Cautions and Notices

Battery Negative Cable Disconnect/Connect

CAUTION: Before servicing any electrical components, the ignition key must be in the OFF or LOCK position and all electrical loads must be OFF, unless instructed otherwise in these procedures. If a tool or equipment could easily come in contact with a live exposed electrical terminal, also disconnect the negative battery cable. Failure to follow these precautions may cause personal injury and/or damage to the vehicle or its components.

1. Turn off all the lamps and accessories.
2. Turn the ignition OFF.
3. Remove the battery ground cable clamp bolt from the cable clamp.
4. Remove the battery ground cable from the battery.
5. Clean any existing corrosion from the battery terminal, the battery cable clamp bolt and the battery cable clamp.
6. Install the battery ground cable to the battery.
7. Install the battery cable clamp bolt to the battery ground cable clamp.
8. Tighten the battery cable clamp bolt to 6 nm (53 lb in).

Electronic Throttle Control

The engine will run extremely poor if the Electronic Throttle Control is not reprogrammed after a power loss.

1. Turn the ignition switch to the RUN position. DO NOT start the engine. Leave the ignition switch in the RUN position for at least three minutes to allow the ETC to cycle and re-learn its home position.
2. Turn the ignition switch to OFF.
3. Start the engine and allow to run for at least 30 seconds.

Power Sunroof

1. Turn the ignition switch to the RUN position.
2. Turn the power sunroof switch to the closed position. After the sunroof fully closes and the motor stops, press and hold in the switch for 3 seconds.
3. Turn the power sunroof switch to the tilt position. After the sunroof reaches the tilt position and the motor stops, press and hold in the switch for 3 seconds.
4. Turn the power sunroof switch to the full open position. After the sunroof is fully open and the motor stops, press and hold in the switch for 3 seconds.
5. Turn the power sunroof switch to the closed position. After the sunroof fully closes and the motor stops, press and hold in the switch for 3 seconds.

Power Windows

Repeat these steps for each window.

1. Turn the ignition switch to the RUN position.
2. Press the power window switch to the down position. After the window is in the full down position, press and hold the switch in the down position for 3 seconds.
3. Press the power window switch to the up position. After the window is in the full up position, press and hold the switch in the up position for 3 seconds.

Heat and A/C Control Head

1. Turn the ignition switch to the RUN position.
2. Simultaneously press the AUTO and OFF buttons, located on the heat and A/C control head, for at least 5 seconds.
3. After initiation, the stepper motors will cycle from one stop to the other. You may hear the motors cycling while calibrating.

Power seat memory, power mirror memory and radio channel preset memory

The power seat and power mirror memory are stored in non-volatile memory in the seat memory module.Reprogramming will not be necessary after a power loss. However, if a component of the seat or mirror is replaced, the module will require programming with the scan tool.The radio channel presets are stored in non-volatile memory in the radio.Reprogramming will not be necessary after a power loss. However, if the radio is replaced, the station presets must be manually reset.

Anti-Corrosion Treatment and Repair

Anti-corrosion materials providing rust resistance are used on the interior and the exterior surfaces of the metal panels. These materials include the following metals:

- One-sided galvanized zinc
- Two-sided galvanized zinc
- Zinc-iron alloy steels

These treated metals are used on the following components:

- The fenders
- The doors
- The quarter panels
- The rocker panels

- The lids
- The floor pans
- The wheelhousings
- Other critical parts

Metal conditioners and primers are used on the interior and the exterior surfaces along with protective waxes on the interior surfaces in the areas where moisture might accumulate. Sealers are applied along the exposed joints and the moisture-repelling asphaltic sound deadeners are applied inside the wheel wells, the doors, and on some underbody components. Any procedure that disturbs these special treatments, such as panel replacement or collision damage repair operations, may leave the metal unprotected and result in corrosion. Proper recoating of these surfaces with service-type anti-corrosion material is essential.

