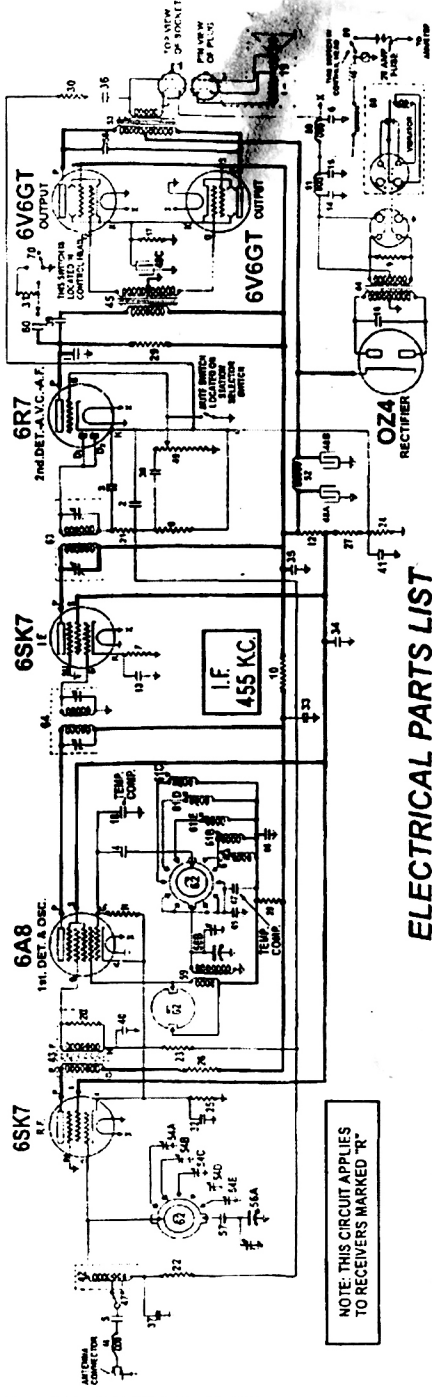


WIRING DIAGRAM 1940 PACKARD AUTOMOBILE RADIO MODELS PA-351099 and PA-35100



ELECTRICAL PARTS LIST

DIAGRAM NUMBER	STEWART WARNER PART NUMBER	DESCRIPTION	LIST PRICE
1	83539	Condenser—mica 260 mmfd.....	\$0.20
2-3	83783	Condenser—mica 110 mmfd.....	.20
4	85081	Condenser—mica 2100 mmfd.....	.35
5	88205	Condenser—.25 mfd. 150 volt (low loss).....	.40
6	89298	Resistor—insulated 330 ohms 1/4 watt.....	.15
7	112970	Resistor—insulated 330,000 ohms 1/4 watt.....	.15
8	112976	Resistor—wire wound 220 ohms 1/2 watt.....	.15
9	112980	Resistor—insulated 1200 ohms 1/4 watt.....	.15
10	112988	Resistor—insulated 33,000 ohms 1/4 watt.....	.15
11	113356	Condenser—paper .5 mfd. 150 volt.....	.36
12	114277	Condenser—oil 1 mfd. 2000 volts.....	.24
13-15	114335	Resistor—wire wound 410 ohms 2 watts.....	.20
16	114489	Condenser—temperature compensating for oscillator.....	.40
17	M-115085	Speaker—dynamic 1 1/2".....	7.00
18	116059	Resistor—carbon 22,000 ohms 1/4 watt.....	.12
19	116071	Resistor—13 megohm 1/16 watt.....	.12
20	116072	Resistor—1600 ohms 1/4 watt.....	.12
21-23	116073	Resistor—insulated 10,000 3 ohms 1/2 watt.....	.15
24-25			
26			
27-28	116074	Resistor—insulated 33,000 ohms 1 watt.....	\$0.18
29	116075	Resistor—27,000 ohms 1 watt.....	.18
30	116092	Resistor—insulated 1500 ohms 1/4 watt.....	.15
31	116099	Resistor—insulated 4700 ohms 1/4 watt.....	.25
32-33-34	116625	Condenser—.1 mfd. 600 volt.....	.15
35-36-37	116640	Condenser—.81 mfd. 600 volt.....	.15
38	116706	Condenser—.2 mfd. 600 volt.....	.35
39	116719	Condenser—.45 mfd. 600 volt.....	.15
40	117276	Condenser—.85 mfd. 600 volt.....	.15
41	117278	Capacitor—mica (shaded).....	2.00
42	117284	Transformer—R.F.....	.92
43	117297	Transformer—power.....	5.00
44	117306	Transformer—input.....	2.90
45	117308	Antenna—speaker noise choke coil.....	.28
46	117313	Switch.....	.50
47	117314	Condenser—multiple electrolytic Section A—10 mfd. 450 volt Section B—10 mfd. 35 volt Section C—10 mfd. 35 volt.....	2.00
48A to 48C	117321	Volume Control—1 amp. silicon switch.....	1.00
49	117332	Choke coil in "A" line.....	.30
50-51			
52	117334	Choke—filter.....	\$0.85
53	117336	Transformer—antenna.....	1.90
54A to 54E	117346	Push button trimmer gear antenna selector.....	1.40
55	M-117487	Cone and voice coil for M-115085 speaker.....	2.20
56A-56B	117547	Condenser—variable gang.....	2.80
57-58	117571	Condenser—.0018 mfd. 600 volt.....	.15
59	117637	Coil—oscillator.....	.70
60	118025	Condenser—.1 mfd. 600 volt.....	.25
