

PASSIVE RESTRAINT SYSTEMS

TABLE OF CONTENTS

	page		page
DESCRIPTION AND OPERATION		SERVICE PROCEDURES	
AIRBAG CONTROL MODULE (ACM)	1	CLEANUP PROCEDURE	7
CLOCKSPRING	1	HANDLING AIRBAG MODULES	7
DRIVER AIRBAG MODULE	2	MAINTENANCE INSPECTION	7
PASSENGER AIRBAG MODULE	2	REMOVAL AND INSTALLATION	
SEATBELT CONTROL TIMER MODULE		WARNINGS AND PRECAUTIONS	8
(SCTM)	3	AIRBAG CONTROL MODULE (ACM)	8
STRUCTURAL SEAT BELT SYSTEM	3	CLOCKSPRING	9
DIAGNOSIS AND TESTING		DRIVER AIRBAG MODULE	10
AIRBAG SYSTEM TEST	4	PASSENGER AIRBAG MODULE	10
SEATBELT CONTROL TIMER MODULE		SEATBELT CONTROL TIMER MODULE	
(SCTM)	4	(SCTM)	11
STRUCTURAL SEAT BELT SYSTEM		STEERING WHEEL	11
CONDITIONS	5	ADJUSTMENTS	
		CLOCKSPRING CENTERING PROCEDURE	12

DESCRIPTION AND OPERATION

AIRBAG CONTROL MODULE (ACM)

DESCRIPTION

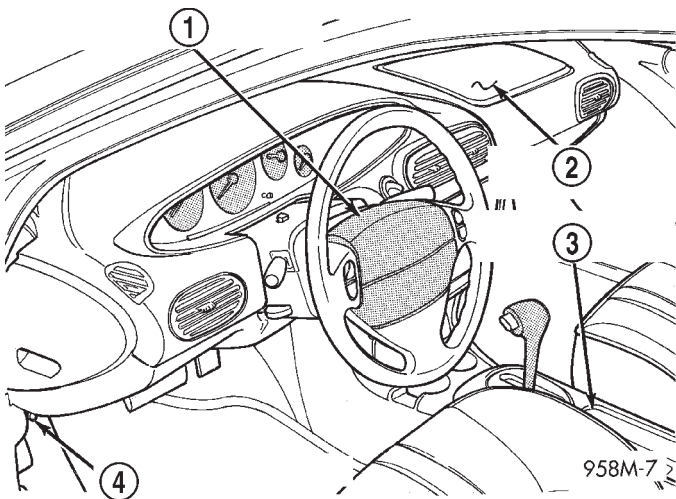


Fig. 1 Airbag Control Module (ACM) Location

- 1 – DRIVER AIRBAG MODULE
- 2 – PASSENGER AIRBAG MODULE
- 3 – AIRBAG CONTROL MODULE
- 4 – DATA LINK CONNECTOR

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.

OPERATION

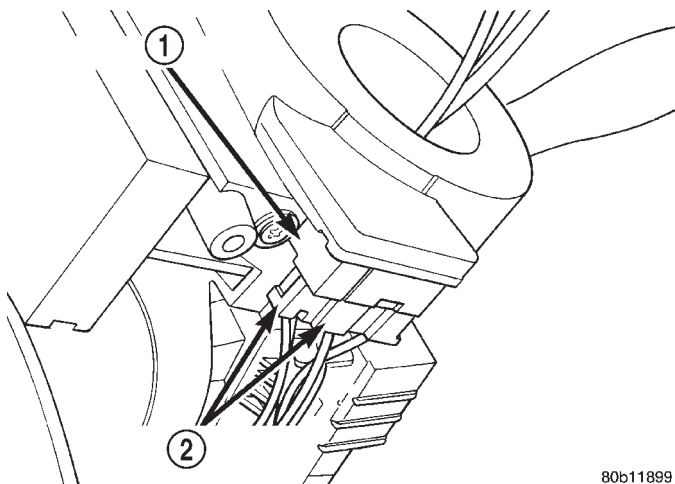
The ACM monitors the system to determine the system readiness. The ACM stores sufficient energy to deploy the airbags for approximately two minutes after the battery is disconnected. The ACM contains on-board diagnostics, and illuminates the AIRBAG warning lamp in the cluster when a diagnostic trouble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

