

PART THREE—BODY

SECTION II—ACCESSORIES

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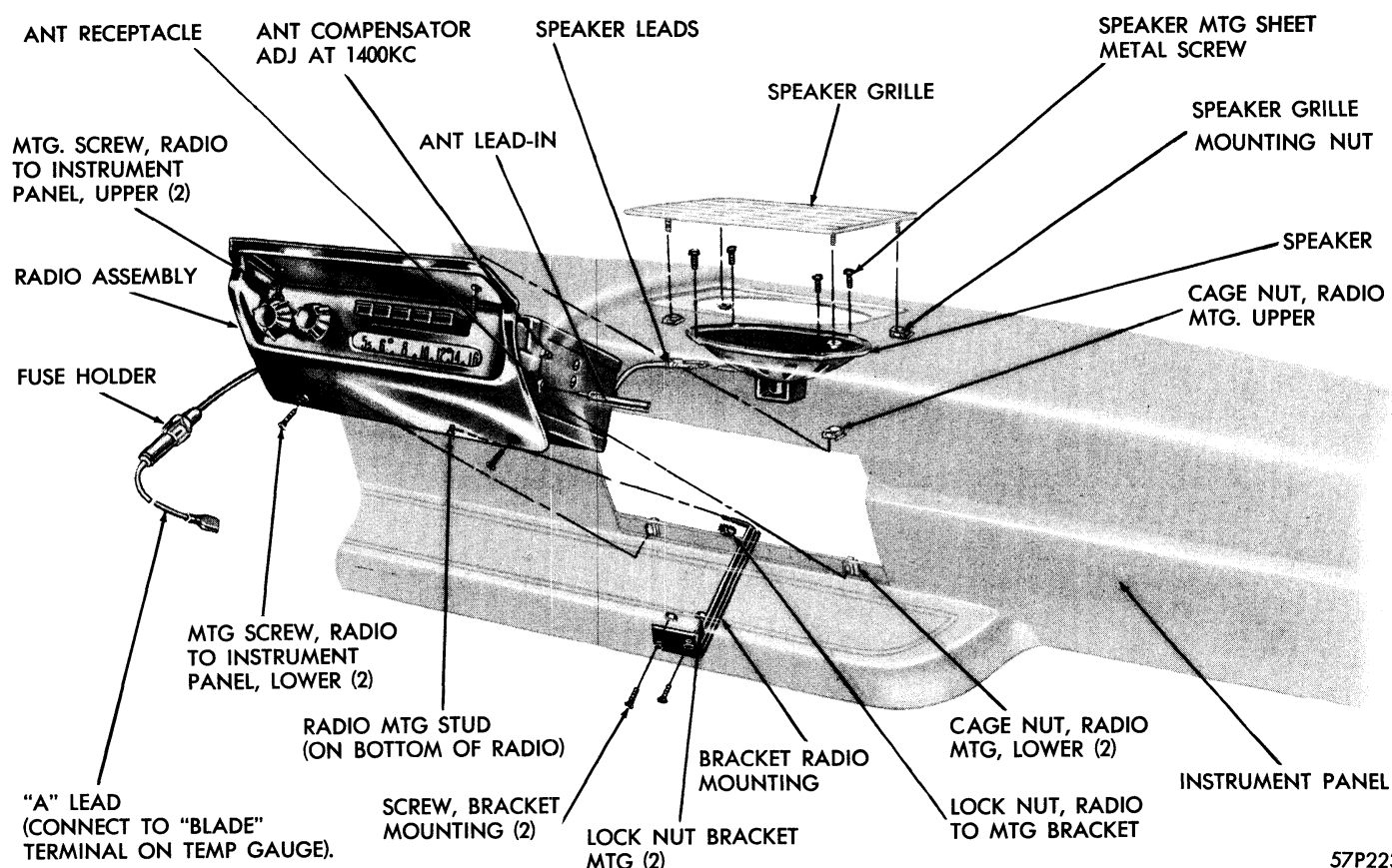
1. RADIO

The custom built Model 850, Figure 3, is engineered to operate in conjunction with the electrical system. This radio has seven tubes, a rectifier tube and push button tuning.

Models 848, 854, and Search Tune Models 917 and 925 are transistor powered radios. The output tubes, rectifier tube, the vibrator and the power supply transformer

have all been eliminated by the use of the transistor. There is only one transistor in each receiver, the balance of the circuit functions being performed by tubes operating directly from the car battery.

The transistor is able to deliver comparatively large amounts of power to the speaker with only the 12 volts of the battery applied to its circuit. The service life of the radio is materially improved by the use of the transistor. The transistor itself, when properly protected,



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Figure 3—Radio Removal and Installation

electrically and thermally has an almost indefinite service life.

When testing these radios in the car or on the bench, the proper polarity must always be observed with the negative being at ground potential. In the event that the polarity is reversed and the radio is left connected for a long period of time, it is possible for the transistor to be destroyed. In the Search Tune receiver, model 917, if the polarity is reversed the receiver will search to the end of the dial scale and stop. It will be unable to reverse its direction of searching unless the proper polarity is observed.

