

Steering Wheel and Column

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Description and Operation

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Steering Wheel and Column Description and Operation

The steering wheel and column has 4 primary functions:

- Vehicle steering
- Vehicle security
- Driver convenience
- Driver safety

Vehicle Steering

The steering wheel is the first link between the driver and the vehicle. The steering wheel is fastened to a steering shaft within the column. At the lower end of the column, the intermediate shaft connects the column to the steering gear.

The steering column can be adjusted vertically and longitudinally.

Vehicle Security

Theft deterrent components are mounted and designed into the steering column. The following components allow the column to be locked in order to minimize theft:

- The ignition switch
- The steering column lock
- The ignition cylinder
- The theft deterrent immobilizer module, if equipped

Driver Convenience

The steering wheel and column may also have driver controls attached for convenience and comfort. The following controls may be mounted on the steering wheel or column.

- The turn signal switch
- The headlamp dimmer switch
- The wiper/washer switch
- The horn pad
- The redundant radio/entertainment system controls
- The tilt functions
- The telephone system controls

Driver Safety

The steering wheel and column has safety features to protect the driver. The following components may be mounted on or near the steering column:

Energy-Absorbing Steering Column: The energy-absorbing steering column compresses in the event of a front-end collision, which reduces the chance of injury to the driver. The energy-absorbing feature, collapsible steering shaft, and break away mounting features help reduce the injury in the event of an accident.

SIR Coil and Module: For additional information on the operation of the SIR coil and module, refer to [Supplemental Inflatable Restraint System Description and Operation](#).

Steering Wheel Angle Sensor: The steering wheel angle sensor is located somewhere along the steering shaft assembly. The sensor measures

the position of the steering wheel and the speed at which it is rotated. A signal representing this measurement is provided to the electronic stability control (ESC) in the ABS module.

The Theft Deterrent Immobilizer Module: The immobilizer module is mounted in the steering column lock on cars without Passive Entry Passive Start system (PEPS). Refer to [Immobilizer Description and Operation](#).

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Diagnostic Information and Procedures

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Symptoms - Steering Wheel and Column

Note:

Review the system operation in order to familiarize yourself with the system functions.

Refer to [Steering Wheel and Column Description and Operation](#).

Symptoms List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- [High Effort While Tilting Column](#).
- [Lock System Does Not Unlock](#).
- [Lock System Does Not Lock](#)
- [Noise in Steering Column](#).
- [Lock System Does Not Lock](#).

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Lock System Does Not Unlock

Condition	Action
Check the ignition lock cylinder for damage.	Replace the ignition lock cylinder. Refer to Ignition Lock Cylinder Replacement .
Check the steering column housing for binding or damage.	Remove the steering shaft and clear the steering column housing. Replace the steering column housing as needed.

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High Effort While Tilting Column

Condition	Action
The pivot bolt is damaged or misaligned.	If necessary, replace the steering column. Refer to Steering Column Replacement .

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Lock System Does Not Lock

Condition	Action
With the steering wheel in the straight-ahead position, remove the key and rotate the steering wheel 120 degrees to the right.	If the steering column does not lock after 120 degree rotation, remove the trim panels around the ignition lock cylinder and lower the steering column. Refer to Ignition Lock Cylinder Replacement .
Check the lock cylinder for damage.	Replace the ignition lock cylinder. Refer to Ignition Lock Cylinder Replacement .
Check the steering column housing for binding or damage.	Remove the steering shaft and clear the steering column housing. Replace the steering column housing as needed.

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Noise in Steering Column

Step	Action	Yes	No
1	Did you review the Steering Wheel and Column Description and perform the necessary inspections?	Go to Stepâ€™2	Go to Steering Wheel and Column Description and Operation
2	Verify that noise is present in the steering column during operation. Is noise present in the steering column during operation?	Go to Stepâ€™3	System OK
3	Inspect the steering column mounting features for the following conditions: - Steering column mounting fasteners for looseness - Steering column mounting features are sheared Are the steering column mounting features loose?	Go to Stepâ€™10	Go to Stepâ€™4
4	Inspect the SIR/SRS coil for noise. Is the SIR/SRS coil noisy?	Go to Stepâ€™11	Go to Stepâ€™5
5	Inspect the lock plate retaining ring for correct installation. Is the lock plate retaining ring installed incorrectly?	Go to Stepâ€™12	Go to Stepâ€™6
6	Inspect the steering column upper and lower bearings for the following conditions: - Damage - Lubrication - Wear - Proper seating Are the bearings in need of repair or replacement?	Go to Stepâ€™13	Go to Stepâ€™7
7	Does the tilt joint need to be lubricated?	Go to Stepâ€™14	Go to Stepâ€™8
8	Note: This is best evaluated while driving the vehicle, turning the steering and applying the brake pedal. Inspect the intermediate steering shaft for noise. Is the intermediate steering shaft noisy?	Go to Stepâ€™15	Go to Stepâ€™9
9	Inspect the power steering assist motor for a whine or growl noise using the J-39570 chassis ear. Is the power steering assist motor noisy abnormally?	Go to Stepâ€™16	Go to Stepâ€™17
10	Note: If the steering column mounting is damaged or sheared, the steering column will need to be replaced. Refer to Steering Column Replacement . Tighten the steering column mounting fastener to specifications. Refer to Fastener Specifications . Did you complete the repair?	Go to Stepâ€™17	â€™”
11	Replace the SIR/SRS coil. Refer to Steering Wheel Airbag Coil Replacement . Did you complete the repair?	Go to Stepâ€™17	â€™”
12	Install the lock plate retaining ring correctly. Did you complete the repair?	Go to Stepâ€™17	â€™”

Step	Action	Yes	No
13	Note: If the steering column upper and/or lower bearings are not serviceable, the steering column will need to be replaced. Refer to Steering Column Replacement. Replace the upper and/or lower bearing, if serviceable. Did you complete the repair?	Go to Step 17	â€”
14	Lubricate the tilt joint. Did you complete the repair?	Go to Step 17	â€”
15	Replace the appropriate intermediate steering shaft component. Refer to Intermediate Steering Shaft Replacement. Did you complete the repair?	Go to Step 17	â€”
16	Replace the power steering assist motor. Refer to Power Steering Assist Motor Replacement	Go to Step 17	â€”
17	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

Related Part Information

Part Name	Catalog Name	Part Code
Steering Column	COLUMN,STRG (W/ INT STRG SHFT)	2494A
Steering Column	COLUMN,STRG(W/STRG WHL)	2495A
Steering Column	COLUMN,STRG(W/BRK & ACCEL & CLU PED)	2496A
Steering Column	COLUMN,STRG(W/ I/P WRG HARN)	2497A
Steering Column	COLUMN KIT,STRG	2499G
Steering Column	COLUMN KIT,STRG	2499W
Steering Column	COLUMN KIT,STRG	2499Y
Steering Column	COLUMN KIT,STRG	2499Z
Steering Column	COLUMN,STRG	2500A
Steering Column	COLUMN,STRG	2500B
Steering Column	COLUMN,STRG (W/ ASST MOT)	2501A