CLOCKSPRING

DESCRIPTION

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

DESCRIPTION AND OPERATION (Continued)



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Fig. 2 Clockspring Location

- 1 - CLOCKSPrING
2 - WIRING HARNESS CONNECTORS

OPERATION

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

DRIVER AIRBAG MODULE

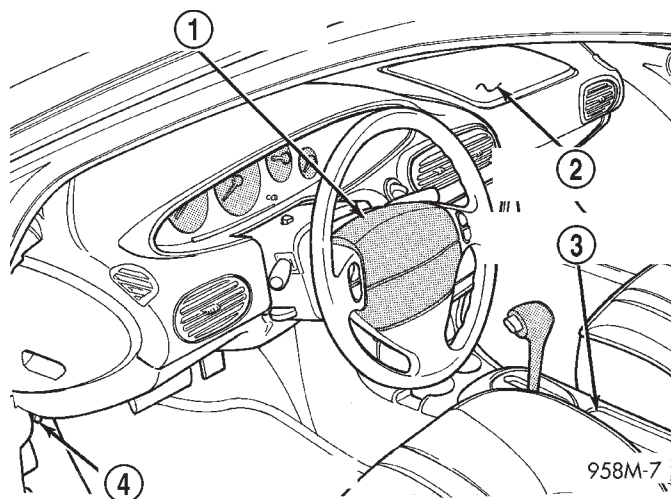
WARNING: NEVER DISASSEMBLE THE DRIVER OR PASSENGER AIRBAG MODULES, THERE ARE NO SERVICEABLE PARTS WITHIN THE MODULES.

DESCRIPTION

The Driver Airbag Module located in the center of the steering wheel is the most visible part of the system. 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.

OPERATION

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.



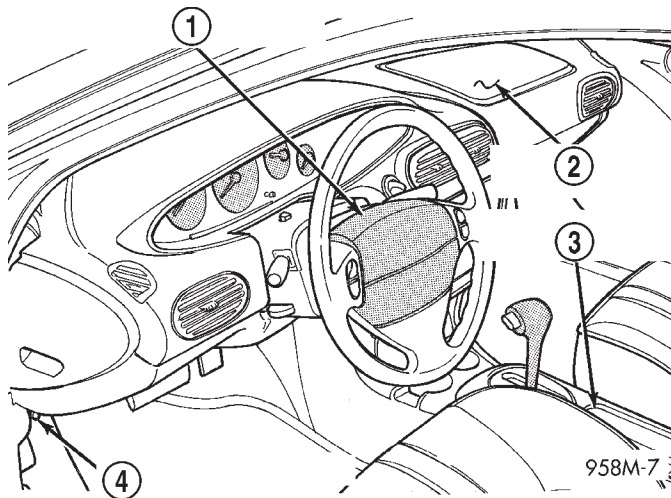
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Fig. 3 Driver Airbag Module

- 1 - DRIVER AIRBAG MODULE
2 - PASSENGER AIRBAG MODULE
3 - AIRBAG CONTROL MODULE
4 - DATA LINK CONNECTOR

PASSENGER AIRBAG MODULE

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

DESCRIPTION

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Fig. 4 Passenger Airbag Module

- 1 - DRIVER AIRBAG MODULE
2 - PASSENGER AIRBAG MODULE
3 - AIRBAG CONTROL MODULE
4 - DATA LINK CONNECTOR

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

DESCRIPTION AND OPERATION (Continued)

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

OPERATION

When supplied with the proper electrical signal the inflator will produce a gas and discharge it directly into the cushion.

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.

