

# SERVICE MANUAL FOR HUDSON

## AUTOMOBILE RADIO RECEIVERS

### SPECIFICATIONS AND CIRCUIT FEATURES

#### SA-39-SIX TUBE DELUXE

##### TUBE COMPLEMENT

6K7G - R. F. amplifier  
6J7G - Oscillator and 1st detector  
6K7G - I.F. amplifier  
6Q7G - 2nd detector, A.V.C., audio  
6K6G - Output  
6X5G - Rectifier

##### TUNING RANGE

540 kilocycles to 1560 kilocycles

##### SPEAKER

Type - dynamic (6 inch)  
Voice coil impedance - 3.5 ohms at  
400 cycles  
Field resistance - 4.5 ohms (cold)

##### OUTPUT RATING

Maximum - 5.1 watts  
Undistorted - 2.6 watts

##### VIBRATOR

Non - Synchronous type

##### POWER RATING

Current drain - 6.6 amp. at 6.0 V.  
Fuse protection - 15 amperes

##### GENERAL SPECIFICATIONS

The following list incorporates the most prominent electrical and mechanical features of this model.

Tuning ratio 17 to 1  
Temperature compensated oscillator circuit.  
All coils of the iron core type.  
Ant. compensator for antenna matching.  
Superior filtering system for reduction of ignition noise.  
Broad band-pass 1st I.F. transformer for high fidelity and easy tuning.

#### DB-39-SEVEN TUBE CUSTOM

##### TUBE COMPLEMENT

6K7G - R. F. amplifier  
6J7G - Oscillator and 1st detector  
6K7G - I. F. amplifier  
6R7G - 2nd detector, A.V.C. and  
audio amplifier  
6V6G - Push-pull beam power output  
6V6G - Push-pull beam power output  
OZ4 - Rectifier

The rectifier socket is wired with filament connections so that a 6X5G can be used in place of the OZ4 if need be. This replacement will necessarily increase the "A" battery drain, but can be used as a temporary substitute.

##### TUNING RANGE

540 kilocycles to 1560 kilocycles

##### SPEAKER

Type - dynamic (8 inch)  
Voice coil impedance - 3.5 ohms at  
400 cycles  
Field resistance - 5 ohms (cold)

##### OUTPUT RATING

Maximum - 8.3 watts  
Undistorted - 5.5 watts

##### VIBRATOR

Non - Synchronous type

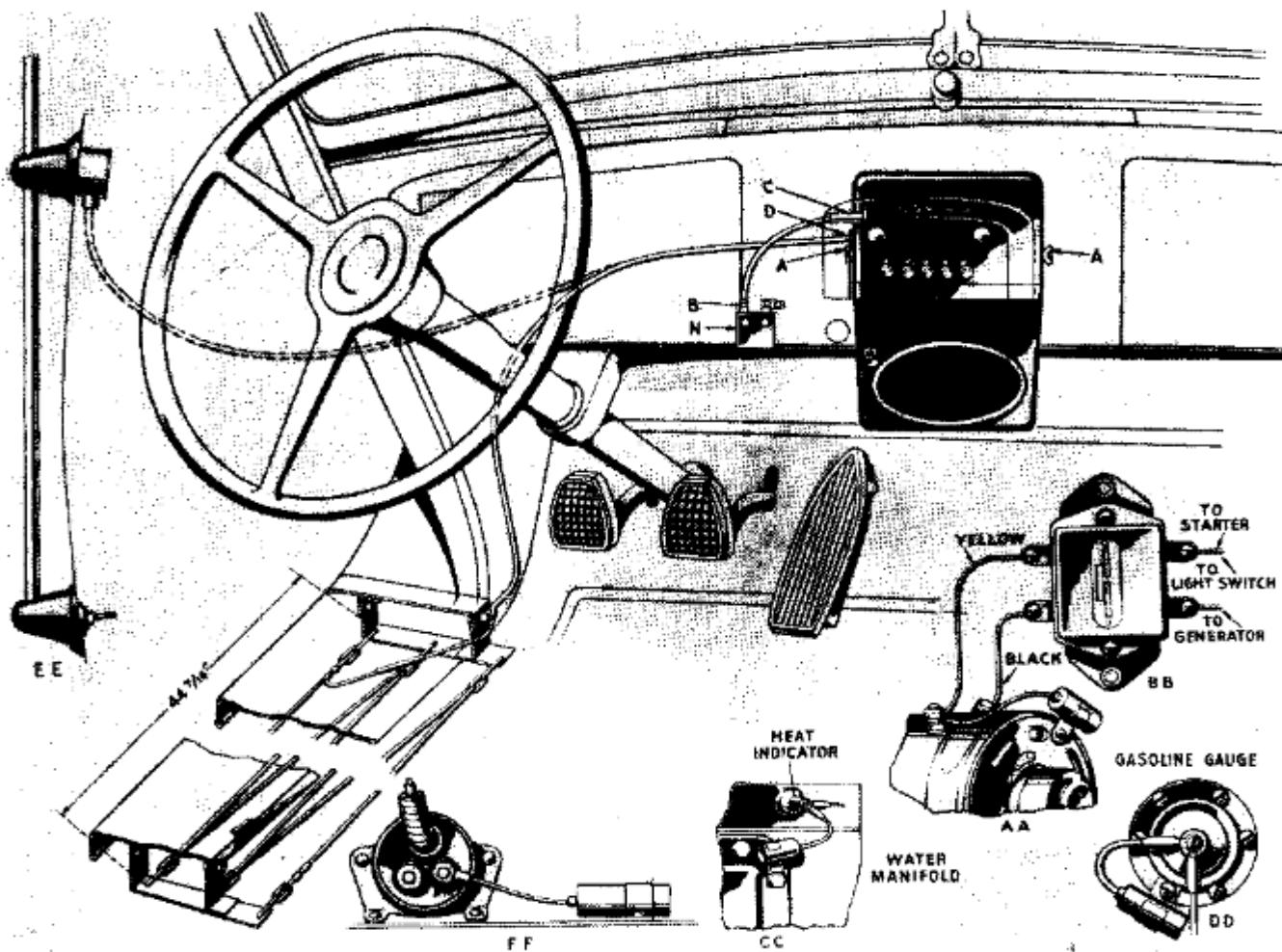
##### POWER RATING

Current drain - 7.1 amp. at 6.0 V.(OZ4)  
Fuse protection - 15 amperes

##### GENERAL SPECIFICATIONS

Tuning ratio 17 to 1.  
Temperature compensated oscillator.  
All coils of the iron core type.  
Ant. compensator for Ant. matching.  
Superior filtering system for reduction of ignition noise.  
Broad band-pass 1st I.F. Transformer.  
Automatic tone compensation.  
Variable tone control.  
Delayed A.V.C. for max. sensitivity.

## INSTALLATION INSTRUCTIONS



## RADIO KITS - 1939 HUDSON

### **RADIO RECEIVER KITS**

HA-157670-6 TUBE RADIO

MODEL SA-39

HA-157671-7 TUBE RADIO

MODEL DB-39

Items included with each kit:

Radio receiver

Mounting brackets

Attaching bolts, nuts & washers

Distribution coil, resistor

Generator condenser (Ident. No. 114151) -  
edition No. 114151

Bent temperature control switch  
set (Ident. No. 114151)

Ignition lead compensator (Ident. No. 114151)

Gas Gauge condenser (Ident. No.  
edition No. 114151)

Station call letter tabs

Station call letter cri. card (Ident. No.

"A" lead and fuse (Ident. No.)

Dial scale chart (Ident. No.)

### **RADIO INSTALLATION KITS**

HA-157647-INSTALLATION KIT

Hudson Six, Monterey Models

HA-157648-INSTALLATION KIT

Hudson Club Six

Hudson Century Club Six

Hudson Custom Club Six

Hudson Special Model

Items included in installation  
kit No. 157647:

Wiring 1. Hudson Club Six, 6 volt

Monterey 6 volt

BIAS lead

BIAS switch (Ident. No. 114151) and  
BIAS wire

Front mounting tabs

Starting selector and buttons

Ground strap, engine

Ground strap, filter

Ground strap, attaching parts

Generator condenser screw and lock  
washers

### **RADIO ANTENNA KITS**

HA-155813-ANTENNA KIT

(Rearview Panel Type)

HA-155814-ANTENNA KIT

(Telescopic Oval Type)

Items included in antenna kits 155813 and 155814:

Antenna

Lead-in

Attaching parts

### **RADIO SERVICE PARTS KIT**

BO-158096-KIT CONTAINING ONLY  
PARTS REQUIRED FOR RAPID  
SERVICING OF MINOR FAULTS.

