

GROUP 11

RADIO, HEATER, VENTILATION AND AIR CONDITIONER

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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 and is extended and retracted by hand.

The Buick radio installation consists of a receiver with separate speaker mounted at the center of the instrument panel. Noise suppressors are 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.

All speakers have an impedance of 10 ohms. When replacing a speaker, the replacement speaker should have the same impedance for satisfactory results.

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 bass response. Rotation counterclockwise will diminish treble 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 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

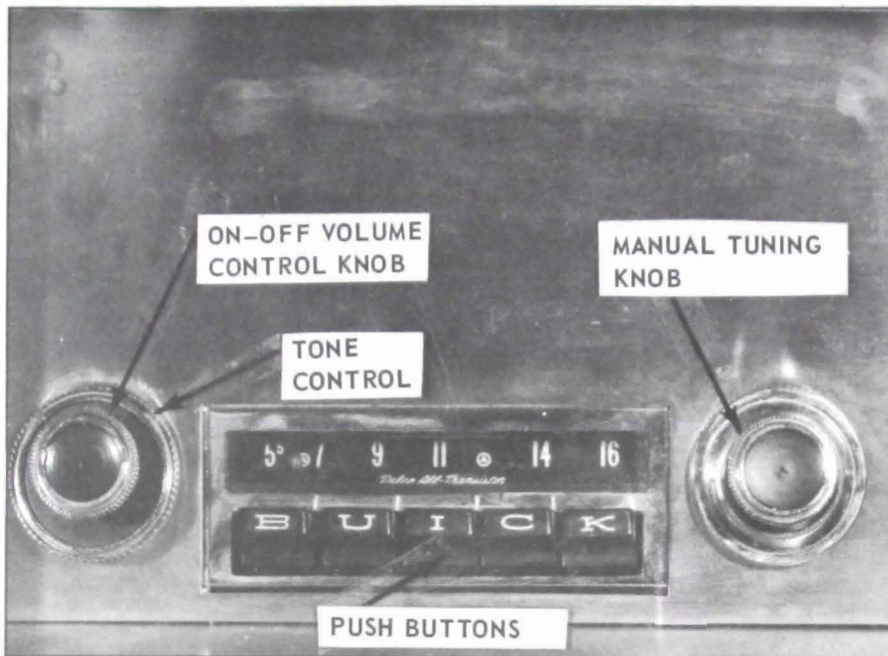


Figure 11-1—Radio Receiver Controls

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 preferable 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 NOISE INTERFERENCE SUPPRESSORS

Three noise suppressor capacitors are used to eliminate radio interference (see Figure 11-2). Two of the capacitors are exterior mounted, one on the voltage regulator and the other on the ignition coil. The third capacitor is pressed into the end bell of the delcotron. The ignition coil capacitor (0.3 MF) is connected to the positive terminal of the coil. Connection of the capacitor lead to the negative terminal will cause excessive pitting of the distributor points. The voltage regulator and delcotron capacitors are both rated at 0.5 MF. The built in resistance of each spark plug wire approximates 4000 ohms per foot.

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.

11-3 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 radio technician.

(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 held out the car window. If radio is still dead with