SEATBELT CONTROL TIMER MODULE (SCTM)

DESCRIPTION

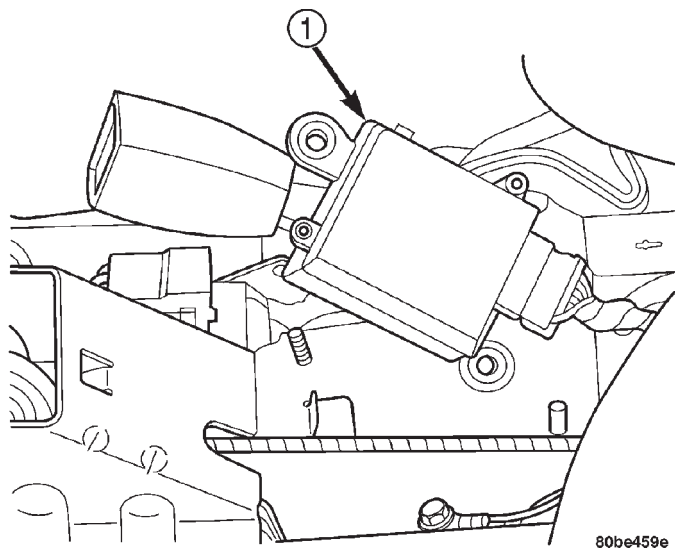


**Fig. 5 Seatbelt Control Timer Module (SCTM)
Location**

1 – SEATBELT CONTROL TIMER MODULE

This vehicle uses a convertible structural seatbelt system. Anchors hold the belt to the seat rather than the body. Embodied in the belt system is a Retractor-Integrated Height Adjuster. The purpose of the height Adjuster is to accommodate a wide range of occupant sizes.

The SCTM is mounted near the center of the vehicle. A G-sensor is located inside the module.

OPERATION

This belt system attaches to a reclinable seat back so the traditional locking pendulum mechanism would not provide security. A solenoid was designed to lock the belt and was made part of each of the retractor mechanisms to each seat back. An impact sensor deactivates the solenoids. The impact sensor is a component of the Seatbelt Control Timer Module (SCTM) located under the center console.

The G-sensor is sensitive to frontal impact and to a roll or pitch or more than 45 degrees and to acceleration or deceleration equal to or greater than 0.7G in any direction.

STRUCTURAL SEAT BELT SYSTEM

DESCRIPTION

The structural seat with integrated Retractor Integrated Height Adjuster allows the seat belts to comfortably fit a large range of occupants. The seat belts are attached to the seat instead of the body, this allows better passenger access to the rear seat.

OPERATION

Since the retractor is mounted on a seat back that can recline, a typical seat belt g-sensor cannot be used in the retractor. Instead, a solenoid inside the retractor is used to lock and unlock the seat belt when electrically signaled by a remote g-sensor. The remote g-sensor is located inside the Seat belt Control Timer Module (SCTM). The SCTM is located under the center console. The seat belt retractor solenoid is located in the seat back and is serviced as a assembly. The removal procedures are located in Group 23, Body.

When the solenoids are powered, the seat belt can be moved. When the solenoids are not powered, the seat belts can not be extracted. This is necessary to ensure that occupants are always safe, even in the case of a power loss during an accident. Whether the seat belts are in lock or unlock position, an occupant can always release the seat belt and it will retract.

The Seat Belt Control Timer Module controls the power to the seat belt solenoids. It supplies power continuously to the seat belts whenever the ignition key is in the RUN or ACCESSORY position. The module has two other unique functions: that of a timer and a g-sensor.

The Seat Belt Control Timer Module was designed with a timer function so that when the vehicle is not in use, the battery would not be prematurely drained. The module times out after approximately 30 minutes if no inputs are send to the module. The module will power the seat belts for a set period of time when there is a input:

- Either door ajar switch (open or closed)

DESCRIPTION AND OPERATION (Continued)

- Ignition switch moved from RUN or ACCESSORY to the OFF position.

Each time one of these input occurs, the timer is reset to keep the belts powered for 30 minutes.

The G-Sensor function of the Seat Belt Control Timer Module will cut power to the seat belt whenever:

- The vehicle accelerates or decelerates at a rate greater than or equal to 0.7g in any direction.
- The vehicle is tilted to an angle greater than or equal to 45 degrees.