**INSTALLATION INSTRUCTIONS**  
**FOR**  
**- MODELS -**  
**SA-39-SIX TUBE-DELUXE**  
**DB-39-SEVEN TUBE-CUSTOM**

**RUNNING BOARD ANTENNA INSTALLATION  
INSTRUCTIONS (SEE FIG. ON PG. 2)**

- 1--Assemble front and rear antenna support brackets on left-hand running board with bolts and nuts to clips welded to bottom of running board.
- 2--Mount the antenna under the left-hand running board, starting at the inner hole of the rear bracket with the end opposite the lead-in, working back and forth and stretching to attach the last hook to the outer hole of the front bracket.
- 3--Insert the lead-in through the hole in body floor panel in line with left front door front pillar post (see illustration), leading up behind kick panel. Scrape paint on running board front bracket for good contact and secure lead-in to bracket with bolt and nut. Fasten antenna lead-in to upper left corner of dash with clip No. 55907 by means of dash lining pad clinch button located near choke wire hole.

**TELESCOPIC TYPE ANTENNA INSTALLATION  
INSTRUCTIONS (SEE INSERT 'EE' ON PG. 2)**

- 1--Remove left-hand cowl kick panel. Loosen cowl insulating pad and roll it down.
- 2--Drill two 3/8 inch holes in left-hand side of body cowl panel using template furnished in radio antenna kit. Place top edge of template at lower edge of body belt moulding with right edge of template at front edge of hinge pillar.
- 3--Install antenna stand-off insulators with wedge shape spacers in position so that they fit contour of body panel. From inside of body, assemble lower insulator bushing and secure in place with washer and nut.
- 4--Remove paint from inside surface surrounding upper hole. Remove lead-in connector cap and assemble connector over upper mounting screw and secure in place with washer and nut. Snap connector cap in place on connector.

**RADIO INSTALLATION INSTRUCTIONS**

- 1--Punch out two 11/32 inch knockout plugs on engine side of dash located four inches below center top edge. Clean surface of paint for 1 1/4" circle around holes on engine side of dash.
- 2--Drill two 11/32 inch holes thru dash silencer panels using the above mentioned holes as template.
- 3--Install radio receiver mounting bracket on inside of dash with arms pointing down. Insert two bolts from inside through mounting bracket and dash, assemble plain washers, lockwashers and nuts and tighten nuts securely.
- 4--On Hudson Six and Hudson 112 remove instrument panel center ornament by removing 2 nuts, lockwashers, and cup washers. The ornament can be discarded. On Hudson Country Club Six, Hudson Country Club Eight and Hudson Country Club Custom Sedan models, 2 ornaments on the instrument panel must be removed: (1) the center panel ornament which is held on by two nuts and (2)

the cover plate just above it which is held in place by three screws. These screws are accessible from the back of the instrument panel.

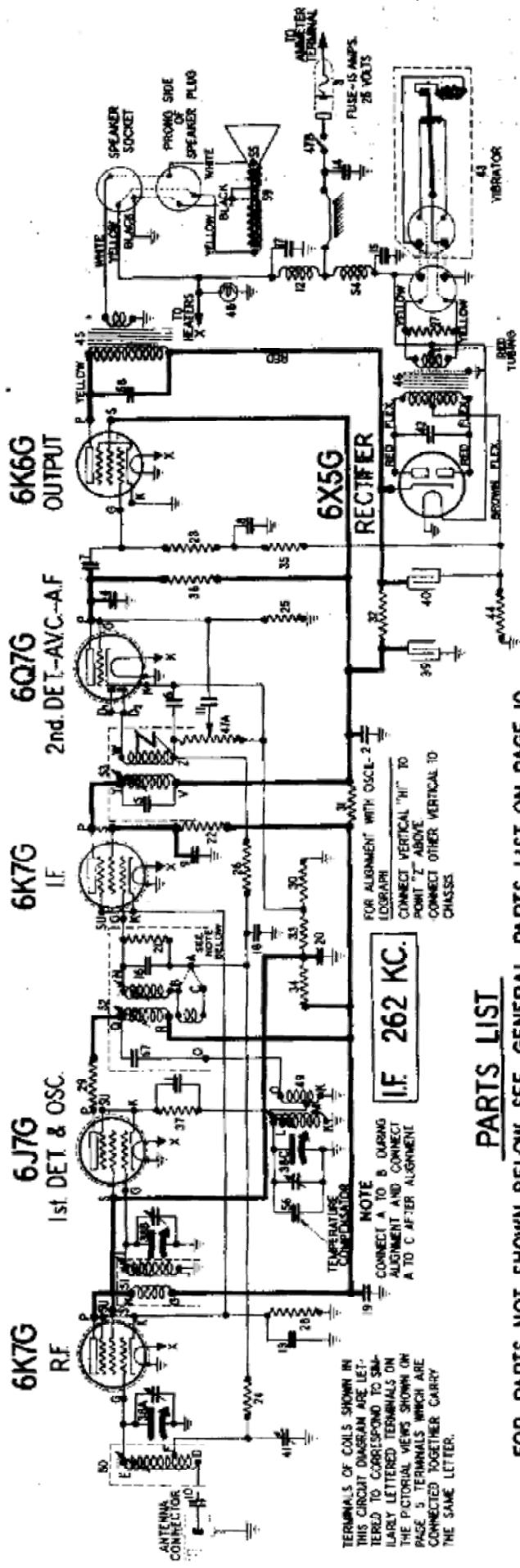
- 5--Install new instrument panel escutcheon securing same with stud nuts.
- 6--Clamp ignition lock condenser, part number 114455 under right hand leg of ignition lock. Connect terminal end of condenser to "AM" terminal of ignition lock.
- 7--Install radio by inserting control shafts through instrument panel from back at the same time guiding studs on receiver into slots in mounting bracket. Replace washers and wing nuts. Install control shaft mounting nuts and tighten securely with special wrench (see note at bottom of page). Tighten wing nuts securely.
- 8--Install control knobs and secure with set screws. Push on the push buttons.
- 9--Attach "A lead" to battery terminal "B" of fuse block "K" and connect to socket "C" on radio receiver being sure that fuse and fuse insulator sleeve are in place.
- 10--Connect antenna lead-in to socket "D".
- 11--Attach one small condenser, part number 114455 on gasoline tank gauge unit with one unit mounting screw, scraping off paint around screw hole. Attach condenser terminal to gauge unit terminal. (Insert "ED".)
- 12--Attach one small condenser, part number 114454 to upper rear cap screw in engine water manifold and attach condenser terminal to terminal of water temperature gauge element. (Insert "CC".)
- 13--Attach large condenser, part number 114456, to rear of generator with machine screw. Scrape paint off around screw hole. Connect condenser terminal to generator "A" terminal (Insert "AA".)
- 14--Install No. 155822 ground strap from the front muffler bracket to chassis frame (except Hudson 112 and Business cars). On Hudson 112 and Business cars install this ground strap from the tail pipe front clamp to chassis frame. The paint must be removed from points of attachment to insure good electrical contact.
- 15--Install No. 155821 ground strap from the center rear cylinder head stud to dash. The paint must be removed from points of attachment to insure good electrical contact.
- 16--Install Suppressor in central terminal of distributor.
- 17--When installing radio on Hudson 112 models, it is necessary to install the high rate generator and charge regulator. (Insert "BB".) Connect "FLD" terminal on side of charge regulator to "F" terminal (engine side) of generator.

NOTE:-This special wrench, part No. J-1059 is to be ordered directly from the Hinckley-Meyers Company, Jackson, Michigan. The price of this special tool is \$ .95.

