2021 RESTRAINTS

Restraints (Service Information) - Gladiator

WARNING

WARNING: To avoid serious or fatal injury on vehicles equipped with the Supplemental Restraint System (SRS), never attempt to repair the electrically conductive circuits or wiring components related to the SRS for which there is no MoparB® wiring repair kit. It is important to use ONLY the recommended splicing kit and procedure. For applicable and available MoparB® wiring repair kits, please visit the MoparB® Connection Repair Kit Web Site. Inappropriate repairs can compromise the conductivity and current carrying capacity of those critical electrical circuits, which may cause SRS components not to deploy when required, or to deploy when not required. Only minor cuts or abrasions of wire and terminal insulation where the conductive material has not been damaged, or connector insulators where the integrity of the latching and locking mechanisms have not been compromised may be repaired using appropriate methods.

WARNING: To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.

WARNING: To avoid serious or fatal injury on vehicles equipped with side curtain or seat (pelvic and thorax) airbags, disable the Supplemental Restraint System (SRS) before attempting any Occupant Restraint Controller (ORC) diagnosis or service. The ORC contains a rollover sensor, which enables the system to deploy the side curtains or seat airbags in the event of a vehicle rollover event. If an ORC is accidentally rolled during service while still connected to battery power, the side curtain and seat airbags will deploy. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

WARNING: To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

WARNING: **To avoid potential physical injury or damage to sensitive electronic circuits and systems, always disconnect and isolate the battery negative (ground) cable and the positive cable, then ground the positive cable to discharge the Occupant Restraint Controller (ORC) capacitor before performing any welding operations on the vehicle. Failure to take the proper precautions could result in accidental airbag deployment, possible damage to the Supplemental Restraint System (SRS) circuits and components, and possible damage to other electronic circuits and components. Whenever a welding process is being performed within 12 inches (30 centimeters) of an electronic module or wiring harness, then that module or harness should be relocated out of the way, or disconnected. Always protect against component or vehicle damage from weld spatter by using weld blankets and screens.**

WARNING: **To avoid serious or fatal injury, do not attempt to dismantle an airbag unit or tamper with its inflator. Do not puncture, incinerate or bring into contact with electricity. Do not store at temperatures exceeding 93B° C (200B° F). An airbag inflator unit may contain 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. An airbag inflator unit may also contain a gas canister pressurized to over 17.24 kPa (2500 psi). Failure to follow these instructions may result in possible serious or fatal injury.**

WARNING: **To avoid serious or fatal injury when handling a seat belt tensioner retractor or buckle, proper care should be exercised to keep fingers out from under the retractor or buckle cover and away from the seat belt webbing or cable where it exits from the retractor or buckle cover.**

WARNING: **To avoid serious or fatal injury, replace all Supplemental Restraint System (SRS) components only with parts specified in the MoparB® Parts Catalog. Substitute parts may appear interchangeable, but internal differences may result in inferior occupant protection.**

WARNING: **To avoid serious or fatal injury, the fasteners, screws, and bolts originally used for the Supplemental Restraint System (SRS) components must never be replaced with any substitutes. These fasteners have special coatings and are specifically designed for the SRS. Anytime a new fastener is needed, replace it with the correct fasteners provided in the service package or specified in the MoparB® Parts Catalog.**

WARNING: **To avoid serious or fatal injury when a steering column has an airbag unit attached, never place the column on the floor or any other surface with the steering wheel or airbag unit face down. Failure to follow these instructions may result in possible serious or fatal injury.**

DESCRIPTION AND OPERATION

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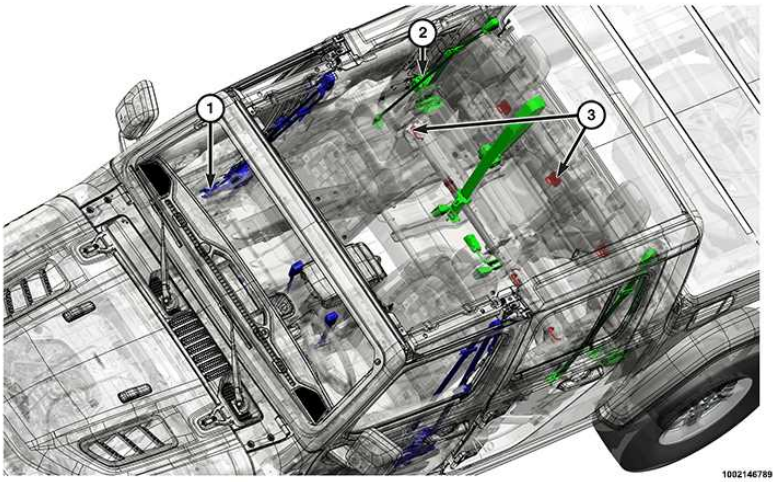
DESCRIPTION

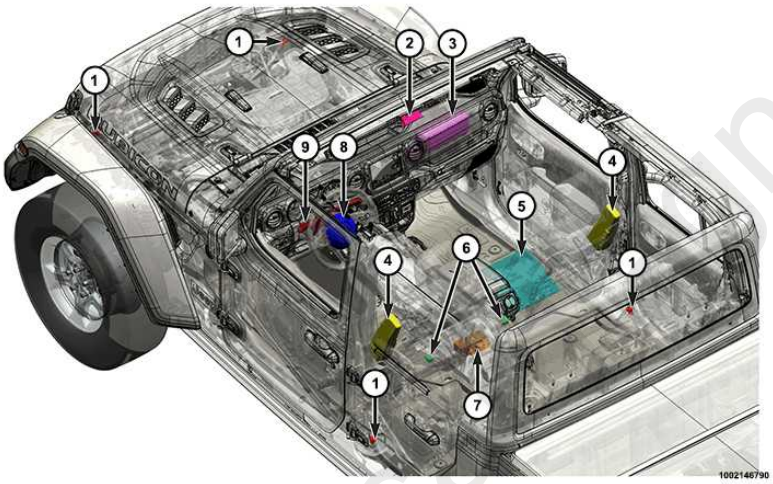
A Supplemental Restraint System (SRS) is standard factory-installed safety equipment on this vehicle. Available supplemental occupant restraints for this vehicle include both **Active** and **Passive** types. Active restraints are those which require the vehicle occupants to take some action to employ, such as fastening and adjusting a seat belt; while passive restraints require no action by the vehicle occupants to be employed.



The **Active** restraints for this vehicle include:

COMPONENT INDEX

1.	Refer to **FRONT SEAT BELTS, BUCKLES, SWITCHES AND SEAT BELT TENSIONERS**.
2.	Refer to **REAR SEAT BELTS AND BUCKLES**.
3.	Refer to **CHILD RESTRAINT ANCHORS**.



The **Passive** restraints include the following major components:

COMPONENT INDEX

1.	Refer to **IMPACT SENSOR**.
2.	Refer to **PASSENGER AIRBAG ON/OFF INDICATOR (EMEA) OR PASSENGER AIRBAG OFF INDICATOR (NAFTA)**.
3.	Refer to **PASSENGER AIRBAG (PAB)**.
4.	Refer to **SEAT AIRBAG (SAB)**.
5.	Refer to **OCCUPANT DETECTION SENSOR (ODS) OR OCCUPANT CLASSIFICATION MODULE (OCM)** - Front Seat.
6.	Refer to **SEAT TRACK POSITION SENSOR (STPS)**.
7.	Refer to **OCCUPANT RESTRAINT CONTROLLER (ORC)**.
8.	Refer to **DRIVER AIRBAG (DAB)**.
9.	Refer to **CLOCKSPRING** - integral with the Steering Column Control Module (SCCM).
-	Refer to **DRIVER KNEE BLOCKER**.
-	Refer to **PASSENGER KNEE BLOCKER**.

The ORC and the Instrument Panel Cluster (IPC) each contain a microcontroller and programming that allow them to communicate with each other using the Controller Area Network (CAN) data bus. This method of communication is used by the ORC for control of the airbag indicator in the IPC. Refer to **COMMUNICATION, DESCRIPTION AND OPERATION** .

Hardwired circuitry connects the SRS components to each other through the electrical system of the vehicle. These hardwired circuits are integral to several wire harnesses, which are routed throughout the vehicle and retained by many different methods. These circuits may be connected to each other, to the vehicle electrical system, and to the SRS components through the use of a combination of soldered splices, splice block connectors, and many different types of wire harness terminal connectors and insulators. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds. For proper wire repair, and connector repair procedures. Refer to **WIRE SPLICING** and refer to **REMOVAL** . Refer to **INSTALLATION** .

OPERATION

ACTIVE RESTRAINTS

The primary passenger restraints in this or any other vehicle are the standard equipment factory-installed seat belts and child restraint anchors. Seat belts and child restraint anchors are referred to as an active restraint because the vehicle occupants are required to physically fasten and properly adjust these restraints in order to benefit from them.

FRONT SEAT BELTS, BUCKLES, SWITCHES AND SEAT BELT TENSIONERS

FRONT SEAT BELTS, BUCKLES, SWITCHES AND SEAT BELT TENSIONERS

Refer to **COMPONENT INDEX**.

Both front seating positions are equipped with three-point seat belt systems employing a lower B-pillar mounted inertia latch-type emergency locking retractors, height-adjustable upper B-pillar mounted turning loops, an integral anchor tensioner that is secured at the base of the B-pillar, and a traveling end-release seat belt buckle secured to the inboard side of the seat frame. In the NAFTA market, the passenger side front seat belt retractor is switchable to an automatic locking retractor for compatibility with child seats.

The seat belt retractors used in all seating positions include an inertia-type, emergency locking mechanism as standard equipment.

The standard inertia-type emergency locking retractor will allow the seat belt webbing to unwind from and wind onto the retractor spool freely unless and until a predetermined inertia load is sensed. The retractor has an internal inertia latch mechanism that will lock the retractor spool once the predetermined inertia load is sensed. Locking the retractor spool prevents the seat belt webbing from being extracted from the retractor and firmly restrains the occupant wearing the seat belt. The retractor spool is automatically unlatched once the loading of the retractor inertia mechanism and the seat belt are relieved.

The emergency locking mechanism, the retractor tensioner mechanism and the load limiting feature are each integral to the retractor unit and are concealed beneath molded plastic covers located on each side of the retractor spool. These features cannot be adjusted or repaired and if ineffective, damaged or deployed, the entire seat belt and retractor unit must be replaced.

A front seat belt tensioner is integral to both front seat belt retractors and both front seat belt lower anchors. The front seat belt retractor tensioner units are secured to each lower inner B-pillar and are concealed behind the lower B-pillar trim. The seat belt anchor tensioner units are located on the inner sill near the base of the B-pillar and are concealed beneath the inner sill trim.

The seat belt tensioners are deployed in conjunction with the dual front airbags by signals generated by the ORC through the individual driver or passenger retractor (or sill end), tensioner (or anchor) line 1 and line 2 (or squib) circuits. When the ORC sends the proper electrical signal to the tensioner initiators, the electrical energy generates enough heat to initiate a small pyrotechnic MGG.

In sequence, the ORC activates the retractor tensioner, followed by the anchor tensioner. The retractor tensioner MGG drives the seat belt retractor spool causing slack to be removed from the front seat belt. The anchor tensioner gas generator pulls the anchor end of the webbing downward, causing the slack to be removed from the front seat belt.

Removing excess slack from the front seat belts not only keeps the occupants properly positioned for an airbag deployment following a frontal impact of the vehicle, but also helps to reduce injuries that the occupants of the front seats might experience in these situations as a result of harmful contact with the steering wheel, steering column, instrument panel or windshield. The front seat belt retractors also have a pyrotechnic-type load limiter consisting of a spring-loaded disc with multiple teeth on both sides. The teeth will engage in and out of the closest fitting grooves as the disc rotates. Milliseconds after a crash has occurred, seat belt webbing is gradually released after the crash reducing any rebound effect, further reducing the potential for injuries.

The ORC monitors the condition of the seat belt tensioners through circuit resistance. If any fault is detected the ORC will illuminate the airbag indicator in the instrument cluster and store a DTC. Proper diagnosis of the seat belt tensioner initiators and squib circuits requires the use of a diagnostic scan tool and may also require the use of the Airbag Kit. Refer to the appropriate diagnostic information.

In the NAFTA market, the buckles of driver and front and passenger seats are equipped with a hall-effect sensor that checks the seat belt fastening. The hall-effect sensors are hardwired to, and monitored by the ORC.

A 1 kilohm diagnostic resistor is connected in parallel with the hall-effect sensor where the two pigtail wire leads connect to the hall-effect sensor pins. The resistor allows a small amount of current to flow through the circuit continuously. The ORC monitors the current in the circuit. When 5-8 mA are present, the seat belt is unbuckled. When 12-17 mA are present, the seat belt is buckled. If the harness is disconnected, the current flow is interrupted and a seat belt switch Diagnostic Trouble Code (DTC) is set.

In all other markets, the front buckles (and rear buckles, if equipped) are equipped with mechanical switches that provide the buckle status. The resistive sensor is based on the current flowing through a normally closed contact. The rated current is about 10 mA while the operating current will be approximately between 10 mA and 400 mA.

The front and rear (if equipped) seat belt switches are designed to control a hardwired sense input to the ORC. A spring-loaded slide with a small window-like opening is integral to the buckle latch mechanism. When a seat belt tip-half is inserted and latched into the seat belt buckle, the slide is pushed downward and the window of the slide exposes the Hall Effect Integrated Circuit chip within the buckle. The field of the permanent magnet induces a current within the chip. The chip provides this induced current as an output to the ORC. When the seat belt is unbuckled, the spring-loaded slide moves upward and shields the Integrated Circuit from the field of the permanent magnet, causing the output current from the seat belt switch to be reduced.

The seat belt switches receive a supply of current from the ORC, and the ORC senses the status of the seat belt switches through its connection to each switch. The ORC provides electronic seat belt switch status messages to the IPC over the CAN data bus. The IPC uses these messages as an additional logic input for control of the seat belt indicator. The ORC monitors the condition of the seat belt switch circuits and will store a DTC for any fault that is detected.

The hardwired circuits between the seat belt switches and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate wiring information. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the switches or the electronic controls and communication between other modules and devices that provide some features of the seat belt reminder system. The most reliable, efficient and accurate means to diagnose the seat belt switches or the electronic controls and communication related to seat belt switch operation requires the use of a diagnostic scan tool. Refer to the appropriate diagnostic information.

The seat belt switches cannot be adjusted or repaired and, if ineffective or damaged, the entire front or rear seat belt buckle-half unit must be replaced. Refer to **BUCKLE, SEAT BELT, REMOVAL AND INSTALLATION**.

The passenger seat is equipped with a seat belt tension sensor. The seat belt tension sensor is used in conjunction with the seat belt switch to determine to a greater degree what type of seat occupant exists, whether a large child, small adult or a child seat with a high belt load. The seat belt tension sensor helps make that determination through the OCS which provides an occupant classification to the ORC.

The seat belt tension sensor is directly connected to the OCM and is supplied 5-volts and ground by the OCM and does not have a direct connection to the CAN data bus.

In this vehicle, the seat belt tension sensor is built in to the seat belt buckle and is serviced only with the buckle if it is ineffective or damaged. Refer to **BUCKLE, SEAT BELT, REMOVAL AND INSTALLATION**.

REAR SEAT BELTS AND BUCKLES

REAR SEAT BELTS AND BUCKLES

Refer to **COMPONENT INDEX**.

All three rear seating positions are equipped with three-point seat belt systems. The outboard seating position belts employ inertia latch-type emergency locking retractors mounted to the sports bar, fixed position turning loops and fixed lower seat belt anchors secured to the rear floor panel. The rear seat center seating position has an inertia latch-type emergency locking retractor that is secured within the left seat back. All of the rear seat belt retractors for this vehicle are also switchable from an emergency locking retractor to an automatic locking retractor for compatibility with child seats. The center seating position belt lower anchor buckle is secured along with the right outboard seat belt buckle to the rear floor panel. All three rear seat belts have fixed end-release seat belt buckles. In vehicles manufactured for EMEA markets, all three rear seat belt buckles each include an integral seat belt switch that detects whether the rear seat belts have been fastened.

The standard inertia-type emergency locking retractor will allow the seat belt webbing to unwind from and wind onto the retractor spool freely unless and until a predetermined inertia load is sensed. The retractor has an internal inertia latch mechanism that will lock the retractor spool once the predetermined inertia load is sensed. Locking the retractor spool prevents the seat belt webbing from being extracted from the retractor and firmly restrains the occupant wearing the seat belt. The retractor spool is automatically unlatched once the loading of the retractor inertia mechanism and the seat belt are relieved.

The emergency locking mechanism is integral to the retractor unit and are concealed beneath molded plastic covers located on each side of the retractor spool. These features cannot be adjusted or repaired and if ineffective, damaged or deployed, the entire seat belt and retractor unit must be replaced.

PASSIVE RESTRAINTS

The passive restraints are referred to as a SRS components because they were designed and are intended to enhance the protection for the occupants of the vehicle **only** when used in conjunction with the seat belts. They are referred to as passive restraints because the vehicle occupants are not required to do anything to make them operate; however, the vehicle occupants must be wearing their seat belts in order to obtain the maximum safety benefit from the factory-installed SRS components.

The SRS electrical circuits are continuously monitored and controlled by a microcontroller and software contained within the ORC. An airbag indicator in the IPC illuminates from four to six seconds as a bulb test each time the status of the ignition transitions to ON or Start. Following the bulb test, the airbag indicator is turned ON or OFF by the IPC from a request made by the ORC to indicate the status of the SRS. If the airbag indicator comes ON at any time other than during the bulb test, it indicates that there is a problem in the SRS electrical circuits. Such a problem may cause airbags not to deploy when required, or to deploy when not required.

Vehicles manufactured for EMEA markets are equipped with a feature that allows PAB operation to be suppressed or enabled using a setup routine in the IPC. A passenger airbag ON/OFF indicator is located in the Sports bar center stack. This indicator receives battery current whenever the status of the ignition is ON or Start and illuminates only when the ORC pulls the appropriate indicator control circuit to ground. The indicator illuminates for about seven seconds as a bulb test each time the status of the ignition transitions to ON or Start.

Following the bulb test, the indicator is turned ON or OFF by the ORC based upon the electronic **passenger airbag disable** messages received from the IPC.

Deployment of the SRS components depends upon the angle and severity of an impact. Deployment is not based upon vehicle speed; rather, deployment is based upon the rate of deceleration as measured by the forces of gravity (G force) upon the acceleration-type impact sensors, or by a pressure wave within a door as measured by the pressure-type impact sensor. When an impact is severe enough, the microcontroller within the ORC signals the inflator of the appropriate airbag units to deploy their airbag cushions.

The front seat belt retractor tensioners and front seat belt anchor tensioners are provided with a deployment signal by the ORC in conjunction with the front airbags. The side curtain airbags are provided with a deployment signal individually by the ORC based upon a side impact sensor input for the same side of the vehicle.

Should the vehicle roll over, the ORC may deploy the SAB units and under certain conditions, will also actuate the front seat belt retractor and anchor buckle tensioners.

During a frontal vehicle impact, the static knee blockers work in concert with properly fastened and adjusted seat belts to restrain the front seat occupants in the proper position for an airbag deployment. The static knee blockers also absorb and distribute the crash energy from the front seat occupants to the structure of the instrument panel. The seat belt tensioners remove the slack from the front seat belts to provide additional assurance that the driver and front seat passenger are properly positioned and restrained for an airbag deployment. The load limiter integral to each seat belt retractor controls the belt pressure applied to the chest of the wearer of that seat belt.

Typically, the vehicle occupants recall more about the events preceding and following a collision than they do of an airbag deployment itself. This is because the airbag deployment and deflation occur very rapidly. In a typical 48 km/h (30 mph) barrier impact, from the moment of impact until the airbags are fully inflated takes about 40 milliseconds. Within one to two seconds from the moment of impact, the airbags are almost entirely deflated. The times cited for these events are approximations, which apply only to a barrier impact at the given speed. Actual times will vary somewhat, depending upon the vehicle speed, impact angle, severity of the impact, and the type of collision.

When the ORC monitors a problem in any of the SRS circuits or components, including the seat belt tensioners, it stores a fault code or DTC in its memory circuit and sends an electronic message to the IPC to turn ON the airbag indicator. The hardwired circuits between components related to the SRS may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin out information and location views for the various wire harness connectors, splices and grounds.

However, conventional diagnostic methods will not prove conclusive in the diagnosis of the SRS or the electronic controls and communication between other modules and devices that provide features of the SRS. The most reliable, efficient and accurate means to diagnose the SRS or the electronic controls and communication related to SRS operation, as well as the retrieval or erasure of a DTC requires the use of a diagnostic scan tool and may also require the use of the Airbag Kit. Refer to the appropriate diagnostic information.

CHILD RESTRAINT ANCHORS

CHILD RESTRAINT ANCHORS

Refer to **COMPONENT INDEX**.

All vehicles in the North American Free Trade Agreement (NAFTA) market are equipped with three, fixed-position, child seat upper tether anchors for the second row seating, while all other markets have the outboard seat tether anchors only. A single upper tether anchor is integral to the back of the left seat back panel, and two more are integral to the right seat back panel. In all other markets, the vehicle has two fixed position, child seat upper tether anchors in the second row. They are located on the back of the left and right seat back panels behind the outboard seating positions. Two lower anchors are also provided for each outboard seating position.

Three lower anchors are integral to the seat back hinge brackets, while the fourth is integral to a dedicated child anchor bracket. All lower anchors are accessed from the front of the second row seat where the seat back meets the seat cushion.

The rear (also known as second row) seat for this vehicle is equipped with a Lower Anchors and Tether for Children (LATCH) child restraint anchorage system for NAFTA markets. The LATCH system provides for the installation of suitable child restraints in certain seating positions without using the standard equipment seat belt provided for that seating position.

The rear seats in NAFTA vehicles are equipped with a fixed-position child restraint upper tether anchor for all three rear seating positions. In all other markets, the vehicle has two fixed position, child seat upper tether anchors in the second row. They are located on the back of the left and right seat back panels behind the outboard seating positions. The upper tether anchors are integral to the rear seat back frames. These anchors are each constructed from heavy-gauge steel wire loops that are securely welded onto the backs of each seat back frame, two for the left rear seat back frame and one for the right rear seat back frame. A label imprinted with an icon representing a child restraint upper tether anchor is located on the seat back panels adjacent to each anchor location. The child restraint upper tether anchors cannot be adjusted or repaired and, if ineffective or damaged, they must be replaced as a unit with their respective rear seat back frame.

