

Fastener Tightening Specifications

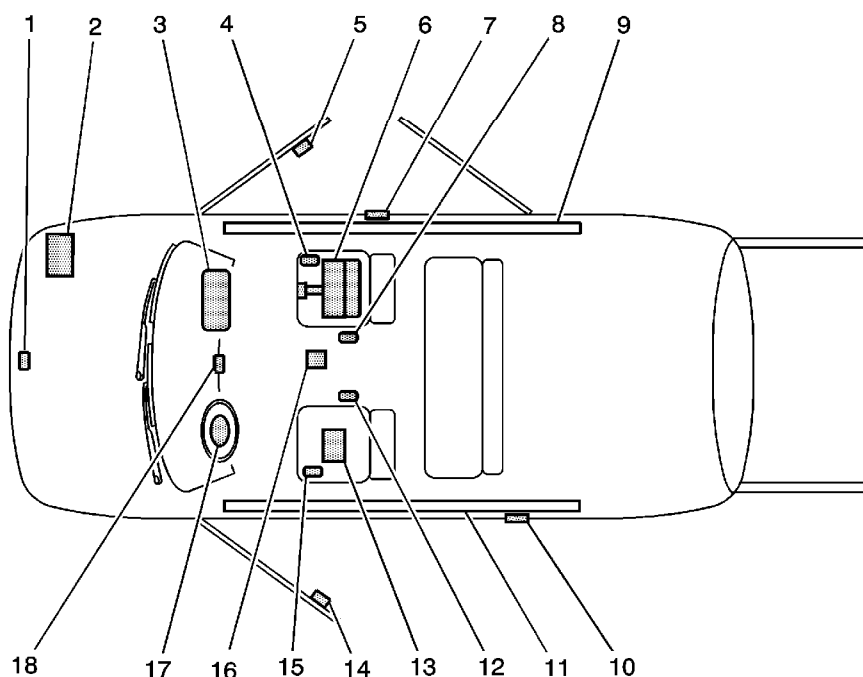
Fastener Tightening Specifications

Application	Specification	
	Metric	English
Inflatable Restraint Front End Discriminating Sensor Nut	10 N·m	89 lb in
Inflatable Restraint I/P Module Bolts	10 N·m	89 lb in
Inflatable Restraint Sensing and Diagnostic Module Nut	10 N·m	89 lb in
Pretensioner Bolt	40 N·m	30 lb ft
Pretensioner Trim Cover Screws	2 N·m	18 lb in

SIR Identification Views

The SIR Identification Views shown below illustrate the approximate location of all SIR components available for the vehicle. This will assist in disabling and enabling the SIR system, refer to [SIR Disabling and Enabling](#) .

Express / Savana



- (1) Impact Sensor, Front --Located under the hood on the bottom side of the radiator support, center of vehicle
- (2) Vehicle Battery--Located in the engine compartment on the passenger side I/P Air Bag-- Located at the top right under the instrument panel
- (3) I/P Air Bag--Located at the top right under the instrument panel
- (4) Seat Position Sensor, Passenger--Located underneath the seat mounter to cross seat beam
- (5) Side Impact Sensor (SIS), RF --Located inside of front right door
- (6) Passenger Presence System--Located on the front passenger seat under the seat bottom trim
- (7) Side Impact Sensor (SIS), RR --Located near the side step under door step mat
- (8) Seat Belt Buckle Pretensioner, Passenger--Located left side of front passenger seat
- (9) Inflator Module for Roof Rail Air Bag--Either a LF located behind roof headliner for the passenger and side door or two inflator modules, a LF for the front passenger and a LR the side door
- (10) Side Impact Sensor (SIS), LR--Located LH side, inside vehicle, forward of wheel well

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- (11) Inflator Module for Roof Rail Air Bag, LF--Located behind roof headliner on left side of vehicle
- (12) Seat Belt Buckle Pretensioner, Driver--Located right side of driver seat
- (13) Sensing and Diagnostic Module (SDM)--Located underneath the vehicle carpet under the center console
- (14) Side Impact Sensor (SIS), LF --Located inside of front left door
- (15) Seat Position Sensor, Driver--Located underneath the seat mounter to cross seat beam
- (16) Rollover Sensor--Located between front seats under carpet
- (17) Steering Wheel Air Bag--Located on the steering wheel
- (18) I/P module Indicator and I/P Module Disable Switch--Located near radio as a switch bank

SIR Service Precautions

Warning: When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Refer to SIR Disabling and Enabling . Failure to observe the correct procedure could cause deployment of the SIR components, personal injury, or unnecessary SIR system repairs.

The inflatable restraint sensing and diagnostic module (SDM) maintains a reserved energy supply. The reserved energy supply provides deployment power for the air bags. Deployment power is available for as much as 1 minute after disconnecting the vehicle power. Disabling the SIR system prevents deployment of the air bags from the reserved energy supply.

General Service Instructions

The following are general service instructions which must be followed in order to properly repair the vehicle and return it to its original integrity:

- Do not expose inflator modules to temperatures above 65°C (150°F).
- Verify the correct replacement part number. Do not substitute a component from a different vehicle.
- Use only original GM replacement parts available from your authorized GM dealer. Do not use salvaged parts for repairs to the SIR system.

Discard any of the following components if it has been dropped from a height of 91 cm (3 ft) or greater:

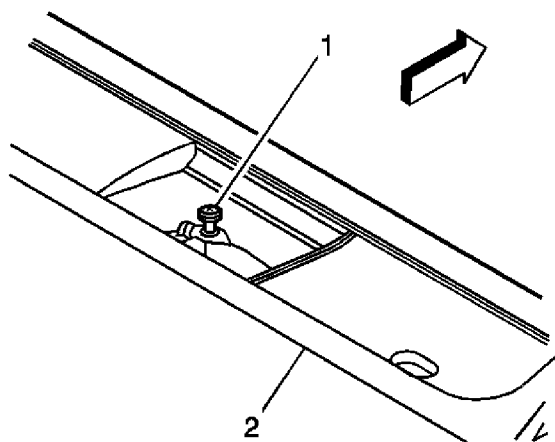
- Inflatable restraint sensing and diagnostic module (SDM)
- Inflatable restraint I/P module
- Inflatable restraint steering wheel module
- Inflatable restraint steering wheel module coil
- Inflatable restraint roof side rail modules
- Inflatable restraint side impact sensors (SIS)
- Inflatable restraint seat belt retractor pretensioners
- Inflatable restraint front end sensors

Inflatable Restraint Front End Sensor Replacement

Removal Procedure

Warning: Do not strike or jolt the inflatable restraint front end sensor. Before applying power to the front end sensor make sure that it is securely fastened. Failure to observe the correct installation procedure could cause SIR deployment, personal injury, or unnecessary SIR system repairs.

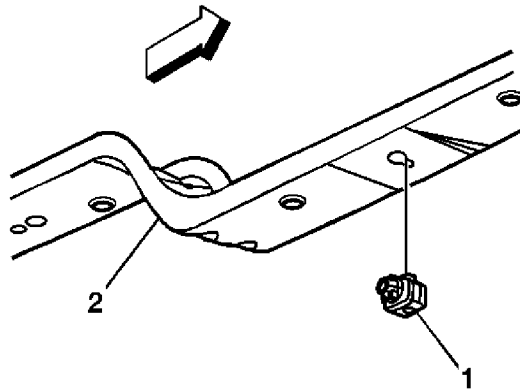
1. Disable the SIR. Refer to [SIR Disabling and Enabling](#).
2. Raise the vehicle and support. Refer to [Lifting and Jacking the Vehicle](#).



3. Remove the connector position assurance (CPA) from the inflatable restraint front end discriminating sensor electrical connector.
4. Disconnect the inflatable restraint front end sensor electrical connector.

Note: The fastener has a left hand thread.

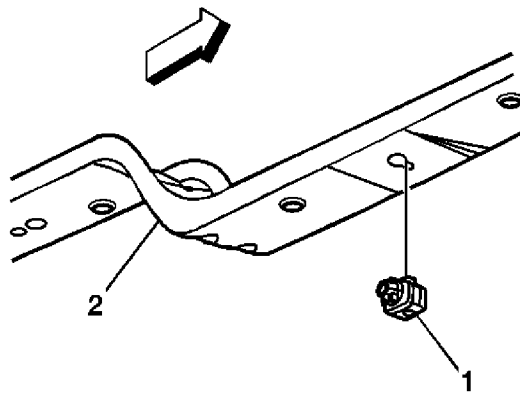
5. Loosen the inflatable restraint front end sensor mounting nut (1).



6. Slide the inflatable restraint front end sensor (1) towards the front of the vehicle.
7. Remove the sensor (1) from the keyhole slot in the lower radiator support (2).

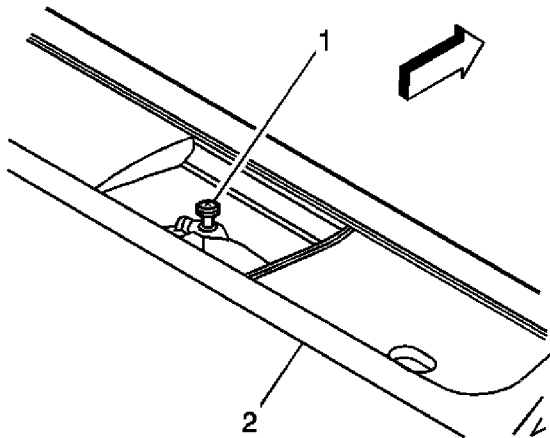
Installation Procedure

1. Remove any dirt, grease, or other impurities from the mounting surface.
2. Point the arrow on the sensor toward the front of the vehicle.



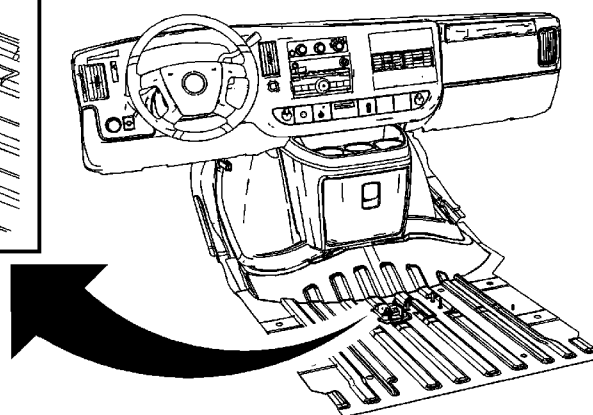
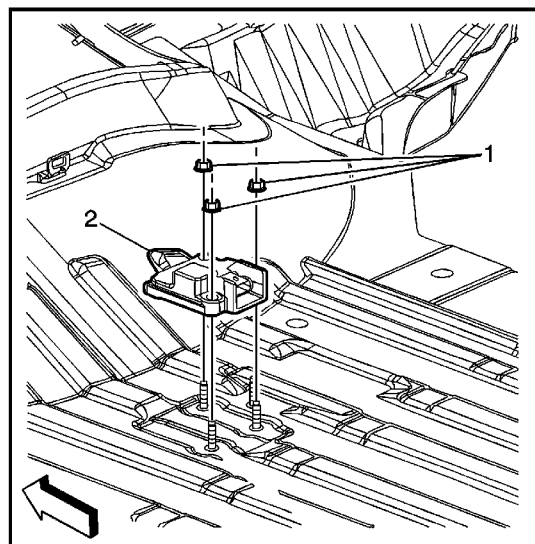
3. Install the inflatable restraint front end sensor (1) into the keyhole slot in lower radiator support (2).

Caution: Refer to [Fastener Caution](#) in the Preface section.



4. Push the sensor towards the rear of the vehicle to seat the sensor in the keyhole slot in the lower radiator support (2). Tighten the nut (1) to **10 N·m (89 lb in)**.
5. Connect the inflatable restraint front end sensor electrical connector.
6. Install the CPA to the electrical connector.
7. Remove the safety stands and lower the vehicle.
8. Enable the SIR system. Refer to [SIR Disabling and Enabling](#).

Inflatable Restraint Vehicle Rollover Sensor Replacement



Callout	Component Name
Warning: Refer to SIR Warning in the Preface section.	
Preliminary Procedure	
1. Disable the SIR. Refer to SIR Disabling and Enabling . 2. Remove the front floor mat/carpet. Refer to Front Floor Mat/Carpet Replacement .	
1	Inflatable Restraint Roll Over Sensor Nuts (Qty: 3) Caution: Refer to Fastener Caution in the Preface section. Tighten 10 N·m (88 lb in)
2	Inflatable Restraint Roll Over Sensor Procedure Disconnect electrical connectors.

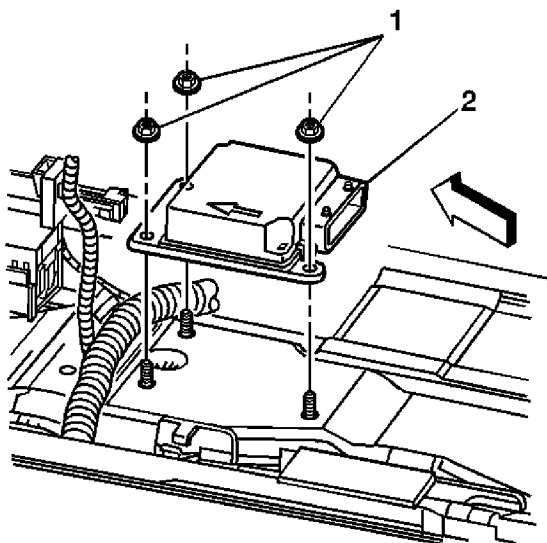
Inflatable Restraint Sensing and Diagnostic Module Replacement

Removal Procedure

Warning: Refer to [SIR Inflator Module Handling and Storage Warning](#) in the Preface section.

Warning: Do not strike or jolt the inflatable restraint sensing and diagnostic module (SDM). Before applying power to the SDM, make sure that it is securely fastened with the arrow facing toward the front of the vehicle. Failure to observe the correct installation procedure could cause SIR deployment, personal injury, or unnecessary SIR system repairs.

1. Disable the SIR system. Refer to [SIR Disabling and Enabling](#).
2. Remove the driver seat. Refer to [Driver or Passenger Seat Replacement](#).



3. Fold back the carpet to access the inflatable restraint sensing and diagnostic module (SDM).
4. Remove the connector position assurance (CPA) from the SDM electrical connector.
5. Disconnect the SDM electrical connector.
6. Remove the SDM (2) mounting nuts (1).
7. Remove the SDM (2) from the vehicle.

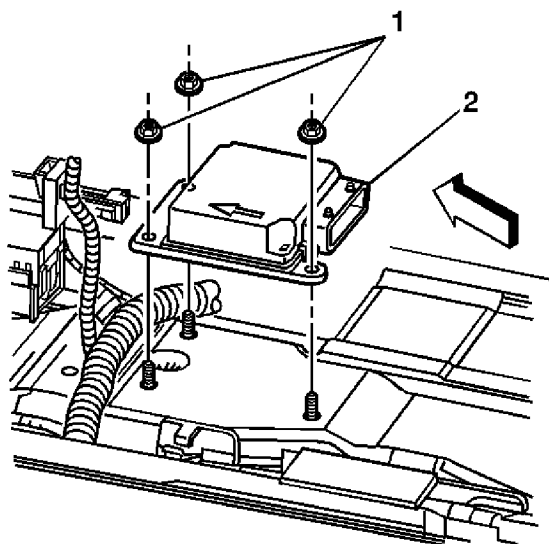
Note: The following repair procedures should only be used in the event that the inflatable restraint sensing and diagnostic module (SDM) mounting studs are damaged to the extent that the SDM may no longer be properly mounted.

8. Repair the studs using the following procedure:
 - 8.1. Remove and discard the stripped nut.
 - 8.2. Drill out the weld spots for the weld stud that has been damaged, remove and discard the damaged stud.

- 8.3. Condition the floor panel attaching surface where the new stud is to be installed.
- 8.4. Install new weld stud GM P/N 115115602 and clamp the weld stud into place.
- 8.5. Migweld the stud at the drilled holes.
- 8.6. Apply body sealer GM P/N 9984248 around any exposed openings.
- 8.7. Install a new nut (1) GM P/N 11515933.

Installation Procedure

1. Remove any dirt, grease, or other impurities from the mounting surface.



2. Install the SDM (2) horizontally to the studs.
3. Point the arrow on the SDM toward the front of the vehicle.

Caution: Refer to [Fastener Caution](#) in the Preface section.

4. Install the SDM mounting nuts (1) and tighten to **10 N·m (89 lb in)**.
5. Install the SDM (2) electrical connector.
6. Install the CPA to the SDM electrical connector.
7. Install the carpet to cover SDM (2).
8. Install the driver seat. Refer to [Driver or Passenger Seat Replacement](#).

Note: The AIR BAG indicator may remain ON after the SDM has been replaced. DTC B1001 may set requiring the SDM part number to be set in multiple modules. If the indicator remains ON after enabling the SIR system, perform the diagnostic system check and follow the steps thoroughly to ensure that the SDM is set properly.

9. Enable the SIR system. Refer to [SIR Disabling and Enabling](#).
10. Refer to [Control Module References](#) for programming and setup information.

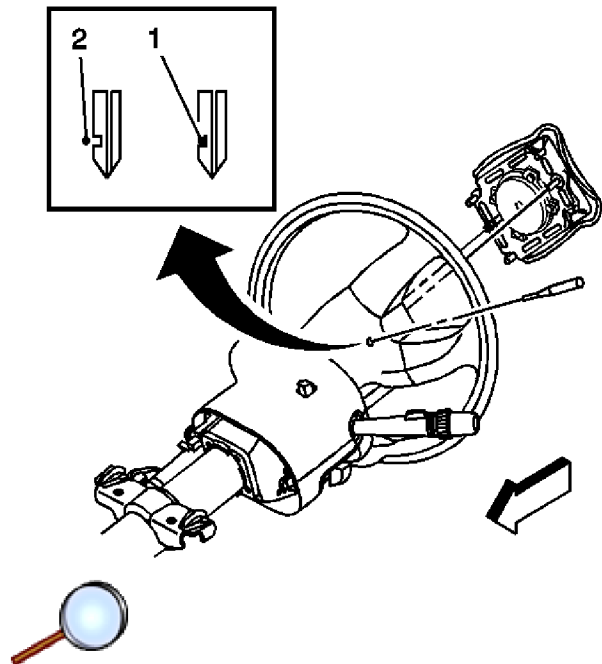
Steering Wheel Inflatable Restraint Module Replacement

Removal Procedure

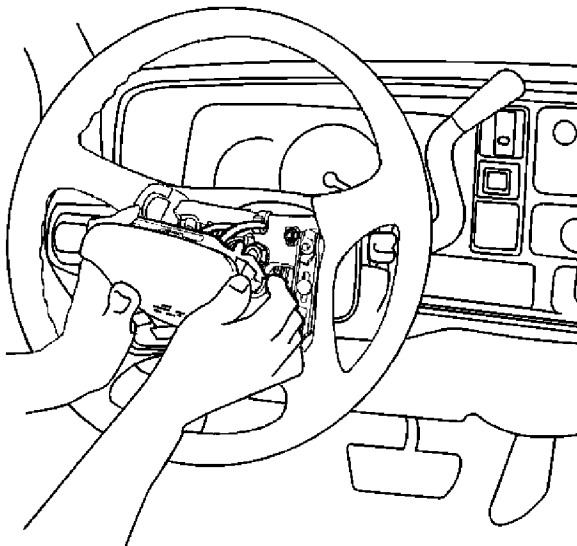
Warning: Refer to [SIR Inflator Module Handling and Storage Warning](#) in the Preface section.

Warning: Refer to [SIR Warning](#) in the Preface section.

1. Disable the inflatable restraint steering wheel module. Refer to [SIR Disabling and Enabling](#).



2. Using a blunt-ended tool, push the leaf spring fasteners (2) inward through the access holes. The access holes are located on both sides of the steering wheel shroud.



