

SECTION 15

ACCESSORIES

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GENERAL DESCRIPTION

CRUISE CONTROL

Cruise Control is an easy-to-use, driver-operated speed control system. It may be either factory or dealer installed on all V-8 engines.

OPERATION

ENGAGEMENT

Maintain desired speed and depress engagement button (located in the end of the turn signal lever), then release button slowly. The cruise system immediately takes over throttle position control and within engine limitation maintains this speed regardless of changes in terrain. (The lowest speed at which the system can be engaged is 30 mph).

DISENGAGEMENT

The system automatically disengages whenever the

brake is depressed. To re-engage, again maintain the desired speed and push the engagement button.

SPEED ADJUSTMENT

Upward - Accelerate to and maintain any desired speed above 30 mph, depress engagement button fully, then release slowly.

Downward - Release control by pushing in the engagement button. When car decelerates to the newly desired speed, release the engagement button slowly.

OVERRIDE

The accelerator pedal may be depressed at any time to override the cruise system. Release of the accelerator pedal will return the car to previous cruise speed.

MAJOR COMPONENTS

The major components of the cruise control system are:

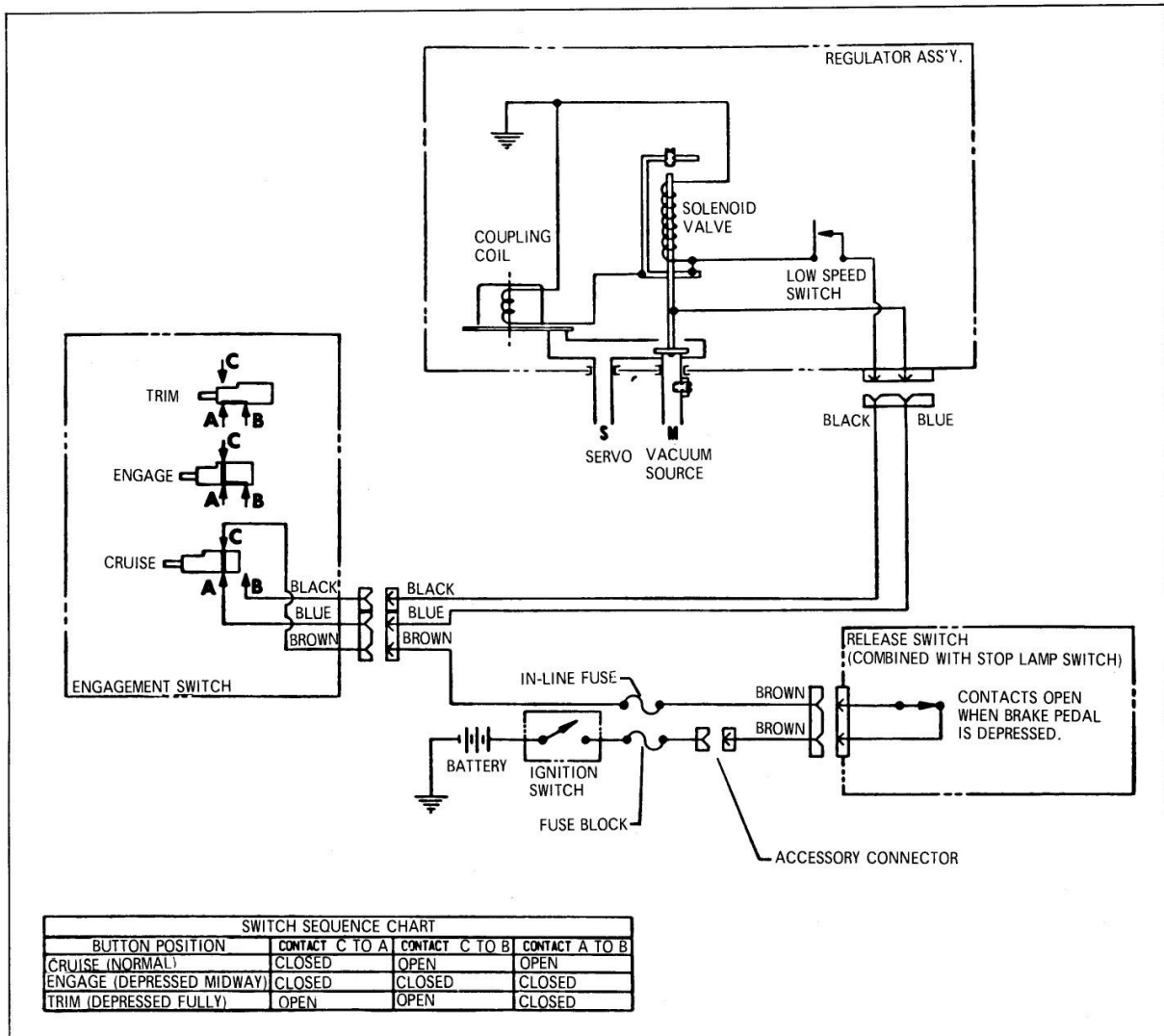


Fig. 15-1 Cruise Control Circuit Diagram

pushbutton engaging switch

regulator assembly

vacuum servo

release switches (electric and vacuum)

power circuit. A release switch is inserted in this circuit to break the connection whenever the brake pedal is depressed.

When the engagement button in the turn signal lever (Fig. 15-2) is depressed to the engage position, a circuit is made between contacts A & B, and the power source - contact C. Current will now be supplied to the regulator assembly at both terminals 1 & 2.

Current passes from terminal 1 (black wire) through the winding in the solenoid valve to ground. A low speed switch is inserted in this circuit to break contact at low speeds (below approx. 30 mph).

With the solenoid valve winding energized, the valve will pull up off its seal allowing engine vacuum to

OPERATION OF MAJOR COMPONENTS

ELECTRICAL CIRCUIT (Fig. 15-1)

Battery current is supplied to contact C in the engagement switch through the underdash accessory

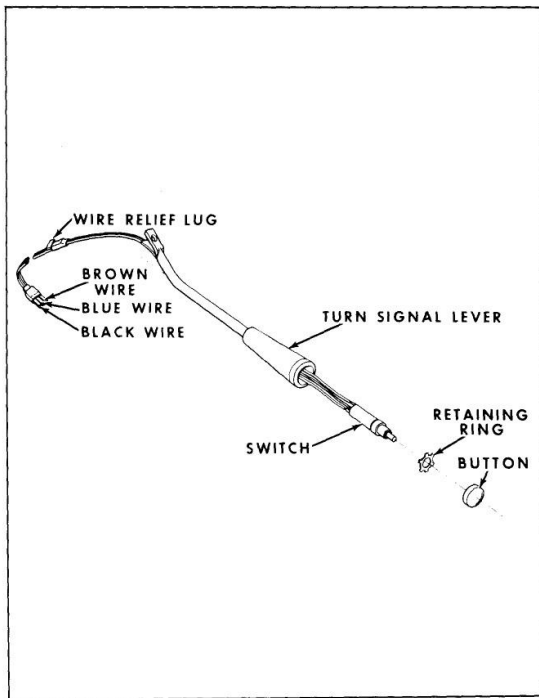


Fig. 15-2 Turn Signal Lever and Engagement Switch

enter the regulator passage and be passed to the servo.

In this position, current also passes to the solenoid valve frame and through the coupling coil winding to ground. With the coupling coil energized, the vacuum regulator plate is engaged. The regulator plate is now mechanically connected to the governor, regulating the size of the vent opening.

Now when the engaging switch is released, the contact at B is broken but A remains complete through the switch, thus keeping the coupling coil and solenoid valve energized. Current now flows from the ignition switch through the fuse block and brake switch to the No. 2 terminal of the connector at the regulator. In the full up position, the solenoid valve makes contact with its frame, passing current through the frame and through the coupling coil. Enough current passes from the solenoid frame through the solenoid winding to hold the valve up, although not enough to pull it up once it is released. The driver's speed is now automatically regulated.

The electrical circuit can be broken by the driver in three different ways. He may turn off the ignition switch or step on the brake (open the brake switch), thus the feed circuit to the engagement switch would be broken. It is also possible for the driver to disengage the Cruise Control by pressing in and

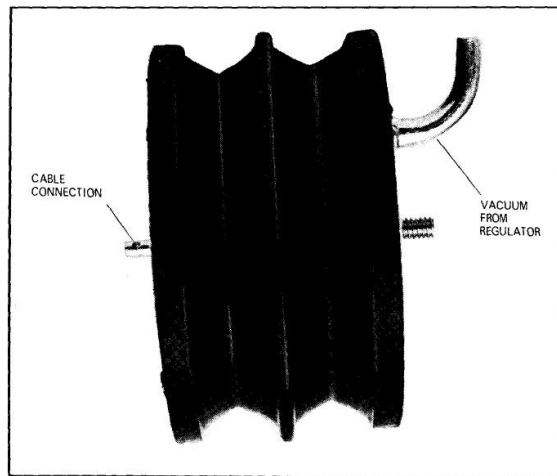


Fig. 15-3 Vacuum Servo

holding the engaging switch. This will open both circuits at A and B. The only time the button would be held in this position is when the driver wants to change the speed setting of the Cruise Control downward. Release of the button once again gives the driver automatic speed control at his new speed.

When the brake pedal is depressed, the vacuum release switch immediately vents the vacuum hose to the servo. This renders the system inoperative independently of the electrical circuit.

VACUUM SERVO

The vacuum servo (Fig. 15-3) is located on the left hand fender skirt. It is connected through a cable to the throttle lever and varies throttle opening in relation to vacuum supplied by the regulator.

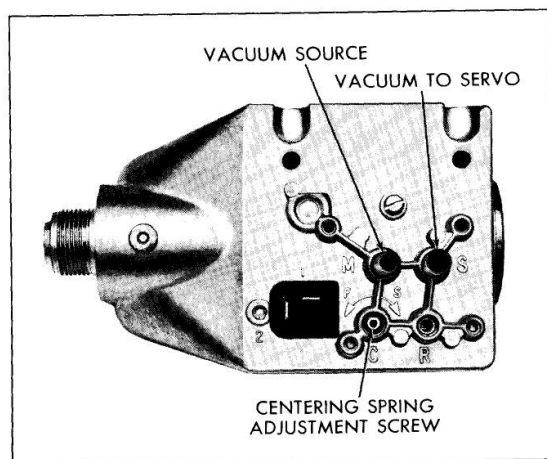


Fig. 15-4 Regulator Assembly

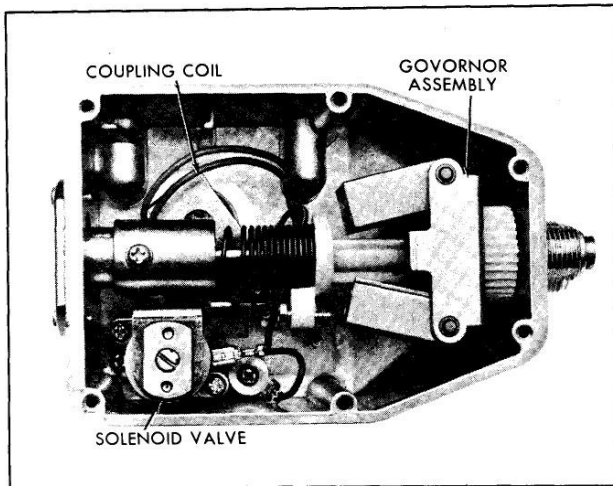


Fig. 15-5 Regulator-Internal View

REGULATOR ASSEMBLY

The regulator (Fig. 15-4) controls the amount of engine vacuum going to the servo. An electrical impulse from the engaging switch vents engine vacuum to the atmosphere, the size of the opening being varied by a governor. The governor is driven by a cable from the transmission with a transfer gear driving the speedometer cable in a 1:1 ratio.

The following are the main operating components of the regulator:

SOLENOID VALVE AND COUPLING COIL

The solenoid valve (Fig. 15-5) blocks the vacuum supply to the Cruise Control when the unit is not in operation. When its magnetic field is energized (Cruise Control operating), the vacuum source to the regulator is completed.

When the coupling coil is not energized, the coil itself moves in relation to governor speed. When the coil is energized, a vacuum regulator plate moves with the coupling coil.

The drive cable from the transmission connects directly to the regulator drive assembly to turn the governor shaft and weights, including the cable to the speedometer.

VALVE BODY AND MAGNET ASSEMBLY

As the governor weights move in or out with varying car speed, the actuator cup assembly causes the coupling coil to move. This portion of the Cruise Control is always operating regardless of whether the system is engaged or not.

When the driver pushes the engaging switch, the vacuum plate is held to the coupling valve by the coupling valve coil magnetic field. The position in which the vacuum plate is held to the coupling coil is dependent upon the car speed when the system was engaged. This position does not change as car speed is increased (system over-ridden), and hence acts as a memory device for when cruise is resumed.

When the switch is engaged, the solenoid valve coil is also energized pulling the valve off its seat and opening port "M" to port "S". As car speed increases or decreases, causing the governor weights to go out or in, the actuator will move the coupling coil and vacuum plate. The vacuum plate will now regulate engine vacuum by opening the vacuum port to atmosphere. This regulated vacuum is delivered from the vacuum plate to the "S" outlet on the bottom of the regulator, then through a hose to the vacuum servo. The servo then moves in proportion to the vacuum applied from the regulator and thus varies throttle opening through the cable to the throttle lever.

VACUUM CHECKS

The vacuum servo (Fig. 15-3) is a sealed unit; therefore, a leaky or defective bellows requires replacement of the assembly. Utilize engine vacuum to test for leakage as follows:

1. Disconnect vacuum servo cable from accelerator linkage and hose from regulator assembly. Connect engine vacuum directly to vacuum servo.
2. Note position of vacuum servo diaphragm.
3. Start engine. The bellows should pull in.
4. Clamp off engine vacuum supply and check for leakage.

The vacuum brake release switch and all vacuum connection hoses can be checked in a similar manner by utilizing a vacuum source.

NOTE: The vacuum restriction adjustment screw (R) in the regulator is pre-set at the factory and must not be tampered with. If it is inadvertently moved, turn it in until it stops and then back off 1 1/2 turns. Do not apply excessive pressure when turning screw.

ELECTRIC CLOCK

DESCRIPTION

The electric clock operates on direct current from the car battery and must not be compared too closely for accuracy to a home electric clock operating on alternating current. The cycles per second of alternating current used in the home are controlled

and periodically corrected at the power house, thereby eliminating accumulation of errors.

With the direct current system, no such control is possible; therefore, automobile electric clocks will accumulate errors day by day the same as handwound, spring-operated clocks.

The electric clock provides automatic regulation of the rate when the position of the hands is changed manually. Moving the hands forward or backward adjusts the length of the hair spring to make the clock run faster or slower. The amount of change in rate depends upon the amount the hands are changed. Maximum rate change is approximately 20 seconds per day and is obtained when the hands are moved five minutes. If the clock is reset less than five minutes the change in rate is proportionally less than 20 seconds.

SETTING CLOCK

When setting clock to correct for errors in time, pull reset stem out, move hands counterclockwise to correct time if clock is running fast, or move hands clockwise to correct time if clock is running slow, then allow reset stem to return to its normal position. This will automatically adjust the rate of clock.

Owners should be advised to set the clock to the correct time once a week at regular intervals to insure maximum accuracy.

SAFEGUARD SPEEDOMETER

The Safeguard speedometer has an indicator pointer incorporated into the speedometer dial. This pointer is set at the desired speed by turning a knob on the speedometer face.

When car exceeds set speed, the buzzer mounted under the dash will sound.

AUXILIARY GAUGES

The auxiliary gauge option consists of an engine water temperature gage, an oil pressure gage, and an ammeter. These gages are incorporated into the instrument cluster and replace the standard warning lights. The water temperature and oil pressure gauges are electrically operated from sending units mounted on the intake manifold and oil filter base.

TACHOMETER

The tachometer indicates speed of the engine in revolutions per minute. The engine can safely be

operated up to a maximum RPM as indicated by the start of the red bar. Engine operation causing tachometer indications in the red area can lead to serious engine damage.

The tachometer is available as a hood mounted unit on all models, with a dash mounted unit available on Tempest and Grand Prix models. This unit is mounted in the I.P. clock location.

ELECTRIC DECK LID RELEASE

With this option, the deck lid latch can be operated by remote control from a switch located in the glove box. This switch operates a solenoid which opens the deck lid.

The trunk can also be operated in the normal manner using a key.

ELECTRIC REAR WINDOW DEFOGGER

The electric rear window defogger option consists of grid lines etched into the inner surface of the rear window. The grid lines complete a circuit and develop high current as voltage is applied to the resistance of the grids.

The power developed raises the temperature of the glass to a point sufficient to defog the window.

NOTE: *The rear window temperature is not raised to a level that would cause the grid lines to be warm to the touch. Do not touch the grid lines to determine proper operation.*

The electric rear window defogger switch (ON-OFF) features an indicator lamp which glows when the defogger is in operation. A jumper lead is incorporated in the defogger switch on cars equipped with air conditioning. This jumper provides a limitation of air conditioning blower motor speed when the defogger is in operation. The limitation of the blower motor speed is achieved by means of a blower over-ride relay to prevent the combined current draw of the electric rear window defogger and the air conditioning blower motor in high-blower.

REAR WINDOW DEFOGGER - BLOWER TYPE

The rear window defogger mounted under the rear package shelf provides rapid defogging of the rear window. The blower control switch, located on the instrument panel, is manually controlled and may be operated on either hi or lo speed as required. Lo speed is provided by means of a resistor mounted on the control switch.

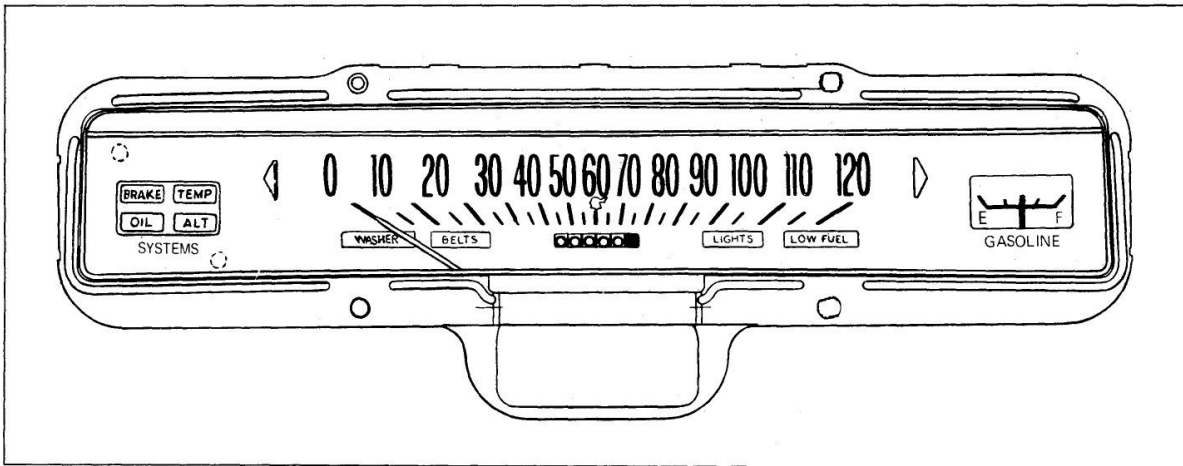


Fig. 15-6 Warning Lamp Option

WARNING LAMP OPTION (Fig. 15-6)

A warning lamp option, available on Pontiac models, consists of 4 indicator lamps in the cluster assembly. The lamps serve as a warning for the following:

BELTS - Fasten your seat belts. This lamp glows for approximately 7-10 seconds when ignition switch is turned on.

LIGHTS - Turn headlamps "OFF". This lamp will glow whenever the headlamps are turned "ON" and the ignition is "OFF".

LOW FUEL - Refuel before too long. This lamp glows when fuel level drops to approximately one-eighth of full tank and will remain glowing until fuel level is increased.

WASHER LOW - Add windshield washer solution. This lamp glows whenever washer solution level drops to one-third full.

CONSOLE

A seat separator console is available on all models with bucket seats and floorshift transmission.

The console includes a shift lever opening (with indicator on automatic transmission models), compartment box and ash tray.

RADIO

DESCRIPTION

The pushbutton radio provides manual tuning,

pushbutton tuning, and a tone control which enables the owner to select a high fidelity tone on either AM or FM stations. The radio contains nine transistors and eight diodes. A special Zener diode is also used to prevent station drift with changes in the system voltage of the automobile. AM and FM operation is controlled by extreme lefthand (AM) and righthand (FM) buttons.

Due to the higher frequencies involved in the FM band, reception is generally limited to an average of about 25 miles. Beyond this point station flutter or fading may become apparent. FM reception is noise-free, provided sufficient signal is present to allow the noise-limiting features of the radio to operate.

ADJUST ANTENNA TRIMMER

The proper adjustment of antenna trimmer is extremely important to the operation of an auto radio.

In order to make the antenna trimmer adjustment, Tune in a weak station, approximately 1400 kilocycles, and turn volume control on full. This is necessary to offset the action of automatic gain control. Using screwdriver, turn trimmer adjusting screw located behind bezel on manual tuning shaft until station peaks in volume. If no station around 1400 kilocycles can be received, turn adjusting screw until noise peaks in volume.

NOTE: On AM-FM radios, adjustment must be made on AM band. No adjustment can be made on FM band.

The antenna trimmer adjustment should be made after a set has been removed from car and worked on by a radio repair man. The reason for trimming antenna after service work has been performed is that

the radio repair man will undoubtedly have adjusted trimmer to match his antenna so it no longer matches the antenna in the car from which it was removed. Trimming the antenna is especially important with the all-transistor radio as this will directly affect sensitivity and selectivity. Complaints of station mixing on all-transistor radios can be eliminated by this adjustment.

SET RADIO PUSHBUTTONS

1. Turn radio on.
2. Select five desired stations (set buttons one at a time). On AM-FM models choose settings on AM band or FM band.
3. Pull selector button out as far as it will go.
4. Tune in desired station, using manual control knob.
5. Push selector button all the way in and release.

FM STEREO RADIO

DESCRIPTION

FM stereo reception is provided by means of a multiplex adapter operating in conjunction with an FM receiver. The multiplex adapter separates the two channels from the incoming signal, and amplifies one while sending the other to the radio receiver for amplification.

On Pontiac and Tempest, the AM-FM receiver and multiplex adapter are a matched set, and must not be separated. The Pontiac and Tempest stereo radio must not be operated without the multiplex adapter. On Grand Prix the multiplex adapter is incorporated in the radio receiver.

Speaker operation for stereo radio is the same as with stereo tape player. Refer to that section for description.

On stereo models, AM and FM reception is controlled with the extreme left and right pushbuttons respectively. Pushing the far left button positions the "dial drum" to place the AM dial panel in the window and also tunes in the station selected with that pushbutton. Pushing the far right button positions the "dial drum" to place the FM dial in the panel window and also tunes in the station selected with that pushbutton. The remaining pushbuttons are used for station selection only. AM, FM, or stereo will provide reception through the speakers as governed by the balance control which is operated by turning the bezel behind the tuning knob.

When an FM station is capable of transmitting in stereo, the stereo indicator lamp will light. The

illumination of the lamp, however, does not always mean the station is transmitting stereo at that particular moment. The perimeter of good FM stereo reception will be generally less than 25 miles.

WINDSHIELD RADIO ANTENNA

All models are equipped with a windshield radio antenna including models without radio. This antenna is the only available antenna on 1970 models. The windshield is installed and the antenna lead-in is provided under the instrument panel. For installation details, see the body manual for 1970.

The windshield antenna is standard equipment on all models. Following are a few of the advantages of this new design:

1. The antenna cannot be broken off by accident, automatic car washes or by malicious destruction.
2. Any antenna windnoise problem is eliminated.
3. Vastly improves overall appearance of car.
4. Noticeably improves FM reception. All FM signals are transmitted and received in a horizontal plane. The top segment of each antenna conductive element is mounted horizontally and measures 31 inches, resulting in ideal FM reception.

5. AM reception is restricted to a shorter range, thus, eliminating unwanted distant station interference in the evening hours - AM signals are transmitted and received vertically and the vertical portion of the conductive element serves as the AM reception antenna. It is comparable to an external antenna extended to a height of approximately 18".

TESTING: The antenna can easily be checked using tester no. J-23520 as shown on the chart in Diagnosis Section.

STEREO TAPE PLAYER

DESCRIPTION

The Stereo Tape Player allows the owner to make his own selection of pre-recorded music. It uses a standard eight-track cartridge and may only be ordered with a radio. The Tape Player is turned on by inserting a cartridge into the unit. The insertion of a tape cartridge automatically removes power from the radio and switches the speakers from the radio to the tape player. This feature prevents accidental damage to the radio should the owner attempt to operate it while the tape player is in use.

Pontiac (except wagons) and Grand Prix models equipped with Stereo Tape have three speakers - one

front and two rear. The two rear speakers are equipped with a crossover network which operates one of them as a tweeter. Pontiac wagons and all Tempest models have two speakers - one front and one rear.

MAINTENANCE AND CAUTIONS

No periodic maintenance of the tape player is required. With use, however, lubricant and oxide from the player may build up on the capstan, head, and tape guide. This may cause the tape to slip or run slowly. These parts should be cleaned using a cotton-tipped swab and rubbing alcohol.

No lubricants should be used since they will cause the player to operate improperly, especially at extreme temperatures.

Do not bring any magnetized tools near the tape head. If the head becomes magnetized, every cartridge played in the player will be degraded.

ALWAYS PULL CARTRIDGE APPROXIMATELY ONE INCH OUT OF TAPE PLAYER WHEN NOT IN USE. IF THIS IS NOT DONE, THE TAPE MAY BE PULLED OUT OF THE CARTRIDGE AND WOUND AROUND THE CAPSTAN WHEN PLAYER IS RE-STARTED.

REAR SEAT SPEAKER

DESCRIPTION

The radio rear speaker system employs a single rear speaker which, together with the front speaker, is controlled by a switch incorporated into the righthand bezel on the radio receiver.

Control of the speaker features a "Fader" control which provides a variable volume control for both front and rear speakers. One extreme switch position is front speaker only; the other extreme position is rear speaker only. Positions between these extremes give varying amounts of front or rear volume.

OPERATIONAL TEST

1. With radio operating, move switch to left position. Front speaker only should operate.
2. Move switch to approximately mid position. Both speakers should operate with equal loudness.
3. Move switch to right. Rear speaker should operate normally and with same loudness as front speaker in step 1.

