

PASSIVE RESTRAINT SYSTEMS

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GENERAL INFORMATION

WARNINGS AND PRECAUTIONS

WARNING: THIS SYSTEM IS A SENSITIVE, COMPLEX ELECTRO-MECHANICAL UNIT. DISCONNECT AND ISOLATE THE BATTERY NEGATIVE CABLE BEFORE BEGINNING AIRBAG SYSTEM COMPONENT REMOVAL OR INSTALLATION PROCEDURES. THIS WILL DISABLE THE AIRBAG SYSTEM. FAILURE TO DISCONNECT THE BATTERY COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

ALLOW SYSTEM CAPACITOR TO DISCHARGE FOR TWO MINUTES BEFORE REMOVING AIRBAG COMPONENTS.

DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A SOLID SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED AND COULD RESULT IN PERSONAL INJURY. WHEN CARRYING OR HANDLING AN UNDEPLOYED AIRBAG MODULE, THE TRIM SIDE OF THE AIRBAG SHOULD BE POINTING AWAY FROM THE BODY TO MINIMIZE POSSIBILITY OF INJURY IF ACCIDENTAL DEPLOYMENT OCCURS.

REPLACE AIRBAG SYSTEM COMPONENTS WITH MOPAR® REPLACEMENT PARTS. SUBSTITUTE PARTS MAY APPEAR INTERCHANGEABLE, BUT INTERNAL DIFFERENCES MAY RESULT IN INFERIOR OCCUPANT PROTECTION.

WEAR SAFETY GLASSES, RUBBER GLOVES, AND LONG SLEEVED CLOTHING WHEN CLEANING POWDER RESIDUE FROM VEHICLE AFTER AIRBAG DEPLOYMENT. SODIUM HYDROXIDE POWDER RESIDUE EMITTED FROM A DEPLOYED AIRBAG CAN CAUSE SKIN IRRITATION. FLUSH AFFECTED AREA WITH COOL WATER IF IRRITATION IS EXPERIENCED. IF NASAL OR THROAT IRRITATION IS EXPERIENCED, EXIT THE VEHICLE FOR FRESH AIR UNTIL THE IRRITATION CEASES. IF IRRITATION CONTINUES, SEE A PHYSICIAN.

DO NOT USE A REPLACEMENT AIRBAG THAT IS NOT IN THE ORIGINAL PACKAGING, IMPROPER DEPLOYMENT AND PERSONAL INJURY CAN RESULT.

THE FACTORY INSTALLED FASTENERS, SCREWS AND BOLTS USED TO FASTEN AIRBAG COMPONENTS HAVE A SPECIAL COATING AND ARE SPECIFICALLY DESIGNED FOR THE AIRBAG SYSTEM. DO NOT USE SUBSTITUTE FASTENERS, USE ONLY ORIGINAL EQUIPMENT FASTENERS LISTED IN THE PARTS CATALOG WHEN FASTENER REPLACEMENT IS REQUIRED.

NOTE: Airbags should be stored in a cool dry location away from excessive heat and static electrical activity with the fabric airbag facing UP, or a premature deployment can result.

If the Driver/Passenger Airbag Module is defective and not deployed, refer to Chrysler Corporation current return list for proper handling procedures.

DESCRIPTION AND OPERATION

AIRBAG CONTROL MODULE (ACM)

The Airbag Control Module (ACM) contains the impact sensor and energy reserve capacitor. The impact sensor acts as a threshold sensitive switch that completes a circuit when an impact provides sufficient deceleration. The sensor is calibrated for the specific vehicle and reacts to the severity and direction of the impact.

The ACM monitors the system to determine the system readiness. The ACM stores sufficient energy to deploy the airbags for approximately two minutes after the battery is disconnected. The ACM contains on-board diagnostics, and illuminates the AIRBAG warning lamp in the cluster when a diagnostic trouble code occurs. The warning equipment is tested for a few seconds every time the vehicle is started.

CLOCKSPRING

The clockspring is mounted to the steering column behind the steering wheel. The clockspring is used to maintain a continuous electrical circuit between the wiring harness and the:

- Driver's airbag module
- Speed control switches
- Horn switch

The clockspring consists of a flat, ribbon like, electrically conductive tape that winds and unwinds with the steering wheel rotation.

