

Service Manual: RESTRAINTS - SERVICE INFORMATION

WARNING > 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 MOPAR wiring repair kit. It is important to use ONLY the recommended splicing kit and procedure. For applicable and available MOPAR wiring repair kits, please visit the MOPAR 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 Chrysler Mopar® 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 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 93° C (200° 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 Chrysler Mopar® 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 Chrysler Mopar® 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 > SUPPLEMENTAL RESTRAINT SYSTEM > DESCRIPTION - SUPPLEMENTAL RESTRAINT SYSTEM

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. Additional details of each of these subsystems of the SRS can be found elsewhere within this service information.

In the event of a collision and the airbags are deployed, the fuel cut-off system operates, causing:

- the interruption of the fuel supply, including the fuel pump and fuel injectors, with the engine consequently cutting out
- the automatic unlocking of the doors
- turning on of the lights inside the vehicle
- deactivation of climate control system ventilation
- switching on of the hazard warning lights (to deactivate the lights press the button on the dashboard)

On some versions, the intervention of the system is indicated by a message shown on the display. In the same way, a dedicated message on the display warns the driver if system operation is compromised.

IMPORTANT

Carefully check the vehicle for fuel leaks, for instance in the engine compartment, under the vehicle or near the tank area. After a collision, bring the ignition device to STOP to prevent the battery from running down.

Fuel reactivation procedure

To restore correct operation of the vehicle, carry out the following procedure (this procedure must be started and completed within one minute):

- bring the ignition device to ON
- turn on the direction indicators on the right, then on the left, then again on the right and again on the left
- now deactivate the direction indicators on the left
- bring the ignition device to STOP
- bring the ignition device to ON

 **IMPORTANT:** Multistage airbags with multiple initiators (squibs) must be checked to determine that all squibs were used during a deployment event. Refer to **STANDARD PROCEDURE** for more information regarding the squib status check and for correct airbag disposal procedures.

DESCRIPTION AND OPERATION > SUPPLEMENTAL RESTRAINT SYSTEM > OPERATION - SUPPLEMENTAL RESTRAINT SYSTEM

The SRS is comprised of two primary subsystems: Active Restraints and Passive Restraints. Additional operational details on each of these subsystems of the SRS can be found elsewhere within this service information.

DESCRIPTION AND OPERATION > ACTIVE RESTRAINTS > DESCRIPTION - ACTIVE RESTRAINTS

The active restraints for this vehicle include:

- **Child Restraint Anchors** - All vehicles are equipped with three, fixed-position, child seat upper tether anchors for the rear seating. A single upper tether anchor is integral to the back of the right seat cushion frame, and two anchors are integral to the back of the left seat cushion frame. Two lower anchors are also provided for each outboard rear seating position. The lower anchors are integral to the seat cushion frames. All lower anchors are accessed from the front of the rear seat near where the seat back meets the seat cushion.

- **Front Seat Belts** - Both front seating positions are equipped with three-point seat belt systems employing a lower B-pillar mounted inertia latch-type emergency locking retractor, adjustable upper B-pillar mounted turning loops, a fixed lower seat belt anchor secured to the inner sill near the base of the B-pillar and a traveling end-release seat belt buckle secured to the inboard side of the seat cushion frame. The driver and passenger side front seat belt buckles each include an integral seat belt switch that detects whether the front seat belts have been fastened.
- **Rear Seat Belts** - All three rear seating positions are equipped with three-point seat belt systems. The outboard belts employ C-pillar mounted inertia latch-type emergency locking retractors, fixed position upper C-pillar mounted turning loops and fixed lower seat belt anchors secured to the quarter inner panel. The center belt employs an inertia latch-type emergency locking retractor secured within the left seat back and a fixed lower anchor buckle secured to the floor panel beneath the rear seat cushion. The fixed end release rear seat belt buckles are also secured to the floor panel beneath the rear seat cushion. In vehicles manufactured for Europe-Middle East-Africa (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.

DESCRIPTION AND OPERATION > ACTIVE RESTRAINTS > 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.

DESCRIPTION AND OPERATION > PASSIVE RESTRAINTS > DESCRIPTION - PASSIVE RESTRAINTS

Fig 1: SRS Logo



Courtesy of CHRYSLER GROUP, LLC

The passive restraints available for this vehicle include the following:

- **Active Head Restraints** - Inertia-based Active Head Restraints (AHR) are standard equipment for both front seating positions in this vehicle.
- **Dual Front Airbags** - A Driver AirBag (DAB) and front Passenger AirBag (PAB) are standard in this vehicle. This airbag system consists of passive, inflatable, Supplemental Restraint System (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 and also 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 Instrument Panel Cluster (IPC) from four to six seconds as a bulb test each time the status of the ignition transitions to On. Dual pyrotechnic-type seat belt tensioners are also integral to the driver and passenger front seat belt retractors and front seat belt anchors to work in conjunction with the dual front airbags. Vehicles manufactured for Europe-Middle East-Africa (EMEA) markets also have pyrotechnic-type seat belt tensioners integral to both rear outboard seat belt retractors.
- **Knee Blocker Airbag** - In vehicles manufactured for the North American Free Trade Agreement (NAFTA) market, the front airbag system also includes a driver knee blocker airbag (also known as a Knee AirBag/KAB or an Inflatable Knee Blocker/IKB) that is located just below the steering column, behind the instrument panel steering column opening cover. In vehicles manufactured for

EMEA markets the KAB is optional equipment. This airbag is also a passive, inflatable SRS component and vehicles with this equipment can be readily identified by the **AIRBAG** logo molded into the steering column opening cover on the instrument panel just beneath the steering column.

- **Seat Airbags** - A Seat AirBag (SAB) (also known as a pelvic and thoracic airbag or a side airbag) 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.
- **Side Curtain Airbags** - Side curtain airbags (also known as Side AirBag Inflatable Curtains/SABIC) are standard equipment in this vehicle. This airbag system consists of passive, inflatable SRS components and vehicles with this equipment can be readily identified by a molded identification **AIRBAG** logo located on the top of each B-pillar upper trim panel near the headliner.

The SRS includes the following major components, which are described in further detail elsewhere in this service information:

- **Active Head Restraints** - One Active Head Restraint (AHR) is located atop each front seat back unit.
- **Airbag Indicator** - The airbag indicator is integral to the IPC, which is located on the instrument panel in front of the driver.
- **Clockspring** - The clockspring is located near the top of the steering column, directly beneath the steering wheel.
- **Driver Airbag** - The Driver AirBag (DAB) is located in the center of the steering wheel, beneath the DAB trim cover.
- **Driver Knee Blocker** - Vehicles manufactured for EMEA markets and not equipped with an optional driver knee airbag have a driver knee blocker. This knee blocker is a static structural reinforcement that is integral to and concealed within the steering column opening cover of the instrument panel.
- **Front Impact Sensor** - Front impact sensors (also known as Early Crash Sensors/ECS) are used on vehicles equipped with dual front airbags. In vehicles manufactured for EMEA markets a single sensor is located on the back of the lower horizontal member of the radiator support. In vehicles manufactured for NAFTA markets two sensors are used, one on the back of each vertical member of the radiator support.
- **Knee Airbag** - Vehicles manufactured for the NAFTA market have a driver Knee AirBag (KAB) feature as standard equipment. In EMEA vehicles, the KAB is optional equipment. The KAB is mounted to the instrument panel lower reinforcement behind the instrument panel steering column opening cover.
- **Occupant Detection Sensor** - All vehicles are equipped with an Occupant Detection Sensor (ODS). The ODS is located on the top of the seat cushion foam of the passenger side front seat.
- **Occupant Restraint Controller** - The Occupant Restraint Controller (ORC) is located on the floor panel center tunnel near the dash panel beneath the center floor console.
- **Passenger Airbag** - The Passenger AirBag (PAB) is located in the instrument panel, beneath the instrument panel cover and above the glove box on the passenger side of the vehicle.
- **Passenger Airbag On/Off Indicator** - Vehicles manufactured for EMEA markets have a passenger airbag On/Off indicator integral to the instrument panel switch pod (also known as the

Accessory Switch Bank Module/ASBM), which is secured to the instrument panel center stack just below the Radio Receiver Module (RRM).

- **Passenger Knee Blocker** - The passenger knee blocker is a static structural reinforcement that is integral to and concealed within the glove box door.
- **Seat Airbag** - A Seat AirBag (SAB) is secured to each outboard front seat back frame, where it is concealed beneath the seat back trim cover and foam.
- **Seat Belt Tensioner** - 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. Vehicles manufactured for EMEA markets also have seat belt tensioners integral to each rear outboard retractor. The rear seat belt retractor tensioner units are secured to each inner C-pillar and are concealed behind the C-pillar trim.
- **Seat Track Position Sensor** - Vehicles manufactured for NAFTA markets have a Seat Track Position Sensor (STPS) located on the inboard side of one of the upper seat adjuster tracks on both the driver and the passenger front seats.
- **Side Curtain Airbag** - A standard equipment side curtain airbag is secured to each inside roof side rail above the headliner. The side curtain airbag extends from the A-pillar to just behind the C-pillar.
- **Side Impact Sensor** - Four side impact sensors are used, two on each side of the vehicle. One acceleration-type sensor is located behind the B-pillar trim of each lower inner B-pillar and one pressure-type sensor is located behind the trim panel on the inside of each front door hardware module carrier.

Fig 2: Six Airbags - Standard



Courtesy of CHRYSLER GROUP, LLC

The vehicle is equipped with six airbags as standard which make it one of the cars with the best

standard equipment of its class. It is also equipped with advanced restraint systems on the seat belts which guarantee optimal protection of the occupants in the event of an accident.

The ORC system can be equipped with:

Number of charges	Driver airbag	Passenger airbag	Driver's knee airbag	Sidebags	Curtain airbag	Front pretensioners	Rear pretensioners
EMEA version	1	1	1 (opt)	2	2	2	2
NAFTA version	2	3	1	2	2	2	-

Number of sensors / switches	ECS	Side impact sensors	Side impact pressure sensors	Front seat buckle switches	Passenger presence sensor	Seat guide position sensor	Rear seat buckle switches
NAFTA version	2	2	2	2	1	2	-
EMEA version	1	2	2	2	1	-	3

The ORC and the 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 hard wired 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 SYSTEM WIRING DIAGRAMS article. The wiring information includes wiring diagrams, proper wire and connector repair procedures, further details on wire harness routing and retention, as well as pin out and location views for the various wire harness connectors, splices and grounds.

DESCRIPTION AND OPERATION > PASSIVE RESTRAINTS > OPERATION - PASSIVE RESTRAINTS

The passive restraints are referred to as a Supplemental Restraint System (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. In addition, each front seat occupant must have their Active Head Restraint (AHR) unit properly adjusted in order to obtain its maximum safety benefit.

The SRS electrical circuits are continuously monitored and controlled by a microcontroller and software

contained within the Occupant Restraint Controller (ORC). An airbag indicator in the Instrument Panel Cluster (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 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 Europe-Middle East-Africa (EMEA) markets are equipped with a feature that allows Passenger AirBag (PAB) operation to be suppressed or enabled using a setup routine in the IPC. A passenger airbag on/off indicator is located in the instrument panel switch pod in the instrument panel 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, front seat belt anchor tensioners, the rear outboard seat belt retractor tensioners (if equipped) and the driver Knee AirBag (KAB) (if equipped) 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.

The ORC also contains a rollover sensor. Should the vehicle roll over and not cause any impact sensor to signal the need for a deployment, the rollover sensor in the ORC will deploy the side curtain airbags units, the SAB units and under certain conditions, will also actuate the front seat belt retractor and anchor buckle tensioners as well as the rear outboard seat belt retractor tensioners (if equipped).

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 further 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 kilometer-per-hour (30 mile-per-hour) 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 Diagnostic Trouble Code (DTC) in its memory circuit and sends an electronic message to the IPC to turn On the airbag indicator. The hard wired circuits between components related to the SRS may be diagnosed using conventional diagnostic tools and procedures.

Refer to the appropriate SYSTEM WIRING DIAGRAMS article. 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 SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

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 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.

SENSOR DIAGNOSIS

The Occupant Restraint Controller (ORC) will set DTCs when a sensor fault is detected. The sensors cannot be tested and are diagnosed by the process of elimination. After disconnecting the harness from the ORC and the sensor, the sensor circuits are checked for shorts to power or earth, sensor circuits shorted together, and wire resistance. Only after eliminating all possible circuit faults is the sensor replaced.

SQUIB DIAGNOSIS

The ORC will set DTCs when a squib concern is detected. The squibs cannot be tested and are diagnosed by the process of elimination. Squib circuits are tested using special SRS equipment.

The hard wired 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 SYSTEM WIRING DIAGRAMS article. 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. Refer to the appropriate Diagnostic & Testing article.

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 SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

STANDARD PROCEDURE > HANDLING NON-DEPLOYED SUPPLEMENTAL RESTRAINTS

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 be face up 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 Supplemental Restraint System (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.

STANDARD PROCEDURE > 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, the upper tether anchors and all interior trim panels must also be inspected.
- **If an active head restraint is deployed** - An inertia-based Active Head Restraint (AHR) unit that is undamaged following a deployment automatically resets itself. These units are designed with the intention of reuse. (Refer to STANDARD PROCEDURE).

- **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 anchor tensioners, both front seat belt retractor and tensioner assemblies, both rear outboard seat belt retractor and tensioner assemblies (if equipped), any front seat belt buckle in use and all rear seat belt retractors and buckles in use must be replaced. The front impact sensors and the steering wheel must also be inspected.
- **If the knee airbag is deployed** - If the driver Knee AirBag (KAB) (also known as the Inflatable Knee Blocker/IKB) has been deployed, the KAB and the instrument panel steering column opening cover must also be replaced. The instrument panel must also be inspected.
- **If the passenger airbag is deployed** - If the Passenger AirBag (PAB) has been deployed, the PAB, the PAB wire harness or connector and the instrument panel must be replaced.
- **If a seat airbag is deployed** - If a Seat AirBag (SAB) (also known as a pelvic and thoracic airbag) 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 be replaced. Both front seat belt anchor tensioners, both front seat belt retractor and tensioner assemblies, both rear outboard seat belt retractor and tensioner assemblies (if equipped), any front seat belt buckle in use and all rear seat belt retractors and buckles in use must be replaced.
- **If a seat belt tensioner is deployed** - The seat belt retractor and anchor tensioners are deployed in conjunction with the front airbags. All seat belt tensioners must be replaced if any airbag in the vehicle except the driver Knee AirBag (KAB) has been deployed.
- **If a side curtain airbag is deployed** - If a side curtain airbag (also known as a Side AirBag Inflatable Curtain/SABIC) has been deployed, the SABIC, the trim on the upper A, B and C-pillars as well as the side impact sensors on the same side of the vehicle as the deployed airbag must be replaced. The headliner, both front seat belt anchor tensioners, both front seat belt retractor and tensioner assemblies, both rear outboard seat belt retractor and tensioner assemblies (if equipped), any front seat belt buckle in use and all rear seat belt retractors and buckles in use must be replaced. The deploy brackets on the B-pillar and C-pillar for the same side of the vehicle as the deployed airbag must be closely inspected following a side curtain airbag deployment.

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.

STANDARD PROCEDURE > SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT > AIRBAG SQUIB STATUS (NAFTA ONLY)

Vehicles manufactured for North America Free Trade Agreement (NAFTA) markets use 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 circuits to the two initiators in the airbag inflators. Typically, both 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 both 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 having two 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. Transition the ignition status 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	Both Squib 1 and 2 were used.
Driver or Passenger Squib 2 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 is live.
Driver or Passenger Squib 2 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 is live; Squib 2 was used.
Driver or Passenger Squib 2 open		
Driver or Passenger Squib 1 open	AND Driver or Passenger Squib 2 open is NOT an active code	Squib 1 was used; Squib 2 is live.
Driver or Passenger Squib 2 open	AND Driver or Passenger Squib 1 open is NOT an active code	Squib 1 is live; Squib 2 was used.

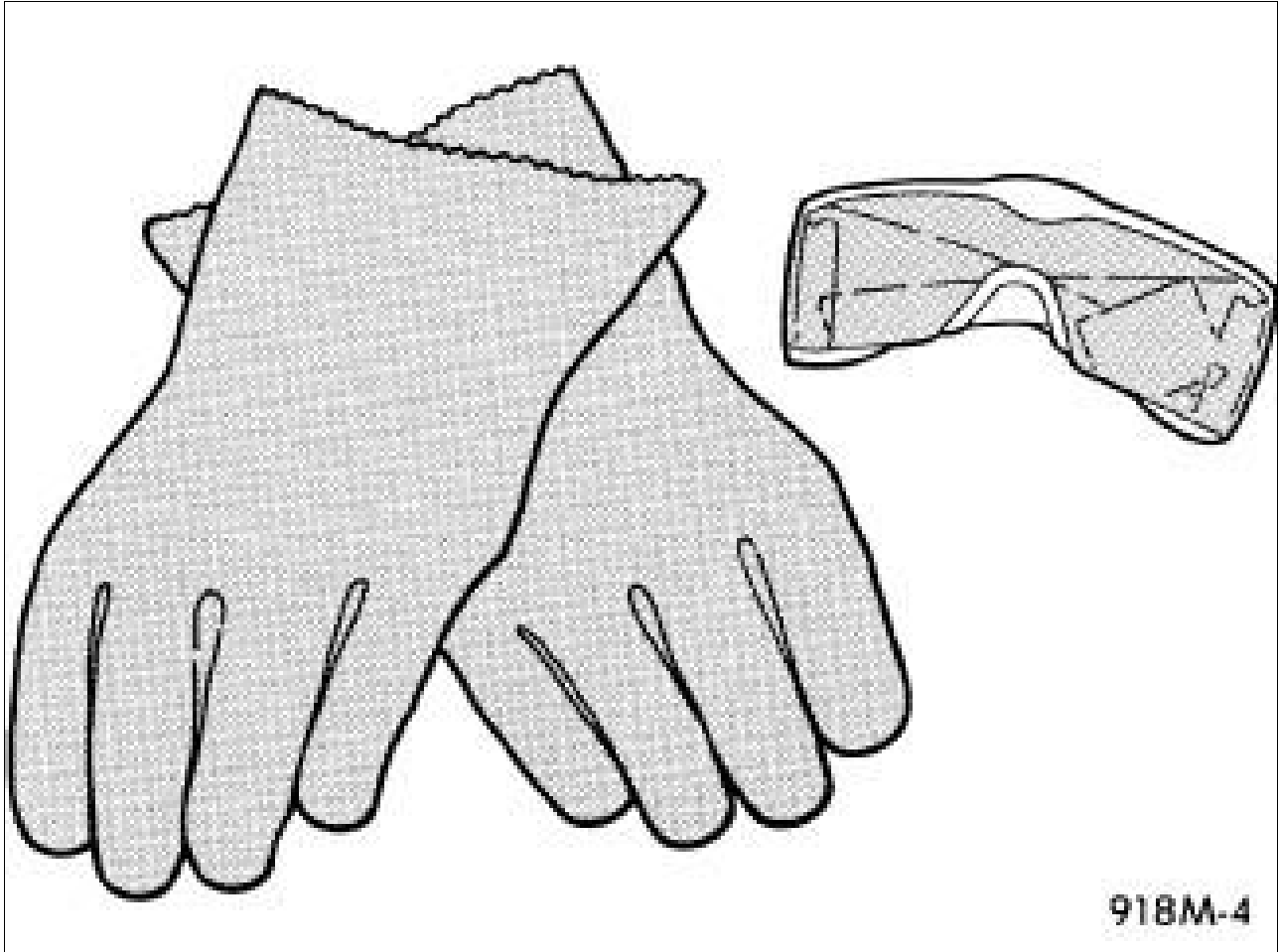


NOTE:

If none of the Driver or Passenger Squib 1 or 2 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.

STANDARD PROCEDURE > SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT > CLEANUP PROCEDURE

Fig 1: Clean Up Safety Equipment



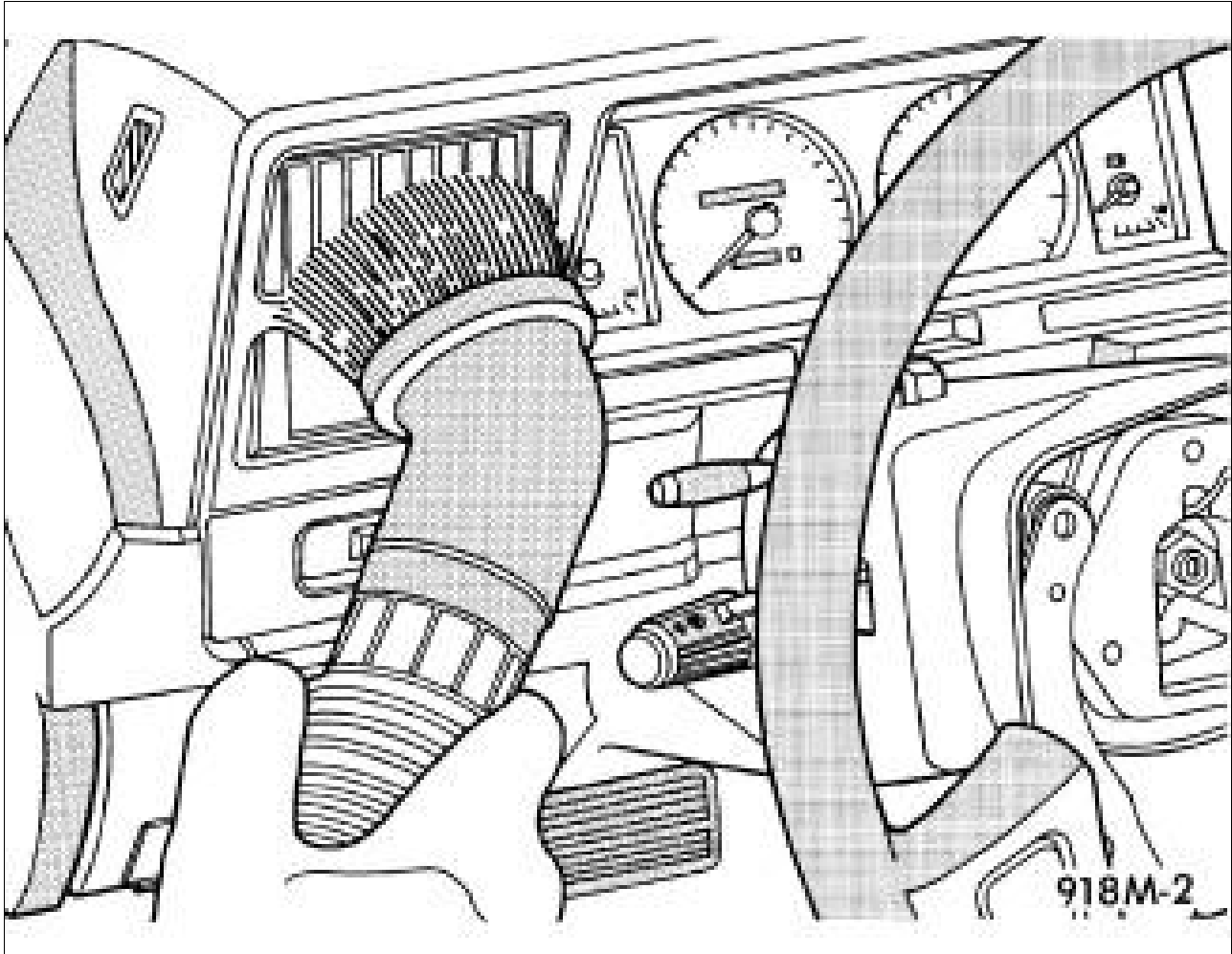
Courtesy of CHRYSLER GROUP, LLC

Following a Supplemental Restraint System (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 a 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.

 **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.

Fig 2: Vacuuming Residual Powder



Courtesy of CHRYSLER GROUP, LLC

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 your way inside, so that you 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 having two 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. You may need to vacuum the interior of the vehicle a second time to recover all of the powder.

STANDARD PROCEDURE > SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT > FUEL SYSTEM REACTIVATION AFTER AIRBAG DEPLOYMENT

In the event of a collision and the airbags are deployed, the fuel cut-off system operates, causing:

- the interruption of the fuel supply, including the fuel pump and fuel injectors, with the engine consequently cutting out
- the automatic unlocking of the doors
- turning on of the lights inside the vehicle
- deactivation of climate control system ventilation
- switching on of the hazard warning lights (to deactivate the lights press the button on the dashboard)

On some versions, the intervention of the system is indicated by a message shown on the display. In the same way, a dedicated message on the display warns the driver if system operation is compromised.

IMPORTANT

Carefully check the vehicle for fuel leaks, for instance in the engine compartment, under the vehicle or near the tank area. After a collision, bring the ignition device to STOP to prevent the battery from running down.

Fuel reactivation procedure

To restore correct operation of the vehicle, carry out the following procedure (this procedure must be started and completed within one minute):

- bring the ignition device to ON
- turn on the direction indicators on the right, then on the left, then again on the right and again on the left
- now deactivate the direction indicators on the left

- bring the ignition device to STOP
- bring the ignition device to ON

STANDARD PROCEDURE > SERVICE AFTER A SUPPLEMENTAL RESTRAINT SYSTEM DEPLOYMENT > 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 STANDARD PROCEDURE .

STANDARD PROCEDURE > 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.

STANDARD PROCEDURE > 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 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 & Testing article.

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. Transition the status of the ignition switch to On and exit the vehicle with the scan tool.
4. Check to be certain that nobody is in the vehicle, then reconnect the negative cable to the battery. If equipped with an Intelligent Battery Sensor (IBS), reconnect the IBS connector.
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 & Testing article.
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 & Testing article to diagnose any stored DTC that will not erase. If the stored DTC information is successfully erased, go to Step 9.
9. Transition the status of the ignition switch to 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 & Testing article to diagnose the problem.

STANDARD PROCEDURE > 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 MOPAR wiring repair kits, please visit the MOPAR 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 or recommended.

STANDARD PROCEDURE > SUPPLEMENTAL RESTRAINT SYSTEM WIRING REPAIRS

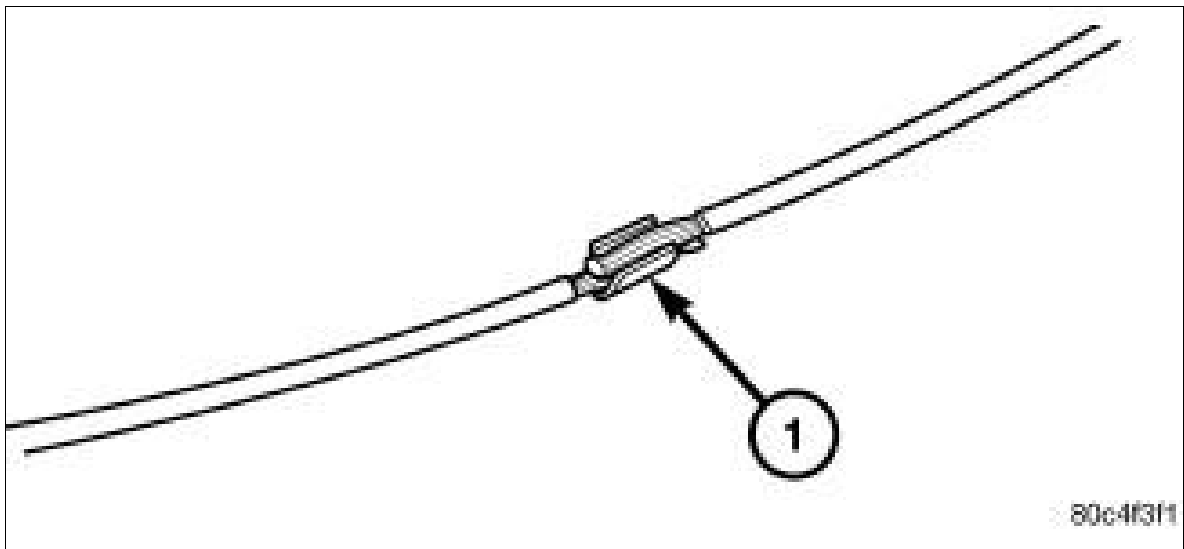
> REPAIR PROCEDURE

 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.

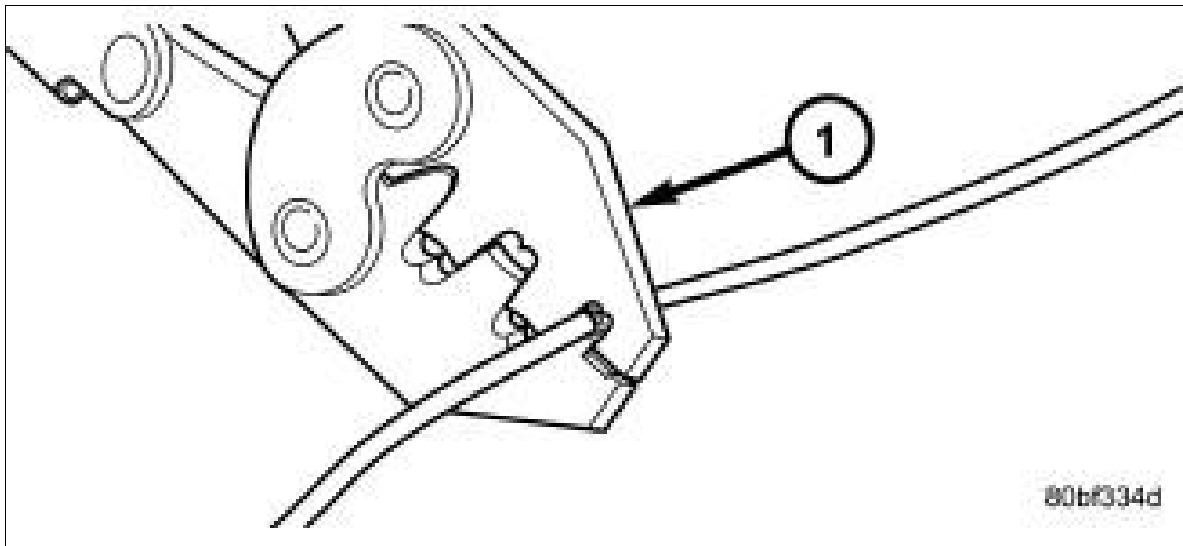
Fig 1: Splice Band



Courtesy of CHRYSLER GROUP, LLC

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).

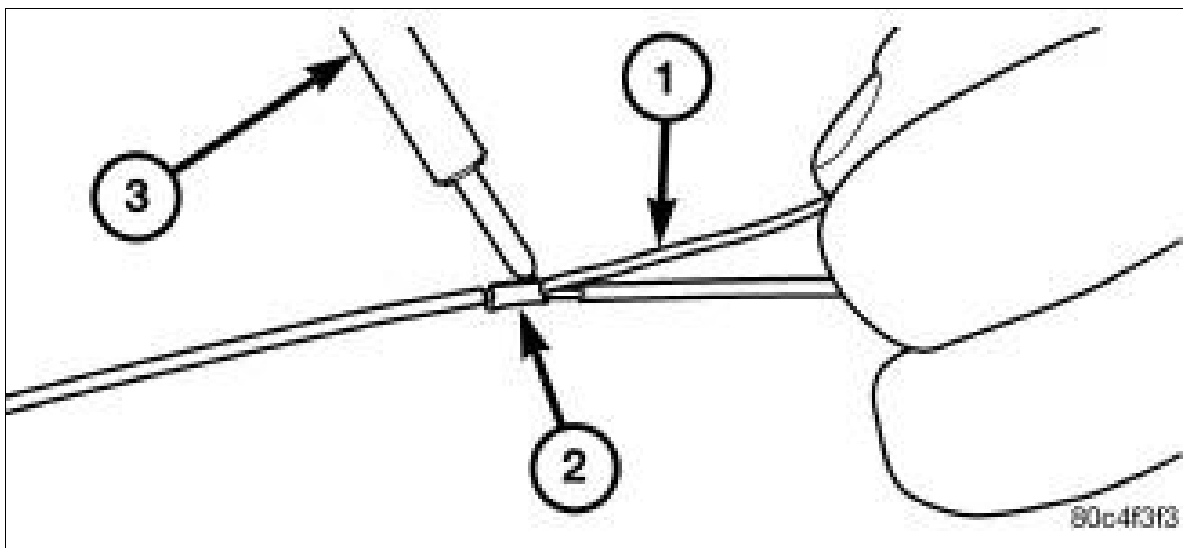
Fig 2: Crimping Tool



Courtesy of CHRYSLER GROUP, LLC

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

Fig 3: Solder Splice



Courtesy of CHRYSLER GROUP, LLC

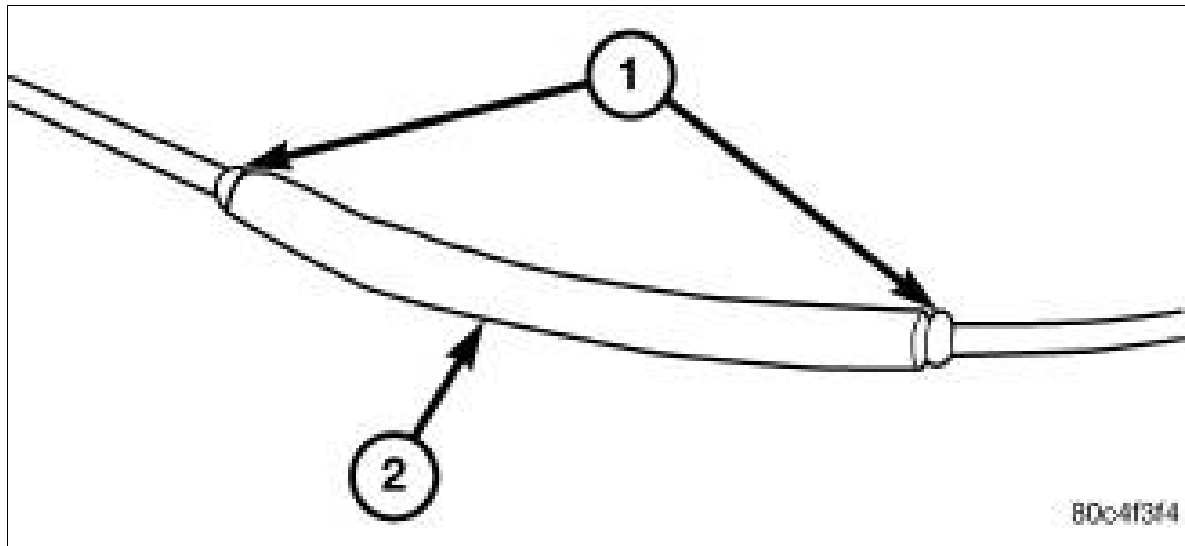


CAUTION:

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.

Fig 4: Heat Shrink Tube



Courtesy of CHRYSLER GROUP, LLC

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.

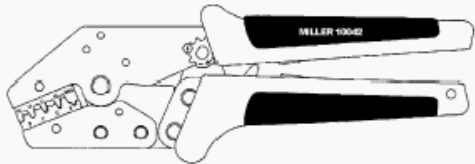
SPECIFICATIONS > TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.	NEW FASTENER*
Seat Belt Turning Loop Height Adjuster Mounting Screw	40	30	-	
Seat Belt Turning Loop To Height Adjuster Screw	40	30	-	
Front Seat Belt Buckle Mounting Screw	40	30	-	
Rear Seat Belt Buckle Mounting Screw	40	30	-	
Front Seat Belt Anchor Tensioner Mounting Screw	40	30	-	
Rear Outboard Seat Belt Retractor Mounting Screw	40	30	-	
Rear Outboard Seat Belt Lower Anchor To C-Pillar Mounting Screw	40	30	-	

Front Seat Belt Retractor To B-Pillar Mounting Screw	40	30	-	
Rear Center Seat Belt Retractor Mounting Screw	40	30	-	
Rear Outboard Seat Belt Turning Loop To C-Pillar Mounting Screw	40	30	-	
Passenger Airbag Mounting Screw	20	15	-	
*NEW FASTENER: Do not reuse these fasteners. If removed, a new fastener must be installed and tightened to specifications.				

SPECIAL TOOLS > SPECIAL TOOLS

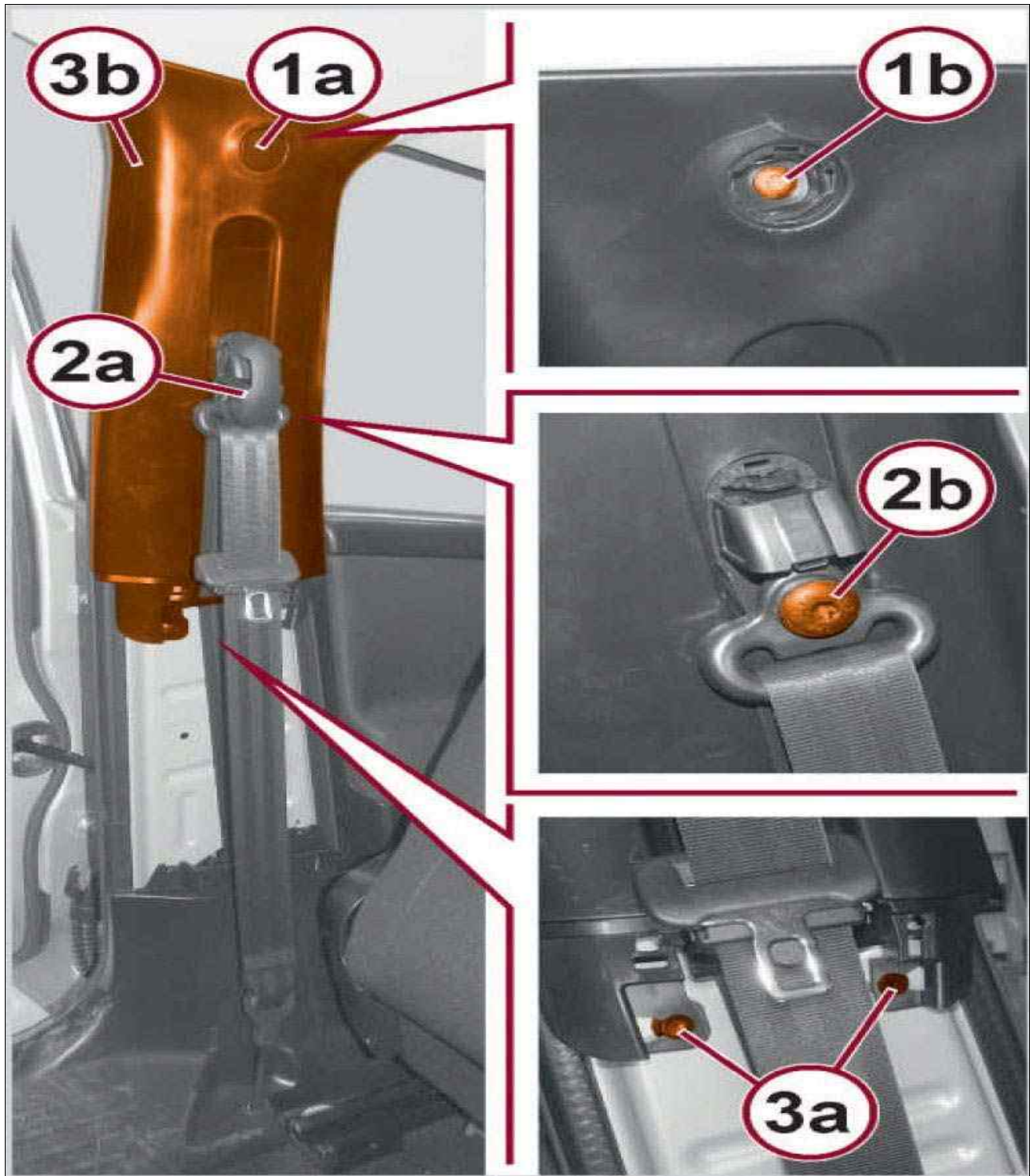
	10042 - Crimper, Wire/Terminal (Originally Shipped In Kit Number(s) 10042.)
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ADJUSTER, SEAT BELT TURNING LOOP > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

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 Chrysler Mopar® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.

Fig 1: Remove/Install B-Pillar Trim



Courtesy of CHRYSLER GROUP, LLC

1. Adjust the front seat to its most forward position for easiest access to the front seat belt and the B-pillar trim.
2. Firmly grasp the top of the trim cover (2a) for the front seat belt turning loop height adjuster on the inside of the upper B-pillar and pull it away from the height adjuster far enough to unsnap it, then disengage the lower snap features of the trim cover from the adjuster.

3. Remove the screw (2b) that secures the front seat belt turning loop to the height adjuster on the inside of the upper B-pillar.
4. Remove the seat belt turning loop from the height adjuster.
5. Remove the upper trim from the inside of the B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .
6. Remove the two screws that secure the height adjuster to the inside of the upper B-pillar.
7. Lift the height adjuster upward on the B-pillar far enough to disengage the hooks on the back of the adjuster from the B-pillar.
8. Remove the height adjuster from the B-pillar.

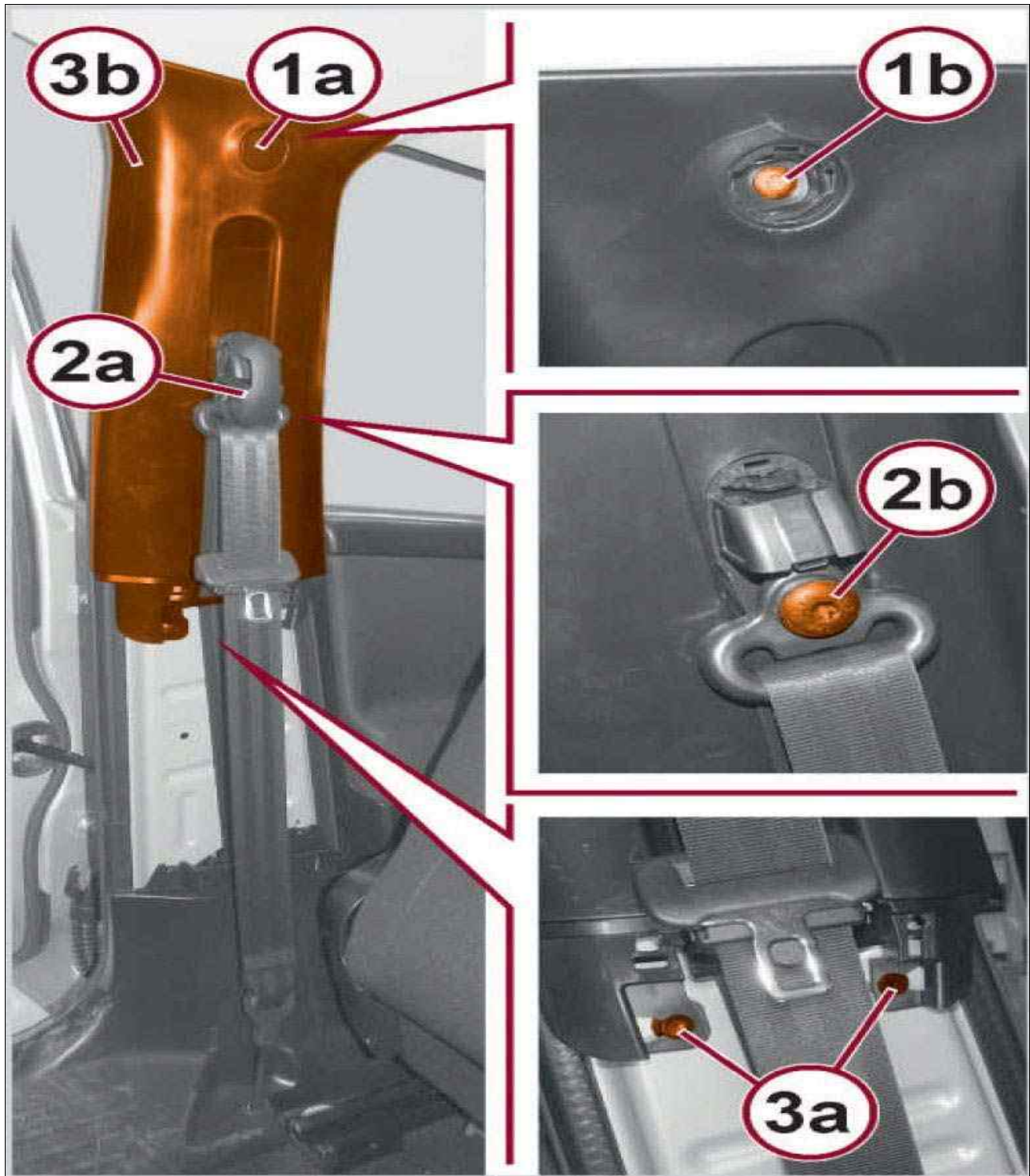
ADJUSTER, SEAT BELT TURNING LOOP > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION



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 Chrysler Mopar® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.

Fig 1: Remove/Install B-Pillar Trim



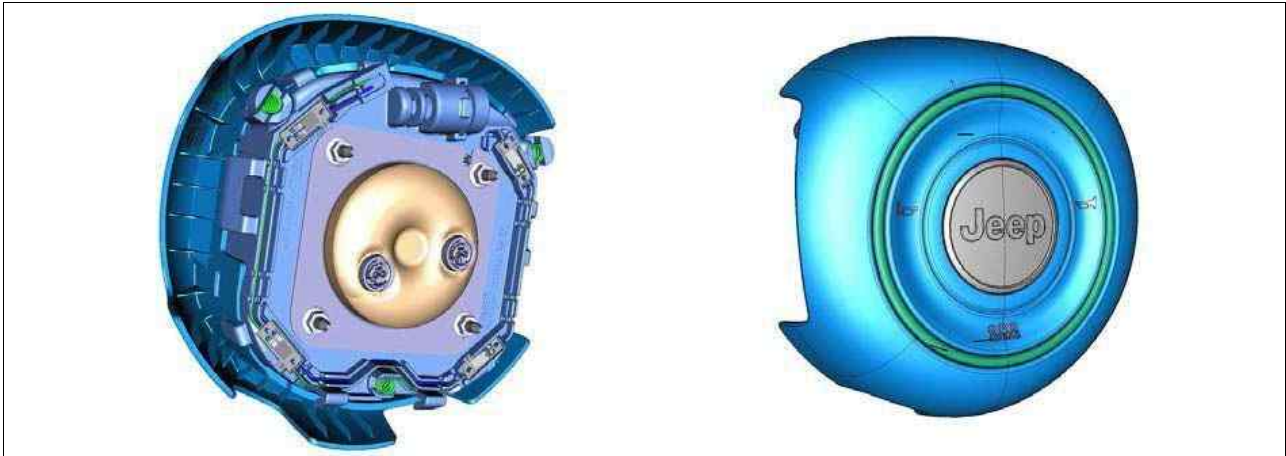
Courtesy of CHRYSLER GROUP, LLC

1. Position the front seat belt turning loop height adjuster to the inside of the upper B-pillar.
2. Lift the height adjuster upward on the B-pillar far enough to engage the hooks on the back of the adjuster into the B-pillar clearance holes.
3. Install and tighten the two screws that secure the height adjuster to the inside of the upper B-pillar. Tighten the screws securely.

4. Install the upper trim (3b) onto the inside of the B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .
5. Position the front seat belt turning loop onto the height adjuster on the inside of the upper B-pillar.
6. Install and tighten the screw (2b) that secures the turning loop to the height adjuster. Tighten the screw to the proper SPECIFICATIONS .
7. Engage the lower snap features of the trim cover under the height adjuster, then use hand pressure to press the top of the trim cover firmly and evenly over the height adjuster until it snaps into place.

AIR BAG, DRIVER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Driver Airbag (DAB)



Courtesy of CHRYSLER GROUP, LLC

Depending on the market, the Driver Airbag (DAB) can be single-stage (EMEA) or multi-stage (NAFTA). The Occupant Restraint Controller (ORC) module will operate the single or the double charge.

Only the single charge is available in the EMEA market.

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

AIR BAG, DRIVER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The Driver AirBag (DAB) is deployed by electrical signals generated by the Occupant Restraint Controller (ORC) through the DAB squib circuits to the initiator in the airbag inflator. In vehicles manufactured for North America Free Trade Agreement (NAFTA) markets having 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.

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. In NAFTA vehicles with multistage airbags only, typically both 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 Supplemental Restraint System (SRS) fault; therefore, it is necessary to always confirm that both 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 illuminate the airbag indicator in the instrument cluster and store a Diagnostic Trouble Code (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 SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

AIR BAG, DRIVER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

WARNING:

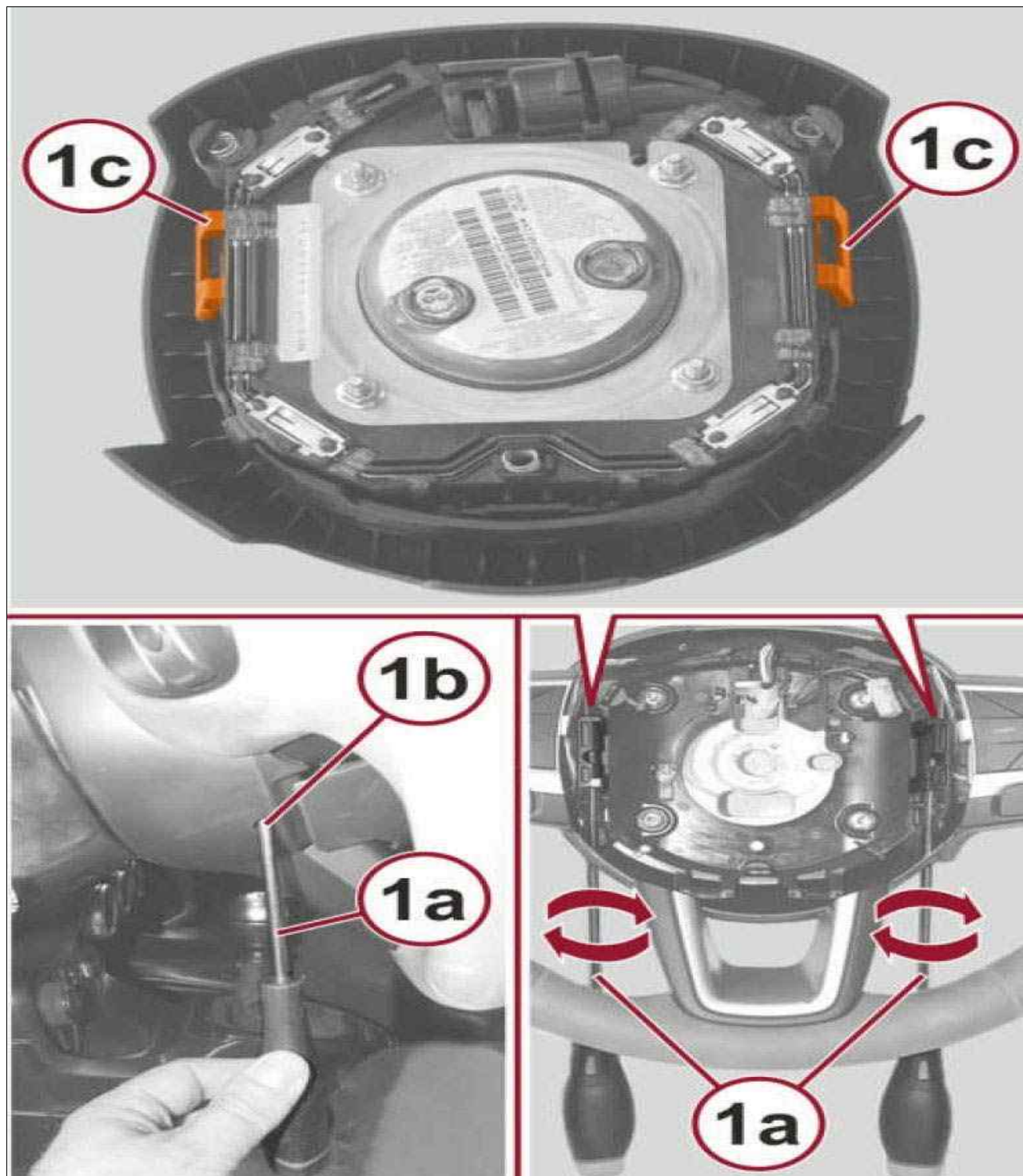
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the 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 cushion and other interior surfaces. In large doses, these deposits may cause irritation to the skin and eyes.

Fig 1: Access Holes, Latches & Screwdriver



Courtesy of CHRYSLER GROUP, LLC

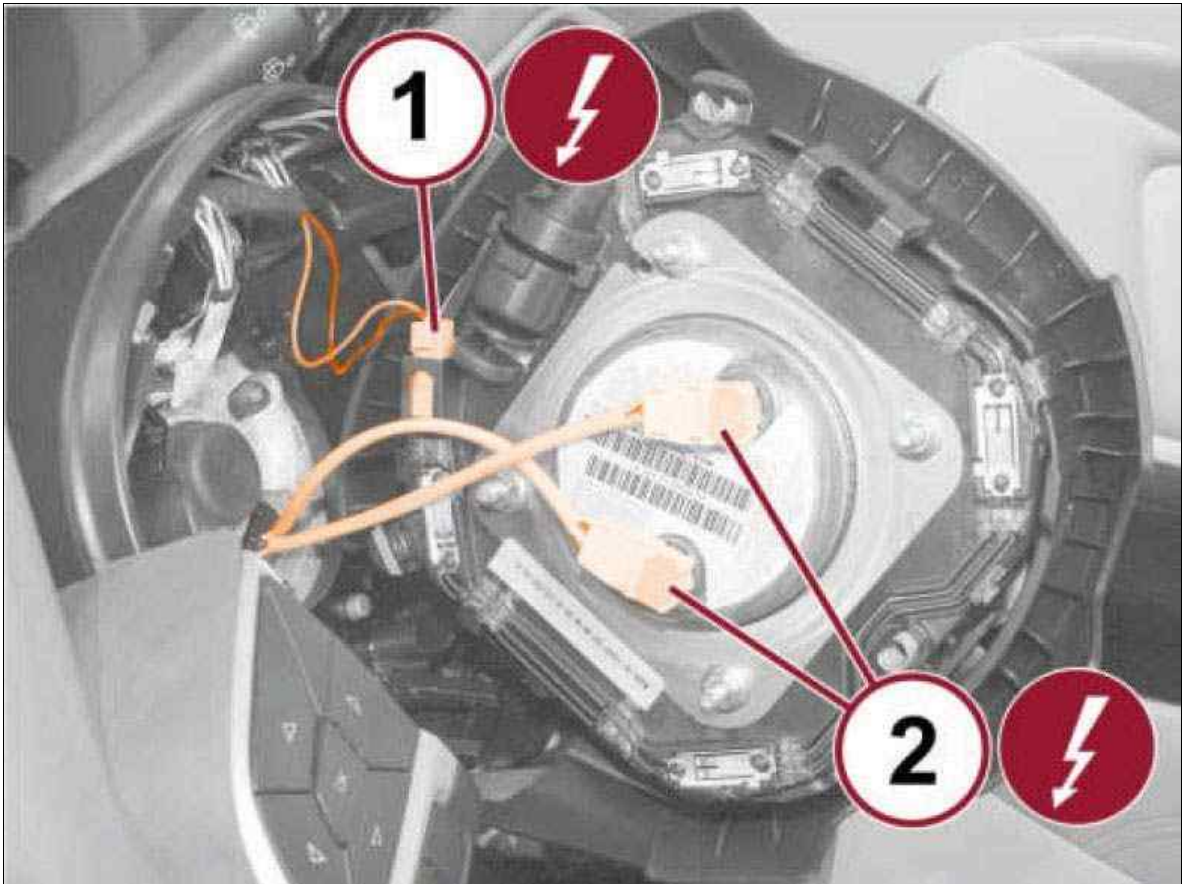


NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Locate the access holes (1b) in the lower surface of the steering wheel hub rear trim cover near each of the two horizontal spokes.
3. Insert an appropriately sized straight-bladed screwdriver through one of the steering wheel access holes far enough to engage the blade of the screwdriver between the latch feature (1c) of the DAB and the hook of the steering wheel armature.
4. While pulling the DAB lightly upward, rotate the screwdriver handle (1a) to disengage the DAB latch feature from the hook of the steering wheel armature.
5. Insert a trim stick or another long and thin obstacle between the released side of the DAB and the steering wheel. This will help to prevent the released side of the DAB from becoming accidentally engaged again, while the latch feature on the opposite side is being released.
6. Repeat Steps 3 and 4 for the opposite side of the DAB.

