



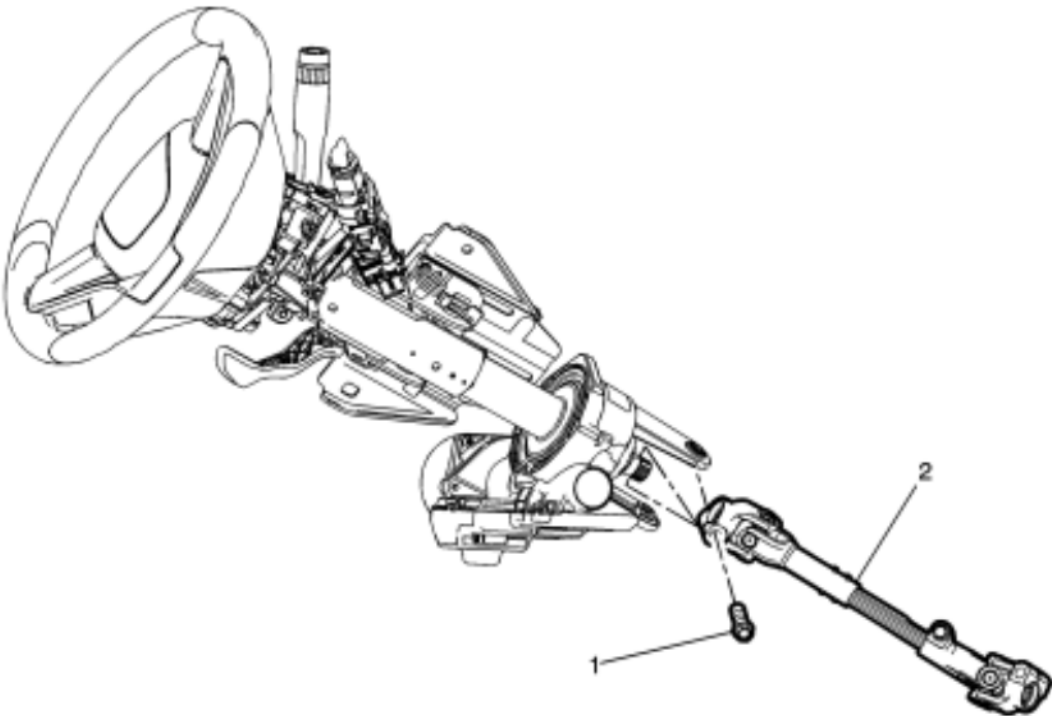
|                                               |                                     |
|-----------------------------------------------|-------------------------------------|
| Specifications                                | Steering Wheel Horn Cap Replacement |
| Intermediate Steering Shaft Replacement (NJ1) | Steering Wheel Replacement          |
| Intermediate Steering Shaft Replacement (N40) | Steering Column Replacement (NJ1)   |
| Steering Column Upper Trim Cover Replacement  | Steering Column Replacement (N40)   |
| Steering Column Lower Trim Cover Replacement  | Steering Angle Sensor Replacement   |
| Turn Signal Switch Bracket Replacement        | Description and Operation           |
| Turn Signal Multifunction Switch Replacement  |                                     |



Fastener Tightening Specifications

| Application                                 | Specification |          |
|---------------------------------------------|---------------|----------|
|                                             | Metric        | English  |
| Intermediate Steering Shaft Lower Bolt      | 49 N·m        | 36 lb ft |
| Intermediate Steering Shaft Upper Bolt      | 49 N·m        | 36 lb ft |
| Steering Column Lower Support Bracket Bolts | 22 N·m        | 16 lb ft |
| Steering Column Upper Support Bracket Nuts  | 22 N·m        | 16 lb ft |
| Steering Wheel Bolt                         | 30 N·m        | 22 lb ft |

Intermediate Steering Shaft Replacement (NJ1)



| Callout                                                                                                                                                                          | Component Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Preliminary Procedure</b></p> <p>Remove the steering column and the intermediate steering shaft as an assembly. Refer to <a href="#">Steering Column Replacement</a> .</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1                                                                                                                                                                                | <p>Intermediate Steering Shaft Upper Bolt</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> .</p> <p><b>Tighten</b><br/>49N·m (36lbft)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2                                                                                                                                                                                | <p>Intermediate Steering Shaft</p> <p><b>Procedure</b></p> <p>1. Use paint in order to place match marks on the intermediate steering shaft and on the steering column shaft.</p> <p>2. If you are replacing the intermediate steering shaft or the steering column, copy the match marks from the old parts to the new parts.</p> <p>3. Align the match marks as you install the intermediate steering shaft to the steering column shaft.</p> <p>4. After the installation is complete, perform the following tasks:</p> <p>Setup the power steering control module. Refer to . Center the steering angle sensor. Refer to .</p> <p>2.1. Setup the power steering control module. Refer to <a href="#">Power Steering Control Module Programming and Setup</a> .</p> <p>2.2. Center the steering angle sensor. Refer to <a href="#">Steering Angle Sensor Centering</a> .</p> |

## Intermediate Steering Shaft Replacement (N40)

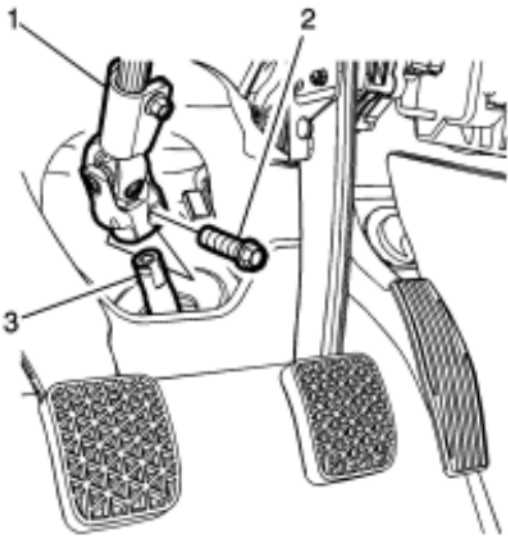
### Removal Procedure

**Caution:** With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column lock, or a strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering wheel must be secured in position before disconnecting the following components:

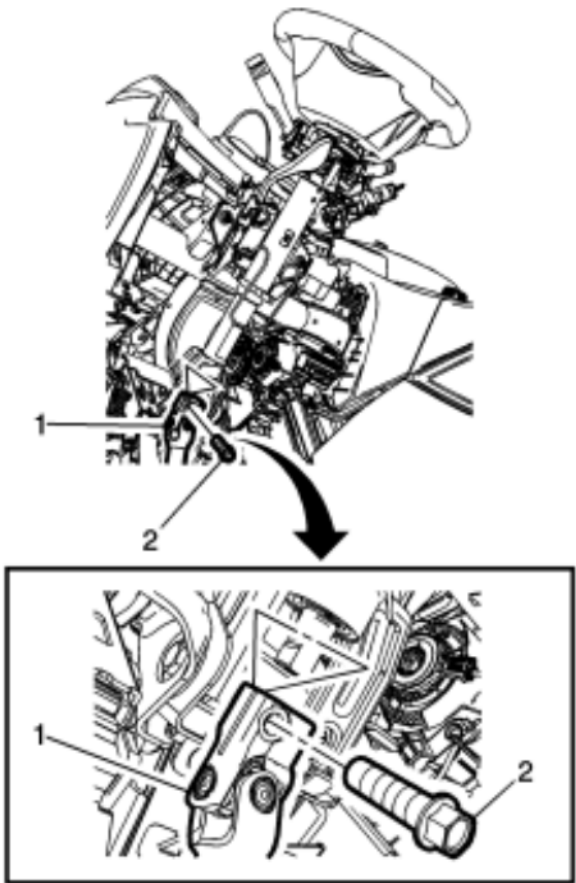
- The steering column
- The intermediate shaft(s)
- The steering gear

After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this procedure may cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your specific SIR coil's centering procedure to re-center SIR Coil.