61A to 61E	118026	Transformer—1 mfd. 600 volt.....	3.00
61A to 61B	118027	Transformer—100-350 KC.....	.60
61A to 61C	118028	Coil only 950-1500 KC.....	.60
61D-61E	118030	Coil only 950-1500 KC.....	.30
62	118031	Coil plugger assembly.....	.30
63	118758	Switch for station selector.....	2.45
64	118762	Transformer—2nd I.F.....	1.40
65	118765	Transformer—1st I.F.....	1.40
66	118771	Condenser—silver mica 300 mmfd.....	.38
67	118772	Condenser—silver mica 300 mmfd.....	.45
68	118792	Vibrator—temperature compensator.....	3.00
69	118802	Switch—"On"—"Off".....	1.00
70	118838	Switch for tone control.....	1.10

INSTRUCTIONS for INSTALLING THE 1940 PACKARD DELUXE AUTOMOBILE RADIO WITH SINGLE BUTTON AUTOMATIC TUNING



1940 PACKARD AUTO RADIO INSTALLATION INSTRUCTIONS

IT IS IMPORTANT THAT THESE INSTRUCTIONS BE READ CAREFULLY AND THE INSTALLATION MADE EXACTLY AS DESCRIBED. BY OBSERVING THESE INSTRUCTIONS, A SATISFACTORY INSTALLATION CAN BE MADE QUICKLY AND EASILY.

MOUNTING THE RECEIVER CASE

Two holes are provided in the bulkhead on the **LEFT SIDE** of the car. Punch the holes through the sound insulation on the driver's side of the bulkhead.

The paint must now be thoroughly cleaned from the metal surrounding the two holes. This is done so as to insure good electrical contact.

Place the receiver case in position against the left side of the bulkhead so that the control end of the case faces the center of the car (see Fig. 1).

Bolt the case to the bulkhead using the two "T" bolts, two plain washers and two nuts supplied with the receiver. The flat washers and lockwashers must be placed on the motor compartment side of the bulkhead.

MOUNTING THE SPEAKER

Holes for mounting the speaker are provided in the bulkhead on the **RIGHT SIDE** of the car (see Fig. 1 for location of speaker). Clean the metal surface surrounding the holes so as to insure good electrical contact. Also punch the holes through the sound insulation to the other side of the bulkhead.

The back of the speaker is equipped with four threaded holes. Insert the short threaded end of the two threaded studs into the holes in the speaker case which correspond in spacing to the two holes in the car's bulkhead and **at the same time will allow the speaker to be mounted so that the cable comes out at the top.**

After the studs have been tightened securely into the speaker body, you must mount the entire speaker unit against the bulkhead. Use the two flat washers, two lockwashers and two nuts provided for the purpose.