Input of ignition switch in the RUN or ACCESSORY position will cause the module to power the seat belts as long as the condition exists.

The SCTM incorporates limited diagnostics. The detectable faults include solenoid shorted to ground, open or shorted to battery, internal fault, or no acceleration within the past 10 timer cycles. Faults are communicated to the seatbelt lamp via a single fault line to another module. The other module communicates the fault on the bus to the cluster/lamp.

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.

SEATBELT CONTROL TIMER MODULE (SCTM)

The Seatbelt Control Timer Module (SCTM) is connected to the Body Control Module (BCM). Problems with the circuitry (Fig. 6) will be indicated by the seatbelt warning indicator lamp.

When the G-sensor is at rest, current flows to the solenoids holding them back. The seatbelt is movable.

When the sensor reacts to the force of impact, it stops current flow to the solenoids. The solenoids close in milliseconds locking the seatbelts.

The timer allows current to flow through the sensor and the solenoids for 30 minutes after the ignition is turned off. The 30-minute limit stops excessive battery drain while the engine is not running.

Connected to the Door Ajar switches, the timer closes the circuit when a door opens, and holds for 30 minutes after the door closes with the ignition off. This is necessary so the seatbelts can be managed after the ignition has been off for more than 30 minutes. Turning the key to the ACCESSORY, RUN, OR RUN/START position will also cause the timer to activate the solenoids.

DIAGNOSTIC MODE

For service purposes on vehicles equipped with a SCTM, the 30 minutes can be reduced to 30 seconds by following this procedure beginning with the ignition OFF, and the driver's door closed:

- Cycle the ignition switch (key ON-key OFF) three times. Then, open and close the driver door three times.

NOTE: If the vehicle is tilted to a 45 degree angle, or if it is subjected to acceleration or deceleration of 0.7G or more in any direction, the G-sensor will lock the seatbelts.

DETECTABLE FAULTS

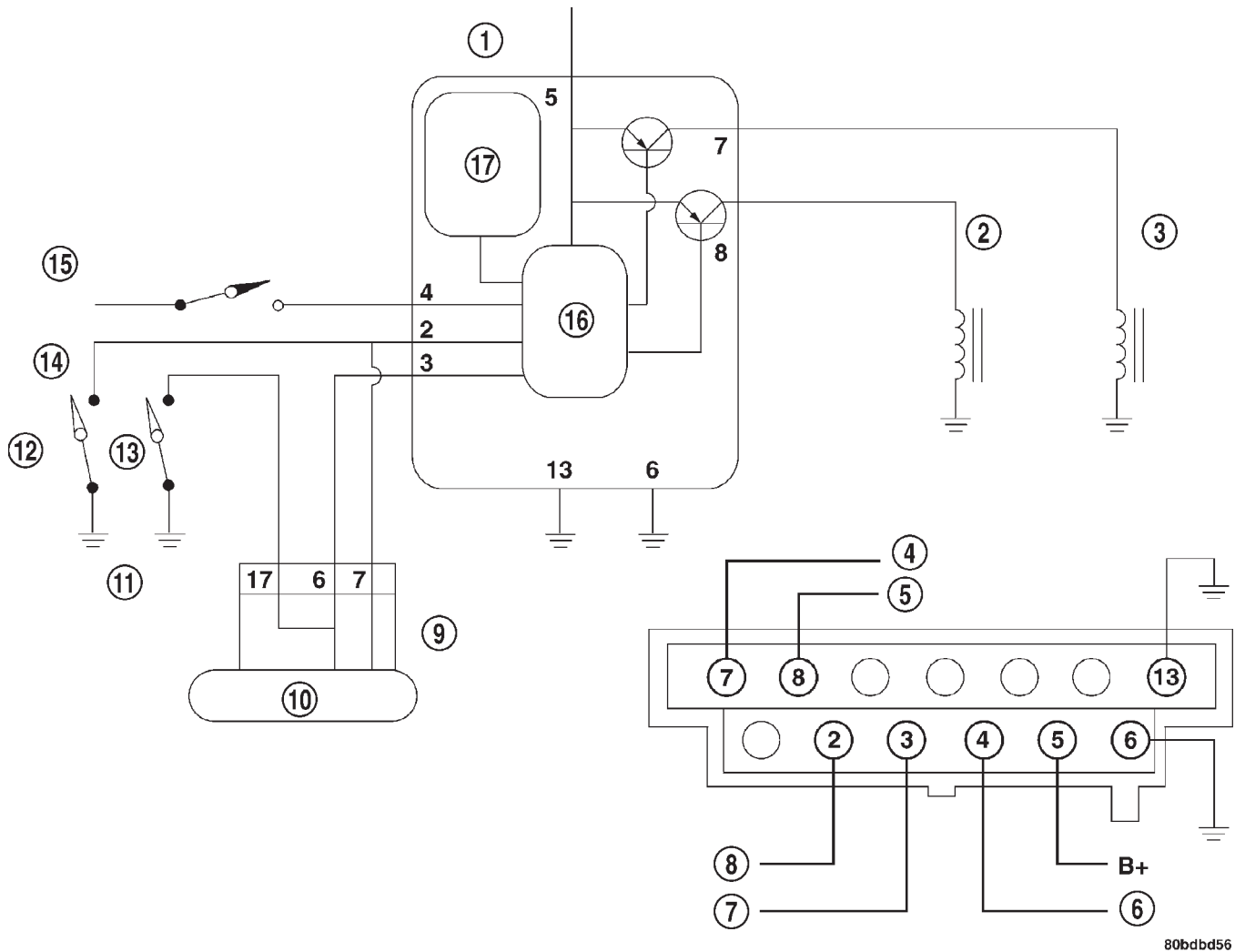
The SCTM affords limited diagnostic capability. Following is a list of detectable faults:

- Solenoid short to ground
- Solenoid Open
- Solenoid short to Battery
- No Acceleration Last Ten Timer Cycles (One Timer Cycle = Key ON plus 30 minute minimum Key OFF)

The seatbelts themselves can demonstrate problems. For example:

- Both Locked all the time
- Both locked with ignition OFF but not timed out
- Both seatbelts function properly when ignition is ON or passenger door is opened but not when driver door is opened
- Both seatbelts function properly when ignition is ON or driver door is opened but not when passenger door is opened
- Driver seatbelt locked, passenger seatbelt unlocked
- Passenger seatbelt locked, driver seatbelt unlocked

DIAGNOSIS AND TESTING (Continued)



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Fig. 6 Seatbelt Control Timer Module System Schematic

- 1 – BATTERY FEED
- 2 – PASS SEAT SOL.
- 3 – DR SEAT SOL.
- 4 – DR SOL.
- 5 – PASS SOL.
- 6 – IGN
- 7 – RT (PASS) DOOR
- 8 – LT (DR) DOOR
- 9 – JUNCTION BLOCK

- 10 – B. C. M.
- 11 – DOOR AJAR SWITCHES
- 12 – LT
- 13 – RT
- 14 – TN
- 15 – IGN. RUN/ACC.
- 16 – I/C
- 17 – G SENSOR

These problems can be diagnosed using a DVOM. Refer to the proper Body Diagnostic Procedures Manual.

STRUCTURAL SEAT BELT SYSTEM CONDITIONS

Refer to Group 8W, wiring Diagrams for circuit and pin locations.

Do Not Disconnect or Connect the module while battery is connected.

NOTE: If SCTM is required to be in the “Sleep” mode for testing, remove the “Seat Belt” 20 amp maxi fuse in the PDC for (1) minute. This will allow the SCTM to time out. Reinstall fuse after (1) minute to proceed with testing.

Both seat belts locked all the time

Turn the ignition switch to the ACCESSORY position to ensure power to the Seat Belt Control Timer Module is ON and will not time out.