1. With the steering wheel in the straight ahead position, LOCK the steering column.
2. Remove the upper trim cover and the lower trim cover from the steering column. Refer to [Steering Column Lower Trim Cover Replacement](#) .
3. Remove the instrument panel lower trim pad cover. Refer to [Instrument Panel Lower Trim Pad Cover Replacement](#) .
4. Remove the left side floor air outlet duct. Refer to [Floor Air Outlet Duct Replacement - Left Side](#) .
5. Disconnect any electrical connectors as necessary.



6. Use paint in order to place match marks on the intermediate steering shaft(1) and on the steering gear pinion shaft(3).
7. Remove the intermediate steering shaft lower bolt(2).
8. Disconnect the intermediate steering shaft from the steering gear pinion shaft.

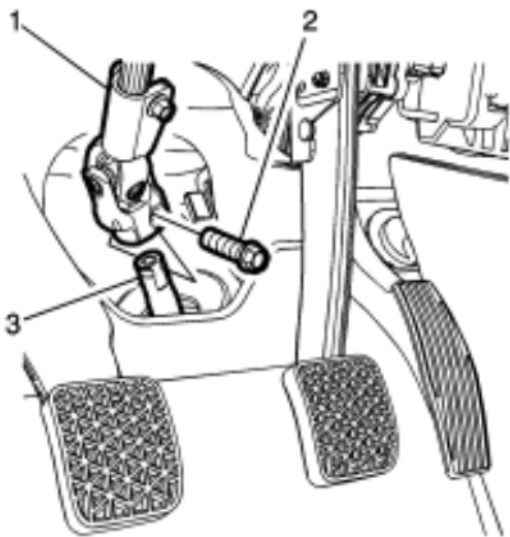


9. Use paint in order to place match marks on the steering column shaft and on the intermediate steering shaft(1).
10. Remove the intermediate shaft upper bolt(2).

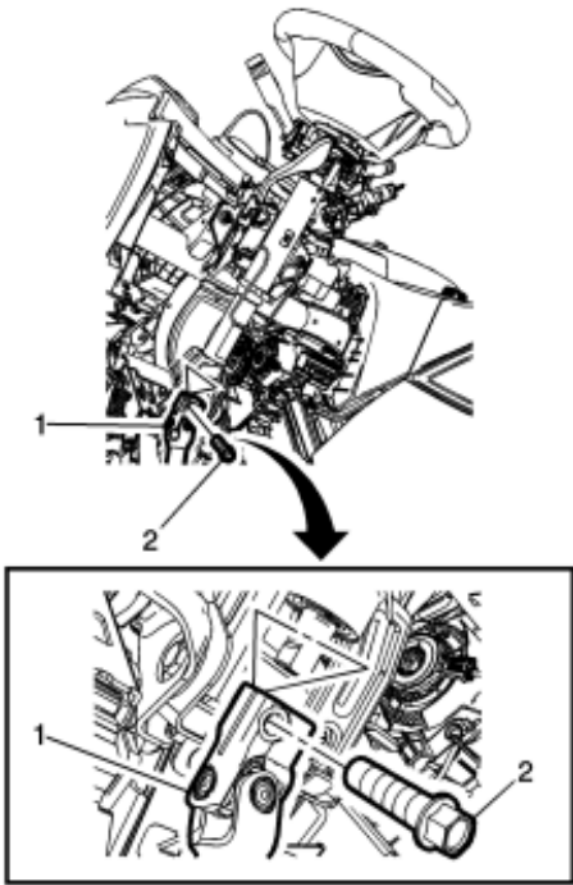
- 11. Disconnect the intermediate steering shaft from the steering column shaft.
- 12. Remove the intermediate steering shaft from the vehicle.

Installation Procedure

- 1. If you are replacing the intermediate steering shaft, copy the match marks from the old shaft to the new shaft.
- 2. Position the intermediate steering shaft in the vehicle.



- 3. Align the match marks and connect the intermediate steering shaft(1) to the steering gear pinion shaft(3).

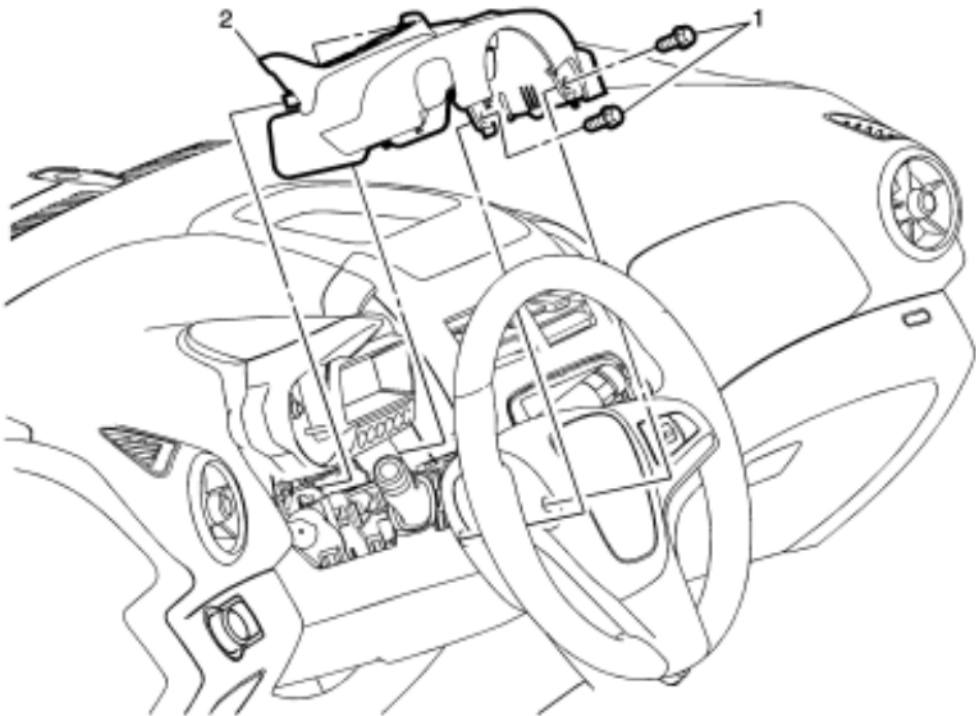


- 4. Align the match marks and connect the intermediate steering shaft(1) to the steering column shaft.

