

SECTION 6E

STEERING WHEEL AND COLUMN

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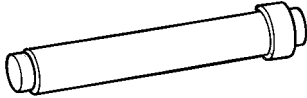
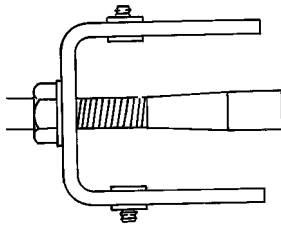
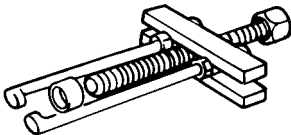
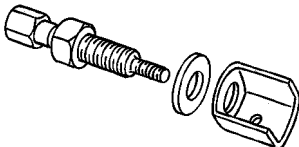
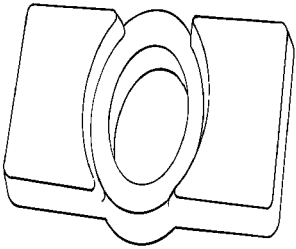
SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Coupling Flange Pinch Bolt	25	18	-
Housing Support Screws	16	12	-
Ignition Housing Shear Bolts	11	-	97
Ignition Switch Retaining Screw	2	-	18
Lower Instrument Trim Panel Screws	3	-	27
Lower Steering Column Cover Panel Screws	3	-	27
Steering Column Jacket Assembly Bracket Nuts	22	16	-
Steering Wheel Nut (With SIR)	22	16	-
Steering Wheel Nut (Without SIR)	38	28	-
Turn Signal Switch Housing Screws	3	-	27
Upper Steering Column Cover Panel Screws	3	-	27
Tilt Steering Lever Cap Screws	3	-	27

SPECIAL TOOLS

SPECIAL TOOLS TABLE

 <p>A105E023</p>	<p>KM-108 Remover/Installer</p>	 <p>A105E053</p>	<p>J-23653-D Lock Plate Compressor</p>
 <p>A110B008</p>	<p>KM-210-A Steering Wheel Puller</p>	 <p>A105E063</p>	<p>J-21854-01 Pivot Pin Remover</p>
 <p>A105E052</p>	<p>J-36667 Lock Plate Adapter</p>		

DIAGNOSIS

STEERING COLUMN DIAGNOSIS

Lock System

Lock System Will Not Unlock

Checks	Action
Check the lock cylinder for damage.	Replace the lock cylinder.
Check the ignition switch for lack of free movement.	Lubricate the ignition switch.
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.

Lock System Will Not Lock

Checks	Action
Check the lock cylinder for damage.	Replace the lock cylinder.
Check the ignition switch for a lack of free movement.	Lubricate the ignition switch.
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.

High Lock Effort

Checks	Action
Check the lock cylinder for damage.	Replace the lock cylinder.
Check the ignition switch for lack of free movement.	Lubricate the ignition switch.
Check for extreme misalignment of the housing to the cover.	Realign the cover on the housing. Replace the cover as needed.
Check for a bent ignition switch mounting bracket.	Replace the ignition switch mounting bracket.

Key Cannot Be Removed in the LOCK Position

Checks	Action
Check to see that the ignition switch is set correctly.	Reset the ignition switch.
Check the lock cylinder for damage.	Replace the lock cylinder.

Column**Noise in the Column**

Checks	Action
Check the steering gear-to-column joints for improper installation.	Tighten the coupling flange pinch bolts. Replace the coupling flange as needed.
Check for column misalignment.	Replace the alignment spacer.
Check the steering shaft bearing for wear or damage.	Replace the steering shaft bearing.
Check the spherical joint for lack of lubrication.	Lubricate the spherical joint.
Check the steering shaft for lack of lubrication.	Lubricate the steering shaft bearing.
Check the shaft lock snap ring for improper seating.	Adjust the shaft lock snap ring. Replace the shaft lock snap ring as needed.

