



PHOTOFACT[®] with

CIRCUITRACE[®]

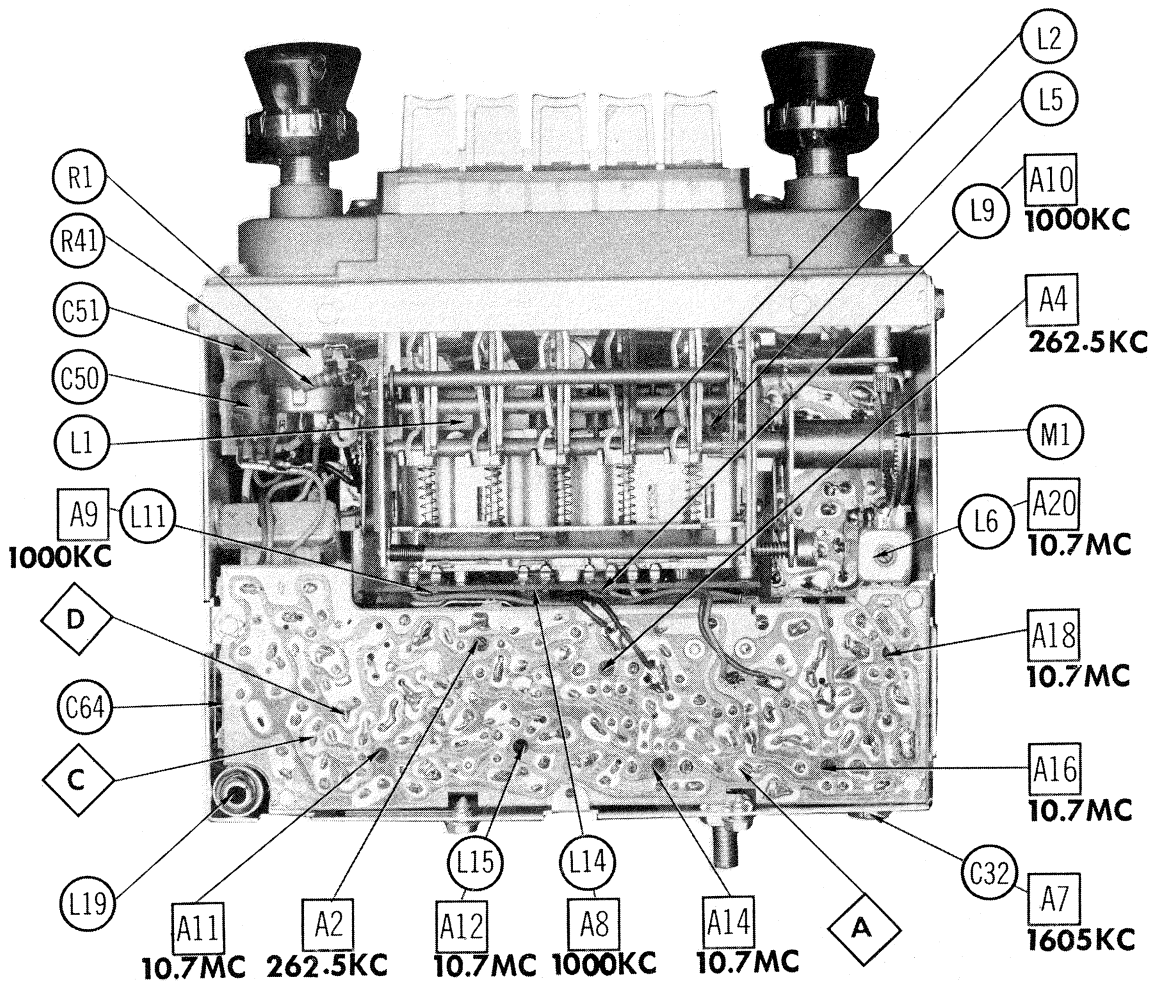
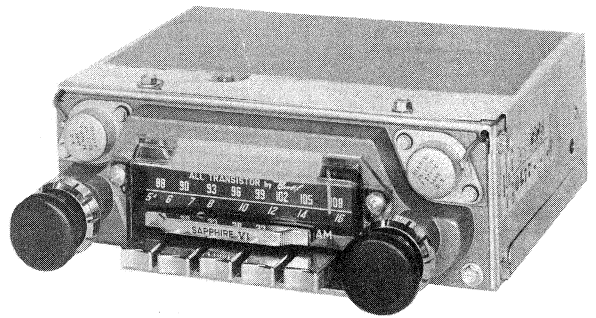
TRADE NAME: Volkswagen Models:
 7FBVG (1967 Karmannhia)
 7FBVT (1967 Transporter)
 7FBVW (1967 Sedan)
 7FBV3 (1967 1600, Type 3)

SUPPLIER: For Current Address, See Annual Index

TYPE SET: 11-Transistor AM-FM Receiver

POWER SUPPLY: 12 Volt Storage Battery

RATING: .25 Amp. @ 12.6 Volts DC



VOLKSWAGEN MODELS 7FBVG, 7FBVT, 7FBVW, 7FBV3

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

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ALIGNMENT INSTRUCTIONS

Check for specified source voltage.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools:
 A1 thru A23. GENERAL CEMENT: 9440
 WALSCO: 2501

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. High side thru .1mfd to point \diamond , 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.
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With radio installed in car and antenna extended 30', tune in a weak station near 1400KC and adjust A7 for maximum output.