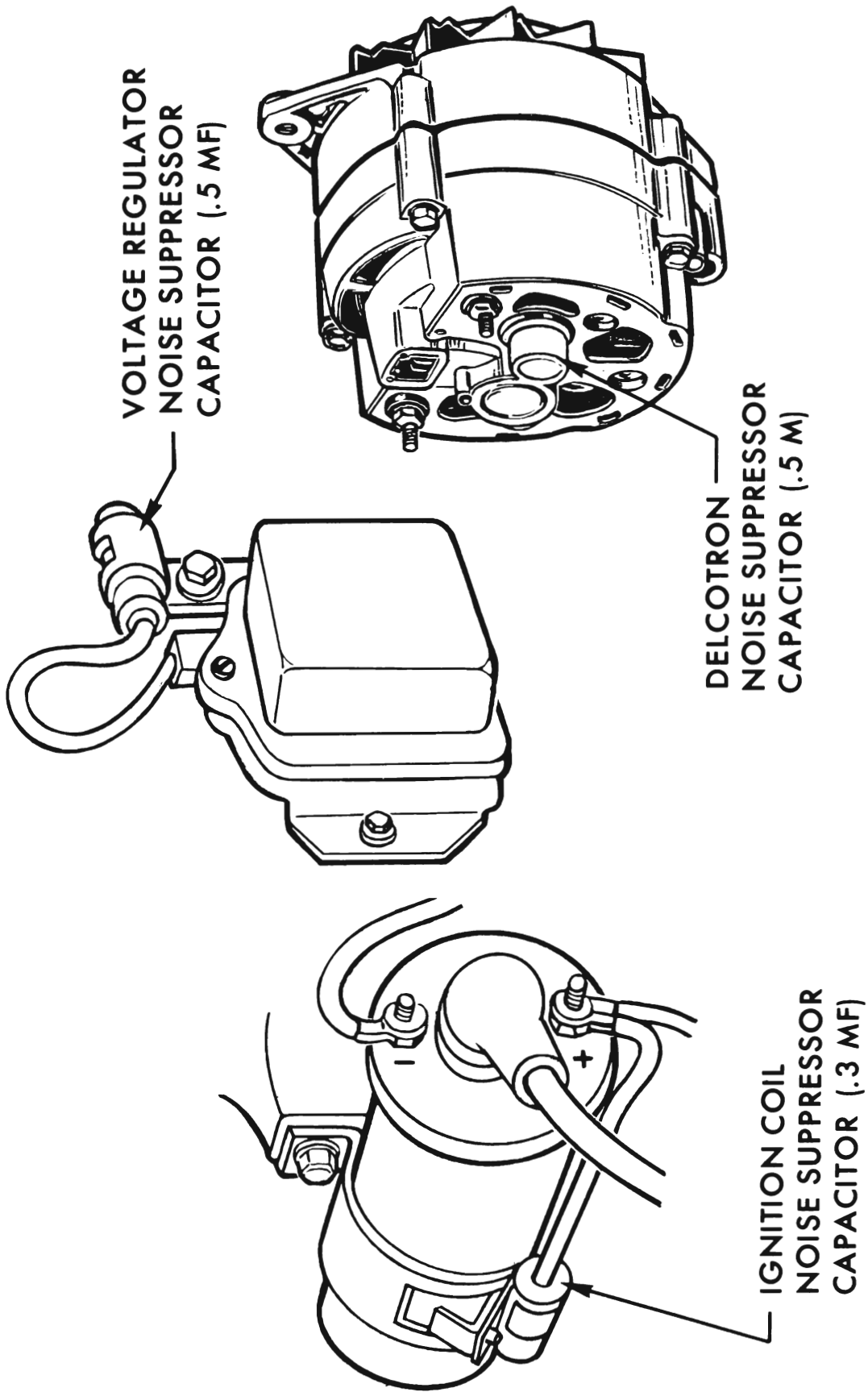


Figure 11-2—Noise Suppressors

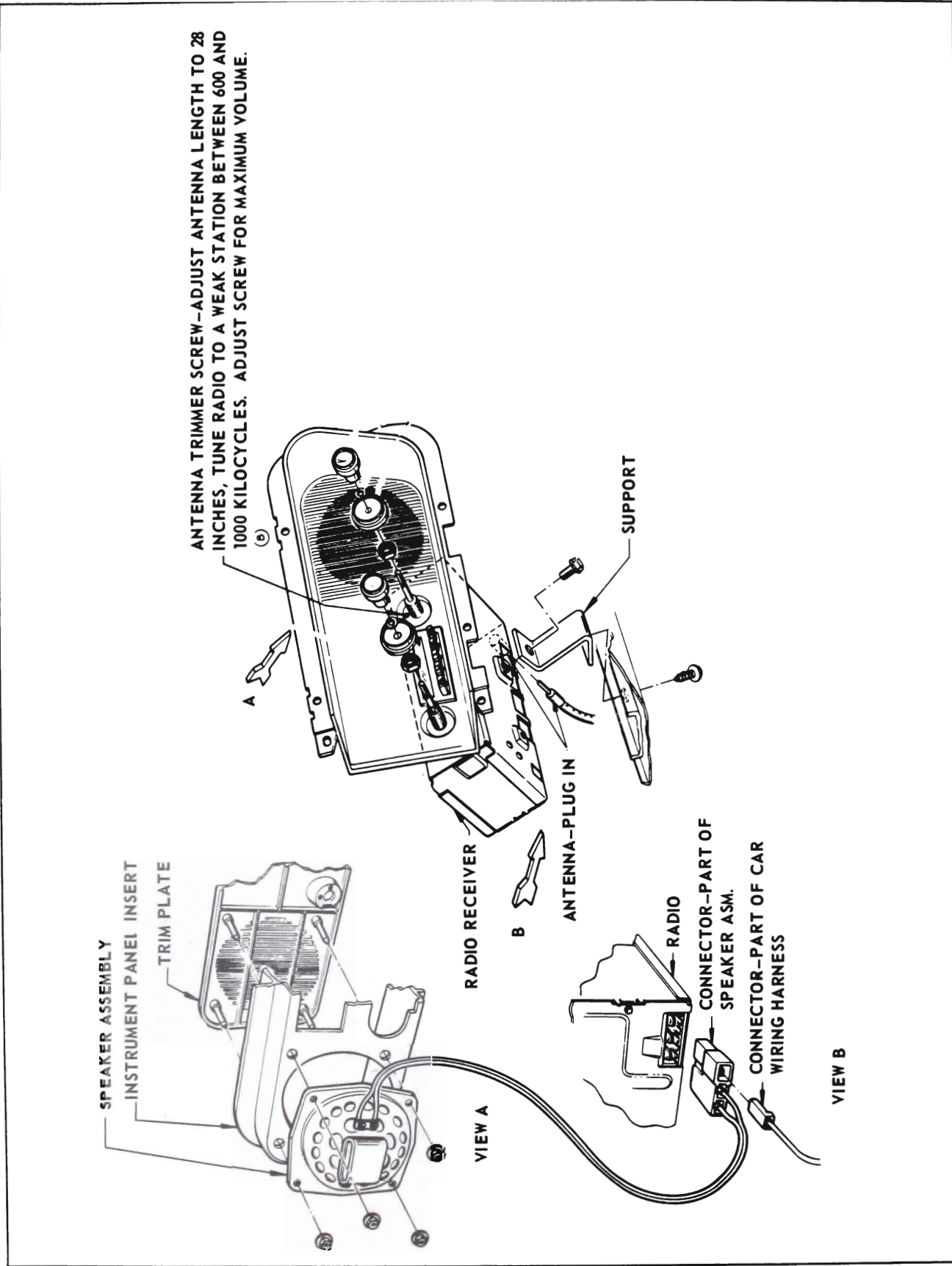


Figure 11-3—Radio Receiver and Speaker Installation

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.

(a) Position antenna at a height of 28".

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

(c) Remove both right inner and outer knobs from radio tuning control shaft and adjust trimmer screw for maximum volume (see Figure 11-3).

(d) If the antenna trimmer does not have a definite peak, check for defective antenna by substitution as in subparagraph "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. Radio is noisy all the time:

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

(b) If antenna is not noisy, remove receiver and speaker for repair.

2. Radio is noisy only when jarred:

(a) Check antenna as in Step 1 above.

(b) Check speaker connection. If speaker connection is not at fault, remove receiver and speaker for repair.

3. Radio is noisy when engine is running:

(a) Check all noise suppressors:

(1) Substitute noise suppressor capacitors on delcotron, regulator, and ignition 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. The antenna leak-in wire is shielded and the shield should have good ground connection at the receiver and the antenna base.

(c) Check for other car wiring passing too close to radio receiver case.

(d) If engine noise is still present, remove receiver and speaker for repair.

4. Radio is 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. Radio is noisy only on dry days when car is moving:

(a) Wheel and tire static will occur only during dry weather. To check to see if noise is wheel static or tire static, drive car until noise is noticed. Touch the brake: if noise disappears, it is wheel static; if noise persists, it is tire static. Static may be eliminated in two ways:

(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 would result in 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 squeeze bottle can be used to insert powder.

11-4 SERVICING RADIO COMPONENTS

a. Removal and Installation of Radio Receiver

REMOVAL (WITHOUT AIR CONDITIONING)

1. Disconnect battery negative lead.

2. Pull off receiver control knobs.

3. Disconnect radio lead, speaker lead, and antenna lead connectors.

4. Remove screw holding support to receiver and withdraw receiver from underside of dash.

REMOVAL (WITH AIR CONDITIONING)

1. Disconnect battery negative lead.

2. Remove five screws and take out exterior cover assembly (see Figure 11-4).

3. Remove four screws from control trim bezel and take out bezel.

4. Take out ash tray assembly and remove screw holding support to radio receiver.

5. Remove four screws securing instrument panel insert to instrument panel and partially withdraw insert. Disconnect radio lead and antenna lead connectors and complete removal of assembly.

