum amplitude and straightness of crossover lines.

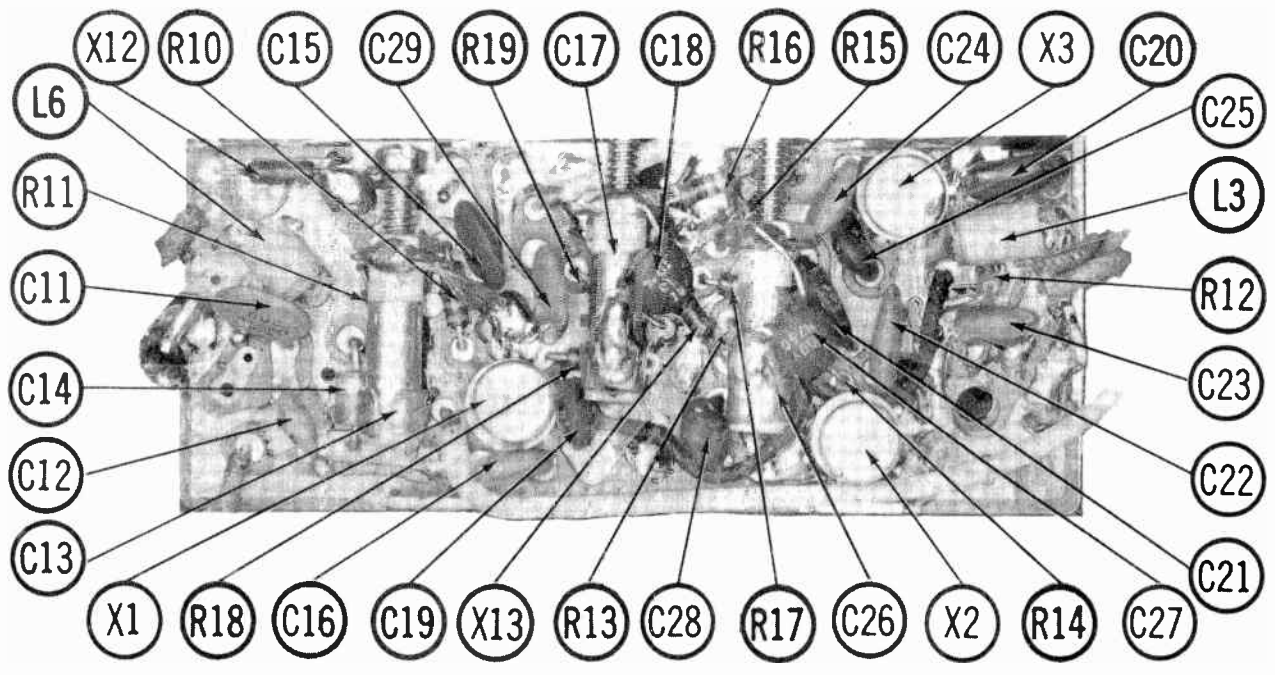
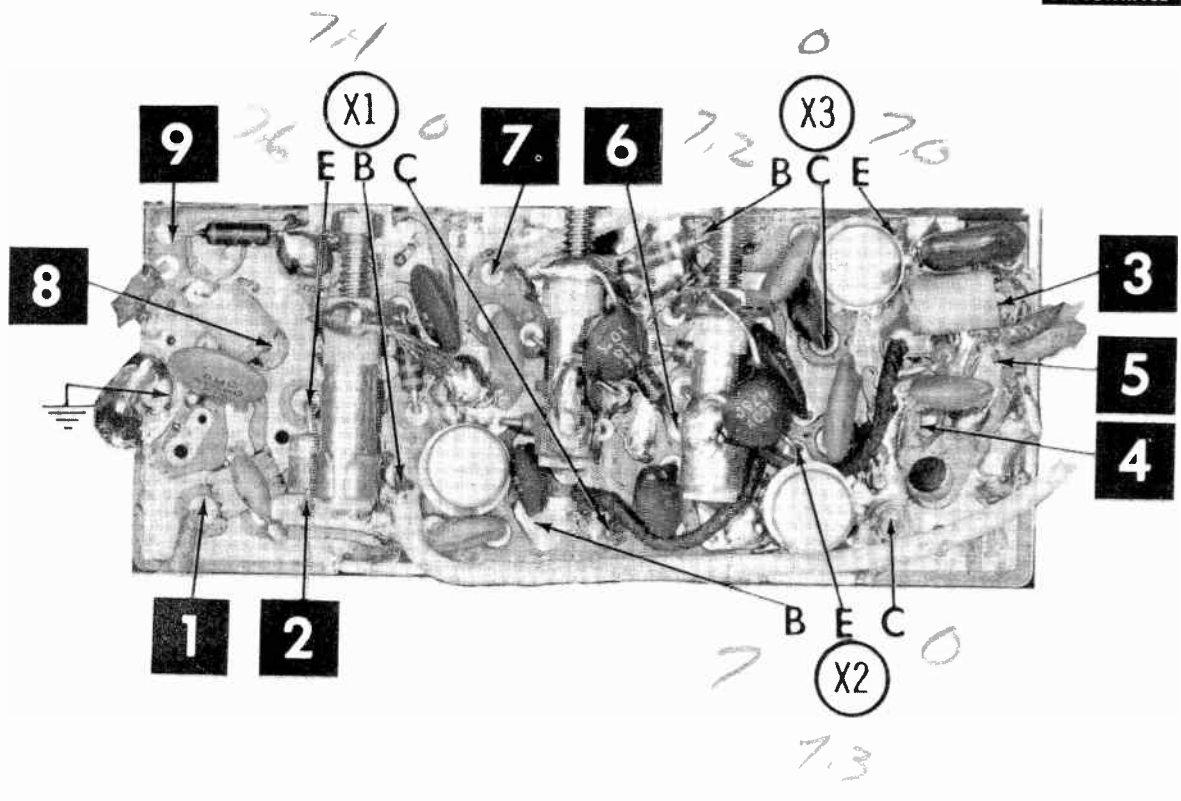
FM RF ALIGNMENT

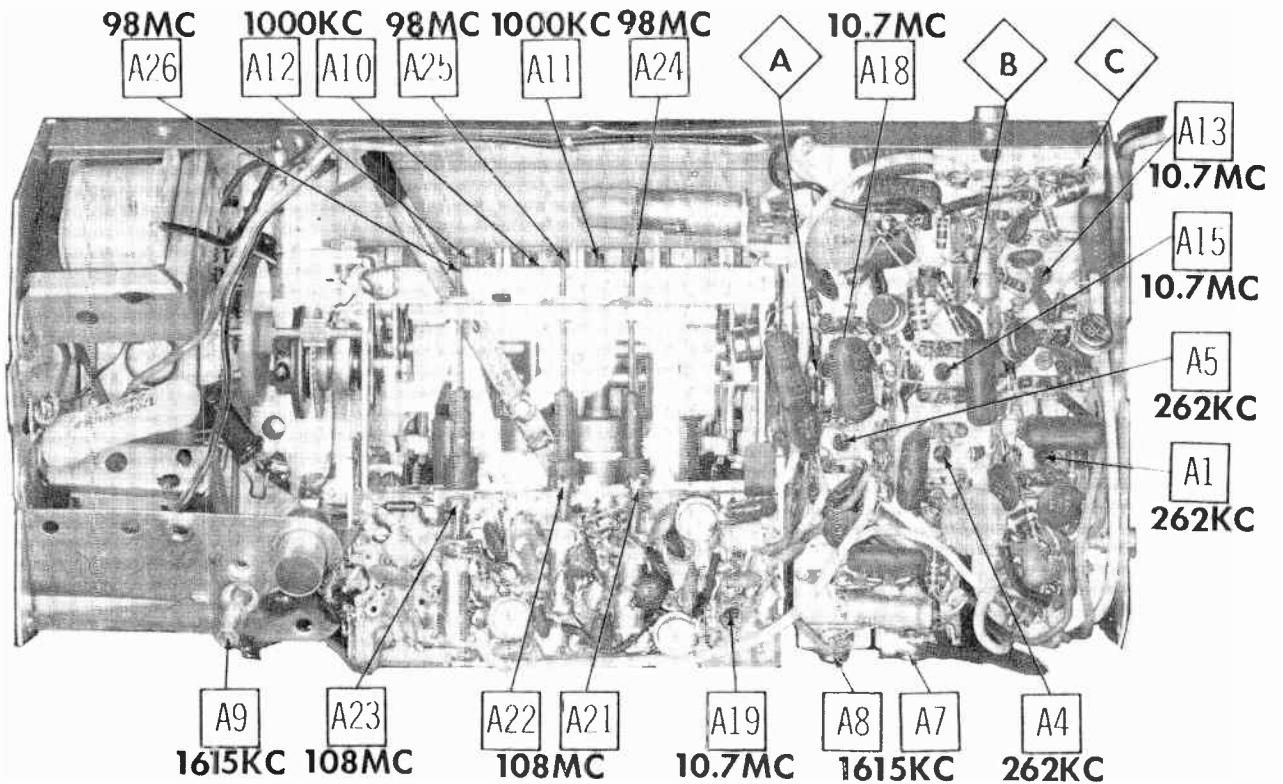
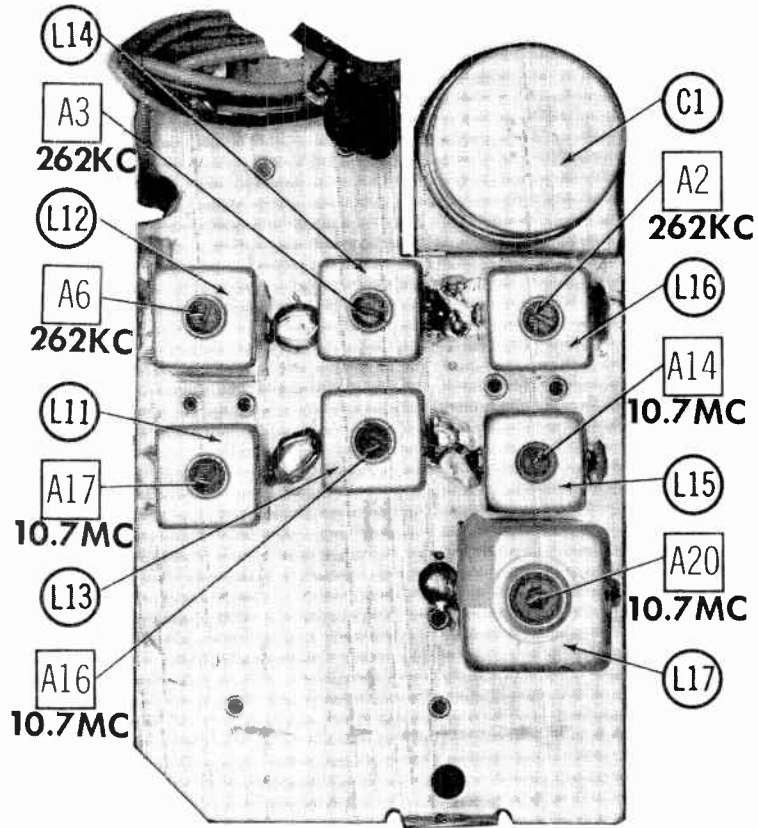
Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

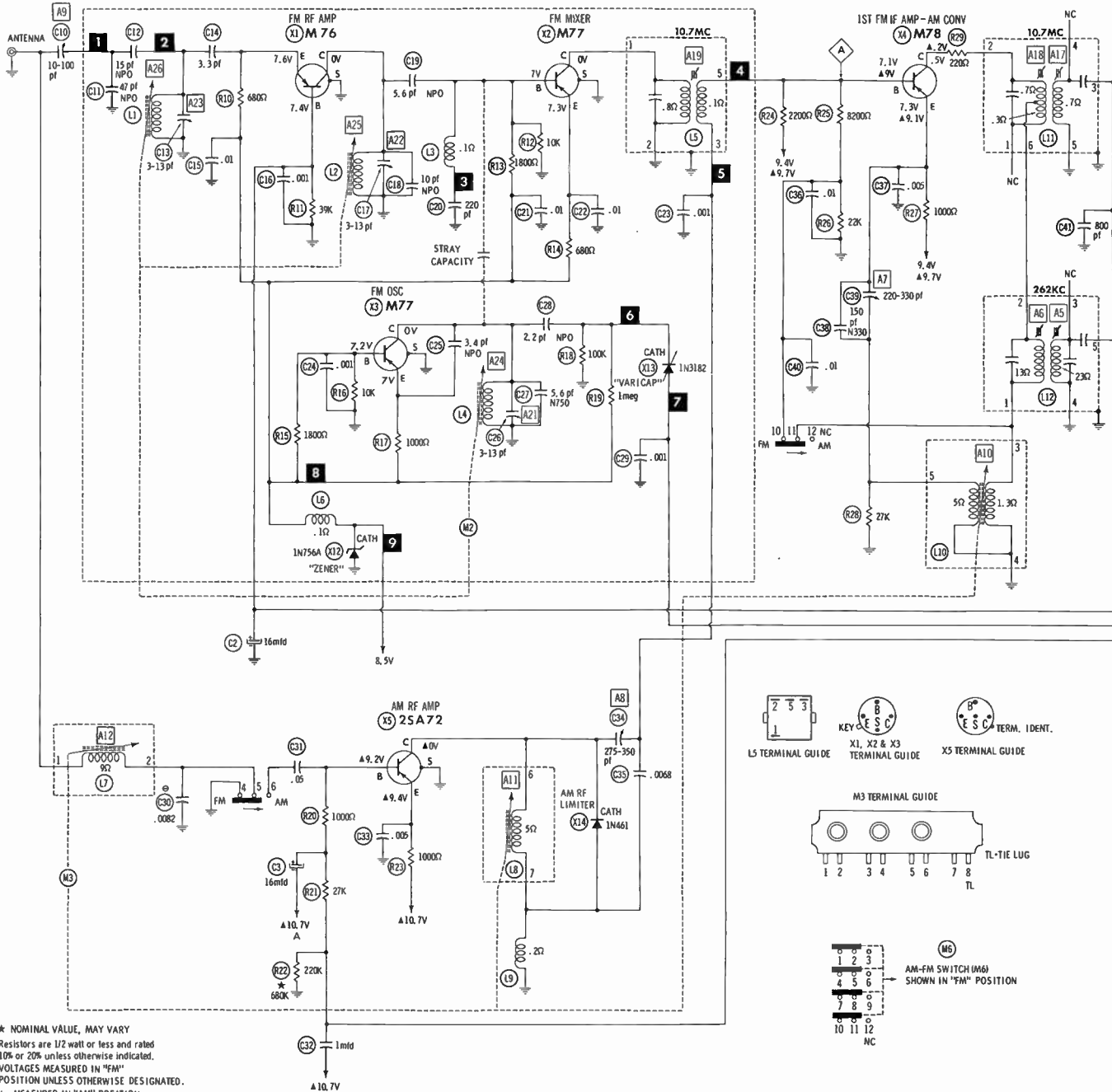
GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
6. 108MC	Set at 108MC	DC probe of VTVM to point D ; common to ground.	A21, A22, A23	Adjust for maximum.
Step 7 is not necessary unless tuner has been tampered with or associated components have been replaced. If necessary, back tuning cores (A24, A25, A26) out of coils but not out of forms. Repeat step 6.				
7. 98MC	Tune to signal.	"	A24, A25, A26	Rock tuning and adjust for maximum.



