

SERVICE MANUAL

FOR

1946 HUDSON AUTOMOBILE RECEIVER

SPECIFICATIONS AND CIRCUIT FEATURES

MODEL DB46—PART No. 208815

WITH

FOOT SWITCH AND VOLUME CONTROL

TUBE COMPLEMENT: 7A7 R.F., 7B8 Converter, 7A7 I.F., 7B6 Detector, A.V.C., 1st Audio, 7C5 Beam Power Output, 7Y4 Rectifier.

TUNING RANGE: 540 to 1600 Kilocycles.

AUTOMATIC POSITIONS: 5 Plus "M" (manual).

SPEAKER: 6" Dynamic externally mounted behind instrument panel. Voice coil impedance 3.2 ohms at 400 cycles. Field resistance 4 ohms cold.

tone control: Continuously variable.

POWER OUTPUT: Maximum 5.5 watts. Measured at voice coil.

VIBRATOR: Non-synchronous.

POWER RATING: Current drain 7.5 amperes. Fuse—20 amperes.

SENSITIVITY: 4 Microvolts at one watt output.

I.F. FREQUENCY: 265 Kilocycles.

WARRANTY AND SERVICE

The 1946 Hudson Receiver is covered by warranty against defect in material and workmanship for a period of 90 days after retail delivery.

This warranty covers a receiver installed at the factory or a receiver installed in the field as an accessory.

All warranty claims must be made to the Hudson Dealer. Do NOT send claims to the radio manufacturer.

OPERATING INSTRUCTIONS

This radio incorporates the new Hudson Automatic Touch Tuning with Foot Volume and Selector Control. The purpose and position of each control is shown in figure 1.

TO TURN RADIO ON

Press the push button on right side below ON-OFF indicator window and allow receiver to reach operating temperature. (Approximately 20 seconds.)

MANUAL TUNING

1. Press the automatic tuning push button on the left side beneath automatic indicator window several times or until the letter "M" appears on the automatic indicator.
2. Pull manual tuning (right hand) control knob outward and turn to tune in desired stations. Tune to exact frequency for the best tone quality.

VOLUME

Adjust left hand control knob for desired volume.

tone control

The tone control is located directly behind the volume control knob (Fig. 1). Rotating this control to the right or left will change the tone of the receiver. Turning to the right will emphasize the high notes, while turning to the left will emphasize the bass notes.

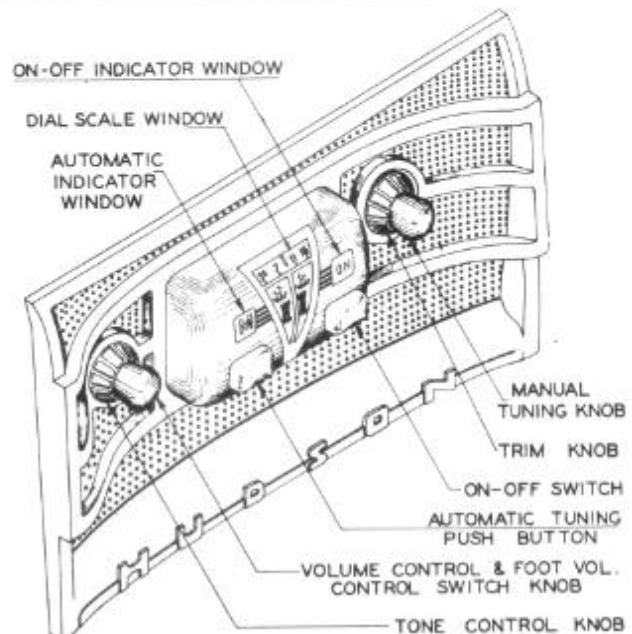


Fig. 1. Operating Controls.

AUTOMATIC TUNING

There are five automatic tuning positions which may be adjusted to five desired stations. If these positions have not been previously adjusted, proceed as follows:

1. Press the automatic tuning push button (on the left side) until Number 1 appears in the automatic indicator window.
2. Pull the manual tuning knob OUTWARD to engage the automatic mechanism.
3. Select the station desired and tune to its frequency by turning the tuning knob. Tune very carefully for clearest reception. CAUTION: DO NOT ATTEMPT TO FORCE TUNING KNOB IN. Knob will return to the "IN" position when the automatic tuning push-button is pressed.
4. Press the automatic station selector push button, pull manual tuning knob outward, and tune in station desired for No. 2 position. Use same procedure for positions No. 3, 4 and 5.

When the five automatic positions have been adjusted to the five desired stations as instructed, it is only necessary to press the AUTOMATIC button to return to MANUAL tuning, or to any one of the stations selected on the automatic.

FOOT CONTROL

The Foot Control provides a convenient means of selecting stations, controlling the volume, and muting the set without taking the hands off the steering wheel or the eyes from the road. Its function is identical to that of the station selector push button and the volume control knob combined. The foot control requires no set up or other adjustment. Press the foot control button all the way down to change stations. Press lightly to silence radio during conversation. Turn the knob with the shoe tip to adjust the volume to any desired point. When using the foot volume control feature turn the panel volume control fully to the left, or until it clicks.