High Steering Shaft Effort

Checks	Action
Check the steering shaft bearing for wear or damage.	Replace the steering shaft bearing.
Check for column misalignment.	Replace the alignment spacer.
Check for an improperly installed or deformed dust seal.	Replace the dust seal.
Check for a damaged upper or lower bearing.	Replace the upper or the lower bearing.
Check the steering shaft universal joint for a lack of free movement.	Lubricate the steering shaft universal joint. Replace the steering shaft universal joint as needed.

6E - 4 STEERING WHEEL AND COLUMN

Lash in the Steering Column

Checks	Action
Check the steering column bracket mounting bolts for improper installation.	Tighten the steering column bracket mounting bolts.
Check for broken weld nuts on the steering column jacket.	Replace the steering column jacket.
Check for loose steering column housing-to-steering column jacket support screws.	Tighten the support screws.

Loose Steering Wheel

Checks	Action
Check for excessive clearance between the holes in the steering wheel support or the housing and the pivot-pin diameters.	Replace the pivot pins with pivot pins of the correct size.
Check to see if the upper bearing is seated correctly in the housing.	Correctly seat the upper bearing. Replace the upper bearing as needed.
Check for loose steering column housing support screws.	Tighten the steering column housing support screws.

Noise When Tilting the Column

Checks	Action
Check for worn upper tilt bumpers.	Replace the upper tilt bumpers.
Check for tilt spring binding.	Adjust the tilt spring. Replace the tilt spring as needed.

Turn Signal/Dimmer Switch

Turn Signal Will Not Stay in the Turn Position

Checks	Action
Check the turn signal switch for an improper installation.	Remove and inspect the turn signal switch. Reinstall the switch.
Check the cancelling mechanism for broken or missing components.	Replace the cancelling mechanism.
Check the turn signal switch housing for foreign material.	Remove any foreign material.

Turn Signal Will Not Cancel

Checks	Action
Check the cancelling mechanism for broken or missing components.	Replace the cancelling mechanism.

Turn Signal/Dimmer Switch Difficult to Operate

Checks	Action
Check the turn signal/dimmer switch and turn signal/dimmer switch lever for improper installation.	Remove and inspect the turn signal/dimmer switch and signal/dimmer switch lever. Reinstall the signal/dimmer switch and signal/dimmer switch lever.
Check the signal/dimmer switch housing for foreign material.	Remove any foreign material.

Turn Signal Will Not Indicate Lane Change

Checks	Action
Check for a broken lane change pressure pad or a broken spring hanger.	Replace the lane change pressure pad or the spring hanger.
Check for improper functioning of the lane change spring.	Replace the lane change spring.
Check the turn signal switch for improper installation.	Replace the turn signal switch.

No Turn Signal Lights

Checks	Action
Check for an inoperative turn signal flasher.	Replace the turn signal flasher.
Check for a faulty turn signal switch.	Replace the turn signal switch.
Check the chassis-to-column connector for an improper connection.	Reconnect the chassis-to-column connector.

Turn Indicator Lights On, but Not Flashing

Checks	Action
Check for an inoperative turn signal flasher.	Replace the turn signal flasher.
Check for a faulty turn signal switch.	Replace the turn signal switch.
Check the chassis-to-column connector for an improper connection.	Reconnect the chassis-to-column connector.

Front or Rear Turn Signal Lights Not Flashing

Checks	Action
Check for a faulty turn signal switch.	Replace the turn signal switch.
Check the chassis-to-column connector for an improper connection.	Reconnect the chassis-to-column connector.

Turn Signal Lights Flash Very Slowly

Checks	Action
Check the chassis-to-column connector for an improper connection.	Reconnect the chassis-to-column connector.

Ignition Switch**Electrical System Will Not Function**

Checks	Action
Check the ignition switch for damage.	Replace the ignition switch.
Check the ignition switch for improper installation.	Remove and inspect the ignition switch. Reinstall the ignition switch.
Check the ignition switch electrical connector for improper installation.	Reconnect the ignition switch electrical connector. Replace the ignition switch electrical connector.

Ignition Switch Will Not Turn

Checks	Action
Check the ignition switch for damage.	Replace the ignition switch.
Check the ignition switch for improper installation.	Remove and inspect the ignition switch. Reinstall the ignition switch.