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Looseness in Steering Column

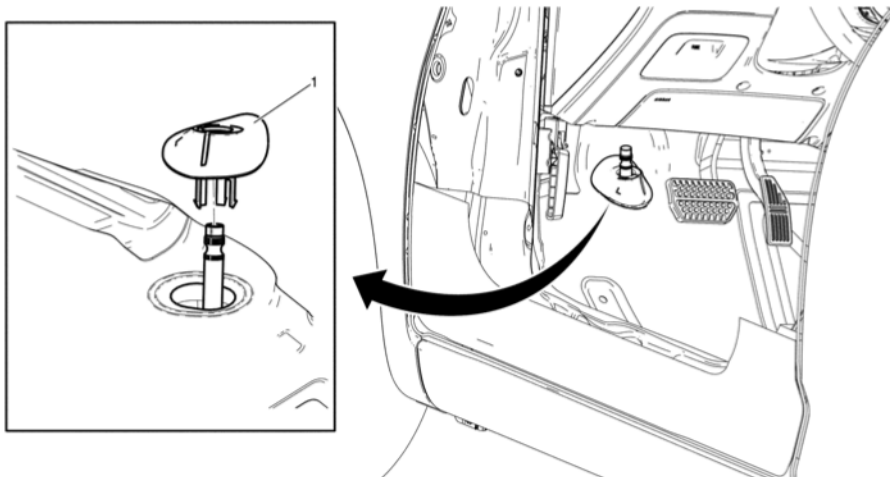
Step	Action	Yes	No
1	Did you review the Steering Wheel and Column Description and perform the necessary inspections?	Go to Stepâ€™%2	Go to Steering Column Replacement
2	Verify that the steering column is loose. Is the steering column loose?	Go to Stepâ€™%3	System OK
3	Inspect the steering column mounting features for the following conditions. - Steering column mounting fasteners for looseness - Steering column mounting features are sheared Are the steering column mounting features loose?	Go to Stepâ€™%5	Go to Stepâ€™%4
4	Inspect the upper and/or lower bearings for looseness. Are any of the bearings worn or loose?	Go to Stepâ€™%6	Go to Stepâ€™%7
5	Note: If the steering column mounting is damaged or sheared, the steering column will need to be replaced. Refer to Steering Column Replacement . Tighten the steering column mounting fastener to specifications. Refer to Fastener Specifications . Did you complete the repair?	Go to Stepâ€™%7	â€™”
6	Note: If the steering column mounting is damaged or sheared, the steering column will need to be replaced. Refer to Steering Column Replacement . Replace the upper and/or lower bearings, if serviceable. Did you complete the repair	Go to Stepâ€™%7	â€™”
7	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Stepâ€™%3

Repair Instructions

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Intermediate Steering Shaft Upper Seal Replacement



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Callout	Component Name
Preliminary Procedure	
Disconnect the intermediate steering shaft from the steering gear. Refer to Intermediate Steering Shaft Replacement .	
1	Intermediate Steering Shaft Upper Seal Procedure 1. When removing the intermediate steering shaft upper seal, lift up the lip on the upper seal to access and release the retaining tabs securing the upper seal to the lower seal. 2. After installing the intermediate steering shaft upper seal, lift up the lip on the upper seal to access and ensure the retaining tabs securing the upper seal to the lower seal are fully engaged. Note: Note the orientation of the alignment marking on the seal to help aid in installation.

Related Part Information

Part Name	Catalog Name	Part Code
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Part Name	Catalog Name	Part Code
Intermediate Steering Shaft Upper Seal	SEAL,INTER STRG SHF UPR 2205A	
Intermediate Steering Shaft Upper Seal	SEAL,INTER STRG SHF UPR 2205B	

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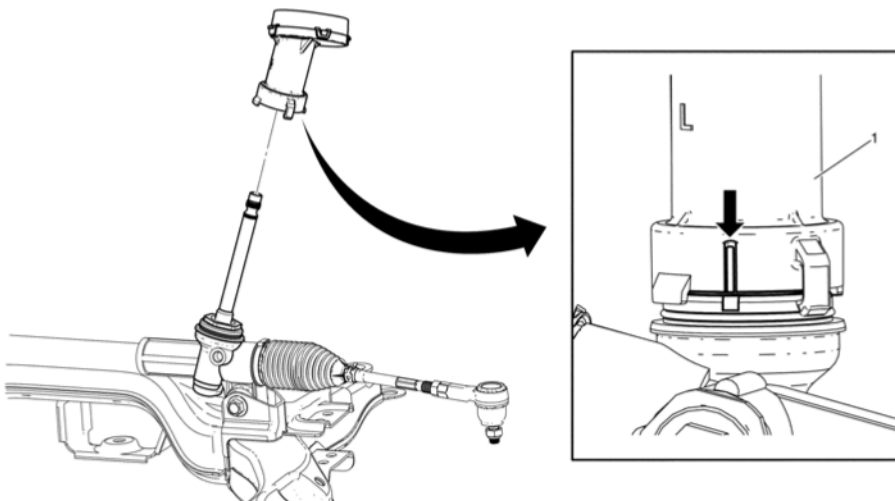
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Intermediate Steering Shaft Lower Seal Replacement



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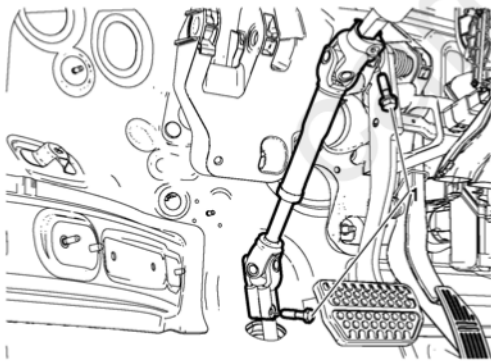
Callout	Component Name
	Preliminary Procedure 1. Remove the intermediate steering shaft upper seal. Refer to Intermediate Steering Shaft Upper Seal Replacement. 2. Lower the front suspension frame and steering gear to get an access to remove the intermediate steering shaft lower seal. Refer to Steering Gear Replacement.
1	Intermediate Steering Shaft Lower Seal Procedure When installing the intermediate steering shaft lower seal, align the nose of the intermediate steering shaft lower seal to the groove on the power steering gear.