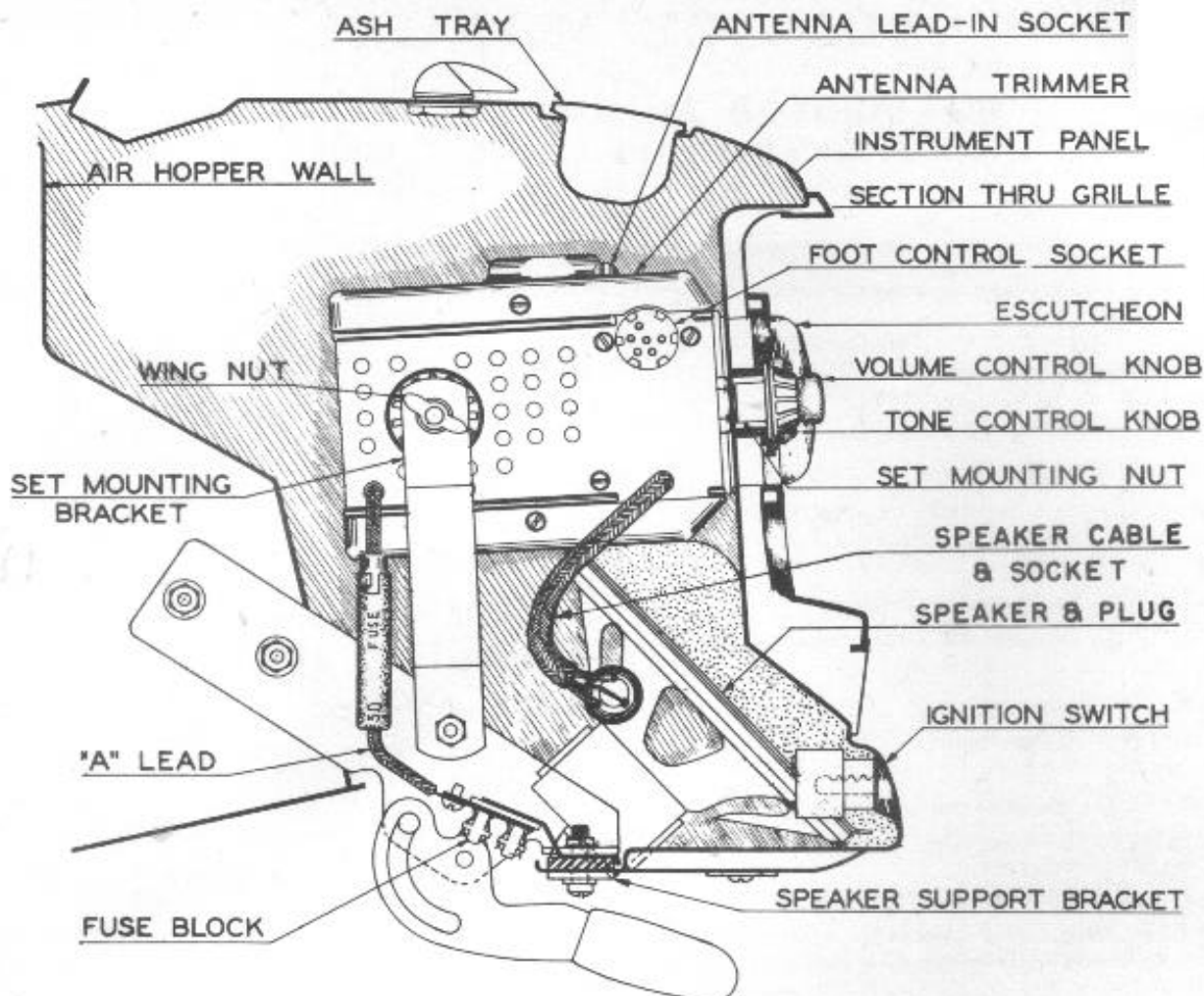


Fig. 2. Mounting Details and Connections

RADIO INSTALLATION INSTRUCTIONS

1. Install the antenna. Complete instructions are packed with each antenna kit.
2. Remove the decorative plate, in the center of the grille, covering the radio opening.
3. Remove the floor mat around the clutch and brake pedals. Place the foot control over the holes provided in the floor board. Fasten it with the three No. 8 R.H. self-tapping screws furnished in the installation kit (Fig. 3).
4. Dress the foot control lead to the left of the clutch pedal and up behind the fire wall pad.
5. Lift the cap from the foot control. Replace the floor mat and cut a hole for the foot control button. To replace the foot control cap, press it firmly and turn until the notches in the cap slip into the flanges on the foot control button.
6. Remove accessory switch bracket.
7. Plug the foot control cable into the socket provided on the left end of the receiver. With this end of the receiver down and the control shafts to the right, push the receiver up between the instrument panel and the air hopper as far as it will go. Turn the radio clockwise until the knob shafts point downward. Lift the front of the receiver up until the shafts slide through the slots provided below the shaft openings in the instrument panel. Bring the receiver forward so that the knob shafts protrude through the shaft openings.
8. Fit the knob shaft bushing nuts on the shafts and tighten as much as possible with the fingers. Place the tips of long nose pliers in the holes in the nuts and tighten securely.
9. Attach set mounting bracket by fastening one end to the side of the receiver case with the wing nut. Fasten the other end of the radio mounting bracket to the cowl ventilator handle bracket with $\frac{1}{4}$ " x $\frac{3}{4}$ " M.S., flat washer, and nut. (Fig. 2.)
10. Remove cardboard protector from speaker unit and fasten speaker and bracket assembly in place with two $\frac{1}{4}$ " x $\frac{3}{4}$ " M.S. flat washers, two lock washers, and two nuts provided. (Fig. 2.) Plug the speaker cable into the socket provided on the speaker frame.
11. Fasten the controls in place as shown in figure 1.
NOTE: Tuning knob must be placed $\frac{3}{16}$ " away from the instrument panel in order to rotate freely in the automatic position.
12. Fasten the accessory switch bracket back in place.
13. Remove the ash tray assembly and plug the antenna lead into the socket provided on the top of the receiver.
14. Fasten the "A" lead to the fuse block as indicated in figure 2.
15. Turn the receiver on and allow it to operate for approximately fifteen minutes in order for it to reach normal operating temperature. Tune in a weak station near 1200 Kc. Reach through the ash tray opening with a small screw driver and adjust the antenna trimmer, located on the top of the receiver, for maximum volume. (Fig. 2.) Replace ash tray.