FM ALIGNMENT USING AM SIGNAL GENERATOR — SELECTOR IN FM POSITION

High side thru .01mfd to point \diamond , 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.	A11, A12, A13, A14, A15, A16, A17, A18, A19, A20.	Adjust for maximum.
5. "	"	DC probe to point \diamond ; common to ground.	A21.	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 .01mfd to point \diamond , low side to ground. Use only enough marker signal to obtain indication. Use 60% frequency modulated signal with 450KC sweep. Use 120% 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.	A11, A12, A13, A14, A15, A16, A17, A18, A19, A20.	Adjust for maximum gain and symmetry of response similar to Fig. 2 with marker as shown.
5. "	"	Vert. amp. to point \diamond ; low side to ground.	A21.	Adjust A21 (Secondary) to place marker at center of crossover lines similar to Fig. 3. Adjust A 11 (Primary) for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

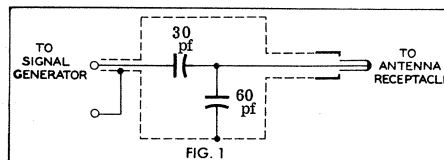
Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

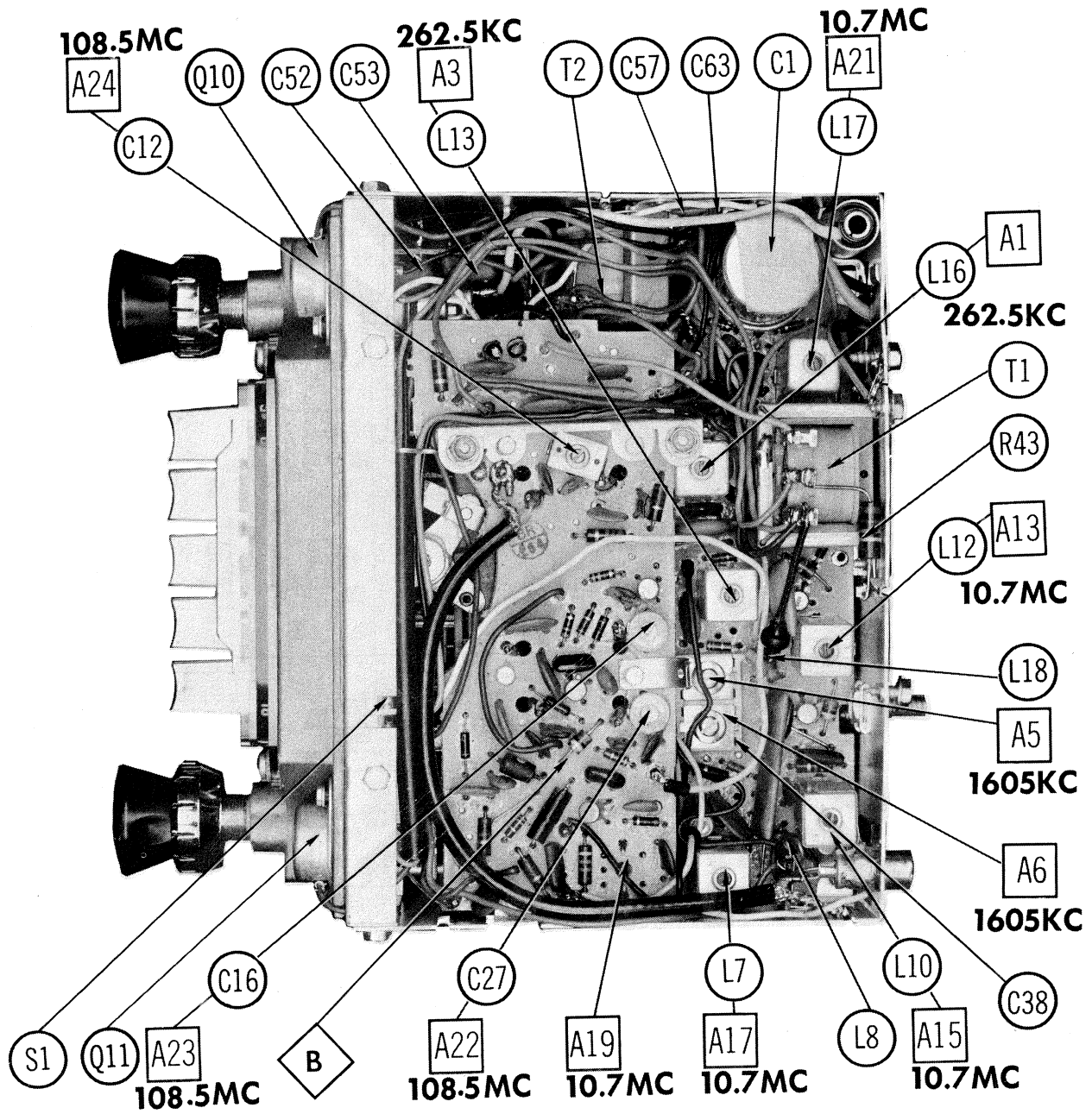
GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
6. 98MC	98MC	DC probe of VTVM to point \diamond ; common to ground.	A22, A23, A24.	Adjust for maximum.

Antenna Adjustment (A7) located right rear.