Metal conditioners and primer coatings are applied to all metal panels at the time of vehicle manufacture. After repair and/or replacement parts are installed, all accessible bare metal surfaces must be treated with metal conditioner and reprimed. Refer to the GM Approved Refinish Materials book GM P/N GM4901M-D-99 witch identifies the paint systems you may use. Always refer to the latest revision of the 4901M-D book. This operation is to be performed prior to the application of sealers, waxes, deadeners, and antirust compounds.

These sealers are intended to prevent water and dust from entering the vehicle and also are anti-corrosion barriers. Sealers are applied to such areas as rear compartment lid hem flanges, wheelhouse, quarter outer, floor, cowl, roof, and various other panel to panel attaching points. The originally sealed joints are obvious and any damage to these sealed locations should be corrected by resealing. Attaching points of new replacement panels should be resealed. Replacement lids and doors will also require sealing in the hem flange areas.

Flanged joints, overlap joints, and seams should be sealed using a quality sealer of medium-bodied consistency. The sealer used must retain its flexible characteristics after curing and be paintable.

Open joints which require bridging of the sealer in order to close a gap should be sealed using a heavy-bodied caulking material. Follow the label directions for the material selected.

Color application may be required in order to restore repaired areas such as hood, fenders, doors, quarters, lid, roof, engine compartment, underbody, and inner panels to original appearance. When this is necessary, conventional refinishing preparation, undercoat buildup, and color application techniques should be followed.

Deadener materials (spray-on type) are used on various metal panels in order to provide corrosion resistance and joint sealing. They control the general noise level inside the passenger area of the vehicle. When deadeners are disturbed because of damage, are removed during repair operations, or a new replacement panel is installed, the deadener material must be replaced by a service equivalent material. The application pattern and location of deadener materials can be determined by observing the original production installation.

Anti-corrosion compounds are light-bodied materials designed to penetrate between metal-to-metal surfaces, such as pinch weld joints, hem flanges, and integral panel attaching points where metal surfaces are difficult to coat with conventional undercoating materials, and are inaccessible for painting. Material suited for this type of application is GM P/N 12346225 Anti-Corrosion Compound Clear (Oil Base) or equivalent.

Conventional undercoating is recommended in order to coat large areas such as replacement door and quarter outer panels, floor pan sections, lids, hoods, fenders, etc. During undercoating operations, care should be taken to prevent the material from being sprayed into door and quarter panel hardware mechanisms such as door locks, glass run channels, window regulators, and seat belt retractors. On the underbody, the material should not be applied to any moving or rotating part, energy absorbing bumper components, or shock absorbers. After undercoating, ensure that all body drain holes are open.

Cleaning of the interior and underbody panel surfaces is necessary when original galvanized or other anti-corrosion materials have been burned off during welding or heating operations. Removal of the residue from burning will require additional care in such areas as interior surfaces of box-type construction and when configurations of the metal panels limit access to interior surfaces.

One or more of the following methods will remove the residue. Sandblasting is an excellent method for cleanup and preparation of open joints, underbody components, and hem flange areas. Sandblasting is most effective and should be used. When access is possible, scraping with a putty knife or scraper can be used. A jet of compressed air will remove most residue and could be effective in a limited access areas.

Basecoat/Clearcoat Paint Systems

CAUTION: Exposure to isocyanates during paint preparation and application processes can cause severe breathing problems. Read and follow all of the instructions from the manufacturers of painting materials, equipment, and protective gear.

CAUTION: Approved safety glasses and gloves should be worn when performing this procedure to reduce the chance of personal injury.

All paint finish repairs of rigid exterior surfaces must meet GM standards. The GM Approved Refinish Materials book GM P/N

GM4901M-D identifies the paint systems you may use. Always refer to the latest revision of the 4901M-D book. All approved products, including volatile organic compound (VOC) compliant regulations are listed in the system approach recommended by the individual manufacturer. Refer to the manufacturer's instructions for the detailed procedures for materials used in the paint system in the painting repairs of rigid exterior surfaces.