MOUNTING THE CONTROL HEAD

In order to mount the control head behind the center of the instrument panel proceed as follows:

1. Open the glove compartment and remove the six screws around the edge of the opening. This will allow the glove compartment to drop away and it should be allowed to rest on the floor of the car temporarily.
2. Remove the long narrow face plate now located in the center of the instrument panel.
3. Remove the ash container located in the center of the instrument panel. This is done by pulling up until the container is free of the instrument panel.

WARRANTY AND SERVICE

Each Packard Radio is covered by the **Warranty** against defects in material and workmanship for a period of **90 days** after **delivery** of the radio.

Warranty Repair Service is provided at all **Stewart-Warner** Warranty Labor Radio Service Stations.

TO OBTAIN WARRANTY SERVICE

1. Make preliminary checks and such minor repairs as replacing burnt-out fuses, defective tubes, vibrators, repairing loose connections, checking automatic tuning adjustments, etc. These operations are explained in the Warranty Policy Bulletin packed with each set.
2. If you have made these preliminary checks and tests and are unable to repair the radio so that it performs satisfactorily remove the radio and speaker from the car and return it to the nearest authorized Stewart-Warner Warranty Labor Service Station where free warranty repairs will be made as covered by the Warranty Policy. When the repairs are completed, re-install the radio in the car.

In case the owner is traveling, the Packard dealer to whom he applies for service will render a handling charge not to exceed \$1.00 for the removal and re-installation of the radio.

IMPORTANT: A WARRANTY REGISTRATION TAG AS SHOWN BELOW IS FURNISHED WITH EACH RADIO. THIS TAG MUST BE FILLED IN BY THE DEALER AND ATTACHED TO THE RADIO WHEN IT IS INSTALLED, IN ORDER THAT THE WARRANTY LABOR SERVICE STATIONS MAY HAVE THE PROPER INFORMATION TO GIVE SERVICE UNDER THE WARRANTY. THIS IS THEIR AUTHORIZATION TO RENDER WARRANTY SERVICE "FREE OF CHARGE."

DEALER — Fill out this tag properly IN INK and attach to the radio in the car. This tag properly filled out must be attached to the radio in order to obtain Free Warranty Service if required during the initial 90-day Warranty period .			
MODEL NO.	OWNERS WARRANTY REGISTRATION		SERIAL NO.
STEWART - WARNER -- PACKARD			
AUTO RADIO			
Owner	Car license No.		
Print Name			
Address			
Street	City	State	
Purchased	From	Date	
Date			Dealer's Name
Address			
Dealer			
(READ IMPORTANT INSTRUCTIONS ON OTHER SIDE)			

PACKARD MOTOR CAR COMPANY

General Accessory Division

DETROIT, MICHIGAN

4. **DISCONNECT THE BATTERY CABLE AT THE STARTER SWITCH ON THE STARTER MOTOR.** This is done so as to protect against possible short circuiting of the wiring behind the control head on the instrument panel.
5. Look into the openings in the center of the instrument panel and you will note two reading lamps mounted on two brackets. Release the lamps from the brackets and remove the brackets. This is done by removing the screws which hold these brackets. Replace the screws after the brackets have been removed in order that the lock switch and the light switch will be properly supported. The two lamp covers used on models 1803, 1804, 1805, 1807, and 1808 will not be needed after the radio control head is installed and should be discarded.
6. Carefully push aside the wiring behind the glove compartment side of the instrument panel.
7. Before attempting to place the control head behind the instrument panel you must put the station call-letter tabs into the dial drum on the left side of the head.
 - (a) Select call-letter tabs of the five stations which you wish to set-up on the Automatic Station Selector. The station for each position must be in the frequency range shown in Fig. 5. Also remove, from the sheets of station call letters, the tab which is marked with the word "DIAL."
 - (b) First slip the tab which is marked "DIAL" into any one of the openings in the side of the dial drum at the left of the control head.
 - (c) Push the Automatic Station Selector Button once and the next blank window in the dial drum will move into place.
 - (d) Insert the call letter tab of the station **WHOSE FREQUENCY (KILOCYCLES) IS LOWEST**, in the group of stations which you have selected, in the opening in the dial drum.

An example of the above procedure for a group of five local stations such as would be found in Chicago, Illinois, is as follows:

1. Call letters of desired stations are WGN; WJJD; WAAF; WMAQ; and WBBM.
2. Arrange call letters in the order of the station frequency (Kilocycles). The lowest frequency station appearing first. Note that the frequency of each station falls within the range specified in Fig. 5 on Page 9.