RAMBLER MODEL AFS1MR







* NOMINAL VALUE, MAY VARY

Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

VOLTAGES MEASURED IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.

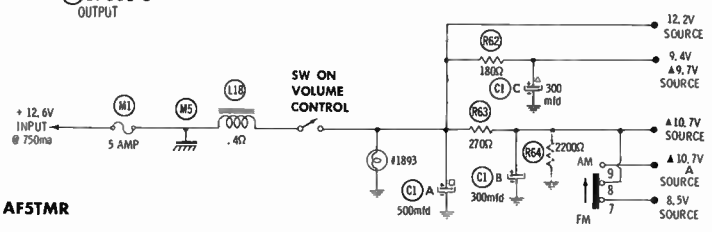
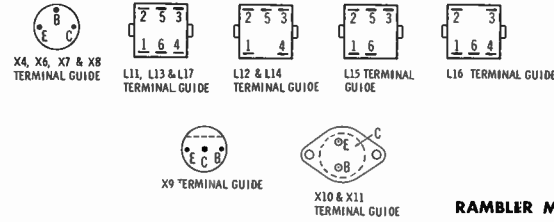
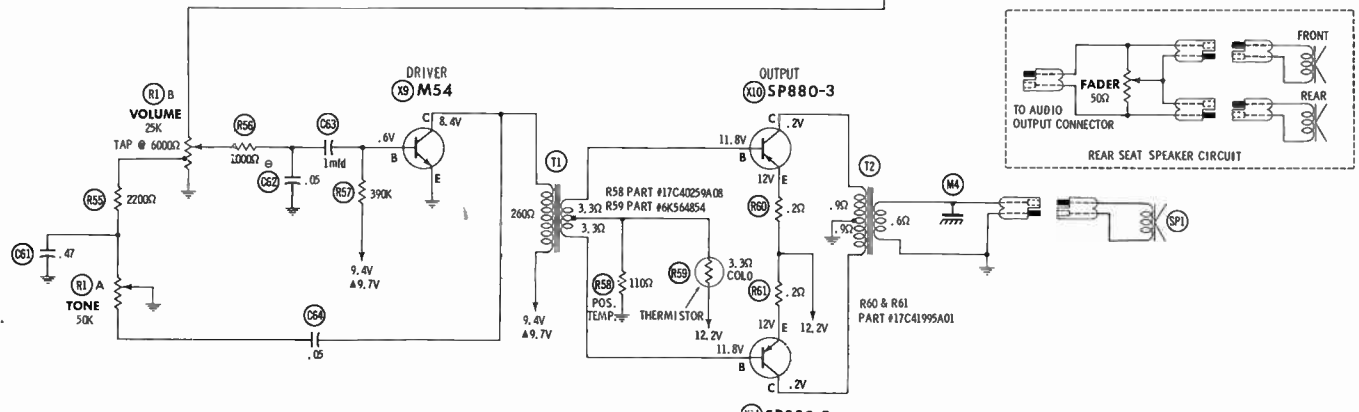
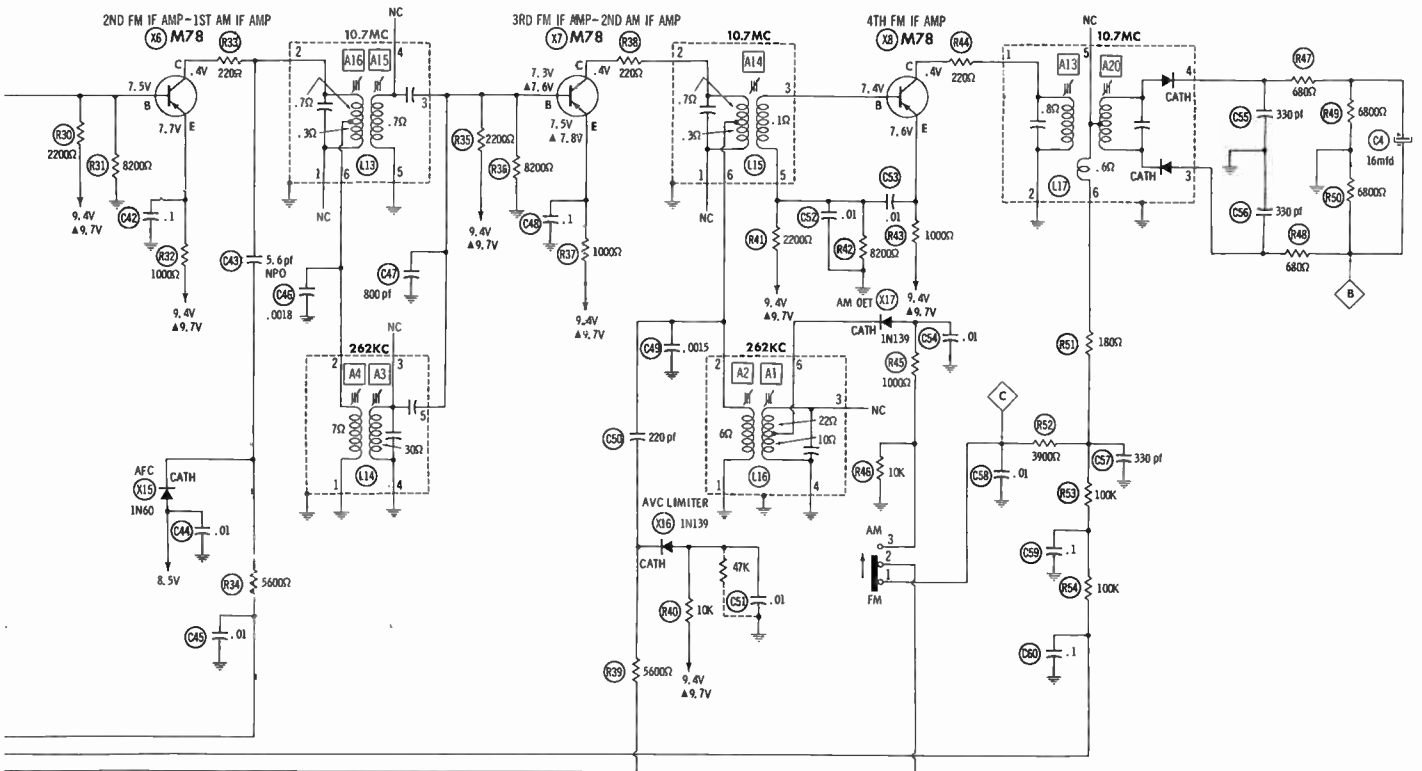
▲ MEASURED IN "AM" POSITION.

● See parts list for alternate value or application.

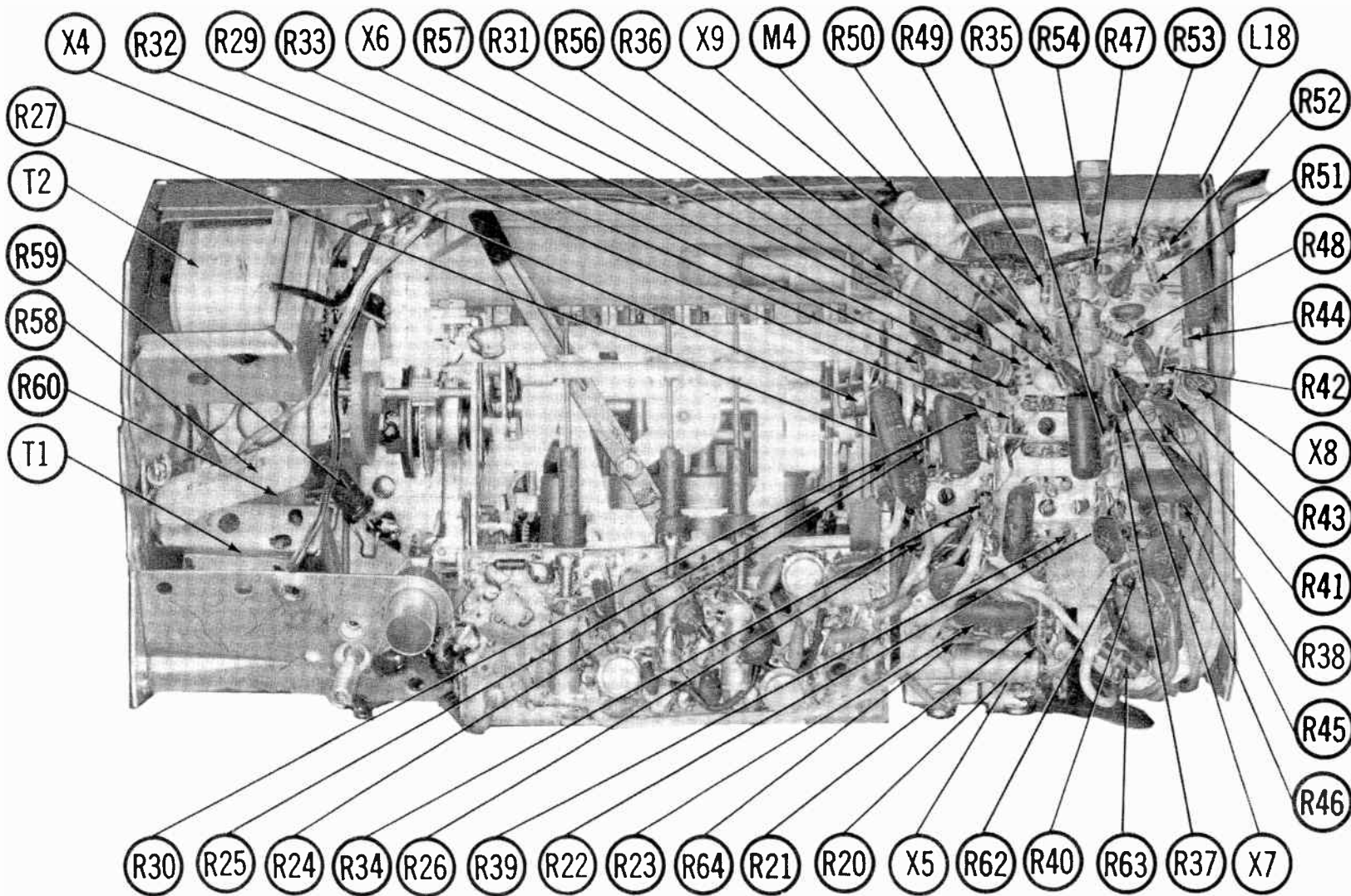
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC with CIRCUITRACE

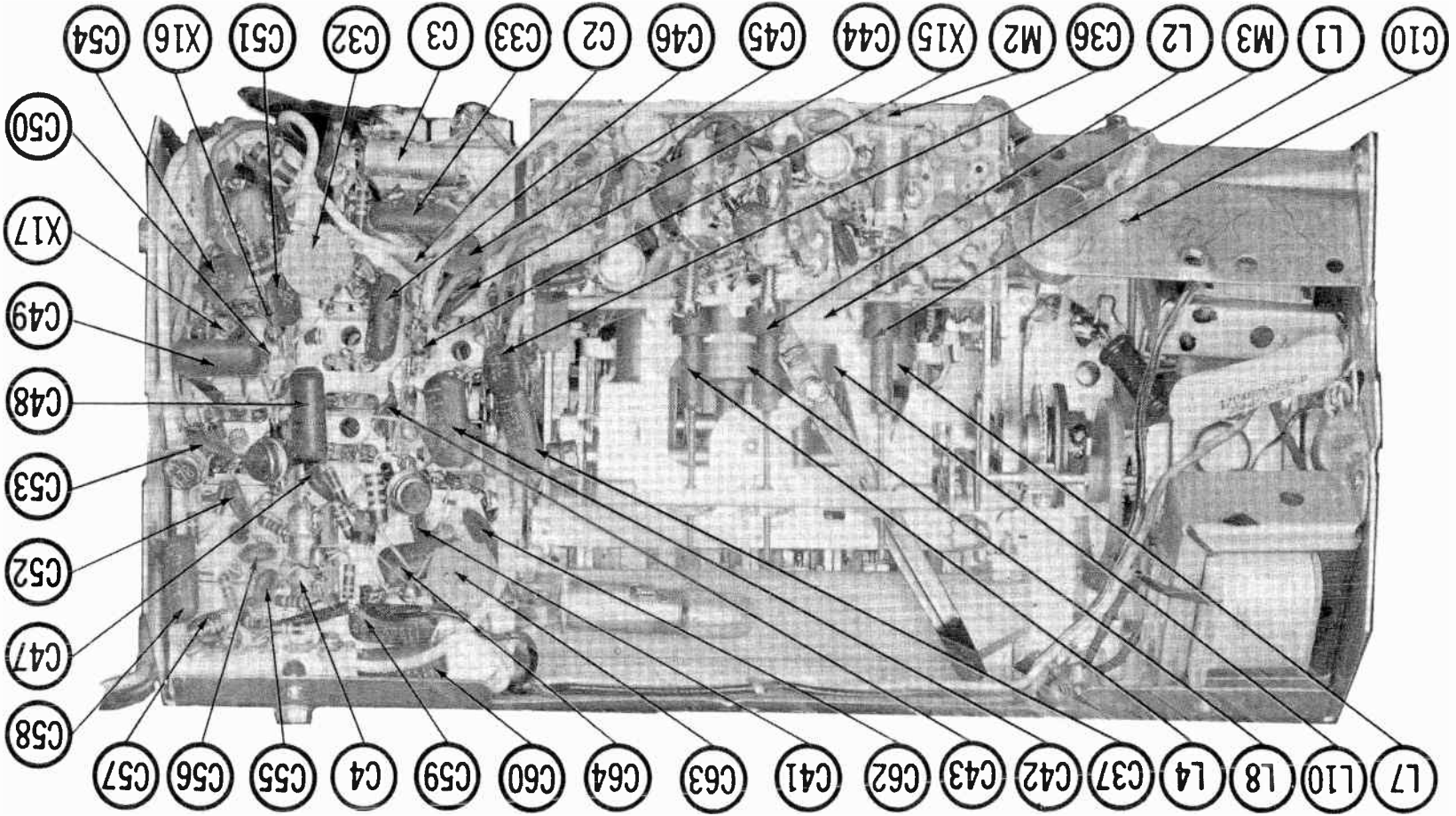
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RAMBLER MODEL AF5TR