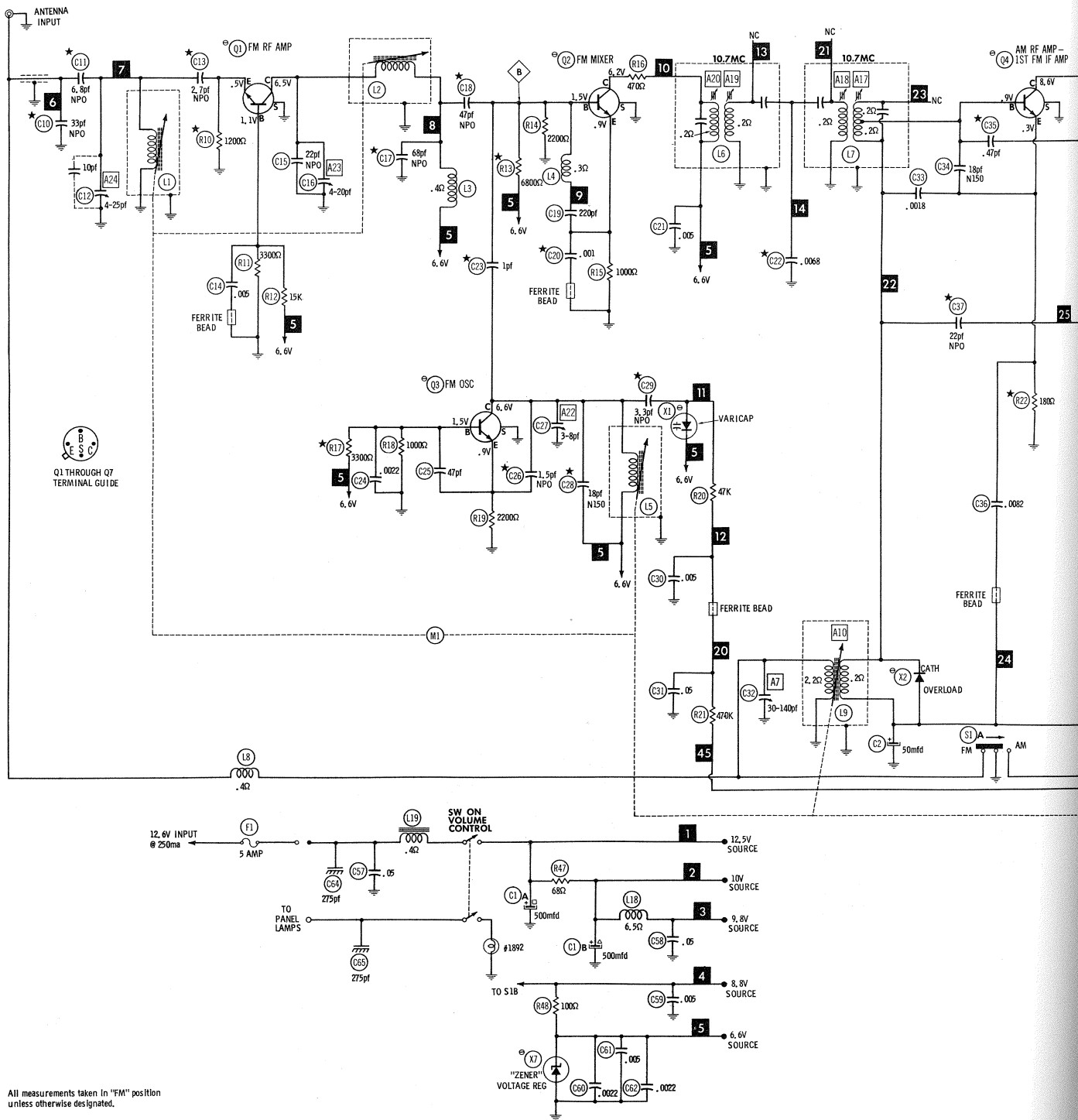
PUSH-BUTTON ADJUSTMENT

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





VOLKSWAGEN MODELS 7FBVG, 7FBVT, 7FBVW, 7FBV3



Q1 THROUGH Q7
TERMINAL GUIDE

All measurements taken in "FM" position unless otherwise designated.

NC No Connection

* Nominal value, may vary.

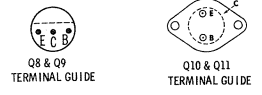
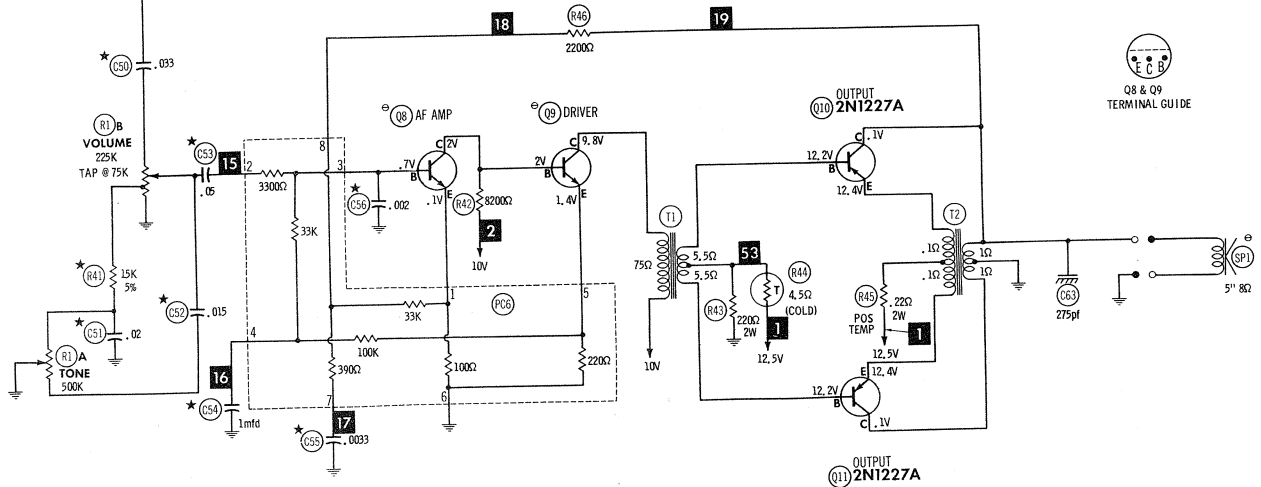
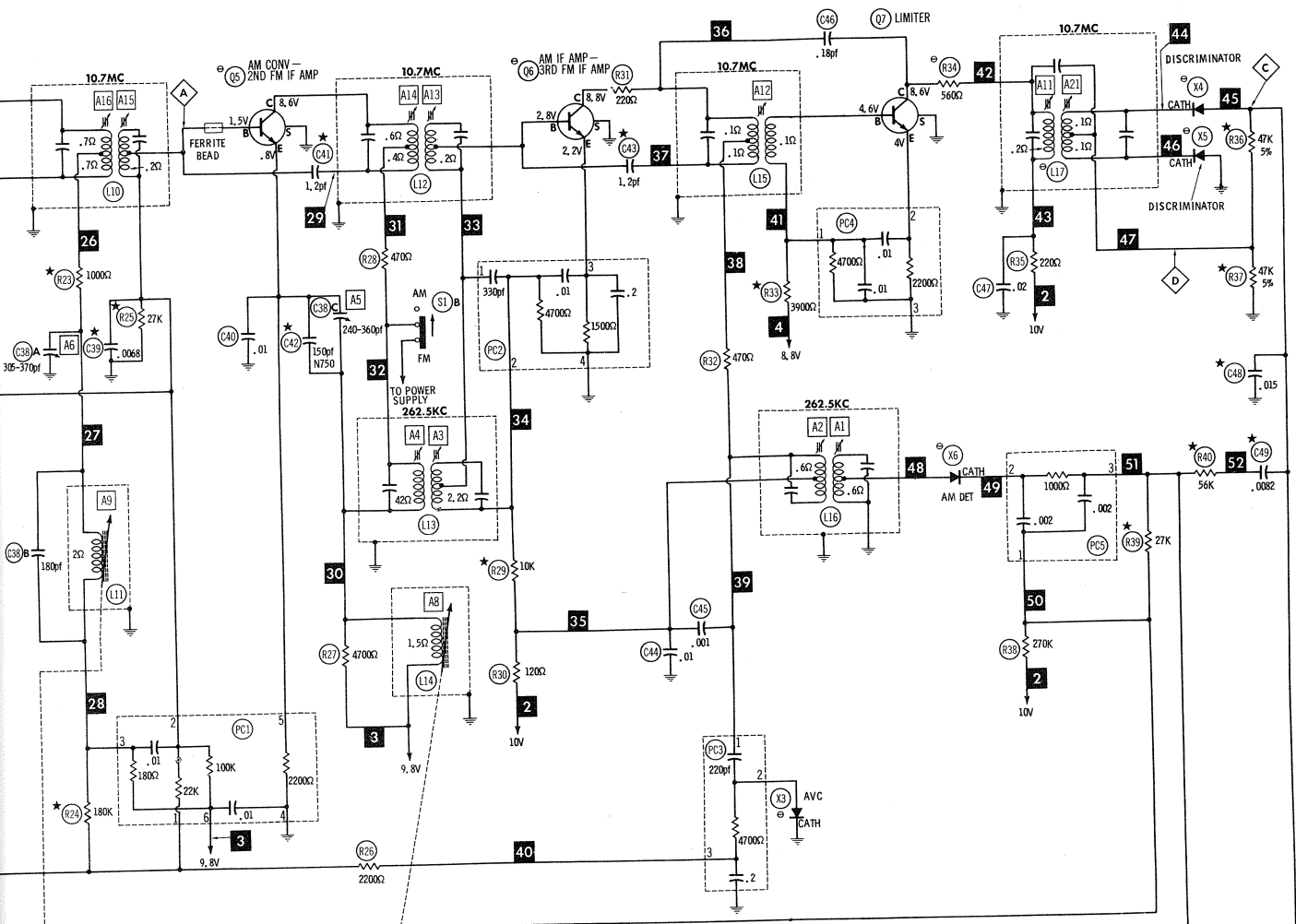
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