All components of an approved paint system have been engineered in order to ensure proper adhesion between layers.If necessary, spot repairs or color blending in an open panel can be done. However, do not blend clearcoat in an open panel. Always apply clearcoat to the next break point (body side molding, feature line, or the next panel)

Do not mix paint systems or substitute a product of one manufacturer for another manufacturer's product.

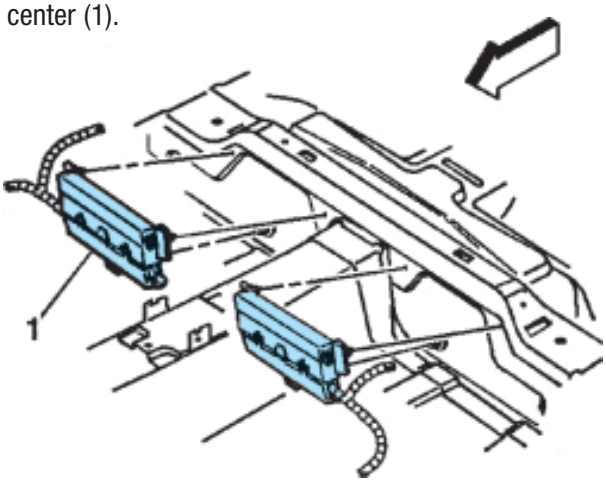
If incompatible products are used together the following problems may occur:

- Lifting of primer coats caused by overly aggressive solvents in subsequent layers
- Loss of adhesion between layers due to incompatibility of resin systems
- Solvent popping or pinholing due to inappropriate solvent selection
- Poor through-curing due to incompatible hardener resins or insufficient reactivity
- Gloss reduction due to incompatible resins and/or solvents
- Poor color accuracy due to pigment interactions with incompatible resins and/or solvents
- Film defects (craters, blisters, orange peel loss of gloss) due to the use of inferior quality raw materials in incompatible products

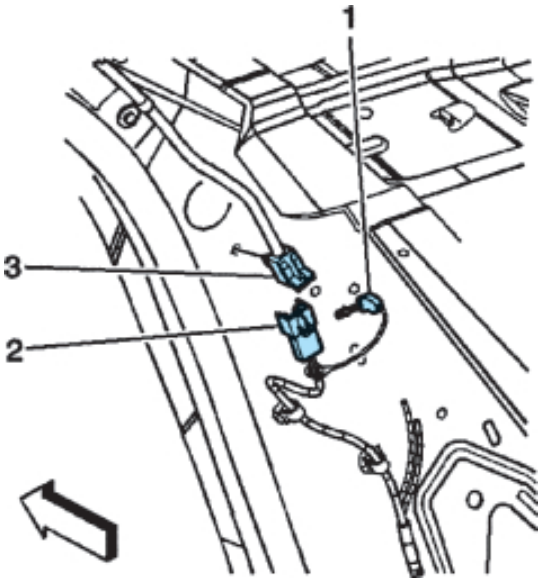
Disabling the SIR System

1. Turn the steering wheel so that the vehicle's wheels are pointing straight ahead
2. Turn the ignition switch to the OFF position.
3. Remove the key from the ignition switch.

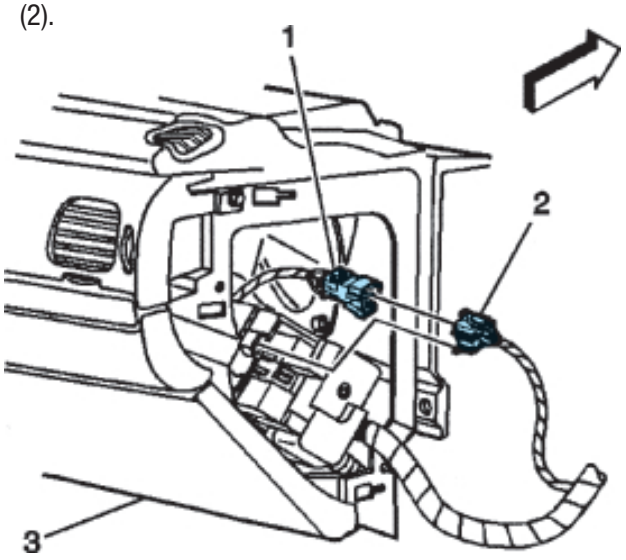
   IMPORTANT: With the SIR fuse removed and the ignition switch in the ON position, the AIR BAG warning indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.
4. Remove the rear seat.
5. Locate rear fuse center (1) under rear seat, remove rear fuse center cover from right (passenger) side of vehicle.
6. Locate and remove SIR fuse from the right rear fuse center (1).