DRIVER AND PASSENGER AIRBAG MODULES

WARNING: NEVER DISASSEMBLE THE DRIVER OR PASSENGER AIRBAG MODULES, THERE ARE NO SERVICEABLE PARTS WITHIN THE MODULES.

The Driver Airbag Module located in the center of the steering wheel is the most visible part of the system (Fig. 1). It contains the airbag cushion and its supporting components. The airbag module contains a housing in which the cushion and inflator are attached and sealed.

The driver side inflator assembly is mounted from the back of the module housing. When supplied with the proper electrical signal, the inflator assembly produces a gas and discharges it directly into the cushion. A protective cover is fitted to the front of the Driver Airbag Module and forms a decorative cover in the center of the steering wheel. The Driver Airbag Module is mounted directly to the steering wheel.

The Passenger Airbag Module is located beneath the decorative cover of the instrument panel, facing the passenger seat (Fig. 1).

The passenger inflator assembly is within the module housing. The module is mounted to the instrument panel retainer and support structure. When supplied

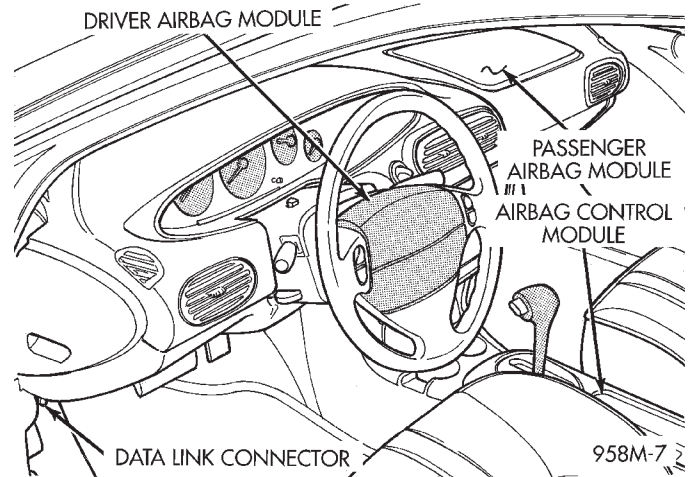


Fig. 1 Driver and Passenger Airbag Modules

with the proper electrical signal the inflator will produce a gas and discharge it directly into the cushion. A protective cover is fitted into the instrument panel over the airbag module and forms a decorative cover.

The Passenger Airbag Module (PAB) consists of:

- Inflator assembly
- Reaction canister
- Airbag Pillow
- Deployment door

The PAB module is mounted to the instrument panel and pad assembly. When supplied with the proper electrical signal, the inflator produces gas and discharges it directly into the pillow. The deployment door will hinge, allowing the pillow to fully inflate.

DIAGNOSIS AND TESTING

AIRBAG SYSTEM TEST

(1) Connect the DRB III® scan tool to the Data Link connector which is located on the left side kick panel just above the hood release.

(2) Turn the ignition key to the ON position. Exit vehicle with the scan tool.

(3) After checking that no one is inside the vehicle, connect the battery negative remote terminal.

(4) Using the scan tool, read and record the active Diagnostic Trouble Code (DTC) data.

(5) Read and record any stored DTC's.

(6) Refer to the proper Body Diagnostic Procedures Manual if any DTC's are found in Step 4 and Step 5.

(7) Erase stored DTC's if there are no active codes. If problems remain, DTC's will not erase. Refer to the proper Body Diagnostic Procedures Manual to diagnose the problem. If the airbag warning lamp either fails to light, or goes on and stays on, there is a system malfunction. Refer to the proper Body Diagnostic Procedures Manual to diagnose the problem. To test the airbag warning lamp operation in the cluster only, refer to Group 8E, Instrument Panel and Systems.

SERVICE PROCEDURES

CLEANUP PROCEDURE

CAUTION: When working around deployed Airbags, rubber gloves, eye protection and long sleeves should be worn. There may be deposits that could irritate the skin and eyes.

