

GROUP 11 RADIO, HEATER, VENTILATION AND AIR CONDITIONER

SECTIONS IN GROUP 11

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SECTION 11-A RADIO

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11-1 BUICK RADIO DESCRIPTION AND OPERATING INSTRUCTIONS

a. Description

The Buick push button radio is available as optional equipment on the 4000, 4100 and 4300 Series.

This is an all transistor radio which plays immediately when turned on, as there are no vacuum tubes to warm up. Even though this radio plays on less than half the current required for a tube-transistor radio, it has the same station pick-up ability and the same power output as a tube-transistor radio.

A manual antenna located on the right front fender, which may be extended and retracted by hand, is included with the radio option.

The Buick radio installation consists of a receiver with separate speaker mounted at the center of the instrument panel. The radio uses suppression parts installed at various locations to eliminate interference.

The receiver has five push buttons for push-tuning of five pre-selected stations. In addition to the push buttons, a control knob permits manual selection of stations.

The radio has a current draw of 1.3 amps at 12 VDC. This includes .3 amp for the light bulb.

b. Switch, Volume, and Tone Control Operation

Clockwise rotation of the switch knob, to left of dial, turns the radio on, and further rotation increases the volume.

Best fidelity (true tone) is provided when the tone control knob, behind the switch knob, is at the midposition of the tone control range. A detent in the control provides a method of quick location of this position. Rotation clockwise of the tone control knob will diminish

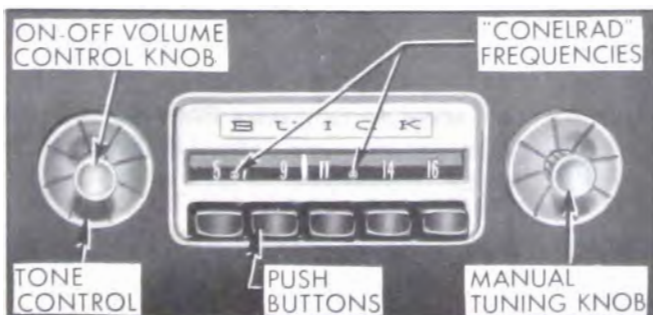


Figure 11-1—Radio Receiver Controls

bass speaker response. Rotation counterclockwise will diminish treble speaker response.

c. Push Button Tuning Operation

To tune in the station for which the push button is set, simply push the button in as far as possible. The button will move easily at start, then a slightly harder push is required to complete the travel. At end of button travel the tuner will rest at the station for which the button has previously been set as described in paragraph 11-5.

d. Manual Tuning Operation

The manual tuning knob is to the right of the receiver dial. See Figure 11-1. This knob may be used to tune in stations other than those for which the push buttons are set; it is also used when tuning to set the buttons for selected stations.

When tuning manually, and particularly when setting up a station on one of the push buttons, careful adjustment of the tuning knob is essential to good radio reception.

On push button selection, if the program sounds shrill or distorted, it is probably caused by improper tuning and can be corrected by adjusting the tuning knob slightly. Since the low notes are apparently more affected by tuning than the high ones, it is a good plan to tune the set to a point where the low notes are heard best and high notes are clear but not shrill. This point may be most readily found by listening to the background noise and tuning for the lowest volume and pitch of this noise. Turning the control knob back and forth until the station is almost lost on either side will enable the operator to hear the difference in reception and select the intermediate position giving best results.

11-2 RADIO TROUBLE DIAGNOSIS— ON CAR

The trouble diagnosis information in this paragraph is of a non-technical nature. It is intended as an aid in locating minor faults which can be corrected without a specialized knowledge of radio and without special radio test equipment. If the suggestions given here do not effect a correction, further testing should be done only by a trained radio technician having proper test equipment.

CAUTION: Never turn radio on with speaker disconnected.

a. Radio Is Inoperative or "Dead"

1. Turn on the radio. The dial should light and a "thump" should be heard from the speaker.

(a) If thump is heard, go to step 2 for antenna check.

(b) If no thump is heard, check the fuse.

(1) If fuse is bad, replace and try radio again. Race engine, if the fuse blows again, remove the radio and speaker assembly for repair by a trained electronic technician with proper instruments.

(2) If fuse is OK, check to see that the speaker to receiver interconnecting cable is connected securely. If there is still no thump as the radio is turned on, remove the receiver and speaker for repair.

2. Check the antenna by substituting with one you hold out the car window. If radio is still dead with substitute antenna, remove the receiver and speaker for repair. If radio operates near normal with substitute antenna, some part of car antenna or lead-in is at fault.

b. Radio Reception Is Weak

1. Check to see if antenna trimmer is peaked. With the radio tuned to a weak station, grasp antenna rod.

(a) If sound decreases considerably, the antenna trimmer is peaked.

(b) If sound remains the same or increases, peak the antenna trimmer.

(1) Raise antenna to maximum height.

(2) Tune radio to weak station between 600 and 1000 on the dial and turn volume control to maximum.

