

PASSIVE RESTRAINT SYSTEMS

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DESCRIPTION AND OPERATION

AIRBAG SYSTEM

DESCRIPTION

A dual front airbag system is standard factory-installed safety equipment on this model. The primary passenger restraints in this vehicle are the standard equipment factory-installed seat belts, which require active use by the vehicle occupants. The airbag system is a supplemental passive restraint that was designed and is intended to enhance the protection for the front seat occupants of the vehicle **only** when used in conjunction with the seat belts. See the owner's manual in the vehicle glove box for more information on the features, use and operation of all of the factory-installed passenger restraints, including the airbag system.

The dual front airbag system consists of the following components:

- Airbag Control Module (ACM)
- Airbag indicator lamp
- Clockspring
- Driver and passenger side airbag modules (including the airbag inflators)
- Driver and passenger side knee blockers
- Passenger side airbag on/off switch
- Wire harness and connections.

This group provides complete service information for the ACM, both airbag modules, the clockspring, and the passenger side airbag on/off switch. Com-

plete service information for the other airbag system components can be located as follows:

Refer to **Instrument Cluster** in the proper section of Group 8E - Instrument Panel Systems for complete service information for the airbag indicator lamp.

Refer to **Knee Blocker** in the Removal and Installation section of Group 8E - Instrument Panel Systems for complete service information on the driver side knee blocker.

Refer to **Glove Box** in the Removal and Installation section of Group 8E - Instrument Panel Systems for complete service information on the passenger side knee blocker.

Refer to **Airbag System** in the Contents of Group 8W - Wiring Diagrams for complete service information and circuit diagrams for the airbag system wiring components.

See the proper Diagnostic Procedures manual to test or diagnose a problem with any component of the airbag system.

OPERATION

The airbag system electrical circuits are continuously monitored and controlled by a microprocessor and software contained within the Airbag Control Module (ACM). The ACM also contains an impact sensor and a safing sensor, which are monitored by the ACM to determine when an impact occurs that is severe enough to require airbag system protection. When a frontal impact is severe enough, the ACM signals the inflator units of both airbag modules to deploy the airbags.

DESCRIPTION AND OPERATION (Continued)

An airbag indicator lamp in the instrument cluster lights for about seven seconds as a bulb test, each time the ignition switch is turned to the On or Start positions. Following the bulb test, the airbag indicator lamp is turned on or off by the ACM to indicate the status of the airbag system. If the airbag indicator lamp comes on at any time other than during the bulb test, it indicates that there is a problem in the airbag system circuits. Such a problem may cause the airbags not to deploy when required, or to deploy when not required.

The driver side airbag module includes an inflatable airbag and an inflator unit behind a trim cover in the hub area of the steering wheel. The passenger side airbag module includes a second inflatable airbag and an inflator unit behind an airbag door in the instrument panel above the glove box.

During a frontal vehicle impact, the knee blockers work in concert with properly adjusted seat belts to restrain the driver and front seat passenger in the proper position for an airbag deployment. The knee blockers also work to absorb and distribute the crash energy from the driver and front seat passenger to the structure of the instrument panel. The driver side knee blocker is a stamped metal reinforcement located behind the instrument panel steering column opening cover. The passenger side knee blocker is integral to the glove box door.

Following are general descriptions of the major components in the airbag system.

WARNING:

THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

THE DRIVER SIDE AIRBAG MODULE INFLATOR ASSEMBLY CONTAINS SODIUM AZIDE AND POTASSIUM NITRATE. THESE MATERIALS ARE POISONOUS AND EXTREMELY FLAMMABLE. CONTACT WITH ACID, WATER, OR HEAVY METALS MAY PRODUCE HARMFUL AND IRRITATING GASES (SODIUM HYDROXIDE IS FORMED IN THE PRESENCE OF MOISTURE) OR COMBUSTIBLE COMPOUNDS. THE PASSENGER AIRBAG MODULE CONTAINS ARGON GAS PRESSURIZED TO OVER 2500 PSI. DO NOT ATTEMPT TO DISMANTLE AN AIRBAG MODULE OR

TAMPER WITH ITS INFLATOR. DO NOT PUNCTURE, INCINERATE, OR BRING INTO CONTACT WITH ELECTRICITY. DO NOT STORE AT TEMPERATURES EXCEEDING 93° C (200° F).

REPLACE AIRBAG SYSTEM COMPONENTS ONLY WITH PARTS SPECIFIED IN THE CHRYSLER MOPAR PARTS CATALOG. SUBSTITUTE PARTS MAY APPEAR INTERCHANGEABLE, BUT INTERNAL DIFFERENCES MAY RESULT IN INFERIOR OCCUPANT PROTECTION.

THE FASTENERS, SCREWS, AND BOLTS ORIGINALLY USED FOR THE AIRBAG SYSTEM COMPONENTS HAVE SPECIAL COATINGS AND ARE SPECIFICALLY DESIGNED FOR THE AIRBAG SYSTEM. THEY MUST NEVER BE REPLACED WITH ANY SUBSTITUTES. ANY TIME A NEW FASTENER IS NEEDED, REPLACE IT WITH THE CORRECT FASTENERS PROVIDED IN THE SERVICE PACKAGE OR SPECIFIED IN THE CHRYSLER MOPAR PARTS CATALOG.

WHEN A STEERING COLUMN HAS AN AIRBAG MODULE ATTACHED, NEVER PLACE THE COLUMN ON THE FLOOR OR ANY OTHER SURFACE WITH THE STEERING WHEEL OR AIRBAG MODULE FACE DOWN.

DRIVER SIDE AIRBAG MODULE**DESCRIPTION**

The driver side airbag module protective trim cover is the most visible part of the driver side airbag system. The driver side airbag module is mounted directly to the steering wheel. Located under the airbag module trim cover are the horn switch, the folded airbag cushion, and the airbag cushion supporting components. The resistive membrane-type horn switch is secured with heat stakes to the inside surface of the airbag module trim cover, between the trim cover and the folded airbag cushion.

The driver side airbag module cannot be repaired, and must be replaced if deployed or in any way damaged. The driver side airbag module trim cover and the horn switch are available as a unit for service replacement.

OPERATION

The driver side airbag module includes a stamped metal housing to which the cushion and an inflator unit are attached and sealed. The conventional pyrotechnic-type inflator assembly is mounted to studs on the back of the airbag module housing. The inflator seals the hole in the airbag cushion so it can discharge the gas it produces directly into the cushion when supplied with the proper electrical signal. Following an airbag deployment, the airbag cushion

DESCRIPTION AND OPERATION (Continued)

quickly deflates by venting this gas towards the instrument panel through the porous fabric material used on the steering wheel side of the airbag cushion.

The protective trim cover is fitted to the front of the airbag module and forms a decorative cover in the center of the steering wheel. The inside of the trim cover has locking blocks molded into it that engage a lip on the airbag module metal housing. Two stamped metal retainers then fit over the inflator mounting studs on the back of the airbag module housing and are engaged in slots on the inside of the cover, securely locking the trim cover into place. The trim cover will split at predetermined breakout lines, then fold back out of the way along with the horn switch upon airbag deployment.

PASSENGER SIDE AIRBAG MODULE

DESCRIPTION

The passenger side airbag door on the instrument panel above the glove box is the most visible part of the passenger side airbag system. Located under the airbag door are the passenger side airbag cushion and the airbag cushion supporting components.

The passenger side airbag module includes a stamped metal housing within which the cushion and inflator are mounted and sealed. The airbag housing has three stamped metal mounting brackets spot welded to it. The mounting brackets at the top and at the lower rear of the airbag module secure the module to the instrument panel armature. The stamped metal mounting bracket at the lower front of the housing secures the passenger side airbag module to two studs on the dash panel, behind the glove box. A plastic end bracket encloses the inboard end of the housing and retains the wire harness connector for the inflator.

Following a passenger side airbag deployment, the passenger side airbag module, the passenger side airbag door and the instrument panel assembly must be replaced. The passenger side airbag module cannot be repaired, and must be replaced if deployed or in any way damaged. The passenger side airbag door is available as a separate service item.

OPERATION

The hybrid-type inflator assembly includes a small canister of highly compressed argon gas. The inflator seals the hole in the airbag cushion so it can discharge the gas it produces directly into the cushion when supplied with the proper electrical signal. Following an airbag deployment, the airbag cushion quickly deflates by venting this gas through the porous fabric material used on each end panel of the airbag cushion.

The molded plastic passenger side airbag door is secured to the instrument panel at the upper and lower flanges with screws. A stamped metal bracket located on the back side of the airbag door is secured to the instrument panel armature with one screw on each end, and serves as the hinge for the door upon an airbag deployment. The airbag door has predetermined breakout lines concealed beneath its decorative cover. Upon airbag deployment, the airbag door will split at the breakout lines and the door will fold back over the top of the instrument panel, out of the way.

PASSENGER SIDE AIRBAG ON/OFF SWITCH

DESCRIPTION

A passenger side airbag on/off switch, which is located on the forward end of the floor console (both full and mini versions), allows the passenger side airbag system to be disabled when certain child restraint devices are being used in the right front seating position. The passenger side airbag on/off switch is equipped with a key actuator that is designed so that the switch position can be changed using an ignition key. The key is inserted into the actuator far enough to fully depress a spring-loaded locking plunger, then rotated to the desired position. The key will not insert all the way into the actuator, and the spring-loaded locking plunger prevents the user from leaving a key in the actuator. When the ignition switch is in the On position and the passenger side airbag system is disabled, a Light-Emitting Diode (LED) illuminates an **Off** indicator lamp on the face plate of the switch.