INTERFERENCE ELIMINATION

IMPORTANT: Use the utmost care in the following operations to insure freedom from motor noise. Be sure that good ground contacts are made between the interference condensers and the car body. If necessary, clean away paint or dirt with emery paper. Tighten all nuts and bolts securely.

1. Remove the top mounting screw of the horn relay near the voltage regulator and under this screw mount the condenser No. 22-1537. Connect the lead to the voltage regulator battery terminal. (Fig. 4.)
2. Install suppressor in center hole of distributor cap. Place high tension lead in the top of suppressor. Be sure the suppressor and the lead are fastened securely. (Fig. 5.)
3. On the six cylinder car, remove the bolt, above the ignition coil, from the firewall. Mount the condenser No. 22-1537 under this bolt. Connect the lead to the coil terminal as shown in figure 6A.

On the eight cylinder car, remove the bottom screw from the ignition coil mounting bracket. Install the condenser No. 22-1537 under the screw. Connect the lead to the coil terminal as shown in figure 6B.

4. Loosen the upper rear cap screw of the engine water jacket plate. **CAUTION: Do not REMOVE cap screw.** Slide the slotted bracket of the condenser No. 22-1260 under the head of this screw. Tighten the screw.

Attach the condenser lead to the water temperature element in the head. (Fig. 7A.)

5. Remove the tape from the hole (located near the left rear cylinder head nut) in the dash. Fasten the flat ground strip to this hole with a sheet metal screw and lock washer. On the six cylinder car, place the other end of the strip on top of the regular stud nut, and fasten it in place with the special nut furnished in the installation kit. (Fig. 7A.) On the eight cylinder cars, bolt the other end of the strap under the regular stud nut. (Fig. 7B.)

6. Install the motor hood bond spring No. 80-145 as shown in Figure 8. Fasten with No. 8 sheet metal screw. Part No. 112-365.

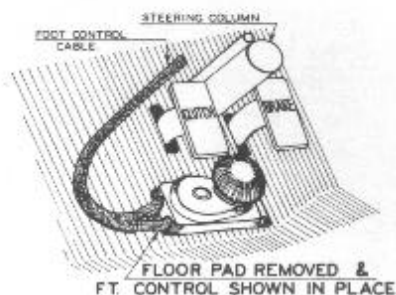


Fig. 3.

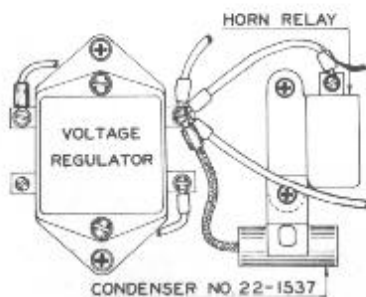


Fig. 4.

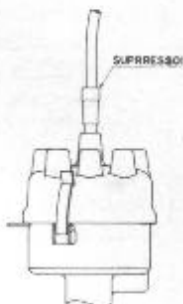


Fig. 5.

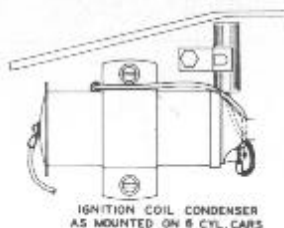


Fig. 6A.

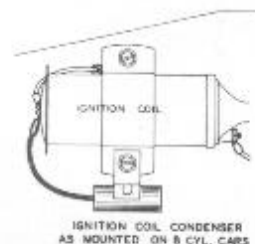


Fig. 6B.

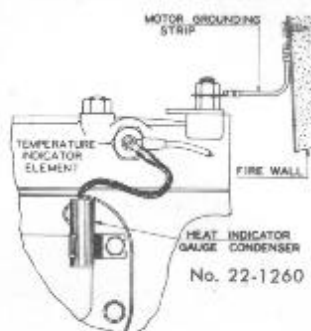


Fig. 7A.