Vehicles manufactured for non-NAFTA markets are equipped with child restraint lower anchors (also known as ISOFIX anchors) are also provided for both outboard rear seating positions. A label on each rear seat cover clearly identifies the anchor locations. The lower anchors are integral to the rear seat cushion frames. These anchors are each constructed from a heavy-gauge steel wire loop that is securely welded to each seat cushion frame, four on each frame. The anchor loops are accessed from the front of their respective seats, near where the rear seat back meets the rear seat cushion. These lower anchors cannot be adjusted or repaired and, if ineffective or damaged, they must be replaced as a unit with the rear seat cushion frame.

Vehicles manufactured for Europe-Middle East-Africa (EMEA) markets are equipped with the upper tether anchors in the rear outboard seating positions.

WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

All vehicles manufactured for sale in the United States and Canada are required to be equipped with a Lower Anchors and Tether for Children, or LATCH child restraint anchorage system. The rear seats in this vehicle have two pairs of anchor provisions for installing a LATCH-compatible child seat. A single seat may be mounted in the center seating position, or one in each outboard seating position.

With LATCH, child seats are secured by direct attachment to the vehicle structure, rather than by the seat belts. With LATCH-compatible child seats, lower (also known as ISOFIX) anchors attach to the seat structure through heavy-gauge wire loops located near the intersection between the seat cushion and the seat back surfaces.

In the NAFTA market, three upper tether anchors are integral to the rear seat back frames to secure the top tether strap of child seats equipped with this feature. These upper tether anchors work with both LATCH-compatible and other child seats equipped with a top tether strap. Vehicles manufactured for EMEA markets are equipped with ISOFIX lower anchors and upper tether anchors in the outboard seating positions.

The owner's information packet in the vehicle glove box contains details and suggestions on the proper use of all of the factory-installed child restraint anchors.

SEAT TRACK POSITION SENSOR (STPS)

SEAT TRACK POSITION SENSOR (STPS)

Refer to **COMPONENT INDEX**.

Vehicles manufactured for NAFTA markets have a STPS located on the inboard side of one of the upper seat adjuster tracks on both the driver and the passenger front seats.

The STPS for each front seat, is a hall-effect sensor designed to provide seat position data to the ORC indicating whether the driver or passenger side front seat is in a full forward or a not full forward position. The ORC uses the seat guide input as a factor in determining the appropriate force to be used when deploying the multistage driver or passenger airbag.

The STPS is designed to provide a seat position data input to the ORC indicating whether the driver or passenger front seat is in a full forward or a not full forward position. The ORC uses this data as an additional logic input for use in determining the appropriate deployment force to be used when deploying the multistage DAB and PAB.

The STPS receives a nominal five volt supply from the ORC. The STPS communicates the seat position by modulating the voltage returned to the ORC on a sensor data circuit. The ORC also monitors the condition of the STPS circuits and will store a DTC for any fault that is detected. The ORC then sends messages over the CAN data bus to control the illumination of the airbag indicator in the IPC.

The STPS cannot be adjusted or repaired and, if ineffective or damaged, the entire STPS unit must be replaced.

SEAT AIRBAG (SAB)

SEAT AIRBAG (SAB)

Refer to **COMPONENT INDEX**.

A SAB integrated into each front seat are standard equipment. This airbag system consists of passive, inflatable SRS components and vehicles with this equipment can be readily identified by a sewn tag with the **AIRBAG** logo located on the outboard side of the front seat back trim cover.

The vehicle includes seat-mounted (thorax) airbags for front external positions in NAFTA / EMEA vehicles.

The SABs are standard equipment on this vehicle. These airbags are completely concealed beneath the seat back trim cover on the upper outboard sides of both front seat backs. These airbags are secured to the seat back frame by nuts on two studs. The two studs are integral to the airbag inflator. The airbag cushion is constructed of a white coated nylon fabric.

The airbag inflator is a self-contained, single-initiator, non-azide, pyrotechnic-type unit that is secured to the seat back frame and sealed to the airbag cushion. The SAB is connected to the vehicle electrical system through a dedicated take out of the seat wire harness with a connector insulator that connects directly to the inflator initiator. The connector insulators are uniquely keyed and color-coded to ensure they can only be connected to the airbag initiator.

Each SAB is deployed individually by an electrical signal generated by the ORC to which it is connected through left or right SAB line 1 and line 2 (or squib) circuits. When the ORC sends the proper electrical signal to the pyrotechnic-type MGG inflator, the electrical energy generates enough heat to initiate a small pyrotechnic charge which ignites chemical pellets within the inflator.

Once ignited, these chemical pellets burn rapidly and produce a large quantity of inert gas. The inflator is sealed to the SAB cushion and a diffuser in the inflator directs all of the inert gas into the folded SAB cushion, causing the cushion to inflate. As the cushion inflates it will split the outboard side of the seat back trim cover.

The cushion expands into the area between the outboard side of the front seat and the front door, protecting the front seat occupant during a side impact collision.

Following the airbag deployment, the SAB cushion rapidly deflates by venting the inert gas through a vent hole of the cushion fabric, and the deflated cushion hangs down loosely from the outboard side of the front seat back.

The ORC monitors the condition of the seat airbags through circuit resistance. If any fault is detected the ORC will illuminate the airbag indicator in the instrument cluster and store a DTC. Proper diagnosis of the SAB inflator and squib circuits requires the use of a diagnostic scan tool and may also require the use of the Airbag Kit. Refer to the appropriate diagnostic information.

The SAB cannot be repaired, and must be replaced if deployed, ineffective, or in any way damaged. If the SAB is deployed, the seat back frame, the seat back foam, the seat back trim cover and the seat airbag wire harness must also be replaced.

PASSENGER KNEE BLOCKER

PASSENGER KNEE BLOCKER

Refer to **COMPONENT INDEX**.

The passenger knee blocker is a static structural reinforcement that is integral to and concealed within the glove box door.

PASSENGER AIRBAG ON/OFF INDICATOR (EMEA) OR PASSENGER AIRBAG OFF INDICATOR (NAFTA)

PASSENGER AIRBAG ON/OFF INDICATOR (EMEA) OR PASSENGER AIRBAG OFF INDICATOR (NAFTA)

Refer to **COMPONENT INDEX**.

Passenger Airbag ON/OFF Indicator (EMEA)

Vehicles manufactured for EMEA markets have a passenger airbag ON/OFF indicator integral to the Sport bar above the rearview mirror.

The text PASSENGER AIRBAG appears in the bezel just above the rearview mirror. The text ON and OFF, each beside an International Control and Display Symbol icon, are stencil-like cutouts in the opaque overlay within the indicator. The dark outer lens prevents the text and icon of the indicator from being clearly visible when it is not illuminated. Dedicated LED units behind the lens and each overlay causes the text and icon to appear in amber through the translucent lens when the indicator is illuminated from behind by the LED.

The PAB ON/OFF indicator gives an indication when the passenger seat is occupied and the PAB and seat belt tensioner deployment circuits are enabled or disabled by the ORC. This indicator is controlled by a transistor within the ORC through hardwired outputs based upon electronic passenger airbag status request messages received by the ORC from the IPC over the CAN data bus. The IPC messages to the ORC are based upon the status of a setup routine performed through the IPC by the vehicle operator.

The PAB ON/OFF indicator Light Emitting Diode (LED) units are completely controlled by the ORC. The LED units receive a battery current input on a fused ignition output (RUN) circuit. Therefore, the LED units will always be OFF when the status of the ignition is anything except ON. The LED units only illuminate when they are provided a path to ground by the ORC transistor. The IPC will request the ORC to turn ON the PAB ON/OFF indicators for the following reasons:

- **Bulb Test** - Each time the status of the ignition transitions to ON the PAB ON/OFF indicators are illuminated for about eight seconds.
- **Passenger AirBag Disabled** - Each time the ORC receives an electronic message from the IPC indicating the setup routine has requested the PAB be disabled, the PAB and seat belt tensioner deployment circuits are deactivated and the PAB OFF indicator will be illuminated. The indicator

remains illuminated until the ORC receives an electronic message from the IPC indicating the setup routine has requested the PAB be enabled, or until the status of the ignition transitions to OFF, whichever occurs first.

- **Passenger AirBag Enabled** - Each time the ORC receives an electronic message from the IPC indicating the setup routine has requested the PAB be enabled, the PAB and seat belt tensioner deployment circuits are activated and the PAB ON indicator will be illuminated. The indicator remains illuminated until the ORC receives an electronic message from the IPC indicating the setup routine has requested the PAB be disabled, or until the status of the ignition transitions to OFF, whichever occurs first.
- **Communication Error** - If the ORC receives invalid messages or no messages from the IPC the PAB ON/OFF indicator status remains as it was when the last valid message was received. The ORC will also maintain the PAB deployment status as it was when the last valid message was received. The ORC and IPC will set a DTC and will illuminate the airbag indicator in the IPC when a communication error has been detected. The PAB indicator remains illuminated in the current status until the ORC receives a valid message from the IPC, or until the status of the ignition transitions to OFF, whichever occurs first.

The ORC continually monitors the messages from the IPC to decide whether the PAB and seat belt tensioner deployment circuits should be activated or deactivated. The IPC provides the proper messages to the ORC, and the ORC provides the proper control output to turn the appropriate PAB ON/OFF indicator ON.

The PAB ON/OFF indicator cannot be repaired or adjusted and, if ineffective or damaged the A/C heater control must be replaced. Refer to **CONTROL, A/C AND HEATER, REMOVAL AND INSTALLATION** .

Passenger Airbag OFF Indicator (NAFTA)

Vehicles manufactured for NAFTA markets have a passenger airbag OFF indicator integral to the bezel in the Sport bar above the rearview mirror.

The text PASSENGER AIRBAG appears on a lens in the Sport bar bezel just above the rearview mirror. The text OFF using an International Control and Display Symbol icon, are stencil-like cutouts in the opaque overlay within the indicator. The dark outer lens prevents the text and icon of the indicator from being clearly visible when it is not illuminated. Dedicated LED units behind the lens and each overlay causes the text and icon to appear in amber through the translucent lens when the indicator is illuminated from behind by the LED.

The PAB OFF indicator gives an indication when the passenger seat is occupied and the PAB and seat belt tensioner deployment circuits are disabled by the ORC from information sent by the OCM. This indicator is controlled by a transistor within the ORC through hardwired outputs based upon passenger occupant classification status request messages received by the ORC from the OCM over the CAN data bus. The OCM passenger classification messages to the ORC are based upon the weight status of the occupant in the passenger seat.

The PAB OFF indicator Light Emitting Diode (LED) units are completely controlled by the ORC. The LED units receive a battery current input on a fused ignition output (RUN) circuit. Therefore, the LED units will always be OFF when the status of the ignition is anything except ON. The LED units only illuminate when they are provided a path to ground by the ORC transistor. The OCM will request the ORC to turn ON the PAB OFF indicators for the following reasons:

- **Bulb Test** - Each time the status of the ignition transitions to ON the PAB OFF indicator is illuminated for about eight seconds.
- **Passenger AirBag Disabled** - Each time the ORC receives an electronic message from the OCM indicating the passenger occupant classification is less than a fifth percentile occupant or Rear Facing Infant Seat (RFIS), the PAB and seat belt tensioner deployment circuits are deactivated and the PAB OFF indicator will be illuminated. The indicator remains illuminated until the ORC receives an electronic message from the OCM indicating passenger occupant classification is not a fifth percentile occupant or RFIS, enabling the PAB or until the status of the ignition transitions to OFF, whichever occurs first.
- **Communication Error** - If the ORC receives invalid messages or no messages from the OCM the PAB OFF indicator status remains as it was when the last valid message was received. The ORC will also maintain the PAB deployment status as it was when the last valid message was received. The ORC and

OCM will set a DTC and will illuminate the airbag indicator in the IPC when a communication error has been detected. The PAB indicator remains illuminated in the current status until the ORC receives a valid message from the OCM, or until the status of the ignition transitions to OFF, whichever occurs first.

The ORC continually monitors the messages from the OCM to decide whether the PAB and seat belt tensioner deployment circuits should be activated or deactivated. The OCM provides the proper messages to the ORC, and the ORC provides the proper control output to turn the PAB OFF indicator ON.

The PAB OFF indicator cannot be repaired or adjusted and, if ineffective or damaged it must be replaced.

PASSENGER AIRBAG (PAB)

Refer to **COMPONENT INDEX**.

A front PAB is standard in this vehicle. This airbag system consists of passive, inflatable, SRS components and vehicles with this equipment can be readily identified by the **AIRBAG** logo molded into the PAB door on the instrument panel above the glove box. Vehicles with the airbag system can also be identified by the airbag indicator, which will illuminate in the IPC from four to six seconds as a bulb test each time the status of the ignition transitions to ON.

The PAB is integral to the top of the instrument panel and bolts to the instrument panel frame. The multistage PAB contains an active vent.

In NAFTA versions, the PAB is a multistage, adaptive-deployment airbag. The airbag contains three squib circuits. Two squibs inflate the airbag, the third squib activates the last charge which allows the cushion to follow a curve of deflation appropriate to impact severity. Only the single charge is available in the EMEA market.

The PAB is deployed by electrical signals generated by the ORC through the PAB squib circuits to the initiator in the airbag inflator and, in vehicles so equipped, to the initiator of the Micro Gas Generator (MGG) for the adaptive vent (NAFTA market vehicles only).

In NAFTA market vehicles, using two initiators and an adaptive vent, the PAB can be deployed at multiple levels of force. The force level is controlled by the ORC to suit the monitored impact conditions by providing one of multiple delay intervals between the electrical signals provided to the two initiators and the MGG. The longer the delay between the initiator signals and the sooner the adaptive vent is opened, the less forcefully the PAB will deploy.

When the ORC sends the proper electrical signals to the initiator, the electrical energy generates enough heat to initiate a small pyrotechnic charge which, in turn ignites chemical pellets within the inflator. Once ignited, these chemical pellets burn rapidly and produce a large quantity of inert gas. The inflator is sealed to the airbag cushion and a diffuser in the inflator directs all of the inert gas into the airbag cushion, causing the cushion to inflate. As the cushion inflates, the PAB door area of the instrument panel cover will split at predetermined breakout lines, then fold back out of the way. Following an airbag deployment, the airbag cushion quickly deflates by venting the inert gas through a discrete vent hole in each fabric side panel of the airbag cushion.

In NAFTA market vehicles, the MGG inflates a small cushion within the primary cushion to control the adaptive vent. The ORC monitors a seat track position sensor on the passenger front seat. If the seat is in the full forward position when an airbag deployment occurs, the ORC keeps the adaptive vent open. With the adaptive vent open the airbag deployment is less forceful, which reduces the possibility of an airbag-induced injury when the passenger is seated close to the deploying airbag. If the passenger front seat is not in the full forward position, the adaptive vent is closed during airbag deployment.

Typically in multistage airbags (NAFTA market only), all initiators are used during a PAB deployment event. However, it is possible for only one initiator to be used during a deployment due to a SRS fault; therefore, it is necessary to always confirm that all initiators have been used in order to avoid the improper disposal of potentially live pyrotechnic materials. See the Service After A Supplemental Restraint Deployment standard

procedure for additional information. Refer to **SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT** .

The inert gas that is produced when the chemicals are burned during a deployment is harmless. However, a small amount of residue from the burned chemicals may cause some temporary discomfort if it contacts the skin, eyes, or breathing passages. If skin or eye irritation is noted, rinse the affected area with plenty of cool, clean water. If breathing passages are irritated, move to another area where there is plenty of clean, fresh air to breath. If the irritation is not alleviated by these actions, contact a physician.

The ORC monitors the condition of the passenger airbag through circuit resistance. If any fault is detected the ORC will illuminate the airbag indicator in the instrument cluster and store a DTC. Proper diagnosis of the PAB inflator, the adaptive vent MGG and the squib circuits requires the use of a diagnostic scan tool and may also require the use of the Airbag Kit. Refer to the appropriate diagnostic information.

The PAB cannot be repaired, and must be replaced if deployed, ineffective or in any way damaged. The PAB door and retainer are serviced only as a unit with the instrument panel cover. If the PAB is deployed, the PAB mounting bracket and the instrument panel must also be replaced.

The PAB is located in the instrument panel, beneath the instrument panel cover and above the glove box on the passenger side of the vehicle.

OCCUPANT RESTRAINT CONTROLLER (ORC)

OCCUPANT RESTRAINT CONTROLLER (ORC)

Refer to **COMPONENT INDEX**.

The ORC is located on the floor panel center tunnel near the rear of the center floor console.

Inputs

- Ignition switch status
- Impact sensor status
- Seat track position sensor data
- Seat belt buckle status
- ORC fault status
- ORC environmental fault status
- ORC operational mode status
- ORC ignition status
- Lateral acceleration status
- Lateral acceleration fault status
- Longitudinal acceleration status
- Longitudinal acceleration fault status
- Calculated average vehicle speed
- Calculated average vehicle speed fault
- Crash signal
- Crash signal confirmation
- Impact type, severity and direction information
- Passenger seat occupancy status
- Rear passenger seat belt buckle status (EMEA)
- Rear passenger seat occupancy status (EMEA) from left, right and center rear ODSs
- Wheel speed sensors status
- Wheel speed sensors fault status

- Steering angle value (counterclockwise positive)
- Steering angle fault status

Outputs

- ORC Z axis acceleration pitch data
- ORC Z axis acceleration pitch fault status
- ORC lateral acceleration data
- ORC lateral acceleration fault status
- ORC longitudinal acceleration data
- ORC longitudinal acceleration fault status
- ORC fault status
- ORC environmental fault status
- Crash signal
- Crash signal confirmation
- Impact sensor status
- Impact sensor fault status
- Impact type, severity and direction information

For additional information on the ORC. Refer to **CONTROLLER, OCCUPANT RESTRAINT (ORC), DESCRIPTION AND OPERATION** .

OCCUPANT DETECTION SENSOR (ODS) OR OCCUPANT CLASSIFICATION MODULE (OCM)

OCCUPANT DETECTION SENSOR (ODS) OR OCCUPANT CLASSIFICATION MODULE (OCM)

Refer to **COMPONENT INDEX**.

ODS

All international released vehicles are equipped with an ODS. The ODS is located on the bottom of the seat cushion foam of the passenger side front seat and each seating position in the second row. The ODS is a resistive pressure switch. The ODS closes when a pre-programmed load is placed on the seat. The ODS is used to trigger a seat belt reminder if a passenger is detected on the seat. The ODS does not affect the level of airbag deployment.

The ODS acts as a simple switch to detect loads placed upon the passenger side front seat cushion. The sensor circuits are connected to and monitored by the ORC whenever the status of the ignition is On. The ORC uses an algorithm logic in monitoring the changing states of the sensor input to determine whether the seat cushion load is static or dynamic.

For EMEA markets, all three rear seating positions are equipped with ODS which enables the ORC to determine if a rear seat is occupied. If the seat is occupied and the seat belt has not been buckled, the seat belt reminder for the occupied rear seat is illuminated in the IPC.

The ORC microcontroller continuously monitors all of the SRS electrical circuits to determine the system status and readiness. If the ORC detects a monitored system fault, it sets a DTC. However, because the ODS input is only used for control of the passenger belt alert feature, which has no effect on SRS component features or functions, the airbag indicator is **NOT** illuminated in response to a detected ODS circuit fault.

The ODS receives source current and a clean ground through dedicated sensor plus and minus circuits from the ORC. The ORC then sends the appropriate sensor status information over the CAN data bus to the IPC, which uses this information as an additional logic input used for control of the seat belt indicator and the passenger belt alert feature.

The ODS cannot be adjusted or repaired, and must be replaced if damaged or ineffective.

OCM

For information about the OCM. Refer to **MODULE, OCCUPANT CLASSIFICATION (OCM), DESCRIPTION AND OPERATION** .

IMPACT SENSOR

IMPACT SENSOR

Refer to **COMPONENT INDEX**.

Remote or satellite impact sensors are mounted in four strategic locations of the vehicle. These sensors are mounted remotely from the impact sensor that is internal to the ORC. Sensors at the front of the vehicle provide an additional logic input for use by the ORC to control the front airbags and the seat belt tensioners. Sensors on each side of the vehicle provide an additional logic input for use by the ORC to control the seat airbags and the seat belt tensioners.

Two front impact sensors are used on vehicles equipped with dual front airbags, one on the back of each front lower load beam, below each headlamp assembly. Two side impact sensors are used, one on each side of the vehicle. These acceleration-type sensors are located behind the B-pillar trim of each lower inner B-pillar.

ACCELERATION TYPE

Although the front and side acceleration type impact sensors are similar in appearance and construction, they may not be interchangeable. The front impact sensors may monitor acceleration forces on a different axis than those monitored by the side impact sensors. Each sensor is secured with a single nut to a weld stud in its mounting location.

Each sensor housing has an integral connector receptacle, an integral locator and anti-rotation pin and an integral mounting hole with a metal sleeve to provide crush protection. A cavity in the center of the molded plastic impact sensor housing contains the electronic circuitry of the sensor which includes an electronic communication chip and an electronic acceleration sensor. Potting material fills the cavity and a translucent molded cover is laser welded over the cavity to seal and protect the internal electronic circuitry and components.

The acceleration type impact sensors are electronic accelerometers that sense the rate of vehicle deceleration, which provides verification of the direction and severity of an impact. Each sensor also contains an electronic communication chip that allows the unit to communicate the sensor status as well as sensor fault information to the microcontroller within the ORC.

The ORC microcontroller continuously monitors all of the passive restraint system electrical circuits to determine the system readiness. If the ORC detects a monitored system fault, it sets a DTC and controls the airbag indicator operation accordingly. The impact sensors on each side of the vehicle receive battery current and ground through dedicated left and right sensor plus and minus circuits from the ORC. The impact sensors and the ORC communicate by modulating the voltage in the sensor plus circuit.

The front impact sensors are each connected to the vehicle electrical system through dedicated take outs and connectors of the dash wire harness, while the side impact sensors are connected through dedicated take outs and connectors of the body wire harness.

The acceleration type impact sensors cannot be repaired or adjusted and, if damaged or ineffective, they must be replaced.

DRIVER KNEE BLOCKER

DRIVER KNEE BLOCKER

Refer to **COMPONENT INDEX**.

Vehicles manufactured for EMEA markets have a driver knee blocker. The knee blocker is a static structural reinforcement that is integral to and concealed within the steering column opening cover of the instrument

panel.

DRIVER AIRBAG (DAB)

DRIVER AIRBAG (DAB)

Refer to **COMPONENT INDEX**.

A DAB is standard in this vehicle. This airbag system consists of passive, inflatable, SRS components and vehicles with this equipment can be readily identified by the **AIRBAG** logo molded into the DAB trim cover in the center of the steering wheel. Vehicles with the airbag system can also be identified by the airbag indicator, which will illuminate in the IPC from four to six seconds as a bulb test each time the status of the ignition transitions to ON.

Depending on the market, the DAB can be single-stage, EMEA or multi-stage, North America Free Trade Agreement (NAFTA). The ORC module will operate the single or the double charge. Only the single charge is available in the EMEA market.

