

VOLKSWAGEN
6TMV SERIES

MOTOROLA



GENERAL INFORMATION

TYPE

Automotive type all-transistor superheterodyne AM radios; operate from 6 volt negative ground system. Designed for custom installation in the following vehicles:

- Model 6TMVG - Karmann - Ghia
- Model 6TMVT - Volkswagen - Transporter
- Model 6TMVW - Volkswagen Sedan

These receivers contain 6 transistors, 2 diodes and a plated chassis board; they differ from each other in mounting hardware only.

**SERVICE STATION
PROCEDURE**

1. A defective in-guarantee radio must be accompanied by the Customer's Guarantee Policy Tag. This tag must be properly filled in by the Volkswagen dealer at the time of radio purchase. Accept as guarantee repairs only those radios within the 1 year or 12,000 miles (whichever occurs first) guarantee period. The removal or re-installation of this receiver is customarily performed by the Volkswagen dealer and is not covered by this guarantee. Also, the removal of motor noise, tire static, electrical interference, faulty installations and aerial repairs are not considered as guarantee repairs and, therefore, expenses related to such services should be handled by the car dealer.

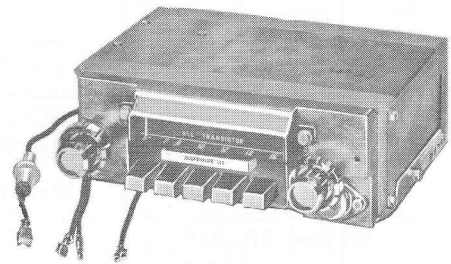
2. Fill in Motorola Guarantee Labor Claim, Part Number 68P60016A30 and mail Green and Pink copies to:

Motorola Guarantee Service
Motorola Automotive Products, Inc.
9401 West Grand Avenue
Franklin Park, Illinois.

3. The yellow copy of the Motorola Guarantee Labor Claim is to be retained by the authorized service station for his files.

4. Defective parts for guarantee repairs made on this model are to be sent to your Motorola Distributor for free replacement supported with the defective parts return tag which you are now using.

5. Only those service shops authorized by their Motorola Distributor can perform guarantee repairs on a no-charge basis to the customer. If you are not already authorized as a Motorola Service Station and you are interested in handling this service, please contact your Motorola Distributor for complete details.



To remove the plated chassis for servicing, unsolder the plated chassis mounting bracket (see photo on Page 2) bend the ears straight, then spread the housing so that the bracket ears will be free of the housing. Lift chassis and bracket to a more servicable position.

NOTE: Since the bracket serves as a chassis ground, an external wire must be connected from the bracket to the radio housing.

After servicing is performed, re-install plated chassis board and bracket, then bend the bracket mounting ears over and solder to housing.

5. When replacing a power output transistor, remember to use the transistor specified in the parts list; coat both sides of the transistor insulator with DC-4 grease (Motorola Part No. 11M490487) and securely tighten the transistor mounting screws. When replacing all other transistors, use long-nose pliers as a heat sink, i. e., grasp transistor leads close to transistor base with the pliers to dissipate heat while soldering.

6. Servicing techniques applicable to these models can be found in the following Motorola publications: "Profitable Transistor Radio Servicing" (Motorola Part Number 68P60011A53) and "A Discussion of Transistorized Car Radios" (Motorola Part No. 68P64980A51).

TO SET PUSHBUTTONS

Unlock pushbutton by pulling it out about 1/2" forward of its normal position. Tune in station and lock the pushbutton to the station by pushing it in firmly.

SERVICE NOTES

1. RADIO POLARITY - WHEN SERVICING THIS RECEIVER, THE "A" LEAD MUST BE CONNECTED TO THE POSITIVE SIDE OF POWER SOURCE. IF CONNECTED OTHERWISE, RECEIVER WILL NOT OPERATE AND DAMAGE TO COMPONENTS MAY RESULT.

2. POWER SUPPLY REQUIREMENTS - It is preferable to use a storage battery (without a battery charger) in place of a battery eliminator. If a battery eliminator is used, it must be well filtered and regulated and adjusted for 7.2 volts.

3. IMPORTANT SERVICE NOTE - It is important that the tape removed from the outside of the radio during servicing be replaced in the same location as originally found; this is necessary to prevent air leaks.