RAMBLER MODEL AF5TMR



PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	M78	FM RF Amp.	DS-41		2N1177	PNP
X2	M77	FM Mixer	DS-42		2N1179	PNP
X3	M77	FM Osc.	DS-42		2N1179	PNP
X4	M78	1st FM IF/AM Conv.	DS-35		2N1180	PNP
X5	2SA72	AM RF Amp.	DS-25	GE-1	2N1637	PNP
X6	M78	2nd FM IF/1st AM IF	DS-37		2N1180	PNP
X7	M78	3rd FM IF/2nd AM IF	DS-37		2N1180	PNP
X8	M78	4th FM IF	DS-38		2N1180	PNP
X9	M54	Driver	DS-48	GE-10	2N649	PNP
X10	SP880-3	Output	DS-520	GE-3	2N301	PNP *
X11	SP880-3	Output	DS-520	GE-3	2N301	PNP *

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X12		1N756A					
X13		1N3182					1N34AS
X14		1N461					1N34AS
X15		1N60					1N34AS
X16		1N139					1N34AS
X17		1N139					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Motorola PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	#500	16	23C41652A03					FFP300.81	TVLS-3028.13
B	300	16							
C	#300	16							
C2	16	16	23C41928A13 (23C41928A06)	CRE809A	NLW15-25	MT1-11	MLV15-25	TT25X15	TL-1158
C3	16	16	23C41928A13 (23C41928A06)	CRE809A	NLW15-25	MT1-11	MLV15-25	TT25X15	TL-1158
C4	16	16	23C41928A13 (23C41928A06)	CRE809A	NLW15-25	MT1-11	MLV15-25	TT25X15	TL-1158

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	10-100	#20B42237A01							
C11	47 NPO		NPO-DI47	DTZ-47	C10Q47C	CCTO-470	CNO447	10TCC-Q47	
C12	15 NPO		NPO-DI15	DTZ-15	C10Q15C	CCTO-150	CNO415	10TCC-Q15	
C13	3-13	#20C42387A01							
C14	3.3		NPO-DI3.3	DTZ-3R3	C10V33C	CCTO-3R3	CNO533	10TCC-V33	
C15	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C16	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10	
C17	3-13	#20C42387A01							
C18	10 NPO		NPO-DI10	DTZ-10	C10Q1C	CCTO-100	CNO410	10TCC-Q10	
C19	5.6 NPO								
C20	220		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TCC-V56	
C21	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C23	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10	
C24	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10	
C25	3.4 NPO		NPO-DI3.3	DTZ-3R3	C10V33C	CCTO-3R3	CNO533	10TCC-V33	
C26	3-13								
C27	5.6 N750	#20C42387A01							
C28	2.2 NPO		NPO-DI2.2	DTZ-2R2	C10V22C	CCTO-2R2	CNO522	10TCC-V22	
C29	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10	
C30	.0082 100V		DBE6D82	CPR-8200J	DPMS6D82	6DP-2-822	PVC628	6PS-D82	
C31	.05 100V		P288N-05		DPMS2S5	1DP-2-503	PVC215	2PS-S50	
C32	1mfd 3V				UK-105	HCC3105P		HY-135	
C33	.005 100V		P288N-005	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50	
C34	275-350	#20B42253A02							
C35	.0068		DI-0068	DD-882	BYA10D68	CCD-882	GP288	10TS-D88	
C36	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C37	.005 100V		P288N-005	CPR-5000J	DPMS6D5	1DP-1-502	PVC625	6PS-D50	
C38	150 N330	#20B42253A01							
C39	220-330								
C40	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C41	800		DI-820	DD-821	LA10T82-C4	CCD-821	B382	10TS-T82	
C42	.1 100V		P288N-1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C43	5.6 NPO								
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C45	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C46	.0018 100V		BE6D18	CPR-1800J	PM6D18	16DP-2-182		6PS-D18	
C47	800		DI-820	DD-821	LA10T82-C4	CCD-821	B382	10TS-T82	
C48	.1 100V		P288N-1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C49	.0015 100V		P288N-0015	CPR-1500J	DPMS6D15	8DP-1-152	PVC8215	6PM-D15	
C50	220		DI-220	DD-221	LA10T22-S3	CCD-221	GP322	10TS-T22	
C51	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C52	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C53	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C54	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C55	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C56	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C57	330		DI-330	DD-331	LA10T33-C4	CCD-331	GP333	10TS-T33	
C58	.01 100V		BE2S1	CPR-10000J	WMF1S1	1DP-1-103	PVC211	4PS-S10	
C59	.1 100V		P288N-1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C60	.1 100V		P288N-1		WMF1P1	1DP-2-104	PVC101	2PS-P10	
C61	.47				UK10-404	HCC10474Z		HY-330	
C62	.05		P288N-05		DPMS2S5	1DP-2-503	PVC215	2PS-S50	
C63	1 3V		UK-105		HCC3105P		B347	HY-135	
C64	.05 100V		P288N-05		DPMS2S5	1DP-2-503	PVC215	2PS-S50	

▲ Nominal value.
 # Motorola Part Number.

PARTS LIST AND DESCRIPTION (CONTINUED)

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 otherwise listed.

ITEM No.	USE	RESIST- ANCE	REPLACEMENT DATA				
			Rambler PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA B	Tone Volume & Switch	50K 25K Tap @ 6000Ω	18C4078A08				

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Rambler PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	FM Ant.	24B42305A01 ①					① Part of M2 ② Part of M3
L2	FM RF	24B42305A02 ①					
L3	10.7MC Trap(1uh)	24C40788A08	BC-561	4602	RTC-8515	T855	
L4	FM Osc.	24B42305A01 ①					
L5	1st FM IF	24D4242A01					
L6	RF Choke (.82uh)	24C40788A09					
L7	AM Ant						
L8	AM RF						
L9	RF Choke (1.5uh)	24C40788A04	BC-562	4604	RTC-8516	T856	
L10	AM Osc.						
L11	2nd FM IF	24D4242A01					
L12	1st AM IF	24D4242A01					
L13	3rd FM IF	24D4242A01					
L14	2nd AM IF	24D42413A02					
L15	4th FM IF	24D42428A01					
L16	3rd AM IF	24D42413A03					
L17	Ratio Detector	24D4242TA01					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Rambler PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L18	750MA	.4Ω	3MH	35C42385A06	C-4095	TC-1	TR-157	TY16XT	Alt.Pt.#25D42032A06

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Rambler PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	8:	1	25D42045A07					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Rambler PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	20Ω CT	8Ω	25D42101A05	A-2743	TA-12	TR-300	TY-29XT	

SPEAKER

ITEM No.	TYPE	RATING	REPLACEMENT DATA		NOTES
			Rambler PART No.	QUAM PART No.	
SP1	6" x 9" PM	8Ω	50C42114A03	69A2Z8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Rambler PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGA	5A	65R122345	9C41095A11	301005	155004A	AGA5	HA F

MISCELLANEOUS

ITEM No.	PART NAME	Rambler PART No.	NOTES
M2	FM Tuner Printed Board	77D42694A02 1V43000A09	AFT-490
M3	AM Coils	1V42801A29	
M4	Spark Plate	64K535152	
M5	Spark Plate	64K561876	
M6	Selector Switch	40C42037A04	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	1V42700A10	Knob, Selector	36C42231A01
Dial Scale	34B42677A01	Pushbutton (AM)	1V42700A21
Knob, Tuning or Volume	36C42264A01	Pushbutton (FM)	1V42700A22
Knob, Tone	36C42233A01	Pointer Assembly	1A41638A04

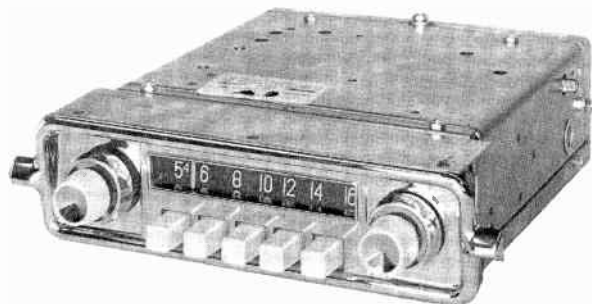
WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

RAMBLER MODEL AFTMR



PHOTOFACT®



TRADE NAME : Riverside Models FJB-16512A,
FJB-16513A
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 6 Transistor AM Receiver
POWER SUPPLY : 6 Volt Storage Battery
RATING : 1 Amp. @ 6.3 Volts DC

TUNING RANGE: BROADCAST 540-1615KC

ALIGNMENT INSTRUCTIONS

Check for specified source voltage.

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

A1 thru A4
A5, A6, A7

GENERAL CEMENT: 8606, 8606L, 8869
GENERAL CEMENT: 8290, 8868, 9087

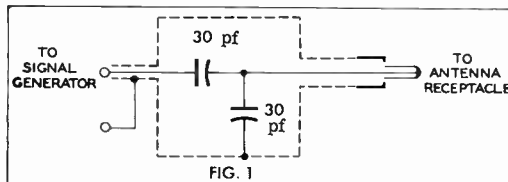
WALSCO: 2543, 2544, 2588
WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mf to point Δ , low side to ground.	262KC (400 ν Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

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



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

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N1637)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N1639)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N1638)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	AF Amp.	DS-26	GE-2	2N591	PNP
X5	6-53 (2N591)	Emitter Follower	DS-26	GE-2	2N591	PNP
X6	8P404 (2N301)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X7		1GD2					1N34AS
X8		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Riverside Part No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	▲250	15	20-328	AFH3-00-04	CCOO12	XC3-48.1		PWH300.4A	PCL-3026.6
B	250	15							
C	■500	15							
C2	750	3	20-753	PTT-138	BR1000-6	QT1-32	BL2211	PETA190	TVA-1097
C3	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	.05		#2B-800-2L	TTD-05	CK-503	H5		TA150	TG-S50
C11	.05			UK-105	UK-105	HCC3105P			HY-135
C12	1mfd	3V	#28A 1332						
C13A									
B									
C14	270	N750		DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27
C15	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C16	.02			BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20
C17	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C18	100			N750-DI100	DTN-100	C10T1U	CCD-222	CN7310	10TCU-T10
C19	.05			TTD-05	CK-503	H5	CCD-181	TA150	TG-S50
C20	.05			TTD-05	CK-503	H5	CCD-103	TA150	TG-S50
C21	180			DI-180	DD-181	LA10T18-S3		GP318	5GA-T18
C22	.01			BPD-01	DD-103	BYA10S1		B110	5HK-S10
C23	.22	3V			UK20-204	HCC25224Z			HY-325
C24	.22	3V			UK20-204	HCC25224Z			HY-325
C25	1mfd	3V			UK-104	HCC3105P			HY-135
C26	.05			TTD-05	CK-503	H5		TA150	TG-S50

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Riverside PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
RIA	Tone	10K	80A3610	F1-10K,			† QJ-1792A	
B	Volume/Switch	7500Ω Tap @ 5000Ω		R14-7500, FFS110, RFS203, AK26 (Ⓢ) KR-4				

† "CONCENTRIKT" Equivalent: K8 Kit with Base Elements and Shafts: B11-116, P17-118 (Panel)

"SNAPTROL" Equivalent: BU8 (Ⓢ), CF9, CR48T, SF13, SR14, GC.

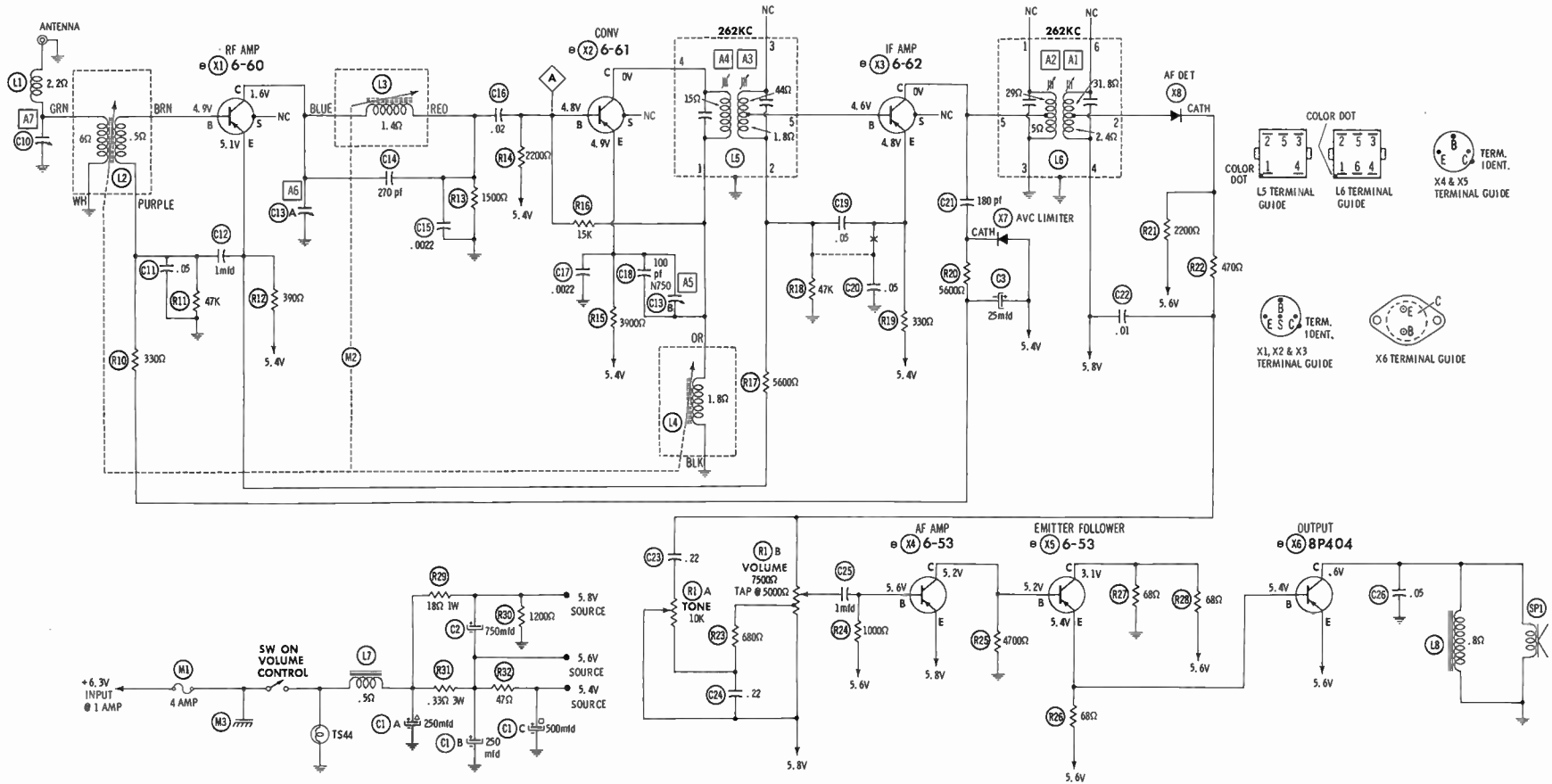
S8 (Ⓢ) (Bushing)