DIAGNOSIS AND TESTING (Continued)

(1) Using a voltmeter, check for battery voltage at Pin 4 and 5 of the Seat Belt Control Timer Module 13 way connector. If no voltage, go to Step 2. If OK, go to Step 5.

(2) Check fuses:

- Fuse 13 in the Power Distribution Center
- Fuse 15 in the Junction Block

If fuses are OK, go to Step 4. If not OK, replace fuse(s), if fuse blows again go to Step 3.

(3) Disconnect Seat Belt Control Timer Module connector and replace fuse, check if fuse blows. If fuse blows check circuit for shorts to ground between the module and fuse. If OK, connect module and if fuse blows check for shorts to ground between the module and the seat belt solenoid. Repair as necessary.

(4) If voltage is OK, go to Step 5. If no voltage check for an open circuit between fuse and module. Repair as necessary.

(5) Check for voltage at the seat belt solenoid connector under the seat. If OK, test solenoid(s). If no voltage, check for open circuit between the module and seat belt connector. If OK, replace Seat Belt Control Timer Module. If not OK, repair as necessary.

Both seat belts locked with the ignition switch in the OFF position, and SCTM not timed out

With a door open and ensure that the timer has not timed out.

(1) Using a voltmeter, check for battery voltage at Pin 5 of the Seat Belt Control Timer Module 13 way connector. If no voltage, go to Step 2. If OK, go to Step 5.

(2) Check fuses:

- Fuse 13 in the Power Distribution Center
- Fuse 15 in the Junction Block

If fuses are OK, go to Step 4. If not OK, replace fuse(s), if fuse blows again go to Step 3.

(3) Disconnect Seat Belt Control Timer Module connector and replace fuse, check if fuse blows. If fuse blows check circuit for shorts to ground between the module and fuse. If OK, connect module and if fuse blows check for shorts to ground between the module and the seat belt solenoid. Repair as necessary.

(4) If voltage is OK, go to Step 5. If no voltage check for an open circuit between fuse and module. Repair as necessary.

(5) Using a ohmmeter check from the module connector, the door ajar switches and circuits for a open circuit and check for a shorted to ground circuit. If open or shorted circuit repair as necessary. If OK, replace Seat Belt Control Timer Module.

Both seat belts lock and unlock with ignition switch ON or when passenger door ajar switch activated but not when the driver door ajar switch is activated.

Using a ohmmeter, check from the module the driver door ajar switch and circuit for a open circuit and for a shorted to ground circuit. Check Pin 2 of the Seat Belt Control Timer Module to ground for continuity. If not OK, check for open or shorted circuit and repair as necessary or replace the door ajar switch. If OK, replace Seat Belt Control Timer Module. System will function improperly only from affected door.

Both seat belts lock and unlock with ignition switch ON or when driver door ajar switch activated but not when the passenger door ajar switch is activated.

Using a ohmmeter check from the module the passenger door ajar switch and circuit for a open or shorted circuit. Check Pin 3 of the Seat Belt Control Timer Module to ground for continuity. If not OK, check for open or shorted circuit and repair as necessary or replace the door ajar switch. If OK, replace Seat Belt Control Timer Module. System will function improperly only from affected door.

Driver seat belt locked, passenger seat belt unlock.

Using a ohmmeter, check the seat belt solenoid from Pin 7 of the Seat Belt Control Timer Module to ground for a reading of 50 to 60 ohms. If OK, replace Seat Belt Control Timer Module. If not OK, check for open or shorted ground circuit and repair as necessary or replace the seat belt retractor if the open or shorted circuit is in the solenoid.

Passenger seat belt locked, driver seat belt unlock.

Using a ohmmeter, check the seat belt solenoid from Pin 8 of the Seat Belt Control Timer Module to ground for a reading of 50 to 60 ohms. If OK, replace Seat Belt Control Timer Module. If not OK, check for open or shorted circuit and repair as necessary or replace the seat belt retractor if the open or shorted circuit is in the solenoid.

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. 7). 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.