INSTALLATION OF RADIO AND ANTENNA

Detailed instructions for installation are furnished with each radio and antenna package. For best radio reception, be sure the antenna rod is clean. When installing the antenna, route the lead in wire as far away as possible from the instrument panel wiring. After the antenna and receiver have been installed the radio should be adjusted.

RADIO ADJUSTMENTS

ANTENNA COMPENSATOR ADJUSTMENT — Turn the radio ON and with the dial set at approximately 1400 kilocycles, the volume at full and the antenna fully extended, adjust the antenna trimmer for the maximum volume of a weak station, or background noise between stations.

SETTING PUSH BUTTONS—Push buttons should be set up in the daytime, since weak stations are stronger at night and there is a possibility of setting a push button on a distant station carrying the same program as the desired station.

Turn radio on and allow it to warm up for 20 minutes. Antenna should be fully extended and the tone control should be in the high position.

Pull out on button (push button cap cannot be removed), turn the manual control knob to the desired station. Push the button in. The station is now set for automatic tuning. Follow the same procedure for the remaining buttons.

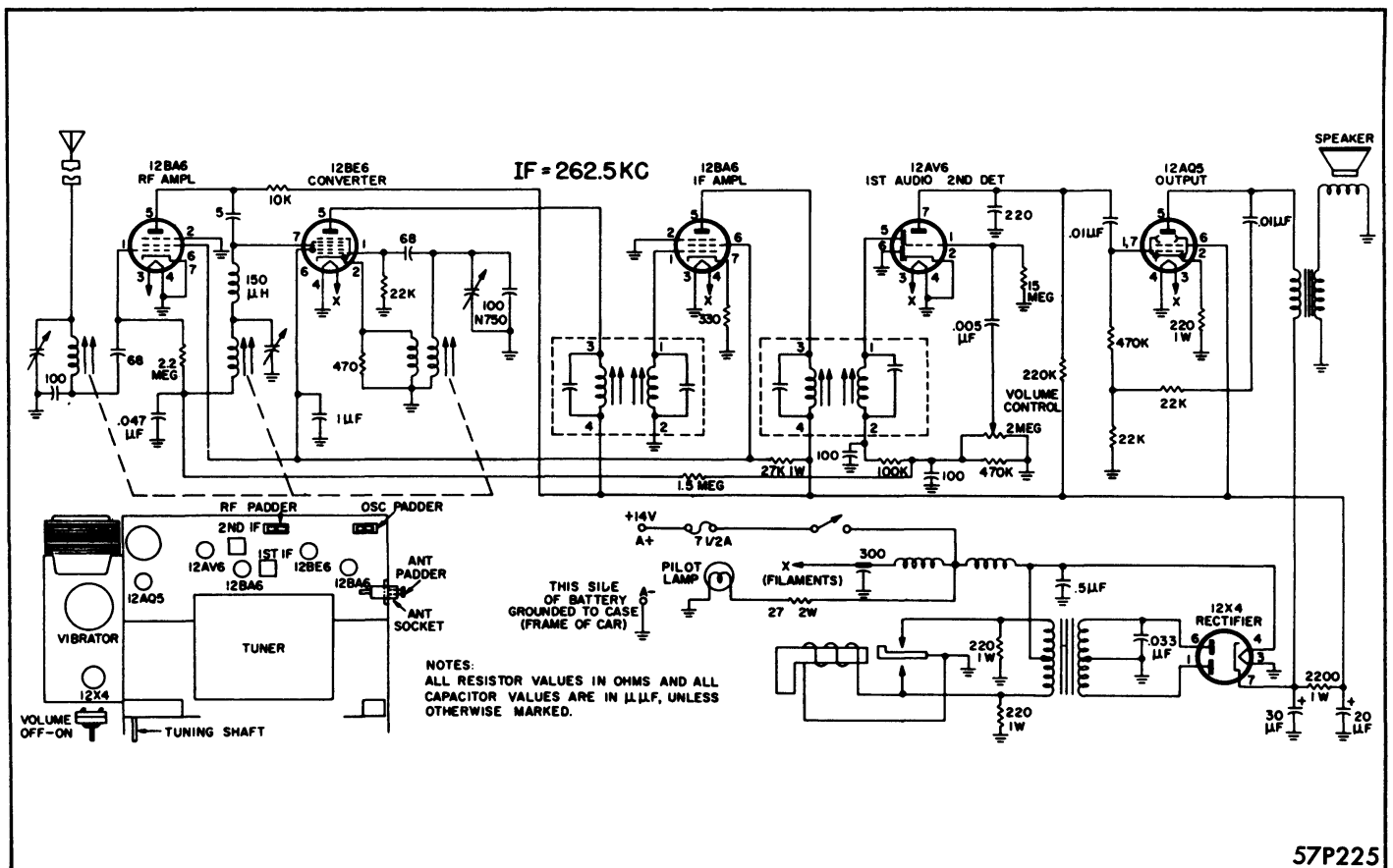


Figure 4—Radio Circuit Diagram Model 850

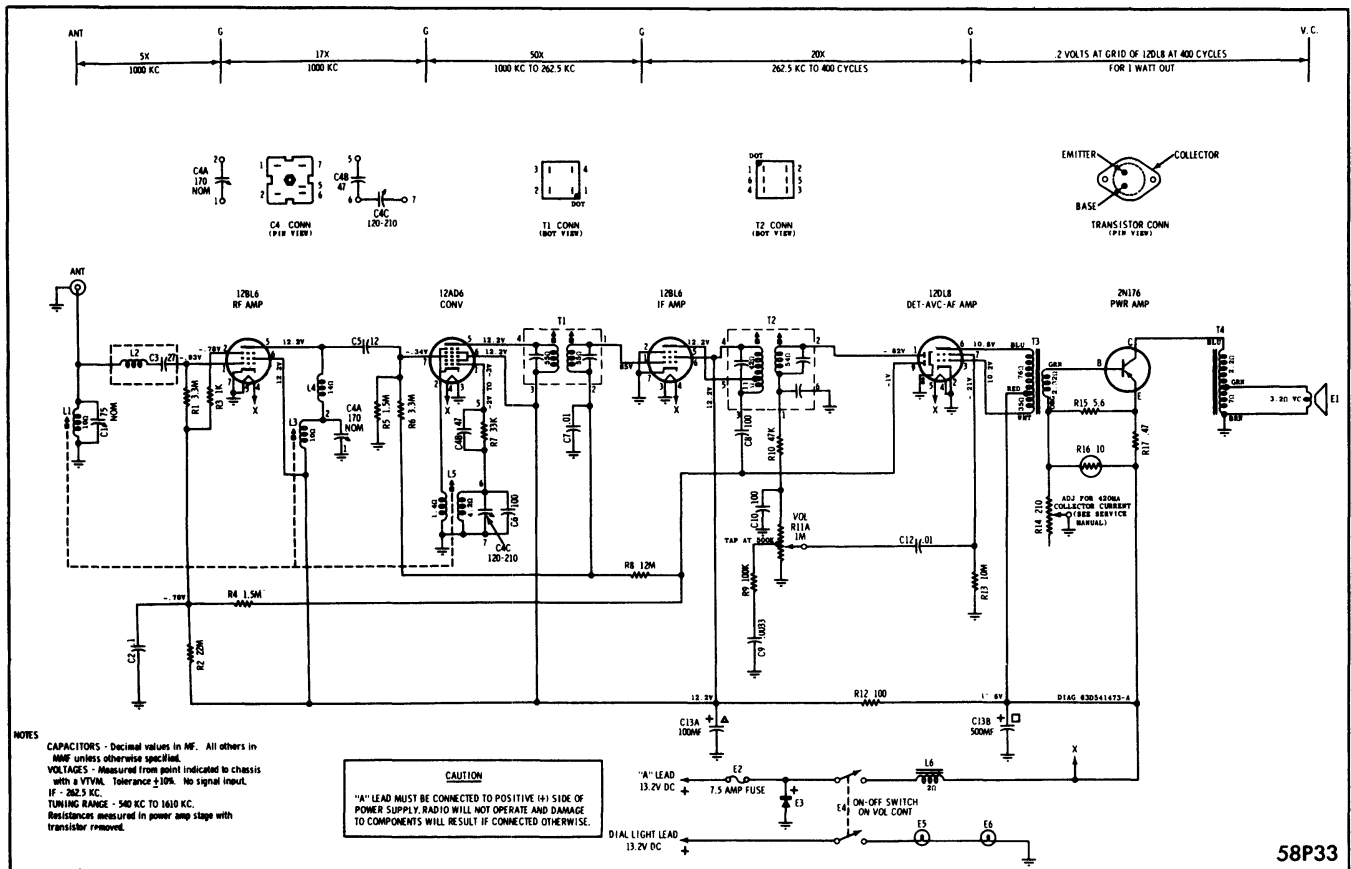


Figure 5—Radio Circuit Diagram—Model 854

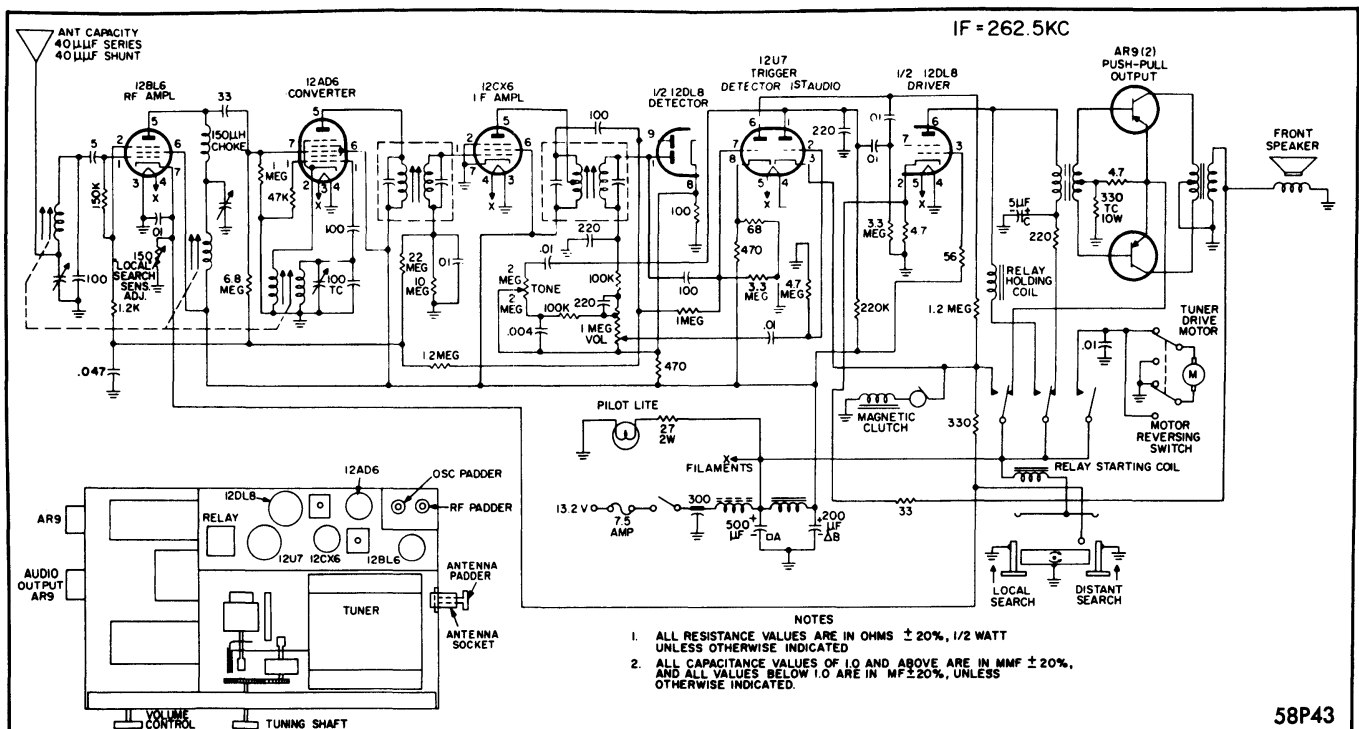


Figure 6—Radio Circuit Diagram—Model 925

NOTE

The numbers on the dial scale indicate the frequency range of the receiver. Before setting the push button, tune carefully until you are exactly on the station; turning to either side of it will result in poor tone quality and excessive noise. When setting automatic tuning, it is preferred that the left-hand buttons tune in the higher KC stations.