⊙ See parts list

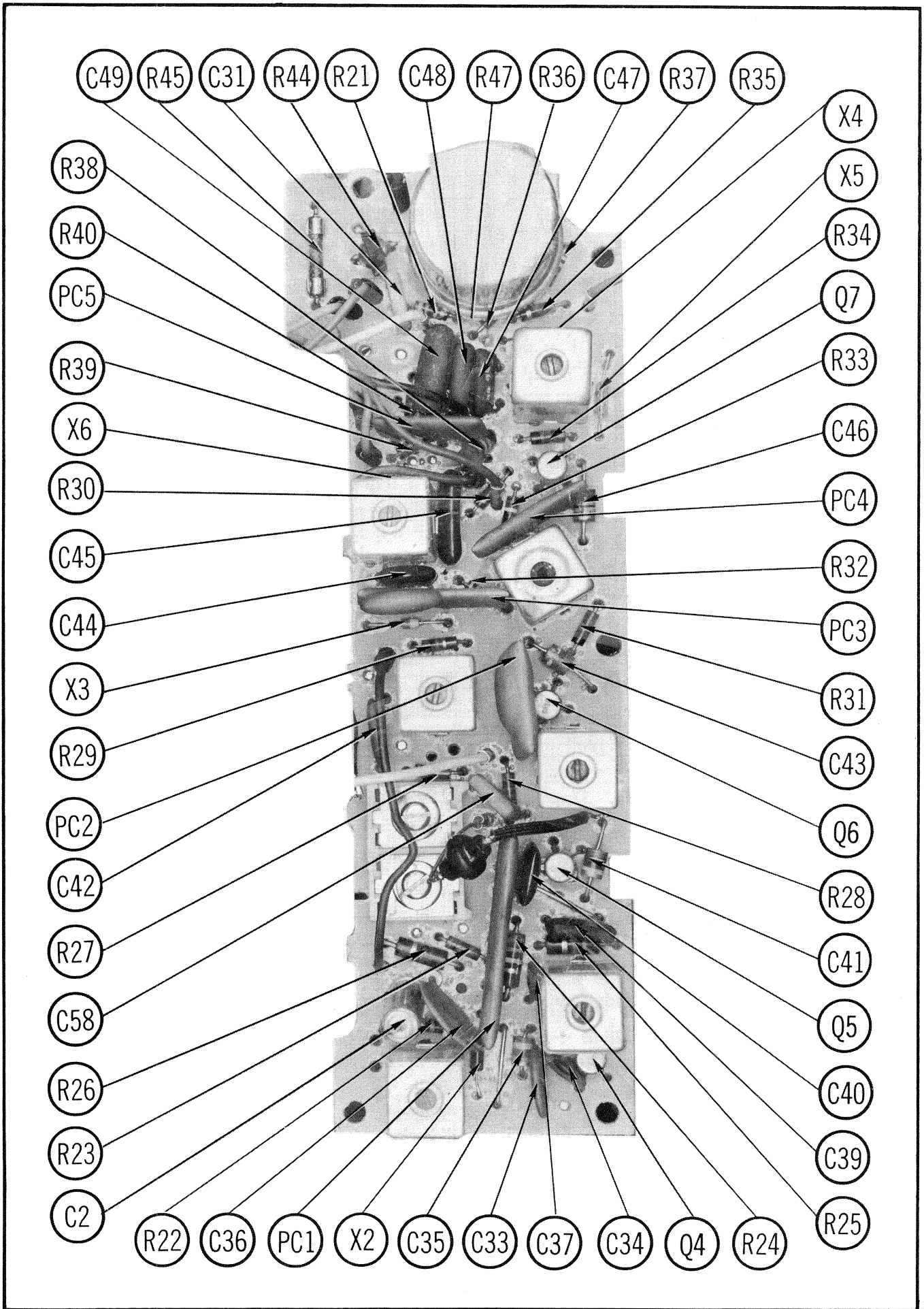
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found 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.