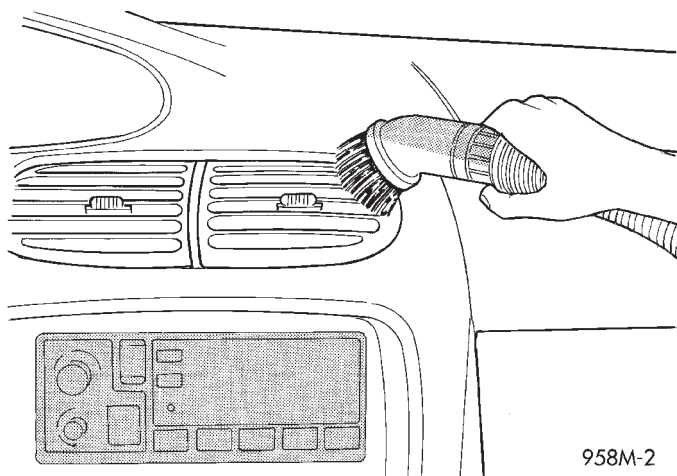


Fig. 7 Vacuum Heater and A/C Outlets

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

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.

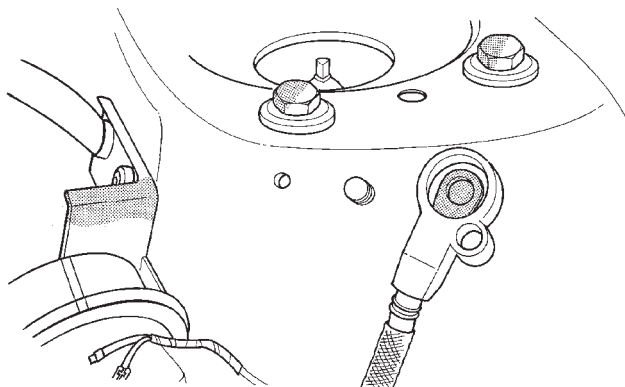
AIRBAG CONTROL MODULE (ACM)

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. 8).



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Fig. 8 Disconnect Battery Negative Remote Cable

(2) For a manual transmission, remove shifter knob and boot.

(3) For automatic transmission models, remove shifter knob and unsnap shift indicator bezel.

(4) Remove the four attaching screws to floor console.

(5) Remove parking brake lever. Refer to Section 5-Brakes, Parking Brake Lever Removal and Installation.

(6) Remove four mounting nuts to ACM.

(7) Disconnect wire harness connectors and remove ACM from mounting studs.

REMOVAL AND INSTALLATION (Continued)

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 four 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.

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. 8).

(2) Remove the two steering column lower cover attaching screws. Remove upper cover.

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

(4) Remove the Driver Airbag Module attaching bolts from 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.

(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. 9).

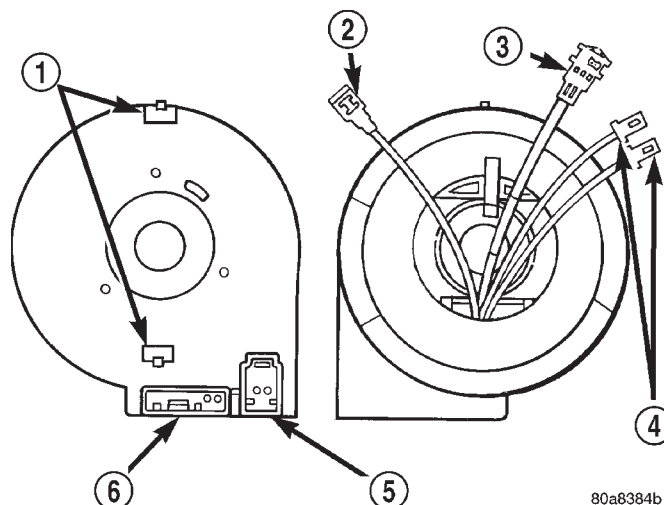
(7) Remove the nut attaching steering wheel to the steering column.

(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.

(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.