The passenger side airbag on/off switch cannot be adjusted or repaired and, if faulty or damaged, the switch assembly must be replaced. The switch bezel is available for service replacement.

OPERATION

To actuate the passenger side airbag on/off switch, insert the ignition key in the switch key actuator far enough to fully depress the spring-loaded locking plunger. The switch key actuator is then rotated with the ignition key to its clockwise stop (the key actuator slot will be aligned with the Off indicator lamp) to disable the passenger side airbag system. When the switch key actuator is rotated with the ignition key to its counterclockwise stop (the key actuator slot will be in a vertical position), the Off indicator lamp will be extinguished and the passenger side airbag system will be enabled.

DESCRIPTION AND OPERATION (Continued)**AIRBAG CONTROL MODULE****DESCRIPTION**

The Airbag Control Module (ACM) is secured with screws to a mounting bracket that is secured with four screws onto the floor panel transmission tunnel below the instrument panel and forward of the center floor console in the passenger compartment of the vehicle. The ACM contains an electronic microprocessor, an electronic impact sensor, an electromechanical safing sensor, and an energy storage capacitor.

The ACM is serviced as a unit with the mounting bracket. The ACM cannot be repaired or adjusted and, if damaged or faulty, the ACM and mounting bracket unit must be replaced.

OPERATION

The microprocessor in the ACM contains the airbag system logic. The airbag system logic includes On-Board Diagnostics (OBD), and the ability to communicate with the instrument cluster circuitry over the Chrysler Collision Detection (CCD) data bus to control the airbag indicator lamp. The microprocessor continuously monitors all of the airbag system electrical circuits to determine the system readiness. If the ACM detects a monitored system fault, it sends messages to the instrument cluster over the CCD data bus to turn on the airbag indicator lamp. Refer to **Instrument Cluster** in the proper section of Group 8E - Instrument Panel Systems for more information on the airbag indicator lamp.

One electronic impact sensor is used in this airbag system. The impact sensor is an accelerometer that senses the rate of vehicle deceleration, which provides verification of the direction and severity of an impact. The impact sensor is calibrated for the specific vehicle, and is only serviced as a unit with the ACM. A pre-programmed decision algorithm in the ACM microprocessor determines when the deceleration rate as signaled by the impact sensor indicates an impact that is severe enough to require airbag system protection. When the programmed conditions are met, the ACM sends an electrical signal to deploy the airbags.

In addition to the electronic impact sensor, there is an electromechanical sensor within the ACM called a safing sensor. The safing sensor is a normally open series switch located in the airbag deployment circuit of the ACM. This sensor detects impact energy of a lesser magnitude than the electronic impact sensor, and must be closed in order for the airbags to deploy.

The ACM also contains an energy-storage capacitor. This capacitor stores enough electrical energy to deploy the airbags for up to one second following a battery disconnect or failure during an impact. The purpose of the capacitor is to provide airbag system

protection in a severe secondary impact, if the initial impact has damaged or disconnected the battery, but was not severe enough to deploy the airbags.

CLOCKSPRING**DESCRIPTION**

The clockspring assembly is secured with two integral plastic latches onto the steering column lock housing near the top of the steering column behind the steering wheel. The clockspring is used to maintain a continuous electrical circuit between the fixed clockspring wire harness on the steering column and several electrical components that rotate with the steering wheel. The rotating components include the driver side airbag module, the horn switch and, if the vehicle is so equipped, the vehicle speed control switches.

The clockspring cannot be repaired. If the clockspring is faulty, damaged, or if the driver side airbag has been deployed, the clockspring must be replaced.

OPERATION

The clockspring assembly consists of a plastic case which contains a flat, ribbon-like, electrically conductive tape that winds and unwinds like a clockspring with the steering wheel rotation. The electrically conductive tape consists of several fine gauge copper wire leads sandwiched between two narrow strips of plastic film.

Like the clockspring in a timepiece, the clockspring tape has travel limits and can be damaged by being wound too tightly. To prevent this from occurring, the clockspring is centered when it is installed on the steering column. Centering the clockspring indexes the clockspring tape to other steering components so that it can operate within its designed travel limits. However, if the clockspring is removed for service or if the steering column is disconnected from the steering gear allowing the clockspring tape to change position relative to the other steering components, it must be re-centered following completion of the service or it may be damaged. Refer to **Clockspring Centering** in the Adjustments section of this group for the proper centering procedures.

Service replacement clocksprings are shipped pre-centered and with a locking pin installed. This locking pin should not be removed until the clockspring has been installed on the steering column. If the locking pin is removed before the clockspring is installed on a steering column, the clockspring centering procedure must be performed.

DIAGNOSIS AND TESTING

AIRBAG SYSTEM

A DRB scan tool is required for diagnosis of the airbag system. See the proper Diagnostic Procedures manual for more information.

(1) Connect the DRB scan tool to the 16-way data link wire harness connector. The connector is located on the driver side lower edge of the instrument panel, outboard of the steering column (Fig. 1).

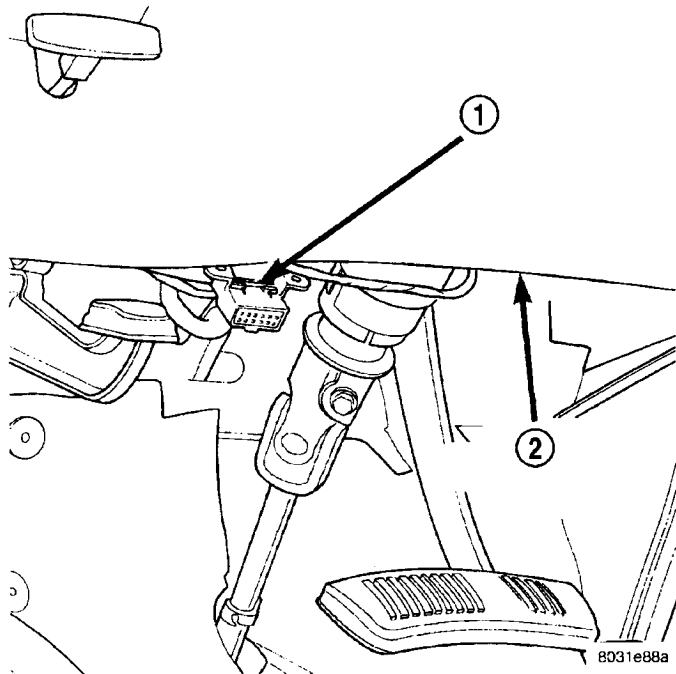


Fig. 1 16-Way Data Link Connector - Typical

- 1 - 16-WAY DATA LINK CONNECTOR
- 2 - BOTTOM OF INSTRUMENT PANEL

(2) Turn the ignition switch to the On position. Exit the vehicle with the DRB. Be certain that the DRB contains the latest version of the proper DRB software.

(3) Using the DRB, read and record the active Diagnostic Trouble Code (DTC) data.

(4) Read and record any stored DTC data.

(5) See the proper Diagnostic Procedures manual if any DTC is found in Step 3 or Step 4.

(6) After completing the necessary repairs, try to erase the stored DTC data. If any problems remain, the stored DTC data will not erase. See the proper Diagnostic Procedures manual for the procedures to diagnose any stored DTC that will not erase.

(7) With the ignition switch still in the On position, check to be certain that nobody is in the vehicle.

(8) From outside of the vehicle (away from the airbags in case of an accidental deployment) turn the ignition switch to the Off position for about ten sec-

onds, and then back to the On position. Observe the airbag indicator lamp in the instrument cluster. It should light for six to eight seconds, and then go out. This indicates that the airbag system is functioning normally.

NOTE: If the airbag indicator lamp fails to light, or lights and stays on, there is an airbag system malfunction. See the proper Diagnostic Procedures manual to diagnose the problem.

SERVICE PROCEDURES

AIRBAG SYSTEM

NON-DEPLOYED

At no time should any source of electricity be permitted near the inflator on the back of an airbag module. When carrying a non-deployed airbag module, the trim cover or airbag side of the module should be pointed away from the body to minimize injury in the event of an accidental deployment. If the module is placed on a bench or any other surface, the trim cover or airbag side of the module should be face up to minimize movement in the event of an accidental deployment.

In addition, the airbag system should be disarmed whenever any steering wheel, steering column, or instrument panel components require diagnosis or service. Failure to observe this warning could result in accidental airbag deployment and possible personal injury. Refer to **Group 8E - Instrument Panel Systems** for additional service procedures on the instrument panel components. Refer to **Group 19 - Steering** for additional service procedures on the steering wheel and steering column components.

DISPOSAL OF NON-DEPLOYED AIRBAG MODULES

All damaged or faulty and non-deployed driver side or passenger side airbag modules which are replaced on vehicles are to be returned. If an airbag module assembly is faulty or damaged and non-deployed, refer to the parts return list in the current Chrysler Corporation Warranty Policies and Procedures manual for the proper handling and disposal procedures.

DEPLOYED

Any vehicle which is to be returned to use after an airbag deployment, must have both airbag modules, the instrument panel assembly, the passenger side airbag module door and the clockspring replaced. These components will be damaged or weakened as a result of an airbag deployment, which may or may not be obvious during a visual inspection, and are not intended for reuse.