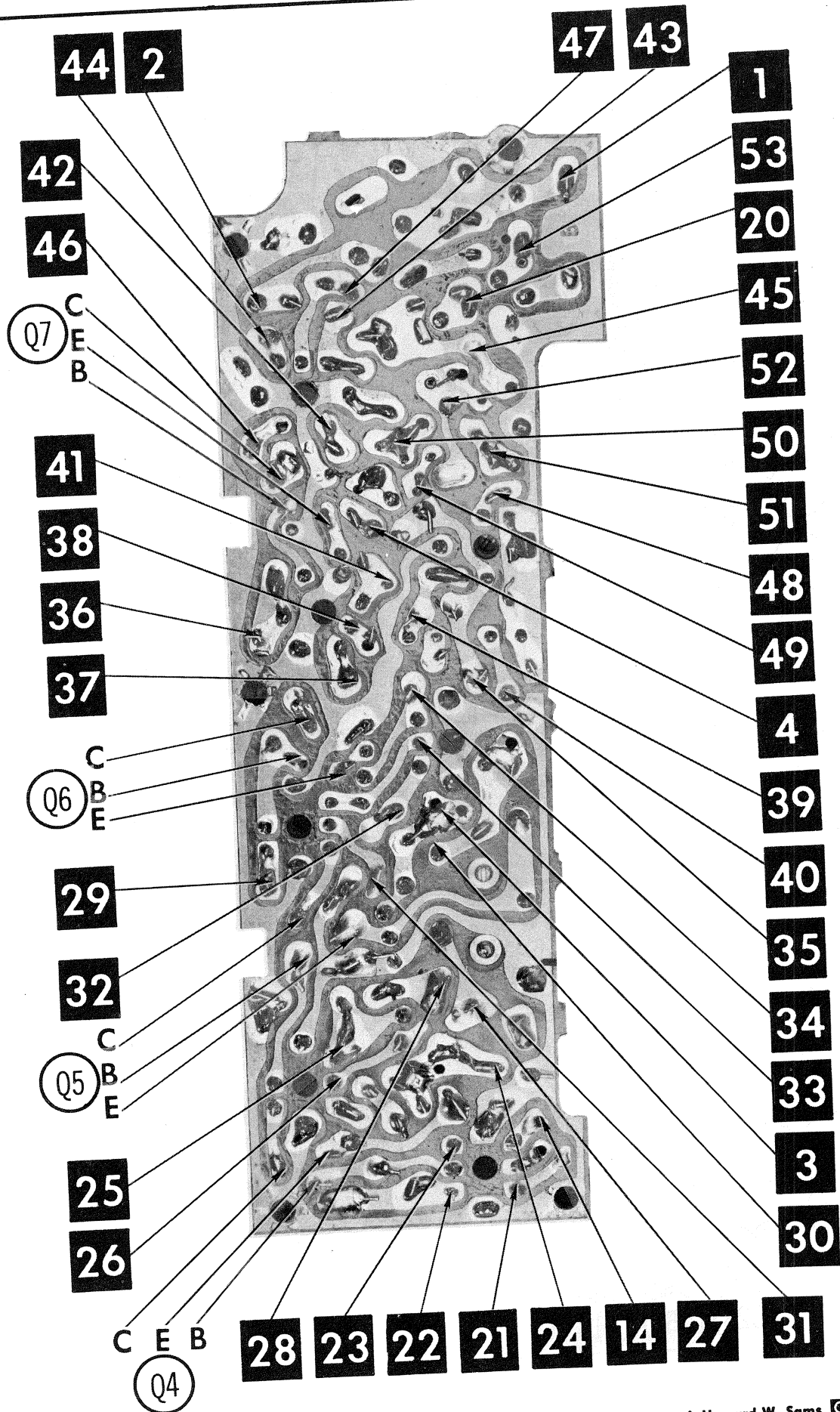
A PHOTOFAC STANDARD NOTATION SCHEMATIC
with **CIRCUITRACE**