Roll or fold the Passenger Airbag Module towards the instrument panel surface and close the door over the folded bag. Then tape the door shut.

Use a vacuum cleaner to remove any residual powder from the vehicle interior. Work from the outside in to avoid kneeling or sitting in a contaminated area. Vacuum the heater and A/C outlets as well (Fig. 2). If the heater or air conditioner was in RECIRC mode at time of airbag deployment, operate blower motor on low speed and vacuum powder residue expelled from the heater and A/C outlets. Multiple vacuum cleaning may be necessary to decontaminate the interior of the vehicle.

NOTE: Dispose of deployed airbags properly. Contact dealer or government agency for disposal recommendations.

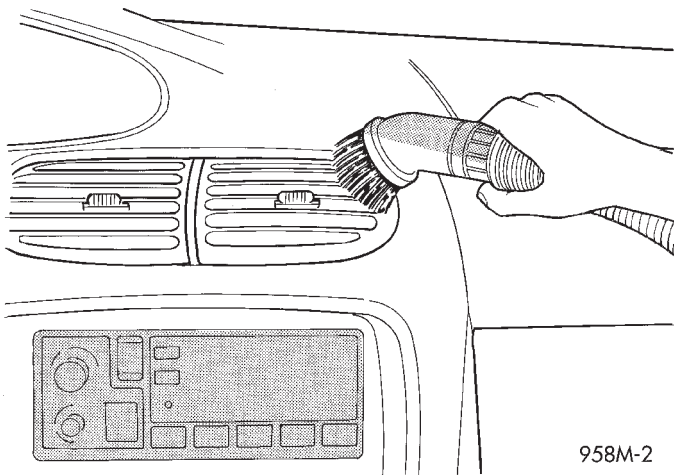


Fig. 2 Vacuum Heater and A/C Outlets

SERVICE OF DEPLOYED AIRBAG MODULE

DRIVER AIRBAG

After a Driver Airbag Module has been deployed:

- Driver Airbag Module
- Steering wheel
- Clockspring assembly
- Steering Column assembly

The component above must be replaced because they cannot be reused. Replace any other driver airbag system components if damaged.

PASSENGER AIRBAG

After a Passenger Airbag Module has been deployed:

- Passenger Airbag Module
- Instrument panel and pad assembly

The components above must be replaced because of visible or non visible structural damage.

The glove box, top cover, cluster hood, steering column cover, right trim bezel and/or end cap, or any other components should be checked and replaced if damaged.

HANDLING AIRBAG MODULES

DEPLOYED MODULE

CAUTION: The vehicle interior may contain a very small amount of sodium hydroxide powder, a by-product of airbag deployment. Sodium hydroxide powder can irritate the skin, eyes, nose and throat. Wear safety glasses, rubber gloves, and long sleeved clothing when cleaning any of the powder residue from the vehicle.

If you find that the cleanup is irritating your skin, run cool water over the affected area. Also, if you experience nasal or throat irritation, exit the vehicle for fresh air until the irritation ceases. If irritation continues, see a physician.

UNDEPLOYED

The airbag modules must be stored in its original special container until used for service. At no time should a source of electricity be permitted near the inflator on the back of an airbag module. When carrying or handling an undeployed airbag module, the trim side of the airbag should be pointing away from the body to minimize possibility of injury if accidental deployment occurs. Do not place undeployed airbag face down on a solid surface, the airbag will propel into the air if accidentally deployment occurs.

MAINTENANCE INSPECTION

Check the airbag warning lamp for proper operation as follows:

(1) Turn the ignition switch to the ON position. The airbag warning lamp should illuminate. If does not, test the system using a DRB III® scan tool and Body Diagnostic Procedures Manual. Repair as required.

(2) The airbag warning lamp lights, but fails to go out after ten seconds. Test the system using a scan tool and Body Diagnostic Procedures Manual. Repair as required.

(3) Erasing stored Diagnostic Trouble Codes (DTC's) is not required.