**Caution:** Refer to [Fastener Caution](#) .

- 5. Install the intermediate steering shaft upper bolt(2) and tighten to **49 N·m (36 lb ft)**.
- 6. Install the intermediate steering shaft lower bolt(2) and tighten to **49 N·m (36 lb ft)**.
- 7. Connect any electrical connectors as necessary.
- 8. Install the left side floor air outlet duct. Refer to [Floor Air Outlet Duct Replacement - Left Side](#) .
- 9. Install the instrument panel lower trim pad cover. Refer to [Instrument Panel Lower Trim Pad Cover Replacement](#) .
- 10. Install the upper trim cover and the lower trim cover to the steering column. Refer to [Steering Column Lower Trim Cover Replacement](#) .
- 11. Center the steering angle sensor. Refer to [Steering Angle Sensor Centering](#) .

Steering Column Upper Trim Cover Replacement



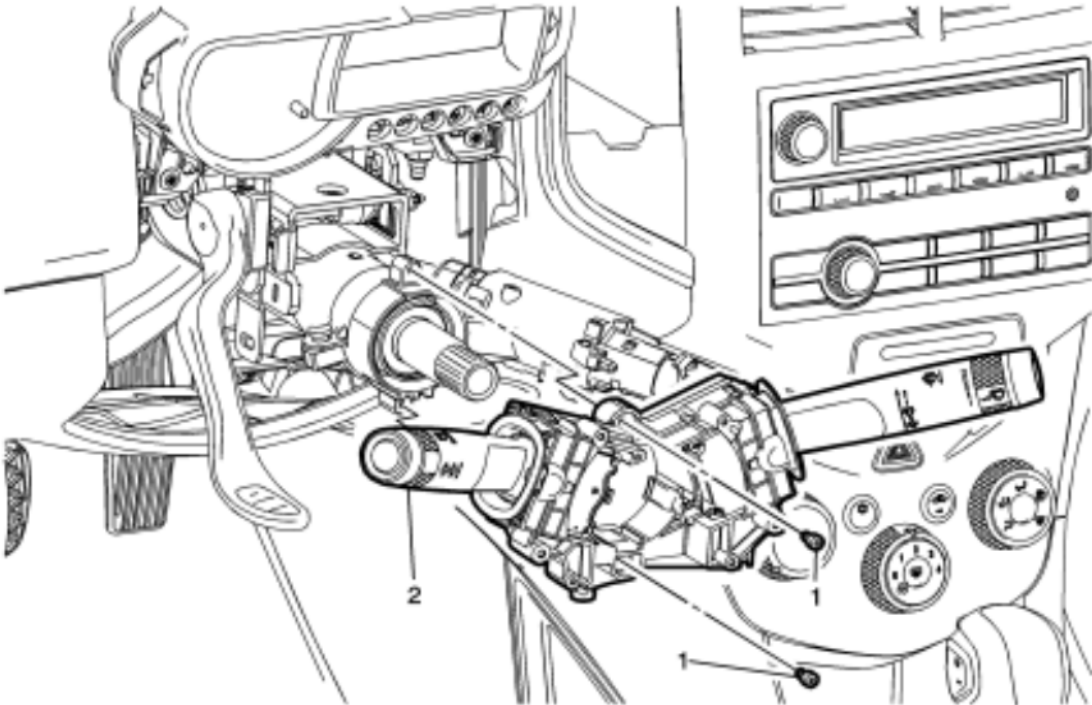
| Callout | Component Name                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | <p>Instrument Panel Steering Column Upper Trim Cover Fasteners (Qty: 2)</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> .</p> <p><b>Procedure</b></p> <p>Turn the steering wheel to the right and to the left in order to gain access to the fasteners.</p>                                                                                                                                                                                                 |
| 2       | <p>Instrument Panel Steering Column Upper Trim Cover Assembly</p> <p><b>Procedures</b></p> <ol style="list-style-type: none"><li>1. Use a flat bladed plastic trim tool along the right and left sides of the trim panel in order to release the retainers securing the upper trim cover to the lower trim cover.</li><li>2. Lift the upper trim cover upward and rearward in order to release the retainers along the front forward edge of the upper trim cover.</li></ol> |

Steering Column Lower Trim Cover Replacement



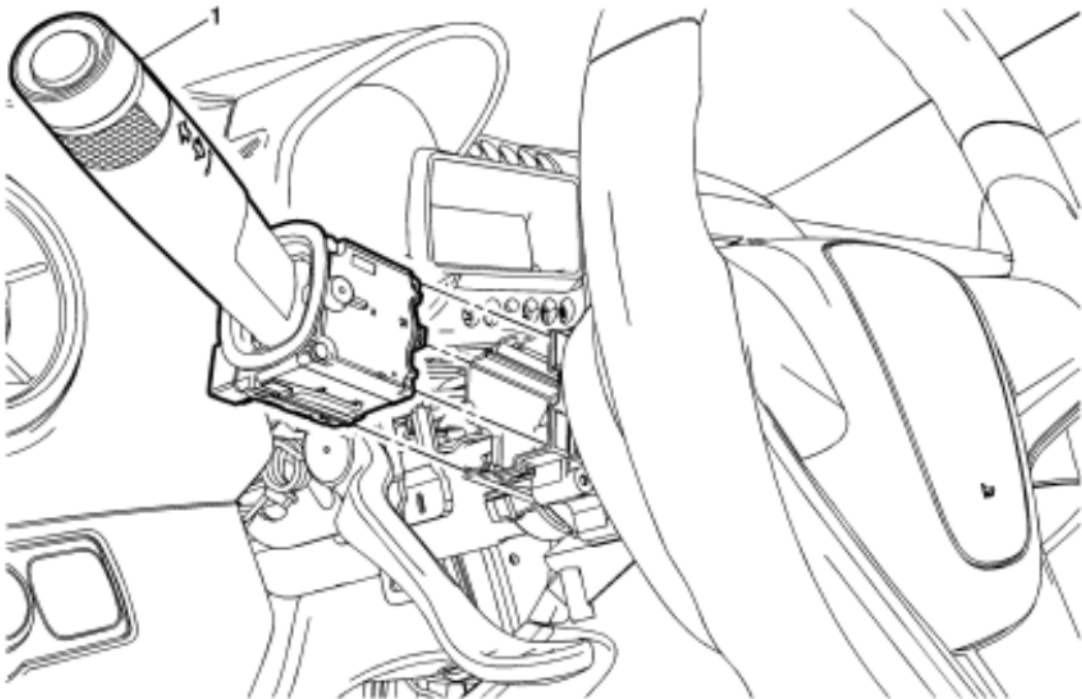
| Callout                                                                                                                                                                          | Component Name                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Preliminary Procedure</b></p> <p>Remove the instrument panel steering column upper trim cover. Refer to <a href="#">Steering Column Upper Trim Cover Replacement</a> .</p> |                                                                                                                                      |
| 1                                                                                                                                                                                | <p>Instrument Panel Steering Column Lower Trim Cover Fastener</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> .</p> |
| 2                                                                                                                                                                                | <p>Instrument Panel Steering Column Lower Trim Cover Assembly</p>                                                                    |