4. PLATED CHASSIS REMOVAL - (NOTE: Before removal of plated chassis, note location of wires and cables; they should be dressed the same when the chassis board is re-installed later.)

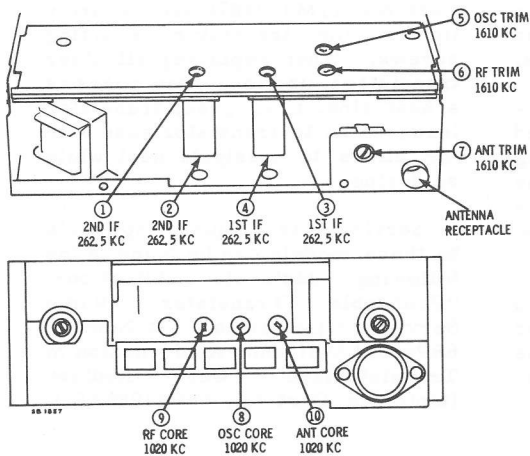
auto radio
MANUAL 68P43100A69
VOLKSWAGEN
6TMV SERIES

ALIGNMENT

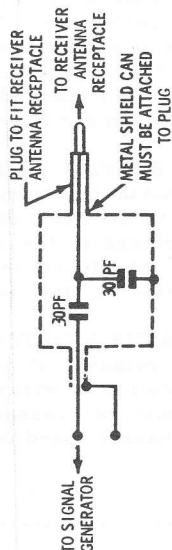
Connect an output meter across the speaker voice coil. Set volume to maximum and tone to treble. Attenuate signal generator output to maintain 2.45 volts (1 watt across 6 ohm load) on output meter at all times to prevent receiver overloading. Cover must be removed to gain access to some of the adjustments.

STEP	GENERATOR CONNECTION	GENERATOR FREQUENCY (400 cycle mod)	TUNER SET TO	ADJUST	REMARKS
IF ALIGNMENT					
1.	Antenna receptacle thru .1mf and chassis	262.5Kc	High end stop	1, 2, 3 & 4	Adjust for maximum.
RF ALIGNMENT					
2.	Antenna receptacle thru dummy (see Figure)	1610Kc	High end stop	5, 6 & 7	Adjust for maximum.
NOTE: Do not perform Steps 3, 4, 5 and 6 unless tuner has been tampered with or components have been replaced. Before proceeding with Step 3, back up tuning cores as far as possible out of coil forms to eliminate their effect on trimmer adjustment. Remove dial scale, dial background, then loosen pilot light bracket mounting screw and turn bracket down to gain access to core screws.					
3.	Antenna receptacle thru dummy (see Figure)	1610Kc	High end stop	5, 6 & 7	Adjust for maximum.
4.	"	1020Kc	Tuner carriage 9/16" from high end stop	8, 9 & 10	Adjust for maximum. Use alignment tool such as GC type 9050-L.
5.	"	1610Kc	High end stop	5, 6 & 7	Adjust for maximum.
6.	Repeat Steps 4 and 5 until no further increase; Step 5 should be last step. Then cement cores in place.				
7.	Final adjustment, align antenna trimmer thru a 53mmf series capacitor	1610Kc	High end stop	7	Adjust for maximum. (NOTE: The 53mmf capacitor approximates the car antenna capacity.)
ANTENNA TRIMMER ADJUSTMENT IN CAR (IF NECESSARY)					
8.	-	--	High end stop	7	Adjust for maximum noise with radio installed in car, antenna fully extended and volume control at maximum, if needed.

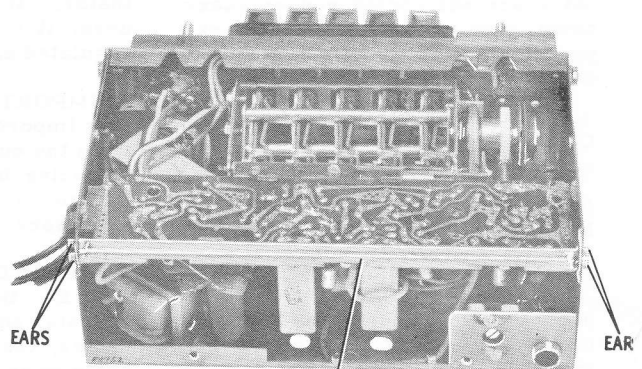
TO CALIBRATE POINTER - Tune radio to 1000Kc signal and bend pointer until center of pointer coincides with the center of the 100Kc mark on dial scale.