STATION	FREQUENCY
WMAQ	670 KC
WGN	720 KC
WBBM	770 KC
WAAF	920 KC
WJJD	1120 KC

3. First insert the tab labelled "DIAL" in any one of the openings in the dial drum at the left side of the control head. Press the automatic station selector button once and the next blank window in the dial drum will move into place. Insert the tab for station WMAQ into this opening.
4. Press the button again and insert the tab for the next station which is WGN. Proceed to press the button and each time insert the next tab in the order that they have been tabulated above—NEXT HIGHER IN FREQUENCY.

IGNITION INTERFERENCE ELIMINATOR

1. Install the generator interference elimination condenser (part No. 117301) on the generator, fastening it under the ground screw on the generator (see Fig. 4). Be sure to clean off any paint or dirt where you mount the condenser. Do not use the "FIELD" terminal. Connect the condenser lead to the "A" terminal on the generator. If generator interference persists, it can be eliminated by cleaning the commutator and re-seating the brushes.

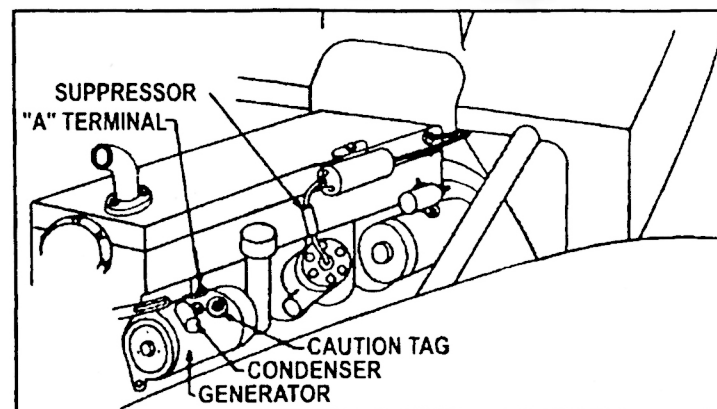


FIG. 4

2. Connect the Ignition Switch interference elimination condenser (part No. 117302) to the feed lead on either the ignition switch or the ammeter. Try both locations and install the condenser where it is most effective. The condenser should be mounted on the flange of the instrument board. Be sure to scrape off all dirt and paint where you mount the condenser.
3. Cut the distributor-to-coil high tension lead about one inch from the distributor cap and install the screw-in-type suppressor resistor. (See Fig. 4.)
4. To check for ignition interference, turn on the radio, start the motor and disconnect the antenna lead-in from the receiver. If there is any interference coming through when the volume control is three-quarters open and the receiver tuned between stations, carefully relocate the speaker cable and ammeter lead so that the interference is reduced to a minimum and fasten at that point. Reconnect the antenna lead and if some interference is still present, move the antenna lead to the most quiet location. Make sure all antenna shield connections are properly grounded. Interference from electric clocks can be eliminated by connecting an additional interference elimination condenser to the ammeter terminal.

SETTING UP RECEIVER FOR AUTOMATIC TUNING

1. First turn the receiver on and allow it to operate for twenty minutes before making these adjustments.
2. Push the Automatic Station Selector Button repeatedly until the word "DIAL" appears in the window on the left. Then press the button just once and note the call-letters of the station which appears in the window. Push the button until "DIAL" is again seen in the window.
3. Using the tuning knob tune in the station whose call letters you just noted were next to "DIAL." This is done so that you can identify the station by its program.

4. Remove the front cover on the receiver case. Two slots are provided at each side of the case so that the cover can be pried off easily. CAUTION: If cover is pried off with a screwdriver do not push screwdriver too far into case. After the cover has been removed you will note two rows of adjusting screws in the receiver (see Fig. 5).

5. Press the Automatic Station Selector Button ONCE. Then using screwdriver, adjust the screw marked 1A (in the receiver case) until the station you were just listening to, is heard again.

6. Adjust the screw marked 1B for maximum volume.

7. The set-up for this station is complete and you can proceed to set up the next station which you have labelled on the dial drum. Proceed as follows:

8. (a) Press the Automatic Station Selector Button just once and note the call letters of the next station. Then press the button again until the word "DIAL" appears in the window.