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Intermediate Steering Shaft Replacement

Removal Procedure

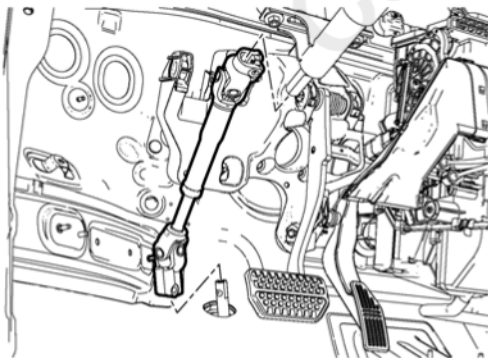
1. Turn the steering wheel to the straight forward position and support it from movement.



2.

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3. Remove the 2 intermediate steering shaft bolts (1).

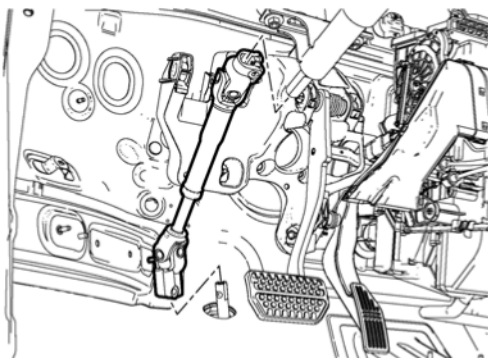


4.

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5. Remove the intermediate steering shaft.

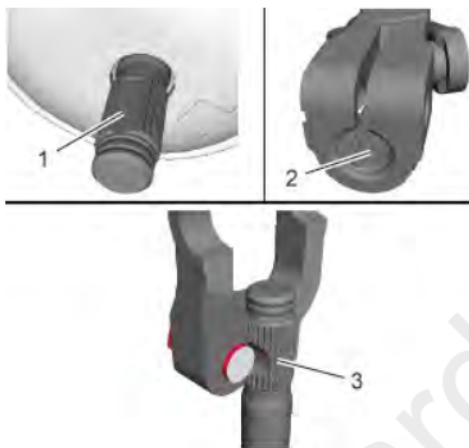
Installation Procedure



1.

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2. Install the intermediate steering shaft.

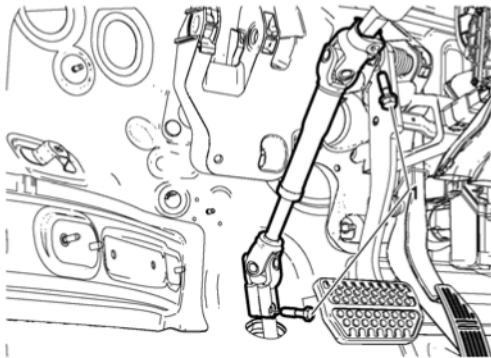


3.

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4. Note:

The recessâ€(2) of the fine tooting in the universal joint have to align precisely with the recessâ€(1) of the fine tooting on the steering pinion. The bore in the universal joint have to align with the groove on the steering pinionâ€(3).



5. [Click here for full size](#)
6. Caution:

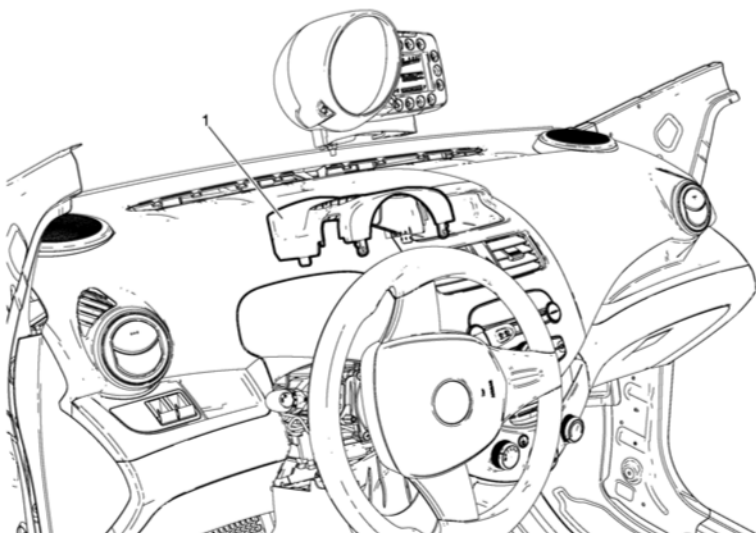
Refer to [Fastener Caution](#).
7. Install the 2 intermediate steering shaft bolts (1) and tighten the intermediate steering shaft bolts to 25 N·m (18 lb·ft).

Related Part Information

Part Name	Catalog Name	Part Code
Intermediate Steering Shaft	SHAFT,INTER STRG	1800B
Intermediate Steering Shaft	SHAFT,INTER STRG	1800J
Intermediate Steering Shaft	SHAFT,INTER STRG	1850B
Intermediate Steering Shaft	SHAFT KIT,INTER STRG	X0279
Intermediate Steering Shaft	SHAFT KIT,INTER STRG	X0393

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Steering Column Upper Trim Cover Replacement





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Callout	Component Name
Preliminary Procedure	
1. Remove the steering column lower cover. Refer to Steering Column Lower Trim Cover Replacement .	
2. Remove the cluster. Refer to Instrument Cluster Replacement .	
1	Steering Column Upper Trim Cover Procedure Unclip the steering column upper trim cover from the steering column lower trim cover.

Related Part Information

Part Name	Catalog Name	Part Code
Instrument Panel Steering Column Upper Trim Cover	COVER,I/P STRG COL UPR TR	2505A
Instrument Panel Steering Column Upper Trim Cover	COVER,I/P STRG COL UPR TR	2505B
Steering Column Upper Trim Cover	COVER,STRG COL UPR TR	3674Z

Part Name

Steering Column Upper Trim Cover

Catalog Name

COVER,STRG COL UPR TR

Part Code

3675A

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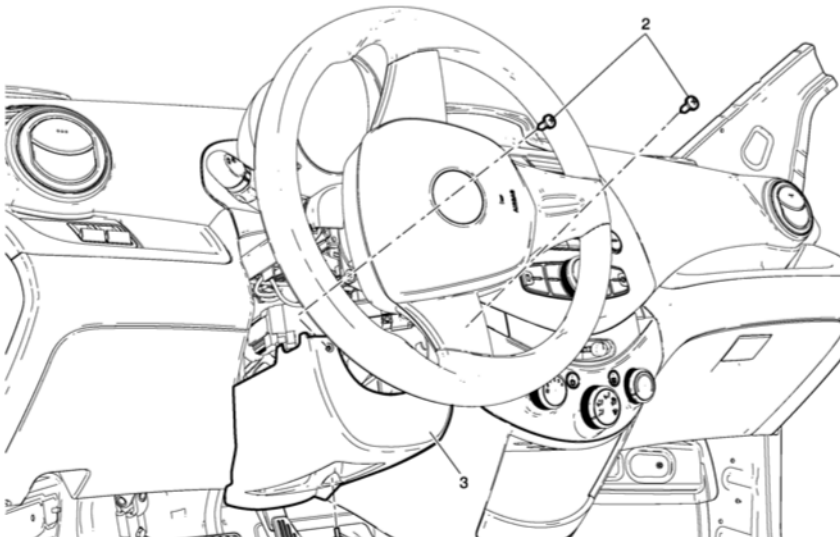
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Steering Column Lower Trim Cover Replacement