(3) Insert a screwdriver in antenna trimmer and turn trimmer for maximum volume.

(c) If the antenna trimmer does not have a definite peak, check for defective antenna by substitution as in sub-par. a, step 2 above.

2. Be sure the speaker connection is plugged in securely.

3. If the radio is still weak, remove the receiver and speaker assembly for repair.

c. Radio is Noisy

1. Complaint is "noisy" all the time.

(a) Check for noisy antenna by striking rod with hand. If antenna is noisy, replace.

(b) If antenna is OK, remove receiver and speaker for repair.

2. Noisy when jarred:

(a) Check antenna as in step 1 above.

(b) Check speaker connection. If OK, remove receiver and speaker for repair.

3. Noisy with engine running:

(a) Check all noise suppression equipment.

(1) Substitute capacitors on generator, regulator, and coil with known good ones.

(2) Check to see that spark plug wires are the original resistance type (approximately 4000 ohms per foot).

(b) Check to see that antenna is mounted securely, grounding the antenna base to the fender. (Antenna lead-in wire is shielded and the shield should have good ground connection at the receiver and antenna base.)

(c) Check for other car wiring passing too close to transistor cooling fins.

(d) If engine noise is still present, take radio to a trained technician with a full story on the complaint.

4. Noisy when car equipment is operated, such as directional lights or brake lights.

(a) Check for defective antenna lead-in wire or loose antenna mounting as in step 3, (b) above.

5. Noisy only when car is moving on dry days.

(a) Wheel and tire static will occur only during warm, dry weather. To check to see if noise is wheel static or tire static, drive car down highway until noise is noticed—touch the brake: if noise disappears, it is wheel static; if noise persists, it is tire static.

(1) Wheel static is eliminated by installation of static collectors in the front wheels. It is important to make sure the button on the end of the spiral collector rides evenly in the spindle. Grease and dirt can cause poor contact between static collector and the cap which could cause wheel static even with the collectors installed.

(2) Tire static is eliminated by injecting graphite "tire static" powder in all five tires. Either a special gun or a plastic catsup bottle can be used to insert powder.

11-3 RADIO REMOVAL AND INSTALLATION

a. Removal of Radio Receiver and Speaker

NOTE: On air conditioner cars it is necessary to lower evaporator assembly by removing both right and left bolts which retain assembly to underside of instrument panel. Then remove the brace that supports radio, the screw which holds the two right sections of the air duct together and the glove box assembly. Radio and speaker may be removed through glove box opening.

1. Disconnect antenna lead-in wire, speaker wire and battery wire from receiver.

2. Remove knobs, escutcheons and retaining nuts from receiver control shafts.

3. Remove the support bracket to receiver cap screw located at right side of receiver and lower receiver from under instrument panel.

4. Remove the two speaker to instrument panel nuts located at front edge of speaker mounting plate and remove speaker and mounting plate assembly.

b. Installation of Receiver and Speaker

If radio parts are removed from car for any reason, the following instructions must be carefully observed to insure proper reinstallation and satisfactory operation. These instructions cover reinstallation only; if an original installation is to be made, carefully follow instructions contained in the parts package, particularly with reference to cutting holes in sheet metal and trim.

IMPORTANT: The Buick antenna is matched to the receiver within the range of the trimmer adjustment. Other antennas may not match the receiver within the range of the trimmer adjustment; therefore the use of other than a standard Buick antenna and lead-in cable is not recommended.

1. Position speaker to instrument panel and install the two retaining nuts.

2. Install receiver from beneath, inserting threaded bushings through control holes in instrument panel. Install and tighten hex nuts on bushings. See Figure 11-2.

3. Install and tighten the support bracket to receiver cap screw.

4. Install escutcheon and tone control knob on shaft to left of the dial. Install escutcheon and inner knob on shaft to right of dial. Install felt washers and control knobs, making sure spring clips properly engage flats of control shafts.

5. Plug in speaker wire, antenna lead-in wire and battery wire.

6. Make antenna trimmer adjustment (par. 11-5, subpar. a).

c. Installation of Interference Suppression Parts

The capacitor leads are connected to the armature ("A") terminal of generator (.33MF) and the the "BAT" terminal generator of regulator (.50MF). Capacitors must never be connected to the field ("F") terminal of either unit as this will cause bad pitting of the voltage regulator points, thus preventing it from operating properly.

The built-in resistance of each spark plug wire approximates 4000 ohms per foot.

The coil capacitor (.33MF) is mounted on the coil bracket and the lead is connected to the battery position (+) terminal of coil. If capacitor is connected to the distributor negative (-) terminal, excessive pitting of distributor contact points will result.

A static collector is installed in each front wheel hub cup. For good results the cup and the center of steering knuckle spindle must be clean and free from grease. The contact button of the static collector is made of self-lubricating material.

In addition to the items mentioned above, ground straps are connected between the cowl and the rear corners of the engine.