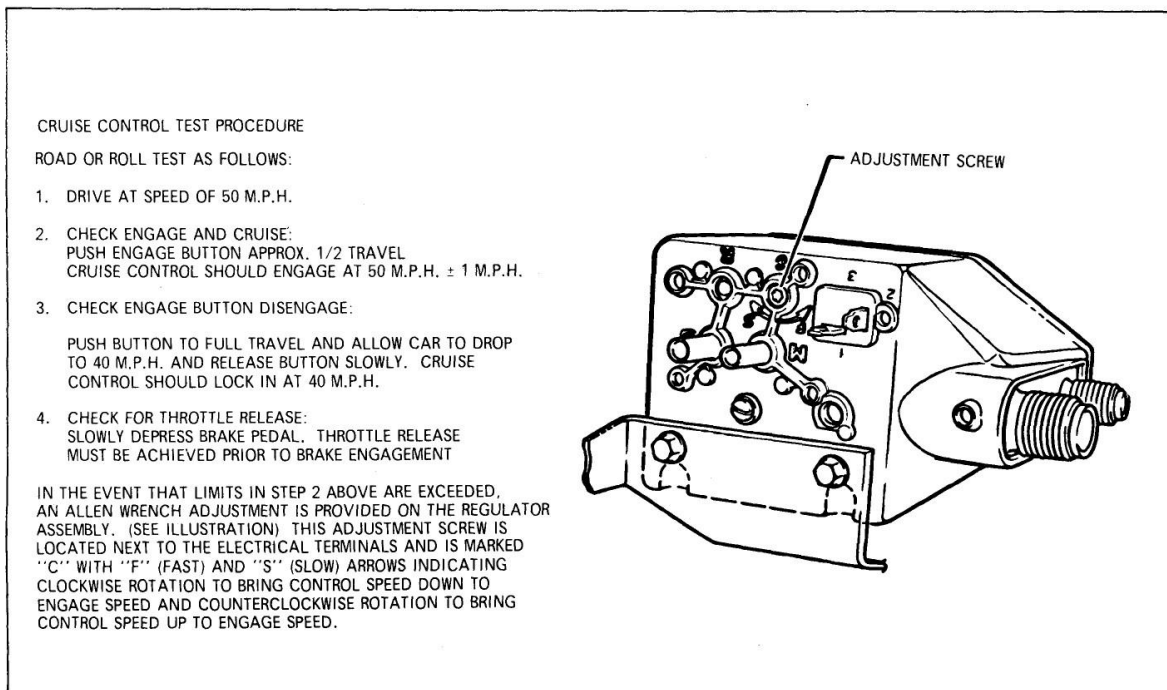


Fig. 15-7 Cruise Control Regulator Adjustment

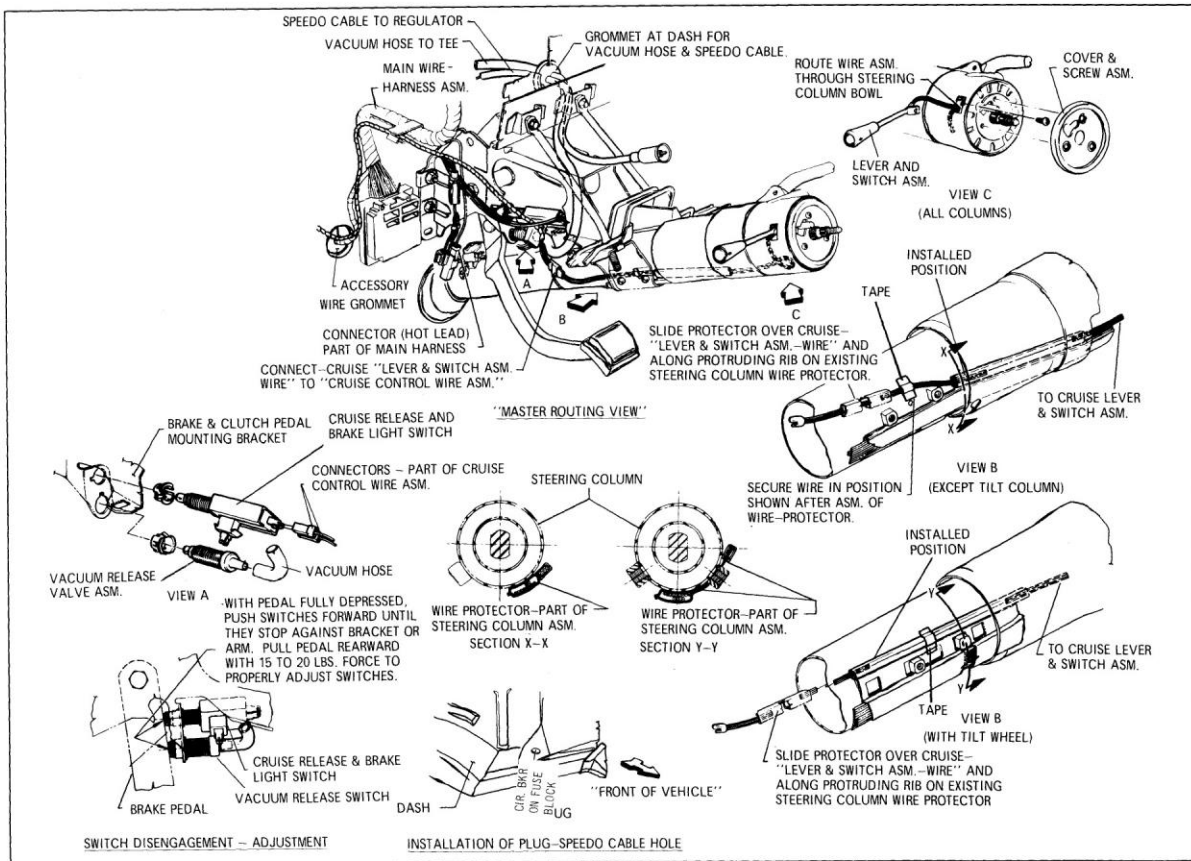


Fig. 15-8 Pontiac Cruise Control Wiring and Vacuum Switch Installation

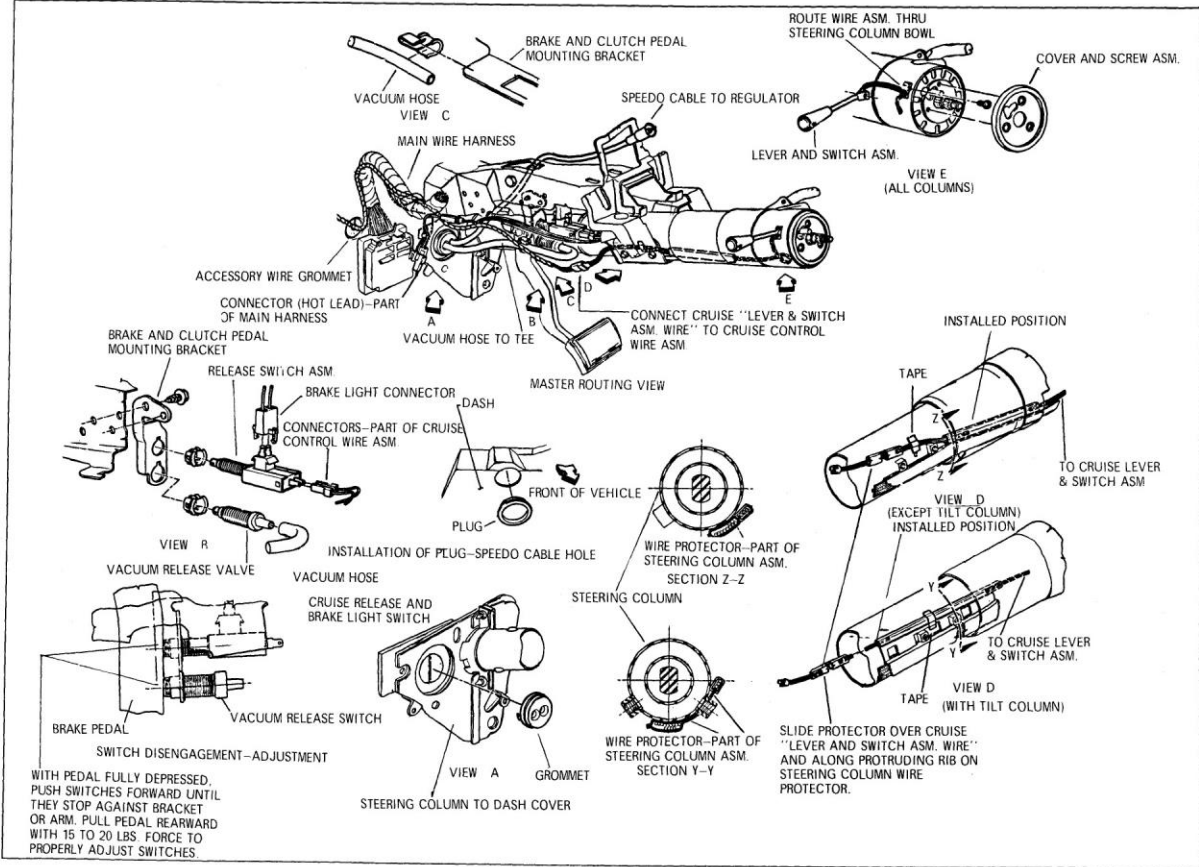


Fig. 15-9 Tempest and Grand Prix Cruise Control Wiring and Vacuum Switch Installation

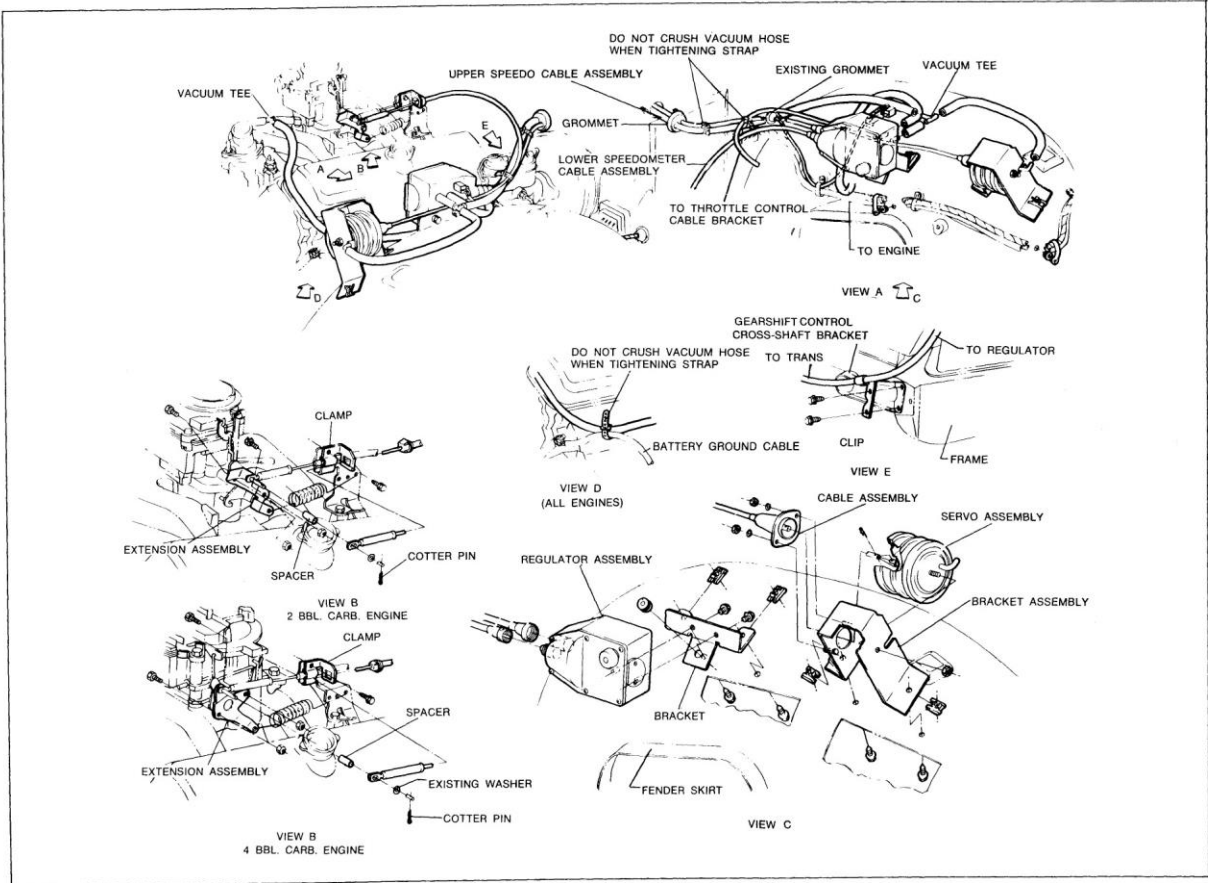


Fig. 15-10 Pontiac Cruise Control Installation

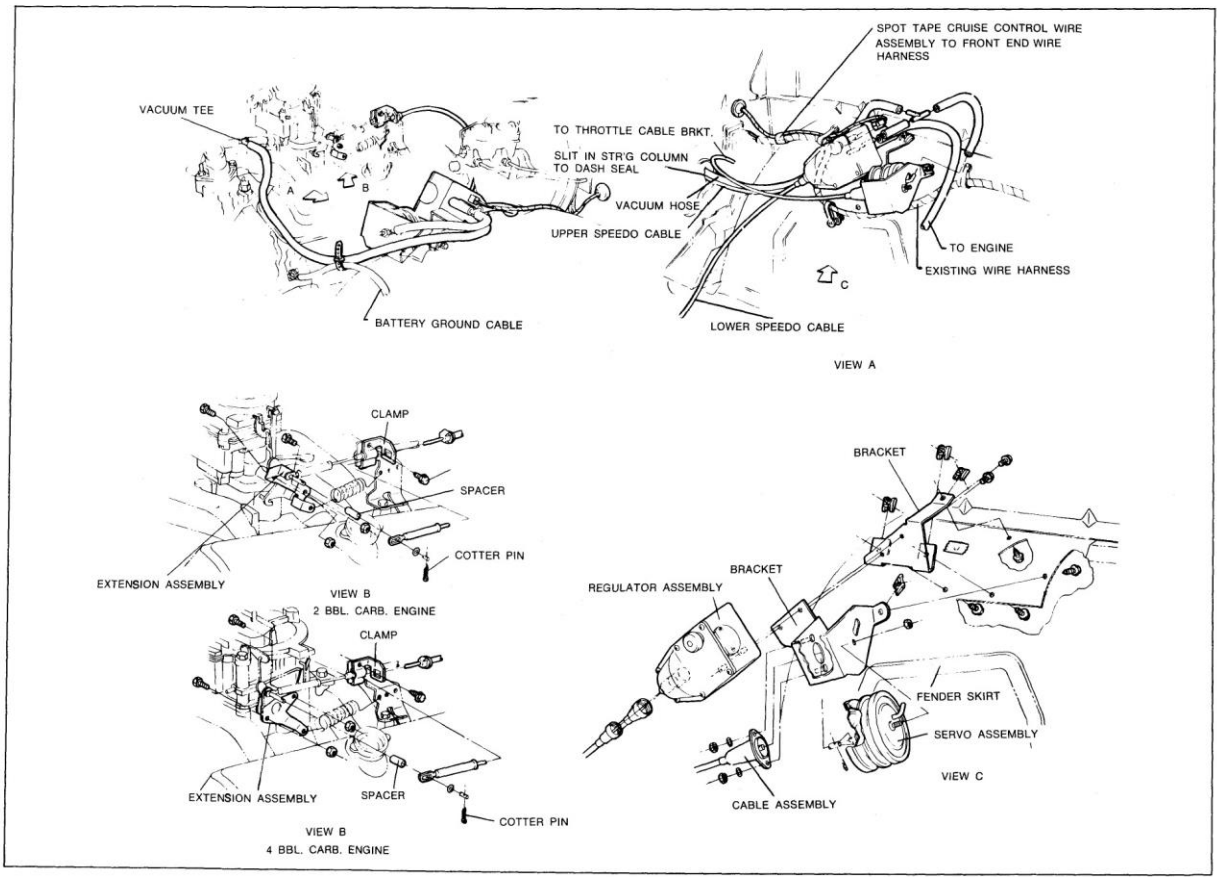


Fig. 15-11 Tempest and Grand Prix Cruise Control Installation

SERVICE PROCEDURES

CRUISE CONTROL ADJUSTMENT PROCEDURES

REGULATOR ADJUSTMENT (Fig. 15-7)

1. If Cruise Control holds speed three or more mph higher than selected speed, turn centering spring adjusting screw (C) clockwise 1/8" turn or less.
2. If Cruise Control holds speed three or more mph below selected speed, turn centering spring adjusting screw (C) counterclockwise 1/8" turn or less.

CAUTION: Do not move adjustment screw (R). See below under *DISASSEMBLY*.

BRAKE RELEASE SWITCH ADJUSTMENT (Figs. 15-8 and 15-9)

Apply brake pedal and push both switches forward as far as possible. Pull pedal forcibly rearward to adjust switches.

MINOR SERVICE

CHECKING FOR DAMAGED CABLES AND GEARS

1. Raise rear of car and place on jack stands.

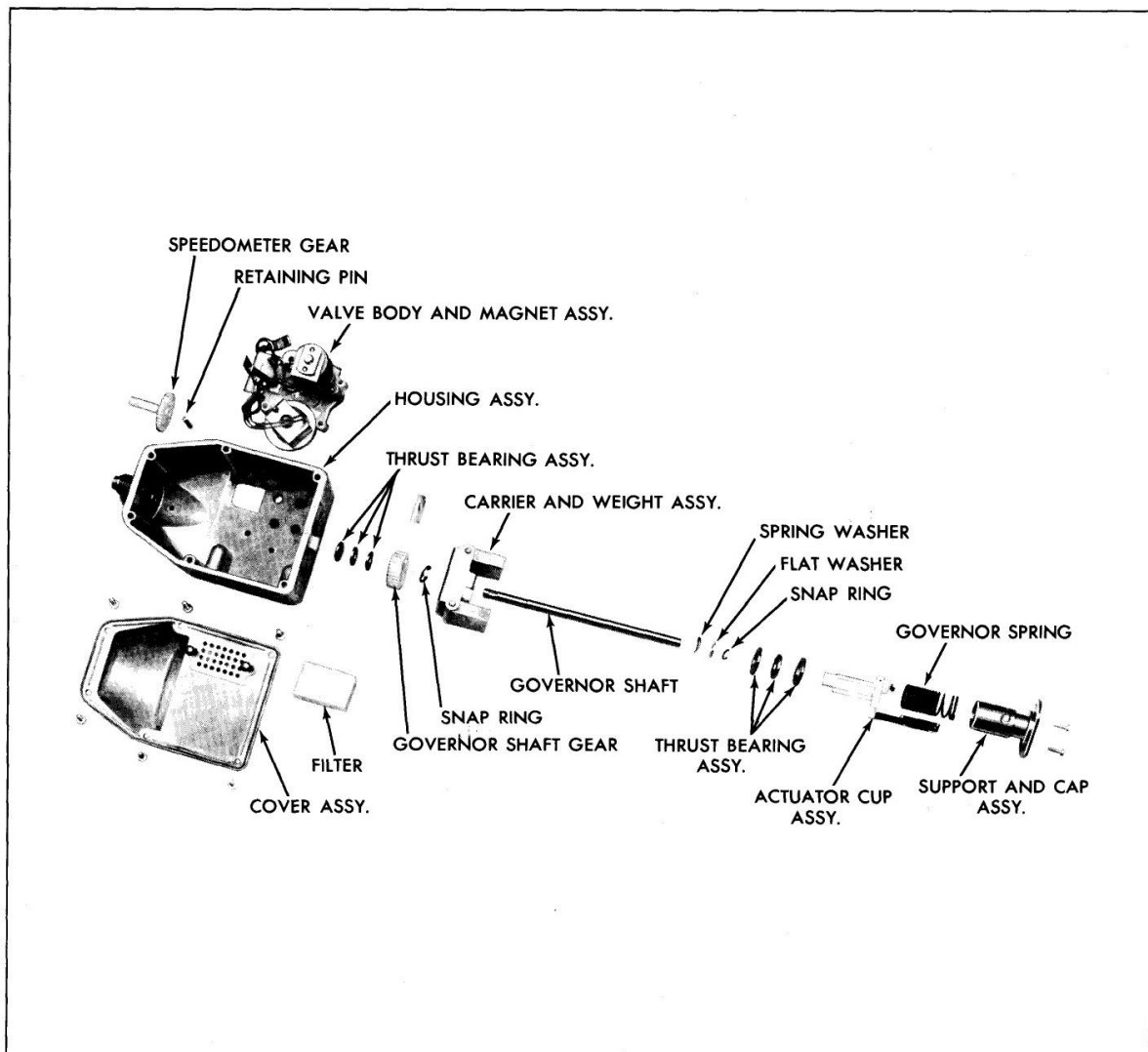


Fig. 15-12 Regulator - Exploded View

2. Start engine and move transmission shift lever to "Drive" range.
3. Remove input cable at regulator to determine if cable from transmission to regulator is turning. If cable is not turning, check for broken cable or stripped transmission speedometer gear.
4. If input cable is turning and speedometer was inoperative, cable to speedometer or regulator transfer gear is broken.

MAJOR SERVICE

REGULATOR - REMOVE AND REPLACE (Figs. 15-10 and 15-11)

1. Disconnect vacuum hoses and electrical connector.
2. Disconnect both speedometer cables.
3. Remove screws holding regulator to fender skirt and remove regulator.
4. To replace, reverse above steps.

REGULATOR - DISASSEMBLE (Fig. 15-12)

NOTE: Do not tamper with the following screws (Fig. 15-13):

- a. Vacuum restriction screw in regulator housing.
- b. The screw in the bearing support assembly.
- c. The screw on top of the solenoid coil.

These screws are pre-adjusted at the factory.

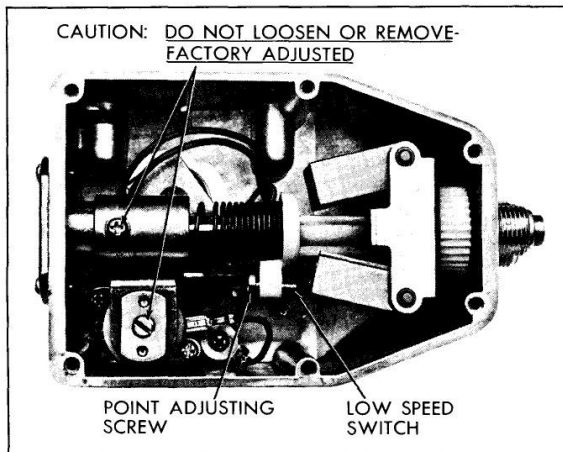


Fig. 15-13 Adjusting Low Speed Switch

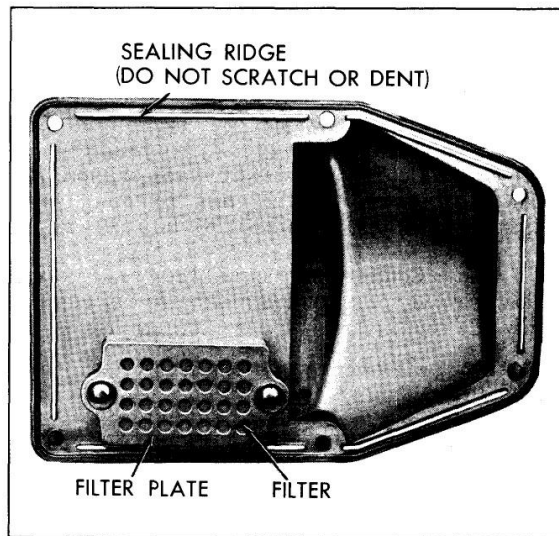


Fig. 15-14 Cover and Intake Filter Assembly

1. Remove screws and cover. To replace air filter in cover, push filter out from under filter plate (Fig. 15-14).
2. Remove two screws securing bearing support, rotate support 180° and slide out (Fig. 15-15).

NOTE: Do not tamper with screw on bearing support. This screw positions the governor spring and is pre-set at the factory.

3. Remove governor spring.
4. Spread governor weights in an up and down position and pry up on actuator coupling with a screwdriver until pin is disengaged from magnet assembly and can be rotated clockwise (Fig. 15-15). Rotate actuator cup 180° and hook the actuator coupling over the top of regulator housing (Fig. 15-16).

5. Slide the governor assembly away from the speedometer drive adapter end until the shaft is free of bearing. This will allow the governor assembly to be removed from the regulator. For further disassembly of governor, see Fig. 15-12.

6. Remove four screws (2 internal, 2 external) holding the valve body and magnet assembly. Remove valve body and magnet assembly from the regulator housing. (Fig. 15-17).

7. Remove driven gear from regulator by pressing retaining pin out of regulator body.

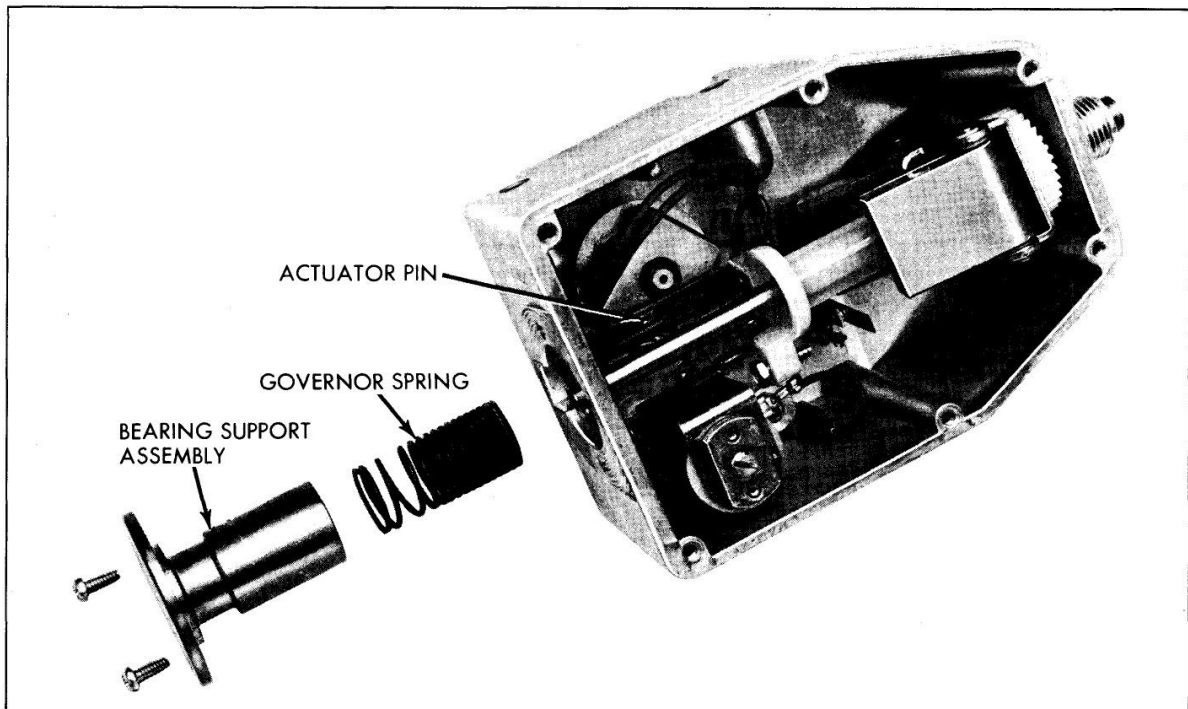


Fig. 15-15 Bearing Support Removal

REGULATOR - REASSEMBLE

1. Install driven gear and retaining pin in housing.
2. Insert valve body and magnet assembly into the regulator housing and install four screws.

NOTE: Make sure the rubber gasket on the bottom of the valve body and magnet assembly lies flat against the regulator housing. Under no circumstances should this gasket be glued to the valve body and magnet assembly.

3. With weights in an up and down position, insert the

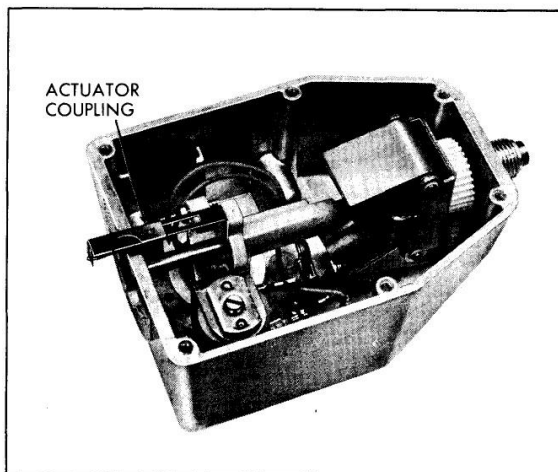


Fig. 15-16 Governor Assembly Removal

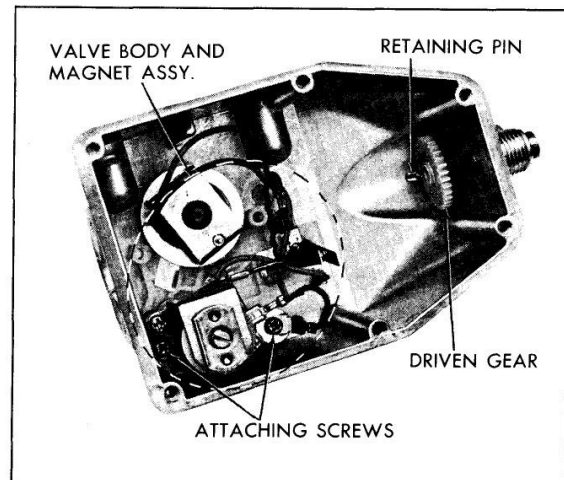


Fig. 15-17 Valve Body and Magnet Assembly Removal

long end of the governor shaft through the bearing support mounting hole keeping the actuator coupling hooked over the regulator housing. Insert the shaft far enough to allow the short end of the governor to be inserted into its bearing. Slide the governor assembly into the bearing until it bottoms.

4. Move the actuator cup down the shaft until it bottoms and rotate 180°. Using a screwdriver, pry the actuator coupling up and rotate the magnet counterclockwise until the pin engages the actuator coupling hole.

5. Install governor spring over governor shaft with closed end of spring toward the actuator cup.

6. Install bearing support in regulator. Rotate 180° and secure with two (2) screws.

7. Secure cover with six (6) screws.

When the valve body and magnet assembly or the governor assembly is replaced, the low speed switch must be adjusted. With the actuator cup held in the lowest speed position (governor weights in) turn point adjusting screw until the gap between the switch points is .025".

Refer to Section 9 of this manual for service of the engagement switch.

ELECTRIC CLOCK

PONTIAC - REMOVE AND REPLACE

1. Disconnect battery.
2. Remove lower air conditioning duct if equipped with air conditioning.
3. Remove lower instrument panel trim at steering column.
4. Remove ash tray and bracket.
5. Remove upper air conditioning duct if equipped.
6. Disconnect bulbs and wire connector from clock.
7. Loosen retaining nuts (3) and slide clock toward right side of car and remove.
8. To replace, reverse removal procedure.

TEMPEST - REMOVE AND REPLACE

1. Disconnect battery.
2. Remove cold air duct if equipped with air conditioning.

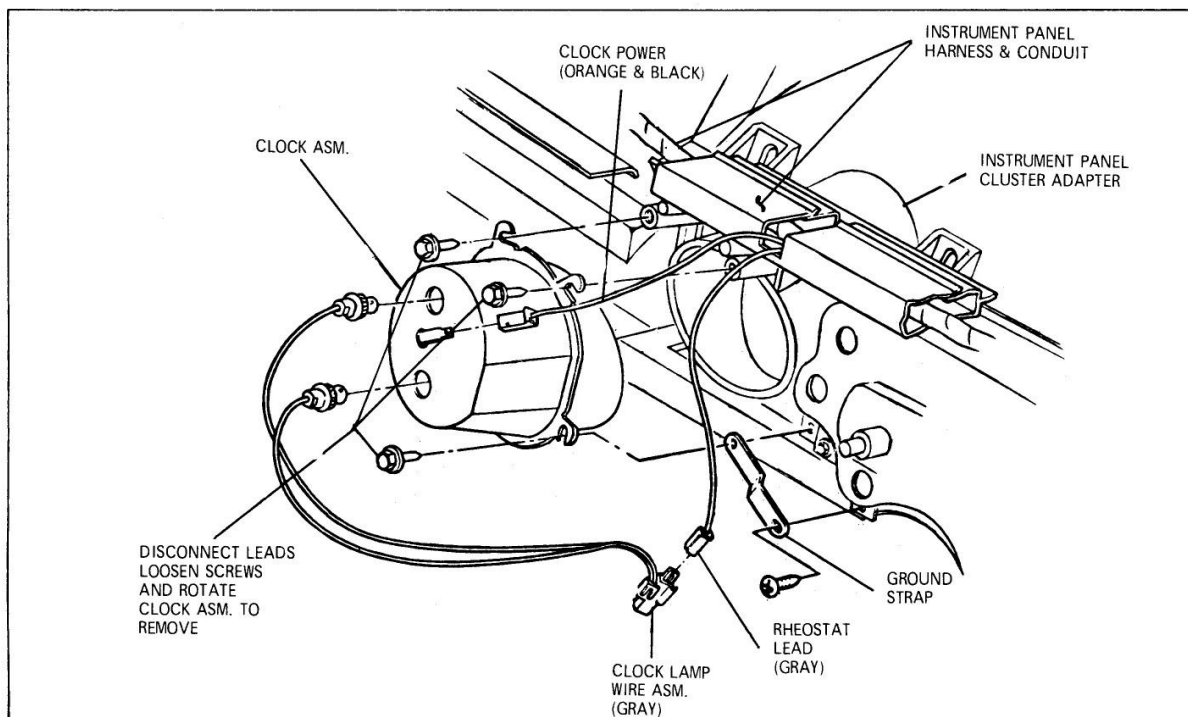


Fig. 15-18 Tempest Clock Installation

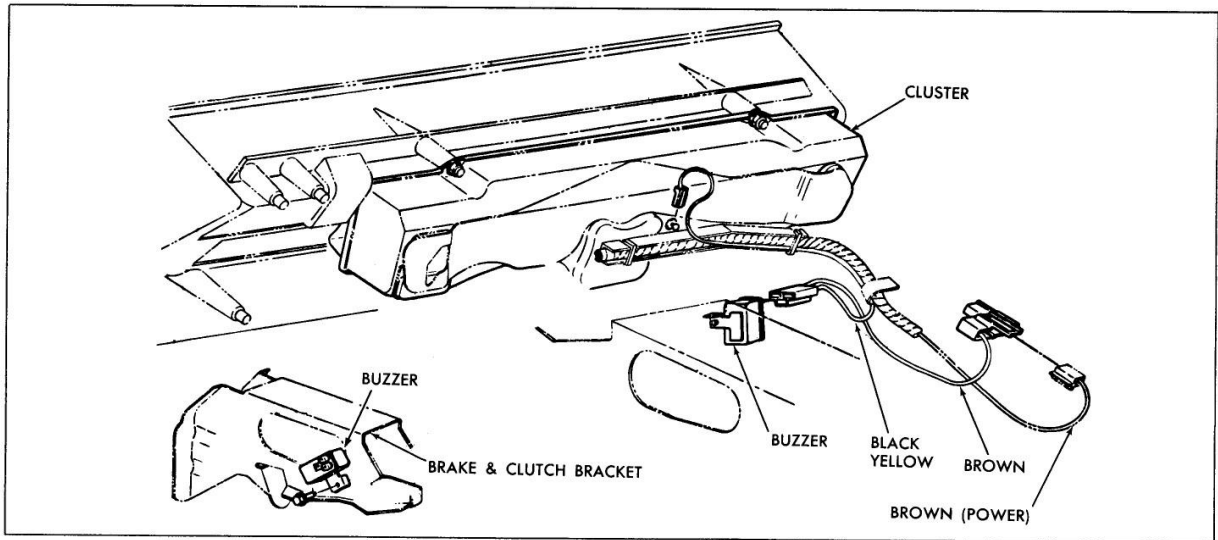


Fig. 15-19 Pontiac Safeguard Speedometer

3. Remove radio and support bracket.

4. Disconnect bulbs and power feed connector from clock.

5. Loosen clock retaining screws (3), rotate clock assembly in a clockwise direction (as viewed from passenger side of dash) and remove (Fig. 15-18).