**-IMPORTANT-**

After the set is installed, the antenna compensator must be adjusted. Carefully tune the set to a weak station between 550 and 650 KC. Remove the chrome plated button located above the name plate on the left side of the set, adjacent to the antenna lead-in plug. Adjust the compensator for maximum volume. This adjustment insures maximum sensitivity.

HUDSON AUTOMOBILE RADIO RECEIVER - DELUXE MODEL SA-39



TERMINALS OF COILS SHOWN IN THIS CIRCUIT DIAGRAM ARE LETTERED TO CORRESPOND TO SIMILARLY LETTERED TERMINALS ON THE PICTORIAL VIEWS SHOWN ON PAGE 5 TERMINALS WHICH ARE CONNECTED TOGETHER CARRY THE SAME LETTER.

## PARTS LIST

FOR PARTS NOT SHOWN BELOW SEE GENERAL PARTS LIST ON PAGE 10.

DIAGNOSTIC INSTRUMENT	TESTS PART NUMBER	DESCRIPTION	TRANS. NUMBER	S.W. PART NUMBER	F.A.T. NUMBER	DESCRIPTION
1-2-----	B15645	Bridge - indica. 100 ohm rd.	32-----	112887	70-156468-Resistor - insulated 82,000 ohms 1 W. 0	
2-----	P15650	Bridge - indica. 100 ohm rd. (120)	74-----	112884	70-156472-Resistor - insulated 82,000 ohms 2 W. 0	
3-----	P15655	Bridge - indica. 100 ohm rd. (158)	75-----	112885	90-156459-Resistor - insulated 82,000 ohms 1/4 W.	
4-----	P15660	Bridge - indica. 100 ohm rd. (196)	76-----	112886	90-156469-Resistor - insulated 220,000 ohms 1/4 W.	
5-----	P15665	Bridge - indica. 100 ohm rd. (234)	77-----	112887	70-156491-Resistor - carbon 5 ohms 1/4 watt (100)	
6-----	P15670	Bridge - indica. 100 ohm rd. (272)	78-----	112888	70-156484-Condenser - variable 0.01 mfd. 4 ohms	
7-----	P15675	Bridge - indica. 100 ohm rd. (310)	79-40-----	114258	70-156481-Cond. - electric - 8 mfd. 4 ohms	
8-----	P15680	Bridge - indica. 100 ohm rd. (348)	81-----	114259	70-156482-Condenser - passive 0.01 mfd. 4 ohms	
9-----	P15685	Bridge - indica. 100 ohm rd. (386)	82-----	112777	70-156483-Coupler - 11 filer .01 rfd. 200 volt	
10-----	P15690	Bridge - indica. 100 ohm rd. (424)	83-----	112898	70-156485-vibrator .01 rfd. 200 volt	
11-----	P15695	Bridge - indica. 100 ohm rd. (462)	84-----	11-3030	70-156487-Dial imp - 5 volt	
12-----	P15700	Bridge - indica. 100 ohm rd. (500)	85-----	114254	70-156488-Oscillator - 200 oh. 2 W.	
13-----	P15705	Bridge - indica. 100 ohm rd. (538)	86-----	114255	70-156489-Transformer - output power	
14-----	P15710	Bridge - indica. 100 ohm rd. (576)	87-----	114256	70-156490-Transformer - power output	
15-----	P15715	Bridge - indica. 100 ohm rd. (614)	88-----	114257	70-156491-Well. Cont. - 500,000 ohms flex. shaft & split	
16-----	P15720	Bridge - indica. 100 ohm rd. (652)	89-----	114258	70-156492-Well. Cont. - 2nd 3.7 ohms	
17-----	P15725	Bridge - indica. 100 ohm rd. (690)	90-----	114259	70-156493-Well. Cont. - 3rd 1.7 ohms	
18-----	P15730	Bridge - indica. 100 ohm rd. (728)	91-----	114260	70-156494-Wire gauge - 100% accuracy	
19-----	P15735	Bridge - indica. 100 ohm rd. (766)	92-----	114261	70-156495-Wire gauge - 2nd 3.7 ohms	
20-----	P15740	Bridge - indica. 100 ohm rd. (804)	93-----	114262	70-156496-Wire gauge - 3rd 1.7 ohms	
21-----	P15745	Bridge - indica. 100 ohm rd. (842)	94-----	114263	70-156497-Wire gauge - 4th 1.7 ohms	
22-----	P15750	Bridge - indica. 100 ohm rd. (880)	95-----	114264	70-156498-Wire gauge - 5th 1.7 ohms	
23-----	P15755	Bridge - indica. 100 ohm rd. (918)	96-----	114265	70-156499-Condensor-temp comp-	
24-----	P15760	Bridge - indica. 100 ohm rd. (956)	97-----	114266	70-156500-Cond. - noise 300 ohms	
25-----	P15765	Bridge - indica. 100 ohm rd. (994)	98-----	114267	70-156501-Condenser - 400 ohms	
26-----	P15770	Bridge - indica. 100 ohm rd. (1032)	99-----	114268	70-156502-Greaterstatistic (5 in	
27-----	P15775	Bridge - indica. 100 ohm rd. (1070)				
28-----	P15780	Bridge - indica. 100 ohm rd. (1108)				
29-----	P15785	Bridge - indica. 100 ohm rd. (1146)				
30-----	P15790	Bridge - indica. 100 ohm rd. (1184)				
31-----	P15795	Bridge - indica. 100 ohm rd. (1222)				
32-----	P15800	Bridge - indica. 100 ohm rd. (1260)				
33-----	P15805	Bridge - indica. 100 ohm rd. (1298)				