11-4 ANTENNA REMOVAL AND INSTALLATION

a. Removal of Antenna Assembly

1. Remove antenna cap nut. Pull mast out of antenna base.

2. Remove antenna base nut, upper spacer and gasket.

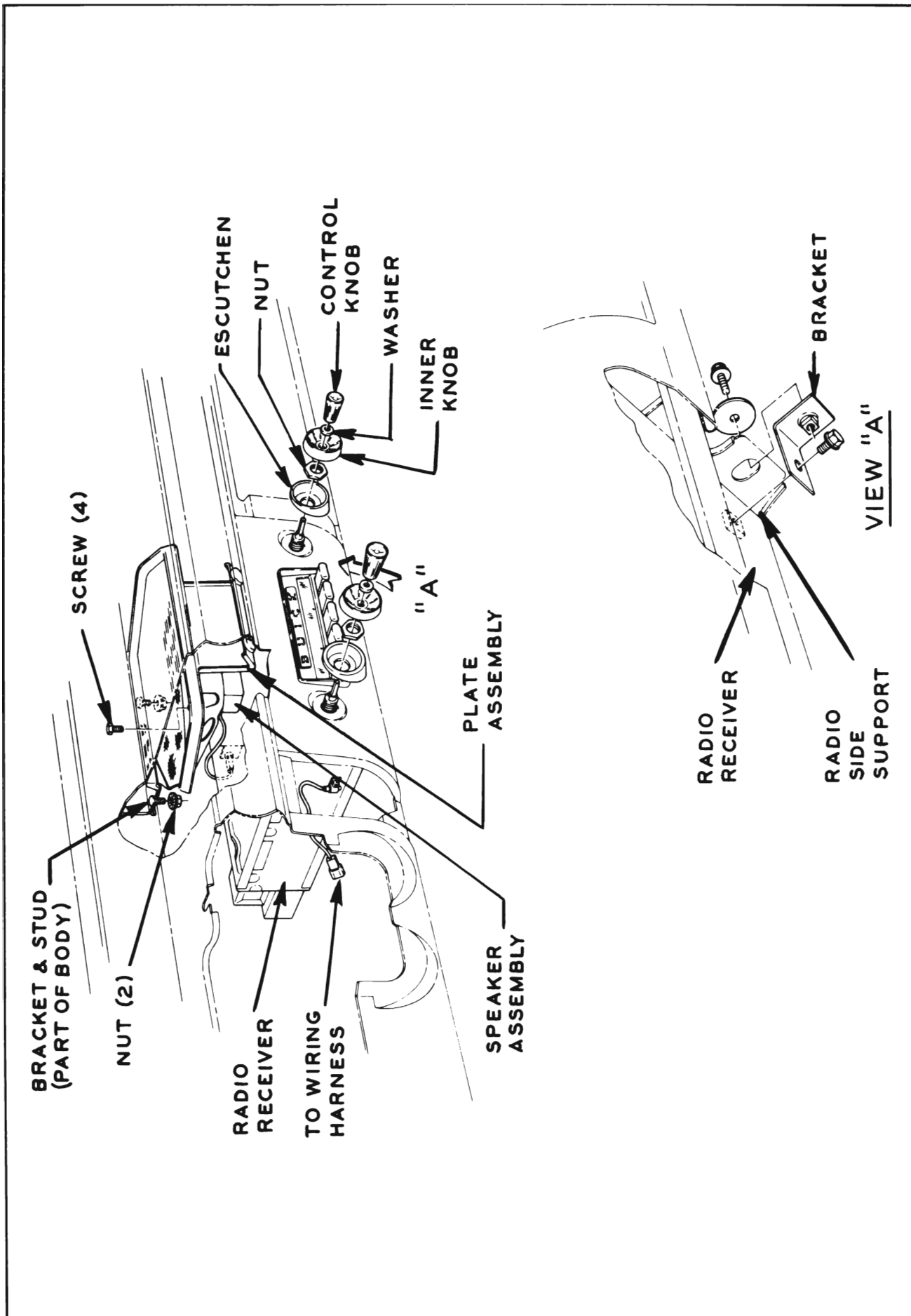


Figure 11-2—Radio Receiver and Speaker Installation

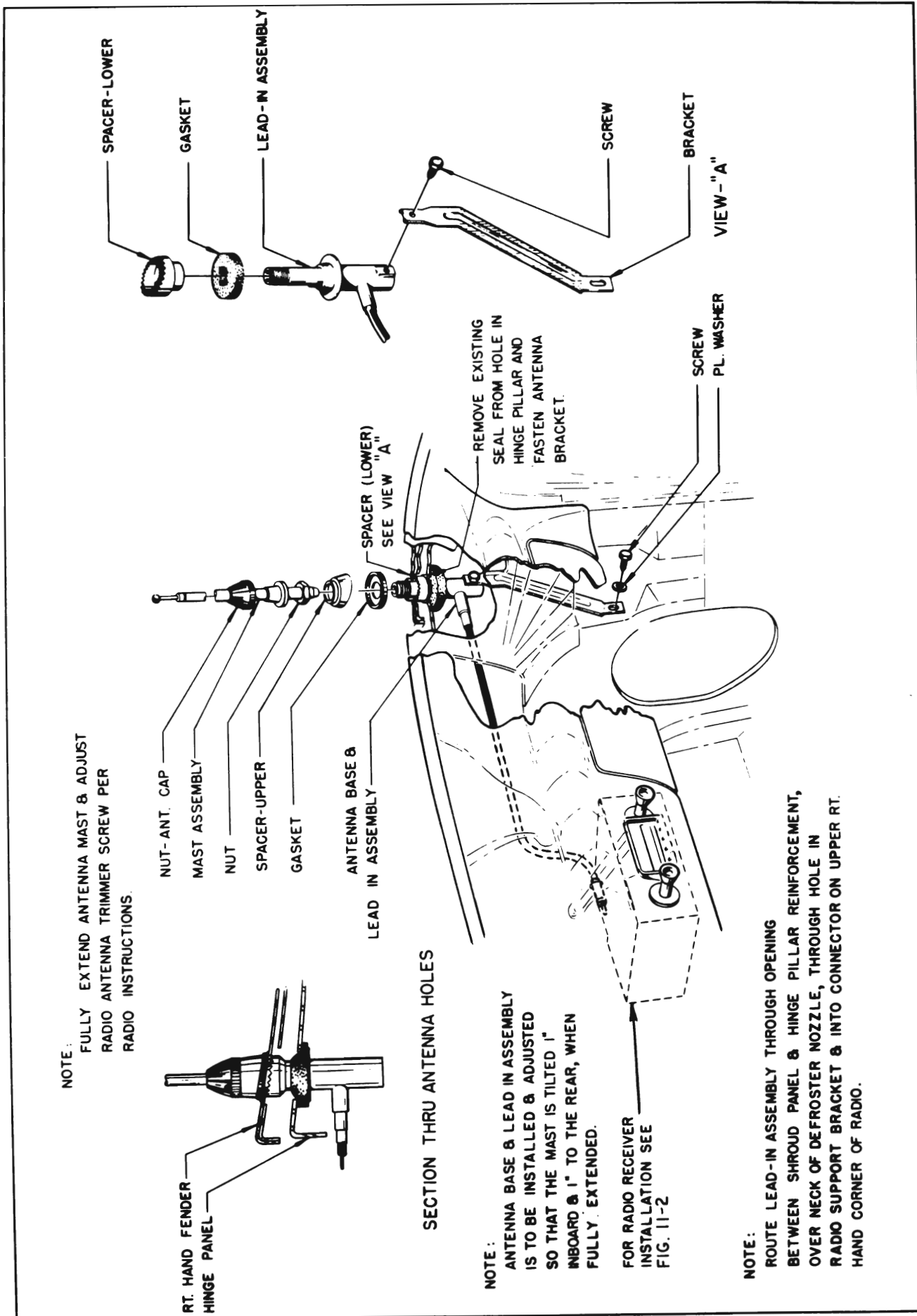


Figure 11-3—Antenna Installation

3. Remove right shroud foundation (cowl trim pad) and screw that attaches lower antenna mounting bracket to shroud.

4. Remove the antenna lead-in wire nut and unplug lead-in. Remove antenna base.

b. Installation of Antenna Assembly

1. Position antenna base in hole with lower spacer and gasket in place in fender and attach lower mounting bracket to shroud.

2. Plug lead-in wire in antenna and tighten nut.

3. Reinstall shroud foundation.

4. Install antenna upper gasket, upper spacer and nut.

5. Insert mast in antenna base and tighten cap nut.

11-5 RADIO ADJUSTMENTS— ON CAR

When making the adjustments covered in this paragraph, it is essential to have the car in a location that is as free as possible from outside interference.

a. Antenna Trimmer Adjustment

An antenna trimmer adjustment is provided for matching the antenna coil in the receiver to the car antenna. This adjustment must always be made after installation of receiver and antenna, or after any repairs to these units. The adjustment should also be checked whenever the radio reception is unsatisfactory.

1. Raise antenna to maximum height.

2. Tune radio to a weak station between 600 and 1000 K.C. that can barely be heard with volume turned full on.

3. Insert a screwdriver up through the opening in the rear of the bottom of the receiver. Carefully turn the trimmer screw back and forth until a position is found that gives maximum volume.

b. Setting Push Buttons to Desired Stations

1. Turn on the radio.

2. Pull button all the way out. It is desirable to set up the push buttons in logical sequence. For example, lowest frequency desired station on first button, next higher frequency station on second button, etc.

3. Carefully tune in the desired station manually, then push the button all the way in.

4. Move dial pointer away from the selected station and push the button to make certain the station will be properly tuned in.

5. Turn tuning knob back and forth to make certain that best tuning is obtained with the push button. If best tuning is not obtained, repeat steps 2, 3, 4.

11-6 REAR SEAT SPEAKER INSTALLATION

The radio rear seat speaker is a dealer installed accessory. Rear seat speaker installation details are shown in Figures 11-4, 11-5, 11-6, and 11-7.