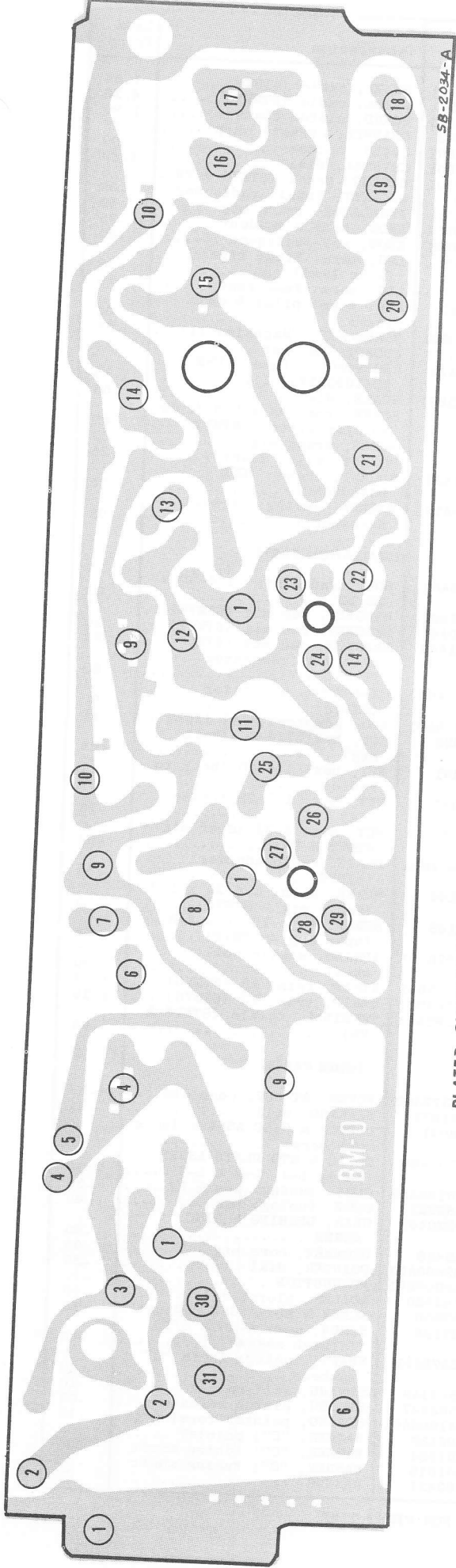
ALIGNMENT POINTS LOCATION DETAIL



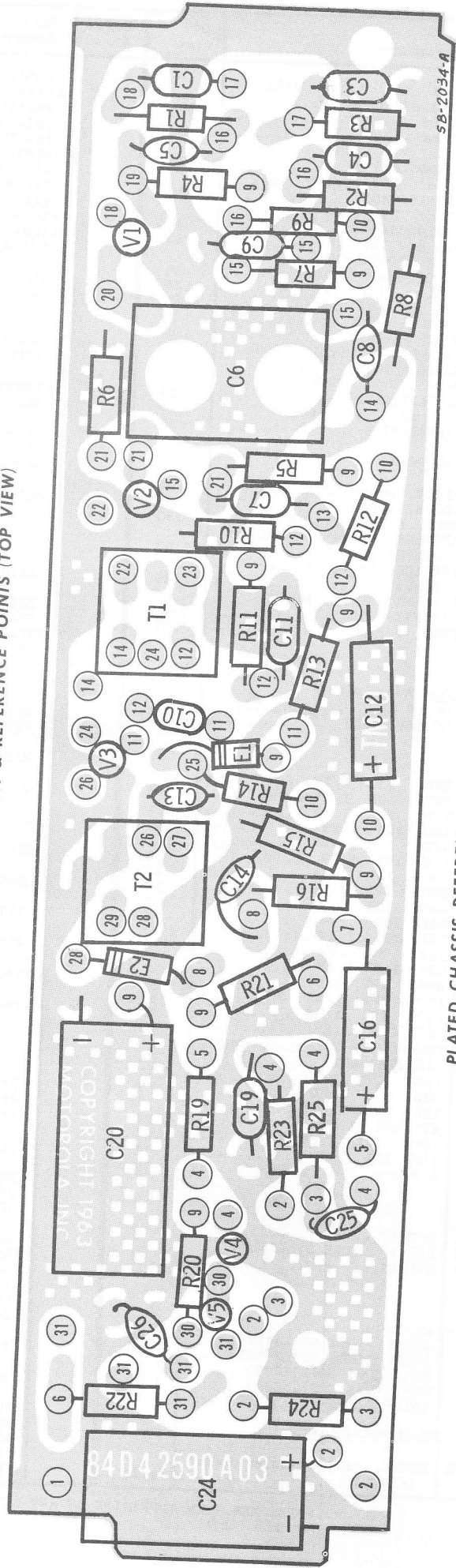
DUMMY ANTENNA