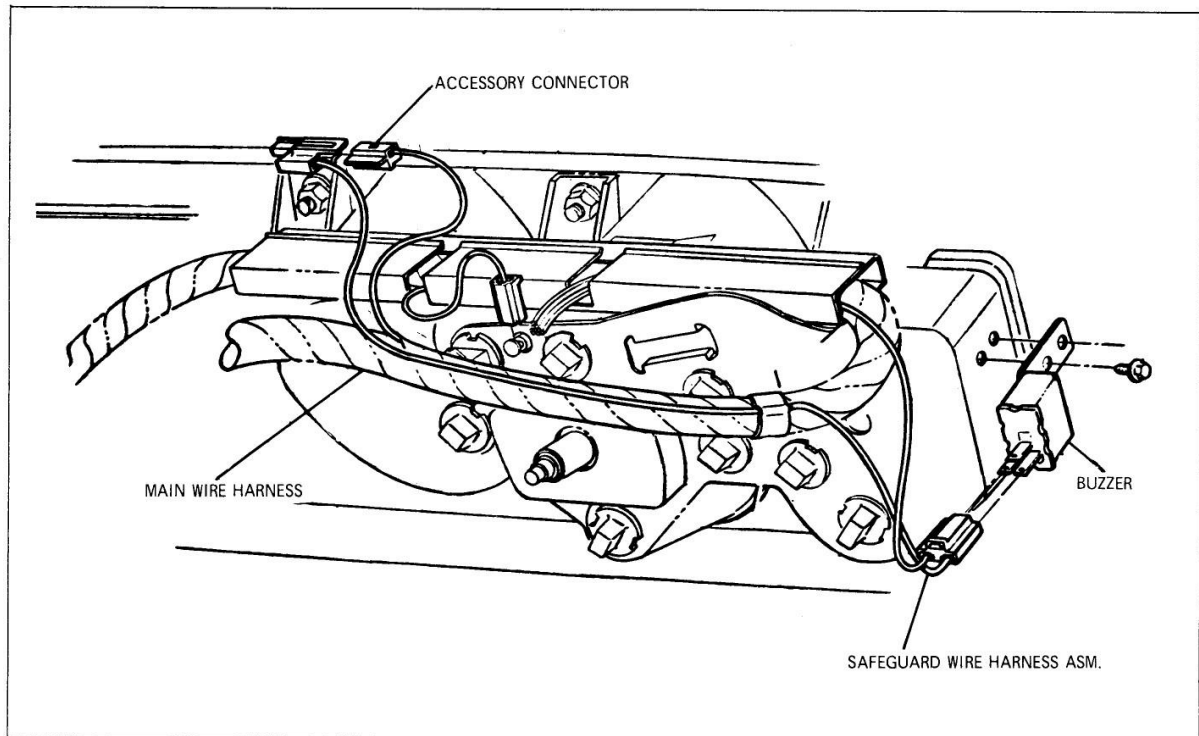


Fig. 15-20 Tempest Safeguard Speedometer

6. To replace, reverse removal procedure.

GRAND PRIX - REMOVE AND REPLACE

1. Disconnect battery.
2. Remove lower A/C duct if equipped.
3. Remove radio.
4. Remove upper A/C duct if equipped.
5. Disconnect bulbs and power feed from clock.
6. Loosen clock retaining screws (3) and rotate clock in a clockwise direction (as viewed from passenger side). Remove clock.
7. To replace, reverse removal procedure.

DASH-MOUNTED TACHOMETER

REMOVE AND REPLACE

For removal of dash-mounted tachometer on Tempest and Grand Prix models, use procedure for clock removal.

SAFEGUARD SPEEDOMETER BUZZER ASSEMBLY

REMOVE AND REPLACE

For safeguard speedometer buzzer removal, refer to Figs. 15-19 (Pontiac), 15-20 (Tempest) and 15-21 (Grand Prix).

DECK LID RELEASE SWITCH

REMOVE AND REPLACE - ALL EXCEPT GRAND PRIX WITH CONSOLE

1. Remove ash tray and bracket on models with air conditioning to gain access to switch.
2. Disconnect wires from switch.
3. Depress retaining clips and remove switch.
4. To replace, reverse removal procedure.

See Figs. 15-23 (Pontiac) and 15-24 (Tempest and Grand Prix).

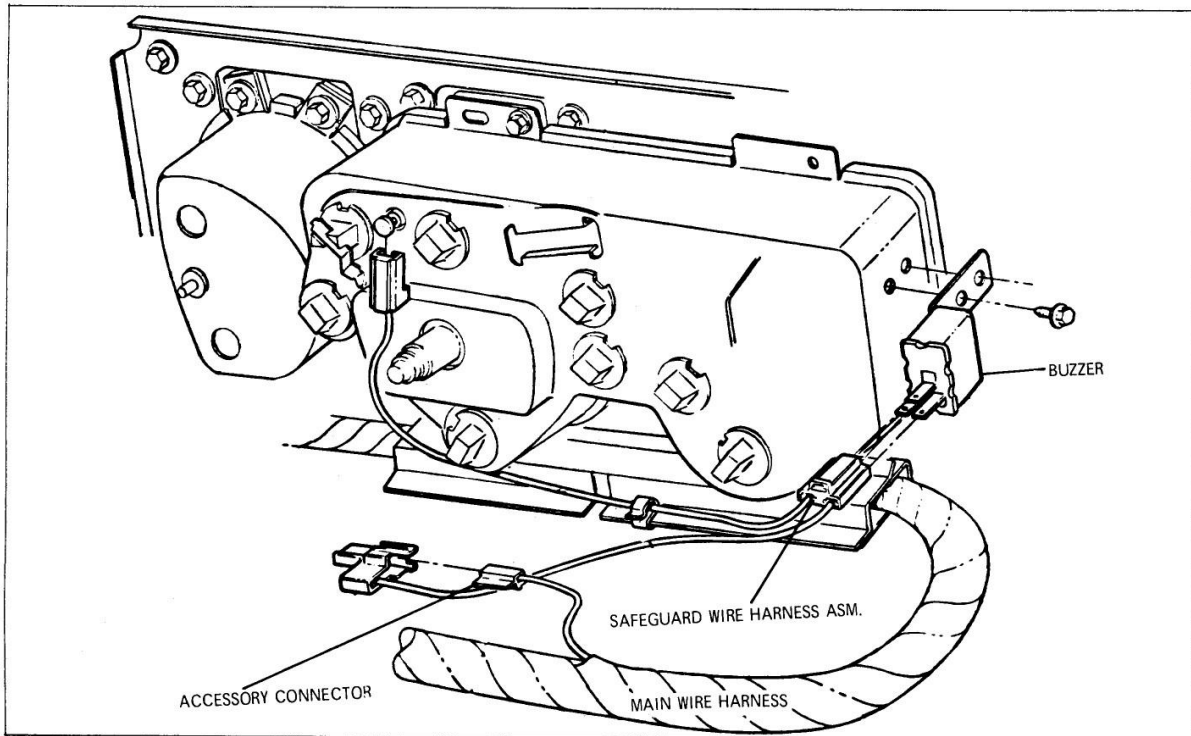


Fig. 15-21 Grand Prix Safeguard Speedometer

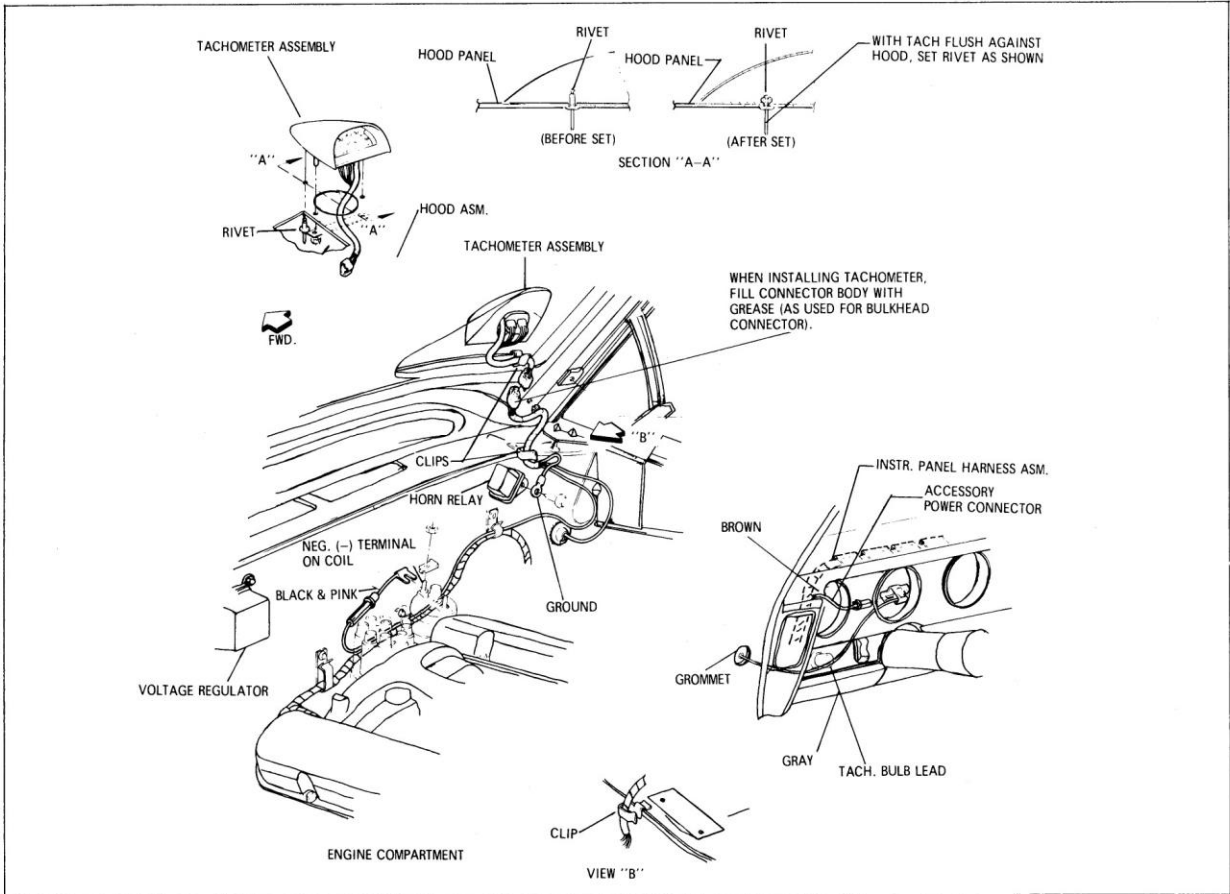


Fig. 15-22 Tempest Hood Mounted Tachometer

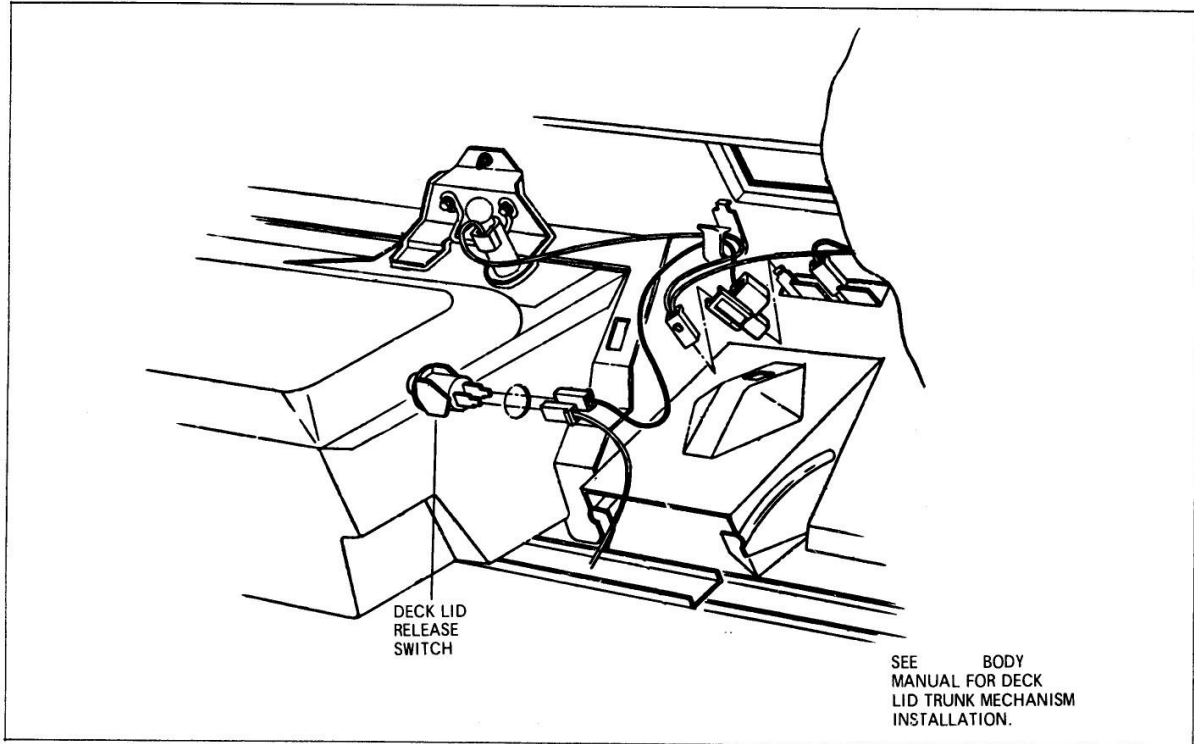


Fig. 15-23 Pontiac Deck Lid Release Switch

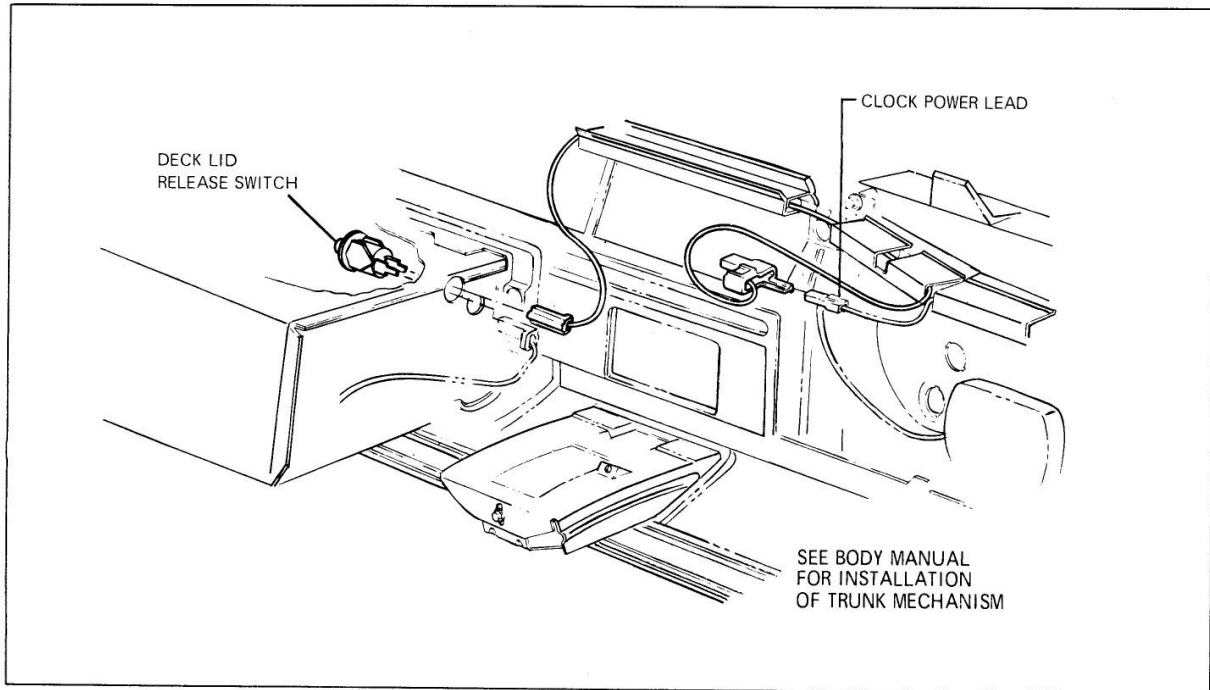


Fig. 15-24 Tempest Deck Lid Release Switch

GRAND PRIX WITH CONSOLE - REMOVE AND REPLACE

1. Remove console compartment box.
2. Disconnect wires from switch.
3. Remove switch (Fig. 15-25).
4. To replace, reverse removal procedure.

ACCESSORY SWITCHES**REMOVE AND REPLACE**

1. Disconnect battery.
2. On Pontiac, remove lower I.P. trim at steering column.
3. Disconnect switch harness connections.
4. Remove retainer clip and remove switch.

When installing an accessory package or replacing the instrument panel, refer to Fig. 15-37 for locating and punching holes for accessory switches.

RADIO**REMOVE AND REPLACE - PONTIAC (Fig. 15-45)**

1. Disconnect battery.

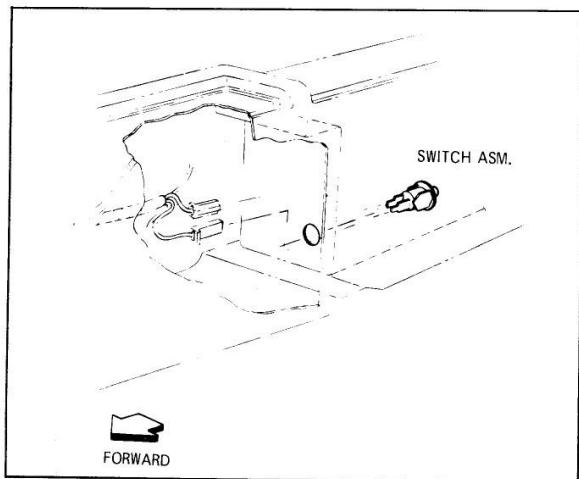


Fig. 15-25 Grand Prix Deck Lid Release Switch

2. Remove lower air conditioning duct if equipped.
3. Remove (2) radio control knobs and hex nuts (under the knobs).
4. Remove ash tray and bracket.
5. Remove upper air conditioning duct if equipped.
6. Disconnect all connections to radio.
7. Remove screws holding radio brace to lower edge of instrument panel and remove radio.
8. To replace, reverse removal procedure.

REMOVE AND REPLACE - TEMPEST (Fig. 15-46)

1. Perform steps 1 through 3 of Pontiac procedure.
2. Remove radio support bracket bolt.
3. Disconnect all electrical leads and antenna lead at radio and remove radio.
4. To replace, reverse removal procedure.

REMOVE AND REPLACE - GRAND PRIX (Fig. 15-47)

To remove the radio on Grand Prix follow procedure for Tempest radio removal.

STEREO RADIO**REMOVE AND REPLACE**

When removing the stereo radio and multiplex assembly on Grand Prix, use procedure for radio removal since the multiplex adapter is integral with the radio. To service the stereo radio on Pontiac and Tempest, perform radio removal procedures and remove the glove box, three retaining screws, multiplex and bracket and transfer bracket if necessary.

See Figures 15-48, 15-49 and 15-50 for stereo radio installation.