Fig 2: Clockspring Pigtail & Steering Wheel Wire Harness



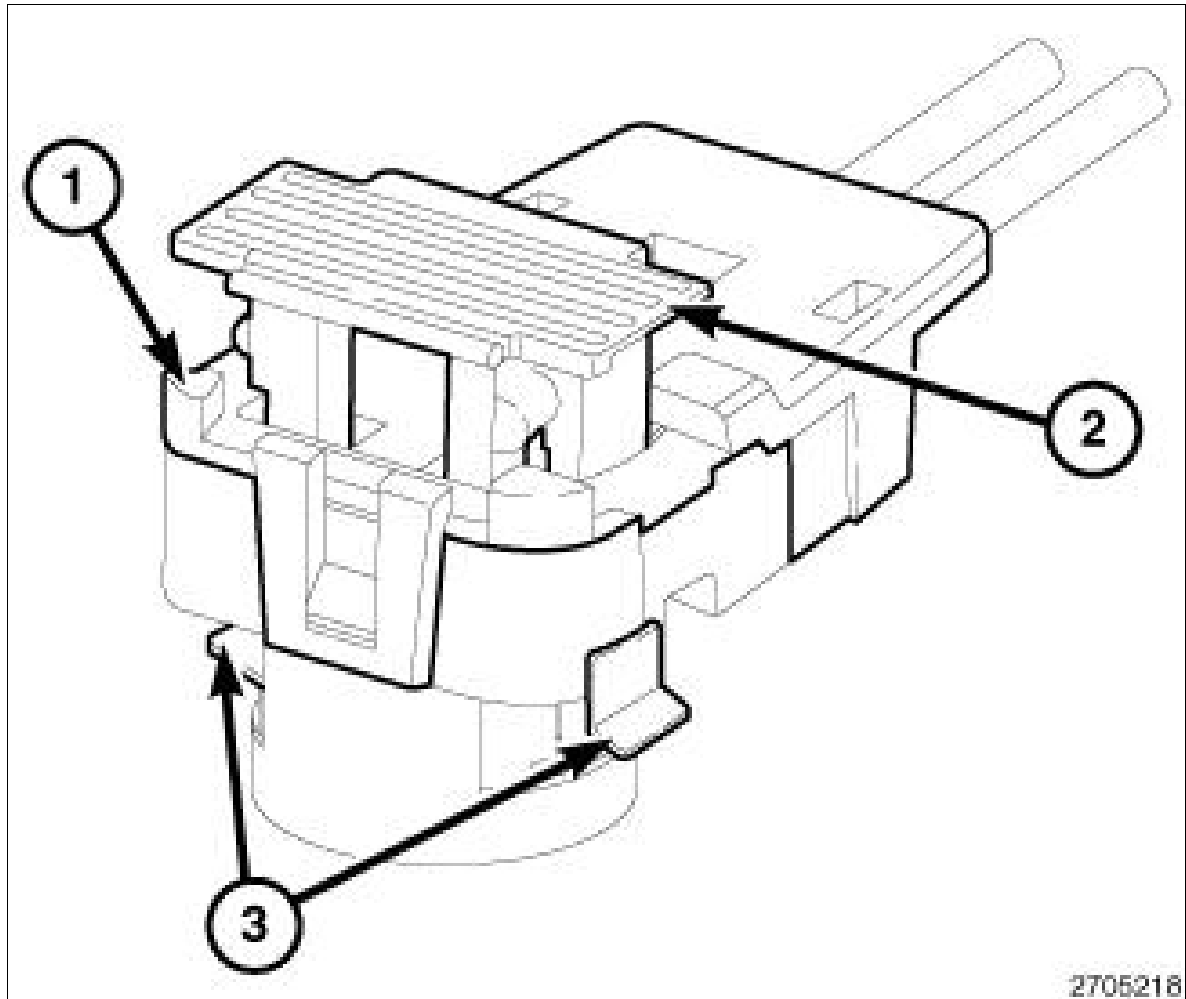
Courtesy of CHRYSLER GROUP, LLC

7. Pull the DAB away from the steering wheel far enough to access the clockspring pigtail (2) and steering wheel wire harness (1) connections to the horn switch and the DAB inflator initiators.
8. Disconnect the steering wheel wire harness connector (1) from the floating horn switch plate connector on the back of the switch plate.

 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.

Fig 3: Clockspring DAB Pigtail Wire Connector Insulators, Latches & Connector Position Assurance (CPA) Lock



Courtesy of CHRYSLER GROUP, LLC

9. The clockspring DAB pigtail wire connector insulator (1) is secured by integral latches (3) and a Connector Position Assurance (CPA) lock (2) to the airbag inflator connector receptacle, which is 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 insulator straight out from the connector receptacle to disengage and disconnect it.
10. Remove the DAB and floating horn switch plate from the steering wheel as a unit.
11. If the DAB has been deployed, the clockspring and stalk unit as well as the steering column must be replaced. Refer to CLOCKSPRING, REMOVAL AND INSTALLATION and COLUMN, REMOVAL AND INSTALLATION .

AIR BAG, DRIVER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

 **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 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.

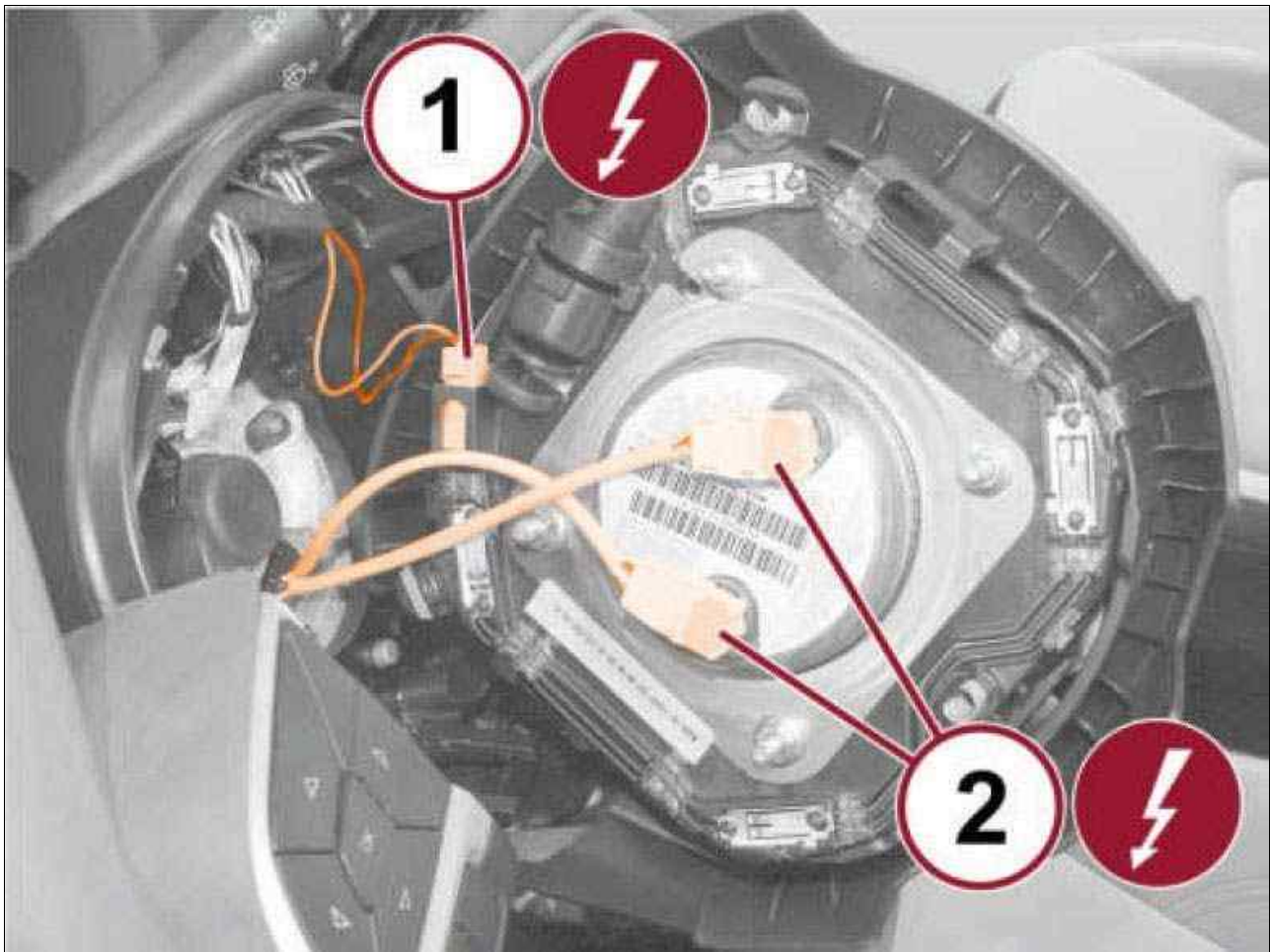
 WARNING:

To avoid serious or fatal injury, 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.

Fig 1: Clockspring Pigtail & Steering Wheel Wire Harness



Courtesy of CHRYSLER GROUP, LLC



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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

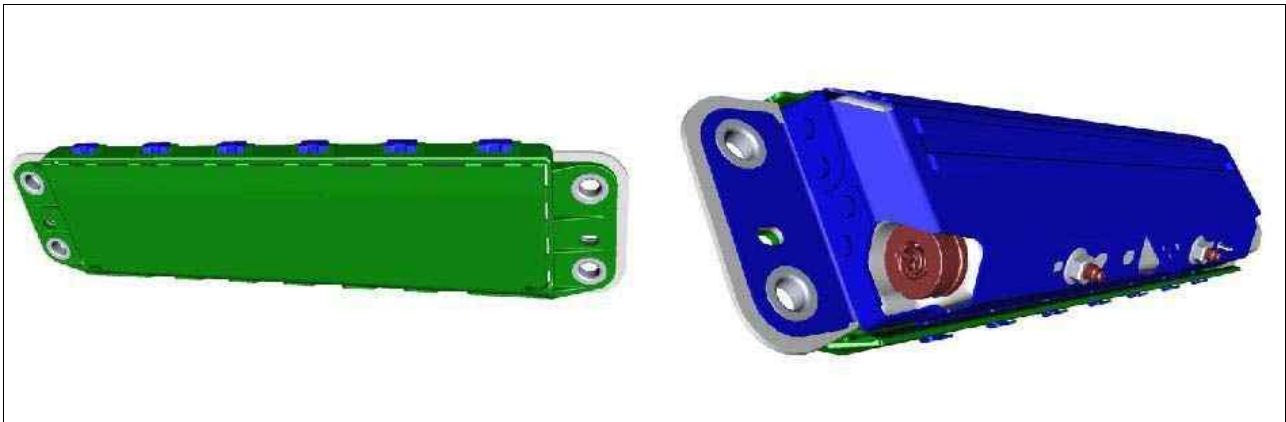
1. Position the Driver AirBag (DAB) and floating horn switch unit close enough to the steering wheel to access the clockspring pigtail (2) and steering wheel wire harness (1) connections to the horn switch and the DAB inflator initiator.
2. Connect the steering wheel wire harness connector to the floating horn switch connector on the back of the mounting and horn switch plate.
3. Connect the clockspring pigtail wire connector to the airbag inflator initiator connector receptacle 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 into place.

4. Carefully position the DAB and floating horn switch unit into the steering wheel hub cavity while tugging lightly upward on the clockspring pigtail wires for the airbag and tucking the wires into the upper hub cavity of 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.
5. Using both hands, push firmly and evenly on both sides of the DAB trim cover until both latch features have snapped into place under the hooks within the hub cavity of the steering wheel.
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 STANDARD PROCEDURE .

AIR BAG, KNEE BLOCKER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Knee Airbag (KAB)



Courtesy of CHRYSLER GROUP, LLC

The Knee Airbag (KAB), also known as Inflatable Knee Blocker (IKB), can help prevent leg injuries during an impact event. A molded thermoplastic KAB deployment door, located below the dashboard, is the most visible part of the KAB. The housing contains the airbag inflator. The airbag inflator is a single-initiator and the two units are sealed within the KAB housing. Europe-Middle East-Africa (EMEA) vehicles can be equipped optionally with driver knee bags. North America Free Trade Agreement (NAFTA) vehicles are always equipped with driver knee airbags.

When the Occupant Restraint Controller (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 KAB deployment door will split at predetermined tear seam lines concealed on the underside of the door, then the door will fold open and out of the way. The cushion protects the lower extremities of the vehicle driver and helps to keep the seat occupant properly positioned for the driver airbag deployment during a frontal impact collision. Following an airbag deployment, the KAB

cushion quickly deflates by expelling the inert gas through the loose weave of the fabric.

The KAB cannot be repaired, and must be replaced if deployed, ineffective, or in any way damaged. Following a KAB deployment, the KAB and the steering column opening cover must be replaced.

AIR BAG, KNEE BLOCKER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The KAB is deployed by an electrical signal generated by the ORC through the KAB squib circuits to the initiator in the airbag inflator. 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 airbag 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 KAB cover will split at predetermined breakout lines, then fold down out of the way. Following an airbag 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 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, all potentially live pyrotechnic or hazardous chemicals are burned during an airbag deployment event.

The inert gas that is produced when the chemicals are burned 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 breathe. If the irritation is not alleviated by these actions, contact a physician.

The ORC monitors the condition of the knee airbag through circuit resistance. If any fault is detected the ORC will illuminate the airbag indicator in the instrument cluster and store a Diagnostic Trouble Code (DTC). Proper diagnosis of the KAB initiator and squib circuit requires the use of a diagnostic scan tool and may also require the use of the SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

AIR BAG, KNEE BLOCKER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

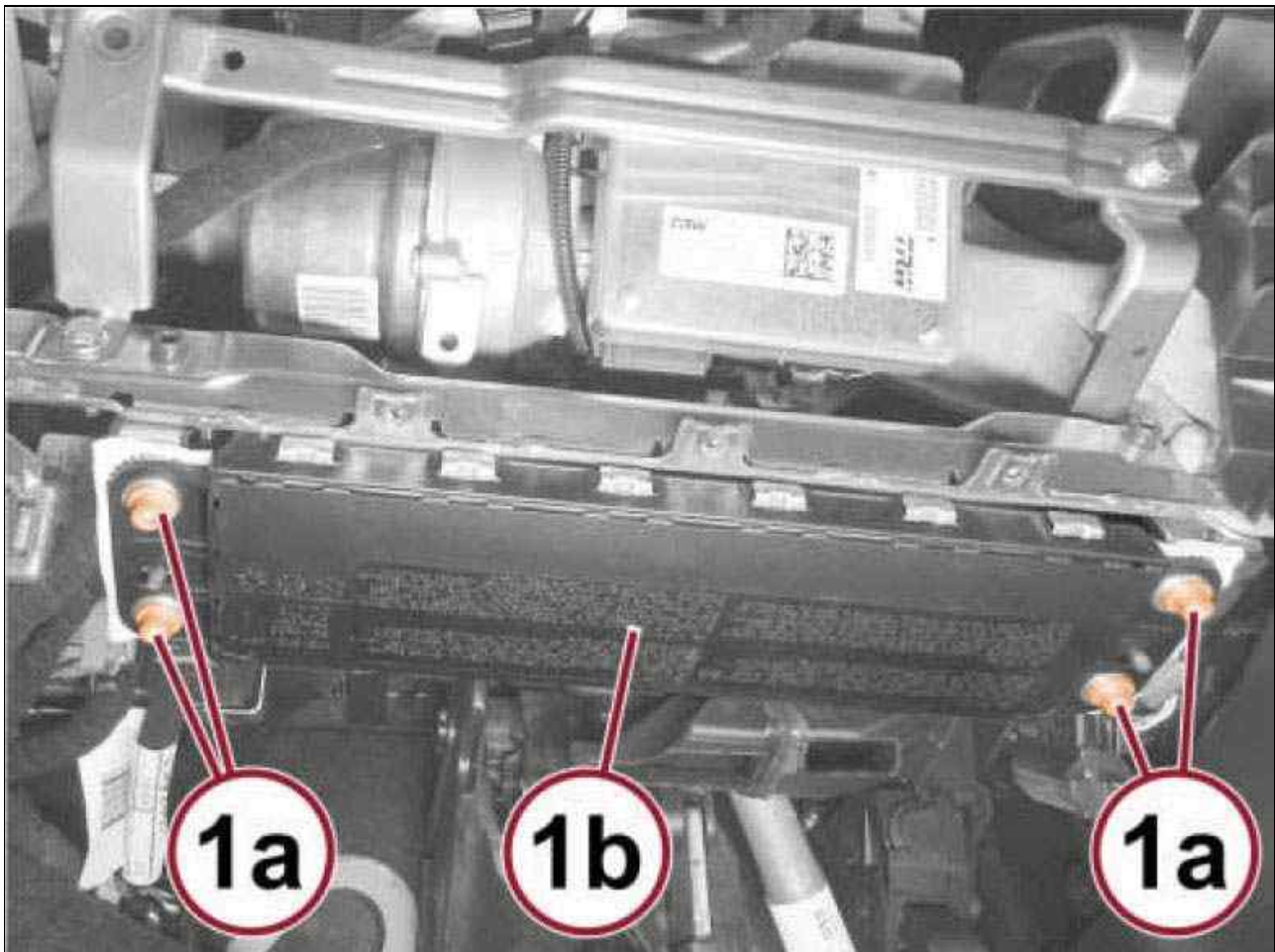
⚠ WARNING:

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 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 cushion and other interior surfaces. In large doses, these deposits may cause irritation to the skin and eyes.

Fig 1: KAB Unit & Screws



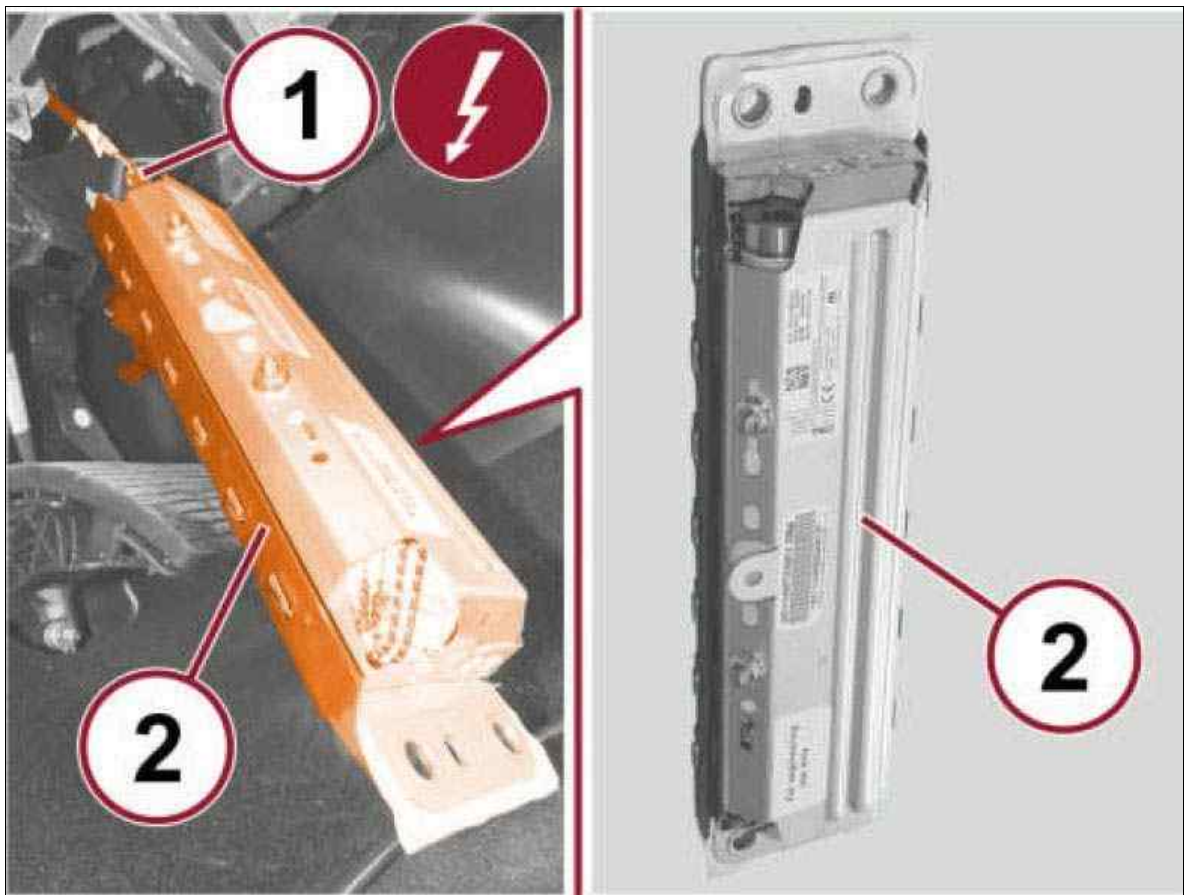
Courtesy of CHRYSLER GROUP, LLC

 NOTE:

The following procedure is for replacement of an ineffective or damaged Knee AirBag (KAB). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to STANDARD PROCEDURE . If the KAB has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to STANDARD PROCEDURE .

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable. Wait two minutes for the system capacitor to discharge before further service.
2. Remove the steering column opening cover from the instrument panel. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .
3. From below the instrument panel, remove the four screws (1a) that secure the KAB unit (1b) to the lower instrument panel support structure.

Fig 2: KAB Unit & Electrical Connection



Courtesy of CHRYSLER GROUP, LLC

4. Pull the KAB (2) down and back from the instrument panel far enough to access the electrical connection (1) to the KAB inflator initiator connector receptacle on the inboard end of the KAB housing.

5. Pull the connector insulator straight out from the inflator initiator to disconnect it from the connector receptacle.
6. Remove the KAB from the vehicle.

AIR BAG, KNEE BLOCKER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

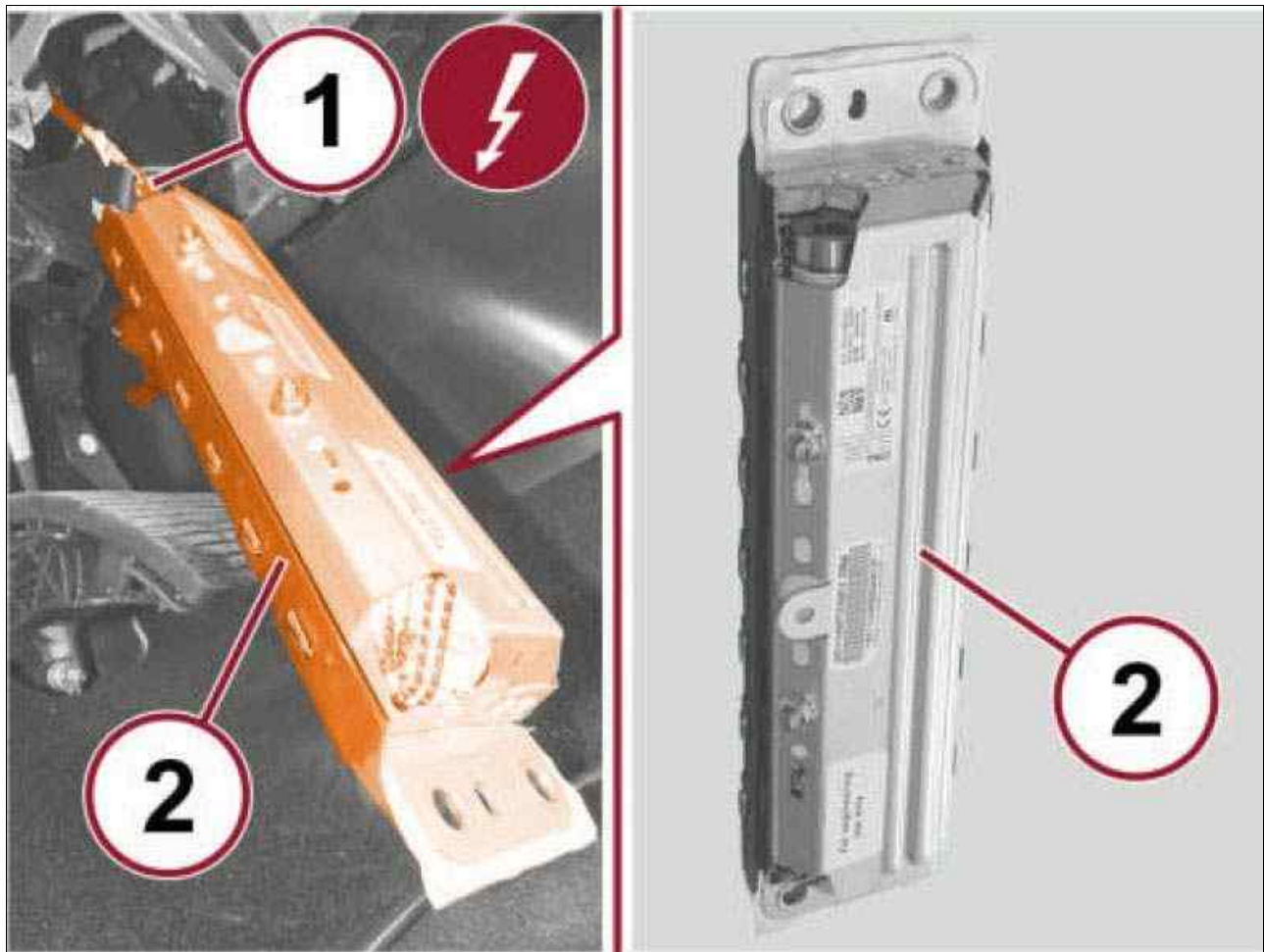
WARNING:

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 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, use extreme care to prevent any foreign material from entering the Inflatable Knee Blocker (IKB) airbag, or becoming entrapped between the IKB airbag cushion and the IKB cover. Failure to observe this warning could result in occupant injuries upon airbag deployment.

Fig 1: KAB Unit & Electrical Connection



Courtesy of CHRYSLER GROUP, LLC

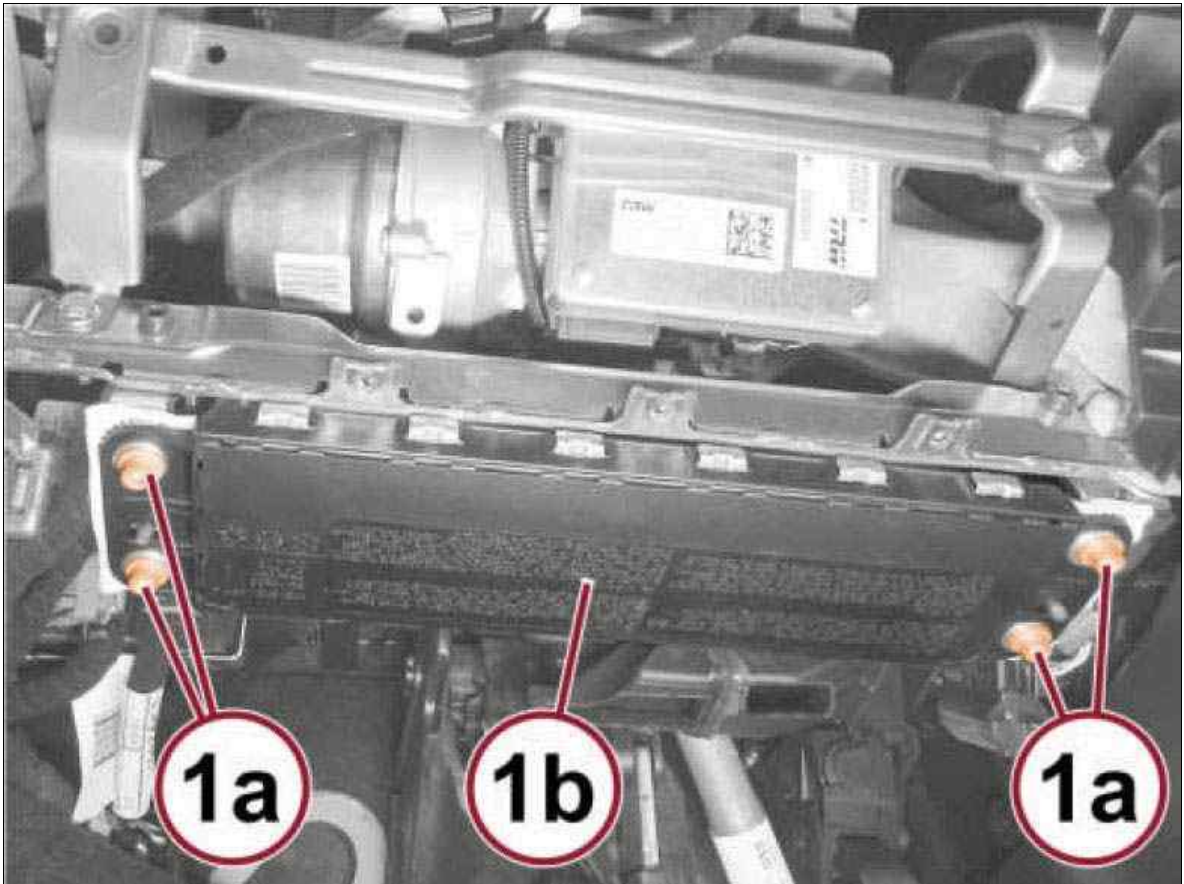


NOTE:

The following procedure is for replacement of an ineffective or damaged Knee AirBag (KAB). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to STANDARD PROCEDURE . If the KAB has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to STANDARD PROCEDURE .

1. Position the KAB unit (2) below the instrument panel in a vertical orientation with the KAB inflator initiator connector (1) receptacle facing upward.
2. Connect the connector insulator of the instrument panel wire harness take out for the KAB to the inflator initiator connector receptacle by pressing straight in on the connector. You can be certain that the connector is fully engaged in its receptacle by listening carefully for a distinct, audible click as the connector latches snap into place.

Fig 2: KAB Unit & Screws



Courtesy of CHRYSLER GROUP, LLC

3. Carefully position the KAB and cover (1b) onto the lower instrument panel support structure.
4. Install the four screws (1a) that secure the KAB and cover to the instrument panel support structure. Tighten the screws securely.
5. Install the steering column opening cover onto the instrument panel. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .
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 STANDARD PROCEDURE .

AIR BAG, PASSENGER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Passenger Airbag (PAB)



Courtesy of CHRYSLER GROUP, LLC

The Passenger Airbag (PAB) is integral to the top of the dashboard and bolts to the frame. The 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 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.

AIR BAG, PASSENGER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The Passenger AirBag (PAB) is deployed by electrical signals generated by the Occupant Restraint Controller (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 (North America Free Trade Agreement/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 Supplemental Restraint System (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.

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 Diagnostic Trouble Code (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 SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

AIR BAG, PASSENGER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

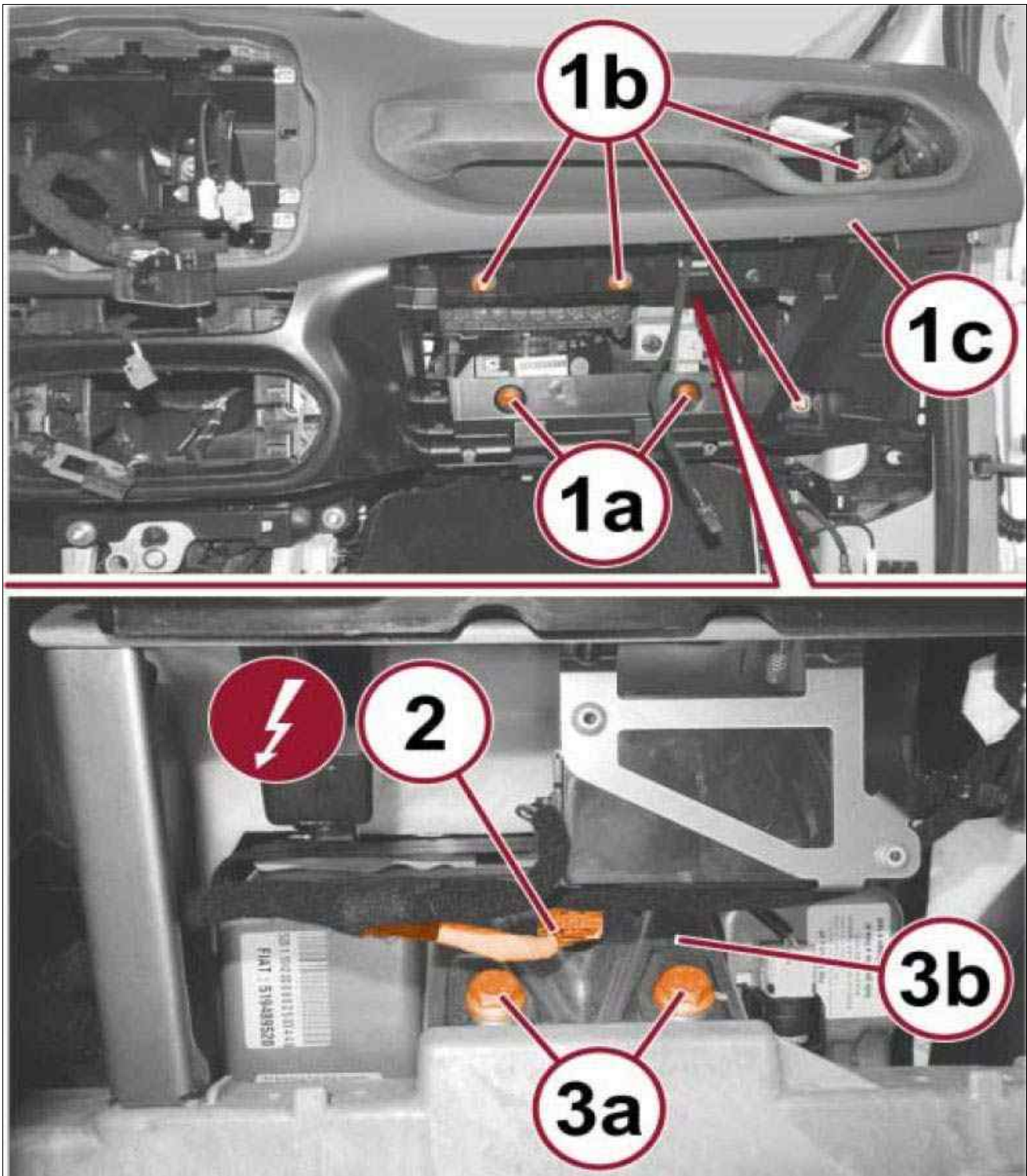
WARNING:

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 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.

Fig 1: Remove/Install Passenger AirBag (PAB)



Courtesy of CHRYSLER GROUP, LLC



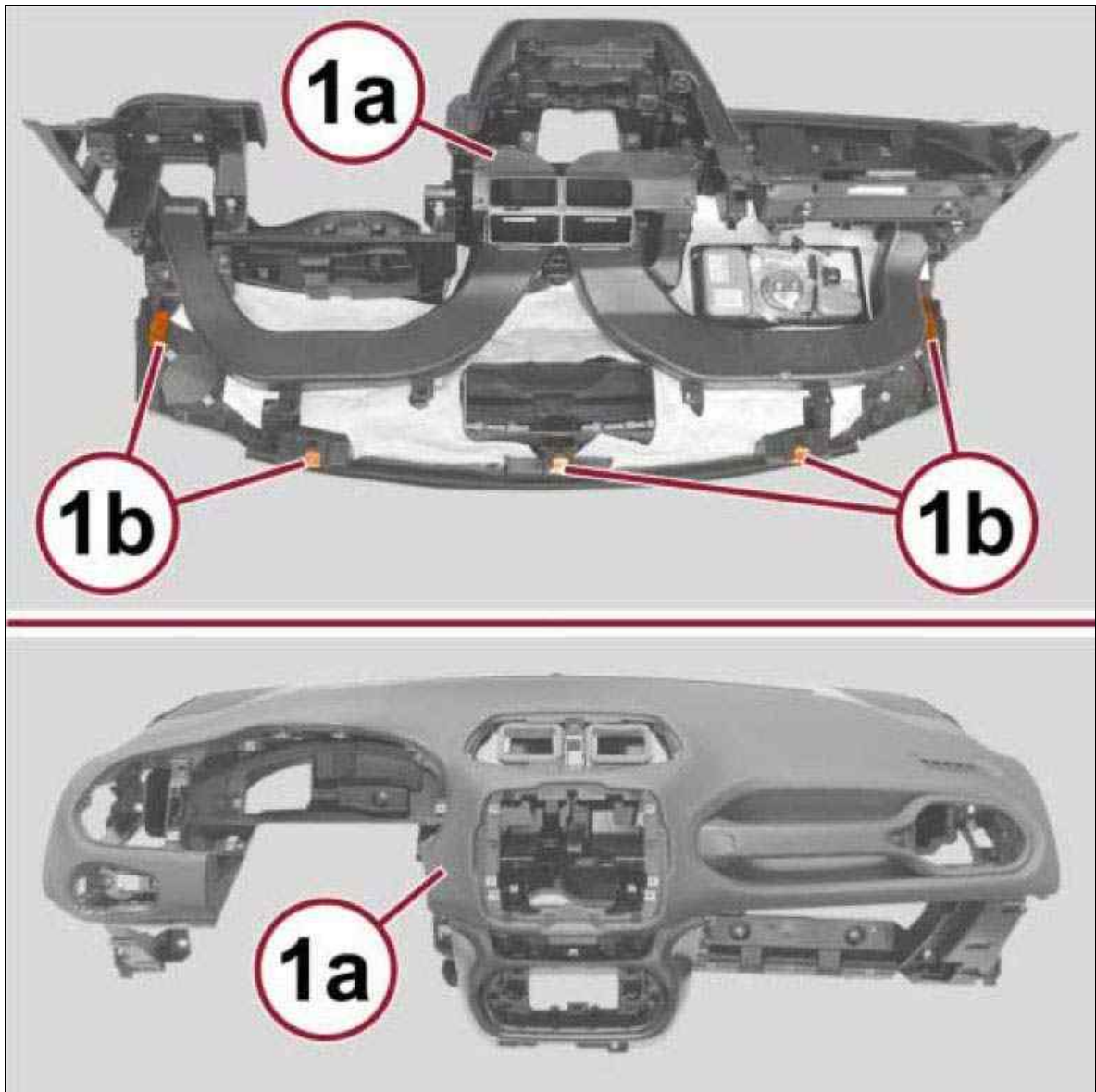
NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Remove the glove box from the instrument panel. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
3. Reach through the instrument panel glove box opening to access and remove the two screws (3a) that secure the Passenger AirBag (PAB) lower mounting bracket (3b) to the instrument panel carrier.
4. Reach through the instrument panel glove box opening to access and disconnect the instrument panel wire harness connector (2) from the PAB jumper wire harness connector.

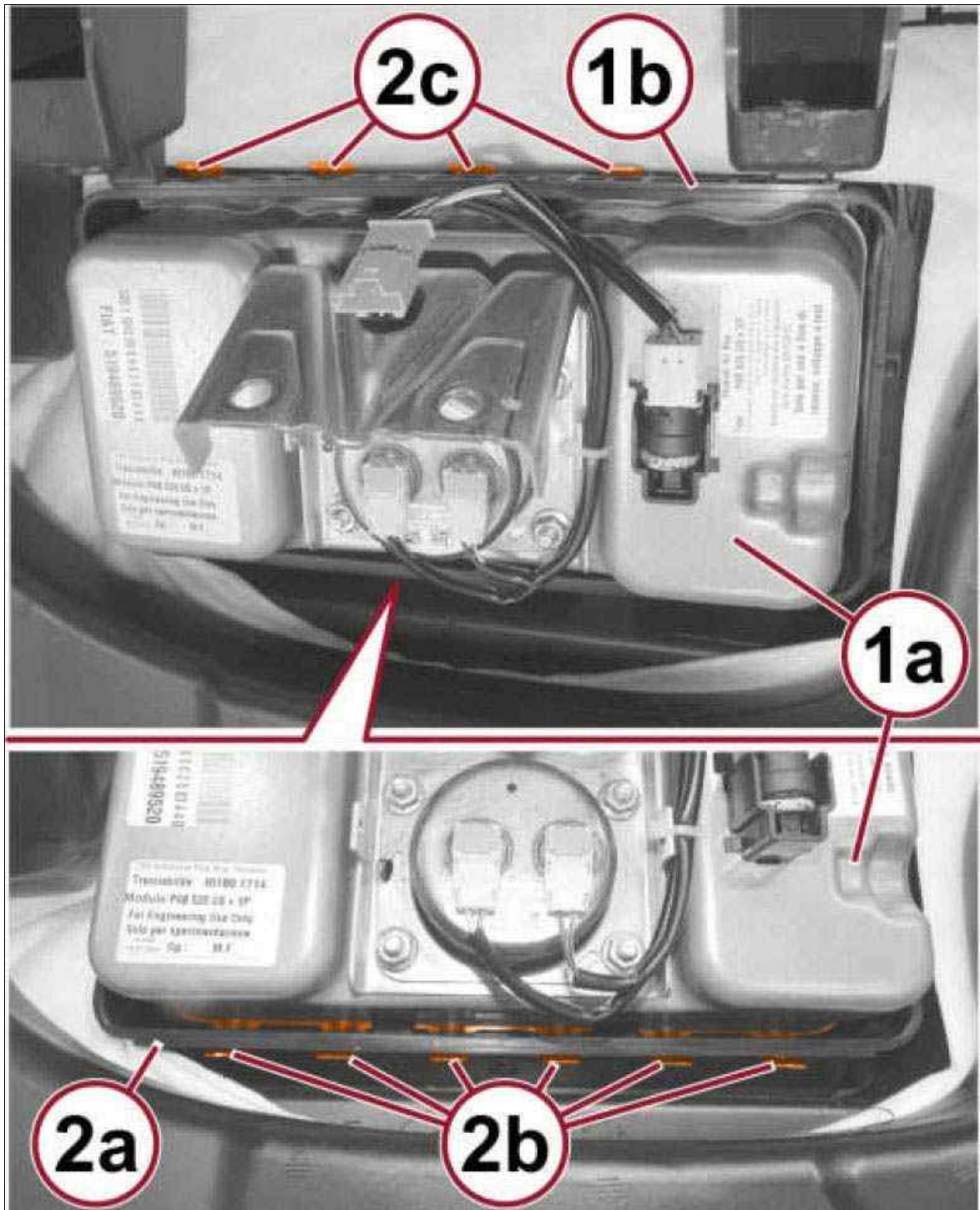
Fig 2: Instrument Panel Cover



Courtesy of CHRYSLER GROUP, LLC

5. Remove the PAB and instrument panel cover (1a) as a unit from the instrument panel carrier. Refer to COVER, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
6. Place the instrument panel cover on a suitable work surface with the top facing down. If the cover will be reused, be certain to take the proper precautions to prevent the cover from receiving cosmetic damage during the following procedures.

Fig 3: PAB Housing, Retainer/Chute & Hooks



Courtesy of CHRYSLER GROUP, LLC

7. Disengage each of the hooks (2c) on the rear side of the PAB housing (1a) from the windows in the rearward vertical wall of the PAB retainer or chute (1b) on the underside of the top cover. To disengage the hooks, use a suitable prying tool to pull the upper edge of the receptacle wall outward far enough to disengage the hooks on the adjacent edge of the PAB housing.
8. With all of the hooks on the rear side of the PAB housing disengaged from the retainer, rotate that side of the housing upward far enough to disengage the hooks (2b) on the forward side of

the housing from the rearward vertical wall of the retainer (2a).

9. With all of the hooks disengaged, lift the PAB housing, inflator and cushion as a unit from the receptacle of the PAB retainer or chute on the underside of the instrument panel top cover.

AIR BAG, PASSENGER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

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 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.

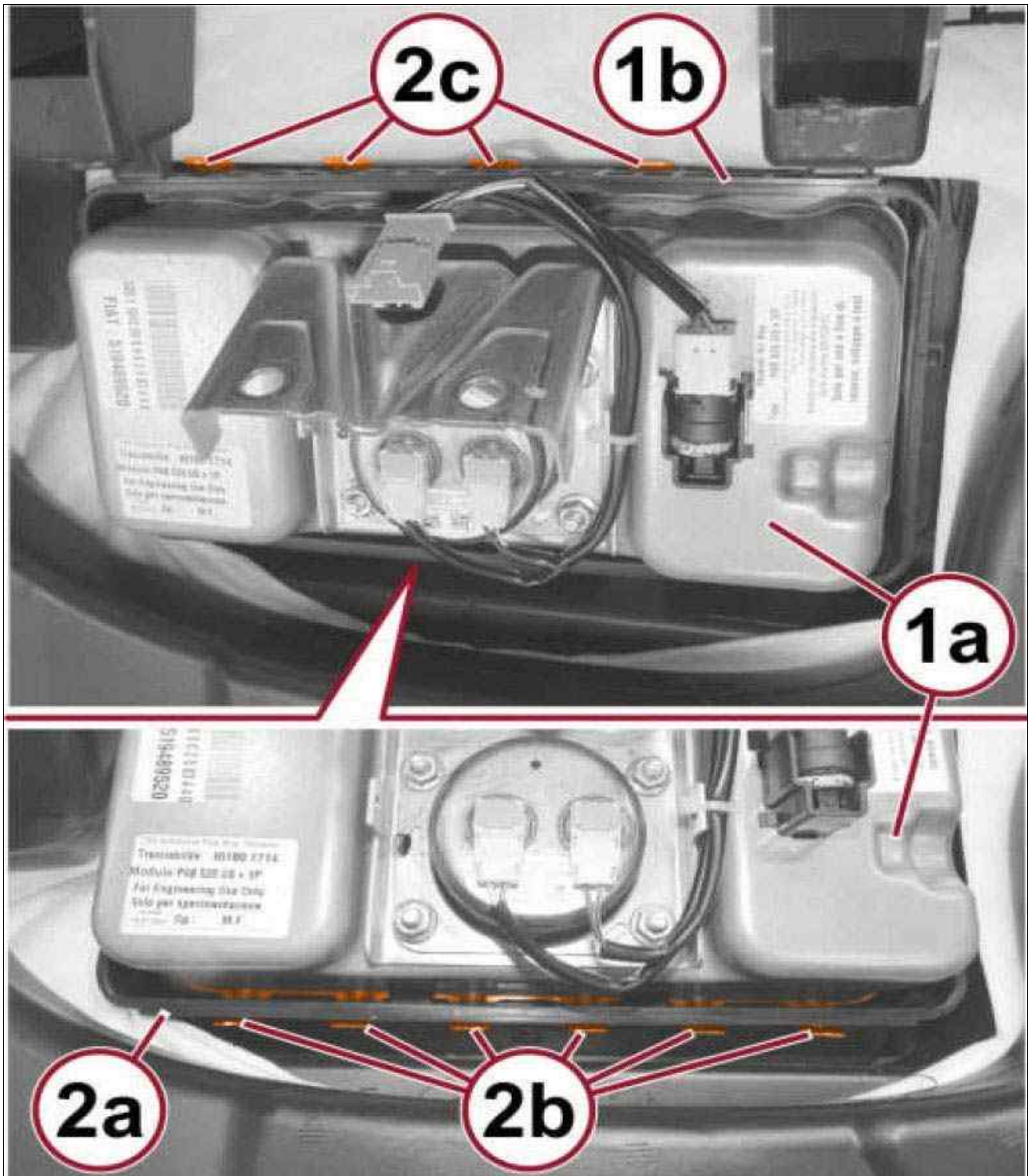
WARNING:

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.

Fig 1: PAB Housing, Retainer/Chute & Hooks



Courtesy of CHRYSLER GROUP, LLC



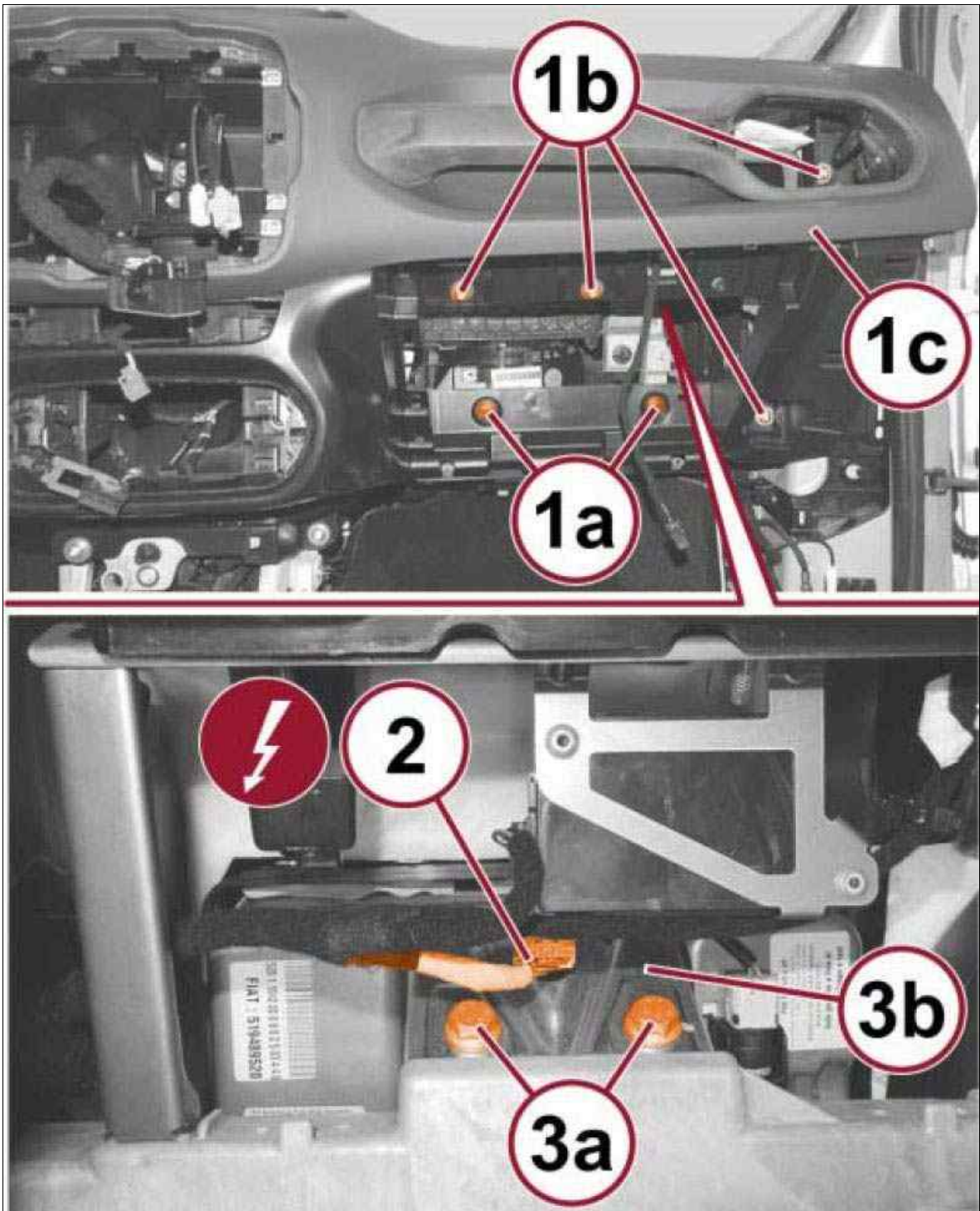
NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Place the instrument panel trim cover on a suitable work surface with the Passenger AirBag (PAB) retainer or chute receptacle facing up. Be certain to take the proper precautions to prevent the instrument panel cover from receiving cosmetic damage during the following procedures.
2. Carefully position the PAB housing (1a) to the PAB retainer or chute receptacle. The side of the PAB housing with 5 hooks faces rearward in the vehicle.
3. Engage all of the hooks (2b) on the forward side of the PAB housing through the windows in the vertical wall on the forward side of the PAB retainer or chute (2a), then rotate the rearward side of the PAB housing downward into the receptacle.
4. Inspect around the perimeter of the PAB making certain each of the hooks (2b and 2c) on the PAB housing is fully engaged through the windows in the forward (2a) and rearward (1b) vertical walls of the PAB retainer or chute receptacle.
5. Install the PAB and the instrument panel cover onto the instrument panel carrier as a unit. Refer to COVER, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

Fig 2: Remove/Install Passenger AirBag (PAB)



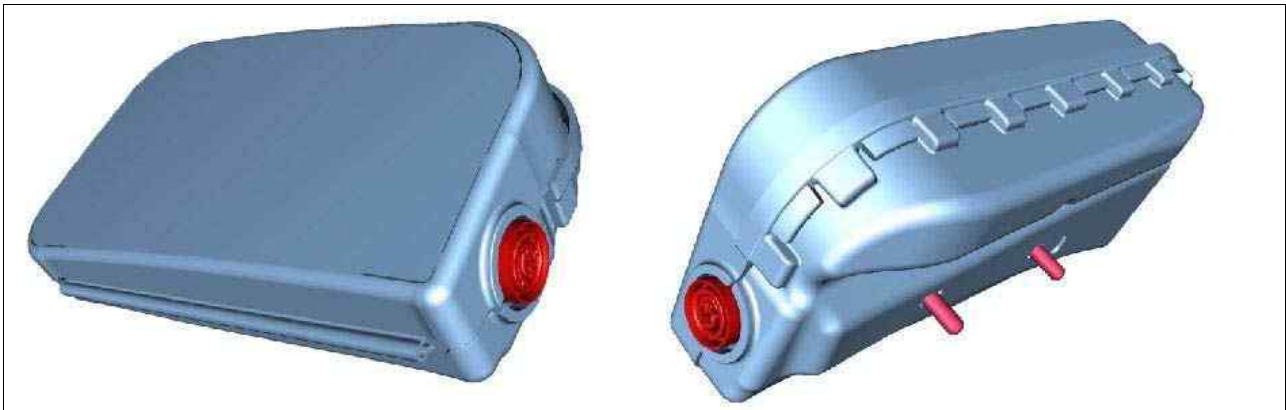
Courtesy of CHRYSLER GROUP, LLC

6. Reach through the instrument panel cover glove box opening to access and reconnect the instrument panel wire harness connector (2) to the PAB jumper wire harness connector. Be certain the connectors are fully engaged and locked.
7. Reach through the instrument panel glove box opening to install and tighten the two screws (3a) that secure the PAB lower mounting bracket (3b) to the instrument panel carrier. Tighten the screws to the proper SPECIFICATIONS .

8. Install the glove box into the instrument panel. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
9. 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 STANDARD PROCEDURE .

AIR BAG, SEAT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Seat AirBags (SAB)



Courtesy of CHRYSLER GROUP, LLC

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

The Seat AirBags (SAB) 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 (3). 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.

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.

AIR BAG, SEAT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

Each SAB is deployed individually by an electrical signal generated by the Occupant Restraint Controller (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 Micro Gas Generator (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 Diagnostic Trouble Code (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 SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

AIR BAG, SEAT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

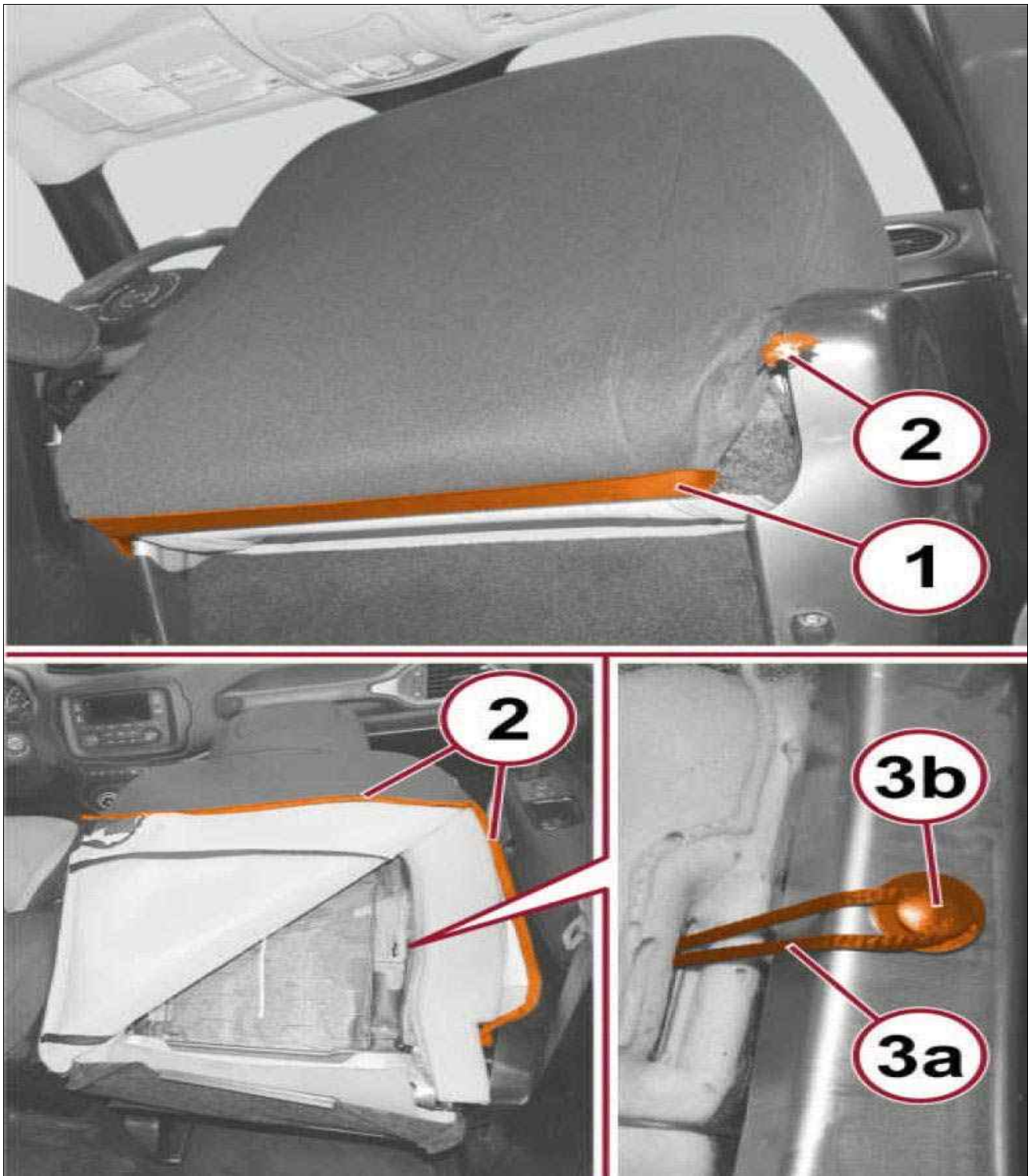
WARNING:

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 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.