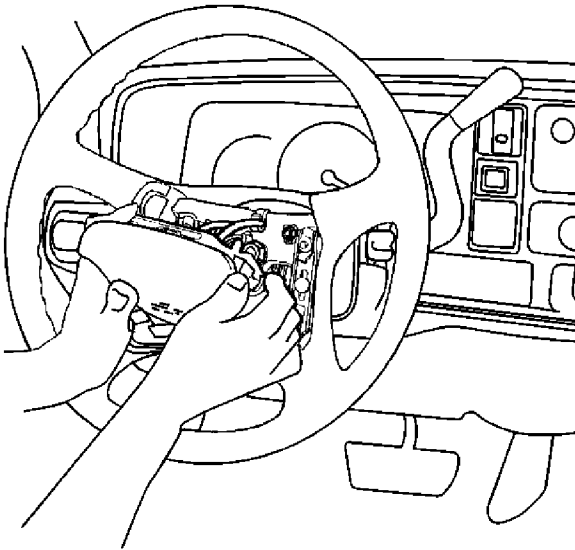


3. Lift and partially remove the inflatable restraint steering wheel module from the steering wheel in order to expose the electrical connectors.
4. Disconnect the connector-position assurance (CPA) retainers from the electrical connectors.
5. Disconnect the electrical connectors from the inflatable restraint steering wheel module.

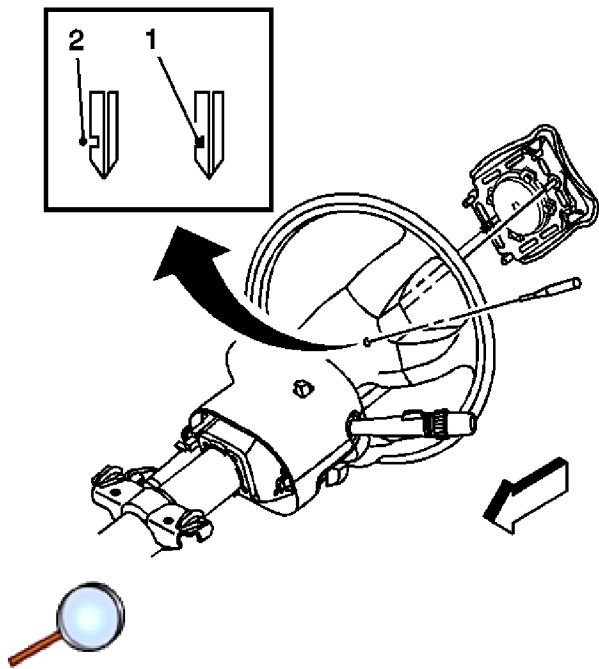
Note: Do not attempt to repair the inflatable restraint steering wheel module. The inflatable restraint steering wheel module is replaced only as an assembly.

6. Remove the inflatable restraint module from the steering wheel.
7. Fully deploy the module before disposal. If the module was replaced under warranty, fully deploy and dispose of the module after the required retention period. Refer to [Inflator Module Handling and Scrapping](#).

Installation Procedure



1. Position the inflatable restraint module to the steering wheel.
2. Connect the electrical connectors to the inflatable restraint steering wheel module.
3. Connect the CPA retainers into the electrical connectors. Seat and lock the connections.



4. Position the alignment posts of the inflatable restraint module to the holes that are located on the steering wheel housing.
5. Push the inflatable restraint module into the steering wheel in order to engage and in order to latch the 2 leaf spring fasteners (1).
6. After installation, pull the sides of the inflatable restraint module in order to ensure that both leaf spring fasteners are engaged.
7. Enable the inflatable restraint steering wheel module. Refer to [SIR Disabling and Enabling](#).

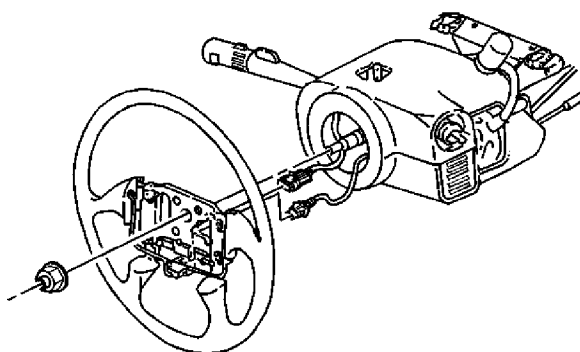
Steering Wheel Inflatable Restraint Module Coil Replacement

Special Tools

[J 42640](#) Steering Column Anti Rotation Pin

Removal Procedure

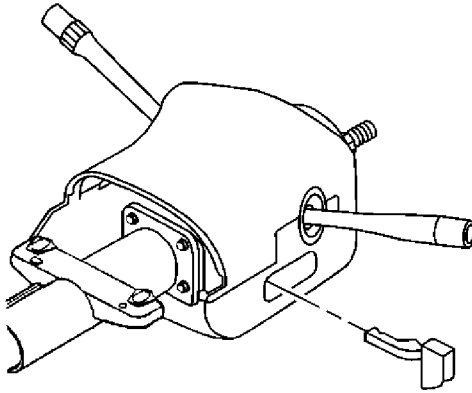
Warning: Refer to [SIR Warning](#) in the Preface section.



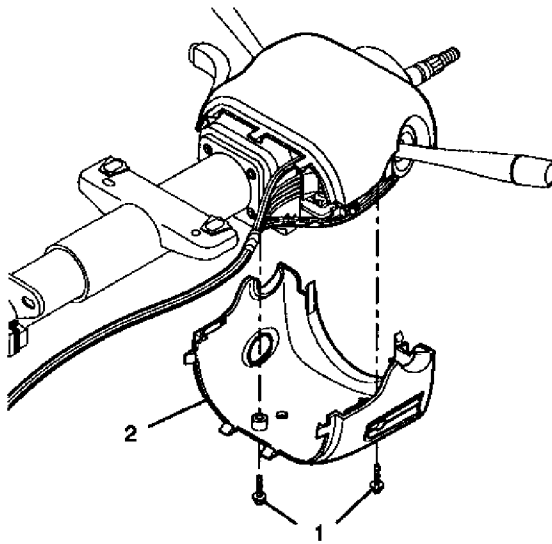
1. Disable the SIR System. Refer to [SIR Disabling and Enabling](#).

Caution: The wheels of the vehicle must be straight ahead and the steering column in the LOCK position before disconnecting the steering column or intermediate shaft from the steering gear. Failure to do so will cause the SIR coil assembly to become uncentered, which may cause damage to the coil assembly.

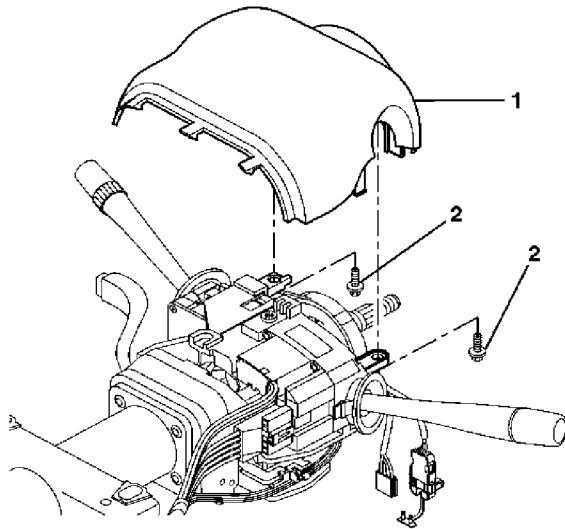
2. Verify the following before removing the SIR coil:
 - The wheels on the vehicle are straight ahead.
 - That [J 42640](#) is installed or the ignition switch is in the LOCK position.
3. Remove the steering wheel from the steering shaft. Refer to [Steering Wheel Replacement](#).



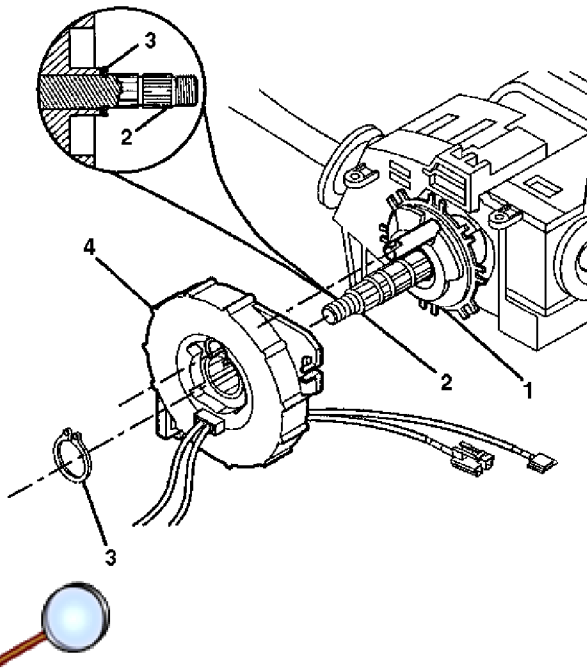
4. On vehicles with a tilt column, pull the tilt lever straight out from the steering column.



5. Remove 2 TORX® head screws (1) from the lower trim cover (2).
6. Remove the lower trim cover (2).

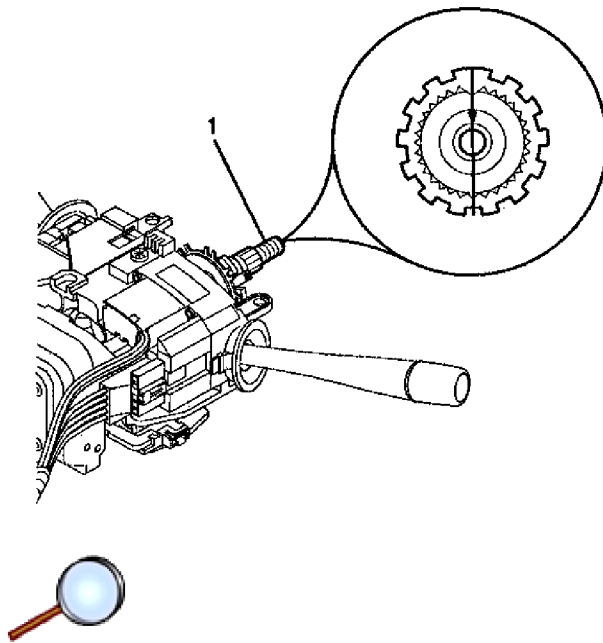


7. Remove 2 TORX® head screws (2) from the upper trim cover (1).
8. Remove the upper trim cover (1).



9. Remove the wire harness straps from the steering wheel column wire harness.
10. Remove the retaining ring (3).
11. Remove the SIR coil (4) from the steering shaft.
12. If replacing, discard the SIR coil.

Installation Procedure

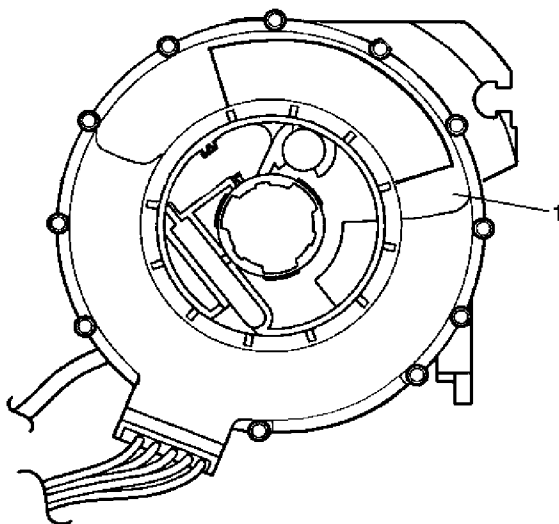


Caution: The new SIR coil assembly will be centered. Improper alignment of the SIR coil assembly may damage the unit, causing an inflatable restraint malfunction.

Caution: The wheels of the vehicle must be straight ahead and the steering column in the LOCK position before disconnecting the steering column or intermediate shaft from the steering gear. Failure to do so will cause the SIR coil assembly to become uncentered, which may cause damage to the coil assembly.

1. Verify the following:

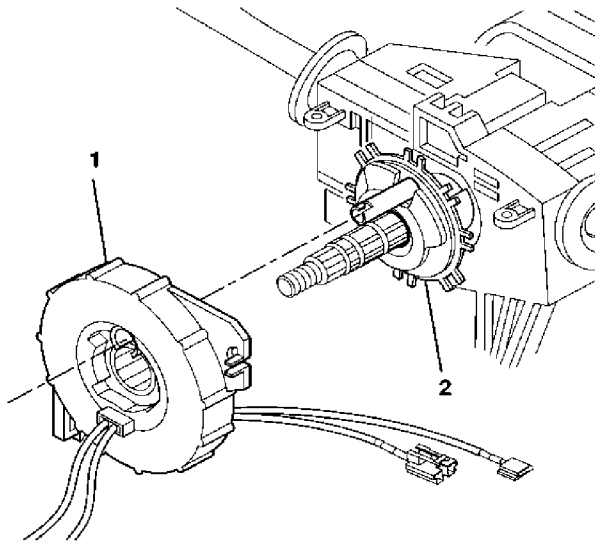
- The wheels on the vehicle are straight ahead.
- That [J 42640](#) is installed or the ignition switch is in the LOCK position.



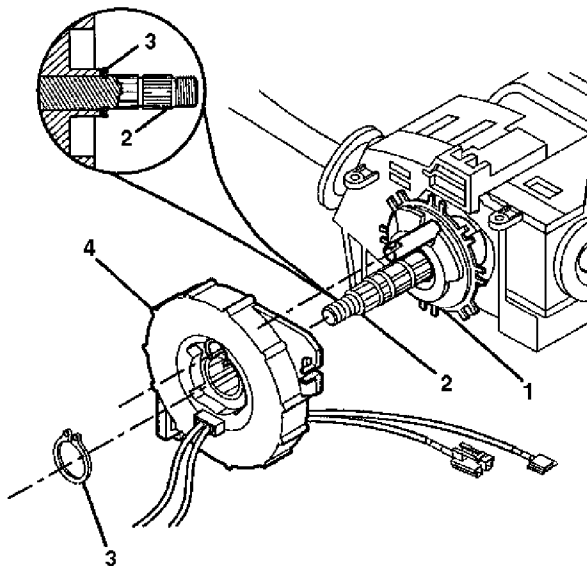


Note: Do not remove the centering tab from the new SIR coil until the installation is complete. If the SIR coil does not come with a centering tab, you must center the SIR coil.

2. If reusing the existing coil it MUST be centered, refer to [Inflatable Restraint Steering Wheel Module Coil Centering](#).

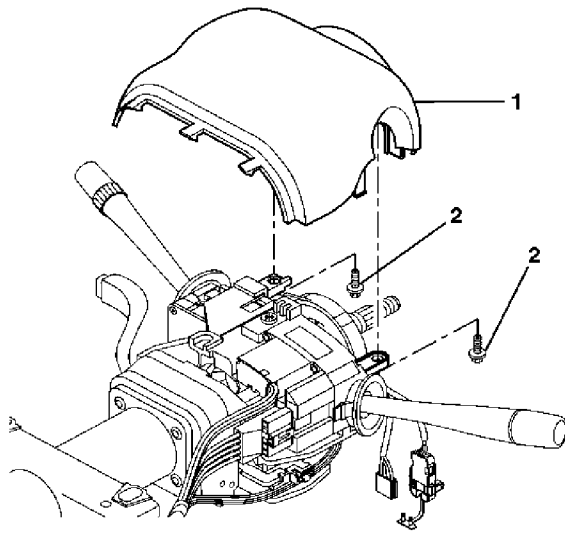


3. Align the SIR coil assembly (1) with the horn tower on the turn signal cancel cam assembly (2).

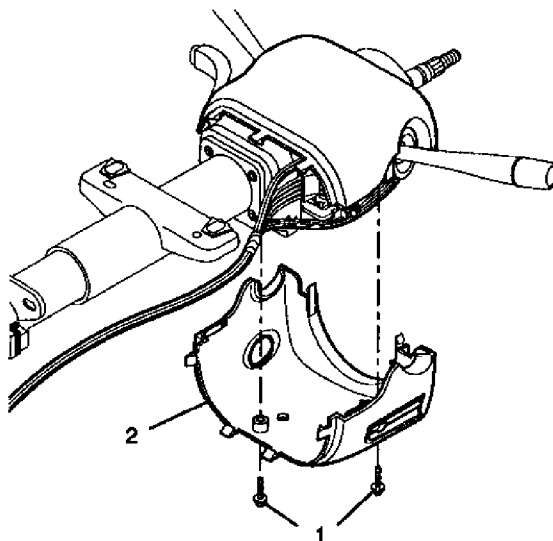


4. Slide the SIR coil (4) onto the steering shaft assembly (2).
5. Firmly seat the retaining ring (3) into the groove on the steering shaft assembly (2).
6. Remove and discard the centering tab from the new SIR coil (4).

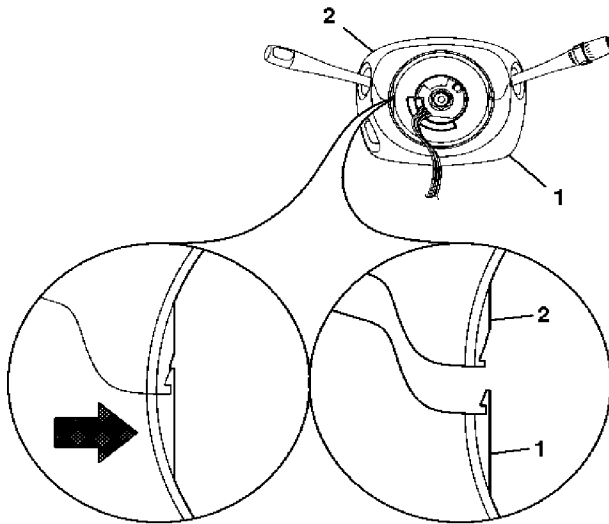
Caution: Refer to [Fastener Caution](#) in the Preface section.



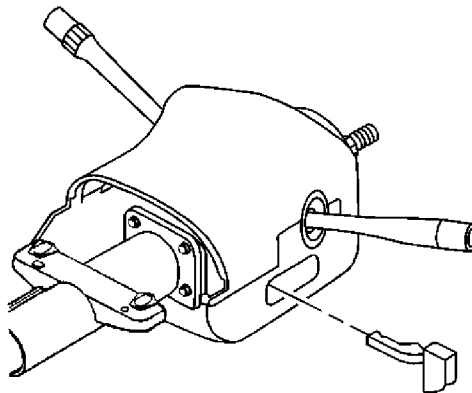
7. Install the upper trim cover (1) and secure by using 2 TORX® head screws (2) and tighten to **1.5 N·m (13 lb in)**.



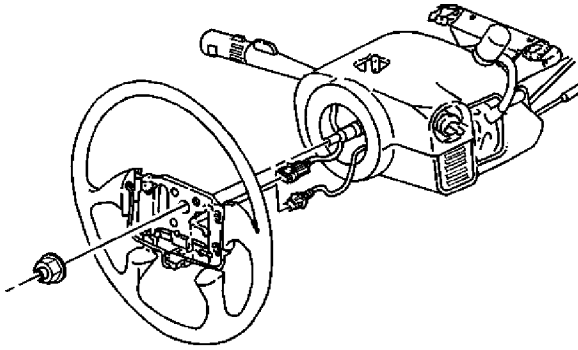
8. Install the lower trim cover (2) and secure by using 2 TORX® head screws (1).



9. Verify that the tabs on the lower trim cover (1) engage with the tabs on the upper trim cover (2). Snap the tabs together. Tighten the screws to **1.5 N·m (13 lb in)**.

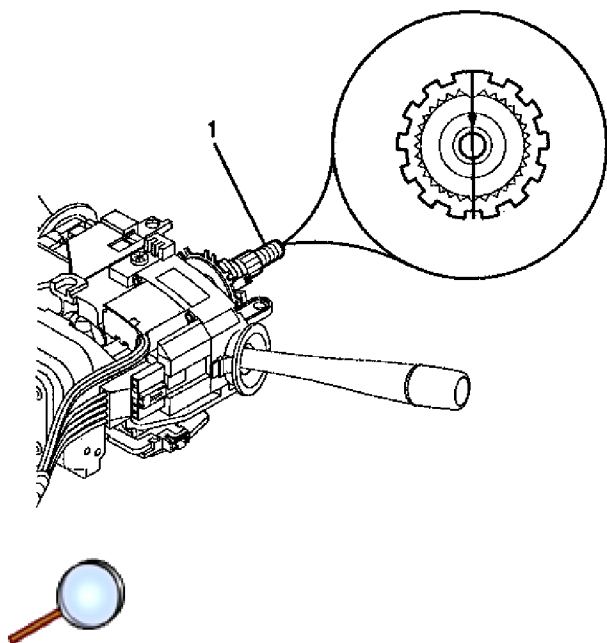


10. On vehicles with a tilt column, align the tilt lever into the steering column.
11. Slide the tilt lever handle into the steering column until the handle locks into position.