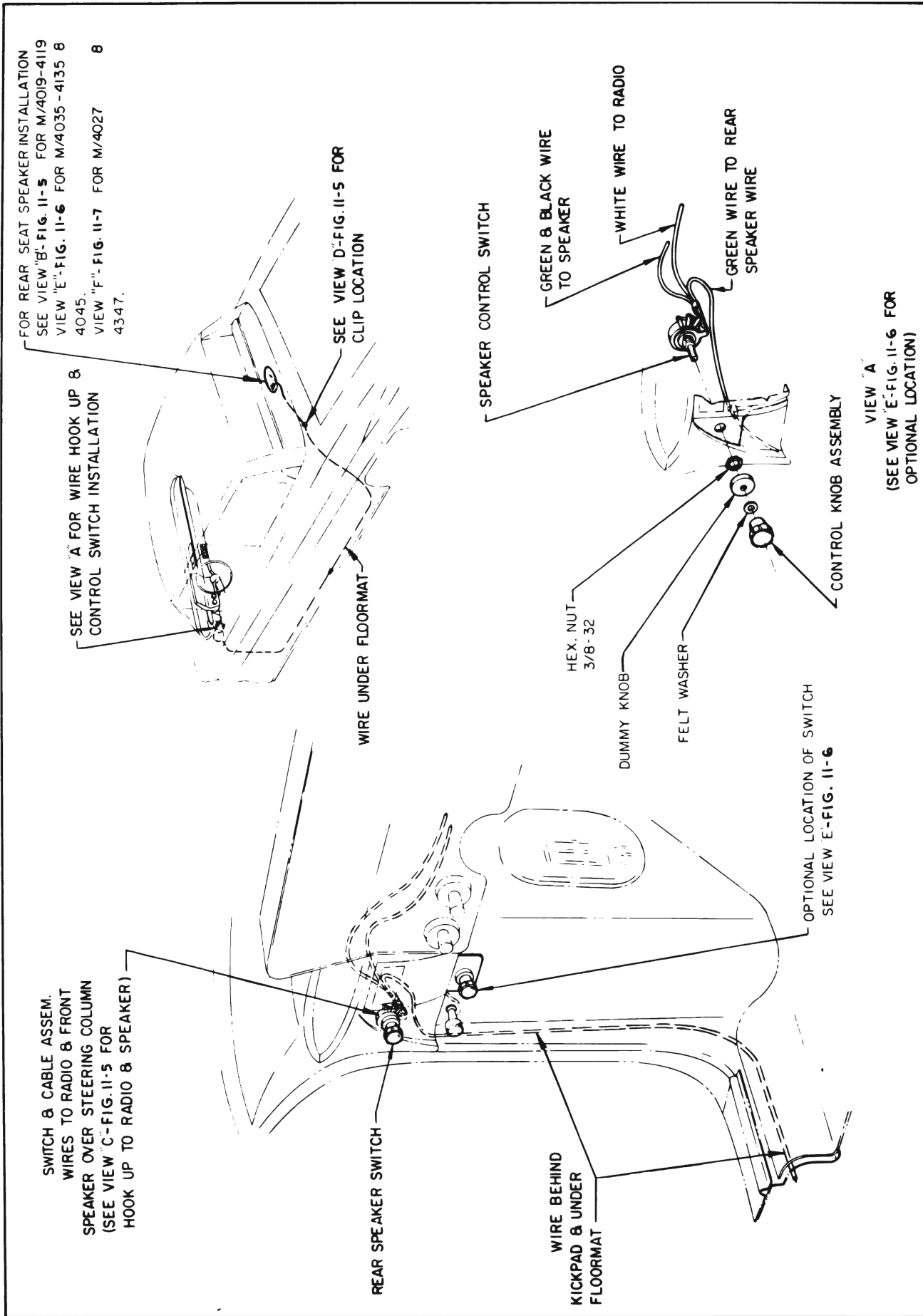


Figure 11-4—Rear Seat Speaker Installation - Illustration #1