(b) Using the tuning knob, tune in the station whose call letters were just noted.

(c) Press the Automatic Station Selector Button TWICE and the call letters of the station will again appear in the window at the left.

(d) Adjust screw No. 2A until desired station is again tuned in.

(e) Adjust screw No. 2B for maximum volume.

(f) This completes the set-up of the second station.

(g) The other stations can be set up in a similar manner. **THE ADJUSTING SCREWS LOCATED IN THE RECEIVER ARE ASSOCIATED WITH THE POSITION OF THE STATION INDICATOR DRUM AS FOLLOWS:**

DRUM POSITION	ASSOCIATED TRIMMER SCREWS
FIRST STATION AFTER "DIAL"	1A and 1B
SECOND STATION AFTER "DIAL"	2A and 2B
THIRD STATION AFTER "DIAL"	3A and 3B
FOURTH STATION AFTER "DIAL"	4A and 4B
FIFTH STATION AFTER "DIAL"	5A and 5B

9. After all the stations have been set up, replace the cover on the receiver case.

10. The receiver is now completely installed and ready to operate either manually or automatically.

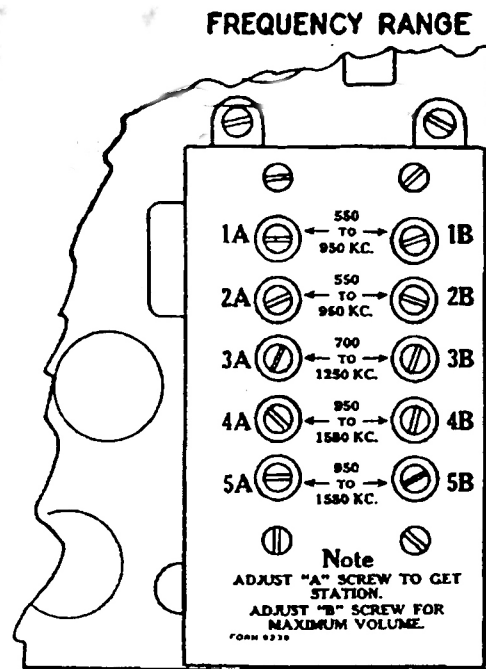


FIG. 5

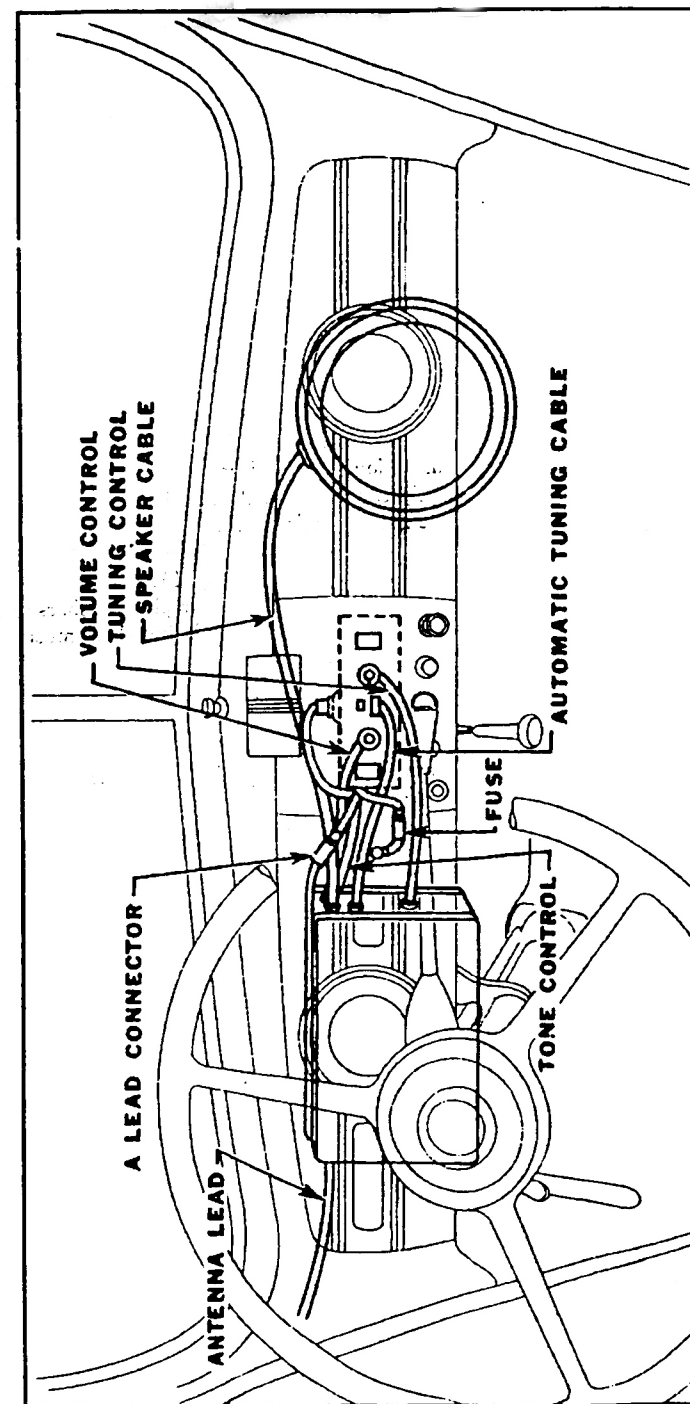


FIG. 1
INSTALLATION OF CONTROL HEAD, SPEAKER AND CHASSIS

9. Insert the control head through the glove compartment opening in the instrument panel making sure to **INSERT THE FLEXIBLE LEADS AND CABLES FIRST**. Also see that the cables will be located near the center of the back of the instrument panel.

Ease the control head into position behind the center of the instrument panel, being careful not to damage nearby cables and leads.

10. After the control head is in the correct position, place the new face plate (escutcheon) on the instrument panel.

FOR CAR MODELS 1800, 1801, 1807 AND 1808 ONLY

Bolt the control head and face plate to instrument panel using the two thin washers, included with this radio, between the gland nuts and the control shaft bushings (see Fig. 2). The gland nuts screw into the control shaft bushings and hold the control head and face plate in position.

FOR CAR MODELS 1803, 1804 AND 1805 ONLY