REMOVAL AND INSTALLATION

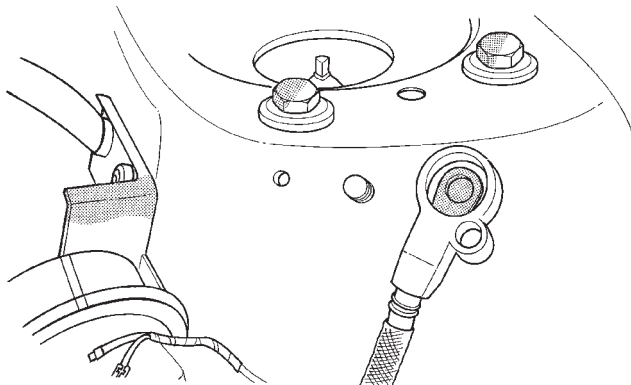
AIRBAG CONTROL MODULE (ACM)

WARNING: REPLACE AIRBAG SYSTEM COMPONENTS WITH CHRYSLER MOPAR® SPECIFIED REPLACEMENT PARTS. SUBSTITUTE PARTS MAY VISUALLY APPEAR INTERCHANGEABLE, BUT INTERNAL DIFFERENCES MAY RESULT IN INFERIOR OCCUPANT PROTECTION.

THE ACM CONTAINS A IMPACT SENSOR WHICH ENABLES THE SYSTEM TO DEPLOY THE AIRBAGS. TO AVOID ACCIDENTAL DEPLOYMENT, NEVER CONNECT ACM ELECTRICALLY TO THE SYSTEM WHILE VEHICLE BATTERY IS CONNECTED.

REMOVAL

(1) Disconnect and isolate the battery negative remote cable (Fig. 3).



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Fig. 3 Disconnect Battery Negative Remote Cable

- (2) For a manual transmission, remove shifter knob and boot.
- (3) Remove the four attaching screws floor console.
- (4) Remove the four floor shifter mounting nuts.
- (5) Remove two rear module mounting nuts and remove module (Fig. 4).

INSTALLATION

CAUTION: USE SUPPLIED NUTS ONLY.

For installation, reverse the above procedures.

- (1) Position ACM (arrow pointing forward) on center tunnel area mounting studs.
- (2) Attach the two rear mounting nuts and tighten to 15 to 19 N·m (125 to 160 in. lbs.) torque.
- (3) Refer to Diagnosis and Testing for Airbag System Test procedures before connecting battery negative remote cable.

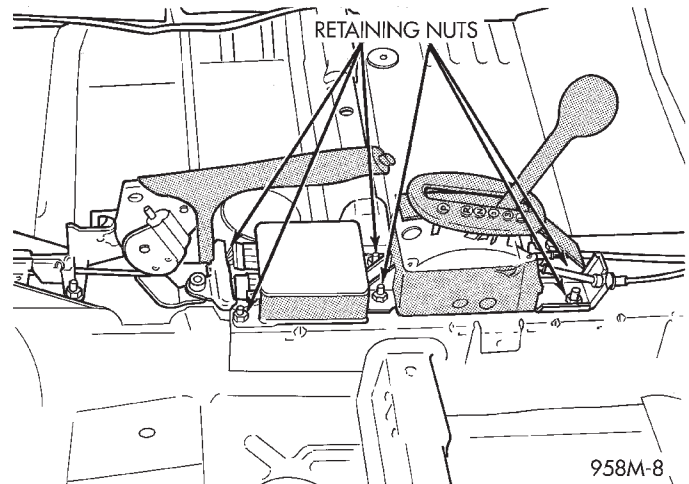


Fig. 4 Airbag Control Module

CLOCKSPRING

REMOVAL

CAUTION: When removing a deployed module, rubber gloves, eye protection and long sleeves should be worn. There may be deposits on the surface which could irritate the skin and eyes.