PLATED CHASSIS REMOVAL



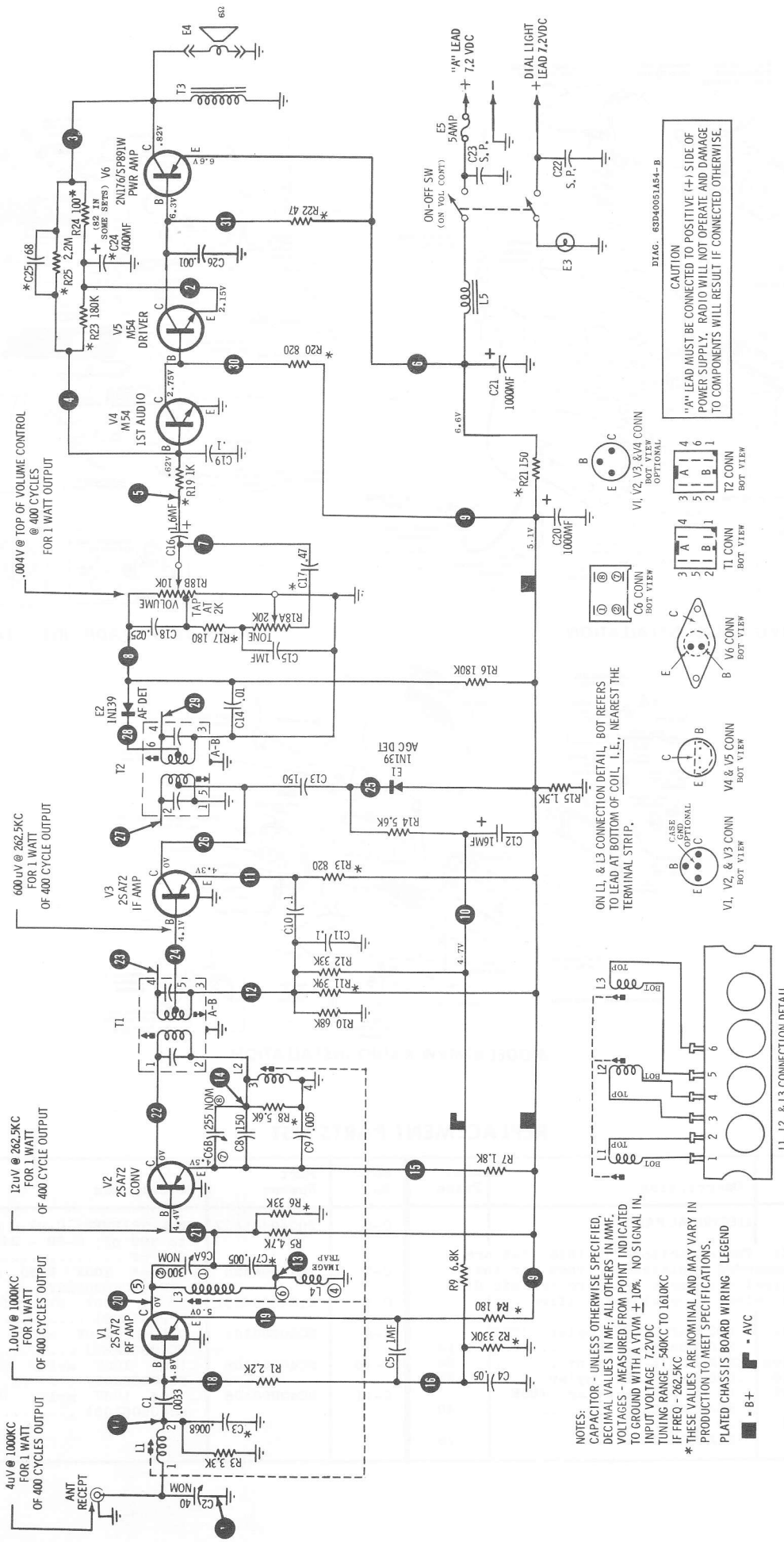
PLATED CHASSIS PARTS LOCATION & REFERENCE POINTS (TOP VIEW)