The DAB is located in the center of the steering wheel, beneath the DAB trim cover. Concealed beneath the DAB trim cover are the folded airbag cushion, the airbag inflator and the retainers that secure the inflator to the housing. The airbag cushion, housing and inflator are secured within a molded plastic case to which the trim cover is secured. A horn switch, retainer spring and fixing plate unit secured to the back of the DAB case is used to secure the unit to the steering wheel armature. The fixing plate also includes integral horn switch wiring, the horn switch connector and four horn switch contacts.

The DAB used in this vehicle is a multistage-type that complies with revised federal airbag standards to deploy with less force than those used in some prior vehicles. A radial deploying fabric airbag cushion with internal tethers is used. The airbag inflator is a tri-initiator, non-azide, pyrotechnic-type unit and is secured to the airbag housing. Three keyed and color-coded connector receptacles on the DAB inflator connect the three inflator initiators to the vehicle electrical system through three jacketed, two-wire pigtail harnesses from the clockspring. These connections are completed to the vehicle electrical system through three pigtail harnesses from the clockspring.

The multistage DAB is deployed by electrical signals generated by the ORC through the DAB squib circuits to the initiator in the airbag inflator. By using two initiators, the airbag can be deployed at multiple levels of force. The force level is controlled by the ORC to suit the monitored impact conditions by providing one of several delay intervals between the electrical signals provided to the two initiators. The longer the delay between these signals, the less forcefully the airbag will deploy. The third initiator is used to control the DAB tether or housing vent (if equipped).

When the ORC sends the proper electrical signal to the initiator, the electrical energy generates enough heat to initiate a small pyrotechnic charge, which in turn ignites chemical pellets within the inflator. Once ignited, these chemical pellets burn rapidly and produce a large quantity of inert gas. The inflator is sealed to the back of the DAB housing and a diffuser in the inflator directs all of the inert gas into the airbag cushion, causing the cushion to inflate. As the cushion inflates, the DAB trim cover will split at predetermined breakout lines, then fold back out of the way. Following a deployment, the airbag cushion quickly deflates by venting the inert gas towards the instrument panel through vent holes within the fabric used to construct the back (steering wheel side) panel of the airbag cushion.

Some of the chemicals used to create the inert gas may be considered hazardous while in their solid state before they are burned, but they are securely sealed within the airbag inflator. Typically these initiators are used and all potentially hazardous chemicals are burned during an airbag deployment event. However, it is possible for only one initiator to be used during a deployment due to a SRS fault; therefore, it is necessary to always confirm all initiators have been used in order to avoid the improper disposal of potentially live pyrotechnic or hazardous materials. Refer to **STANDARD PROCEDURE**.

The inert gas that is produced when the chemicals are burned during a deployment is harmless. However, a small amount of residue from the burned chemicals may cause some temporary discomfort if it contacts the skin, eyes, or breathing passages. If skin or eye irritation is noted, rinse the affected area with plenty of cool,

clean water. If breathing passages are irritated, move to another area where there is plenty of clean, fresh air to breath. If the irritation is not alleviated by these actions, contact a physician.

The ORC monitors the condition of the DAB through circuit resistance. If any fault is detected, the ORC will request the illumination of the airbag indicator in the instrument cluster and store a DTC. Proper diagnosis of the DAB initiator and squib circuits requires the use of a diagnostic scan tool and may also require the use of the Airbag Kit. Refer to the appropriate diagnostic information.

The DAB cannot be repaired, and must be replaced if deployed, ineffective or in any way damaged. The DAB trim cover is serviced only as a unit with the DAB.

CLOCKSPRING

CLOCKSPRING

Refer to **COMPONENT INDEX**.

The clockspring is located near the top of the steering column, directly beneath the steering wheel. It allows circuit continuity for the DAB and all other circuits used in the steering wheel. The clockspring for this vehicle is integral to the SCCM near the top of the steering column below the steering wheel. The clockspring includes an integral, internal turn signal cancel cam that is serviced as a unit with the SCCM. The SCCM also includes the left (lighting) multifunction switch and the right (wiper) multifunction switch. Each of these switches and the wiring between the switches and the clockspring should not be separated and are serviced only as a complete assembly with the SCCM. The SCCM case includes integral tabs on the back for mounting the unit with a band clamp to the steering column support tube.

The SCCM case includes a connector receptacle near the top of the back of the unit facing toward the instrument panel which contains the circuits for the multifunction switches. The connectors near the bottom of the unit contain the circuits for the clockspring and the receptacles on the steering wheel side of the clockspring. The connector receptacles on the steering wheel side of the clockspring contain the circuits for the other switches mounted on the steering wheel. Within the plastic clockspring case is a spool-like molded plastic rotor with a large exposed hub. The upper surface of the rotor hub has a large center hole and short pigtail wires with connectors. The pigtail connectors contain the circuits for the Driver AirBag (DAB).

The service replacement SCCM is shipped pre-centered and has a spring actuated molded plastic automatic locking ring installed. The automatic locking ring secures the centered clockspring rotor to the SCCM case during shipment and handling, and automatically releases the rotor when the steering wheel is installed. However, it is recommended that an additional strap be installed through the two retainer loops integral to the outer circumference of the SCCM to secure the rotor to the case whenever the SCCM is removed from the steering column to prevent accidental loss of clockspring centering.

The clockspring is a mechanical electrical circuit component that is part of the SCCM and is used to provide continuous electrical continuity between the instrument panel wire harness and certain electrical components mounted on or in the steering wheel. On this vehicle the electrical components include the DAB, the Electronic Vehicle Information Center (EVIC) switches, the horn switch, the remote radio switches, the speed control switches and the hands-free communication switches, if the vehicle is so equipped. The clockspring is positioned and secured to the SCCM near the top of the steering column. The connector receptacles on the back of the SCCM connect the electrical components that connect to the steering wheel side of the SCCM to the vehicle electrical system through take outs and connectors from the instrument panel wire harness.

The turn signal cancel cam is integral to the rim of the SCCM rotor hub within the SCCM, so it also moves with the rotation of the steering wheel. Short pigtail wires on the upper surface of the SCCM connect the SCCM to the DAB. A wire harness connects to the EVIC switches, the horn switch, the speed control switch and, if the vehicle is so equipped, the optional remote radio and hands-free communication switches on the steering wheel.

Like the clockspring in a timepiece, the SCCM tape has travel limits and can be damaged by being wound too tightly during full stop-to-stop steering wheel rotation. To prevent this from occurring, the SCCM is centered when it is installed on the steering column. Centering the SCCM indexes the SCCM tape to the movable steering components so that the tape can operate within its designed travel limits. If the steering wheel is

removed from the steering column or if the SCCM is removed from the steering column, a spring-actuated automatic locking ring pops up from the face of the SCCM rotor to lock the rotor from rotation. However, if the locking ring is manually compressed or if the steering shaft is disconnected from the steering gear with the steering wheel installed, the SCCM spool can change position relative to the other steering components. Loss of SCCM centering will result in damage to the SCCM tape.

Service replacement SCCMs are shipped pre-centered and with a plastic locking pin installed. This locking pin should not be removed until the SCCM has been installed on the steering column. If the locking pin is removed before the SCCM is installed on a steering column, SCCM centering may be compromised.

The clockspring cannot be repaired. If the clockspring is ineffective, damaged, or if the DAB has been deployed, the entire SCCM must be replaced. Refer to **MODULE, STEERING COLUMN CONTROL (SCCM), REMOVAL AND INSTALLATION** .

DIAGNOSIS AND TESTING

DIAGNOSIS AND TESTING - SUPPLEMENTAL RESTRAINT SYSTEM

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

The hardwired circuits between modules and components related to the Supplemental Restraint System (SRS) may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds. For proper wire repair, and connector repair procedures. Refer to **WIRE SPLICING** and refer to **REMOVAL** . Refer to **INSTALLATION** .

However, conventional diagnostic methods will not prove conclusive in the diagnosis of the SRS or the electronic controls and communication between other modules and devices that provide features of the SRS. The most reliable, efficient and accurate means to diagnose the SRS or the electronic controls and communication related to SRS operation, as well as the retrieval or erasure of a DTC requires the use of a diagnostic scan tool. Refer to the appropriate diagnostic information.

In addition to a diagnostic scan tool that contains the latest version of the proper diagnostic software, certain diagnostic procedures for the SRS may require the use of the Airbag Kit. Refer to the appropriate diagnostic information.

STANDARD PROCEDURE

HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbag, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

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

When handling a non-deployed seat belt tensioner, take proper care to keep fingers out from under the retractor or buckle cover and away from the seat belt webbing or cable where it exits from the retractor or buckle cover. In addition, the SRS should be disarmed whenever any steering wheel, steering column, seat belt tensioner, airbag, impact sensor or instrument panel components require diagnosis or service. Failure to observe this warning could result in accidental airbag deployment and possible personal injury.

All damaged, ineffective or non-deployed airbags and seat belt tensioners which are replaced on vehicles are to be handled and disposed of properly. If an airbag or seat belt tensioner unit is ineffective or damaged and non-deployed, refer to the Hazardous Substance Control System for information regarding the potentially hazardous properties of the subject component and the proper safe handling procedures. Then dispose of all non-deployed and deployed airbags and seat belt tensioners in a manner consistent with state, provincial, local and federal regulations.

SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT

Any vehicle which is to be returned to use following a Supplemental Restraint System (SRS) component deployment must have the deployed restraints replaced. In addition, the following guidelines MUST be observed.

- **Following ANY major vehicle impact damage in the vicinity of an impact sensor or the ORC** - It is critical that the mounting surfaces and mounting brackets for the Occupant Restraint Controller (ORC), front impact sensors and side impact sensors located within the proximity of the impact damage be closely inspected and restored to their original conditions. Because the ORC and each impact sensor are used by the SRS to monitor or confirm the direction and severity of a vehicle impact, improper orientation or insecure fastening of these components may cause airbags not to deploy when required, or to deploy when not required.
- **Following ANY airbag deployment event** - The Lower Anchors and Tethers for Children (LATCH) provisions, upper tether anchors (if equipped) and all interior trim panels must also be inspected.
- **If the driver airbag is deployed** - If the Driver AirBag (DAB) has been deployed, the DAB, the clockspring, the steering column assembly including the intermediate shaft and coupler, both front seat belt retractor and tensioner assemblies, and all other seat belt retractors and buckles in use must be replaced. The front impact sensors and the steering wheel must also be inspected.
- **If the passenger airbag is deployed** - If the Passenger AirBag (PAB) has been deployed, the PAB, the PAB door and the PAB wire harness or connector must be replaced. The instrument panel must also be inspected.
- **If a seat airbag is deployed** - If a Seat AirBag (SAB) has been deployed, the SAB, the seat back frame, the seat back foam, the seat back trim cover and the side impact sensors on the same side of the vehicle as the deployed airbag must replaced. Both front seat belt retractor and tensioner assemblies, the front seat belt buckles in use and any rear seat belt retractors and buckles in use must also be replaced.
- **If a seat belt tensioner is deployed** - The seat belt tensioners are deployed in conjunction with the front airbags, but can also be deployed with a SAB. All seat belt tensioners must be replaced if any airbag in the vehicle has been deployed.

The components identified with the deployed SRS components in the preceding list are not intended for reuse and will be damaged or weakened as a result of an airbag deployment, which may or may not be obvious during a visual inspection. All other vehicle components should be closely inspected following any SRS component deployment, but are to be replaced only as required by the extent of the visible damage incurred.

AIRBAG SQUIB STATUS

Multistage airbags with multiple initiators (squibs) which must be checked to determine that all squibs were used during the deployment event. The Driver AirBag (DAB) and Passenger AirBag (PAB) in these vehicles are deployed by electrical signals generated by the Occupant Restraint Controller (ORC) through the driver or passenger squib 1 and squib 2 and squib 3 circuits to the three initiators in the airbag inflators. Typically, these initiators are used and all potentially hazardous chemicals are burned during an airbag deployment event. However, it is possible for only one initiator to be used; therefore, it is always necessary to confirm that all initiators have been used in order to avoid the improper handling or disposal of potentially live pyrotechnic or hazardous materials. The following procedure should be performed using a diagnostic scan tool to verify the status of both airbag squibs before either deployed airbag is removed from the vehicle for disposal.

CAUTION: **Deployed front airbags have initiators (squibs) in the airbag inflator may or may not have live pyrotechnic material within the inflator. Do not dispose of these airbags unless you are certain of complete deployment. Refer to the Hazardous Substance Control System for information regarding the potentially hazardous properties of the subject component and the proper safe handling procedures. Then dispose of all non-deployed and deployed airbags and seat belt tensioners in a manner consistent with state, provincial, local and federal regulations.**

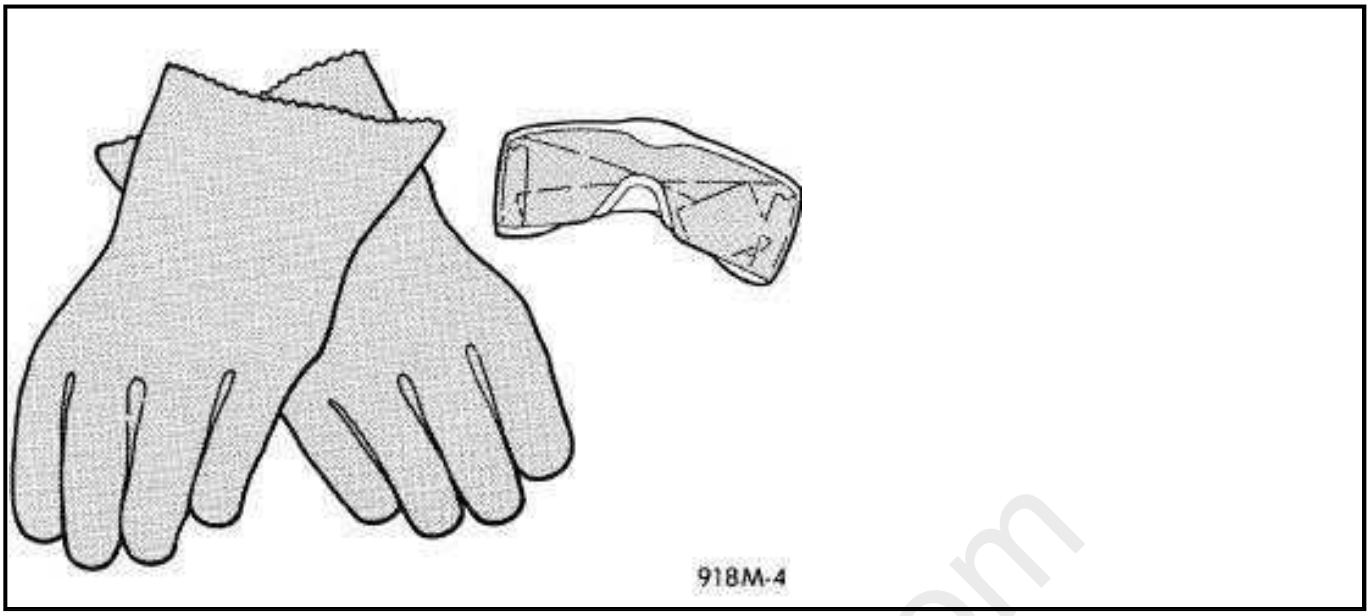
1. Be certain that the diagnostic scan tool contains the latest version of the proper diagnostic software. Connect the scan tool to the 16-way Data Link Connector (DLC). The DLC is located on the driver side lower edge of the instrument panel, outboard of the steering column.
2. Turn the ignition to ON.
3. Using the scan tool, read and record the active (current) Diagnostic Trouble Code (DTC) data.

Using the active DTC information, refer to the **Airbag Squib Status** table to determine the status of both DAB squibs and both PAB squibs.

AIRBAG SQUIB STATUS		
IF THE ACTIVE DTC IS:	**CONDITIONS**	**SQUIB STATUS**
Driver or Passenger Squib 1 open	**AND** the stored DTC minutes for both Driver or Passenger squibs are within 15 minutes of each other	Squib 1, 2, and 3 were used.
Driver or Passenger Squib 2 open		
Driver or Passenger Squib 3 open		
Driver or Passenger Squib 1 open	**AND** the stored DTC minutes for Driver or Passenger Squib 2 open is GREATER than the stored DTC minutes for Driver or Passenger Squib 1 by 15 minutes or more	Squib 1 was used; Squib 2 and 3 are live.
Driver or Passenger Squib 2 open		
Driver or Passenger Squib 3 open		
Driver or Passenger Squib 1 open	**AND** the stored DTC minutes for Driver or Passenger Squib 1 open is GREATER than the stored DTC minutes for Driver or Passenger Squib 2 by 15 minutes or more	Squib 1 and 3 are live; Squib 2 was used.
Driver or Passenger Squib 2 open		
Driver or Passenger Squib 3 open		
Driver or Passenger Squib 1 open	**AND** Driver or Passenger Squib 2 and 3 open is NOT an active code	Squib 1 was used; Squib 2 and 3 are live.
Driver or Passenger Squib 2 open	**AND** Driver or Passenger Squib 1 and 3 open is NOT an active code	Squib 1 and 3 are live; Squib 2 was used.
Driver or Passenger Squib 3 open	**AND** Driver or Passenger Squib 1 or 2 open is NOT an active code	Squib 1 and 2 are live; Squib 3 was used.

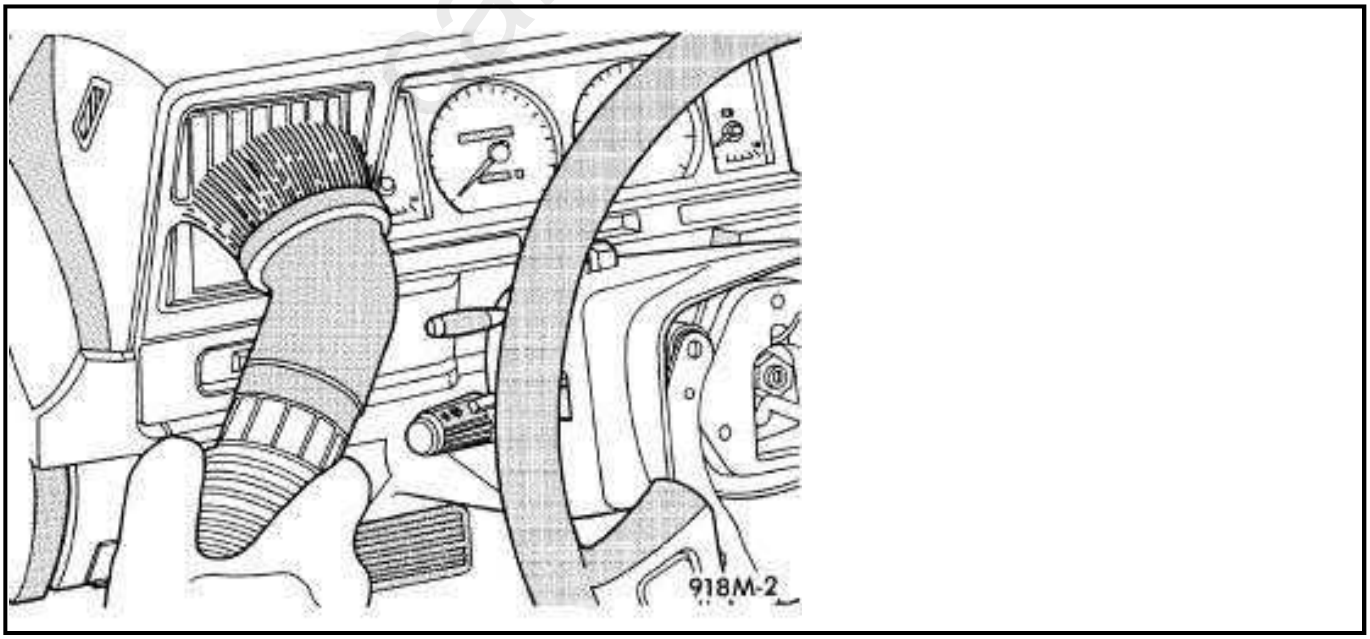
NOTE: **If none of the Driver or Passenger Squib 1, 2, or 3 open are active codes, the status of the airbag squibs is unknown. In this case the airbag should be handled and disposed of as if the squibs were both live.**

CLEANUP PROCEDURE



WARNING: **To avoid serious or fatal injury, 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.**

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



1. Begin the cleanup by using a vacuum cleaner to remove any residual powder from the vehicle interior. Clean from outside the vehicle and work toward the inside, in order to avoid kneeling or sitting on a non-cleaned area.

2. Be certain to vacuum the heater and air conditioning outlets as well. Run the heater and air conditioner blower on the lowest speed setting and vacuum any powder expelled from the outlets.

CAUTION: **Deployed front airbags have initiators (squibs) in the airbag inflator may or may not have live pyrotechnic material within the inflator. Do not dispose of these airbags unless you are certain of complete deployment. Refer to the AIRBAG SQUIB STATUS heading within this information. All damaged, ineffective, or non-deployed Supplemental Restraint System (SRS) components which are replaced on vehicles are to be handled and disposed of properly. If an airbag or seat belt tensioner unit is ineffective or damaged and non-deployed, refer to the Hazardous Substance Control System for information regarding the potentially hazardous properties of the subject component and the proper safe handling procedures. Then dispose of all non-deployed and deployed airbags and seat belt tensioners in a manner consistent with state, provincial, local and federal regulations.**

3. Next, remove the deployed SRS components from the vehicle. Refer to the appropriate service removal procedures.
4. It may be necessary to vacuum the interior of the vehicle a second time to recover all of the powder.

SQUIB CIRCUIT DAMAGE

In addition to the preceding guidelines, be aware that the heat created by the initiator during an airbag or tensioner deployment will cause collateral damage to the connected wiring (squib circuits) and connector insulators. There are two methods by which an airbag or seat belt tensioner may be connected to the vehicle electrical system. The first method involves a short pigtail harness and connector insulator that are integral to the airbag or tensioner unit and are replaced as a unit with the service replacement airbag or seat belt tensioner. This connection method typically requires no additional wiring repair following a deployment.

However, the second connection method involves a wire harness takeout and connector insulator that are connected directly to the airbag or tensioner initiator or squib. These direct-connect type take outs and connector insulators **MUST** be repaired following an airbag or seat belt tensioner deployment using the approved Supplemental Restraint System Wiring Repairs procedure. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM WIRING REPAIRS** .

SUPPLEMENTAL RESTRAINT STORAGE

Airbags and seat belt tensioners must be stored in their original, special container until they are used for service. Also, they must be stored in a clean, dry environment away from sources of extreme heat, sparks and high electrical energy. Always place or store any airbag on a surface with its trim cover or airbag cushion side facing up, to minimize movement in case of an accidental deployment.

SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

NOTE: **The following procedure should be performed using a diagnostic scan tool to verify proper Supplemental Restraint System (SRS) operation following the**

service or replacement of any SRS component. Refer to the appropriate diagnostic procedures.

1. During the following test, the negative cable remains disconnected and isolated from the battery, as it was during the Supplemental Restraint System (SRS) component removal and installation procedures.
2. Be certain that the diagnostic scan tool contains the latest version of the proper diagnostic software. Connect the scan tool to the 16-way Data Link Connector (DLC). The DLC is located on the driver side lower edge of the instrument panel, near the steering column opening cover and outboard of the steering column.
3. Check to be certain that nobody is in the vehicle, then connect the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
4. If the vehicle is equipped with Keyless Go, follow the warning below.

WARNING: **After disconnecting the 12-Volt battery wait two minutes before proceeding. Remove the ORC fuses, connect the 12-Volt battery, wait two minutes before proceeding. Cycle the ignition to the on position, then reconnect the orc fuses. Failure to follow these instructions may result in possible serious or fatal in jury.**

For vehicles with a standard ignition follow the warning below.

WARNING: **Turn the ignition on, then reconnect the 12-Volt battery. Failure to follow these instructions may result in possible serious or fatal injury.**

Exit the vehicle with the scan tool.

5. Using the scan tool, read and record the active (current) Diagnostic Trouble Code (DTC) data.
6. Next, use the scan tool to read and record any stored (historical) DTC data.
7. If any DTC is found in **Step 5** or **Step 6** , refer to the appropriate diagnostic information.
8. Use the scan tool to erase the stored DTC data. If any problems remain, the stored DTC data will not erase. Refer to the appropriate diagnostic information to diagnose any stored DTC that will not erase. If the stored DTC information is successfully erased, go to **Step 9** .
9. Turn the ignition switch OFF for about 15 seconds, and then back to ON. Observe the airbag indicator in the instrument cluster. It should light from four to six seconds, and then go out. This indicates that the SRS is functioning normally and that the repairs are complete. If the airbag indicator fails to light, or lights and stays ON, there is still an active SRS fault or malfunction. Refer to the appropriate diagnostic information to diagnose the problem.

SUPPLEMENTAL RESTRAINT SYSTEM WIRING REPAIRS

It is important when repairing any Supplemental Restraint System (SRS) electrical circuits to use the recommended splicing kit and procedure. For applicable and available MoparB® wiring repair kits, visit the MoparB® Connection Repair Kit Web Site.

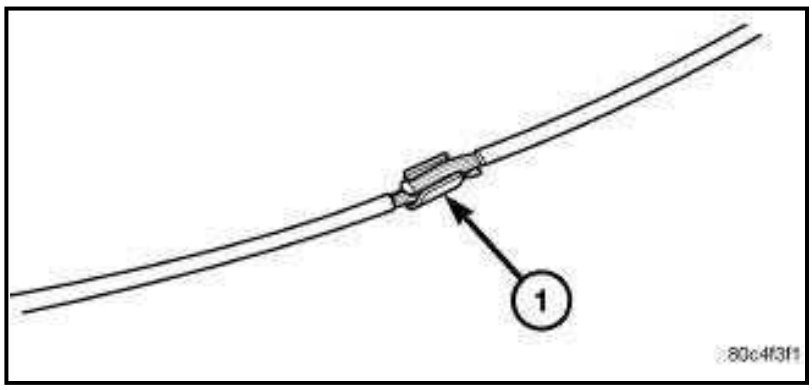
This recommended procedure involves crimping the wires together with a splice band, soldering the crimped connection and, finally, sealing and protecting the repair. The crimp and solder ensure a strong mechanical bond that will always pass a pull test while also maintaining the conductivity and current carrying capacity of the circuit. The adhesive sealant and heat shrink tubing ensures the splice repair will perform as well or better than the original wire and be safe from potential corrosion or short circuits.

There is no limit to the number of splice repairs that can be made in one harness using this procedure. However, as has been past practice, multiple adjacent splices should be offset from each other. This wiring splice repair procedure is approved for **harness side repairs ONLY** . Repairs and splices to pigtail wires on SRS components such as airbag units, seat belt tensioner units or clocksprings are not approved nor recommended.

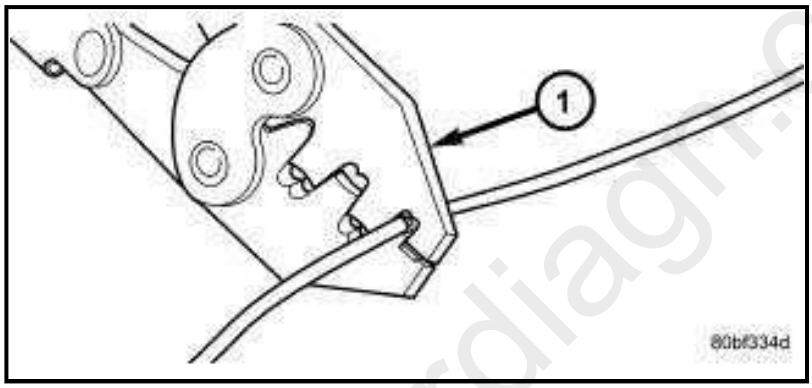
REPAIR PROCEDURE

CAUTION: **If additional wire is needed when making a splice repair to any wire, it is important that the same or next larger size wire gauge be used. Refer to the appropriate wiring diagram for the original wire gauge size.**

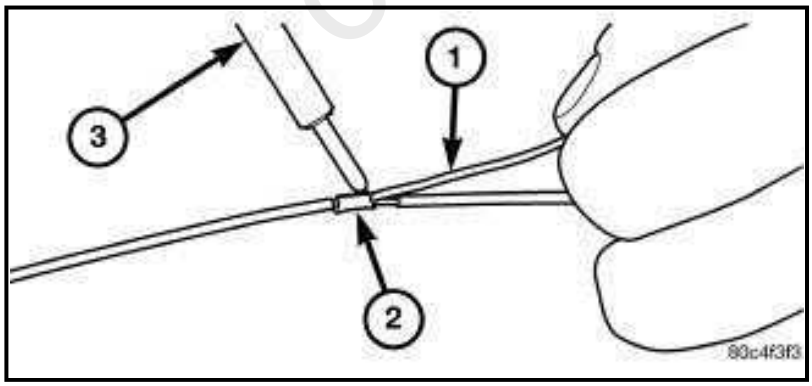
1. Remove 13 millimeters (0.50 inch) of insulation from each wire that needs to be spliced.



2. Place a piece of adhesive sealant-lined heat shrink tubing (Part Number 04778570 or equivalent) over the wire on one side of the splice. Be certain the length of tubing will be sufficient to cover and seal the entire repair area.
3. Place the strands of the wires being spliced so that they are overlapping each other within the splice band (1).

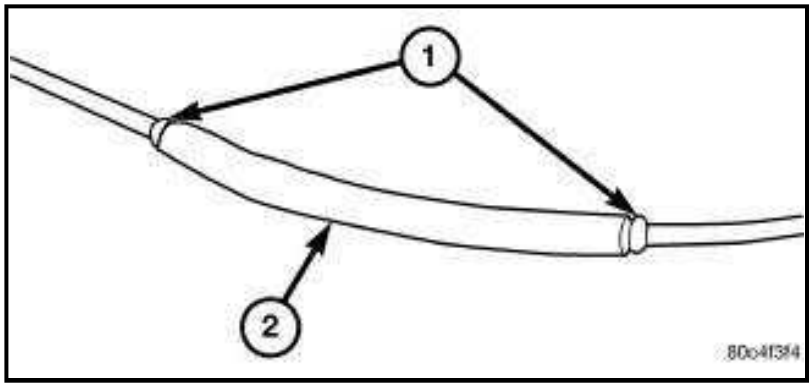


4. Using a crimping tool (1) (MoparB® Part Number 05019912AA, Miller Special Tool Number (special tool #10042, Crimper, Wire/Terminal) or equivalent) crimp the splice band and wires together securely.



CAUTION: **Never use acid core solder for electrical wiring repairs.**

5. Using rosin core type solder (1) only and a suitable soldering iron (3), solder the wire and splice band connection (2) together.



6. Center the heat shrink tubing (2) over the splice joint repair and heat using a suitable heat gun. Heat the joint until the tubing is tightly sealed and sealant (1) begins to ooze out of both ends of the tubing.

TECHNICAL SPECIFICATIONS

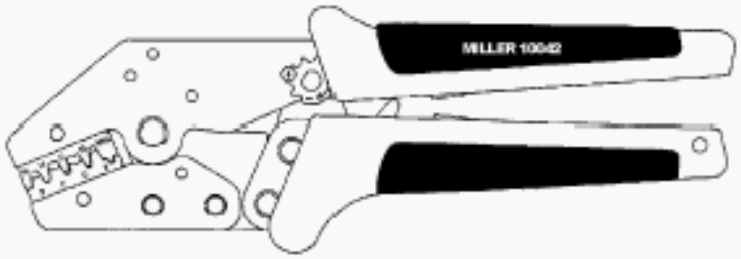
TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.	COMMENT
B-Pillar Impact Sensor Bolt	8	-	71	B
Clockspring Mounting Screw	6	-	53	B
Driver Airbag To Steering Wheel Bolts	9	-	80	B
Front Height Adjuster To Body Bolts	45	33	-	B
Front Turning Loop To Height Adjuster Nut	39	29	-	B
Front Impact Sensor Nut	11	8	-	B
Front Seat Belt Buckle Bolt	45	33	-	B
Front Retractor Tensioner Bolt	45	33	-	B
Front Retractor Tensioner Bracket To B-Pillar Bolts	26	19	-	B
Front Retractor To B-Pillar Bolt	45	33	-	Do not reuse these fasteners. If removed, a **NEW** fastener must be installed and tightened to specifications.
Passenger Airbag Mounting Bolts	18	13	-	B
Seat Airbag Mounting Nut	10	-	88	B
Rear Outboard Retractor To Floor Bolts	40	30	-	B
Rear Outboard Seat Belt Anchor To Floor Bolt	40	30	-	B
Rear Center Retractor Belt To Seat Bolt	45	33	-	B
Rear Center Seat Belt Anchor And Right Outboard Buckle To Seat Frame Nut	40	30	-	B
Rear Center Buckle To Seat Frame Bolt	40	30	-	B
Rear Left Outboard Buckle To Seat Frame Bolt	40	30	-	B

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.	COMMENT
Rear Turning Loop To Sport Bar Bolt	40	30	-	B
Rear Retractor to C-Pillar Bolt	40	30	-	-

SPECIAL TOOLS

	10042 - Crimper, Wire/Terminal (Originally Shipped In Kit Number(s) 10042.)

ADJUSTER, SEAT BELT TURNING LOOP

REMOVAL AND INSTALLATION

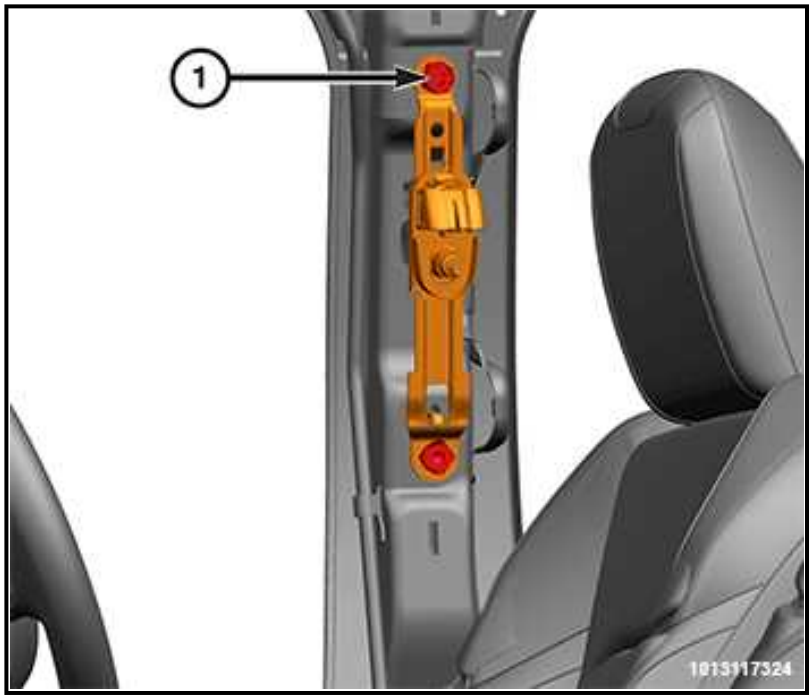
REMOVAL AND INSTALLATION

REMOVAL

WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

1. Squeeze the release buttons together and gently unsnap the trim cover (1) from the height adjuster to access the front seat belt turning loop mounting nut.

2. Remove the nut (1) that secures the seat belt turning loop to the height adjuster.
3. Remove the seat belt turning loop from the height adjuster.
4. Remove the upper B-pillar trim. Refer to **PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION** .



5. Remove the two bolts (1) that secure the height adjuster to the B-pillar.
6. Remove the adjuster from the B-pillar.

INSTALLATION

1. Position the seat belt turning loop adjuster to the B-pillar.
2. Install the two bolts that secure the adjuster to the B-pillar and tighten to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
3. Install the upper B-pillar trim. Refer to **PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION** .
4. Position the seat belt turning loop to the height adjuster. Be certain that the seat belt webbing between the retractor and the turning loop is not twisted.
5. Install the nut that secures the turning loop to the height adjuster and tighten to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
6. Install the trim cover to the height adjuster.

AIR BAG, DRIVER

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

REMOVAL

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbag, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

WARNING: **To avoid serious or fatal injury when removing a deployed airbag, rubber gloves, eye protection, and a long-sleeved shirt should be worn. There may be deposits on the airbag cushion and other interior surfaces. In large doses, these deposits may cause irritation to the skin and eyes.**

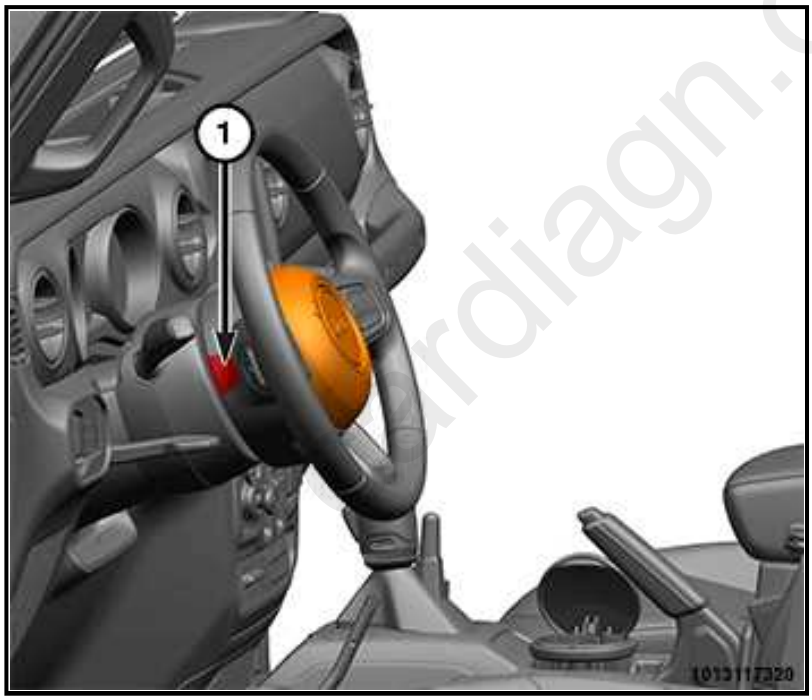
WARNING: **To avoid serious or fatal injury, use extreme care to prevent any foreign material from entering the Driver AirBag (DAB), or becoming entrapped between the DAB cushion and the DAB trim cover. Failure to observe this warning could result in occupant injuries upon airbag deployment.**

WARNING: **To avoid serious or fatal injury, the driver airbag trim cover must never be painted. Replacement airbags are serviced with trim covers 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.**

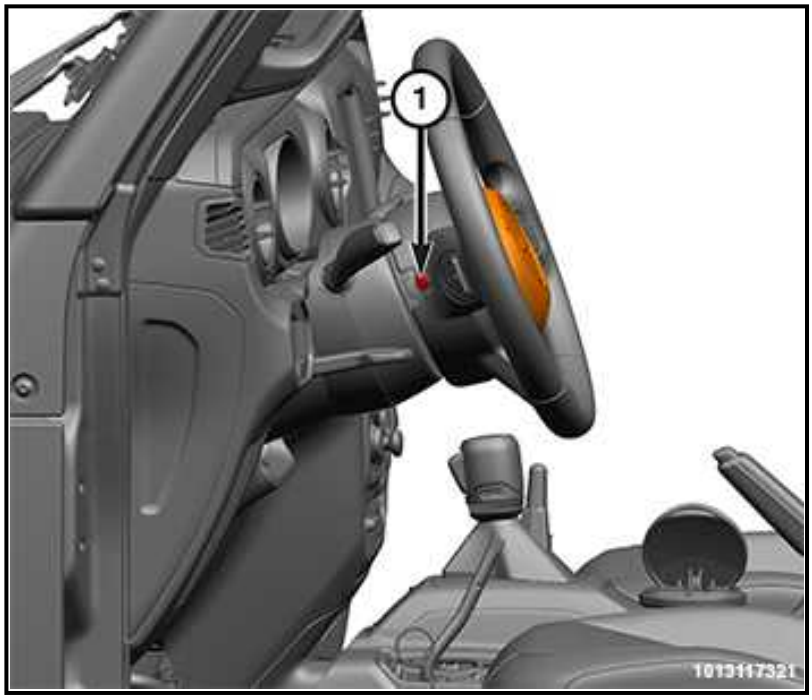
NOTE: **LHD model shown in illustration, RHD model similar.**

NOTE: **The following procedure is for replacement of an ineffective or damaged Driver AirBag (DAB). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS . If the DAB has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT .**

1. Disconnect and isolate the negative battery cable(s). Refer to STANDARD PROCEDURE .



2. Remove the two access panel closeouts (1) on the steering wheel near each of the two horizontal spokes.



3. Remove the two air bag retaining bolts (1) from the air bag.
4. Pull the DAB away from the steering wheel far enough to access the steering wheel wire harness connectors to the DAB inflator initiators.

CAUTION: **Do not pull on the clockspring pigtail wires or pry on the connector insulators to disengage them from the Driver AirBag (DAB) inflator initiator connector receptacles. Improper removal of these pigtail wires and their connector insulators can result in damage to the airbag circuits or the connector insulators.**

5. The clockspring DAB pigtail wire connector insulators are secured by integral latches and a Connector Position Assurance (CPA) lock to the airbag tether cutter and inflator connector receptacles, which are located on the back of the floating horn switch plate and the DAB housing. Pull the lock straight out from the connector insulator, then pull the insulators straight out from the connector receptacles to disengage and disconnect them.
6. Remove the DAB and floating horn switch plate from the steering wheel as a unit.
7. If the DAB has been deployed, the clockspring and stalk unit as well as the steering column must be replaced. Refer to **COLUMN, REMOVAL AND INSTALLATION** . Refer to **CLOCKSPRING, REMOVAL AND INSTALLATION**.

INSTALLATION

1. Position the DAB close enough to the steering wheel to access the steering wheel wire harness connectors to the DAB inflator initiators.
2. Connect the clockspring pigtail wire connectors to the airbag inflator initiator connector receptacles by pressing straight in on the connector insulator. Be certain to engage each keyed and color-coded connector to the matching connector receptacle. Be certain that each connector is fully engaged in its receptacle, then push the connector lock straight into the connector to lock it in place.
3. Carefully position the DAB to the steering wheel hub cavity while tugging lightly upward on the clockspring pigtail wires for the airbag and tucking the wires to the steering wheel. Be certain that none of the steering wheel wiring is pinched between the airbag housing or the horn switch and the steering wheel armature.
4. Using both hands, push firmly and evenly on both sides of the DAB trim cover until you can line the bolts up to the DAB. Install and tighten the bolts to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
5. Install the two access panel closeouts on the steering wheel near each of the two horizontal spokes.