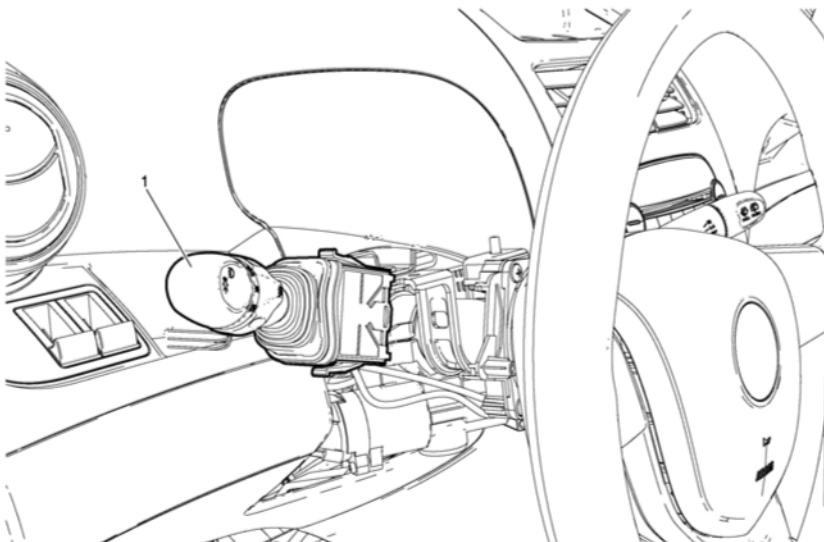
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Callout	Component Name
1	Steering Column Lower Trim Cover Screw (Qty:â€™%1)
2	Steering Column Lower Trim Cover Screw (Qty:â€™%2) Procedure Turn the steering wheel until the bolts are reachable.
3	Steering Column Lower Trim Cover

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Turn Signal Switch Replacement





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Callout	Component Name
	Preliminary Procedure 1. Remove the steering column upper trim cover. Refer to Steering Column Upper Trim Cover Replacement. 2. Remove the steering column lower trim cover. Refer to Steering Column Lower Trim Cover Replacement.
1	Turn Signal Switch Procedure 1. Disconnect any electrical connectors as needed. 2. Release the plastic retaining tabs to release the turn signal switch from steering wheel inflatable restraint module coil.

Related Part Information

Part Name	Catalog Name	Part Code
Turn Signal Switch	SWITCH,T/SIG(W/CRCONT)	5795A

Part Name	Catalog Name	Part Code
Turn Signal Switch	SWITCH,T/SIG	5800A
Turn Signal Switch	SWITCH,T/SIG	X0014

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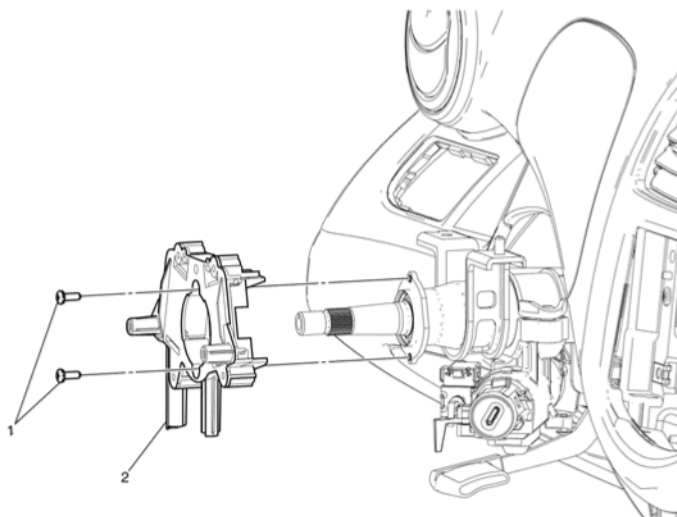
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Turn Signal Switch Bracket Replacement



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Callout	Component Name
Preliminary Procedures 1. Remove the steering wheel airbag coil. Refer to Steering Wheel Airbag Coil Replacement . 2. Remove the turn signal switch. Refer to Turn Signal Switch Replacement . 3. Remove the windshield wiper and washer switch. Refer to Windshield Wiper and Windshield Washer Switch Replacement .	
1	Turn Signal Switch Bracket Screw (Qty: 2) Caution: Refer to Fastener Caution . Tighten 3.4 N·m (30 lb·in)
2	Turn Signal Switch Bracket

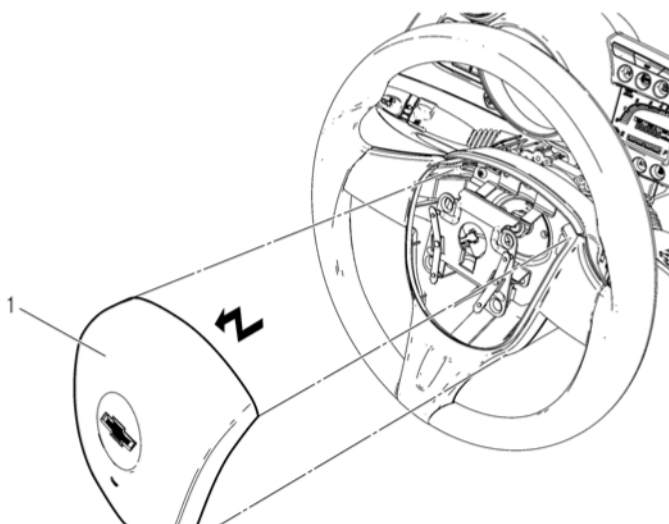
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Steering Wheel Horn Cap Replacement