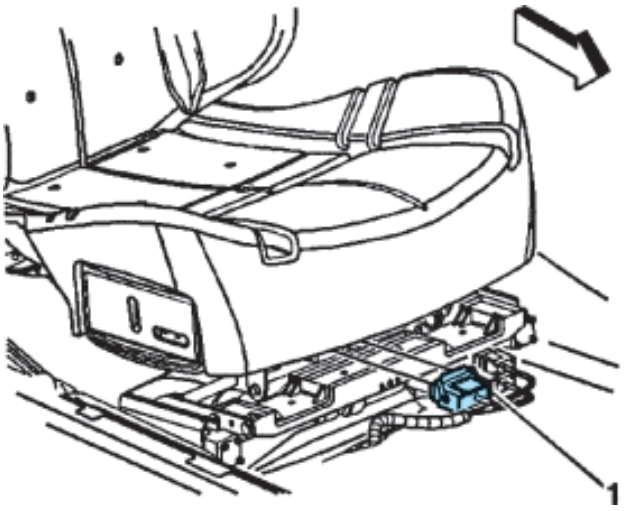
7. Remove the right rear sail panel.
8. Remove the Connector Position Assurance (CPA) (1) from the right/passenger roof rail module yellow connector (2).
9. Disconnect the right roof rail module yellow connector (3) from the vehicle harness yellow connector (2).



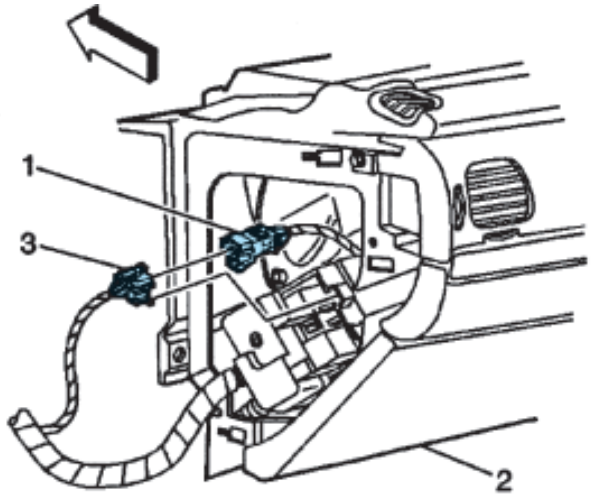
10. Remove the passenger sound insulator from the instrument panel (IP) (3).
11. Remove the Connector Position Assurance (CPA) from the IP/passenger yellow connector (1).
12. Disconnect the passenger frontal air bag yellow connector (1) from the vehicle harness yellow connector (2).



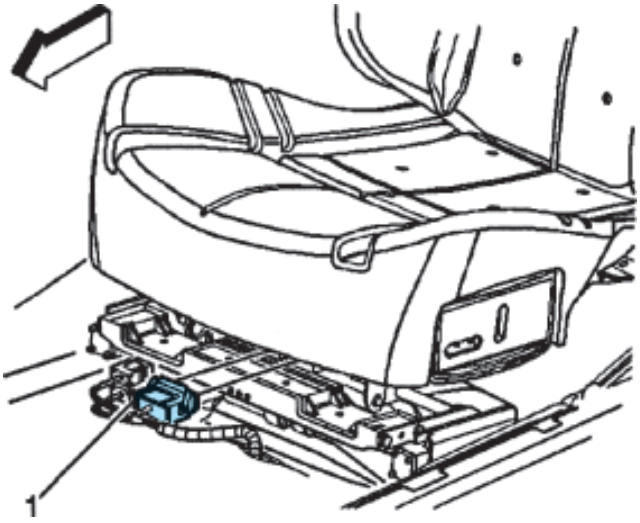
13. Remove both CPA locks from the passenger side air bag and pretensioner yellow connector (1) located under the front of the passenger seat.
14. Disconnect the passenger side air bag and pretensioner yellow connector from the vehicle harness yellow connector (1).