6. Further disassembly and separation of receiver from instrument panel insert will be evident upon inspection.

INSTALLATION

7. Install radio receiver reverse of removal and trim antenna if receiver was repaired.

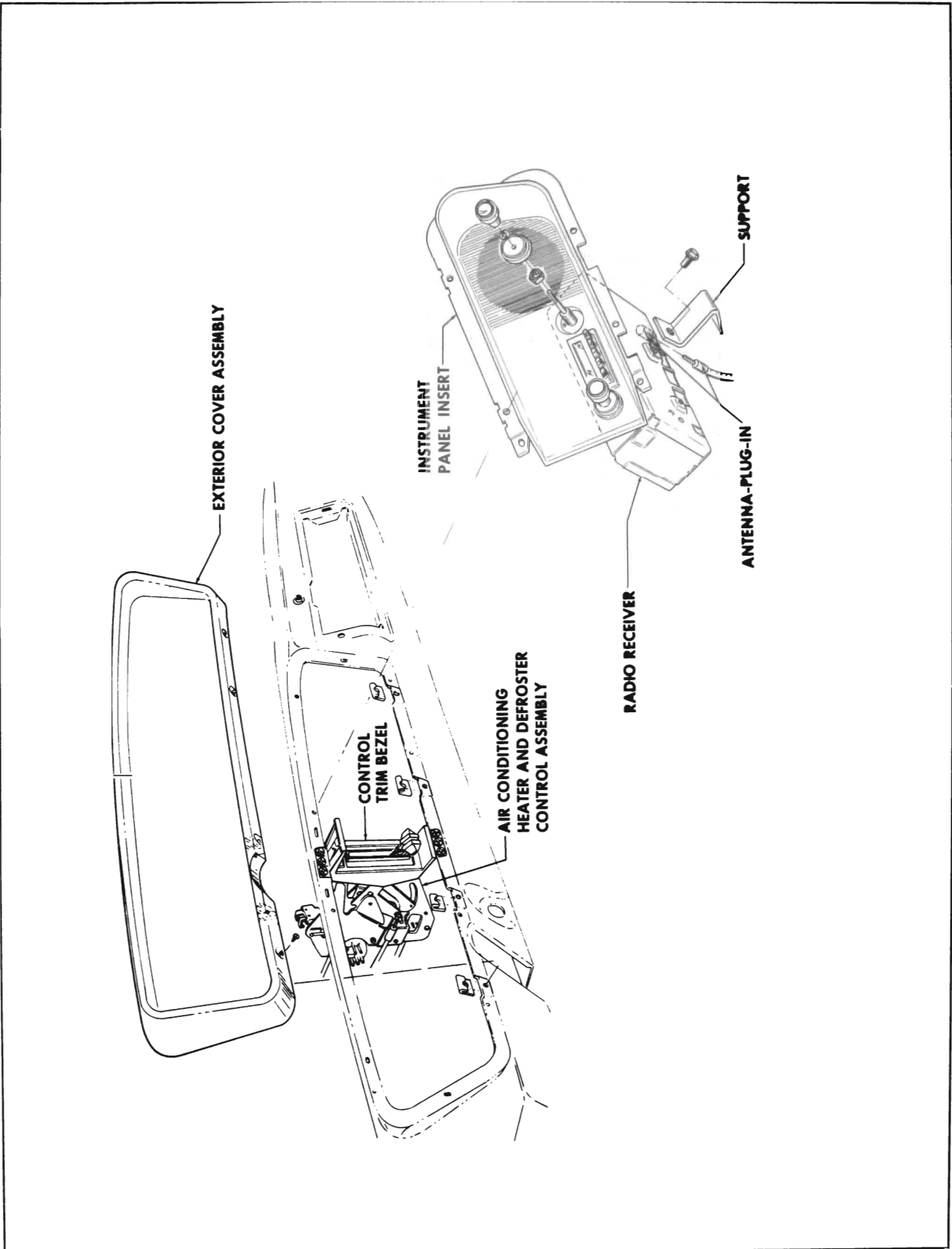


Figure 11-4—Radio Receiver Removal and Installation

b. Removal and Installation of Speaker

REMOVAL (WITHOUT AIR CONDITIONING)

1. Disconnect double series connected connectors from rear of receiver and separate connectors.
2. Remove four nuts securing speaker to trim plate and take out speaker.

REMOVAL (WITH AIR CONDITIONING)

1. Disconnect negative battery lead.
2. Remove five screws and take out exterior cover assembly (see Figure 11-3).
3. Remove four screws from control, trim bezel and take out bezel.
4. Take out ash tray assembly and remove screw holding support to radio receiver.
5. Remove four screws securing instrument panel insert to instrument panel and partially withdraw insert. Disconnect radio lead and antenna lead connectors and complete removal of assembly.
6. Further disassembly and separation of speaker from instrument panel insert will be evident upon inspection.