12. Install the steering wheel onto the steering shaft. Refer to [Steering Wheel Replacement](#).
13. Enable the SIR system. Refer to [SIR Disabling and Enabling](#).

Inflatable Restraint Steering Wheel Module Coil Centering

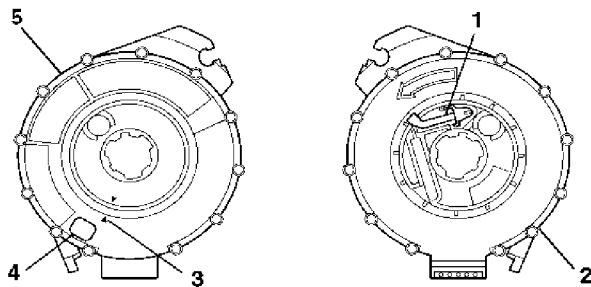


Caution: The new SIR coil assembly will be centered. Improper alignment of the SIR coil assembly may damage the unit, causing an inflatable restraint malfunction.

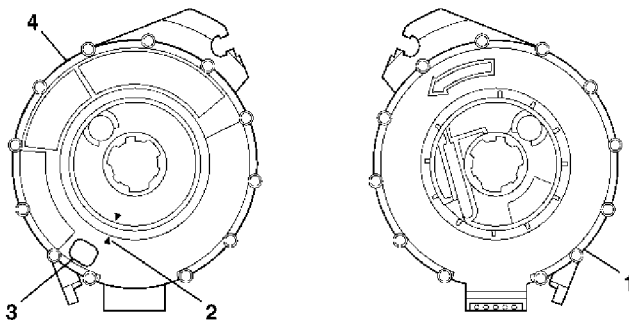
Note: If double wire harness strap is installed onto the wire harness assembly and column, you must reuse the holder for the wire straps during installation.

Remove the wire harness strap(s) where necessary.

1. Verify the following conditions before centering the SIR coil:
 - The wheels on the vehicle are straight ahead.
 - The block tooth (1) of the steering shaft assembly is in the 12 o'clock position.
 - The ignition switch is in the LOCK position.



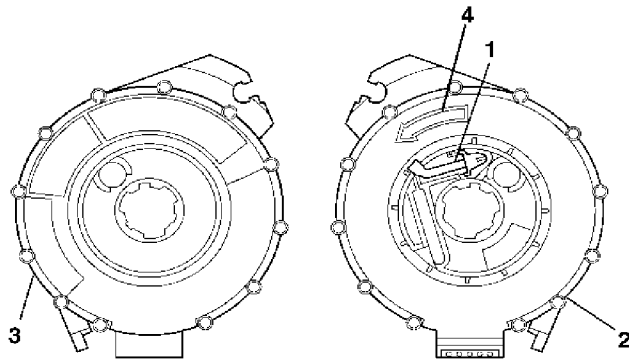
2. If the front (5) of the SIR coil has a centering window (4), and the back side (2) includes a spring service lock (1), perform the following steps:
 - 2.1. Hold the SIR coil with the face up.
 - 2.2. While depressing the spring service lock, rotate the coil hub clockwise until the coil ribbon stops.
 - 2.3. Rotate the coil hub slowly, counterclockwise, until the centering window appears yellow and both arrows (3) line up.
 - 2.4. Release spring service lock between the locking tab. The SIR coil is now centered.
 - 2.5. Align the centered SIR coil with the horn tower and slide onto the steering shaft assembly.



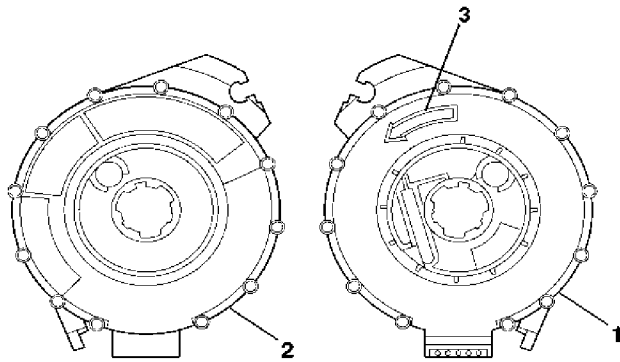
3. If the front (4) of the SIR coil has a centering window (3), and the back side (1) includes NO

spring service lock, perform the following steps:

- 3.1. Hold the SIR coil with the face up.
- 3.2. Rotate the coil hub clockwise until the coil ribbon stops.
- 3.3. Rotate the coil hub slowly, counterclockwise until the centering window appears yellow and both arrows (2) line up. This is the CENTER position.
- 3.4. While holding the coil hub in the CENTER position, align the SIR coil with the horn tower and slide onto the steering shaft assembly.



4. If the front side (3) of the SIR coil has NO centering window, but the back side (2) includes a spring service lock (1), perform the following steps:
 - 4.1. Hold the SIR coil with the back side up.
 - 4.2. While depressing the spring service lock, rotate the coil hub in the direction of the arrow (4) until the coil ribbon stops.
 - 4.3. Still pressing the spring service lock, rotate the coil hub in the opposite direction 2½ revolutions.
 - 4.4. Release the spring service lock between locking tabs. The SIR coil is now centered.
 - 4.5. Align the centered SIR coil with the horn tower and slide onto the steering shaft assembly.



5. If the front side (2) of the SIR coil has NO centering window, and the back side (1) includes NO spring service lock, perform the following steps:
 - 5.1. Hold the SIR coil with the face up.
 - 5.2. Rotate the coil hub in the direction of the arrow until the coil ribbon stops.
 - 5.3. Rotate the coil hub, slowly, counterclockwise, for 2½ revolutions. This is the CENTER position.
 - 5.4. While maintaining the coil hub in the CENTER position, align the centered SIR coil with the horn tower and slide onto the steering shaft assembly.
6. If double wire harness strap is installed onto the wire harness assembly and column, you must route the wires up against the steering column. One wire harness strap will surround one lead from the coil to the steering column. The other wire harness strap will surround all leads to the steering column.

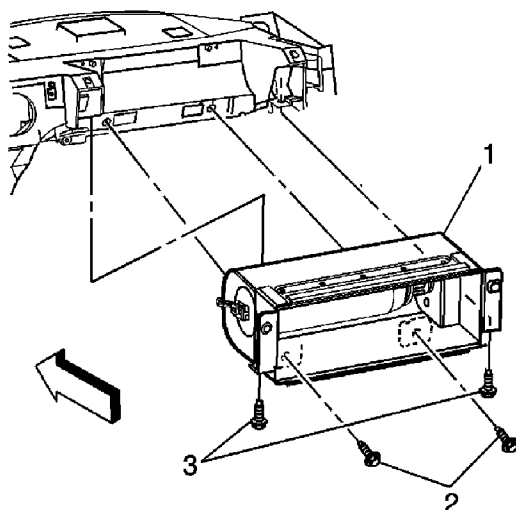
Instrument Panel Inflatable Restraint Module Replacement

Removal Procedure

Warning: Refer to [SIR Inflator Module Handling and Storage Warning](#) in the Preface section.

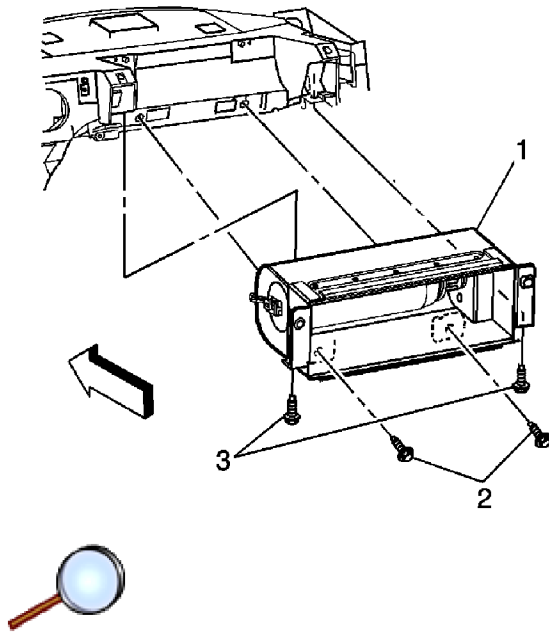
Warning: Refer to [SIR Warning](#) in the Preface section.

1. Disable the SIR system. Refer to [SIR Disabling and Enabling](#).
2. Remove the right knee bolster bracket. Refer to [Passenger Knee Bolster Bracket Replacement](#).
3. Remove the instrument panel trim pad. Refer to [Instrument Panel Trim Pad Replacement](#).
4. Remove the body control module. Refer to [Body Control Module Replacement](#).
5. Disconnect the instrument panel inflatable restraint module electrical connector.



6. Remove the upper bolts (3) from the instrument panel inflatable restraint module (1).
7. Remove the lower bolts (2) from the instrument panel inflatable restraint module (1).
8. Remove the instrument panel inflatable restraint module (1).
9. Ensure that the instrument panel inflatable restraint module is fully deployed before disposal. If the module was replaced under warranty, fully deploy and dispose of the module after the required retention period. Refer to [Inflator Module Handling and Scrapping](#).

Installation Procedure



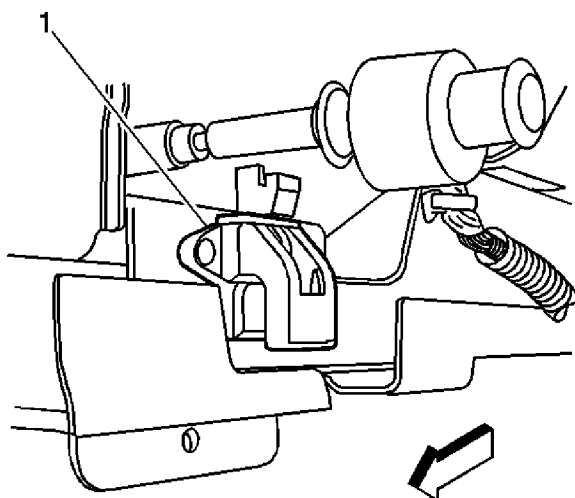
1. Install the inflatable restraint I/P module (1) to the instrument panel inflatable restraint carrier.

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the lower bolts (2) hand tight.
3. Install the lower bolts (3) to the inflatable restraint instrument panel inflatable restraint module and tighten to **10 N·m (89 lb in)**.
4. Connect the electrical connector to the instrument panel inflatable restraint module.
5. Install the right knee bolster bracket. Refer to [Passenger Knee Bolster Bracket Replacement](#).
6. Install the body control module. Refer to [Body Control Module Replacement](#).
7. Install the instrument panel trim pad. Refer to [Instrument Panel Trim Pad Replacement](#).
8. Enable the SIR system. Refer to [SIR Disabling and Enabling](#).

Inflatable Restraint Seat Position Sensor Replacement

Removal Procedure

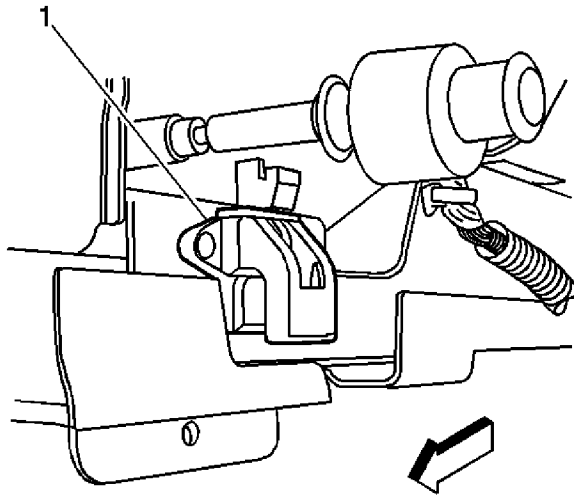


1. Remove the seat from the vehicle. Refer to [Driver or Passenger Seat Replacement](#).
2. Disconnect the electrical connector from the seat position sensor.

Warning: Eye protection must be worn when drilling rivets to reduce the chance of personal injury.

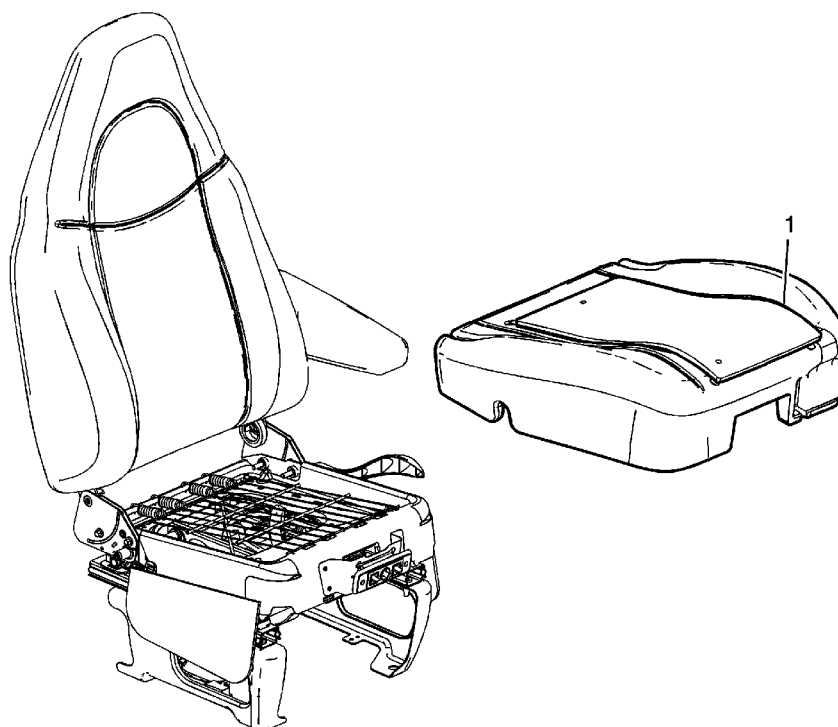
3. Drill out the rivets that retain the seat position sensor (1) to the seat adjuster track bracket.
4. Remove the seat position sensor from the seat adjuster track bracket.

Installation Procedure



1. Install the seat position sensor to the seat adjuster bracket.
2. Install the rivets that retain the seat position sensor (1) to the seat adjuster track bracket.
3. Connect the electrical connector to the seat position sensor.
4. Install the passenger seat to the vehicle. Refer to [Driver or Passenger Seat Replacement](#).

Inflatable Restraint Passenger Presence System Replacement - Front



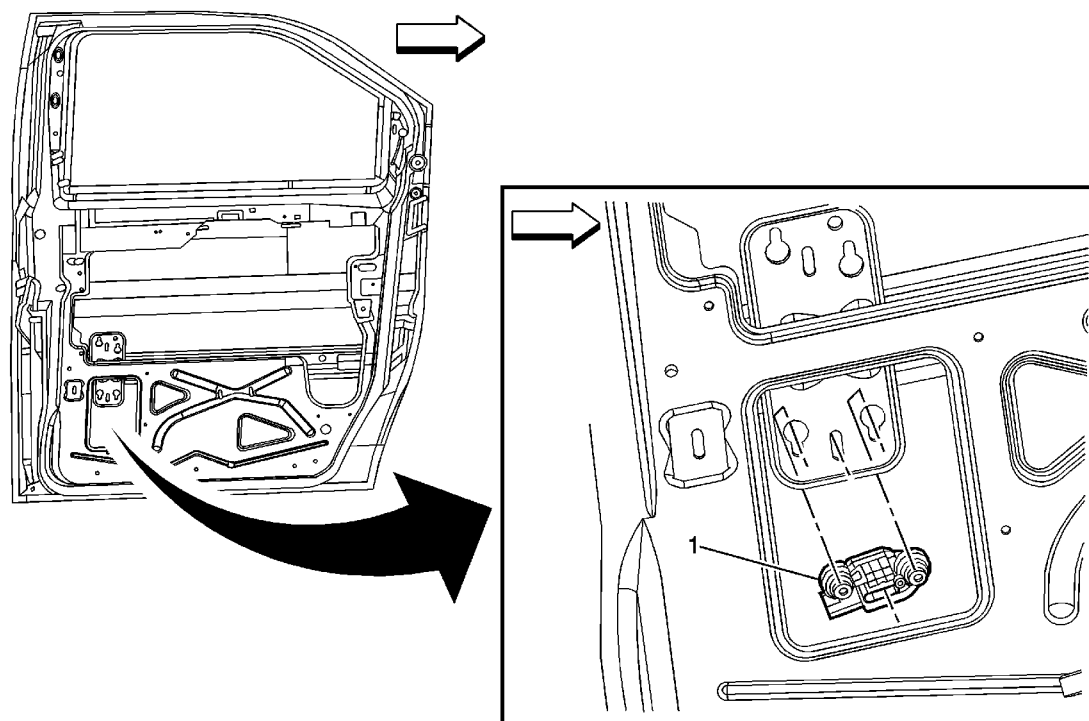
Callout	Component Name
	<p>Warning: Replace the passenger presence system as a complete assembly to prevent possible injury to the occupant. All the components in the service kit are assembled and calibrated as a unit. Using only some of the components in the service kit will cause the passenger presence system to operate improperly.</p> <p>Warning: To avoid personal injury, perform a preload test on the passenger presence system whenever you remove or replace the seat cushion trim. Failure to do so may cause the system to malfunction.</p> <h3>Preliminary Procedure</h3> <ol style="list-style-type: none">1. Remove the front seat. Refer to Driver or Passenger Seat Replacement.2. Remove the seat cushion cover. Refer to Front Seat Cushion Cover and Pad Replacement.3. Re-zero the inflatable restraint passenger presence system whenever the seat cushion or any component of the passenger presence system is removed. Refer to Control Module References for programming and setup information.
	<p>Inflatable Restraint Front Passenger Presence System Assembly</p> <p>© 2010 General Motors Corporation. All rights reserved.</p>

1

Tip

- The passenger presence system is an integral part of the pad on the passenger seat cushion.
- The sensor, module and seat cushion pad must be replaced as a unit.

Inflatable Restraint Side Impact Sensor Replacement - Front



Callout	Component Name
<h3>Preliminary Procedure</h3> <p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the front side door trim panel. Refer to Front Side Door Trim Panel Replacement.3. Remove the front side door water deflector. Refer to Front Side Door Water Deflector Replacement.	
	Side Impact Inflatable Restraint Sensor - Front

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Caution: Refer to [Fastener Caution](#) in the Preface section.

Procedure

1

1. Disconnect the electrical connector.
2. Loosen the side impact inflatable restraint sensor bolts. (Qty: 2)
3. Remove the side impact inflatable restraint sensor from the vehicle.

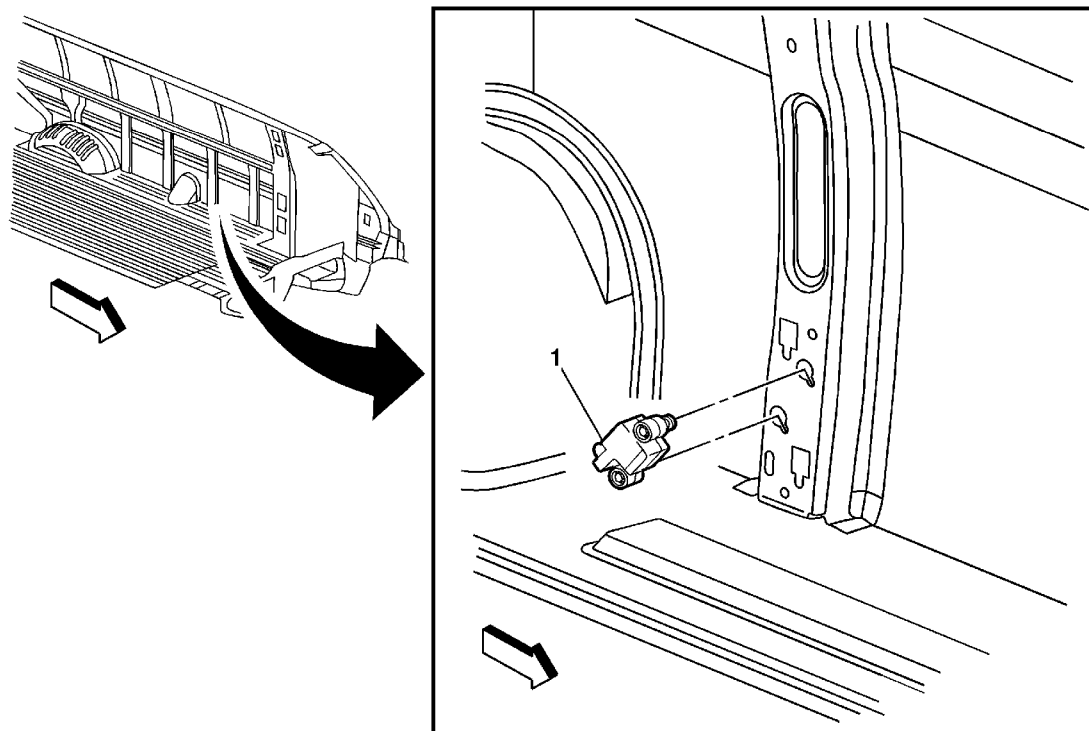
Tip

The bolts and the push in fasteners are an integral part of the sensor and should remain with the sensor.