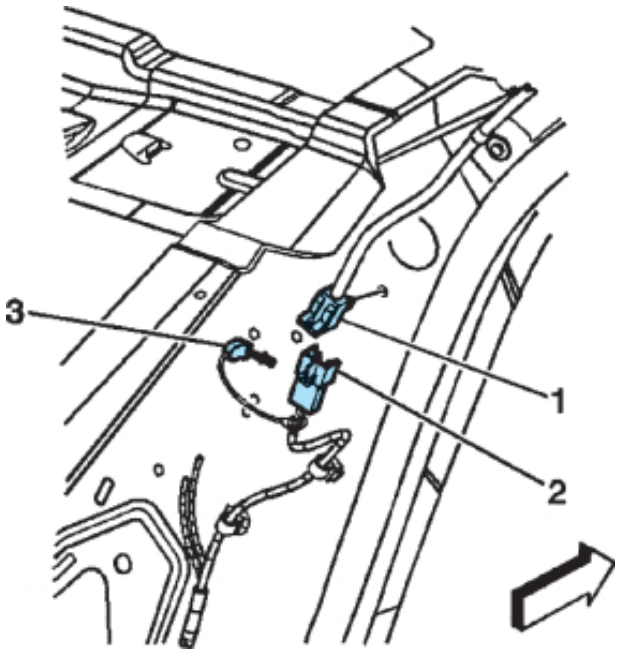
15. Remove the driver sound insulator from the instrument panel (IP) (2).
16. Remove the CPA from the driver yellow connector (1).
17. Disconnect the driver front air bag yellow connector (1) from the vehicle harness yellow connector (3).



18. Remove both CPA locks from the driver side air bag and pretensioner yellow connector (1) located under the front of the driver seat.
19. Disconnect the driver side air bag and pretensioner yellow connector from the vehicle harness yellow connector (1).

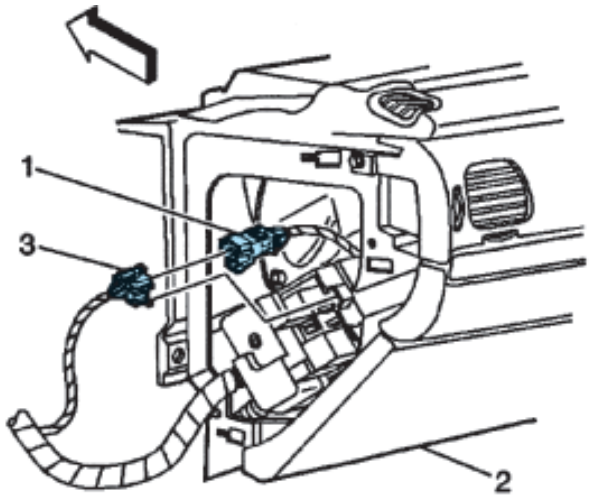


20. Remove the left rear sail panel.
21. Remove the CPA (3) from the left/driver roof rail module yellow connector (2).
22. Disconnect the left roof rail module yellow connector (1) from the vehicle harness yellow connector (2).