PLATED CHASSIS REFERENCE POINTS (BOTTOM VIEW)

PLATED CHASSIS REFERENCE SYSTEM

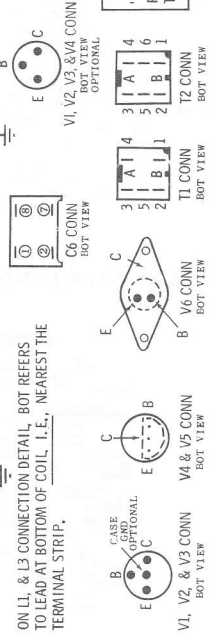
All service points accessible on the bottom of the plated chassis have been cross-referenced to the schematic by the circled reference numbers. To check the voltage at the base of the driver transistor, 1) locate the driver transistor base on schematic, 2) check reference number on schematic, 3) locate reference number on bottom view of plated chassis. To locate any specific part of the plated chassis, use the chassis parts location photo.



NOTES:
 CAPACITOR - UNLESS OTHERWISE SPECIFIED, DECIMAL VALUES IN MF, ALL OTHERS IN MMF. VOLTAGES - MEASURED FROM POINT INDICATED TO GROUND WITH A VTVM $\pm 10\%$. NO SIGNAL IN. INPUT VOLTAGE 7.2VDC. TUNING RANGE - 540KC TO 1610KC. IF FREQ - 262.5KC.
 * THESE VALUES ARE NOMINAL AND MAY VARY IN PRODUCTION TO MEET SPECIFICATIONS.
 PLATED CHASSIS BOARD WIRING LEGEND

■ - B+
 ■ - AVC

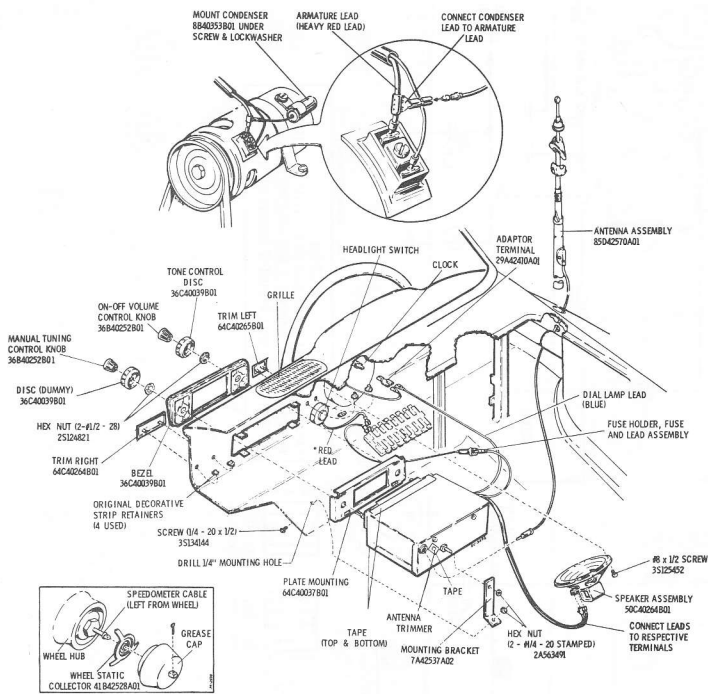
ON L1, & L3 CONNECTION DETAIL, BOT REFERS TO LEAD AT BOTTOM OF COIL, I.E., NEAREST THE TERMINAL STRIP.