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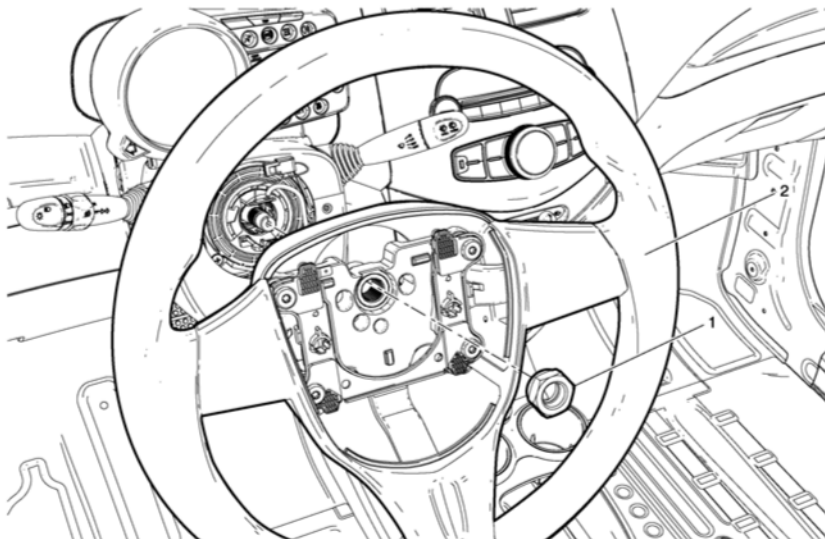
Callout	Component Name
1	Steering Wheel Horn Cap Procedure 1. Pull the horn cap outward. DO NOT remove the horn cap completely from steering wheel 2. Lift the horn cap slightly to come out the horn cap from horn contact. 3. Remove the horn cap.

Related Part Information

Part Name	Catalog Name	Part Code
Steering Wheel Horn Cap	CAP,STRG WHL HORN	0800A
Steering Wheel Horn Cap	CAP,STRG WHL HORN	0850A

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Steering Wheel Replacement





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Callout	Component Name
Preliminary Procedure	
Remove the inflatable restraint steering wheel module. Refer to Airbag Steering Wheel Module Replacement .	
1	Steering Wheel Bolt Caution: Refer to Fastener Caution. Tighten 38â€%N-m (28â€%lbâ€%ft)

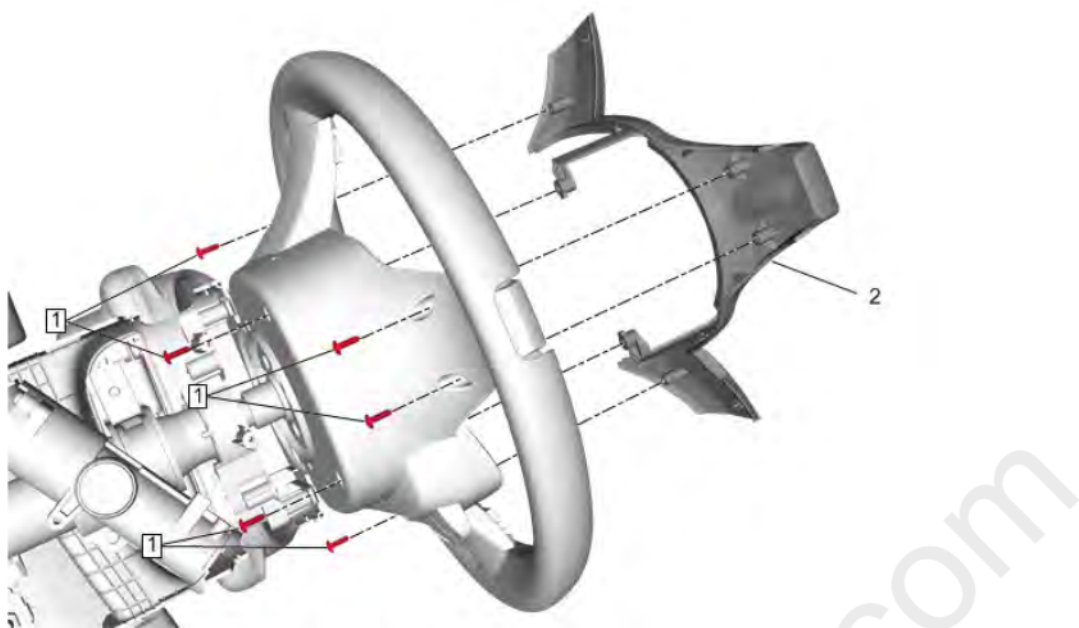
Callout	Component Name
2	Steering Wheel
	Procedure
	1. Disconnect the electrical connectors as needed.
	2. Using the <i>CH-50168-A</i> steering wheel puller, remove the steering wheel carefully.
	Special Tools
	<i>CH-50168-A</i> Steering Wheel Puller
	For equivalent regional tools, refer to Special Tools .

Related Part Information

Part Name	Catalog Name	Part Code
Steering Wheel WHEEL PKG,STRG		SJ534
Steering Wheel WHEEL PKG,STRG		SS153
Steering Wheel WHEEL,STRG (W/AIRBAG MDL)	0045A	
Steering Wheel WHEEL,STRG		0049Y
Steering Wheel WHEEL,STRG		0050A
Steering Wheel WHEEL,STRG		0050B
Steering Wheel WHEEL KIT,STRG		SG013

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Steering Wheel Spoke Lower Cover Replacement



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Callout	Component Name
Preliminary Procedures	
1. Airbag Steering Wheel Module Replacement	
2. Steering Column Lower Trim Cover Replacement	
1	Steering Wheel Lower Spoke Cover Bolt [6x]
2	Steering Wheel Lower Spoke Cover
	Procedure
Use the appropriate trim tool to release the steering wheel lower spoke cover from the steering wheel.	

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Steering Column Replacement (Electric Power Steering)

Caution:

During removal and installation, all EPS components including mechanical and/or electrical is extremely susceptible to damage. Dropping or prying on any EPS component may cause internal damage. If damage occurs or a part is dropped, the EPS component must be replaced.

Caution:

Care must be taken during removal and installation of the Electronic Power Steering (EPS) components to not hit or break the EPS motor/controller module or module harness connectors. If the EPS motor/ controller module or module connectors are damaged, the complete component must be replaced.

Caution:

Electrostatic discharge (ESD) can damage many solid-state electrical components. ESD susceptible components may or may not be labeled with the ESD symbol. Handle all electrical components carefully. Use the following precautions in order to avoid ESD damage:

- Touch a metal ground point in order to remove your body's static charge before servicing any electronic component; especially after sliding across the vehicle seat.
- Do not touch exposed terminals. Terminals may connect to circuits susceptible the ESD damage.
- Do not allow tools to contact exposed terminals when servicing connectors.
- Do not remove components from their protective packaging until required to do so.
- Avoid the following actions unless required by the diagnostic procedure:

Other List:attention-list2

- Ground the protective packaging of any component before opening. Do not rest solid-state components on metal workbenches, or on top of TVs, radios, or other electrical devices.