REMOVAL OF RADIO CHASSIS

Disconnect radio antenna lead in wire at radio and disconnect the battery lead wire at the fuse holder, disconnect the pilot light head, disconnect the speaker wires from radio. Remove the four mounting screws from front of radio panel. See Figure 3. Loosen the radio bracket mounting screw located under radio. Pull the chassis out of the instrument panel.

TIRE STATIC

After completion of radio installation, road test car for static on dry concrete and black-top pavements, at both low and high car speeds, with antenna extended

to operating position, with radio at full volume and tuned off station.

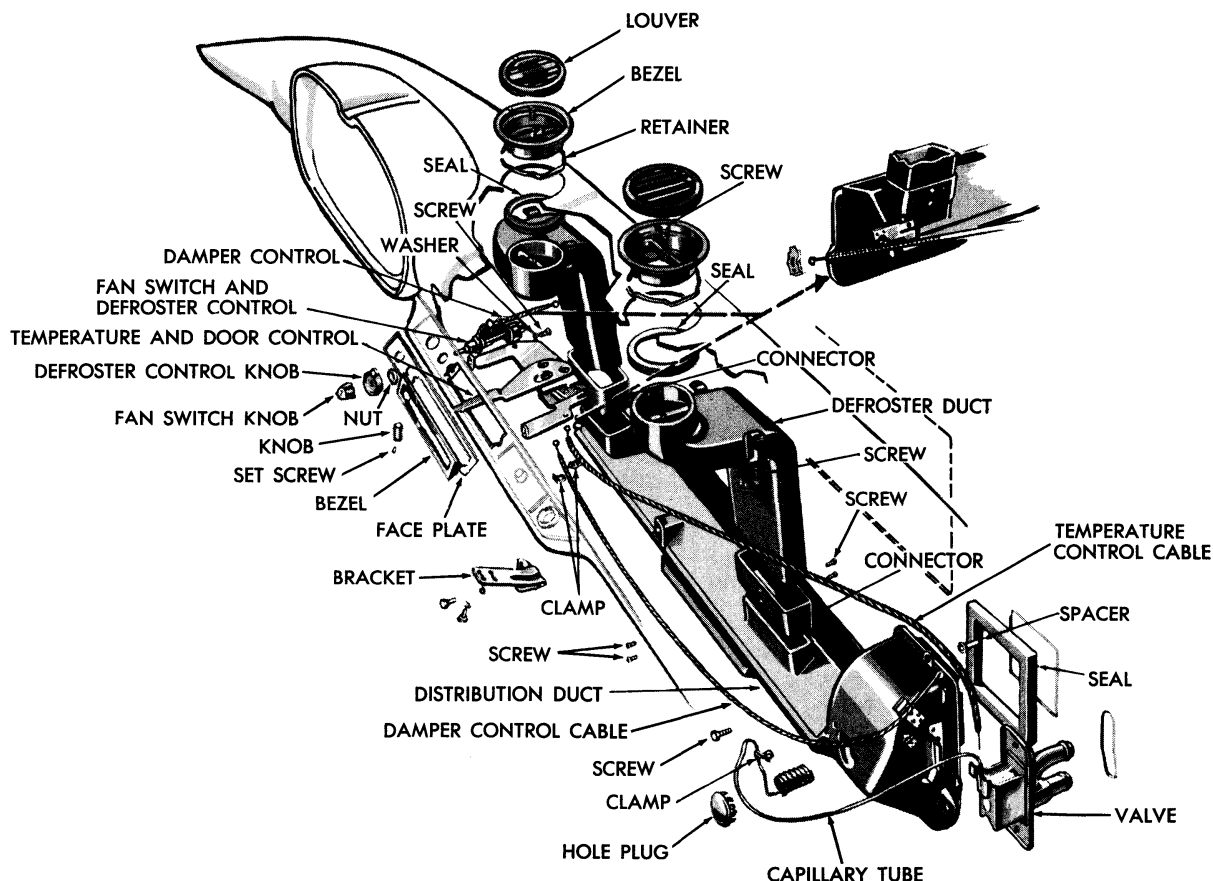
If tire static noise is encountered, inject Tire Static Suppression Powder, Package and black-top pavements, at both low and high car speeds, with antenna extended to operating position, with radio at full volume and tuned off station.