Tighten

8 N·m (71 lb in)

Inflatable Restraint Side Impact Sensor Replacement - Left Side Rear

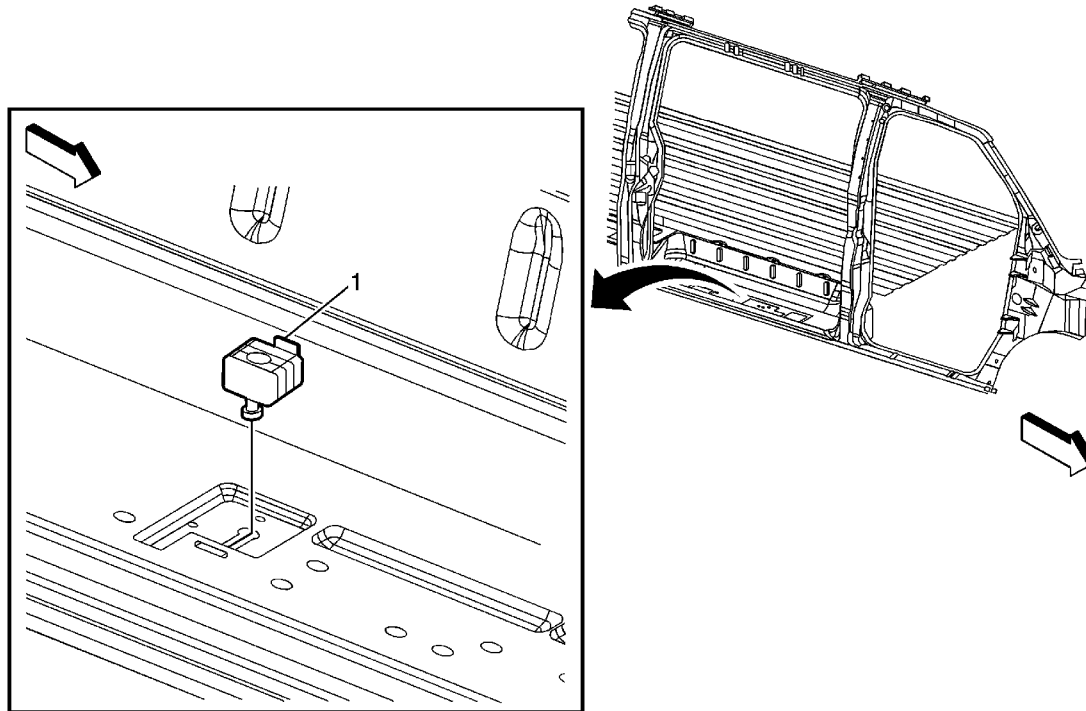


Callout	Component Name
<h3>Preliminary Procedure</h3> <p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the Left rear inside trim panel. Refer to Body Side Trim Panel Replacement - Left Side.	
	<p>Side Impact Inflatable Restraint Sensor - Right</p> <p>Caution: Refer to Fastener Caution in the Preface section.</p>

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1	<div data-bbox="324 157 548 199">Procedure</div> <div data-bbox="357 231 1323 336"><ol style="list-style-type: none">1. Disconnect the electrical connector.2. Loosen the side impact inflatable restraint sensor bolts. (Qty: 2)3. Remove the side impact inflatable restraint sensor from the vehicle.</div> <div data-bbox="324 367 381 409">Tip</div> <div data-bbox="324 399 1388 441">The bolts are an integral part of the sensor and should remain with the sensor.</div> <div data-bbox="324 472 446 514">Tighten</div> <div data-bbox="324 504 544 546">7 N·m (62 lb in)</div>
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Inflatable Restraint Side Impact Sensor Replacement - Right Side Rear (with E24)

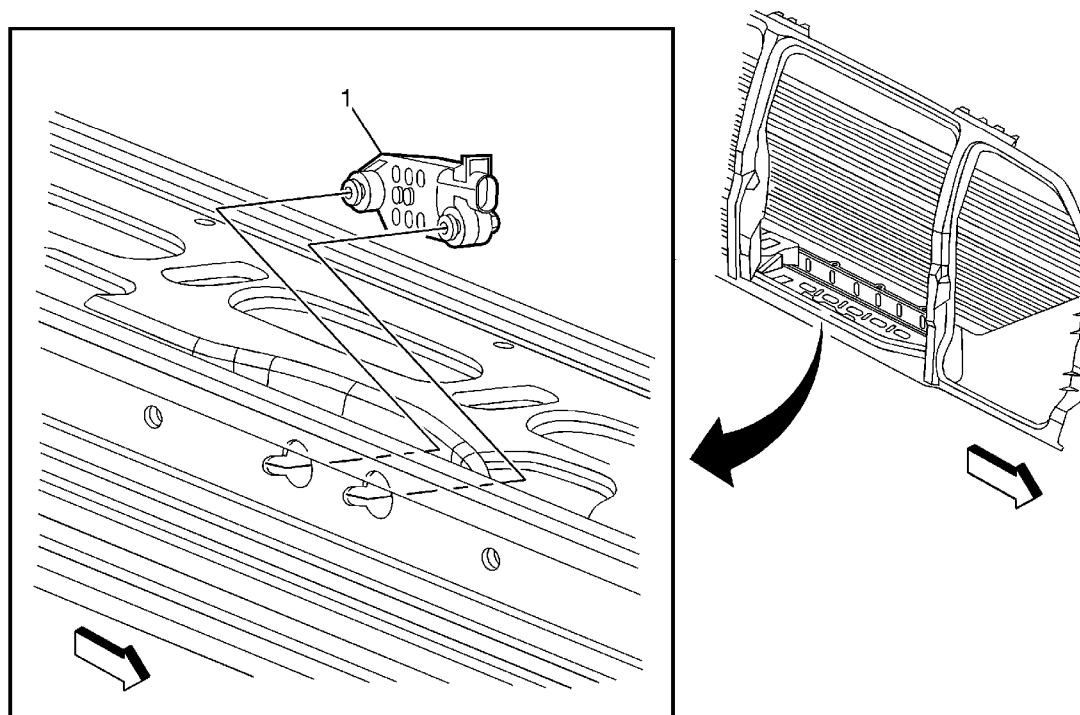


Callout	Component Name
<h3>Preliminary Procedure</h3> <p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the rear door step mat. Refer to Rear Side Door Step Mat Replacement.	
	<p>Side Impact Inflatable Restraint Sensor - Right</p> <p>Caution: Refer to Fastener Caution in the Preface section.</p>

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1	<div data-bbox="324 157 548 199">Procedure</div> <div data-bbox="357 237 1323 336"><ol style="list-style-type: none">1. Disconnect the electrical connector.2. Loosen the side impact inflatable restraint sensor bolts. (Qty: 2)3. Remove the side impact inflatable restraint sensor from the vehicle.</div> <div data-bbox="324 373 381 405">Tip</div> <div data-bbox="324 405 1393 438"><p>The bolts are an integral part of the sensor and should remain with the sensor.</p></div> <div data-bbox="324 474 449 508">Tighten</div> <div data-bbox="324 508 548 541"><p>7 N·m (62 lb in)</p></div>
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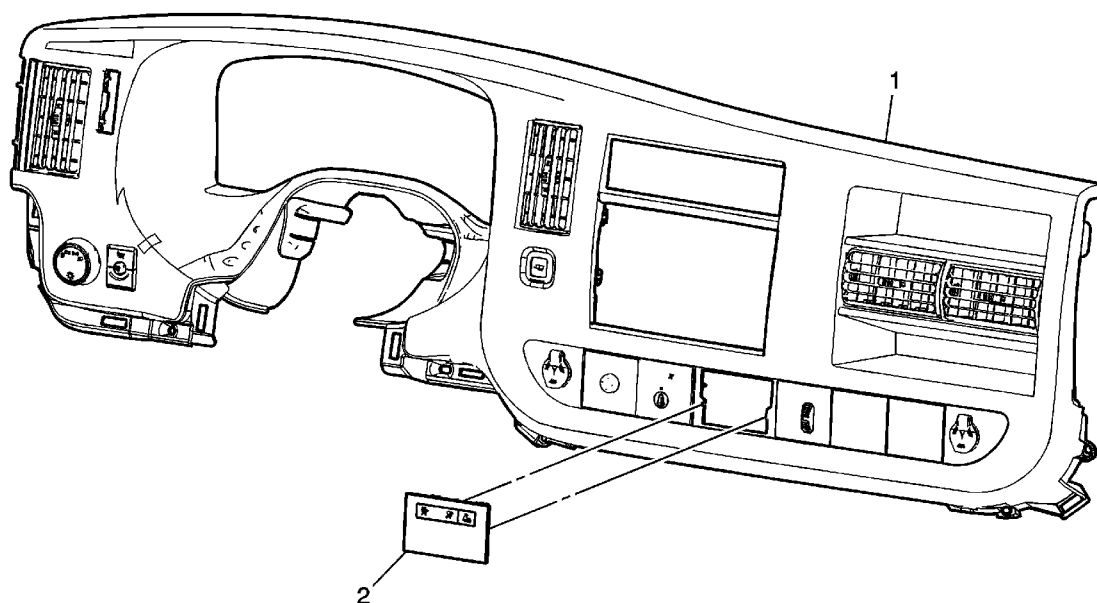
Inflatable Restraint Side Impact Sensor Replacement - Right Side Rear (with YA2)



Callout	Component Name
Preliminary Procedure	
<p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the rear door step mat. Refer to Rear Side Door Step Mat Replacement.	
	Side Impact Inflatable Restraint Sensor - Right
	<p>Caution: Refer to Fastener Caution in the Preface section.</p> <p>© 2010 General Motors Corporation. All rights reserved.</p>

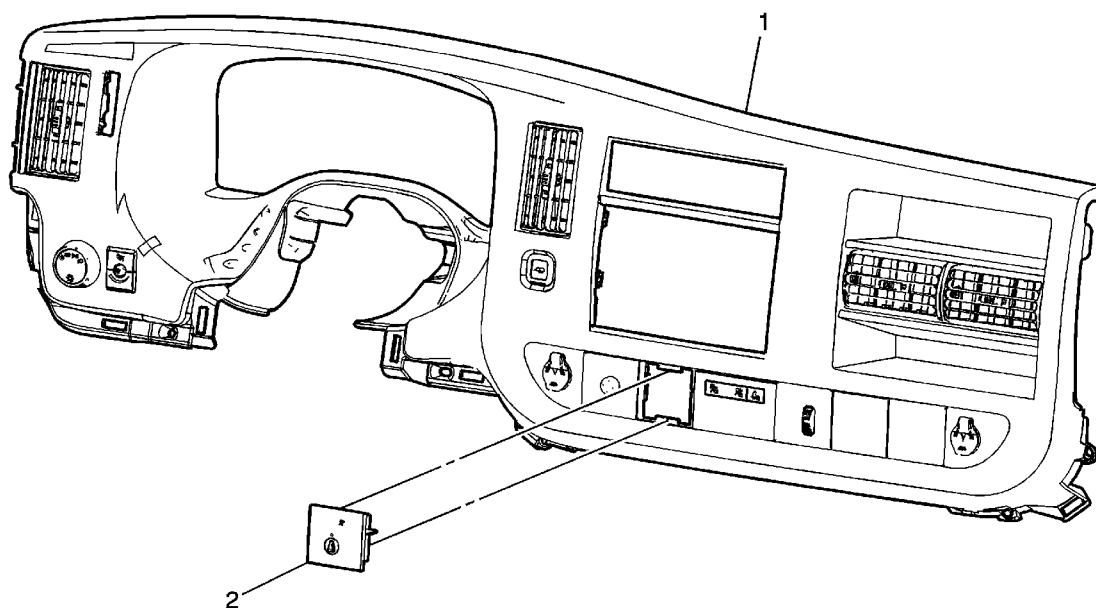
1	<div data-bbox="324 157 548 199">Procedure</div> <div data-bbox="357 237 1323 336"><ol style="list-style-type: none">1. Disconnect the electrical connector.2. Loosen the side impact inflatable restraint sensor bolts. (Qty: 2)3. Remove the side impact inflatable restraint sensor from the vehicle.</div> <div data-bbox="324 373 381 405">Tip</div> <div data-bbox="324 405 1393 438"><p>The bolts are an integral part of the sensor and should remain with the sensor.</p></div> <div data-bbox="324 474 449 508">Tighten</div> <div data-bbox="324 508 548 541"><p>7 N·m (62 lb in)</p></div>
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Inflatable Restraint Instrument Panel Module Indicator Replacement



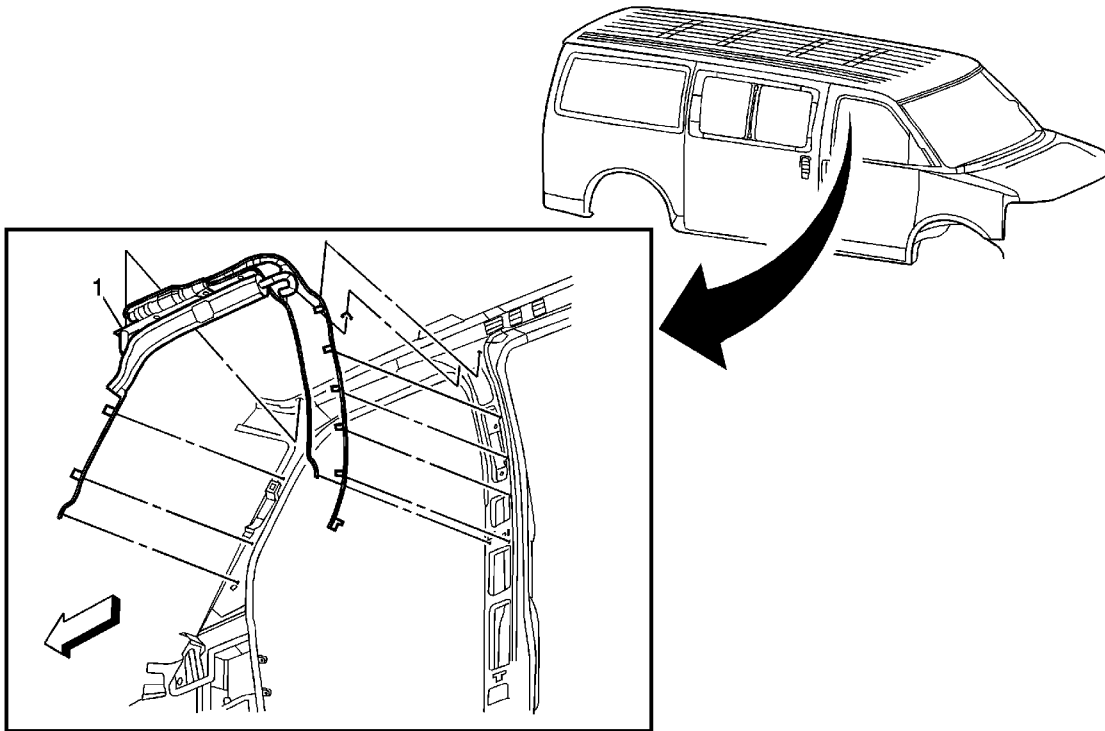
Callout	Component Name
1	Instrument Panel Cluster Trim Plate Bezel Assembly Refer to Instrument Panel Cluster Trim Plate Bezel Replacement .
2	SIR Indicator Assembly Procedure Squeeze the retaining tabs on the back of the switch and push the switch out of the cluster trim bezel assembly.

Instrument Panel Inflatable Restraint Module Switch Replacement



Callout	Component Name
1	Instrument Panel Cluster Trim Plate Bezel Assembly Refer to Instrument Panel Cluster Trim Plate Bezel Replacement .
2	SIR Shut - off Switch Assembly Procedure Squeeze the retaining tabs on the back of the switch and push the switch out of the cluster trim bezel assembly.

Inflatable Restraint Roof Side Rail Module Replacement - Front



Callout	Component Name
<h3>Preliminary Procedure</h3> <p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the front headliner assembly. Refer to Headlining Front Trim Panel Replacement.	
	Front Roof Side Rail Inflatable Restraint Module Assembly
	<p>Caution: Refer to Fastener Caution in the Preface section.</p> <p><small>© 2010 General Motors Corporation. All rights reserved.</small></p>

Procedure

1

1. Disconnect the electrical connector.
2. Loosen the roof side rail inflatable restraint module bolts. (Qty: 7)
3. Remove the push in retainers (Qty: 10) securing the roof side rail inflatable restraint module to the vehicle.
4. Remove the roof side rail inflatable restraint module from the vehicle.

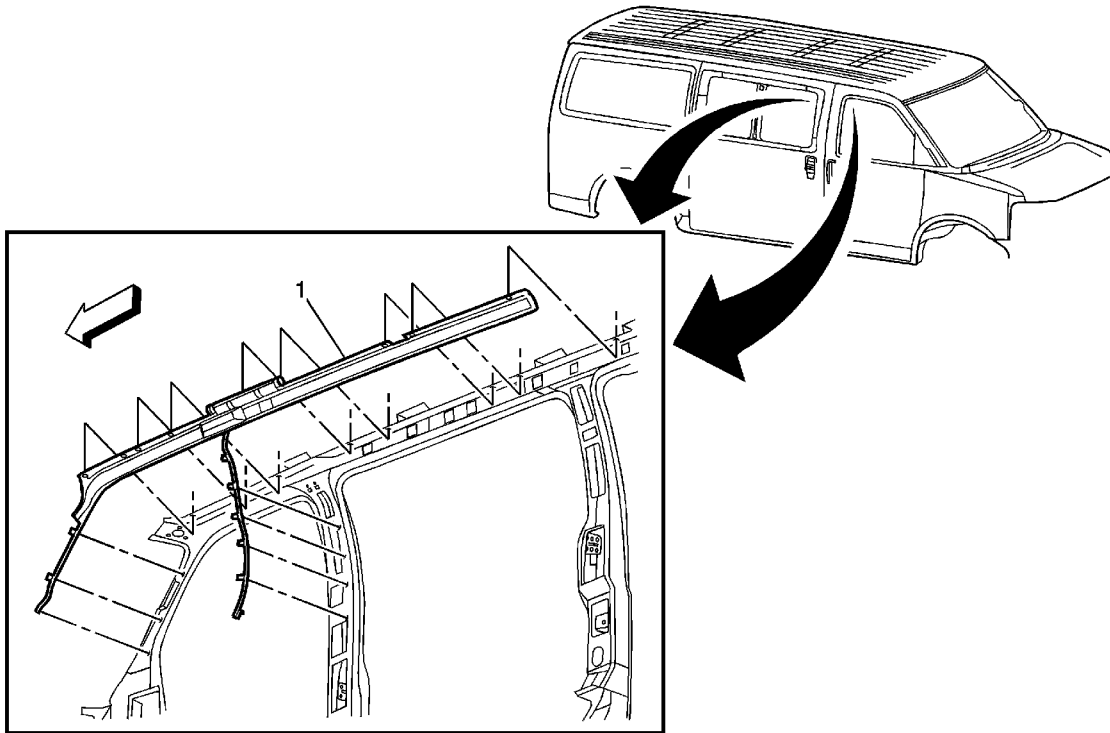
Tip

The bolts and the push in fasteners are an integral part of the module and should remain with the module.