SERVICE PROCEDURES (Continued)

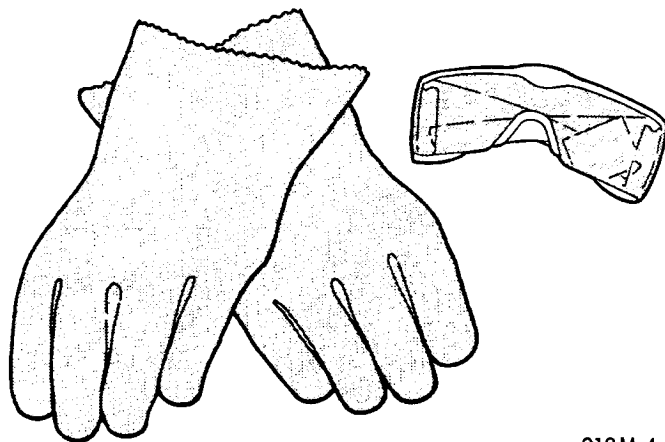
Other vehicle components should be closely inspected, but are to be replaced only as required by the extent of the visible damage incurred.

STORAGE

An airbag module must be stored in its original, special container until used for service. Also, it must be stored in a clean, dry environment; away from sources of extreme heat, sparks, and high electrical energy. Always place or store an airbag module on a surface with its trim cover or airbag side facing up, to minimize movement in case of an accidental deployment.

CLEANUP PROCEDURE

Following an airbag system deployment, the vehicle interior will contain a powdery residue. This residue consists primarily of harmless particulate by-products of the small pyrotechnic charge used to initiate the airbag deployment propellant. However, this residue will also contain traces of sodium hydroxide powder, a chemical by-product of the propellant material that is used to generate the nitrogen gas that inflates the airbag. Since sodium hydroxide powder can irritate the skin, eyes, nose, or throat, be sure to wear safety glasses, rubber gloves, and a long-sleeved shirt during cleanup (Fig. 2).



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Fig. 2 Wear Safety Glasses and Rubber Gloves - Typical

WARNING: IF YOU EXPERIENCE SKIN IRRITATION DURING CLEANUP, RUN COOL WATER OVER THE AFFECTED AREA. ALSO, IF YOU EXPERIENCE IRRITATION OF THE NOSE OR THROAT, EXIT THE VEHICLE FOR FRESH AIR UNTIL THE IRRITATION CEASES. IF IRRITATION CONTINUES, SEE A PHYSICIAN.

Begin the cleanup by removing the airbag modules from the vehicle. Refer to **Driver Side Airbag Module** and **Passenger Side Airbag Module** in the Removal and Installation section of this group for the procedures.

Use a vacuum cleaner to remove any residual powder from the vehicle interior. Clean from outside the vehicle and work your way inside, so that you avoid kneeling or sitting on a non-cleaned area.

Be sure to vacuum the heater and air conditioning outlets as well (Fig. 3). Run the heater and air conditioner blower on the lowest speed setting and vacuum any powder expelled from the outlets. You may need to vacuum the interior of the vehicle a second time to recover all of the powder.

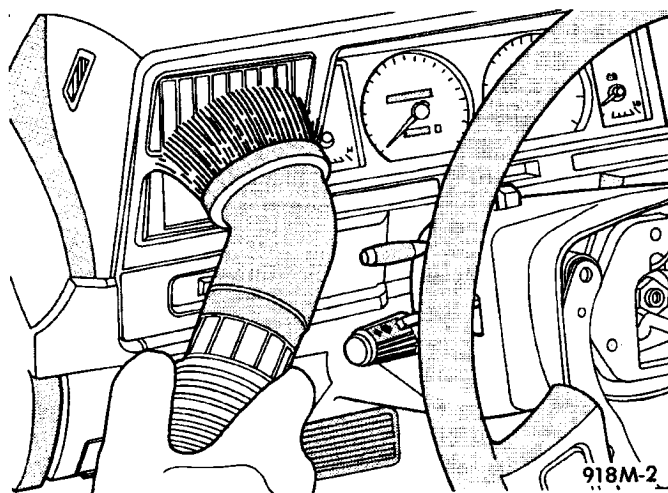


Fig. 3 Vacuum Heater and A/C Outlets - Typical

Place the deployed airbag modules in your vehicular scrap pile.

REMOVAL AND INSTALLATION

DRIVER SIDE AIRBAG MODULE

The following procedure is for replacement of a faulty or damaged driver side airbag module. If the driver side airbag has been deployed, the clockspring must also be replaced. Refer to **Clockspring** in the Removal and Installation section of this group for the additional service procedures for the clockspring.

REMOVAL AND INSTALLATION (Continued)**WARNING:**

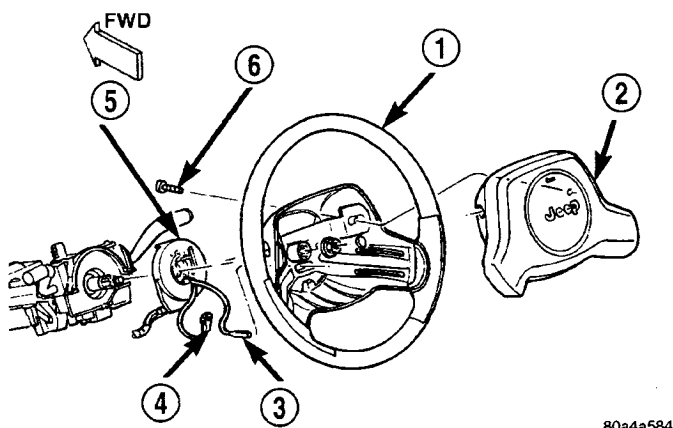
THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

WHEN REMOVING A DEPLOYED AIRBAG MODULE, RUBBER GLOVES, EYE PROTECTION, AND A LONG-SLEEVED SHIRT SHOULD BE WORN. THERE MAY BE DEPOSITS ON THE AIRBAG MODULE AND OTHER INTERIOR SURFACES. IN LARGE DOSES, THESE DEPOSITS MAY CAUSE IRRITATION TO THE SKIN AND EYES.

REMOVAL

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed, wait two minutes for the system capacitor to discharge before further service.

(2) From the underside of the steering wheel, remove the two screws that secure the driver side airbag module to the steering wheel (Fig. 4).



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Fig. 4 Driver Side Airbag Module Remove/Install

- 1 - STEERING WHEEL
- 2 - DRIVER'S AIRBAG MODULE
- 3 - HORN SWITCH WIRE
- 4 - AIRBAG WIRE
- 5 - CLOCKSPring
- 6 - SCREW

(3) Pull the airbag module away from the steering wheel far enough to access the two wire harness connectors on the back of the airbag module.

(4) Disconnect the clockspring horn switch wire harness connector from the horn switch feed wire connector, which is located on the back of the airbag module.

(5) The clockspring airbag wire harness connector is a tight snap-fit into the airbag module connector receptacle, which is located on the airbag inflator on the back of the airbag module. Firmly grasp and pull or gently pry on the clockspring airbag wire harness connector to disconnect it from the airbag module. **Do not pull on the clockspring wire harness to disengage the connector from the airbag module connector receptacle.**

(6) Remove the driver side airbag module from the steering wheel.

(7) If the driver side airbag has been deployed, the clockspring must be replaced. Refer to **Clockspring** in the Removal and Installation section of this group for the clockspring service procedures.

INSTALLATION**WARNING:**

USE EXTREME CARE TO PREVENT ANY FOREIGN MATERIAL FROM ENTERING THE DRIVER SIDE AIRBAG MODULE, OR BECOMING ENTRAPPED BETWEEN THE AIRBAG CUSHION AND THE DRIVER SIDE AIRBAG TRIM COVER. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

THE DRIVER SIDE AIRBAG MODULE TRIM COVER MUST NEVER BE PAINTED. REPLACEMENT TRIM COVERS ARE SERVICED IN THE ORIGINAL COLORS. PAINT MAY CHANGE THE WAY IN WHICH THE MATERIAL OF THE TRIM COVER RESPONDS TO AN AIRBAG DEPLOYMENT. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

(1) When installing the driver side airbag module, reconnect the clockspring airbag wire harness connector to the airbag module connector receptacle by pressing straight in on the connector. You can be certain that the connector is fully engaged by listening carefully for a distinct audible click as the connector snaps into place.

(2) Reconnect the clockspring horn switch wire harness connector to the horn switch feed wire connector, which is located on the back of the airbag module.

(3) Carefully position the driver side airbag module in the steering wheel. Be certain that the clock-

REMOVAL AND INSTALLATION (Continued)

spring wire harnesses in the steering wheel hub area are not pinched between the airbag module and the steering wheel.

(4) From the underside of the steering wheel, install and tighten the two driver side airbag module mounting screws. Tighten the screws to 10.2 N·m (90 in. lbs.).

(5) Do not reconnect the battery negative cable at this time. Refer to **Airbag System** in the Diagnosis and Testing section of this group for the proper procedures.

DRIVER SIDE AIRBAG MODULE TRIM COVER

The horn switch is integral to the driver side airbag module trim cover. If either component is faulty or damaged, the entire driver side airbag module trim cover and horn switch unit must be replaced.