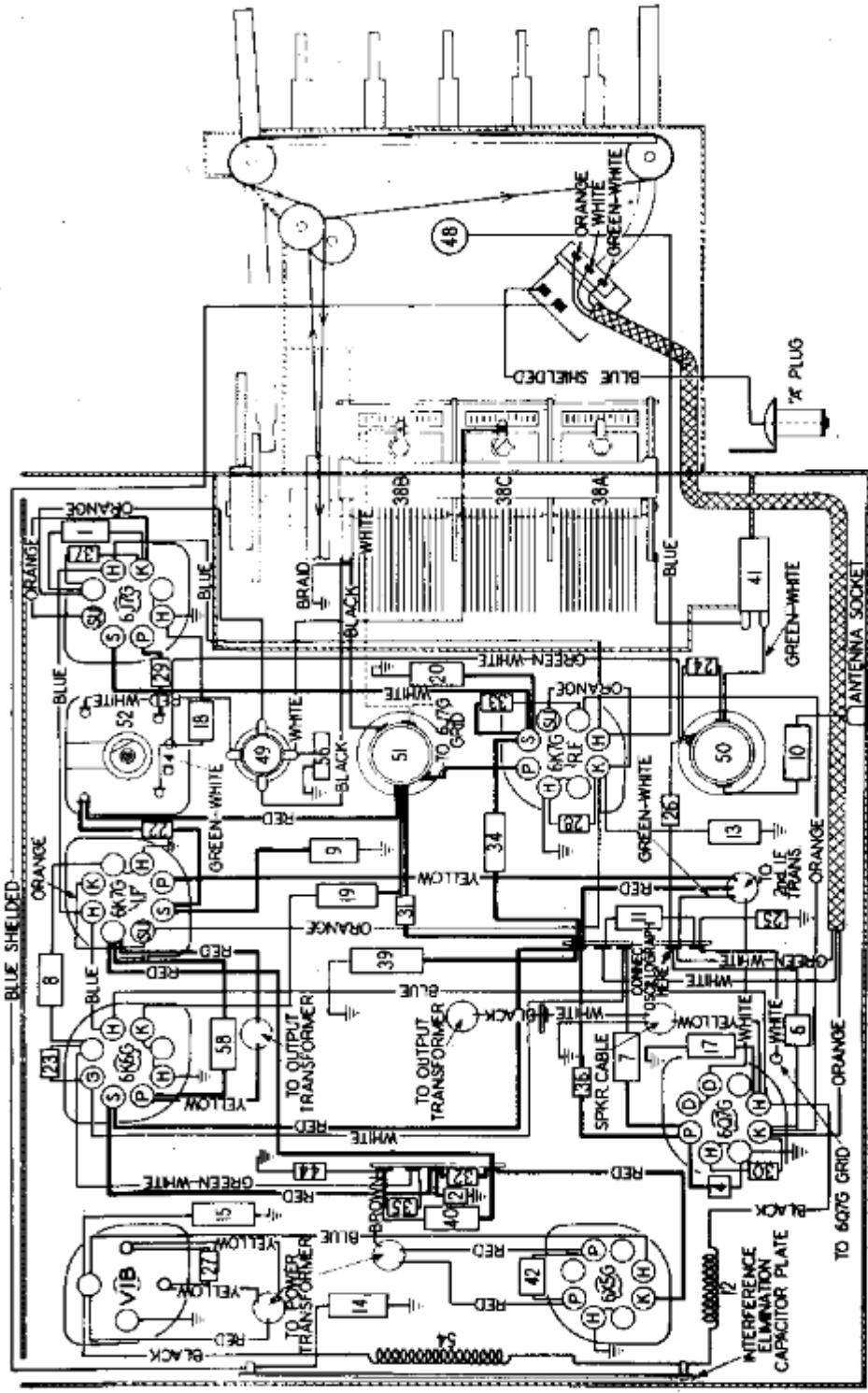
SOCKET VOLTAGES

BOTTOM VIEW OF CHA 3313

**IMPORTANT:** USE HIGH RESISTANCE VOLTMETER OF AT LEAST 1000 OHMS/VOLT.  
**NOTE A:** THE BIAS VOLTAGE ON THE GRID OF THE FETG R.F. AMPLIFIER IS 1.7 VOLTS.  
 AND THE DIODE PLATES OF THE SAW UNITS IS 2.45 VOLTS MEASURED ACROSS  
 RESISTOR NO. 30.  
**NOTE B:** THIS BIAS VOLTAGE ON THE GRID OF THE FETG IS -17 VOLTS MEAS-  
 URED ACROSS RESISTOR NO. 44.

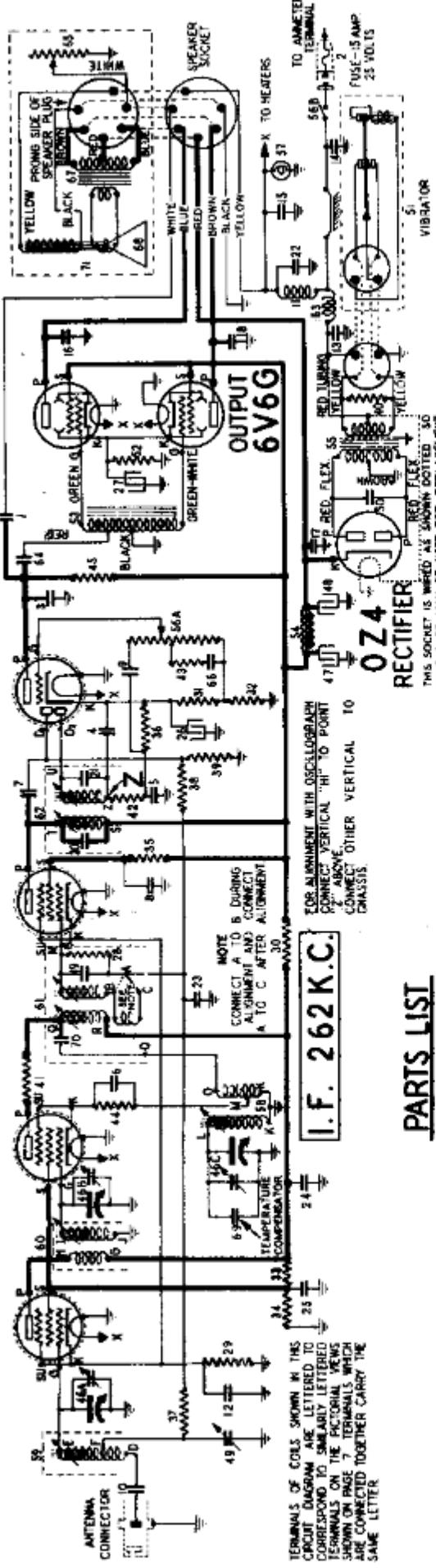
Bo-105SE--Sporter--statistic (5 inch)

# CHASSIS WIRING DIAGRAM & COIL TERMINAL DRAWINGS FOR MODEL SA-39



# HUDSON AUTOMOBILE RADIO RECEIVER - CUSTOM MODEL DB-39

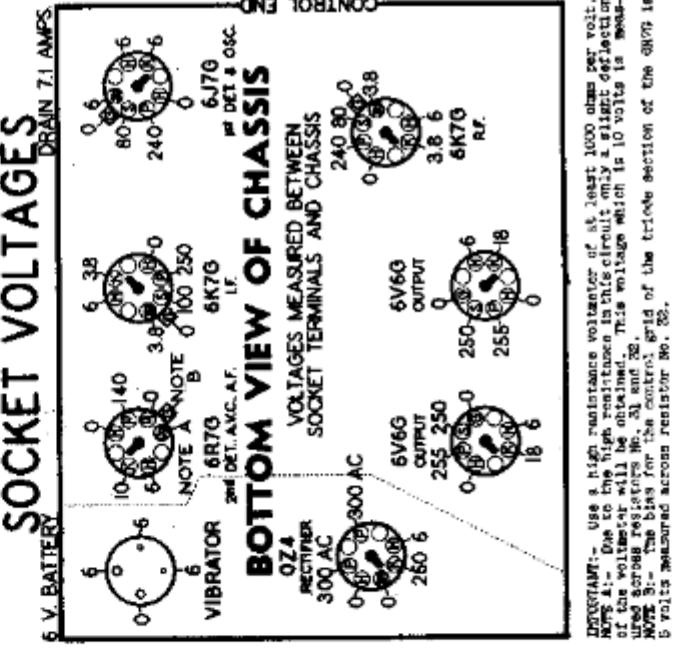
6K7G 6J7G 6R76  
R.F. 1st DET. & OSC. I.F. 2nd DET. A.V.C., A.F.



I.F. 262 K.C.