- (1) Disconnect and isolate the battery negative remote cable (Fig. 3).
- (2) Remove the two steering column lower cover attaching screws. Remove upper cover.
- (3) Remove the Driver Airbag Module attaching T-30 Torx bolts from back side of the steering wheel. Lift the module and disconnect the wire by:
 - (a) Lifting the secondary latch.
 - (b) Disconnect the connector from back of the airbag module using the finger grips. Use care not to pull on wires. Never use a metallic tool to pry on the connector.
- (4) Remove the speed control switch screws from back of the steering wheel. Pull the switch pods out and disconnect the wires.
- (5) Disconnect the horn wire from the steering wheel and remove the speed control wires from the wire guides.
- (6) Remove the steering wheel. Carefully feed all wires through the steering wheel armature to avoid damaging wires. When replacing a deployed Driver Airbag Module, a new clockspring must be installed (Fig. 5).
- (7) Remove the nut attaching steering wheel to the steering column.
- (8) Disconnect the natural 3-way and the yellow 2-way connectors from back side of the Driver Airbag Module.
- (9) Remove the steering column shrouds by unfastening the two fasteners.

REMOVAL AND INSTALLATION (Continued)

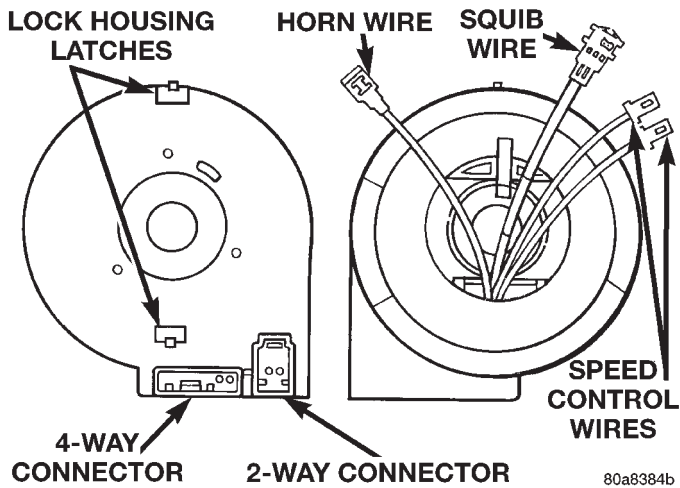


Fig. 5 Clockspring

- (10) Remove multi-function switch by unfastening the two screws.
- (11) Remove the clockspring by lifting the top lock housing latches up slightly to guide it over the lock housing. The clockspring cannot be serviced.

INSTALLATION

- (1) Adjust the steering wheel so that the tires are straight ahead position.
- (2) Center the clockspring by ensuring the yellow indicator visually seen through the centering window. Refer to Clockspring Centering Procedure.
- (3) Align the top locking tab with the slot on the lock housing. Gently push into place.
- (4) Install the multi-function switch and tighten to 1.5 to 2.5 N·m (14 to 22 in. lbs.) torque.
- (5) Install the steering column shrouds and tighten to 1.7 to 2.3 N·m (15 to 20 in. lbs.) torque.
- (6) Carefully route the wires through the hole in the steering wheel armature. Install steering wheel and Tighten to 61 N·m (45 ft. lbs.) torque.
- (7) Route the speed control wires under the horn mechanism and through the speed control switch pockets. Connect the speed control wires to switches and install switches. Tighten screws to 0.7 to 2.7 N·m (6 to 24 in. lbs.) torque.
- (8) Connect horn lead to the airbag module mounting bracket.
- (9) Connect the yellow airbag lead to the Driver Airbag Module and push secondary latch into place (Fig. 5). Ensure the wires do not get pinched during installation.
- (10) Install the airbag module bolts and tighten to 9 to 10 N·m (80 to 90 in. lbs.) torque. Refer to Diagnosis and Testing for Airbag System Test procedures before connecting the battery negative remote cable.

DRIVER AIRBAG MODULE

REMOVAL

CAUTION: When removing a deployed Driver Airbag Module, rubber gloves, eye protection and long sleeves should be worn. There may be deposits on the surface that could irritate the skin and eyes.