Fig 1: Remove/Install Seat AirBag (SAB)



Courtesy of CHRYSLER GROUP, LLC



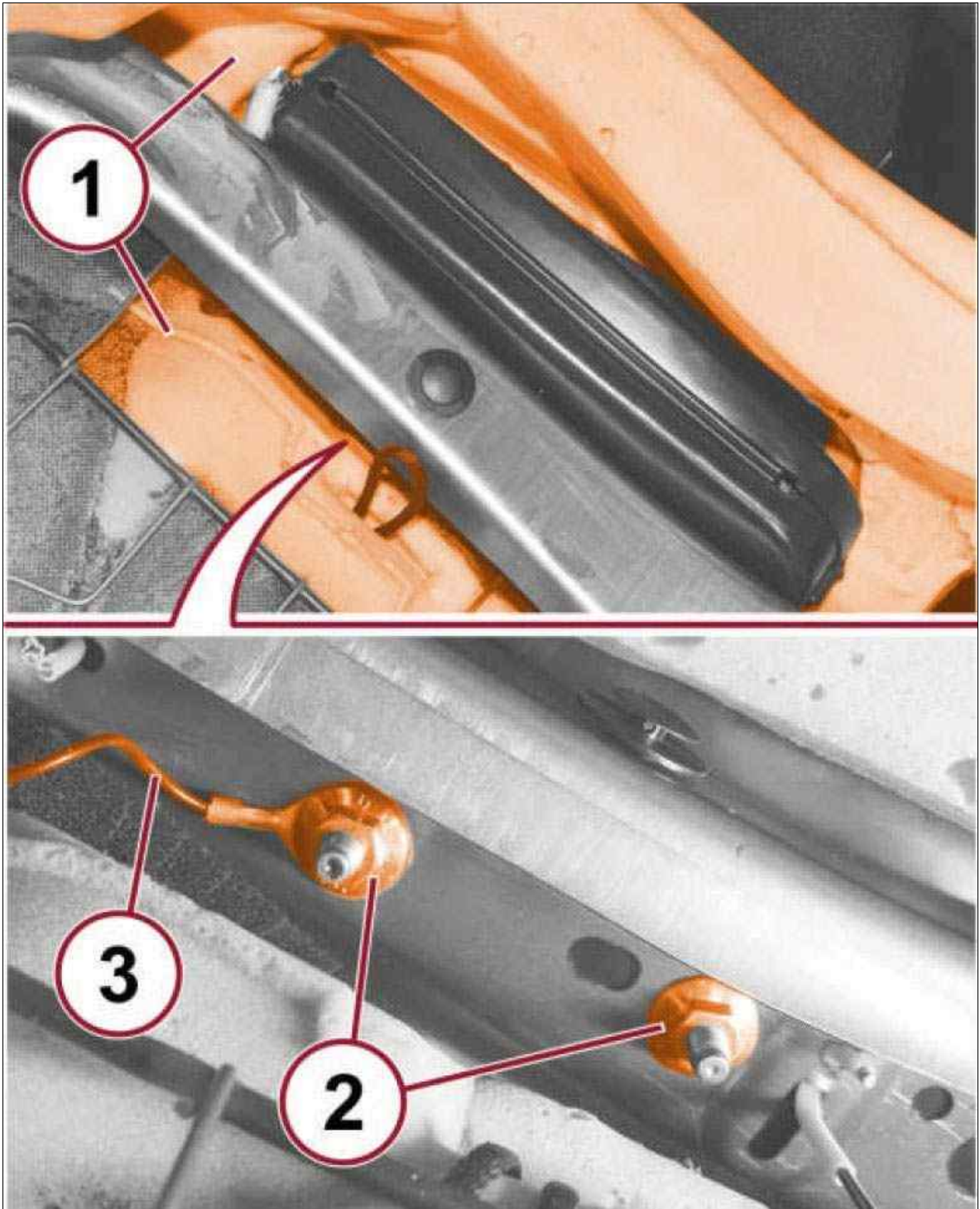
NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Working from behind the front seat, fold the seat back fully forward to access and disengage the J-channel (1) that secures the front of the seat back trim cover to the back.
3. Unzip (2) the outboard side of the seat back trim cover to access the seat back frame.
4. Disengage the cord (3a) that secures the seat back pad from the button (3b) on the outboard side of the seat back frame.

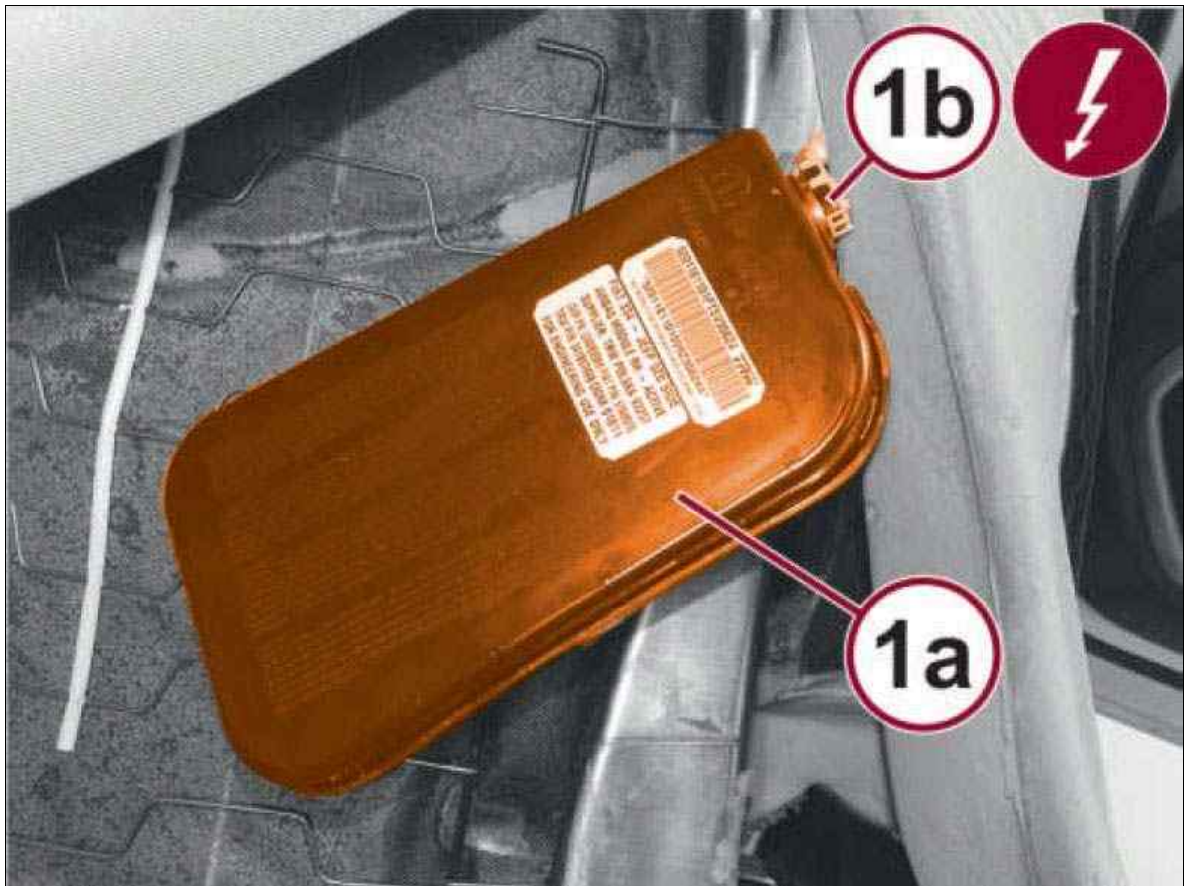
Fig 2: Seat Back Padding, Nuts & Ground Wire



Courtesy of CHRYSLER GROUP, LLC

5. Move the seat back padding (1) aside far enough to access the Seat AirBag (SAB) mounting provisions on the inside of the outboard seat back frame.
6. Remove the two nuts (2) that secure the studs of the SAB to the inside of the seat back frame.
7. Remove the ground wire (3) eyelet terminal from the upper SAB stud.

Fig 3: Seat AirBag (SAB) & Wire Connector



Courtesy of CHRYSLER GROUP, LLC

8. Rotate the SAB (1a) out from the outboard side of the seat back frame far enough to access the electrical connection.

 CAUTION:

Do not pull on the seat 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.

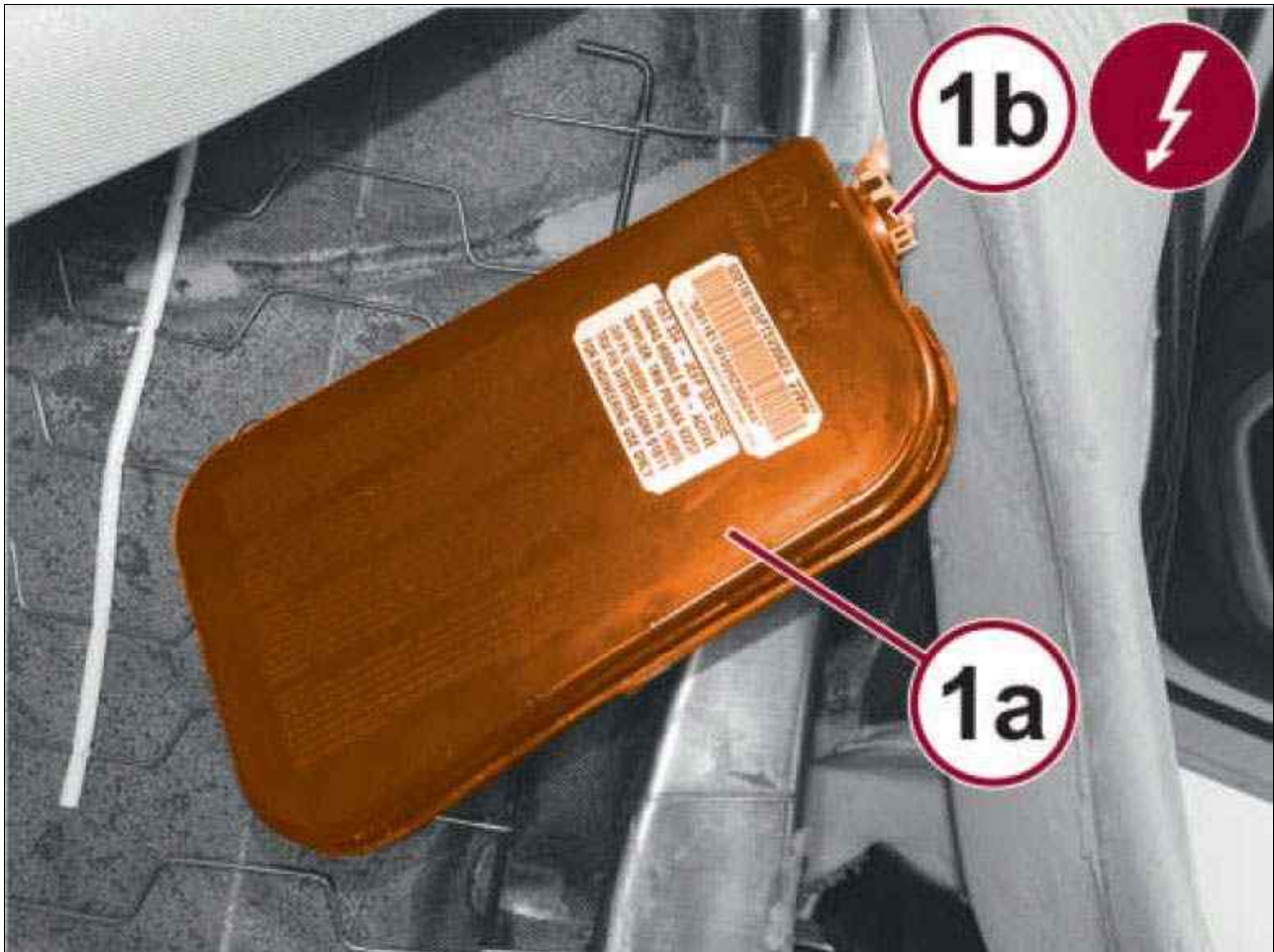
9. Disconnect the seat wire harness connector (1b) from the SAB inflator.
10. Remove the SAB from the seat back.

AIR BAG, SEAT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

 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 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.

Fig 1: Seat AirBag (SAB) & Wire Connector



Courtesy of CHRYSLER GROUP, LLC

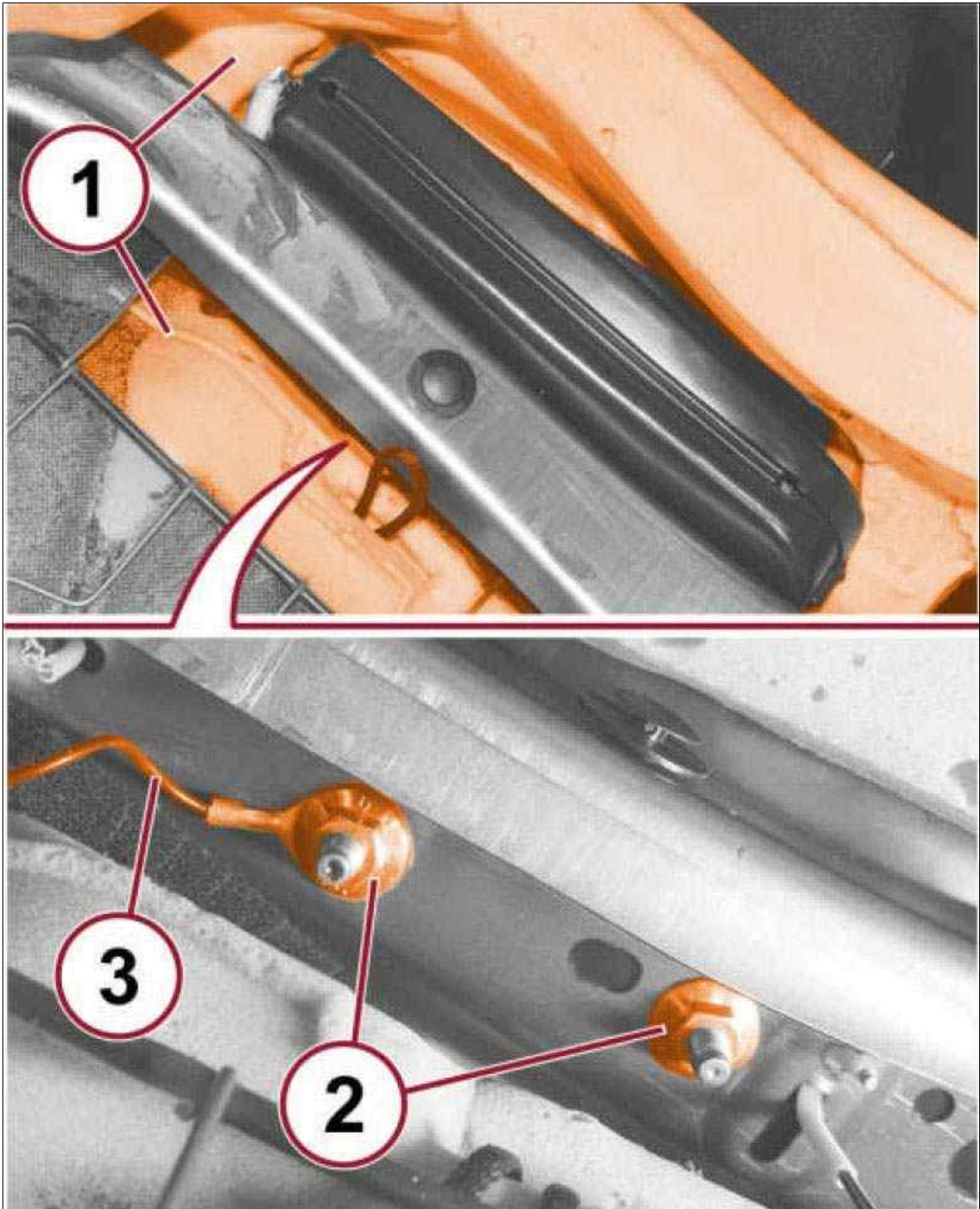


NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Position the Seat AirBag (SAB) unit (1a) close enough to the outboard side of the seat back frame to connect the seat wire harness connector (1b) to the SAB inflator. Be certain that the connector latches and lock are fully engaged.
2. Position the SAB unit to the outboard side of the seat back frame and insert the studs through the mounting holes in the frame.

Fig 2: Seat Back Padding, Nuts & Ground Wire



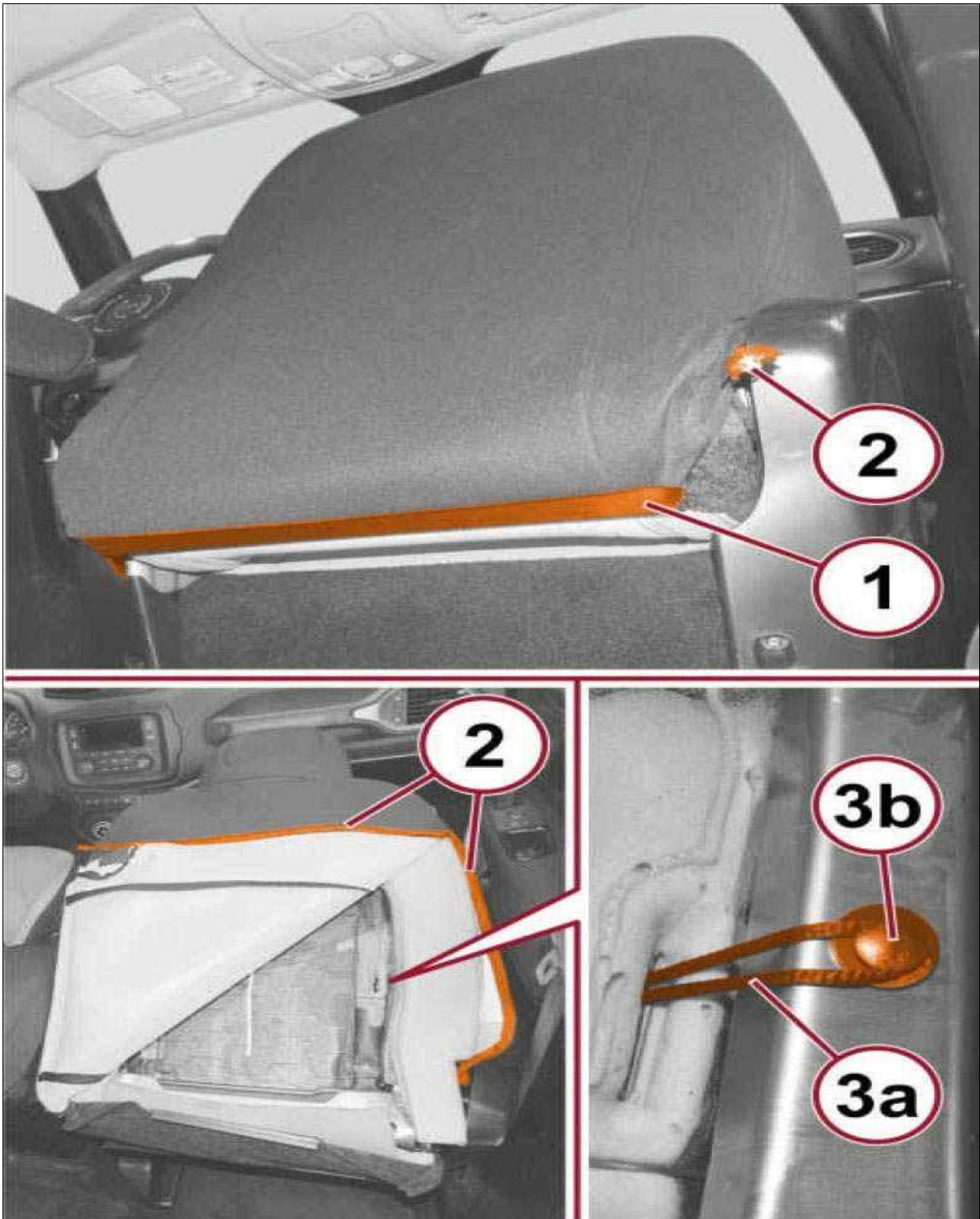
Courtesy of CHRYSLER GROUP, LLC

3. Move aside the seat back padding (1) far enough to access and install the ground wire (3)

eyelet terminal over the upper SAB stud on the inside of the seat back frame.

4. Install and tighten the two nuts (2) that secure the SAB to the inside of the seat back frame. Tighten the nuts securely.

Fig 3: Remove/Install Seat AirBag (SAB)



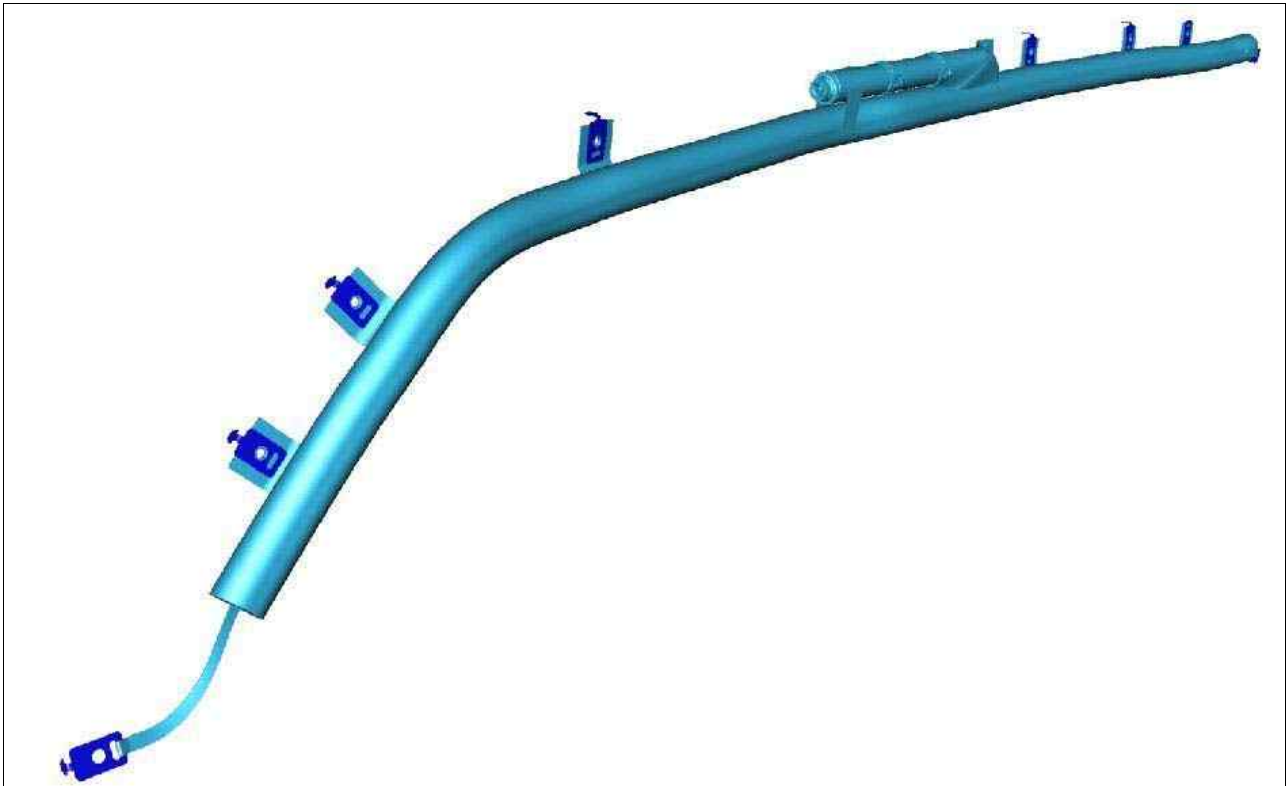
Courtesy of CHRYSLER GROUP, LLC

5. Engage the cord (3a) that secures the seat back pad to the button (3b) on the outboard side of the seat back frame.

6. Zip up (2) the outboard side of the seat back trim cover.
7. Engage the J-channel (1) that secures the front of the seat back trim cover to the back.
8. 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 STANDARD PROCEDURE .

AIR BAG, SIDE CURTAIN > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Side Curtain Airbag



Courtesy of CHRYSLER GROUP, LLC

Side curtain airbags are used in markets where they are required equipment. Vehicles with side curtain airbags can be identified by a molded trim button with the Supplemental Restraint System (SRS) logo located at the top of each B- and C-pillar trim.

The side curtains use a hybrid inflator. To deploy the airbag, the Occupant Restraint Controller (ORC) sends a current to the airbag inflator which ignites the chemical pellets. When the chemical pellets ignite, the pressure of the expanding gases produces enough pressure to break a containment cap of a cylinder of inert gas. The gas is directed into the side curtain airbag. The side current airbags will stay inflated for approximately five seconds to help protect passengers in the event of a rollover event. The deflation rate of the airbags is controlled by the tightness of the airbag fabric mesh.

The side curtain airbag units cannot be adjusted or repaired and must be replaced if deployed, ineffective, or in any way damaged. Once a side curtain airbag has been deployed, the complete side curtain airbag unit, the headliner, the upper A, B and C-pillar trim, the B and C-pillar deploy brackets as

well as all other visibly damaged components must be replaced.

AIR BAG, SIDE CURTAIN > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

Each side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC) is deployed individually by an electrical signal generated by the ORC to which it is connected through the left or right SABIC line 1 and line 2 (or squib) circuits. The hybrid-type inflator assembly for each airbag contains a small canister of highly compressed inert gas. When the ORC sends the proper electrical signal to the airbag inflator, the electrical energy creates enough heat to ignite chemical pellets within the inflator.

Once ignited, these chemicals burn rapidly and produce the pressure necessary to rupture a containment disk in the inert gas canister. The inflator and inert gas canister are sealed and connected to a tubular manifold so that all of the released gas is directed into the folded airbag cushion, causing the cushion to inflate. As the cushion inflates it will drop down from the roof rail between the edge of the headliner and the side glass/body pillars to form a curtain-like cushion to protect the vehicle occupants during a side impact collision incident. The cushion features large chambers that inflate adjacent to the head of each front and rear seat occupant.

The front and rear tethers keep the side curtain airbag cushion taut to the side of the vehicle. In addition, ramps integral to the side trim of the interior, integral to the side curtain airbag modules themselves and deploy brackets at the tops of the B and C-pillars guide the cushion into the proper deployment position. Following the deployment, the cushion slowly deflates by venting the inert gas through the loose weave of the cushion fabric and the deflated cushion hangs down loosely from the roof rail.

The ORC monitors the condition of the side curtain airbags through circuit resistance. If any fault is detected the ORC will illuminate the airbag indicator in the instrument cluster and store a Diagnostic Trouble Code (DTC). Proper diagnosis of the side curtain airbag inflator and squib circuits requires the use of a diagnostic scan tool and may also require the use of the SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

AIR BAG, SIDE CURTAIN > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL - AIRBAG

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 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.

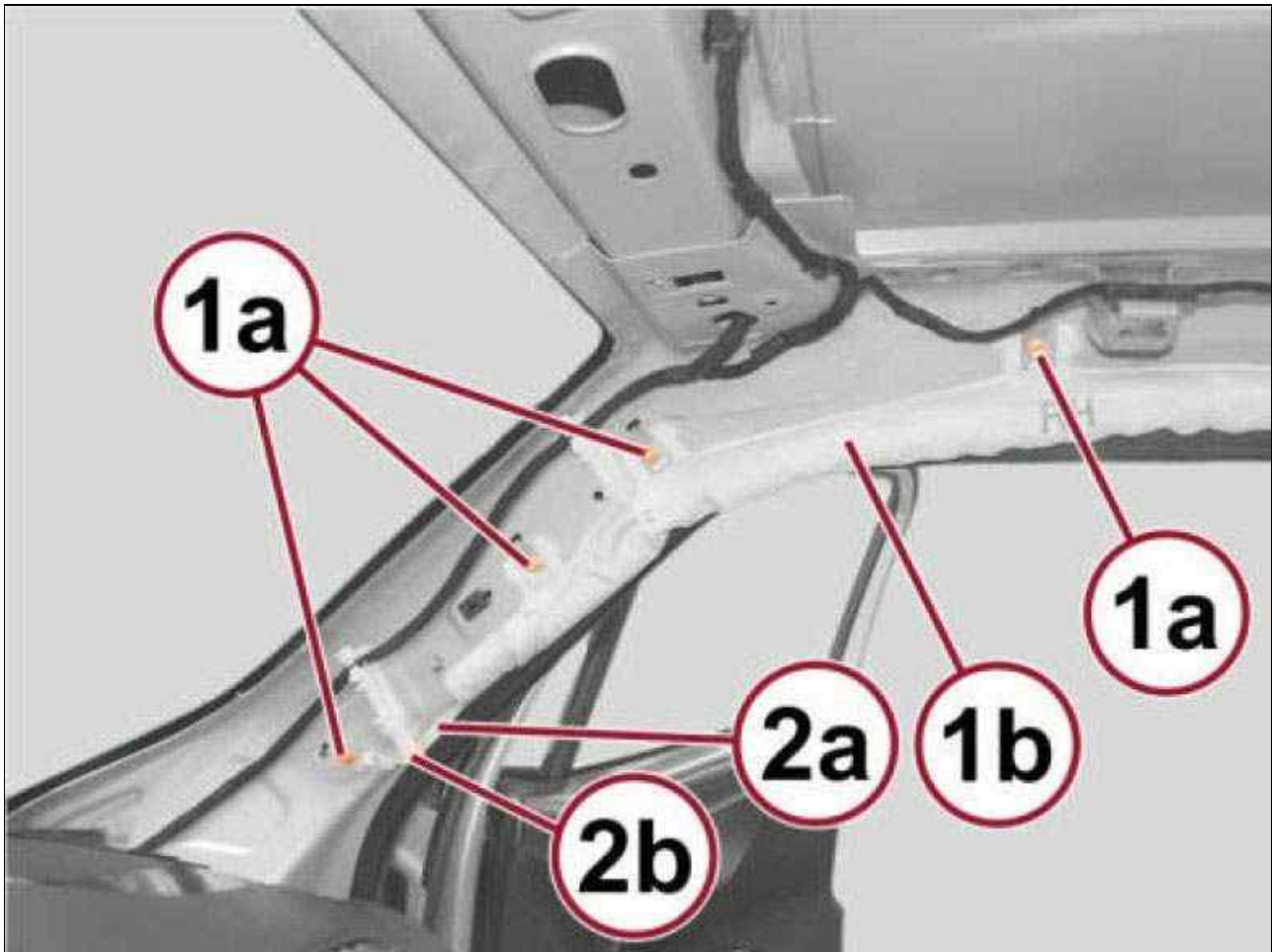
WARNING:

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 side curtain airbag, or becoming entrapped between the side curtain airbag cushion and the headliner. Failure to observe this warning could result in occupant injuries upon airbag deployment.

Fig 1: Remove/Install Side Curtain Airbag



Courtesy of CHRYSLER GROUP, LLC

 NOTE:

The following procedure is for replacement of an ineffective or damaged side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC). If the airbag is ineffective or

damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to STANDARD PROCEDURE . If the side curtain airbag has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to STANDARD PROCEDURE .

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Fully recline both front seat backs.

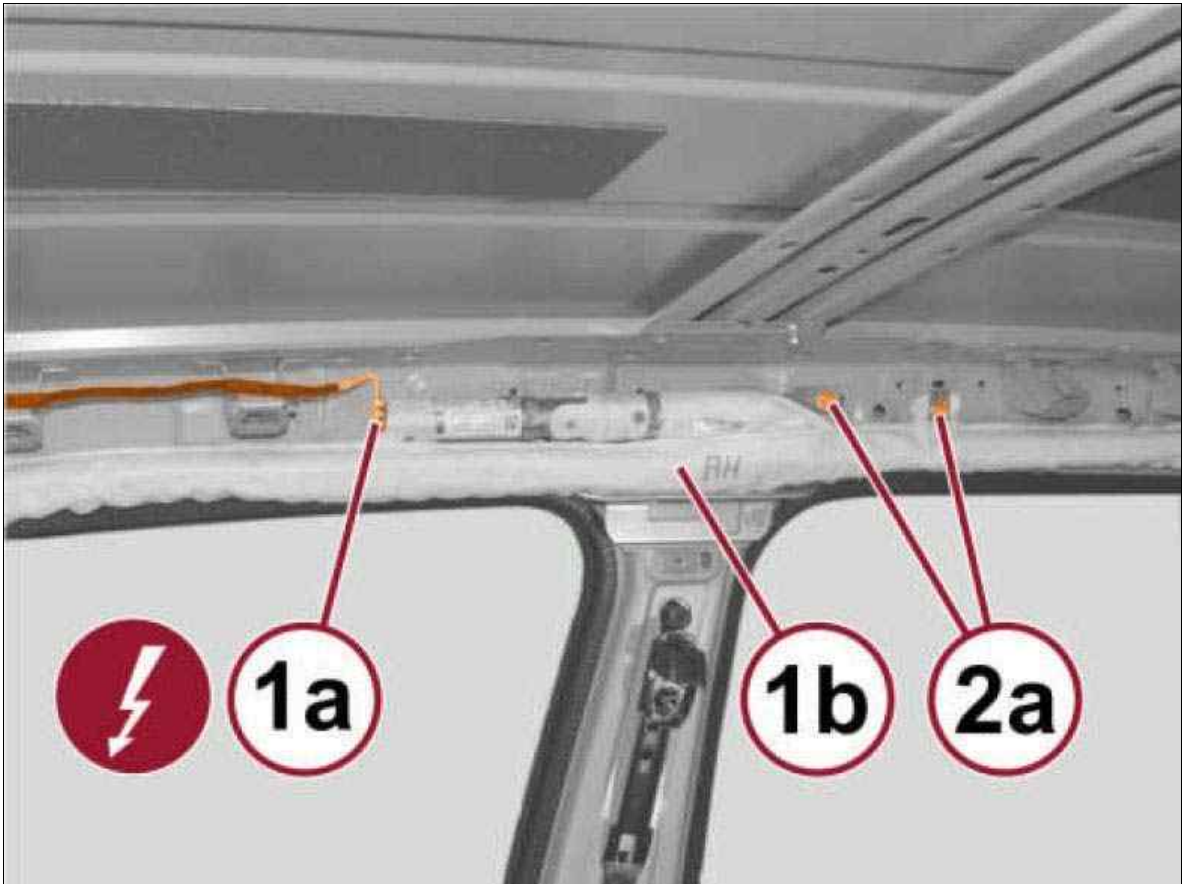


NOTE:

Use the headliner removal procedure to lower the headliner from the inner roof panel. The headliner will NOT be removed from the vehicle interior.

3. Lower the headliner from the inner roof panel and allow it to rest within the vehicle interior. Refer to HEADLINER, REMOVAL AND INSTALLATION .
4. Remove the screws (1a) that secure the Side AirBag Inflatable Curtain (SABIC) (1b) to the inner A-pillar and front inner roof rail.
5. Disengage the front tether (2a) from the retaining clip (2b) on the inner A-pillar.

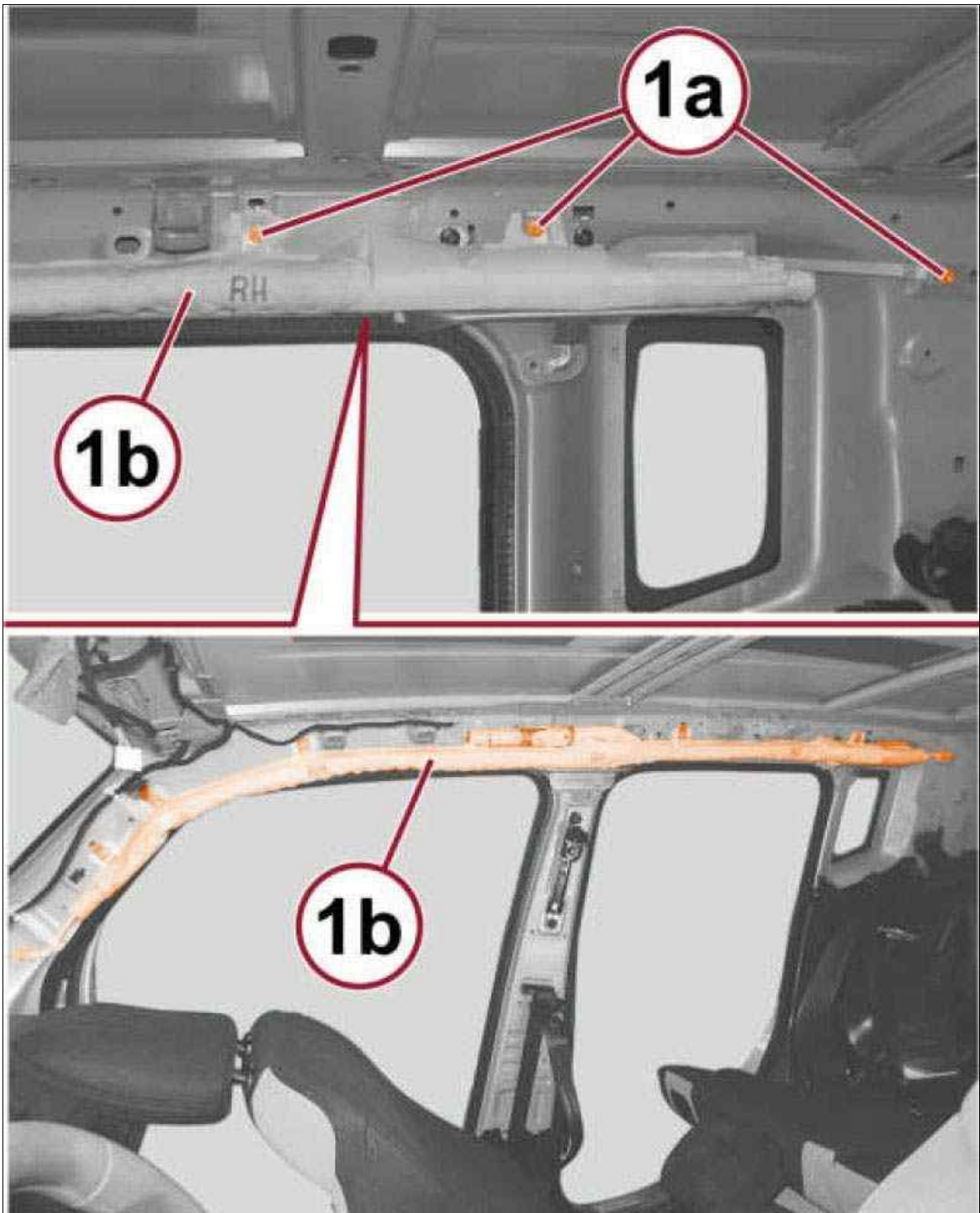
Fig 2: SABIC, Wire Connector & Screws



Courtesy of CHRYSLER GROUP, LLC

6. Disconnect the body wire harness connector (1a) for the SABIC (1b) from the connector receptacle of the inflator above the front door opening.
7. Remove the screws (2a) that secure the SABIC to the inner roof rail above the front and rear door openings.

Fig 3: SABIC & Screws



Courtesy of CHRYSLER GROUP, LLC

8. Remove the screws (1a) that secure the SABIC to the rear of the inner roof rail.
9. Remove the SABIC (1b) from the vehicle as a unit.

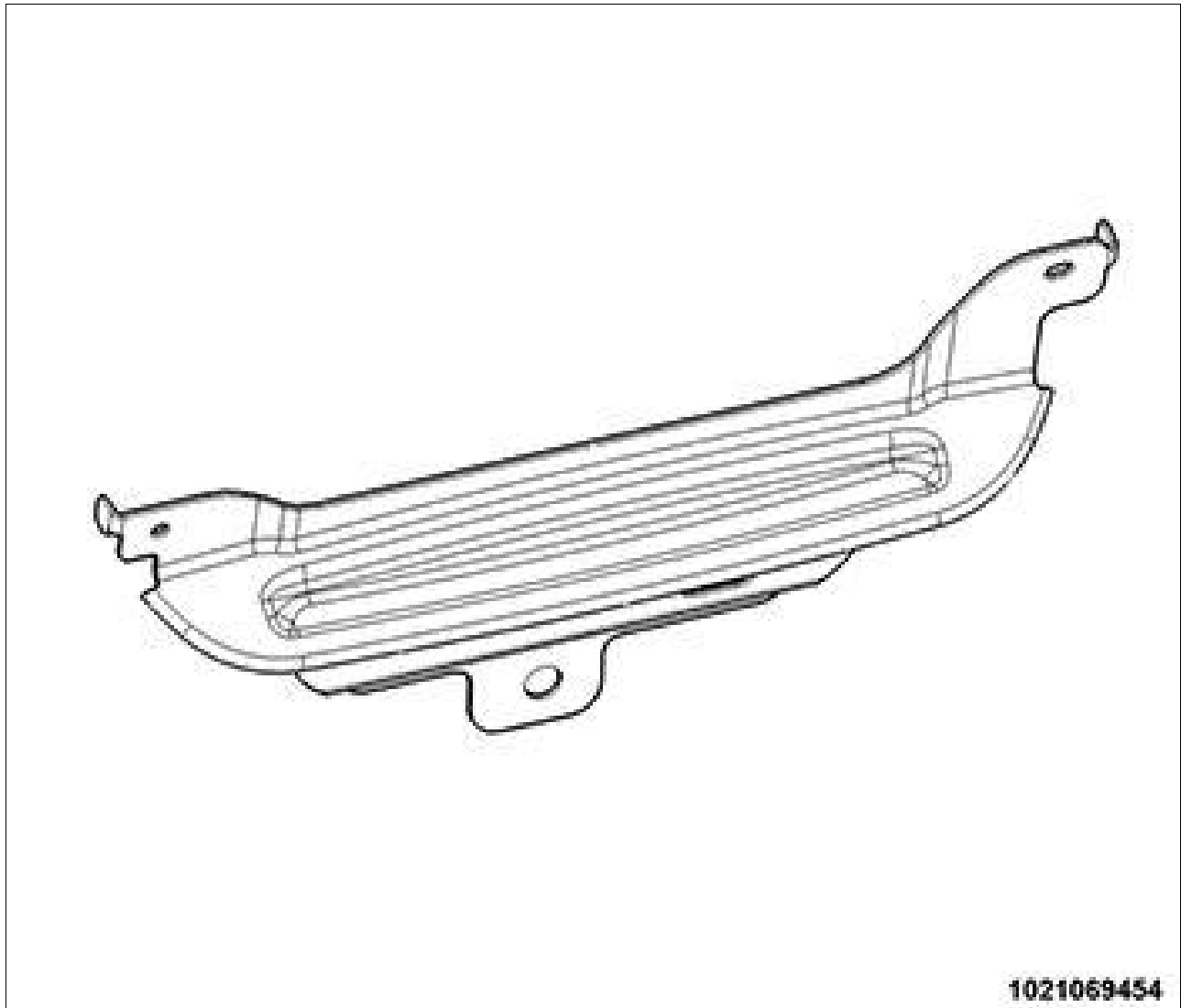
 NOTE:

If the SABIC has been deployed, the B-pillar and C-pillar deploy brackets must also

be inspected. Refer to REMOVAL - DEPLOY BRACKET - B-PILLAR or REMOVAL - DEPLOY BRACKET - C-PILLAR .

AIR BAG, SIDE CURTAIN > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL - DEPLOY BRACKET - B-PILLAR

Fig 1: Deploy Bracket B-Pillar



Courtesy of CHRYSLER GROUP, LLC



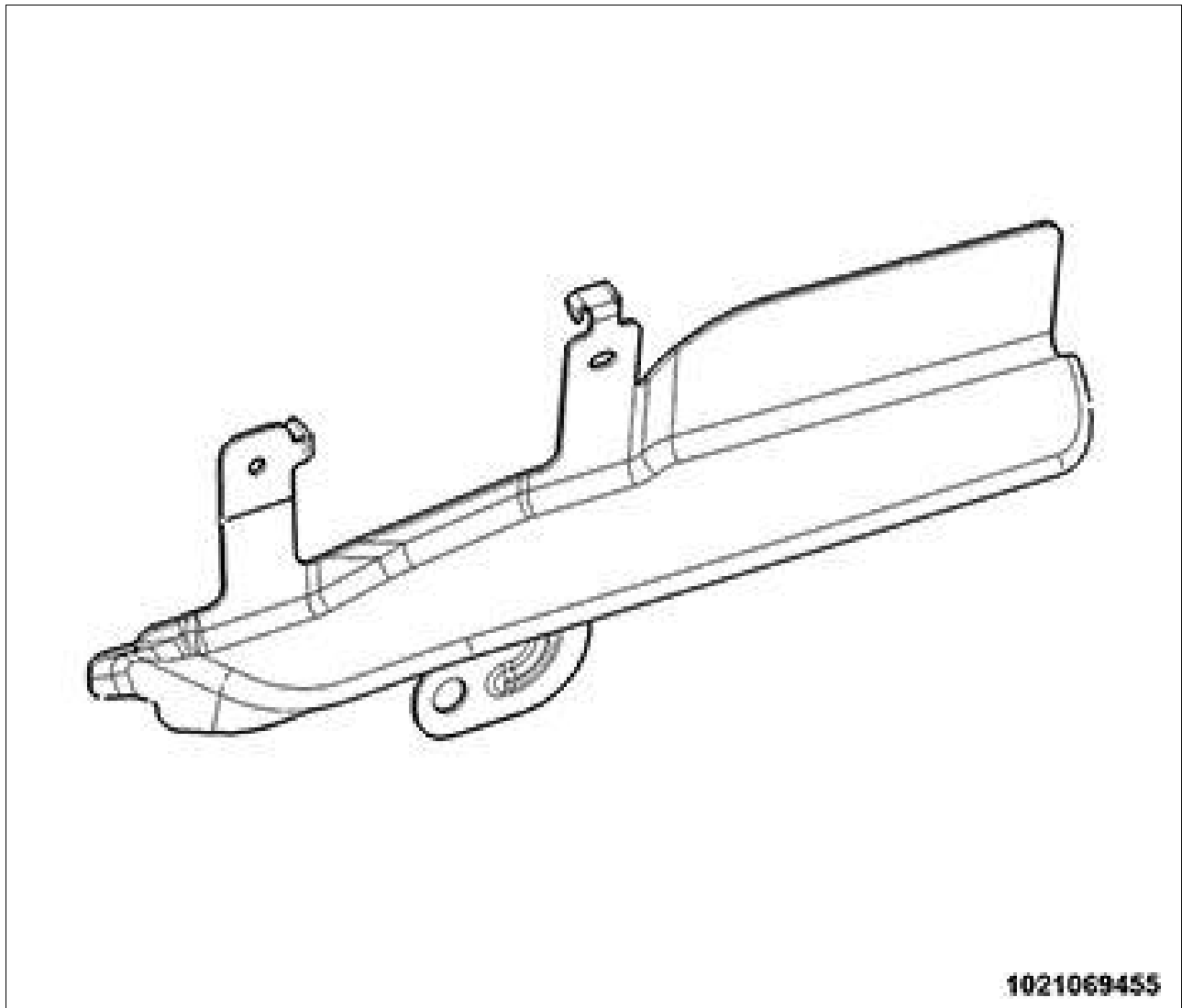
NOTE:

If a side curtain airbag has been deployed, the B-pillar and C-pillar deploy brackets for the same side of the vehicle will be deformed or weakened and must be replaced with new units.

1. Remove the side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC) from the vehicle. Refer to AIR BAG, SIDE CURTAIN, REMOVAL AND INSTALLATION .
2. Using a drill motor and an appropriate bit, carefully drill out the blind rivets that secure the deploy bracket to the inner B-pillar.
3. Disengage the deploy bracket tabs from the slotted holes in the inner B-pillar and remove the bracket from the vehicle.

AIR BAG, SIDE CURTAIN > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL - DEPLOY BRACKET - C-PILLAR

Fig 1: Deploy Bracket C-Pillar



Courtesy of CHRYSLER GROUP, LLC



NOTE:

If a side curtain airbag has been deployed, the B-pillar and C-pillar deploy brackets for the

same side of the vehicle will be deformed or weakened and must be replaced with new units.

1. Remove the side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC) from the vehicle. Refer to AIR BAG, SIDE CURTAIN, REMOVAL AND INSTALLATION .
2. Using a drill motor and an appropriate bit, carefully drill out the blind rivets that secure the deploy bracket to the inside of the C-pillar.
3. Disengage the deploy bracket tabs from the slotted holes in the inner C-pillar and remove the bracket from the vehicle.

AIR BAG, SIDE CURTAIN > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION - AIRBAG

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 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.

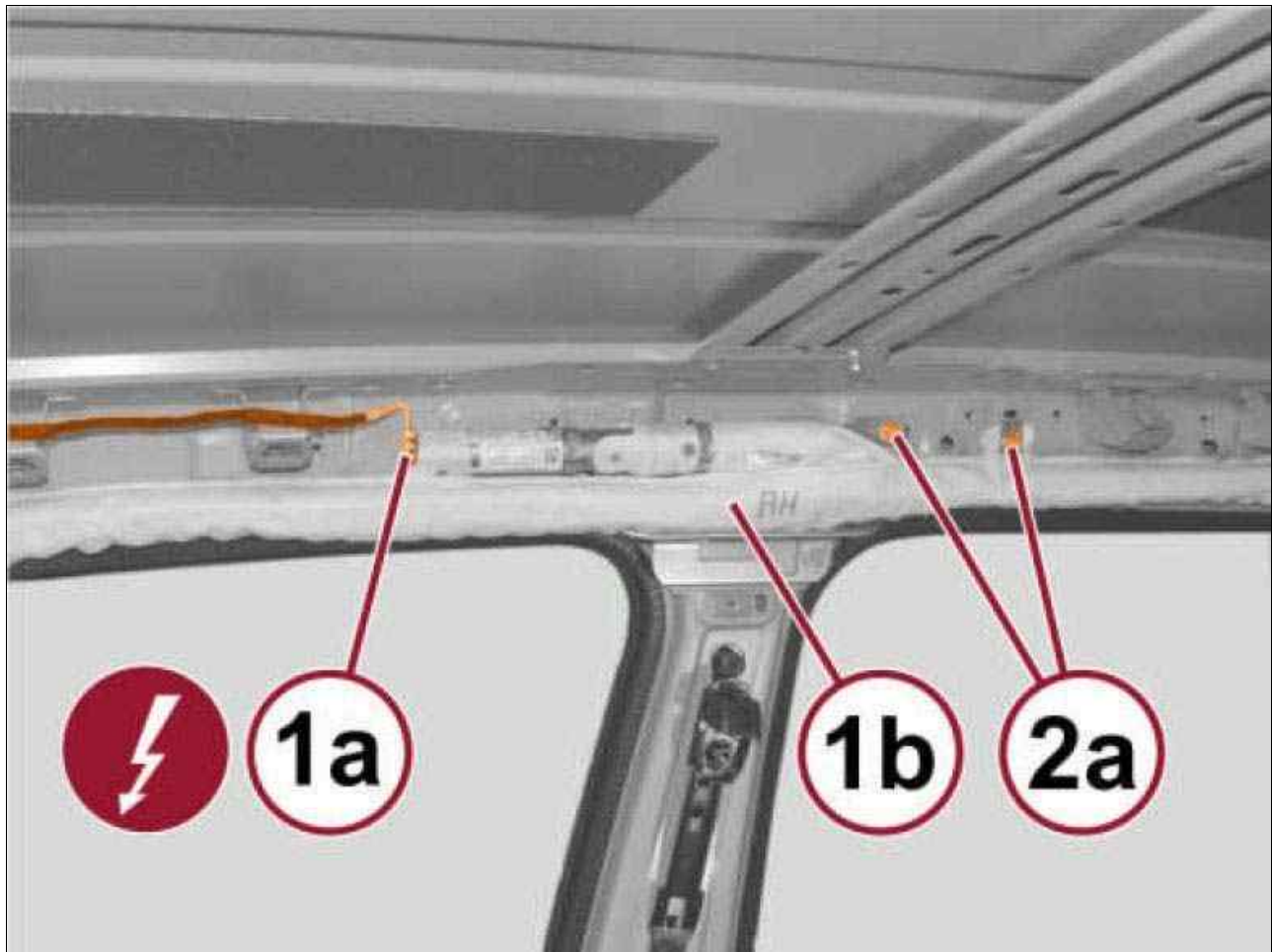
WARNING:

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 side curtain airbag, or becoming entrapped between the side curtain airbag cushion and the headliner. Failure to observe this warning could result in occupant injuries upon airbag deployment.

Fig 1: SABIC, Wire Connector & Screws



Courtesy of CHRYSLER GROUP, LLC

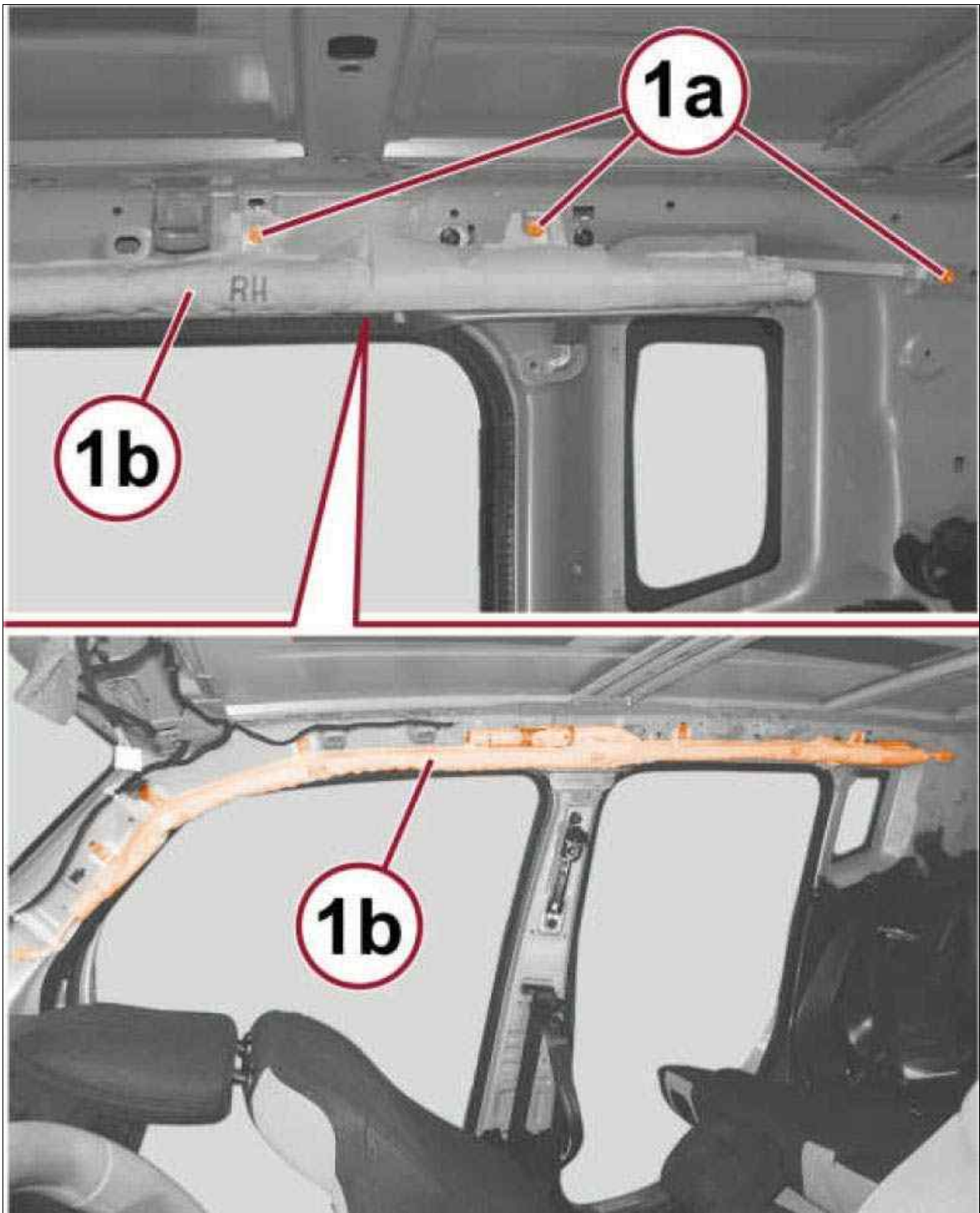


NOTE:

The following procedure is for replacement of an ineffective or damaged side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints. Refer to STANDARD PROCEDURE . If the side curtain airbag has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle. Refer to STANDARD PROCEDURE .