Tighten

9 N·m (80 lb in)

Roof Side Rail Inflatable Restraint Module Replacement (without YA2)



Callout	Component Name
<h3>Preliminary Procedure</h3> <p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the headliner assembly. Refer to Headlining Front Trim Panel Replacement and Headlining Rear Trim Panel Replacement.	
	<p>Roof Side Rail Inflatable Restraint Module Assembly</p> <p>Caution: Refer to Fastener Caution in the Preface section.</p>

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Procedure

1

1. Disconnect the electrical connector.
2. Loosen the roof side rail inflatable restraint module bolts. (Qty: 9)
3. Remove the push in retainers (Qty: 13) securing the roof side rail inflatable restraint module to the vehicle.
4. Remove the roof side rail inflatable restraint module from the vehicle.

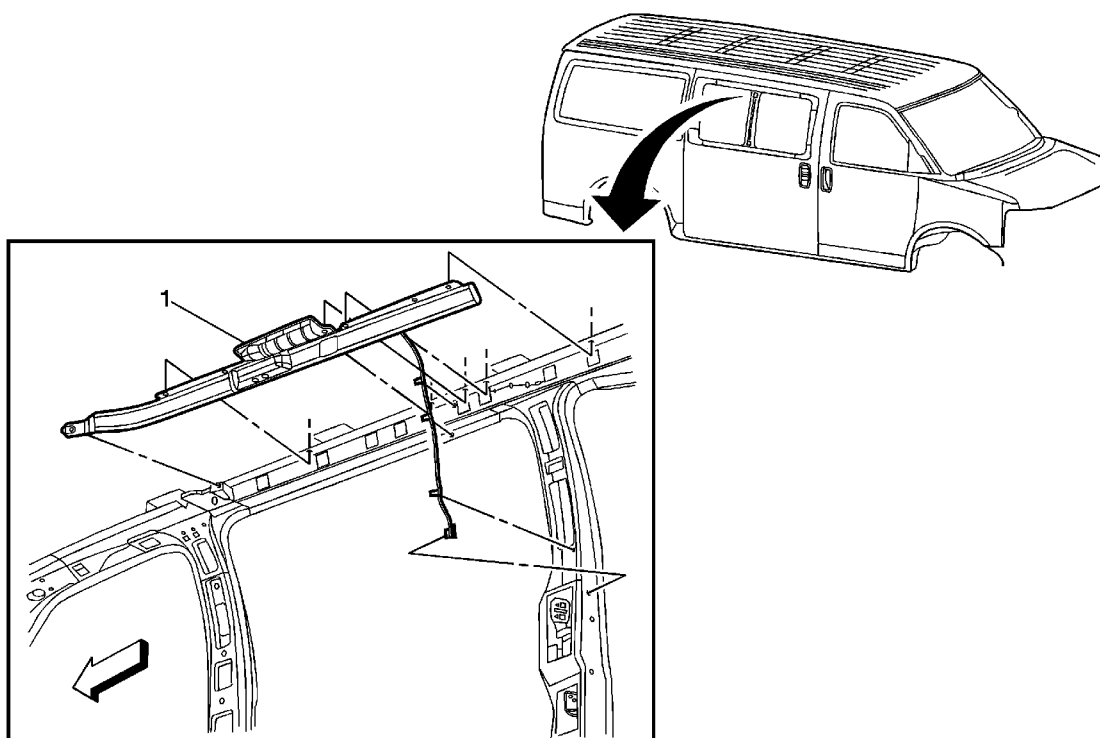
Tip

The bolts and the push in fasteners are an integral part of the module and should remain with the module.

Tighten

9 N·m (80 lb in)

Inflatable Restraint Roof Side Rail Module Replacement - Rear



Callout	Component Name
<h3>Preliminary Procedure</h3> <p>Warning: Refer to SIR Warning in the Preface section.</p> <p>Warning: Refer to SIR Inflator Module Handling and Storage Warning in the Preface section.</p> <p>Warning: In order to prevent SIR deployment, personal injury, or unnecessary SIR system repairs, do not strike the door or the door pillar in the area of the side impact sensor (SIS). Turn OFF the ignition and remove the key when performing service in the area of the SIS.</p> <ol style="list-style-type: none">1. Disable the SIR system. Refer to SIR Disabling and Enabling.2. Remove the rear headliner assembly. Refer to Headlining Rear Trim Panel Replacement.	
	<p>Rear Roof Side Rail Inflatable Restraint Module Assembly</p> <p>Caution: Refer to Fastener Caution in the Preface section.</p>

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Procedure

1

1. Disconnect the electrical connector.
2. Loosen the roof side rail inflatable restraint module bolts. (Qty: 6)
3. Remove the push in retainers (Qty: 8) securing the roof side rail inflatable restraint module to the vehicle.
4. Remove the roof side rail inflatable restraint module from the vehicle.

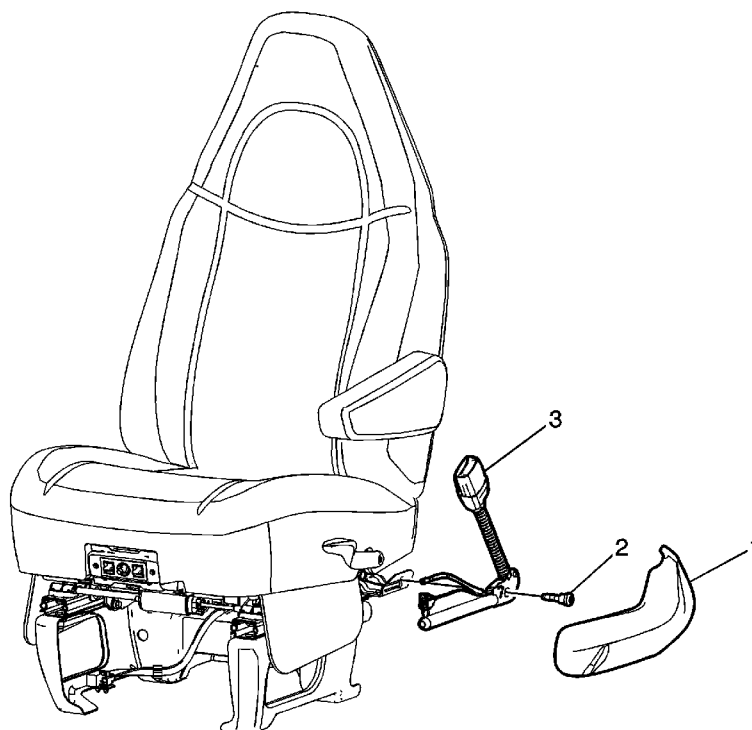
Tip

The bolts and the push in fasteners are an integral part of the module and should remain with the module.

Tighten

9 N·m (80 lb in)

Seat Belt Buckle Pretensioner Replacement



Callout	Component Name
Warning: Refer to SIR Warning in the Preface section.	
Warning: In order to prevent accidental deployment and the risk of personal injury, do not dispose of an undeployed inflatable restraint seat belt pretensioner as normal shop waste. Undeployed seat belt pretensioners contain substances that could cause severe illness or personal injury if their sealed containers are damaged during disposal. Use the following deployment procedures to safely dispose of an undeployed seat belt pretensioner. Failure to observe the following disposal methods may be a violation of federal, state, or local laws.	
Preliminary Procedure	
Disable the SIR. Refer to SIR Disabling and Enabling .	
1	Front Seat Riser Finish Cover Refer to Front Seat Riser Finish Cover Replacement .
2	Seat Belt Buckle Pretensioner Bolt Caution: Refer to Fastener Caution in the Preface section.

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	Tighten 52 N·m (38 lb ft)
3	Seat Belt Buckle Pretensioner

Repairs and Inspections Required After a Collision

Accident With or Without Air Bag Deployment - Component Inspections

Warning: Proper operation of the SIR sensing system requires that any repairs to the vehicle structure return the vehicle structure to the original production configuration. Not properly repairing the vehicle structure could cause non-deployment in a collision or deployment for conditions less severe than intended.

After a collision, inspect the following components as indicated. If any damage is detected, replace the component. If damage to the mounting points or mounting hardware is detected, repair the component or replace the hardware as needed.

- Steering column--Perform the steering column accident damage checking procedures. Refer to [Steering Column Accident Damage Inspection](#).
- Instrument panel (I/P) knee bolsters and mounting points--Inspect the knee bolsters for bending, twisting, buckling, or any other type of damage.
- I/P brackets, braces, etc.--Inspect for bending, twisting, buckling, or any other type of damage.
- Seat belts--Perform the seat belt operational and functional checks. Refer to [Operational and Functional Checks](#).
- Seats and seat mounting points--Inspect for bending, twisting, buckling, or any other type of damage.
- Passenger seat bottom with passenger presence system (PPS)--Check for any dtcs or problems that may cause the PPS not to function properly.
- The roof and headliner mounting points.

Frontal Inflator Module Deployment

After a collision involving air bag deployment, replace the following components.

Note: The front passenger seat is equipped with a PPS, which detects an occupant. If the requirements for disabling the I/P air bag are met then the PPS will communicate with the sensing and diagnostic module (SDM) to disable/turn OFF the I/P air bag, even in a accident. For more information on the PPS refer to [SIR System Description and Operation](#).

- Inflatable restraint I/P module, if deployed and after performing the necessary inspections listed above
- Inflatable restraint steering wheel module
- Inflatable restraint SDM
- Inflatable restraint front end sensor, left/right
- Inflatable restraint seat belt pretensioners

Perform additional inspections on the following components.

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- Steering wheel module coil and the coil wiring pigtail--Inspect for melting, scorching, or other damage due to excessive heat.
- Mounting points or mounting hardware for the I/P, steering wheel module, SDM, and pretensioners--Inspect for any damage and repair or replace each component as needed.

Accident With Side Air Bag Deployment - Component Replacement and Inspections

After a collision involving side air bag deployment, replace the following components.

- Inflatable restraint side impact sensors (SIS), left/right, on the side of the impact
- Inflatable restraint roof rail module, left/right, on the side of the impact
- Inflatable restraint SDM
- Inflatable restraint seat belt pretensioner

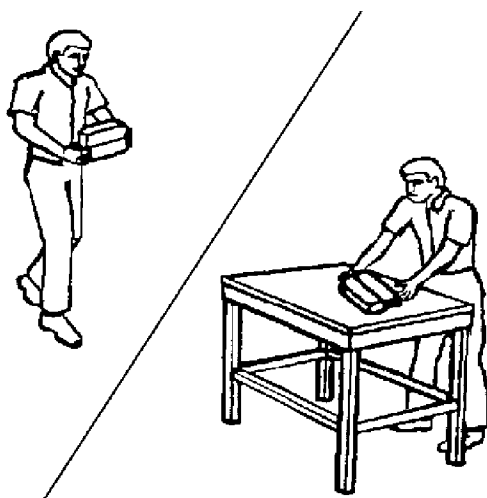
Perform additional inspections on the following components.

- Mounting points or mounting hardware for the SIS--Inspect for any damage and repair or replace each component as needed.
- Mounting points or mounting hardware for the roof rail module (left/right) on the side of impact--Inspect for any damage and repair or replace each component as needed.
- Mounting points or mounting hardware for the SDM and seat belt pretensioners--Inspect for any damage and repair or replace each component as needed.

Inflator Module Handling and Scrapping

Live and Undeployed Inflator Module

Warning: Refer to [SIR Inflator Module Handling and Storage Warning](#) in the Preface section.



Take special care when handling or storing an undeployed inflator module. An inflator module deployment produces a rapid generation of gas. This may cause the inflator module, or an object in front of the inflator module, to project through the air in the event of an unlikely deployment.

Dual Stage Inflator Module

Dual stage inflator modules have 2 deployment stages. If stage 1 was used to deploy a dual stage inflator module, stage 2 may still be active. Therefore, a deployed dual stage inflator module must be treated as an active module. If disposal of a dual stage module is required, both deployment loops must be energized to deploy the air bag.

Scrapping Procedure

During the course of a vehicle's useful life, certain situations may arise which will require the disposal of a live and undeployed inflator module. Do NOT dispose a live and undeployed inflator module through normal disposal channels until the inflator module has been deployed.

Do not deploy the inflator module in the following situations:

- After replacement of an inflator module under warranty--the inflator module may need to be

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returned undeployed to the manufacturer.

- If the vehicle is the subject of a Product Liability report, GM-1241, related to the SIR system and is subject to a preliminary investigation--do NOT alter the SIR system in any manner.
- If the vehicle is involved in a campaign affecting the inflator modules--follow the instructions in the Campaign Service Bulletin for proper SIR handling procedures.

Deployment Procedures

You can deploy the inflator module either inside or outside of the vehicle. The method used depends upon the final disposition of the vehicle. Review the following procedures in order to determine which will work best in a given situation:

Deployment Outside Vehicle - Steering Wheel Module, I/P Module, and Roof Rail Module

Deploy the inflator module outside of the vehicle when the vehicle will be returned to service. Situations that require deployment outside of the vehicle include the following:

- Using the SIR diagnostics, you determine that the inflator module is malfunctioning.
- The inflator module is cosmetically damaged, scratched, or ripped.
- The inflator module pigtail is damaged.
- The inflator module connector is damaged.
- The inflator module connector terminals are damaged.

Deployment and disposal of a malfunctioning inflator module is subject to any required retention period.

Warning: In order to prevent accidental deployment and the risk of personal injury, do not dispose of an undeployed inflator module as normal shop waste. Undeployed inflator modules contain substances that could cause severe illness or personal injury if their sealed containers are damaged during disposal. Use the following deployment procedures to safely dispose of an undeployed inflator module. Failure to observe the following disposal methods may be a violation of federal, state, or local laws.

Special Tools

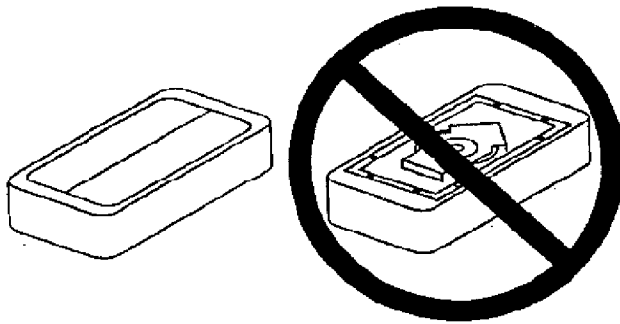
- [J 38826](#) SIR Deployment Harness
- [J 39401-B](#) SIR Deployment Fixture
- An appropriate pigtail adapter

1. Turn OFF the ignition.
2. Remove the ignition key.
3. Put on safety glasses.
4. Remove the inflator module.
 - If you are removing the steering wheel module, refer to [Inflatable Restraint Steering Wheel Module Replacement](#).
 - If you are removing the I/P module, refer to [Inflatable Restraint Instrument Panel Module](#)

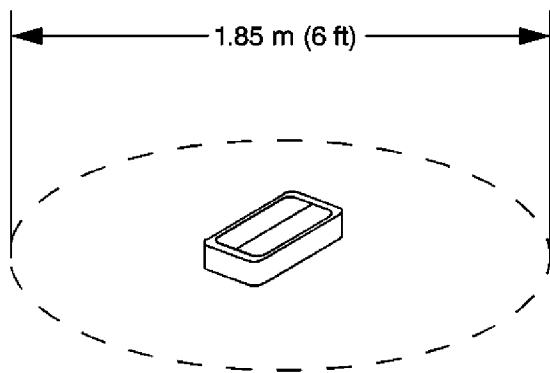
Replacement.

- If you are removing a roof rail module, refer to [Inflatable Restraint Roof Side Rail Module Replacement](#).

Warning: Refer to [SIR Inflator Module Handling and Storage Warning](#) in the Preface section.



5. Place the inflator module on a work bench, with the vinyl trim cover facing up and away from the surface.

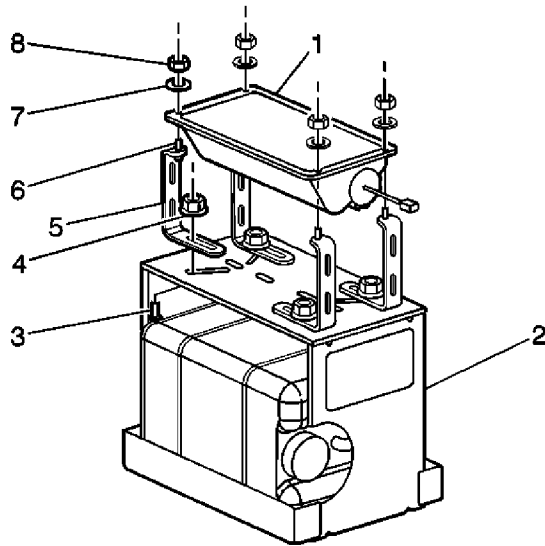


6. Clear a space on the ground about 1.85 m (6 ft) in diameter for deployment of the inflator module or deployment fixture. If possible, use a paved, outdoor location free of activity. Otherwise, use a space free of activity on the shop floor. Ensure you have sufficient ventilation.

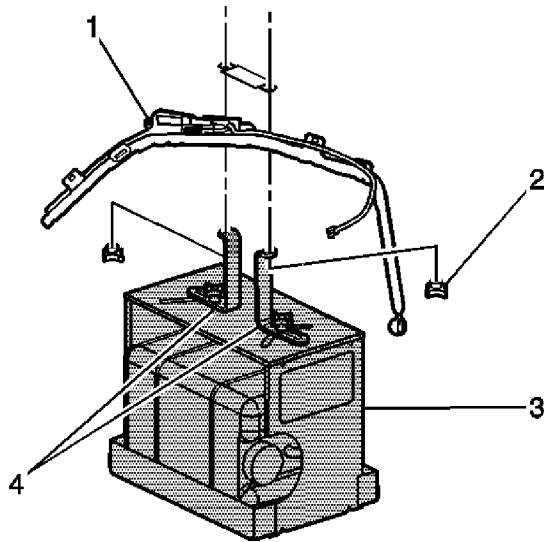
7. Clear the area of loose or flammable objects.

Note: Dual stage deployments are only used in steering wheel and I/P inflator modules. If stage 1 was used to deploy a dual stage inflator module, stage 2 may still be active. If disposal of a dual stage module is required, both deployment loops must be energized to deploy the air bag.

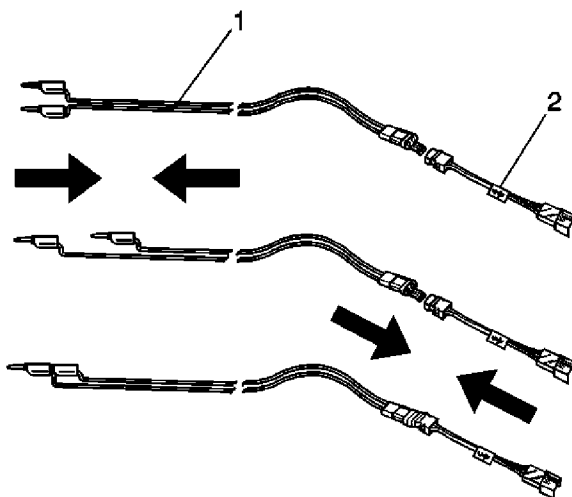
8. If you are deploying a steering wheel inflator module, place the inflator module in the center of the space.



9. When deploying an I/P inflator module, perform the following instructions:
 - 9.1. Place the [J 39401-B](#) in the center of the cleared area.
 - 9.2. Fill the deployment fixture with water or sand.
 - 9.3. Using the proper nuts and bolts, mount the I/P module (1) to the deployment fixture (2), with the vinyl trim facing up.
 - 9.4. Securely tighten all fasteners that hold the I/P module (1) to the deployment fixture (2).