Removal Procedure

1. Disconnect the battery negative cable. Refer to [Battery Negative Cable Disconnection and Connection](#).

2. **Caution:**

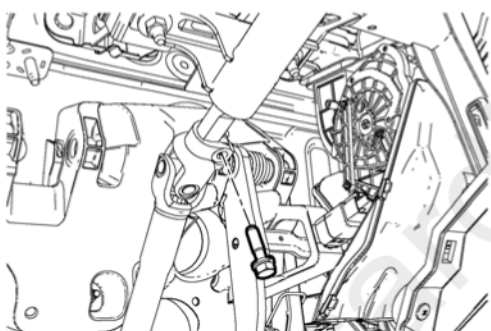
With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column lock, or a strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering wheel must be secured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

3. Turn the steering wheel to the straight ahead position and lock it in place.
4. Remove the steering wheel. Refer to [Steering Wheel Replacement](#).
5. Remove the steering column lower trim cover. Refer to [Steering Column Lower Trim Cover Replacement](#).
6. Remove the steering column upper trim cover. Refer to [Steering Column Upper Trim Cover Replacement](#).
7. Remove the turn signal switch bracket. Refer to [Turn Signal Switch Bracket Replacement](#).
8. Disconnect any electrical connectors as necessary.

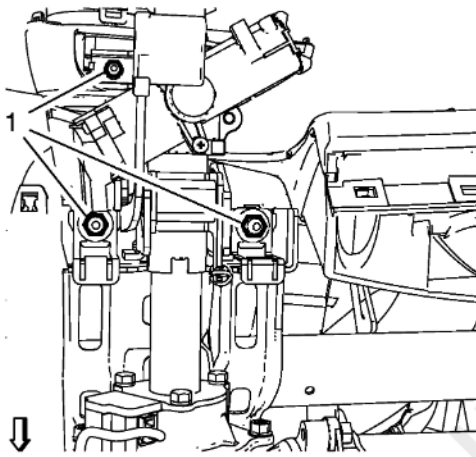
9. Remove the steering column opening filler. Refer to [Steering Column Opening Filler Replacement](#).
10. Remove the electric power steering module and bracket assembly from the steering column. Refer to [Power Steering Control Module Replacement](#).



11. [Click here for full size](#)
12. Remove the intermediate steering shaft upper bolt and disconnect the shaft from the steering column. Refer to [Intermediate Steering Shaft Replacement](#).
13. Note:

Install tie straps between the tilt lever bracket and the base of the steering column to prevent the steering column jacket from pulling apart. The tilt lever MUST be in the LOCK (FULL UP) position during the steering column removal and installation to ensure that the tilt lever bracket remains rigid. Also install tie straps around the tilt lever and the steering column jacket to keep the tilt lever in the LOCK position. Do not bend the steering column energy absorbing straps located on the upper steering column mounting bracket.
14. Install tie straps as described above.

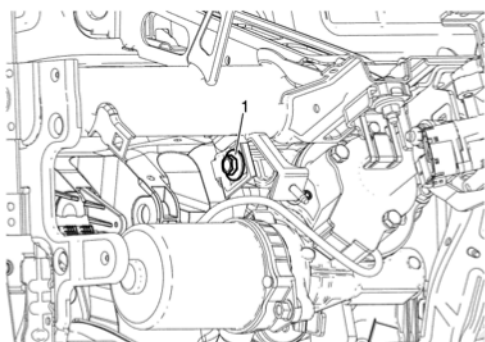
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16. Remove and DISCARD the steering column nuts (1).



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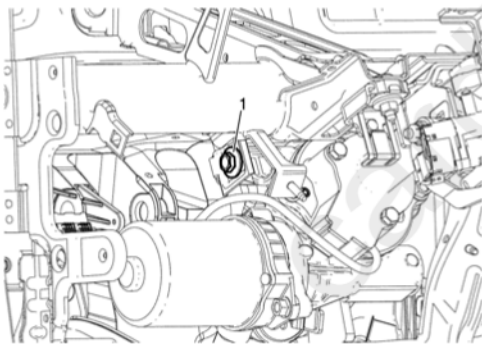
18. Remove the steering column bolt 860/ (1)

18. REMOVE THE STEERING COLUMN BOLT (1).

19. Remove the steering column from the vehicle.

Installation Procedure

1. Install the steering column to the vehicle.



2.

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3. 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.

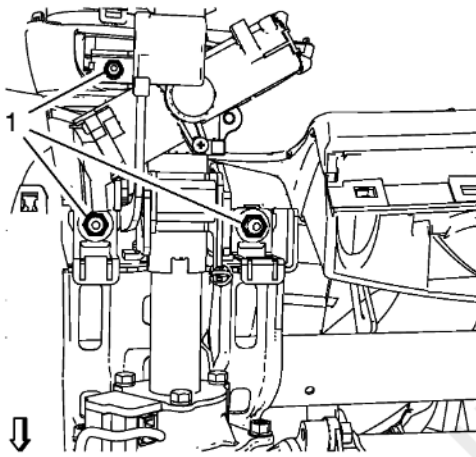
4. Caution:

Refer to [Fastener Caution](#).

5. Note:

Start all steering column fasteners by hand before finalizing any torques. Do NOT bend the steering column energy absorbing straps located on the upper steering column mounting bracket during installation.

6. Install the steering column bolt(1) and tighten to 25â€%N-mâ€%(18â€%lbâ€%ft).



7.

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8. Install the NEW steering column nuts (1) and tighten to 25 N-m (18 lb-ft).
9. Remove the tie straps.
10. Connect the intermediate steering shaft to the steering column.

11. Install the intermediate steering shaft upper bolt and tighten to 23â€%N-mâ€%(17â€%lbâ€%ft).
12. Install the electric power steering module and bracket assembly to the steering column. Refer to [Power Steering Control Module Replacement](#).
13. Install the steering column opening filler. Refer to [Steering Column Opening Filler Replacement](#).
14. Connect any electrical connectors as necessary.
15. Install the turn signal switch bracket. Refer to [Turn Signal Switch Bracket Replacement](#).
16. Install the steering column upper trim cover. Refer to [Steering Column Upper Trim Cover Replacement](#).
17. Install the steering column lower trim cover. Refer to [Steering Column Lower Trim Cover Replacement](#).
18. Install the steering wheel. Refer to [Steering Wheel Replacement](#).
19. Connect the battery negative cable. Refer to [Battery Negative Cable Disconnection and Connection](#).
20. Calibrate the steering angle sensor. Refer to [Power Steering Control Module Programming and Setup](#).