1. Position the Side AirBag Inflatable Curtain (SABIC) (1b) into the vehicle as a unit. Be certain that the SABIC is not twisted.
2. Install and tighten the screws (2a) that secure the SABIC to the inner roof rail above the front and rear door openings. Tighten the screws securely.
3. Connect the body wire harness connector (1a) for the SABIC to the connector receptacle of the inflator above the front door opening.

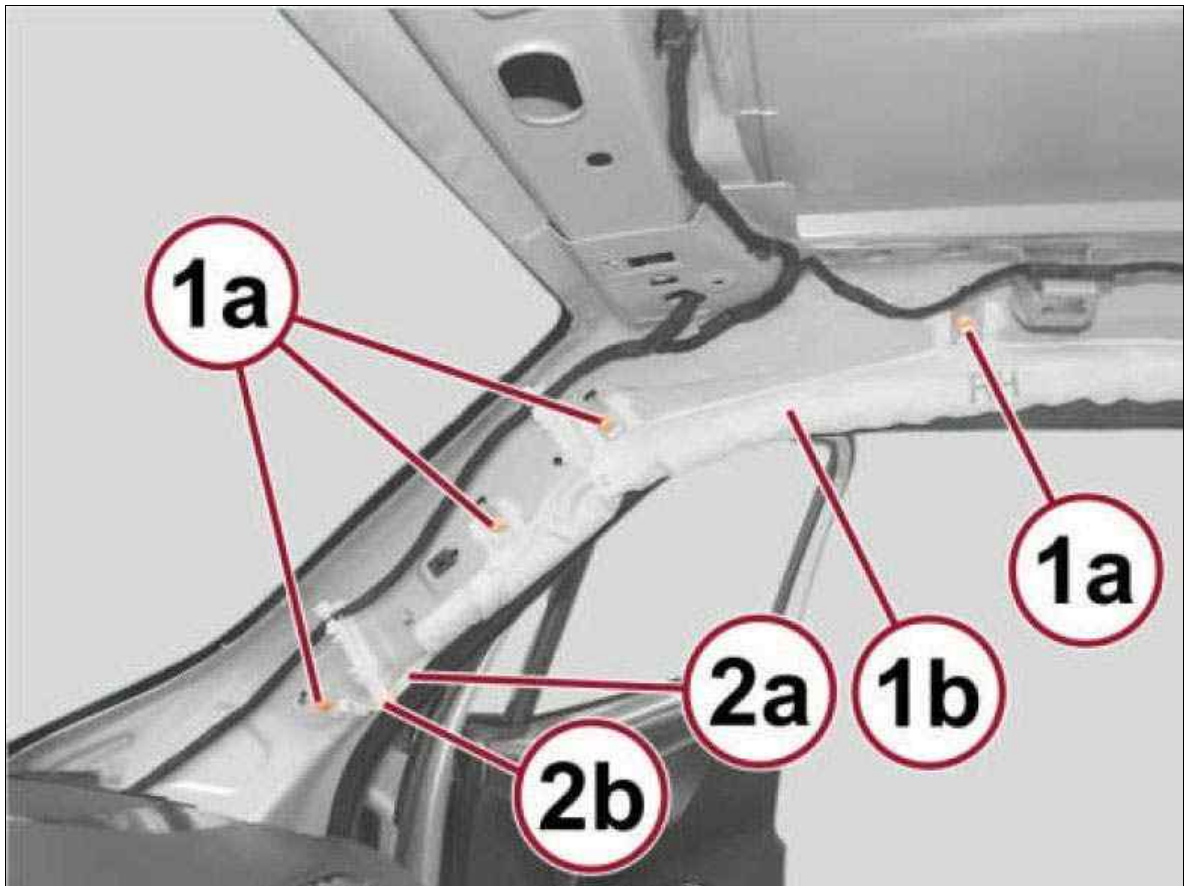
Fig 2: SABIC & Screws



Courtesy of CHRYSLER GROUP, LLC

4. Install and tighten the screws (1a) that secure the SABIC and the rear tether to the rear of the inner roof rail. Tighten the screws securely.

Fig 3: Remove/Install Side Curtain Airbag

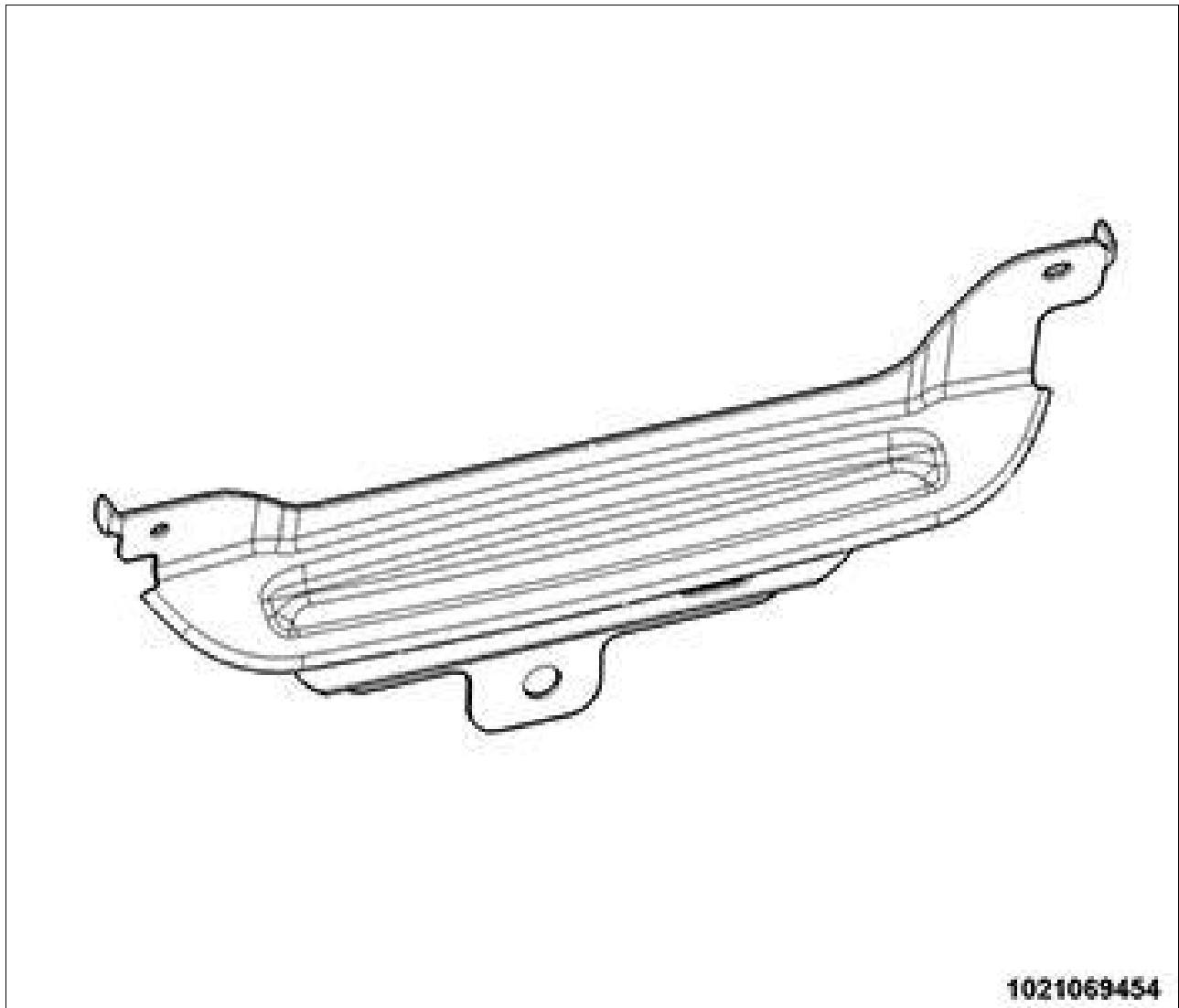


Courtesy of CHRYSLER GROUP, LLC

5. Install and tighten the screws (1a) that secure the SABIC (1b) and the front tether (2a) to the inner A-pillar and front inner roof rail. Tighten the screws securely.
6. Engage the front tether with the retaining clip (2b) on the inner A-pillar.
7. Install the headliner into the vehicle. Refer to HEADLINER, REMOVAL AND INSTALLATION .
8. 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 STANDARD PROCEDURE .

**AIR BAG, SIDE CURTAIN > REMOVAL AND INSTALLATION > REMOVAL AND
INSTALLATION > INSTALLATION - DEPLOY BRACKET - B-PILLAR**

Fig 1: Deploy Bracket B-Pillar



Courtesy of CHRYSLER GROUP, LLC



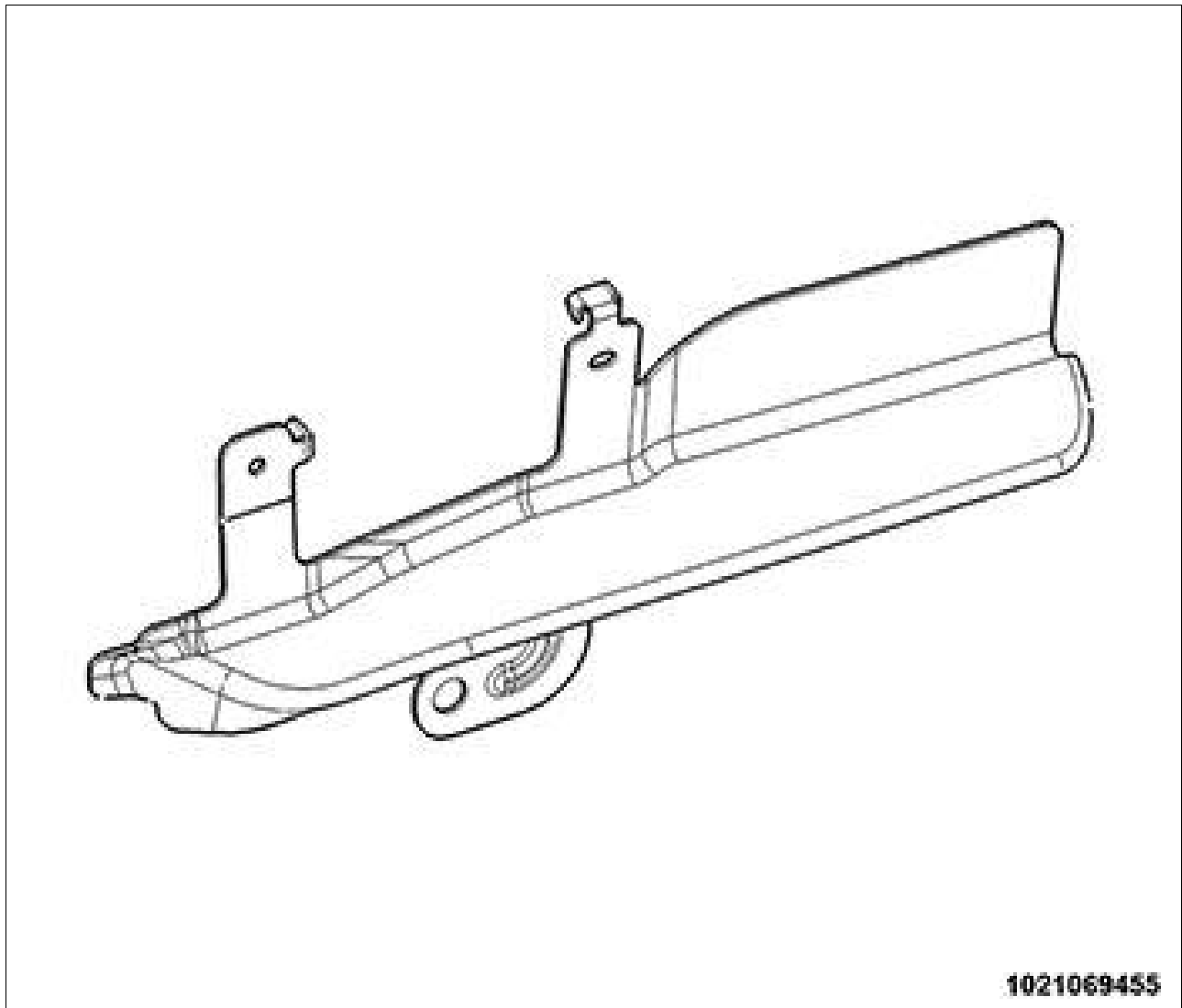
NOTE:

If a side curtain airbag has been deployed, the B-pillar and C-pillar deploy brackets for the same side of the vehicle will be deformed or weakened and must be replaced with new units.

1. Position the deploy bracket near the top of the inner B-pillar with the locating tabs engaged in the slotted holes of the B-pillar.
2. Secure the deploy bracket to the inner B-pillar using a blind rivet installation tool and new blind rivets.
3. Reinstall the side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC) into the vehicle. Refer to AIR BAG, SIDE CURTAIN, REMOVAL AND INSTALLATION .

AIR BAG, SIDE CURTAIN > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION - DEPLOY BRACKET - C-PILLAR

Fig 1: Deploy Bracket C-Pillar



Courtesy of CHRYSLER GROUP, LLC



NOTE:

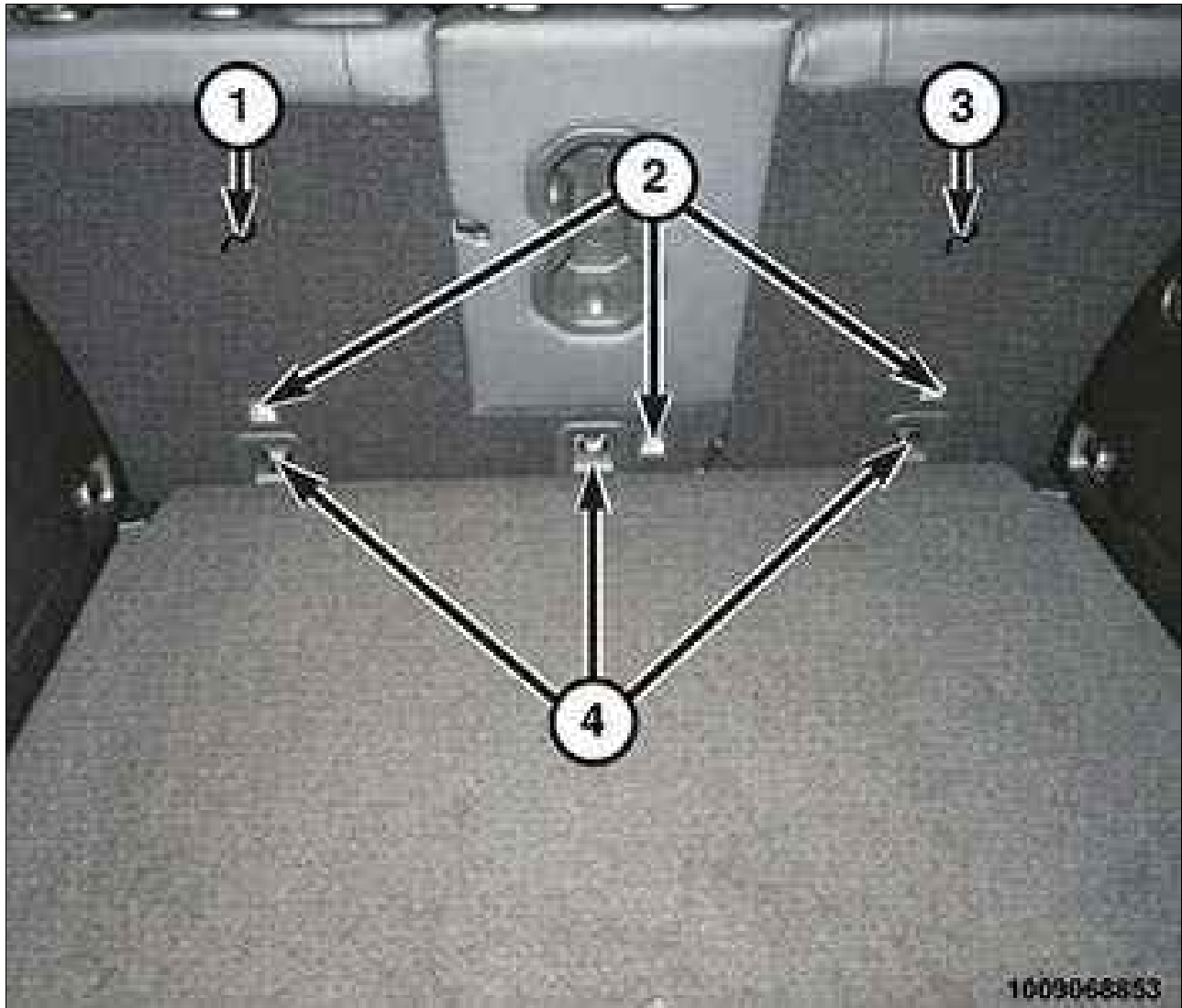
If a side curtain airbag has been deployed, the B-pillar and C-pillar deploy brackets for the same side of the vehicle will be deformed or weakened and must be replaced with new units.

1. Position the deploy bracket near the top of the inner C-pillar with the locating tabs engaged in the slotted holes of the C-pillar.
2. Secure the deploy bracket to the inner C-pillar using a blind rivet installation tool and new blind rivets.

3. Reinstall the side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC) into the vehicle. Refer to AIR BAG, SIDE CURTAIN, REMOVAL AND INSTALLATION .

ANCHOR, CHILD SEAT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: LATCH System



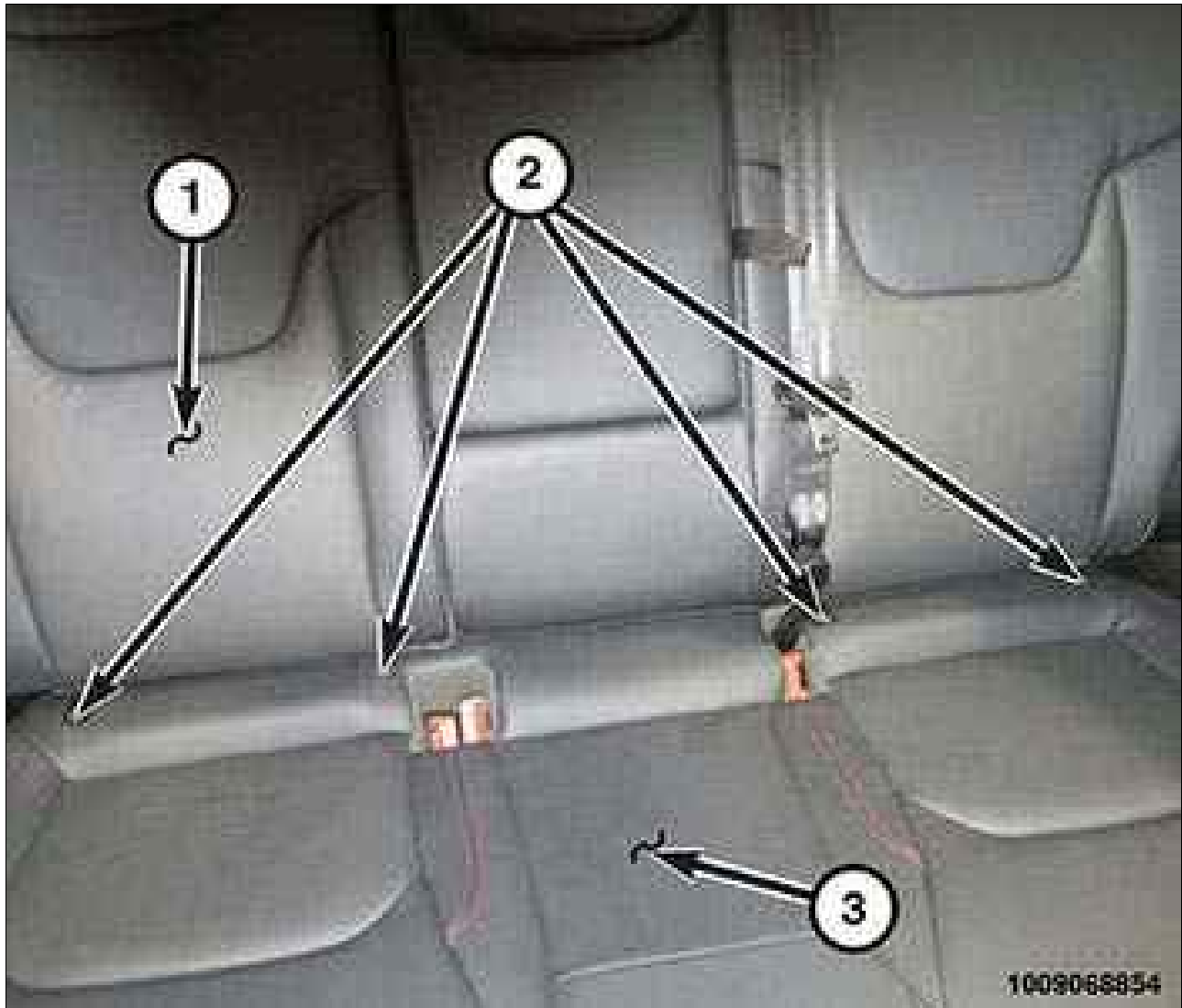
Courtesy of CHRYSLER GROUP, LLC

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 North America Free Trade Agreement (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 these vehicles are equipped with a fixed-position child restraint upper tether anchor (4) for all three rear seating positions. The three 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 (1) rear seat back frame and one for the right (3) rear seat back frame. A label (2) 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.

Fig 2: Child Restraint Lower Anchors



Courtesy of CHRYSLER GROUP, LLC

Child restraint lower anchors (also known as ISOFIX anchors) are also provided for both outboard rear seating positions. A label (2) on each rear seat cover (1) 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 (3). 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 not equipped with the upper tether anchors, but do have the ISOFIX lower anchors.

 **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 Chrysler Mopar® Parts Catalog.

ANCHOR, CHILD SEAT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

All vehicles manufactured for sale in North America Free Trade Agreement (NAFTA) markets 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.

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 Europe-Middle East-Africa (EMEA) markets are equipped with only the ISOFIX lower anchors and have no upper tether anchor provisions.

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.

BUCKLE, SEAT BELT > STANDARD PROCEDURE > STANDARD PROCEDURE - REAR CENTER SEAT BELT LOWER ANCHOR BUCKLE RELEASE

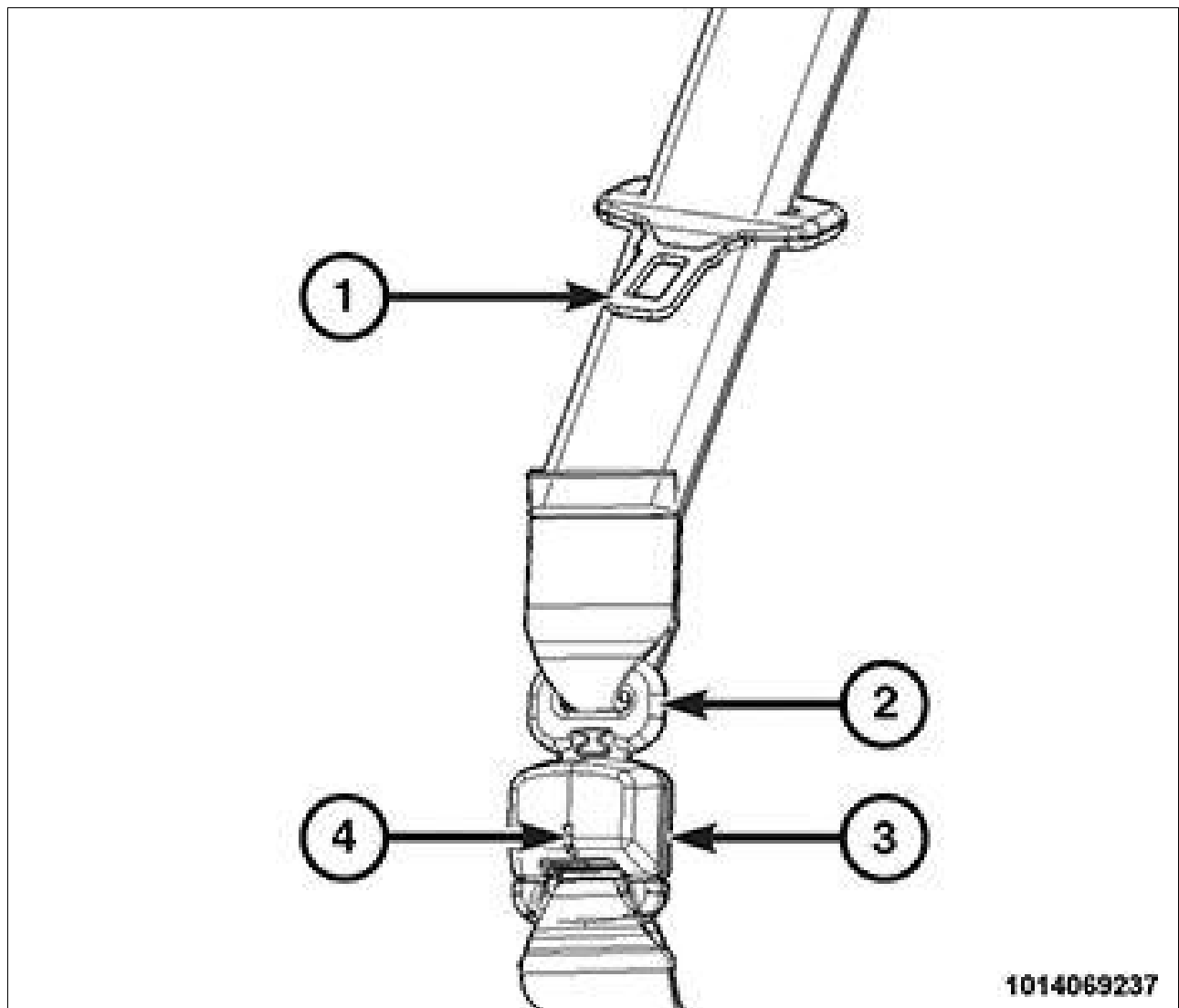


WARNING:

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 Chrysler Mopar® Parts Catalog.

Fig 1: Seat Belt Latch Plate, Notch, Buckle & Anchor Latch Plate



Courtesy of CHRYSLER GROUP, LLC

Insert the tip of a seat belt latch plate (1) or a small screwdriver into the notch (4) of the rear center seat belt anchor buckle (3) to release the anchor latch plate (2) from the anchor buckle.

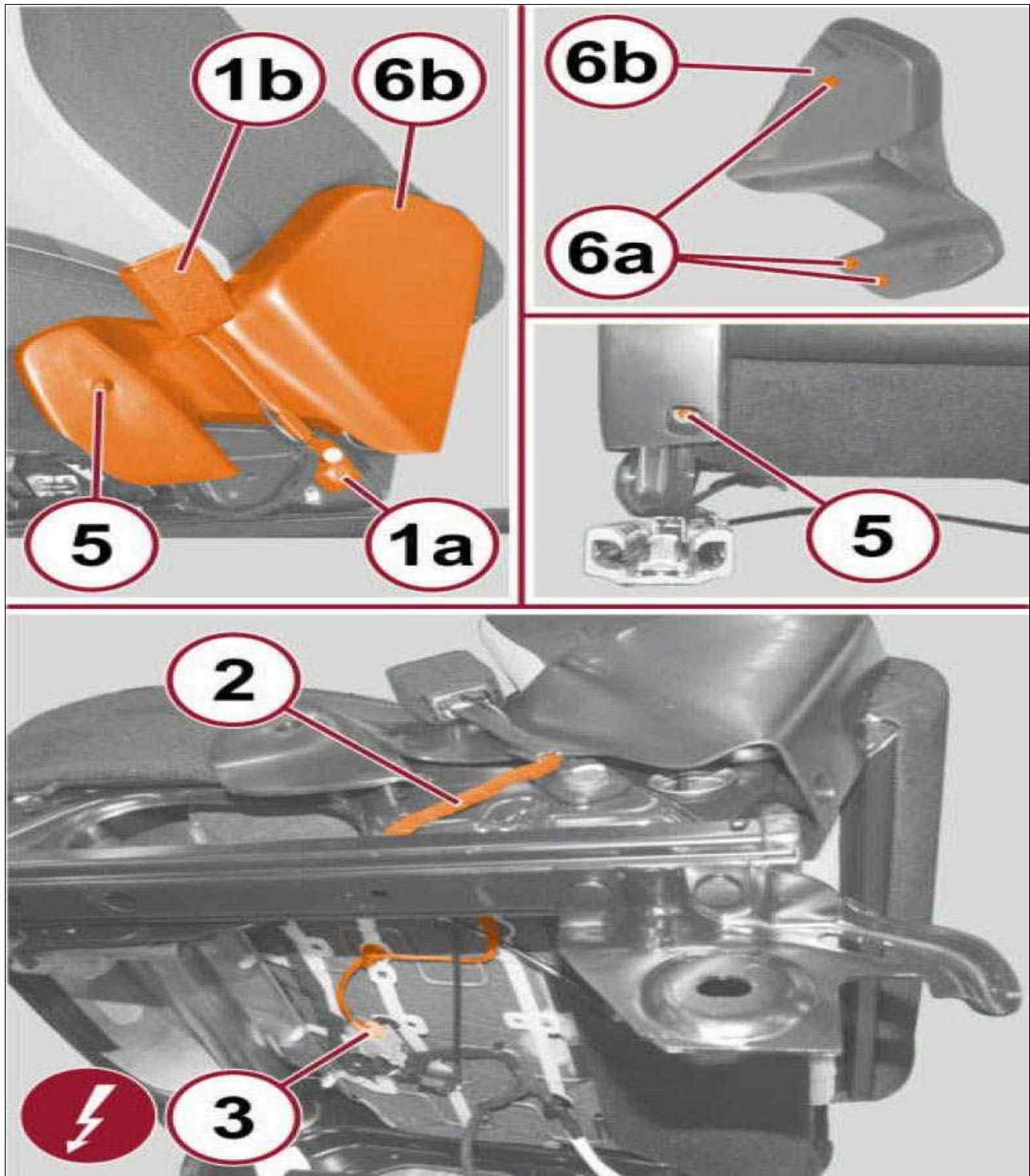
BUCKLE, SEAT BELT > REMOVAL AND INSTALLATION > SEAT BELT BUCKLE, FRONT > REMOVAL - FRONT SEAT

⚠ 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 Chrysler Mopar® Parts Catalog.

Fig 1: Remove/Install Front Seat Belt Buckle



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Remove the appropriate left or right front seat from the vehicle. Refer to SEAT, FRONT, REMOVAL AND INSTALLATION .

3. Remove the screw (1a) that secures the buckle (1b) 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 (2) 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 (3) from the seat wire harness.
7. Remove the seat belt buckle from the front seat.

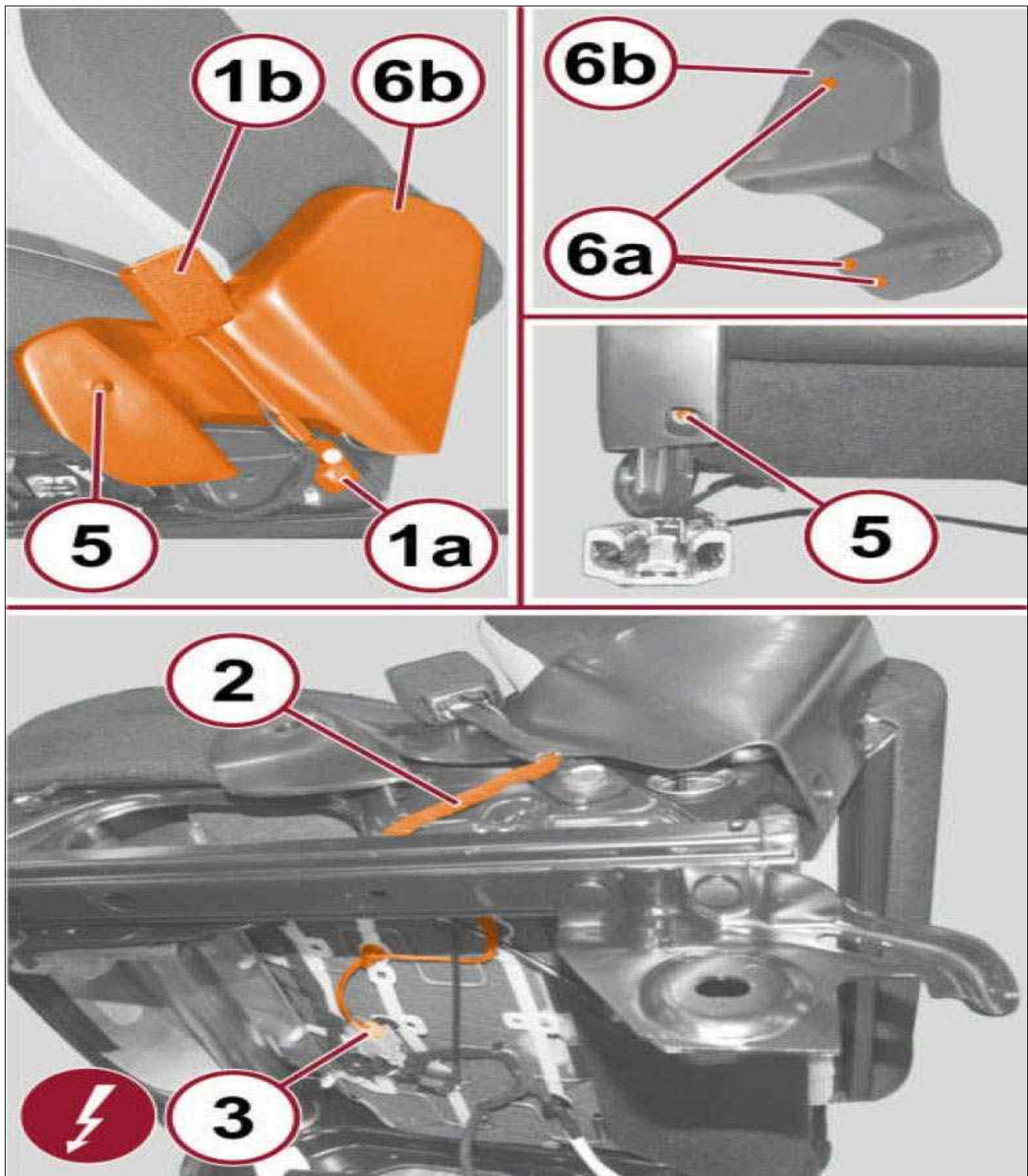
BUCKLE, SEAT BELT > REMOVAL AND INSTALLATION > SEAT BELT BUCKLE, FRONT > INSTALLATION - FRONT SEAT



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 Chrysler Mopar® Parts Catalog.

Fig 1: Remove/Install Front Seat Belt Buckle



Courtesy of CHRYSLER GROUP, LLC

1. Position the seat belt buckle (1b) lower anchor to the bracket on the inboard rear corner of the front seat.
2. Route the seat belt switch pigtail wire (2) 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 (3) to the seat wire harness.

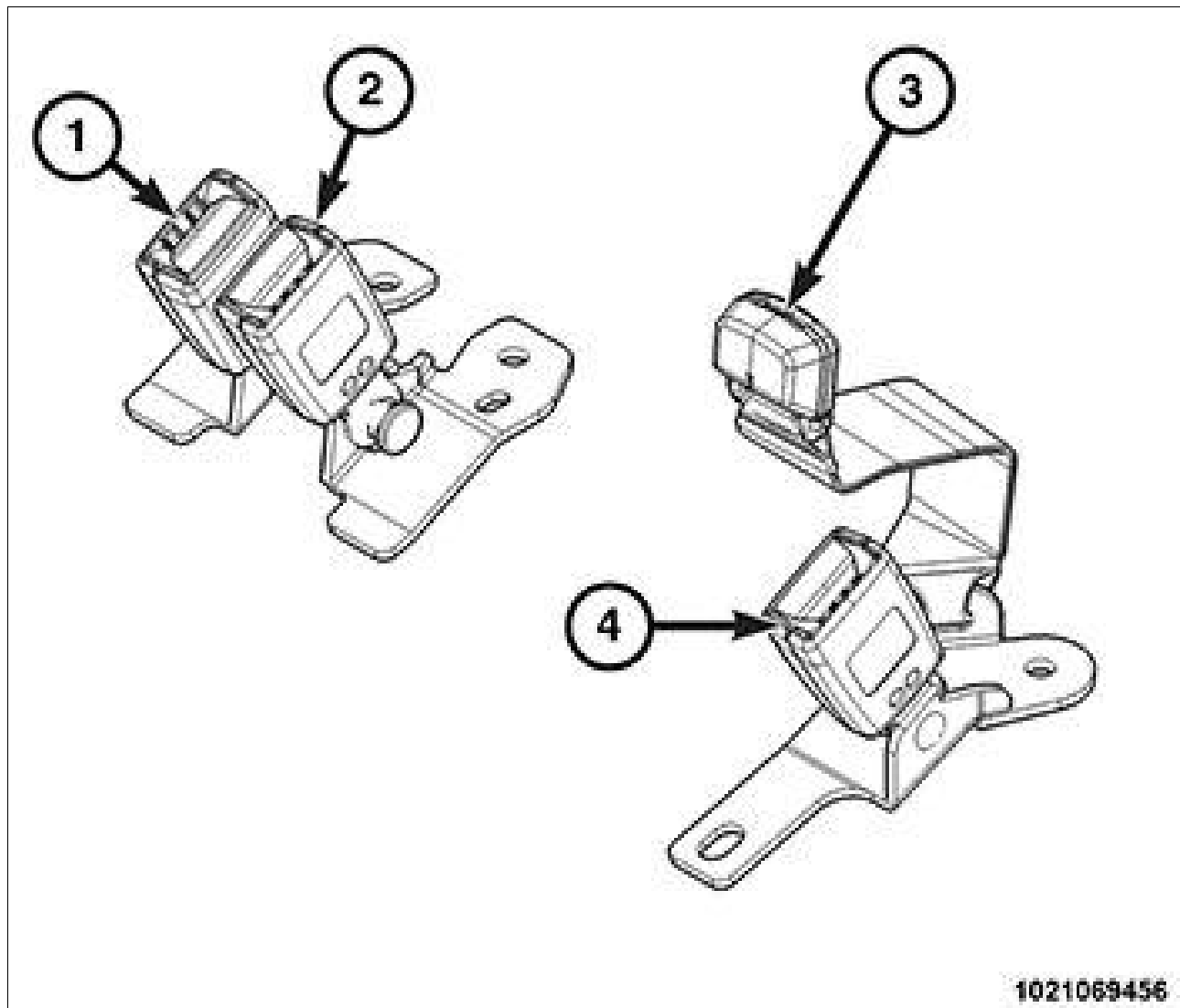
4. Install and tighten the screw (1a) that secures the buckle lower anchor to the seat bracket. Tighten the screw to the proper SPECIFICATIONS .
5. Install the left or right front seat into the vehicle. Refer to SEAT, FRONT, REMOVAL AND INSTALLATION .
6. Do not connect the negative cable to the battery at this time. The Supplemental Restraint System (SRS) Verification Test procedure should be performed following service of any SRS component. Refer to STANDARD PROCEDURE .

BUCKLE, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION - REAR SEAT BELT BUCKLE > REMOVAL - REAR SEAT

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 Chrysler Mopar® Parts Catalog.

Fig 1: Rear Right & Rear Center Seat Belt Buckles, Lower Anchor & Rear Left Buckles



Courtesy of CHRYSLER GROUP, LLC



NOTE:

The rear right (1) and rear center (2) seat belt buckles are serviced individually; however, the rear center lower anchor (3) and rear left (4) buckles are serviced only as a unit. In vehicles manufactured for Europe-Middle East-Africa (EMEA) markets, each of the rear buckles (except the center lower anchor buckle) also includes a seat belt switch and pigtail wire harness. Seat belt switches are not used in the rear buckles of vehicles manufactured for North America Free Trade Agreement (NAFTA) markets.

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Release the rear center seat belt lower anchor from the lower anchor buckle. Refer to

BUCKLE, SEAT BELT, STANDARD PROCEDURE .

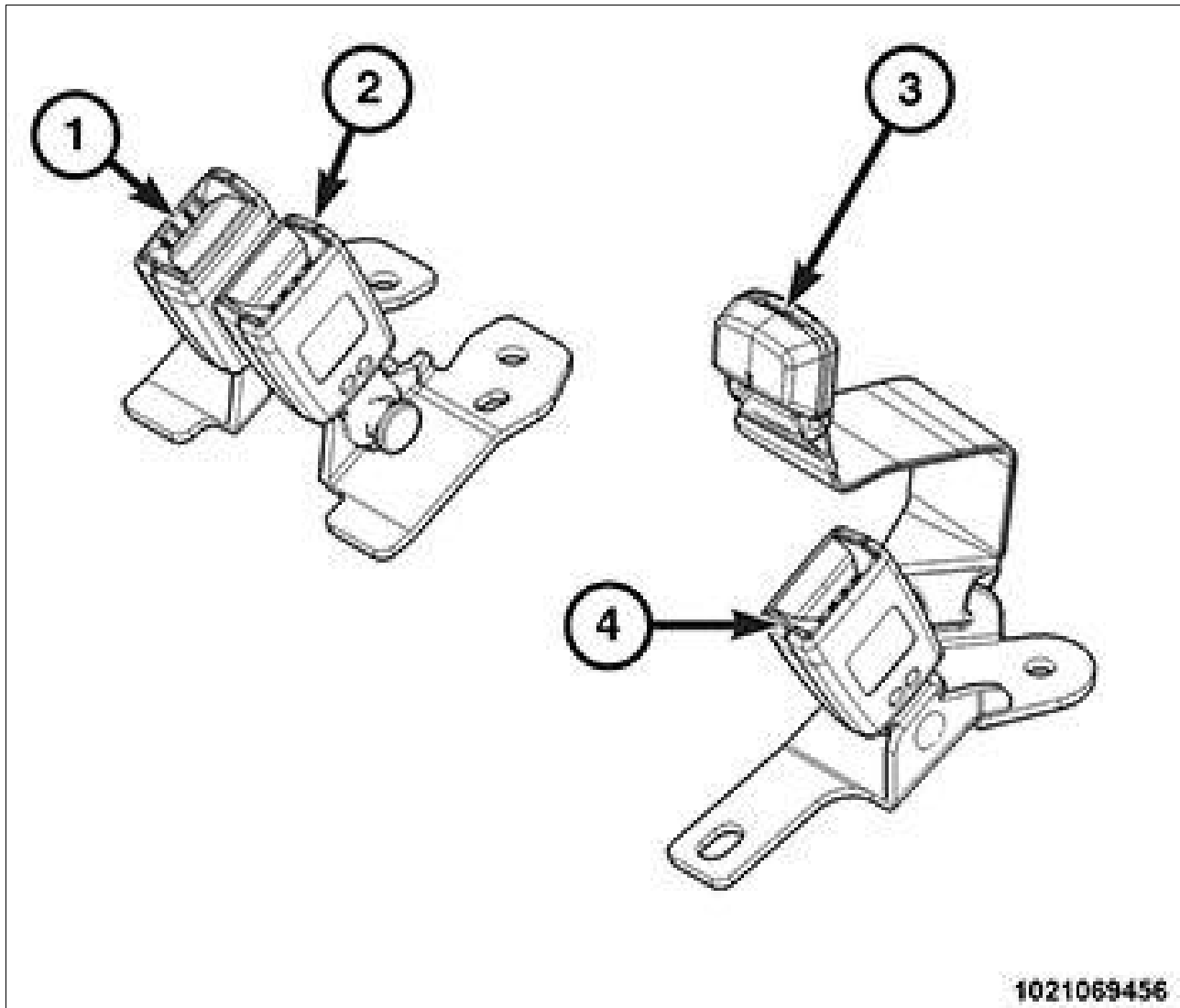
3. Remove the rear seat cushion from the vehicle. Refer to SEAT CUSHION, REMOVAL AND INSTALLATION .
4. If equipped, disconnect the seat belt switch pigtail wire connector for the buckle being serviced from the body wire harness.
5. Remove the screw or screws that secure the rear seat belt buckle anchor to the rear floor panel.
6. Remove the buckle unit from the rear floor panel.

BUCKLE, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION - REAR SEAT BELT BUCKLE > INSTALLATION - REAR SEAT

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 Chrysler Mopar® Parts Catalog.

Fig 1: Rear Right & Rear Center Seat Belt Buckles, Lower Anchor & Rear Left Buckles



Courtesy of CHRYSLER GROUP, LLC



NOTE:

The rear right (1) and rear center (2) seat belt buckles are serviced individually; however, the rear center lower anchor (3) and rear left (4) buckles are serviced only as a unit. In vehicles manufactured for Europe-Middle East-Africa (EMEA) markets, each of the rear buckles (except the center lower anchor buckle) also includes a seat belt switch and pigtail wire harness. Seat belt switches are not used in the rear buckles of vehicles manufactured for North America Free Trade Agreement (NAFTA) markets.

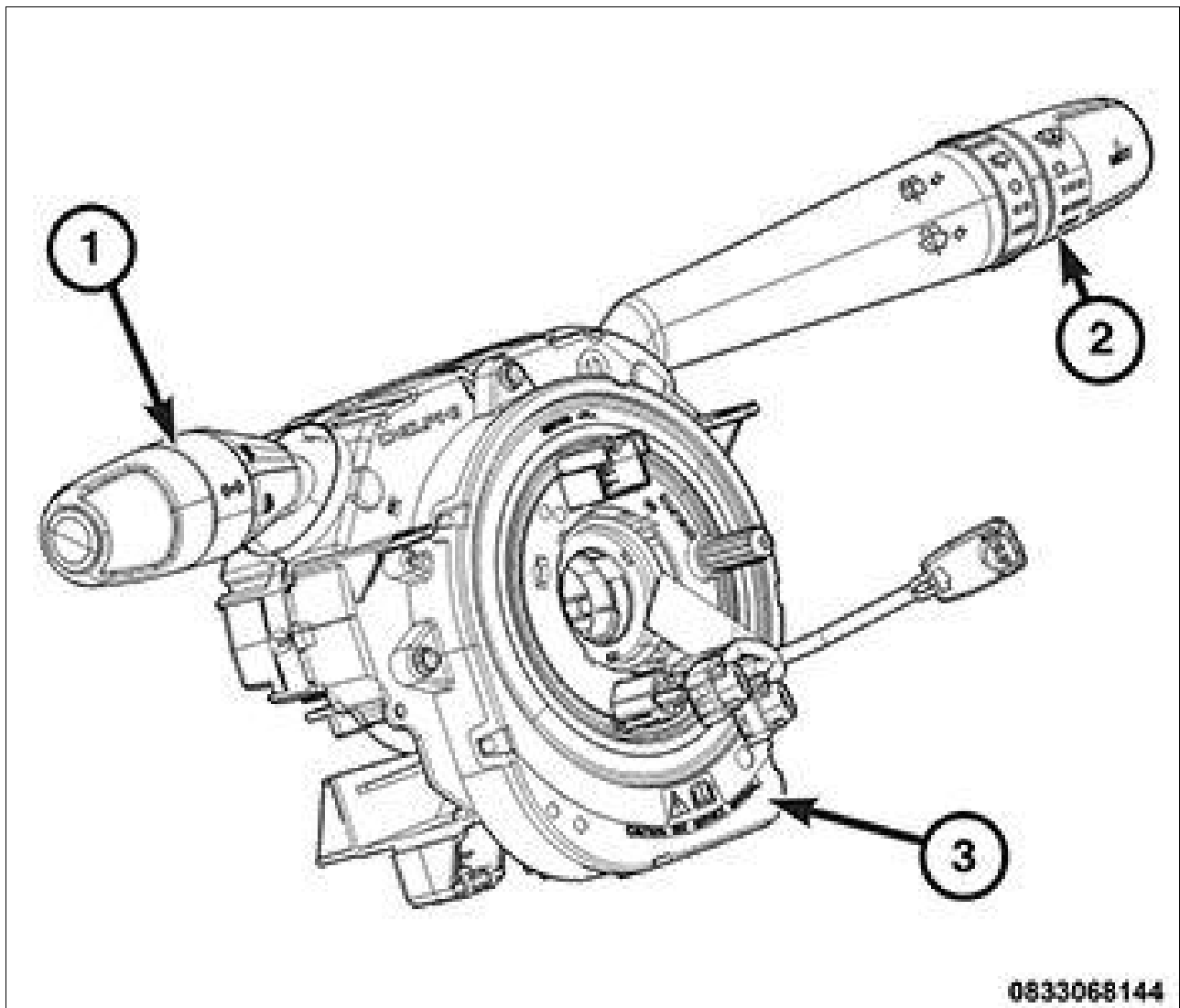
1. Position the rear seat belt buckle unit onto the rear floor panel.
2. Install and tighten the screw or screws that secure the rear seat belt buckle anchor to the rear floor panel. Tighten the screws to the proper SPECIFICATIONS .
3. If equipped, connect the seat belt switch pigtail wire connector for the buckle being serviced to

the body wire harness.

4. Install the rear seat cushion into the vehicle. (Refer to REMOVAL AND INSTALLATION).
5. 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 STANDARD PROCEDURE).

CLOCKSPRING > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Right/Left Multifunction Switch & Clockspring



Courtesy of CHRYSLER GROUP, LLC

The clockspring (3) for this vehicle is secured to the stalk unit near the top of the steering column below the steering wheel. The clockspring also includes an integral, internal turn signal cancel cam that is serviced as a unit with the clockspring. The stalk unit also supports the left (lighting) multifunction switch (1) and the right (wiper) multifunction switch (2). Each of these switches and the wiring between the switches and the clockspring can not be separated and are serviced only as a complete assembly with

the clockspring. The stalk unit case includes integral tabs on the back for mounting the unit with a band clamp to the steering column support tube. The multifunction switches and the clockspring are each integral to the stalk unit. The clockspring and the multifunction switches are each constructed of molded plastic.

The stalk unit case includes one connector receptacle on 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. 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 a short pigtail wire or wires with a connector or connectors. The pigtail connectors contain the circuits for the Driver AirBag (DAB). Connector receptacles on the rotor hub contain the circuits for the other switches mounted on the steering wheel.

Wound around the rotor spool within the clockspring case is a long ribbon-like tape that consists of several thin copper wire leads sandwiched between two thin plastic membranes. The outer end of the tape terminates at the connector receptacle on the top of the stalk unit case, while the inner end of the tape terminates at the pigtail wires and connector receptacles on the hub of the clockspring rotor that face the steering wheel. The outer surface of the rotor hub rim within the clockspring case also has the integral lobes of the turn signal cancel cam.

The service replacement clockspring 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 clockspring 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 clockspring rotor and the stalk unit case to secure the rotor to the case while the clockspring is removed from the steering column to prevent accidental loss of clockspring centering.

The clockspring cannot be repaired. If the clockspring is ineffective, damaged, or if the DAB has been deployed, the clockspring, turn signal cancel cam and stalk unit must be replaced.

CLOCKSPRING > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The clockspring is a mechanical electrical circuit component that is used to provide continuous electrical continuity between the fixed instrument panel wire harness and certain electrical components mounted on or in the rotating steering wheel. On this vehicle the rotating 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 near the top of the steering column. The fixed connector receptacles on the back of the fixed clockspring case connect the clockspring 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 clockspring rotor hub within the clockspring case so it also moves with the rotation of the steering wheel. Short pigtail wires on the upper surface of the clockspring rotor connect the clockspring to the DAB and a wire harness connected 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 clockspring 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 clockspring is centered when it is installed on the steering column. Centering the clockspring indexes the

clockspring 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 clockspring is removed from the steering column, a spring-actuated automatic locking ring pops up from the face of the clockspring 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 clockspring spool can change position relative to the other steering components. Loss of clockspring centering will result in damage to the clockspring tape.

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

The hard wired clockspring circuits may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the clockspring squib circuits for the Supplemental Restraint System (SRS). The most reliable, efficient and accurate means to diagnose the circuits related to SRS operation requires the use of a diagnostic scan tool and may also require the use of the SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

CLOCKSPRING > STANDARD PROCEDURE > STANDARD PROCEDURE - CLOCKSPRING CENTERING

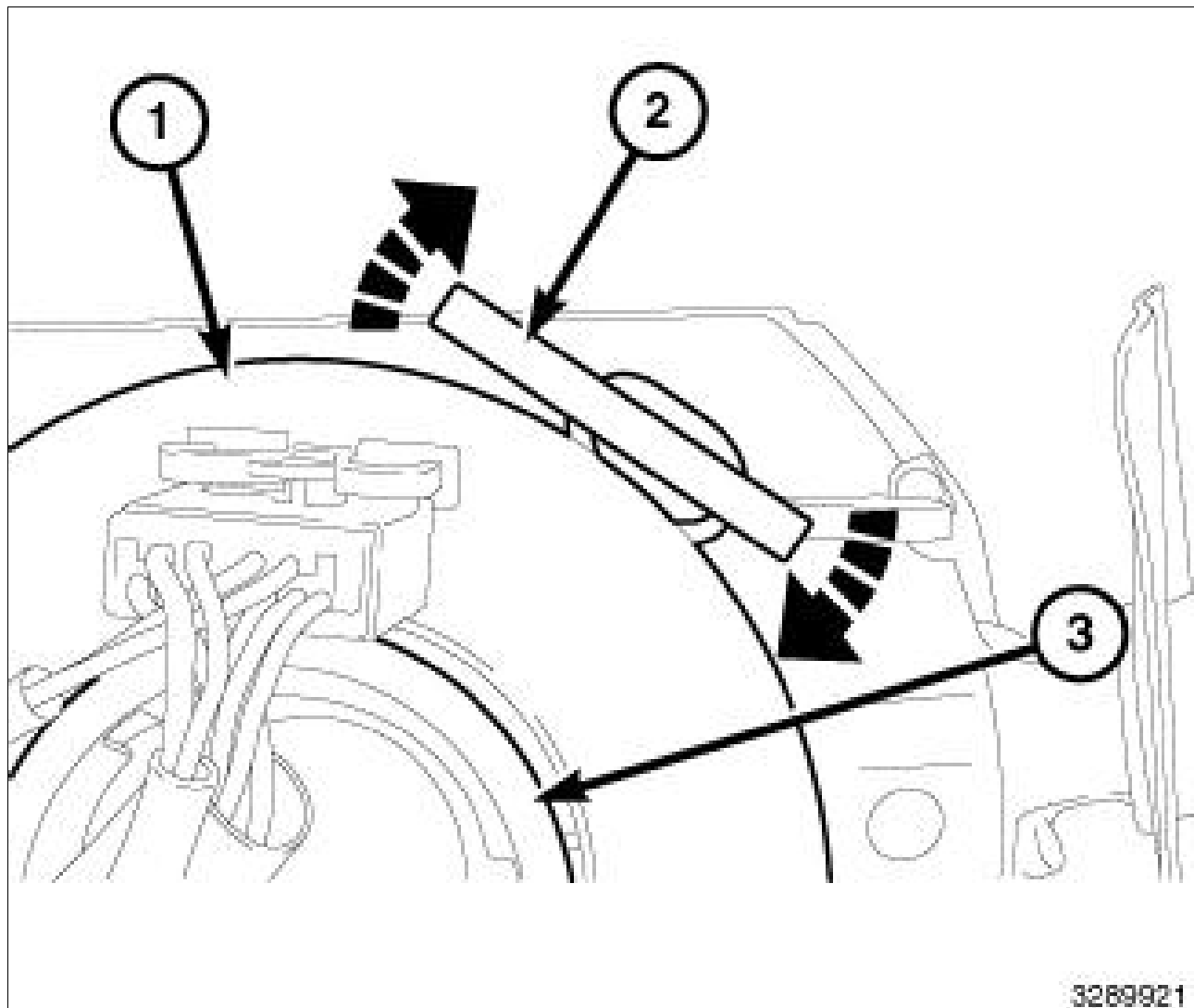
WARNING:

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 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:

Always turn the steering wheel until the front wheels are in the straight-ahead position. Then, prior to disconnecting the steering column from the steering gear, lock the steering wheel to the steering column. If clockspring centering has been compromised for ANY reason, the entire Steering Column Control Module (SCCM) and clockspring unit MUST be replaced with a new unit.

Fig 1: Clockspring, Red Plastic Locking Pin & Spring Activated Locking Ring



Courtesy of CHRYSLER GROUP, LLC

Like the clockspring in a timepiece, the clockspring 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 clockspring is centered when it is installed on the steering column. Centering the clockspring indexes the clockspring tape to the movable steering components so that the tape can operate within its designed travel limits. However, if the steering shaft is disconnected from the steering gear, the clockspring rotor spool can change position relative to the fixed steering components. **This clockspring has no provisions for re-centering.**

The service replacement stalk unit is shipped with the clockspring (1) pre-centered and with a red plastic locking pin (2) installed. This locking pin should not be removed until the stalk unit has been properly installed on the steering column. If the locking pin is removed before the stalk unit is installed on a steering column, clockspring centering may become compromised. The locking pin is removed by rotating it in a clockwise direction, breaking it off in the stalk unit housing. Do not bend the locking pin to break it off as this may damage the stalk unit housing.