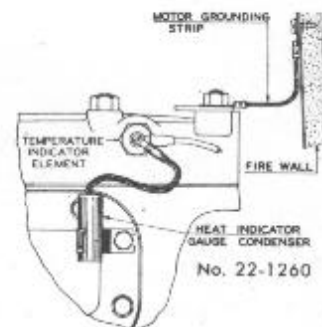
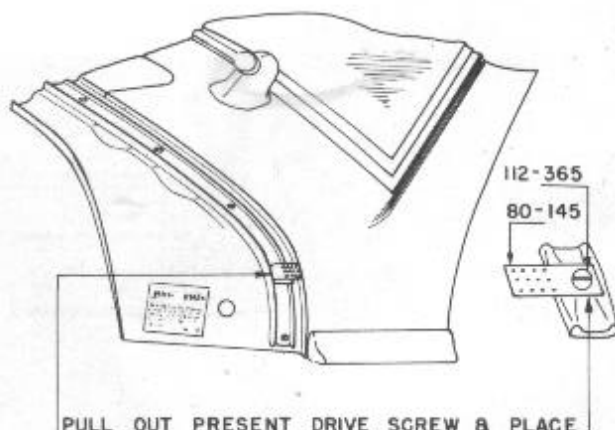


Fig. 7B.



PULL OUT PRESENT DRIVE SCREW & PLACE BONDING STRIP OVER HOLE WITH PERFORATIONS FACING DOWN. PUT IN SHEET METAL SCREW. BEND BONDING STRIP OVER AS SHOWN AFTER TIGHTENING SCREW

Fig. 8.