WARNING:

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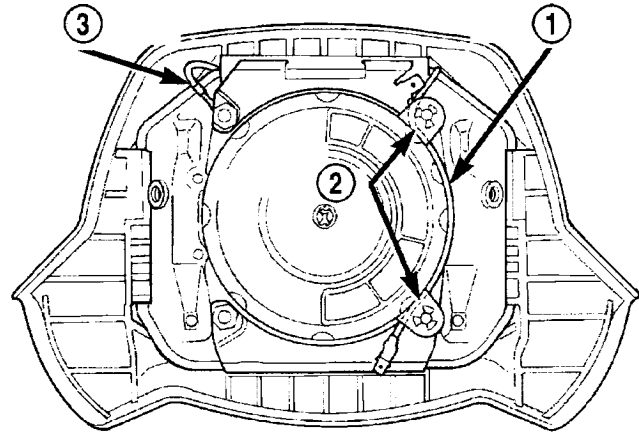
THE HORN SWITCH IS INTEGRAL TO THE AIRBAG MODULE TRIM COVER. SERVICE OF THIS COMPONENT SHOULD BE PERFORMED ONLY BY CHRYSLER-TRAINED AND AUTHORIZED DEALER SERVICE TECHNICIANS. FAILURE TO TAKE THE PROPER PRECAUTIONS OR TO FOLLOW THE PROPER PROCEDURES COULD RESULT IN ACCIDENTAL, INCOMPLETE, OR IMPROPER AIRBAG DEPLOYMENT AND POSSIBLE OCCUPANT INJURIES.

REMOVAL

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed, wait two minutes for the system capacitor to discharge before further service.

(2) Remove the driver side airbag module from the steering wheel. Refer to **Driver Side Airbag Module** in the Removal and Installation section of this group for the procedures.

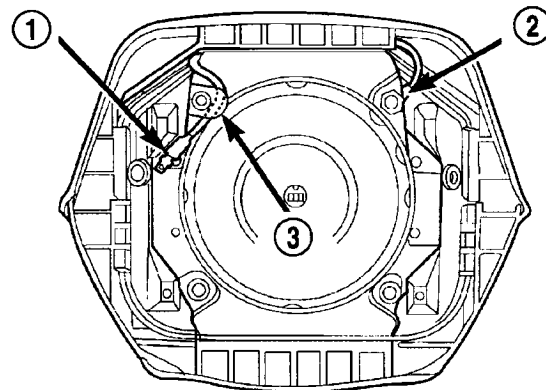
(3) Remove the plastic horn switch feed wire retainer(s) from the stud(s) on the back of the driver side airbag housing (Fig. 5) or (Fig. 6).



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Fig. 5 Horn Switch Feed Wire Remove/Install - w/o Speed Control

- 1 - HORN SWITCH FEED WIRE
- 2 - WIRE RETAINERS
- 3 - HORN SWITCH GROUND WIRE



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Fig. 6 Horn Switch Feed Wire Remove/Install - w/Speed Control

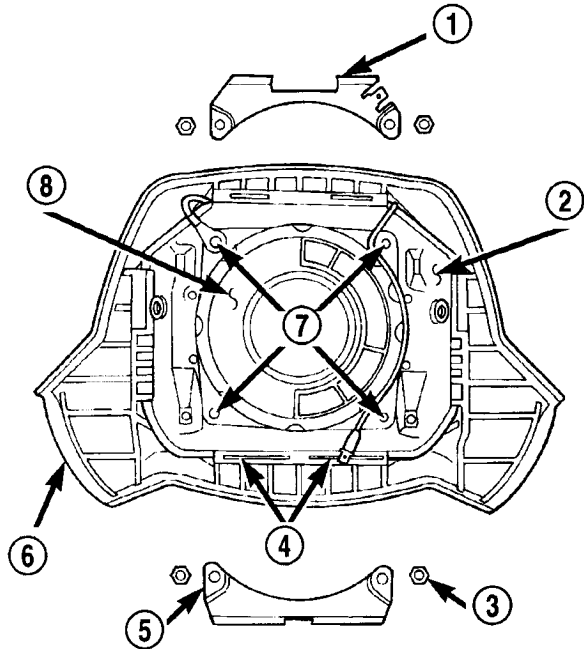
- 1 - HORN SWITCH FEED WIRE
- 2 - HORN SWITCH GROUND WIRE
- 3 - WIRE RETAINER

(4) Remove the four nuts that secure the upper and lower trim cover retainers to the studs on the back of the driver side airbag housing (Fig. 7) or (Fig. 8).

(5) Remove the upper and lower trim cover retainers from the airbag housing studs.

(6) Remove the horn switch ground wire eyelet from the upper airbag housing stud.

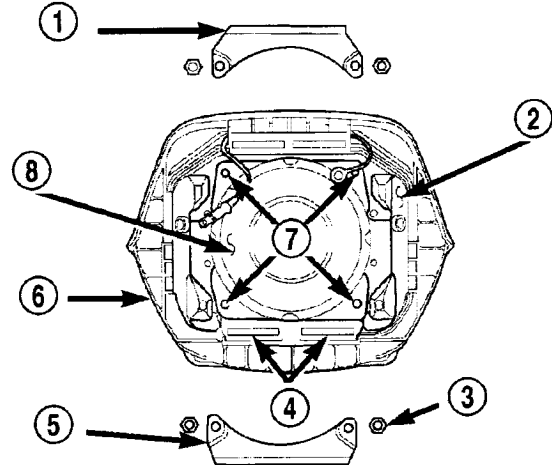
(7) Disengage the four trim cover locking blocks from the lip around the outside edge of the driver side airbag housing and remove the housing from the cover (Fig. 9) or (Fig. 10).

REMOVAL AND INSTALLATION (Continued)

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**Fig. 7 Driver Side Airbag Trim Cover Retainers
Remove/Install - w/o Speed Control**

- 1 - UPPER RETAINER
- 2 - AIRBAG HOUSING
- 3 - NUT (4)
- 4 - RETAINER SLOTS
- 5 - LOWER RETAINER
- 6 - TRIM COVER
- 7 - STUDS
- 8 - INFLATOR



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**Fig. 8 Driver Side Airbag Trim Cover Retainers
Remove/Install - w/Speed Control**

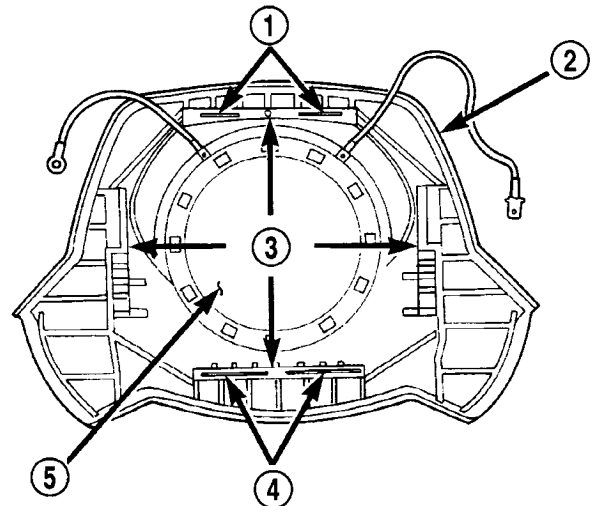
- 1 - UPPER RETAINER
- 2 - AIRBAG HOUSING
- 3 - NUT (4)
- 4 - RETAINER SLOTS
- 5 - LOWER RETAINER
- 6 - TRIM COVER
- 7 - STUDS
- 8 - INFLATOR

INSTALLATION**WARNING:**

USE EXTREME CARE TO PREVENT ANY FOREIGN MATERIAL FROM ENTERING THE DRIVER SIDE AIRBAG MODULE, OR BECOMING ENTRAPPED BETWEEN THE AIRBAG CUSHION AND THE DRIVER SIDE AIRBAG TRIM COVER. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

THE DRIVER SIDE AIRBAG MODULE TRIM COVER MUST NEVER BE PAINTED. REPLACEMENT TRIM COVERS ARE SERVICED IN THE ORIGINAL COLORS. PAINT MAY CHANGE THE WAY IN WHICH THE MATERIAL OF THE TRIM COVER RESPONDS TO AN AIRBAG DEPLOYMENT. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

(1) Carefully position the driver side airbag module in the trim cover. Be certain that the horn switch



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**Fig. 9 Driver Side Airbag Trim Cover Remove/Install
- w/o Speed Control**

- 1 - RETAINER SLOTS
- 2 - TRIM COVER
- 3 - LOCKING BLOCKS
- 4 - RETAINER SLOTS
- 5 - HORN SWITCH

feed and ground wires are not pinched between the airbag housing and the trim cover locking blocks.

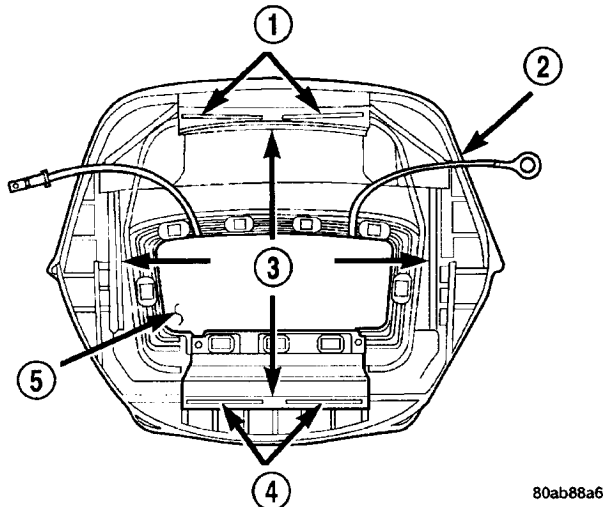
REMOVAL AND INSTALLATION (Continued)

Fig. 10 Driver Side Airbag Trim Cover Remove/Install - w/Speed Control

- 1 - RETAINER SLOTS
- 2 - TRIM COVER
- 3 - LOCKING BLOCKS
- 4 - RETAINER SLOTS
- 5 - HORN SWITCH

(2) Engage the upper and lower trim cover locking blocks with the lip of the driver side airbag housing, then engage the locking blocks on each side of the trim cover with the lip of the housing. Be certain that each of the locking blocks is fully engaged on the lip of the airbag housing (Fig. 11).