PARTS LIST  
FOR PARTS NOT SHOWN BELOW  
SEE GENERAL PARTS LIST ON-PAGE 8

S.W. DIAGRAM NUMBER	HUDSON PART NUMBER	DESCRIPTION	HUDSON PART NUMBER	DESCRIPTION
1-----	830007	BO-158445--Condenser-paper .02 mfd. 600V.	44-----	1129869 BO-158449--Resistor - 9500 ohm 5W. (10%)
2-----	832007	BO-158458--Fuse 15 amp. 25 volt.	45-----	1129890 BO-158495--Resistor - 27000 ohm 1/2 watt
3-4-5---	835307	BO-158447--Condenser - mica 250 mfd.	46-----	1129891 BO-158448--Condenser - variable gang
6-----	835319	BO-158449--Condenser - .001 mfd.mica (10%)	47-48-	1114243 BO-158461--Control - variable gang
7-----	842282	BO-158450--Condenser - mica 51 mfd.	49-----	1114244 BO-158461--Control - 8 mfd. 450 volt
8-----	850061	BO-158451--Condenser-paper .02 mfd. 400V.	50-----	1114255 BO-158462--Condenser - padding
9-10----	880298	BO-158452--Condenser-paper .01 mfd. 400V.	51-----	1114277 BO-158463--Condenser - padding .01
11-----	880300	BO-158453--Choke coil (short)	52-----	1114300 BO-158505--Transformer - 2000 volts
12-----	881193	BO-158453--Condenser-paper .25 mfd. 150V.	53-----	1114335 BO-158493--Resistor - wire wound 430 ohms 2 watt. (10%)
13-14----	881195	BO-158454--Condenser-paper .5 mfd. 150V.	54-----	1114350 BO-158507--Transformer - audio input
15-16----	882045	BO-158455--Condenser-paper .2100 mfd.	55-----	1114352 BO-158508--Choke - filter (iron core)
17-18----	882233	BO-158444--Condenser-paper .110 mfd. mica (5%)	56-----	1114354 BO-158509--Transformer - power
19-20-21--	882233	BO-158458--Condenser-paper .25 mfd. 150 volt.	57-----	1114357 BO-158530--Volume control 400,000 ohms
22-----	882096	BO-158459--Condenser-paper .05 mfd. 150V.	58A-----	1114383 BO-158531--With flex. shift. & switch
23-----	886324	BO-158467--Condenser-paper .1 mfd. 400V.	59-----	1114401 BO-158537--Oscillator coil
24-----	886324	BO-158468--Condenser-paper .1 mfd. 400V.	60-----	1114404 BO-158538--Antenna coil
25-----	884271	BO-158459--Condenser-paper .1 mfd. 200V.	61-----	1114410 BO-158541--R. f. coil
26-27----	110377	BO-158460--Cond.-elect. 10 mfd. 35 volt.	62-----	1114411 BO-158544--Transformer - 1st i.r.
28-----	105591	BO-158454--Resistor - 680,000 ohms 1 watt	63-----	1114415 BO-158545--Transformer - 2nd i.r.
29-----	129863	BO-158458--Resistor - 330 ohm 1/4 watt	64-----	1114455 BO-158546--Choke coil (long)
30-----	129864	BO-158471--Resistor - 1800 ohm 1/4 watt	65-----	1114456 BO-158485--Condenser-paper .25 mfd. 400V.
31-32----	129865	BO-158472--Resistor - 6000 ohm 1/4 watt	66-----	1114449 BO-158542--Time control (110,000 ohms)
33-----	12867	BO-158473--Resistor - 71000 ohm 1 watt	67-----	1114481 BO-158492--Condenser - mfd. .005 mfd.
34-----	12867	BO-158474--Resistor - 80000 ohm 1/4 watt	68-----	1114482 BO-158498--Condenser - temperature compensation
35-----	12866	BO-158475--Resistor - 100,000 ohm 1W (10%)	69-----	1114483 BO-158499--Speaker - dynamic (8 ohm)
36-----	12866	BO-158476--Resistor - 100,000 ohm 1/4 watt	70-----	1114490 BO-158449--Condenser - for decoupler
37-----	1128970	BO-158475--Resistor - 350,000 ohm 1/4 watt	71-----	1114491 BO-158547--Cone - vrnice onil assy
38-----	1128971	BO-158477--Resistor - 470,000 ohm 1/4 watt	72-----	1114492 BO-158548--Transformer - output
39-----	1128973	BO-158478--Resistor - 1 megohm 1/4 watt	73-----	1114493 BO-158549--Speaker - dynamic (8 ohm)
40-----	1128976	BO-158480--Resistor - wire wound 220 ohms 1/2 watt	74-----	1114494 BO-158550--Speaker - for custom Model DB-39
41-----	1128977	BO-158481--Resistor - 470,000 ohm 1/4 watt (100 ohms)	75-----	1114495 BO-158551--Speaker - dynamic (8 ohm)
42-----	1128962	BO-158485--Resistor - 27000 ohm 1/4 watt	76-----	1115036 BO-158554--Speaker - dynamic (8 ohm)
43-----	1128966	BO-158480--Resistor - 60000 ohm 1W (10%)	77-----	1115037 BO-158555--Speaker - dynamic (8 ohm)



NOTE: THIS SOCKET IS USED AS A BIAS DOTTED SO THAT 420 MAY BE USED FOR REPLACEMENT SINCE THE 024 HAS NO FILAMENT. THIS REPLACEMENT INCREASES THE BATTERY DRAIN.

(for custom Model DB-39)

## ALIGNMENT PROCEDURE

**THIS MATERIAL APPLIES TO BOTH MODELS SA-39 AND DB-39 UNLESS OTHERWISE INDICATED BY NOTES BELOW.**

TO PROPERLY ALIGN THESE RECEIVERS IT IS ESSENTIAL THAT YOU FOLLOW THIS PROCEDURE **EXACTLY**. BEFORE ALIGNING THE I.F. TRANSFORMERS THE GREEN-WHITE JUMPER LOCATED UNDER THE FIRST I.F. TRANSFORMER MUST BE CONNECTED AS SHOWN IN FIGURES 2 AND 4 OTHERWISE ALIGNMENT WILL BE INCORRECT.

AFTER ALIGNING THE I.F. TRANSFORMERS, TRANSFER THE GREEN-WHITE JUMPER LOCATED UNDER THE FIRST I.F. TRANSFORMER TO ITS ORIGINAL POSITION.

- 1- Connect the output meter across the speaker voice coil or  
 (a) For Model SA-39, connect between the plate of the 5K6G and chassis in series with a .1 mfd. condenser.  
 (b) For Model DB-39, connect between the plates of the two 6V6G output tubes.  
 NOTE:- The more sensitive type of meter should be connected across the voice coil.

- 2- Connect the ground lead of the signal generator to the receiver chassis and leave it connected in this manner throughout the entire alignment procedure.

- 3- Turn the volume control to the maximum volume position.

- 4- With the gang condenser in full mesh, set the pointer to the end of the calibration slot on the low frequency end of the dial scales. This can be done by loosening the set screw in the dial cord drive drum, (see "X" in figure 5 on page 11) holding the gang condenser in full mesh and turning the drum until the pointer is correctly set. Then retighten the set screw in the dial drum.

DUMMY ANT. IN SERIES WITH SIGNAL GENERATOR	CONNECTION OF SIG. GEN. OUTPUT TO RECEIVER	SIGNAL GENERATOR FREQUENCY	RECEIVER DIAL SETTING	TRIMMER NUMBER	TRIMMER DESCRIPTION	TYPE OF ADJUSTMENT
.01 MFD CONDENSER	CONTROL GRID OF 6J7G TUBE	262 KC.	ANY POINT WHERE IT DOES NOT AFFECT THE SIGNAL	1-2	1ST I. F.	IMPORTANT: CHANGE JUMPER ON BOTTOM OF 1ST I.F. TRANSFORMER TO CONNECT TERMINALS A & B INSTEAD OF A & C. (SEE FIGURE 1 OR 3 ON PAGE 9). ADJUST FOR MAXIMUM OUTPUT. THEN REPEAT ADJUSTMENT. (TRIMMER NO. 4 IN MODEL DB-39 ONLY)
CONNECT A 125 MMFD. MICA CON- DENSER TO THE END OF THE SIG- NAL GENERATOR LEAD. CONNECT THE OTHER END OF THE CONDEN- SER TO POINT "X" SHOWN IN FIGURES 1 OR 3 ON PAGE 9.		1350 KC.	1350 KC.	3-4	2ND I.F.	
SAME AS ABOVE		1350 KC.	TUNE TO 1350 KC. GENERATOR SIGNAL	5	OSCILLATOR (SHUNT CONDENSER)	IMPORTANT: CHANGE JUMPER ON BOTTOM OF 1ST I.F. TRANSFORMER TO CONNECT TERMINALS A & C INSTEAD OF A & B. (SEE TRIMMER LOCATION CHART ON PAGE 9). ADJUST TRIMMER TO BRING IN SIGNAL.
SAME AS ABOVE		600 KC.	TUNE TO 600 KC. GENERATOR SIGNAL	6	ANTENNA (SHUNT CONDENSER)	ADJUST FOR MAXIMUM OUTPUT.
SAME AS ABOVE		600 KC.	TUNE TO 600 KC. GENERATOR SIGNAL	7	R.F. (SHUNT CONDENSER)	
SAME AS ABOVE		1350 KC.	TUNE TO 1350 KC. GENERATOR SIGNAL	8	ANTENNA COMPENSATOR (SERIES CONDENSER)	ADJUST FOR MAXIMUM OUTPUT. TRY TO INCREASE OUTPUT BY DETUNING TRIMMER AND RETUNING RECEIVER DIAL UNTIL MAXIMUM OUTPUT IS OBTAINED.
SAME AS ABOVE		600 KC.	TUNE TO 600 KC. GENERATOR SIGNAL	9	ANTENNA (IRON CORE)	ADJUST FOR MAXIMUM OUTPUT.
SAME AS ABOVE		600 KC.	TUNE TO 600 KC. GENERATOR SIGNAL	10	R.F. (IRON CORE)	
SAME AS ABOVE		1350 KC.	TUNE TO 1350 KC. GENERATOR SIGNAL	6	ANTENNA (SHUNT CONDENSER)	ADJUST FOR MAXIMUM OUTPUT.
SAME AS ABOVE		600 KC.	TUNE TO 600 KC. GENERATOR SIGNAL	7	R.F. (SHUNT CONDENSER)	
SAME AS ABOVE		600 KC.	TUNE TO 600 KC. GENERATOR SIGNAL	8	ANTENNA COMPENSATOR (SERIES CONDENSER)	ADJUST FOR MAXIMUM OUTPUT. TRY TO INCREASE OUTPUT BY DETUNING TRIMMER AND RETUNING RECEIVER DIAL UNTIL MAXIMUM OUTPUT IS OBTAINED.