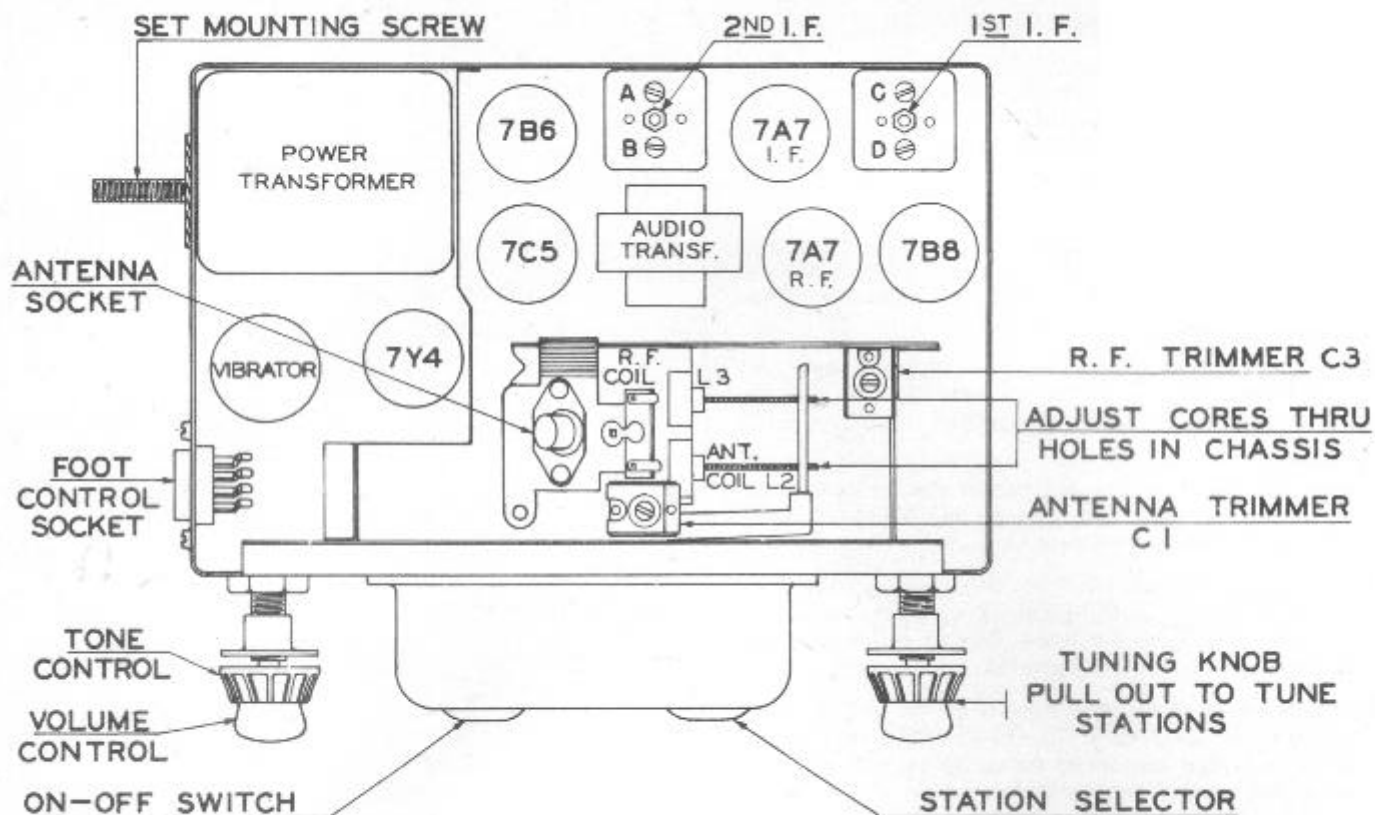


Fig. 10. Top View of Chassis

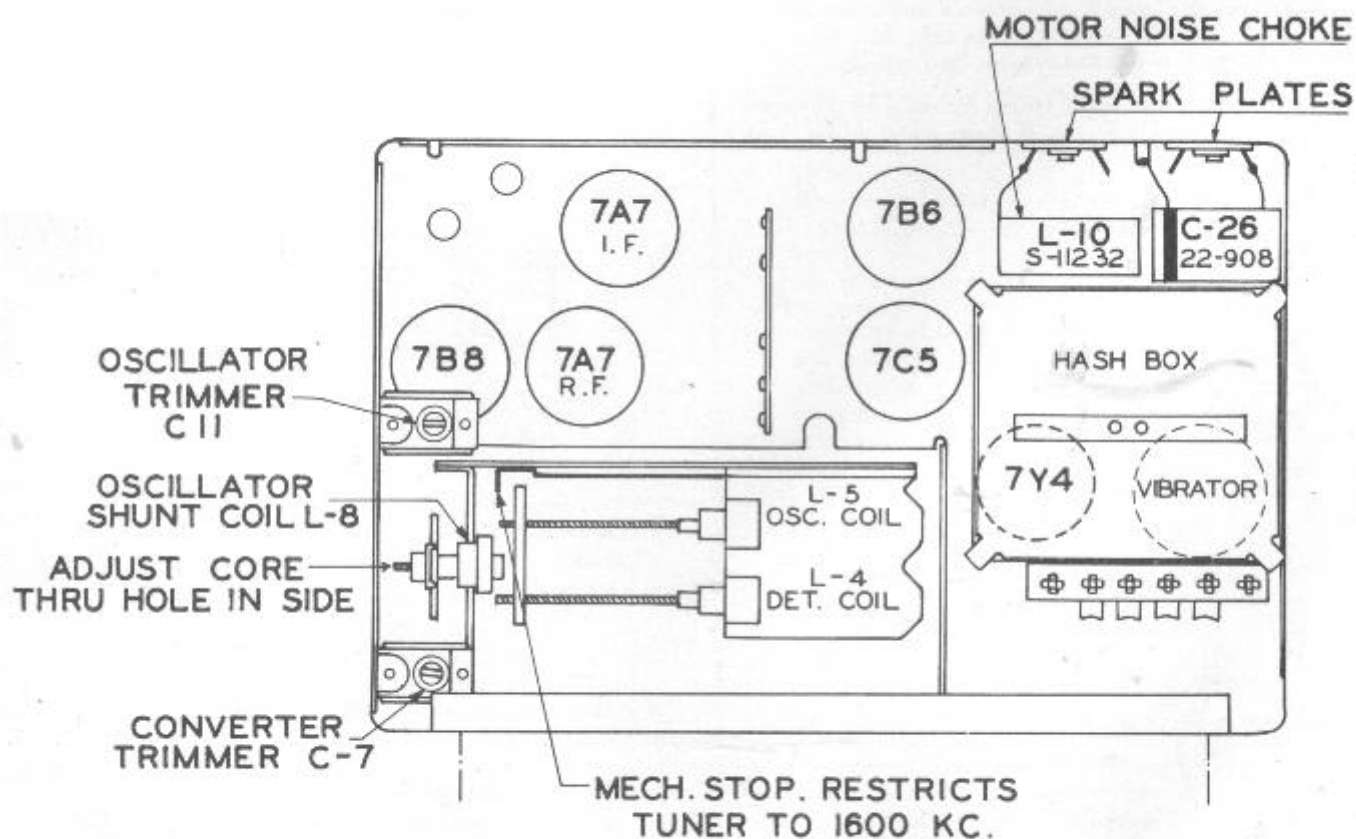


Fig. 11. Bottom View of Chassis

ALIGNMENT

Maximum performance depends on accurate alignment of the receiver; so follow these instructions carefully.

CAUTION: Make all adjustments on the receiver with volume control turned full on and foot volume control cable plugged into its socket. Reduce signal intensity as much as possible at signal generator. Connect output meter across voice coil.

I.F. ALIGNMENT PROCEDURE

1. Remove top and bottom covers from receiver.
2. Set signal generator to 265 Kc.
3. Apply signal from generator through a .1 Mfd. dummy to 7B8 converter grid. (Pin No. 6 on socket.)
4. Adjust I.F. trimmers A, B, C and D (Fig. 10), in the order named for maximum output. Repeat the operation to assure accurate alignment.

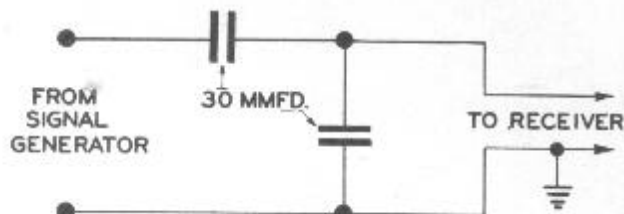


Figure 12. Dummy Antenna

Figure 12 shows the schematic of a recommended dummy antenna closely resembling actual antenna capacity to be used when aligning the R.F. section of the receiver.