INSTALLATION

7. Install speaker reverse of removal.

c. Removal and Installation of Antenna

REMOVAL

1. Unscrew antenna cap nut (see Figure 11-5) and lift mast assembly out of base and lead-in assembly. Remove pad.
2. Remove outside air inlet grille located forward of the windshield.

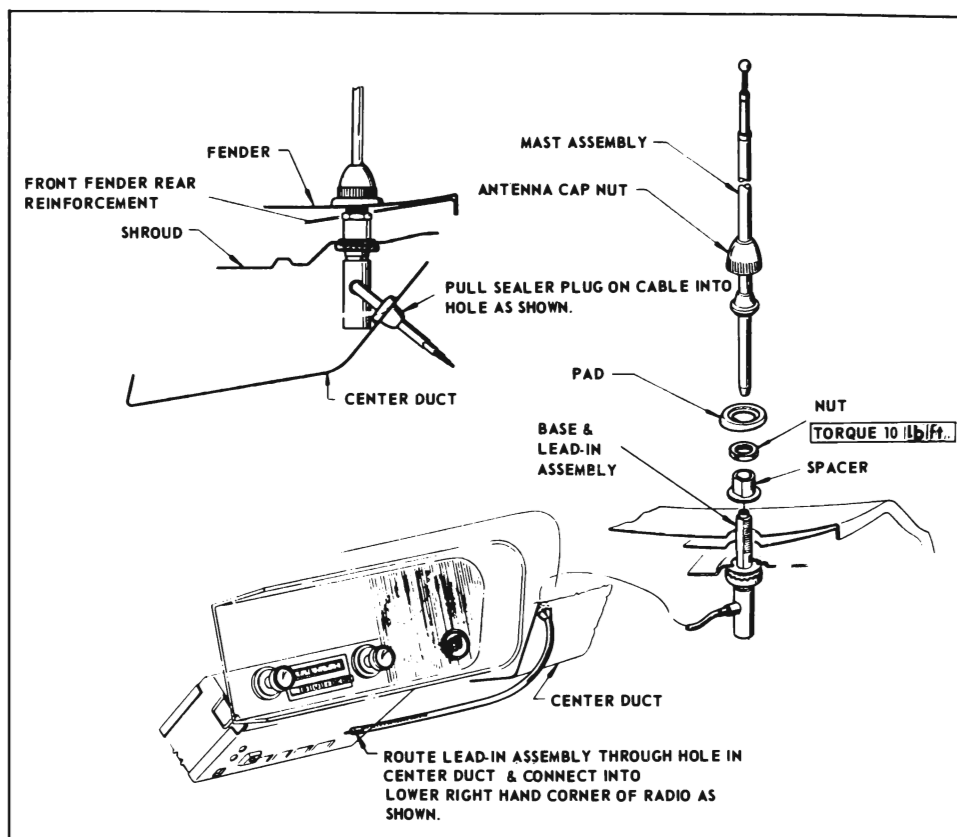


Figure 11-5—Antenna Installation

3. Unplug antenna wire from receiver, remove nut securing spacer, and also the base and lead-in assembly to shroud and withdraw base and lead-in assembly through opening in topside of cowl.

INSTALLATION

4. Install antenna reverse of removal procedures and trim antenna if antenna was repaired.

NOTE: The 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. Use of other than authorized replacement parts is not recommended.

11-5 RADIO ADJUSTMENTS—ON CAR

NOTE: 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. Position antenna at a height of 28".
2. Tune radio to a weak station between 600 and 1000 KC that can barely be heard with volume turned full on.
3. Remove both right inner and outer knobs from radio tuning control shaft and turn antenna trimmer screw for maximum volume (see Figure 11-3).