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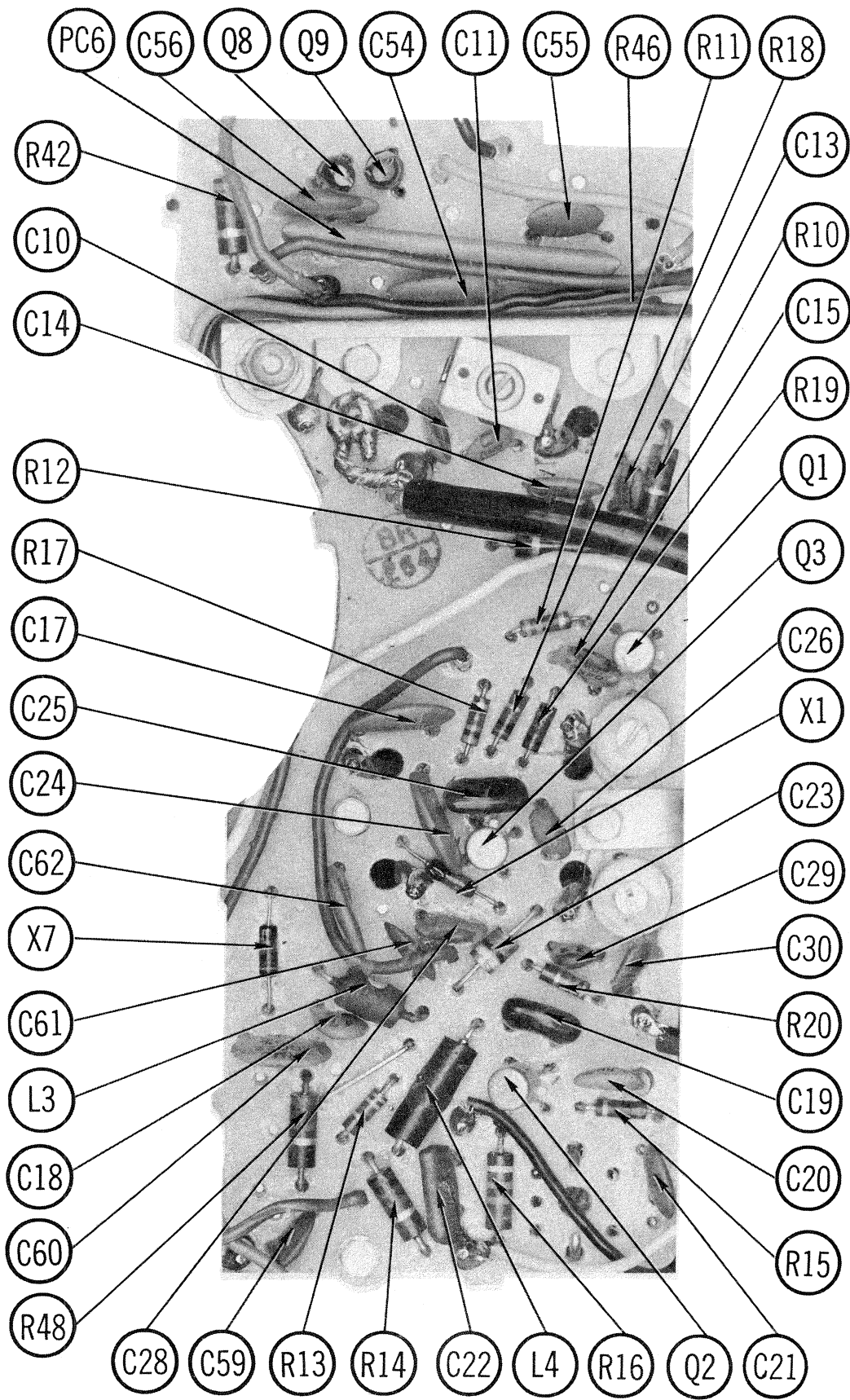


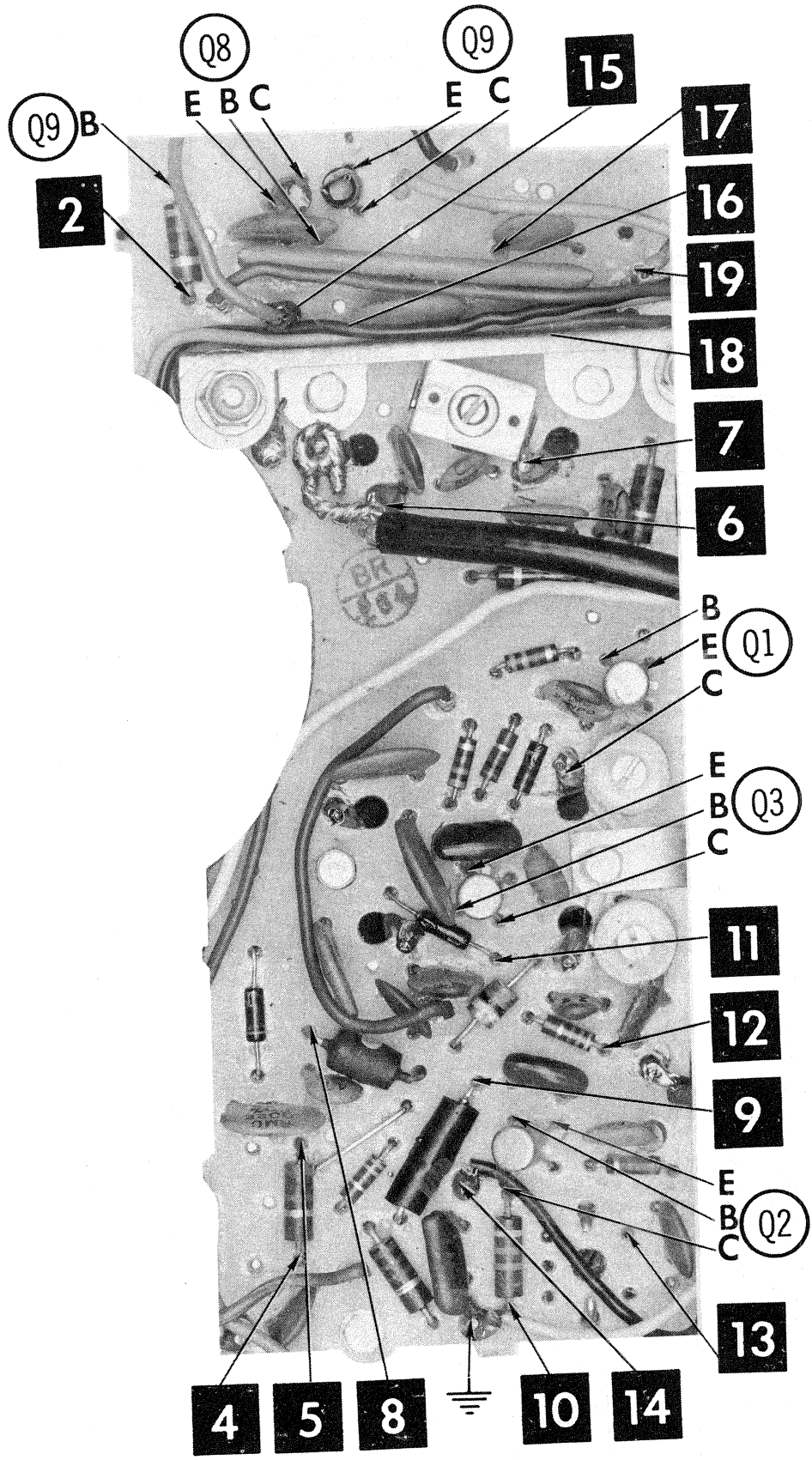
VOLKSWAGEN MODELS 7FBVG, 7FBVT, 7FBVW, 7FBV3