R.F. AND OSCILLATOR ALIGNMENT

1. Connect signal generator leads through dummy illustrated in figure 12 to antenna lead in socket on receiver.
2. Set signal generator to 535 Kc.
3. Place set in manual tuning position and set dial to 535 Kc.
4. Adjust oscillator trimmer C-11 (Fig. 11) for maximum response.
5. Set signal generator to 1200 Kc.
6. Tune set to 1200 Kc.
7. Adjust converter trimmer C-7 (Fig. 11) and R.F. trimmer C-3 (Fig. 10) for maximum response.
8. If dial calibration is off after making above adjustments, a correction can be made by loosening dial scale mounting screws and sliding scale to desired position.

CORE OR COIL REPLACEMENT ONLY

WARNING: The following adjustments are to be made **ONLY** if a core or coil is replaced.

1. Replace coil or core.
2. Set signal generator to 1700 Kc.
3. Connect signal generator leads through dummy illustrated in figure 12 to antenna receptacle on the receiver.
4. Set receiver dial to 1600 KC. (Maximum high frequency end of dial.)
5. Screw the core completely out of the antenna coil, the R.F. Coil, the converter coil, and the oscillator coil.
6. Adjust oscillator trimmer C-11 (Fig. 11) at 1700 Kc.
7. Adjust converter trimmer C-7, R.F. trimmer C-3, and antenna trimmer C-1 (Fig. 10 and 11) for maximum output reading.
8. Replace cores to their approximate original positions.
9. Set generator dial and receiver dial to 1200 Kc.
10. Adjust oscillator core (Fig. 10) to scale at 1200 Kc.
11. Adjust the antenna core, R.F. core, and converter core (Fig. 10 and 11), for maximum output reading.
12. Set signal generator to 600 Kc.
13. "Rock in" Shunt oscillator coil (Fig. 10) for maximum output reading. (This should only be done as a last resort.) This is the same as rocking in the padder condenser on a ganged condenser receiver.
14. Check receiver at 1200 Kc. for calibration and gain. If receiver is off scale or weak, repeat operations 9, 10 and 11.
15. After alignment is complete, the maximum high frequency tuning range should be checked: If the range is greater or less than 1605 Kc. the mechanical stop for the tuner cross arm should be bent to limit the frequency coverage to 1605 Kc.

After all adjustments have been made, glue core screws with speaker cement.

IMPORTANT: After reinstalling the receiver in the car, allow it to operate for approximately 15 minutes to reach normal operating temperature. Check the antenna trimmer alignment on a weak station at approximately 1200 Kc. Extend antenna to maximum before adjusting the antenna trimmer.

PARTS LIST

1946 RADIO RECEIVER KIT * Model DB 46 (Part Number 208815)

Items included in kit are:

Radio receiver
Mounting bracket, screws, lockwashers, knobs
Speaker and bracket assembly
Foot volume control and switch assembly
Distributor suppressor
Temperature gauge condenser
Ignition coil and generator condenser
Motor hood bonding spring
Motor bond strap
Sheet metal screw
Nut for 6 cyl. cars
Lockwasher

RADIO ANTENNA KITS *

Part No. 209558—66" Telescopic Antenna including all installation parts.

Part No. 209762—92" Telescopic Antenna including all installation parts.

Part No. 205451—Vacuum Operated Antenna including all installation parts.

(See antenna kits for full installation instructions.)

NOTE: Kits marked * are not available from the radio manufacturer. See your Hudson dealer.

COILS AND CHOKES

Diag. No.	Zenith Part No.	Hudson Part No.	Description
L9	20-213	204890	Main hash choke
T1	95-916	209569	1st I.F. transformer
T2	95-917	209570	2nd I.F. transformer
L1	S8819	209741	Antenna motor noise choke assembly
L7	S11229	209568	Oscillator series coil assembly
L8	S11231	209576	Oscillator shunt coil assembly
L10	S11232	209571	Motor noise choke coil assembly
L5	S12053 *	209574	Oscillator tuning coil assembly
L2	S12060 *	209572	Antenna tuning coil assem.
L3	S12060 *	209572	R.F. tuning coil assembly
L4	S12060 *	209572	Detector tuning coil assem.

Note: In ordering coils marked (*), be sure to give color code information.

CONDENSERS

C 9	22-162	204900	100 mmfd.	600 V.
C12	22-170	204901	.1 mfd.	400 V.
C17	22-182	204902	250 mmfd.	600 V.
C 4	22-190	209577	.1 mfd.	200 V.
C13	22-250	204904	.05 mfd.	200 V.
C19	22-838	204905	.005 mfd.	600 V.
C14	22-906	204906	.005 mfd.	200 V.