AFTER THE SET IS INSTALLED IN THE CAR, TUNE IN A FAIRLY WEAK STATION NEAR 600 KC. AND ADJUST TRIMMER 8 FOR MAXIMUM OUTPUT.

# TRIMMER LOCATION CHARTS FOR MODEL SA-39.

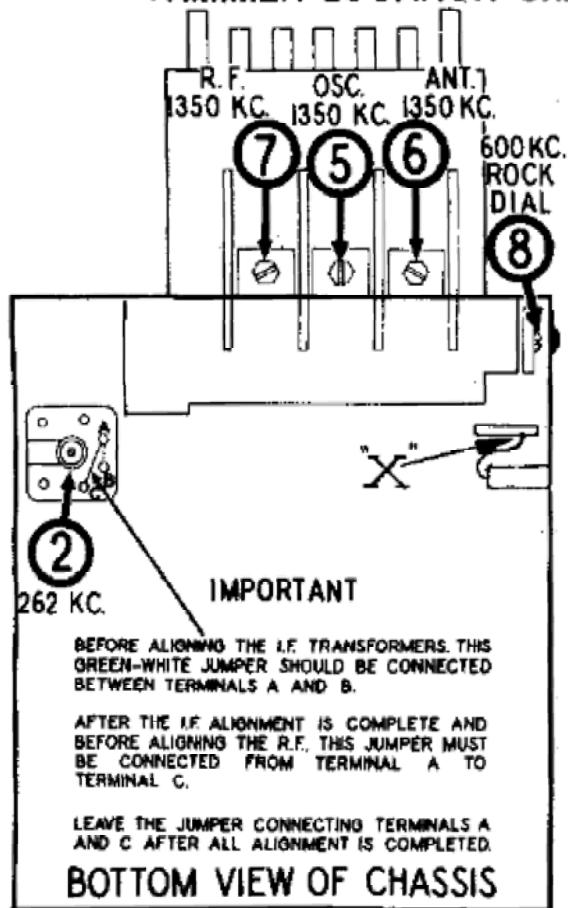


FIG. 1

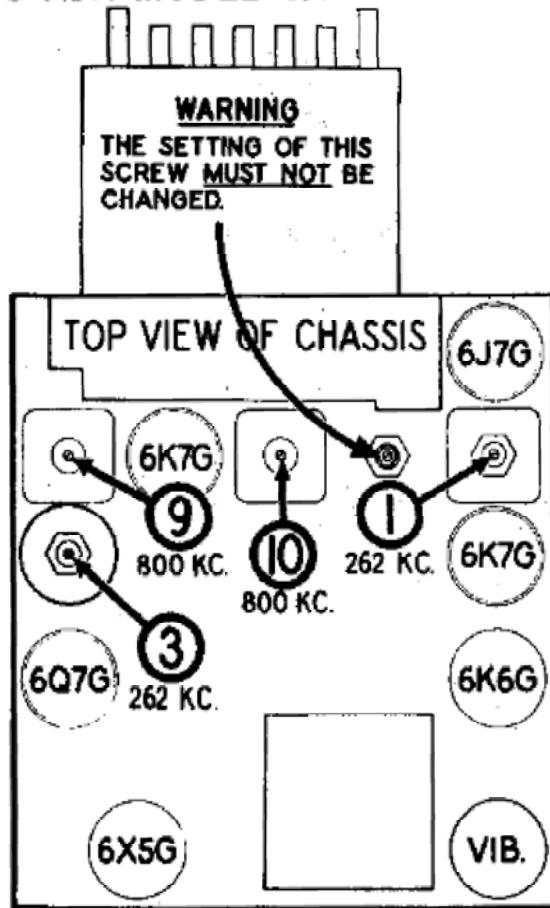


FIG. 2

# TRIMMER LOCATION CHARTS FOR MODEL DB-39.

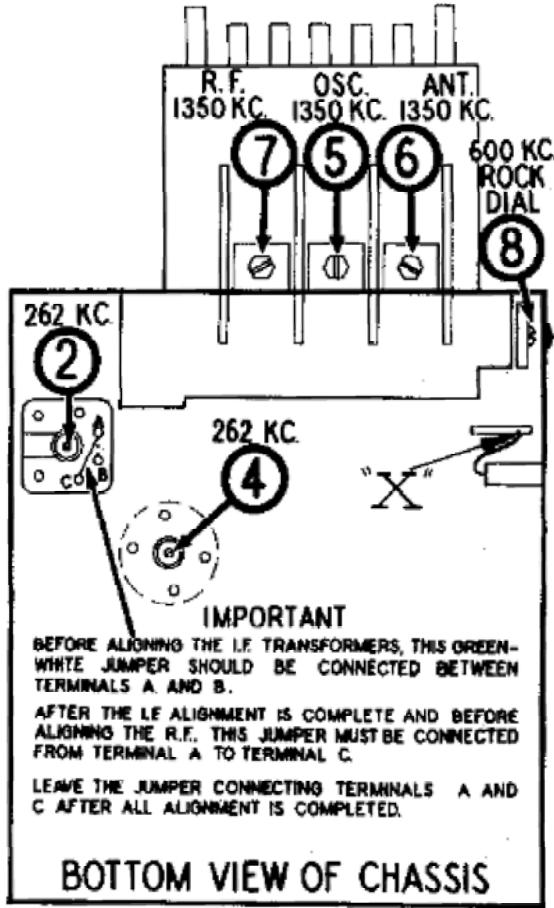


FIG. 3

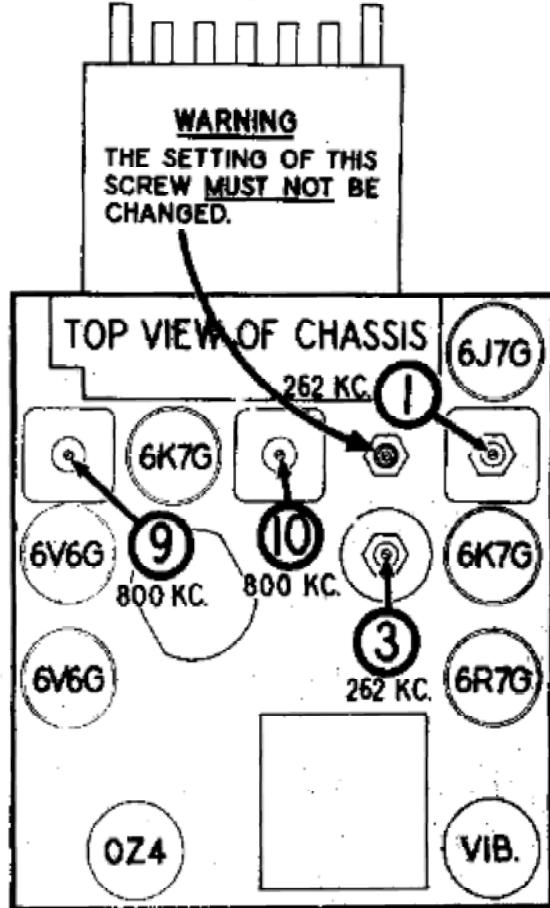


FIG. 4

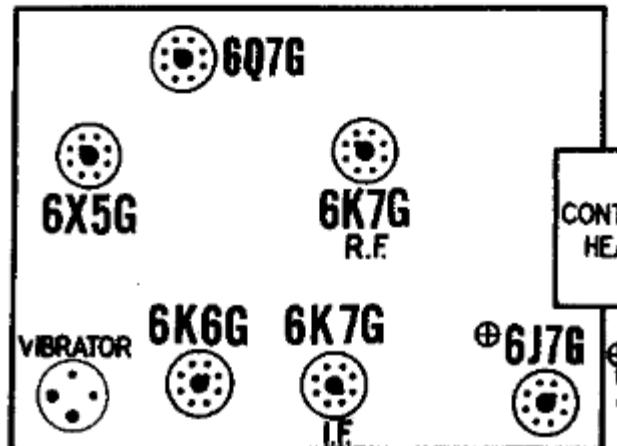
# REPLACEMENT PARTS

FOR ELECTRICAL PARTS NOT LISTED HERE SEE PAGES  
4 AND 6. PARTS LISTED BELOW ARE USED ON BOTH  
MODELS SA-39 AND DB-39 UNLESS OTHERWISE SPECIFIED.