76-1 (Switch)

Ⓢ Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Riverside Part No.			IRC PART No.	WORKMAN PART No.	
R31	.33Ω 3W		WT33	60-.33-3S					



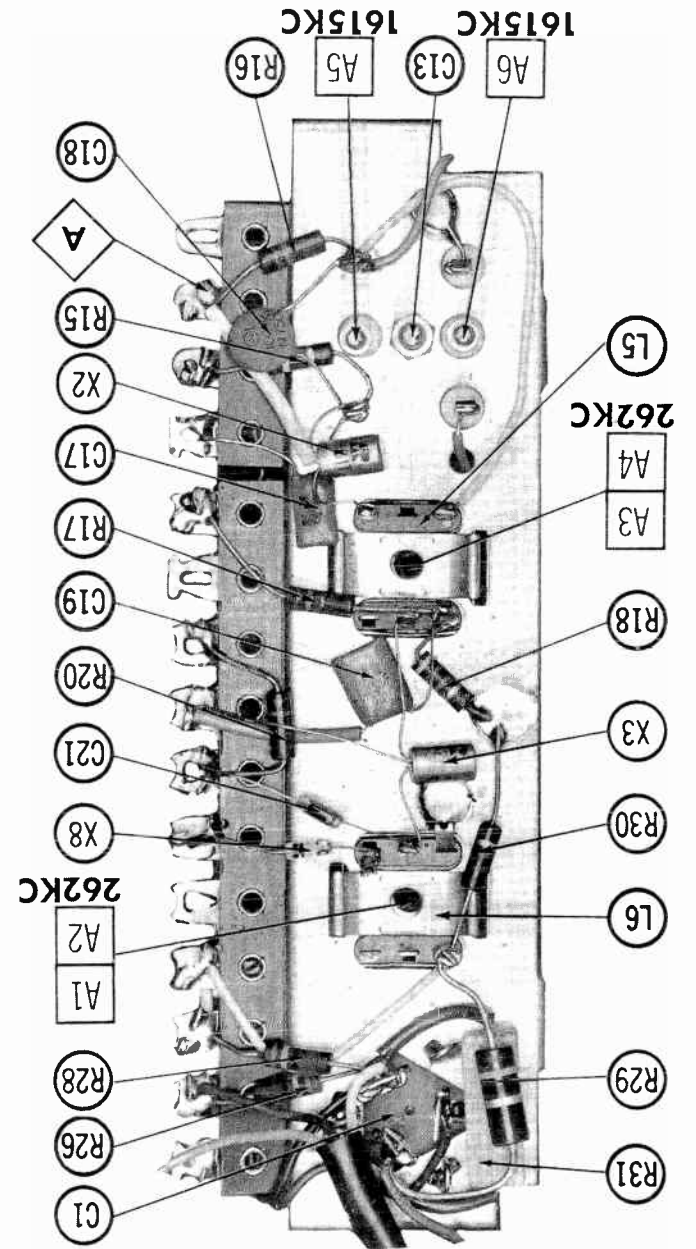
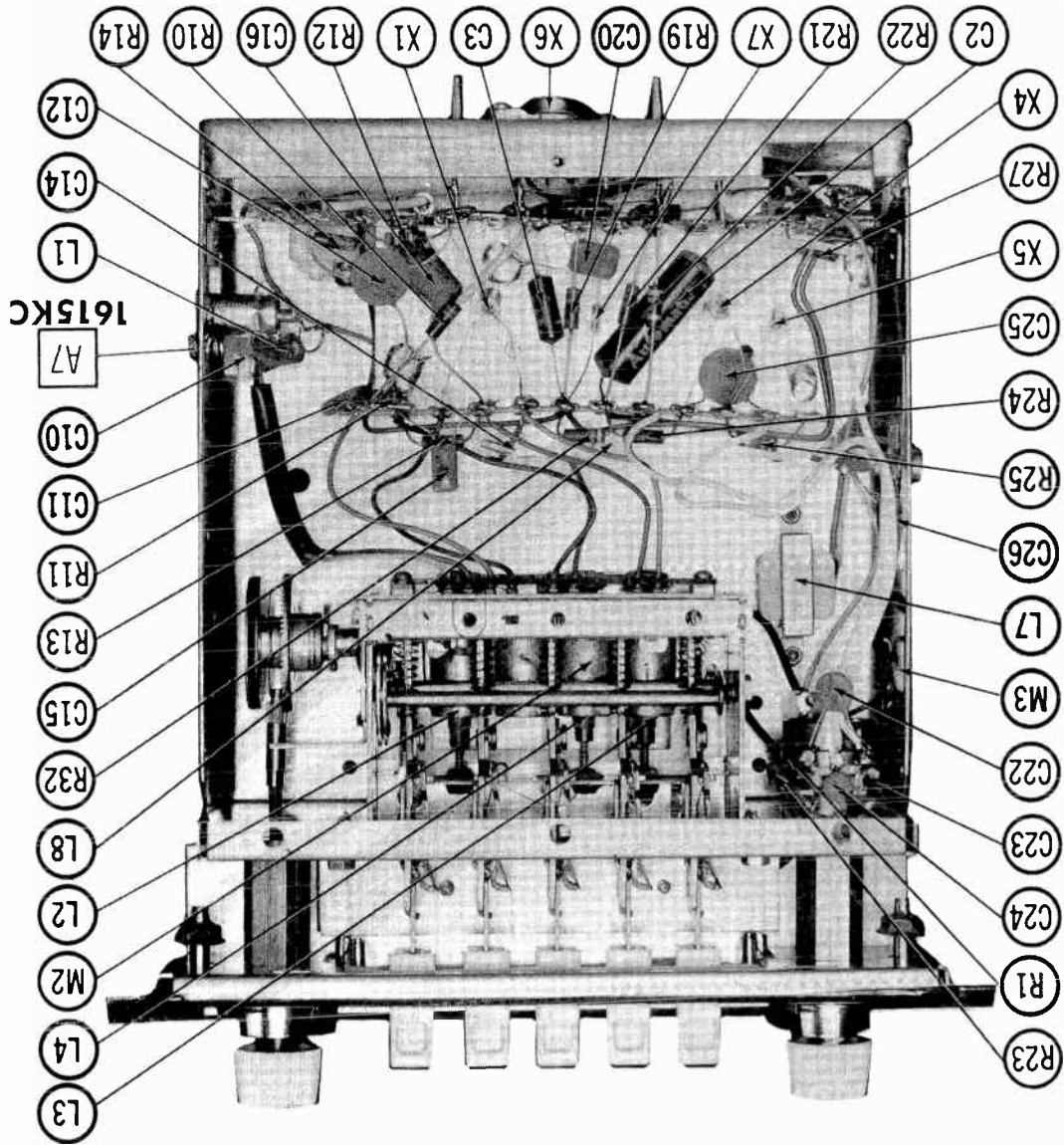
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

- ⊖ See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

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RIVERSIDE MODEL FJB-16512A

RIVERSIDE MODEL FJB-16512A



PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Riverside PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-274	BC-690	6570			
L6	Output IF	14-275	BC-691	6571			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Riverside PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	1A	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

CHOKE (AUDIO OUTPUT)

ITEM No.	INDUCTANCE	REPLACEMENT DATA					NOTES
		Riverside PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L8	20MH	75A2043					

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES	
			Riverside PART No.	QUAM PART No.		
SP1	6"	PM	8Ω	73A1982	6A21Z8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Riverside PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A	108-400	12A2079	303004	155009	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	Riverside PART No.	NOTES
M2	Tuner	78B3608	Pushbutton Manual
	Tuner	78B3609	
M3	Spark Plate	43-215	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	54C1176	Knob, Tone	48A1063-1
Dial Glass (Manual 39-156)	39-110	Knob, Dummy	48A1063-1A
Knob, Tuning or Volume	47-50	Pushbuttons	55A1179

WIRING DATA

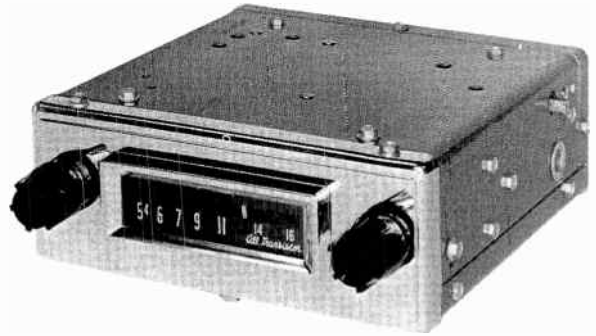
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)



PHOTOFACT®

TRADE NAME : Riverside Model FJB-16569A
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 5 Transistor AM Receiver
POWER SUPPLY : 12 Volt Storage Battery
RATING : .680 Amp. @ 12.6 Volts DC

TUNING RANGE: BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

Check for specified source voltage.

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

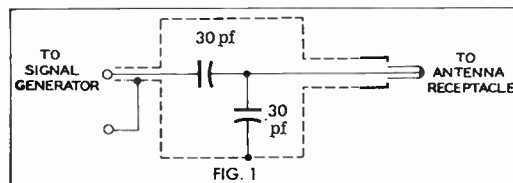
A1 thru A4 GENERAL CEMENT: 8606, 8606L, 8869
 A5, A6, A7 GENERAL CEMENT: 8290, 8868, 9087

WALSCO: 2543, 2544, 2588

WALSCO: 2525, 2528, 2587

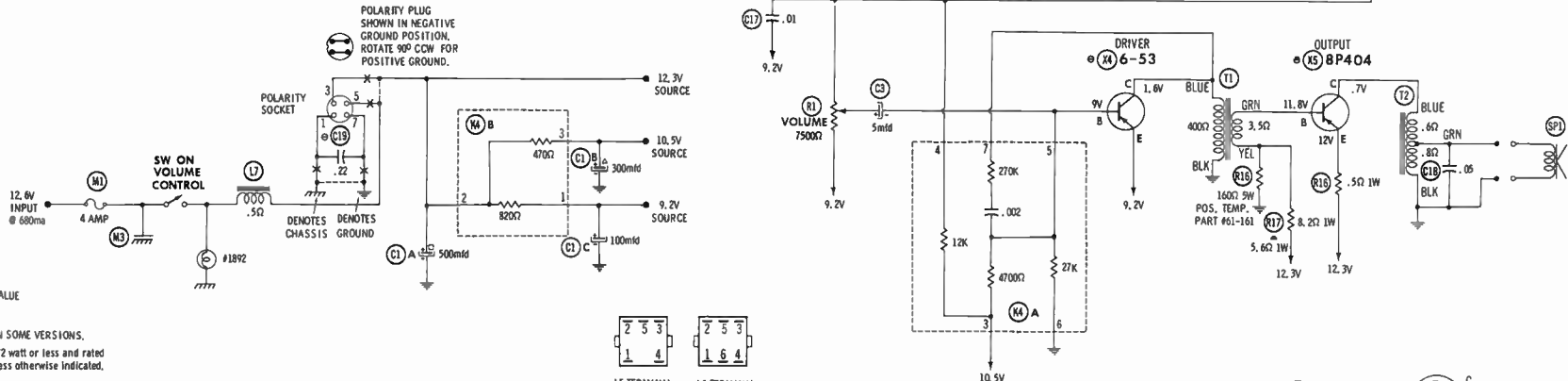
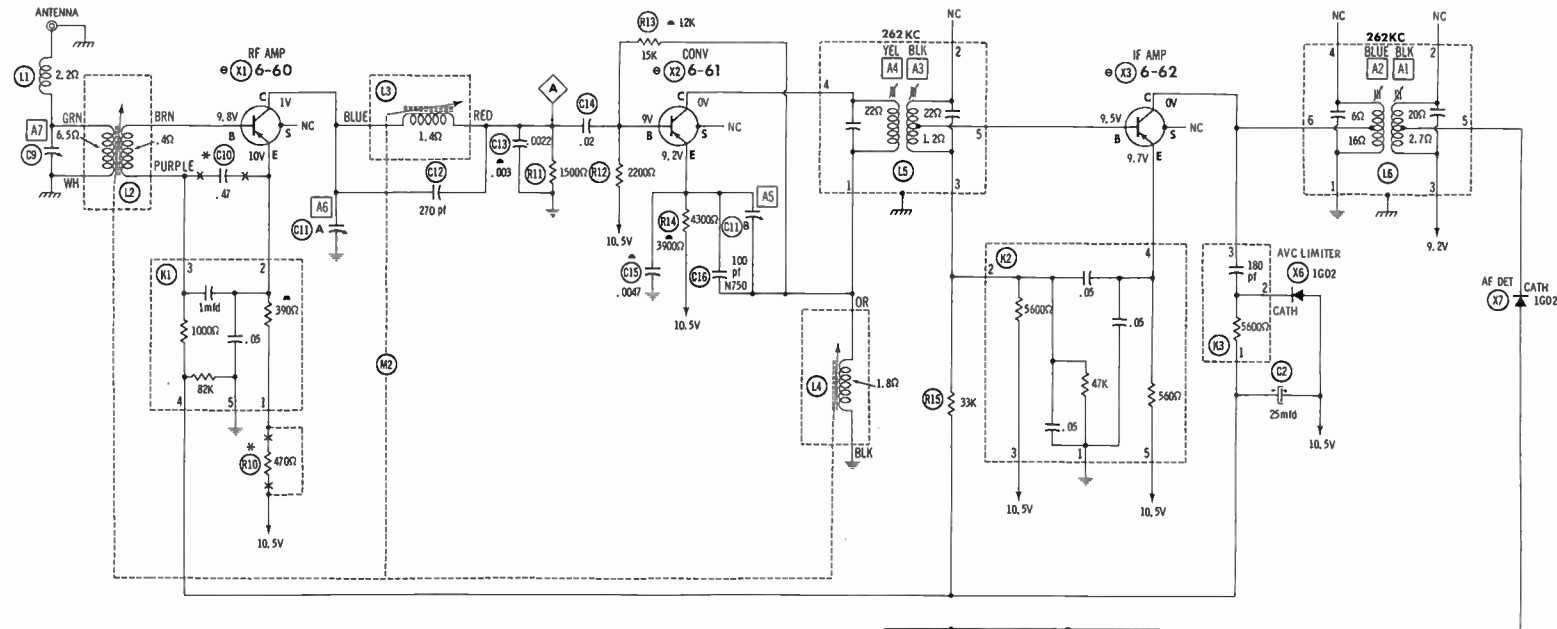
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfid to point Δ , low side to ground.	262KC (400% Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.