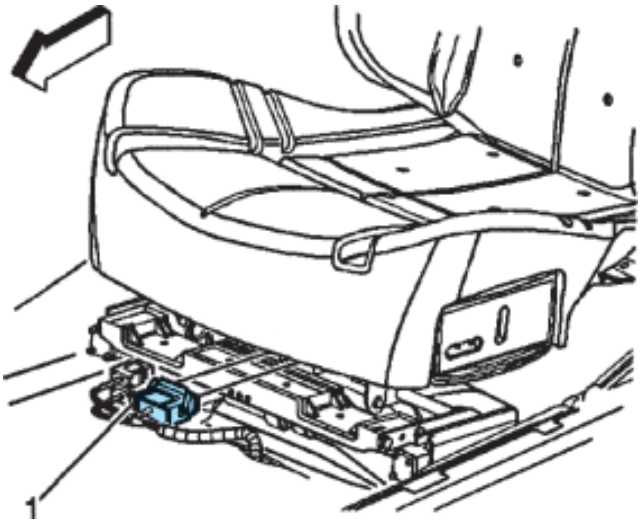


Enabling the SIR System

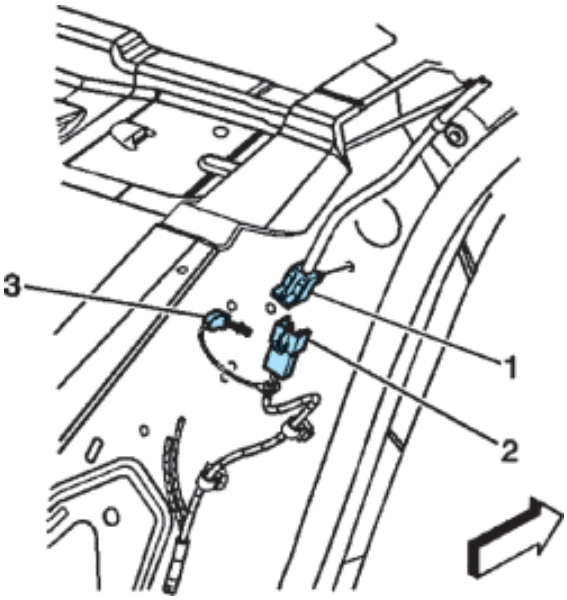
1. Connector the driver front air bag yellow connector (1) to the vehicle harness yellow connector (3).
2. Install the CPA to the driver yellow connector (1).
3. Install the driver sound insulator to the instrument panel (2).



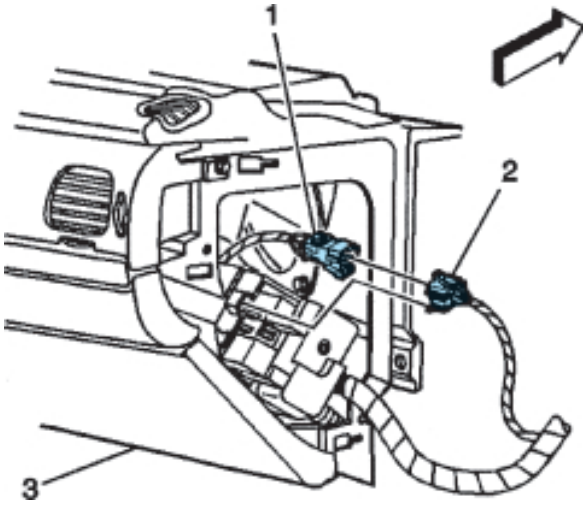
4. Connect the driver side air bag and pretension yellow connector to the vehicle harness yellow connector (1) located under the front of the driver seat.
5. Install both CPA locks to the driver side air bag and pretensioner yellow connector (1).



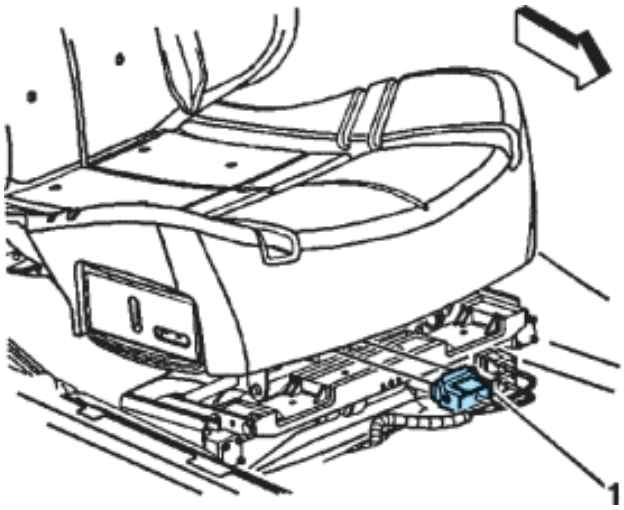
6. Connect the left/driver roof rail module yellow connector (1) to the vehicle harness yellow connector (2).
7. Install the CPA (3) to the left roof rail module yellow connector (2).
8. Install the left rear rail panel.