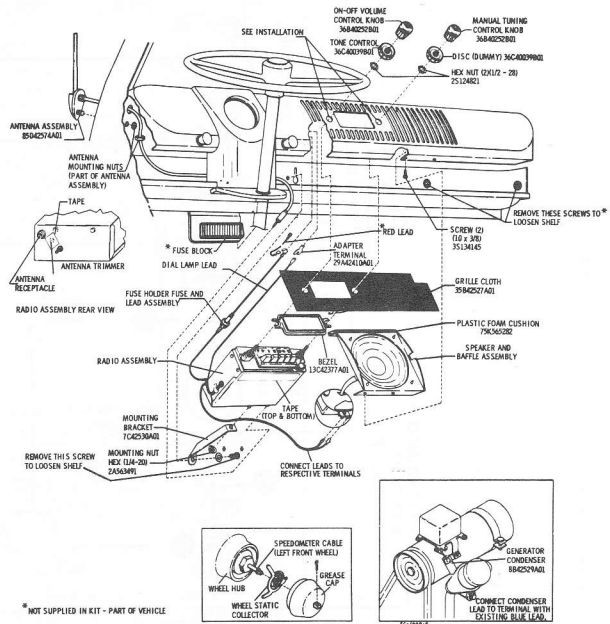
CAUTION
 "A" LEAD MUST BE CONNECTED TO POSITIVE (+) SIDE OF POWER SUPPLY. RADIO WILL NOT OPERATE AND DAMAGE TO COMPONENTS WILL RESULT IF CONNECTED OTHERWISE.

DIAG. 632M0051A54-B

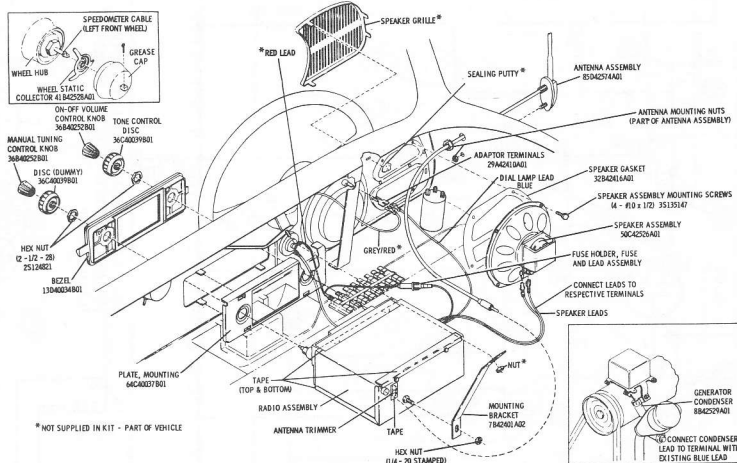
SCHEMATIC DIAGRAM



MODEL 6TMVG RADIO INSTALLATION



MODEL 6TMVT RADIO INSTALLATION



MODEL 6TMVW RADIO INSTALLATION

REPLACEMENT PARTS LIST

Ref. No.	Part Number	Description	List Price	Ref. No.	Part Number	Description	List Price
ELECTRICAL PARTS							
CAPACITORS - NOTE: The capacitors in this list are recommended replacement types for the original equipment; all are ceramic disc type unless otherwise specified.							
C-1	8C40906A31	.0033 mf 100V mylar (USE 21R10052A10)	1.10	C-6	20C40481A07	DUAL TRIMMER: C-6A - 250 to 390 pf; C-6B - 240 to 350 pf	1.45
C-2	20B40944A06	TRIMMER: 5 to 60 pf	.60	C-7	8C40906A25	.005 mf 100V N750 mylar (USE 8C40906A27)	.30
C-3	8C40906A16	.0068 mf 100V mylar	.35	C-8	21D40536A31	150 pf 100V N750 (USE 21R124608)	.25
C-4	8C40906A02	.05 mf 100V mylar (USE 8C40906A23)	.40	C-9	8C40906A01	.005 mf 100V mylar (USE 8C40906A27)	.30
C-5	21K565252	1.0 mf 3V (USE 21K565267)	.75	C-10	8C40906A06	.1 mf 100V mylar (USE 8C40906A05)	.35
				C-11	8C40906A06	.1 mf 100V mylar (USE 8C40906A05)	.35