6. Do not connect the negative cable to the battery at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

AIR BAG, PASSENGER

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

REMOVAL

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

WARNING: **To avoid serious or fatal injury when removing a deployed airbag, rubber gloves, eye protection, and a long-sleeved shirt should be worn. There may be deposits on the airbag unit and other interior surfaces. In large doses, these deposits may cause irritation to the skin and eyes.**

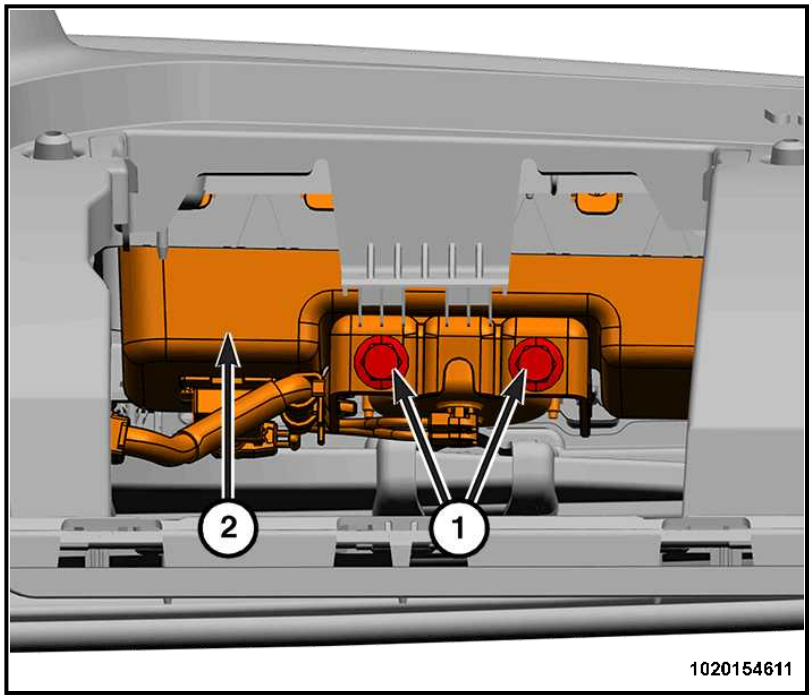
WARNING: **To avoid serious or fatal injury, use extreme care to prevent any foreign material from entering the passenger airbag, or from becoming entrapped between the airbag cushion and the deployment door. Failure to observe this warning could result in occupant injuries upon airbag deployment.**

WARNING: **To avoid serious or fatal injury, the instrument panel cover must never be painted. Replacement covers are serviced in the original colors. Paint may change the way in which the material of the cover responds to an airbag deployment. Failure to observe this warning could result in occupant injuries upon airbag deployment.**

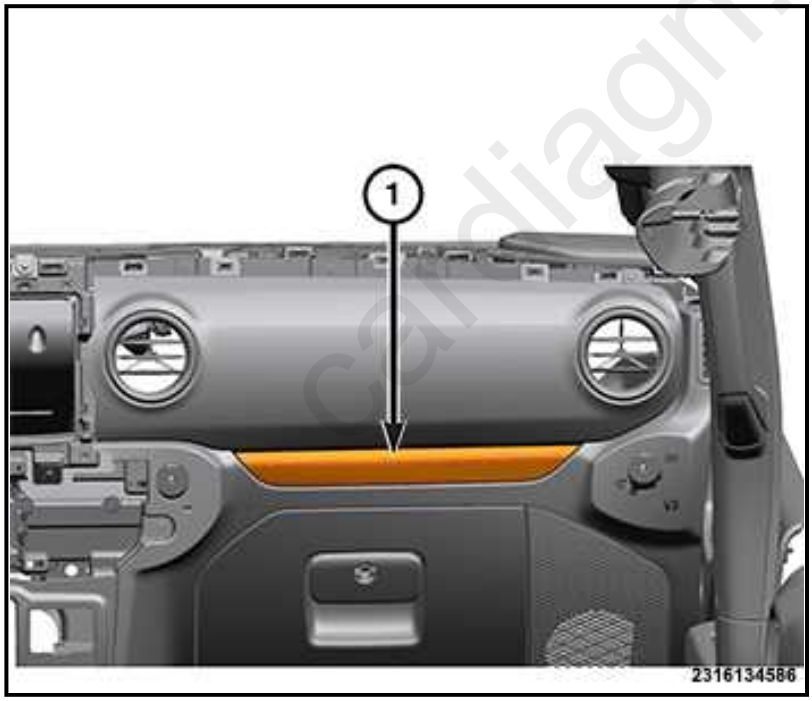
NOTE: **LHD model shown in illustration, RHD model similar.**

NOTE: **The following procedure is for replacement of an ineffective or damaged Passenger AirBag (PAB). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS . If the PAB has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT .**

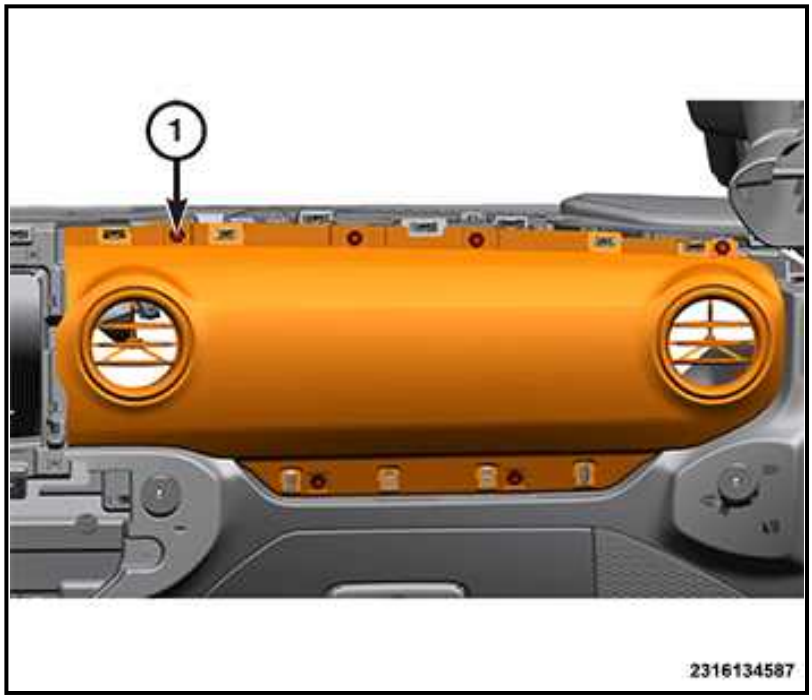
1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Remove the glove box from the instrument panel. Refer to **GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION** .
3. Remove the passenger side grab handle. Refer to **HANDLE, GRAB, REMOVAL AND INSTALLATION** .



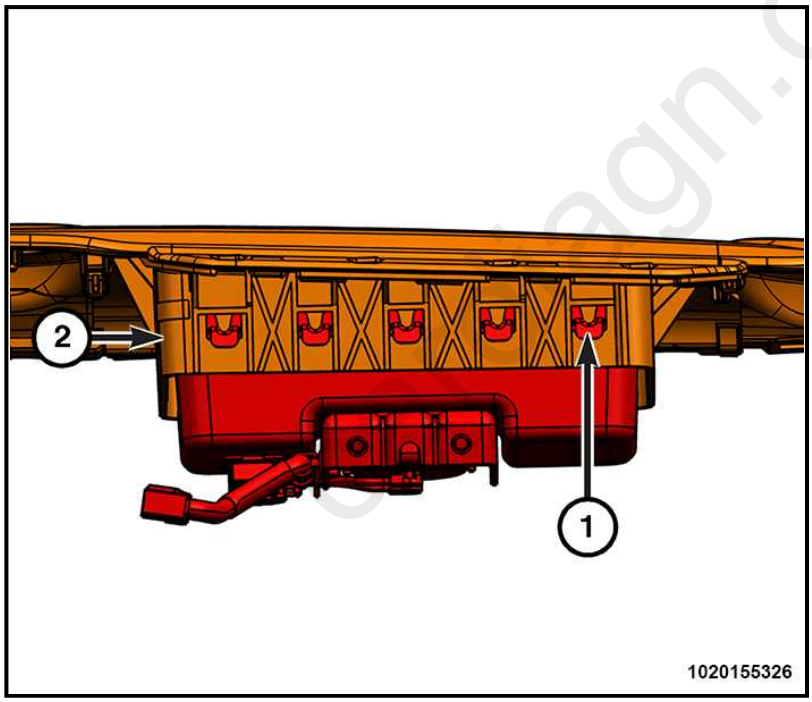
4. Reach through the instrument panel glove box opening to access and remove the two bolts (1) that secure the PAB (2) lower mounting bracket to the instrument panel structural support.
5. Reach through the instrument panel glove box opening to access and disconnect the instrument panel wire harness connector from the PAB jumper wire harness connector.
6. Remove the instrument panel pad. Refer to **PAD, INSTRUMENT PANEL, REMOVAL AND INSTALLATION** .



7. Remove the instrument panel trim (1).

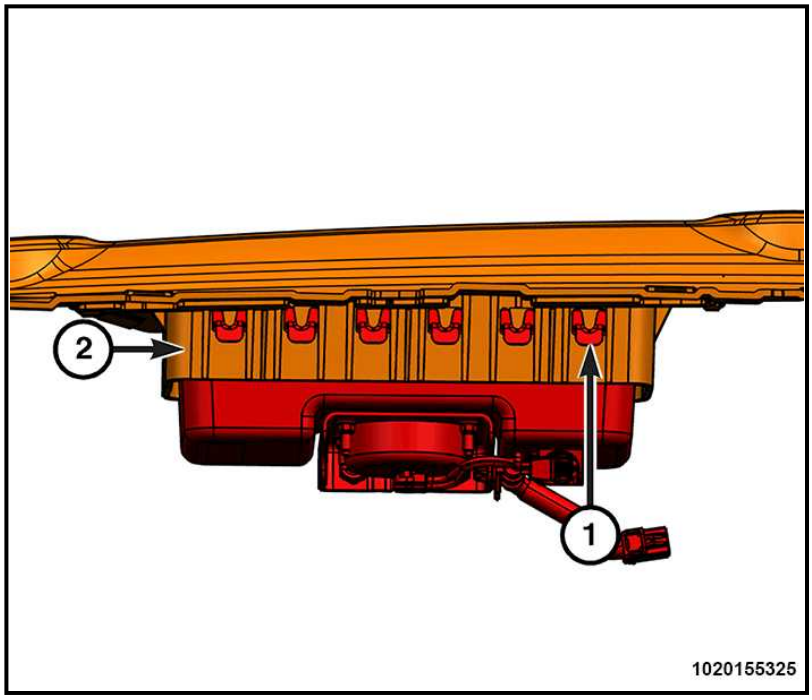


8. Remove the six screws (1) securing right side instrument panel trim to the instrument panel structural support.
9. Remove the PAB and right side instrument panel trim panel as a unit from the instrument panel structural support.

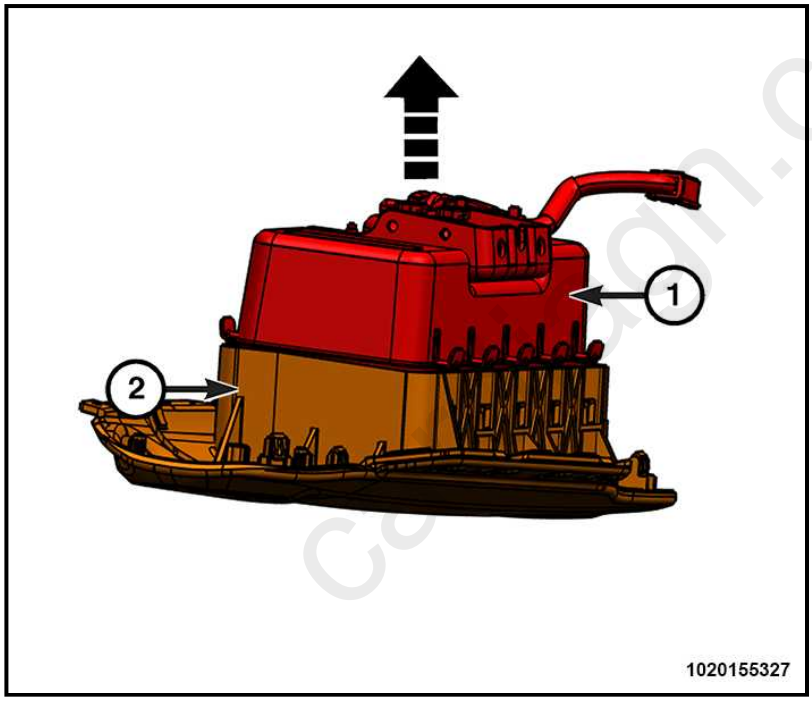


NOTE: **Starting with the 5-tab side makes it easier to disengage the 6-tab side.**

10. Disengage the hooks (1) on one side of the PAB from the windows in the upper or lower horizontal walls of the PAB chute (2) on the underside of the right side instrument panel trim panel. To disengage the hooks, use a suitable prying tool to pull the upper edge of the chute wall outward far enough to disengage the hooks on the adjacent edge of the PAB chute which is part of the right side instrument panel trim panel.



11. With the hooks on one side of the PAB disengaged from the chute, rotate that side of the PAB upward far enough to disengage the hooks (1) on the opposite side of the PAB from the chute (2).



12. With all of the hooks disengaged, lift the PAB (1) from the chute (2).

INSTALLATION

1. Carefully position the PAB to the PAB chute. The side of the PAB housing with six hooks faces UP in the vehicle.

NOTE: **Starting with the 6-tab side makes it easier to engage the 5-tab side.**

2. Engage the hooks on one side of the PAB with the windows in the upper or lower horizontal walls of the PAB chute.
3. Inspect around the perimeter of the PAB making certain each of the hooks on the PAB is fully engaged through the windows in the upper and lower walls of the PAB chute.
4. Position the PAB and right side instrument panel trim panel to the instrument panel structural support as a unit.

5. Install the six screws securing right side instrument panel trim to the instrument panel structural support and tighten securely.
6. Install the instrument panel trim.
7. Install the instrument panel pad. Refer to **PAD, INSTRUMENT PANEL, REMOVAL AND INSTALLATION** .
8. Reach through the instrument panel glove box opening to access and connect the instrument panel wire harness connector to the PAB jumper wire harness connector. Be certain the connectors are fully engaged and locked.
9. Reach through the instrument panel glove box opening to install the two bolts that secure the PAB lower mounting bracket to the instrument panel structural support. Tighten the screws to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
10. Install the passenger side grab handle. Refer to **HANDLE, GRAB, REMOVAL AND INSTALLATION** .
11. Install the glove box to the instrument panel. Refer to **GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION** .
12. Do not connect the negative cable to the battery at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

AIR BAG, SEAT

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

REMOVAL

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

WARNING: **To avoid serious or fatal injury when removing a deployed airbag, rubber gloves, eye protection, and a long-sleeved shirt should be worn. There may be deposits on the airbag unit and other interior surfaces. In large doses, these deposits may cause irritation to the skin and eyes.**

NOTE: **LHD model shown in illustration, RHD model similar.**

NOTE: **The following procedure is for replacement of an ineffective or damaged Seat AirBag (SAB). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS . If the SAB has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT .**

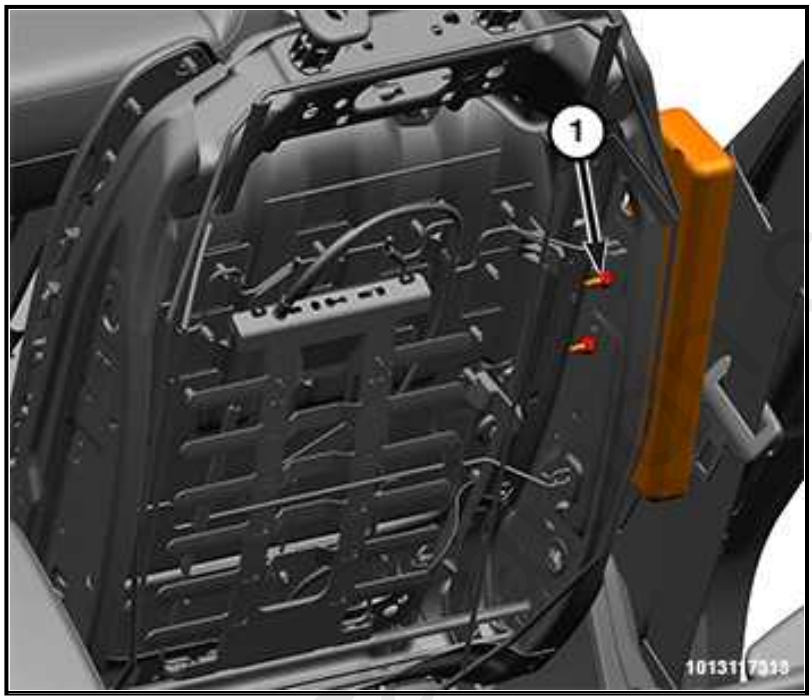
1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .

CAUTION: **During removal of the seat back trim cover, be certain not to tear or damage the integral nylon pouch that contains the seat airbag. If the nylon pouch or the trim cover are torn or damaged, the entire front seat back trim cover must be replaced with a new unit.**

2. Remove the seat back panel. Refer to **PANEL, SEAT BACK, FRONT, REMOVAL AND INSTALLATION** .

NOTE: **Do not pull on the seat airbag jumper wire harness take out or pry on the connector insulator to disengage the connector from the seat airbag inflator connector receptacle. Improper removal of this take out and its connector insulator can result in damage to the airbag circuits or the connector insulator.**

Disconnect the seat wire harness connector from the top of the SAB inflator. Pull the lock straight out from the connector insulator, then pull the insulator straight out from the connector receptacle to disengage and disconnect the wire harness connector.



3. Remove the two nuts (1) that secure the SAB to the seat back frame.
4. Remove the front seat back cover. Refer to **COVER, SEAT BACK, REMOVAL AND INSTALLATION** .

INSTALLATION

1. Install the front seat back cover. Refer to **COVER, SEAT BACK, REMOVAL AND INSTALLATION** .
2. Install the two nuts that secure the SAB to the inside of the seat back frame. Tighten the nuts to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
3. Connect the seat wire harness connector to the top of the SAB inflator. You can be certain that the connector is fully engaged in its receptacle by listening carefully for a distinct, audible click as the connector snaps in place.
4. Push the lock firmly to the SAB connector insulator until it is flush with the upper surface of the insulator.

CAUTION: **Be certain that all of the trim is properly reinstalled on the front seat back frame. Failure to do so will adversely affect the function of the seat airbag system.**

5. Install the front seat back panel. Refer to **PANEL, SEAT BACK, FRONT, REMOVAL AND INSTALLATION** .
6. Do not connect the negative battery cable at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

BUCKLE, SEAT BELT

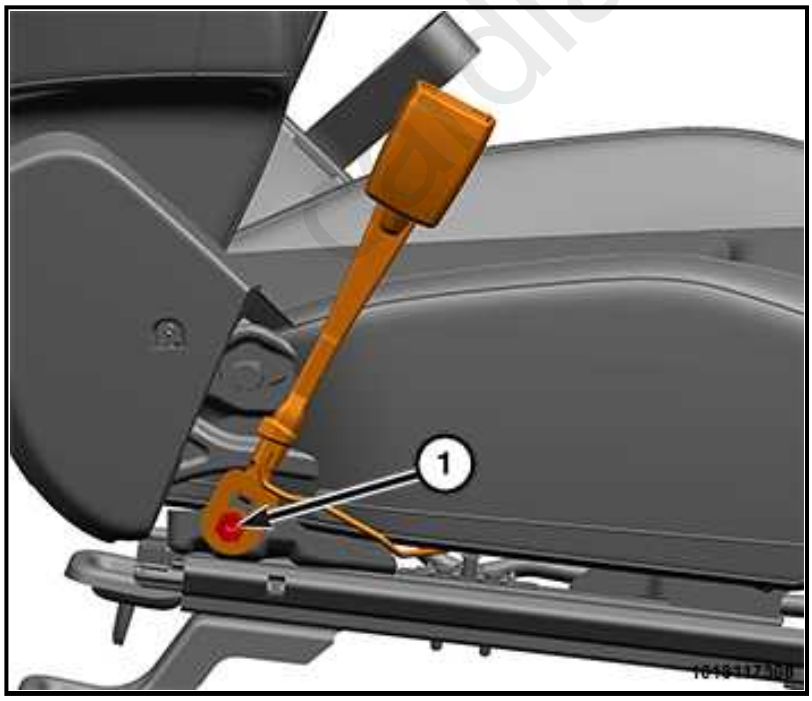
REMOVAL AND INSTALLATION

FRONT SEAT BELT BUCKLE

REMOVAL

WARNING: To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.

1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Remove the appropriate left or right front seat from the vehicle. Refer to **SEAT, FRONT, REMOVAL AND INSTALLATION** .



3. Remove the bolt (1) that secures the buckle lower anchor to the bracket on the inboard rear corner of the seat cushion frame.
4. Note or mark the routing of the seat belt switch pigtail wire to ease reinstallation.
5. Release the seat belt switch pigtail wire from the retainers on the underside of the front seat cushion.
6. Disconnect the seat belt switch pigtail connector from the seat wire harness.

7. Remove the seat belt buckle from the front seat.

INSTALLATION

1. Position the seat belt buckle lower anchor to the bracket on the inboard rear corner of the front seat.
2. Route the seat belt switch pigtail wire beneath the seat and engage it with the retainers on the underside of the front seat cushion.
3. Connect the seat belt switch pigtail wire connector to the seat wire harness connector.
4. Install the bolt that secures the buckle lower anchor to the seat bracket. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
5. Install the left or right front seat into the vehicle. Refer to **SEAT, FRONT, REMOVAL AND INSTALLATION** .
6. Do not connect the negative battery cable at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

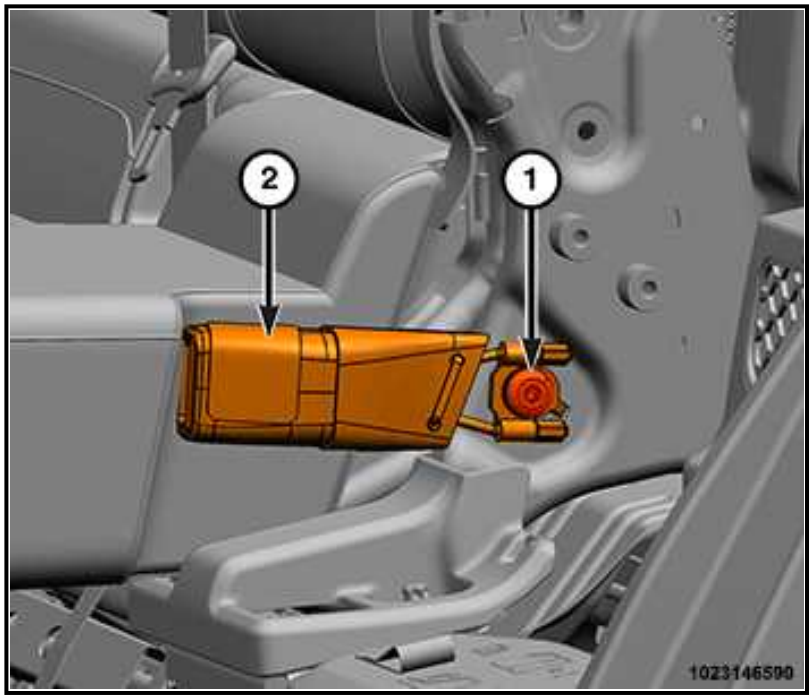
REAR, CENTER

REMOVAL

WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

NOTE: **The rear right, left, and center seat belt buckles are serviced individually.**

1. Remove the 40% rear seat from the vehicle. Refer to **SEAT, SECOND ROW, REMOVAL AND INSTALLATION** .



2. Remove the bolt (1) that secures the rear center seat belt buckle (2) to the seat cushion frame.
3. Remove the rear center seat belt buckle from the seat cushion frame.
4. If equipped, disconnect the wire harness connector and remove the buckle from the vehicle.

INSTALLATION

NOTE: **The rear right, left, and center seat belt buckles are serviced individually.**

1. If equipped, connect the wire harness connector.
2. Position the rear center seat belt buckle to the seat cushion frame.
3. Install the bolt that secures the rear center seat belt buckle to the seat cushion frame. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
4. Install the 40% rear seat from the vehicle. Refer to **SEAT, SECOND ROW, REMOVAL AND INSTALLATION** .