(3) Install the horn switch ground wire eyelet over the upper airbag housing stud.

(4) Install the upper and lower airbag trim cover retainers over the airbag housing studs. Be certain that the tabs on each retainer are engaged in the retainer slots of the upper and lower trim cover locking blocks (Fig. 9) or (Fig. 10).

(5) Install and tighten the trim cover retainer mounting nuts on the airbag housing studs. Tighten the nuts to 10 N·m (90 in. lbs.).

(6) Install the driver side airbag module onto the steering wheel. Refer to **Driver Side Airbag Module** in the Removal and Installation section of this group for the procedures.

PASSENGER SIDE AIRBAG MODULE

The following procedure is for replacement of a faulty or damaged passenger side airbag module. If the passenger side airbag module has been deployed, the instrument panel assembly must be replaced. The instrument panel assembly includes the passenger side airbag module and the passenger side airbag door. Refer to **Instrument Panel Assembly** in the Removal and Installation section of Group 8E -

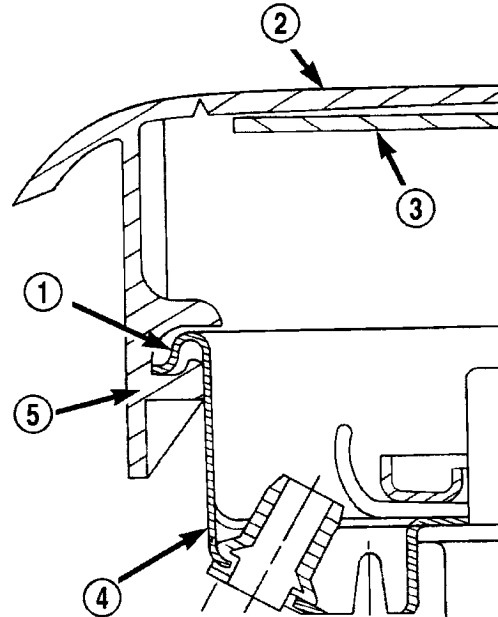


Fig. 11 Driver Side Airbag Trim Cover Locking Blocks Engaged

- 1 - LIP
- 2 - TRIM COVER
- 3 - HORN SWITCH
- 4 - AIRBAG HOUSING
- 5 - LOCKING BLOCK

Instrument Panel Systems for the instrument panel assembly service procedures.

WARNING:

THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

WHEN REMOVING A DEPLOYED AIRBAG MODULE, RUBBER GLOVES, EYE PROTECTION, AND A LONG-SLEEVED SHIRT SHOULD BE WORN. THERE MAY BE DEPOSITS ON THE AIRBAG MODULE AND OTHER INTERIOR SURFACES. IN LARGE DOSES, THESE DEPOSITS MAY CAUSE IRRITATION TO THE SKIN AND EYES.

REMOVAL AND INSTALLATION (Continued)**REMOVAL**

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed, wait two minutes for the system capacitor to discharge before further service.

(2) Remove the instrument panel assembly from the passenger compartment of the vehicle. Refer to **Instrument Panel Assembly** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

(3) Place the instrument panel on a suitable work surface. Be certain to take the proper precautions to protect the instrument panel from any possible cosmetic damage.

(4) Remove the three nuts that secure the passenger side airbag module to the studs on the instrument panel armature (Fig. 12).

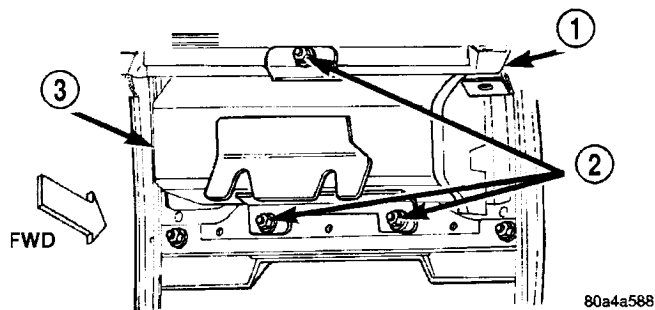


Fig. 12 Passenger Side Airbag Module Remove/Install

- 1 - INSTRUMENT PANEL ARMATURE
- 2 - NUTS (3)
- 3 - PASSENGER'S AIRBAG MODULE

(5) Remove the passenger side airbag module from the instrument panel.

INSTALLATION

WARNING: USE EXTREME CARE TO PREVENT ANY FOREIGN MATERIAL FROM ENTERING THE PASSENGER SIDE AIRBAG MODULE, OR BECOMING ENTRAPPED BETWEEN THE AIRBAG CUSHION AND THE PASSENGER SIDE AIRBAG DOOR. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

(1) Carefully position the passenger side airbag module in the instrument panel.

(2) Install and tighten the three nuts that secure the passenger side airbag module upper and lower mounting brackets to the studs on the instrument panel armature. Tighten the nuts to 12 N·m (105 in. lbs.).

(3) Install the instrument panel assembly into the passenger compartment of the vehicle. Refer to **Instrument Panel Assembly** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures. When installing the instrument panel, be certain to reconnect the passenger side airbag module wire harness to the cross-body wire harness, and that the connector is fully engaged and latched.

(4) Do not reconnect the battery negative cable at this time. Refer to **Airbag System** in the Diagnosis and Testing section of this group for the proper procedures.

PASSENGER SIDE AIRBAG DOOR**WARNING:**

THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

WHEN REMOVING A DEPLOYED AIRBAG MODULE, RUBBER GLOVES, EYE PROTECTION, AND A LONG-SLEEVED SHIRT SHOULD BE WORN. THERE MAY BE DEPOSITS ON THE AIRBAG MODULE AND OTHER INTERIOR SURFACES. IN LARGE DOSES, THESE DEPOSITS MAY CAUSE IRRITATION TO THE SKIN AND EYES.

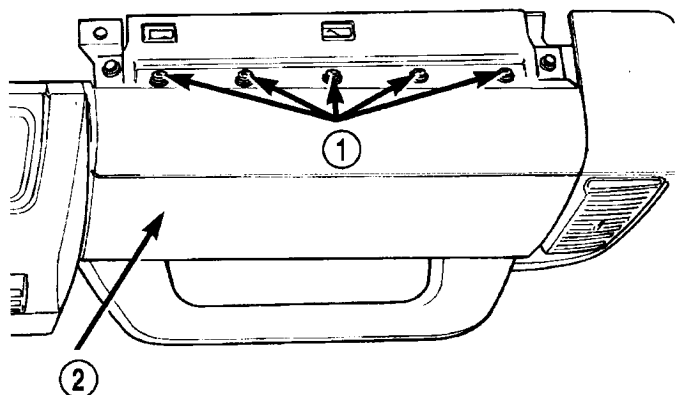
REMOVAL

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed, wait two minutes for the system capacitor to discharge before further service.

(2) Remove the passenger side airbag module from the instrument panel. Refer to **Passenger Side Airbag Module** in the Removal and Installation section of this group for the procedures.

(3) Remove the five screws that secure the passenger side airbag door upper flange to the top of the instrument panel (Fig. 13).

(4) Remove the grab handle bezel from the instrument panel. Refer to **Instrument Panel Grab Handle Bezel** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

REMOVAL AND INSTALLATION (Continued)

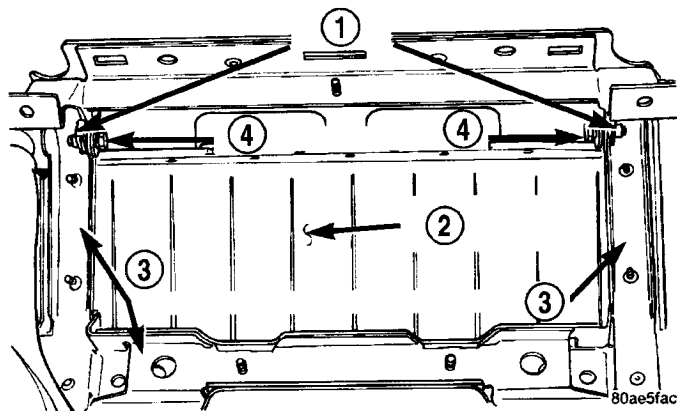
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Fig. 13 Passenger Side Airbag Door Upper Screws Remove/Install

- 1 - MOUNTING SCREWS
- 2 - AIRBAG DOOR

(5) Remove the five screws that secure the passenger side airbag door lower flange to the instrument panel above the glove box opening.

(6) Remove the two screws that secure the ends of the passenger side airbag door bracket to the instrument panel armature (Fig. 14).



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Fig. 14 Passenger Side Airbag Door Remove/Install

- 1 - J-NUTS
- 2 - PASSENGER AIRBAG DOOR
- 3 - INSTRUMENT PANEL ARMATURE
- 4 - MOUNTING SCREWS

(7) Remove and discard the two passenger side airbag door bracket J-nuts from the instrument panel armature. These J-nuts must be replaced with new parts whenever the passenger side airbag door bracket screws are removed.

(8) Remove the passenger side airbag door from the instrument panel.