The tenite face plate used in these models must be slipped into position from the side. In order to do this push the control head back until the shafts do not project out of the holes in the panel, then slide the face plate into position from the glove compartment side. Bolt the control head and face plate to the instrument panel using the two thick washers, included with this radio, between the gland nuts and the control shaft bushing (see Fig. 2). The gland nuts screw into the control shaft bushings and hold the control head and face plate in position.

11. Place the gland nut covers over the gland nuts (see Fig. 2) and then slide the two control knobs on the control shafts.
12. The two reading lamps which were removed at the start of this installation must now be snapped into position in the two new brackets provided at the sides of the control head behind the instrument panel.
13. Replace the ash container in the top of the instrument panel.
14. Replace the glove compartment.

CONNECTING THE SPEAKER AND CONTROL HEAD CABLES TO THE RECEIVER

Refer to figures 1, 2 and 3 which illustrate the shaft connections to the receiver.

1. Insert the volume control cable in its proper coupling on the receiver case (see Fig. 3). As you do this, turn the volume (**LEFT**) knob to be sure the shaft engages, then tighten the shaft coupling collar at the receiver case.
2. Turn the tuning (**RIGHT**) knob, on the control head, clockwise until you reach appreciable resistance. Then turn this knob counter-clockwise one whole turn. Insert a small screwdriver in the coupling hole for the tuning shaft on the receiver case. Turn the slotted shaft in the tuning shaft bushing *clockwise* until you reach a stop. Then insert the flexible tuning control cable (see Fig. 2) into its coupling in the side of the receiver case (see Fig. 3). Turn the knob slightly clockwise until the shaft end engages and then tighten the shaft coupling collar at the receiver case.
3. Insert the flexible push button control cable into its socket on the receiver case (see Fig. 3). Before tightening the set screw on this socket, **PUSH**

THE AUTOMATIC STATION SELECTOR BUTTON ON THE CONTROL HEAD IN AS FAR AS IT WILL GO AND AT THE SAME TIME PUSH THE FLEXIBLE CABLE INTO THE SOCKET ON THE RECEIVER CASE AS FAR AS IT WILL GO— THEN TIGHTEN THE SET SCREW ON THE SOCKET.