Diag. No.	Zenith Part No.	Hudson Part No.	Description
C23	22-908	204907	.5 mfd. 120 V.
C26			
C25	22-1076	204909	Dual spark plate
C27			
C 6	22-1136	209585	250 mmfd. 600 V.
C 5	22-1169	209584	.001 mfd. 600 V.
C18	22-1170	204910	.01 mfd. 600 V.
C16	22-1180	209587	.003 mfd. 200 V.
C 2	22-1244	204915	.004 mfd. 600 V.
C 3	22-1376	209583	R.F. trimmer
C 7	22-1377	209582	Detector trimmer
C11	22-1378	209581	Oscillator trimmer
C20			Dry electrolytic - 20 mfd. - 25 V. x 10 mfd. - 300 V. x 20 mfd. - 350 V.
C21	22-1387	209578	.008 mfd. 1600 V.
C22			
C24	22-1448	209579	Antenna trimmer
C 1	22-1462	209580	.01 mfd. 200 V.
C15	22-1466	209754	350 mmfd. compensator
C10	22-1478	209919	

RESISTORS

R19	63-1334	209672	Vol. control, and SW. tone control
R20			
S 5			
R18	63-1368	209920	1800 ohm 2 watt W.W.
R2	63-1379	207877	Sensitivity control. 0-800 ohm
R 8	63-1390	209922	1 megohm 1/4 watt
R 1			
R 4			
R11	63-1392	209923	330M ohm 1/4 watt
R12			
R21	63-1393	209924	47 ohm 1/4 watt
R15	63-1394	209925	10M ohm 1/4 watt
R 5	63-1396	209926	68M ohm 1/4 watt
R 7	63-1398	209928	33M ohm 1/4 watt
R16			
R17	63-1399	209929	82 ohm 1/2 watt
R14	63-1400	209930	15 megohm 1/4 watt
R 6	63-1401	209931	15M ohm 1/2 watt
R13	63-1369	209921	270 ohm 1 watt W.W.
R25	63-1410	208649	120 ohm 1/2 watt W.W.
R26	63-1414	208709	100 ohm 1/4 watt
R10	63-1416	207939	6.8 megohm 1/4 watt
R24	63-1417	207940	47000 ohms 1/4 watt
R23	63-1419	208591	10 ohm 1/2 watt W.W.
R3	63-1411	208000	18000 ohm 1/4 watt

MISCELLANEOUS

	52-202	204935	Battery cable (set to fuse)
	52-254	209551	Battery cable (fuse to fuse block)
SK1	52-279	209968	Speaker cable and plug
	78-281	209745	Vibrator socket
FS2	78-551	209683	Foot switch cable plug socket
	78-596	209746	Tube socket - loktal base (8 contact)
S2	85-339	209747	On-Off switch
	93-456	209748	Vibrator cushion washer
T4	95-914	209684	Power transformer
T3	95-915	209685	Output transformer
S4	136-12	18269	Fuse - 20 amp.
V1	190-20	209686	Vibrator

PARTS LIST (Continued)

Diag. No.	Zenith Part No.	Hudson Part No.	Description
	202-420	209749	Installation instruction book
S1	S11269	209566	Hand selector and muting switch assembly
	S11310	209934	Antenna socket, bracket & terminal assembly
FS3	S11758	208812	Foot switch, vol. control & cable assembly

SPEAKER AND MOUNTING COMPONENTS

SP1	12-937	204020	Speaker support bracket
	49-538	208826	6" dynamic speaker
	54-30	170567	No. 8/32 x 5/16 x 7/64 hex nut
	57-945	204022	Speaker cover plate
	114-88	205287	No. 8/32 x 1/2 hex hd. M.S.
	114-167	205288	No. 10/32 x 5/16 hex acorn hd. M.S.
	196-53	204024	Rubber speaker gasket
	208-538*	209751	Cone & voice coil assem.

Note: When ordering cone and voice coil assembly marked *, be sure to give manufacturer's code letter.

INSTALLATION PARTS AND KNOBS

S11321	209753	Installation kit complete
12-938	204021	Set mounting bracket
22-1260	152021	Temperature gauge cond.
22-1537	208592	Generator and ignition coil condenser
46-459	205293	Tone control knob
54-157	70874	1/4-20 x 7/16 x 3/16 hex nut
54-173	205283	Set mounting nut
54-174	205289	1/4-20 wing nut
63-1252	205281	Distributor suppressor
80-145	205282	Motor hood bond spring
80-232	209752	Knob retaining spring
112-310	170687	Foot Sw. mtg. screw
112-365	170304	No. 8 x 1/2" B.H.S.M. screw
114-168	70872	1/4-20 x 3/4 hex hd. M.S.
S12271	209936	Tuning control & trim. knob assem. (46-550 & 584)
S12272	209937	Volume control knob and spring assem. (46-549)

Diag. No.	Zenith Part No.	Hudson Part No.	Description
	93-577	12857	.062 x 17/64 x 3/4 steel washer
	83-986	204481	Motor bond strap
	112-361	71707	No. 8 self tapping screw
	93-575	170395	Lock washer
	54-188	170859	Hex nut (for 6 cyl. cars only)