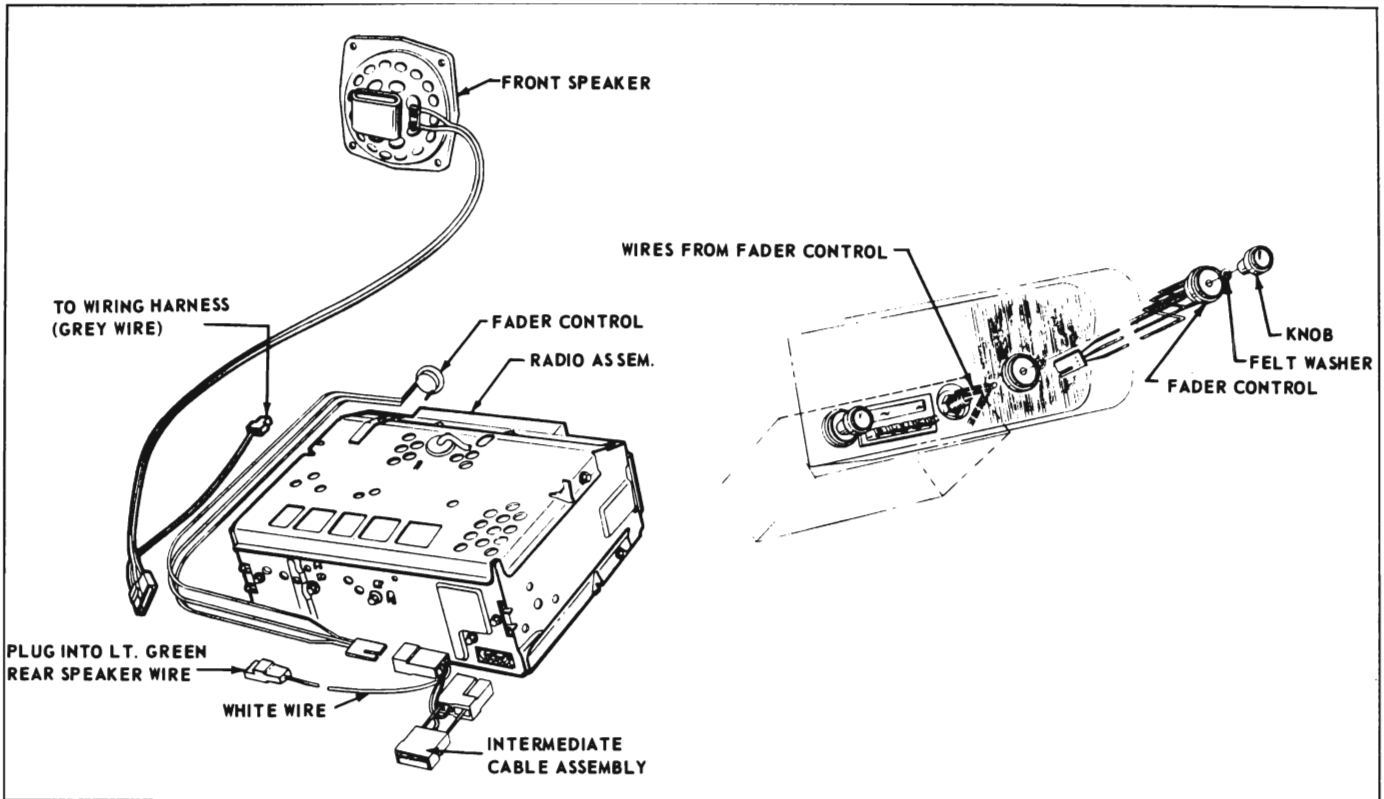


Figure 11-6—Rear Speaker Instrument Panel Connection

b. Setting Push Buttons to Desired Stations

1. Turn on the radio.

2. Pull push button all the way out as far as it will go. It is desirable to set-up the push but-

tons in logical sequence. For example, lowest frequency 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 that 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, and 4.