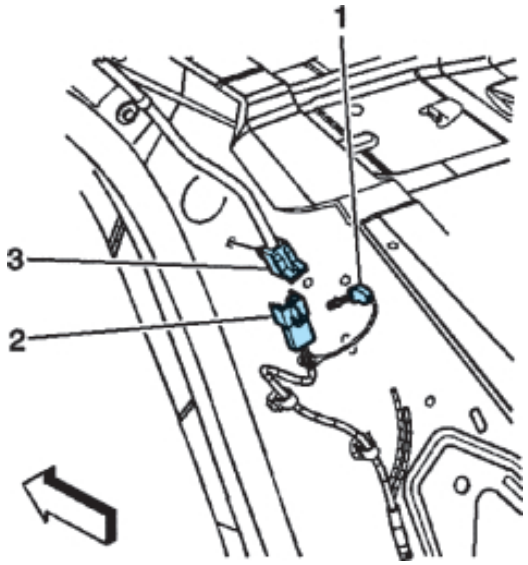
9. Connect the passenger frontal air bag yellow connector (1) to the vehicle harness yellow connector (2).
10. Install the CPA to the passenger yellow connector (1).
11. Install the passenger sound insulator to the instrument panel (3).



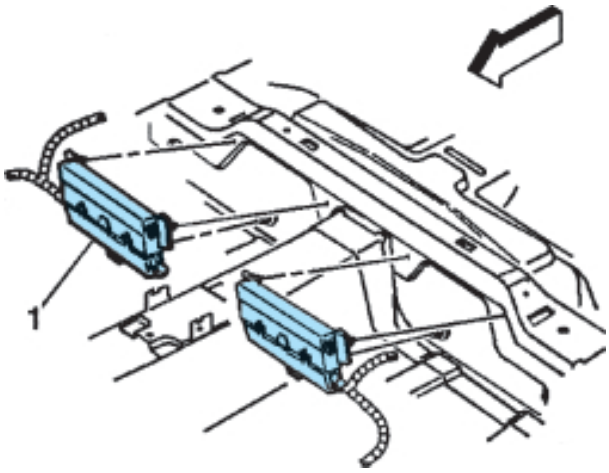
12. Connect the passenger side air bag and pretensioner yellow connector to the vehicle harness yellow connector (1) located under the front of the passenger seat.
13. Install both CPA locks to the passenger side air bag and pretensioner yellow connector (1).



14. Connect the right/passenger roof rail module yellow connector (3) to the vehicle harness yellow connector (2).
15. Install the CPA (1) to the right roof rail module yellow connector (2).
16. Install right rear sail panel.



17. Install the SIR fuse to the right rear fuse center (1).



18. Install right fuse center cover.
19. Install the rear seat.
20. Use caution while reaching in and turn the ignition switch to the ON position.
21. The AIR BAG warning indicator will flash, then turn OFF.
22. Perform the SIR Diagnostic System Check if the AIR BAG warning indicator does not operate as described.

Glass and Sheet Metal Handling

CAUTION: When working with any type of glass or sheet metal with exposed or rough edges, wear approved safety glasses and gloves in order to reduce the chance of personal injury.

Stationary Window Replacement

CAUTION: When replacing stationary windows, Urethane Adhesive Kit GM P/N 12346392, or a urethane adhesive system meeting GM Specification GM3651M, must be used to maintain original installation integrity. Failure to use the urethane adhesive kit will result in poor retention of the window which may allow unrestrainted occupants to be ejected from the vehicle, resulting in personal injury.