Wiper Switch Lever**Switch Inoperative: No LOW, HIGH, INTERMITTENT or WASH**

Checks	Action
Check the wiper switch for damage.	Replace the wiper switch.
Check the wiper switch for improper installation.	Remove and inspect the wiper switch. Reinstall the wiper switch.

MAINTENANCE AND REPAIR

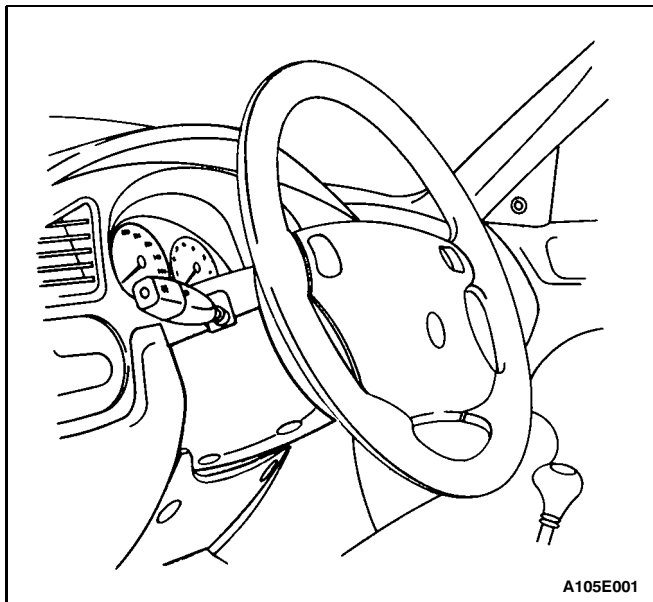
ON-VEHICLE SERVICE

TURN SIGNAL SWITCH AND LEVER

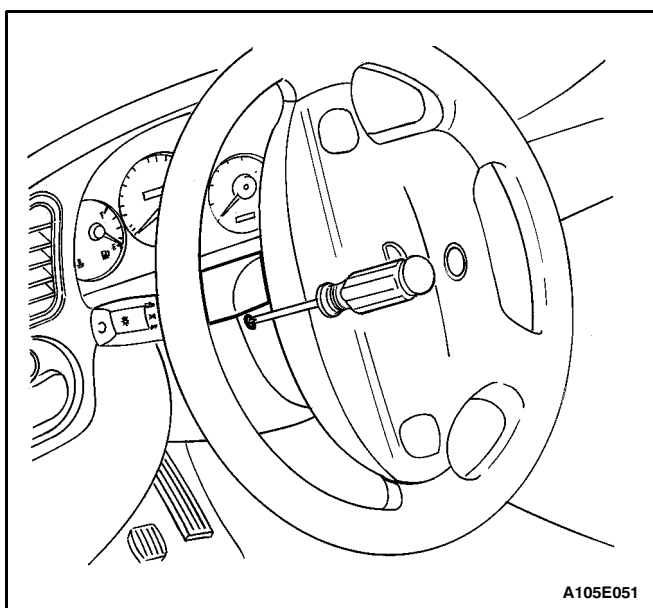
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Removal Procedure

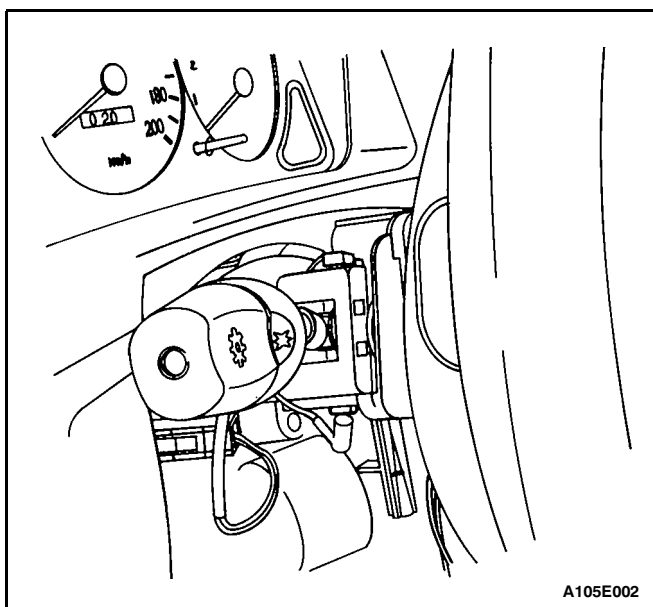
1. Disconnect the negative battery cable.
2. Remove the lower steering column cover panel screws and remove the lower steering column cover panel.
3. Turn the steering wheel to expose the upper steering column cover panel screws. Remove the upper steering column cover panel screws and remove the upper steering column cover panel.
4. Remove the turn signal switch by pushing in on the tabs on either side of the switch housing.