If tire static noise is encountered, inject Tire Static Suppression Powder into tires with Injector and follow instructions on package.

2. HEATER

The permanently open cowl vent type heater draws air through the cowl vent for heating, ventilating, or defrosting. An increase in air flow while driving is made possible by the location of the air inlet, making it unnecessary to use the heater blower, except at low car speeds.

For winter operation the vent permits air to flow through the plenum chamber into the heating core, through the heater housing, blower and distribution duct and into the passenger compartment.



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Figure 7—Heater Installation Passenger Side of Car

Passenger compartment temperatures are automatically controlled by means of a modulating water valve adjusted by moving the temperature control to the desired point. For summer operation a ventilator door is provided in the fire wall to direct fresh air from the cowl vent opening into the driver compartment. This door can be easily opened or closed by a convenient foot pedal.

Toggle action hinge assures positive clamping of the door to prevent possibility of air, dust or water leakage. Air enters the cowl vent opening and by-passes the heating system and enters through the ventilation door.

Heated or unheated air is distributed to the windshield through two circular louvered grilles mounted on the top surface of the instrument panel, as shown in Figure 7. The defrosting air from the grilles covers the entire windshield. A damper in the distribution duct diverts the air to the windshield for defrosting.

INSTALLATION OF HEATERS

Instructions for installation of heater and adjustment of controls are furnished with each heater package.

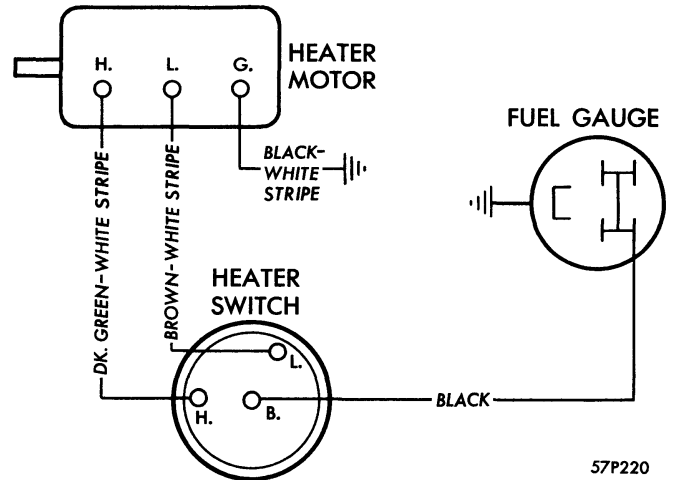


Figure 9—Heater Wiring Diagram

BLOWER MOTOR

Disconnect the wires to the blower motor. Remove the blower mounting studs and remove the blower motor as shown in Figure 8.

HEATER CORE

REPLACEMENT—Drain the cooling system. Disconnect the heater hoses at the heater core. Disconnect the