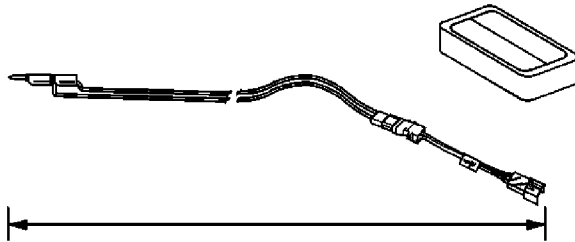
10. When deploying a roof rail module, perform the following instructions:
 - 10.1. Place the [J 39401-B](#) (3) in the center of the cleared area.
 - 10.2. Fill the deployment fixture with water or sand to provide sufficient stabilization of fixture during deployment.
 - 10.3. Adjust and secure the fixture arms (4) to the deployment fixture (3), using the proper nuts and bolts.
 - 10.4. Attach the roof rail module in the deployment fixture and securely tighten all fasteners.



11. Inspect the SIR deployment harness and the appropriate pigtail adapter (2) for damage. Replace as needed.
12. Short the 2 SIR deployment harness leads (1) together using one banana plug seated into

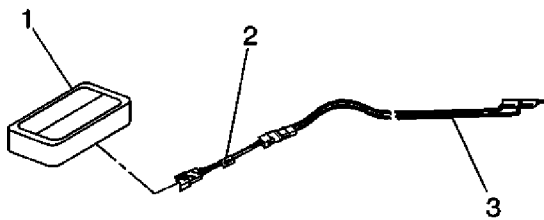
the other.

13. Connect the appropriate pigtail adapter (2) to the SIR deployment harness (1).



14. Extend the SIR deployment harness and adapter to the full length from the deployment fixture or area.

Note: On a dual stage inflator module, both connectors must be attached to the deployment harness adapter. This will ensure that both stage 1 and stage 2 of the deployment loops are energized, regardless of the deployment state.

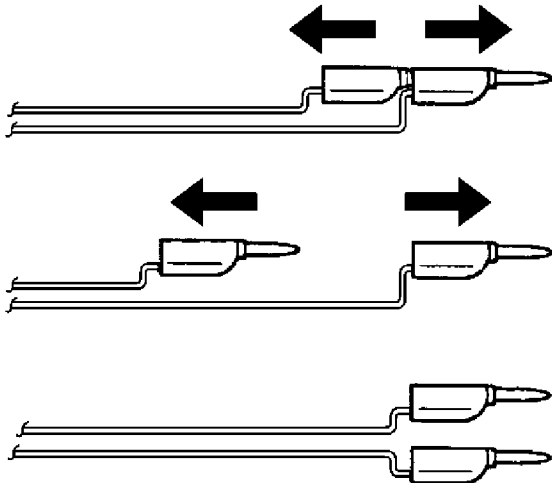


15. Connect the inflator module (1) to the adapter (2) on the SIR deployment harness (3).

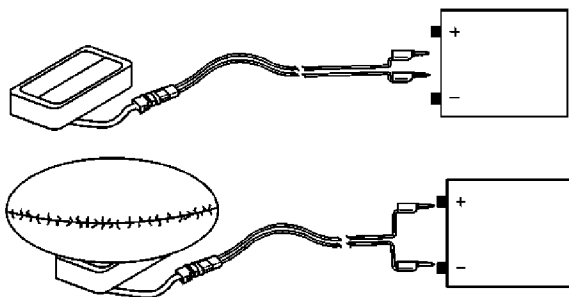
Note:

- The rapid expansion of gas involved with deploying an inflator module is very loud. Notify all the people in the immediate area that you intend to deploy the inflator module.
- When the inflator module deploys, the deployment fixture may jump about 30 cm (1 ft) vertically. This is a normal reaction of the inflator module due to the force of the rapid expansion of gas inside the inflator module.
- If you are deploying a dual stage inflator module with stage 1 already deployed, the fixture may not move and the noise may have been reduced.

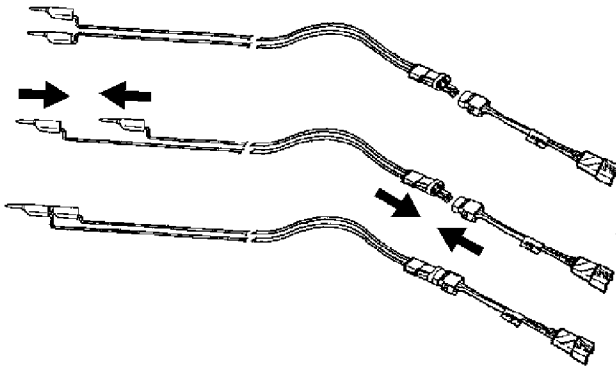
16. Clear the area of people.



17. Separate the 2 banana plugs on the SIR deployment harness that were shorted together earlier in the procedure.



18. Place a 12-volt minimum/2-amp minimum power source, such as a vehicle battery, near the shorted end of the harness.
19. Connect the SIR deployment harness wires to the power source. Deployment of the inflator module will occur when contact is made.



20. Disconnect the SIR deployment harness from the power source after the inflator module deploys.
21. If the inflator module did not deploy, disconnect the adapter and discontinue the procedure and contact the Technical Assistance Group.

If deployment was successful, proceed to the following steps.

Warning: After deployment, the metal surfaces of the SIR component may be very hot. To help avoid a fire or personal injury:

- Allow sufficient time for cooling before touching any metal surface of the SIR component.
- Do not place the deployed SIR component near any flammable objects.

22. Seat one banana plug into the other in order to short the deployment harness leads.



23. Put on a pair of shop gloves.
24. Disconnect the pigtail adapter from the inflator module as soon as possible.
25. Inspect the pigtail adapter and the SIR deployment harness. Replace as needed.
26. Dispose of the deployed inflator module through normal refuse channels.
27. Wash your hands with a mild soap.

Deployment Inside Vehicle - Vehicle Scrapping Procedure

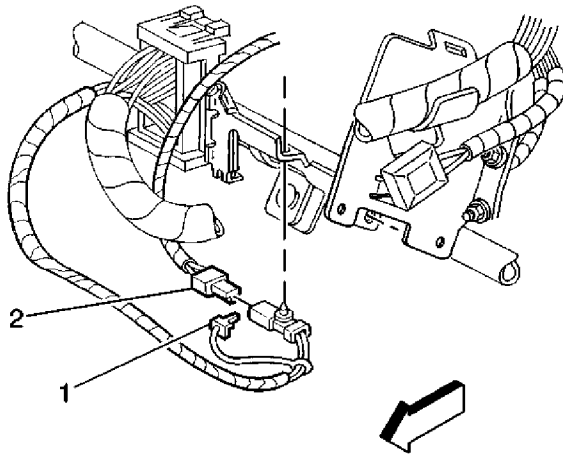
Deploy the inflator modules inside of the vehicle when destroying the vehicle or when salvaging the vehicle for parts. This includes, but is not limited to, the following situations:

- The vehicle has completed all useful life.
- Irreparable damage occurred to the vehicle in a non-deployment type accident.
- Irreparable damage occurred to the vehicle during a theft.
- The vehicle is being salvaged for parts to be used on a vehicle with a different VIN, as opposed to rebuilding as the same VIN.

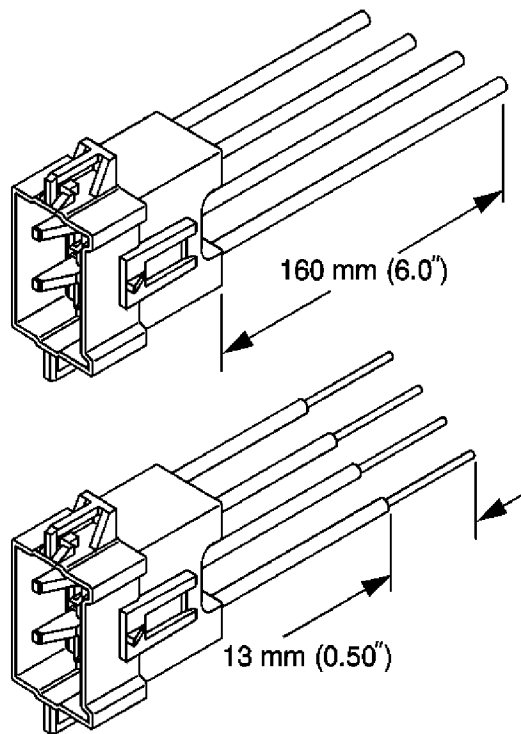
Warning: When deploying a SIR component for disposal, perform the deployment procedures in the order listed. Failure to observe the procedures in the order listed may result in personal injury.

1. Lower the driver and passenger windows.
2. Turn the ignition switch to the OFF position and remove the ignition key.
3. Check that all inflator modules which will be deployed are mounted securely.
 - Driver inflator module is secured to the steering wheel.
 - Passenger inflator module is secured to the instrument panel.
 - Left roof rail inflator module is secured to the left roof rail.
 - Right roof rail inflator module is secured to the right roof rail.
4. Put on safety glasses.
5. Remove all loose objects from the front seats.

Warning: A deployed dual stage inflator module will look the same whether one or both stages were used. Always assume a deployed dual stage inflator module has an active stage 2. Improper handling or servicing can activate the inflator module and cause personal injury.

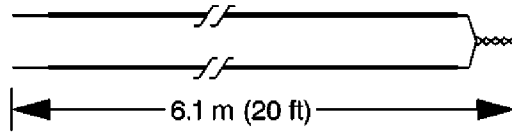


6. Disconnect the steering wheel module yellow connector (1) from vehicle harness yellow connector (2).

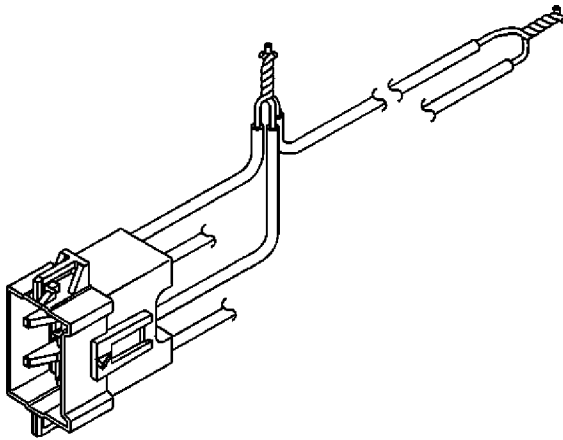


Note: If the vehicle is equipped with dual stage air bags the steering wheel module and I/P module will each have 4 wires. Refer to [Component Connector End Views](#) for determining high and low circuits.

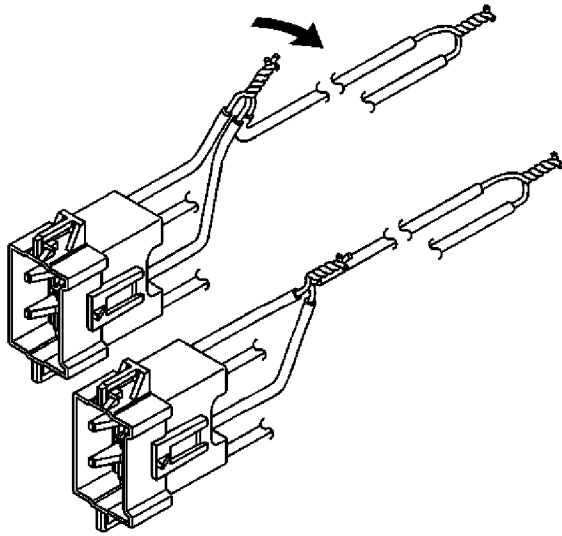
7. Cut the yellow harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
8. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



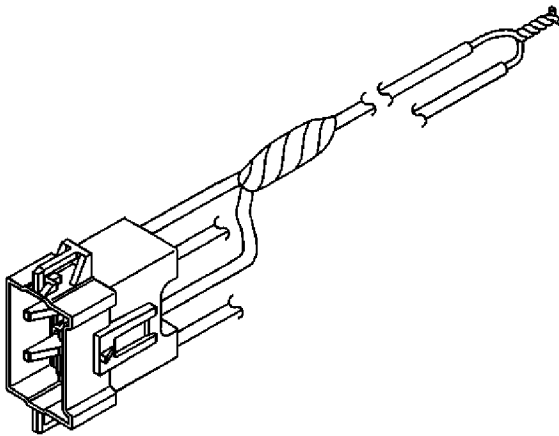
9. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. Use these wires to fabricate the driver deployment harness.
10. Strip 13 mm (0.5 in) of insulation from both ends of the wires.
11. Twist together one end from each of the wires in order to short the wires. Deployment wires shall remain shorted, and not connected to a power source until you are ready to deploy the inflator module.



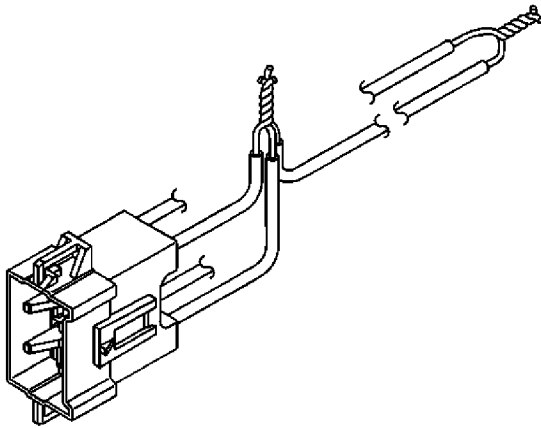
12. Twist together the 2 connector wire leads from the high circuits from both stages of the steering wheel module, to one set of deployment wires. Refer to [Component Connector End Views](#) in order to determine the correct circuits.
13. Inspect that the 3-wire connection is secure.



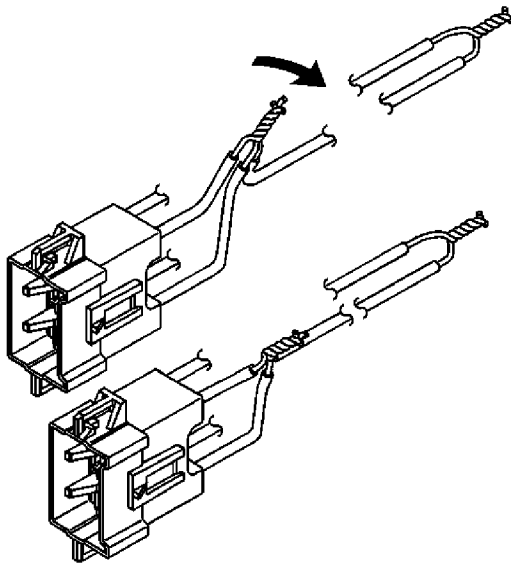
14. Bend flat the twisted connection.



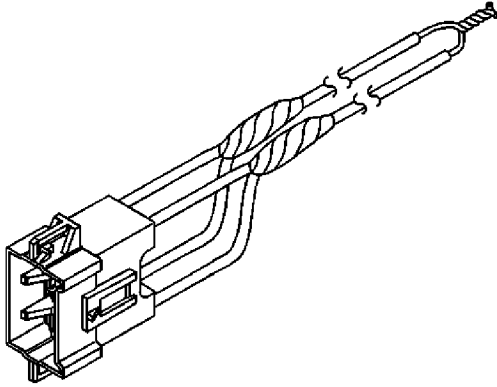
15. Secure and insulate the 3-wire connection to the deployment harness using electrical tape.



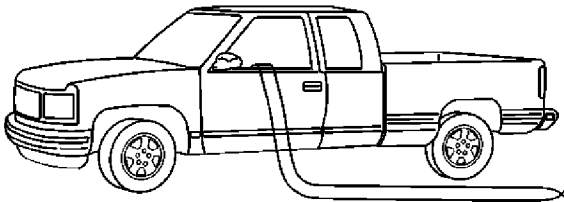
16. Twist together the 2 connector wire leads from the low circuits from both stages of the steering wheel module, to one set of deployment wires. Refer to [Component Connector End Views](#) in order to determine the correct circuits.
17. Inspect that the 3-wire connection is secure.



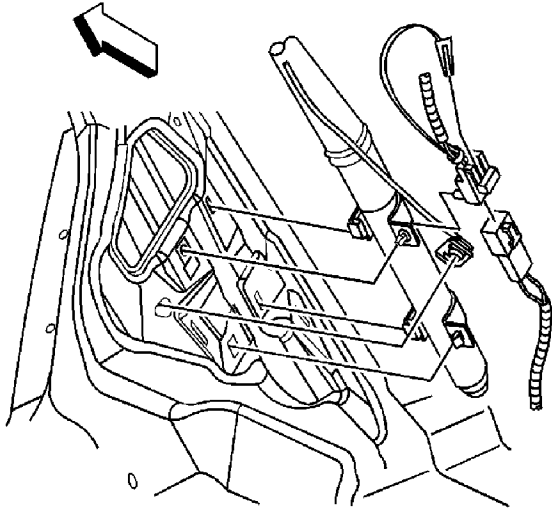
18. Bend flat the twisted connection.



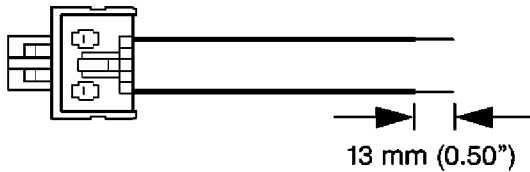
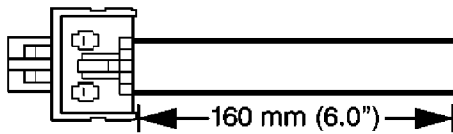
19. Secure and insulate the 3-wire connection to the deployment harness using electrical tape.
20. Connect the deployment harness to the connector on the steering wheel module.



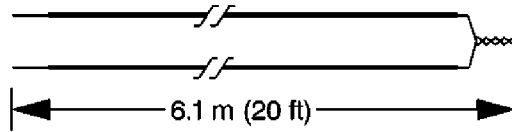
21. Route the deployment harness out of the driver side of the vehicle.



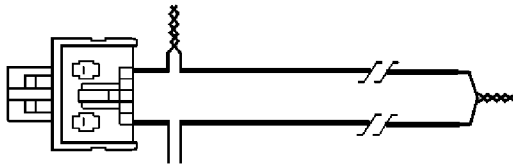
22. Disconnect the yellow left roof rail harness connector from the vehicle harness connector.



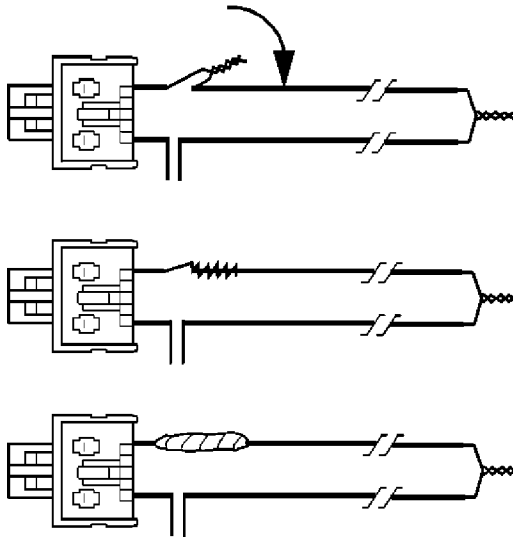
23. Cut the harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
24. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



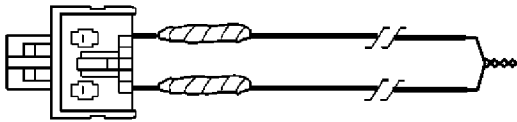
25. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. These wires will be used to fabricate the roof rail air bag deployment harness.
26. Strip 13 mm (0.5 in) of insulation from both ends of the wires.
27. Twist together one end from each of the wires in order to short the wires.



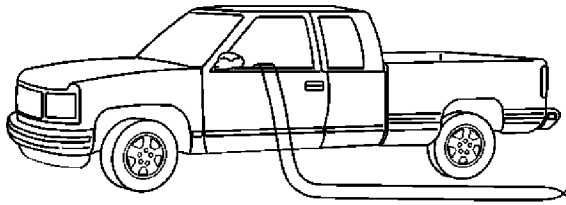
28. Twist together one connector wire lead to one deployment wire.