- (1) Disconnect and isolate the battery negative remote cable (Fig. 3).
- (2) Remove the Driver Airbag Module attaching T-30 Torx bolts from back side of the steering wheel (Fig. 6). Lift the module and disconnect the wire by:

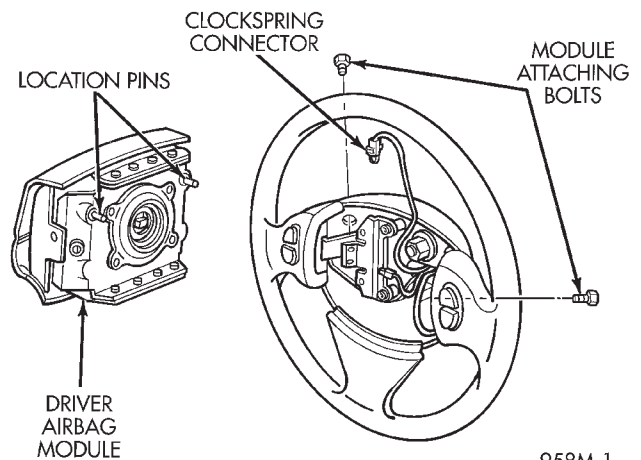


Fig. 6 Driver Airbag Module

- (a) Lifting the secondary latch.
- (b) Disconnect the connector from back of the Driver Airbag Module using the finger grips. Use care not to pull on wires. Never use a metallic tool to pry off the connector.
- (3) Remove the speed control switch screws from the back of the steering wheel. Pull the switch pods out and disconnect the wires.
- (4) Disconnect the horn wire from the airbag mounting bracket. Remove the speed control wires from the wire guides.
- (5) When replacing a deployed Driver Airbag Module, the clockspring must also be replaced. Refer to Clockspring Removal and Installation in this section.

INSTALLATION

- (1) Connect horn wire to the Driver Airbag Module mounting bracket. Connect the Driver Airbag Module connector to the back of the module. Make airbag connection by pressing straight in on the connector then push the secondary latch into place. The connector should be fully seated to ensure a positive connection. Ensure that the wires do not get pinched during installation.

REMOVAL AND INSTALLATION (Continued)

(2) Install the two module bolts and tighten to 9 to 10 N·m (80 to 90 in. lbs.) torque.

(3) Connect wire connectors to the speed control switches and install the switches. Tighten the screws to 0.7 to 2.7 N·m (6 to 24 in. lbs.). Refer to Diagnosis and Testing for Airbag System Test procedures before connecting the battery negative remote cable.

PASSENGER AIRBAG MODULE

DEPLOYED MODULE

CAUTION: When removing a deployed Passenger Airbag Module, rubber gloves, eye protection and long sleeves should be worn. There may be deposits on the surface that could irritate the skin and eyes.

REMOVAL

(1) Remove Instrument Panel. Refer to Group 8E, Instrument Panel and Systems for Removal and Installation.

(2) After removal of the instrument panel disconnect Passenger Airbag Module wire connector.

(3) Remove the four nuts and two screws attaching airbag assembly to the instrument panel collar.

(4) Lift Passenger Airbag Module up and out of panel cavity.

INSTALLATION

For installation, reverse the above procedures.

(1) Remove all of the instrument panel components that are not damaged and replace any components that are damaged.

(2) Use a new instrument panel and pad assembly.

(3) Transfer all of the components.

(4) Install a new Passenger Airbag Module and tighten nuts to 11 N·m (100 in. lbs.) and screws to 2 N·m (20 in. lbs.) torque. Refer to Diagnosis and Testing for Airbag System Test procedures before connecting battery negative remote cable.

UNDEPLOYED MODULE

REMOVAL

When removing a Passenger Airbag Module for any reason other than DEPLOYMENT:

(1) Disconnect and isolate the battery negative remote cable (Fig. 3).

(2) Open and lower glove box fully to gain access to Passenger Airbag Module (PAB) attaching screws inside of the glove box (Fig. 7). Glove box removal not required.

(3) Disconnect wire connector from the Passenger Airbag Module.