In addition, this clockspring is equipped with a spring activated locking ring (3) that automatically extends to lock the clockspring rotor spool to the stalk unit housing as soon as the steering wheel is removed. However, if the locking ring is manually compressed while the clockspring is removed from the steering

column, clockspring centering may be compromised. When the steering wheel is properly installed onto the steering column, the locking ring is automatically compressed to unlock the clockspring rotor spool.

CLOCKSPRING > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL



WARNING:

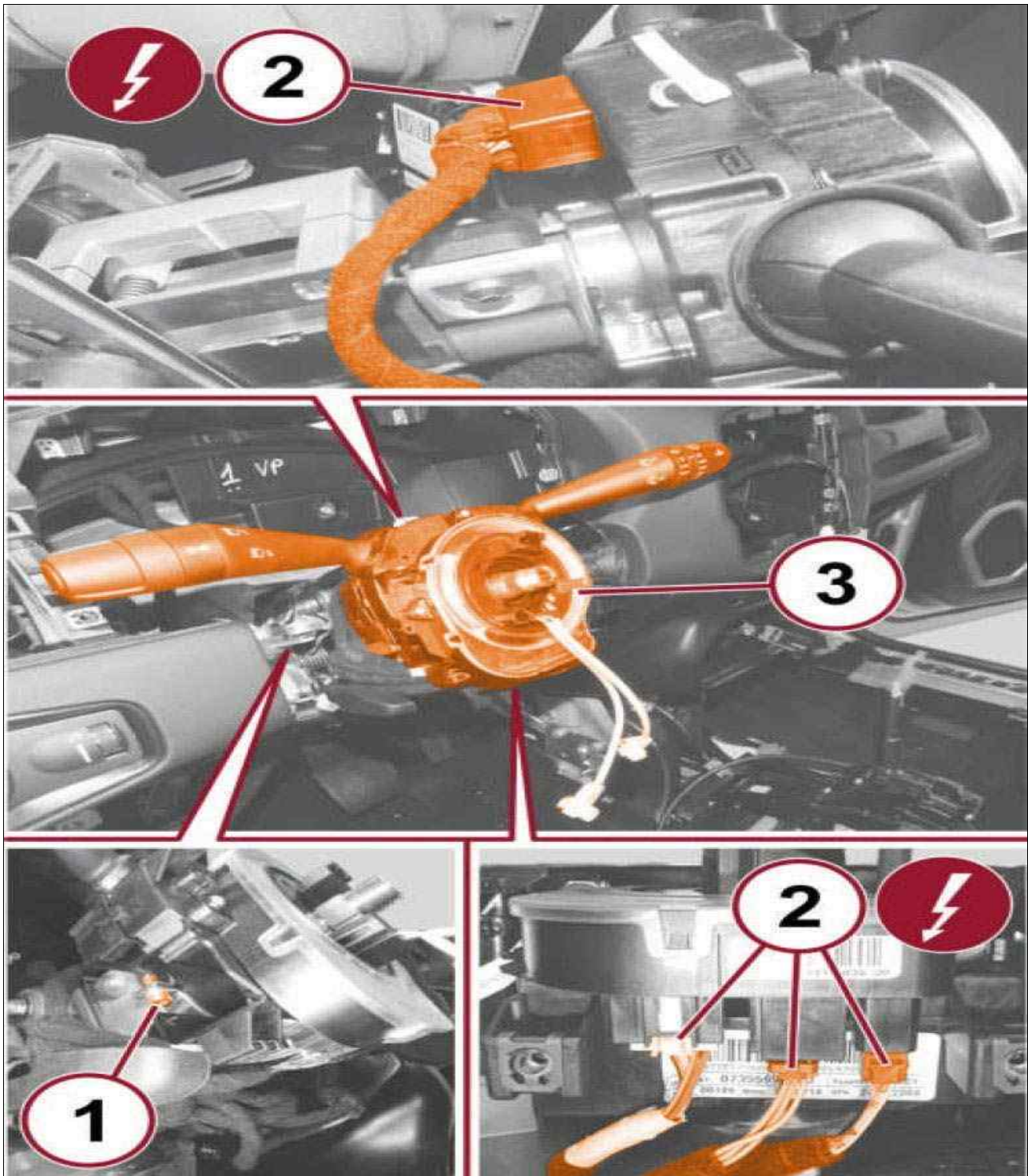
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the 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:

Always turn the steering wheel until the front wheels are in the straight-ahead position. Then, prior to disconnecting the steering column from the steering gear, lock the steering wheel to the steering column. If clockspring centering has been compromised for ANY reason, the entire Steering Column Control Module (SCCM) and clockspring unit MUST be replaced with a new unit.

Fig 1: Remove/Install Steering Column Control Module (SCCM)



Courtesy of CHRYSLER GROUP, LLC

1. Place the front wheels in the straight ahead position and inhibit the steering column shaft from rotation.
2. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.

3. Remove the steering wheel from the upper steering column shaft. Refer to WHEEL, STEERING, REMOVAL AND INSTALLATION .
4. If the removed clockspring and stalk unit is to be reused, be certain that the spring-activated clockspring locking ring has extended upward following steering wheel removal to lock the clockspring rotor to the stalk unit case and maintain clockspring centering until the steering wheel is reinstalled on the steering column. **Do not manually compress the clockspring locking ring while the stalk unit is removed from the steering column as this may result in the loss of clockspring centering.** If clockspring centering is not maintained, the entire clockspring and stalk unit must be replaced with a new unit before the steering wheel is reinstalled.
5. Move the steering column to the fully lowered (down) position.
6. Remove the upper and lower shrouds from the steering column. Refer to SHROUD, STEERING COLUMN, REMOVAL AND INSTALLATION .
7. Disconnect the instrument panel wire harness connectors (2) from the connector receptacles near the top and the bottom on the back of the clockspring.
8. Remove the clockspring and stalk unit from the steering column.

CLOCKSPRING > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

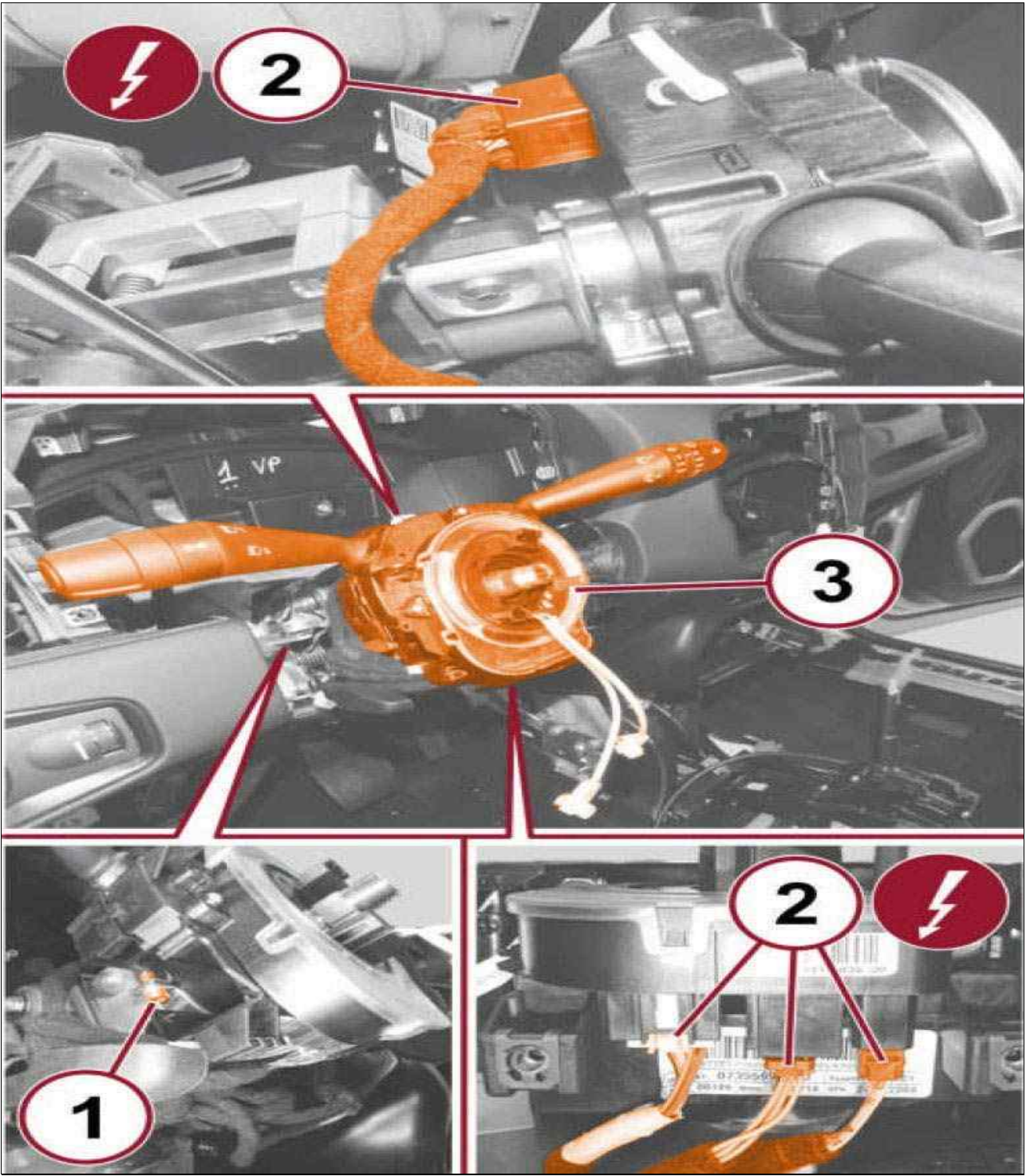
WARNING:

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 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:

Always turn the steering wheel until the front wheels are in the straight-ahead position. Then, prior to disconnecting the steering column from the steering gear, lock the steering wheel to the steering column. If clockspring centering has been compromised for ANY reason, the entire Steering Column Control Module (SCCM) and clockspring unit MUST be replaced with a new unit.

Fig 1: Remove/Install Steering Column Control Module (SCCM)



Courtesy of CHRYSLER GROUP, LLC

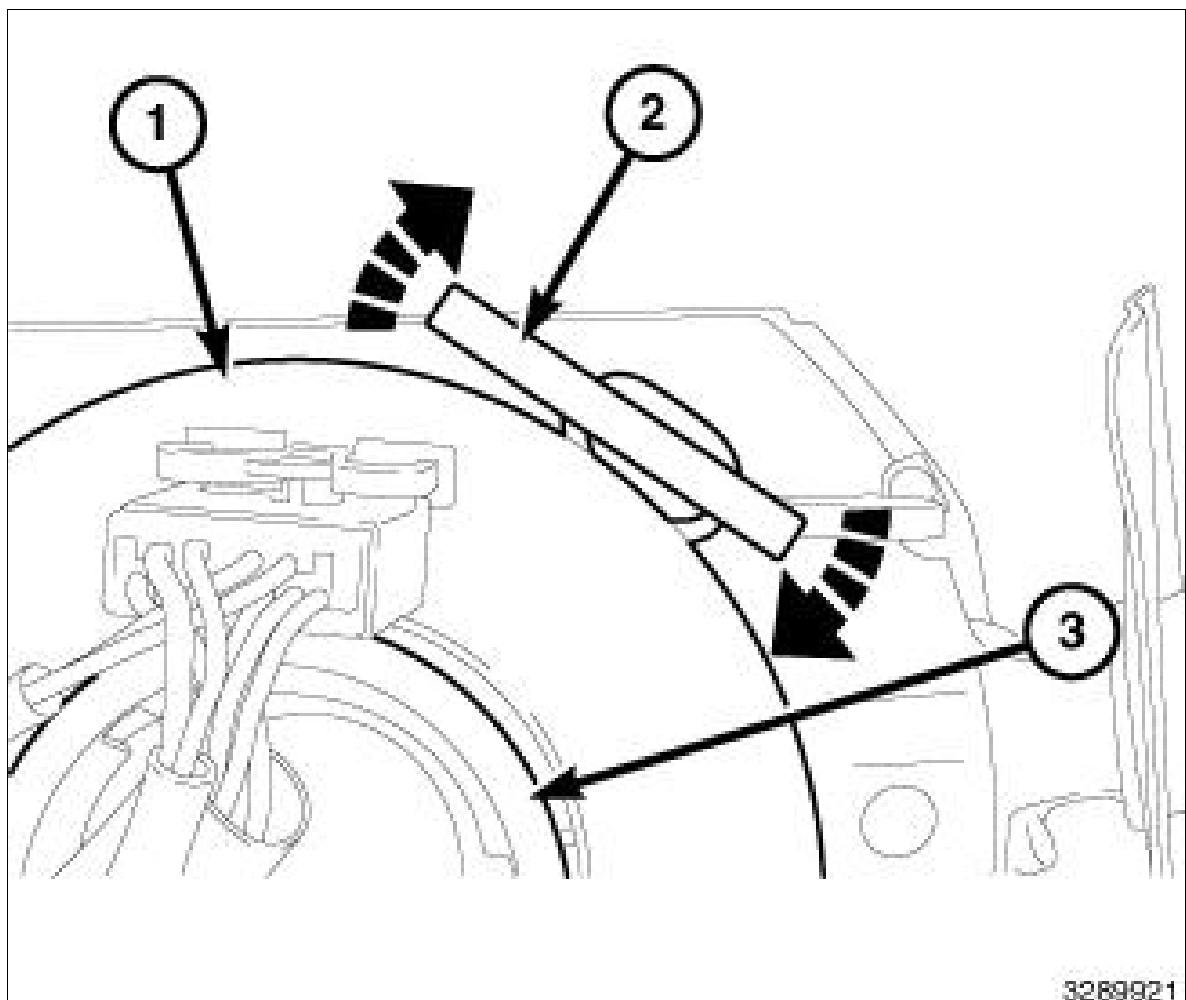


NOTE:

A service replacement clockspring and stalk unit is shipped with the clockspring pre-centered and with a molded plastic locking pin installed. This locking pin should not be removed until the clockspring and stalk unit has been installed on the steering column.

1. Position the clockspring and stalk unit (3) onto the top of the steering column jacket.
2. Tighten the screw (1) that tensions the band clamp that secures the stalk unit to the top of the steering column jacket. Tighten the screw securely.
3. Connect the instrument panel wire harness connectors (2) to the connector receptacles on the back of the stalk unit housing near the top and the bottom.
4. Install the upper and lower shrouds onto the steering column. Refer to SHROUD, STEERING COLUMN, REMOVAL AND INSTALLATION .
5. Move the steering column to the fully raised (up) position.

Fig 2: Clockspring, Red Plastic Locking Pin & Spring Activated Locking Ring



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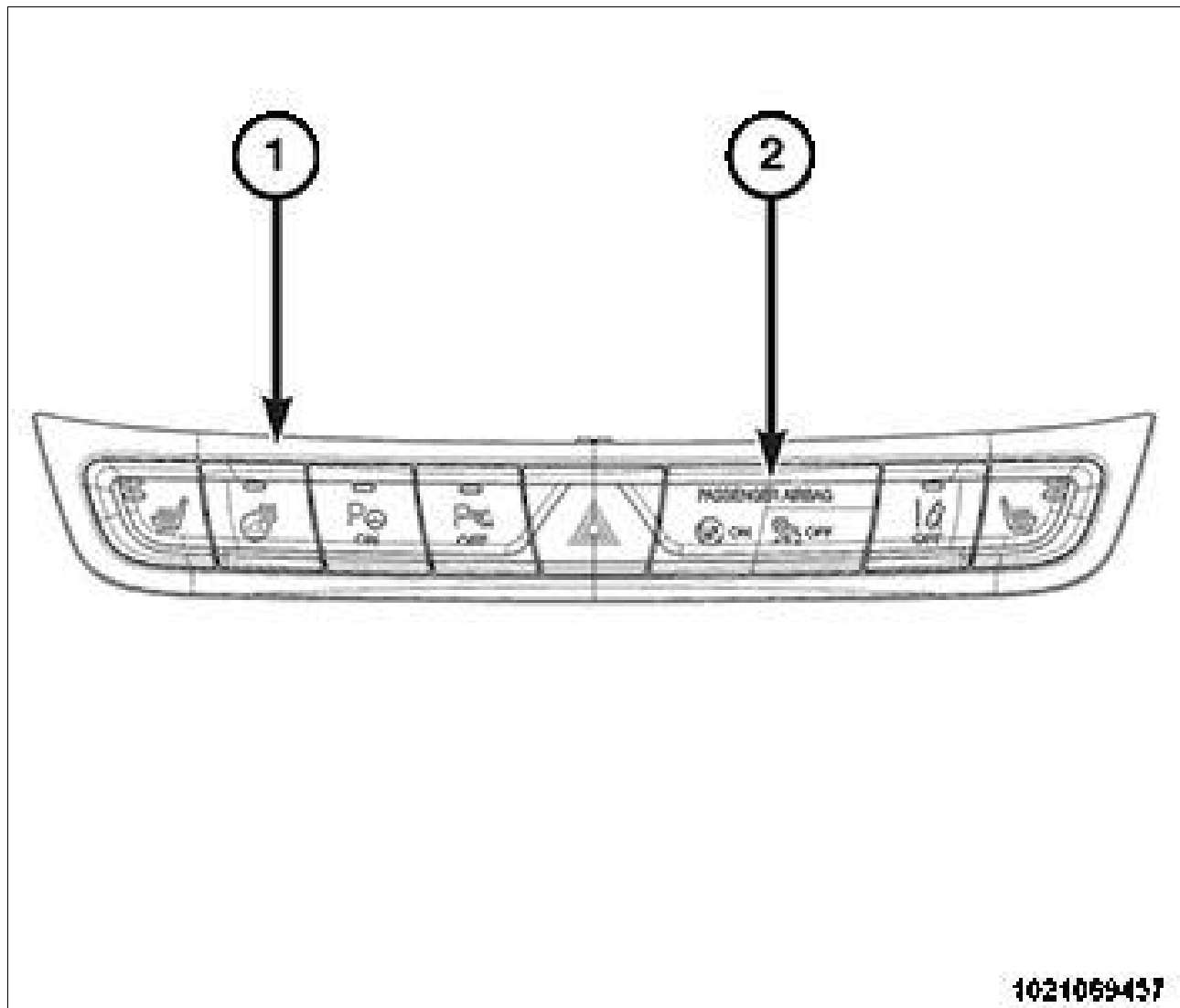
 CAUTION:

The clockspring locking pin is removed by rotating it in a clockwise direction, breaking it off in the SCCM housing. Do not bend the locking pin to break it off as this may damage the SCCM housing.

6. If a new clockspring and stalk unit is being used, break off the plastic locking pin (2) that secures the clockspring rotor (1) to the stalk unit housing to maintain clockspring centering. Rotate the pin in a clockwise direction to break it off in the stalk unit housing.
7. Install the steering wheel onto the steering column. Refer to WHEEL, STEERING, REMOVAL AND INSTALLATION .
8. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

**INDICATOR, PASSENGER AIR BAG > DESCRIPTION AND OPERATION >
DESCRIPTION AND OPERATION > DESCRIPTION**

Fig 1: Instrument Panel Switch Pod & Passenger AirBag (PAB) On/Off Indicator



Courtesy of CHRYSLER GROUP, LLC

Vehicles manufactured for Europe-Middle East-Africa (EMEA) markets are equipped with a Passenger AirBag (PAB) on/off indicator (2). This indicator is integral to the instrument panel switch pod (1), which is secured to the instrument panel center stack just below the Radio Receiver Module (RRM). Refer to POD, SWITCH, DESCRIPTION AND OPERATION .

The text **PASSENGER AIRBAG** appears on a lens just to the right of the hazard warning switch in the instrument panel switch pod. The text **ON** and **OFF** , each below 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 cannot be repaired or adjusted and, if ineffective or damaged the instrument panel switch pod must be replaced.

INDICATOR, PASSENGER AIR BAG > DESCRIPTION AND OPERATION >

DESCRIPTION AND OPERATION > OPERATION

The Passenger AirBag (PAB) on/off indicator (also known as the Passenger Airbag Disable Lamp/PADL) gives an indication when the passenger seat is occupied **and** the PAB and seat belt tensioner deployment circuits are enabled or disabled by the Occupant Restraint Controller (ORC). This indicator is controlled by a transistor within the ORC through hard wired outputs based upon electronic **passenger airbag status request** messages received by the ORC from the Instrument Panel Cluster (IPC) over the Controller Area Network (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:

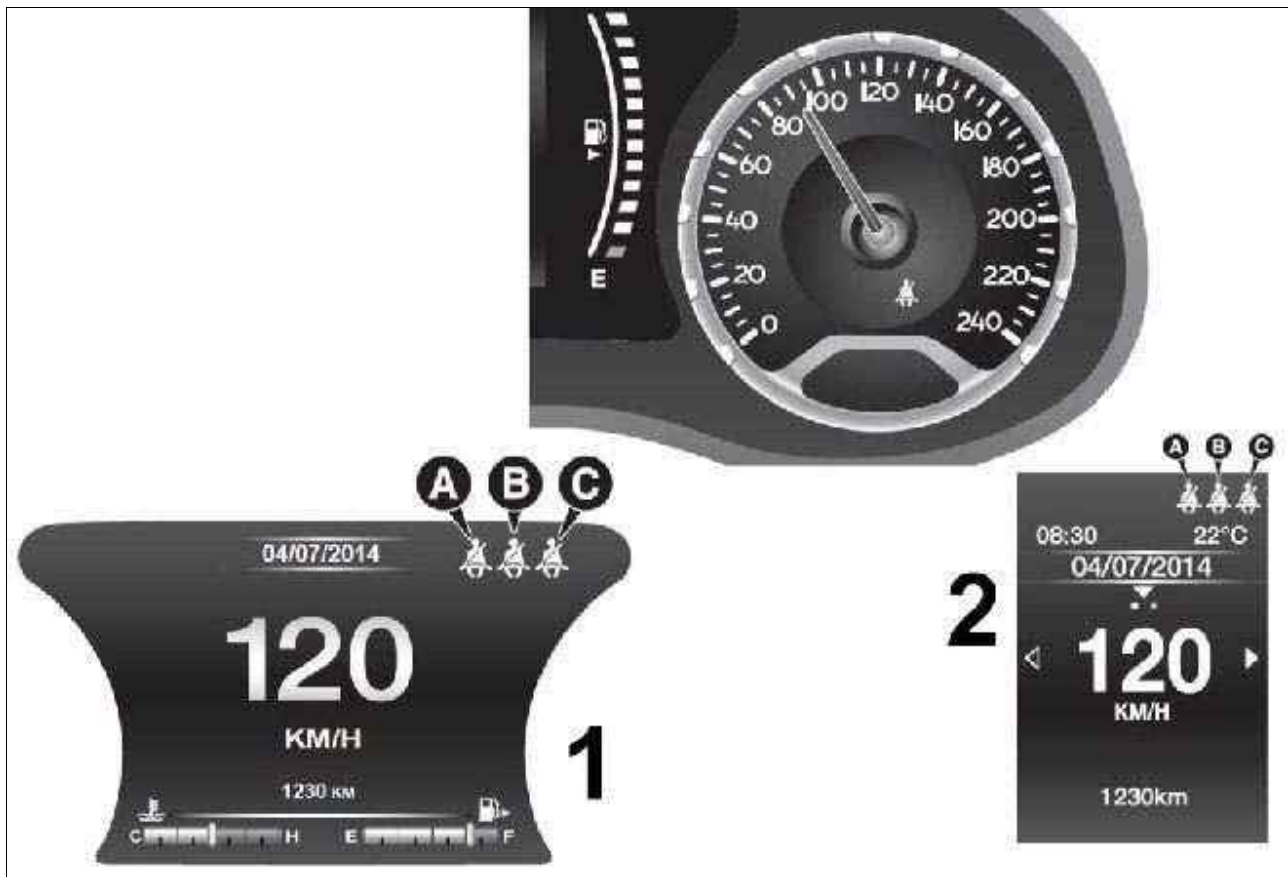
- **Bulb Test** - Each time the status of the ignition transitions to On the PAB on/off indicators are illuminated for about eight seconds.
- **Passenger AirBag Disabled** - Each time the ORC receives an electronic message from the IPC indicating the setup routine has requested the Passenger AirBag (PAB) 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 IC 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 Passenger AirBag (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 IC 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 Diagnostic Trouble Code (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 hard wired circuits between the PAB on/off indicator and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the PAB on/off indicator or the electronic controls and communication between other modules and devices that provide the features of this indicator. The most reliable, efficient and accurate means to diagnose the PAB on/off indicator or the electronic controls and communication related to PAB on/off indicator operation requires the use of a diagnostic scan tool. Refer to the appropriate Diagnostic & Testing article.

INDICATOR, SEAT BELT REMINDER (SBR) > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Seat Belt Reminder (SBR) Indicator



Courtesy of CHRYSLER GROUP, LLC

- 7" DID/EVIC (1)
- 3.5" TFT EVIC (2)
- rear left seat belt (A)
- rear central seat belt (B)
- rear right seat belt (C)

The Seat Belt Reminder (SBR) system warns the passengers of the front and rear seats if their seat belt is not fastened.

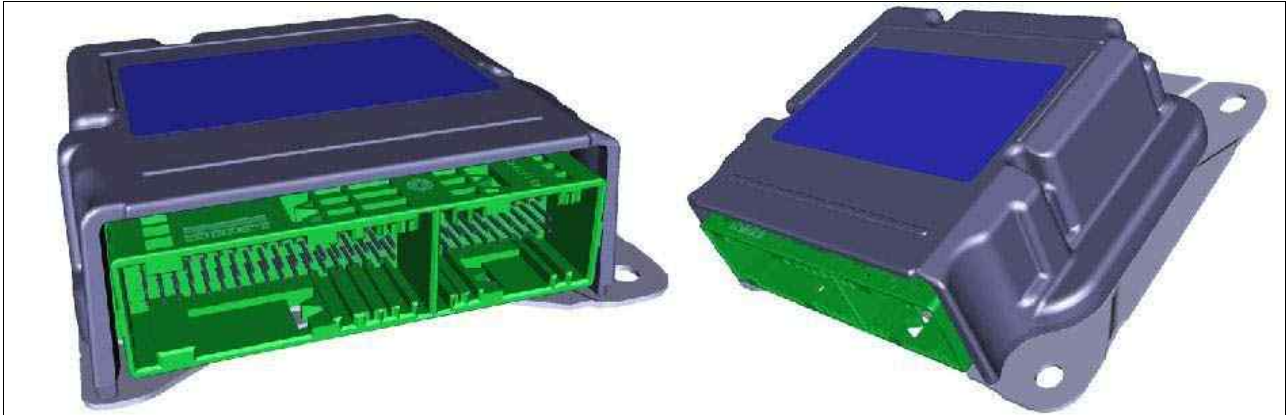
The system signals unfastened seat belts with visual warnings (warning lights on in the Instrument Panel Cluster (IPC) and icons on the Electronic Vehicle Information Center/EVIC display) and an acoustic signal.

The Occupant Restraint Controller (ORC) will send the buckle condition messages to the IPC via the CAN network for the activation of the indications.

MODULE, OCCUPANT RESTRAINT CONTROLLER > DESCRIPTION AND OPERATION

> DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Occupant Restraint Controller (ORC) Module



Courtesy of CHRYSLER GROUP, LLC

The Occupant Restraint Controller (ORC) module, located on the floor tunnel under the instrument panel center console, monitors the impact and occupant sensors and activates restraint system devices in the event of an impact. The ORC also contains impact sensors that are used to determine the level of deployment and to verify the information received from the remote sensors.

An arrow printed on the ORC label indicates the installation orientation. The arrow must point toward the front of the vehicle. The ORC must be installed correctly for correct restraint system operation.

The ORC module will set a specific DTC which cannot be deleted, not even using the diagnostic tool. This will happen when you reach:

- 3 activations of the pretensioners, EMEA only
- 2 activations of the pretensioners, NAFTA only
- 3 activations of the side airbags, EMEA only
- 2 activations of the side airbags, NAFTA only
- 1 activation of the pretensioners plus the front airbags; all versions
- Any other combination of the above mentioned cases until one of the limits is reached

When one of the above mentioned limits is reached, the ORC module will have to be replaced.

In EMEA versions the front passenger airbag can be deactivated via the vehicle menu. A dedicated LED indicates its deactivation.

Fig 2: Airbag Deactivation LED (EMEA) & (NAFTA)



Courtesy of CHRYSLER GROUP, LLC

The yaw or lateral acceleration sensor is installed inside the ORC module and is used for the correct operation of the vehicle dynamic stability functions.

The impact sensor and safing sensor internal to the ORC are calibrated for the specific vehicle, and are only serviced as a unit with the ORC. In addition, there are unique versions of the ORC for vehicles with or without certain optional Supplemental Restraint System (SRS) components. The ORC cannot be repaired or adjusted and, if damaged or ineffective, it must be replaced.

MODULE, OCCUPANT RESTRAINT CONTROLLER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The microcontroller within the ORC contains the SRS logic circuits and controls all of the SRS components. The ORC uses On-Board Diagnostics (OBD) and can communicate with other electronic modules in the vehicle as well as with the diagnostic scan tool using the Controller Area Network (CAN)

data bus. This method of communication is used for control of the airbag indicator in the Instrument Panel Cluster (IPC) and for SRS diagnosis and testing through the 16-way data link connector located on the driver side lower edge of the instrument panel.

The ORC microcontroller continuously monitors all of the SRS electrical circuits to determine the system readiness. If the ORC detects a monitored system fault, it sets an active and stored Diagnostic Trouble Code (DTC) and sends electronic messages to the IPC over the CAN data bus to turn On the airbag indicator. An active fault only remains for the duration of the fault, or in some cases for the duration of the current ignition cycle, while a stored fault causes a DTC to be stored in memory by the ORC. For some DTCs, if a fault does not recur for a number of ignition cycles, the ORC will automatically erase the stored DTC. For other internal faults, the stored DTC is latched forever.

The ORC receives battery current through two circuits; a fused ignition output (run) circuit through a fuse in the Body Control Module (BCM) and a fused ignition output (run-start) circuit through a second fuse in the BCM. The ORC receives ground through a ground circuit and take out of the instrument panel wire harness that is secured by a nut to a weld stud on the floor panel transmission tunnel. These connections allow the ORC to be operational whenever the status of the ignition is Start or On.

The ORC also contains an energy-storage capacitor. When the status of the ignition is Start or On this capacitor is continually being charged with enough electrical energy to deploy the SRS components for up to one second following a battery disconnect or failure. The purpose of the capacitor is to provide backup SRS protection in case there is a loss of battery current supply to the ORC during an impact.

Various sensors within the ORC are continuously monitored by the ORC logic. These internal sensors, along with several external impact sensor inputs allow the ORC to determine both the severity of an impact and to verify the necessity for deployment of any SRS components. In vehicles manufactured for Europe-Middle East-Africa (EMEA) markets, a remote front impact sensor (also known as an Early Crash Sensor/ECS) is located on the back of the lower horizontal member of the radiator support near the center. In vehicles manufactured for North America Free Trade Agreement (NAFTA) markets, remote front impact sensors are located on the back of the right and left vertical members of the radiator support inboard of the headlamps. The electronic impact sensors are accelerometers that sense the rate of vehicle deceleration, which provides verification of the direction and severity of an impact.

The ORC also monitors inputs from the seat track position sensors (NAFTA market only), the front seat belt switches, the rear seat belt switches (EMEA markets only), an internal rollover sensor and four additional remote side impact sensors located on the left and right front door hardware module carriers and on the right and left lower B-pillars to control deployment of the side curtain airbag units and, if equipped, the front seat airbags (also known as pelvic and thoracic airbags). The ORC uses the seat belt switch inputs along with inputs from the Occupant Detection Sensor (ODS) in the passenger front seat cushion to support the seat belt alert feature, and will send electronic messages to the IPC to illuminate the seat belt indicator when appropriate.

The impact sensors within the ORC are electronic accelerometer sensors that provide an additional logic input to the ORC microcontroller. These sensors are used to verify the need for a SRS component deployment by detecting impact energy of a lesser magnitude than that of the primary electronic impact sensors, and must exceed a safing threshold in order for the SRS components to deploy. A separate impact sensor within the ORC provides confirmation to the ORC microcontroller of side impact forces. This separate sensor is a bi-directional unit that detects impact forces from either side of the vehicle.

Pre-programmed decision algorithms in the ORC microcontroller determine when the deceleration rate as signaled by the impact sensors indicate an impact that is severe enough to require SRS protection. In NAFTA market vehicles, based upon the severity of the monitored impact, the ORC also determines the level of front airbag deployment force required for each front seating position. When the programmed conditions are met, the ORC sends the proper electrical signals to deploy the front airbags, the front

seat belt tensioners and either side curtain and, if equipped, seat airbag unit.

The BCM stores and compares vehicle configuration data with the ORC as well as with other Electronic Control Units (ECU) in the vehicle. This process is referred to as PROgramming Of Configuration of Systems Integrated (PROCSI) (also known as PROXI). If a configuration mismatch is detected, the BCM sets a DTC. A configuration mismatch DTC will require the performance of a Restore BCM PROXI Configuration routine, or a PROXI Configuration Alignment routine using a diagnostic scan tool.

The hard wired inputs and outputs for the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the ORC or the electronic controls and communication between other modules and devices that provide some features of the SRS. The most reliable, efficient and accurate means to diagnose the ORC or the electronic controls and communication related to SRS operation requires the use of a diagnostic scan tool and may also require the use of the SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.

MODULE, OCCUPANT RESTRAINT CONTROLLER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

WARNING:

To avoid serious or fatal injury on vehicles equipped with side curtain airbags, disable the Supplemental Restraint System (SRS) before attempting any Occupant Restraint Controller (ORC) diagnosis or service. The ORC may contain a rollover sensor, which enables the system to deploy the side SRS components in the event of a vehicle rollover event. If an ORC containing a rollover sensor is accidentally rolled during service while still connected to battery power, the side SRS components 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:

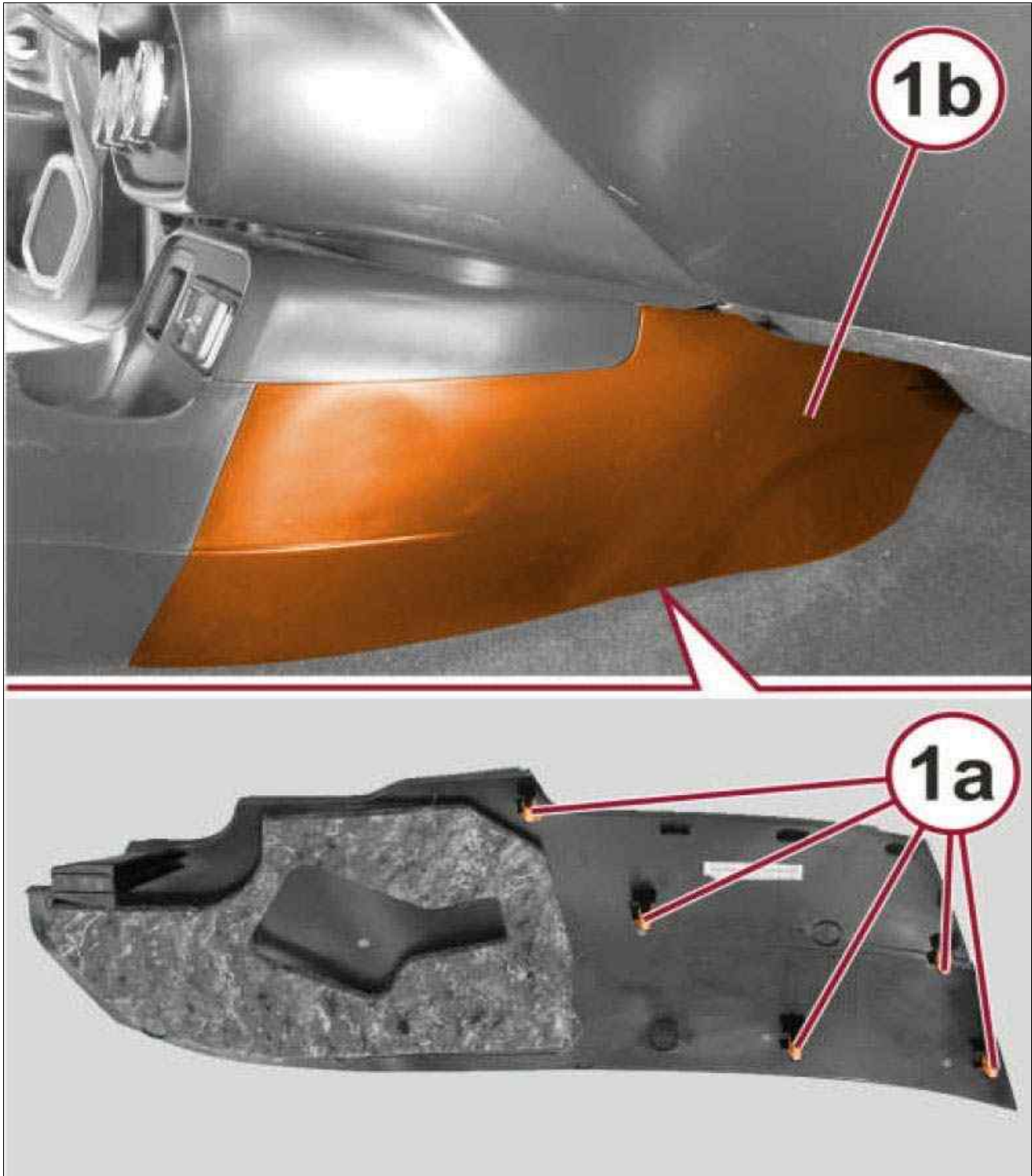
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the 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 Occupant Restraint Controller (ORC),

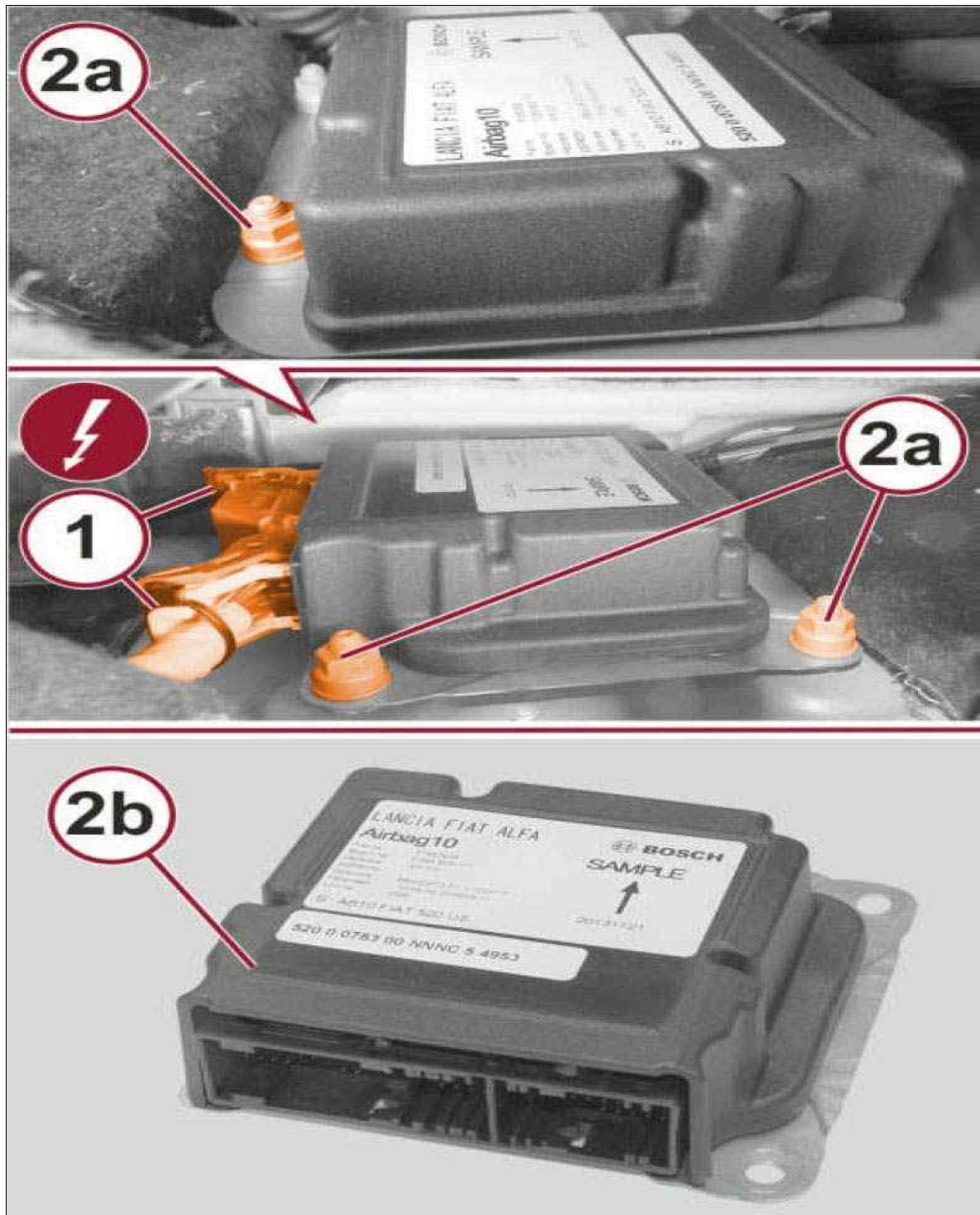
as it can damage the impact sensor or affect its calibration. The ORC contains the impact sensor, which enables the system to deploy the SRS components. If an ORC is accidentally dropped during service, the module must be scrapped and replaced with a new unit. Failure to observe this warning could result in accidental, incomplete, or improper SRS component deployment.

Fig 1: Front Side Panel



1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Remove the front side panel (1b) from the right side of the center floor console on the floor panel center tunnel. Refer to CONSOLE, FLOOR, REMOVAL AND INSTALLATION .

Fig 2: Occupant Restraint Controller (ORC), Wire Connector & Nuts



3. Disconnect the wire harness connectors (1) from the rearward-facing end of the Occupant Restraint Controller (ORC) (2b). To disconnect the wire harness connector from the ORC, depress the release tab and lift the lever arm on the connector.
4. Remove the three nuts (2a) that secure the ORC to the weld studs on the floor panel center tunnel.
5. Lift the ORC off of the weld studs and remove it from the vehicle.

MODULE, OCCUPANT RESTRAINT CONTROLLER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

WARNING:

To avoid serious or fatal injury on vehicles equipped with side curtain airbags, disable the Supplemental Restraint System (SRS) before attempting any Occupant Restraint Controller (ORC) diagnosis or service. The ORC may contain a rollover sensor, which enables the system to deploy the side SRS components in the event of a vehicle rollover event. If an ORC containing a rollover sensor is accidentally rolled during service while still connected to battery power, the side SRS components 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.

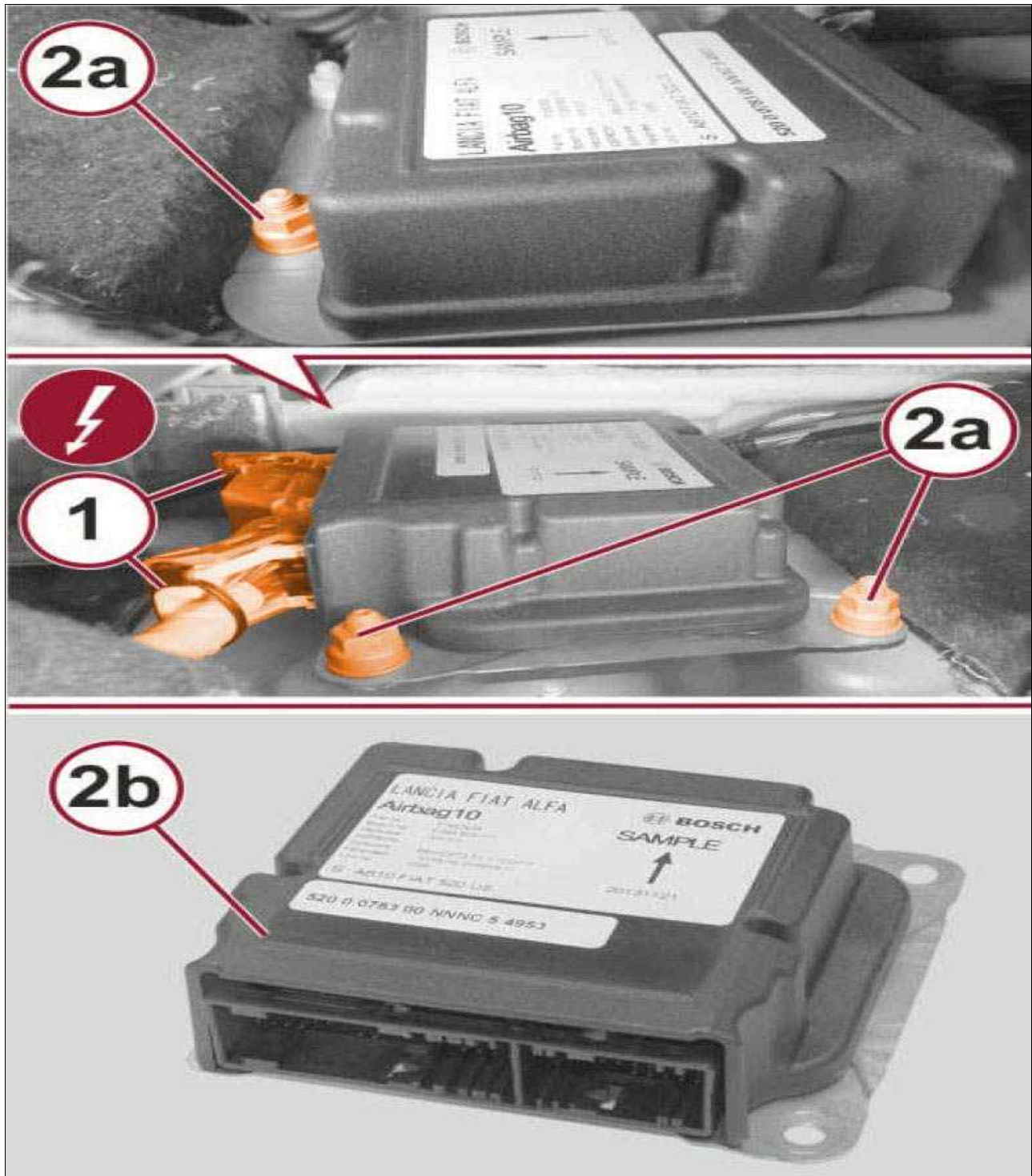
WARNING:

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 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 Occupant Restraint Controller (ORC), as it can damage the impact sensor or affect its calibration. The ORC contains the impact sensor, which enables the system to deploy the SRS components. If an ORC is accidentally dropped during service, the module must be scrapped and replaced with a new unit. Failure to observe this warning could result in accidental, incomplete, or improper SRS component deployment.

Fig 1: Occupant Restraint Controller (ORC), Wire Connector & Nuts

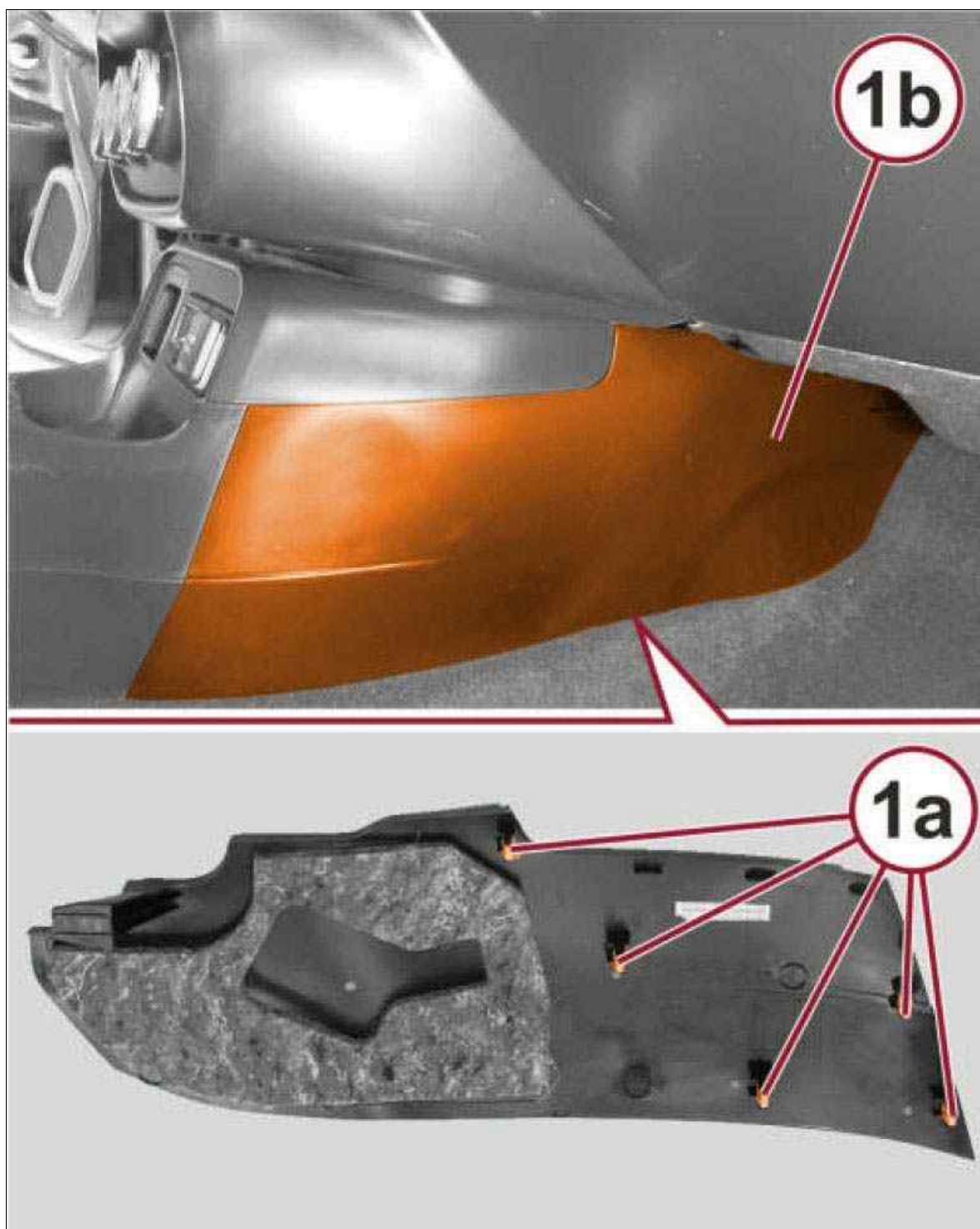


Courtesy of CHRYSLER GROUP, LLC

1. Carefully position the Occupant Restraint Controller (ORC) (2b) onto the weld studs on the top of the floor panel center tunnel. When the ORC is correctly positioned, the bottom of the housing will fit flush with the top of the floor panel center tunnel and the orientation arrow on the label on top of the housing will be pointed forward in the vehicle.
2. Install and tighten the three nuts (2a) that secure the ORC to the weld studs on the top of the floor panel center tunnel. Tighten the nuts securely.

3. Connect both wire harness connectors (1) to the rearward-facing end of the ORC. Be certain that the latch on each connector is fully engaged.

Fig 2: Front Side Panel



Courtesy of CHRYSLER GROUP, LLC

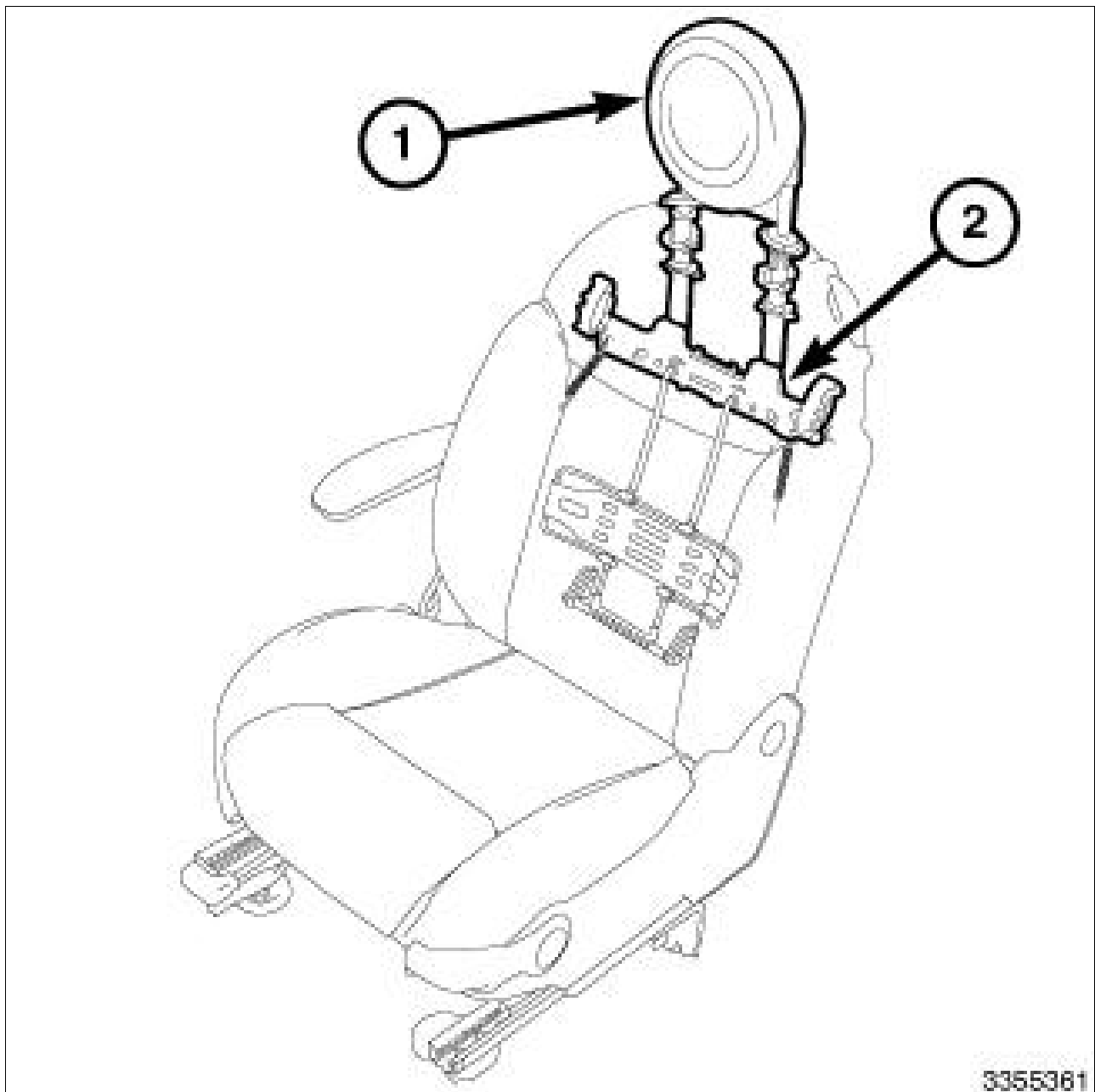
4. Align the snap clips (1a) of the front side panel with the right side of the center floor console and snap it into place. Refer to CONSOLE, FLOOR, REMOVAL AND INSTALLATION .
5. If this Electronic Control Unit (ECU) is being replaced with a new unit, a diagnostic scan tool MUST be used to align the PROXI configuration data into the new ECU. Follow the routine

outlined in the diagnostic scan tool for PROXI Configuration Alignment under Body Control Module (BCM) Miscellaneous Functions menu.

6. If this Electronic Control Unit (ECU) is being replaced with a new unit, the Initialize ORC Miscellaneous Function must be run using a diagnostic scan tool.
7. 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 STANDARD PROCEDURE .

RESTRAINT, ACTIVE HEAD > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Active Head Restraint (AHR) Units & Mechanical Components



Courtesy of CHRYSLER GROUP, LLC

Active Head Restraint (AHR) units (1) are standard equipment for both front seating positions in this vehicle. One inertia-activated AHR unit is located atop each front seat back. Outwardly, an inertia-activated AHR appears the same as a non-active head restraint. The mechanical components (2) that articulate the inertia-activated AHR headrest pad are all concealed within the front seat back frame assembly.

At the top of the seat back frame are two stamped steel headrest guide tubes. The guide tubes are each inserted through a molded plastic fulcrum bushing installed in the upper seat back frame member and are permanently fixed to a movable stamped steel armature bracket located just below the upper frame member near the top of the seat back. The armature bracket is secured to a stamped steel pivot link at each side that pivots on a screw threaded into a mounting bracket welded to each side member of the seat back frame.

The pivot links each have a spring attached to a lever opposite the armature bracket attachment that is anchored to the seat back frame side member below, which provides the spring-loaded return action of the inertia mechanism. The upper end of the static lumbar assembly is secured at each side to the base of the armature bracket. Each side of the lower end of the lumbar assembly is engaged in a ramp bracket riveted to the lower seat back frame member.

The inertia-activated AHR linkage cannot be repaired. If damaged or ineffective, it must be replaced as a unit with a new seat back frame unit.