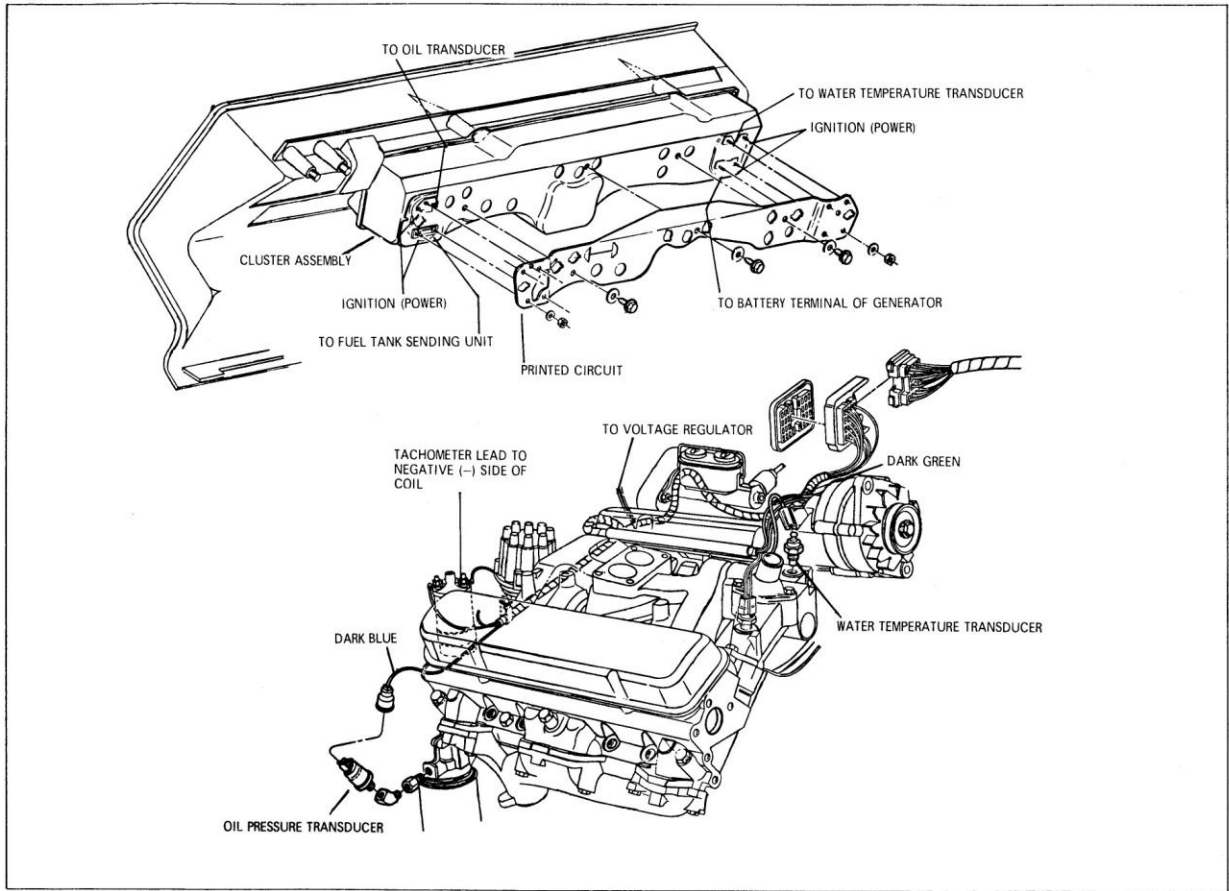


Fig. 15-26 Pontiac Auxiliary Gage Installation

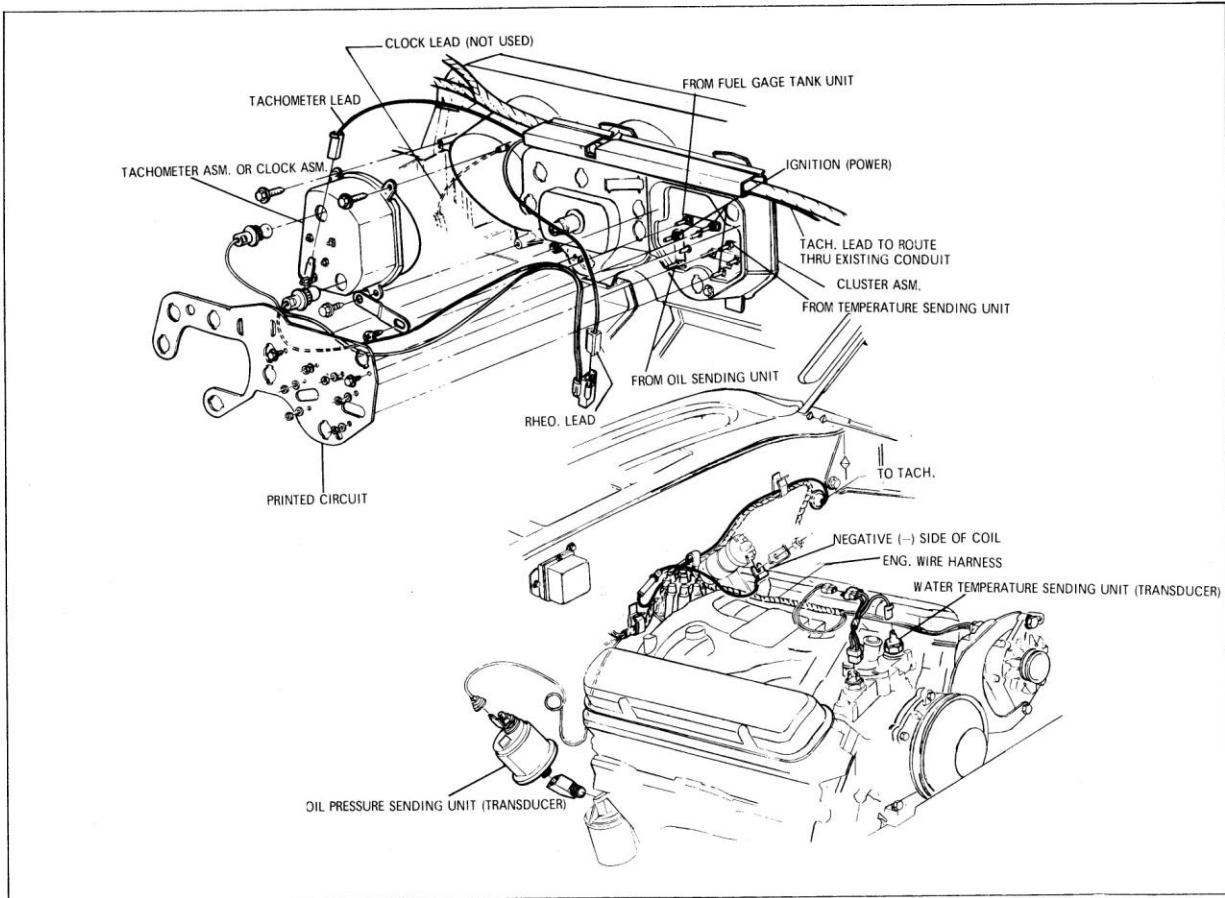


Fig. 15-27 Tempest Auxiliary Gage Installation

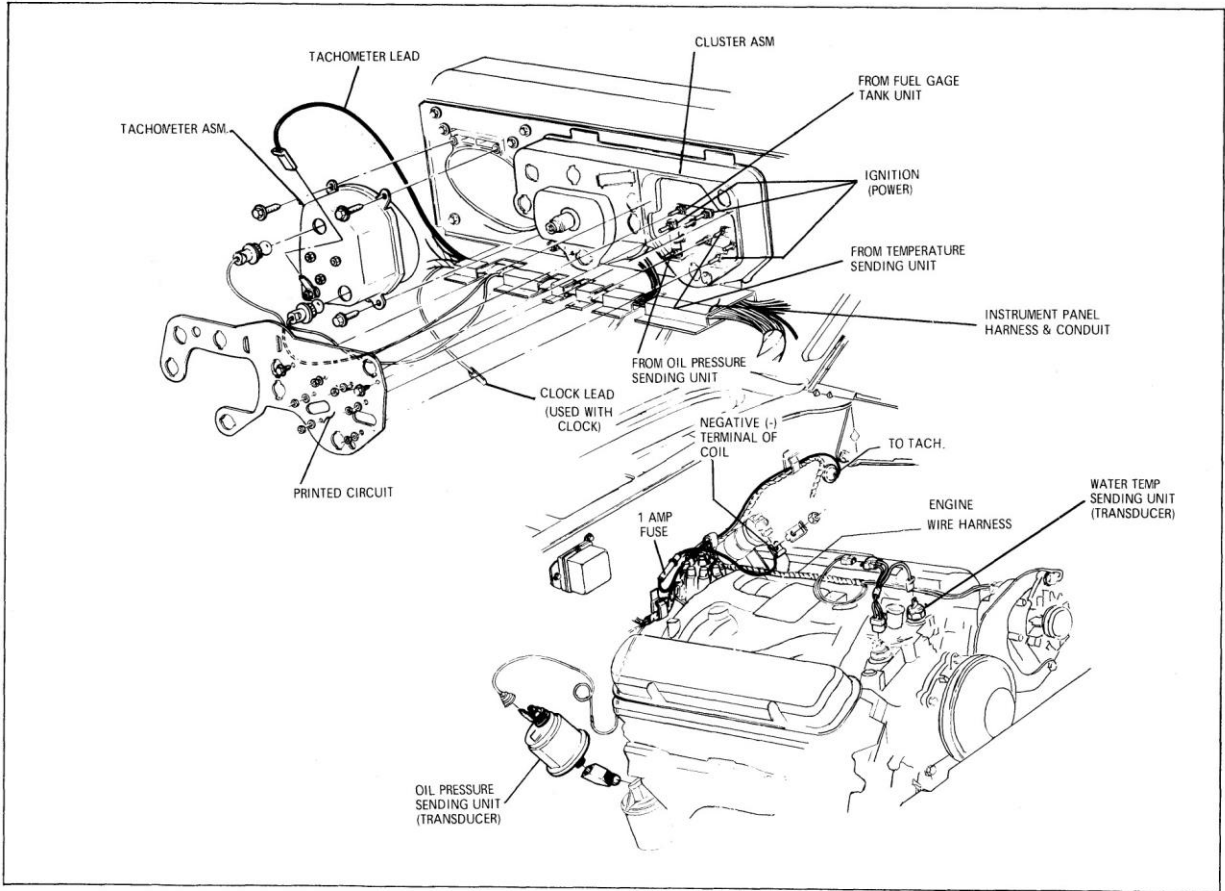


Fig. 15-28 Grand Prix Auxiliary Gage Installation

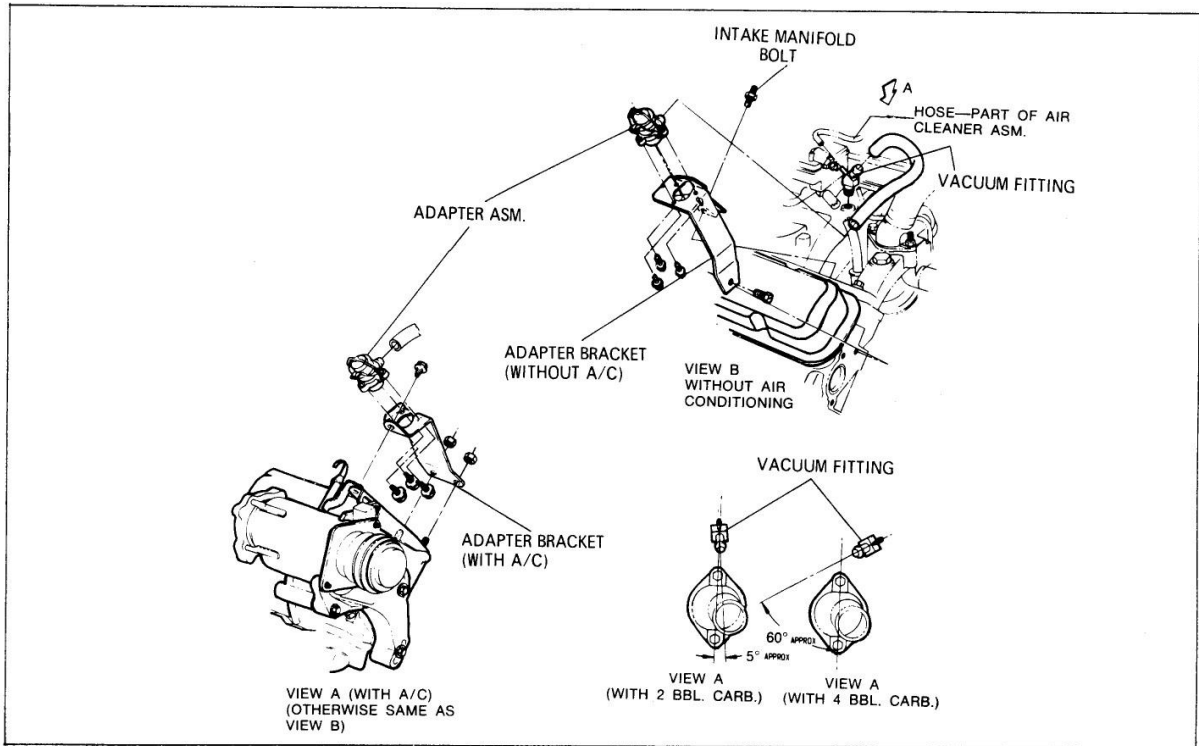


Fig. 15-29 V-8 Vacuum Tire Pump Installation

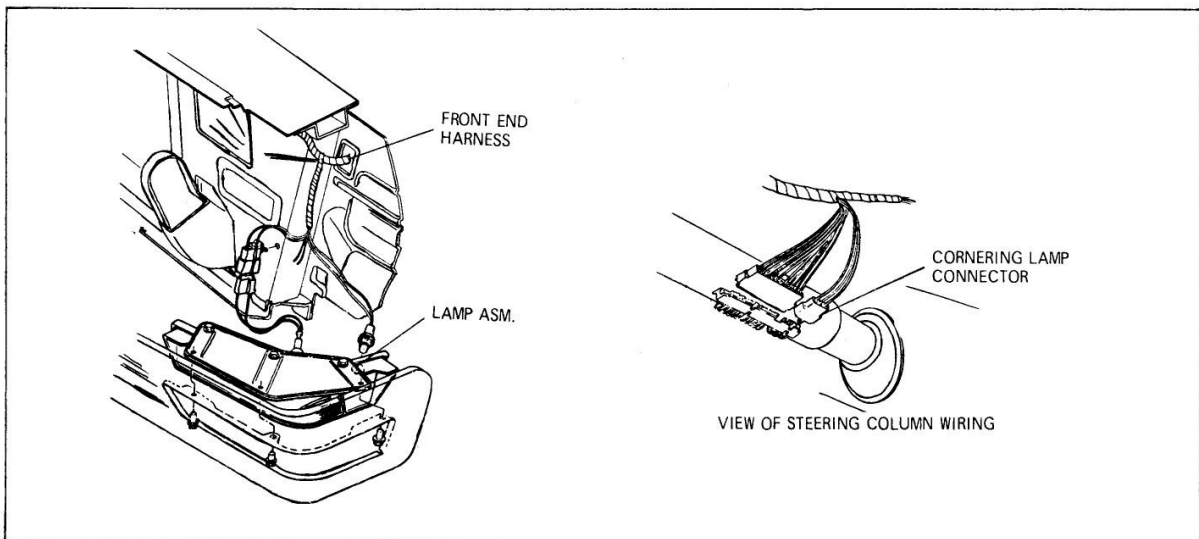


Fig. 15-30 Pontiac Cornering Lamp Installation

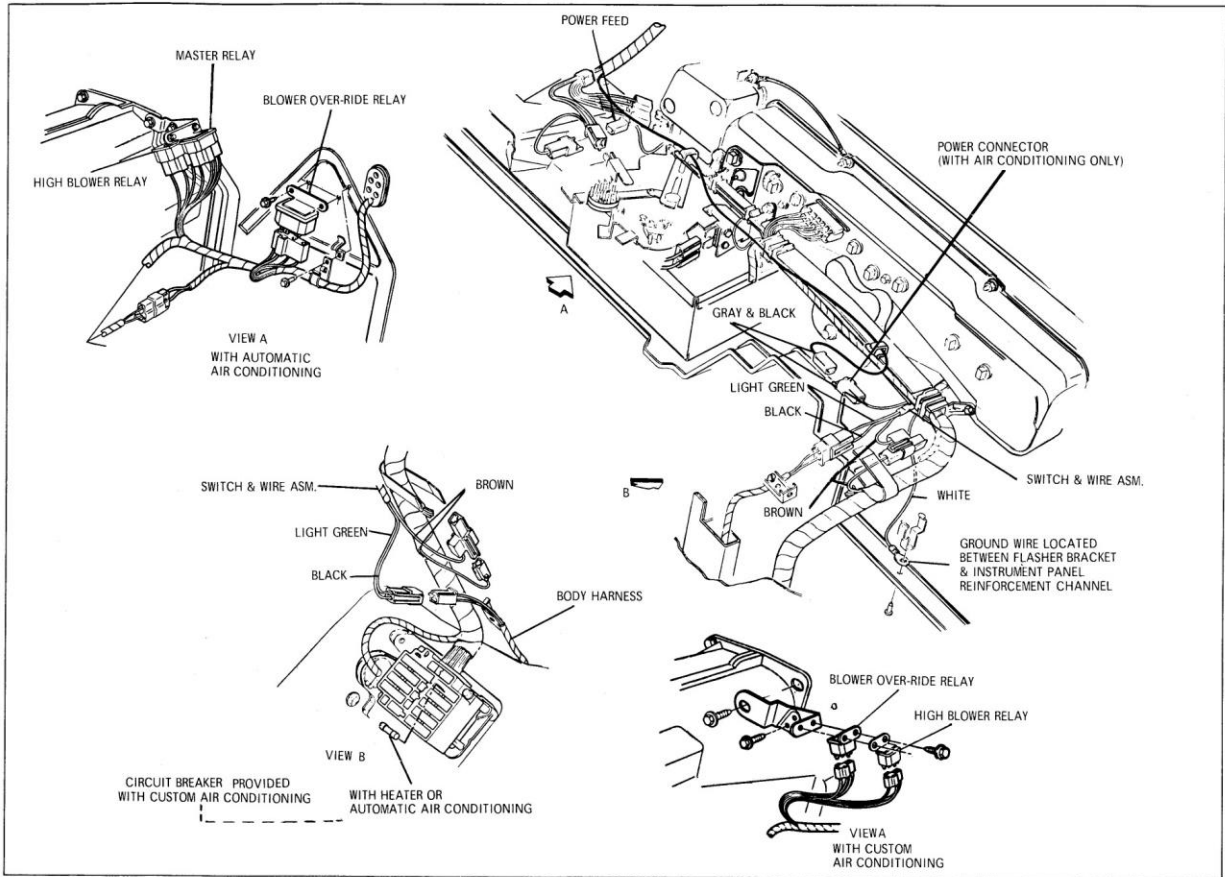


Fig. 15-31 Pontiac Electric Rear Window Defogger

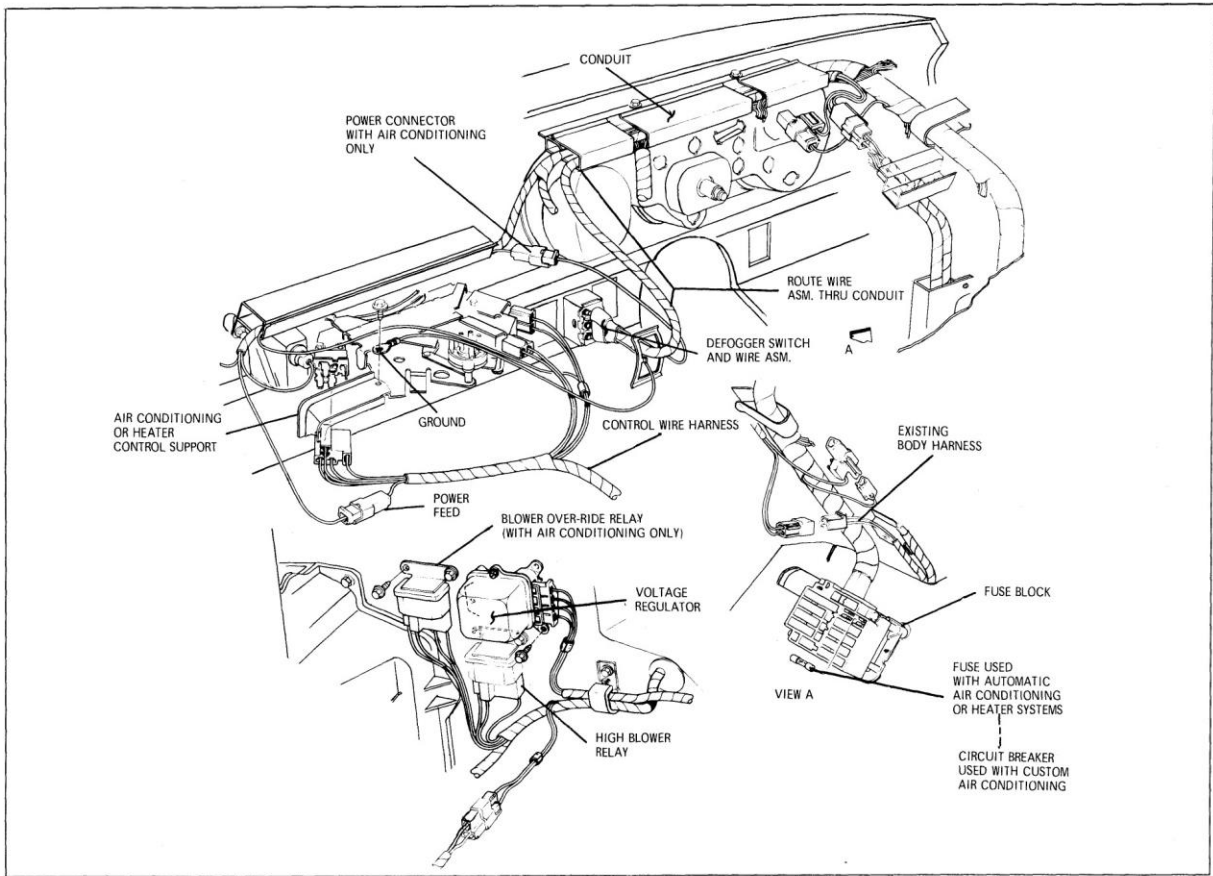


Fig. 15-32 Tempest Electric Rear Window Defogger

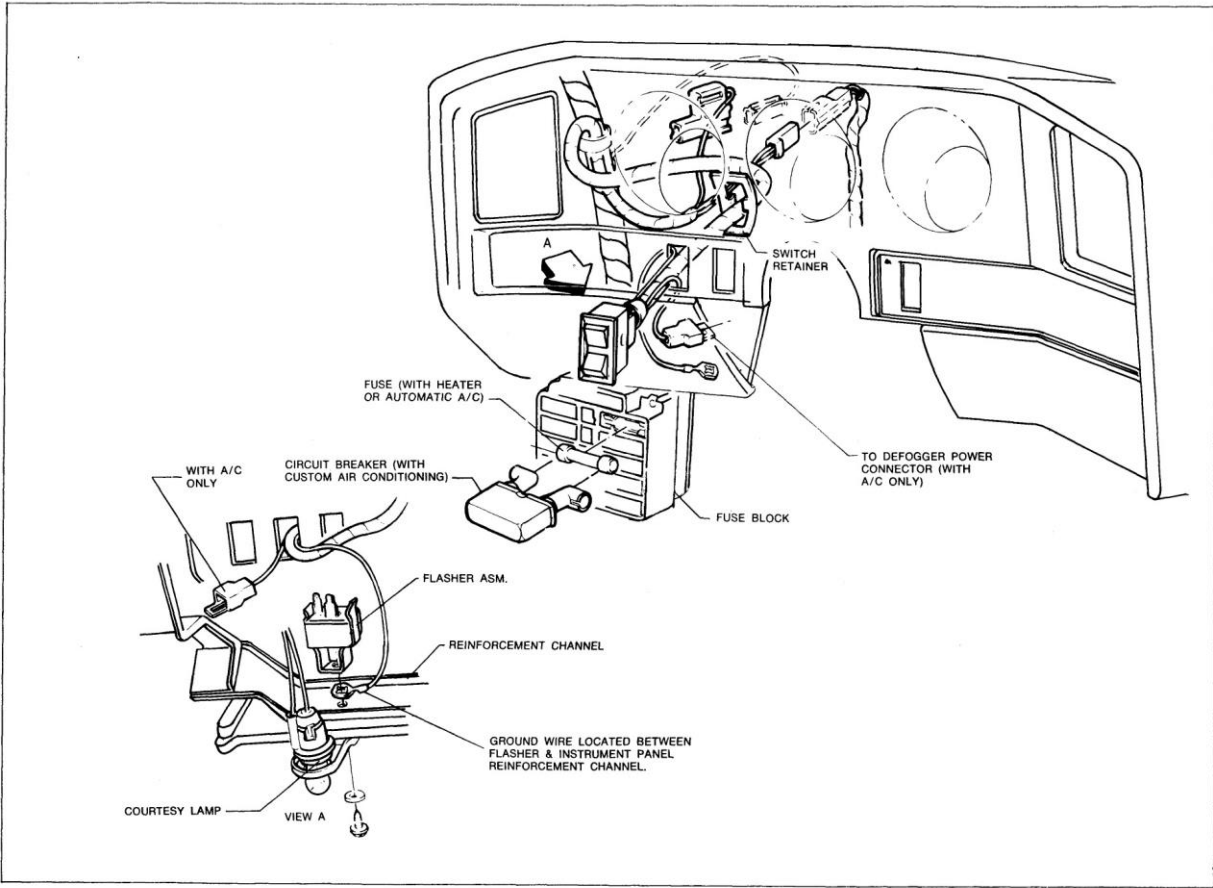


Fig. 15-33 Grand Prix Electric Rear Window Defogger

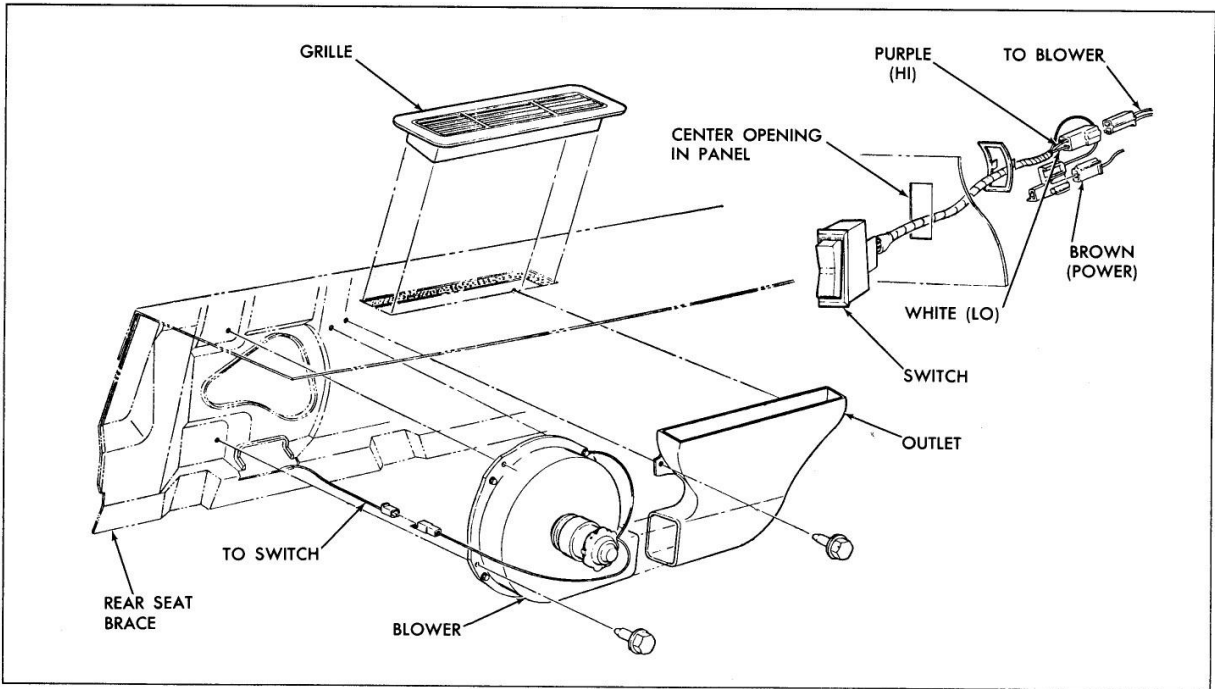


Fig. 15-34 Pontiac (Blower) Rear Window Defogger

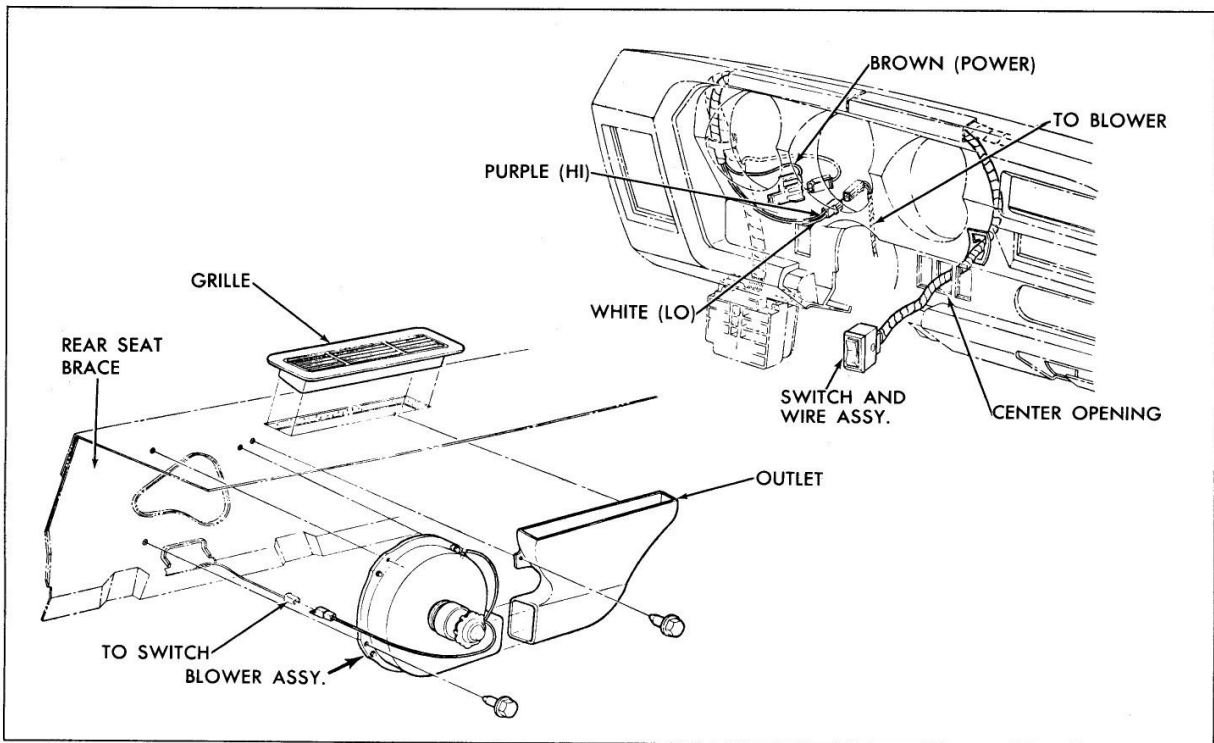


Fig. 15-35 Tempest (Blower) Rear Window Defogger

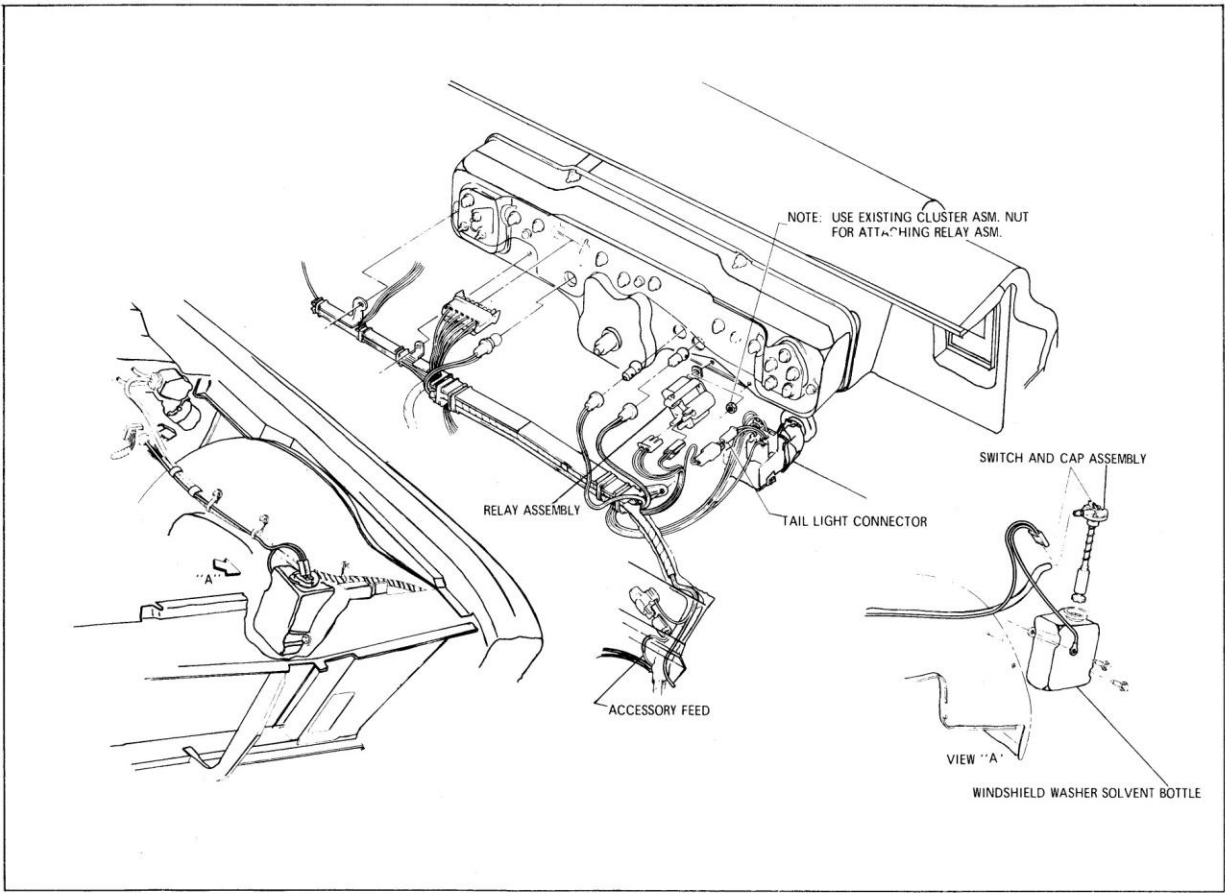


Fig. 15-36 Pontiac Warning Lamp Option

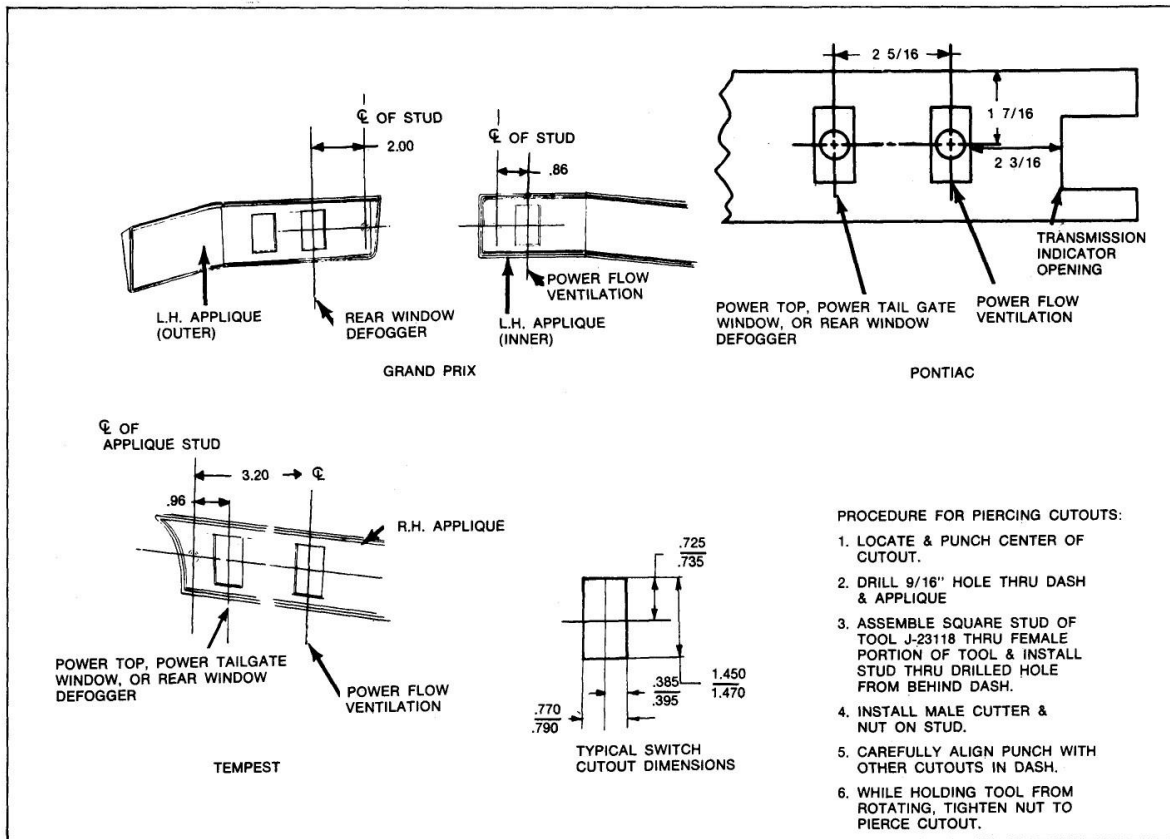