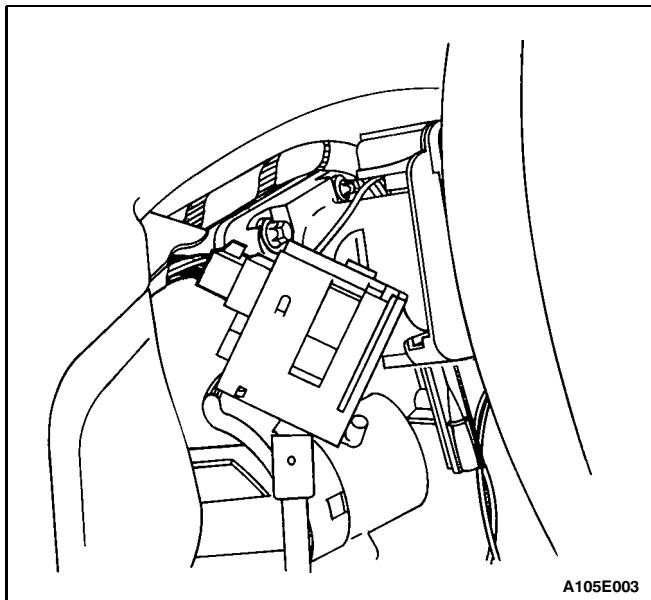
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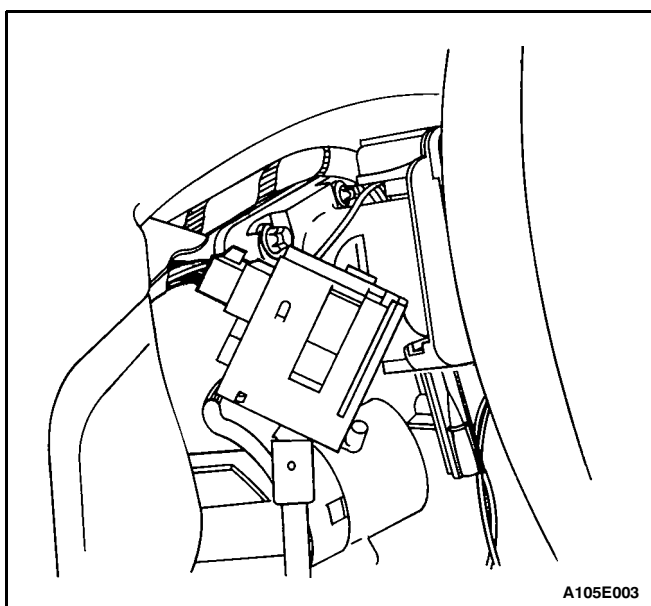
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A105E002