A Howard W. Sams CIRCUITRACE Photo





A Howard W. Sams CIRCUITRACE® Photo

PARTS LIST AND DESCRIPTION

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

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

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				BENDIX PART No.	NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.		
Q1		FM RF Amp	DS-81	GE-11	TR-22	SK-3018	2092417-0711	NPN
Q2		FM Mixer	DS-81	GE-11	TR-22	SK-3018	2092417-0712	NPN
Q3		FM Oscillator	DS-81	GE-11	TR-22	SK-3018	2092417-0713	NPN
Q4		AM RF Amp/1st FM IF	DS-74	GE-11	TR-22	SK-3018	2092418-0715	NPN
Q5		AM Conv/2nd FM IF	DS-74	GE-11	TR-22	SK-3018	2092418-0716	NPN
Q6		AM IF/3rd FM IF	DS-74	GE-11	TR-22	SK-3018	2092418-0717	NPN
Q7		FM Limiter	DS-74	GE-11	TR-22	SK-3018	2092418-0716	NPN
Q8		AF Amp	DS-66	GE-10	TR-21	SK-3020	2092609-0707	NPN
Q9		Driver	DS-66	GE-10	TR-21	SK-3020	2092609-0002	NPN
Q10	2N1227A	Output	DS-520	GE-3	TR-01	SK-3009	2091859-0714	PNP ♦
Q11	2N1227A	Output	DS-520	GE-3	TR-01	SK-3009	2091859-0714	PNP ♦

♦ When replacing, apply silicone 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		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1		2092055-0003					
X2		2092055-0708	1N34AS	1N34A			
X3		2092055-0708	1N34AS	1N34A			
X4		2092055-0007	1N34AS	1N34A			
X5		2092055-0007	1N34AS	1N34A			
X6		2092055-0001	1N34AS	1N34A			
X7		2092055-0710	1N34AS	1N34A			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		BENDIX PART No.	REPLACEMENT DATA				
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	500	16	2091503-0712	PWH2-02-40		XC2-43.05	FPF200.65	PCL-2177
B	500	16						
C2	50	8	2093667-0711	CRE417A	NLW50-10	MT1-16	TT10X50	TE-1119

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	33	NPO	†						
C11	6.8	NPO	†	NPO-DI 33	DTZ-33	CS601CG330K	CCTO-330	CNO433	10TCC-Q33
C12	4-25		†	NPO-DI 6.8	DTZ-6R8	CZ601CH6R8D	CCTO-6R8	CNO568	10TCC-V68
C13	2.7	NPO	†	#2093115-0704					
C14	.005		†	NPO-DI 3.0	DTZ-3R3		CCTO-3R3	CNO533	10TCC-V30
C15	22	NPO	†	TTD-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-D50
C16	4-20		†	NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
C17	68	NPO	†	#2094703-0702					
C18	47	NPO	†	NPO-DI 68	DTZ-68	CX601CG680K	CCTO-680	CNO468	10TCC-Q68
C19	220		†	NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CNO447	10TCC-Q47
C20	.001		†	ADM-15-221	CPR-220J	CD15F221J500	DM-15-221	SX322	MS-322
C21	.005		†	DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C22	.0068	25V	†	TTD-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-D50
C23	1pf		†	DBE6D68	CPR-6800J	WMF1D68	1DP-1-682	PVC4268	6PS-D68
C24	.0022		†	NPO-DI 1.0	TCZ-1	JBX601YP222K	CCD-222	CNO510	10TCC-V10
C25	47		†	DI-2200	DD-222	CD15E470J500	DM-15-470	GP222	10TS-D22
C26	1.5	NPO	†	ADM-15-470	CPR-47J			SX447	MS-447
C27	3-8		†	NPO-DI 1.0	TCZ-1			CNO510	10TCC-V10
C28	18	N150	†	#2094703-0701					
C29	3.3	NPO	†						
C30	.005		†	NPO-DI 3.0	DTZ-3R3		CCTO-3R3	CNO533	10TCC-V30
C31	.05	25V	†	TTD-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-D50
C32	30-140		†	DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50
C33	.0018		†	DI-1500	DD-152		S463		
C34	18	N150	†				CCD-152	GP215	10TS-D15
C35	.47pf		†				*	*	10TCP-Q18
C36	.0082		†	NPO-DI 1.0	TCZ-1			CNO510	10TCC-V10
C37	22	NPO	†	TTD-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-D50
C38A	305-370		†	NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22
B	180		†	#2092422-0718					
C	240-360		†						
C39	.0068	25V	†	DBE6D68	CPR-6800J	WMF1D68	1DP-1-682	PVC4268	6PS-D68
C40	.01	25V	†	DBE4S1	CPR-10000J	DMF2S1	4DP-1-103	PVC211	2TM-S10
C41	1.2		†	NPO-DI 1.0	TCZ-1			CNO510	10TCC-V10
C42	150	N750	†	N750-DI 150	DTN-150		CCTN-151	CN7315	10TCU-T15
C43	1.2		†	NPO-DI 1.0	TCZ-1			CNO510	10TCC-V10
C44	.01	25V	†	DBE4S1	CPR-10000J	DMF2S1	4DP-1-103	PVC211	2TM-S10
C45	.001		†	ADM-20-102	CPR-1000J	CD19F102J500	DM-19-102J	SX210	MS-21
C46	.18pf		†	#2093231-2188					
C47	.02	25V	†	DBE4S22		DMF4S22	4DP-2-223	PVC6122	4PS-S22
C48	.015	25V	†	DBE4S15		DMF4S15	4DP-1-153	PVC6115	4PS-S15
C49	.0082	100V	†	DBE6D82	CPR-8200J	DPMS6D82	6DP-2-822	PVC628	6PS-D82
C50	.033	25V	†	DBE4S33		DMF4S33	4DP-2-333	PVC6133	4PS-S33
C51	.02	25V	†	DBE4S33		DMF4S33	4DP-2-333	PVC6133	4PS-S33
C52	.015	25V	†	DBE4S15		DMF4S15	4DP-1-153	PVC6115	4PS-S15
C53	.05	25V	†	DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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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.
C54	1mfd	†	DI-3300	UK-105	HCX3R0XR105P	CCD-332	MAG31	HY-135
C55	.0033	†	DI-2000	DD-332	JBV601YP332K	CCD-202	GP233	10TS-D33
C56	.002	†	TTD-05	DM-202	JBX601YP202K		GP220	5GAB-D22
C57	.05		DBE685	CK-503	HOV101ZV503Z		TA150	TG-S50
C58	.05	25V	TTD-005	CK-502	HOY101ZV502P	6DP-3-503	PVC615	6PS-S50
C59	.005		DI-2200	DD-222	JBX601YP222K	CCD-502	TA250	TG-D50
C60	.0022		TTD-005	CK-502	HOY101ZV502P	CCD-222	GP222	10TS-D22
C61	.005		DI-2200	DD-222	JBX601YP222K	CCD-502	TA250	TG-D50
C62	.0022					CCD-222	GP222	10TS-D22
C63	275	#2093050-0002						
C64	275	#2093050-0002						
C65	275	#2093050-0002						