Turn Signal Switch Bracket Replacement



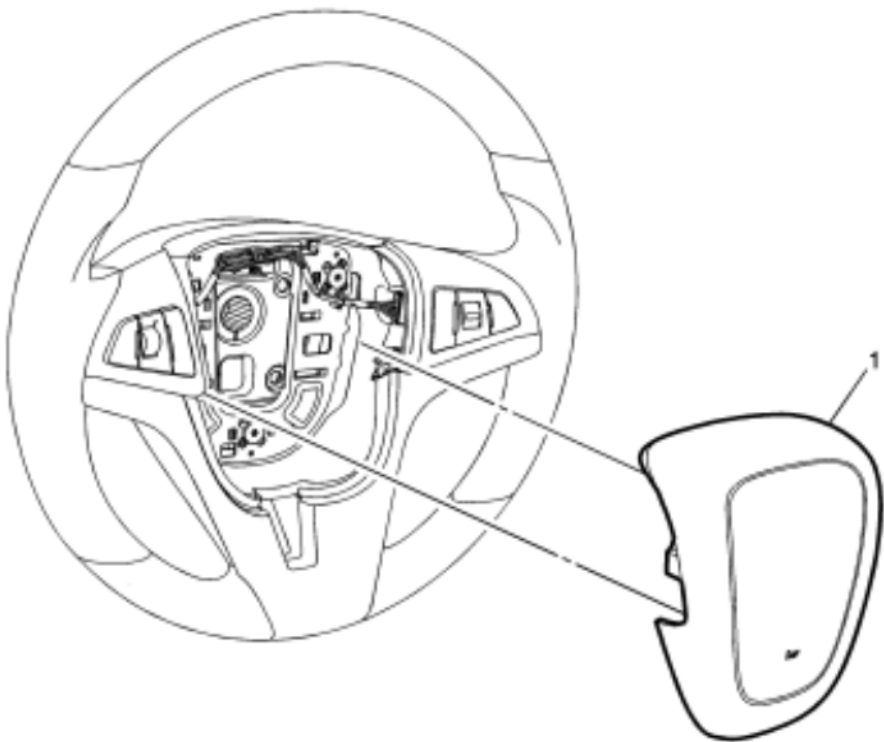
| Callout                                                                                                                                                                  | Component Name                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Preliminary Procedure</b></p> <p>Remove the inflatable restraint steering wheel module coil. Refer to <a href="#">Steering Wheel Airbag Coil Replacement</a> .</p> |                                                                                                                                                                                                                                                                                |
| 1                                                                                                                                                                        | <p>Turn Signal Switch Bracket Fastener (Qty: 2)</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> .</p>                                                                                                                                                         |
| 2                                                                                                                                                                        | <p>Turn Signal Switch Bracket</p> <p><b>Procedure</b></p> <p>1. Disconnect any electrical connectors as necessary.<br/>2. Release the locking tab in order to disconnect the turn signal switch bracket from the steering column.<br/>3. Transfer components as necessary.</p> |

Turn Signal Multifunction Switch Replacement



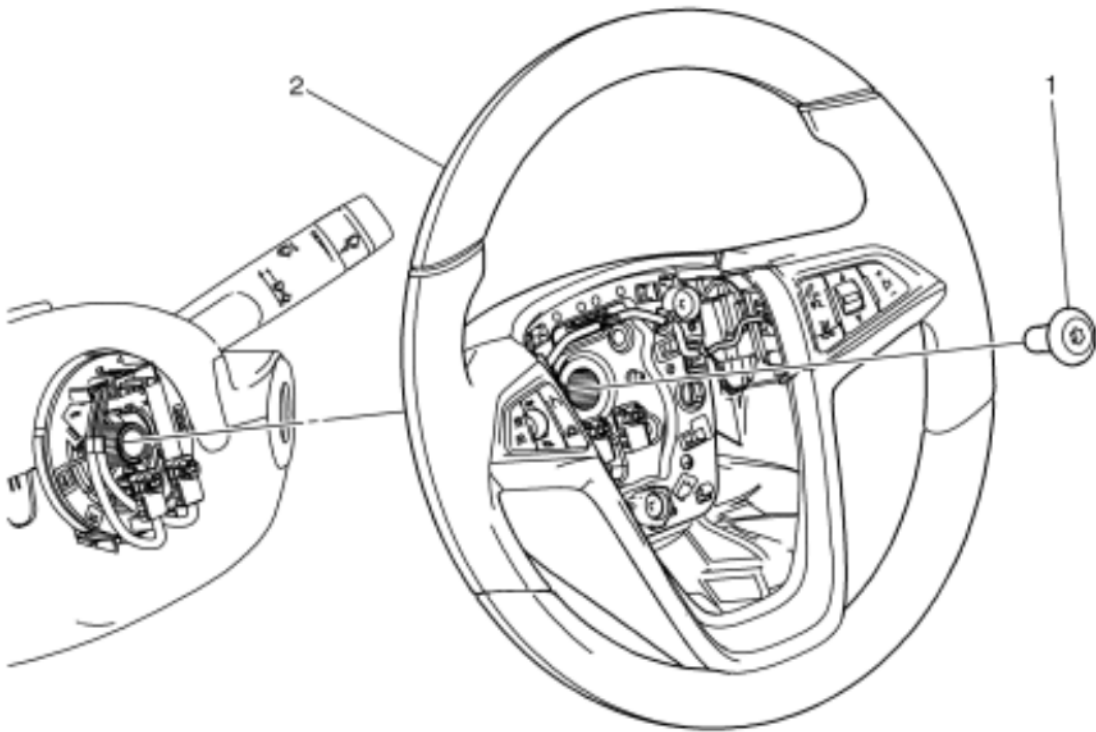
| Callout                                                                                                                                                                                           | Component Name                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Preliminary Procedure</b></p> <p>Remove the upper trim cover and the lower trim cover from the steering column. Refer to <a href="#">Steering Column Lower Trim Cover Replacement</a> .</p> |                                                                                                                                                                                                                                                                                            |
| 1                                                                                                                                                                                                 | <p>Turn Signal Switch</p> <p><b>Procedure</b></p> <ol style="list-style-type: none"><li>1. Disconnect any electrical connectors as necessary.</li><li>2. Release the plastic retaining tabs and remove the turn signal multifunction switch from the turn signal switch bracket.</li></ol> |

Steering Wheel Horn Cap Replacement



| Callout | Component Name                                                                                                                                     |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | <div>Steering Wheel Horn Cap</div> <div><b>Procedure</b></div> <div>Use flat bladed plastic tool to gently pry horn cap from steering wheel.</div> |