RESTRAINT, ACTIVE HEAD > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The inertia-activated Active Head Restraint (AHR) units are deployed automatically by the mechanism contained within each front seat back assembly. During a rear impact, inertia drives the seat occupant rearward into the seat back, loading the seat lumbar assembly. The ramp brackets at the base of the lumbar assembly translate this rearward travel into a vertical motion. The vertical motion of the lumbar assembly is then transmitted to the armature bracket.

Through the rotation of the pivot links at each side of the armature bracket, the vertical motion of the lumbar assembly is converted to a slightly forward and upward arc of the armature bracket, headrest guide tubes and headrest that is designed to reduce the space between the back of the head of the seat occupant and the head restraint pad. Closing this space catches the head of the seat occupant during a low speed rear impact collision event and is important in reducing or eliminating potentially debilitating cervical (also known as whiplash) injuries.

Unless damaged, following the rear impact, the inertia-activated AHR can be reset by simply pushing the front seat headrests rearward to their normal positions.

RESTRAINT, ACTIVE HEAD > STANDARD PROCEDURE > STANDARD PROCEDURE - ACTIVE HEAD RESTRAINT RESET

If the Active Head Restraint (AHR) units have been deployed, both the driver and passenger side units must be reset. You can recognize that an AHR has been deployed by the forward position of the head restraint cushion. If deployed, the AHR units can be manually reset by pressing the head restraint rearward.

RETRACTOR, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The seat belt retractors used in all seating positions include an inertia-type, emergency locking mechanism as standard equipment. Both front seat belt retractors also include a retractor tensioner, an anchor tensioner unit and load limiting features as standard equipment. The outboard rear seat belt retractors in vehicles manufactured for Europe-Middle East-Africa (EMEA) markets include a retractor tensioner and the load limiting feature. The center rear seat retractor for all markets and the outboard rear seat belt retractors for North America Free Trade Agreement (NAFTA) markets include only the load limiting feature. Refer to TENSIONER, SEAT BELT, DESCRIPTION AND OPERATION .

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.

RETRACTOR, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

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.

RETRACTOR, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL - FRONT

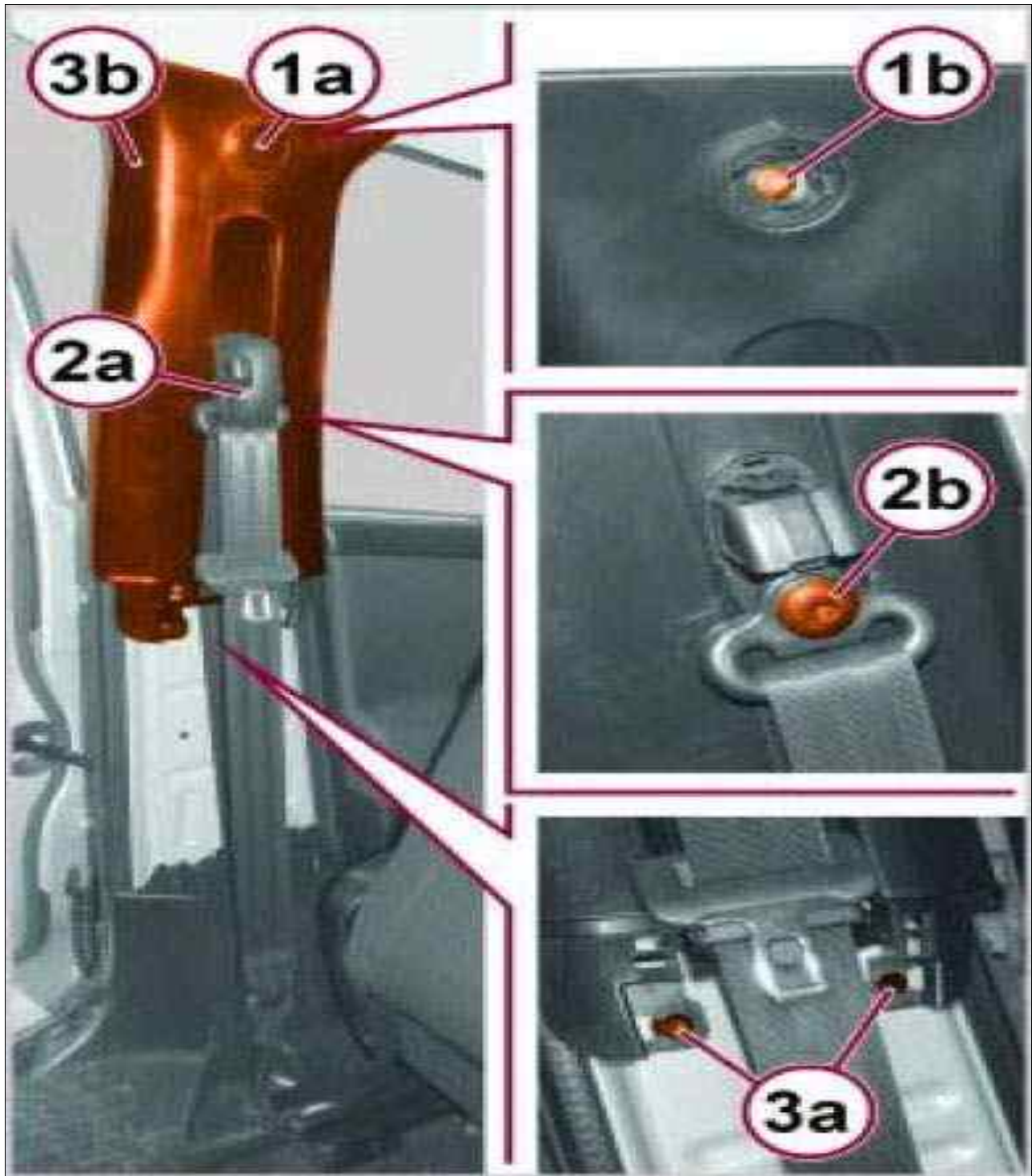
WARNING:

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 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 Chrysler Mopar® Parts Catalog.

Fig 1: Remove/Install B-Pillar



Courtesy of CHRYSLER GROUP, LLC



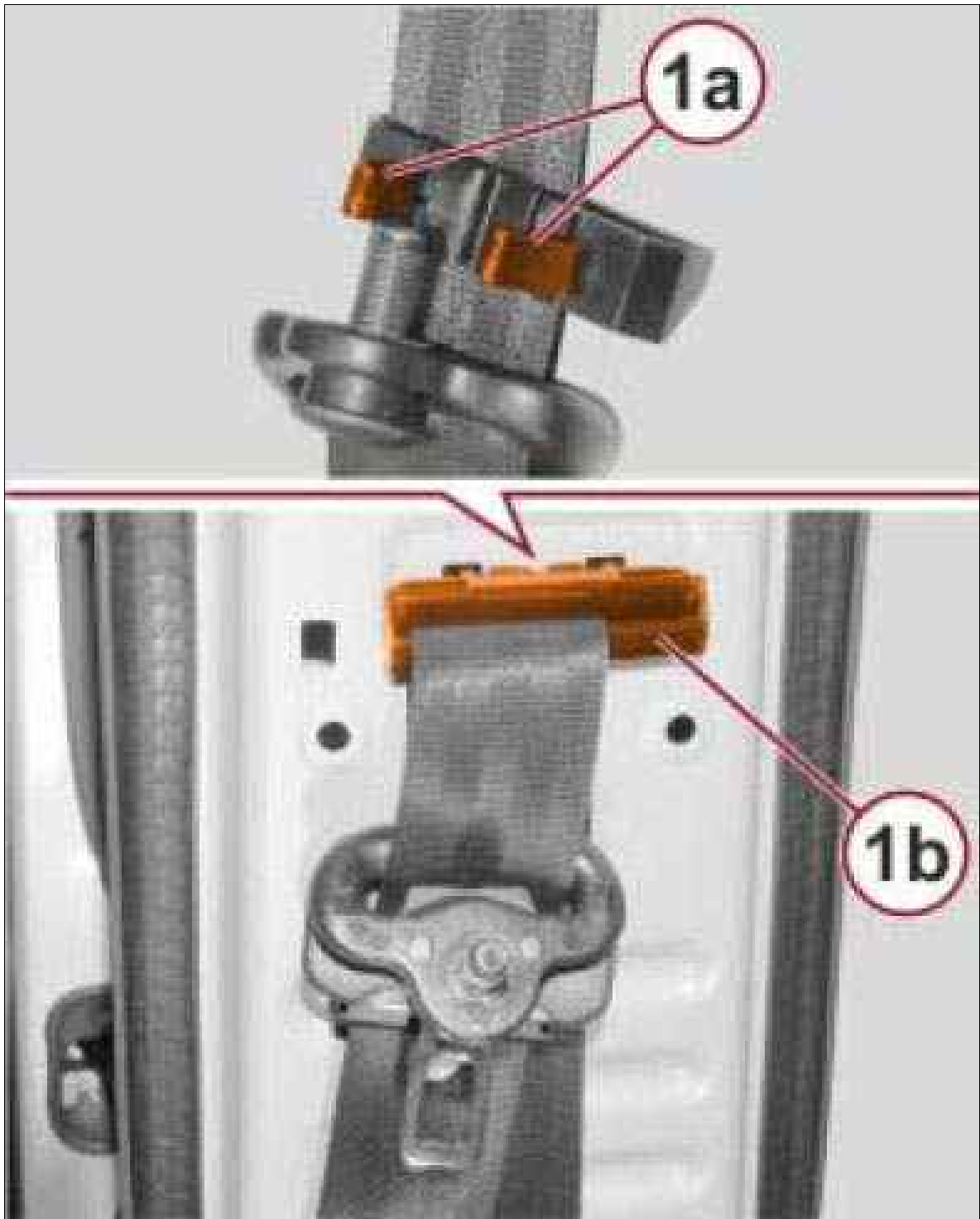
NOTE:

The following procedure is for replacement of an ineffective or damaged seat belt and retractor unit. The front retractors also include a retractor seat belt tensioner and a lower anchor seat belt tensioner. If the front seat belt, retractor or either tensioner is ineffective or damaged, but either seat belt tensioner is not deployed, review the recommended

procedures for Handling Non-Deployed Supplemental Restraints. Refer to STANDARD PROCEDURE . If the seat belt tensioners have been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the unit from the vehicle. Refer to STANDARD PROCEDURE .

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Adjust the front seat to its most forward position for easiest access to the front seat belt, retractor, lower anchor and the B-pillar trim.
3. Firmly grasp the top of the trim cover (2a) for the front seat belt turning loop height adjuster on the inside of the upper B-pillar and pull it away from the height adjuster far enough to unsnap it, then disengage the lower snap features of the trim cover from the adjuster.
4. Remove the screw (2b) that secures the front seat belt turning loop to the height adjuster on the inside of the upper B-pillar.
5. Remove the seat belt turning loop from the height adjuster.
6. Remove the trim (3b) from the inside of the B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .
7. Remove the trim from the inner sill. Refer to PLATE, SCUFF, LIFTGATE SILL, REMOVAL AND INSTALLATION .

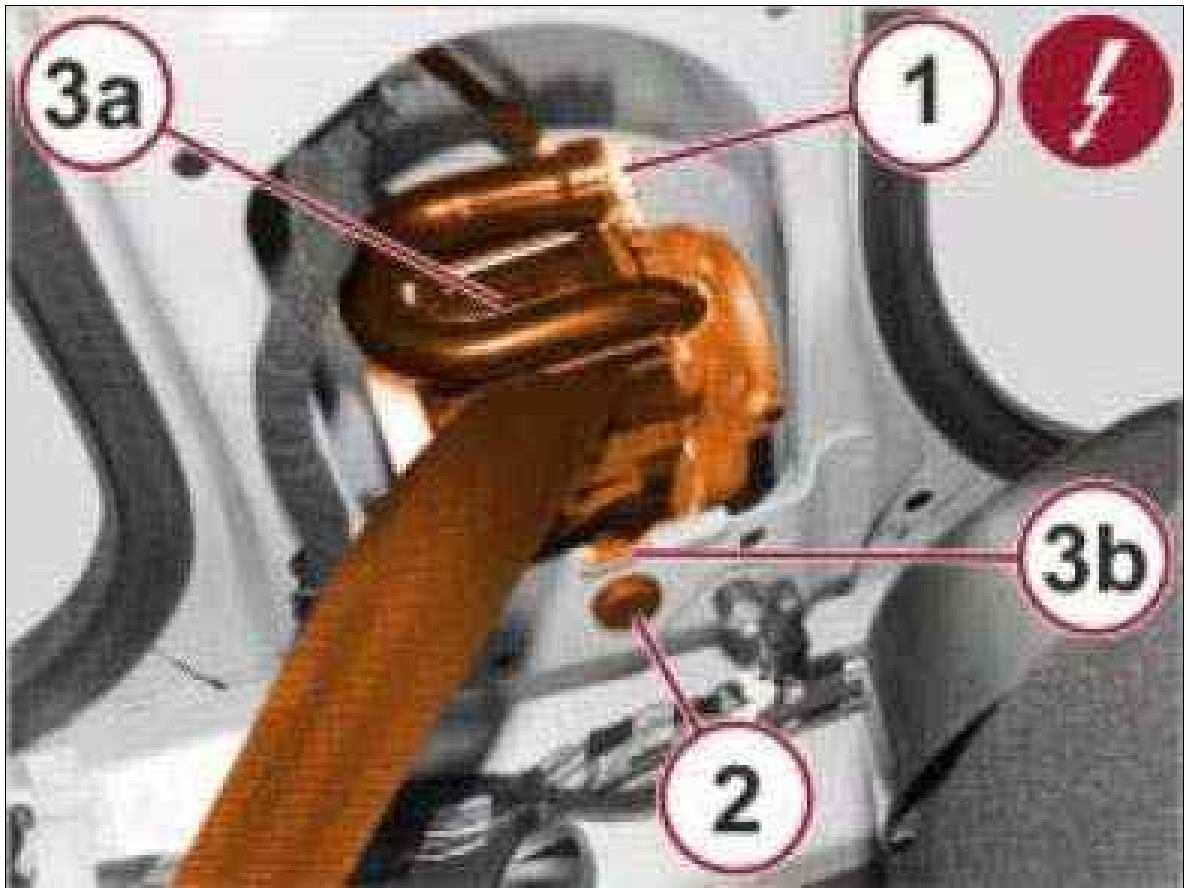
Fig 2: Seat Belt Web Guide & Retainers



Courtesy of CHRYSLER GROUP, LLC

8. Disengage the retainers (1a) that secure the seat belt web guide (1b) to the inner B-pillar.

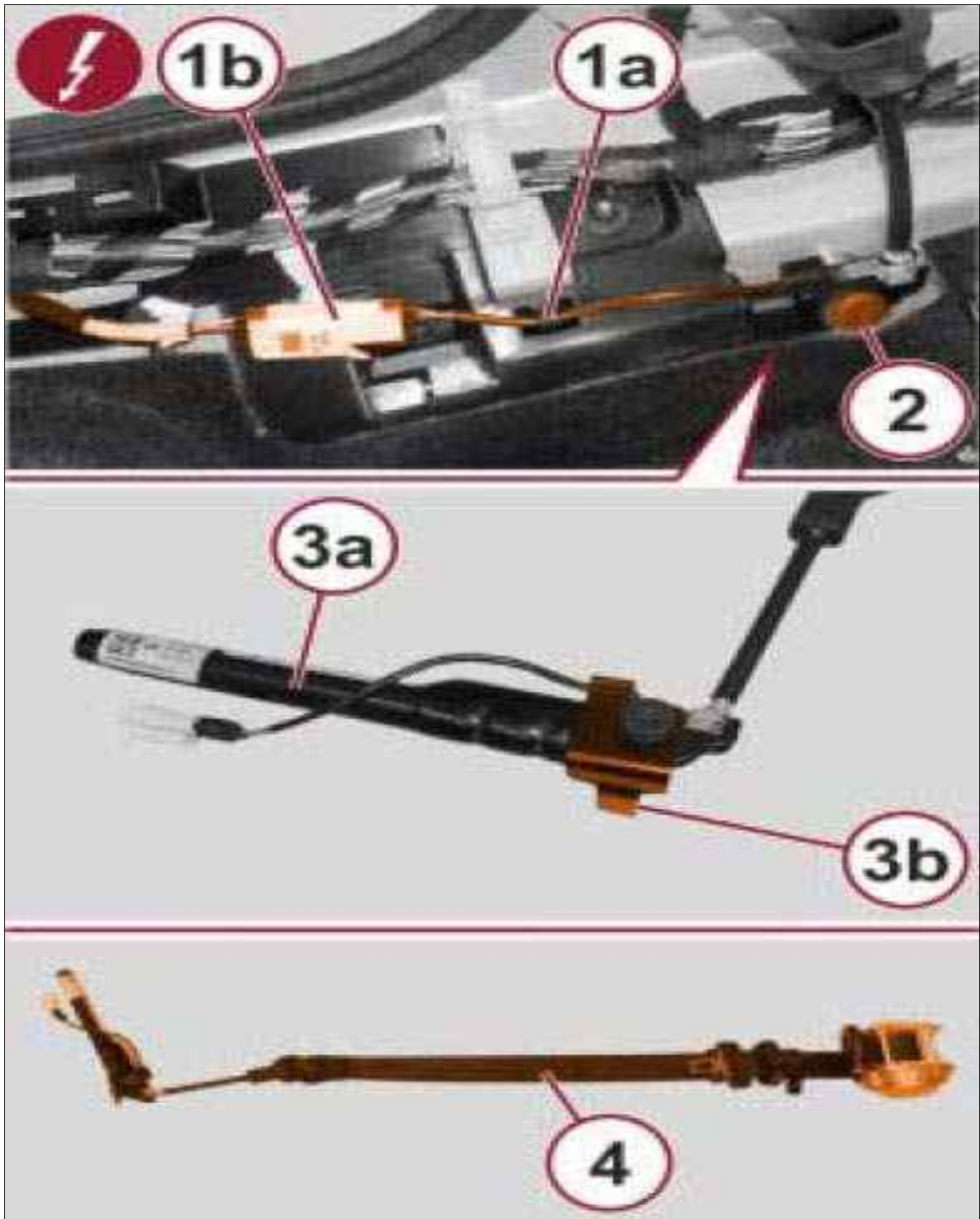
Fig 3: Remove/Install Retractor Tensioner



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the body wire harness connector (1) from the initiator for the retractor tensioner.
10. Remove the screw (2) that secures the retractor bracket to the base of the inner B-pillar.
11. Lift the retractor (3a) upward far enough to disengage the T-tab (3b) on the retractor bracket from the notch in the inner B-pillar.

Fig 4: Remove/Install Retractor & Anchor Tensioner



Courtesy of CHRYSLER GROUP, LLC

12. Disengage the anchor tensioner pigtail wire (1a) from the retainer and disconnect it from the body wire harness connector (1b) for the tensioner.
13. Pull the carpet away from the inner sill far enough to access and remove the screw (2) that secures the anchor tensioner to the inner sill.
14. Pull the anchor tensioner (3a) away from the inner sill far enough to disengage locating tab (3b)

from the sill.

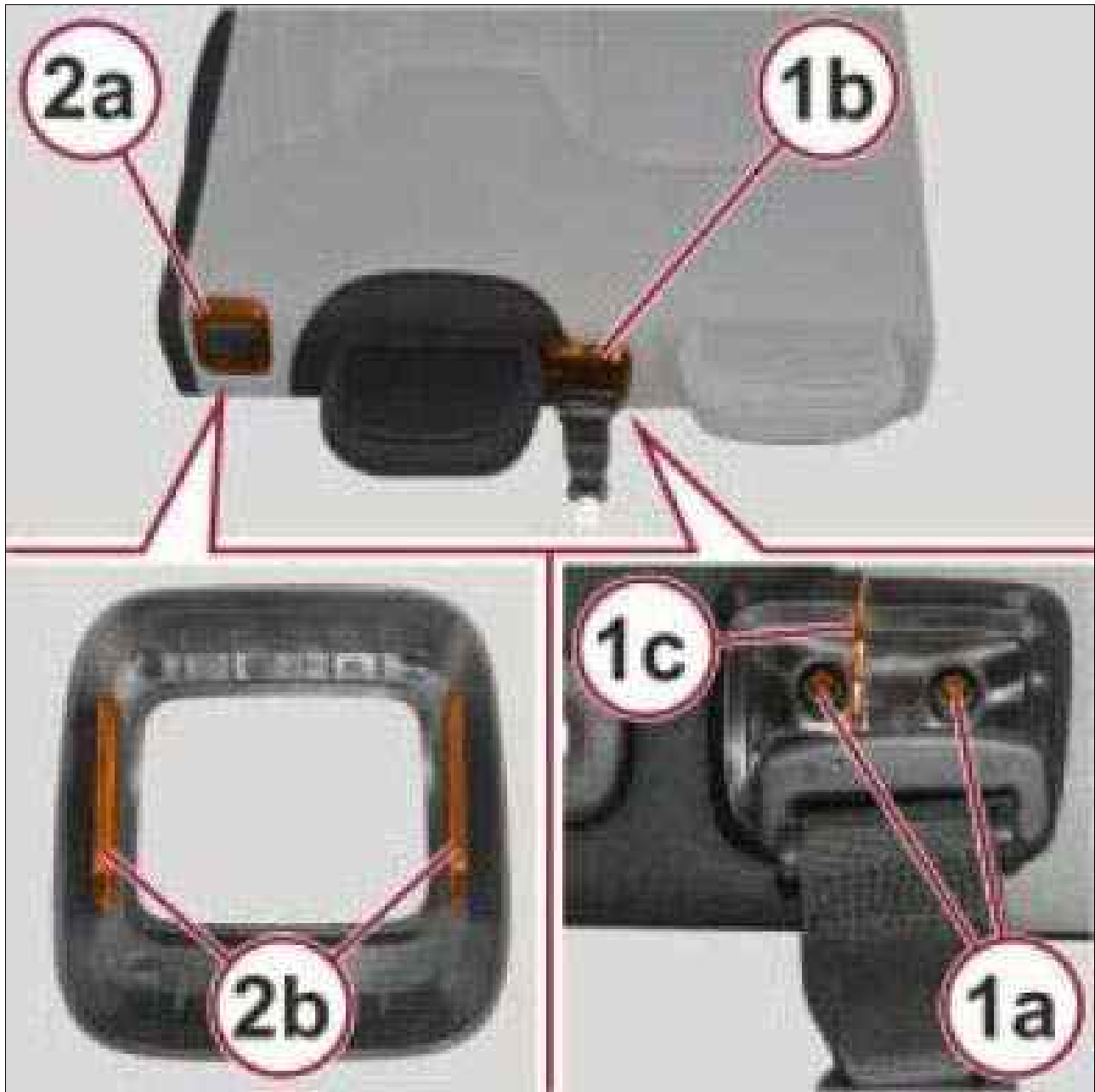
15. Remove the front seat belt, retractor and anchor tensioner (4) from the vehicle as a unit.

RETRACTOR, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL - REAR SEAT CENTER

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 Chrysler Mopar® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.

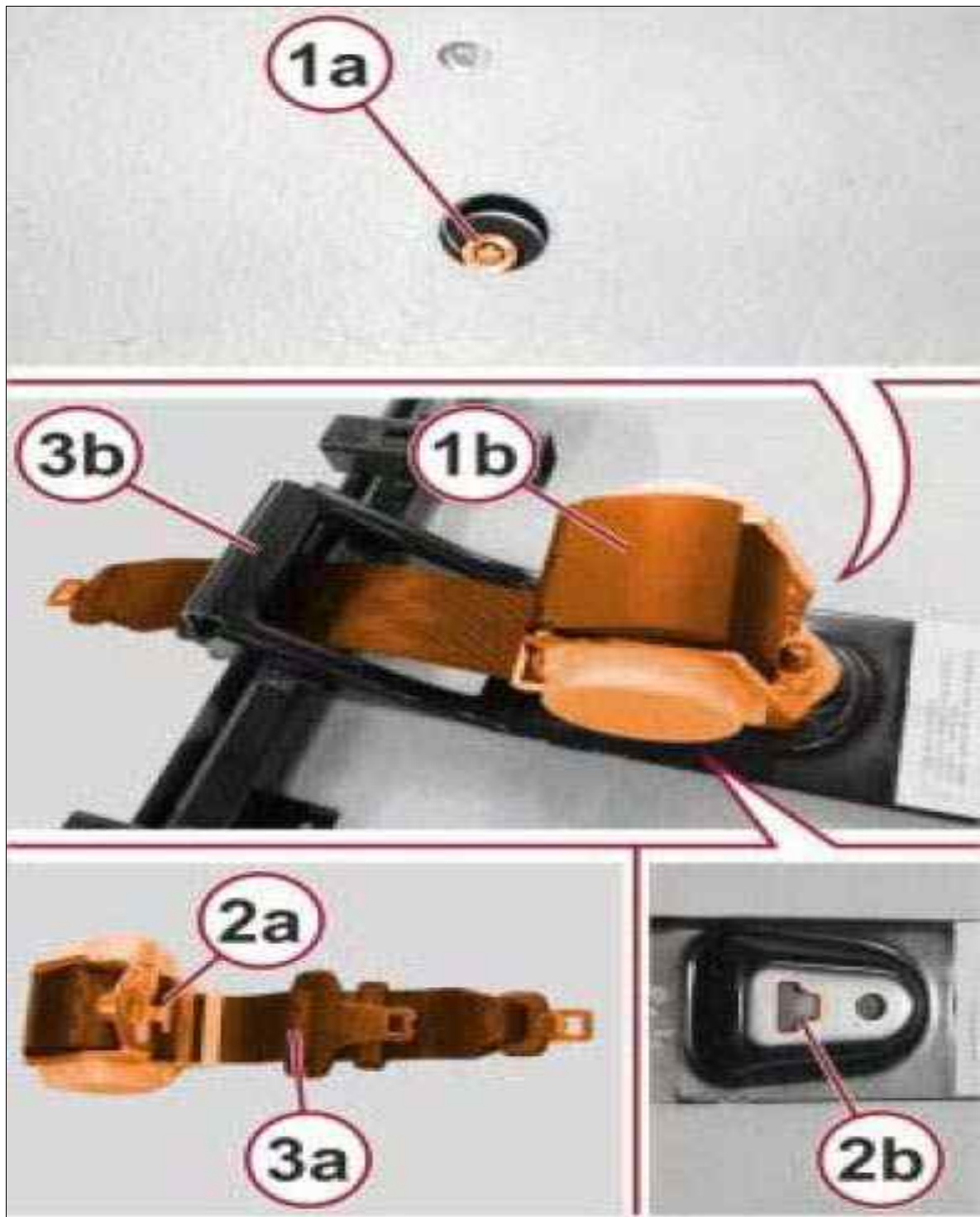
Fig 1: Remove/Install Rear Seat Back



Courtesy of CHRYSLER GROUP, LLC

1. Remove the left rear seat back from the vehicle. Refer to SEAT BACK, REAR, REMOVAL AND INSTALLATION .
2. Remove the screws (1a) that secure the center rear seat belt flange (1b) to the top of the seat back.
3. Disengage the seat belt flange from the belt webbing through the slit (1c) in the flange.
4. Remove the trim cover and foam from the left rear seat back. Refer to COVER, SEAT BACK, FRONT, REMOVAL AND INSTALLATION .

Fig 2: Remove/Install Rear Center Seat Belt & Retractor



Courtesy of CHRYSLER GROUP, LLC

5. Working through the access hole in the seat back panel, remove the screw (1a) that secures the retractor to the seat back frame.
6. Working from the front of the seat back frame, disengage the T-tab of the retractor bracket from the keyed hole (2b) in the seat back frame.
7. Disengage the seat belt webbing and latch plates (3a) from the guide (3b) 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.

RETRACTOR, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL - REAR OUTBOARD

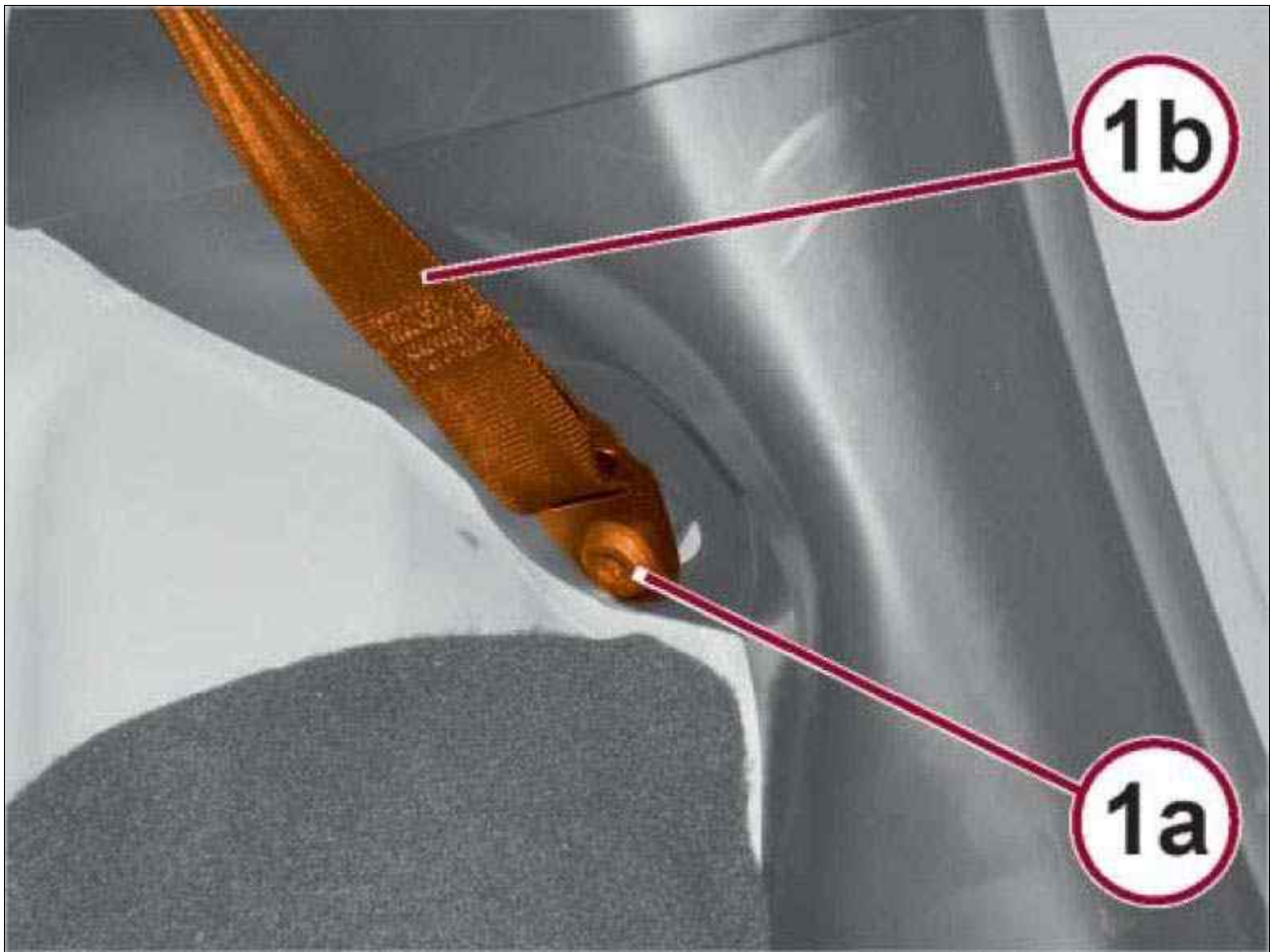
WARNING:

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 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 Chrysler Mopar® Parts Catalog.

Fig 1: Rear Outboard Seat Belt & Screw



Courtesy of CHRYSLER GROUP, LLC



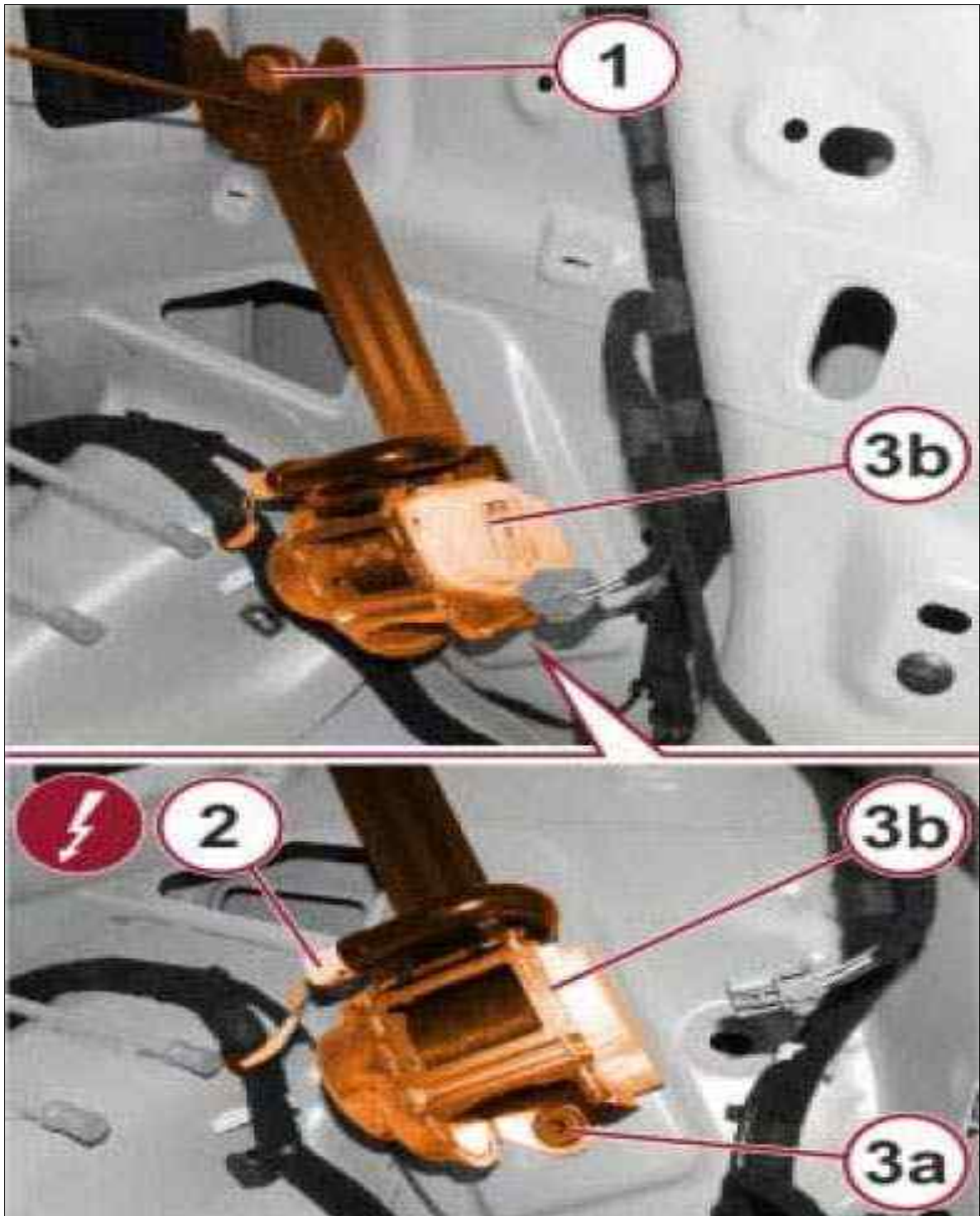
NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Remove the screw (1a) that secures the rear outboard seat belt (1b) lower anchor near the base of the C-pillar.

3. Remove the trim from the quarter inner panel. Refer to PANEL, QUARTER TRIM, REMOVAL AND INSTALLATION .

Fig 2: Remove/Install Rear Outboard Seat Belt & Retractor



Courtesy of CHRYSLER GROUP, LLC

4. Remove the screw (1) that secures the rear outboard seat belt turning loop near the top of the C-pillar.
5. Remove the seat belt turning loop from the upper C-pillar.

6. If equipped, disconnect the body wire harness connector (2) for the retractor tensioner from the initiator.
7. Remove the screw (3a) that secures the retractor (3b) to the quarter inner panel.
8. Remove the rear outboard seat belt and retractor from the quarter inner panel as a unit.

RETRACTOR, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION - FRONT SEAT

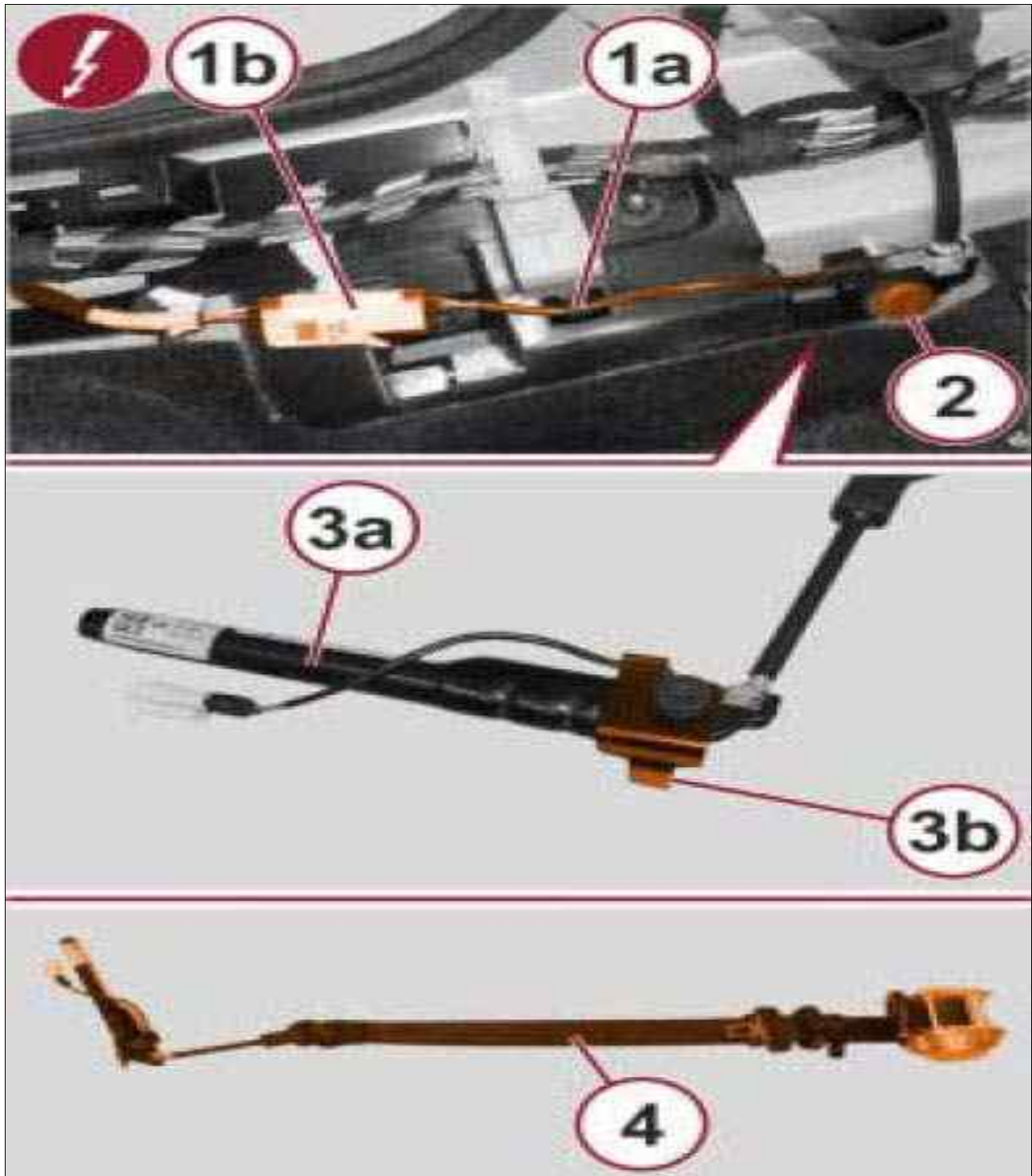
WARNING:

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 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 Chrysler Mopar® Parts Catalog.

Fig 1: Remove/Install Retractor & Anchor Tensioner



Courtesy of CHRYSLER GROUP, LLC



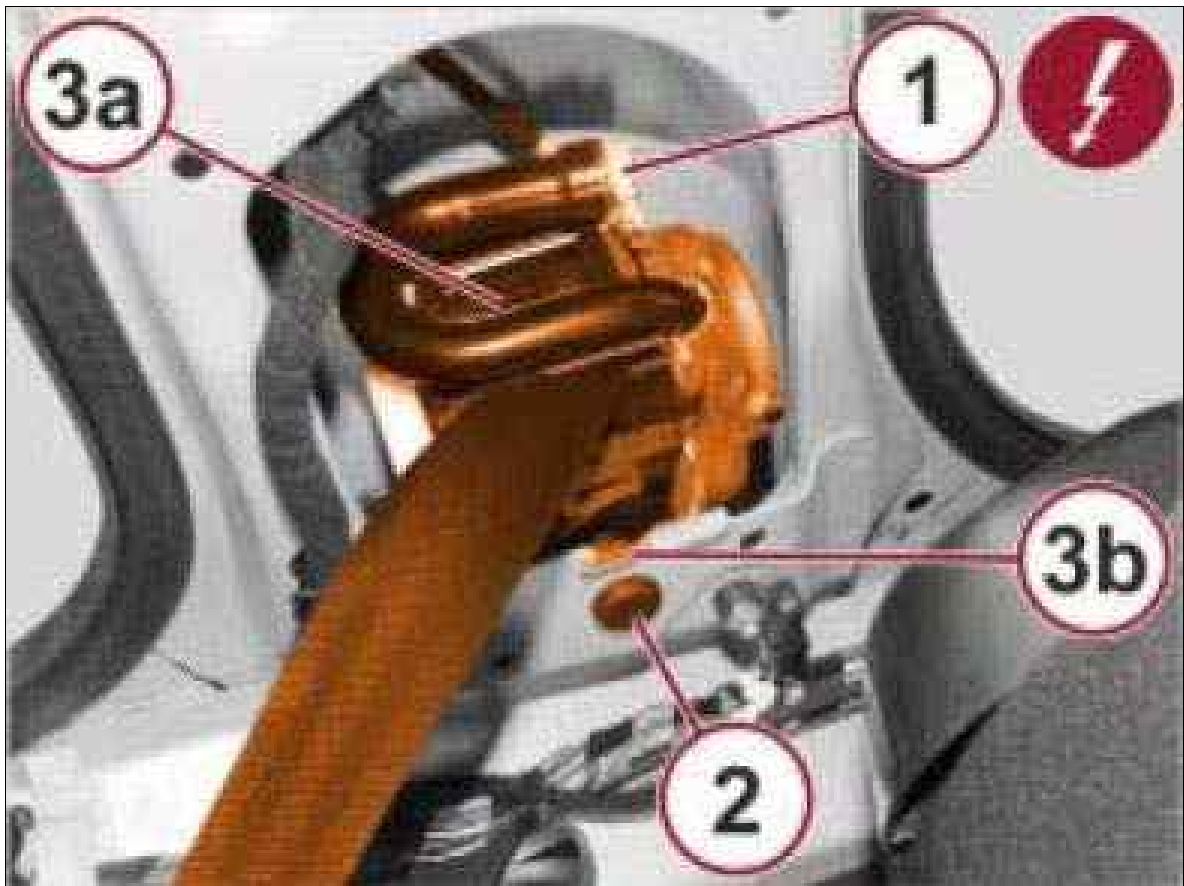
NOTE:

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

STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Position the front seat belt, retractor and anchor tensioner (4) into the vehicle as a unit.
2. Engage the locating tab (3b) of the anchor tensioner (3a) with the inner sill.
3. Install and tighten the screw (2) that secures the anchor tensioner to the inner sill. Tighten the screw to the proper SPECIFICATIONS .
4. Connect the body wire harness connector (1b) to the anchor tensioner pigtail wire then engage the wire with the retainer (1a).

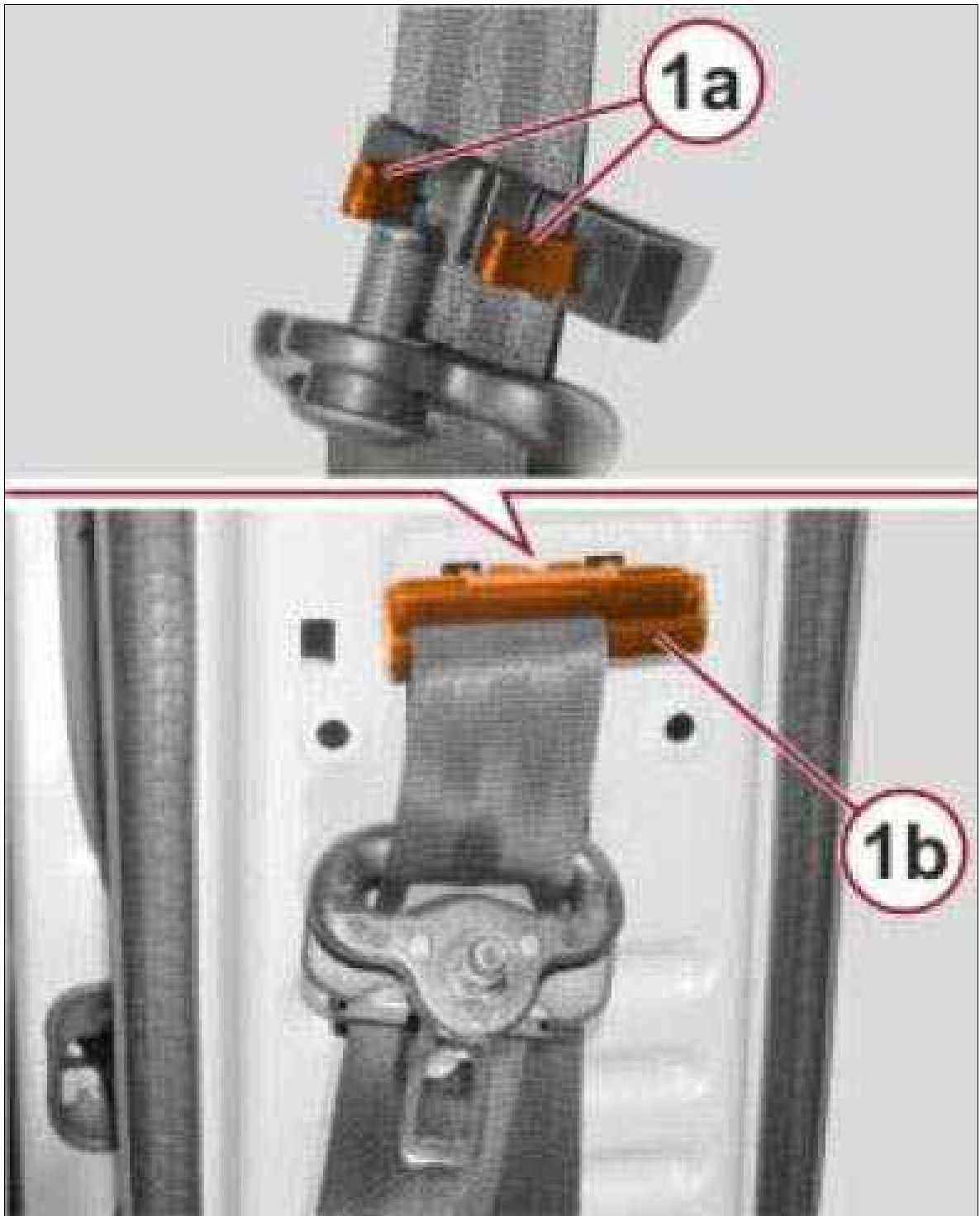
Fig 2: Remove/Install Retractor Tensioner



Courtesy of CHRYSLER GROUP, LLC

5. Position the seat belt retractor unit (3a) to the B-pillar by engaging the T-tab (3b) on the retractor bracket into the notch in the inner B-pillar.
6. Install and tighten the screw (2) that secures the retractor bracket to the base of the inner B-pillar. Tighten the screw to the proper SPECIFICATIONS .
7. Connect the body wire harness connector (1) to the initiator for the retractor tensioner.

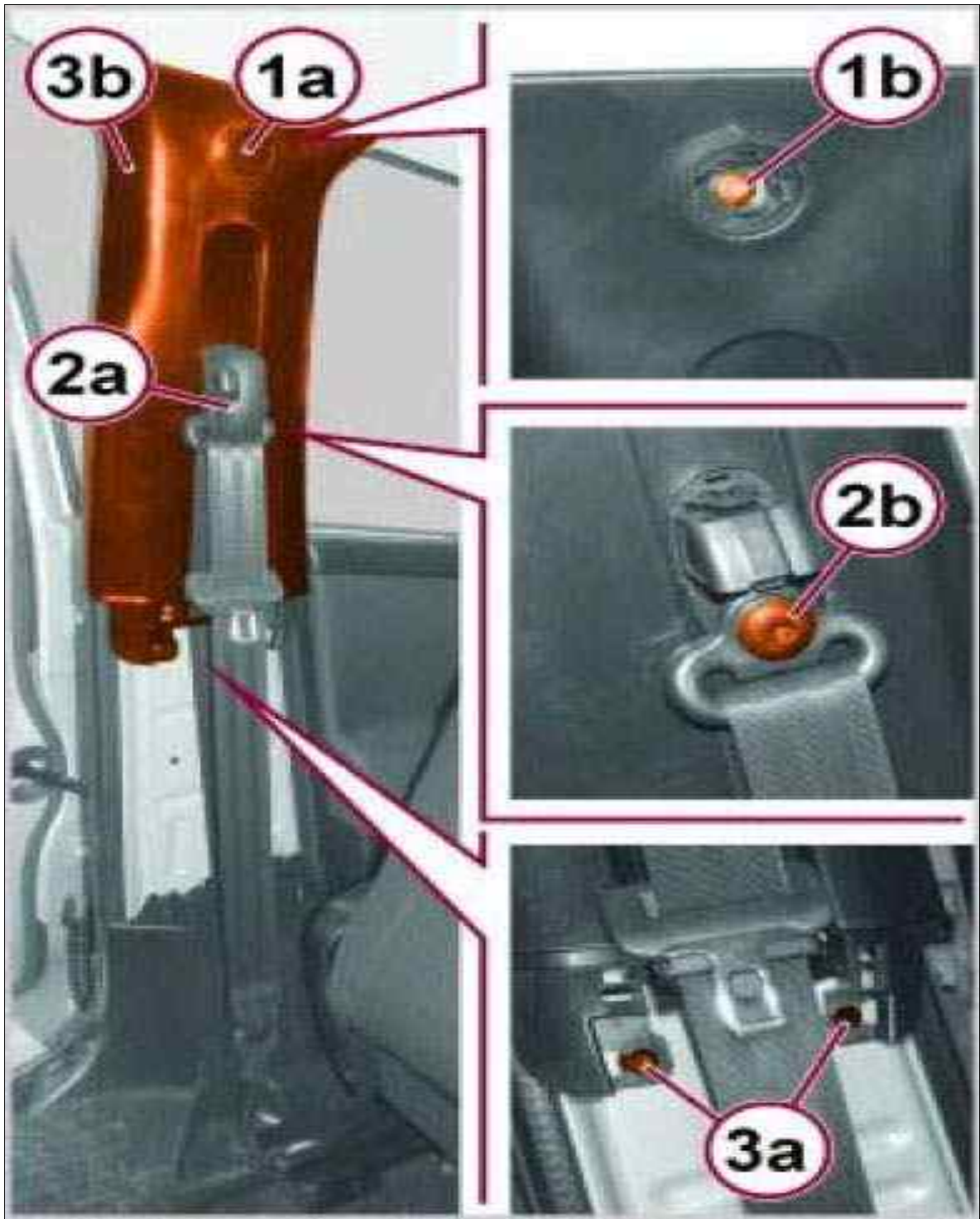
Fig 3: Seat Belt Web Guide & Retainers



Courtesy of CHRYSLER GROUP, LLC

8. Engage the retainers (1a) that secure the seat belt web guide (1b) to the inner B-pillar. Be certain that the seat belt webbing between the retractor and the web guide is not twisted.

Fig 4: Remove/Install B-Pillar



Courtesy of CHRYSLER GROUP, LLC

9. Install the trim onto the inner sill. Refer to PLATE, SCUFF, LIFTGATE SILL, REMOVAL AND INSTALLATION .
10. Install the trim onto the inside of the B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .

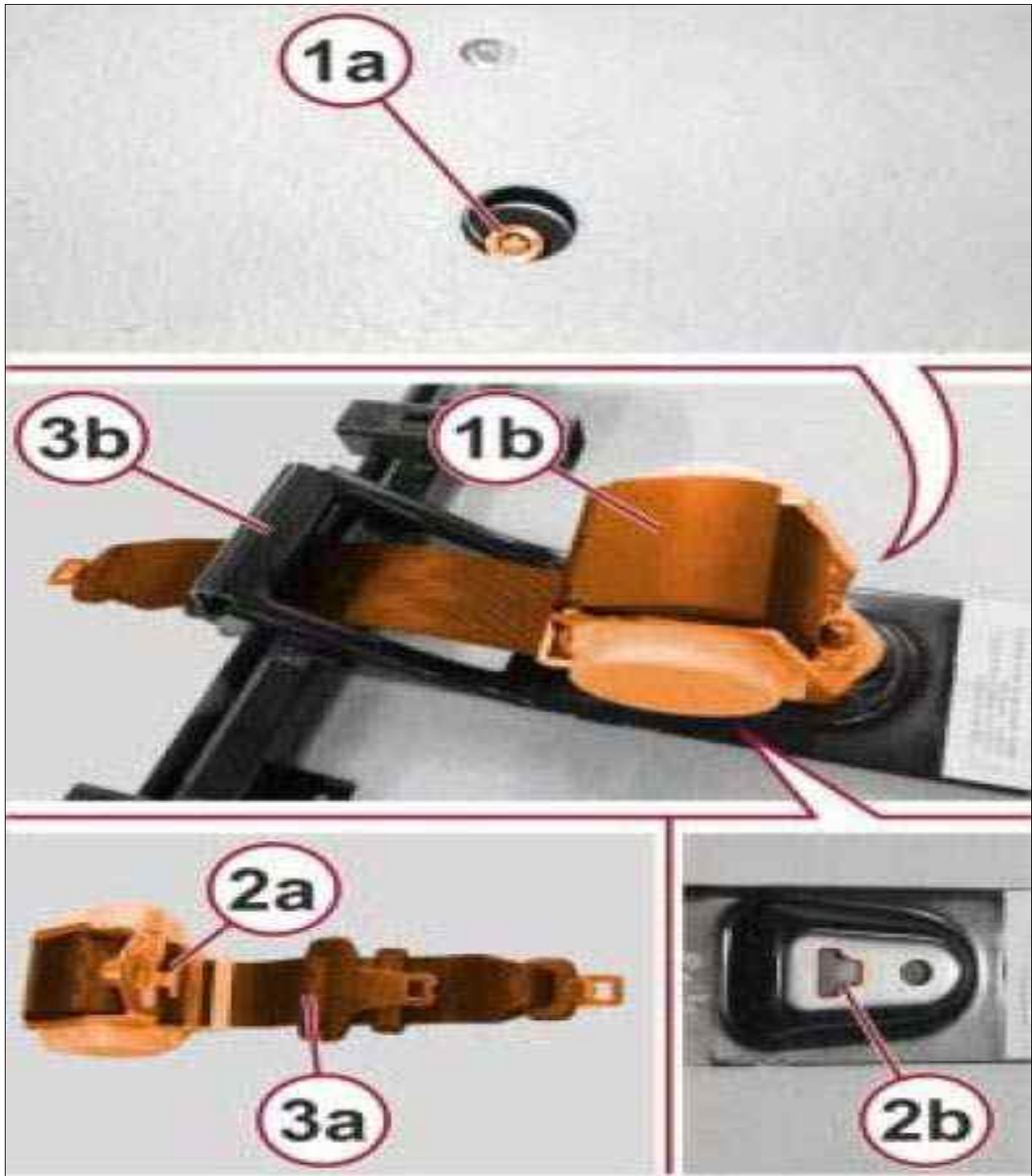
11. Position the front seat belt turning loop onto the height adjuster. Be certain that the seat belt webbing between the web guide and the turning loop is not twisted.
12. Install and tighten the screw (2b) that secures the turning loop to the height adjuster. Tighten the screw to the proper SPECIFICATIONS .
13. Install the trim cover (2a) over the top of the seat belt turning loop height adjuster.
14. Be certain that the seat belt webbing between the turning loop and the lower anchor buckle is not twisted.
15. 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 STANDARD PROCEDURE .

RETRACTOR, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION - REAR SEAT CENTER

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 Chrysler Mopar® Parts Catalog. Failure to follow these instructions may result in possible serious or fatal injury.