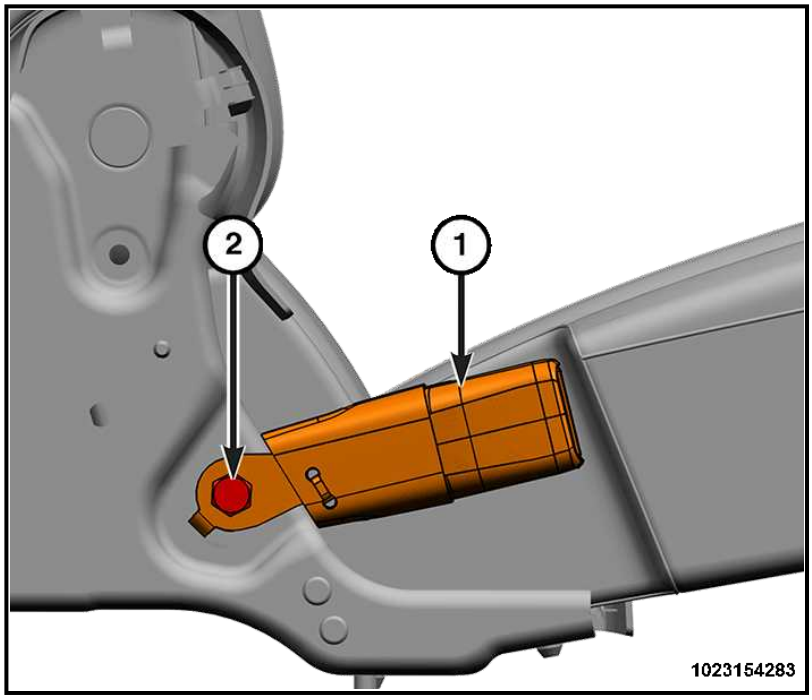
REAR OUTBOARD, LEFT

REMOVAL

WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

NOTE: **The rear right, left, and center seat belt buckles are serviced individually.**

1. Remove the 40% rear seat from the vehicle. Refer to **SEAT, SECOND ROW, REMOVAL AND INSTALLATION** .



2. Remove the bolt (2) that secures the left rear seat belt buckle (1) to the seat cushion frame.
3. Remove the left rear seat belt buckle from the seat cushion frame.
4. If equipped, disconnect the wire harness connector and remove the buckle from the vehicle.

INSTALLATION

NOTE: **The rear right, left, and center seat belt buckles are serviced individually.**

1. If equipped, connect the wire harness connector.
2. Position the left rear seat belt buckle to the seat cushion frame.
3. Install the bolt that secures the left rear seat belt buckle to the seat cushion frame. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
4. Install the 40% rear seat from the vehicle. Refer to **SEAT, SECOND ROW, REMOVAL AND INSTALLATION** .

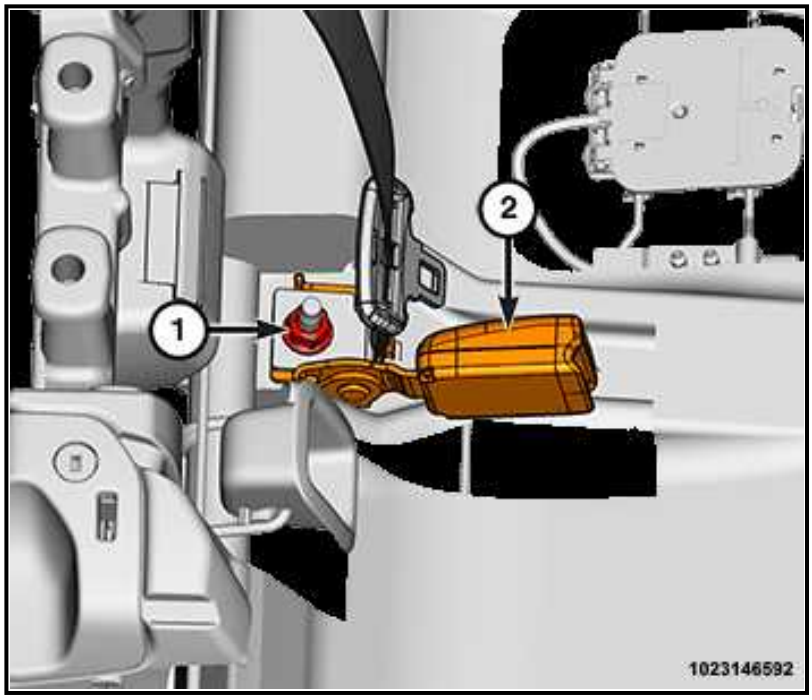
REAR OUTBOARD, RIGHT

REMOVAL

WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

NOTE: **The rear right, left, and center seat belt buckles are serviced individually.**

1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .



2. Remove the nut (1) that secures the right rear seat belt buckle (2) to the seat cushion frame.
3. Remove the right rear seat belt buckle from the seat cushion frame.
4. If equipped, disconnect the wire harness connector and remove the buckle from the vehicle.

INSTALLATION

NOTE: The rear right, left, and center seat belt buckles are serviced individually.

1. If equipped, connect the wire harness connector.
2. Position the right rear seat belt buckle to the rear floor panel.
3. Install the nut that secures the right rear seat belt buckle to the seat cushion frame. Tighten the nut to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
4. Connect the negative battery cable(s). Refer to **STANDARD PROCEDURE** .

CLOCKSPRING

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

The clockspring for this vehicle is integral to the Steering Column Controls Module (SCCM). If any function of the clockspring is ineffective, or if the clockspring is damaged, the entire SCCM must be replaced. Refer to **MODULE, STEERING COLUMN CONTROL (SCCM), REMOVAL AND INSTALLATION** .

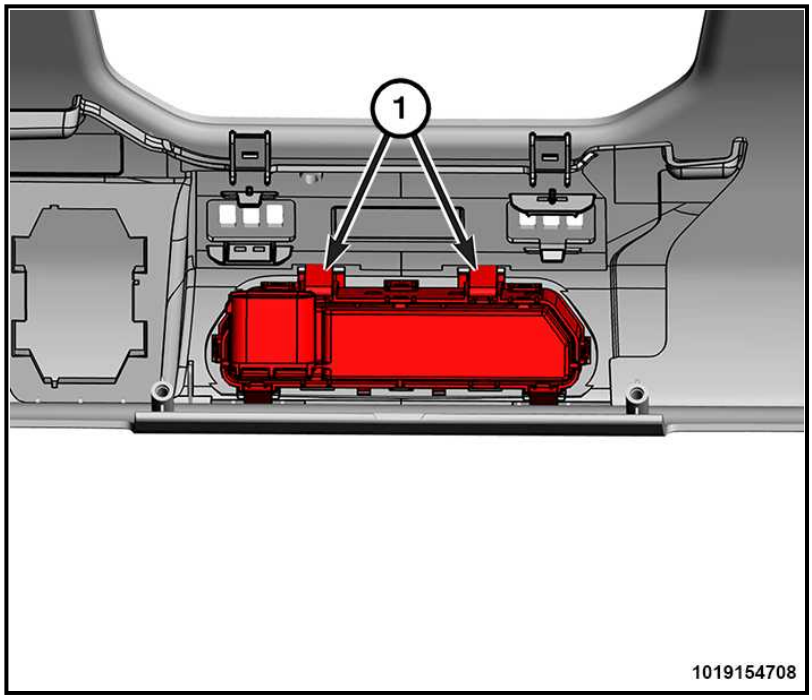
INDICATOR, PASSENGER AIR BAG

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

REMOVAL

1. Remove the header panel. Refer to **PANEL, HEADER, REMOVAL AND INSTALLATION** .



2. Disengage the four clips (1) securing the passenger airbag indicator to the header panel.

INSTALLATION

1. Install the passenger airbag indicator to the header panel and engage the four clips.
2. Install the header panel. Refer to **PANEL, HEADER, REMOVAL AND INSTALLATION** .

RETRACTOR, SEAT BELT

REMOVAL AND INSTALLATION

FRONT SEAT BELT RETRACTOR

REMOVAL

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

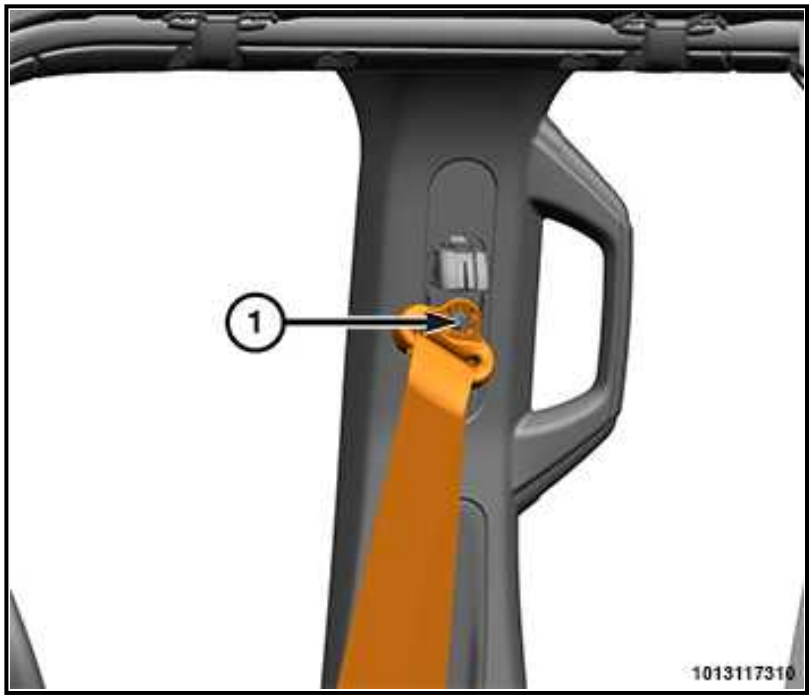
WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

NOTE: **LHD model shown in illustration, RHD model similar.**

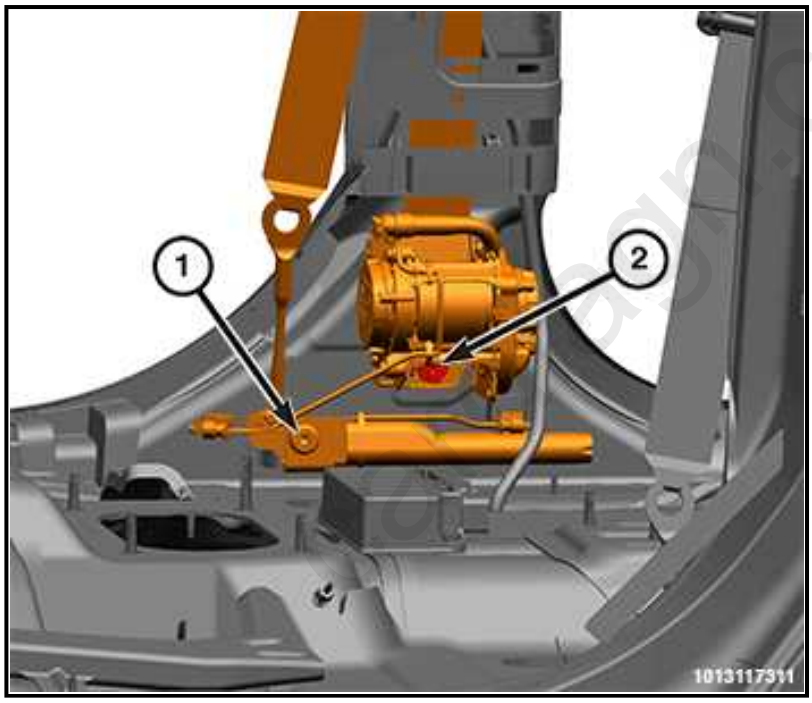
NOTE: **The following procedure is for replacement of an ineffective or damaged seat belt and retractor unit. The front retractor also includes a seat belt tensioner. If the front seat belt or retractor is ineffective or damaged, but the seat belt tensioner is not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS . If the seat belt tensioner has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the unit from the vehicle. Refer to SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT .**

1. Disconnect and isolate the negative battery cable(s). Refer to STANDARD PROCEDURE .
2. Remove the upper and lower trim from the B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .
3. Disconnect the three wire harness connectors from the initiators of the two tensioners and the adaptive load limiter.

4. Remove the protective cover (1) from over the nut for the seat belt turning loop.
5. Remove the retractor belt guide from the B-pillar.



6. Remove the nut (1) that secures the seat belt turning loop to the height adjuster.
7. Remove the seat belt turning loop from the height adjuster.



8. Remove the bolt that secures the retractor bracket (2) to the B-pillar, and remove the bolt (1) that secures the anchor tensioner to the B-pillar
9. Lift the retractor assembly upward far enough to disengage the T-tab on the retractor bracket from the notch in the B-pillar.
10. Remove the front seat belt retractor and anchor tensioner from the vehicle as a unit.

INSTALLATION

1. Position the seat belt retractor unit to the B-pillar by engaging the T-tab on the retractor bracket to the notch in the inner B-pillar and align the anchor tensioner with the mounting hole in the B-pillar.
2. Install the bolt that secures the retractor bracket to the B-pillar. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
3. Install the bolt that secures the anchor tensioner to the B-pillar. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .

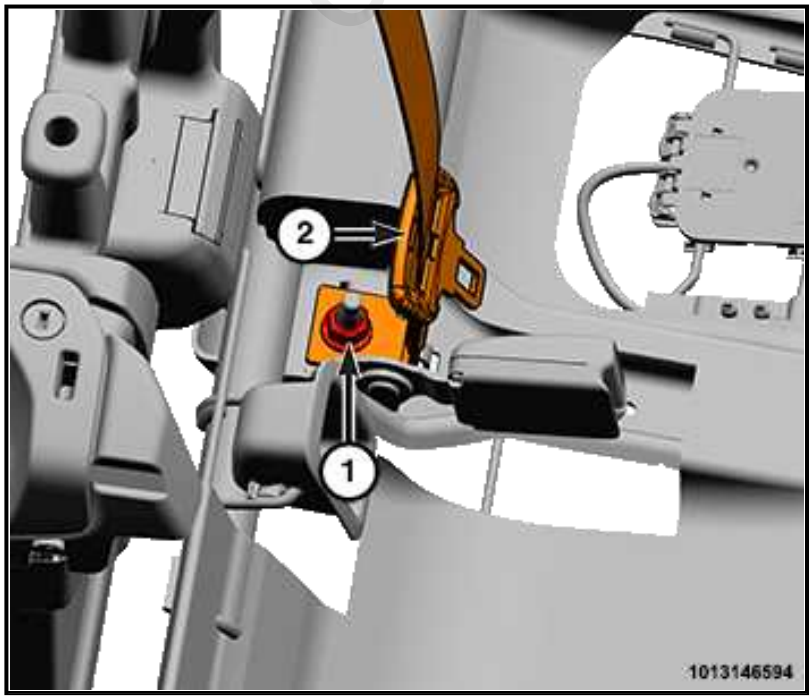
4. Position the seat belt turning loop to the height adjuster. Be certain that the seat belt webbing between the retractor and the turning loop is not twisted.
5. Install the nut that secures the turning loop to the height adjuster. Tighten the nut to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
6. Install the retractor belt guide to the B-pillar.
7. Install the cover over the top of the seat belt turning loop.
8. Connect the three wire harness connectors to the initiators for the two tensioners and the adaptive load limiter.
9. Install the lower and upper trim to the B-pillar, Be certain that the seat belt webbing between the turning loop and the lower anchor buckle is not twisted. Refer to **PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION** .
10. Do not connect the negative cable to the battery at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

REAR CENTER SEAT BELT RETRACTOR

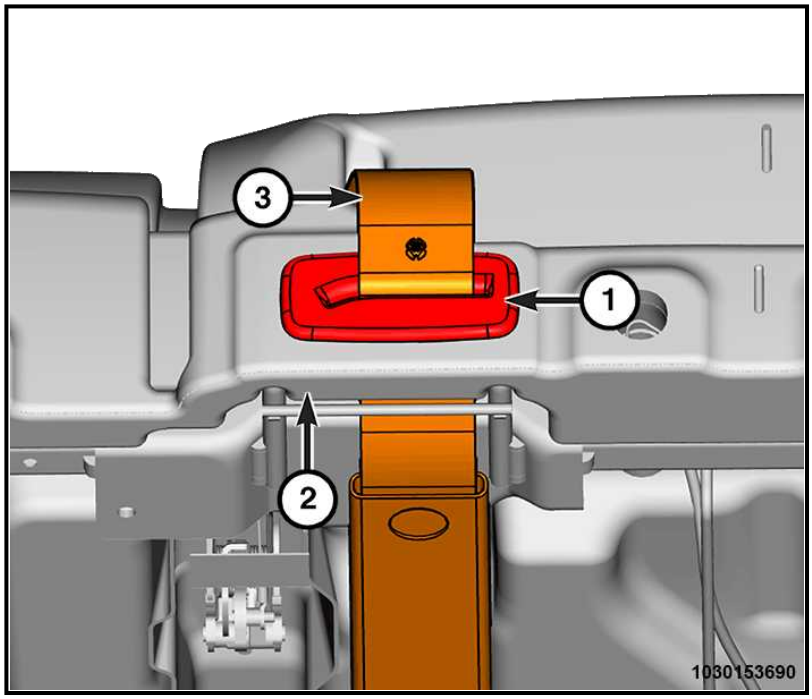
REMOVAL

WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

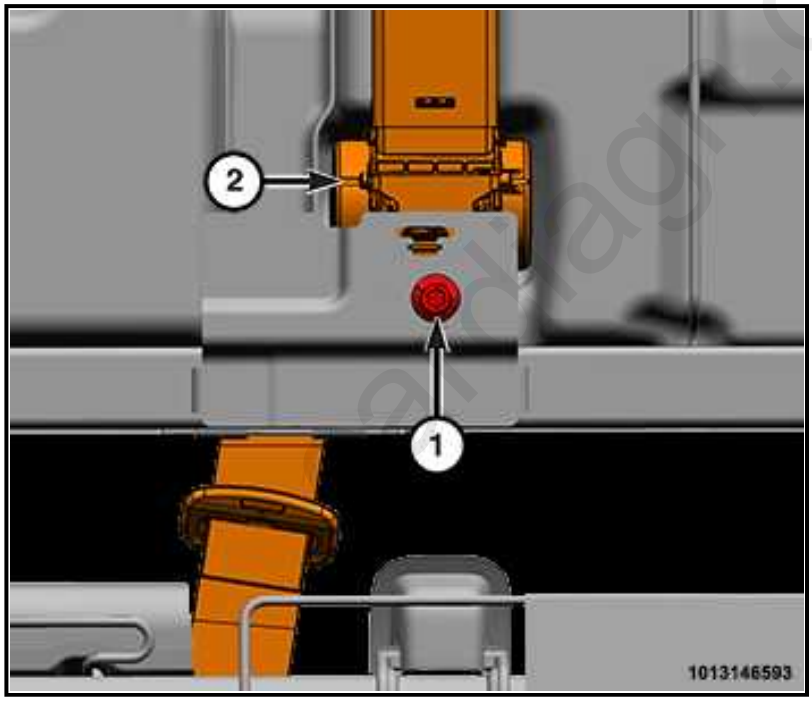
1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Remove the 60% seatback panel. Refer to **PANEL, SEAT BACK, SECOND ROW, REMOVAL AND INSTALLATION** .



3. Remove the nut (1) that secures the center rear seat belt anchor (2) to the seat cushion frame.



4. Disengage the seat belt guide (1) at the top of the seat back (2) and remove from the seat belt (3) through the slit in the seat belt guide.



5. Remove the bolt (1) that secures the retractor (2) to the seat back frame.
6. Disengage the T-tab of the retractor bracket from the keyed hole in the seat back frame.
7. Disengage the seat belt webbing and latch plates from the guide at the top of the seat back frame.
8. Remove the rear center seat belt and retractor from the seat back frame as a unit.

INSTALLATION

1. Position the rear center seat belt and retractor to the seat back from the front of the right rear seat back frame as a unit.
2. Engage the T-tab of the retractor bracket with the keyed hole in the seat back bracket.
3. Install the bolt that secures the retractor to the frame. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .

4. Route the seat belt and latch plates through the guide at the top of the seat back frame. Be certain the seat belt webbing is not twisted between the retractor and the top of the seat back.
5. Position the seat belt anchor to the seat back. Be certain the seat belt webbing is not twisted.
6. Install the nut that secures the seat belt anchor to the seat cushion frame. Tighten the nut to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
7. Install the 60% seatback panel. Refer to **PANEL, SEAT BACK, SECOND ROW, REMOVAL AND INSTALLATION** .
8. Connect the negative battery cable(s). Refer to **STANDARD PROCEDURE** .