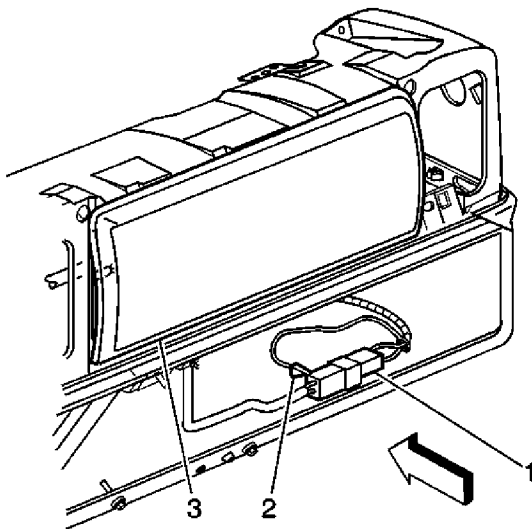
29. Bend flat the twisted connection.
30. Secure and insulate the connection using electrical tape.



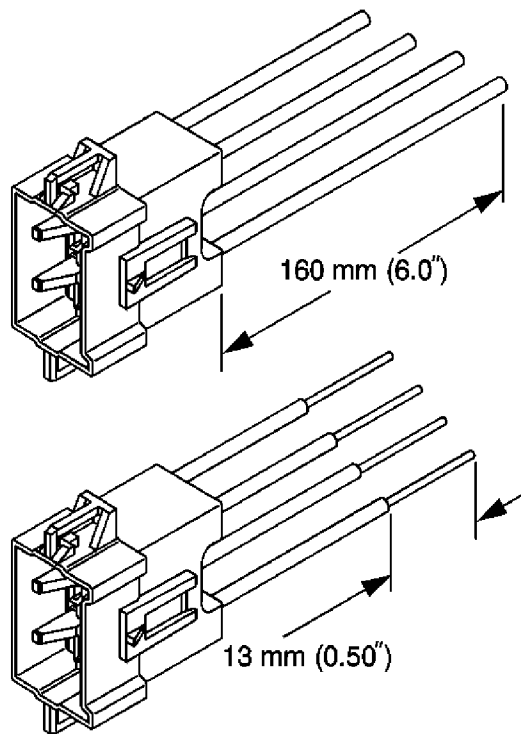
31. Twist together, bend, and tape the remaining connector wire lead to the remaining deployment wire.
32. Connect the deployment harness to the yellow connector of the roof rail module.



33. Route the deployment harness out of the driver side of the vehicle.

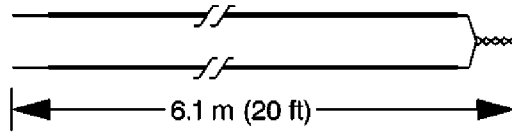


34. Disconnect the I/P module yellow harness connector (1) from the vehicle harness connector (2).

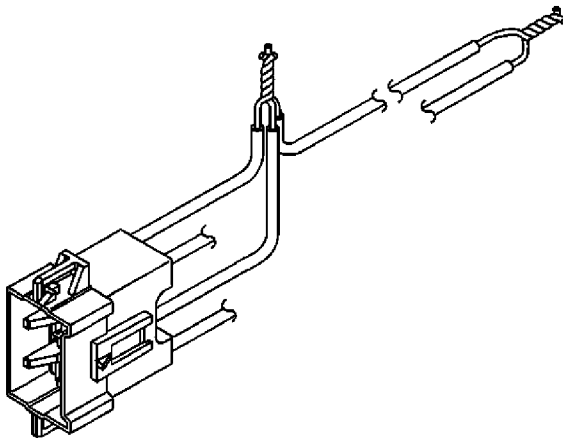


Note: If the vehicle is equipped with dual stage air bags the steering wheel module and I/P module will each have 4 wires. Refer to [Component Connector End Views](#) for determining high and low circuits.

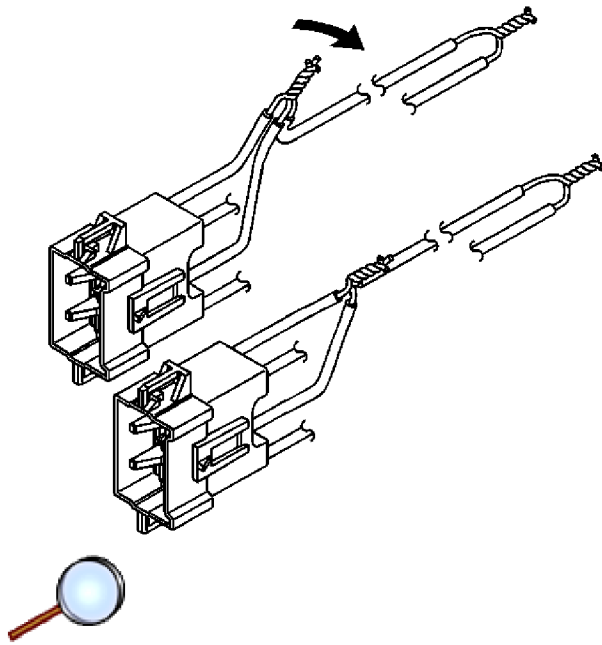
35. Cut the yellow harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
36. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



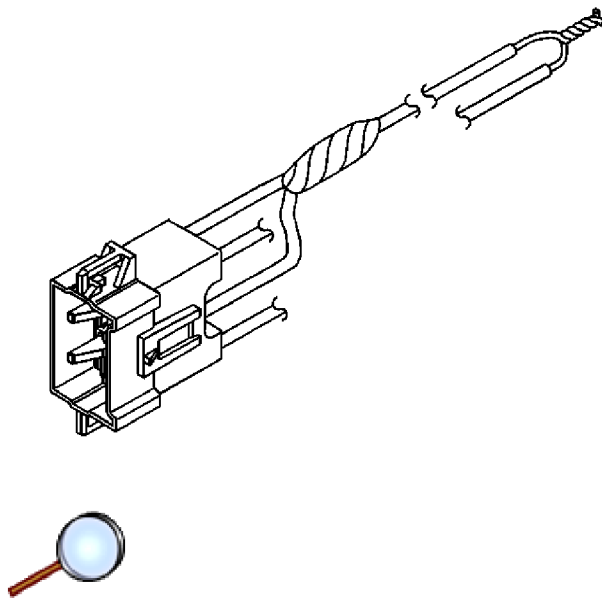
37. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. These wires will be used to fabricate the passenger deployment harness.
38. Strip 13 mm (0.5 in) of insulation from both ends of the wires.
39. Twist together one end from each of the wires in order to short the wires.



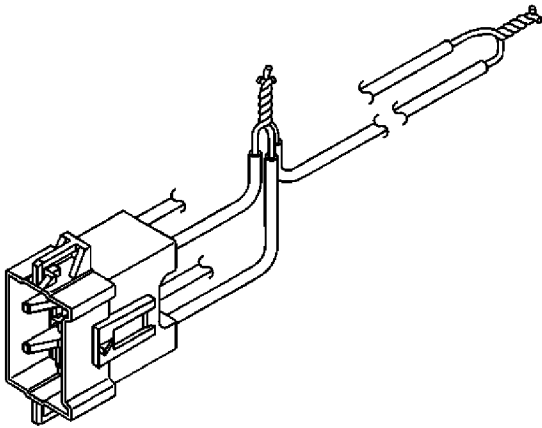
40. Twist together the 2 connector wire leads from the high circuits from both stages of the I/P module to one set of deployment wires. Refer to [Component Connector End Views](#) in order to determine the correct circuits.
41. Inspect that the 3-wire connection is secure.



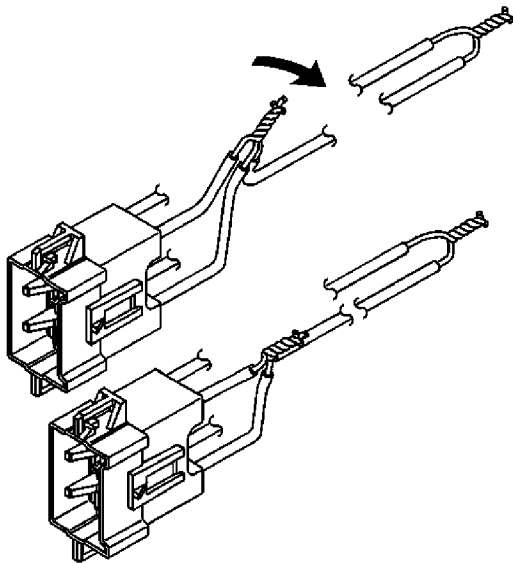
42. Bend flat the twisted connection.



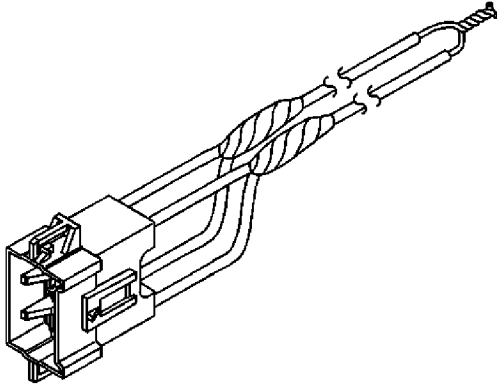
43. Secure and insulate the 3-wire connection to the deployment harness using electrical tape.



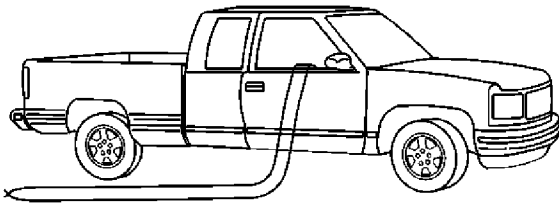
44. Twist together the 2 connector wire leads from the low circuits from both stages of the I/P module to one set of deployment wires. Refer to [Component Connector End Views](#) in order to determine the correct circuits.
45. Inspect that the 3-wire connection is secure.



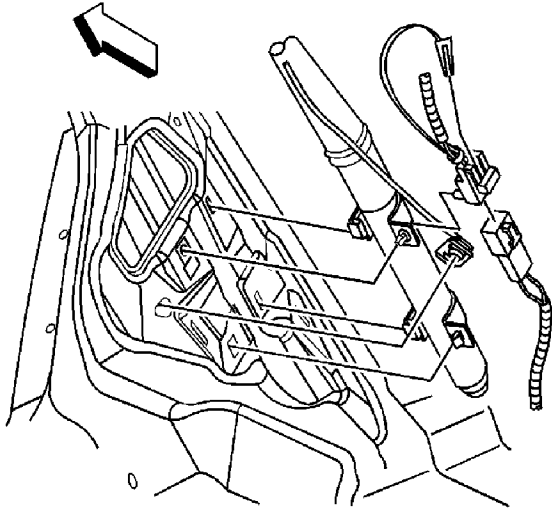
46. Bend flat the twisted connection.



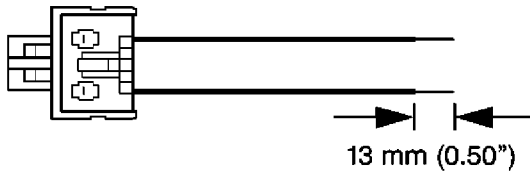
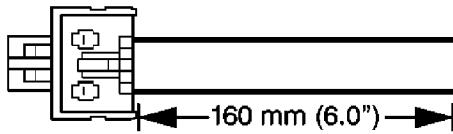
47. Secure and insulate the 3-wire connection to the deployment harness using electrical tape.
48. Connect the deployment harness to the I/P module in-line connector.



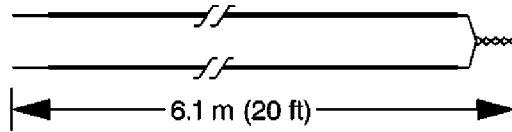
49. Route the deployment harness out of the passenger side of the vehicle.



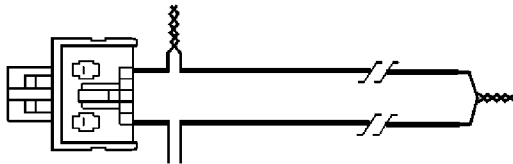
50. Disconnect the yellow harness connector to the right roof rail air bag from the vehicle harness connector.



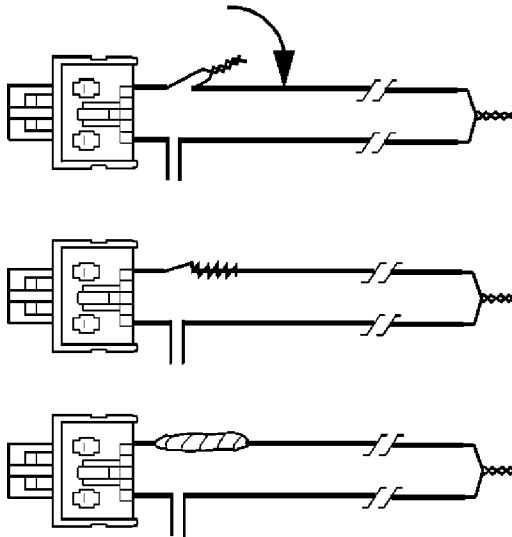
51. Cut the harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
52. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



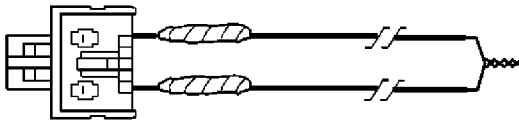
53. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. These wires will be used to fabricate the roof rail module deployment harness.
54. Strip 13 mm (0.5 in) of insulation from both ends of the wires.
55. Twist together one end from each of the wires in order to short the wires.



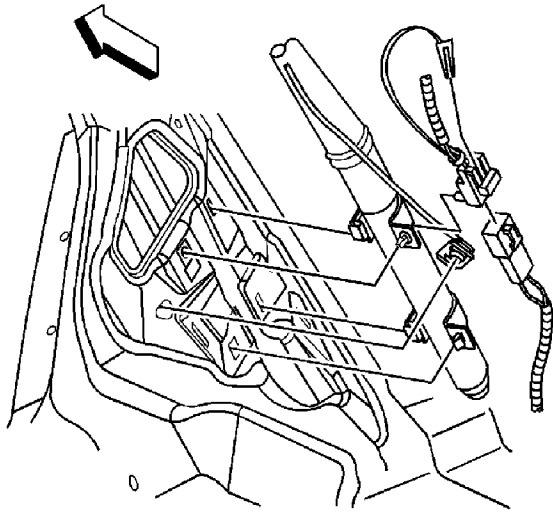
56. Twist together one connector wire lead to one deployment wire.



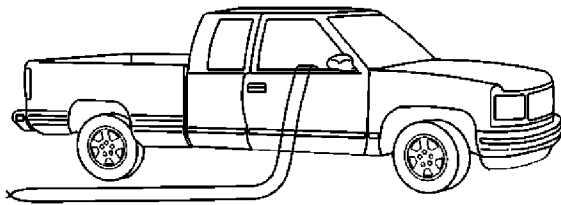
57. Bend flat the twisted connection.
58. Secure and insulate the connection using electrical tape.



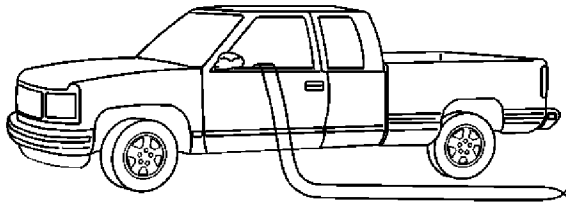
59. Twist together, bend, and tape the remaining connector wire lead to the remaining deployment wire.



60. Connect the deployment harness to the roof rail module yellow connector.



61. Route the deployment harness out of the passenger side of the vehicle.
62. Completely cover the windshield and the front door window openings with a drop cloth.
63. Stretch to the full length all of the deployment harness wires on the right side of the vehicle.
64. Deploy each deployment loop one at a time.
65. Place a power source, 12 V minimum/2 A minimum, such as a vehicle battery, near the shorted end of the harnesses.
66. Separate one set of wires and touch the wire ends to the power source in order to deploy the selected inflator module.
67. Disconnect the deployment harness from the power source and twist the wire ends together.
68. Continue the same process with the remaining deployment harnesses.



69. Stretch to the full length all of the deployment harness wires on the left side of the vehicle.
70. Deploy each deployment loop one at a time.
71. Place a power source, 12 V minimum/2 A minimum, such as a vehicle battery, near the shorted end of the harnesses.
72. Separate one set of wires and touch the wires ends to the power source in order to deploy the selected inflator modules.
73. Disconnect the deployment harness from the power source and twist the wire ends together.
74. Continue the same process with the remaining deployment harnesses.
75. Remove the drop cloth from the vehicle.
76. Disconnect all harnesses from the vehicle.
77. Discard the harnesses.
78. Scrap the vehicle in the same manner as a non-SIR equipped vehicle.
79. If one or all of the inflator modules did not deploy, perform the following steps to remove the undeployed modules from the vehicle:
 - [Inflatable Restraint Steering Wheel Module Replacement](#)
 - [Inflatable Restraint Instrument Panel Module Replacement](#)
 - [Inflatable Restraint Roof Side Rail Module Replacement](#)

Pretensioner Handling and Scrapping

Warning: When carrying an undeployed inflatable restraint seat belt pretensioner:

- Do not carry the seat belt pretensioner by the wires or connector.
- Carry the seat belt pretensioner by the piston tube, keeping hands and fingers away from the cable.
- Make sure the open end of the seat belt pretensioner piston tube points away from you and other people.
- Do not cover the seat belt pretensioner piston tube opening with your hand.

Failure to observe these guidelines may result in personal injury.

Scrapping Procedure

During the course of a vehicle's useful life, certain situations may arise which will require the disposal of a live and undeployed seat belt pretensioner. Do not dispose of a live and undeployed seat belt pretensioner through normal disposal channels until the seat belt pretensioner has been deployed. The following information covers the proper procedures for disposing of a live and undeployed seat belt pretensioner. Do not deploy the seat belt pretensioner in the following situations:

- After replacement of a seat belt pretensioner under warranty. The seat belt pretensioner may need to be returned undeployed to the manufacturer.
- If the vehicle is the subject of a Product Liability report, GM1241, related to the SIR system or the seat belt system. If the vehicle is subject to the Product Liability report, do not alter the SIR or seat belt system in any manner.
- If the vehicle is involved in a campaign affecting the seat belt pretensioners. Follow the instructions in the Campaign Service Bulletin for proper SIR handling procedures.

Deployment Procedures

The seat belt pretensioner can be deployed inside or outside of the vehicle. The method used depends upon the final disposition of the vehicle. Review the following procedures in order to determine which will work best in a given situation.

Deployment Outside Vehicle for Seat Belt Pretensioners

Deploy the seat belt pretensioners outside of the vehicle when the vehicle will be returned to service. Situations that require deployment outside of the vehicle include the following:

- Using the SIR diagnostics, it is determined that the seat belt pretensioner is malfunctioning.
- The seat belt pretensioner pigtail, if equipped, is damaged.
- The seat belt pretensioner connector is damaged.
- The seat belt pretensioner connector terminals are damaged.

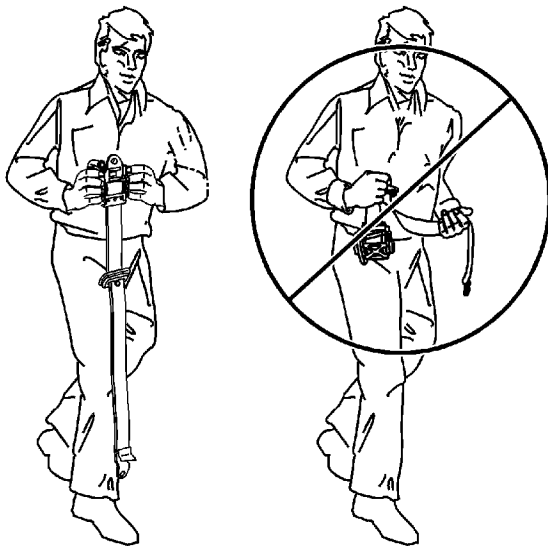
Deployment and disposal of a malfunctioning seat belt pretensioner is subject to any required
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retention period.