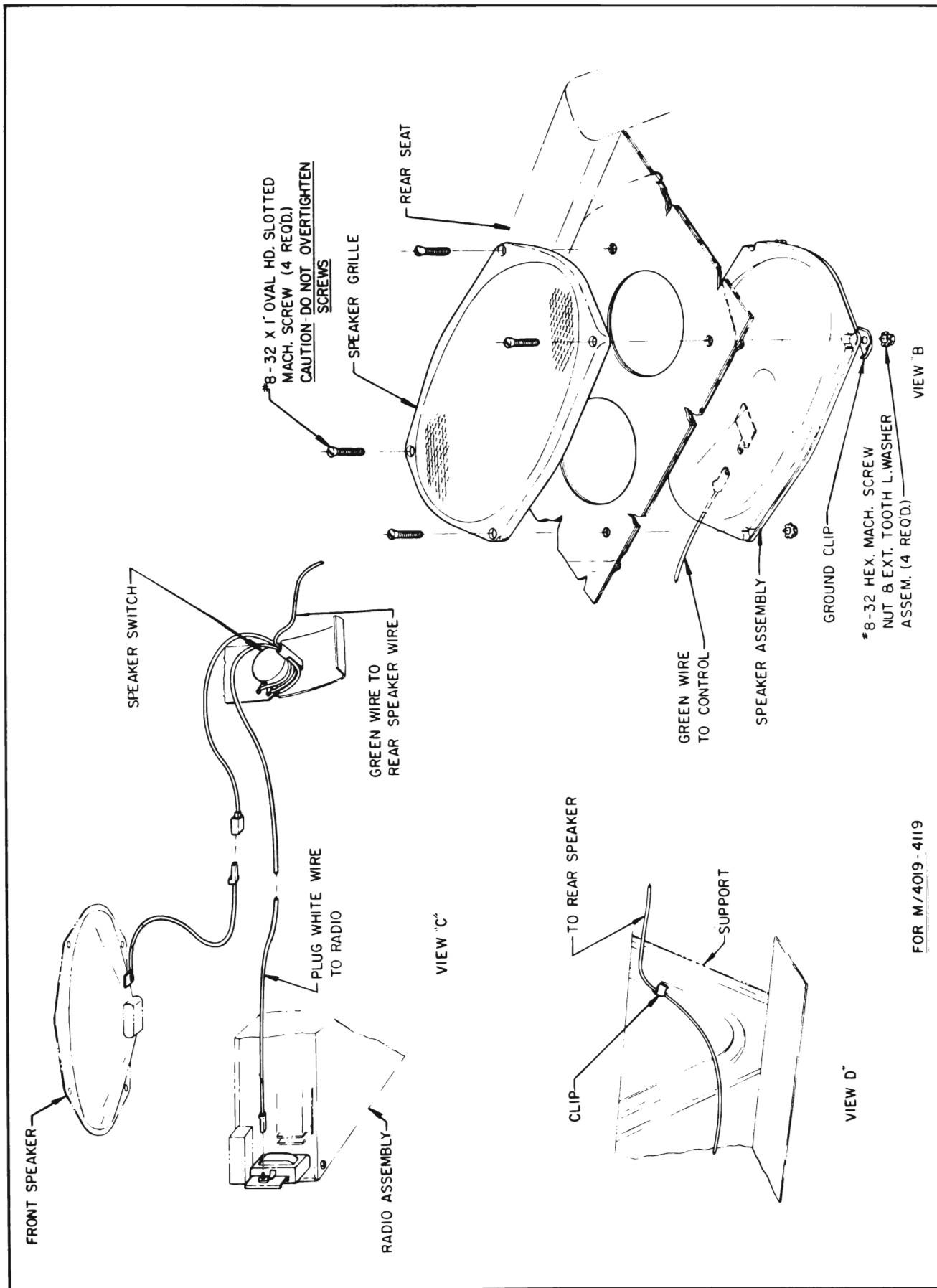


Figure 11-5—Rear Seat Speaker Installation - Illustration #2

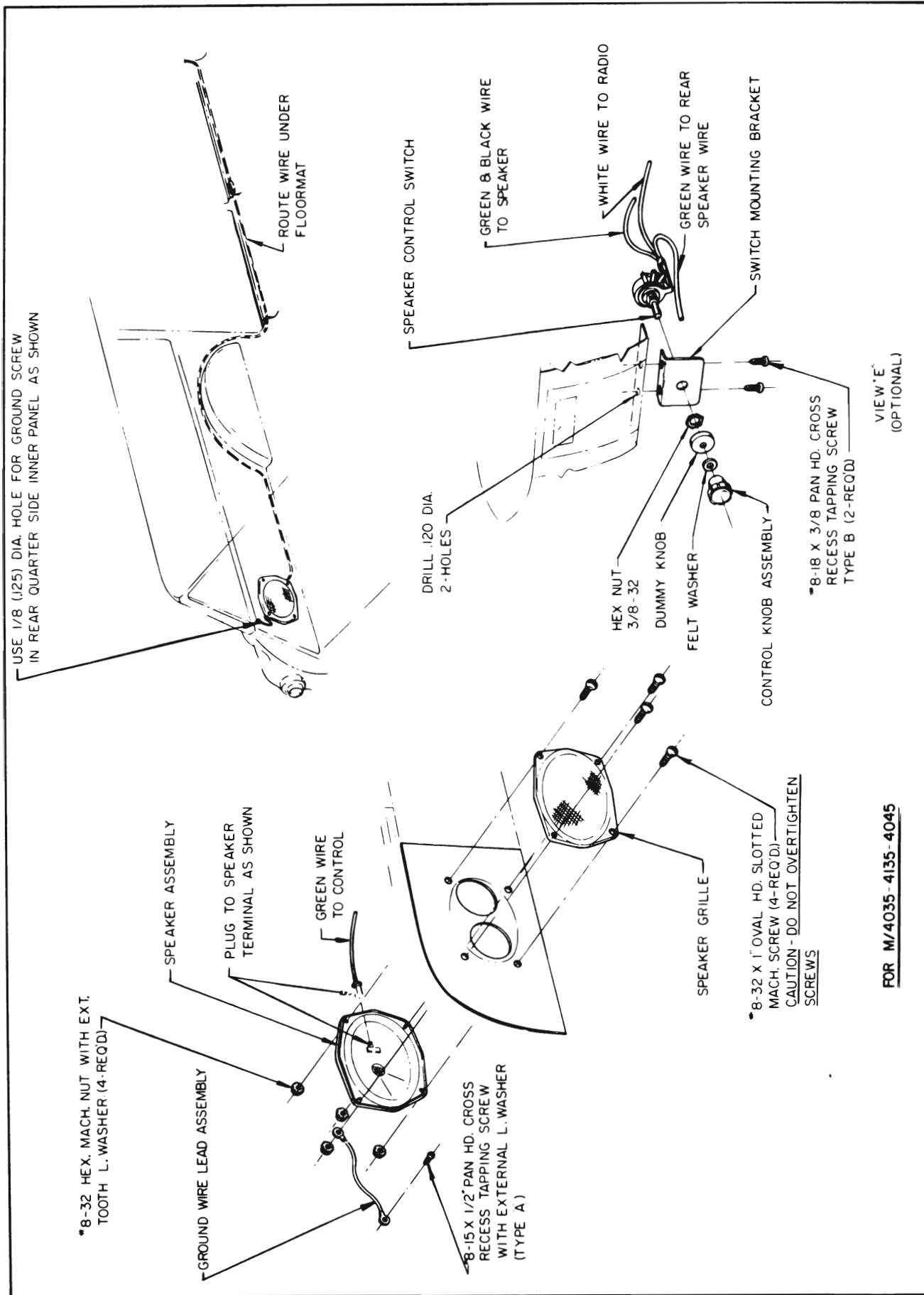