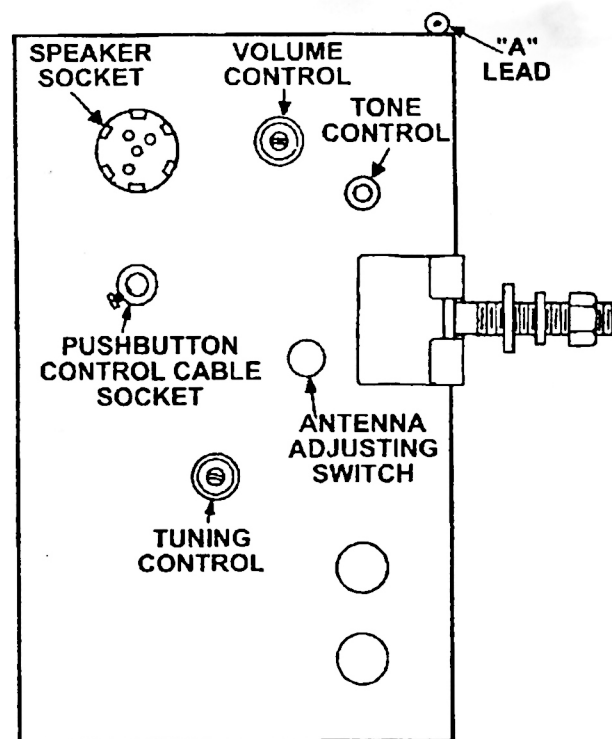


FIG. 3

tipped "A" lead projecting from the control head. The eyelet on the end of the "A" lead must be connected to the discharge side of the ammeter. The remaining "A" lead (female end) projecting from the control head must be connected to the bayonet tipped "A" coming out of the top of the receiver case.

7. Push the tone control plug into its proper socket on the side of the receiver case (see Fig. 3).
8. Re-connect the battery cable at the starter switch on the starter motor.

ANTENNA

The Packard Cowl Antenna (part No. PA-351487) or the Packard Under-carriage Antenna (part No. PA-327559), can be used with this receiver. The Cowl type antenna is recommended because of its superior performance. It is not subject to mechanical abuse, or decrease in efficiency caused by weather conditions and materially reduces tire static.

To install either antenna, follow the instructions enclosed in the antenna package.

4. Using the two tongue shaped clips supplied with the accessories, bind the tuning control flexible cable and the push button flexible cable together at two spots along the length of the cable.
5. Connect the speaker cable plug to the socket on the end of the receiver case (see Fig. 3).
6. Put the fuse in the insulating sleeve, then insert the fuse and sleeve in the fuse housing of the separate "A" lead supplied with the accessories. Then connect it with the short bayonet

After the antenna has been mounted on the car, you must connect the antenna lead-in to the antenna receptacle on the left side of the receiver case.

SYNCHRONIZING CONTROLS AND MATCHING THE ANTENNA

VOLUME CONTROL: Turn the volume control (left) knob clockwise as far as it will go until it strikes a definite stop. Then turn it counter-clockwise until the switch clicks off. This synchronizes the "off" position of the switch with the "off" position of the volume control.

TUNING CONTROL: As the tuning dial is calibrated in kilocycles, it will be necessary to line it up with the receiver so that stations may be tuned in at their proper place on the dial. To do this turn the receiver on and proceed as follows:

1. Push the Automatic Station Selector Button once and then see if you can tune in stations manually using the tuning knob. If you cannot tune in stations manually, push the Station Selector Button and try again. Repeat this process until stations can be tuned in using the tuning knob. When this position is reached—rotate the Automatic Station Selector Dial Drum on the left side of the control head, with the eraser head of a lead pencil until the word "DIAL" appears in the opening. In doing this, rotate the front of the dial upwards.
2. Tune in a station whose frequency in kilocycles is known. (The number on the dial represents channel numbers which with the addition of a zero, become the number of kilocycles.) If the station does not come in at the exact frequency on the dial, hold the tuning control knob and with the eraser on the end of a lead pencil, move the dial until the correct frequency is indicated.