REAR OUTBOARD SEAT BELT RETRACTOR

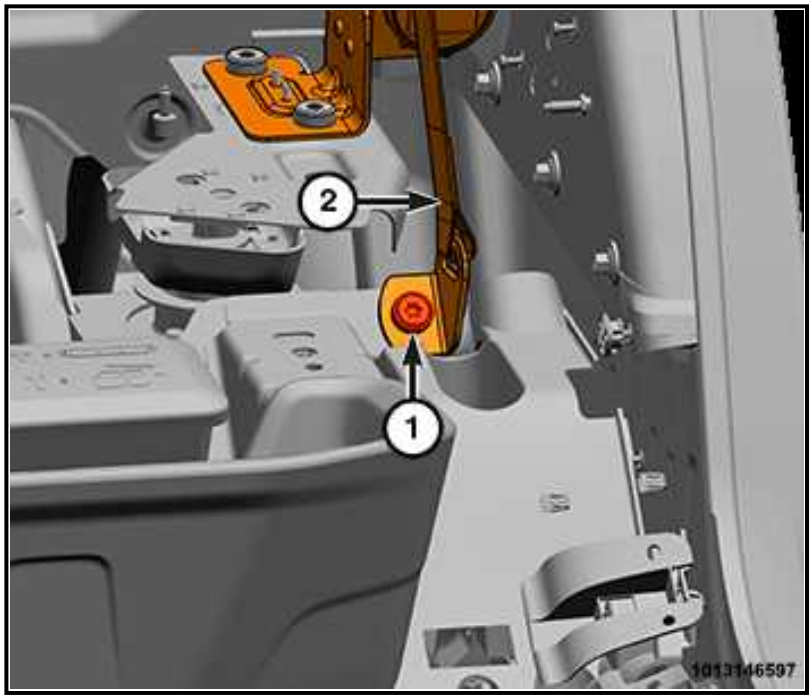
REMOVAL

WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

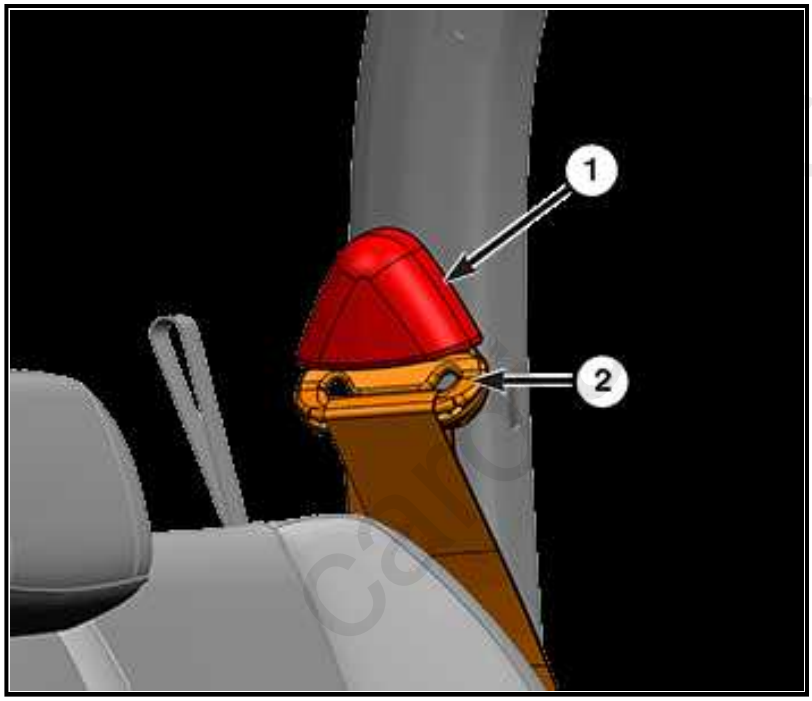
WARNING: **To avoid serious or fatal injury during and following any seat belt or child restraint anchor service, carefully inspect all seat belts, buckles, mounting hardware, retractors, tether straps, and anchors for proper installation, operation, or damage. Replace any belt that is cut, frayed, or torn. Straighten any belt that is twisted. Tighten any loose fasteners. Replace any belt that has a damaged or ineffective buckle or retractor. Replace any belt that has a bent or damaged latch plate or anchor plate. Replace any child restraint anchor or the unit to which the anchor is integral that has been bent or damaged. Never attempt to repair a seat belt or child restraint component. Always replace damaged or ineffective seat belt and child restraint components with the correct, new and unused replacement parts listed in the MoparB® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.**

NOTE: **The following procedure is for replacement of an ineffective or damaged seat belt and retractor unit. In vehicles manufactured for Europe-Middle East-Africa (EMEA) markets the rear outboard retractors also include a retractor seat belt tensioner. If the rear outboard seat belt, retractor or tensioner is ineffective or damaged, but the seat belt tensioner is not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS . If the seat belt tensioner has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the unit from the vehicle. Refer to SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT .**

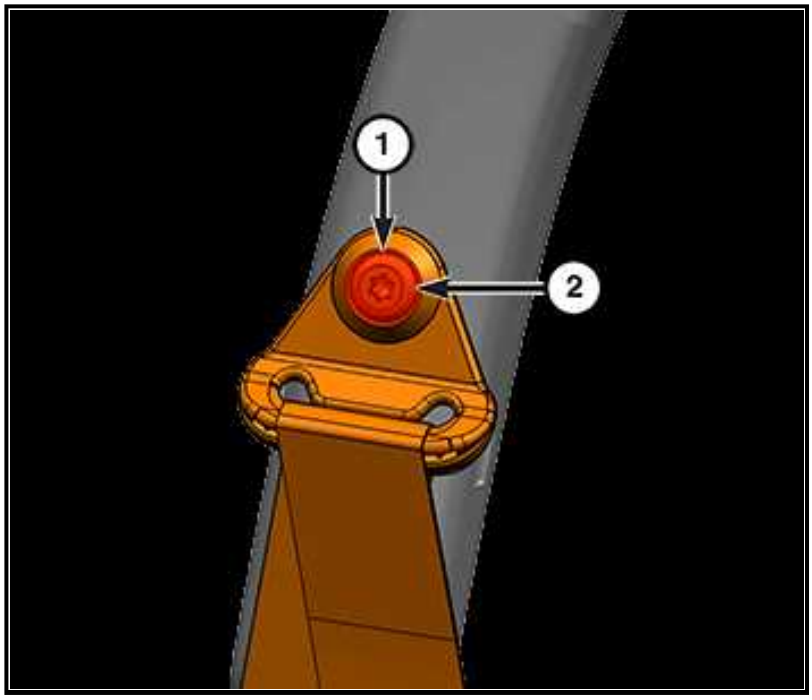
1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Remove the quarter trim panel. Refer to **PANEL, QUARTER TRIM, REMOVAL AND INSTALLATION** .



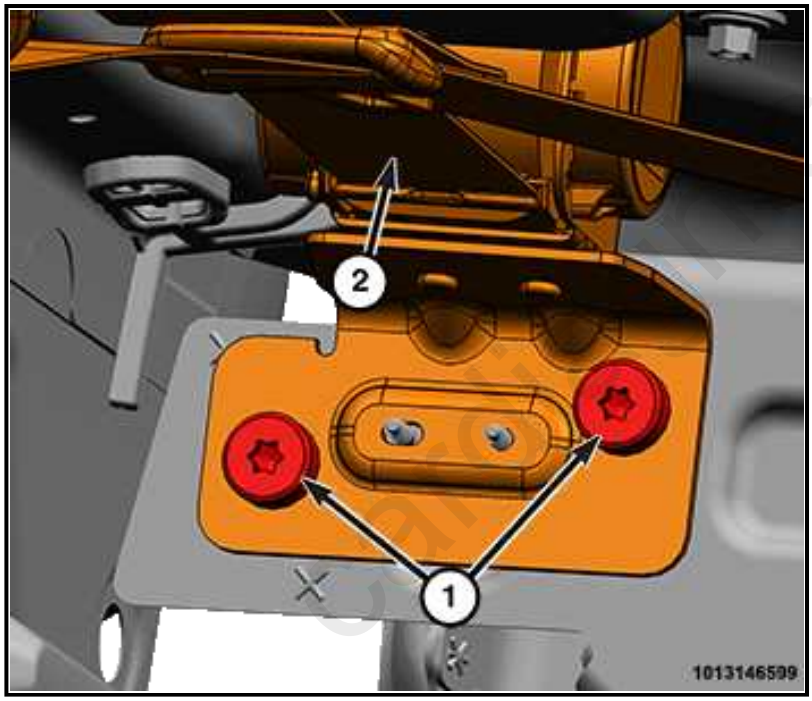
3. Remove the bolt (1) that secures the rear outboard seat belt lower anchor to the floor panel.



4. Remove the trim cover (1) for the rear outboard seat belt turning loop (2).



5. Remove the bolt (1) that secures the rear outboard seat belt turning loop (2) to the sport bar.



6. Remove the two bolts (1) that secures the retractor (2) to the floor panel.
7. Remove the rear outboard seat belt and retractor from the vehicle as a unit.

INSTALLATION

1. Position the rear outboard seat belt and retractor to the vehicle as a unit.
2. Install the two bolts that secures the retractor to the floor panel. Tighten the bolts to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
3. Position the seat belt turning loop to the sport bar. Be certain the seat belt webbing between the retractor and the turning loop is not twisted.
4. Install the bolt that secures the turning loop to the sport bar. Tighten the screw to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
5. Install the trim cover to the rear outboard seat belt turning loop.
6. Position the rear seat belt lower anchor near the base of the floor panel. Be certain the seat belt webbing between the turning loop and the lower anchor is not twisted.

7. Install the bolt that secures the lower anchor near the base of the floor panel. Tighten the bolt to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
8. Install the quarter trim panel. Refer to **PANEL, QUARTER TRIM, REMOVAL AND INSTALLATION** .
9. Do not connect the negative battery cable at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

SENSOR, IMPACT

REMOVAL AND INSTALLATION

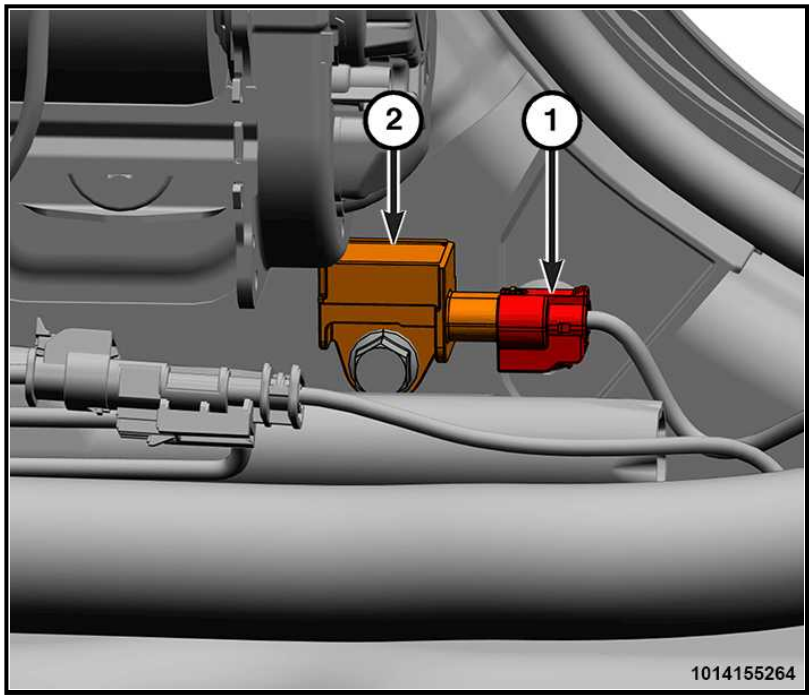
B-PILLAR IMPACT SENSOR

REMOVAL

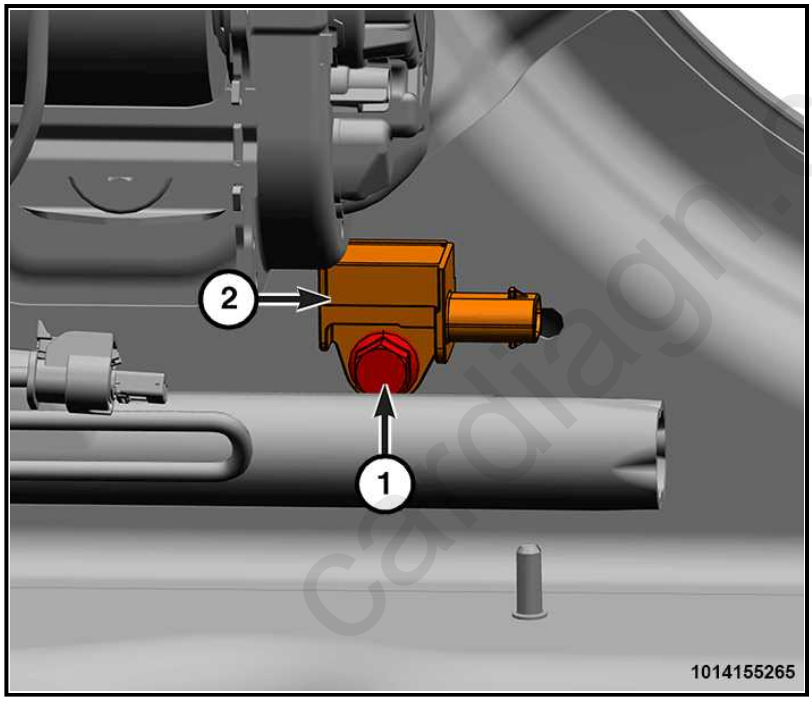
WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

WARNING: **To avoid serious or fatal injury, never strike or drop the side impact sensor, as it can damage the impact sensor or affect its calibration. The side impact sensor enables the system to deploy the side Supplemental Restraint System (SRS) components. If an impact sensor is accidentally dropped during service, the sensor must be scrapped and replaced with a new unit. Failure to observe this warning could result in accidental, incomplete, or improper side SRS component deployment.**

1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Adjust the driver or passenger side front seat to its most forward position for easiest access to the B-pillar.
3. Remove the lower B-pillar trim. Refer to **PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION** .



4. Disconnect the wire harness connector (1) from the side impact sensor (2).



5. Remove the bolt (1) that secures the side impact sensor (2) to the lower B-pillar.
6. Disengage the locating and anti-rotation pin of the sensor from the clearance hole in the inner B-pillar.
7. Remove the sensor from the vehicle.

INSTALLATION

1. Position the side impact sensor to the B-pillar. Be certain that the locating and anti-rotation pin on the back of the sensor is engaged in the clearance hole of the B-pillar.
2. Install the bolt that secures the sensor to the B-pillar. Tighten the nut to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .
3. Connect the wire harness connector to the side impact sensor.
4. Install the lower B-pillar trim. Refer to **PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION** .
5. Do not connect the negative battery cable at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to

SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST .

FRONT IMPACT SENSOR

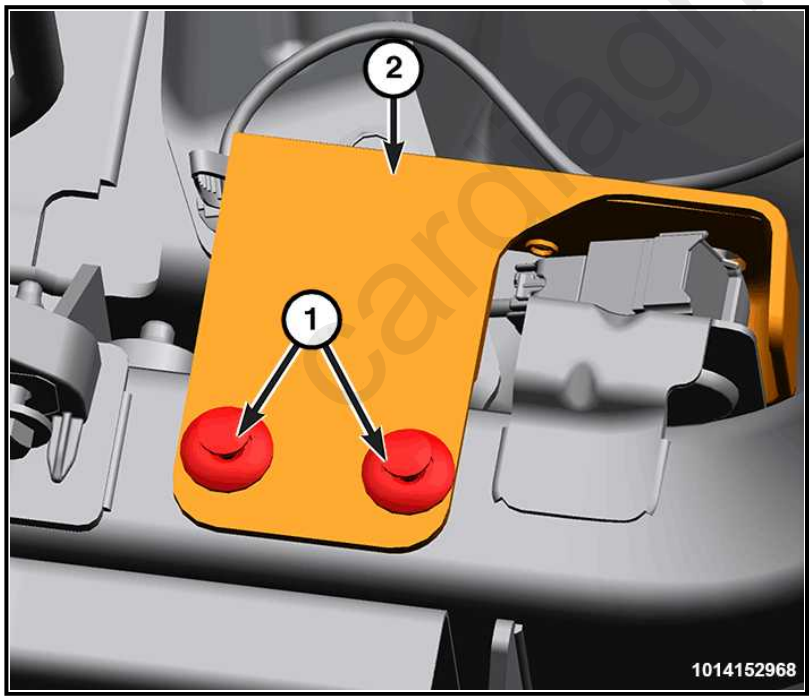
REMOVAL

NOTE: **LH sensor shown in illustration, RH sensor similar.**

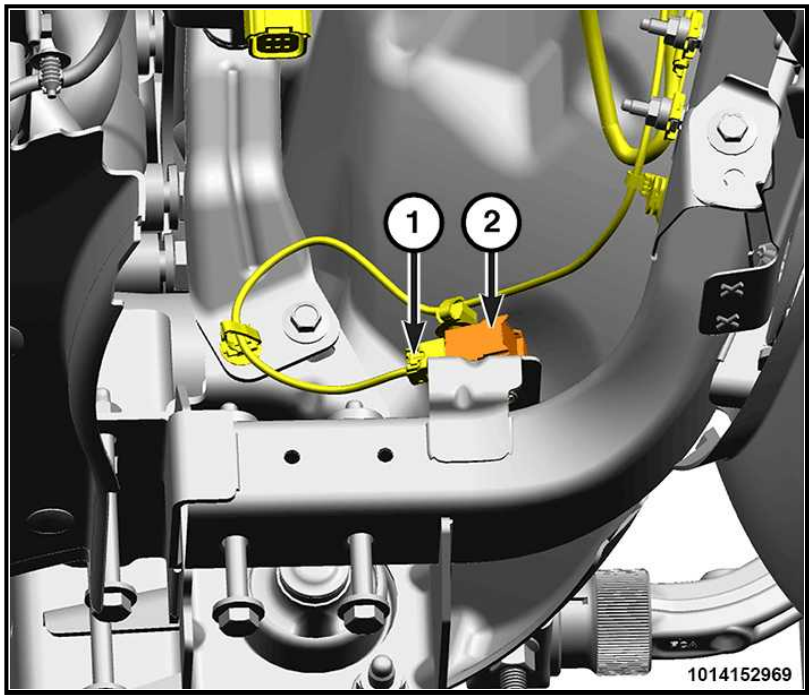
WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbag, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

WARNING: **To avoid serious or fatal injury, never strike or drop the front impact sensor, as it can damage the impact sensor or affect its calibration. The front impact sensor enables the system to deploy the front supplemental restraints. If an impact sensor is accidentally dropped during service, the sensor must be scrapped and replaced with a new unit. Failure to observe this warning could result in accidental, incomplete, or improper front supplemental restraint deployment.**

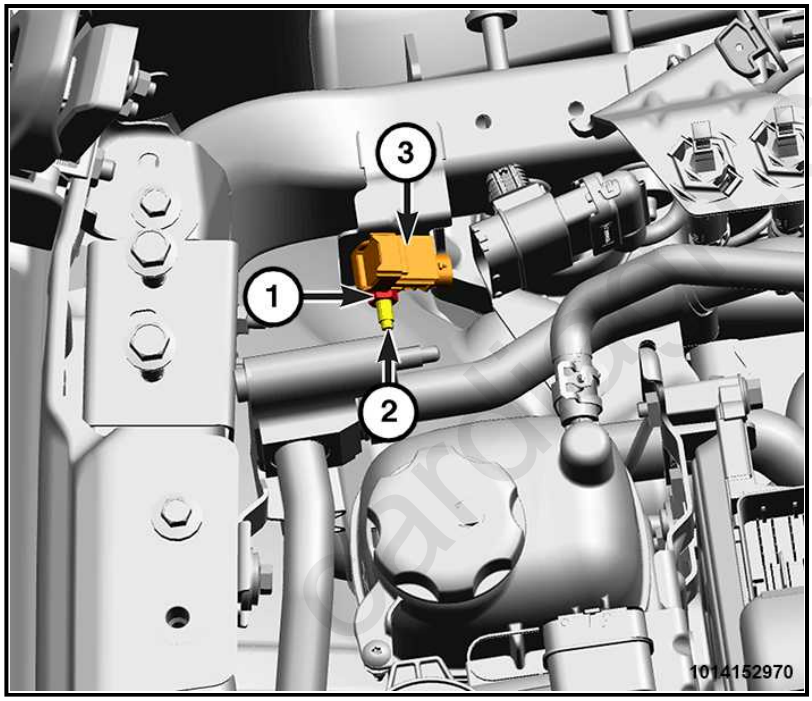
1. Remove the appropriate side headlamp unit. Refer to UNIT, HEADLAMP, REMOVAL AND INSTALLATION .



2. Remove the two push fasteners (1) securing the front impact sensor shield (2) and position it aside.



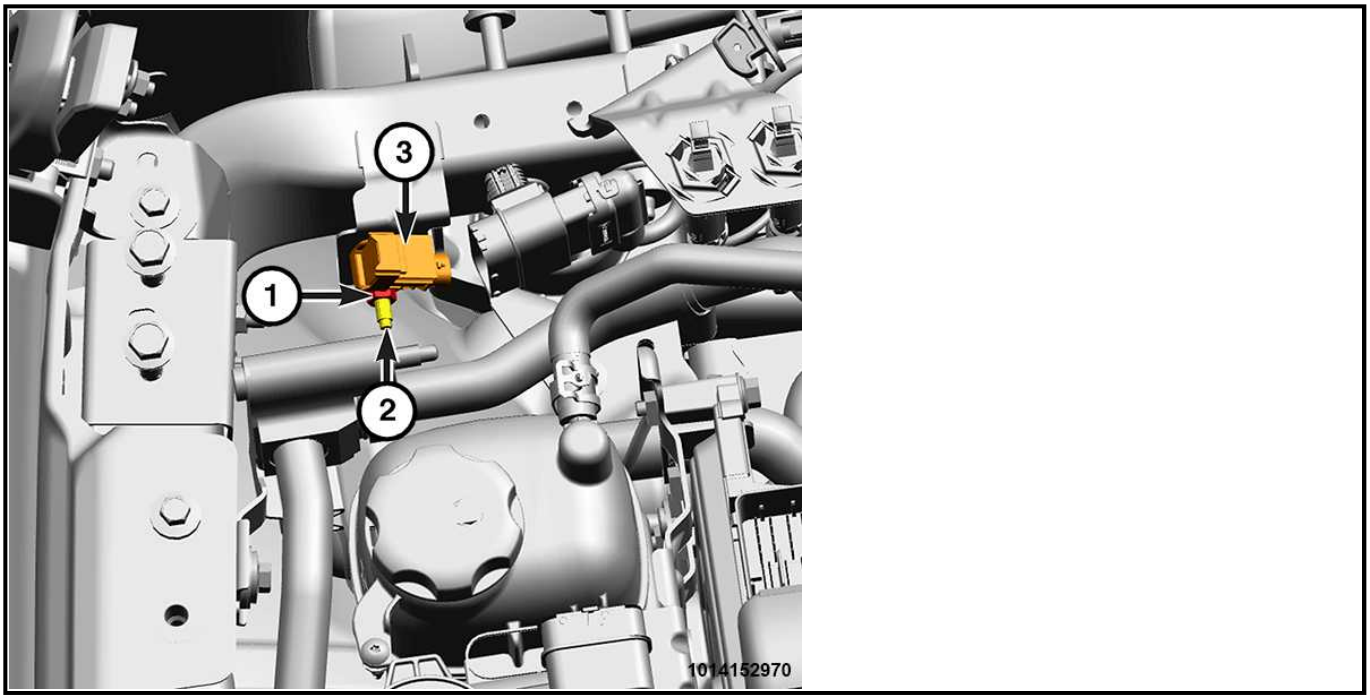
3. Disconnect the wire harness connector (1) from the impact sensor (2).



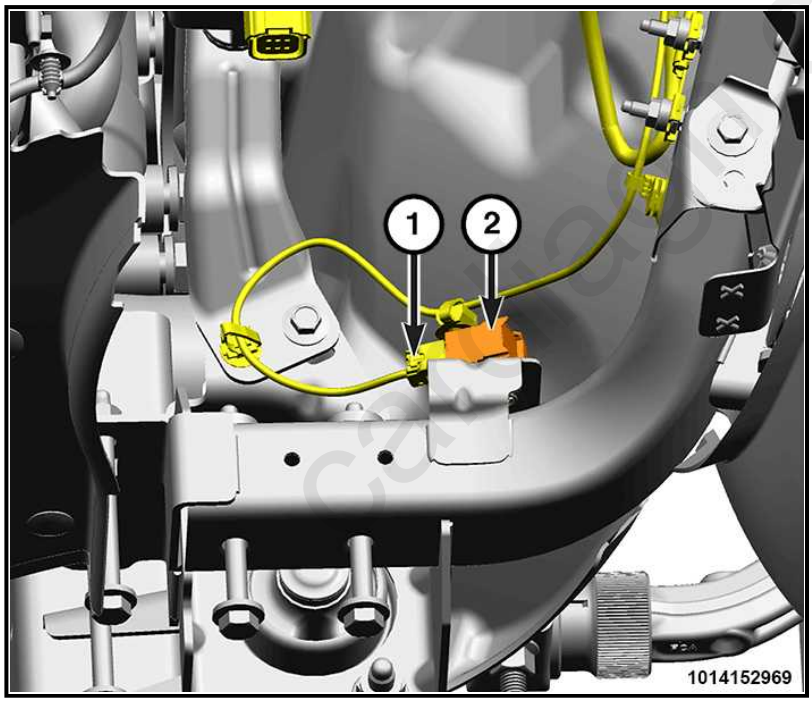
4. Remove the nut (1) securing impact sensor (3) to the mounting stud (2) and remove the sensor from the vehicle.