RIVERSIDE MODEL FJB-16569A

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

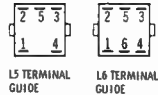


▲ NOMINAL VALUE MAY VARY.

* NOT USED IN SOME VERSIONS.

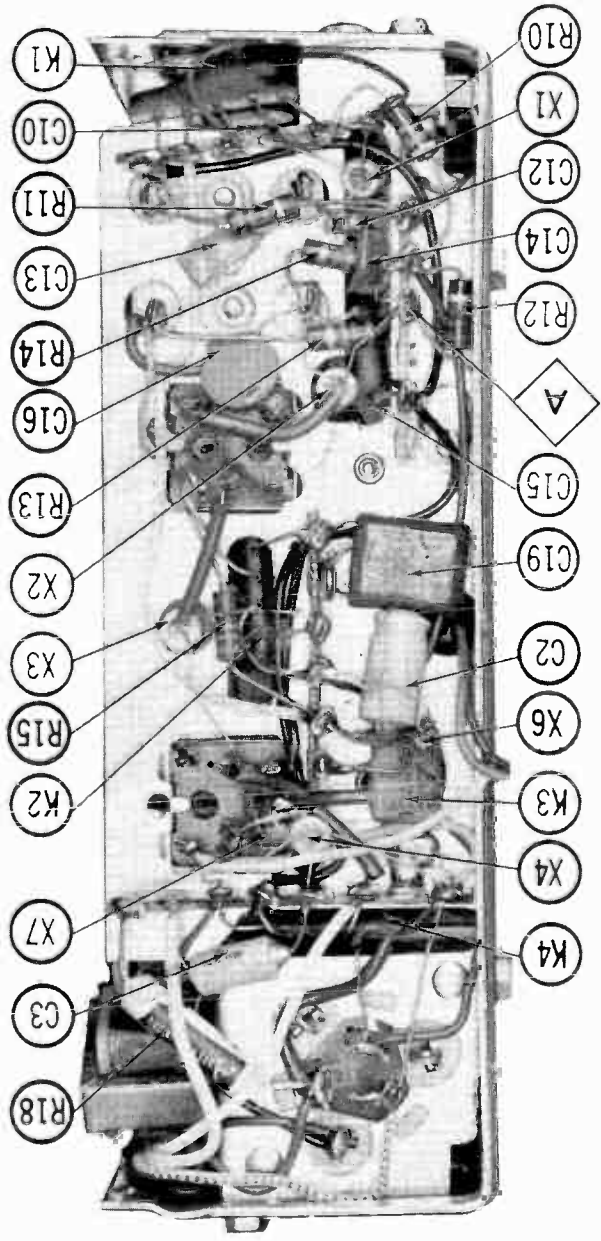
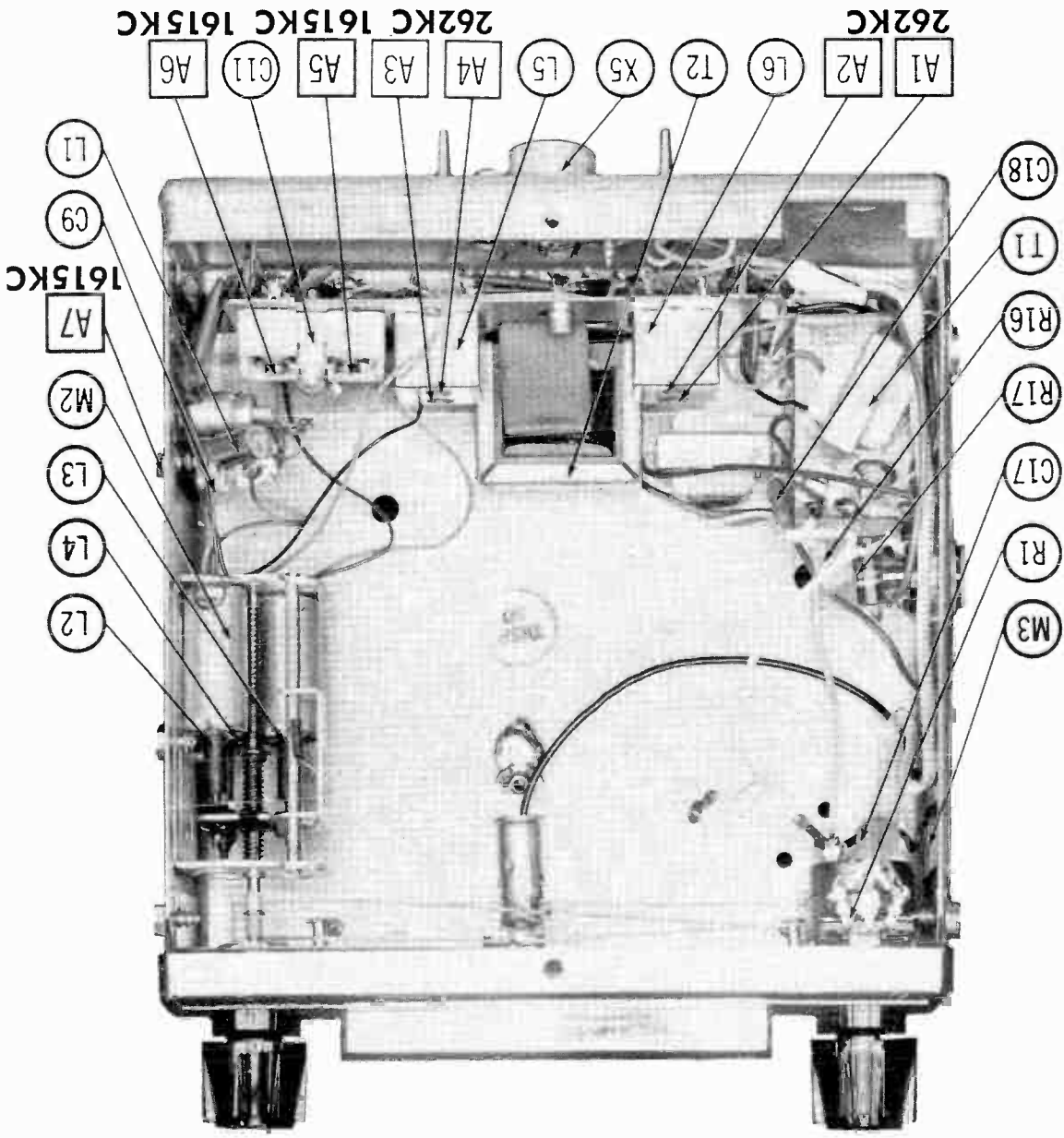
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

- ⊙ See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.



RIVERSIDE MODEL FJB-16569A

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PARTS LIST 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 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Rear Seat Speaker Extension Cable	Use BELDEN No. 8782 (Stranded) Coded Parallel Leads
Bonding Strap	Use BELDEN No. 8681 (3/8 In.) or 8670 (3/4 In.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-63 (2N591)	Driver	DS-26	GE-2	2N591	PNP
X5	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Port or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1GD2					1N34AS
X7		1GD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Riverside PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	20-2653	A FH3-00-04.5		XC3-48.1		FP300.83	TVLS-3026.1*
B	300	16							
C	100	16							
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152

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

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C9	.47	3V	#28-800-2L						
C10			①		UK10-404	HCC10474Z			HY-330
C11A			#28A1332						
B									
C12	270			DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T25
C13	.0022			BPD-0022	DD-222	LA10D22-C4	CCD-222	B222	10TS-D22
C14	.02		(.003) †	TTD-02	CK-203	H3		TA120	TG-S20
C15	.0047			BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47
C16	100	N750		N750-DI100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10
C17	.01			BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10
C18	.05			TTD-05	CK-503	H5		TA150	TG-S50
C19	.22				UK20-204	HCC25224Z			HT-325

Riverside Part Number.

† Alternate Value.

① Not used in some versions

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			Riverside PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume	7500Ω	80A2916A (80A2916)	F2-10K,SFS212, AK-31, KR-4			B13-116, TM8, QCB4 ① 76-1 or (BU14) ② CF61, SS4, GC)	

① Use QCB4 instead of Tab Mount Plate in TM8.

② Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Riverside Part No.			IRC PART No.	WORKMAN PART No.	Part No.
R16	160Ω 5W PTC			61-161					

PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		Riverside PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1 L2 L3 L4 L5 L6	RF Choke (6, 2uh) Ant. RF Osc. Input IF Output IF	14-6. 2 ① ① ① 14-3233A 14-3234A	BC-565	4610		RTC-8520 T859	① Part of M2.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Riverside PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	.680	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			Riverside PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	8:	1	75A2635				TR-184	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			Riverside PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	24Ω Tap	@ 8Ω	75A2638 (75A2636)				TR-169	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		Riverside PART No.	QUAM PART No.	
SP1	5" PM 8Ω	73A2163	5A05Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Riverside PART NO.	REPLACEMENT DATA
K1	RF Amplifier	390Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582C	
K2	IF Amplifier	560Ω, 5600Ω, 47K, .05mfd, .05mfd, .05mfd	89A2584B	
K3	AVC	5600Ω, 180pf	89A2701	
K4	AF Amp.	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Riverside PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A			303004	155004	AGW4	H4H

MISCELLANEOUS

ITEM No.	PART NAME	Riverside PART No.	NOTES
M2	Tuner	78A3602	
M3	Spark Plate	43-216	

CABINETS & CABINET PARTS

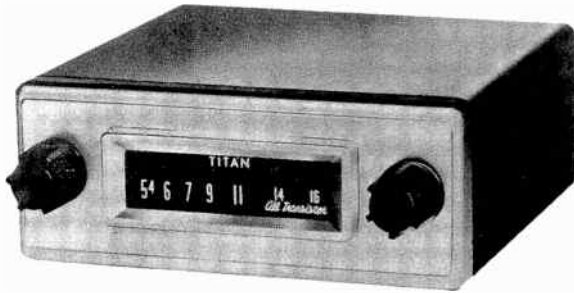
(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	55C3605	Knob, Tuning or Volume	47A1235
Dial Glass	39-78	Knob, Spacer	47A1249

RIVERSIDE MODEL FJB-16569A



PHOTOFACT®



TRADE NAME : Titan Model TMA-39
 SUPPLIER : For Current Address, See Master Index.
 TYPE SET : 5 Transistor AM Receiver
 POWER SUPPLY : 12 Volt Storage Battery
 RATING : .680 Amp. @ 12.6 Volts DC
 TUNING RANGE : BROADCAST 540-1615KC

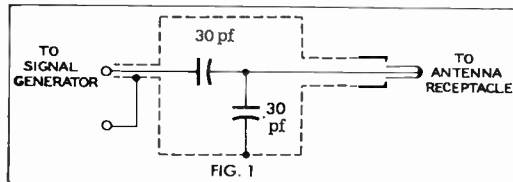
ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:

A1 thru A4	GENERAL CEMENT: 8606, 8606L, 8869	WALSCO: 2543, 2544, 2588
A5, A6, A7	GENERAL CEMENT: 8290, 8868, 9087	WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.



TITAN MODEL TMA-39

PARTS LIST 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 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N642)	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)	Driver	DS-26	GE-2	2N591	PNP
X5	8P404 (2N176)	Output	DS-520	GE-3	2N301	PNP*

* When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		IGD2					1N34AS
X7		IGD2					1N34AS

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		TITAN PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	#500	16	20-2653	AFH3-00-04.5		XC3-48.1		FP300.83	TVLS-3026.1*
B	300	16							
C	100	16							
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C9		#28-800-2L							
C10	.47 3V	①		UK10-404	HCC10474Z				HY-330
C11A		#28A1332							
B									
C12	270		DI-270	DD-271	LAI0T27-C4	CCD-271	GP327	5GA-T25	
C13	.0022		BPD-0022	DD-222	LAI0D22-C4	CCD-222	B222	10TS-D22	
C14	.02	(.003) †	TTD-02	CK-203	H3		TA120	TG-S20	
C15	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B247	5HK-D47	
C16	100 N750		N750-DI100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10	
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C18	.05		TTD-05	CK-503	H5		TA150	TG-S50	
C19	.22			UK20-204	HCC25224Z			HY-325	

TITAN Part Number.

† Alternate Value.