INSTALLATION**WARNING:**

USE EXTREME CARE TO PREVENT ANY FOREIGN MATERIAL FROM ENTERING THE PASSENGER SIDE AIRBAG MODULE, OR BECOMING ENTRAPPED BETWEEN THE AIRBAG CUSHION AND THE PASSENGER SIDE AIRBAG DOOR. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

THE PASSENGER SIDE AIRBAG DOOR MUST NEVER BE PAINTED. REPLACEMENT AIRBAG DOORS ARE SERVICED IN THE ORIGINAL COLORS. PAINT MAY CHANGE THE WAY IN WHICH THE MATERIAL OF THE AIRBAG DOOR RESPONDS TO AN AIRBAG DEPLOYMENT. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN OCCUPANT INJURIES UPON AIRBAG DEPLOYMENT.

(1) Install two new passenger airbag door bracket J-nuts onto the instrument panel armature. These J-nuts must be replaced with new parts whenever the passenger side airbag door bracket screws are removed.

(2) Position the passenger side airbag door to the instrument panel and align the mounting holes in each end of the airbag door bracket with the J-nuts on the instrument panel armature.

(3) Install and tighten the two screws that secure the passenger side airbag door bracket to the instrument panel armature. Tighten the screws to 12 N·m (105 in. lbs.).

(4) Install and tighten the five screws that secure the passenger side airbag door lower flange to the instrument panel above the glove box opening. Tighten the screws to 2.2 N·m (20 in. lbs.).

(5) Install the grab handle bezel onto the instrument panel. Refer to **Instrument Panel Grab Handle Bezel** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

(6) Install and tighten the five screws that secure the passenger side airbag door upper flange to the top of the instrument panel. Tighten the screws to 2.2 N·m (20 in. lbs.).

(7) Install the passenger side airbag module onto the instrument panel. Refer to **Passenger Side Airbag Module** in the Removal and Installation section of this group for the procedures.

REMOVAL AND INSTALLATION (Continued)**PASSENGER SIDE AIRBAG ON/OFF SWITCH**

WARNING: THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

REMOVAL**PASSENGER SIDE AIRBAG ON/OFF SWITCH**

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed, wait two minutes for the system capacitor to discharge before further service.

(2) Remove the glove box from the instrument panel. Refer to **Glove Box** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

(3) Reach through the glove box opening to access and disconnect the two passenger side airbag on/off switch wire harness connectors from the instrument panel wire harness. These connectors are retained on a bracket located on the outboard glove box opening reinforcement (Fig. 15).

(4) Still reaching through the glove box opening, disengage the passenger side airbag on/off switch wire harness from the retainer clip on the plenum bracket that supports the heater-A/C housing just inboard of the fuseblock module.

(5) Remove the full floor console or mini-floor console from the floor panel transmission tunnel. Refer to **Full Floor Console** or **Mini Floor Console** in the Removal and Installation section of Group 23 - Body for the procedures.

(6) From the underside of the console, remove the three screws that secure the passenger side airbag on/off switch to the back of the switch bezel (Fig. 16).

(7) Remove the passenger side airbag on/off switch from the switch bezel.

PASSENGER SIDE AIRBAG ON/OFF SWITCH BEZEL

The passenger side airbag on/off switch can be serviced without removing the switch bezel from the floor console. If the passenger side airbag on/off switch bezel is removed from the floor console, it must be replaced. The latch tabs that secure the

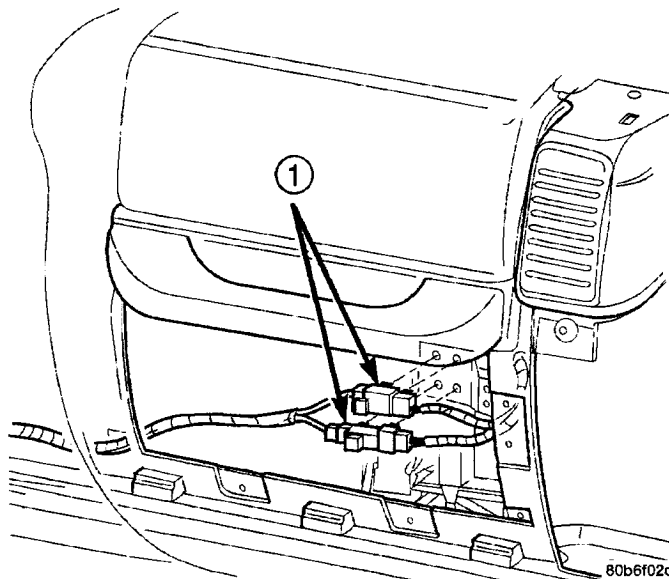


Fig. 15 Passenger Side Airbag On/Off Switch Wire Harness Connectors

1 - PASSENGER AIRBAG ON/OFF SWITCH CONNECTORS

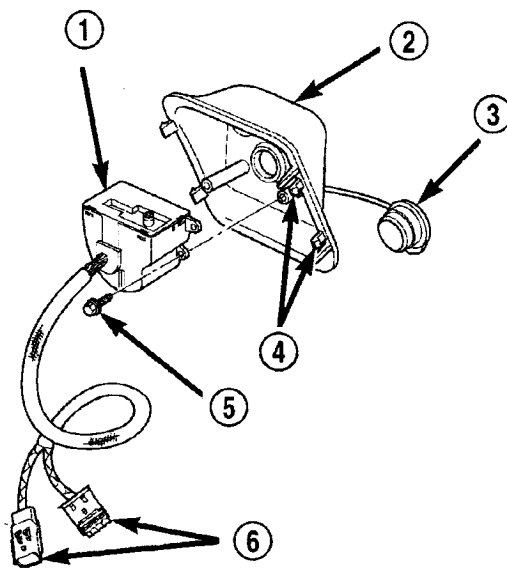


Fig. 16 Passenger Side Airbag On/Off Switch Remove/Install

1 - PASSENGER SIDE AIRBAG ON/OFF SWITCH
 2 - BEZEL
 3 - CAP
 4 - LATCH TABS (4)
 5 - SCREW (3)
 6 - WIRE HARNESS CONNECTORS

bezel to the console will be damaged during the removal process.

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed,

REMOVAL AND INSTALLATION (Continued)

wait two minutes for the system capacitor to discharge before further service.

(2) Remove the passenger side airbag on/off switch from the bezel. Refer to **Passenger Side Airbag On/Off Switch** in the Removal and Installation section of this group for the procedures.

(3) From the underside of the console, release the four latch tabs that secure the passenger side airbag on/off switch bezel to the mounting hole in the front of the full floor console or mini floor console.

(4) Remove the passenger side airbag on/off switch bezel from the top of the full floor console or mini floor console.

INSTALLATION**PASSENGER SIDE AIRBAG ON/OFF SWITCH**

(1) From the underside of the console, position the passenger side airbag on/off switch to the back of the switch bezel.

(2) Install and tighten the three screws that secure the passenger side airbag on/off switch to the switch bezel. Tighten the screws to 2.2 N·m (20 in. lbs.).

(3) Install the full floor console or mini floor console onto the floor panel transmission tunnel. Refer to **Full Floor Console** or **Mini Floor Console** in the Removal and Installation section of Group 23 - Body for the procedures.

(4) Reach through the glove box opening to engage the passenger side airbag on/off switch wire harness in the retainer clip on the plenum bracket that supports the heater-A/C housing just inboard of the fuse-block module.

(5) Still reaching through the glove box opening, access and reconnect the two passenger side airbag on/off switch wire harness connectors to the instrument panel wire harness. These connectors are retained on a bracket located on the outboard glove box opening reinforcement. Be certain that both connectors are fully engaged and latched.

(6) Install the glove box onto the instrument panel. Refer to **Glove Box** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

(7) Do not reconnect the battery negative cable at this time. Refer to **Airbag System** in the Diagnosis and Testing section of this group for the proper procedures.

PASSENGER SIDE AIRBAG ON/OFF SWITCH BEZEL

(1) Position the passenger side airbag on/off switch bezel to the mounting hole at the front of the full floor console or mini floor console.

(2) Press down firmly and evenly on the passenger side airbag on/off switch bezel until each of the four latch tabs on the bezel is fully engaged with the

mounting hole of the full floor console or mini floor console.

(3) Install the passenger side airbag on/off switch onto the bezel. Refer to **Passenger Side Airbag On/Off Switch** in the Removal and Installation section of this group for the procedures.

(4) Do not reconnect the battery negative cable at this time. Refer to **Airbag System** in the Diagnosis and Testing section of this group for the proper procedures.

AIRBAG CONTROL MODULE**WARNING:**

THE AIRBAG CONTROL MODULE CONTAINS THE IMPACT SENSOR, WHICH ENABLES THE SYSTEM TO DEPLOY THE AIRBAG. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

NEVER STRIKE OR KICK THE AIRBAG CONTROL MODULE, AS IT CAN DAMAGE THE IMPACT SENSOR OR AFFECT ITS CALIBRATION. IF AN AIRBAG CONTROL MODULE IS ACCIDENTALLY DROPPED DURING SERVICE, THE MODULE MUST BE SCRAPPED AND REPLACED WITH A NEW UNIT. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN ACCIDENTAL, INCOMPLETE, OR IMPROPER AIRBAG DEPLOYMENT AND POSSIBLE OCCUPANT INJURIES.