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Fig. 9 Clockspring

- 1 - LOCK HOUSING LATCHES
- 2 - HORN WIRE
- 3 - SQUIB WIRE
- 4 - SPEED CONTROL WIRES
- 5 - 2-WAY CONNECTOR
- 6 - 4-WAY CONNECTOR

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. 9). 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.

REMOVAL AND INSTALLATION (Continued)

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. 8).

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

(3) Remove the Driver Airbag Module attaching bolts from the steering wheel. Lift the module and disconnect the wire by:

(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.

(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.

(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. 8).

(2) Open and lower glove box fully to gain access to Passenger Airbag Module (PAB) attaching screws inside of the glove box (Fig. 10). Glove box removal not required.

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

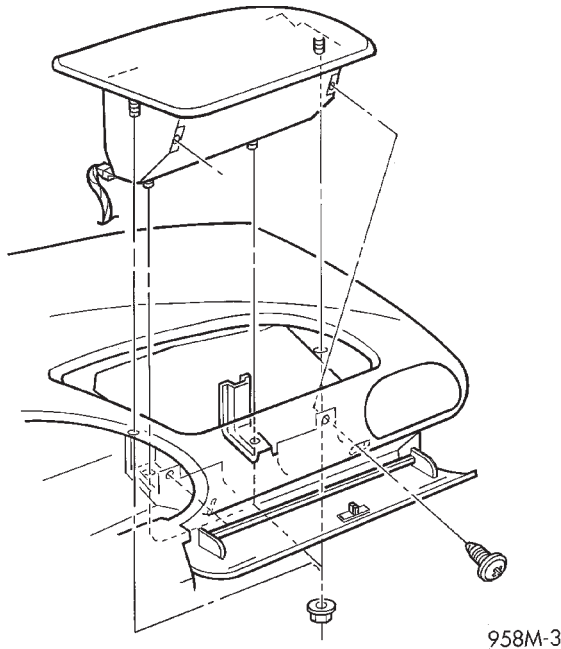
(4) Remove the four nuts and two screws attaching airbag assembly to the instrument panel collar.

(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.

REMOVAL AND INSTALLATION (Continued)

**Fig. 10 Passenger Airbag Removal****SEATBELT CONTROL TIMER MODULE (SCTM)**

CAUTION: DO NOT CONNECT OR DISCONNECT THE SEATBELT CONTROL TIMER MODULE (SCTM) WHILE THE BATTERY IS CONNECTED. FAILURE TO DO THIS MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE AS A CONSEQUENCE OF IMPROPER OPERATION OF THE MODULE.

REMOVAL

- (1) Disconnect and isolate the battery negative remote cable.
- (2) Raise parking brake lever as high as possible.
- (3) Loosen set screw on front of shifter knob and remove shift lever knob.
- (4) Remove plastic plunger rod from shifter lever.
- (5) Remove cap covering screw head near shifter lever.
- (6) Remove lighted PRNDL bezel.
- (7) Remove screws next to floor shifter and in console storage compartment, holding floor console to the brackets on the floor pan.
- (8) Disconnect wire connector for floor console accessories at floor pan.
- (9) Separate console from vehicle.
- (10) Remove the two mounting nuts from the Seatbelt Control Timer Module.
- (11) Remove the wire harness connector from the module and remove module.

INSTALLATION**CAUTION: USE SUPPLIED NUTS ONLY**

- (1) Install the module and tighten the mounting nuts to the proper torque.
- (2) Position console in vehicle.
- (3) Verify that the rear locator pin on the bottom of the storage bin is engaged to the slot in the body bracket.
- (4) Connect the wire connector for the floor console accessories at floor pan.
- (5) Install lighted PRNDL letter bezel.
- (6) Install cap to cover screw head near shifter lever.
- (7) Install plastic plunger rod to shifter lever.
- (8) Install shift lever knob and tighten set screw on front of shifter knob.

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. 8).
- (3) Remove the speed control switch screws from back of the steering wheel. Pull the switch pods out and disconnect the wires.
- (4) Remove the Driver Airbag Module attaching bolts from 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.
- (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.
- (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.

REMOVAL AND INSTALLATION (Continued)

(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. 9). 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.