① Not used in some versions

CONTROLS

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

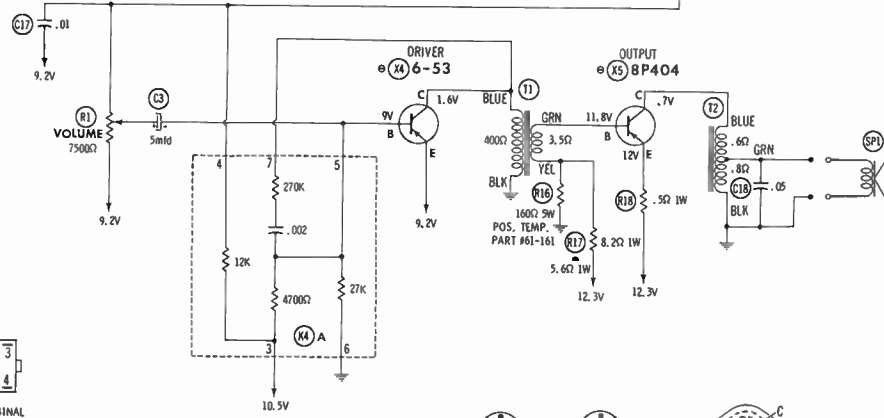
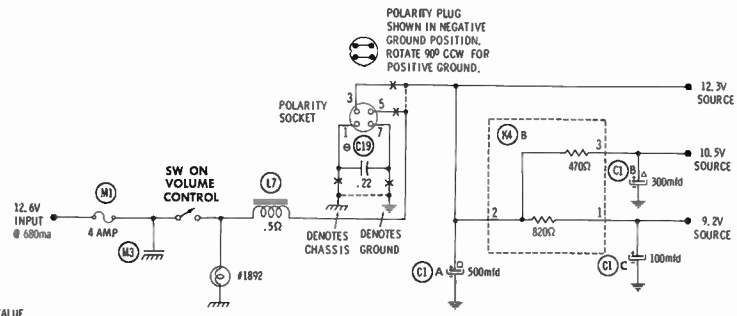
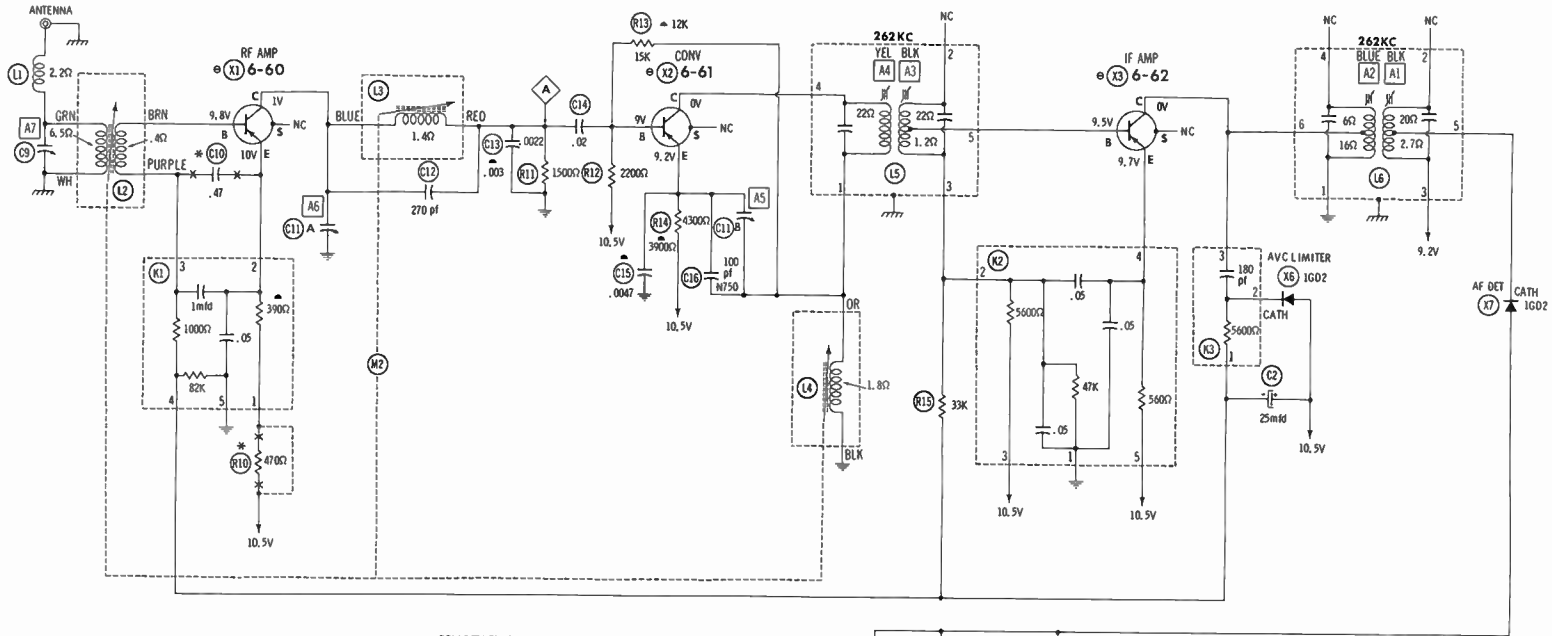
ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			TITAN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume	7500Ω	80A2916A (80A2916)	F2-10K,SFS212, AK-31, KR-4			B13-116, TM8, QCB4 ① 76-1 or (BU14 ②, CF61, SS4, GC)	

① Use QCB4 instead of Tab Mount Plate in TM8.

② Alter bushing to meet requirements.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	TITAN PART No.			IRC PART No.	WORKMAN PART No.	Part No.
R16	160Ω 5W PTC			61-161					

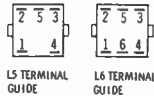


⊖ NOMINAL VALUE
MAY VARY.

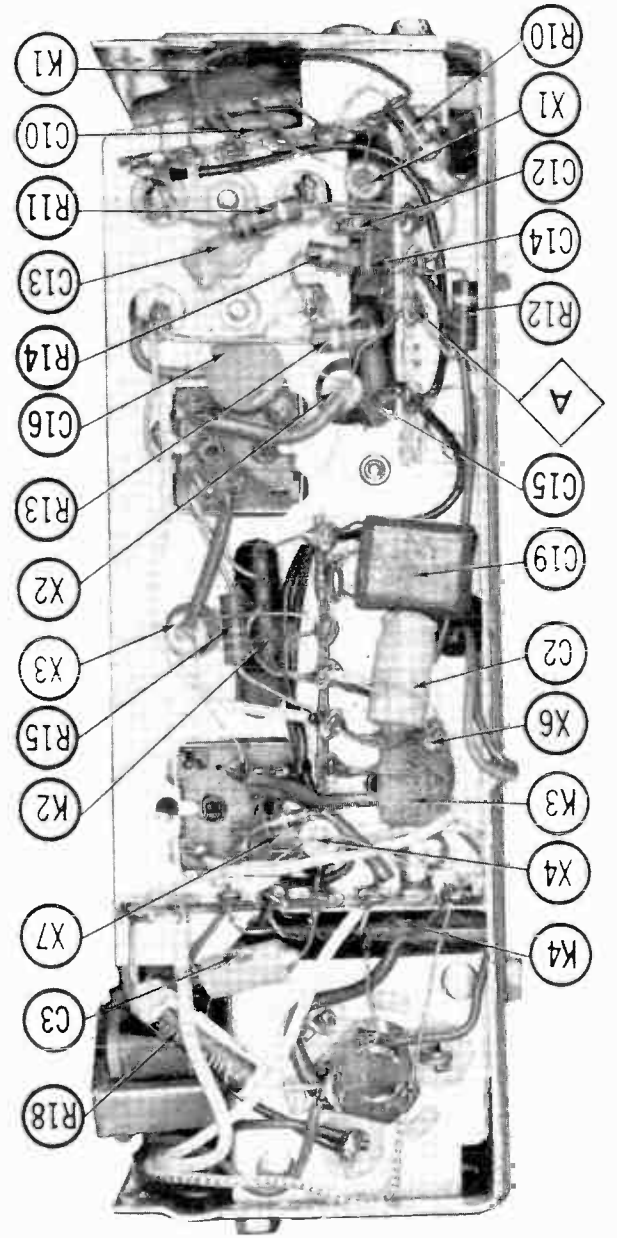
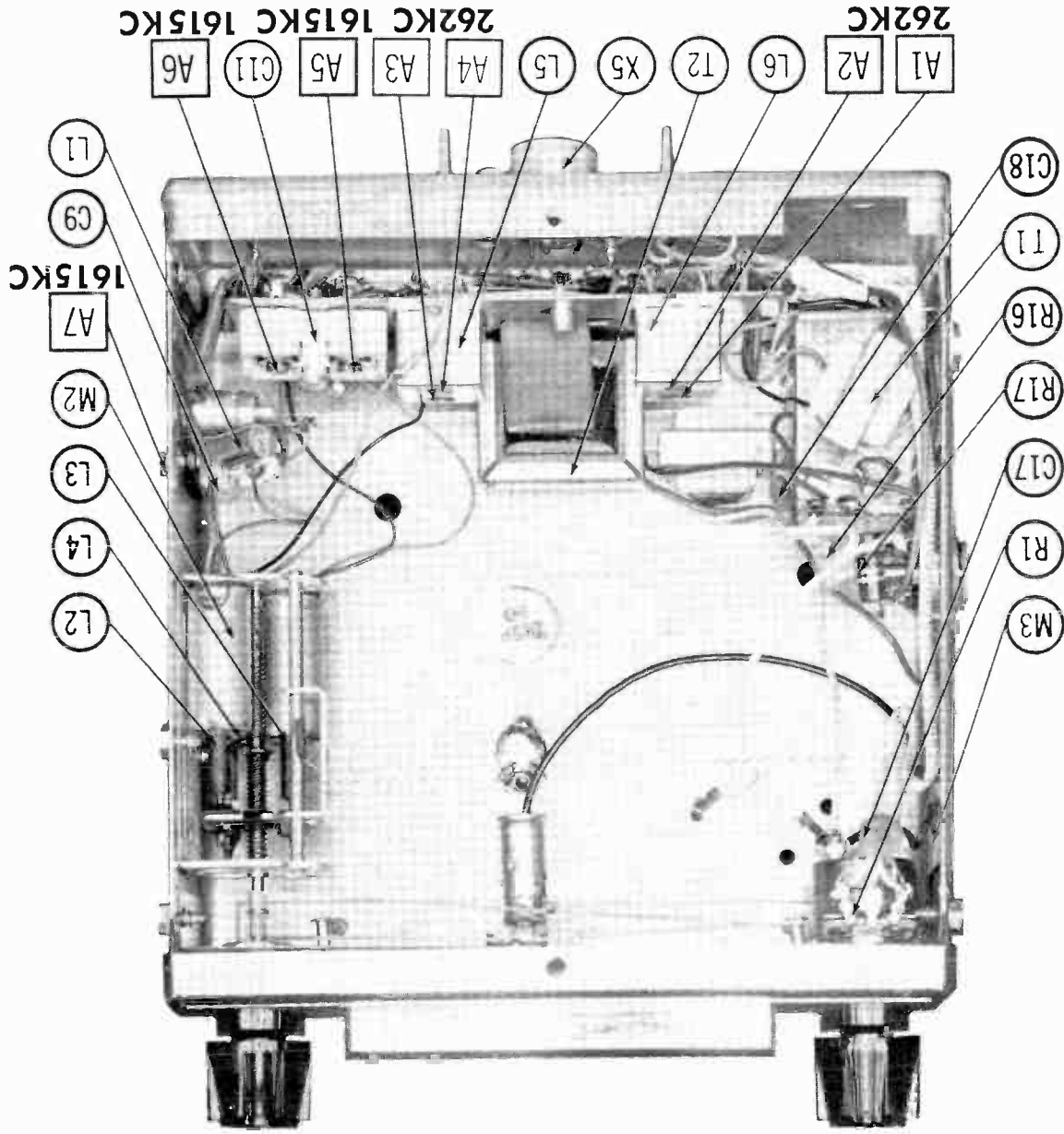
* NOT USED IN SOME VERSIONS.
Resistors are 1/2 watt or less and rated
10% or 20% unless otherwise indicated.

- ⊖ See parts list for alternate value or application.
 1. Voltage measurements taken with vacuum tube voltmeter.
 2. All controls set for normal operation, no signal applied.
 3. Measured values are from socket pin or terminal to common ground.
 4. All terminals viewed from bottom unless otherwise designated.
 5. Numbers assigned to terminals may not be found on the unit.
 6. Supply voltage maintained at rated value for voltage readings.
 7. Resistance measurements not given because of the wide variation
 in internal resistance of transistor.

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TITAN MODEL TMA-39



PARTS LIST AND DESCRIPTION (CONTINUED)

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.	USE	REPLACEMENT DATA					NOTES
		TITAN PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-3233A					
L6	Output IF	14-3234A					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	TITAN PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	.680	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TITAN PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TITAN PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				TITAN PART No.	QUAM PART No.	
SP1	5"	PM	8Ω	73A2163	5A05Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	TITAN PART No.	REPLACEMENT DATA
K1	RF Amplifier	390Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582C	
K2	IF Amplifier	560Ω, 5600Ω, 47K, .05mfd, .05mfd, .05mfd	89A2584B	
K3	AVC	5600Ω, 180pf	89A2701	
K4	AF Amp.	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			TITAN PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A			303004	155004	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	TITAN PART No.	NOTES
M2	Tuner	78A3602	
M3	Spark Plate	43-216	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	55C3605	Knob, Tuning or Volume	47A1235
Dial Glass	39-78	Knob, Spacer	47A1249



PHOTOFACT[®]

TRADE NAME: Titan Models TMA40, TPB60
 SUPPLIER: For Current Address, See Master Index.
 TYPE SET: 5 Transistor AM Receiver
 POWER SUPPLY: 6 or 12 Volt Storage Battery
 RATING: .440 Amp. @ 6.3 Volts DC,
 .660 Amp. @ 12.6 Volts DC
 TUNING RANGE: BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

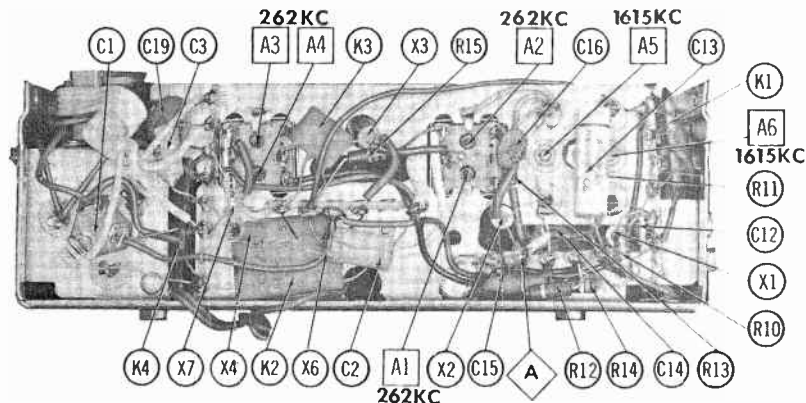
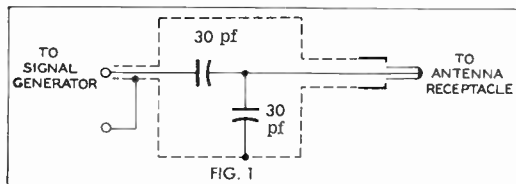
Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools: A1 thru A7 GENERAL CEMENT: 9440 WALSCO: 2501

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point A , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Thru dummy (Fig. 1) to antenna receptacle.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.