Fig 1: Remove/Install Rear Center Seat Belt & Retractor



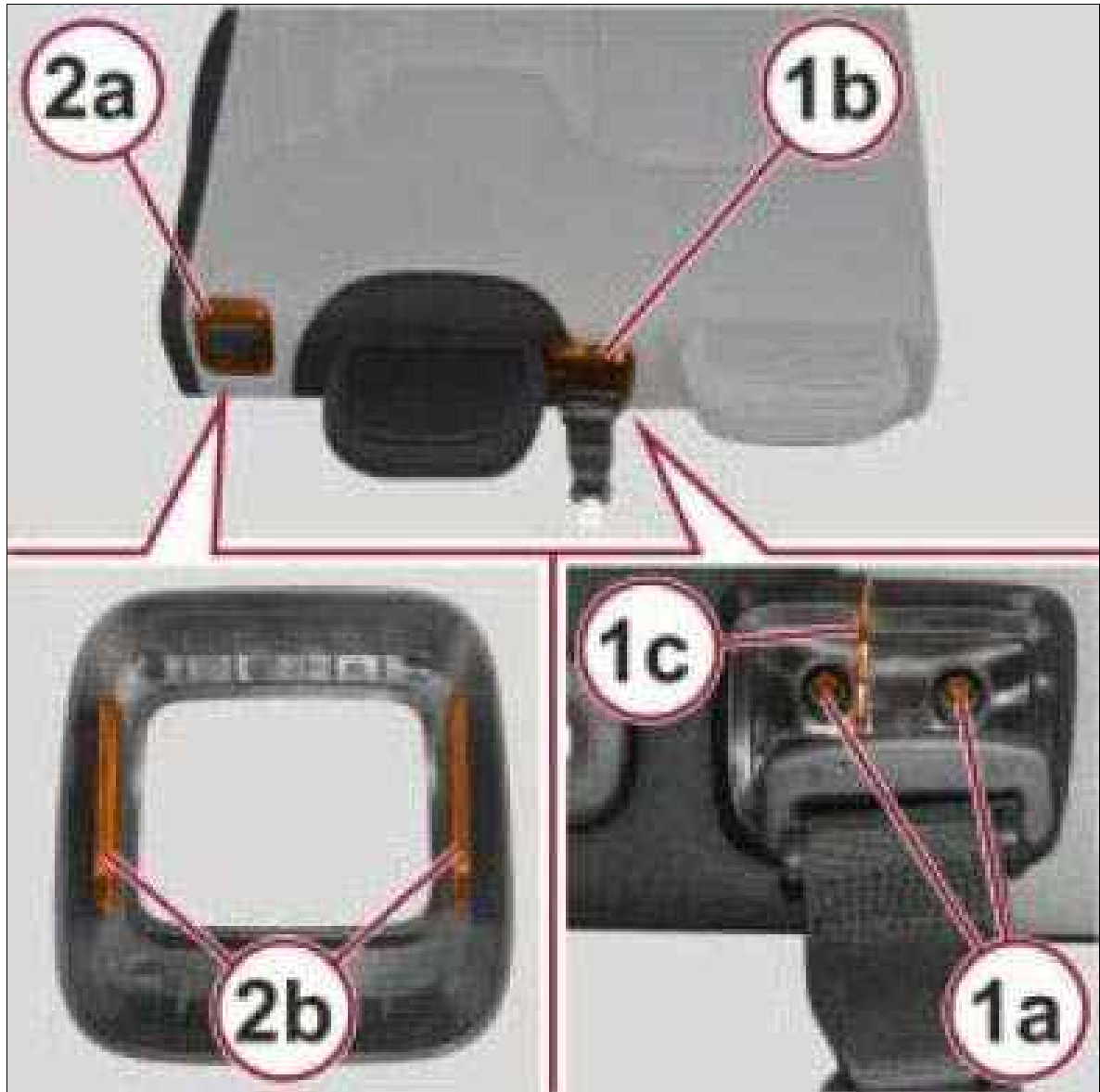
Courtesy of CHRYSLER GROUP, LLC

1. Position the rear center seat belt and retractor (1b) to the bracket from the front of the left rear seat back frame as a unit.
2. Engage the T-tab (2a) of the retractor bracket with the keyed hole (2b) in the seat back bracket.
3. Route the seat belt webbing and latch plates (3a) through the guide (3b) 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.

4. Working through the access hole on the back of the seat back, install and tighten the screw (1a) that secures the retractor to the frame. Tighten the screw to the proper SPECIFICATIONS .
5. Reinstall the trim cover and foam onto the left rear seat back frame. Refer to COVER, SEAT BACK, FRONT, REMOVAL AND INSTALLATION .

Fig 2: Remove/Install Rear Seat Back



Courtesy of CHRYSLER GROUP, LLC

6. Reinstall the flange (1b) by inserting the seat belt webbing through the slit (1c) of the flange.
7. Position the flange onto the seat back. Be certain the seat belt webbing is not twisted.
8. Install and tighten the two screws (1a) that secure the flange to the seat back frame. Tighten the screws securely.

9. Reinstall the left rear seat back into the vehicle. Refer to SEAT BACK, FRONT, REMOVAL AND INSTALLATION and SEAT BACK, REAR, REMOVAL AND INSTALLATION .

RETRACTOR, SEAT BELT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION - REAR OUTBOARD

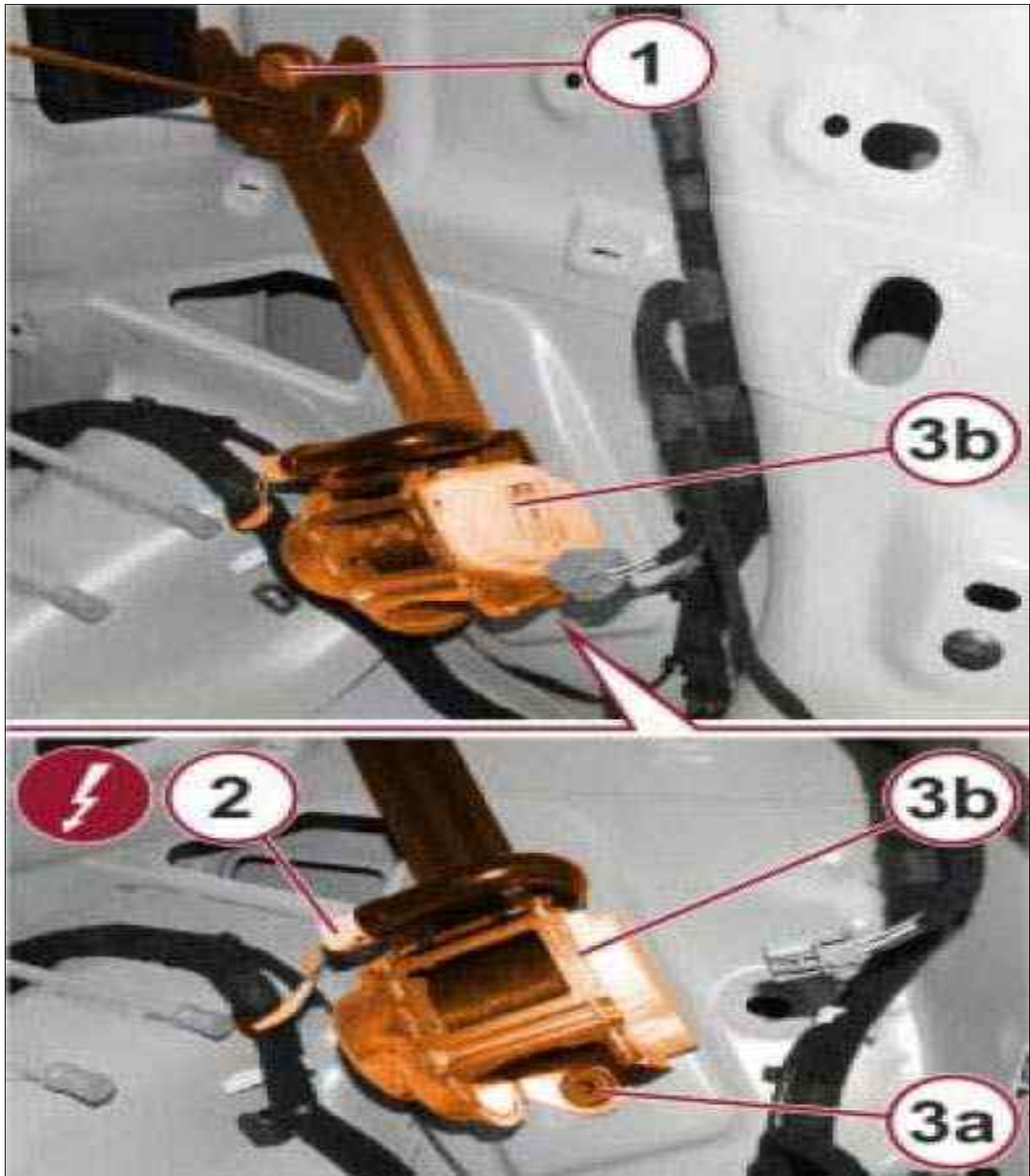
WARNING:

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 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 Chrysler Mopar® Parts Catalog.

Fig 1: Remove/Install Rear Outboard Seat Belt & Retractor



Courtesy of CHRYSLER GROUP, LLC



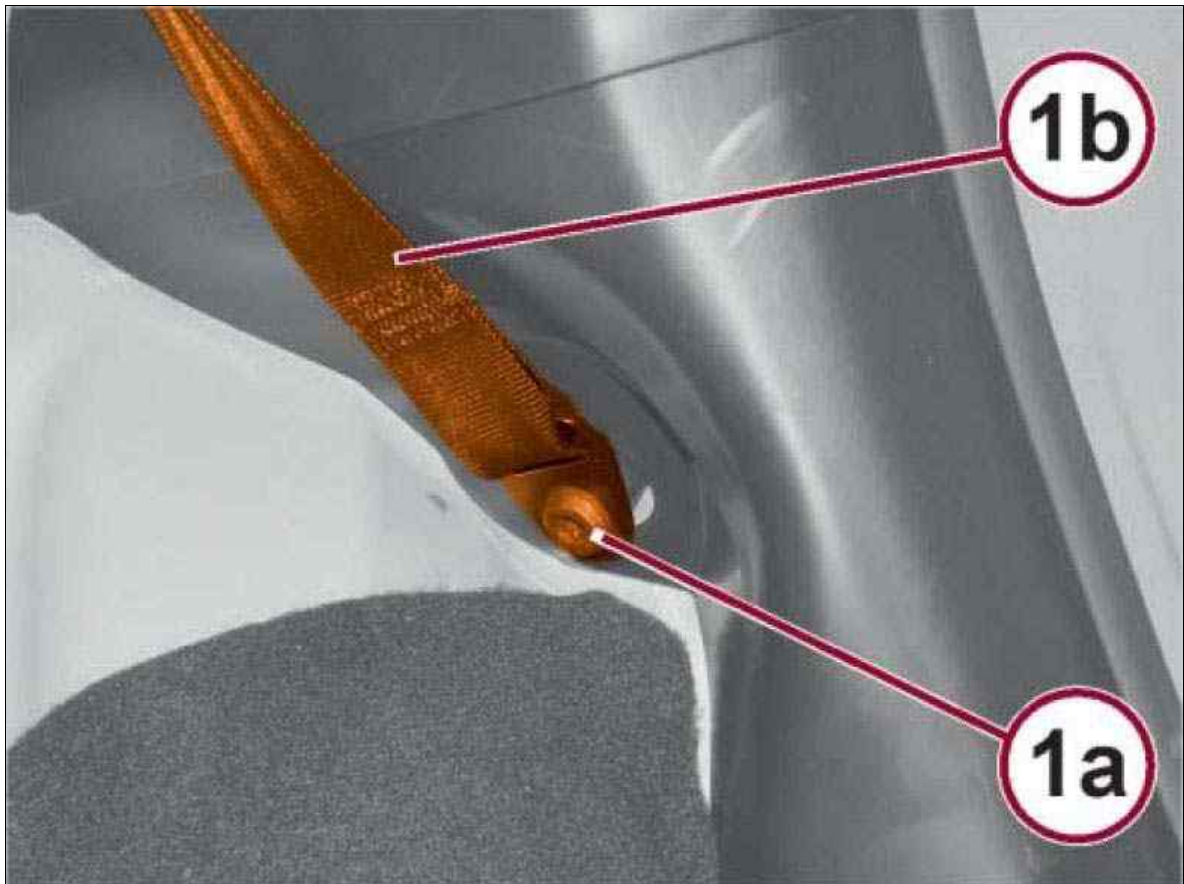
NOTE:

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 STANDARD PROCEDURE . 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 STANDARD PROCEDURE .

1. Position the rear outboard seat belt and retractor (3b) to the quarter inner panel as a unit.
2. Install and tighten the screw (3a) that secures the retractor to the quarter inner panel. Tighten the screw to the proper SPECIFICATIONS .
3. If equipped, connect the body wire harness connector (2) for the retractor tensioner to the initiator.
4. Position the seat belt turning loop to the upper C-pillar. Be certain the seat belt webbing between the retractor and the turning loop is not twisted.
5. Install and tighten the screw (1) that secures the turning loop to the upper C-pillar. Tighten the screw to the proper SPECIFICATIONS .
6. Install the trim onto the quarter inner panel. Refer to PANEL, QUARTER TRIM, REMOVAL AND INSTALLATION .

Fig 2: Rear Outboard Seat Belt & Screw



Courtesy of CHRYSLER GROUP, LLC

7. Position the rear seat belt (1b) lower anchor near the base of the C-pillar. Be certain the seat belt webbing between the turning loop and the lower anchor is not twisted.

8. Install and tighten the screw (1a) that secures the lower anchor near the base of the C-pillar. Tighten the screw to the proper SPECIFICATIONS .
9. 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 STANDARD PROCEDURE .

SENSOR, IMPACT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > IMPACT SENSORS

Remote or satellite impact sensors are mounted in various strategic locations of the vehicle. These sensors are mounted remotely from the impact sensor that is internal to the Occupant Restraint Controller (ORC). Sensors at the front of the vehicle provide an additional logic input for use by the ORC to control the front airbags, the seat belt pretensioners and, if equipped, the driver Knee AirBag (KAB). Sensors on each side of the vehicle provide an additional logic input for use by the ORC to control the side curtain airbags, seat airbags and the seat belt pretensioners. Two types of sensors are used in this vehicle. They are the acceleration-type and the pressure-type, which are described elsewhere within this service information.

Market-specific impact sensors:

EMEA version

- 4 impact sensors (2 accelerometer sensors, 2 pressure sensors)
- 1 front impact sensor ECS (Early Crash Sensor)

NAFTA version

- 4 impact sensors (2 accelerometer sensors, 2 pressure sensors)
- 2 front impact sensors ECS (Early Crash Sensor)

Fig 1: Front Impact Sensor



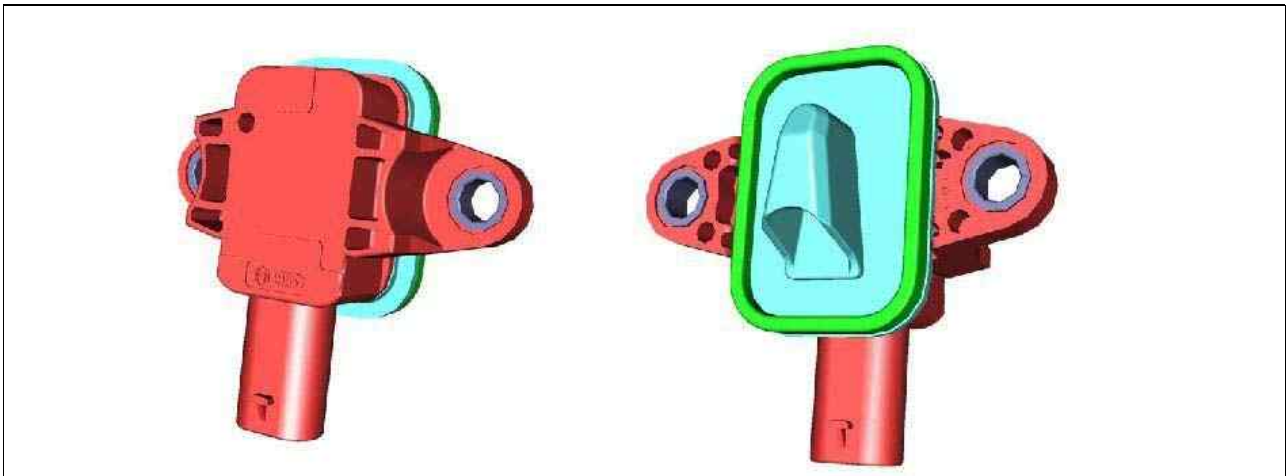
Courtesy of CHRYSLER GROUP, LLC

Front impact sensor

The front impact sensors detect frontal impacts and support the driver/passenger airbags and pretensioners. The sensors contain accelerometers that measure the rate of vehicle deceleration in the event of an impact. The sensors are located inside the front crossmember.

In head-on collisions, the impact sensor in the ORC acts as the primary sensor and the front sensors provide confirmation of the event. In angled or offset front impacts, the front sensors act as the primary sensors and the ORC sensors provide confirmation of the event.

Fig 2: Side Pressure & Impact Sensors



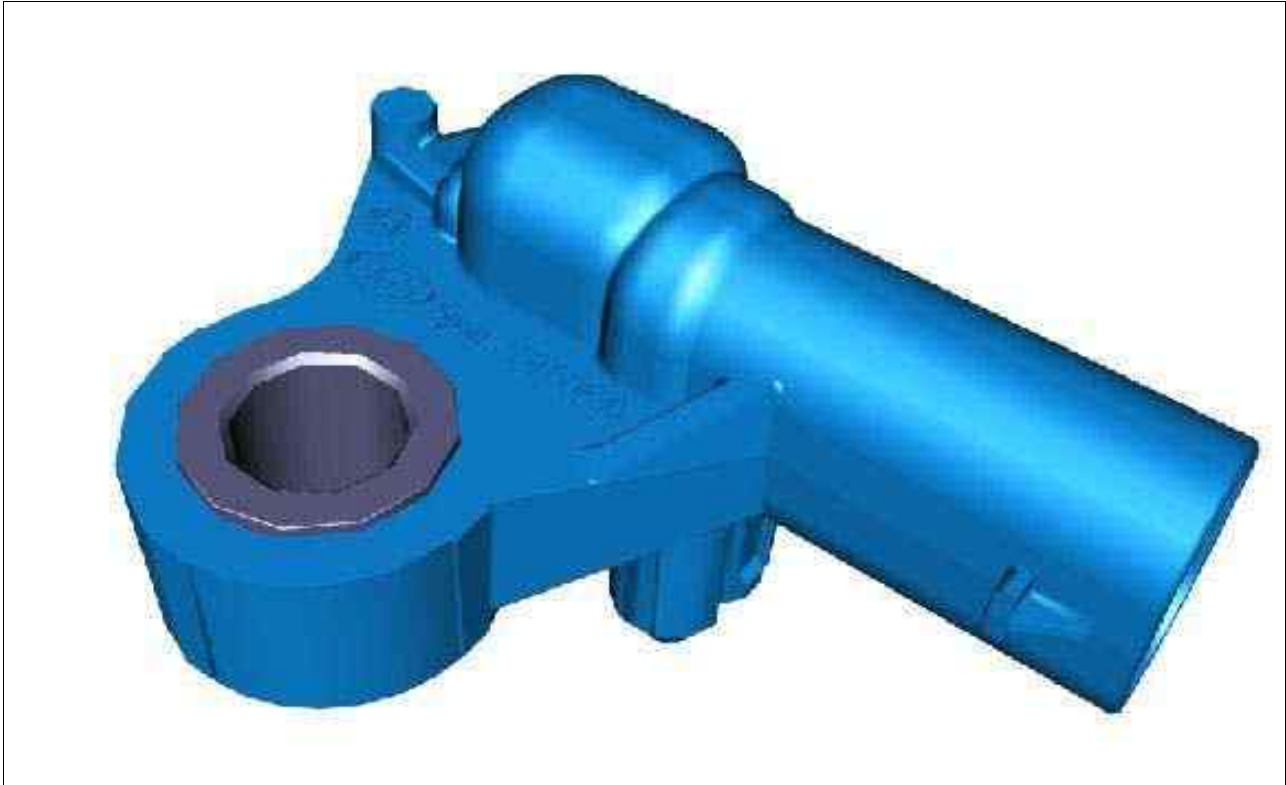
Courtesy of CHRYSLER GROUP, LLC

Side pressure and impact sensors

One pressure sensor is located in each of the front doors to protect front row passengers in the event of side crashes.

The pressure sensors can detect a sudden change in air pressure within the door which is consistent with a direct impact to the door. The sensor signal alone cannot command the explosion of the airbag. The ORC or a second sensor must detect a crash event simultaneously to deploy the side airbags.

Fig 3: B-pillar Side Impact Sensor



Courtesy of CHRYSLER GROUP, LLC

B-pillar side impact sensor

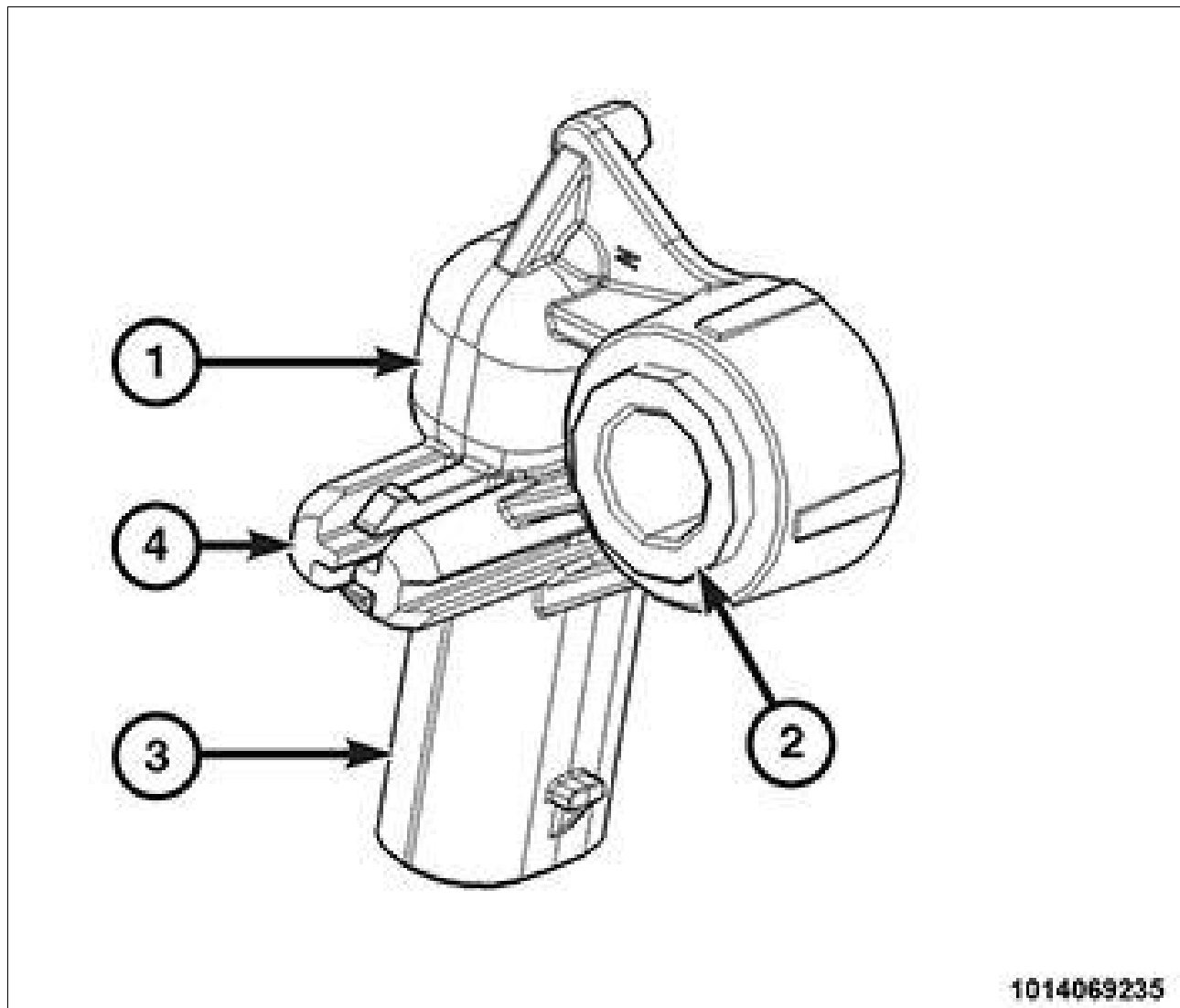
Two accelerometric impact sensors are used on each side of the vehicle to detect a side impact and support the side curtain airbags, the seat-mounted thorax airbags, and the seat belt pretensioners.

An accelerometer crash sensor for each side is located behind the cover at the bottom of the B-pillar. All sensors in the passive restraints system relay information to the ORC using the Peripheral Sensor Interface 5 (PSI5) network architecture.

During side impacts, the first sensor detects the impact and the other sensors confirm the event.

SENSOR, IMPACT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > IMPACT SENSORS > ACCELERATION TYPE

Fig 1: Remote Or Satellite Acceleration-Type Impact Sensors



Courtesy of CHRYSLER GROUP, LLC

Remote or satellite acceleration-type impact sensors (1) are mounted in various locations in 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, the seat belt pretensioners and, if equipped, the driver Knee AirBag (KAB). Sensors on each side of the vehicle provide an additional logic input for use by the ORC to control the side curtain airbags, the seat belt tensioners and the seat (also known as pelvic and thoracic) airbags.

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.

In vehicles manufactured for Europe-Middle East-Africa (EMEA) markets a front sensor is located on the back of the lower horizontal member of the radiator support near the vehicle center line. In vehicles manufactured for North America Free Trade Agreement (NAFTA) markets a front sensor is located on the back of each vertical member of the radiator support below the inboard side of the headlamp housing. Vehicles for all markets have a side acceleration-type sensor located near the base of each inner B-pillar, concealed behind the interior trim.

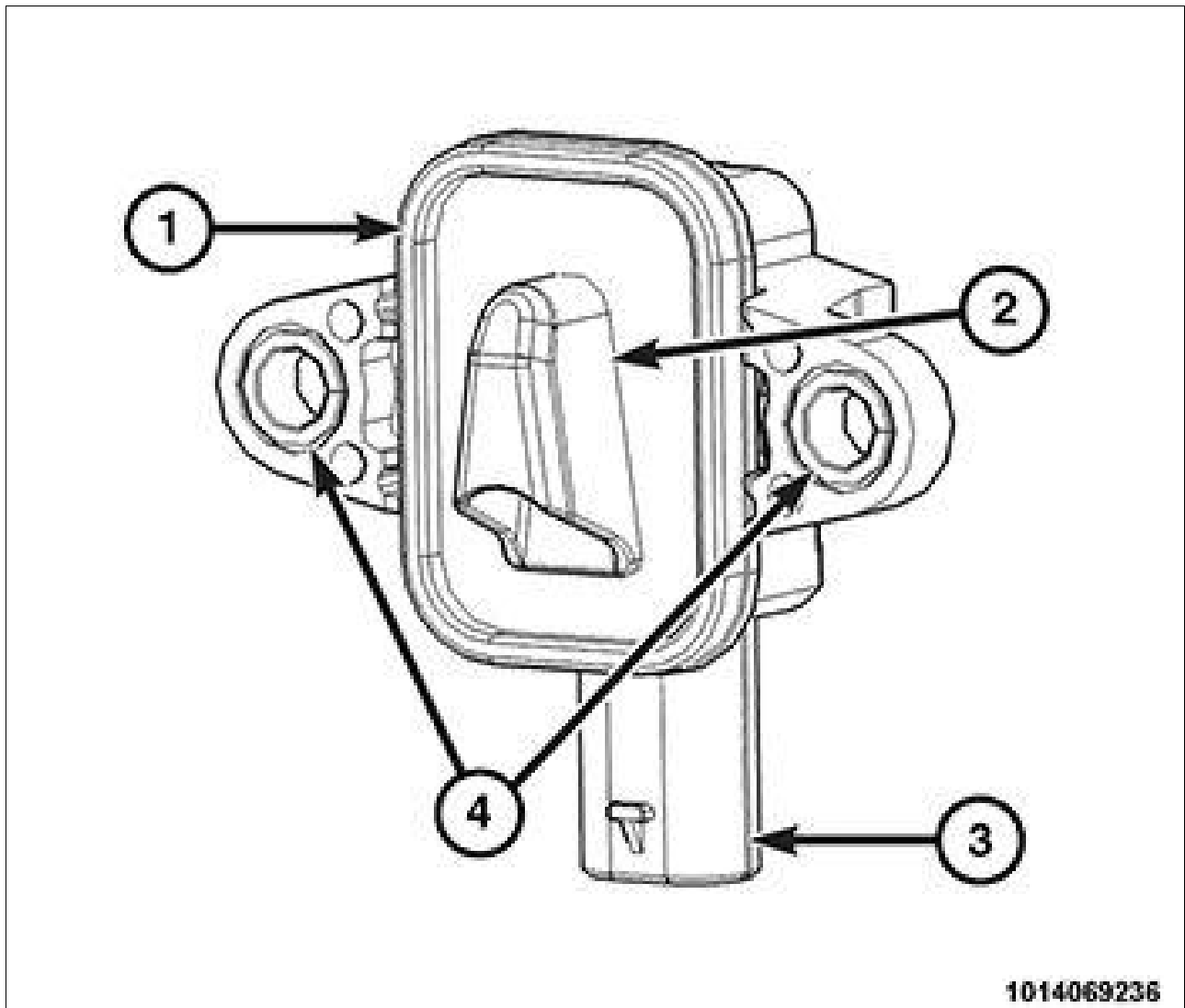
Each sensor housing has an integral connector receptacle (3), an integral locator and anti-rotation pin (4) and an integral mounting hole with a metal sleeve (2) to provide crush protection. A cavity in the center of the molded plastic impact sensor housing contains the electronic circuitry of the sensor 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 front impact sensors are each connected to the vehicle electrical system through dedicated take outs and connectors of the headlamp and 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.

SENSOR, IMPACT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > IMPACT SENSORS > PRESSURE TYPE

Fig 1: Pressure-Type Front Door Side Impact Sensors



Two pressure-type front door side impact sensors (1) are used on this vehicle, one each for the left and right sides of the vehicle. These sensors are mounted remotely from the impact sensor that is internal to the ORC. Each side sensor is secured with two screws and is sealed by a resilient gasket to a front door hardware module carrier. The sensors are concealed behind the front door trim panel within the passenger compartment.

The right and left front door side impact sensors are identical in construction and calibration. The impact sensor housing has an integral connector receptacle (3), two integral mounting tabs (4) and an integral hood-like water shield (2). The water shield extends through a hole in the hardware module carrier into the interior of the door cavity and protects the sensor orifice from contamination. 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 the pressure sensor.

The housing cavity is filled with a potting material to seal and protect the internal electronic circuitry and components. The pressure-type side impact sensors are each connected to the vehicle electrical system through a dedicated take out and connector of the door wire harness.

These pressure-type door side impact sensors cannot be adjusted or repaired and, if damaged or ineffective, they must be replaced.

SENSOR, IMPACT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > IMPACT SENSORS

Two types of impact sensors are used in this vehicle. They are the acceleration-type and the pressure-type. Additional operational details of each of these sensor types is described in further detail below.

SENSOR, IMPACT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > IMPACT SENSORS > ACCELERATION-TYPE

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 Diagnostic Trouble Code (DTC) and controls the airbag indicator operation accordingly. The acceleration-type and pressure-type side impact sensors for each side of the vehicle are connected in series (daisy-chained) to the ORC. 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 hard wired circuits between the impact sensors and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the impact sensors or the electronic controls and communication between other modules and devices that provide some features of the Supplemental Restraint System (SRS). The most reliable, efficient and accurate means to diagnose the acceleration-type impact sensors or the electronic controls and communication related to impact sensor operation requires the use of a diagnostic scan tool. Refer to the appropriate

SENSOR, IMPACT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > IMPACT SENSORS > PRESSURE-TYPE

The pressure-type door side impact sensors recognize a side impact in the door area by monitoring changes in pressure within the door cavity. A sudden pressure wave is created as the door collapses during an impact event. 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 pressure-type and acceleration-type side impact sensors for each side of the vehicle are connected in series (daisy-chained) to the ORC. The impact sensors each 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 current in the sensor plus circuit.

The hard wired circuits between the pressure-type door side impact sensors and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the impact sensors or the electronic controls and communication between other modules and devices that provide features of the Supplemental Restraint System (SRS). The most reliable, efficient and accurate means to diagnose the pressure-type impact sensors or the electronic controls and communication related to impact sensor operation requires the use of a diagnostic scan tool. Refer to the appropriate Diagnostic & Testing article.

SENSOR, IMPACT > REMOVAL AND INSTALLATION > IMPACT SENSOR, FRONT > REMOVAL - FRONT - EMEA MARKETS

WARNING:

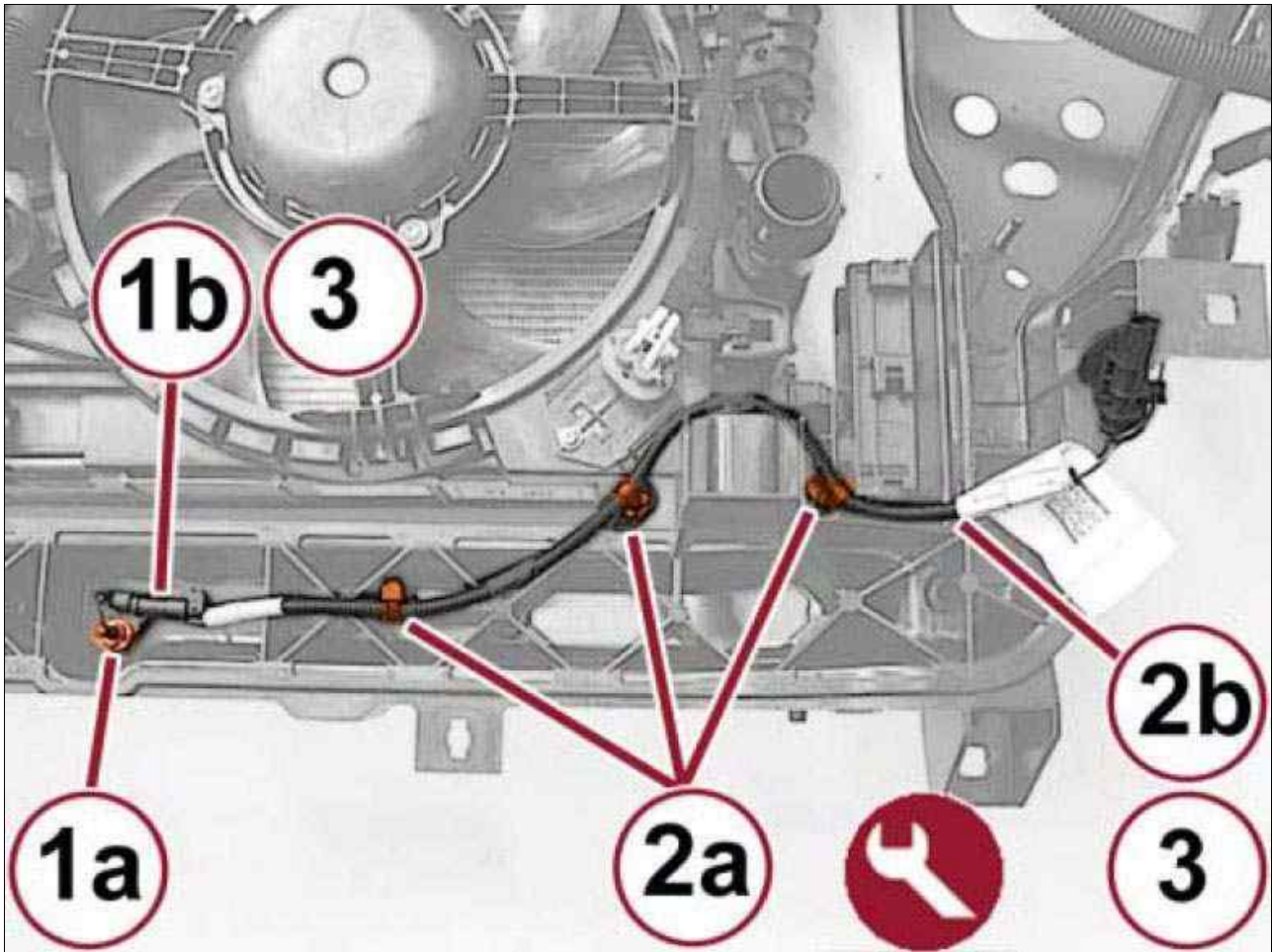
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the 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 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.

Fig 1: Remove/Install Front Impact Sensor (EMEA Markets)



Courtesy of CHRYSLER GROUP, LLC



NOTE:

The following procedure applies only to vehicles manufactured for the Europe-Middle East-Africa (EMEA) markets.

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Reach below and behind the center of the lower horizontal member of the radiator support to access and disconnect the headlamp and dash wire harness (2b) connector from the front impact sensor (1b) connector receptacle.

3. Remove the nut (1a) that secures the front impact sensor to the stud on the back of the radiator support.
4. Disengage the locating and anti-rotation pin of the sensor from the clearance hole in the radiator support.
5. Remove the front impact sensor from the vehicle.

SENSOR, IMPACT > REMOVAL AND INSTALLATION > IMPACT SENSOR, FRONT > REMOVAL - FRONT - NAFTA MARKETS

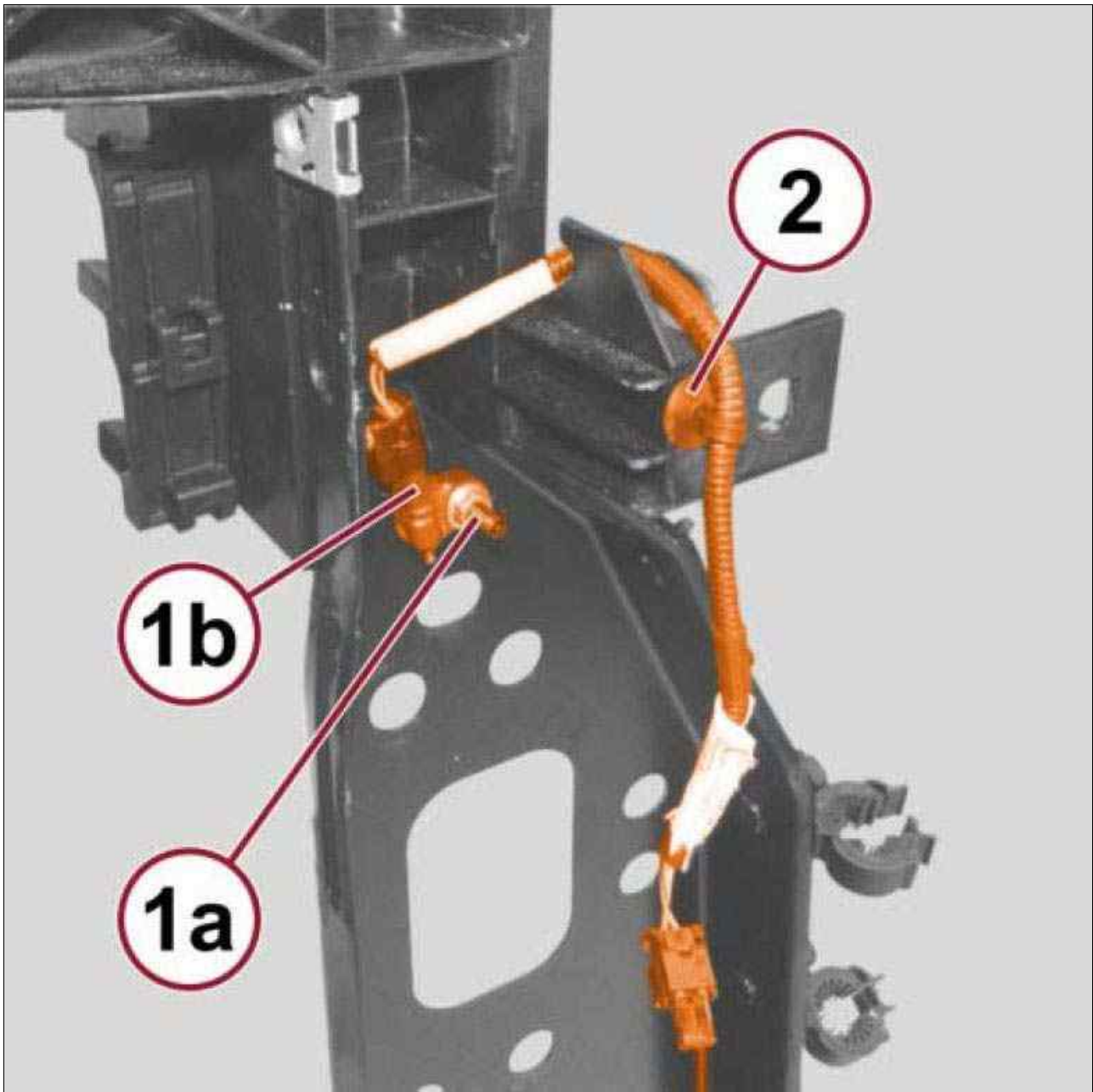
WARNING:

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 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 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.

Fig 1: Remove/Install Front Impact Sensor (NAFTA Markets)



Courtesy of CHRYSLER GROUP, LLC



NOTE:

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

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.

2. Reach behind and below the inboard side of the right or left headlamp on the vertical member of the radiator support to access and disconnect the headlamp and dash wire harness (2) connector from the front impact sensor (1b) connector receptacle.
3. Remove the nut that secures the front impact sensor to the stud (1a) on the back of the radiator support.
4. Disengage the locating and anti-rotation pin of the sensor from the clearance hole in the radiator support.
5. Remove the front impact sensor from the vehicle.

SENSOR, IMPACT > REMOVAL AND INSTALLATION > IMPACT SENSOR, FRONT > INSTALLATION - FRONT - EMEA MARKETS

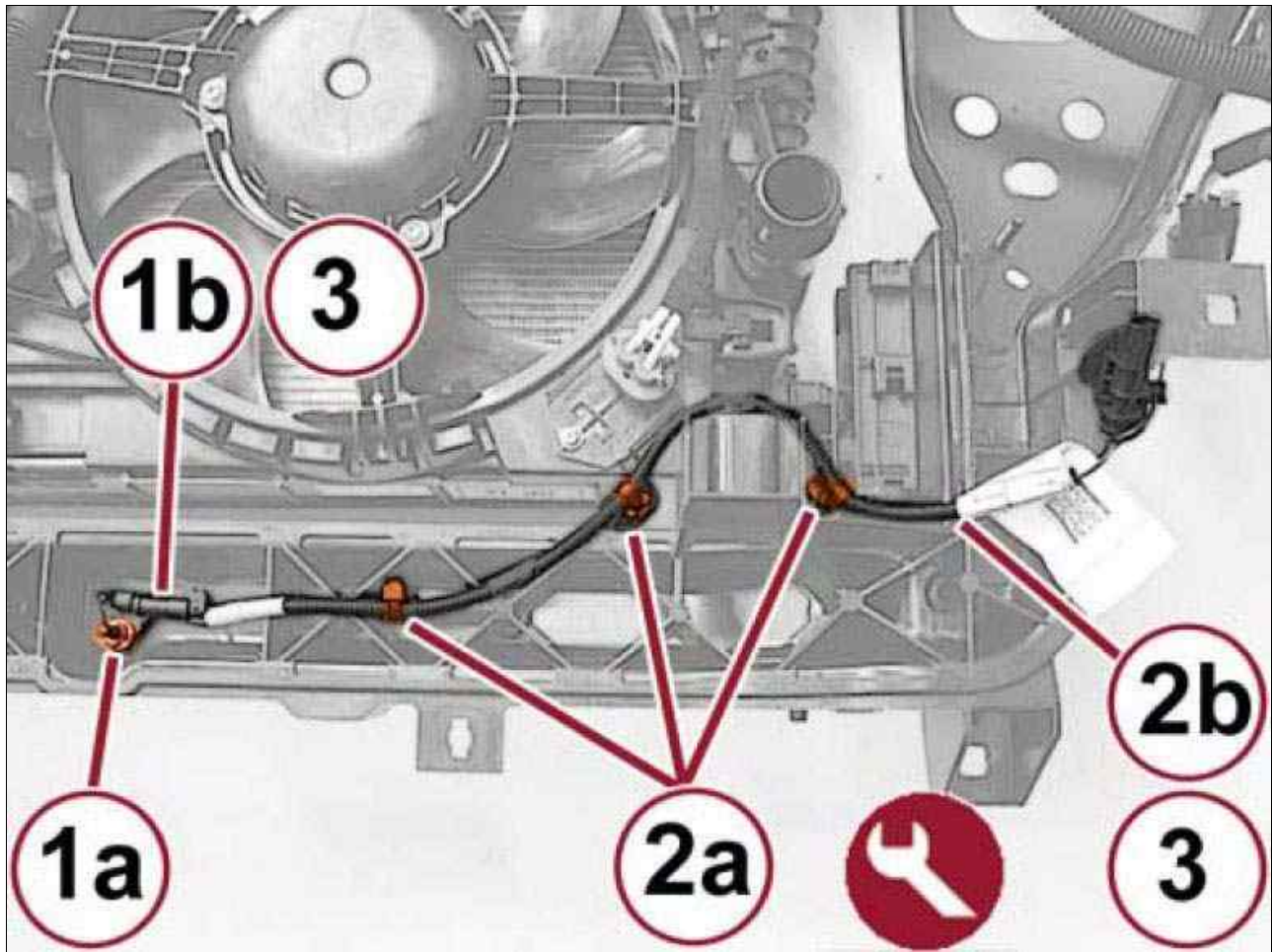
WARNING:

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 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 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 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 front SRS component deployment.

Fig 1: Remove/Install Front Impact Sensor (EMEA Markets)



Courtesy of CHRYSLER GROUP, LLC



NOTE:

The following procedure applies only to vehicles manufactured for the Europe-Middle East-Africa (EMEA) markets.

1. Reach below and behind the center of the lower horizontal member of the radiator support to position the front impact sensor (1b) onto the stud on the back of the support member. Be certain that the locating and anti-rotation pin on the back of the sensor is engaged in the clearance hole of the support member.
2. Install and tighten the nut (1a) that secures the sensor to the radiator support. Tighten the nut securely.
3. Connect the headlamp and dash wire harness (2b) connector to the sensor connector receptacle.
4. 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 STANDARD PROCEDURE .

SENSOR, IMPACT > REMOVAL AND INSTALLATION > IMPACT SENSOR, FRONT > INSTALLATION - FRONT - NAFTA MARKETS

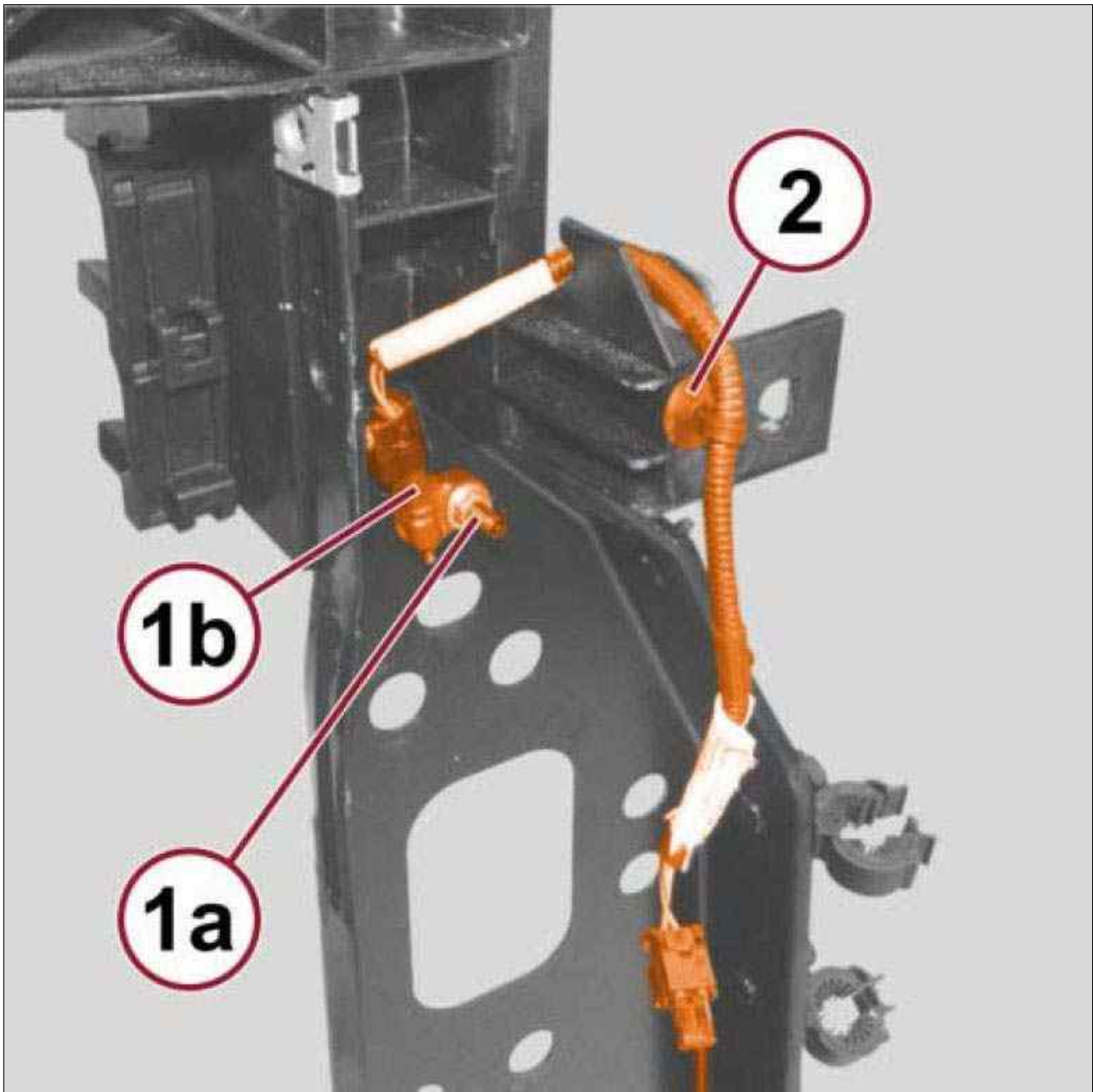
WARNING:

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 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 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 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 front SRS component deployment.

Fig 1: Remove/Install Front Impact Sensor (NAFTA Markets)



Courtesy of CHRYSLER GROUP, LLC



NOTE:

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

1. Reach behind and below the inboard side of the right or left headlamp on the vertical member of the radiator support to position the front impact sensor (1b) onto the stud on the back of the support member. Be certain that the locating and anti-rotation pin on the back of the sensor is engaged in the clearance hole of the support member.

2. Install and tighten the nut that secures the front impact sensor to the stud (1a) on the back of the radiator support. Tighten the nut securely.
3. Connect the headlamp and dash wire harness (2) connector to the sensor connector receptacle.
4. 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 STANDARD PROCEDURE .

SENSOR, IMPACT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION - SIDE IMPACT SENSOR > REMOVAL - SIDE - B-PILLAR

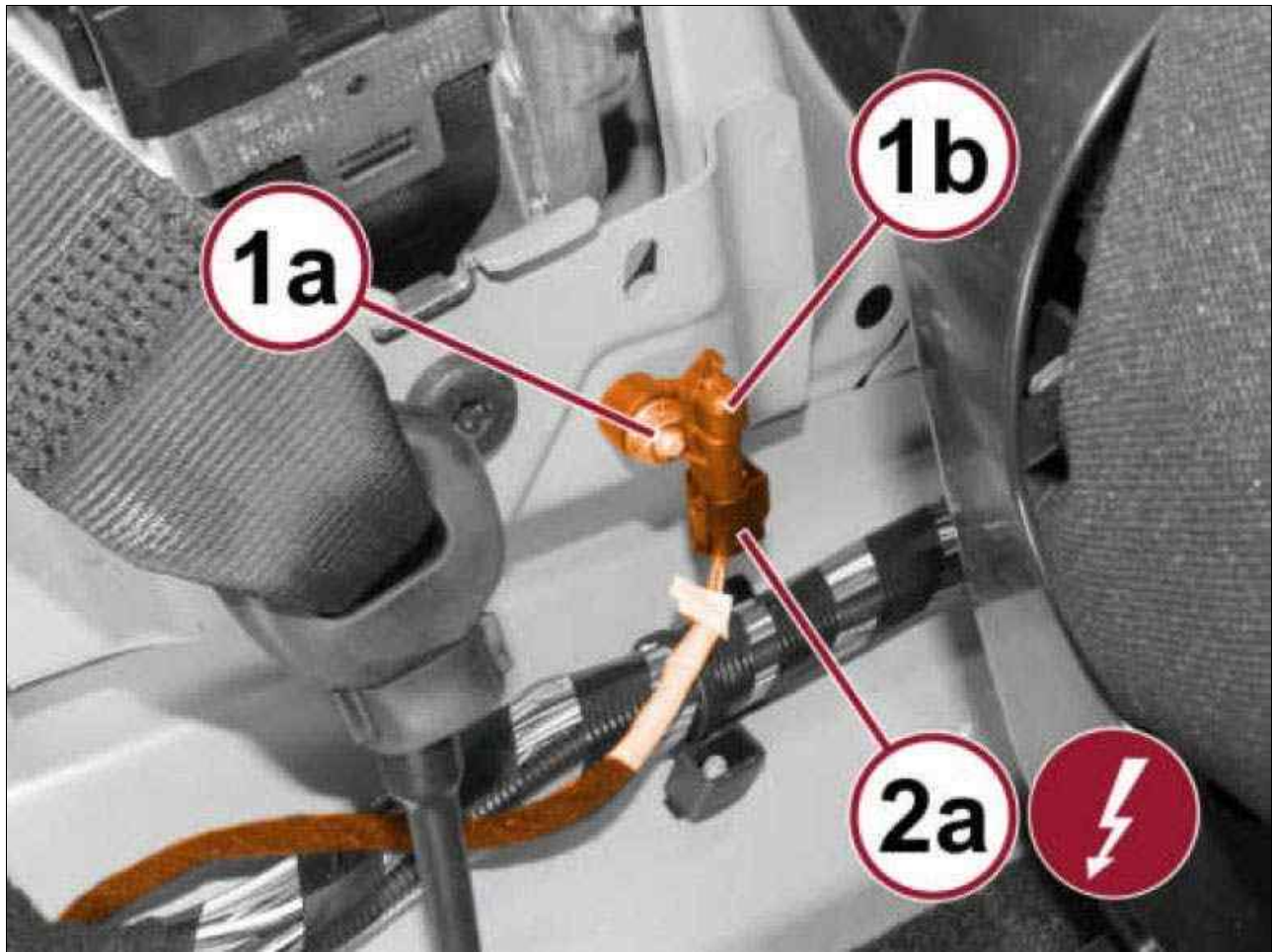
WARNING:

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 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.

Fig 1: Remove/Install B-Pillar Side Impact Sensor



Courtesy of CHRYSLER GROUP, LLC

1. Adjust the driver or passenger side front seat to its most forward position for easiest access to the B-pillar.
2. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
3. Remove the trim from the inside of the lower right or left B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .
4. Remove the trim from the inside of the lower right or left rear sill. Refer to PLATE, SCUFF, LIFTGATE SILL, REMOVAL AND INSTALLATION .
5. Remove the nut (1a) that secures the side impact sensor (1b) to the weld stud on the lower B-pillar.
6. Disconnect the body wire harness connector (2a) from the sensor connector receptacle.
7. Disengage the locating and anti-rotation pin of the sensor from the clearance hole in the inner B-pillar.