MATCHING THE ANTENNA: After the receiver is operating you must check to see that the Antenna Adjusting Switch is in the correct position for the particular type antenna in use. This switch is located behind the small chrome button on the right side of the receiver case. A red instruction tag is held in place by this button. The instructions which appear on this tag are repeated below:

FOR COWL TYPE ANTENNA: Turn the switch located under this button so that the screwdriver slot points to **WHITE DOT** on receiver case.

FOR UNDERCARRIAGE ANTENNA: Turn the switch located under this button so that the screwdriver slot points to **RED DOT** on receiver case.

TO OBTAIN MAXIMUM SENSITIVITY make the following adjustment:

1. Set the receiver to "DIAL" tuning.
2. With volume control on "Full," tune in a **WEAK** station between 1350 and 1580 KC.
3. Remove the large chrome plug button on the right side of the receiver case.
4. Adjust the screw behind this button until maximum volume is obtained.
5. **DO NOT DISTURB THE SCREW UNDER THE BROWN BUTTON CAP**

5. You must observe the rule of labelling each successive dial window with the tab of the station whose frequency is next higher, otherwise it may be impossible to set-up the automatic station selector

(c) Proceed to place the remainder of the station call letter tabs in the dial drum **BEING CAREFUL THAT EACH TAB YOU INSERT IS FOR A STATION NEXT HIGHER IN FREQUENCY (KILOCYCLES)** in the group of stations that you are setting up. Thus the last tab inserted in the drum will be for the highest frequency station in the entire group.

8. **WHEN THIS RADIO RECEIVER IS INSTALLED IN MODELS 1803, 1804, 1805, 1807 AND 1808 ONLY:** Remove the two thick spacer washers now located on the tuning and volume control knob shafts. This can be done by merely pulling them off the shaft bushings.

FOR CAR MODELS 1800 AND 1801 DO NOT REMOVE these spacer washers now on the tuning and volume control knob shafts.

ON MODELS 1803, 1804, AND 1805 you must place two light shields on the control head dial drums. These shields are packed with the tenite face plate and are held on the control head with clips.

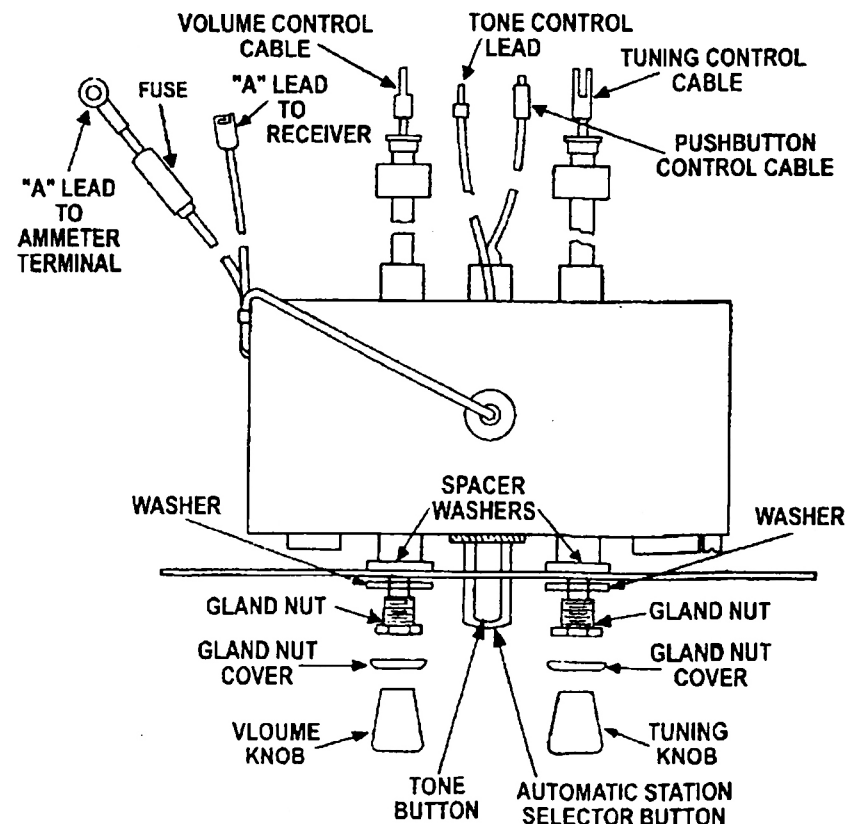


FIG. 2