PUSH-BUTTON ADJUSTMENT

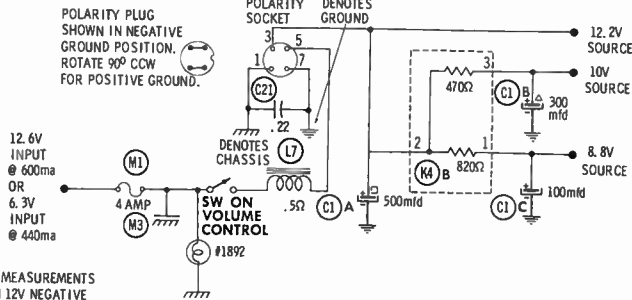
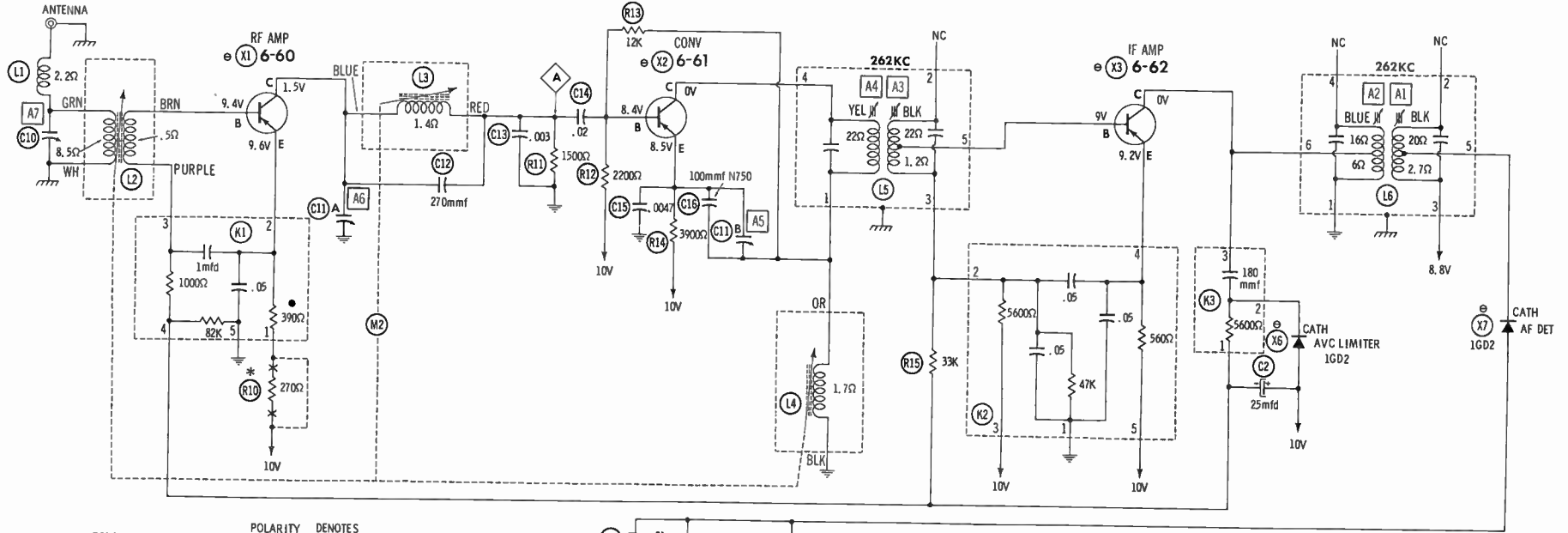
1. Pull button out.
2. Tune manually to desired station.
3. Press button in firmly.
4. Repeat for remaining buttons.



TITAN MODELS TMA-40, TPB-60

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

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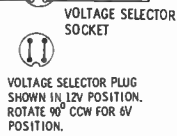
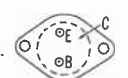
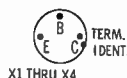
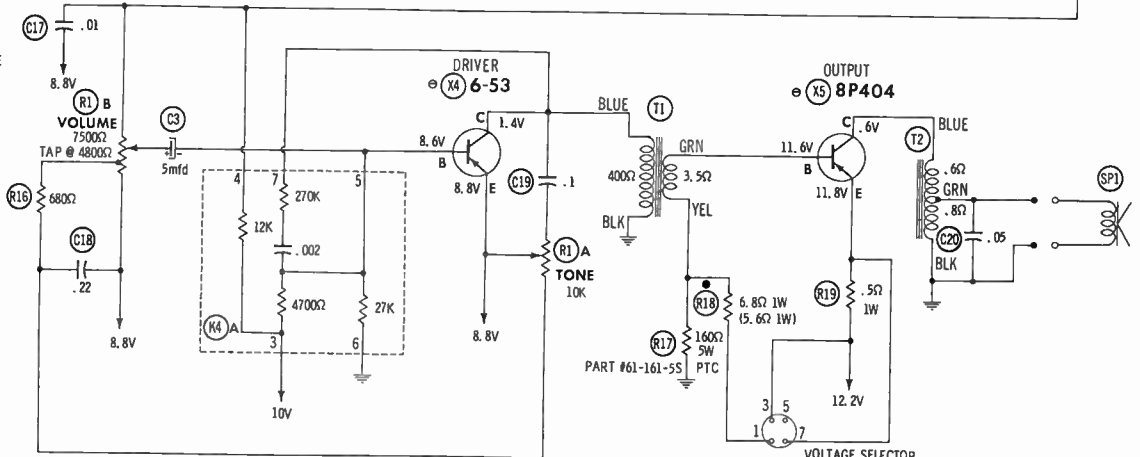


VOLTAGE MEASUREMENTS
TAKEN IN 12V NEGATIVE
GROUND POSITION.

* NOT USED IN SOME VERSIONS
● NOMINAL VALUE MAY VARY

Resistors are 1/2 watt or less and rated
10% or 20% unless otherwise indicated.

- ① See parts list for alternate value or application.
- 1. Voltage measurements taken with vacuum tube voltmeter.
- 2. All controls set for normal operation, no signal applied.
- 3. Measured values are from socket pin or terminal to common ground.
- 4. All terminals viewed from bottom unless otherwise designated.
- 5. Numbers assigned to terminals may not be found on the unit.
- 6. Supply voltage maintained at rated value for voltage readings.
- 7. Resistance measurements not given because of the wide variation in internal resistance of transistor.



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TITAN MODELS TMA-40, TPB-60

PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	6-60 (2N640)†	RF Amp.	DS-25	GE-1	2N1637	PNP
X2	6-61 (2N642)†	Conv.	DS-25	GE-1	2N1639	PNP
X3	6-62 (2N641)†	IF Amp.	DS-25	GE-1	2N1638	PNP
X4	6-53 (2N591)†	Driver	DS-26	GE-2	2N591	PNP
X5	8P404 (2N176)†	Output	DS-520	GE-3	2N301	PNPA

† Alternate Type Number.

▲ When replacing, apply silicon grease to both sides of insulator. Tighten mounting screws securely.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X6		1GD2 (1N295)†					1N34AS
X7		1GD2 (1N295)†					1N34AS

† Alternate type number.

ELECTROLYTIC CAPACITORS

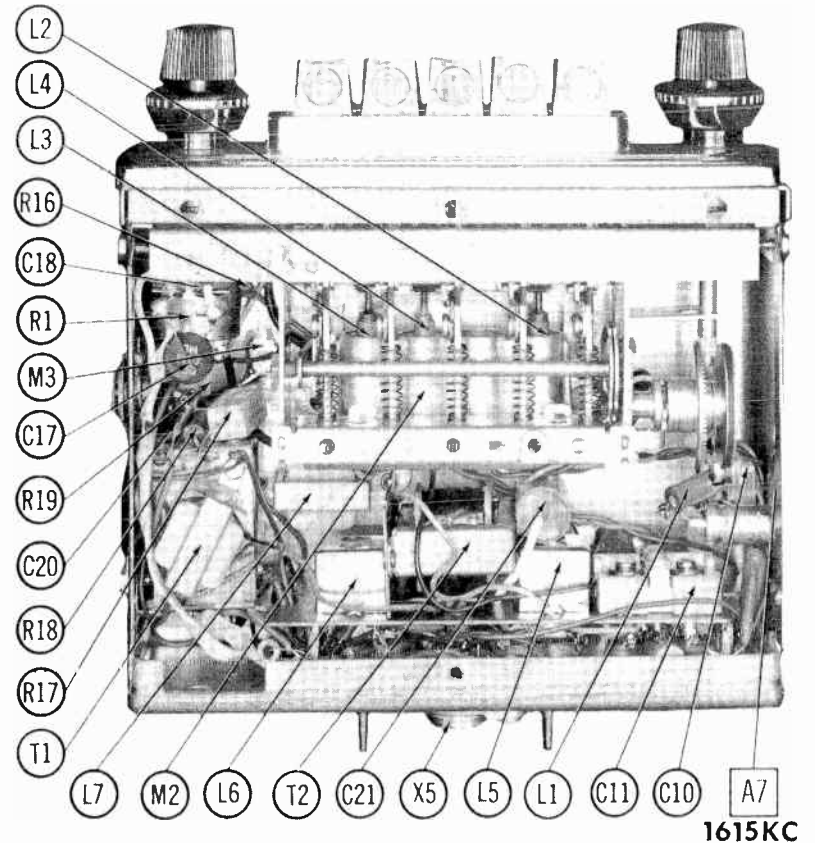
ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	TITAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	#500	16	20-2653	AFH3-00-94.5		XC3-48.1		FP300.83	TVLS-3026.1*
B	#300	16							
C	100	16							
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C10		#28-800-2L							
C11A		#28A1332							
B									
C12	270		DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T270	
C13	.003 200V		BE6D3	CPR-3000J	DPMS6D33	6DP-1-302	PVC423	6PS-D30	
C14	.02		BPD-02	DD-203	BYA6S2	CCD-203	B120	5HK-S20	
C15	.0047 200V		P288N-0047	CPR-4700J	WMF2D47	6DP-1-472	PVC4247	6PS-D47	
C16	100 N750		N750-DI100	DTN-100	C10T1U	CCTN-101	CN7310	10TCU-T10	
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C18	.22 3V			UK20-204	HCC25224Z			HY-325	
C19	.1 16V		TTD-1	CK-104	H6		TA010	TG-P10	
C20	.05		TTD-05	CK-503	H5		TA150	TG-S50	
C21	.22 200V		P288N-22		DPMS2P22	1DP-3-224	PVC1022	2PS-P22	

TITAN Part Number.



TITAN MODELS TMA-40, TPB-60

PARTS LIST AND DESCRIPTION (CONTINUED)

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 otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			TITAN PART No.	CENTRALA8 PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA B	Tone Volume/Switch	10K 7500Ω Tap @ 4800Ω	80A3566			†QJ-1788A	

† "CONCENTRIKIT" Equivalent: K8 Kit with Base Elements and Shafts: B11-116, P17-112 (Panel)
"SNAPTROL" Equivalent: BU15, CF9, CR48T, SF10, SR9, GC. B21-115X, R-26-121 (Rear)
QCB5 (Bushing)
76-1 (Switch)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		TITAN PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	① Part of M2.
L2	Ant.	①					
L3	RF	①					
L4	Osc.	①					
L5	Input IF	14-3233A					
L6	Output IF	14-3234A					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	TITAN PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L7	600ma @ 12.6V 440ma @ 6.3V	.5Ω	10MH	75A3082	C-4095	TC-2	TR-155	TY17XT	

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TITAN PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	T1	8:	1	75A2635			TR-184	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TITAN PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	T2	24Ω Tap	@ 8Ω	75A2638			TR-169	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		TITAN PART No.	QUAM PART No.	
SP1	5" X 7" PM 4" Round PM	8Ω 8Ω	73B2825 73B3553	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	TITAN PART NO.	REPLACEMENT DATA
K1	RF Amp. Network	390Ω, 1000Ω, 82K, .05mfd, 1mfd	89A2582C	
K2	IF Amp. Network	560Ω, 5600Ω, 47K, .05mfd, .05mfd, .05mfd	89A2584	
K3	AVC	5800Ω, 180mmf	89A2701	
K4	Audio Network	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			TITAN PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGW	4A			303004	155009	AGW4	HDH

MISCELLANEOUS

ITEM No.	PART NAME	TITAN PART No.	NOTES
M2	Tuner	78B3567	Pushbutton
	Tuner	78B3591	Manual
M3	Spark Plate	43-216	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	54C2357	Knob-Dummy	48A393-1
Knob-Tuning or Volume	47-50BC	Knob-Spacer	47A1249
Knob-Tone	47B393	Pushbutton	55A1734

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)



PHOTOFACT[®]

TRADE NAME : Titan Model SP-22
SUPPLIER : For Current Address, See Master Index.
TYPE SET : 6 Transistor Auto-Portable Receiver
POWER SUPPLY : 12 Volt Storage Battery (Auto)
 9 Volts DC (Portable)
RATING : .27 Amp. @ 12.6 Volts DC or
 .23 Amp. @ 9 Volts DC
TUNING RANGE : BROADCAST 540-1615KC



ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

A1 thru A4
A5, A6, A7, A8

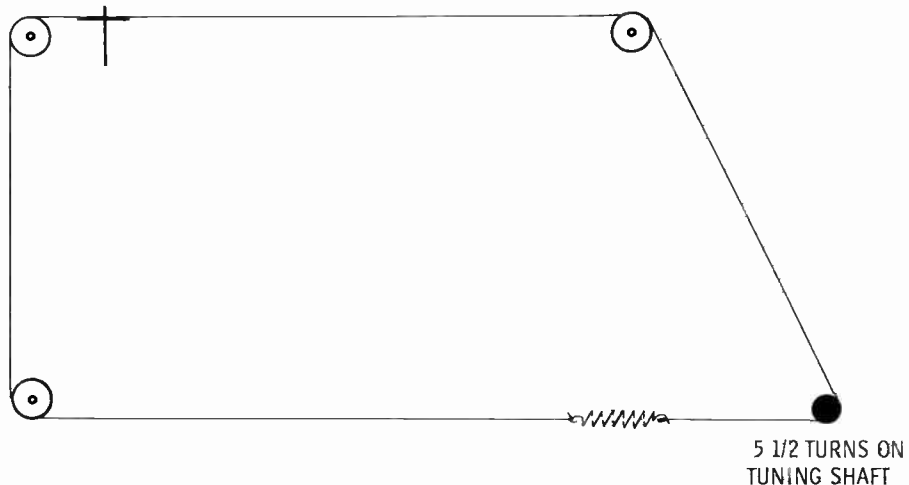
GENERAL CEMENT: 8606, 8606L, 8869
 GENERAL CEMENT: 8290, 8868, 9087

WALSCO: 2543, 2544, 2588
 WALSCO: 2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side thru .1mfd to point Δ , low side to ground.	262KC (400v Mod.)	High Freq. End Stop.	Output Meter across voice coil.	A1, A2, A3, A4	Adjust for maximum.
2.	Loosely coupled to loopstick.	1615KC	"	"	A5, A6, A7	"

With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A8 for maximum output.