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1. STEERING

2. STEERING WHEEL AND COLUMN

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Steering Column Replacement (Hydraulic Power Steering)

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 steering shaft coupling
- The intermediate shaft(s)

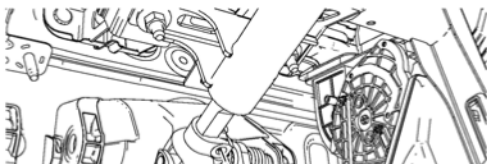
After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this procedure may cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your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

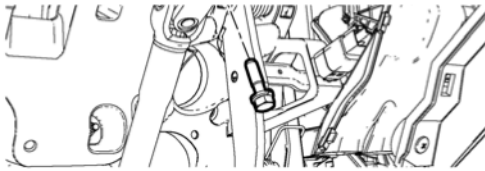
Caution:

Once the steering column is removed from the car, the column is extremely susceptible to damage. Dropping the column on its end could collapse the steering shaft or loosen the plastic injections which maintain column rigidity. Leaning on the column could cause the jacket to bend or deform. Any of the above damage could impair the column's collapsible design. If it is necessary to remove the steering wheel, use only the specified steering wheel puller. Under no conditions should the end of the shaft be hammered upon as hammering could loosen plastic injections which maintain column rigidity.

Removal Procedure

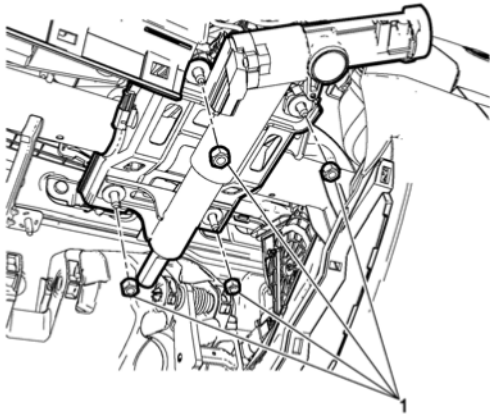
1. Remove the instrument panel (I/P) lower trimpad cover. Refer to [Steering Column Opening Filler Replacement](#).





2. [Click here for full size](#)
3. Remove the intermediate steering shaft upper bolt and disconnect the shaft from the steering column.
4. Remove the steering wheel. Refer to [Steering Wheel Replacement](#).
5. Remove the steering column lower trim cover. Refer to [Steering Column Lower Trim Cover Replacement](#).
6. Remove the steering column upper trim cover. Refer to [Steering Column Upper Trim Cover Replacement](#).
7. Disconnect electrical connectors as needed.
8. Note:

Install tie straps between the tilt lever bracket and the base of the steering column to prevent the steering column jacket from pulling apart. The tilt lever MUST be in the LOCK (FULL UP) position during the steering column removal and installation to ensure that the tilt lever bracket remains rigid. Also install tie straps around the tilt lever and the steering column jacket to keep the tilt lever in the LOCK position. Do not bend the steering column energy absorbing straps located on the upper steering column mounting bracket.
9. Install tie straps as described above.



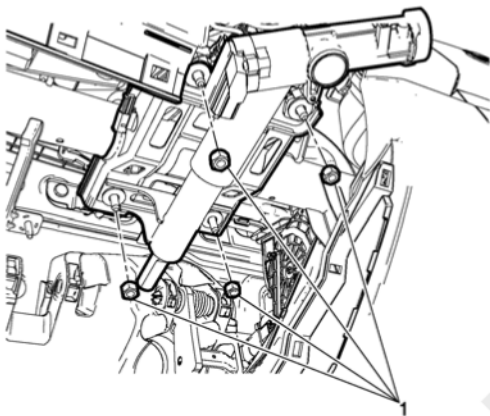
10.

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11. Remove and DISCARD the steering column nuts (1).

12. Remove the steering column.

Installation Procedure



1.

[Click here for full size](#)

2. Note:

a. Start all nuts by hand before finalizing any torque

- ✓ Start all nuts by hand before finalizing any torques.

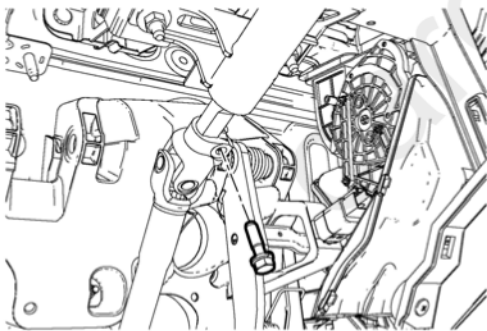
- Do not bend the steering column energy absorbing straps located on the upper steering column mounting bracket during installation.

3. Install the steering column.

4. Caution:

Refer to [Fastener Caution](#).

5. Install the NEW steering column nuts and tighten to 25â€%N-m (18â€%lbâ€%ft).



6. [Click here for full size](#)

7. 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:

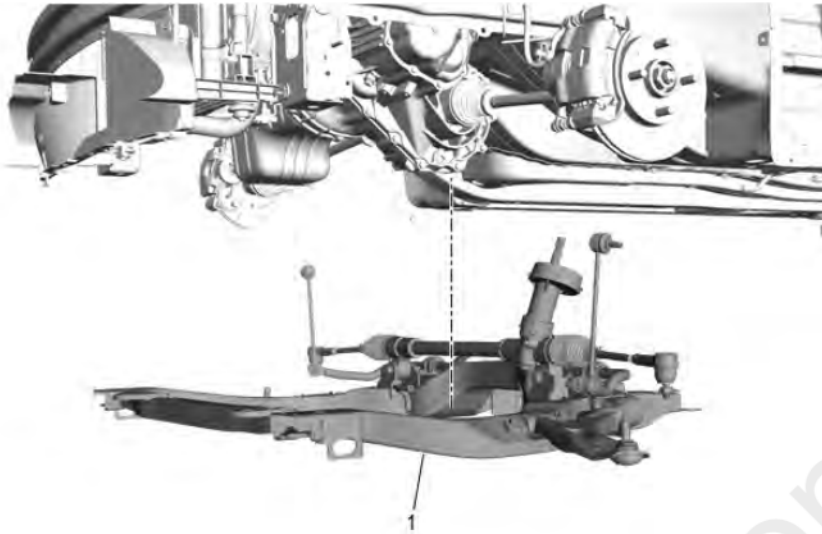
- Tighten the steering column lower fasteners before you tighten the steering column upper fasteners. Failure to do this can damage the steering column.
- Tighten the steering column fasteners to the specified torque. Overtightening the upper steering column fasteners could affect the steering column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

8. Remove the tie straps.
9. Connect the intermediate steering shaft to the steering column.
10. Install the intermediate steering shaft upper bolt and tighten to 23â€%N-m (17â€%lbâ€%ft).
11. Connect any electrical connectors as needed.
12. Install the steering column upper trim cover. Refer to [Steering Column Upper Trim Cover Replacement](#).
13. Install the steering column lower trim cover. Refer to [Steering Column Lower Trim Cover Replacement](#).
14. Install the steering wheel. Refer to [Steering Wheel Replacement](#).
15. Install the I/P lower trim pad cover. Refer to [Steering Column Opening Filler Replacement](#).