Steering Wheel Replacement



| Callout                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Component Name                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Preliminary Procedure</b></p> <p>1. If equipped with the supplemental inflatable restraint system, remove the steering wheel module. Refer to <a href="#">Steering Wheel Inflatable Restraint Module Replacement</a> . If equipped with a steering wheel horn cap, remove the horn cap. Refer to <a href="#">Steering Wheel Horn Cap Replacement</a> .</p> <p>2. Use paint in order to place match marks on the steering wheel and on the steering column shaft.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Steering Wheel Bolt</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> .</p> <p><b>Tighten</b><br/>30 N·m (22 lbft)</p>                                                                                                                                                                                                                                                                                                                                     |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Steering Wheel</p> <p><b>Procedure</b></p> <p>1. Disconnect all electrical connectors as necessary.<br/>2. Loosen the steering wheel bolt until 2 to 3 threads are left engaged.<br/>3. Wiggle the steering wheel until the steering wheel disengages completely.<br/>4. Remove the steering wheel bolt.<br/>5. Remove the steering wheel.<br/>6. Copy the match marks from the old steering wheel to the new steering wheel.<br/>7. Transfer any parts as necessary.</p> |

## Steering Column Replacement (NJ1)

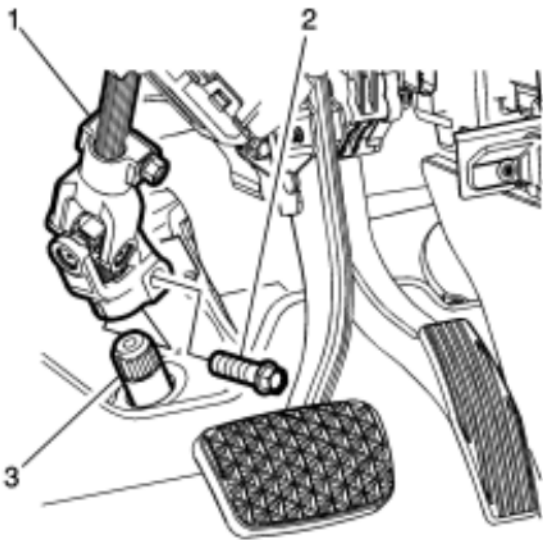
### Removal Procedure

**Caution:** With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column lock, or a strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering wheel must be secured in position before disconnecting the following components:

- The steering column
- The intermediate shaft(s)
- The steering gear

After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this procedure may cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your specific SIR coil's centering procedure to re-center SIR Coil.

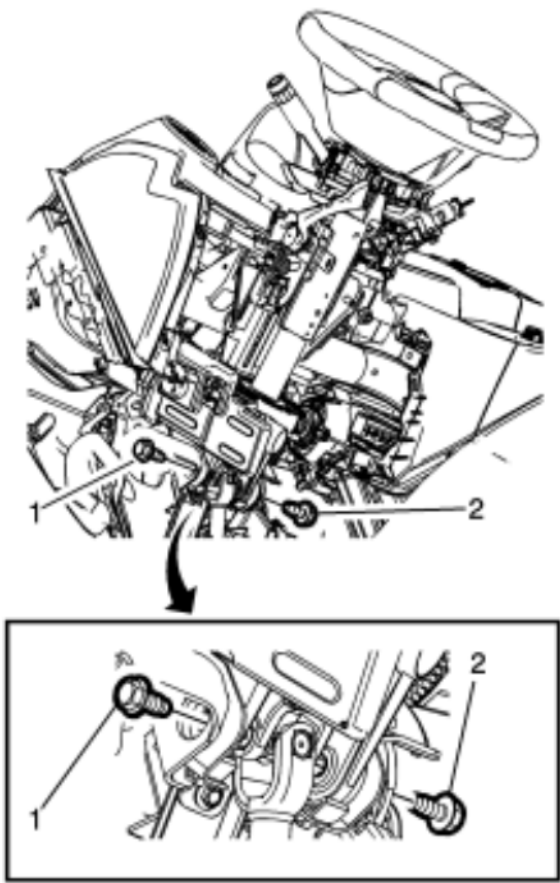
1. With the steering wheel in the straight ahead position, LOCK the steering column.
2. Remove the upper trim cover and the lower trim cover from the steering column. Refer to [Steering Column Lower Trim Cover Replacement](#) .
3. Remove the instrument panel lower trim pad cover. Refer to [Instrument Panel Lower Trim Pad Cover Replacement](#) .
4. Remove the left side floor air outlet duct. Refer to [Floor Air Outlet Duct Replacement - Left Side](#) .
5. Disconnect any electrical connectors as necessary.



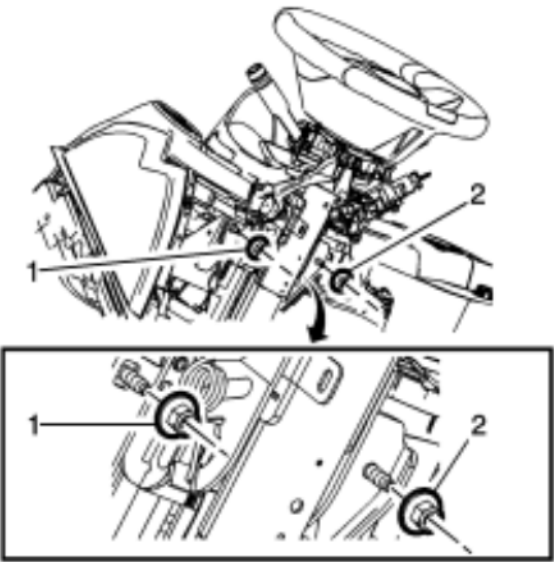
6. Use paint in order to place match marks on the intermediate steering shaft(1) and on the steering gear pinion shaft(3).
7. Remove the intermediate steering shaft lower bolt(2).
8. Disconnect the intermediate steering shaft from the steering gear pinion shaft.

**Caution:** Do not support the steering column by only the lower or upper support bracket. Damage to the column lower bearing adapter could result.

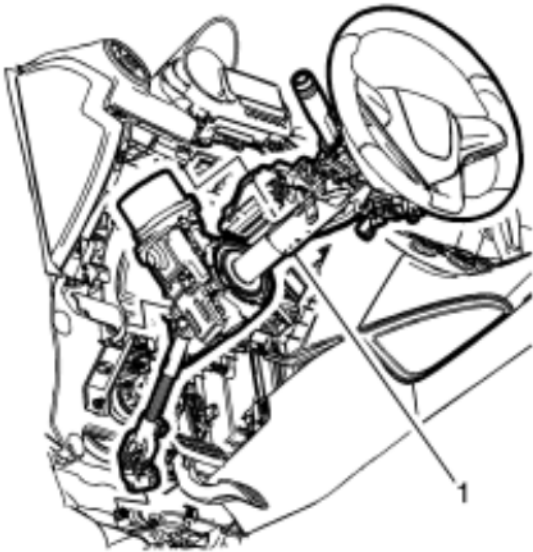
9. Support the steering column.