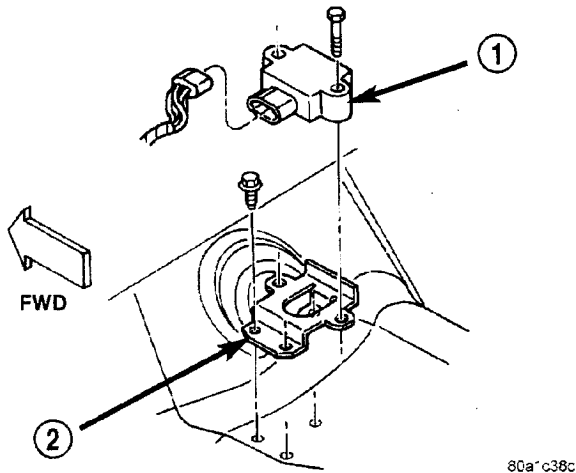
REMOVAL

(1) Disconnect and isolate the battery negative cable. If either of the airbags has not been deployed, wait two minutes for the system capacitor to discharge before further service.

(2) Pull back the carpet from the floor panel transmission tunnel area under the heater-A/C housing floor duct and forward of the full floor console or mini floor console.

(3) If the vehicle is equipped with the optional Anti-lock Brake System (ABS), remove the acceleration switch and mounting bracket from the floor panel transmission tunnel (Fig. 17). Refer to **Acceleration Switch** in the Removal and Installation section of Group 5 - Brakes for the procedures.

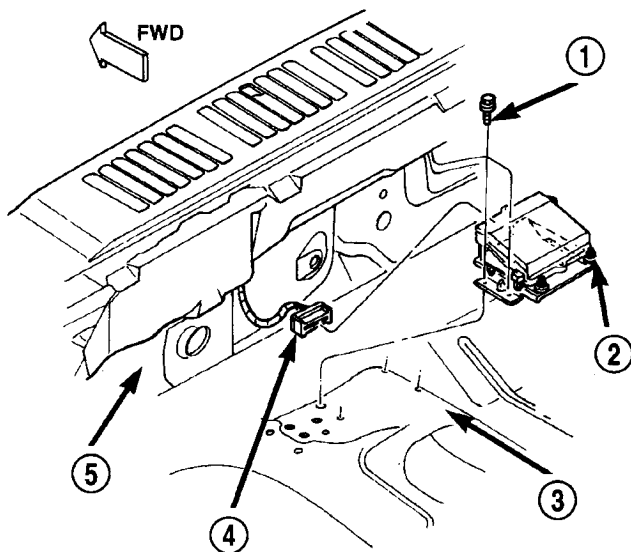
REMOVAL AND INSTALLATION (Continued)

**Fig. 17 Acceleration Switch Remove/Install**

- 1 - ACCELERATION SWITCH
2 - MOUNTING BRACKET

NOTE: Always remove and replace the airbag control module and its mounting bracket as a unit. Replacement modules include a replacement mounting bracket. Do not transfer the module to another mounting bracket.

(4) Remove the four screws that secure the Airbag Control Module (ACM) mounting bracket to the floor panel transmission tunnel (Fig. 18).

**Fig. 18 Airbag Control Module Remove/Install**

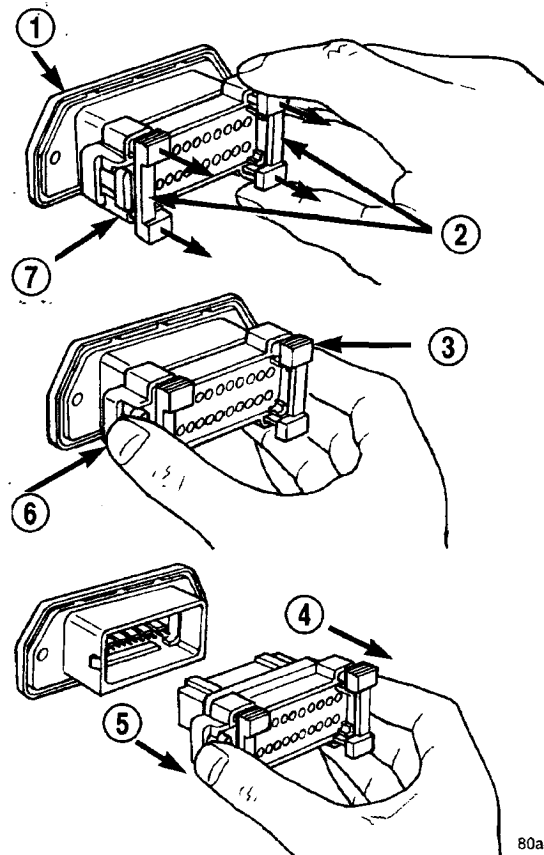
- 1 - SCREW
2 - AIRBAG CONTROL MODULE
3 - FLOOR TRANSMISSION TUNNEL
4 - CONNECTOR
5 - DASH PANEL

(5) Slide the ACM and mounting bracket out from under the heater-A/C housing floor duct far enough to access the ACM wire harness connector.

(6) Disconnect the cross-body wire harness connector from the ACM. To disconnect the cross-body wire harness connector from the ACM (Fig. 19) :

(a) Pull the two white locks out about 3 millimeters (0.125 in.) from each side of the connector.

(b) Squeeze the two connector latch tabs between the thumb and forefinger and pull the connector straight away from the ACM connector receptacle.

**Fig. 19 Airbag Control Module Connector Removal**

- 1 - AIRBAG CONTROL MODULE
2 - PULL TWO LOCKS OUT
3 - SQUEEZE LATCHES
4 - PULL
5 - PULL
6 - SQUEEZE LATCHES
7 - MALE CONNECTOR

(7) Remove the ACM and mounting bracket from the floor panel transmission tunnel as a unit.

INSTALLATION

(1) Reconnect the cross-body wire harness connector to the ACM connector receptacle. Be certain that

REMOVAL AND INSTALLATION (Continued)

the connector latches are fully engaged and that the white connector locks are pushed in.

(2) Carefully position the ACM and mounting bracket unit to the floor panel transmission tunnel. When the ACM is correctly positioned the arrow on the ACM label will be pointed forward in the vehicle.

(3) Install and tighten the four screws that secure the ACM mounting bracket to the floor panel transmission tunnel. Tighten the screws to 10.7 N·m (95 in. lbs.).

(4) If the vehicle is equipped with the optional ABS brakes, install the acceleration switch and mounting bracket onto the floor panel transmission tunnel. Refer to **Acceleration Switch** in the Removal and Installation section of Group 5 - Brakes for the procedures.

(5) Do not reconnect the battery negative cable at this time. Refer to **Airbag System** in the Diagnosis and Testing section of this group for the proper procedures.

CLOCKSPRING

The clockspring cannot be repaired. It must be replaced if faulty or damaged, or if the driver side airbag has been deployed.

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REMOVAL

NOTE: Before starting this procedure, be certain to turn the steering wheel until the front wheels are in the straight-ahead position.

(1) Place the front wheels in the straight-ahead position.

(2) Remove the driver side airbag module from the steering wheel. Refer to **Driver Side Airbag Module** in the Removal and Installation section of this group for the procedures.

(3) If the vehicle is so equipped, disconnect the upper clockspring wire harness connector from the steering wheel wire harness for the vehicle speed

control switches located within the hub cavity of the steering wheel.

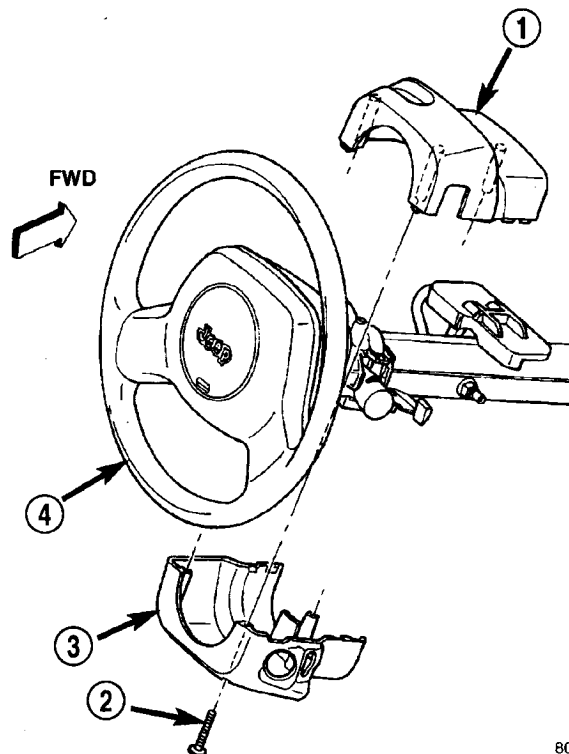
(4) Remove the nut that secures the steering wheel armature to the steering column upper shaft, which is located within the hub cavity of the steering wheel.

(5) Pull the steering wheel off of the steering column upper shaft spline using a steering wheel puller (Special Tool C-3428-B).

(6) Remove the steering column opening cover from the instrument panel. Refer to **Steering Column Opening Cover** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

(7) If the vehicle is so equipped, move the tilt steering column to the fully raised position.

(8) Remove the three screws that secure the lower steering column shroud to the upper shroud (Fig. 20).