Ref. No.	Part Number	Description	List Price	Ref. No.	Part Number	Description	List Price
C-12	23C41928A13	16 mf 16V lytic (USE 23C41928A06)90		13C42377A01	BEZEL, radio (6TMVT)	1.55
C-13	21D40339A44	150 pf 100V20		*13B40033B01	BEZEL, radio (6TMVW)	4.20
C-14	21D40339A08	.01 mf 100V20		84D42590A03	BOARD, plated chassis	1.90
C-15	21K564765	1.0 mf 3V (USE 21K565267)75		7B41644A02	CHANNEL, chassis supp15
C-16	23C41928A09	1.6 mf 25V lytic (USE 23C41928A05)90		15D42348A01	COVER, bottom90
C-17	21K564764	.47 mf 3V (USE 21R10003A01)45		*61C40036B01	CRYSTAL, dial	1.30
C-18	21D40339A64	.025 mf 100V35		32B42688A01	GASKET, bezel (6TMVG & VW)..	.15
C-19	8C40906A06	.1 mf 100V (USE 8C40906A05)35		5K611519	GROMMET, insul: radio hsg .	.05
C-20	23C41928A10	1000 mf 10V lytic	1.25		14A543810	INSULATOR, trans mtg10
C-21	23C41928A10	1000 mf 10V lytic	1.25		*36C40039B01	KNOB, tone & pendent35
C-22	64A41668A01	SPARK PLATE05		*36B40252B01	KNOB, vol-tuning-sw40
C-23	64A41668A01	SPARK PLATE05		29A541679	LUG, term: blade type (spkr lead)05
C-24	23C41928A16	400 mf 10V lytic (USE 23C41928A15)	1.55		29C41506A01	LUG, term: fuse recept20
C-25	21D40536A44	68 pf 100V (USE 21D40536A32)25		29K534326	LUG, term: pilot & spkr leads05
C-26	21D40339A72	.001 mf 100V (USE 21K121678)25		*33C40040B01	NAMEPLATE, "Sapphire 111" .	.95
MISCELLANEOUS ELECTRICAL PARTS					9A531066	RECEPTACLE, ant	15
E-1	48C134587	DIODE, 1N13965		9C41095A14	RECEPTACLE, fuse (USE 9C41095A17)	1.15
E-2	48C134587	DIODE, 1N13965		*34B40035B01	SCALE, dial55
E-3	65S125595	BULB, pilot: 1.5A-6.3V30		3S134015	SCREW, tpg: #8 x 5/8 (spkr to spkr plate - 6TMVT) ..	.05
E-4	*50C40261B01	SPEAKER, 5-1/4" PM: 6Ω VC (6TMVG)	6.80		3K560695	SCREW, trans mtg03
	50C42526A01	SPEAKER, 5" PM: 6Ω VC (6TMVW)	7.60		9K564923	SOCKET, pilot light25
	50C42592A01	SPEAKER, 6" PM: 6Ω VC (6TMVT)	8.45		9C40264A03	SOCKET, trans (USE 9C40264A01)25
E-5	65R122345	FUSE, 5 amp07		4C40104A10	WASHER, spring: crystal retainer03
COILS & CHOKES					INSTALLATION PARTS		
L-1, -2, -3		SEE TUNER PARTS		3A40730A01	BOLT, radio mtg: 1/4-20 x 23/32 .....	.03
L-4	24C40788A11	IMAGE TRAP .....	.05	7A42537A01	BRACKET, rec mtg (6TMVG) ..	.15
L-5	25D42032A07	FILTER CHOKE	1.55	7B42530A01	BRACKET, rec mtg (6TMVT) ..	.20	
RESISTORS & CONTROLS					*7B42401A02	BRACKET, rec mtg (6TMVW) ..	.20
R-1	6S129875	2200 10% 1/2W .....	.17	8B40353B01	CAPACITOR, generator (6TMVG & VT) .....	.80
R-2	6S128227	330K 10% 1/2W .....	.17	8B42529A01	CAPACITOR, generator (6TMVW) .....	.90
R-3	6S124506	3300 10% 1/2W .....	.17	29A42410A01	LUG, adaptor: dial light ..	.10
R-4	6S128952	180 10% 1/2W .....	.17	2B521926	NUT, hex: 1/4-20 (bolt mtg) .....	.03
R-5	6S121847	4700 10% 1/2W .....	.17	2A563491	NUT, hex: 1/4-20 (brkt to radio) .....	.03