Fig. 15-37 Accessory Switch Cutouts

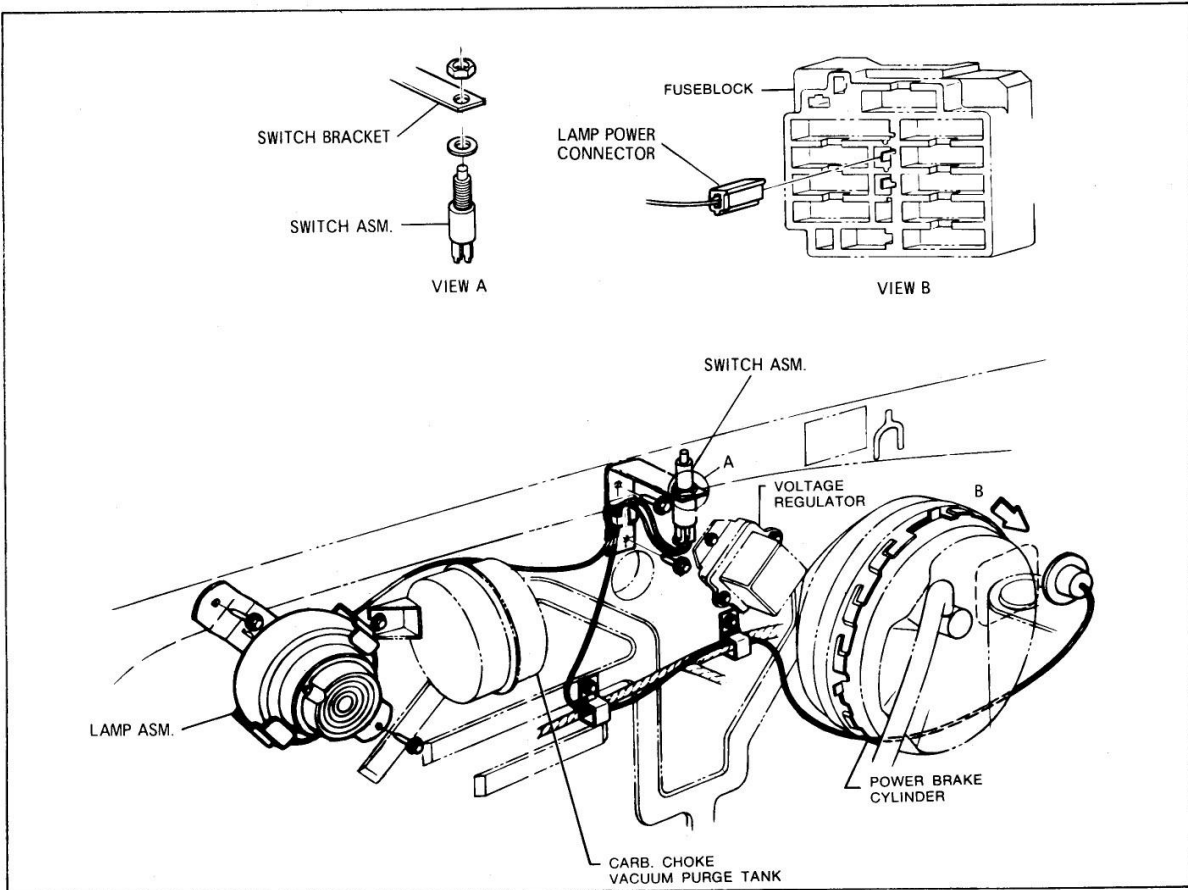


Fig. 15-38 Pontiac Underhood Lamp

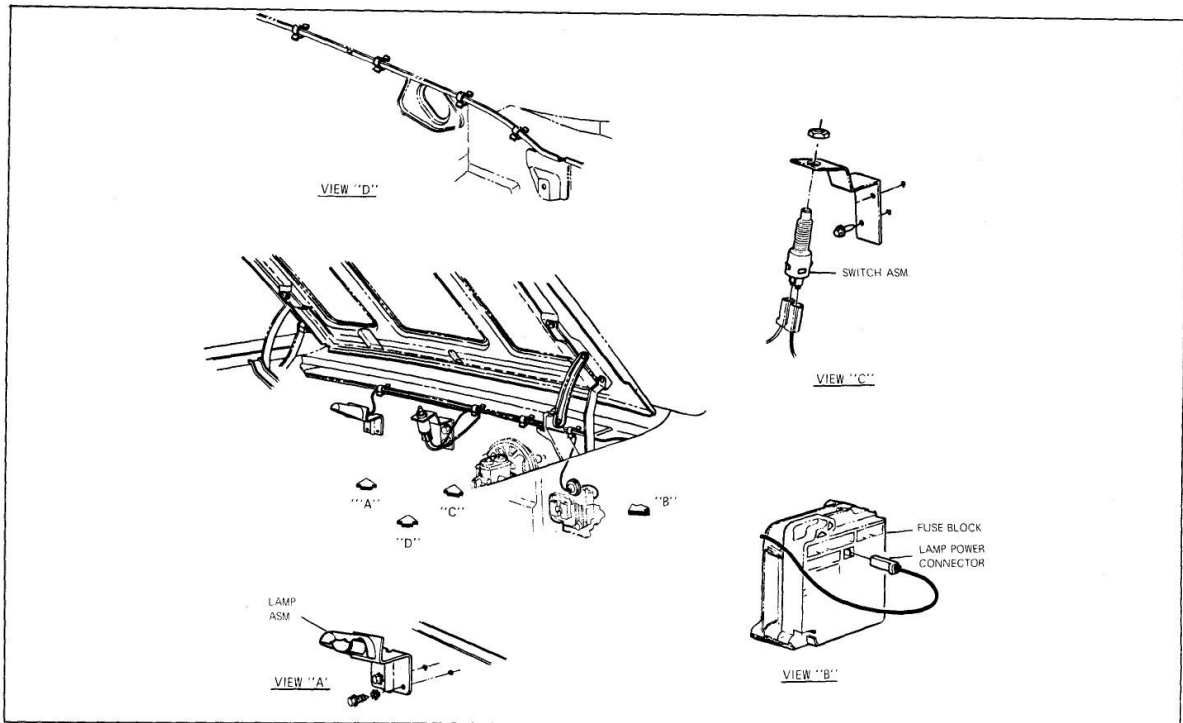


Fig. 15-39 Tempest Underhood Lamp

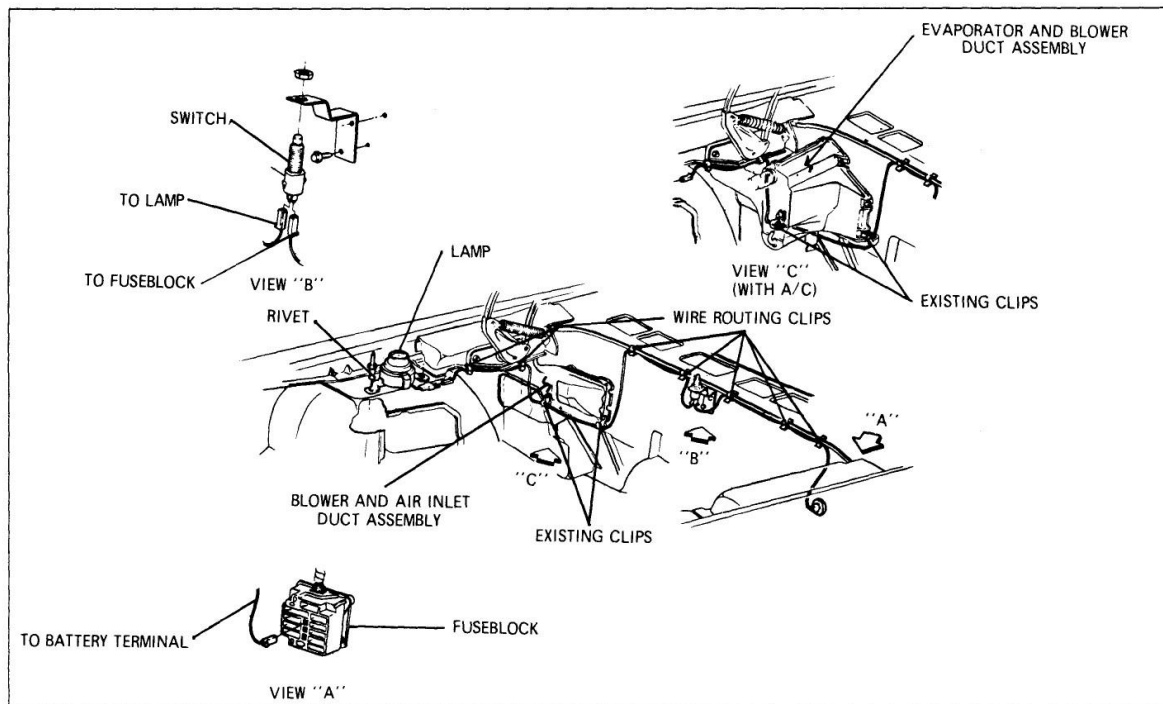


Fig. 15-40 Grand Prix Underhood Lamp

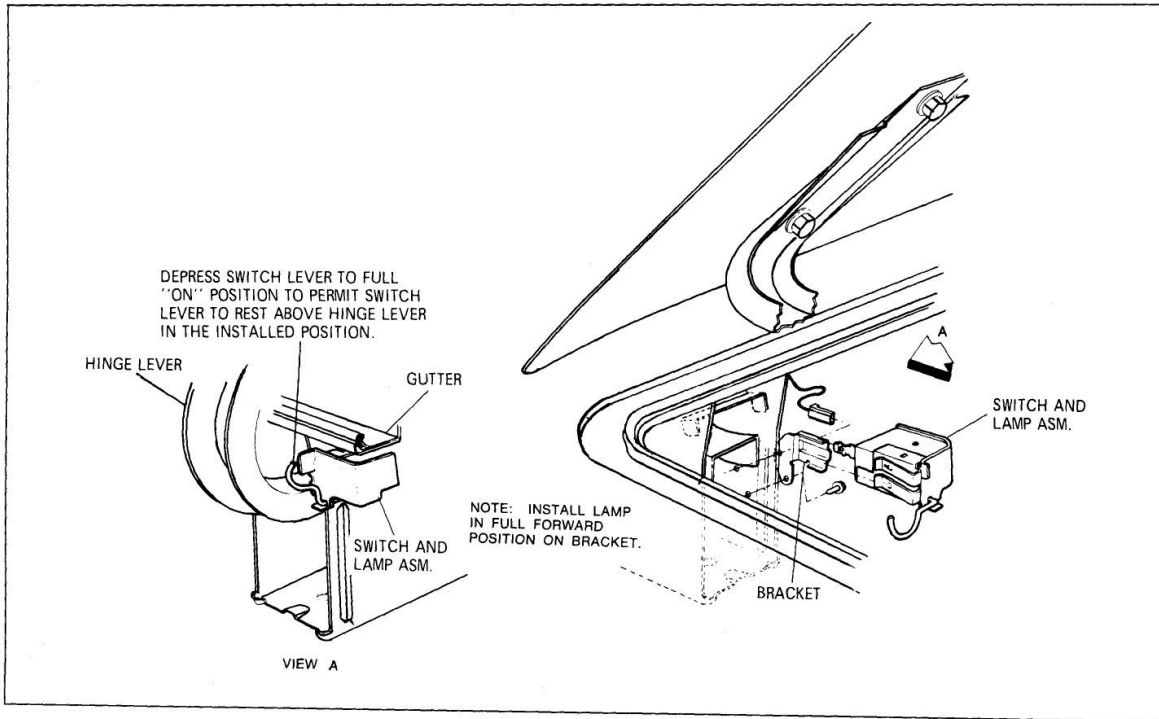


Fig. 15-41 Pontiac Luggage Compartment Lamp

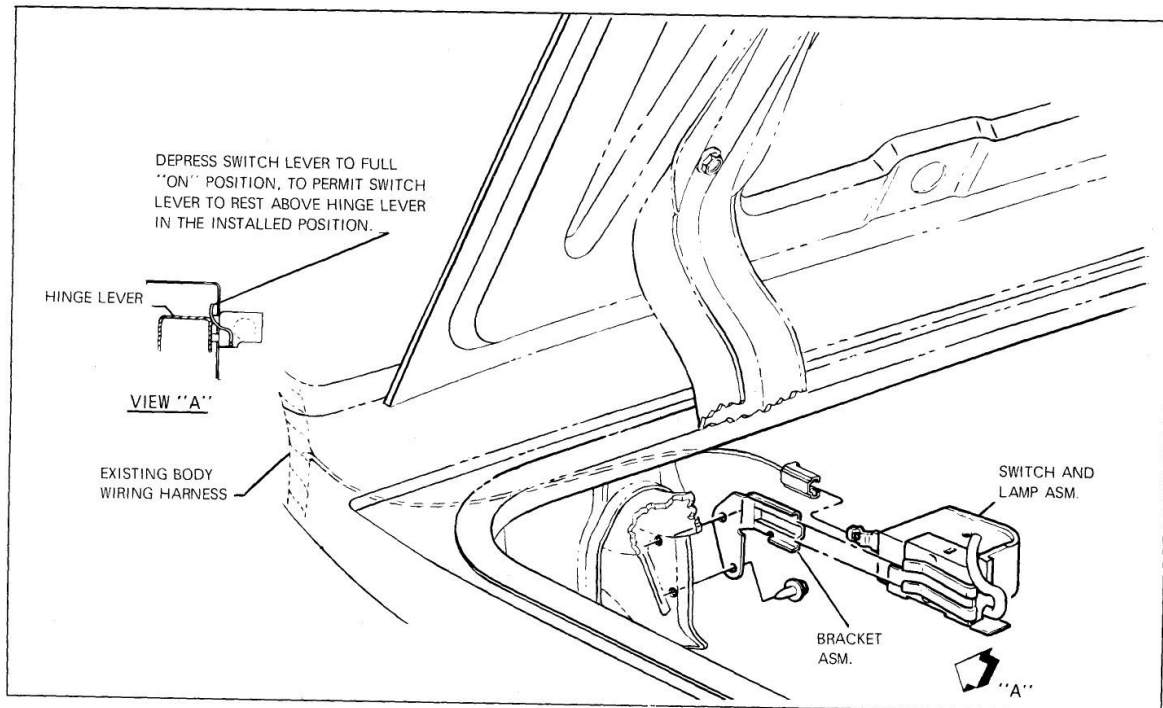


Fig. 15-42 Tempest and Grand Prix Luggage Compartment Lamp

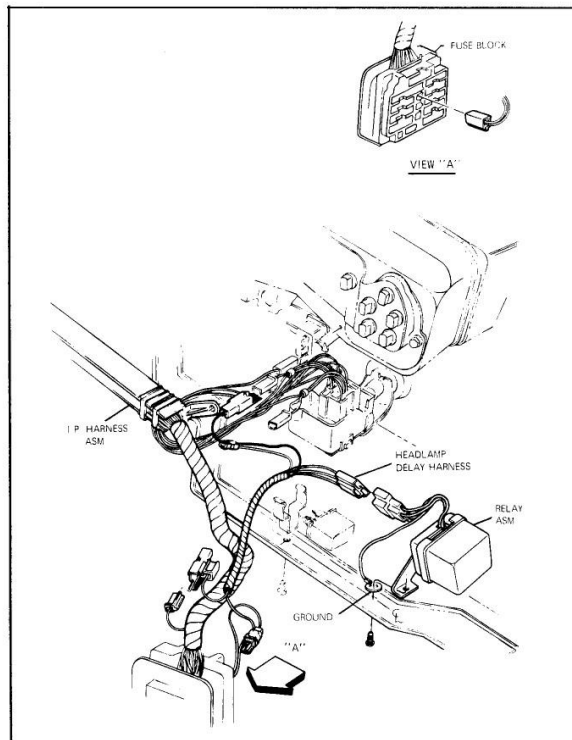


Fig. 15-43 Headlamp Delay Unit Installation

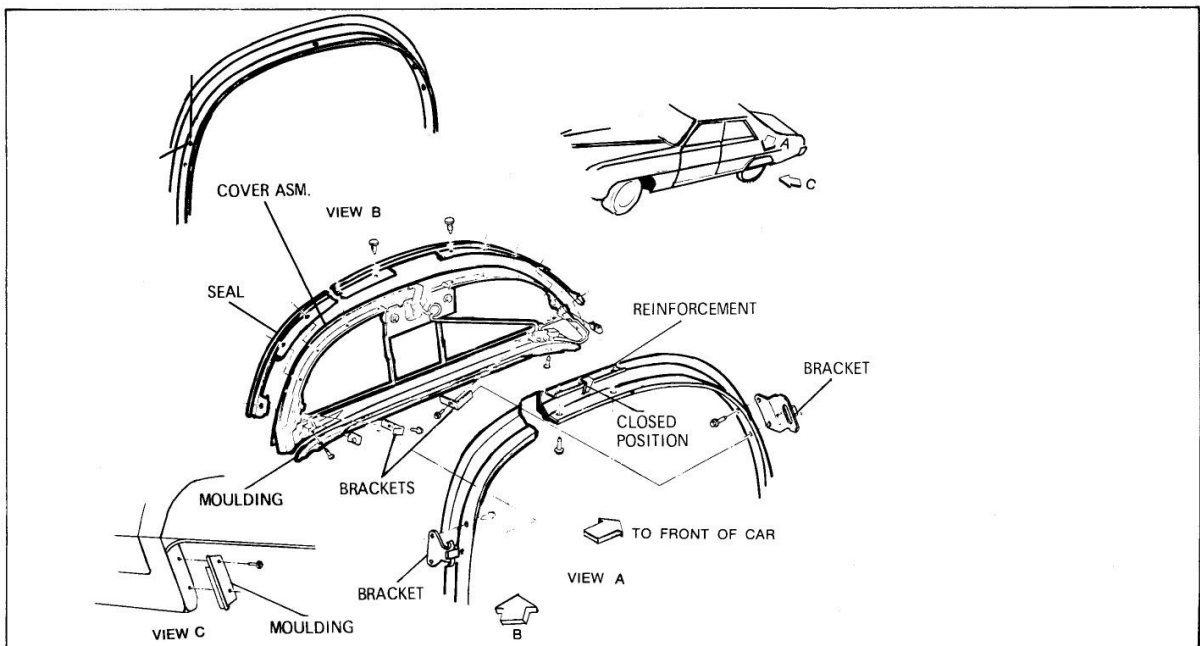


Fig. 15-44 Pontiac Rear Wheel Opening Cover

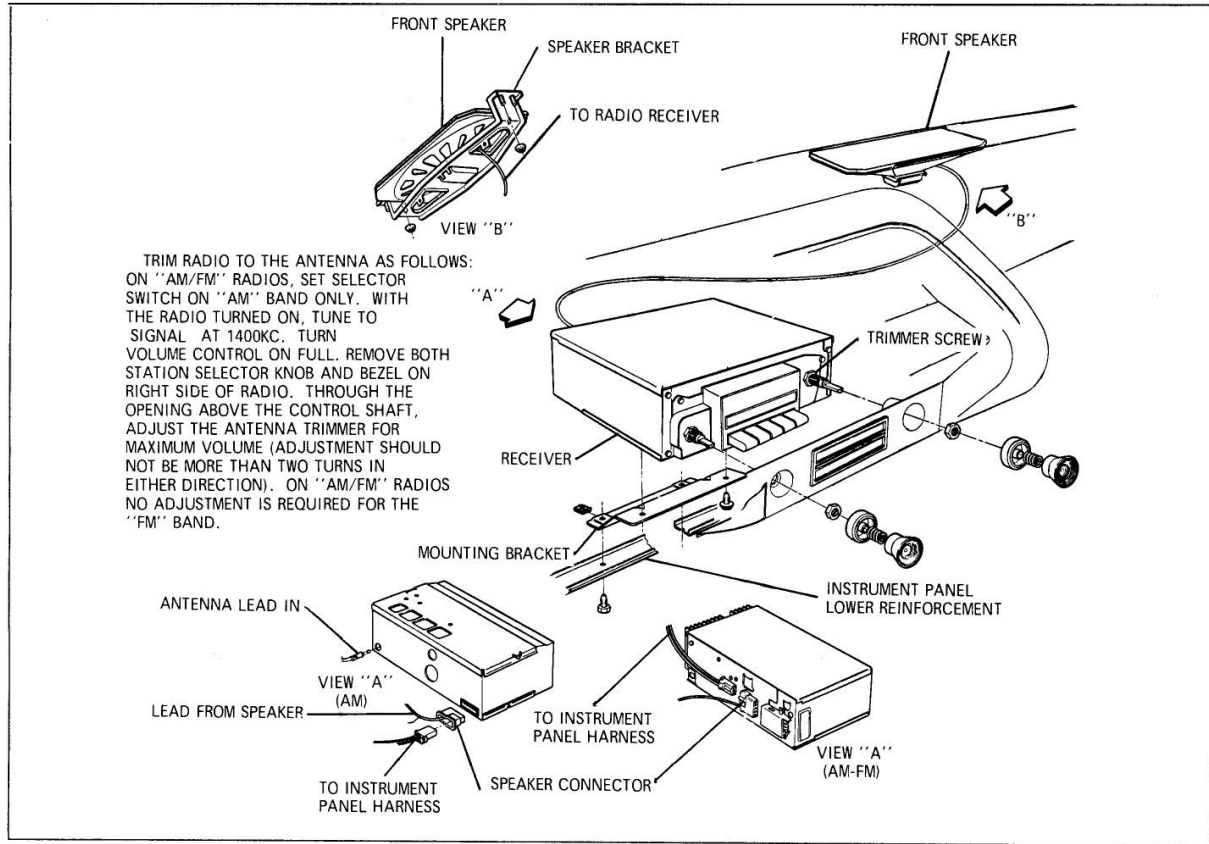


Fig. 15-45 Pontiac Radio and Front Speaker Installation

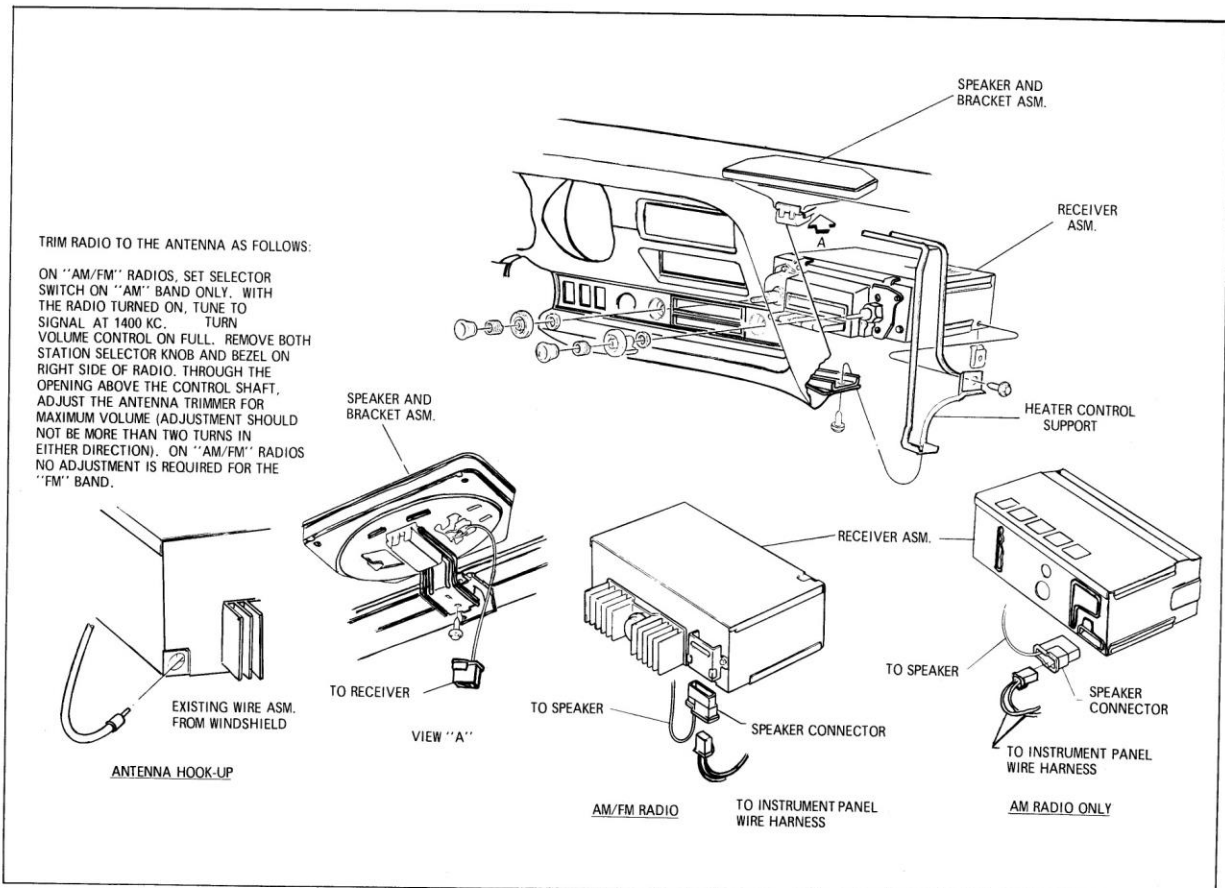


Fig. 15-46 Tempest Radio and Front Speaker Installation

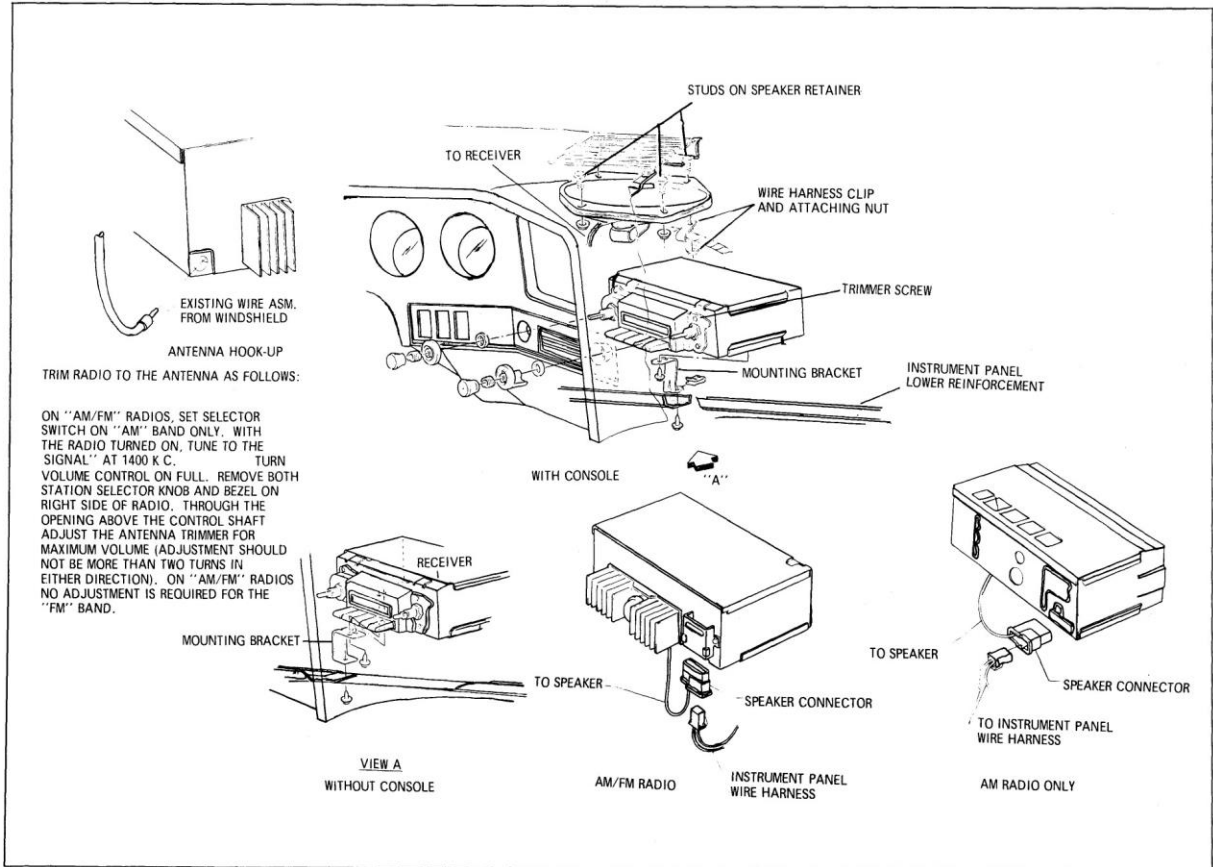


Fig. 15-47 Grand Prix Radio and Front Speaker Installation

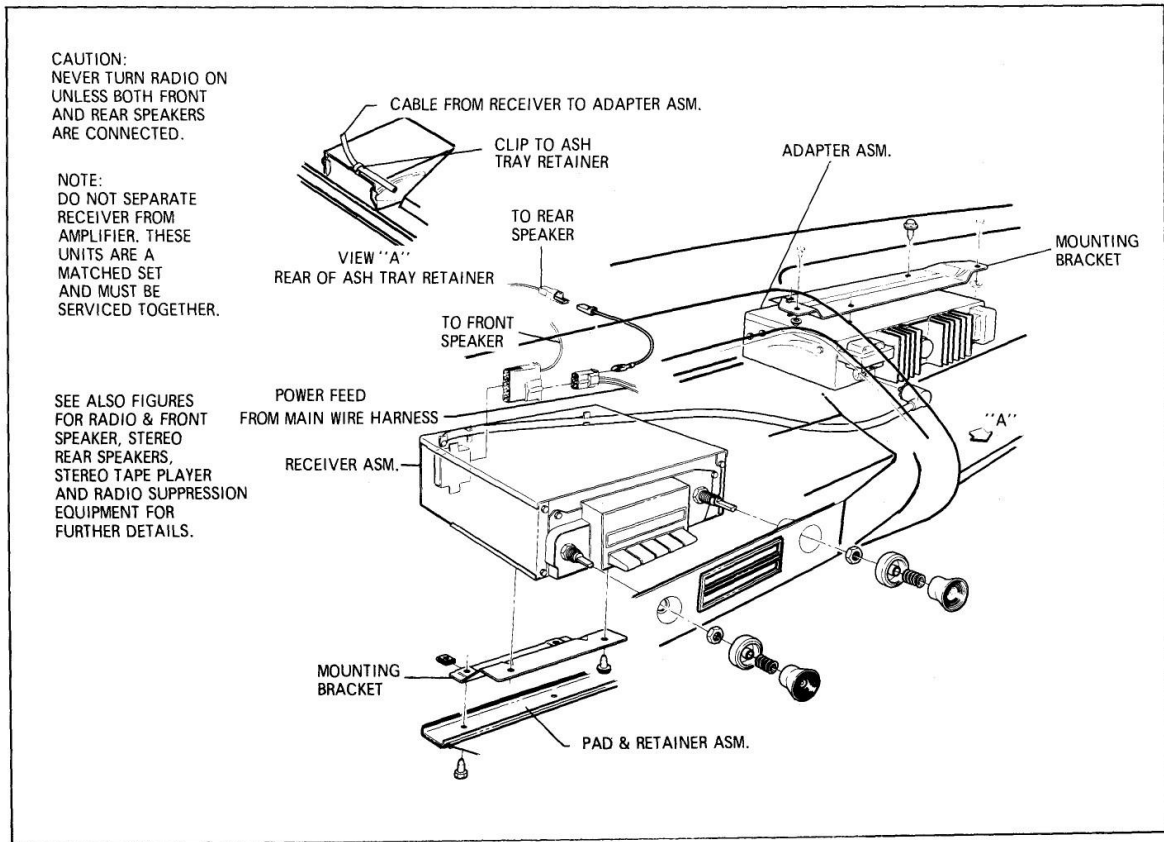


Fig. 15-48 Pontiac Stereo Radio Installation