DIAL AND TUNING MECHANISM ASSEMBLY

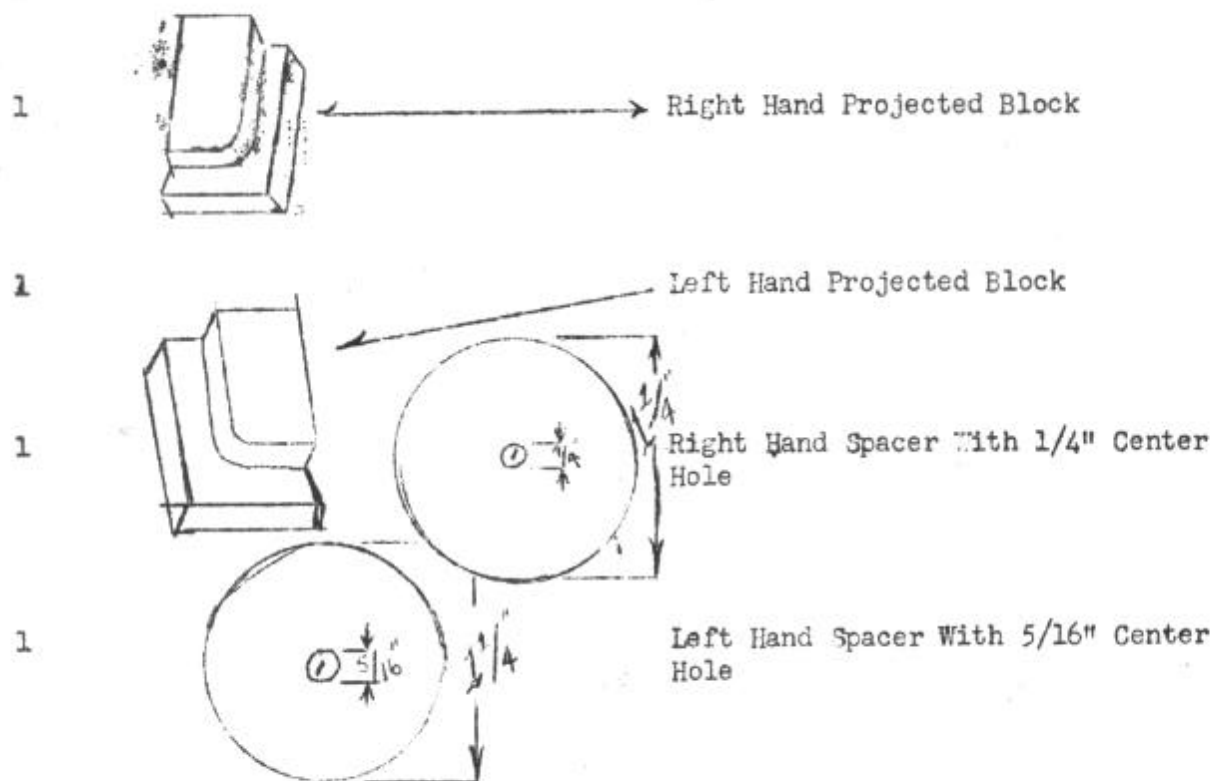
	26-337	209682	Dial scale (manual tuning)
	34-132	209691	Indexing disc
	34-133	209692	Ratchet gear
	34-135	209789	Volume control gear
	46-581	209553	Selector knob (2 used)
	57-1061	209560	Escutcheon
	57-1151	209694	Name plate
	59-158	204040	Dial pointer
	80-329	209695	Gear indexing spring
	80-331	209681	Cross arm return spring
	80-332	209696	Cam lever spring
	80-336	209697	Ratchet gear return spring
	80-340	209698	Lever spring
	80-341	209699	Kick-off spring
	80-342	209700	Tuning shaft spring
	80-343	209701	Solenoid switch spring
	80-344	209702	Solenoid switch contact spring
	80-425	209703	Knob return spring
S3	100-31	71550	Dial light bulb
	149-44*	209799	Adjusting spring & core
	188-45	209705	Turret screw lock ring
	S10826	209706	Solenoid end plug and bracket assembly
L6	S10829	209567	Solenoid and terminal assembly
	S10831	209707	Ratchet and bracket
	S10836	209708	Cross arm assembly
	S11052	204025	Tuning shaft and gear assembly
	S11082	209709	Turret assembly
	S11313	209738	Dial drum and bracket assembly
	S11494	209739	Mounting plate and lever assembly
	S11976	209740	Dial light socket and wire assembly

Note: In ordering Adjusting Spring and Core marked (*), be sure to give color code information.

INSTRUCTIONS FOR CORRECT USAGE OF RADIO CONVERSION KIT

Listed below, are instructions for the correct usage of a conversion kit for adapting the 1949-1950 model radio, part number # HA 221940, for installation on 1951 model cars without Super-Matic or Drive-Master equipment.

The conversion kit consists of the following items:



INSTALLATION

First, it is necessary to have a replacement mounting bracket made approximately 1/2" longer than the bracket installed at the Factory. This bracket can be made from any type of light metal preferably 1/8" X 3/4" strap iron.

After this bracket is installed, mount radio with control head barely inserted through dash panel. Place right and left hand projected blocks in their respective positions and bring radio all the way through the dash panel. The mounting bracket nuts may then be tightened. Caution must be used to make sure that the left hand switch and tuning control shaft protrudes all the way through the dash panel.

Install nut and washer on switch and tone control shaft and tighten. Place plastic spacer with 5/16" center hole on this shaft following with chrome tone control and switch knob. Be sure these two parts are on the shaft all the way. Place plastic spacer with 1/4" center hole on tuning control shaft following with chrome backing washer and control knob.

If the above instructions are followed, a satisfactory conversion can be assured.