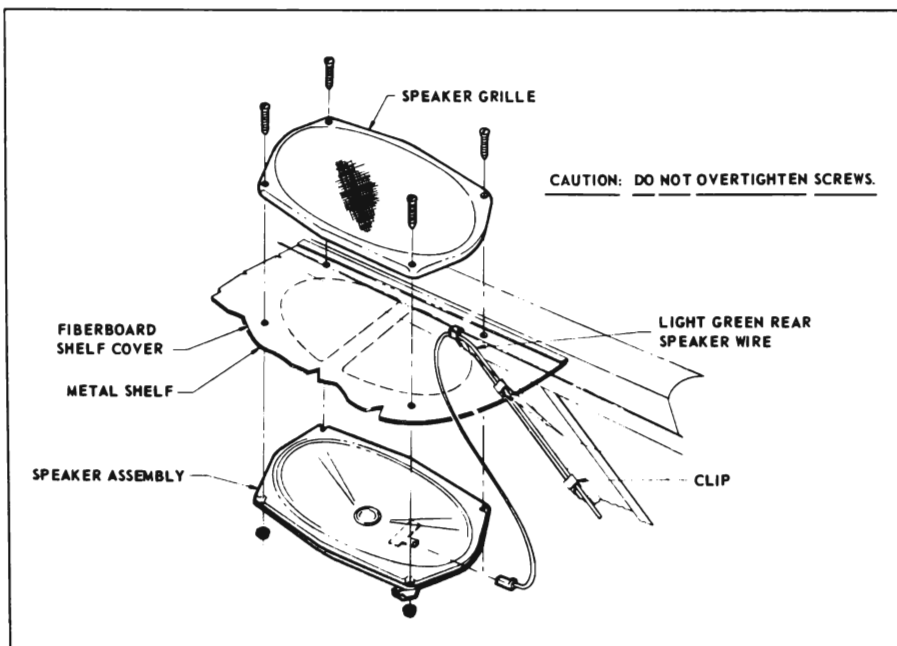


Figure 11-7—Rear Speaker Installation (Sedan)

11-6 REAR SPEAKER INSTALLATION

The radio rear speaker is optional on all models except convertibles. The rear speaker may be dealer installed. Installation details are shown in Figures 11-6, 11-7, and 11-8.

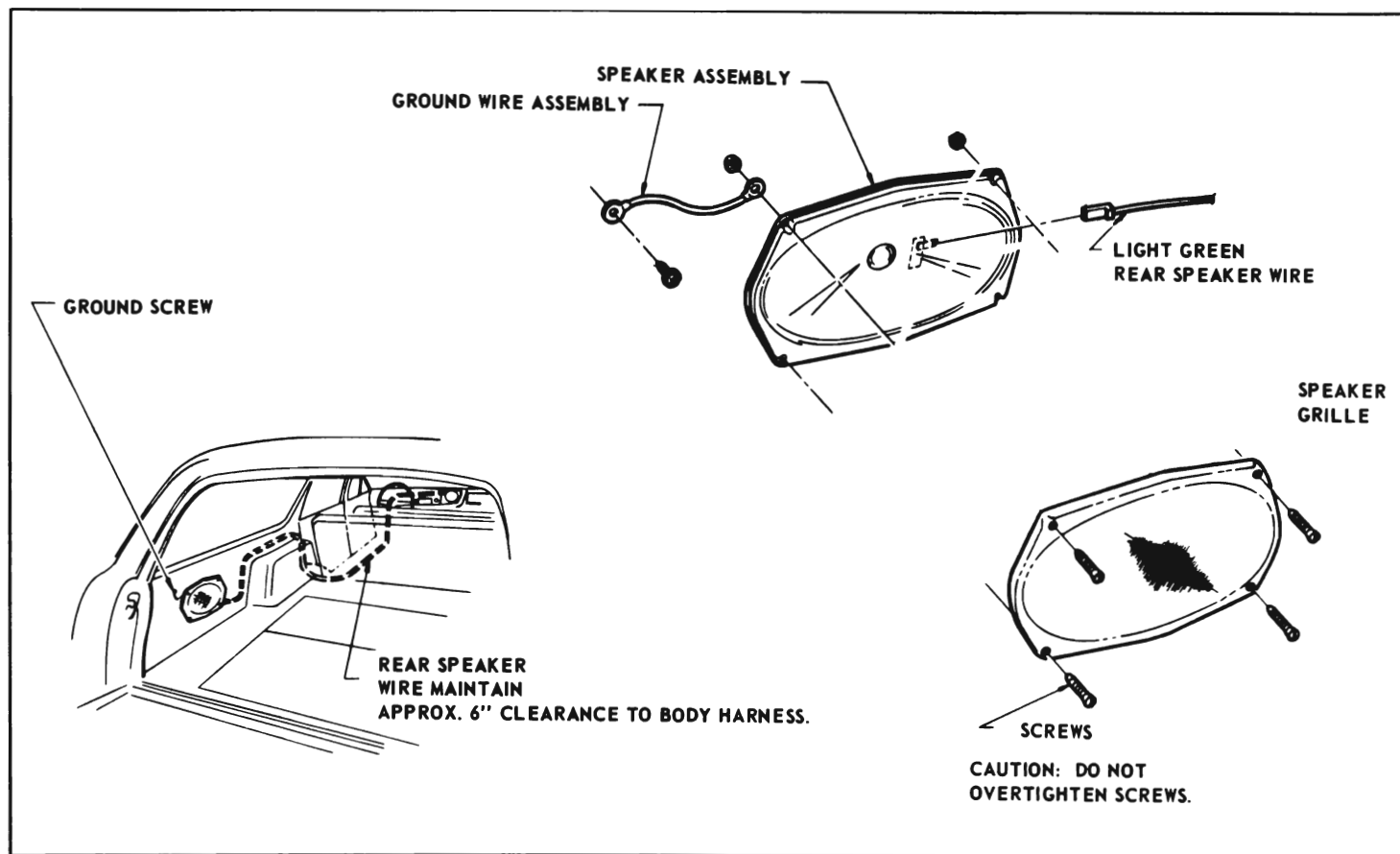


Figure 11-8—Rear Speaker Installation (Estate Wagon)