BENDIX PART NUMBER

† Nominal Value

* 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				
			BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA B	Tone Volume/Switch	500K 225K Tap @ 75K	2094685-0701	F1-500K, R14-250K, FFS113, RFS206, KR7	NP-500K, NRF1-250K, UPC-B-113, UR-D-206, NWE-23	† QJ-2276A	■ UE4629S

† "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts: B11-133, P17-126 (Panel)
B18-130X, R9-208 (Rear)
76-2 (Switch)

"SNAP-TROL" Equivalent: BU4, CF16, CR29T, SF15, SR51, WF
■ "STA-LOC" Equivalent: FB55L, RU254T753, OS1812A, IS2375, US42

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	BENDIX PART No.			IRC PART No.	WORKMAN PART No.	BENDIX PART No.
R43	220Ω 2W	BWH220		2093141-2221	R45	.22Ω 2W (PTC)			2090948-0007
R44	4.5Ω (cold)			220629-0017					

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				
		BENDIX PART No.	MEISSNER Part No.	MERIT PART No.	MILLER PART No.	WORKMAN PART No.
L1	FM Ant	2056765-001 ①				
L2	FM RF	2056765-001 ①				
L3	RF Choke (2uh)	2092210-0007	19-1002	BC-563	74F226AP	TA812
L4	FM IF Trap (1uh)	2092210-0005	19-1000	BC-561	4602	T855
L5	FM Oscillator	2056767-0001 ①				
L6	1st FM IF	2093587-0706				
L7	2nd FM IF	2093587-0708	19-1002	BC-563	74F226AP	TA812
L8	RF Choke (2uh)	2092210-0007				
L9	AM Antenna					
L10	3rd FM IF	2092421-0717				
L11	AM RF					
L12	4th FM IF	2093587-0703				
L13	1st AM IF	2092419-0720				
L14	AM Oscillator					
L15	5th FM IF	2092421-0718				
L16	2nd AM IF	2092419-0719				
L17	Discriminator	2093856-0702	19-3100	TV-194	6112	T305
L18	RF Choke (100uh)	2092210-0711				

① Part of M1

② Alternate Part Number 2093586-0703

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.	
L19	250 ma	.4Ω	470 uh	2094209-0703					

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	2.2	1	2092192-0706					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			BENDIX PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	25Ω Tap @ 8Ω		2094696-0703					
	TURNS RATIO							
	60	1						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA			NOTES
				BENDIX PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	8Ω	2094857-0701			Model: 7FBVG Model: 7FBVT, 7FBVW Model: 7FBV3
	6"	PM	8Ω	2057037-0701			
	4" X 8"	PM	8Ω	2057038-0701		48A2Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	BENDIX PART No.	REPLACEMENT DATA
PC1	RF Biasing Network	180Ω, 2200Ω, 22K, 100K, .01mfd, .01mfd	2094687-0702	
PC2	Biasing Network	1500Ω, 4700Ω, 330pf, .01mfd, .2mfd	2094688-0701	
PC3	AVC Network	4700Ω, 220pf, .2mfd	2094690-0701	
PC4	Biasing Network	2200Ω, 4700Ω, .01mfd, .01mfd	2094691-0701	
PC5	AM Detector	1000Ω, .002mfd, .002mfd	2094692-0701	
PC6	Biasing Network	100Ω, 220Ω, 390Ω, 3300Ω, 33K, 33K, 100K	2056721-0701	

FUSE DEVICES

ITEM No.	DESCRIPTION		REPLACEMENT DATA						
			PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
			DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	AGA	5Amp	2091811-0009	2094348-0508	AGA5	HAF	301005	155004A	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M1	Tuner	2094066-0511	
S1	AM Coil Assembly	2090131-0097	
	AM-FM Selector Sw.	2056700-0701	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Escutcheon	2094551-0501	Knob, Tone or Dummy Dial Pointer Assembly Push Button	2094480-0001
Dial Glass	2094184-0506		2090129-0085
Knob, Tuning or Volume	2057270-0501		2056519-0001

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.)