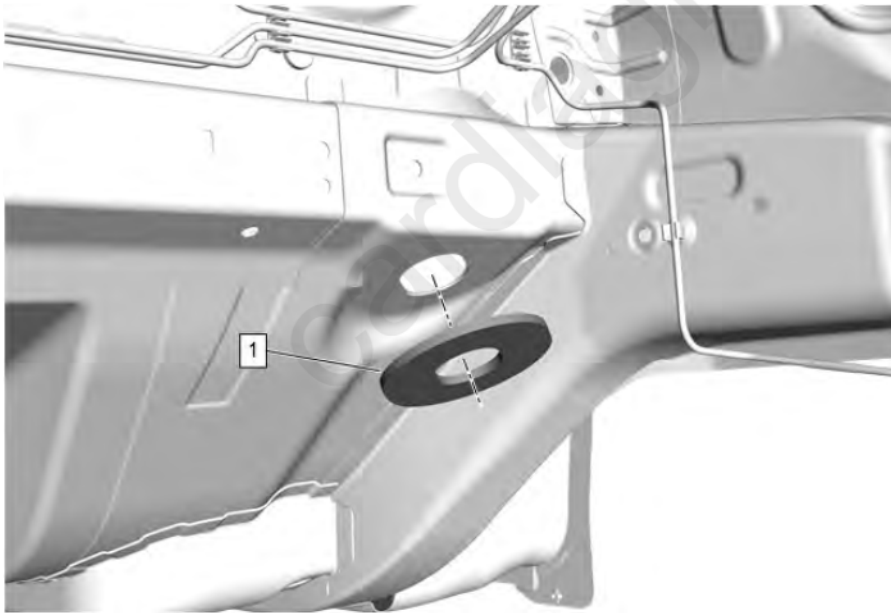
1. STEERING
2. STEERING WHEEL AND COLUMN
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Steering Column Dash Outer Seal Replacement

Removal Procedure



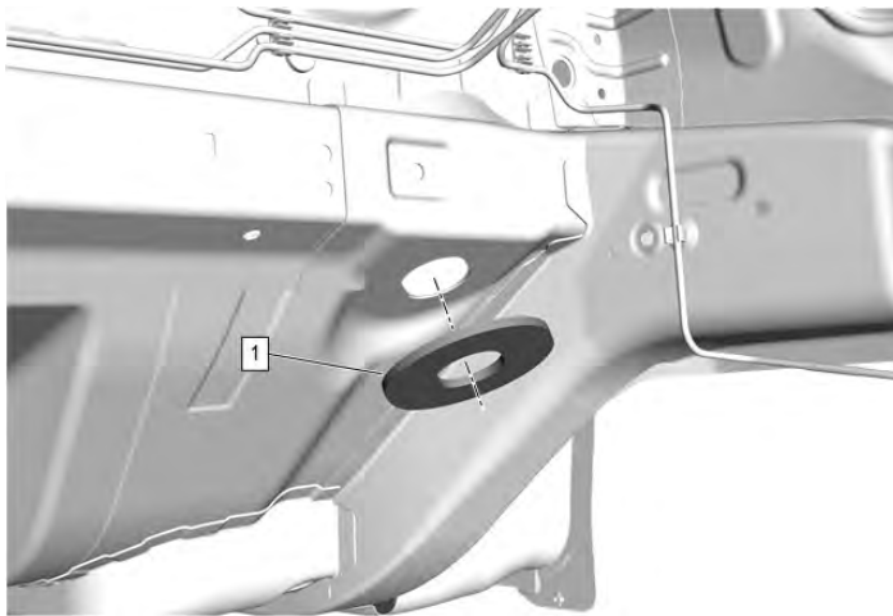
1. [Click here for full size](#)
2. Drivetrain and Front Suspension Cradle (1) >> Remove - [Drivetrain and Front Suspension Frame Replacement](#)



3. [Click here for full size](#)
4. Steering Column Dash Outer Seal (1) >> Remove
5. Remove the seal using an appropriate tool.
6. Clean the area where the seal is to be bonded to the body panel.

Installation Procedure

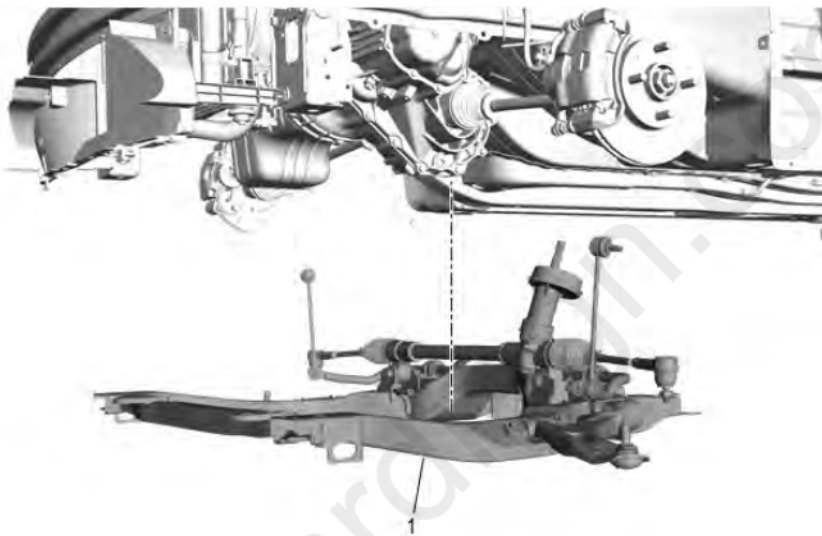
1. Remove the seal adhesive paper.



2.

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3. Steering Column Dash Outer Seal (1) >> Install



4.

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5. Drivetrain and Front Suspension Cradle (1) >> Install - [Drivetrain and Front Suspension Frame Replacement](#)

Specifications

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Fastener Specifications

Reusable Threaded Fastener Tightening Specifications

Application	Specification
	Metric (English)
Note: All fasteners listed in this table can be reused after removal.	
Intermediate Steering Shaft Lower Bolt	25â€%N-mâ€%(18â€%lbâ€%ft)
Intermediate Steering Shaft Upper Bolt	23â€%N-mâ€%(17â€%lbâ€%ft)
Steering Column Bolt	25â€%N-mâ€%(18â€%lbâ€%ft)
Steering Column Nut	25â€%N-mâ€%(18â€%lbâ€%ft)
Steering Wheel Nut	38â€%N-mâ€%(28â€%lbâ€%ft)
Turn Signal Switch Bracket Screw	3.4â€%N-mâ€%(30â€%lbâ€%in)

Special Tools and Equipment

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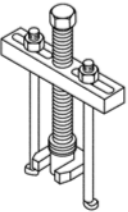
1. STEERING

2. STEERING WHEEL AND COLUMN

3. SPECIAL TOOLS AND EQUIPMENT

4.

Special Tools

Illustration	Tool Number/ Description
	CH-50168-A Steering Wheel Puller

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SUSPENSION

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