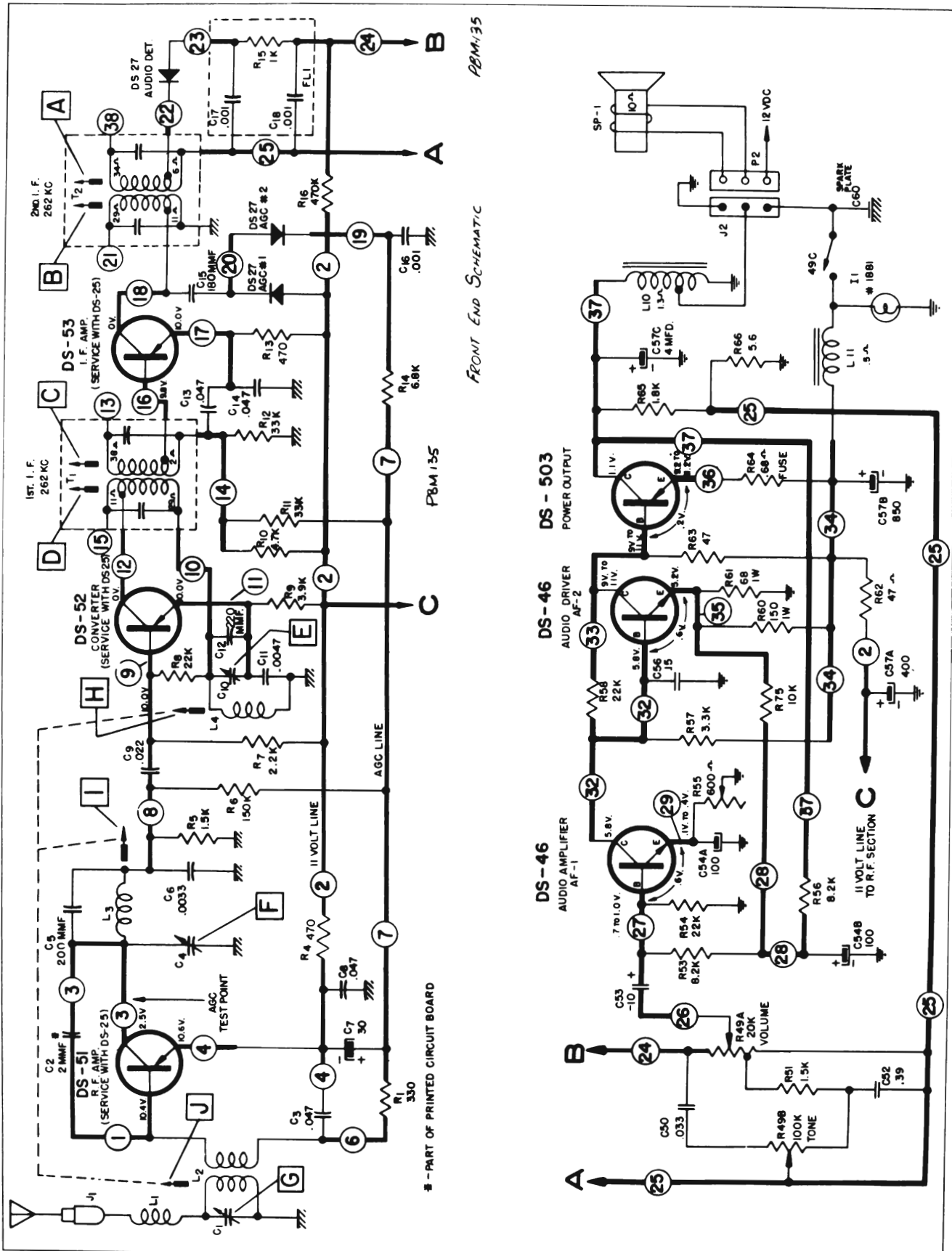


Figure 11-9—Radio Circuit Schematic