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Fig. 20 Steering Column Shrouds Remove/Install

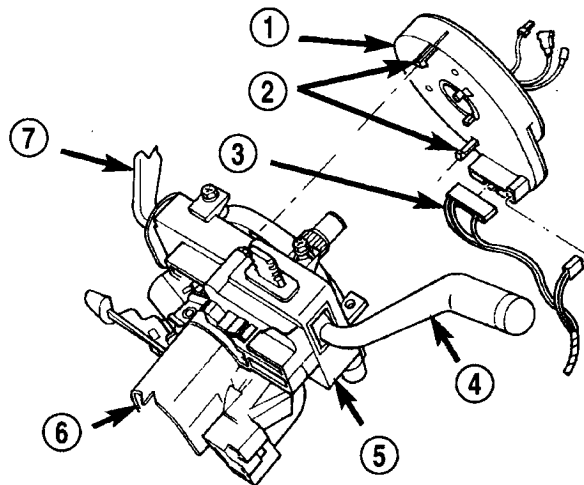
- 1 - UPPER SHROUD
- 2 - SCREW (3)
- 3 - LOWER SHROUD
- 4 - STEERING WHEEL

(9) If the vehicle is equipped with a standard non-tilt steering column, loosen the two upper steering column mounting nuts. If the vehicle is equipped with the optional tilt steering column, move the tilt steering column to the fully lowered position.

(10) Remove both the upper and lower shrouds from the steering column.

REMOVAL AND INSTALLATION (Continued)

(11) Disconnect the two instrument panel wire harness connectors from the lower clockspring connector receptacles (Fig. 21).



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Fig. 21 Clockspring Remove/Install

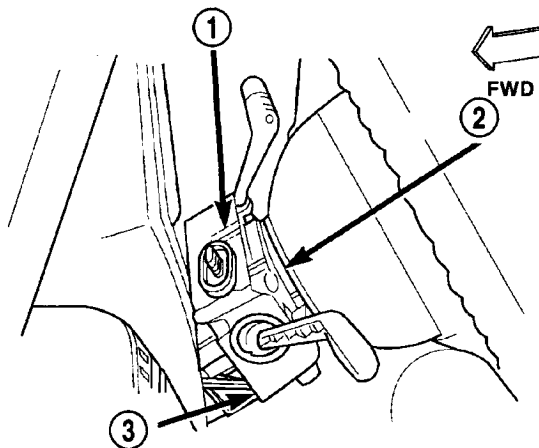
- 1 - CLOCKSPRING
- 2 - LATCHES
- 3 - WIRE HARNESS
- 4 - TURN SIGNAL SWITCH LEVER
- 5 - WATER SHIELD BRACKET
- 6 - STEERING COLUMN
- 7 - WIPER SWITCH LEVER

(12) The multi-function switch water shield bracket on the top of the steering column has a small access window which allows access to the upper clockspring latch with a small screwdriver (Fig. 22). Gently pry both plastic latches of the clockspring assembly to release them from the steering column upper housing.

NOTE: If the clockspring plastic latches are broken, be certain to remove the broken pieces from the steering column upper housing.

(13) Remove the clockspring from the steering column. The clockspring cannot be repaired. It must be replaced if faulty or damaged, or if the driver side airbag has been deployed.

(14) If the removed clockspring is to be reused, lock the clockspring rotor to the clockspring case to maintain clockspring centering until it is reinstalled on the steering column. This can be done by inserting a stiff wire through the small index hole located at about the 11 o'clock position in the centered clockspring rotor and case. Refer to **Clockspring Centering** in the Adjustments section of this group for an illustration of the clockspring index hole. Bend the wire over after it has been inserted through the index hole to prevent it from falling out.



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Fig. 22 Upper Clockspring Latch Access Window

- 1 - UPPER CLOCKSPRING LATCH ACCESS WINDOW
- 2 - CLOCKSPRING
- 3 - WATER SHIELD AND BRACKET

INSTALLATION

If the clockspring is not properly centered in relation to the steering wheel, steering shaft and steering gear, it may be damaged. Refer to **Clockspring Centering** in the Adjustments section of this group before installing or reinstalling a clockspring.

Service replacement clocksprings are shipped pre-centered and with a locking pin installed. This locking pin should not be removed until the clockspring has been installed on the steering column. If the locking pin is removed before the clockspring is installed on a steering column, the clockspring centering procedure must be performed.

NOTE: Before starting this procedure, be certain that the front wheels are still in the straight-ahead position.

(1) If the removed clockspring is being reused, remove the wire from the index hole that is locking the clockspring rotor to the clockspring case to maintain clockspring centering.

(2) Be certain that the turn signal switch control stalk is in the neutral position, then carefully slide the centered clockspring down over the steering column upper shaft until the clockspring latches engage the steering column upper housing.

(3) If a new clockspring has been installed, remove the locking pin that is securing the clockspring rotor to the clockspring case and maintaining clockspring centering.

(4) Reconnect the two instrument panel wire harness connectors to the lower clockspring connector receptacles. Be certain that the connector latches are fully engaged.

REMOVAL AND INSTALLATION (Continued)

(5) Position both the upper and lower shrouds onto the steering column.

(6) Install and tighten the three screws that secure the lower steering column shroud to the upper shroud. Tighten the screws to 2 N·m (18 in. lbs.).

(7) Install the steering column opening cover onto the instrument panel. Refer to **Steering Column Opening Cover** in the Removal and Installation section of Group 8E - Instrument Panel Systems for the procedures.

(8) Install the steering wheel onto the steering column upper shaft. Be certain to index the flats on the hub of the steering wheel with the formations on the inside of the clockspring rotor. Pull the upper clockspring wire harnesses through the lower hole in the steering wheel armature.

(9) Install and tighten the steering wheel mounting nut. Tighten the nut to 61 N·m (45 ft. lbs.). Be certain not to pinch the wire harnesses between the steering wheel and the nut.

(10) If the vehicle is so equipped, reconnect the upper clockspring wire harness connector to the steering wheel wire harness for the vehicle speed control switches.

(11) Install the driver side airbag module onto the steering wheel. Refer to **Driver Side Airbag Module** in the Removal and Installation section of this group for the procedures.

ADJUSTMENTS**CLOCKSPRING CENTERING**

The clockspring is designed to wind and unwind when the steering wheel is rotated, but is only designed to rotate the same number of turns (about five complete rotations) as the steering wheel can be turned from stop to stop. Centering the clockspring indexes the clockspring tape to other steering components so that it can operate within its designed travel limits. The rotor of a centered clockspring can be rotated two and one-half turns in either direction from the centered position, without damaging the clockspring tape.

However, if the clockspring is removed for service or if the steering column is disconnected from the steering gear, the clockspring tape can change position relative to the other steering components. The clockspring must then be re-centered following completion of the service or the clockspring tape may be damaged.

Service replacement clocksprings are shipped pre-centered and with a locking pin installed. This locking pin should not be removed until the clockspring has been installed on the steering column. If the locking pin is removed before the clockspring is installed on a steering column, the clockspring centering procedure must be performed.

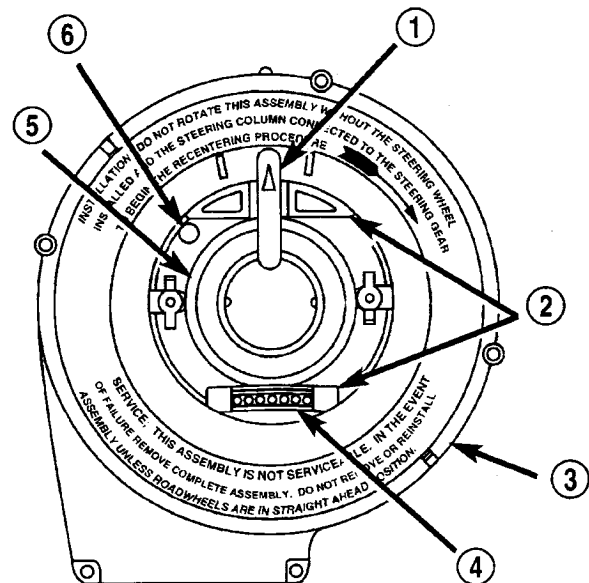
WARNING: THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. THEN WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

NOTE: Before starting this procedure, be certain to turn the steering wheel until the front wheels are in the straight-ahead position.

(1) Place the front wheels in the straight-ahead position.

(2) Remove the clockspring from the steering column. Refer to **Clockspring** in the Removal and Installation section of this group for the procedures.

(3) Hold the clockspring case in one hand so that it is oriented as it would be when it is installed on the steering column (Fig. 23).



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Fig. 23 Clockspring

- 1 - LOCKING PIN
- 2 - ROTOR FLATS
- 3 - CASE
- 4 - UPPER CLOCKSPRING WIRE HARNESSSES (WIRES NOT SHOWN)
- 5 - ROTOR
- 6 - INDEX HOLE

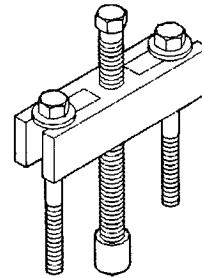
ADJUSTMENTS (Continued)

(4) Use your other hand to rotate the clockspring rotor clockwise to the end of its travel. **Do not apply excessive torque.**

(5) From the end of the clockwise travel, rotate the rotor about two and one-half turns counterclockwise, until the rotor flats are horizontal. If the upper clockspring wire harnesses are not oriented towards the bottom of the clockspring, rotate the rotor another one-half turn in the counterclockwise direction.

(6) The clockspring is now centered. Lock the clockspring rotor to the clockspring case to maintain clockspring centering until it is reinstalled on the steering column. This can be done by inserting a stiff wire through the small index hole located at about the 11 o'clock position in the centered clockspring rotor and case. Bend the wire over after it has been inserted through the index hole to prevent it from falling out.

(7) The front wheels should still be in the straight-ahead position. Install the clockspring onto the steering column. Refer to **Clockspring** in the Removal and Installation section of this group for the procedures.

SPECIAL TOOLS**PASSIVE RESTRAINT SYSTEMS**

Puller C-3428-B