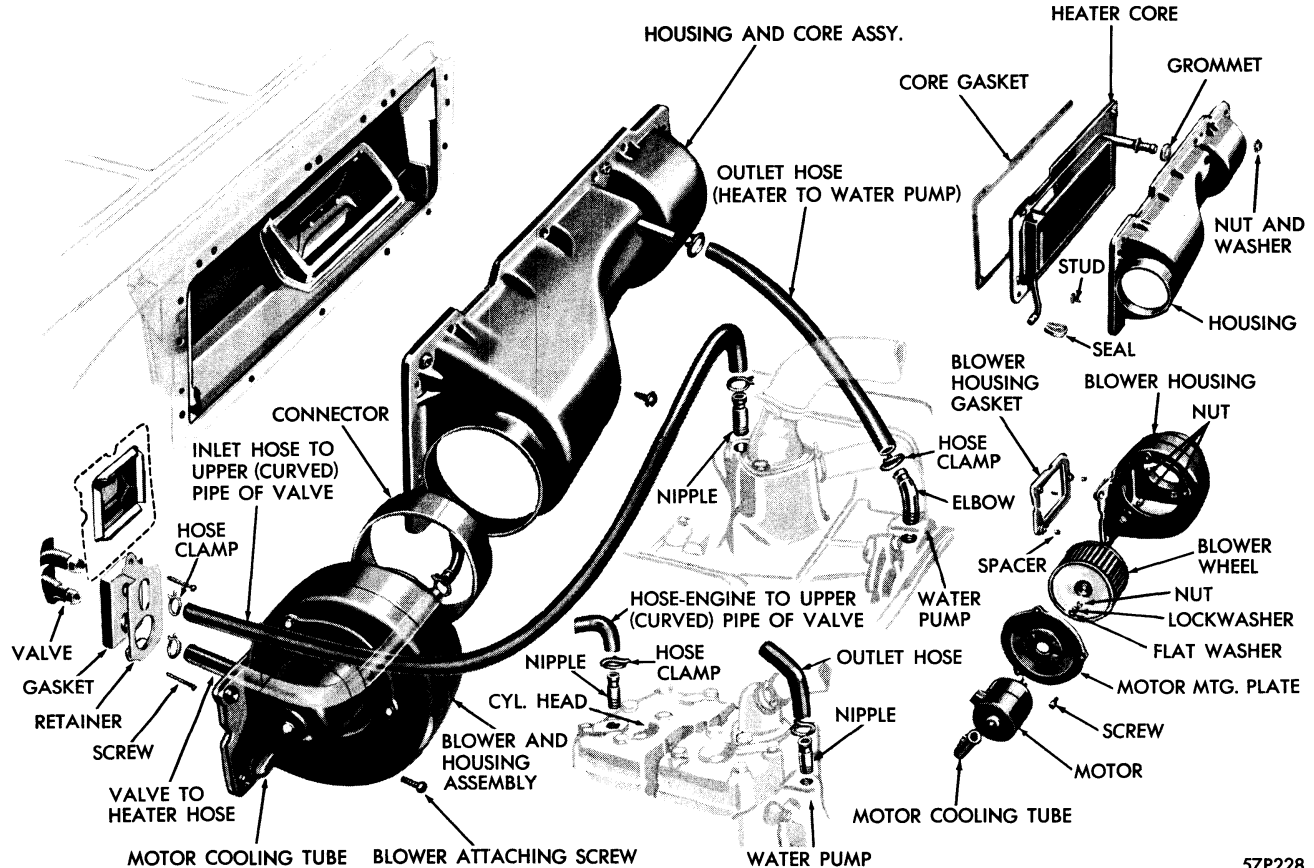


Figure 8—Heater Installation Engine Side of Car

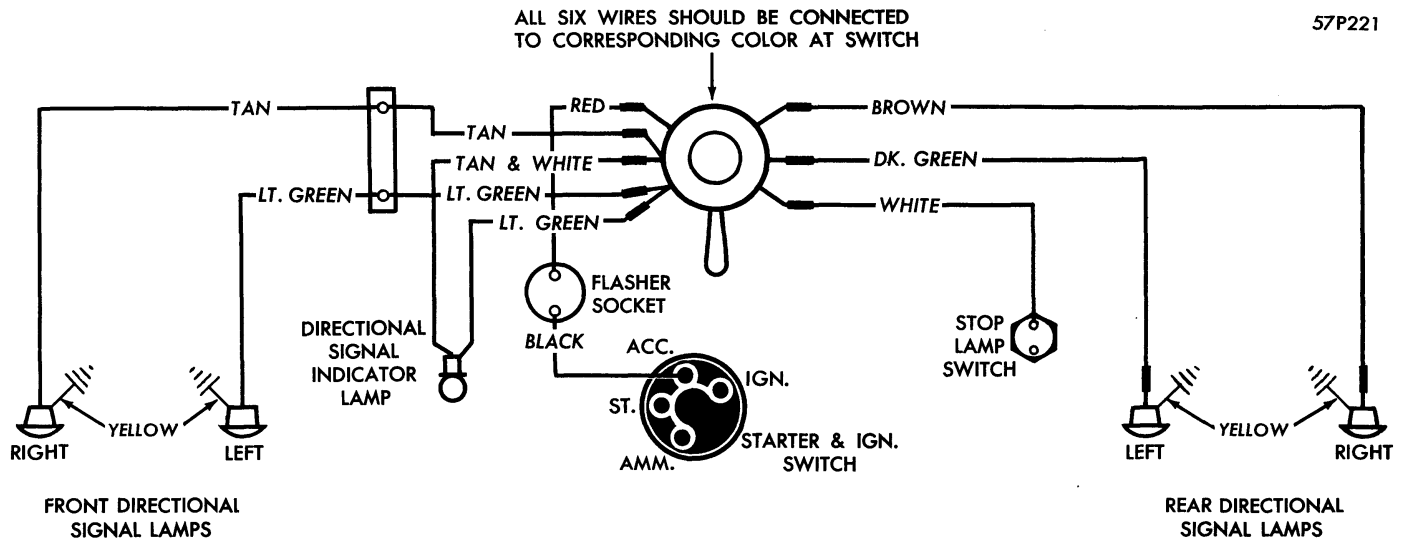


Figure 10—Six Wire Directional Signal Circuit

blower motor wires. Remove attaching screws from heater housing. Remove heater housing and remove heater core from housing.