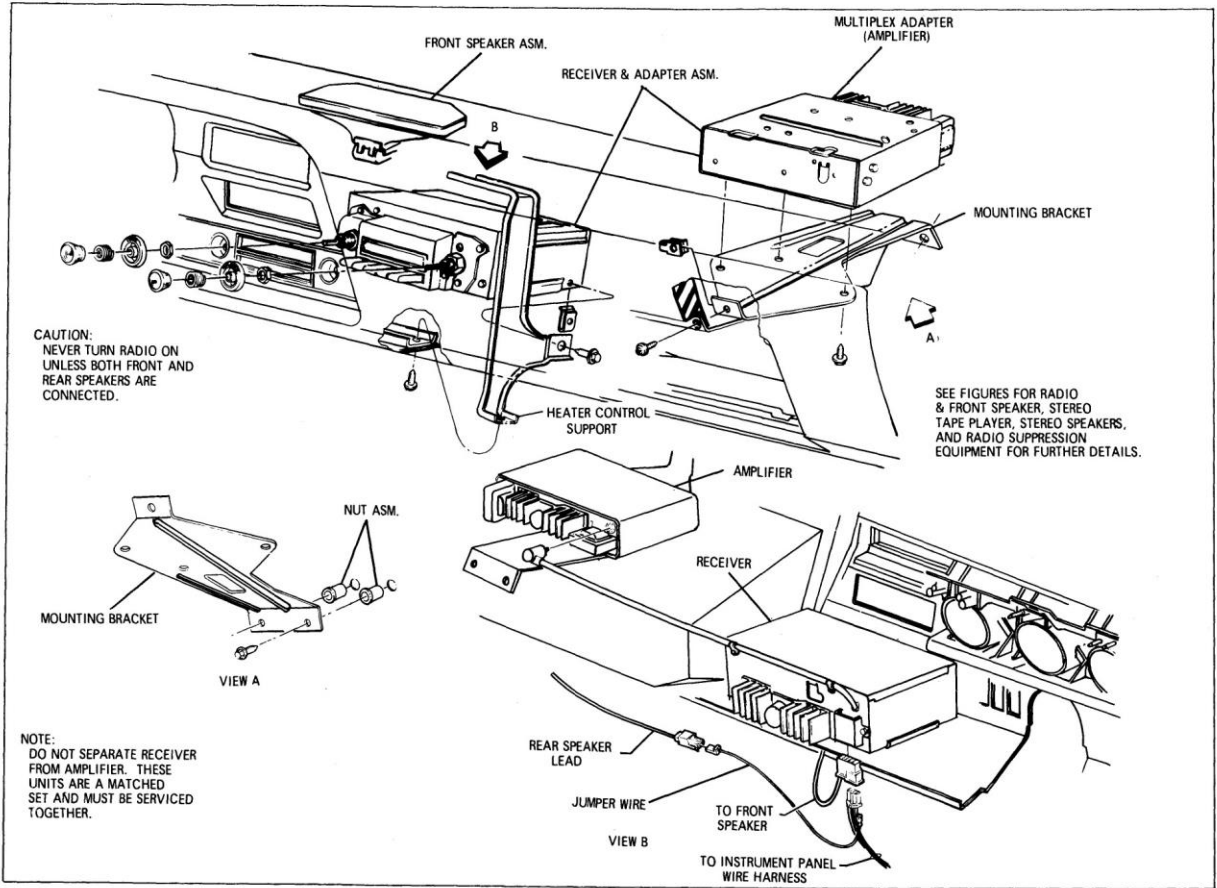


Fig. 15-49 Tempest Stereo Radio Installation

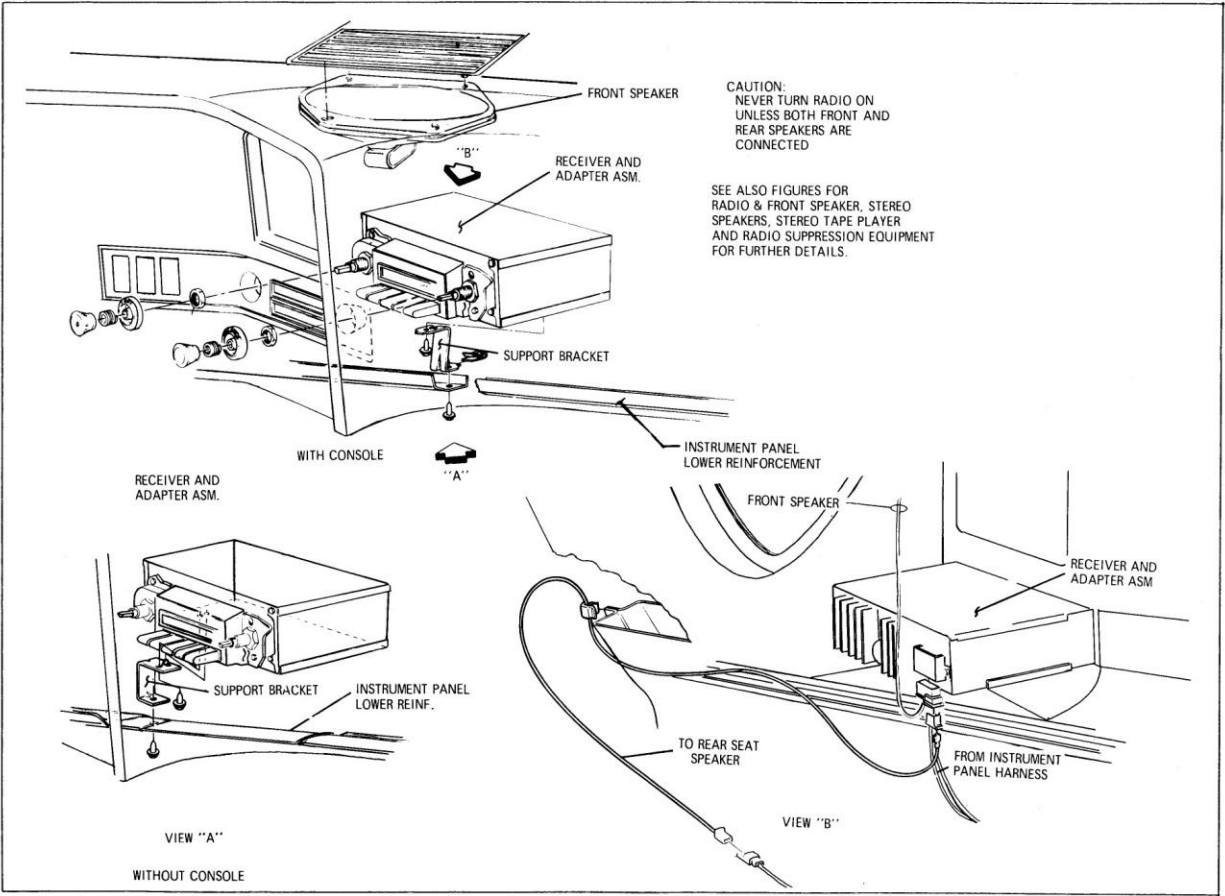


Fig. 15-50 Grand Prix Stereo Radio Installation

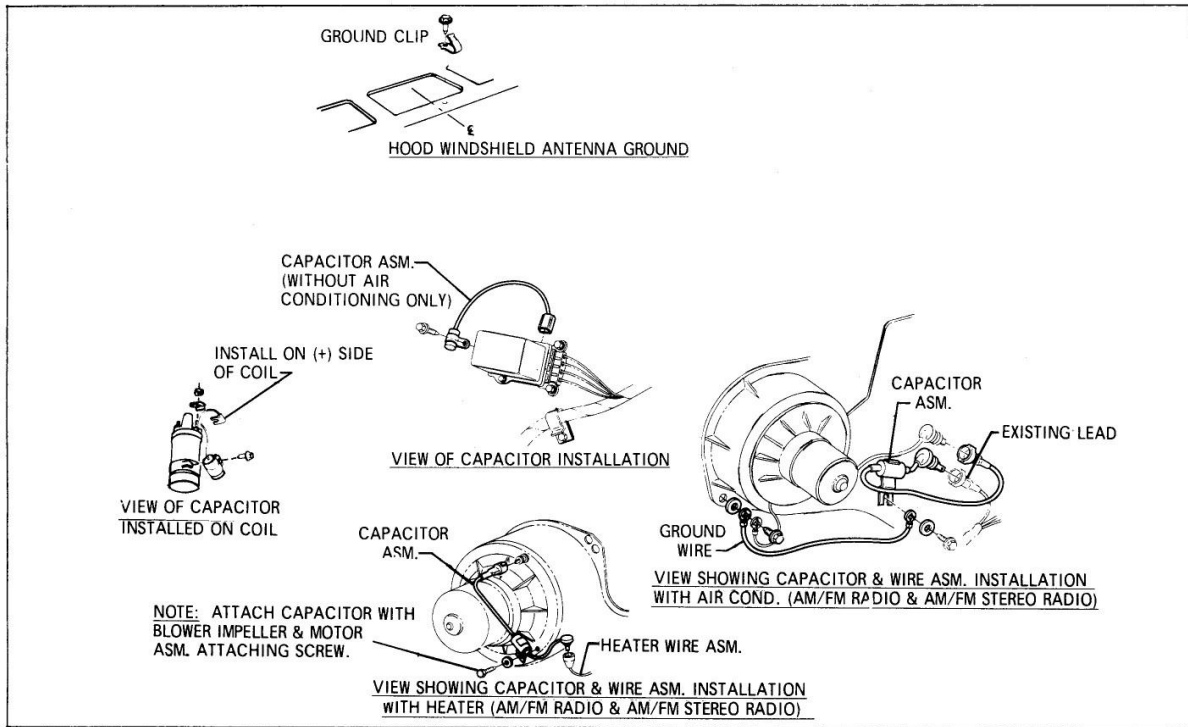


Fig. 15-51 Pontiac Radio Suppression Equipment

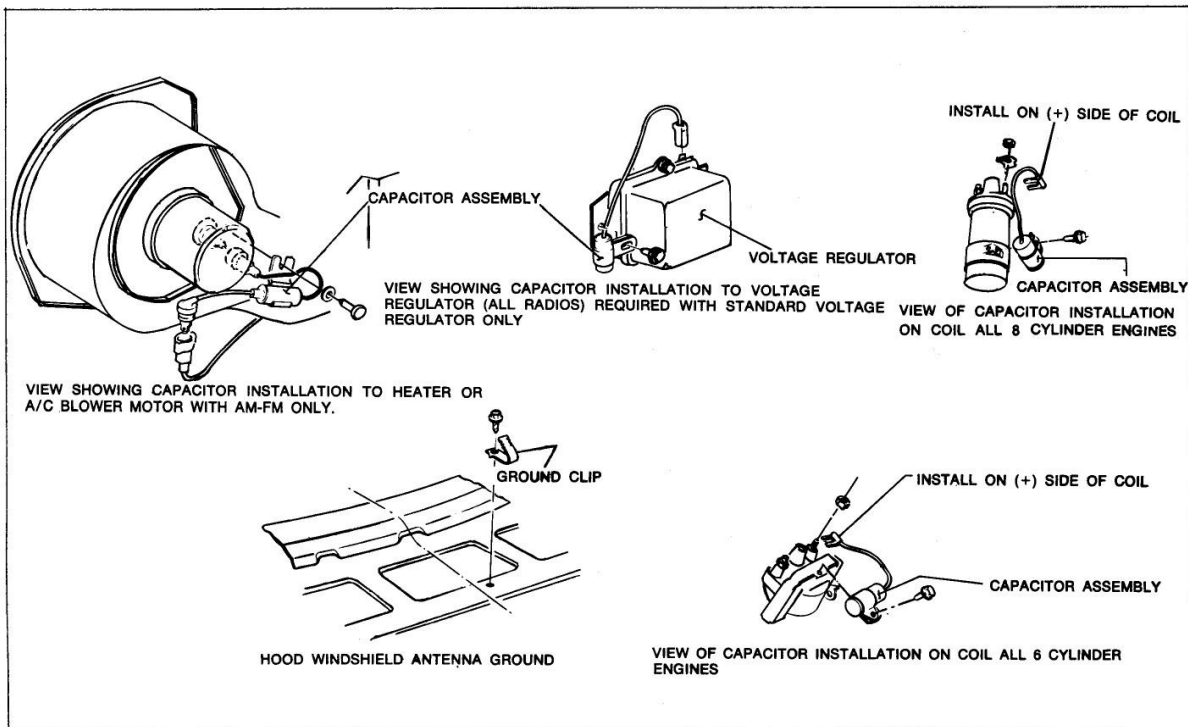


Fig. 15-52 Tempest Radio Suppression Equipment

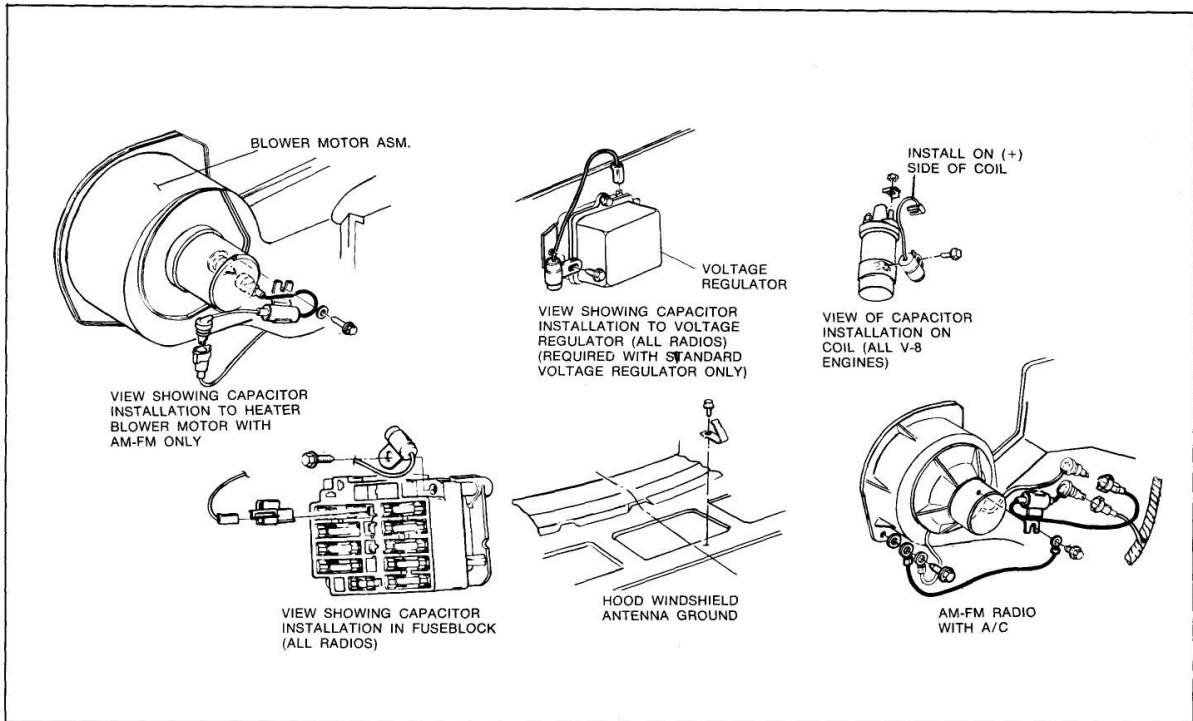


Fig. 15-53 Grand Prix Radio Suppression Equipment

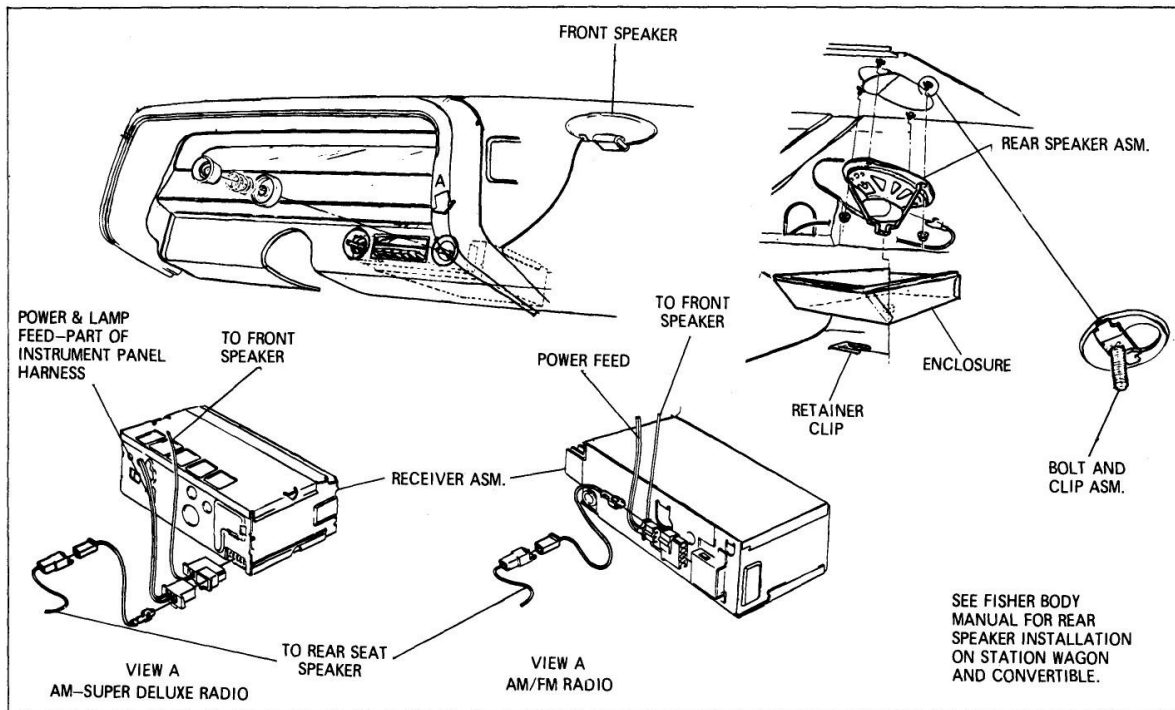


Fig. 15-54 Pontiac Rear Seat Speaker Installation

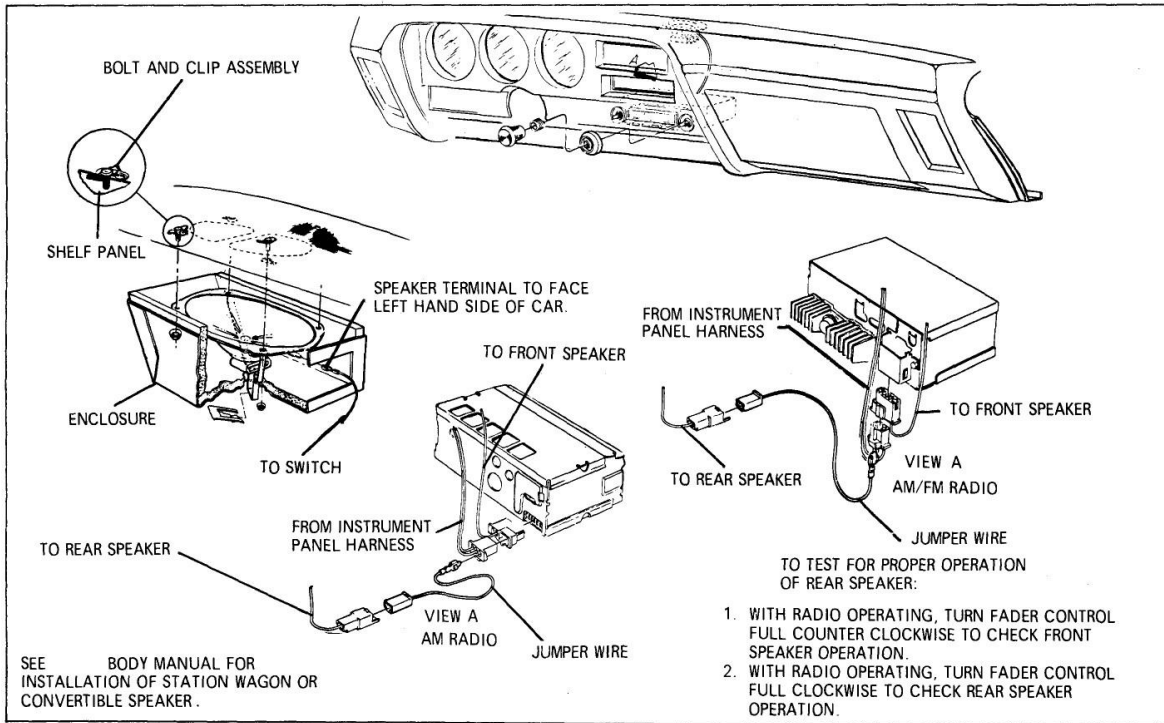


Fig. 15-55 Tempest Rear Seat Speaker Installation

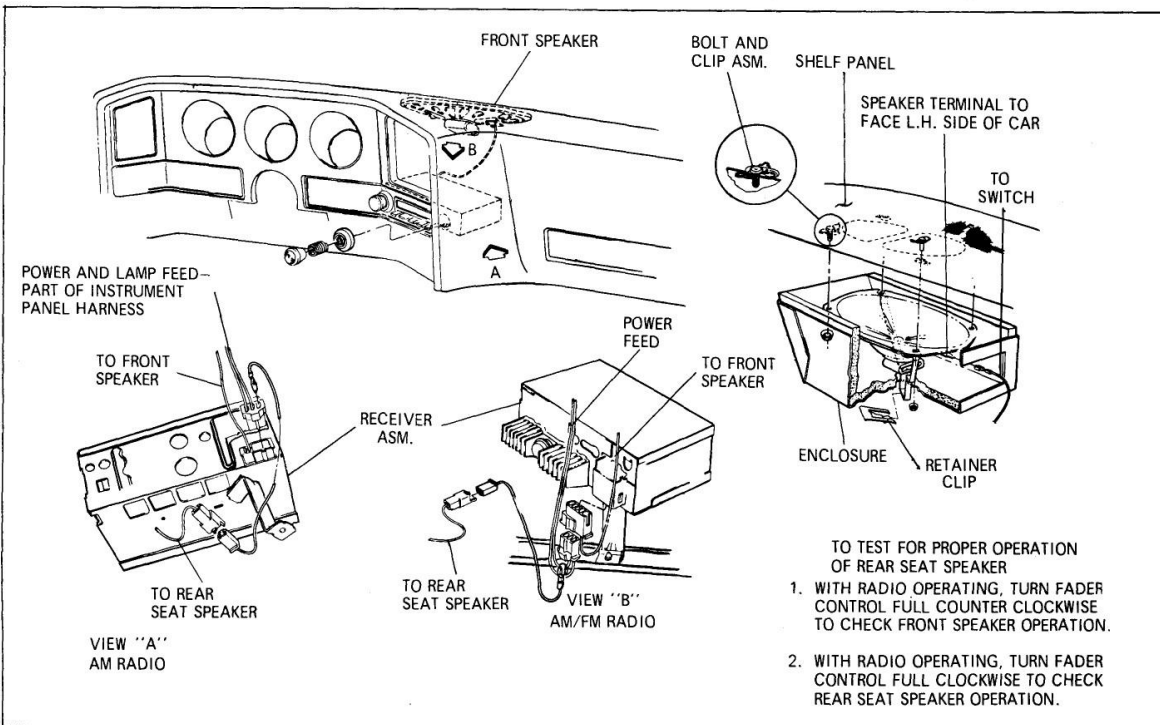


Fig. 15-56 Grand Prix Rear Seat Speaker Installation

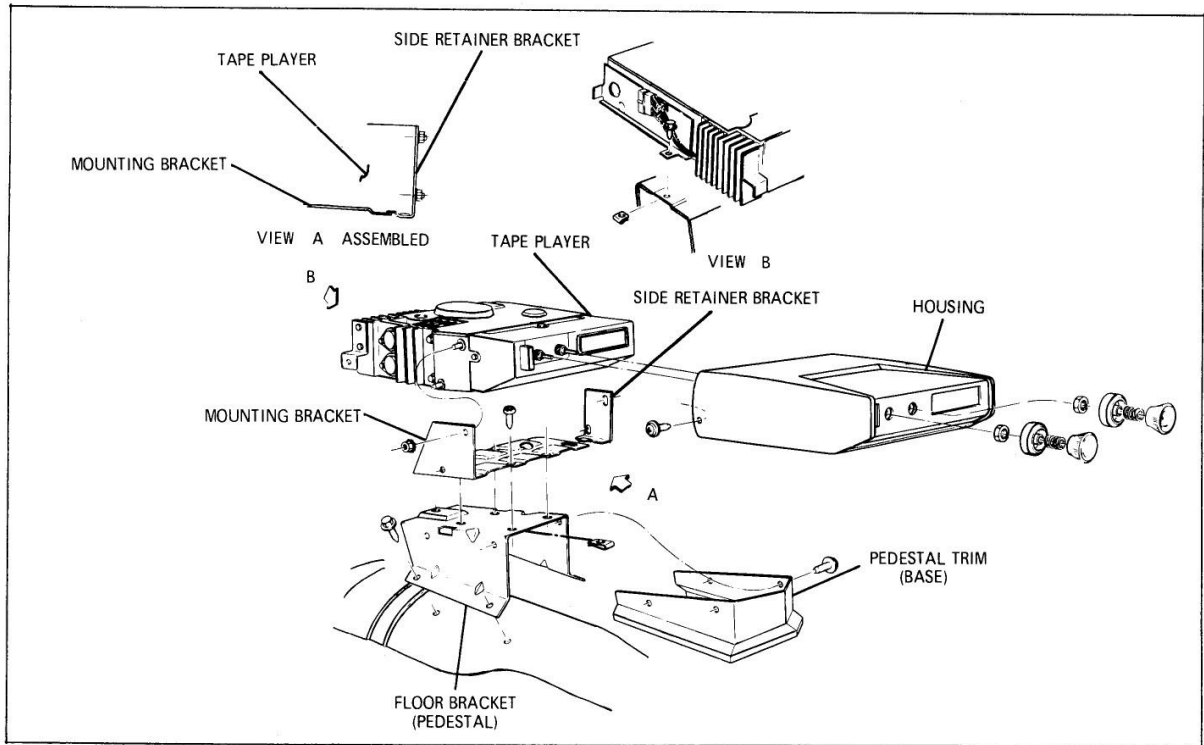


Fig. 15-57 Pontiac Stereo Tape Player Installation

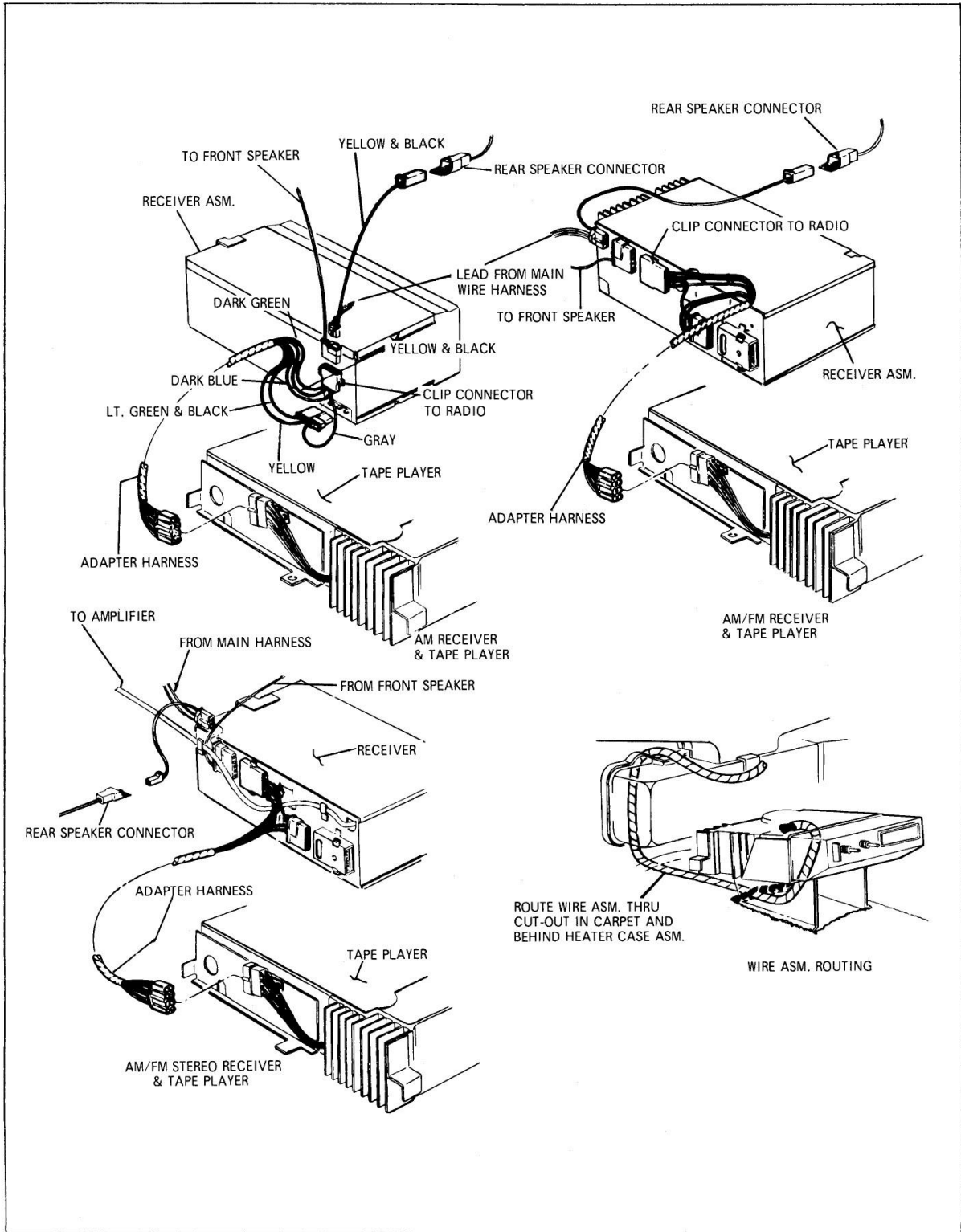


Fig. 15-58 Pontiac Stereo Tape Player Wiring

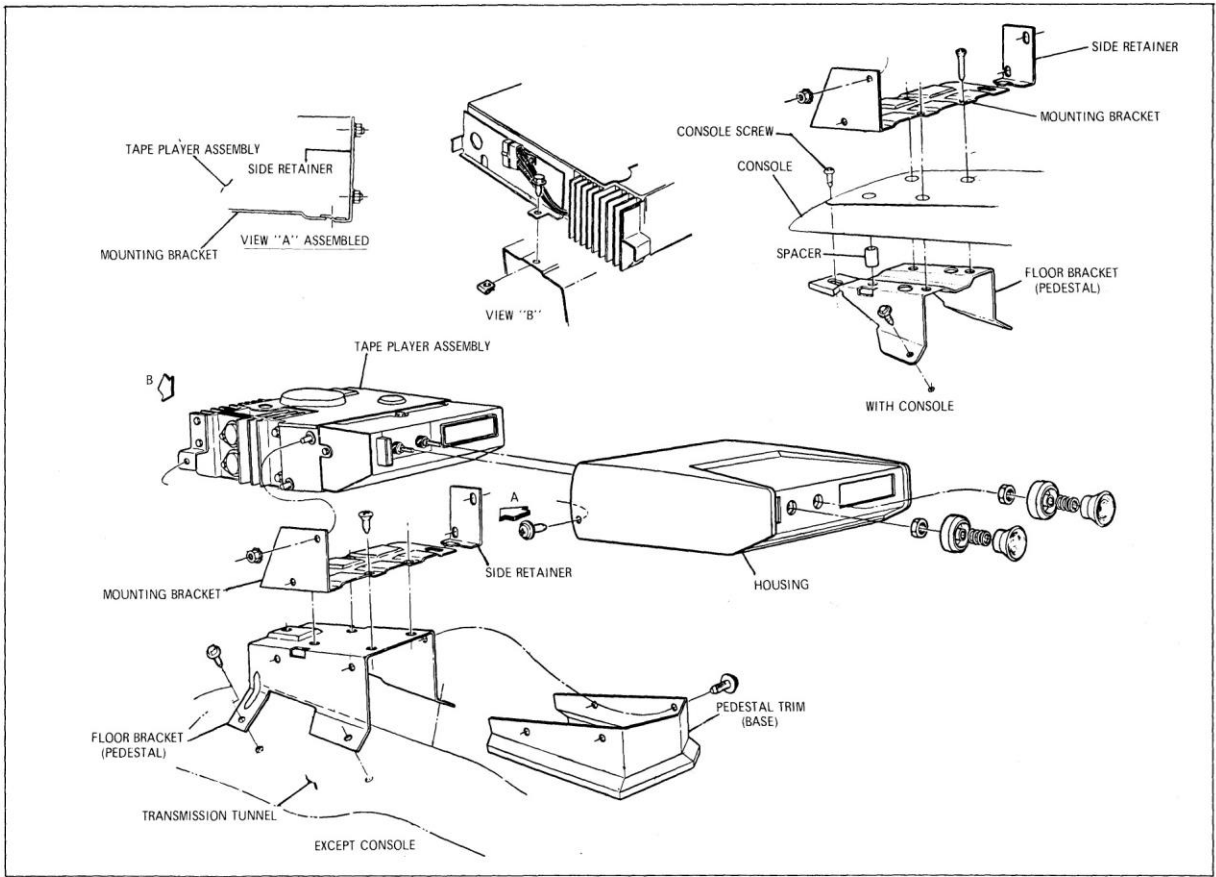


Fig. 15-59 Tempest Stereo Tape Player Installation