8. Remove the sensor from the weld stud on the B-pillar.

SENSOR, IMPACT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION - SIDE IMPACT SENSOR > REMOVAL - SIDE - FRONT DOOR

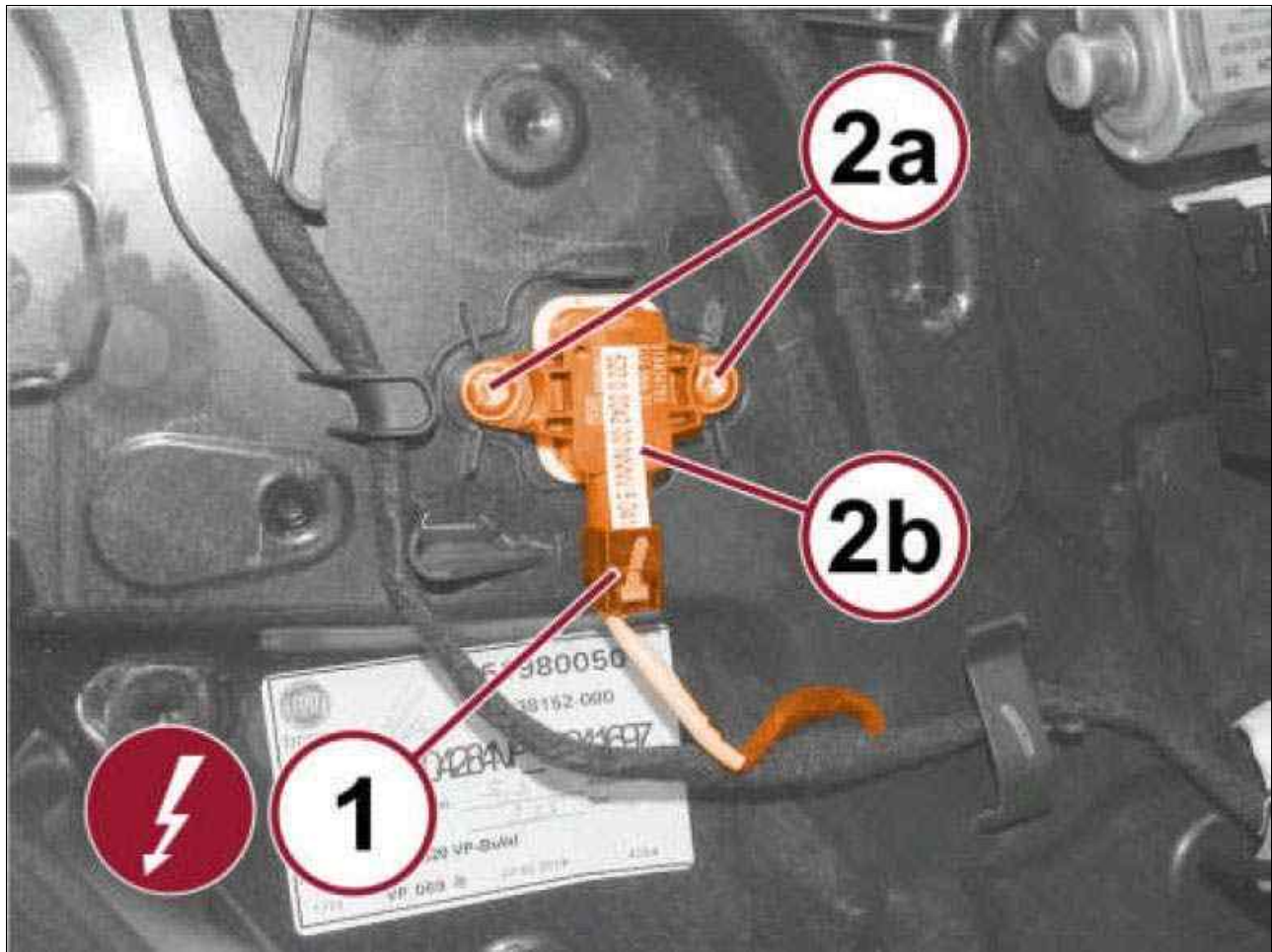
WARNING:

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 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.

Fig 1: Remove/Install Front Door Side Impact Sensor



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
2. Remove the trim panel from the inside of the front door. Refer to PANEL, DOOR TRIM, REMOVAL AND INSTALLATION .
3. Disconnect the door wire harness connector (1) from the sensor connector receptacle.
4. Remove the two screws (2a) that secure the impact sensor (2b) to the door hardware module carrier.
5. Remove the sensor from the door hardware module carrier.

**SENSOR, IMPACT > REMOVAL AND INSTALLATION > REMOVAL AND
INSTALLATION - SIDE IMPACT SENSOR > INSTALLATION - SIDE - B-PILLAR**

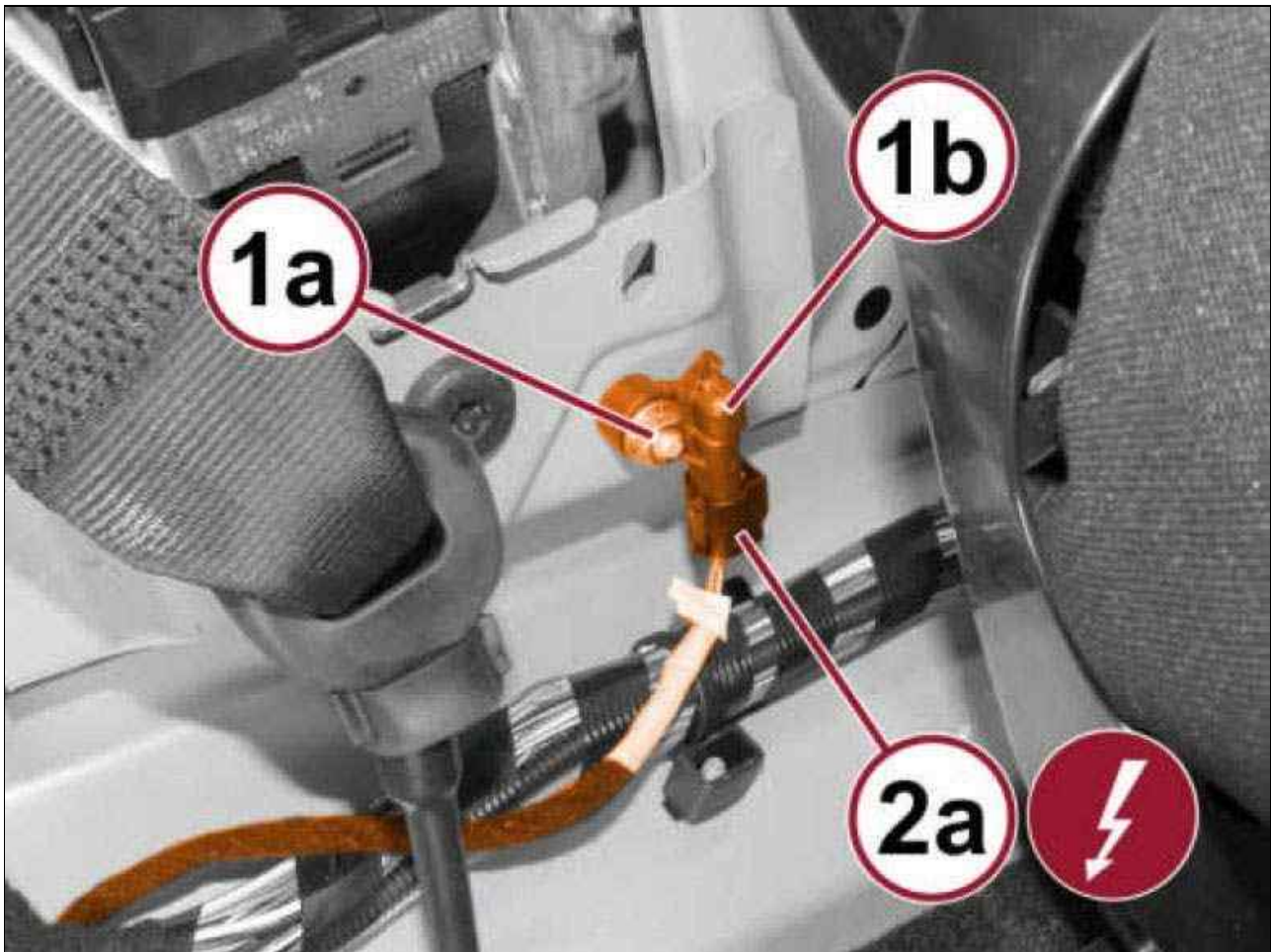
⚡ WARNING:

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 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.

Fig 1: Remove/Install B-Pillar Side Impact Sensor



Courtesy of CHRYSLER GROUP, LLC

1. Position the side impact sensor (1b) onto the weld stud on the inner 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. Connect the body wire harness connector (2a) to the side impact sensor connector receptacle.
3. Install and tighten the nut (1a) that secures the sensor to the stud on the inner B-pillar. Tighten the nut securely.
4. Install the trim onto the inside of the lower right or left sill. Refer to PLATE, SCUFF, LIFTGATE SILL, REMOVAL AND INSTALLATION .
5. Install the trim onto the inside of the B-pillar. Refer to PANEL, B-PILLAR TRIM, LOWER, REMOVAL AND INSTALLATION and PANEL, B-PILLAR TRIM, UPPER, REMOVAL AND INSTALLATION .
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 STANDARD PROCEDURE .

SENSOR, IMPACT > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION - SIDE IMPACT SENSOR > INSTALLATION - SIDE - FRONT DOOR

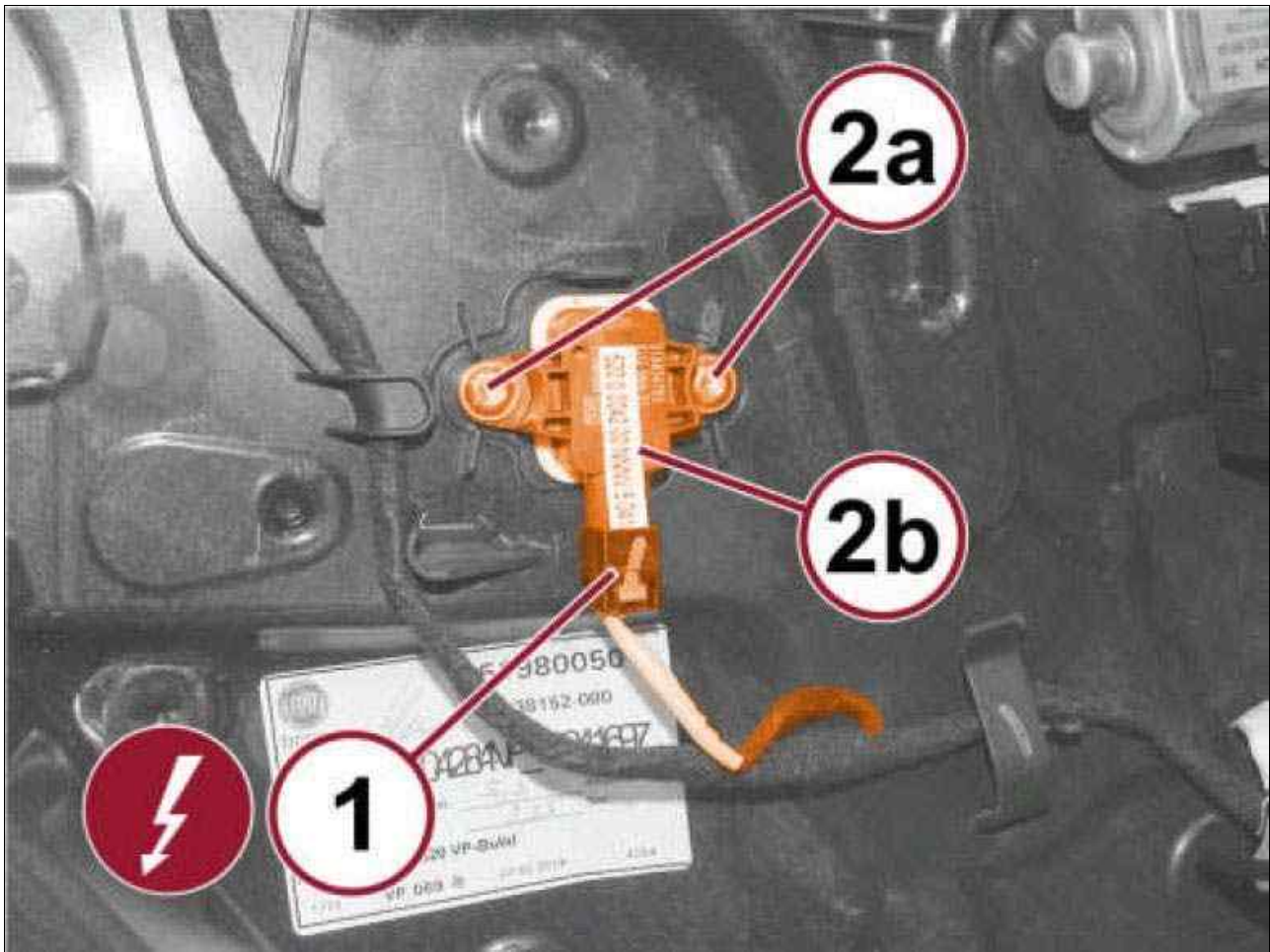
WARNING:

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 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.

Fig 1: Remove/Install Front Door Side Impact Sensor



Courtesy of CHRYSLER GROUP, LLC

1. Position the impact sensor (2b) to the front door hardware module carrier.
2. Install and tighten the two screws (2a) that secure the impact sensor to the carrier. Tighten the screws securely.
3. Connect the door wire harness connector (1) to the impact sensor connector receptacle.
4. Install the trim panel onto the inside of the front door. Refer to PANEL, DOOR TRIM, REMOVAL AND INSTALLATION .
5. 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 STANDARD PROCEDURE .

**SENSOR, OCCUPANT DETECTION > DESCRIPTION AND OPERATION >
DESCRIPTION AND OPERATION > DESCRIPTION**

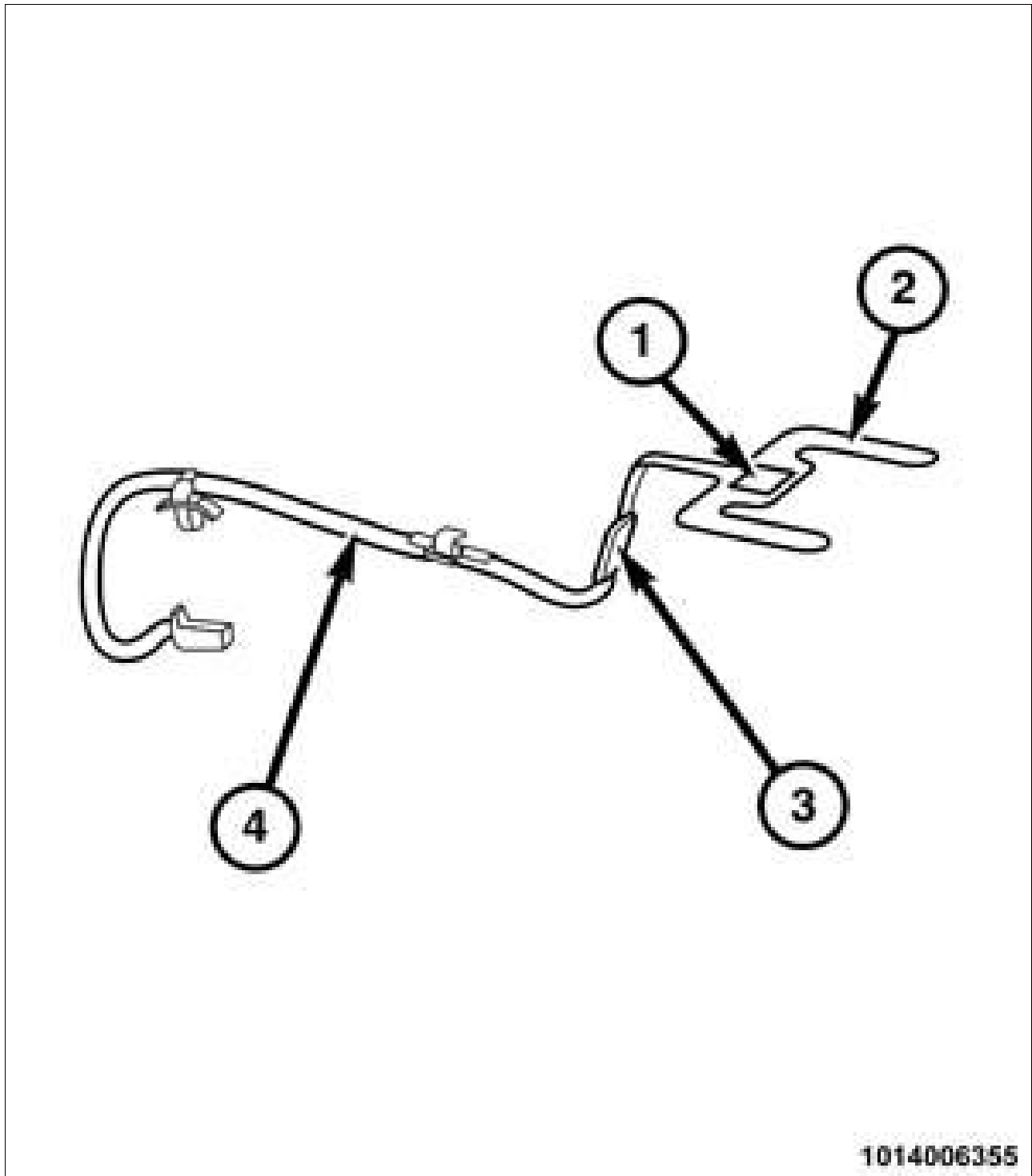
Fig 1: Occupant Detection Sensor (ODS) Seat



Courtesy of CHRYSLER GROUP, LLC

The Occupant Detection Sensor (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.

Fig 2: Occupant Detection Sensor (ODS)



Courtesy of CHRYSLER GROUP, LLC

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

**SENSOR, OCCUPANT DETECTION > DESCRIPTION AND OPERATION >
DESCRIPTION AND OPERATION > OPERATION**

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 Occupant Restraint Controller (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.

The ORC microcontroller continuously monitors all of the Supplemental Restraint System (SRS) electrical circuits to determine the system status and readiness. If the ORC detects a monitored system fault, it sets a Diagnostic Trouble Code (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 Controller Area Network (CAN) data bus to the Instrument Panel Cluster (IPC), which uses this information as an additional logic input used for control of the seat belt indicator and the passenger belt alert feature.

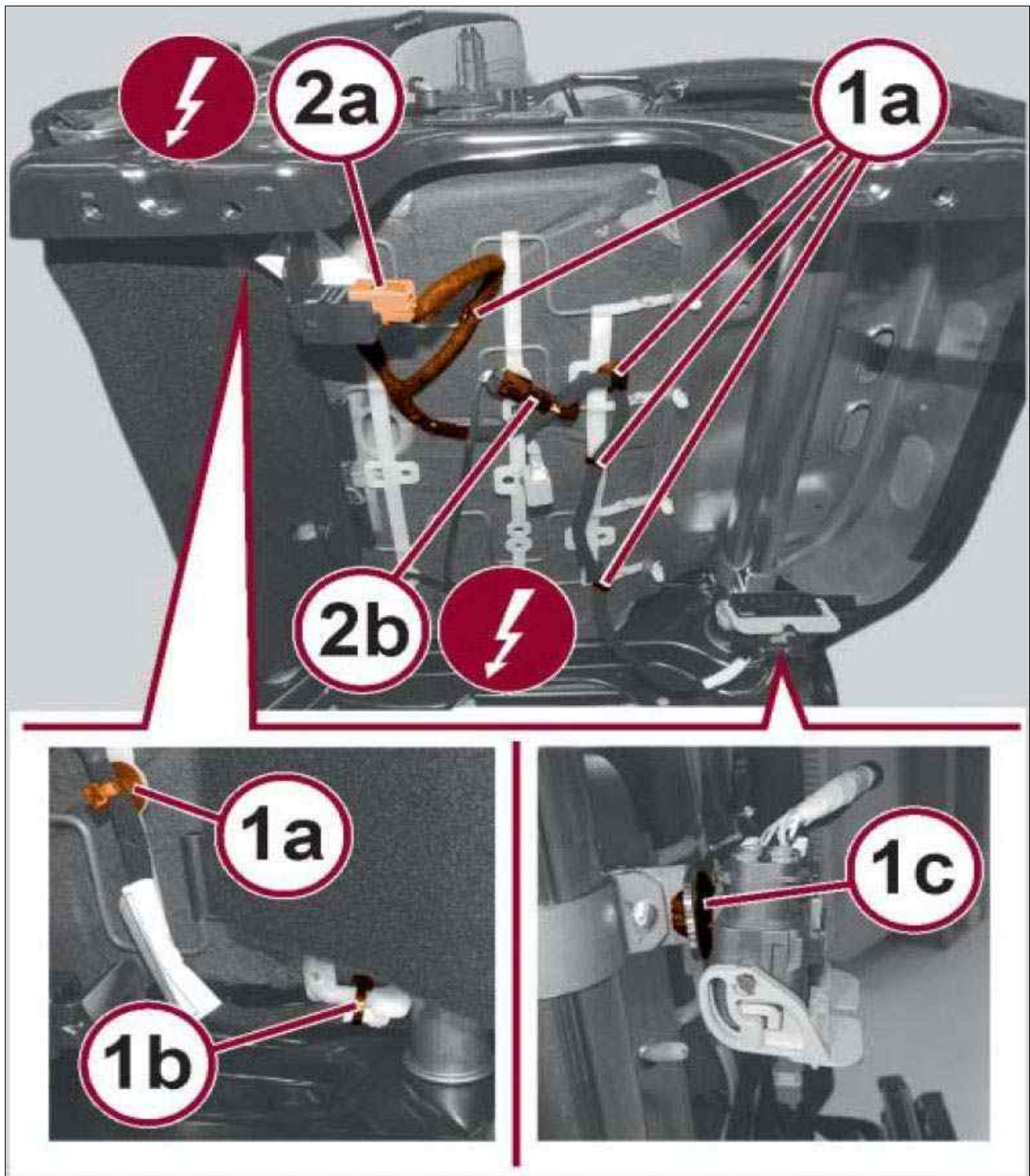
The hard wired circuits between the ODS and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the ODS or the electronic controls and communication between other modules and devices that provide some features of the passenger belt alert feature. The most reliable, efficient and accurate means to diagnose the ODS or the electronic controls and communication related to the passenger belt alert feature operation requires the use of a diagnostic scan tool. Refer to the appropriate Diagnostic & Testing article.

SENSOR, OCCUPANT DETECTION > 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 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.

Fig 1: Seat Track Position Sensor, ODS, Wire Connectors & Retainers



Courtesy of CHRYSLER GROUP, LLC

1. Position the passenger side front seat to its most forward position for easiest access to the front seat mounting hardware.
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable. Wait two minutes for the system capacitor to discharge before further service.

3. Remove the passenger side front seat from the vehicle. Refer to SEAT, FRONT, REMOVAL AND INSTALLATION .
4. Disengage the seat wire harness retainers (1a, 1b and 1c).
5. Disconnect the seat wire harness connections under the seat cushion for the seat track position sensor (2a) and the Occupant Detection Sensor (ODS) (2b).
6. Remove the seat back from the seat cushion. Refer to SEAT BACK, FRONT, REMOVAL AND INSTALLATION .
7. Remove the trim from the front seat cushion foam and frame. Refer to COVER, SEAT CUSHION, FRONT, REMOVAL AND INSTALLATION .
8. If equipped remove the heater mat from the front seat cushion foam.
9. Reach under the back of the front seat cushion frame to access and disengage the Occupant Detection Sensor (ODS) pigtail wire harness from the retainers.
10. Carefully disengage the adhesive patch of the ODS from the top surface of the seat cushion foam.



NOTE:

Care must be taken not to pull off any of the seat cushion foam along with the ODS mat. If part of the seat cushion foam is removed with the mat, the entire seat cushion foam should be replaced.

11. Extract the tail of the ODS and the sensor pigtail wire harness through the clearance hole in the seat cushion foam.

SENSOR, OCCUPANT DETECTION > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION



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 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,

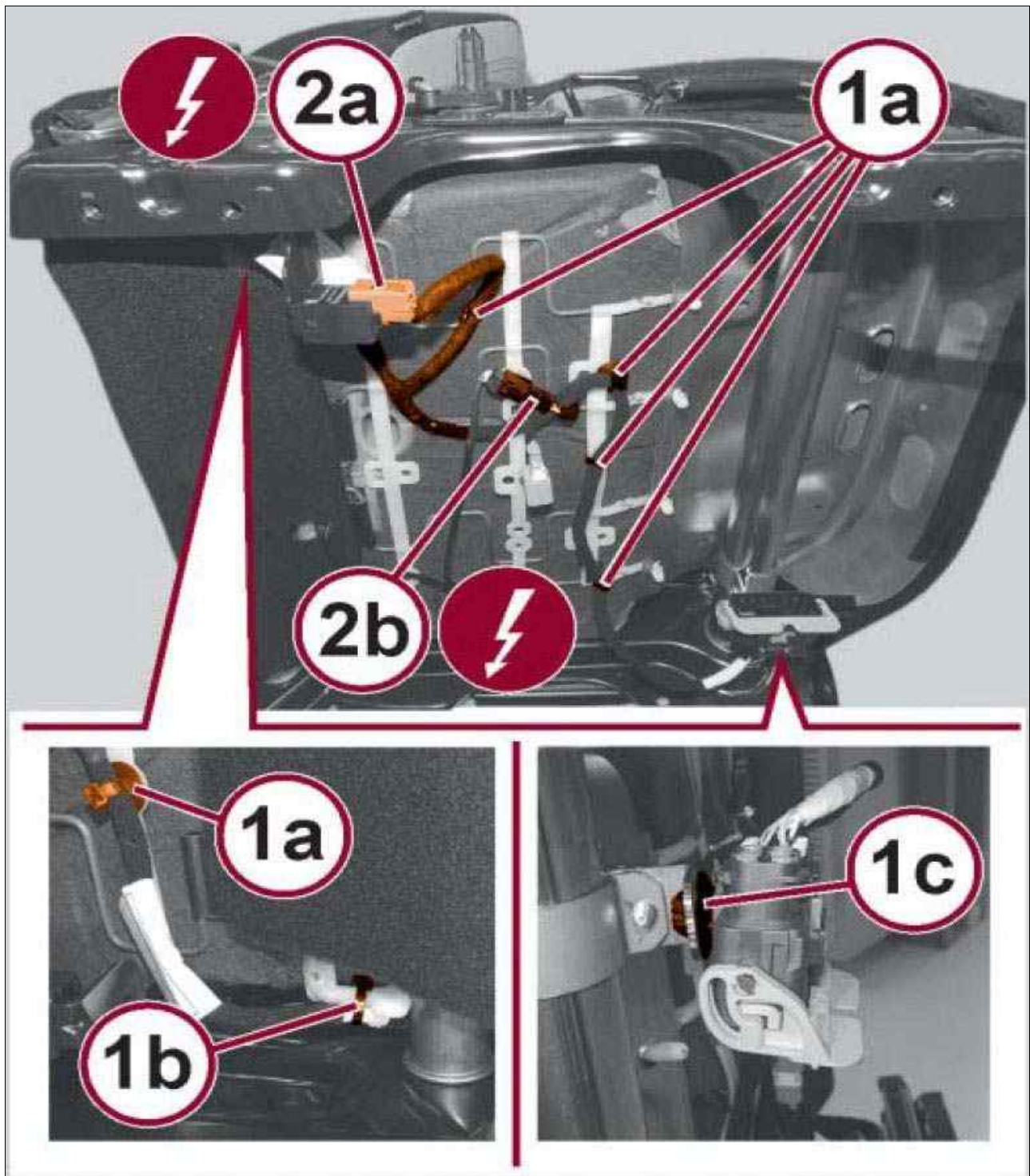
torn, cut or abraded. The ODS should not be handled with or come into contact with hard or sharp-edged tools or objects. Do not allow the ODS to drop more than 2 meters (6.5 feet). Prior to installation, do not sit on, stand on or place boxes, tools or any other foreign object on the ODS. If the ODS adhesive patches become inadvertently adhered to any seat materials or foreign objects prior to proper positioning on the seat cushion, the ODS must be scrapped and replaced with a new unit. 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).



CAUTION:

The adhesive used to secure the ODS to the seat is heat activated and requires that both the adhesive and the material it is applied to be ideally between 21° and 38° C (between 70° and 100° F). Application of the ODS to surfaces below 10° C (50° F) is not recommended as the adhesive becomes too firm to readily adhere. Do not touch or allow the adhesive patches to contact any foreign materials with the release paper removed. Do not attempt to add adhesive materials to the ODS.

Fig 1: Seat Track Position Sensor, ODS, Wire Connectors & Retainers



Courtesy of CHRYSLER GROUP, LLC

1. Carefully inspect the Occupant Detection Sensor (ODS) to be certain that it is in good condition.
2. If the removed ODS sensor is being reused, apply a spray adhesive for plastics to the adhesive area after providing suitable protection from overspray to the remaining portions of the sensor mat.

3. If a new ODS is being used, remove the release paper from the adhesive patch of the ODS mat.

 NOTE:

The release paper should not be removed from the adhesive patch of a new ODS mat until just prior to application to the seat cushion foam.

4. If the seat cushion foam is being reused, apply a spray adhesive for plastics to the adhesive area after providing suitable protection from overspray to the remaining portions of the seat cushion foam.
5. If a new seat cushion foam is being used, remove the release paper from the adhesive area of the seat cushion foam.

 NOTE:

The release paper should not be removed from the adhesive area of a new seat cushion foam until just prior to application of the ODS mat.

6. Insert the ODS pigtail wire harness and the tail of the ODS through the clearance hole in the seat cushion foam.
7. Carefully position and center the ODS mat onto the seat cushion foam with the adhesive patch of the mat centered over the adhesive area of the seat cushion foam.
8. Apply hand pressure (0.8 bar or 12 psi) over the adhesive patch of the ODS for at least four seconds to activate and adhere the adhesive to the seat cushion foam.
9. Reach under the back of the front seat cushion frame to access and route the ODS pigtail wire and connector.
10. Install the seat back onto the seat cushion. Refer to SEAT BACK, FRONT, REMOVAL AND INSTALLATION .
11. Install the trim onto the front seat cushion foam and frame. Refer to COVER, SEAT CUSHION, FRONT, REMOVAL AND INSTALLATION .
12. Connect the seat wire harness connections under the seat cushion for the seat track position sensor (2a) and the Occupant Detection Sensor (ODS) (2b).
13. Engage the seat wire harness retainers (1a, 1b and 1c).
14. Install the passenger side front seat into the vehicle. Refer to SEAT, FRONT, REMOVAL AND INSTALLATION .
15. Connect the negative cable to the battery. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

SENSOR, SEAT TRACK POSITION > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Seat Track Position Sensor



Courtesy of CHRYSLER GROUP, LLC

Vehicles manufactured for the North America Free Trade Agreement (NAFTA) market are equipped with a Seat Track Position Sensor (STPS) for each front seat. The STPS 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 Occupant Restraint Controller (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 seat guide position sensor receives a 5 V signal from the ORC. The sensor communicates the seat position by modulating the voltage returned to the ORC. The ORC monitors the current produced by the modulating voltage. The ORC also monitors the condition of the sensor circuits and will store a DTC for any detected fault and make a request to the Body Control Module (BCM) over CAN-C to switch on the airbag warning light in the instrument panel.

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

SENSOR, SEAT TRACK POSITION > DESCRIPTION AND OPERATION >

DESCRIPTION AND OPERATION > OPERATION

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 Driver AirBag (DAB) and Passenger AirBag (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 Instrument Panel Cluster (IPC).

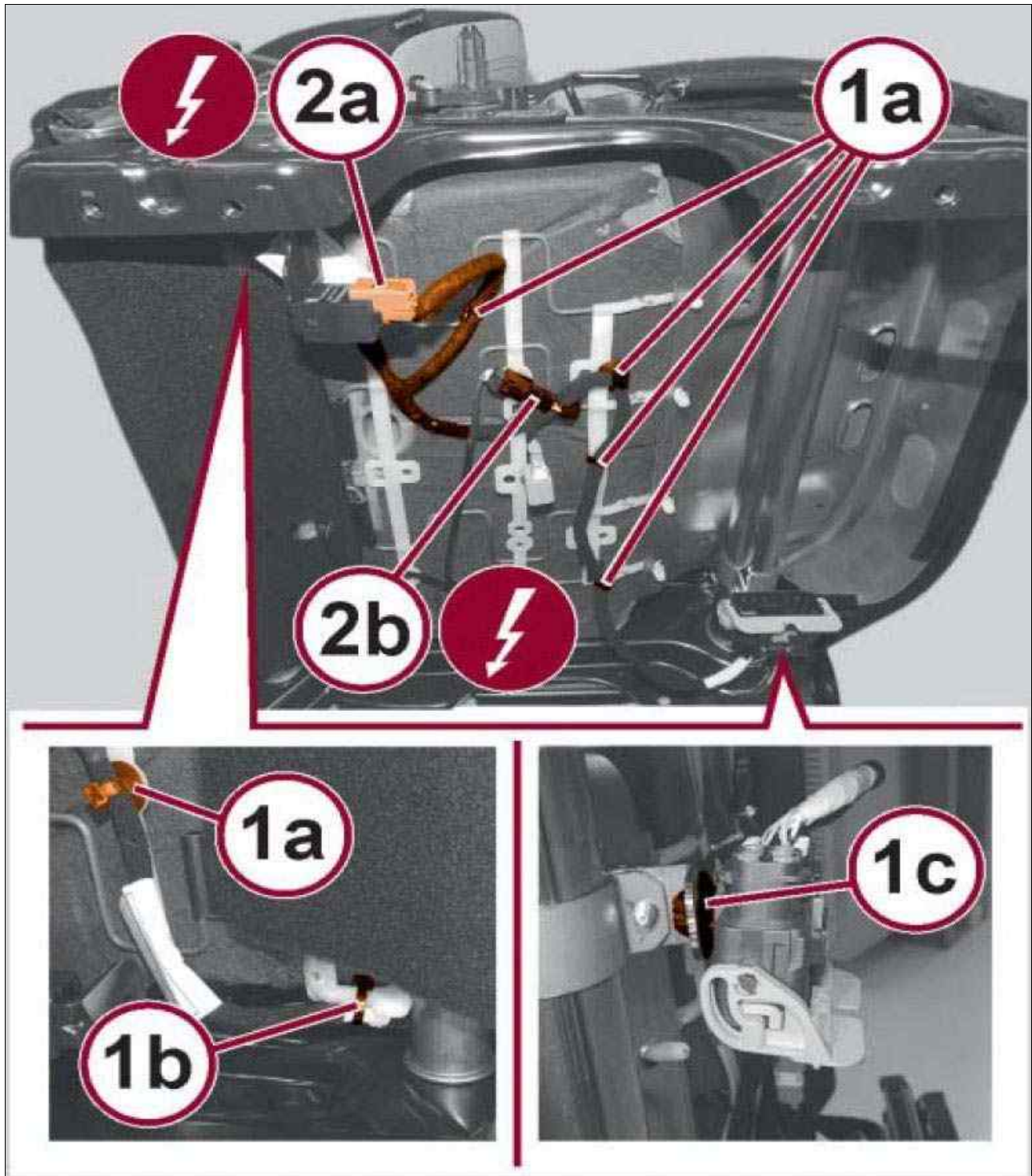
The hard wired circuits between the STPS and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. However, conventional diagnostic methods will not prove conclusive in the diagnosis of the STPS or the electronic controls and communication between other modules and devices that provide features of the Supplemental Restraint System (SRS). The most reliable, efficient and accurate means to diagnose the STPS or the electronic controls and communication related to STPS operation requires the use of a diagnostic scan tool. Refer to the appropriate Diagnostic & Testing article.

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 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.

Fig 1: Seat Track Position Sensor, ODS, Wire Connectors & Retainers



Courtesy of CHRYSLER GROUP, LLC



NOTE:

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

1. Disconnect and isolate the negative cable from the battery. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector before disconnecting the negative cable from the battery. Wait two minutes for the system capacitor to discharge before further service.
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 depressed while sliding the connector end of the STPS off of the bracket.
4. Disconnect the seat wire harness connector (2a) from the STPS connector receptacle.
5. Remove the STPS from under the front seat.

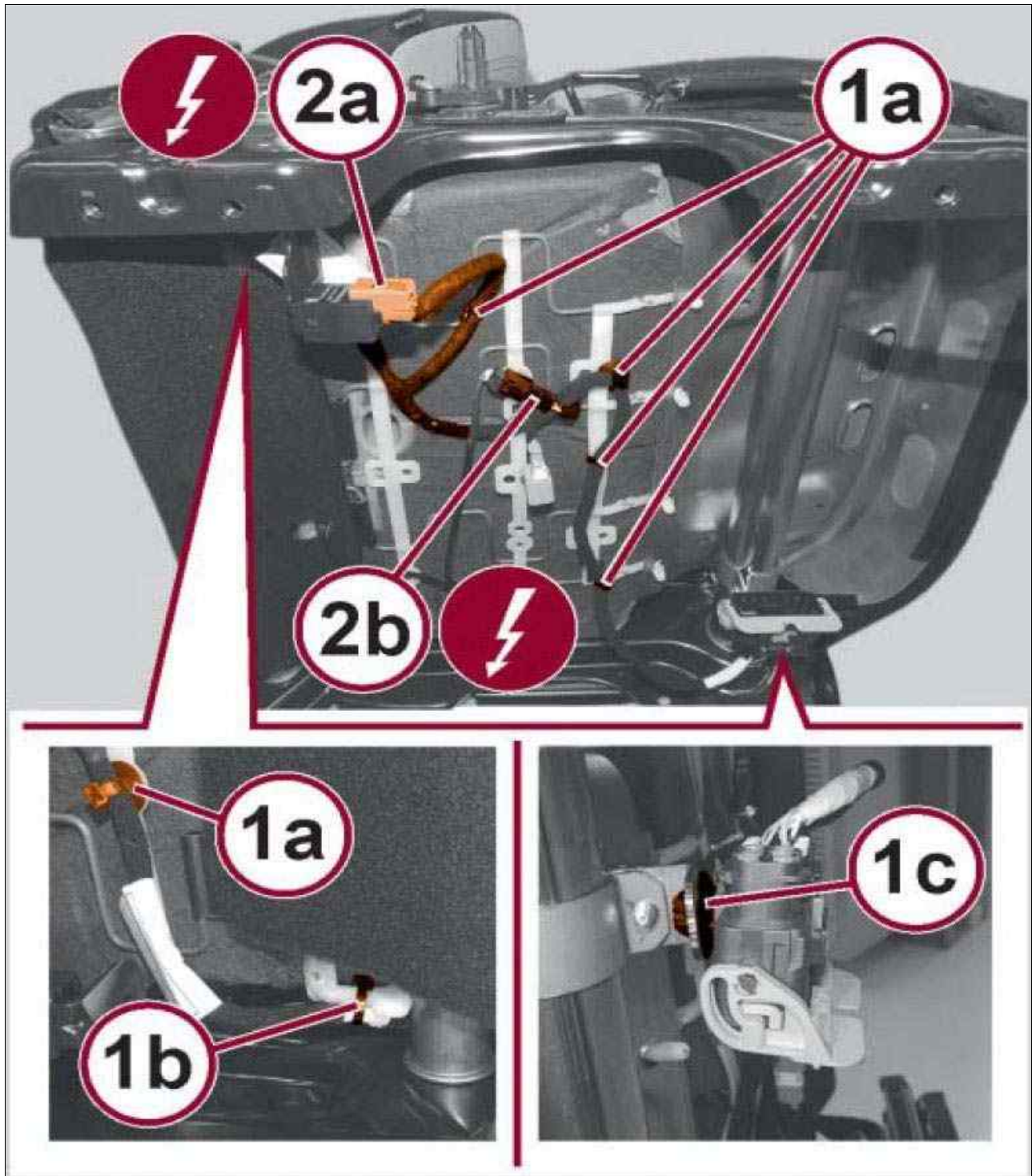
SENSOR, SEAT TRACK POSITION > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION



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 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.

Fig 1: Seat Track Position Sensor, ODS, Wire Connectors & Retainers



Courtesy of CHRYSLER GROUP, LLC



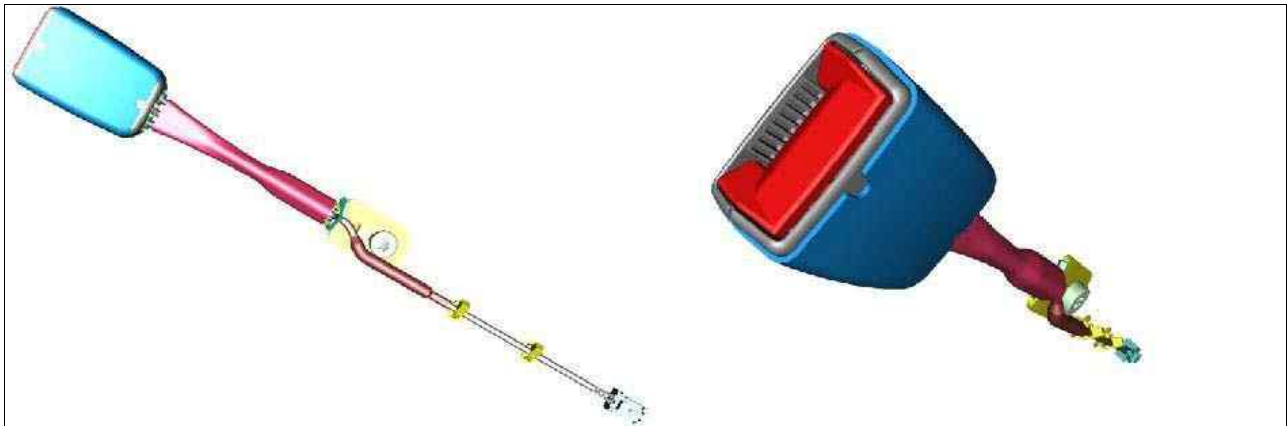
NOTE:

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

1. Reach under the rear edge of the front seat cushion to connect the seat wire harness connector (2a) to the Seat Track Position Sensor (STPS) connector receptacle. Be certain that the latch on the connector is fully engaged.
2. Align the open end of the STPS mounting slot 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 feature snaps into place with an audible click.
4. 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 STANDARD PROCEDURE .

SWITCH, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Seat Belt Switch



Courtesy of CHRYSLER GROUP, LLC

The buckles of driver and front and rear passenger seats are equipped with a sensor that checks the fastening and differ depending on the market:

EMEA version

- Driver side Hall-effect sensor
- Resistive sensors on anchorage of front and rear passenger buckles

NAFTA version

- Driver and front passenger side Hall-effect sensor

The resistive and Hall-effect sensors are hardwired to, and monitored by the Occupant Restraint Controller (ORC). When the latch plate is inserted into the buckle it pushes on the spring device and the window of the slide aligns between the Hall-effect sensor and the permanent magnet. When the sensor and the magnet align, the Hall-effect sensor changes state indicating that the seat belt is fastened.

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 DTC is set.

The resistive sensor is based on the current flowing through a normally closed contact.

The rated current is about 10mA while the operating current will be approximately between 10mA and 400mA.

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.

SWITCH, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

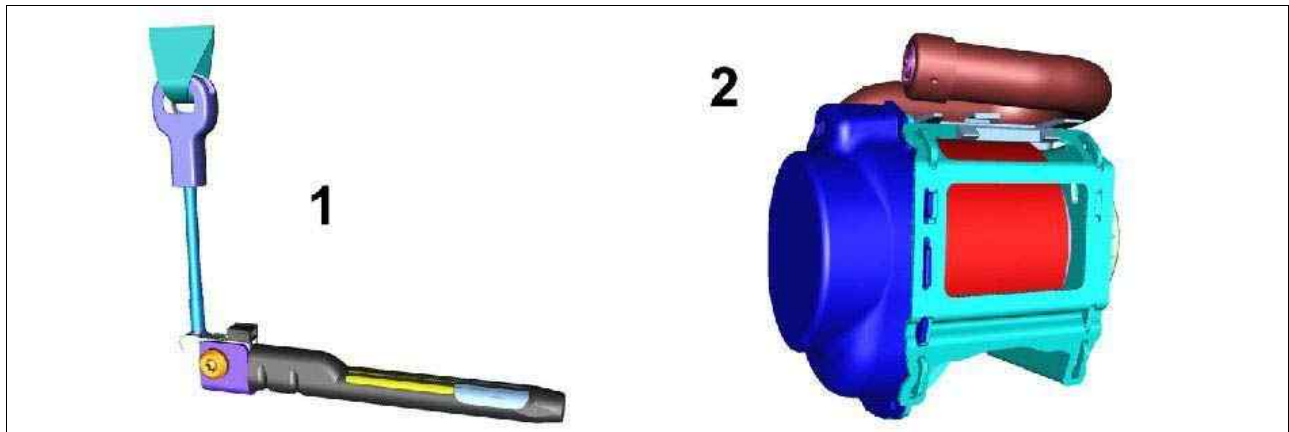
The front and rear (if equipped) seat belt switches are designed to control a hard wired sense input to the ORC. A spring-loaded slide with a small window-like opening is integral to the buckle latch mechanism. When a seat belt tip-half is inserted and latched into the seat belt buckle, the slide is 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 Instrument Panel Cluster (IPC) over the Controller Area Network (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 Diagnostic Trouble Code (DTC) for any fault that is detected.

The hard wired circuits between the seat belt switches and the ORC may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate SYSTEM WIRING DIAGRAMS article. 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 & Testing article.

TENSIONER, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION - SEAT BELT TENSIONERS

Fig 1: Seat Belt Tensioners



Courtesy of CHRYSLER GROUP, LLC

Two seat belt tensioners, one on the seat belt anchor (1) and the other in the front and rear seat belt retractors (2) (rear retractors in Europe-Middle East-Africa/EMEA) are deployed by the Occupant Restraint Controller (ORC) in conjunction with the dual front airbags. When the ORC sends the proper electrical signal to the tensioners, the electrical energy generates enough heat to initiate a small pyrotechnic gas generator.

On the retractor tensioner, a gas generator is installed in one end of a steel tube that contains numerous steel balls. As the gas expands, it pushes the steel balls through the tube into a cast metal housing, where a ball guide directs the balls into engagement with the teeth of a sprocket that is geared to one end of the retractor spool. As the balls drive past the sprocket, the sprocket turns and drives the seat belt retractor spool causing the slack to be removed from the front seat belts. The ball trap captures the balls as they leave the sprocket and are expelled from the housing.

On the anchor tensioner, the gas generator is installed in one end of the tubular metal piston housing, which contains a piston secured to one end of a cable. The cable is routed around an integral guide to the buckle anchor, which is secured to the opposite end of the cable. As the gas expands, it pushes the piston and the cable through the tube and pulls the buckle anchor downward, removing the slack from the front seat belt.

The seat belts for both front seats in this vehicle incorporate dual tensioners. One tensioner is integral to the seat belt retractor (2), and one tensioner is integral to the seat belt lower anchor (1). In vehicles manufactured for EMEA markets a single tensioner is also integral to each rear outboard retractor. Each of these tensioner types along with the load limiter are described in further detail elsewhere within this service information.

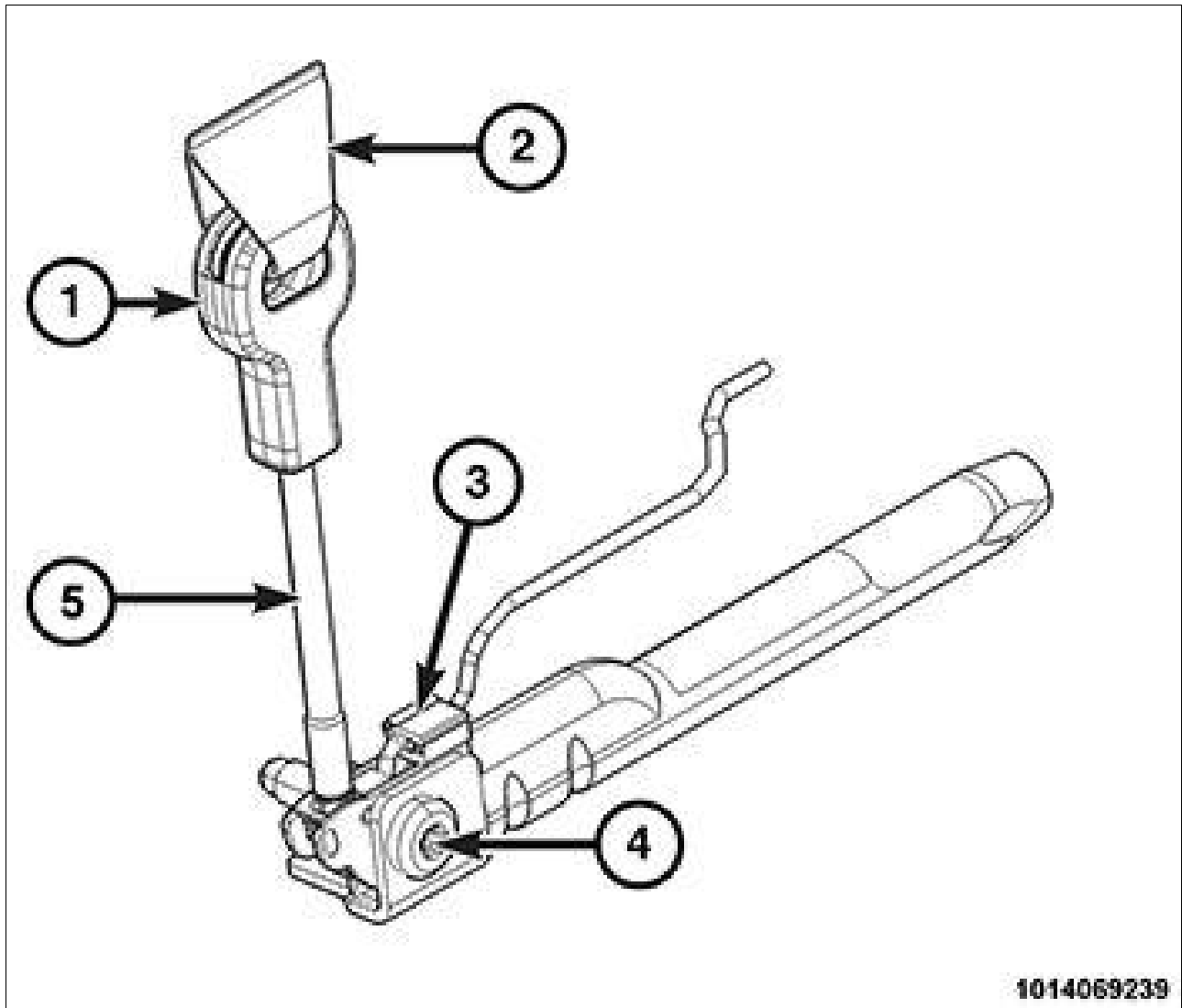
TENSIONER, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION - SEAT BELT TENSIONERS > LOAD LIMITER

A load-limiting device is integral to the front seat belt retractors to supplement the dual lower anchor and retractor tensioners. The load limiter is also used on the outboard rear seat belt retractors to supplement the retractor tensioners in vehicles manufactured for EMEA markets. The load limiter decreases the force transmitted by the seat belt to the chest of the occupant being restrained. The force level at which the limiters act is sufficient to considerably reduce the risk of skeletal fractures, even in individuals who might suffer from brittle bones.

A load limiter cannot be adjusted or repaired and, if ineffective or damaged, the entire front or rear outboard seat belt and retractor unit must be replaced. If the front airbags have been deployed, the retractor and anchor tensioners have also been deployed. The retractor and anchor tensioners are not intended for reuse and must be replaced following any front airbag deployment. Refer to RETRACTOR, SEAT BELT, REMOVAL AND INSTALLATION .

TENSIONER, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION - SEAT BELT TENSIONERS > LOWER ANCHOR TENSIONER

Fig 1: Lower Anchor Tensioner



Courtesy of CHRYSLER GROUP, LLC

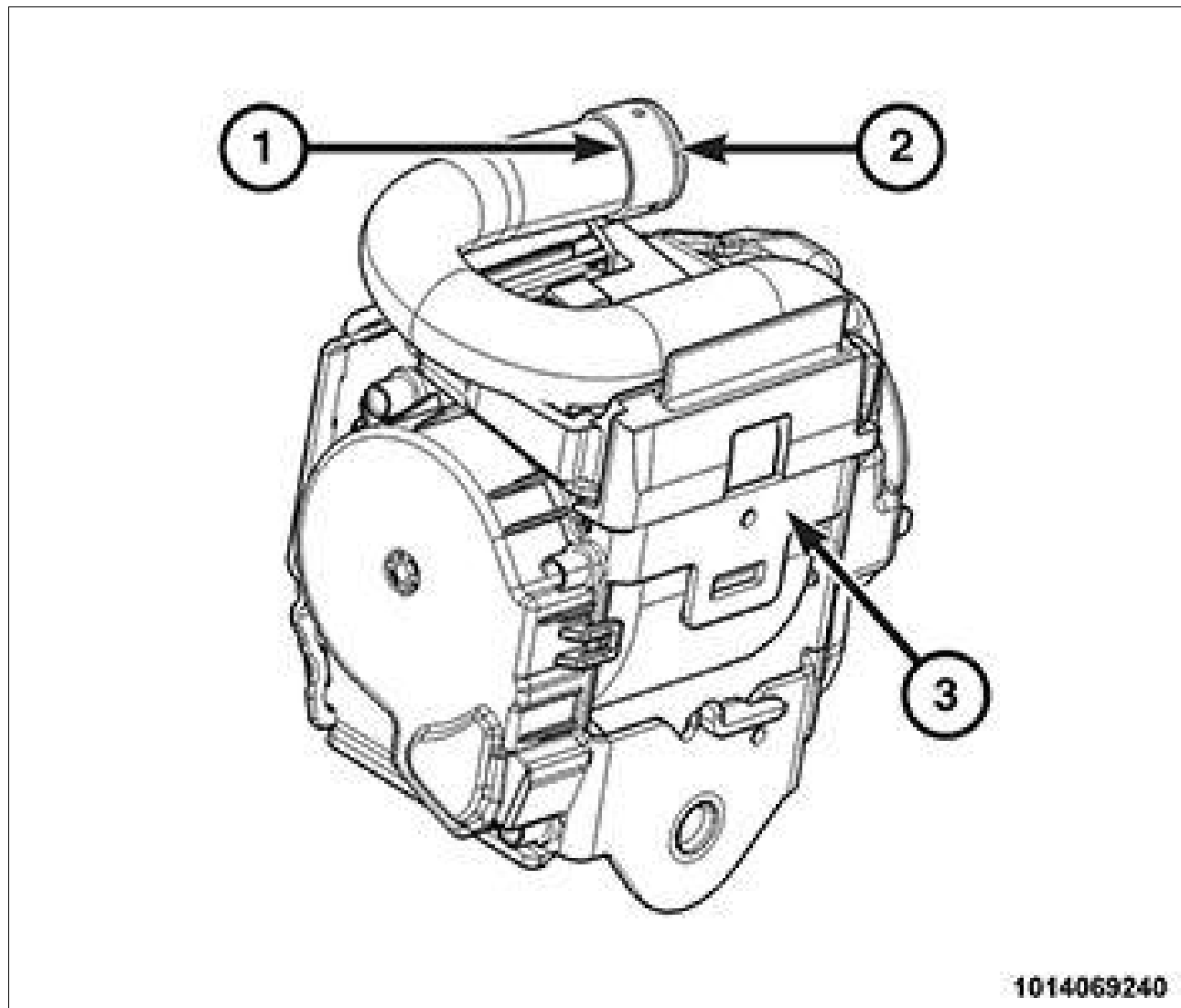
A seat belt lower anchor tensioner supplements the dual front airbag system for all versions of this vehicle. These tensioners are integral to the front seat belt and retractor units, and are secured by a screw (4) to the inner sill panel near the base of the B-pillar outboard of each front seat. The lower anchor tensioner consists of an eyelet (1) through which the seat belt webbing (2) is secured, a rod (5), a small pyrotechnically activated gas generator and an initiator connected through a pigtail wire (3) to

the electrical system of the vehicle. The lower anchor tensioners are controlled by the ORC.

The lower anchor tensioners cannot be repaired and, if ineffective or damaged, the entire seat belt and retractor with the lower anchor tensioner unit must be replaced. If the front airbags have been deployed, the lower anchor tensioners have also been deployed. The lower anchor tensioners are not intended for reuse and must be replaced following any front airbag deployment. Refer to RETRACTOR, SEAT BELT, REMOVAL AND INSTALLATION .

TENSIONER, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION - SEAT BELT TENSIONERS > RETRACTOR TENSIONER

Fig 1: Retractor Tensioner



Courtesy of CHRYSLER GROUP, LLC

Seat belt retractor tensioners supplement the dual front airbag system for all versions of this vehicle. These tensioners are integral to the front seat belt and retractor units (3), which are secured to the inner B-pillar on the right and left sides of the vehicle. Retractor tensioners are also used in the rear outboard seating positions of vehicles manufactured for EMEA markets. The retractor is concealed beneath the molded plastic inner B-pillar lower trim or C-pillar upper trim. The retractor tensioners are controlled by

the ORC. Each retractor tensioner has a Micro Gas Generator (MGG) (1) controlled by an initiator (2) connected to the vehicle electrical system through a dedicated take out of the body wire harness by a keyed and latching yellow molded plastic connector insulator to ensure a secure connection.

The retractor tensioners cannot be repaired and, if ineffective or damaged, the entire front or rear outboard seat belt and retractor unit must be replaced. If the front airbags have been deployed, the retractor tensioners have also been deployed. The retractor tensioners are not intended for reuse and must be replaced following any front airbag deployment. A growling or grinding sound while attempting to operate the seat belt retractor is a sure indication that the retractor tensioner has been deployed and requires replacement. Refer to RETRACTOR, SEAT BELT, REMOVAL AND INSTALLATION .

TENSIONER, SEAT BELT > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

The seat belt tensioners are deployed in conjunction with the dual front airbags by signals generated by the ORC through the individual retractor (or sill end), pretensioner (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 Micro Gas Generator (MGG).

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

Removing excess slack from the 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 might experience in these situations as a result of harmful contact with the steering wheel, steering column, instrument panel, windshield or other interior objects. The seat belt retractors also have a mechanical-type load limiter consisting of a torsion bar mechanism that is designed to deform in order to reduce the force of the tightened seat belt on the chest of the seat occupant during a frontal impact, 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 Diagnostic Trouble Code (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 SRS Load Tool special tool along with the appropriate Load Tool Jumpers and Adapters. Refer to the appropriate Diagnostic & Testing article.