10. Remove the 2 steering column lower support bracket bolts (1, 2).



11. Remove the 2 steering column upper support bracket nuts (1, 2).



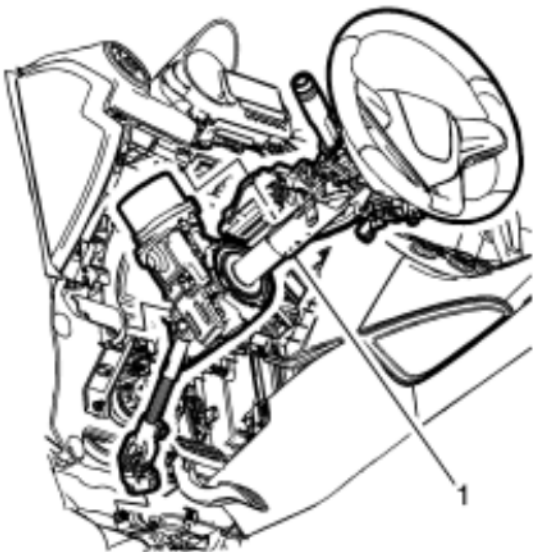
**Caution:** Once the steering column is removed from the vehicle, the column is extremely susceptible to damage. Dropping the column assembly on the end could collapse the steering shaft or loosen the plastic injections, which maintain column rigidity. Leaning on the column assembly could cause the jacket to bend or deform. Any of the above damage could impair the columns collapsible design. Do NOT hammer on the end of the shaft, because hammering could loosen the plastic injections, which maintain column rigidity. If you need to remove the steering wheel, refer to the Steering Wheel Replacement procedure in this section.

12. Remove the steering column assembly (1) from the vehicle.

13. Transfer components as necessary.

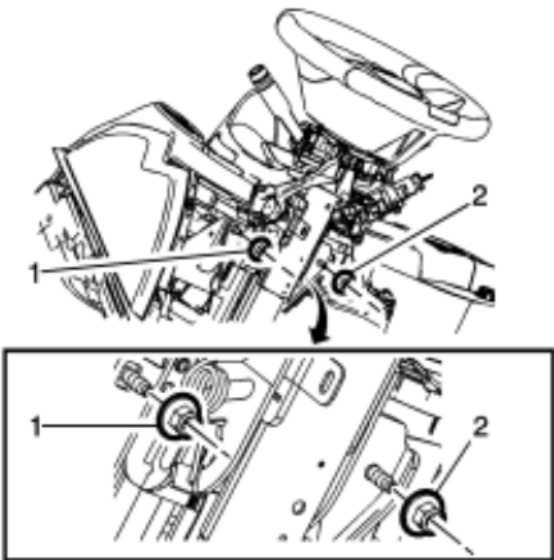
Installation Procedure

1. If you are replacing the steering column or the intermediate steering shaft, copy the match marks from the old parts to the new parts.



**Caution:** Do NOT allow the wiring harness to be pinched between the motor/module assembly and the steering column during installation. A pinched harness will cause diagnostic trouble codes to be set and may require replacement of the steering column.

2. Position the steering column assembly (1) in the vehicle.
3. Align the match marks and connect the intermediate steering shaft to the steering gear pinion shaft.

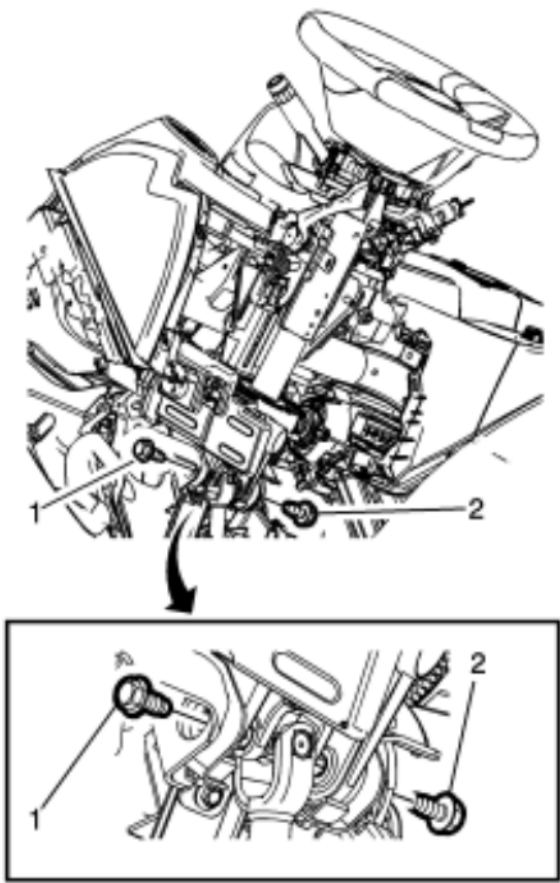


**Warning:** In order to ensure the intended function of the steering column in a vehicle during a crash and in order to avoid personal injury to the driver, perform the following:

- Tighten the steering column lower fasteners before you tighten the steering column upper fasteners. Failure to do this can damage the steering column.
- Tighten the steering column fasteners to the specified torque. Overtightening the upper steering column fasteners could affect the steering column collapse.

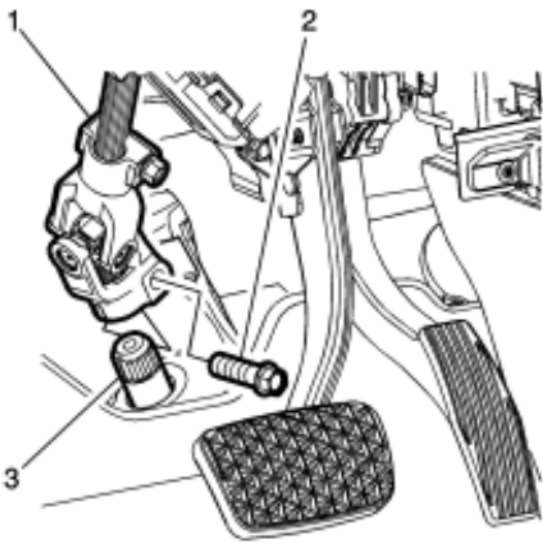
**Caution:** Ensure all fasteners are securely seated before applying needed torque. Failure to do so may result in component damage or malfunctioning of steering column.

4. Install, but do not tighten, the 2 steering column upper support bracket nuts (1, 2).



5. Install, but do not tighten, the 2 steering column lower support bracket bolts(1, 2).

**Caution:** Refer to [Fastener Caution](#) .



- 6. Install the intermediate steering shaft lower bolt(2) and tighten to **49 N·m (36 lbft)**.
- 7. Tighten the 2 steering column lower support bracket bolts to **22 N·m (16 lbft)**.
- 8. Tighten the 2 steering column upper support bracket nuts to **22 N·m (16 lbft)**.
- 9. Connect any electrical connectors as necessary.
- 10. Install the left side floor air outlet duct. Refer to [Floor Air Outlet Duct Replacement - Left Side](#) .
- 11. Install the instrument panel lower trim pad cover. Refer to [Instrument Panel Lower Trim Pad Cover Replacement](#) .
- 12. Install the upper trim cover and the lower trim cover to the steering column. Refer to [Steering Column Lower Trim Cover Replacement](#) .
- 13. Setup the power steering control module. Refer to [Power Steering Control Module Programming and Setup](#) .
- 14. Center the steering angle sensor. Refer to [Steering Angle Sensor Centering](#) .