After installing heater core, housing, wires, as shown in Figure 9, and hoses, fill cooling system and make sure all hose connections are tight. Check for leaks.

3. DIRECTIONAL SIGNAL

The directional signal lever is located on the left side of the steering column and returns automatically to the neutral position when the turn is completed. Green indicator above and to the left of the speedometer flashes simultaneously with bulbs in tail and parking lights until turn is completed.

The directional signals operate by turning the key either to the left or right, thereby offering a safety flashing light when parked at night.

The turn indicator switch prevents the stop light from operating on the side where the directional signal is flashing. The flasher is so constructed that even though the indicator lamp is burned out, the directional signal lights will operate.

Detailed installation instructions are furnished in the Directional Signal Package. See Figure 10 for wiring diagram.

4. DIAGNOSIS PROCEDURES

RADIO INTERFERENCE

Four types of interference may be encountered, each must be identified before an attempt is made to eliminate the interference.

1. **EXTERNAL INTERFERENCE**—This type is due to street cars, neon lights, power lines, buses, other automobiles, high tension lines, etc. This interference can be readily identified by driving into another locality and checking the radio for a change in the intensity of the interference at various locations.

2. **IGNITION SYSTEM OR GENERATOR INTERFERENCE**—This type of interference appears in the form of discharge, or a hum or whine from the generator. To identify this interference, shut off the engine with the radio turned on but not tuned in on a station. If the noise disappears, the interference is coming from the ignition system or the generator.

3. **BACKGROUND NOISE INTERFERENCE**—This interference may result when the radio is tuned in on a distant station which has a very weak signal. It is introduced when using the full volume of the set under certain conditions. In most cases, the interference may be due to atmospheric conditions or to a certain amount of inherent noises from tubes and radio set.

4. **SUPPRESSING INTERFERENCE**—Antenna or receiver interference may be picked up by the antenna or the receiver. To determine which unit is picking up the disturbance, disconnect the antenna lead at the receiver and plug it into another antenna. If the interference disappears the disturbance is being picked up by the antenna. If the antenna is picking up engine interference, make sure the antenna lead is properly shielded and connected to the receiver. Make sure the lead is properly grounded. Check all high tension wires that connect with the distributor cap and ignition coil for good contact with the terminal inserts. Push these wires

in their receptacles as far as possible to insure good contacts.

If antenna lead-in is not properly routed, interference may occur. The antenna lead-in should extend through the grommet, over and away from all other wires to the antenna socket on the radio.

If the interference continues after these steps are taken, part of the disturbance may be picked up by the receiver, the battery or the pilot light lead. If such is the case, make certain all ground connections are clean and tight.

ELECTRICAL SYSTEM—Sometimes, interference may be caused by loose wires in the electrical system. Check connections to all lights, horn buttons, cigar lighter, etc. Make sure contacts are clean and tight.

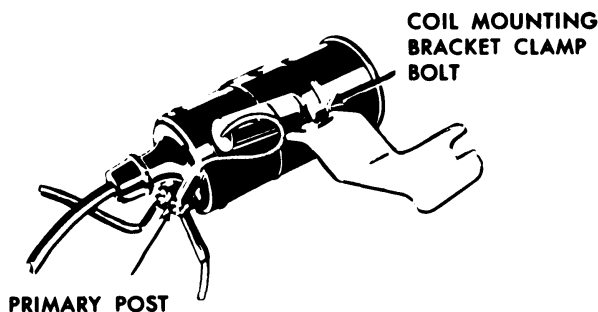
IGNITION SYSTEM—A good precaution to follow in preventing interference from this possible source is to keep the ignition system in good condition.

Make sure spark plugs are clean and properly gapped. Also, check for burned or improperly adjusted distributor points.

COIL—A condenser which filters out noise from the coil comes with each radio; for proper installation, see Figure 11.

GENERATOR—A condenser which filters out noise from the coil comes with each radio set. When installing the condenser be sure not to connect it with the field terminal, otherwise, damage to the voltage regulator may result. For proper installation, see Figure 12.

VOLTAGE REGULATOR—A condenser which filters out noise from the Voltage Regulator comes with each radio; for proper installation, see Figure 13.



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Figure 11—Suppressing Coil Noises With Condenser

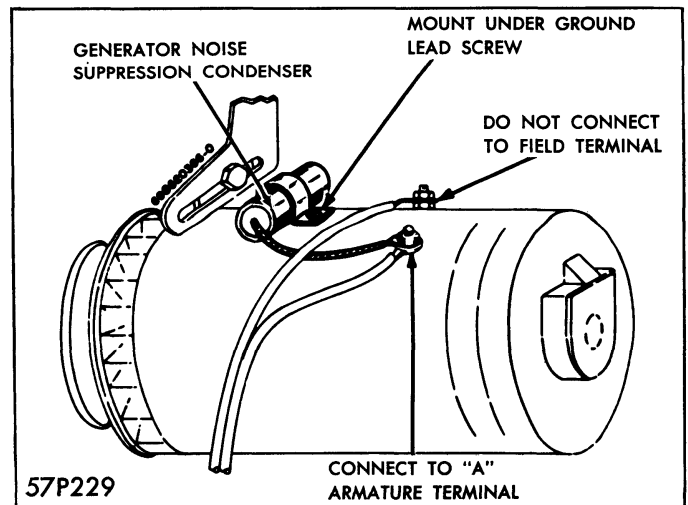


Figure 12—Suppressing Generator Noises With Condenser

NOTE

In some cases, electrical disturbances from nearly all power lines or other electrical equipment may be confused with ignition interference. Such disturbances may be heard whether or not the engine is running. Check radio for ignition interference in a locality that is free from other sources that might produce like noises.