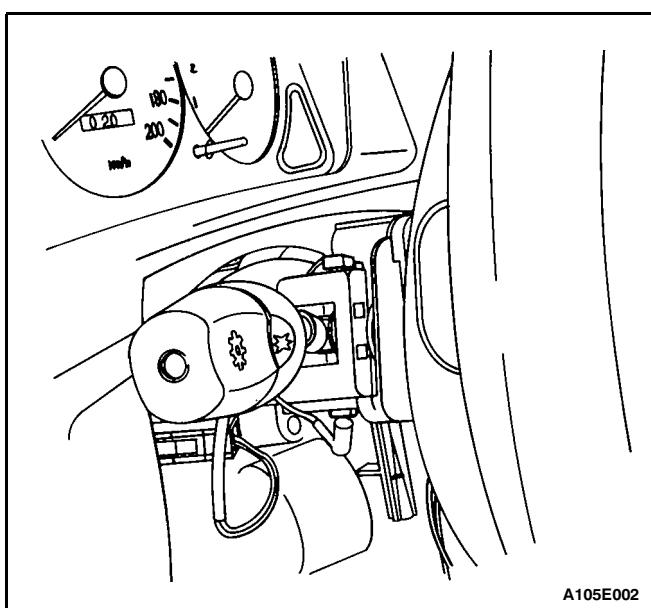


5. Disconnect the electrical connections from the turn signal switch.

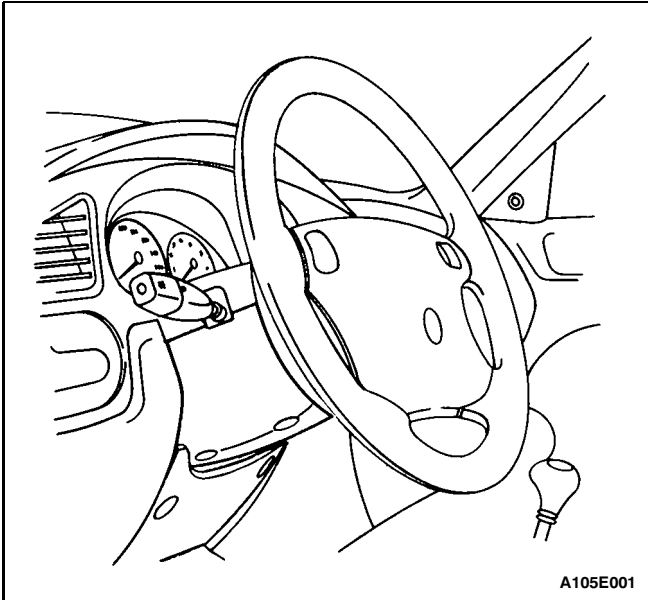


Installation Procedure

1. Connect the electrical connections to the turn signal switch.



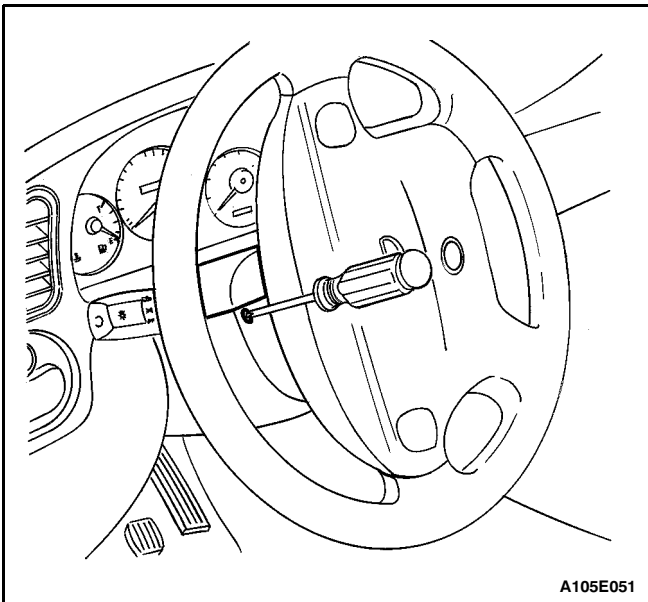
2. Install the turn signal switch by snapping it into the switch housing.



3. Install the lower steering column cover panel. Install the lower steering column cover panel screws.

Tighten

Tighten the lower steering column cover panel screws to 3 N•m (27 lb-in).