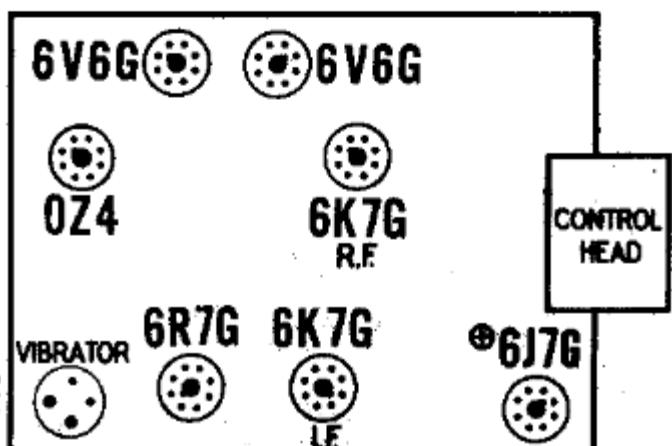
HUDSON PART NUMBER	S.W. PART NUMBER	DESCRIPTION	HUDSON PART NUMBER	S. W. PART NUMBER	DESCRIPTION
<b>RADIO CONTROLS-DIAL PARTS-KNOB-ETC.</b>					
BO-158519	69176	Retaining Ring - for tuning shaft	BO-71153	76908	Washer-lock type-for mtg. brkt. to bulkhead
BO-158572	112764	Snap buttons - dial scale retaining	BO-71389	79028	Washer - for mtg. bracket to bulkhead
BO-158520	113019	Clip - diffusion plate retaining	BO-70674	79029	Nuts - for mtg. bracket to bulkhead
BO-158521	113178	Cord - dial drive (23" required)	BO-155519	89176	Retaining ring for tuning shaft
BO-157684	114272	Push buttons	BO-158346	114254	"C" washer for volume & tuning shafts
BO-158523	114273	Knob - for dial - with metal head(for Hudson 93-95-97)	BO-158570	114257	Nuts-wing type-for mtg. receiver to bracket
BO-158524	114274	Knob - for dial - plain head (for Hudson 90 and 92)	BO-156571	114264	Nuts-to retain nose of receiver to dashboard
BO-158525	114282	Push button adjusting screw	BO-170265	114270	Retaining Bolts - for mtg. brkt. to bulkhead
BO-158529	114324	Spring - tension - for dial cord	BO-157999	114323	Mtg. Bracket - for receiver to bulkhead
BO-158527	114327	Return spring - for push button key	BO-157683	114671	Instructions & Tabs Complete
BO-158528	114344	Celluloid diffusion plate(behind dial scale)			
BO-157684	114356	Tab - celluloid (for push buttons)			
BO-158529	114357	Tabs - station call letters			
BO-158530	114363	Volume control (400,000 ohms) for model DB-39 only (with flexible shaft & switch)			
BO-158531	114384	Volume control (500,000 ohms) for model SA-39 only (with flexible shaft & switch)			
BO-158532	114388	Tuning shaft assembly - flexible	BO-158550	79030	Screws for mtg. nose housing to receiver case
BO-158533	114374	Push button mechanism - complete	BO-158551	88219	Screw - for mtg. trimmer cover on nose
BO-158534	114377	Gear & Pinion - for manual drive	BO-158552	110236	Anti Rattle clips for case
BO-158536	114378	Dial drum & bushing (for cord drive)	BO-158553	114225	Speaker case (model SA-39) bottom cover
BO-158536	114279	Spring - for manual tuning shaft operation	BO-158554	114227	Speaker case (model DB-39) bottom cover
BO-158537	114401	Dial lamp - 6 volts	BO-158555	114229	Receiver case - less cover - less nose - less speaker case (Model DB-39)
BO-158538	114434	Dial lamp socket	BO-158558	114233	Top cover for case (model DB-39 only)
BO-157997	114457	Dial scale (brown) for Hudson 92	BO-158557	114244	Ornamental chrome ring - on speaker opening (model DB-39)
BO-157996	114458	Dial scale (gold) for Hudson 90 & 98	BO-158558	114280	Rubber gasket - for nose
BO-157996	114459	Dial scale (light tan) for Hudson 93, 95 & 97	BO-158559	114336	Receiver case - less cover - less nose - less speaker case (model SA-39)
BO-158522	114510	Dial pointer	BO-158560	114339	Trunk clamp - upper section
BO-157685	114870	Retaining spring on push buttons	BO-158561	114341	Trunk clamp - lower section on speaker case
BO-153205	114685	Set screws - for tune or volume knobs	BO-158562	114347	Nose housing complete (model DB-39 only)
<b>RADIO CHASSIS PARTS</b>					
BO-158496	63207	Fuse 15 amp. 25 volt	BO-158563	114333	Speaker grille - for model DB-39 only
BO-158497	63319	Fuse Insulator Tube	BO-158564	114471	Cover - on nose - for trimmer opening
BO-158498	65427	Socket - octal base (standard)	BO-158565	114472	Speaker grille - for model SA-39 only
BO-158500	88262	Vibrator socket (4 prong)	BO-158566	114473	Gasket - for speaker mtg. (model DB-39)
BO-158501	110087	Antenna lead receptacle	BO-158567	114473	Nose housing complete (model SA-39 only)
BO-158502	112664	Shield - for tubes	BO-158568	114473	Plug button - (chrome plated) in case
BO-158503	114252	Base for tube shield	BO-158569	114480	Top cover for case (model SA-39 only)
BO-158504	114253	Clamp - for vibrator			
BO-158505	114300	Vibrator			
BO-158510	114380	Cap - for tube shield			
BO-158518	114480	Ammeter end of "cable-with fuse housing			
<b>SUPPRESSOR EQUIPMENT</b>					
BO-161299	114386	Distributor suppressor	BO-158533	114333	Special knob-for tone control(on spkr.case)
BO-152021	114454	Condenser - for temperature gauge	BO-158540	114471	Cable & plug (6 prong) for M-115036 speaker
BO-151402	114455	Condenser - for gas gauge or electrolox	BO-158541	114479	Cable & plug (3 prong) for R-115023 speaker
BO-152022	114456	Condenser - for generator	BO-158542	114481	Tone control (100,000 ohms)
			BO-158543	R114483	Plug-on speaker-3 prong (for model SA-39)
			BO-158544	114484	Plug-on speaker-8 prong (for model DB-39)
			BO-158545	R114487	Cone - voice coil assem. for R-115023 spkr.
			BO-158546	M114488	Transformer - output (for M-115036 speaker)
			BO-158547	M114489	Cone - voice coil assem. for M-115036 spkr.
			BO-158548	114501	Special speaker mtg. nuts
			BO-158549	R115023	Speaker-dynamic(6") (for DeLuxe model SA-39)
			BO-158549	M115036	Speaker-dynamic(8") (for Custom model DB-39)