R-6	6S127632	33K 10% 1/2W .....	.17	2S124821	NUT, hex: 1/2-28 (radio mtg) .....	.15
R-7	6S122445	1800 10% 1/2W .....	.17	2S119959	NUT, hex: 8-32 (spkr mtg - 6TMVT & VW) .....	.03
R-8	6S127005	5600 10% 1/2W .....	.17	*64C40037B01	PLATE, radio adaptor (6TMVG) .....	.45
R-9	6S119930	6800 10% 1/2W .....	.17	3S134144	SCREW, mach: 1/4-20 x 1/2 (radio mtg - 6TMVG) .....	.05
R-10	6S124507	68K 10% 1/2W .....	.17	3S134145	SCREW, tpg: 10-20 x 3/8 (spkr mtg - 6TMVT) .....	.05
R-11	6S125535	39K 10% 1/2W .....	.17	41B42528A01	SPRING, static coil: wheel .....	.40
R-12	6S127632	33K 10% 1/2W .....	.17	*64C40265B01	STRIP, trim: LH (6TMVG) ...	1.05
R-13	6S127534	820 10% 1/2W .....	.17	*64D40264B01	STRIP, trim: RH (6TMVG) ...	1.10
R-14	6S127005	5600 10% 1/2W .....	.17	29A64295A01	TERMINAL, female (6TMVG & VW) .....	.05
R-15	6S127513	1500 10% 1/2W .....	.17	TUNER PARTS		
R-16	6S125531	180K 10% 1/2W .....	.17	*77D42372A03	TUNER, AT-587: complete ..	24.35
R-17	6S128952	180 10% 1/2W .....	.17	43K471633	BEARING, ball .....	.01
R-18	18C42340A01	CONTROL, vol-tone-sw (USE 18C42540A01)	3.00	1V564641	CLUTCH & DISC ASSEM: incl set screw .....	.30
R-19	6S121301	1000 10% 1/2W .....	.17	1V42300A95	COILS & MTG PLATE ASSEM: incls L-1, L-2 & L-3	2.30
R-20	6S127534	820 10% 1/2W .....	.17	76C40706A12	CORE, tuning: ant & RF .....	.35
R-21	6S124797	150 10% 1/2W .....	.17	76K563223	CORE, tuning: osc .....	.40
R-22	6S127542	47 10% 1/2W .....	.17	1B40220A03	GEAR, BUSHING & DISC ASSEM .....	.65
R-23	6S125531	180K 10% 1/2W .....	.17	5B562438	GROMMET, core mtg .....	.03
R-24	6S129221	100 10% 1/2W .....	.17	*52B42600A03	POINTER, dial .....	.20
R-25	6S127001	2.2 meg 10% 1/2W .....	.17	*38D40009B01	PUSHBUTTON .....	.40
TRANSFORMERS					49A562480	ROLLER, clutch rel05
T-1	24D42517A01	1ST IF	1.65	1V562830	SCREW & NUT ASSEM: adjust .	.15	
T-2	24D42517A02	2ND IF (USE 24D42517A04) .	1.85	3A563128	SCREW, set: 4-40 x 5/16 (clutch assem) .....	.15
T-3	25D42101A06	OUTPUT	1.65	1B42375A01	SHAFT, tuning: incl "C" washers .....	.80
TRANSISTORS					41A562449	SPRING, anti-rattle10
V-1	*48S134797	2SA72	1.00	41A562447	SPRING, clutch release .....	.03
V-2	48S134796	2SA72 (USE 48S134797)	1.00	41B41805A01	SPRING, pointer tension .....	.10
V-3	48S134798	2SA72 (USE 48S134797)	1.00	4K692188	WASHER, "C": pointer .....	.03
V-4	48R134667	M54 (USE 48S134809)	1.30	4K501364	WASHER, "C": tuning shaft .	.05	
V-5	48R134667	M54 (USE 48S134809)	1.30	4A501015	WASHER, "C": tuning shaft .	.03	
V-6	48S134749	2N176 (USE 48S134747)	4.15	4A562431	WASHER, cup .....	.03
MECHANICAL PARTS							
	*13B40033B02	BEZEL, radio: incl gasket (6TMVG)	4.25				

*DENOTES NEW ITEM APPEARING ON ANY LIST FOR FIRST TIME