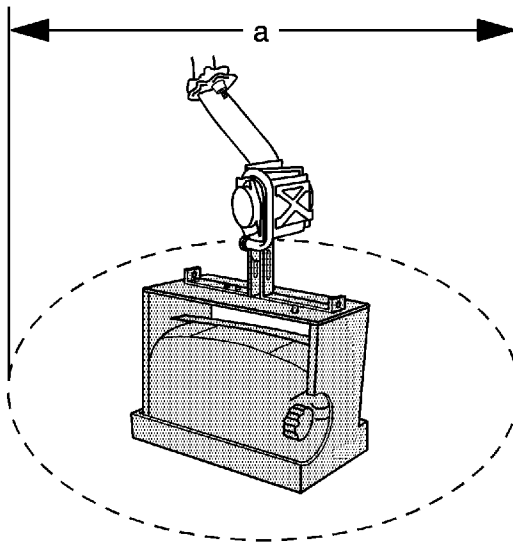
Warning: In order to prevent accidental deployment and the risk of personal injury, do not dispose of an undeployed inflatable restraint seat belt pretensioner as normal shop waste. Undeployed seat belt pretensioners contain substances that could cause severe illness or personal injury if their sealed containers are damaged during disposal. Use the following deployment procedures to safely dispose of an undeployed seat belt pretensioner. Failure to observe the following disposal methods may be a violation of federal, state, or local laws.

Special Tools

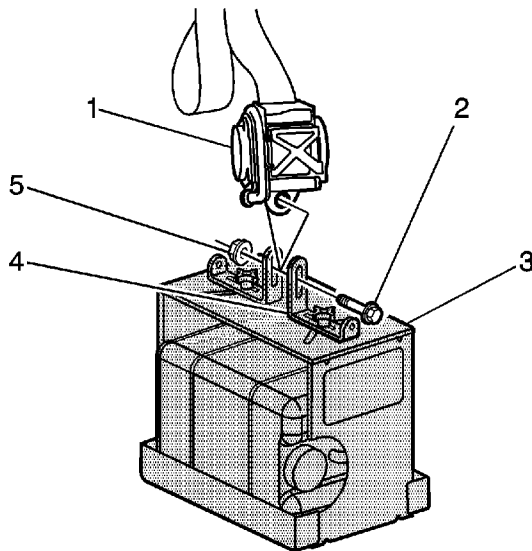
- [J 38826](#) SIR Deployment Harness
- [J 39401-B](#) SIR Deployment Fixture
- An appropriate pigtail adaptor



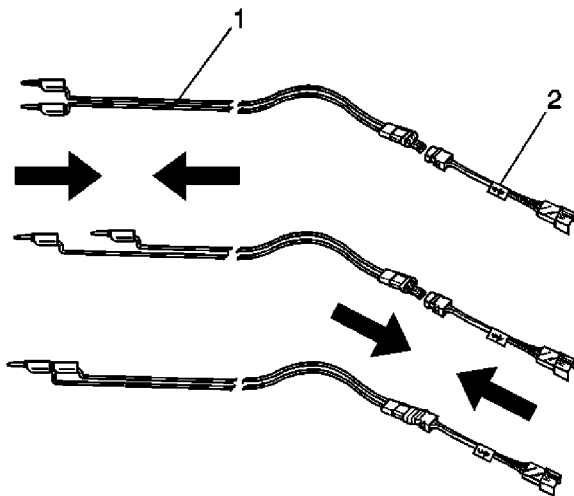
1. Turn OFF the ignition.
2. Remove the ignition key.
3. Put on safety glasses.
4. Remove the seat belt pretensioner from the vehicle. Refer to [Seat Belt Buckle Pretensioner Replacement](#).
5. When carrying a seat belt pretensioner to the deployment area, keep fingers clear of the seat belt webbing.



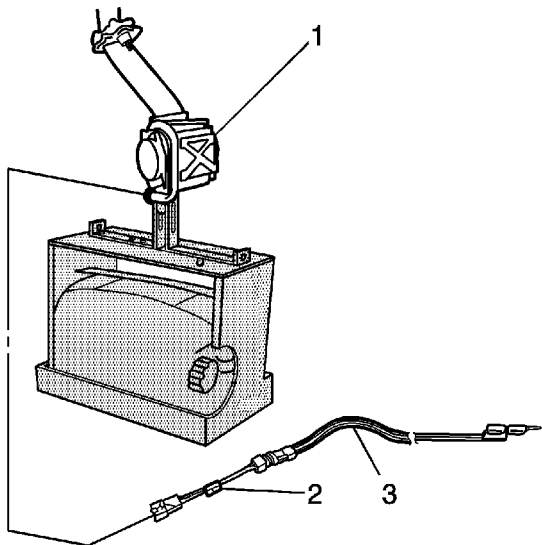
6. Clear a space on the ground about 1.85 m (6 ft) in diameter for deployment of the seat belt pretensioner. If possible, use a paved, outdoor location free of activity. Otherwise, use a space free of activity on the shop floor. Make sure you have sufficient ventilation.
7. Make sure no loose or flammable objects are in the area.
8. Place the [J 39401-B](#) in the center of the cleared area.
9. Fill the fixture plastic reservoir with water or sand.



10. Mount the seat belt pretensioner (1) in the SIR deployment fixture (3) with the open end facing up using the following mounting method.
 - Adjust and secure the [J 39401-B](#) arms (4) to the deployment fixture.
 - To mount, use the proper size bolt (2) and nut (5) with washers in order to secure the seat belt pretensioner (1) to the deployment fixture brackets.
 - Securely tighten all fasteners prior to deployment.



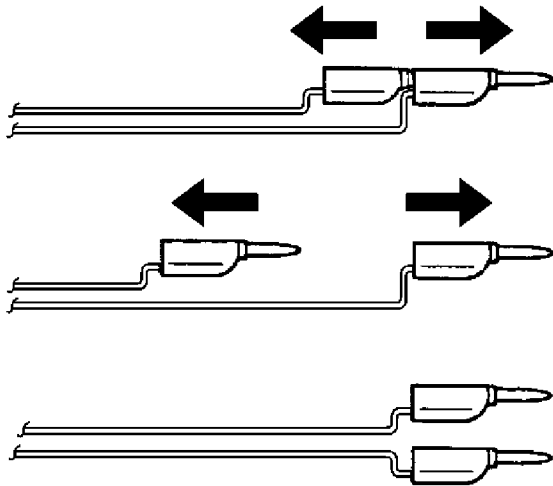
11. Inspect the [J 38826](#) and the appropriate pigtail adapter for damage. Replace as needed.
12. Short the 2 SIR deployment harness (1) leads together using 1 banana plug seated into the other.
13. Connect the appropriate pigtail adapter (2) to the SIR deployment harness.



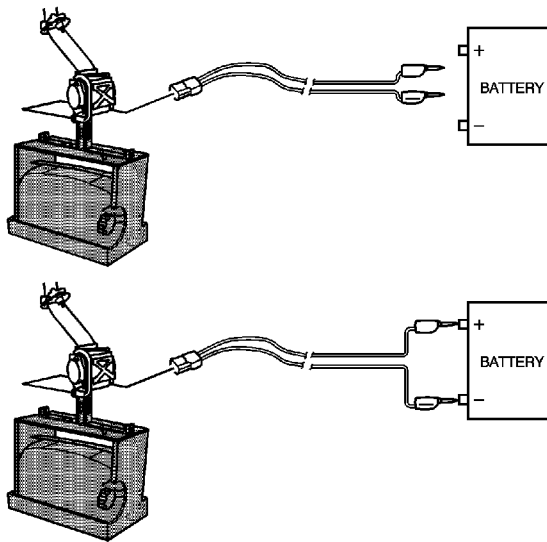
14. Extend the SIR deployment harness and adapter to full length from the deployment fixture.
15. Connect the seat belt pretensioner connector (1) to the adapter (2) on the deployment harness (3).

Note: When deploying a seat belt pretensioner, the rapid expansion of gas is very loud. Notify the people in the immediate area that a seat belt pretensioner will be deployed.

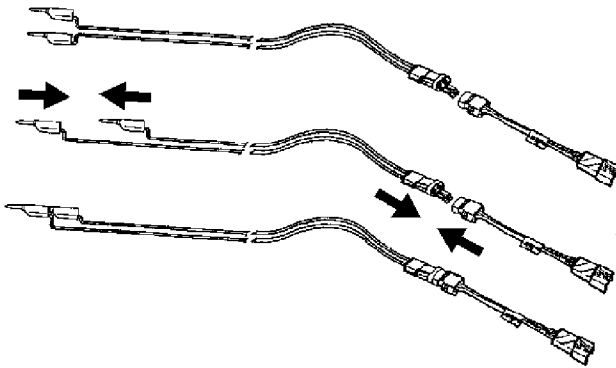
16. Clear the area of people.



17. Separate the 2 banana plugs on the SIR deployment harness.



18. Place a 12 volt minimum/2 amp minimum power source, such as a vehicle battery, near the shorted end of the harness.
19. Connect the SIR deployment harness wires to the power source. Seat belt pretensioner deployment will occur when contact is made.
20. Disconnect the SIR deployment harness from the power source after the seat belt pretensioner deploys.

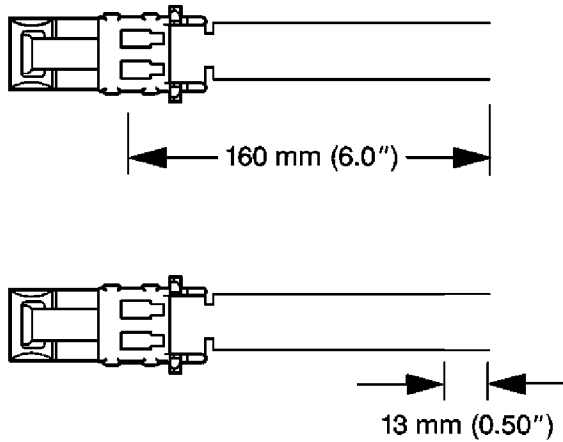


21. Seat one banana plug into the other in order to short the deployment harness leads.
22. If the seat pretensioner did not deploy, disconnect the adapter and discontinue the procedure. Contact the Technical Assistance Group. Otherwise, proceed to the following steps.
23. Put on a pair of shop gloves.
24. Disconnect the pigtail adapter from the seat belt pretensioner as soon as possible.
25. Dispose of the deployed seat belt pretensioner through normal refuse channels.
26. Wash hands with a mild soap.

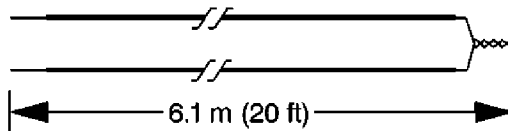
Deployment Inside Vehicle - Vehicle Scrapping Procedure

Deploy the seat belt pretensioners inside of the vehicle when destroying the vehicle or when salvaging the vehicle for parts. This includes but is not limited to the following situations:

- The vehicle has completed its useful life.
- Irreparable damage occurs to the vehicle in a non-deployment type accident.
- Irreparable damage occurs to the vehicle during a theft.
- The vehicle is being salvaged for parts to be used on a vehicle with a different VIN as opposed to rebuilding as the same VIN.

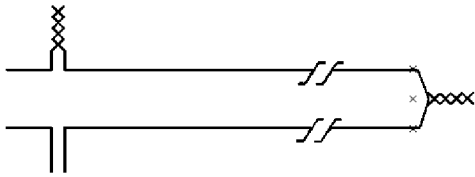


1. Turn OFF the ignition.
2. Remove the ignition key.
3. Put on safety glasses.
4. Remove all loose objects from the front seats.
5. Disconnect the seat belt pretensioner connector. Refer to [Seat Belt Buckle Pretensioner Replacement](#).
6. Cut the seat belt pretensioner harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
7. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.

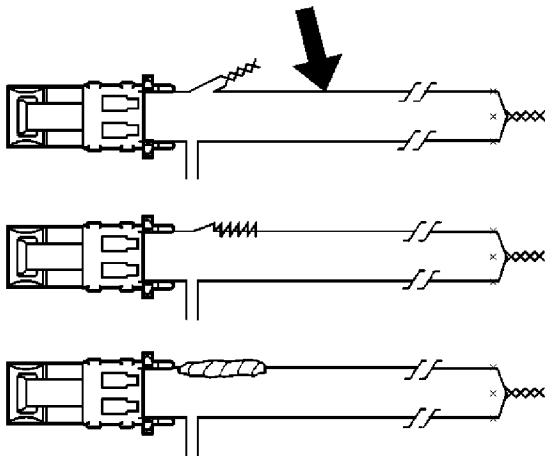


8. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. These wires will be used for the seat belt pretensioner deployment harness.
9. Strip 13 mm (0.5 in) of insulation from both ends of the wires cut in the previous step.
10. Twist together one end from each of the wires in order to short the wires. Deployment wires shall remain shorted, and not connected to a power source until you are ready to deploy the

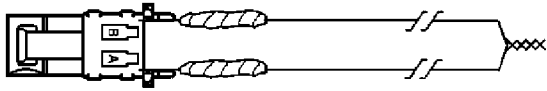
seat belt pretensioner.



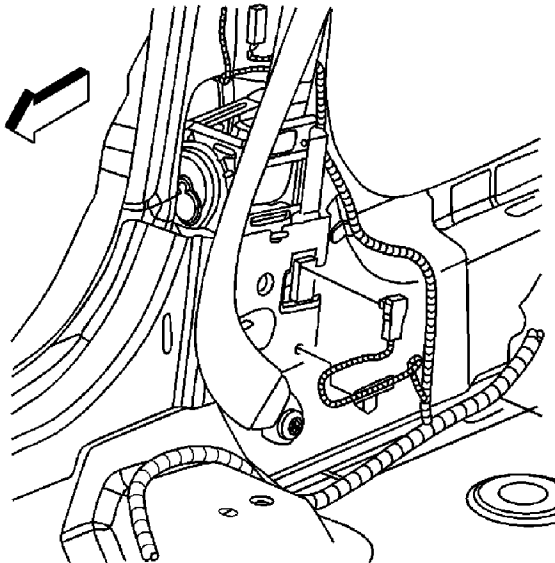
11. Twist together one connector wire lead to one deployment wire.
12. Inspect that the previous connections is secure.



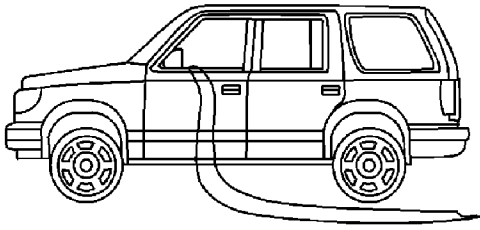
13. Bend flat the twisted connection.
14. Secure and insulate the connection using electrical tape.



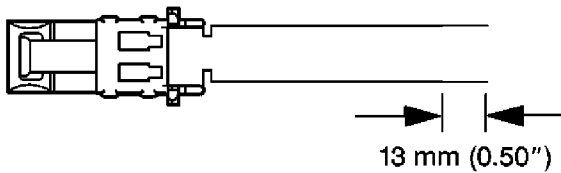
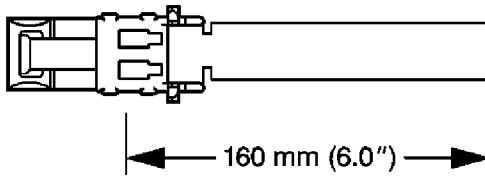
15. Twist together, bend, and tape the remaining connector wire lead to the remaining deployment wire.



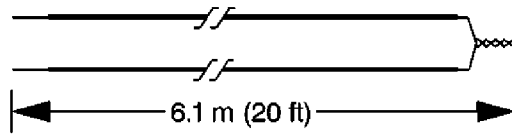
16. Connect the deployment harness to the seat belt pretensioner connector.



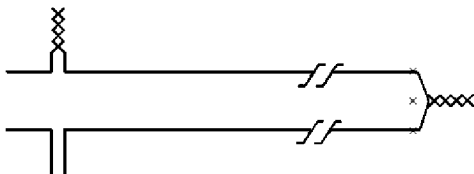
17. Route the deployment harness out of the driver side of the vehicle.



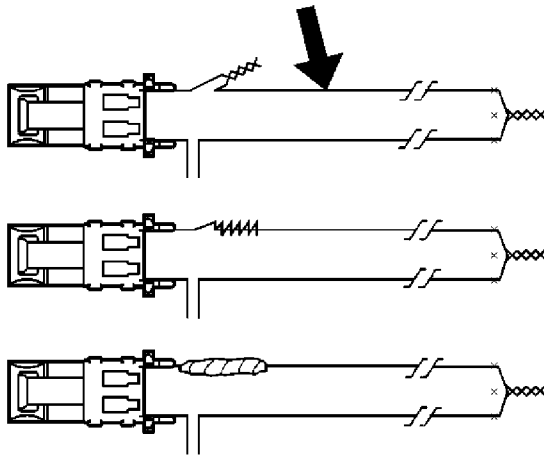
18. Disconnect the seat belt pretensioner connector. Refer to [Seat Belt Buckle Pretensioner Replacement](#).
19. Cut the seat belt pretensioner connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
20. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



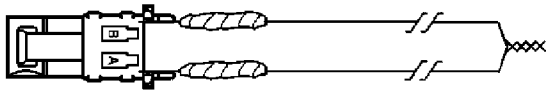
21. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. These wires will be used for the seat belt pretensioner deployment harness.
22. Strip 13 mm (0.5 in) of insulation from both ends of the wires cut in the previous step.
23. Twist together one end from each of the wires in order to short the wires. The deployment wires are to remain shorted, and not connected to a power source until you are ready to deploy the seat belt pretensioner.



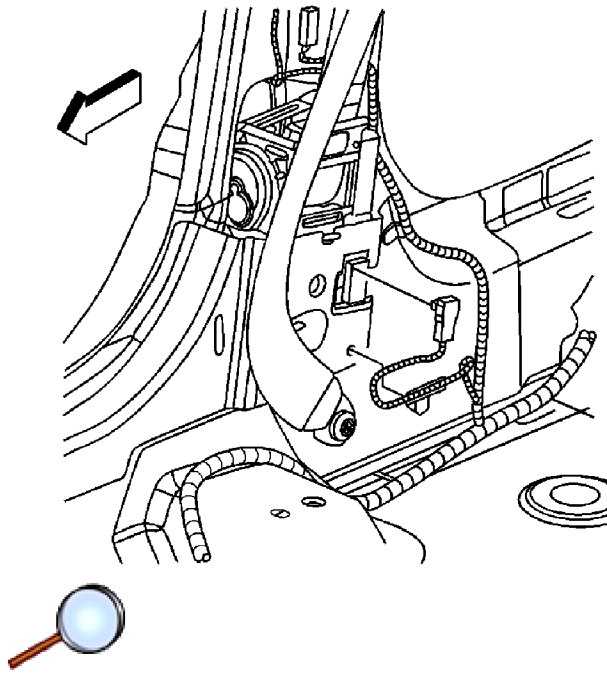
24. Twist together one connector wire lead to one deployment wire.
25. Inspect that the previous connection is secure.



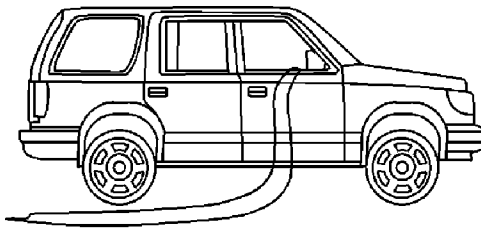
26. Bend flat the twisted connection.
27. Secure and insulate the connection using electrical tape.



28. Twist together, bend, and tape the remaining connector wire lead to the remaining deployment wire.



29. Connect the deployment harness to the seat belt pretensioner connector.



30. Route the deployment harness out of the passenger's side of the vehicle.
31. Completely cover the windshield and the front door openings with a drop cloth.
32. Deploy each deployment loop one at a time.
33. Stretch out all of the deployment harness wires on the left and right side of the vehicle to their full length.
34. Place a power source, 12 volt minimum/2 amp minimum, such as a vehicle battery, near the shorted end of the harnesses.
35. Separate one set of wires and touch the wire ends to the power source in order to deploy the seat belt pretensioners.
36. Disconnect the deployment harness from the power source and twist the wire ends together.
37. Continue the same process with the remaining deployment harnesses that are available.
38. Remove the drop cloth from the vehicle.
39. Disconnect all harnesses from the vehicle.

40. Discard the harnesses.
41. Scrap the vehicle in the same manner as a non-SIR equipped vehicle.
42. If one or more of the seat belt pretensioners did not deploy, perform the following steps to remove the undeployed seat belt pretensioner from the vehicle, refer to [Seat Belt Buckle Pretensioner Replacement](#).
43. Call the Technical Assistance Group for further assistance.