Figure 11-6—Rear Seat Speaker Installation - Illustration #3

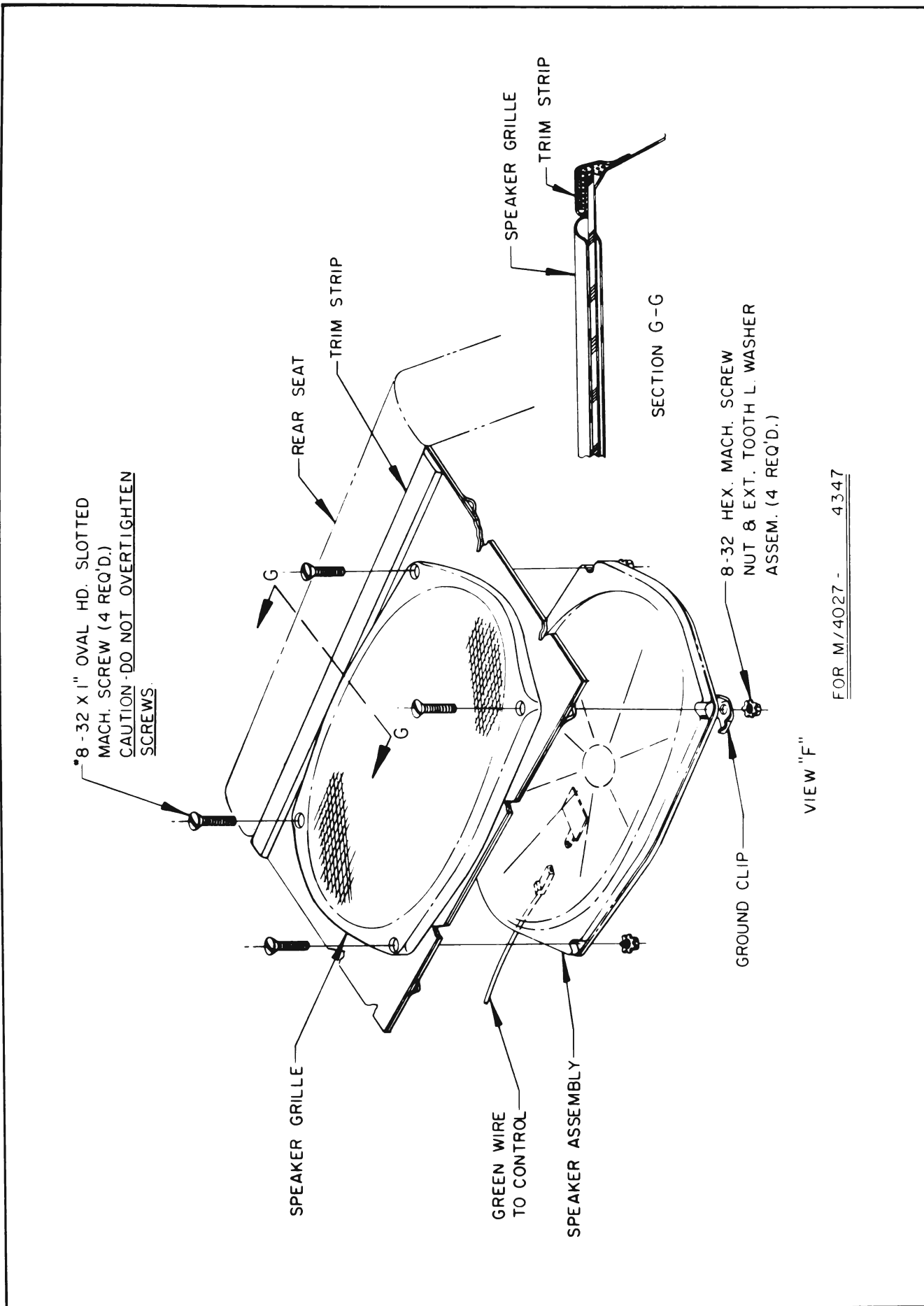