RADIO DOES NOT OPERATE

Check the fuse. If the fuse is good, check for the following conditions. Break in the cable wire, defective contact in fuse socket or defects in receiver wiring.

If voltage is available at receiver, listen closely to determine if the "B" power supply on the vibrator is

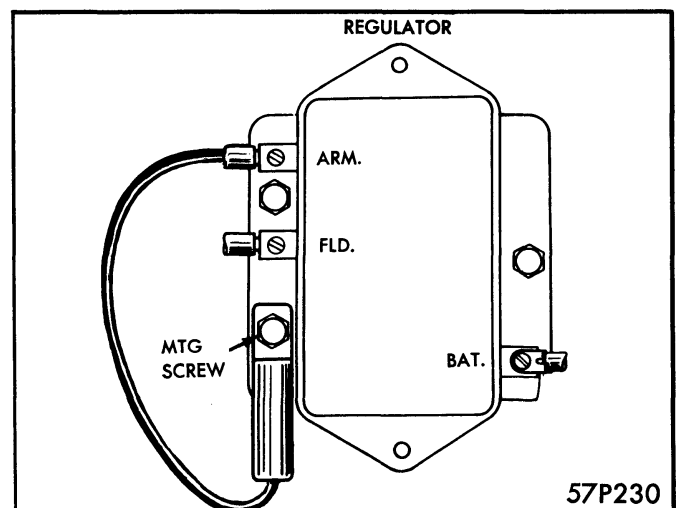


Figure 13—Suppressing Voltage Regulator Noises with Condenser

CAUTION

Do not use a fuse of higher amperage as it may cause damage to the radio transformer.

operating. A humming sound will be heard if the vibrator is working. If a vibrator is defective, it should be replaced.

Vibrator points which are stuck together can sometimes be jolted loose by momentarily touching the two fuse leads together. Do not hold leads together for more than a second as a direct short is created if the vibrator does not start to function.

If the vibrator is working but the set will not operate, remove the radio for checking of the tubes or necessary repairs.

HEATER LEAKAGE

HEATER HOSES—Coolant may leak out of the system at heater hose connections, at water outlet elbow and heater core. Tighten connections as necessary. Install new hoses if needed. Check hoses for proper installation.

HEATER CORE—If the defroster is working satisfactorily, yet moisture or fog is not removed from the windshield, inspect heater core and connections for a small leak. If such is the case, the leaking coolant may vaporize and fog the windshield and windows. Make sure heater drain tubes allow water or moisture which might enter through the cowl ventilator to pass out heater housing.

INSUFFICIENT HEAT

1. **VENTILATOR DOOR**—Check ventilator door for proper sealing. If ventilator door is not fully closed, cold air will enter directly into the passenger compartment.

2. **TEMPERATURE CONTROL VALVE**—If the temperature control valve is not operating properly, make sure it fully opens and closes.

3. **AIR BOUND**—If an air bound or air lock condition exists in the heater, heat output will be affected. This means that air has entered the system and may have become trapped, limiting the circulation of the hot water. To correct condition by forcing out the trapped air, loosen heater outlet hose with the engine running. Be sure the temperature control valve works freely. Make sure the fan and motor are operating properly.

4. **THERMOSTAT**—Insufficient heat sometimes can be corrected by the installation of a high temperature thermostat which starts to open at 180 degrees F., and is fully open at 200 degrees F. Never use a high temperature thermostat if an alcohol base anti-freeze is used in the cooling system. Alcohol has a boiling point of less than 200 degrees F., and the coolant will boil off when a high temperature thermostat is used. Use only a permanent type anti-freeze with a high temperature thermostat.

DIRECTIONAL SIGNAL LAMP WILL NOT LIGHT

If directional signal lamp bulb is burned out, turn indicator lamp will not light when the circuit to the burned out bulb is energized. If bulb is in satisfactory condition and all connections are tight, the cause may be: A defective flasher, or switch; frayed or worn insulation; a break in feed wire from ignition coil to flasher, or in the feed wire from flasher to switch.

TURN INDICATOR LIGHT WILL NOT LIGHT WHEN TURN IS MADE

TURN INDICATOR LIGHT WILL NOT LIGHT WHEN TURN IS MADE IN ONE DIRECTION—If such a condition occurs, check for a burned out signal light bulb, a loose connection, or a poor ground in the circuit.

TURN INDICATOR LAMP WILL NOT LIGHT WHEN TURN IS MADE IN EITHER DIRECTION—If the turn indicator lamp does not light when a right or left turn is made, but the signal lights operate, either the indicator bulb is burned out or the flasher is at fault and needs to be replaced.