## Steering Column Replacement (N40)

### Removal Procedure

**Caution:** With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column lock, or a strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering wheel must be secured in position before disconnecting the following components:

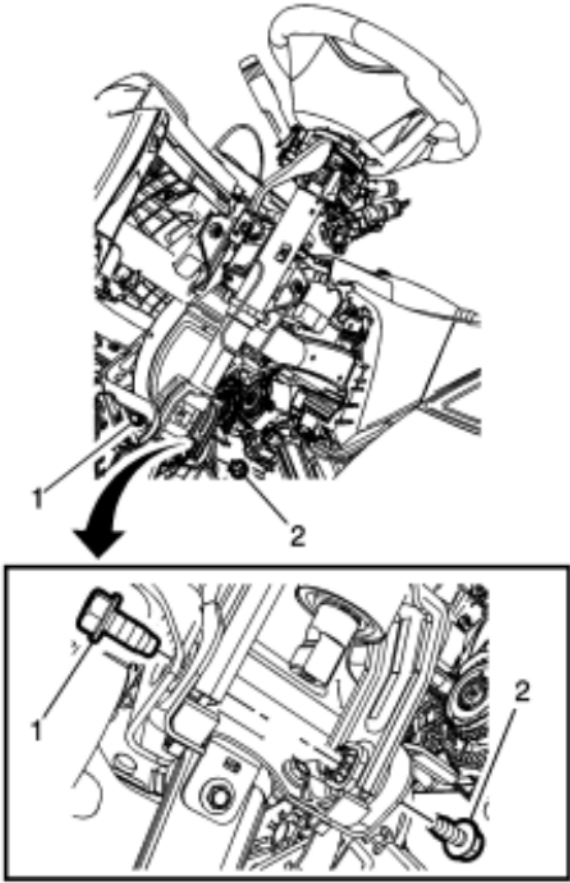
- The steering column
- The intermediate shaft(s)
- The steering gear

After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this procedure may cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your specific SIR coil's centering procedure to re-center SIR Coil.

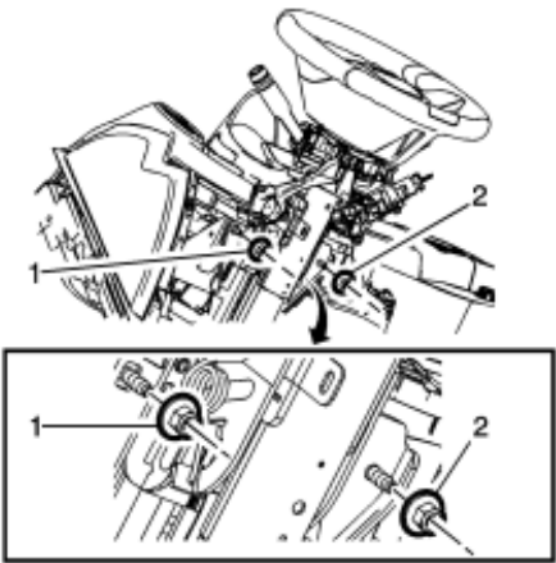
1. With the steering wheel in the straight ahead position, LOCK the steering column.
2. Remove the upper trim cover and the lower trim cover from the steering column. Refer to [Steering Column Lower Trim Cover Replacement](#) .
3. Remove the instrument panel lower trim pad cover. Refer to [Instrument Panel Lower Trim Pad Cover Replacement](#) .
4. Remove the left side floor air outlet duct. Refer to [Floor Air Outlet Duct Replacement - Left Side](#) .
5. Disconnect any electrical connectors as necessary.
6. Use paint in order to place match marks on the intermediate steering shaft and on the steering column shaft.
7. Disconnect the intermediate steering shaft from the steering column shaft. Refer to [Intermediate Steering Shaft Replacement](#) .

**Caution:** Do not support the steering column by only the lower or upper support bracket. Damage to the column lower bearing adapter could result.

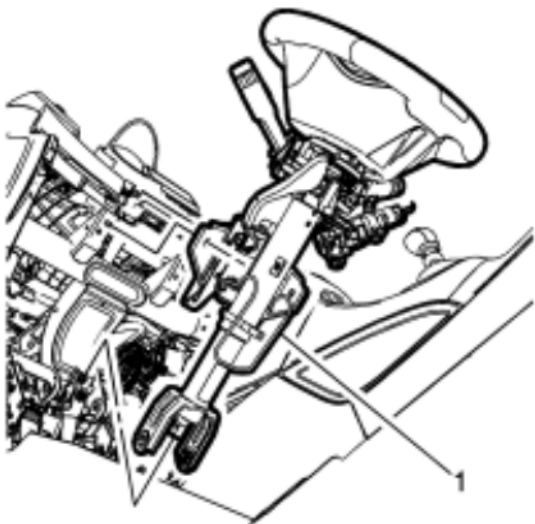
8. Support the steering column.



9. Remove the 2 steering column lower support bracket bolts (1,2).



10. Remove the 2 steering column upper support bracket nuts(1,2).

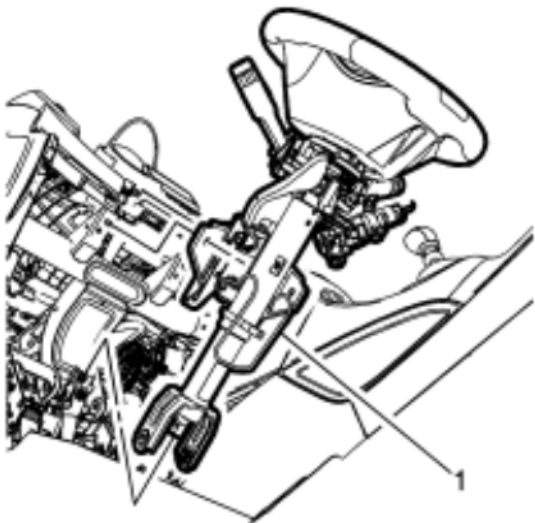


**Caution:** Once the steering column is removed from the vehicle, the column is extremely susceptible to damage. Dropping the column assembly on the end could collapse the steering shaft or loosen the plastic injections, which maintain column rigidity. Leaning on the column assembly could cause the jacket to bend or deform. Any of the above damage could impair the columns collapsible design. Do NOT hammer on the end of the shaft, because hammering could loosen the plastic injections, which maintain column rigidity. If you need to remove the steering wheel, refer to the Steering Wheel Replacement procedure in this section.

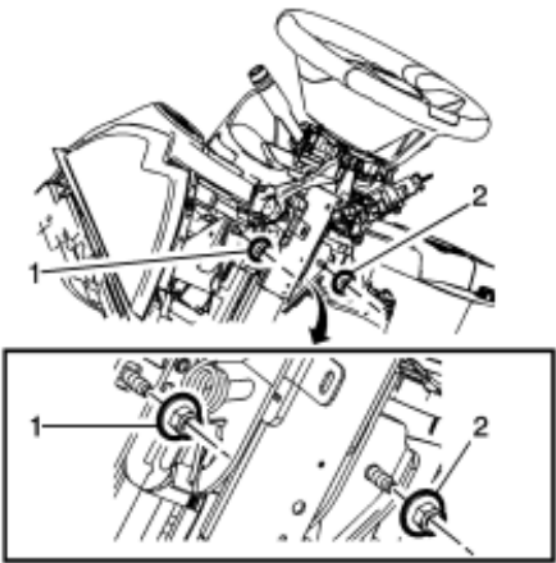
- 11. Remove the steering column assembly(1) from the vehicle.
- 12. Transfer components as necessary.