## TUBE LOCATIONS

### DELUXE MODEL SA-39

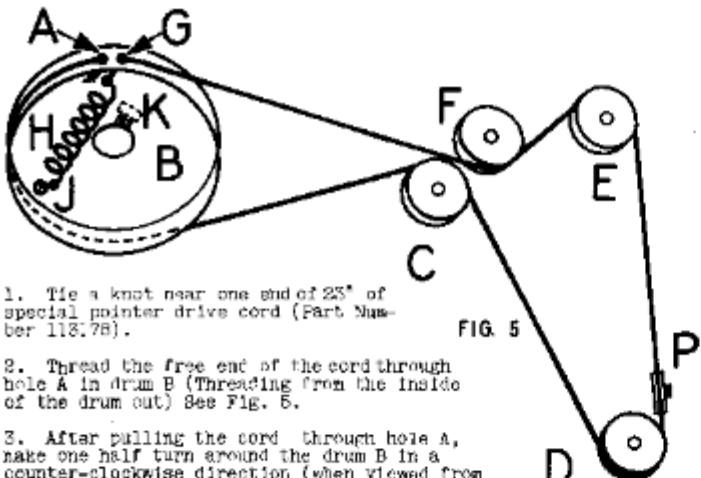


### CUSTOM MODEL DB-39



## ADDITIONAL SERVICE DATA

### HOW TO REPLACE THE DIAL POINTER DRIVE CORD



1. Tie a knot near one end of 23' of special pointer drive cord (Part Number 118.178).

2. Thread the free end of the cord through hole A in drum B (Threading from the inside of the drum out) See Fig. 5.

3. After pulling the cord through hole A, make one half turn around the drum B in a counter-clockwise direction (when viewed from flange side of drum).

4. Continuing, draw the cord over to the back of pulley C and around to pulley D. From this point continue across to pulley E and around to pulley F.

5. Go around pulley F and up to the top of drum B to hole G.

6. Draw the cord through hole G and tie it to the end of tension spring H in such a manner that when the spring is clipped to lug J, the spring will be extended to approximately 7/8 inch.

### HOW TO SET UP THE PUSH BUTTONS.

To set up the push buttons, proceed as follows:

1. Turn on the set and allow it to operate for at least one-quarter hour before attempting to set up the push buttons.

2. Select the five stations to which the buttons are to be set. Be sure to select nearby, powerful stations, since weak signals will generally give better results when tuned in manually. Any button may be set to any desired station.

3. Grasp the tuning knob and pull it out, (outward movement is slight, about 1/8 inch) so that the drive pinion engages the condenser drive gear and the set may be tuned manually.

4. Tune in the station to which you wish to set the particular button. Be sure to tune in the station correctly by TUNING TO THE POINT WHERE THE PROGRAM IS HEARD WITH THE LEAST HISS OR DISTORTION, AND NOT TO THE POINT OF GREATEST VOLUME.

5. Grasp the push button being set up, and turn it to the left (counter-clockwise) about one whole turn.

6. Push this button all the way in, and keeping it pushed in, turn right (clockwise) until reasonably tight.

7. Set up the remaining four buttons in a similar manner.

8. Label each button with the call letters of the stations you have selected, using the call letter tabs and celluloid covers packed with your receiver. Insert the call letter tab in the recess in the push button, and cover it with the celluloid tab.

9. To use your push button tuner, first push in the tuning knob. Then push in the button labelled with the call letters of the desired station. Be sure to push the button all the way in.

### INCORRECT TUNING OF PUSH BUTTONS

Occasionally a receiver may be found which will not tune-in stations accurately when push button tuning is used. The causes and remedies for this are as follows:

1. Push buttons incorrectly set-up. Remedy: Reset the button to the desired station being sure to tune in the station carefully.

2. Extreme sharpness of tuning of the receiver. Remedy: The green-white jumper wire on the bottom of the 1st I. F. transformer may be improperly connected. The correct connection for normal operation of the receiver is shown in FIG. 1 on page 9 (Terminals A and C should be connected together).

### CATHODE-RAY ALIGNMENT

If a cathode ray oscilloscope is to be used for alignment purposes, its vertical input terminals should be attached to the second detector output. Connect the "hi" vertical terminal of the oscilloscope to the point shown on the chassis wiring diagram pages 5 and 7 (also indicated as point "Z")

on the schematic circuit diagram pages 4 and 6). Connect the "lo" or gnd. terminal of the oscilloscope to the receiver chassis.

When using a cathode ray oscilloscope for alignment it is necessary that the input signal be frequency modulated.

### AUDIO OSCILLATION IN MODEL DB-39 RECEIVER.

Occasionally audio oscillation or howl may be encountered in this model. This is caused by an audio voltage being fed back to the audio section of receiver from the speaker cord. The remedy is to locate the speaker cord away from the 6R7-G and 6V6-G tubes, holding it in place with a rubber band if necessary.

### LOW SENSITIVITY

Low sensitivity may be due to improper adjustment of the antenna compensator, trimmer #6 (see alignment procedure, page 8). This trimmer is accessible without removing the set from the car. When the readjustment of the compensator is necessary, care should be taken that the antenna, if of the under-car type, is clean and free of accumulation of mud or slush which would alter its capacity and lower its resistance. In such cases, the antenna and its insulators should be washed, and preferably, allowed to dry before making adjustment. Doing this sharpens the tuning of the compensator and makes possible an accurate setting.

### FAILURE OF RECEIVER TO OPERATE

Failure of the receiver to operate may be due to one or more causes. When a receiver is found in such condition, its parts should be checked as follows:

#### 1-FUSE

The fuse may be burned out or making poor contact. In cases of burnout, replace with another 15 Ampere fuse. If second fuse fails, remove receiver from car and investigate condition of vibrator and receiver circuits. DO NOT USE A HIGHER RATING FUSE.

#### 2-TUBES

Unfasten the trunk clamps holding the speaker case cover. This will enable you to reach the tubes. Check to see that all tubes are in their proper sockets. One or more tubes may be defective. To determine their condition, remove them from the receiver and test with a tube tester, or if a tube tester is not available, replace the tubes, one at a time, with tubes known to be good, until the defective tube is located.

#### 3-VIBRATOR

Improper operation of the vibrator is usually evidenced by one of the following symptoms: Receiver blows fuses, receiver is dead or weak, reception is intermittent, reception is noisy and unsteady. To check the vibrator, replace the suspected unit with a new vibrator. Do not attempt to adjust the defective unit.

#### 4-CIRCUIT

Failures within the basic circuits of the receiver may be isolated by a systematic test procedure. The receiver should be removed from the car and placed where it will be readily accessible. The top cover and speaker case cover should be removed from the case. The defect in the receiver can then be located by means of continuity, voltage, or stage analysis, using a signal generator. Reference to the diagrams and parts list on pages 4, 5, 6 and 7 will give the values of the circuit elements and their schematic relations. Pages 5 and 7 illustrate the physical location of the parts and the color coding of the wiring, which will be of assistance when checking the receiver by the usual continuity methods. Pages 5 and 7 also carry pictorials of the various coils and I.F. transformers, showing lugs which correspond to similarly lettered points on the circuit diagram, which make replacement of these units a simple matter. Defective parts should be renewed with genuine factory tested replacements. Pages 4 and 6 of this manual illustrate voltage charts for these two receivers, showing values of voltage which should be obtained on a receiver in normal operating condition. A comparison of the voltages measured at the tube terminals of the receiver with the voltages obtained from the chart will give a quick check of the receiver circuit. Deviations from the specified values may be as much as 20% before operation of the receiver is appreciably affected. The absence or erratic reading of one or more of the voltages will indicate a fault in the particular circuit under test; in that case each transformer, resistor, condenser, choke and conductor of the circuit should be individually checked for open circuit, short circuit, and grounding.

When checking the receiver, using a signal generator, a signal is fed progressively into the I. F. and R. F. stages of the receiver, until the defective stage is located, and a continuity or voltage check may then be given that stage to isolate the defective unit or circuit.

### ADJUSTMENT OF IRON CORES IN COILS.

The Antenna, R. F., and Oscillator coils have adjustable iron cores. Any adjustment of these cores will necessarily change the inductance of the coils and therefore extreme caution must be exercised where adjustment becomes necessary. THE CORE OF THE OSCILLATOR COIL MUST NOT BE ADJUSTED AT ANY TIME. The correct method of adjusting the R. F. and antenna coil cores is adequately covered under "Alignment Instructions" on page 8.