INSTALLATION

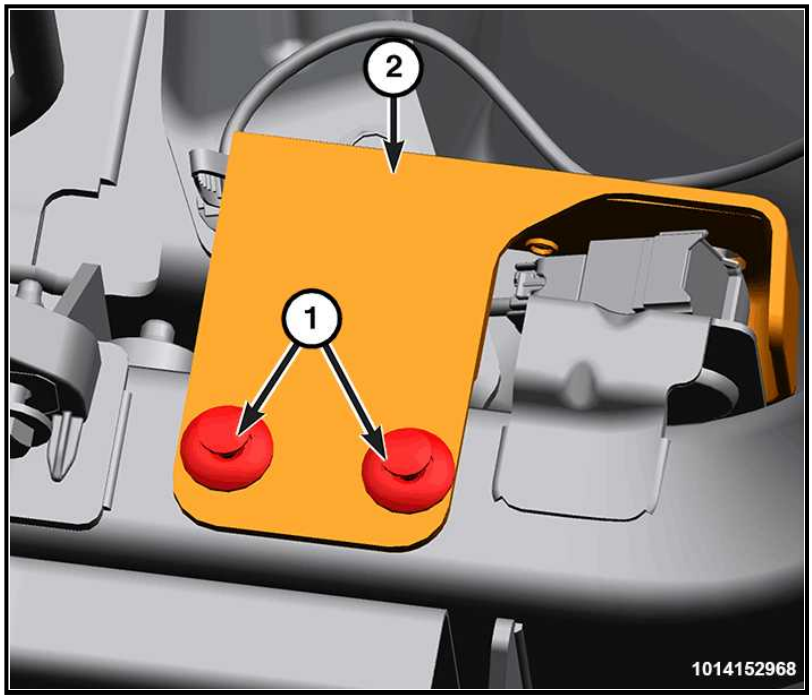
NOTE: **Verify that the locating and anti-rotation pin on the back of the sensor is engaged in the clearance hole of the radiator support.**



1. Position the front impact sensor (3) to the stud (2).
2. Install the nut (1) that secures the front impact sensor to the mounting stud and tighten it to the proper torque specification. Refer to **TORQUE SPECIFICATIONS** .



3. Connect the wire harness connector (1) to the impact sensor (2).



4. Position the impact sensor shield (2) and install the two push fasteners (1).
5. Install the headlamp unit. Refer to **UNIT, HEADLAMP, REMOVAL AND INSTALLATION** .
6. Do not connect the negative battery cable at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

SENSOR, OCCUPANT DETECTION

REMOVAL AND INSTALLATION

FRONT

REMOVAL

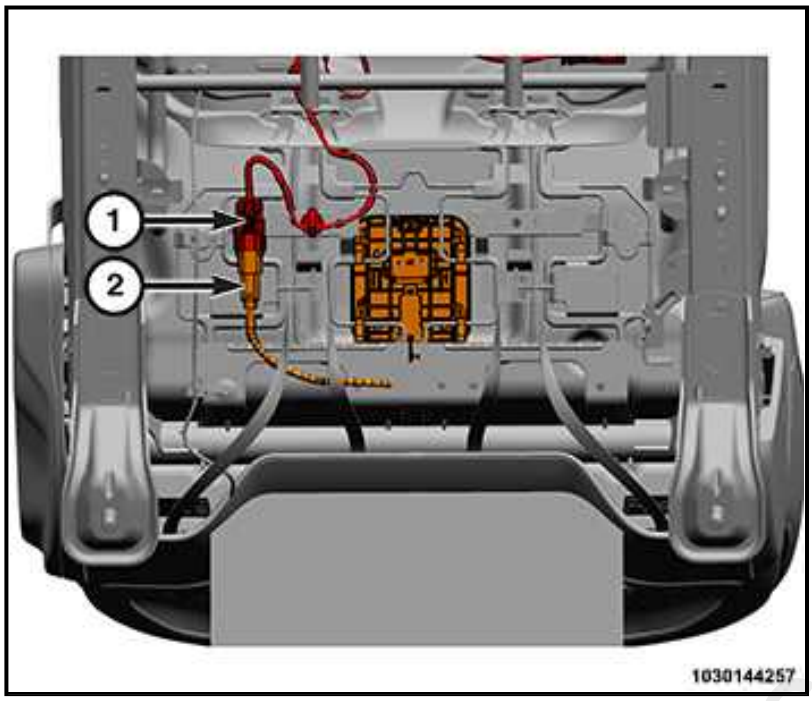
WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

CAUTION: **When handling a new Occupant Detection Sensor (ODS), it should never be bent, creased, torn, cut or abraded. The ODS should not be handled with or come into contact with hard or sharp-edged tools or objects. Do not allow the ODS to drop more than 2 meters (6.5 feet). Prior to installation, do not sit on, stand on or place boxes, tools or any other foreign object on the ODS. Do not modify the seat foam or trim materials of a seat that contains an ODS. Failure to observe these cautions may result in an inoperative ODS, or an ODS that provides inaccurate inputs to the Occupant Restraint Controller (ORC).**

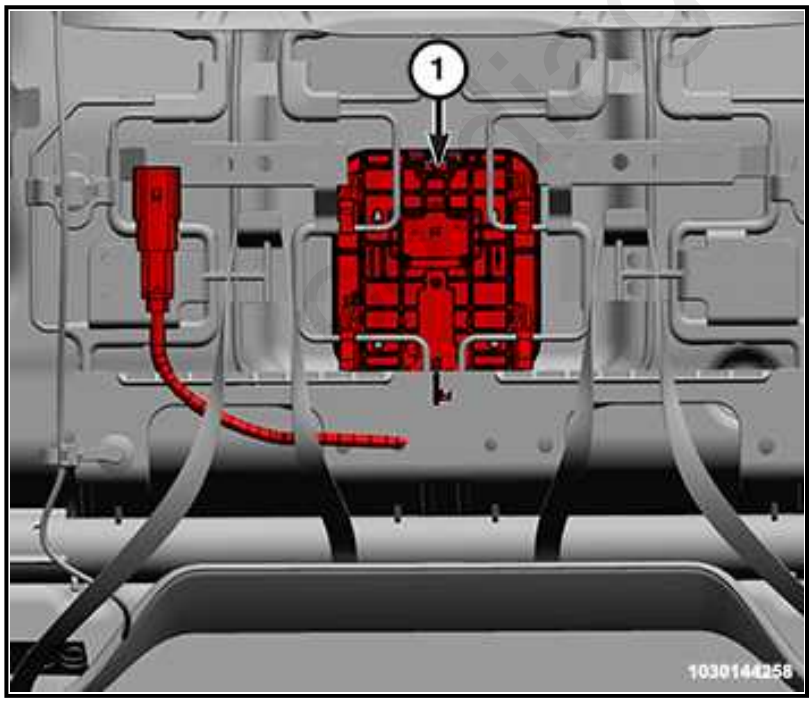
NOTE: **LHD model shown in illustration, RHD model similar.**

1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .

2. Remove the passenger side front seat from the vehicle. Refer to **SEAT, FRONT, REMOVAL AND INSTALLATION** .
3. Remove the front seat cushion from seat frame. Refer to **COVER, SEAT CUSHION, REMOVAL AND INSTALLATION** .



4. Disconnect the seat wire harness connector (1) under the seat cushion for the Occupant Detection Sensor (ODS) connector (2).
5. Remove the ODS wire harness connector (2) retainers from the seat cushion frame.



6. Disengage the four molded clips and remove the ODS (1) from the seat frame.

INSTALLATION

1. Route the ODS pigtail through the seat frame.
2. Align the ODS to the seat wire frame using the alignment guides.
3. Attach the ODS to the seat frame by firmly pressing the four molded clips into the seat wire frame.
4. Install ODS wire harness connector retainers to seat cushion frame.

5. Connect the ODS wire harness connector.
6. Install the front seat cushion to the frame. Refer to **COVER, SEAT CUSHION, REMOVAL AND INSTALLATION** .
7. Install the passenger side front seat into the vehicle. Refer to **SEAT, FRONT, REMOVAL AND INSTALLATION** .
8. Connect the negative battery cable(s). Refer to **STANDARD PROCEDURE** .

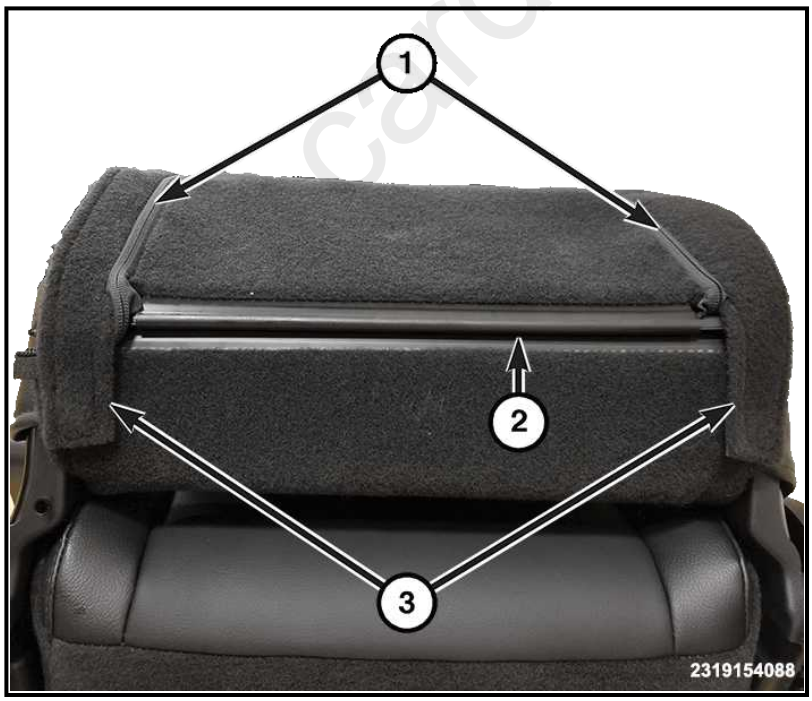
REAR

REMOVAL

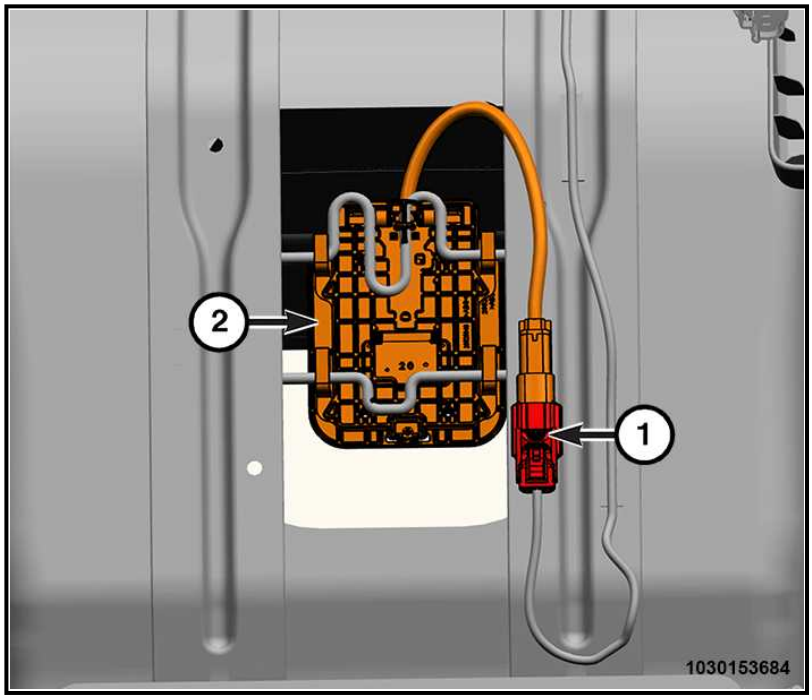
WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**

CAUTION: **When handling a new Occupant Detection Sensor (ODS), it should never be bent, creased, torn, cut or abraded. The ODS should not be handled with or come into contact with hard or sharp-edged tools or objects. Do not allow the ODS to drop more than 2 meters (6.5 feet). Prior to installation, do not sit on, stand on or place boxes, tools or any other foreign object on the ODS. Do not modify the seat foam or trim materials of a seat that contains an ODS. Failure to observe these cautions may result in an inoperative ODS, or an ODS that provides inaccurate inputs to the Occupant Restraint Controller (ORC).**

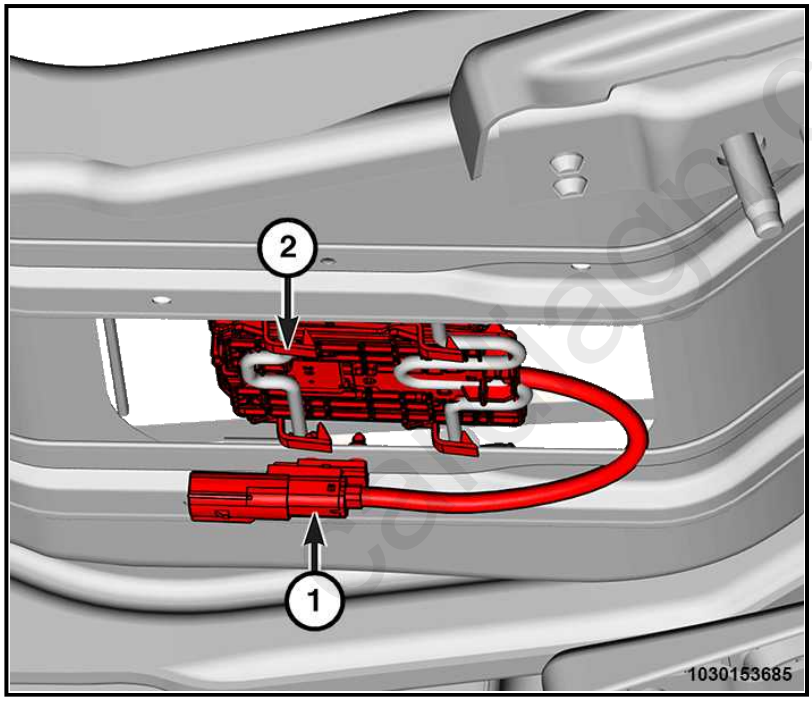
1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Reposition the rear seat cushion.



3. Remove the two outboard velcro straps (3).
4. Release the J-hook strip (2) at the bottom of the seatback cover.
5. Open the zippers (1) on each side of the seatback cover.



6. Disconnect the seat wire harness connector (1) under the seat cushion for the Occupant Detection Sensor (ODS) connector (2).



7. Disconnect the ODS wire harness connector from the retainers (1).
8. Disengage the four molded clips (2) and remove the ODS from the seat frame.

INSTALLATION

1. Route the ODS pigtail through the seat frame.
2. Align the ODS to the seat wire frame using the alignment guides.
3. Attach the ODS to the seat frame by firmly pressing the four molded clips into the seat wire frame.
4. Connect the ODS wire harness connector.
5. Close the zippers on each side of the seatback cover.
6. Engage the J-hook strip at the bottom of the seatback cover.
7. Install the two outboard velcro straps.
8. Reposition the rear seat cushion.

9. Connect the negative battery cable(s). Refer to **STANDARD PROCEDURE** .

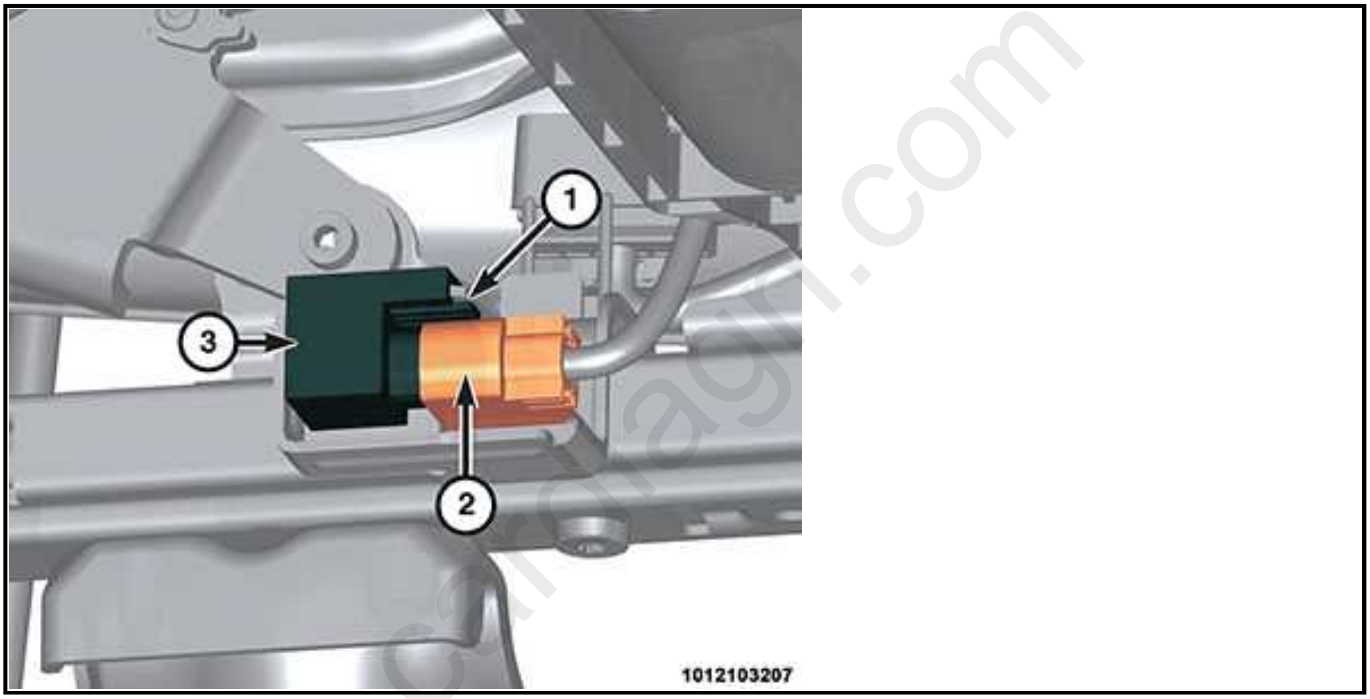
SENSOR, SEAT TRACK POSITION

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

REMOVAL

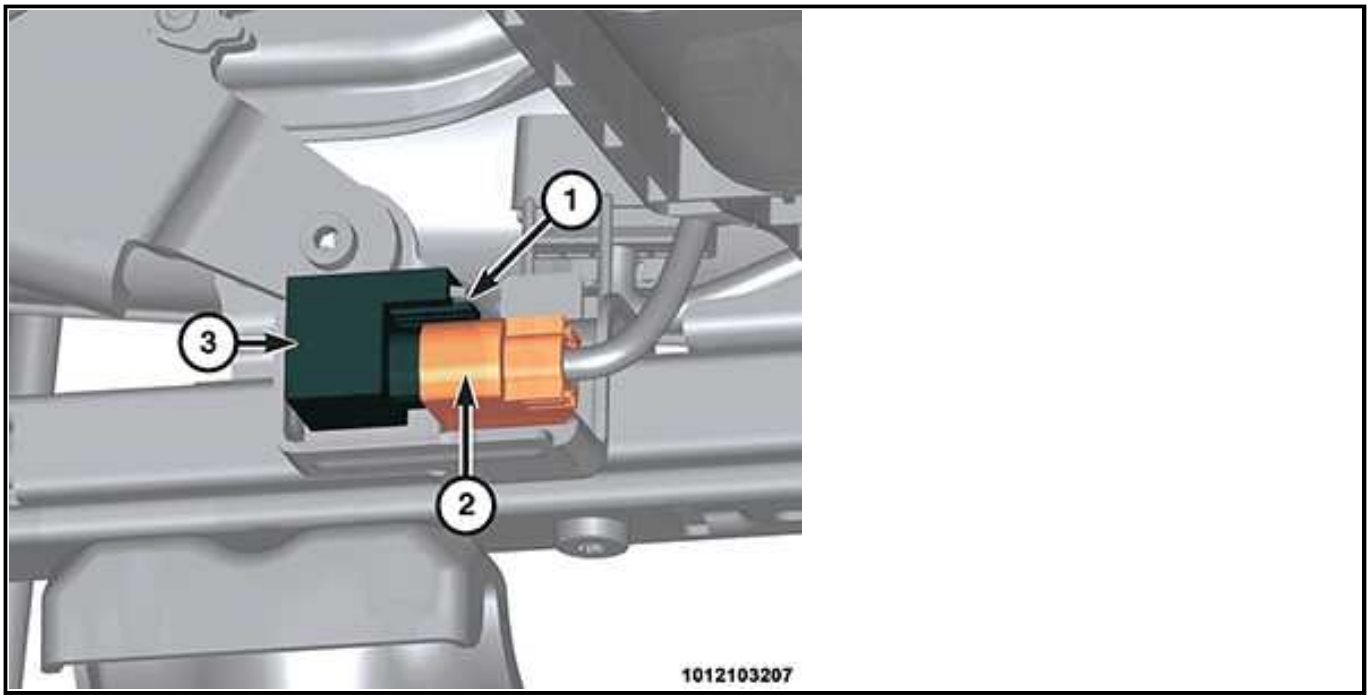
WARNING: **To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.**



NOTE: **The following procedure applies only to vehicles manufactured for the North America Free Trade Agreement (NAFTA) markets.**

1. Disconnect and isolate the negative battery cable(s). Refer to **STANDARD PROCEDURE** .
2. Reach under the rear edge of the front seat cushion to access the Seat Track Position Sensor (STPS) on a bracket located on the inboard side near the rear of one of the upper seat tracks.
3. Using a small screwdriver, hold the latch feature (1) depressed while sliding the STPS wire harness connector of the STPS.
4. Disconnect the STPS wire harness connector (2) from the STPS (3).
5. Remove the STPS from under the front seat.

INSTALLATION



NOTE: **The following procedure applies only to vehicles manufactured for the NAFTA markets.**

1. Reach under the rear edge of the front seat cushion to connect the seat wire harness connector (2) to the STPS (3) connector receptacle. Be certain that the latch on the connector is fully engaged.
2. Align the open end of the STPS mounting slot (1) to the blade of the STPS bracket located on the inboard side near the rear of one of the upper seat tracks.
3. Push the STPS firmly onto the bracket until the latch (1) feature snaps into place with an audible click.
4. Do not connect the negative battery cable at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to **SUPPLEMENTAL RESTRAINT SYSTEM VERIFICATION TEST** .

TENSIONER, SEAT BELT

REMOVAL AND INSTALLATION

REMOVAL AND INSTALLATION

The front anchor and seat belt tensioners are serviced only as an assembly with the front seat belt retractor. Do not attempt to replace individual parts of the seat belt assembly as they are not available. For replacement procedures of the front seat belt retractor. Refer to **RETRACTOR, SEAT BELT, REMOVAL AND INSTALLATION**.