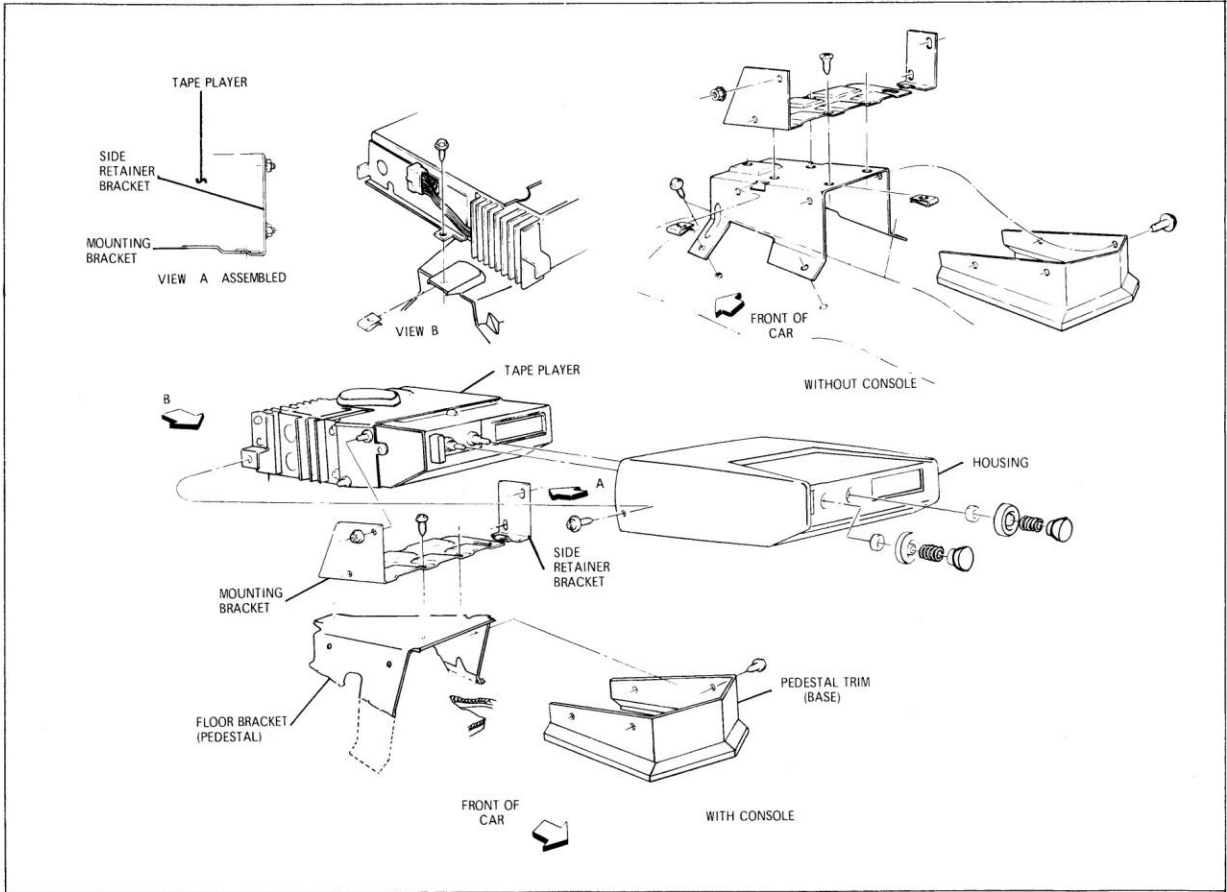


Fig. 15-61 Grand Prix Stereo Tape Player Installation

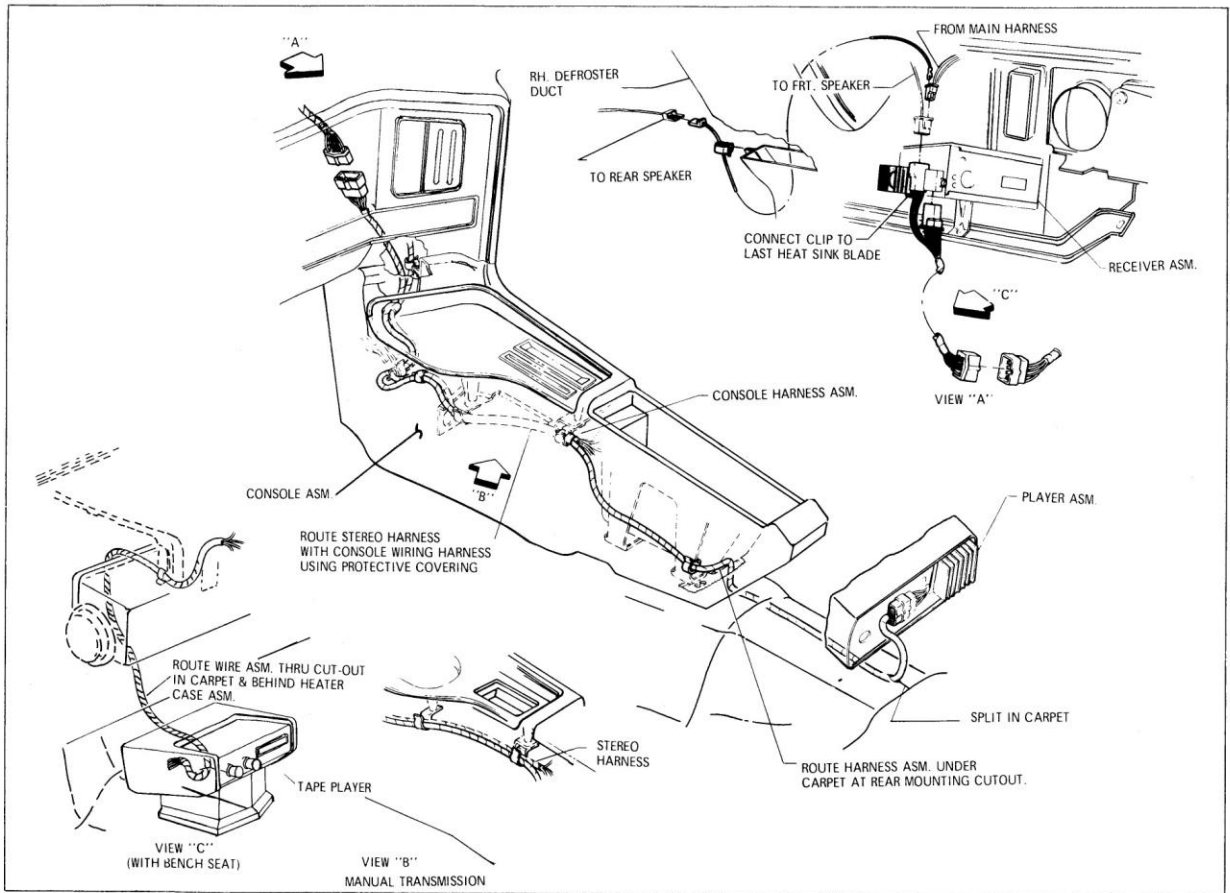


Fig. 15-62 Grand Prix Stereo Tape Player Wiring

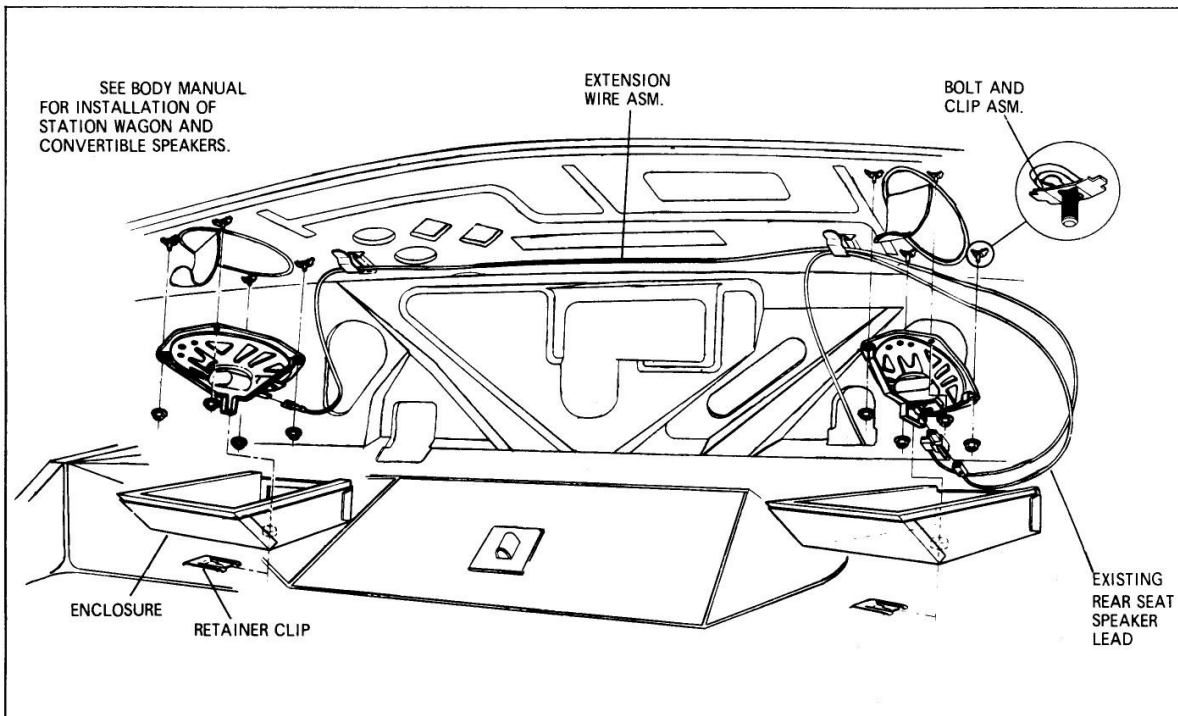


Fig. 15-63 Pontiac Rear Seat Stereo Speakers

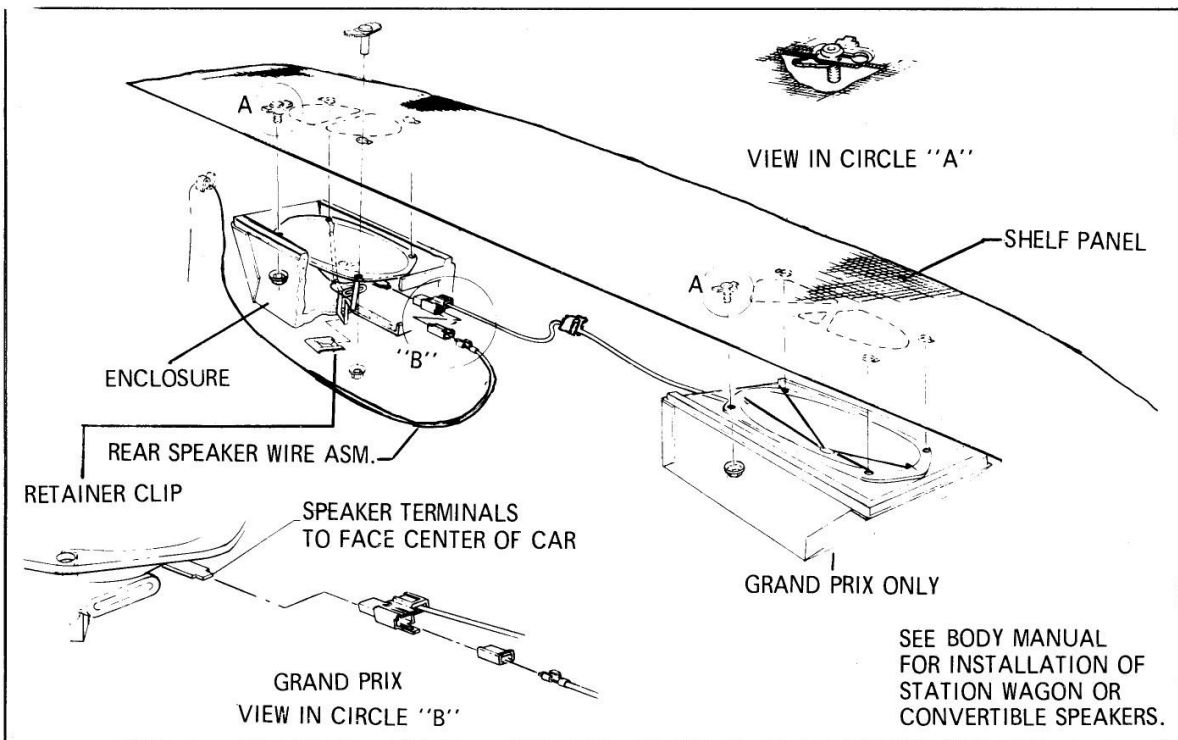


Fig. 15-64 Tempest and Grand Prix Rear Seat Stereo Speakers

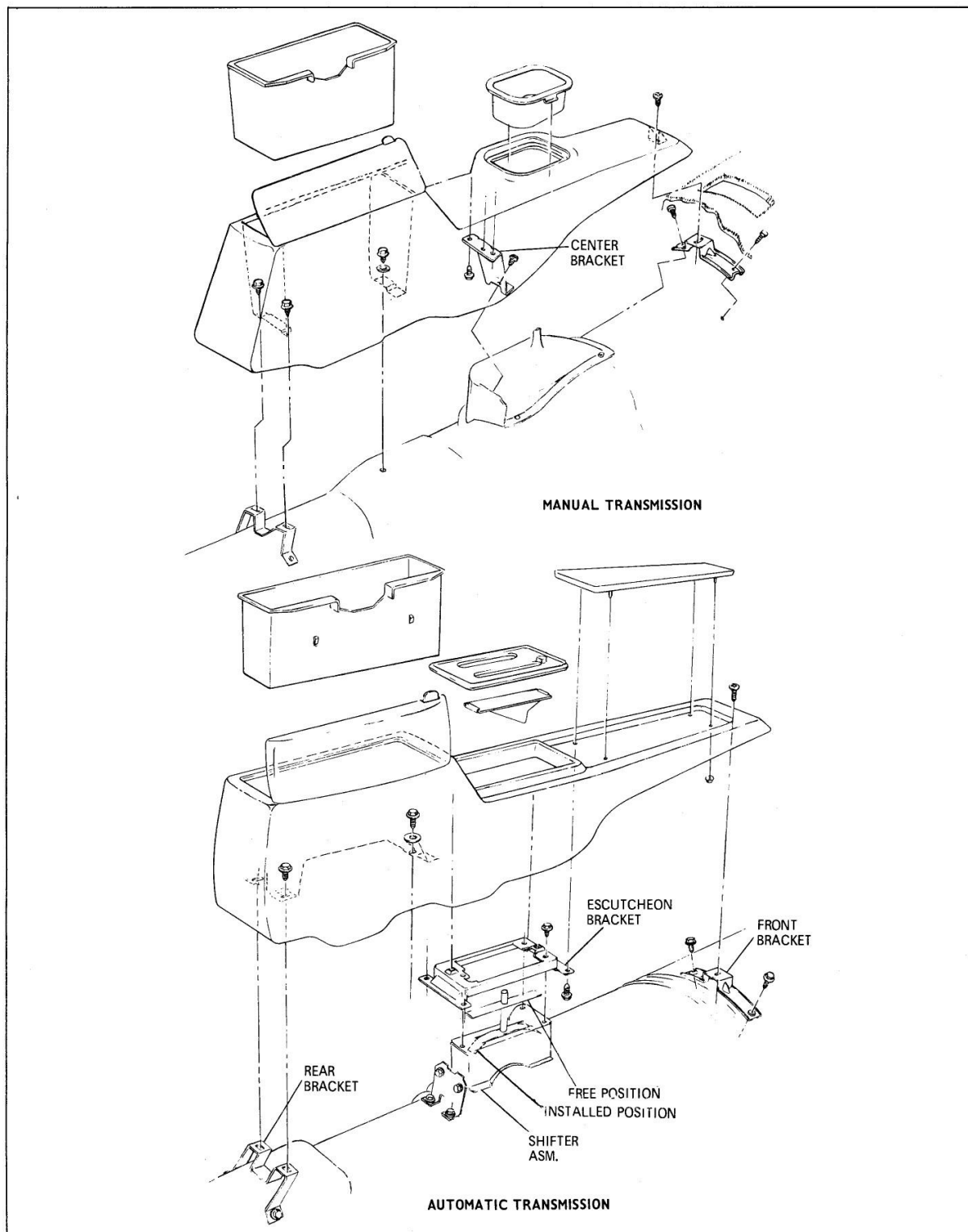


Fig. 15-65 Tempest Console Installation

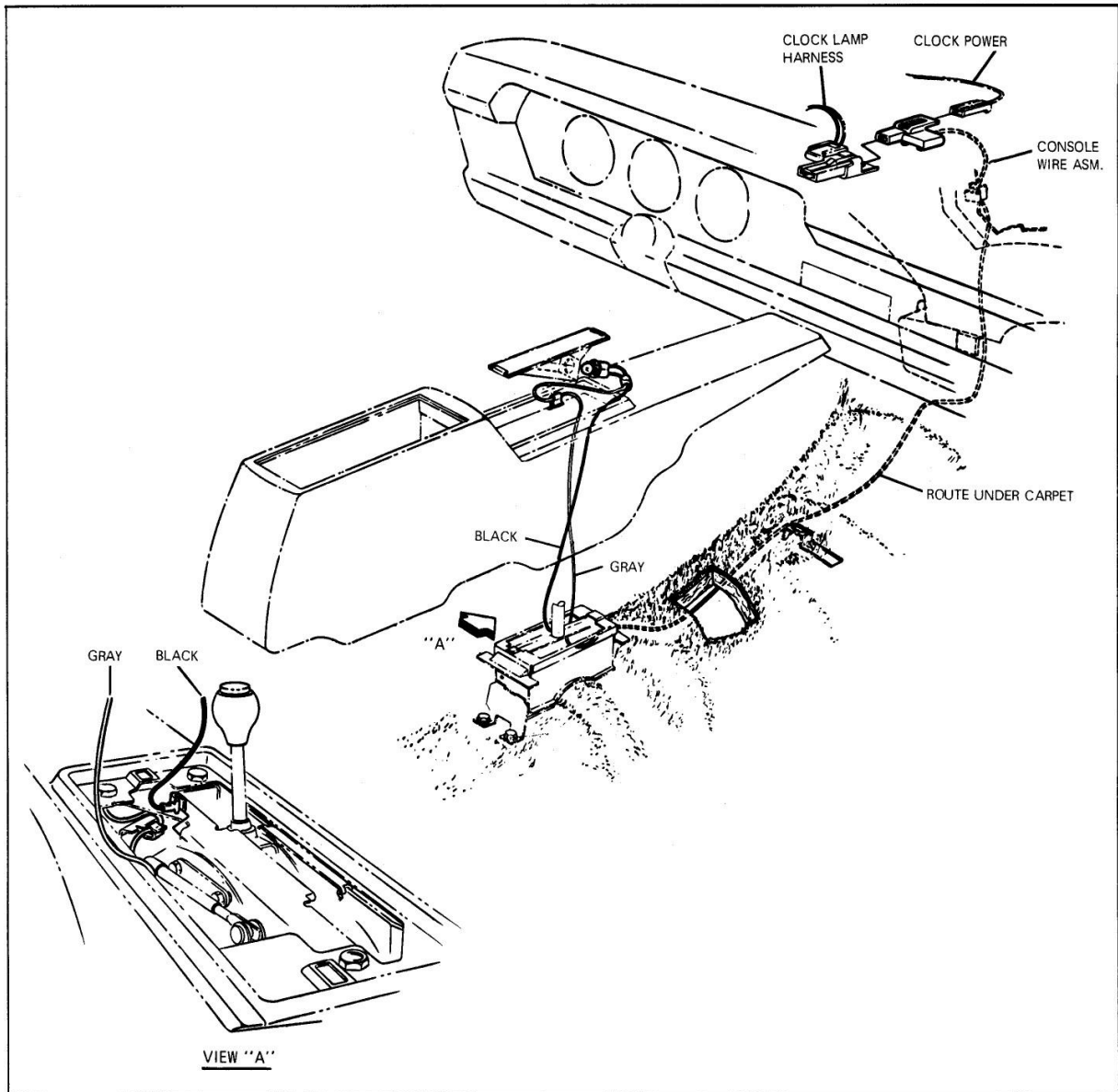


Fig. 15-66 Tempest Console Wiring

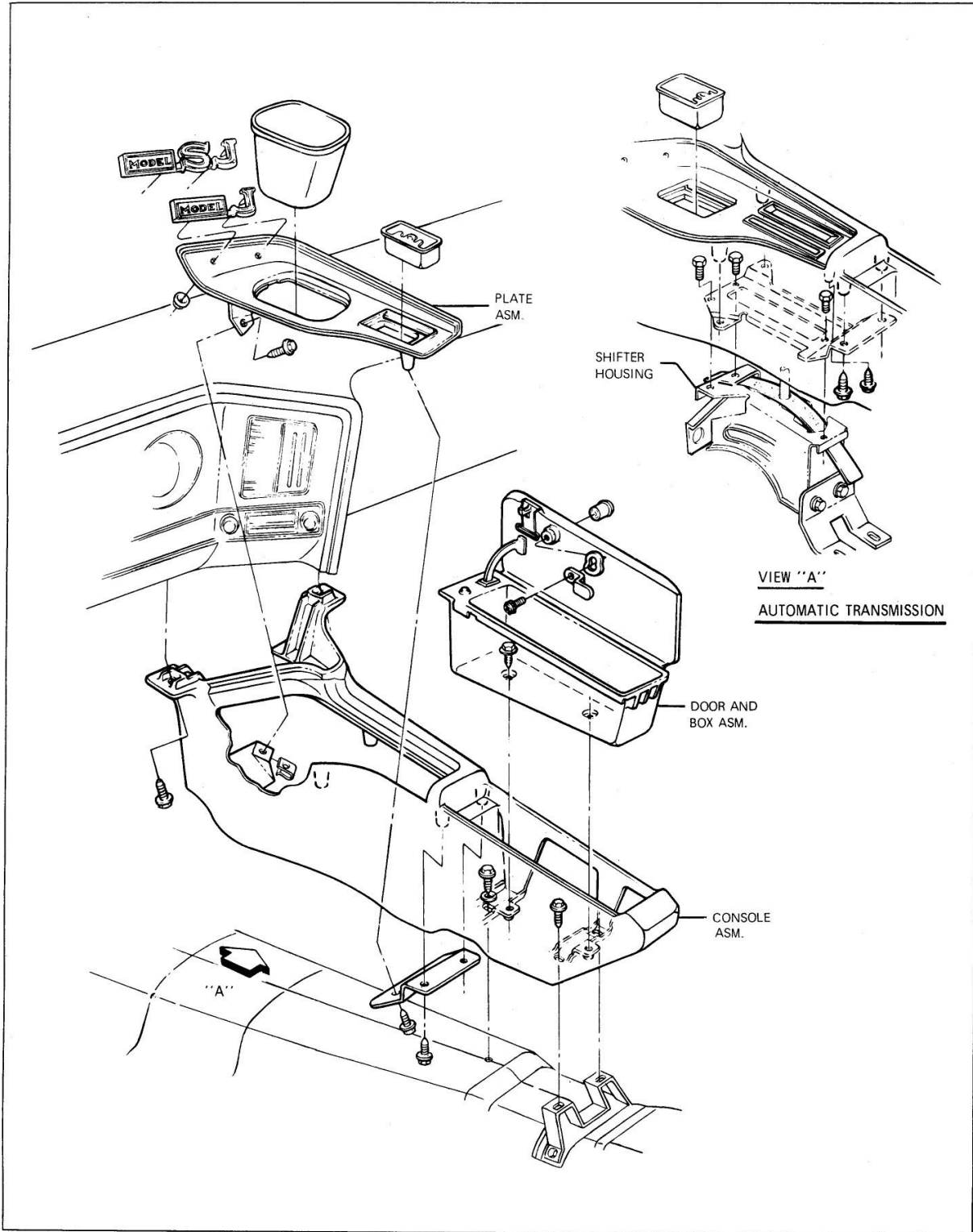


Fig. 15-67 Grand Prix Console Installation

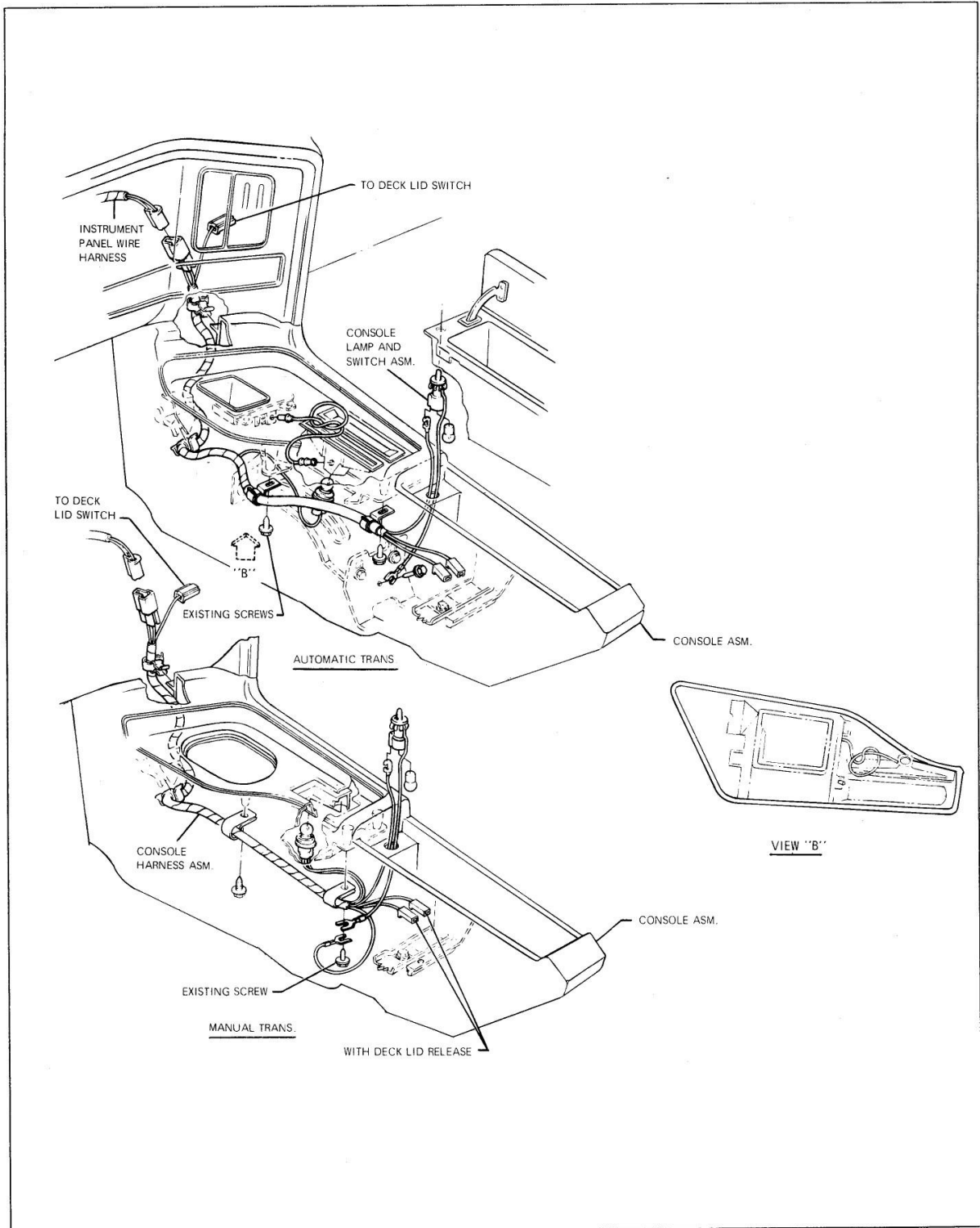


Fig. 15-68 Grand Prix Console Wiring

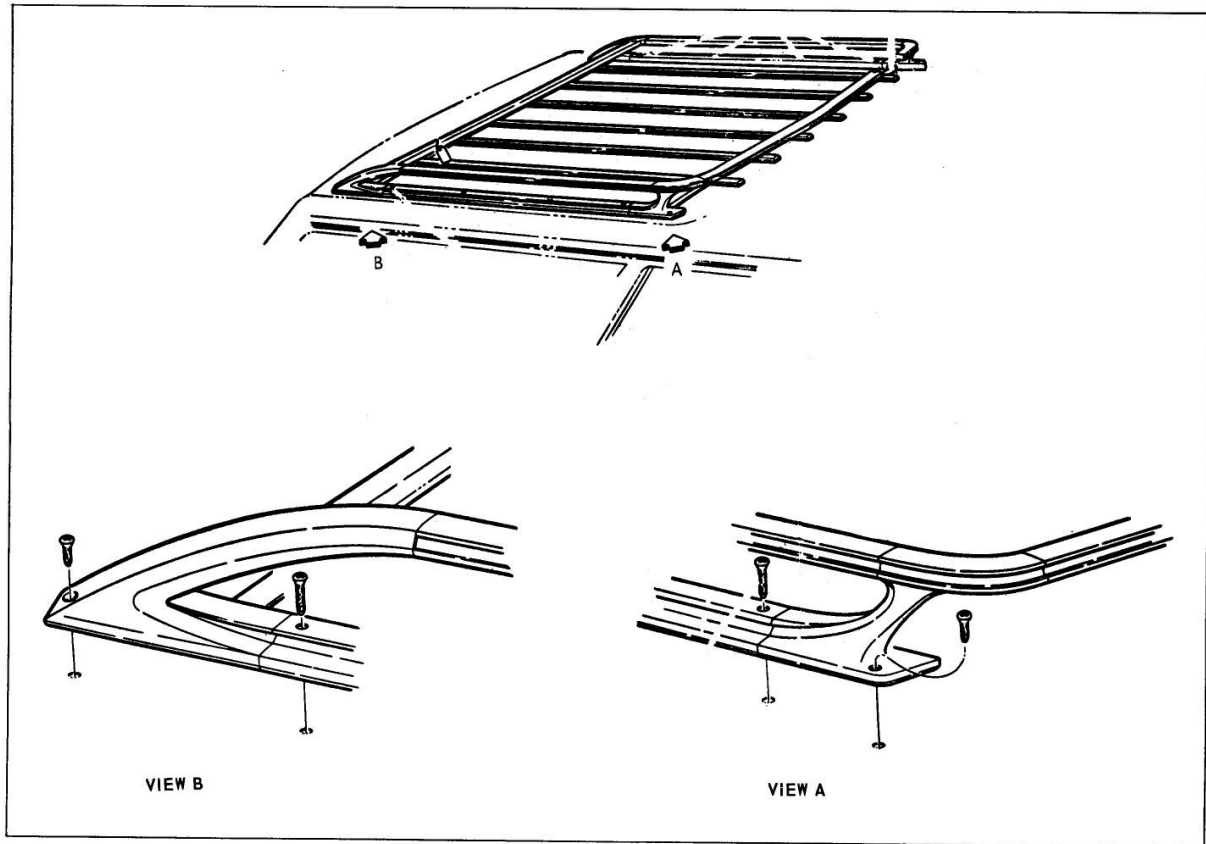


Fig. 15-69 Tempest Station Wagon Luggage Carrier

DIAGNOSIS

TROUBLE DIAGNOSIS - CRUISE CONTROL

All electrical and vacuum connections and other obvious items, such as cruise release brake switch

adjustment, are to be checked and corrected prior to any type of testing.