Installation Procedure

- 1. If you are replacing the steering column or the intermediate steering shaft, copy the match marks from the old parts to the new parts.



- 2. Position the steering column assembly(1) in the vehicle.
- 3. Align the match marks and connect the intermediate steering shaft to the steering column shaft. Refer to [Intermediate Steering Shaft Replacement](#) .



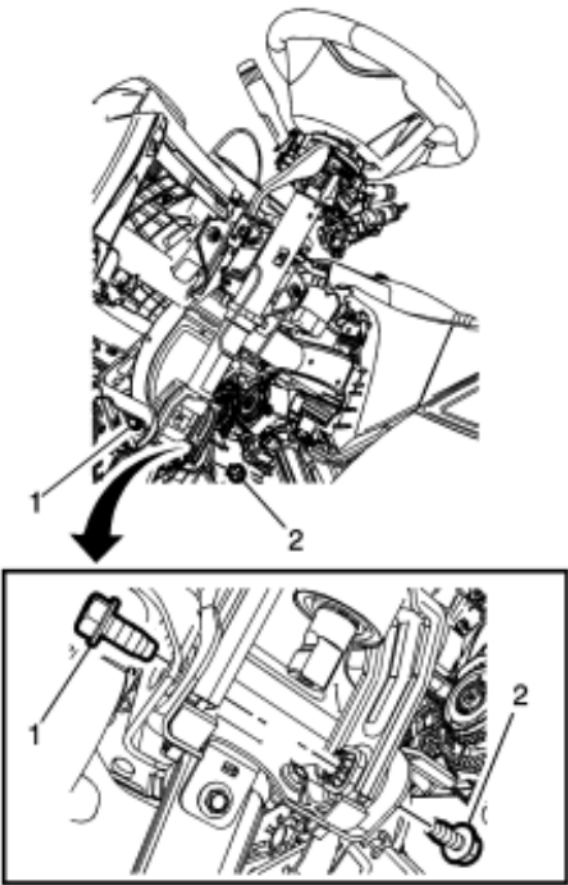
**Warning:** In order to ensure the intended function of the steering column in a vehicle during a crash and in order to avoid personal injury to the driver, perform the following:

- Tighten the steering column lower fasteners before you tighten the steering column upper fasteners. Failure to do this can damage the steering column.
- Tighten the steering column fasteners to the specified torque. Overtightening the upper steering column fasteners could affect the steering column collapse.

**Caution:** Ensure all fasteners are securely seated before applying needed torque. Failure to do so may result in component damage or malfunctioning of steering column.

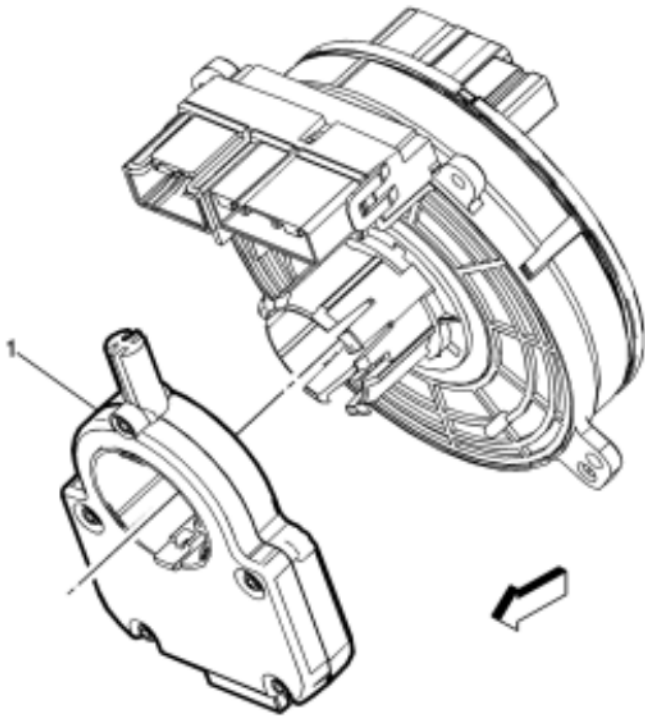
4. Install, but do not tighten, the 2steering column upper support bracket nuts(1,2).

**Caution:** Refer to [Fastener Caution](#) .



5. Install the 2steering column lower support bracket bolts(1,2) and tighten to **22 N·m (16 lbft)**.
6. Tighten the 2steering column upper support bracket nuts to **22 N·m (16 lbft)**.
7. Connect any electrical connectors as necessary.
8. Install the left side floor air outlet duct. Refer to [Floor Air Outlet Duct Replacement - Left Side](#) .
9. Install the instrument panel lower trim pad cover. Refer to [Instrument Panel Lower Trim Pad Cover Replacement](#) .
10. Install the upper trim cover and the lower trim cover to the steering column. Refer to [Steering Column Lower Trim Cover Replacement](#) .
11. Center the steering angle sensor. Refer to [Steering Angle Sensor Centering](#) .

Steering Angle Sensor Replacement



| Callout                                                                                                                                             | Component Name                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Preliminary Procedure</b></p> <p>Remove the steering wheel airbag coil. Refer to <a href="#">Steering Wheel Airbag Coil Replacement</a> .</p> |                                                                                                                                                                                                                                                                                                             |
| 1                                                                                                                                                   | <p>Steering Angle Sensor</p> <p><b>Procedure</b></p> <p>1. Press in the clip on the steering wheel airbag coil in order to remove the steering angle sensor.</p> <p>2. After the installation is complete, center the steering angle sensor. Refer to <a href="#">Steering Angle Sensor Centering</a> .</p> |

## Steering Wheel and Column Description and Operation

**Warning:** Refer to [Safety Glasses Warning](#) .

**Warning:** In order to ensure the intended function of the steering column in a vehicle during a crash and in order to avoid personal injury to the driver, perform the following:

- Tighten the steering column lower fasteners before you tighten the steering column upper fasteners. Failure to do this can damage the steering column.
- Tighten the steering column fasteners to the specified torque. Overtightening the upper steering column fasteners could affect the steering column collapse.

**Caution:** Refer to [Steering Wheel Straight and Column Locked Caution](#) .

**Caution:** Refer to [Steering Column in Lock Position Caution](#) .

In addition to the steering function, the steering column provides safety and security.

The energy-absorbing column is designed to compress in a front-end collision to lessen the chance of driver injury.

The ignition switch and the lock are mounted on the column, allowing the ignition and steering operations to be locked to prevent theft of the car.

The column levers trigger the turn signals, the headlight beams, and the windshield washer and wipers.

**Note:** Apply a thin coat of lithium grease to all friction points when reassembling to ensure proper operation.

A tilt steering column uses a spherical joint to allow the steering wheel to tilt up and down. This enables the driver to adjust the steering wheel to a comfortable driving position.

The column may be easily disassembled and assembled.