Figure 11-7—Rear Seat Speaker Installation - Illustration #4

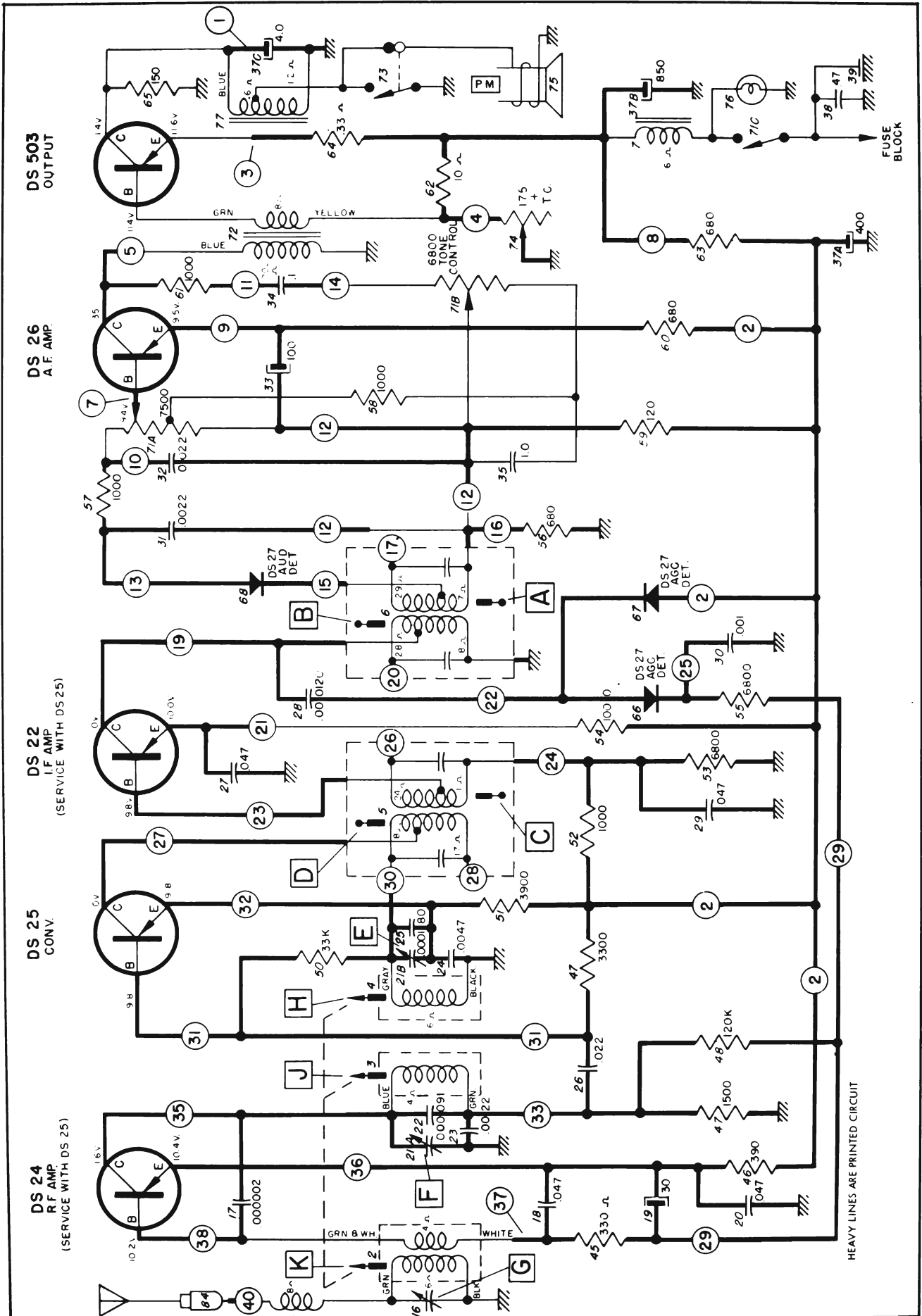


Figure 11-8—Radio Circuit Schematic