BLOWING FUSES

CAUSE	CORRECTION
Short or ground in wiring circuit.	Perform electrical checks (Fig. 15-72).

CRUISE CONTROL DOES NOT ENGAGE

CAUSE	CORRECTION
Fuse blown.	Replace fuse.
Brake switch out of adjustment.	Adjust brake switch.
No current to terminal No. 2.	Repair wiring harness.
Engaging switch inoperative.	Replace engaging switch.
Faulty valve body and magnet assembly.	Replace valve body and magnet assembly.
Faulty low speed switch.	Replace low speed switch.

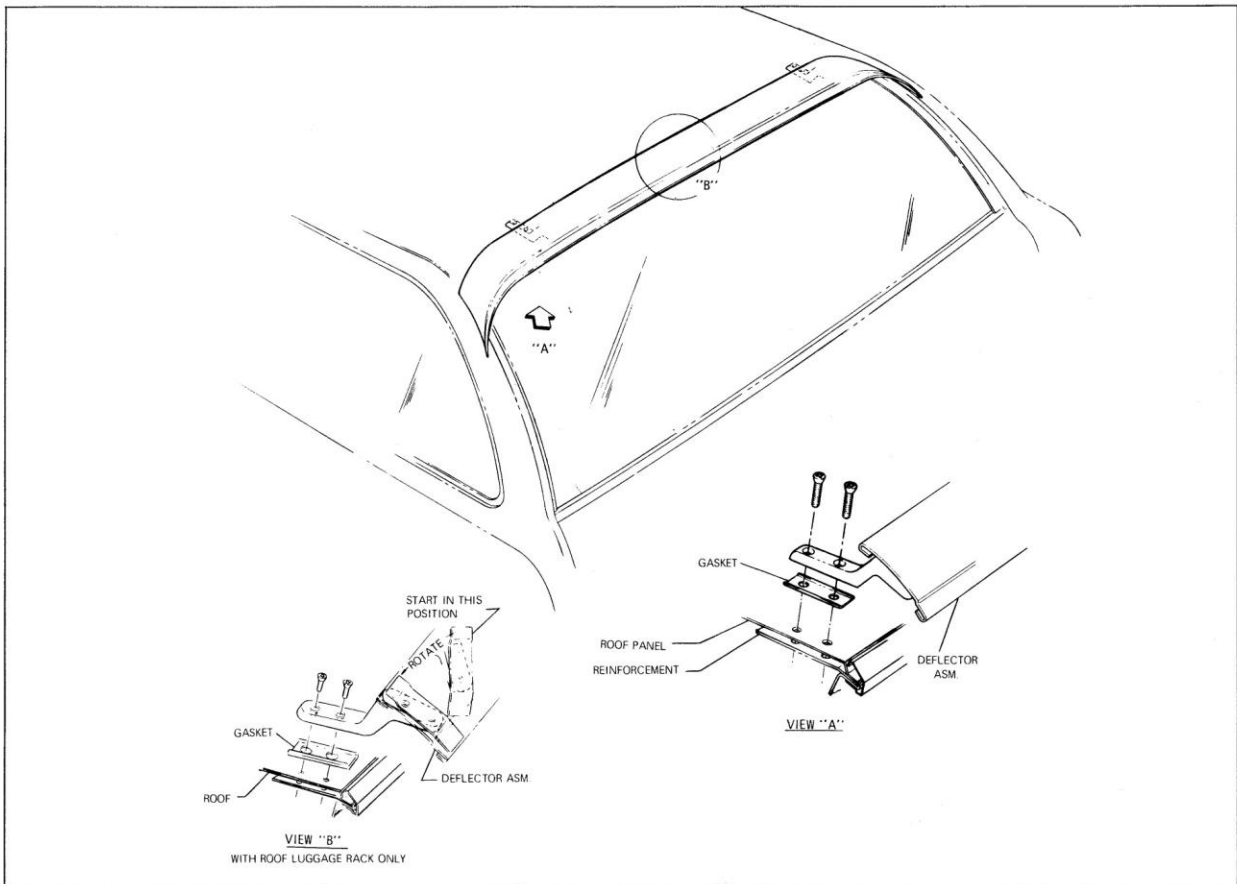


Fig. 15-70 Pontiac Station Wagon Air Deflector

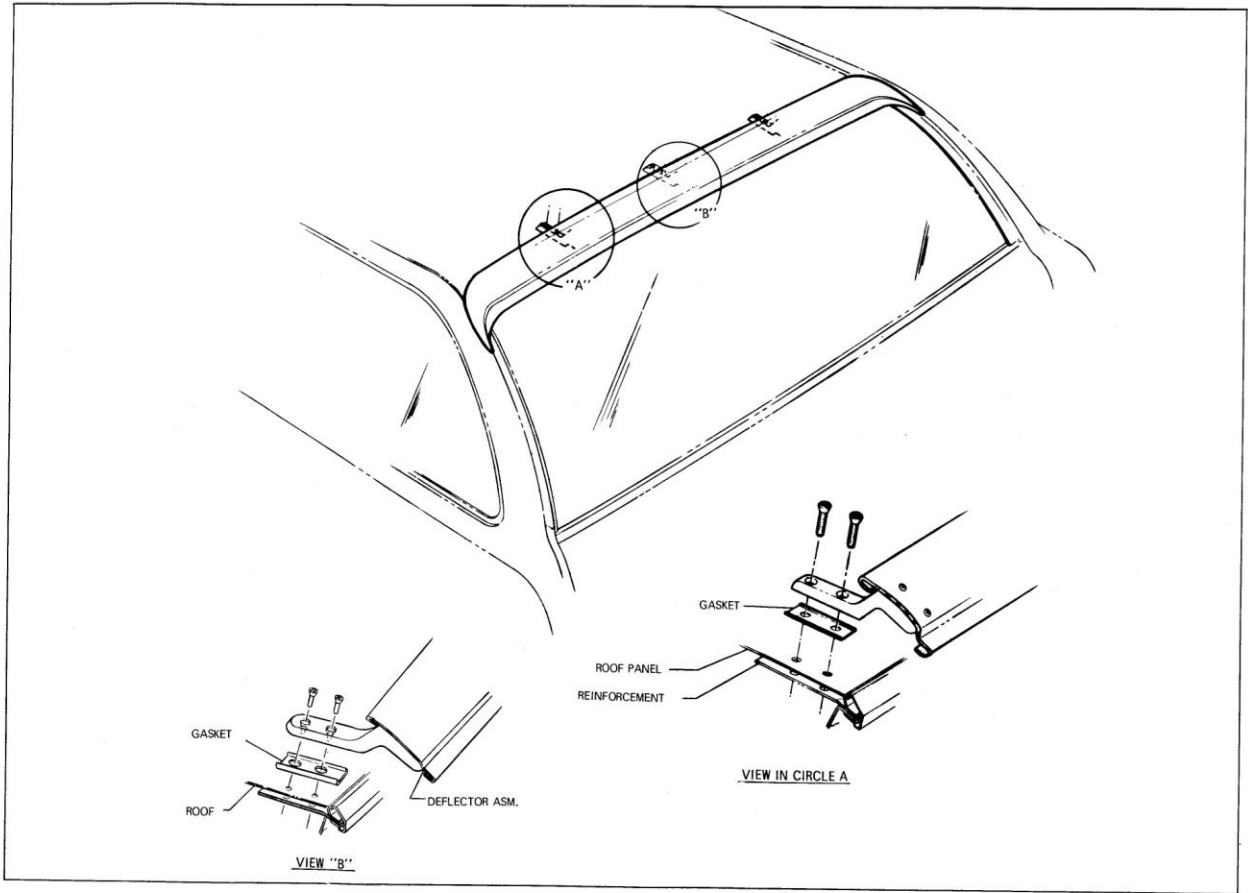


Fig. 15-71 Tempest Station Wagon Air Deflector

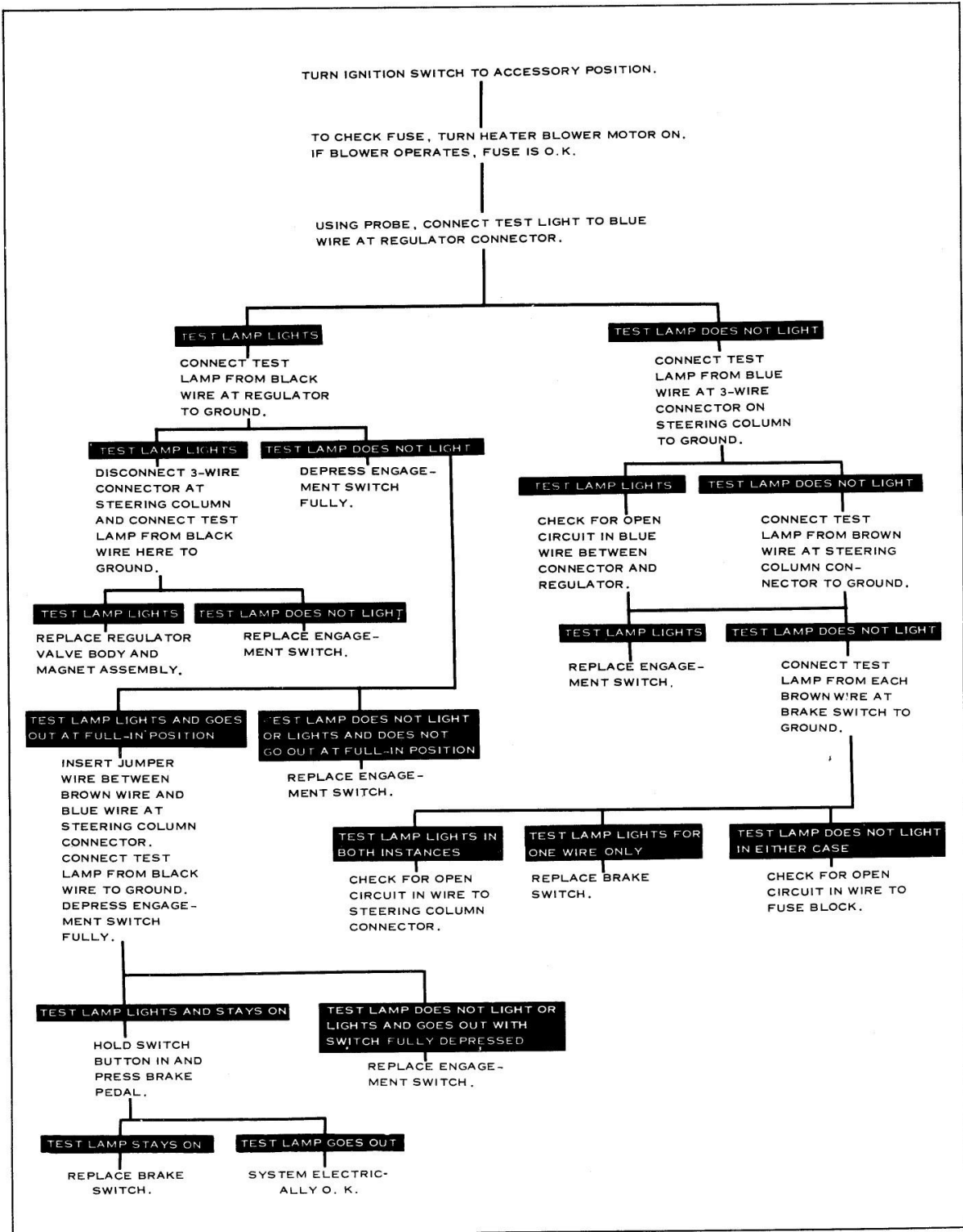


Fig. 15-72 Cruise Control Electrical Check-Out Procedure

**CRUISE CONTROL DOES NOT DISENGAGE WHEN BRAKE IS
APPLIED**

CAUSE	CORRECTION
Improper brake release switch adjustment.	Adjust brake release switch.
Defective brake release switch.	Replace brake release switch.
Faulty valve body and magnet assembly.	Replace low speed switch.

CRUISE CONTROL RE-ENGAGES WHEN BRAKE RELEASED

CAUSE	CORRECTION
Faulty engaging switch.	Replace engaging switch.
Terminal No. 1 grounded.	Replace or repair wiring harness.

CARBURETOR DOES NOT RETURN TO NORMAL IDLE

CAUSE	CORRECTION
Faulty Cruise Control linkage cable.	Replace cable.
Improper accelerator linkage adjustment.	Adjust accelerator linkage.
Weak or disconnected throttle return spring.	Connect or replace spring.

PULSATING ACCELERATOR PEDAL

CAUSE	CORRECTION
Speedometer cable or drive cable kinked.	Replace cables if necessary.

CRUISE CONTROL DOES NOT CONTROL AT SELECTED SPEED

CAUSE	CORRECTION
Faulty vacuum servo or vacuum hose.	Replace vacuum servo or vacuum hose.
Faulty governor assembly.	Replace governor assembly.

**CRUISE CONTROL CONTROLS SPEED 3 OR MORE MPH ABOVE
SELECTED SPEED**

CAUSE	CORRECTION
Improper centering spring adjustment.	Adjust centering spring (C).

**CRUISE CONTROL CONTROLS SPEED 3 OR MORE MPH
BELOW SELECTED SPEED**

CAUSE

CORRECTION

Improper centering spring adjustment.

Adjust centering spring (C).

**CRUISE CONTROL HUNTS FOR CORRECT SPEED (NOT
PULSATION OF ACCELERATOR PEDAL)**

CAUSE

CORRECTION

Vacuum restriction adjusting screw (R) is in too far.

Adjust vacuum restriction adjusting screw (R).

**CRUISE CONTROL GOES 4 MPH OR MORE OVER SELECTED
SPEED WHEN GOING OVER A HILL**

CAUSE

CORRECTION

Vacuum restriction adjusting screw (R) is out too far.

Adjust vacuum restriction adjusting screw (R).

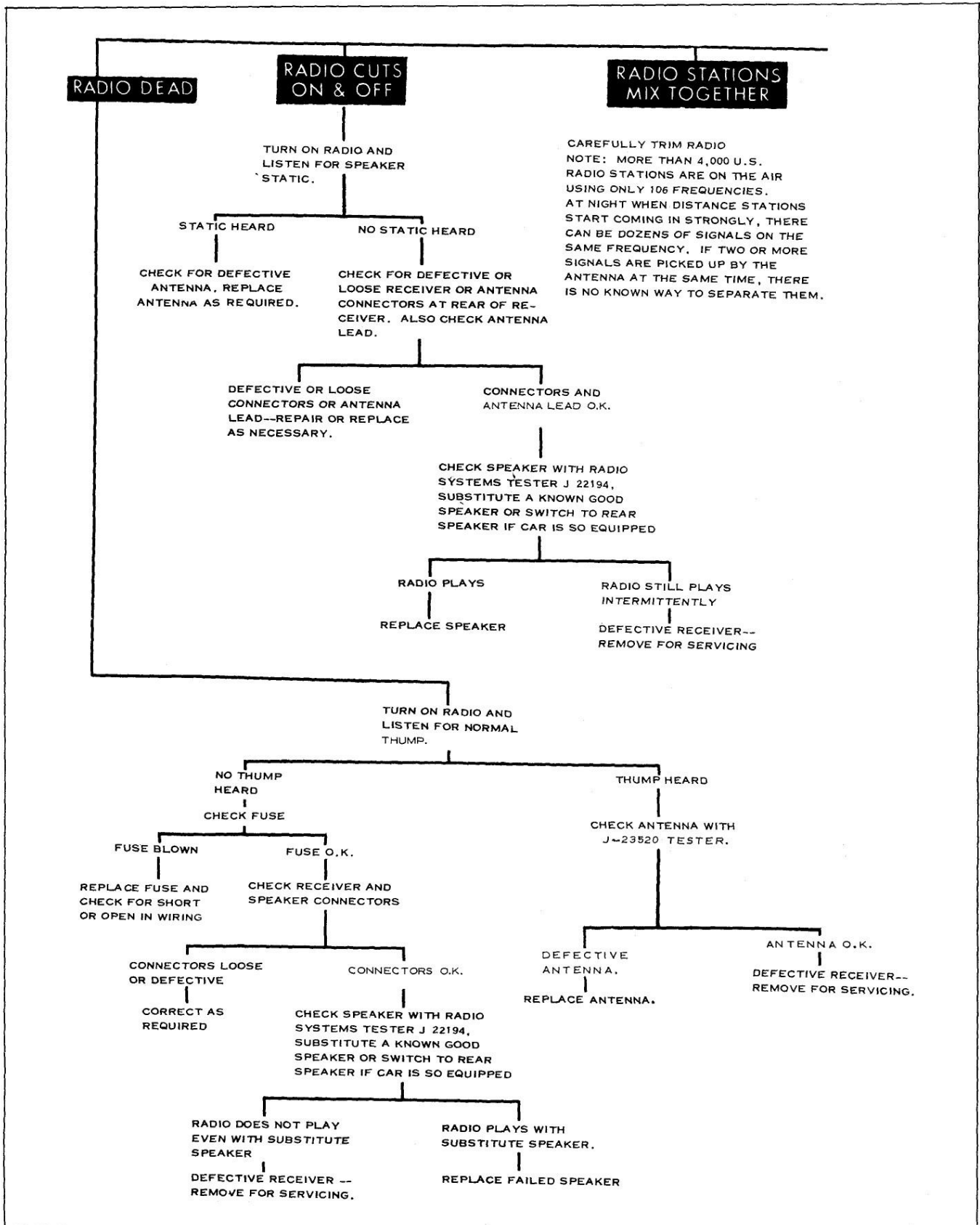


Fig. 15-73 Radio Trouble Diagnosis

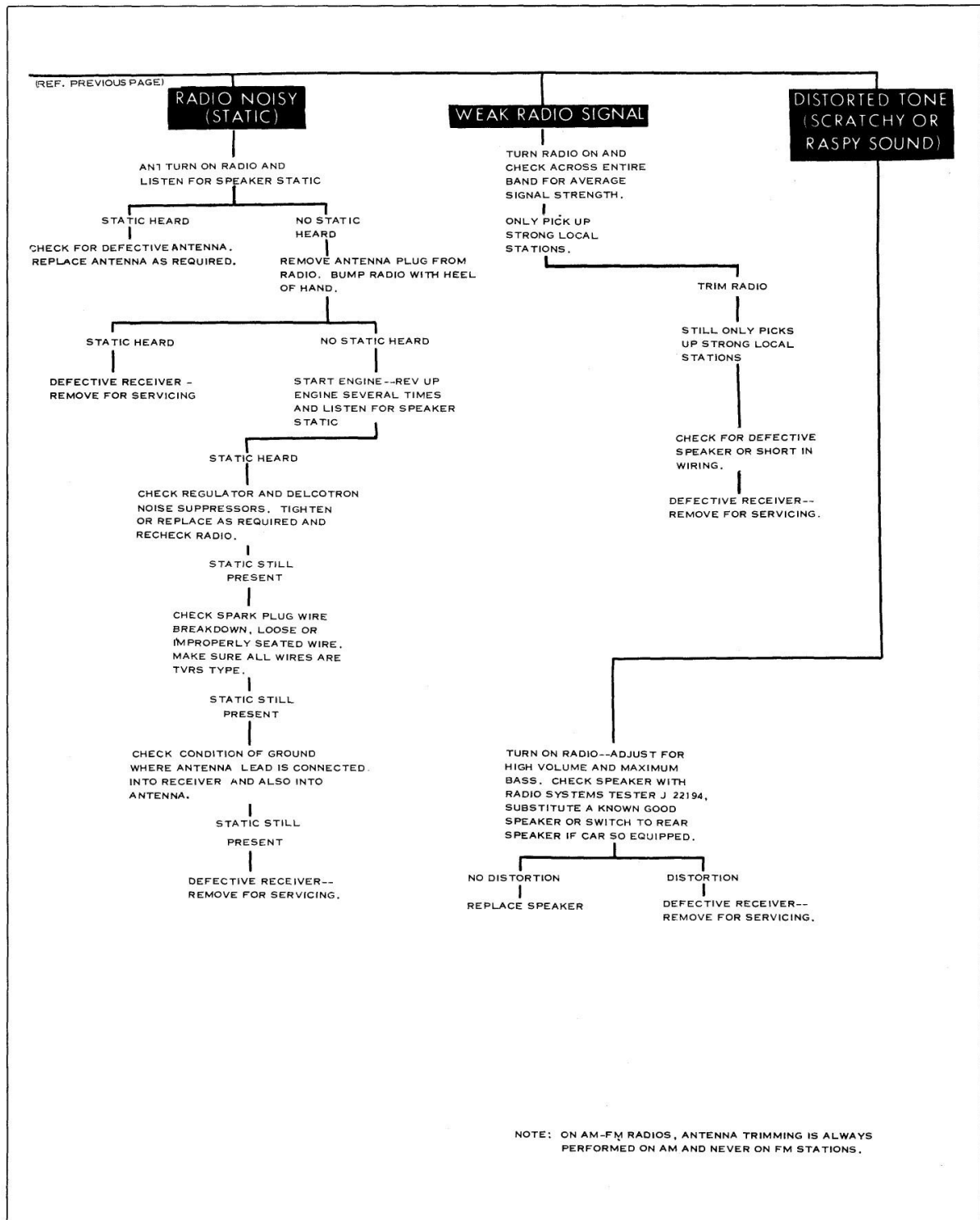


Fig. 15-74 Radio Trouble Diagnosis

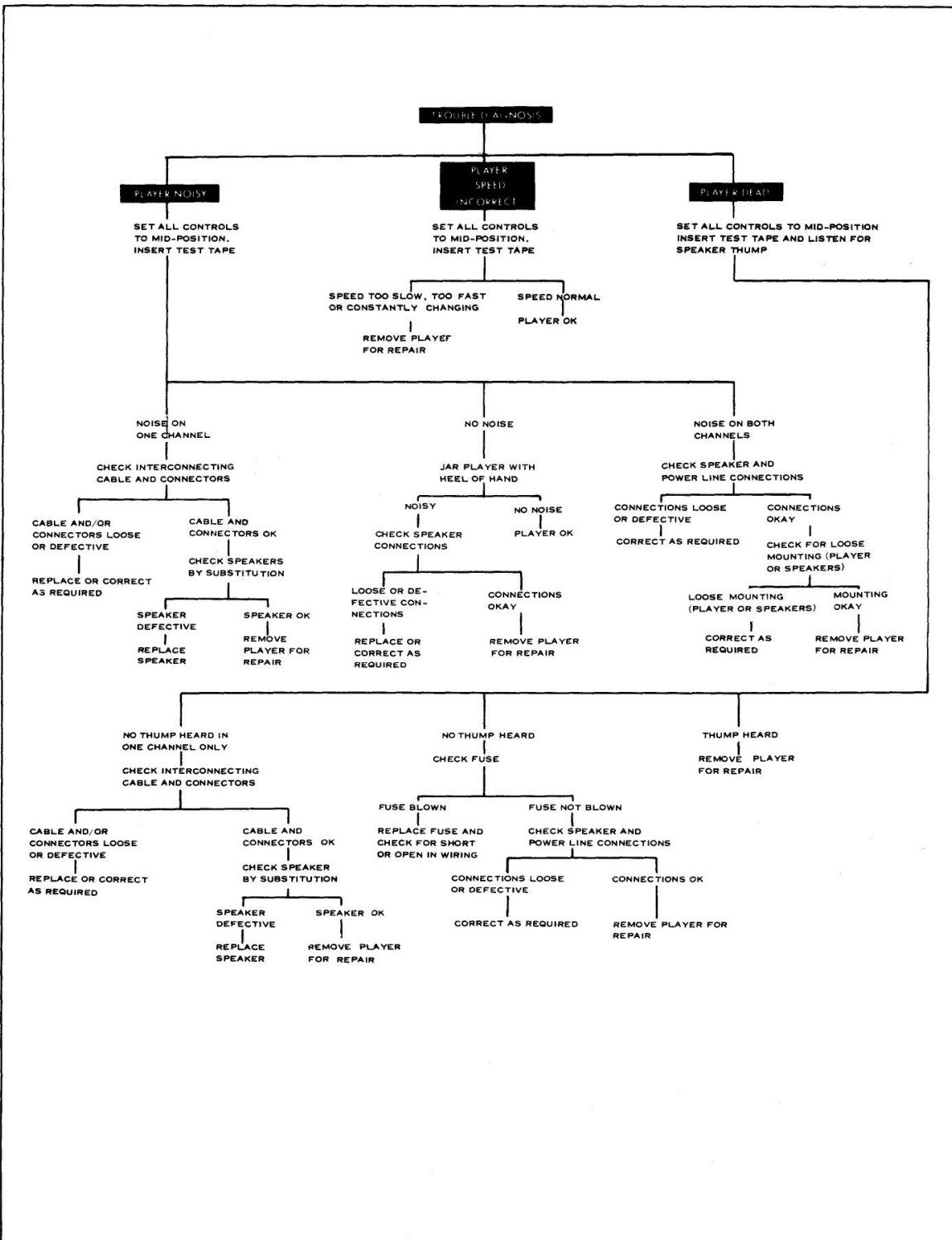


Fig. 15-75 Stereo Tape Player Diagnosis

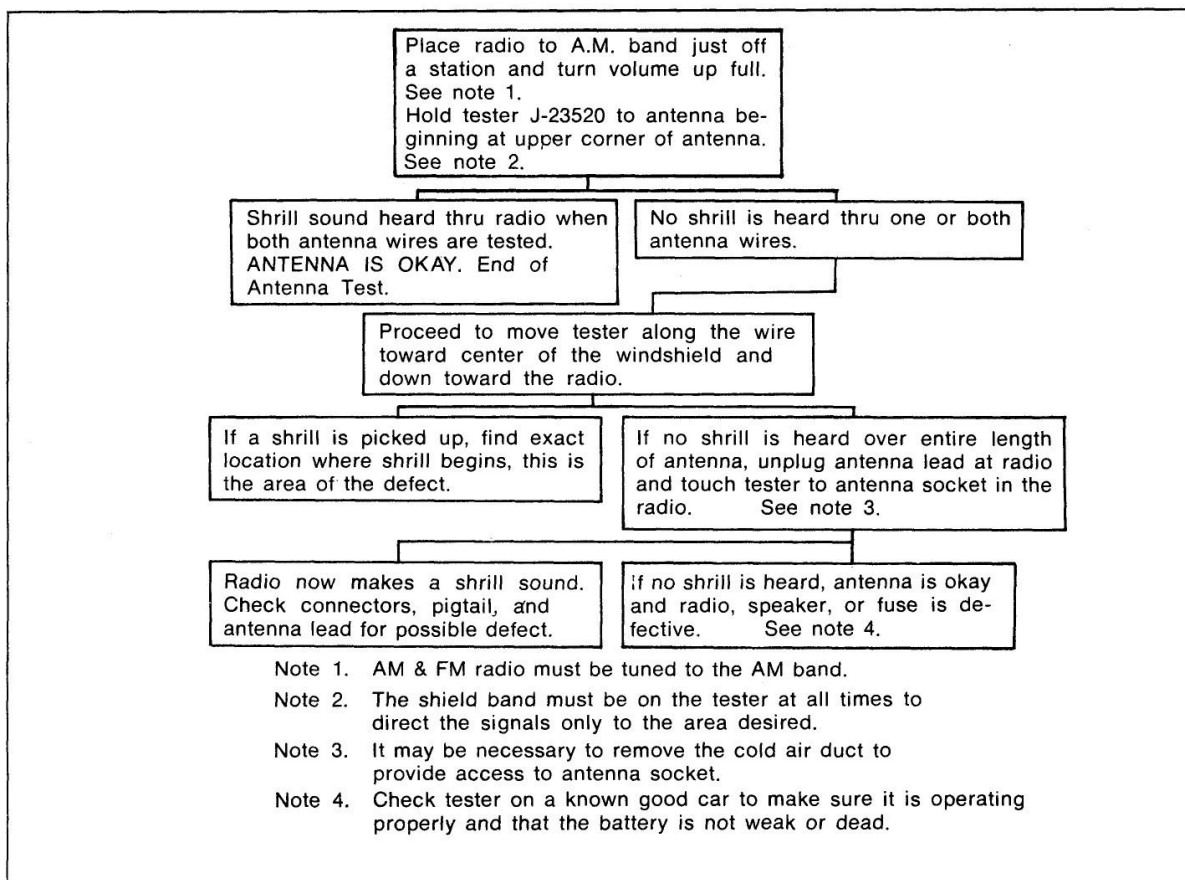


Fig. 15-76 Radio Antenna Test