DIAL CORD STRINGING

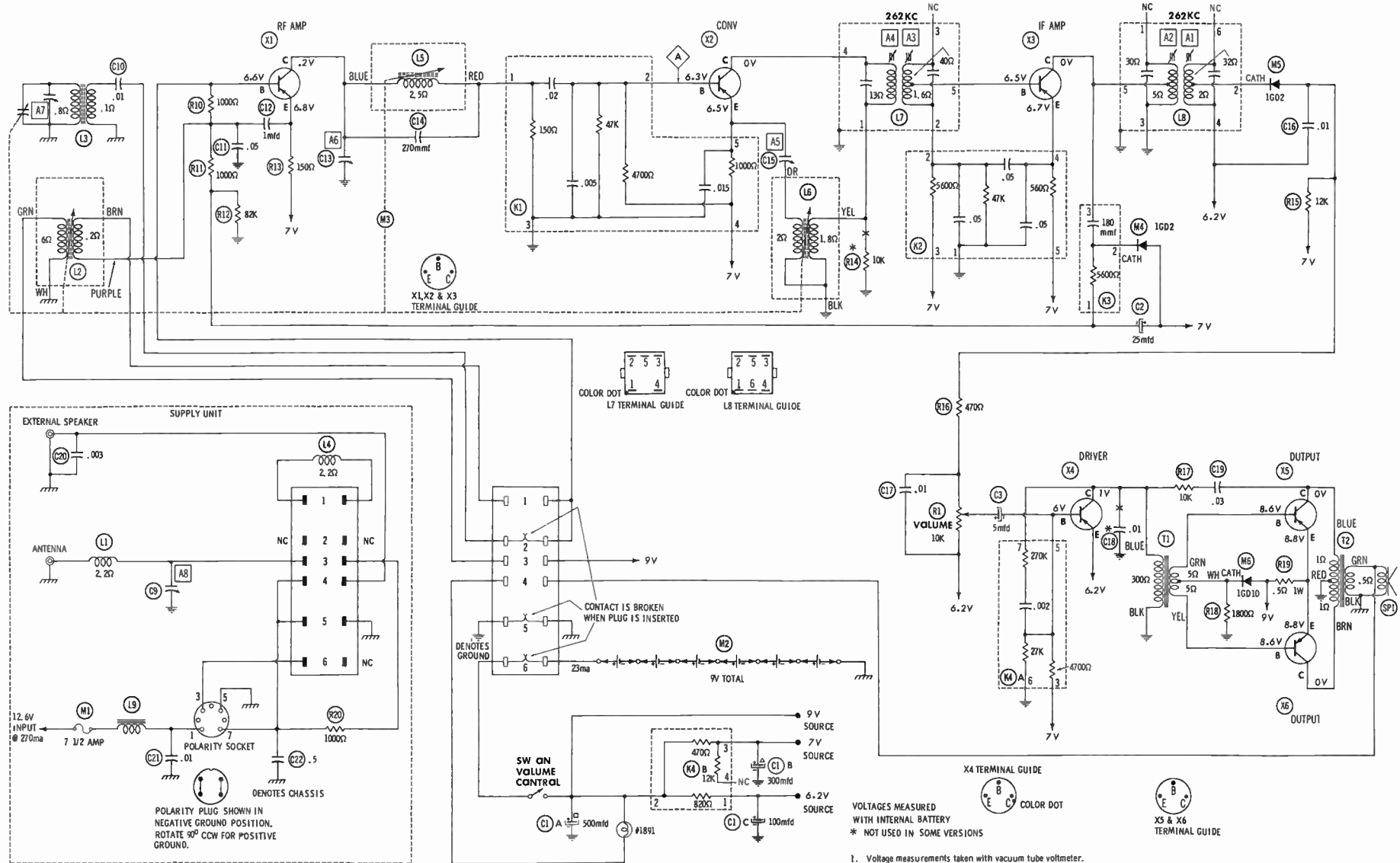


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World Radio History

TITAN MODEL SP-22



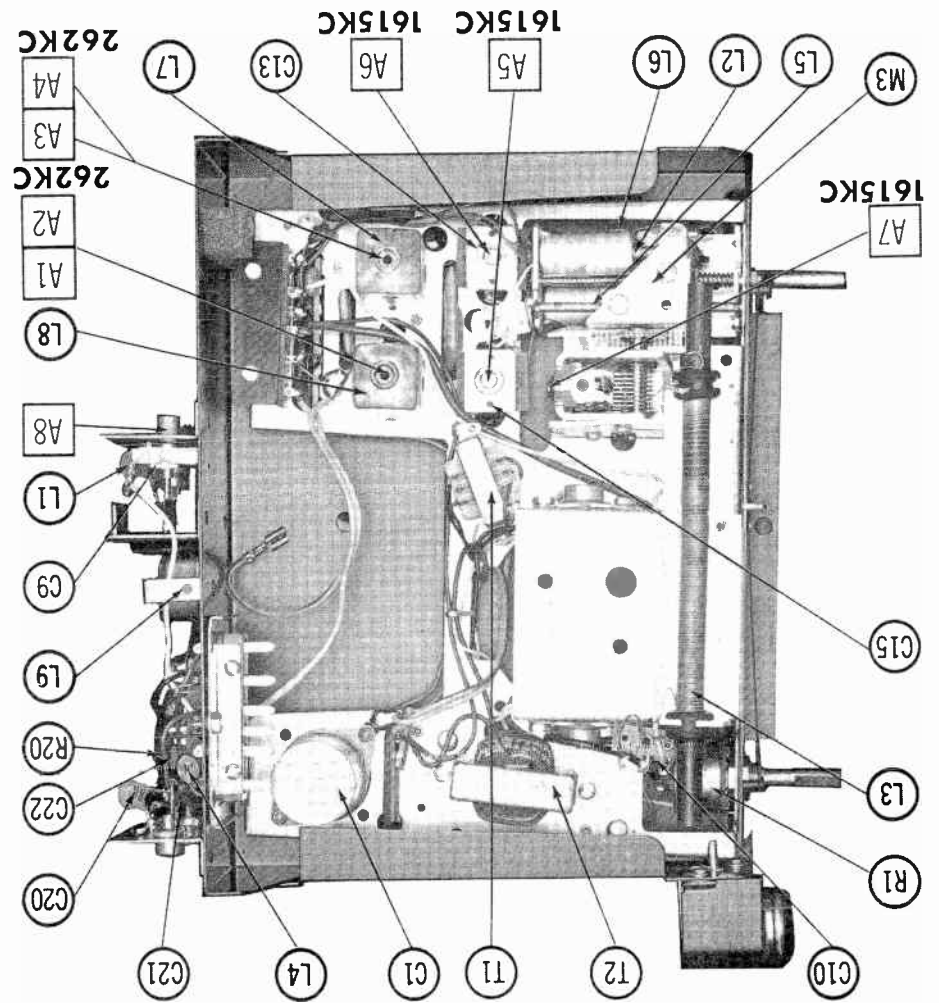
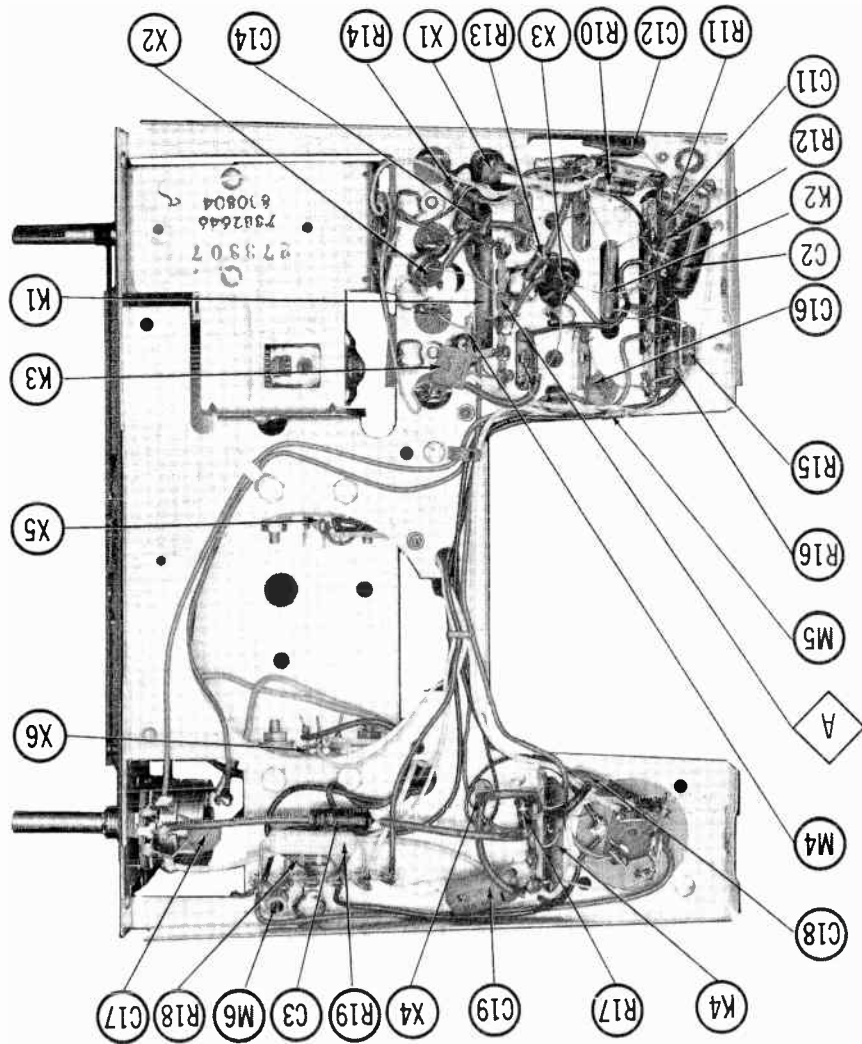
A PHOTOFACIT STANDARD NOTATION SCHEMATIC
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VOLTAGES MEASURED WITH INTERNAL BATTERY * NOT USED IN SOME VERSIONS

1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

TITAN MODEL SP-22

TITAN MODEL SP-22



PARTS LIST 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.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			PART No.	NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
X1		RF Amp. Conv. IF Amp. Driver Output Output	DS-25	GE-1	2N1837	6-80	PNP
X2			DS-25	GE-1	2N1639	6-61	PNP
X3			DS-25	GE-1	2N1638	6-82	PNP
X4			DS-26	GE-2	2N591	6-53	PNP
X5						6-88	PNP
X6						6-88	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		PART No.	REPLACEMENT DATA					MALLORY PART No.	SPRAGUE PART No.
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.			
C1A	500	16	20-2653	AFH3-00-94.5				FP-300.83	PCLS-3026.11	
B	300	16								
C	100	16								
C2	25	15	20-256	PTT69	NLW25-15	MT1-10	MLV25-15	TT15X25	TE-1157.1	
C3	5	15	20-505	CRE454A	NLW5-15	MT1-3	MLV5-15	TT25X5	TE-1152	

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C8		#28-800-1L							
C10	.01 50V	#28-431A	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C11	.05		TTD-05	CK-503	H5	HCC3105P	TA-150	TG-S50	
C12	1mfd 3V	#28-461		UK-105				HY-135	
C13									
C14	270		DI-270	DD-271	LA10T27-C4	CCD-271	GP327	5GA-T27	
C15									
C16	.01 50V		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C17	.01 50V		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C18	.01 50V		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C19	.03 100V		P288N-03	DD-303	DPMS6S3	1DP-1-303	PVC-613	4PS-S30	
C20	.003		DI-3000	DD-302	LA10D3-C4	CCD-302	GP230	5GA-D30	
C21	.01 50V		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C22	.5 200V		P288N-5		DPMS2P5	2DP-5-504	PVC-105	2TM-P50	

Part Number.

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	10K	80A2647	F2-10K,SFS212, KR-4, or (AB-15, AK-33, KR-4)	A47-10K-Z, RS-3/16, SWE-13	B13-116, SK-9, 76-1 or (BU1, CF61, SS4, GC)*	UA14A, SD3500, US-41 or (RU14A, IS1312, SL35, US41) or (U18, DS-37, US-26)

* "SNAPTROL"

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	(1) Part of M3
L2	Ant.	⓪					
L3	Loopstick	10A2862					
L4	RF Choke (6.2uh)	14-6.2	BC-565	4610	RTC-8520	T859	
L5	RF	⓪					
L6	Osc.	⓪					
L7	Input IF	14-2874					
L8	Output IF	14-2875					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L9	270ma	.5Ω	10MH	75A8001	C-4095	TC-2	TR-155	TY17XT	

PARTS LIST AND DESCRIPTION (CONTINUED)

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 (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	5:	1	75A2796					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	24Ω CT	6 Ω	25A2797					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		PART No.	QUAM PART No.	
SP1	4" PM 6-8Ω	73A2665		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PART No.	REPLACEMENT DATA
K1	RF Coupling - Bias	150Ω, 1000Ω, 4700Ω, 47K, .005mfd, .015mfd, .02mfd	89A2583B	
K2	IF Amp. Bias	560Ω, 5600Ω, 47K, (3) .05mfd	89A2584B	
K3	AVC	5600Ω, 180mmf	89A2701	
K4	Audio Bias	470Ω, 820Ω, 4700Ω, 12K, 27K, 270K, .002mfd	89A2585A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	SFE	7 1/2		12A1912B	30707.5	15507.5	SFE 7 1/2	HME

BATTERIES

ITEM No.	VOLTAGE	PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M2	9V		130 (or AL-1)	635 (or E93)	M-14R (or MN1400)	6 Required

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M3 M4 M5 M6	Tuner AVC (1GD2) Det. (1GD2) Bias (1GD10)	78B2646	Includes Tuning Coils and Gang

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Dial Glass Dial Pointer	39-99 84A2930	Knob - Tuning, Volume	47-50C

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
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.)

TITAN MODEL SP-22

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NA-3068 (1963 Rambler American)..... AR-23

NAP-3069 (1963 Rambler American)..... AR-23

NAY-3052 (1963 Chrysler)..... AR-23

NP-3029 (1963 Rambler American)..... AR-23

NU-63-AT..... AR-23

NU-3107..... AR-23

NU-3107A..... AR-28

NY-400 (1960 Chrysler)..... AR-14

NY-598A (1958 Chrysler)..... AR-10

NY-3012 (1963 Chrysler)..... AR-23

NY-3100 (1963 Chrysler New Yorker)..... AR-26

OAE-10 (1960 Oldsmobile)..... AR-14

OAE-4531 (1964 Oldsmobile)..... AR-28

OE-160 (1960 Oldsmobile)..... AR-14

OE-171AT (1961 Oldsmobile)..... AR-16

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PM-236 (1953 Plymouth)..... AR-15

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SB-3032 (1963 Special)..... AR-23

SBP-3033 (1963 Special)..... AR-28

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