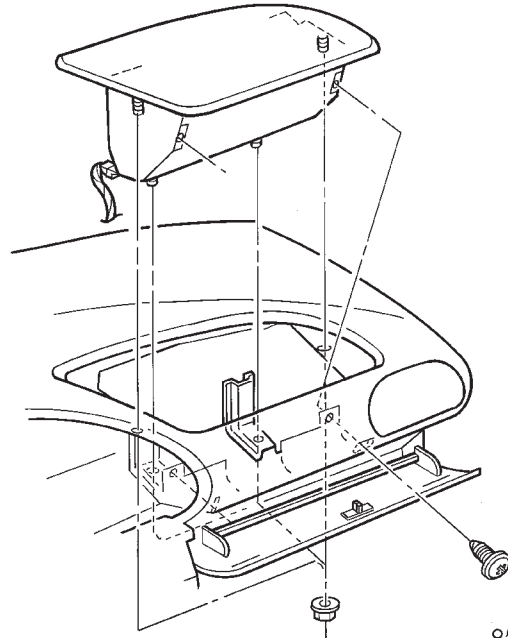


Fig. 7 Passenger Airbag Removal

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(4) Remove the four nuts and two screws attaching airbag assembly to the instrument panel collar.

(5) Lift Passenger Airbag Module up and out of panel cavity.

INSTALLATION

For installation, reverse the above procedures. Install a new Passenger Airbag Module and tighten nuts to 11 N·m (100 in. lbs.) and screws to 2 N·m (20 in. lbs.) torque. Refer to Diagnosis and Testing for Airbag System Test procedures before connecting battery negative remote cable.

STEERING WHEEL

REMOVAL

(1) Adjust the steering wheel so that the tires are in the straight ahead position.

(2) Disconnect and isolate the battery negative remote cable (Fig. 3).

(3) Remove the Driver Airbag Module attaching T-30 Torx bolts from back side of the steering wheel. Lift the module and disconnect the wire by:

(a) Lifting the secondary latch.

(b) Disconnect the connector from the module using the finger grips. Use care not to pull on wires. Never use a metallic tool to pry on the connector.

(4) Remove the speed control switch screws from back of the steering wheel. Pull the switch pods out and disconnect the wires.

(5) Disconnect the horn wire from the airbag module mounting bracket. Remove the speed control wires from under the bracket and from the wire guides.

REMOVAL AND INSTALLATION (Continued)

- (6) Remove the steering wheel retaining nut.
- (7) Remove the steering wheel with wheel puller tool. Carefully feed all of the wires through the steering wheel armature to avoid damaging wires.

INSTALLATION

- (1) Ensure that the road wheels are in the straight ahead position.
- (2) Ensure that the clockspring is centered by using the centering indicator. Refer to Clockspring Centering Procedure in this section.
- (3) Ensure that the turn signal stalk is in the neutral position.
- (4) Carefully route the wires through the hole in the steering wheel armature. Install steering wheel and tighten to 61 N·m (45 ft. lbs.) torque.
 - (a) Ensure that the driving key on the steering wheel hub lines up with the slot in the clockspring rotor.
 - (b) Ensure that the block tooth in the steering wheel hub lines up with the missing tooth on the steering column shaft.
- (5) Route the speed control wires under the horn mechanism and through the speed control switch pockets. Connect the speed control wires to switches and install switches. Tighten bolts to 1.7 ± 1 N·m (15 \pm 10 in. lbs.) torque.
- (6) Connect the horn lead to steering wheel.
- (7) Connect the yellow airbag lead to the Driver Airbag Module and push secondary latch into place (Fig. 5). Check that the wires do not get pinched during installation.

- (8) Install the airbag module bolts and tighten the left side first. Tighten to 9 to 10 N·m (80 to 90 in. lbs.) torque.

- (9) Refer to Diagnosis and Testing for Airbag System Test procedures before connecting battery negative remote cable.

ADJUSTMENTS**CLOCKSPRING CENTERING PROCEDURE**

WARNING: If the rotating tape within the clockspring is not positioned properly with the steering wheel and the front wheels, the clockspring may fail during use. The clockspring is centered when yellow appears in the centering window and the arrow on the rotor points to the window. If clockspring is not centered, the following procedure **MUST BE USED** to center the clockspring:

- (1) To center the clockspring, with steering wheel removed, depress the two plastic locking pins to disengage the mechanism. Rotate clockspring until yellow appears in the centering window.
- (2) The arrow on the rotor will be pointing at the window if the clockspring is centered. Release locking pins to engage locking mechanism.
- (3) For installation, refer to Clockspring Removal and Installation in this section. Refer to Diagnosis and Testing for Airbag System Test procedures before connecting battery negative remote cable.