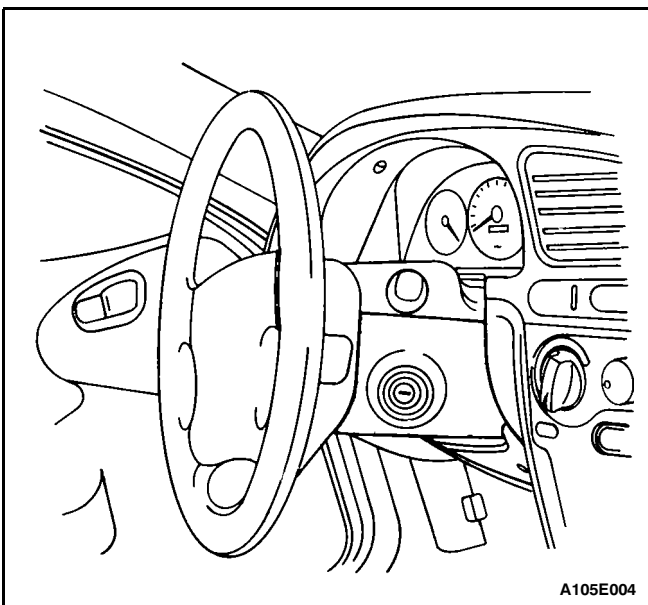


4. Install the upper steering column cover panel. Install the upper steering column cover panel screws.

Tighten

Tighten the upper steering column cover panel screws to 3 N•m (27 lb-in).

5. Connect the negative battery cable.

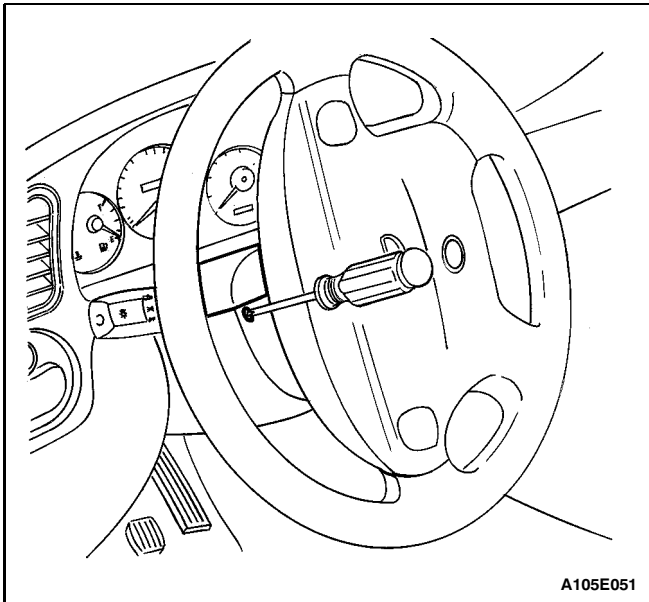


WIPER SWITCH AND LEVER

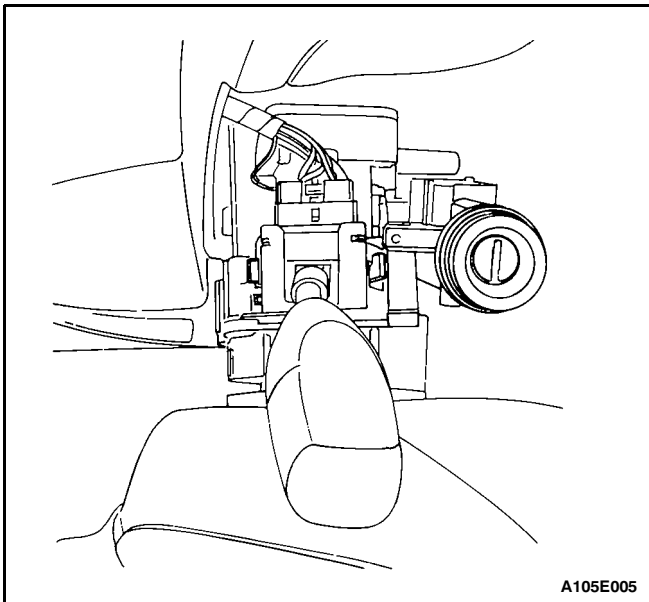
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Removal Procedure

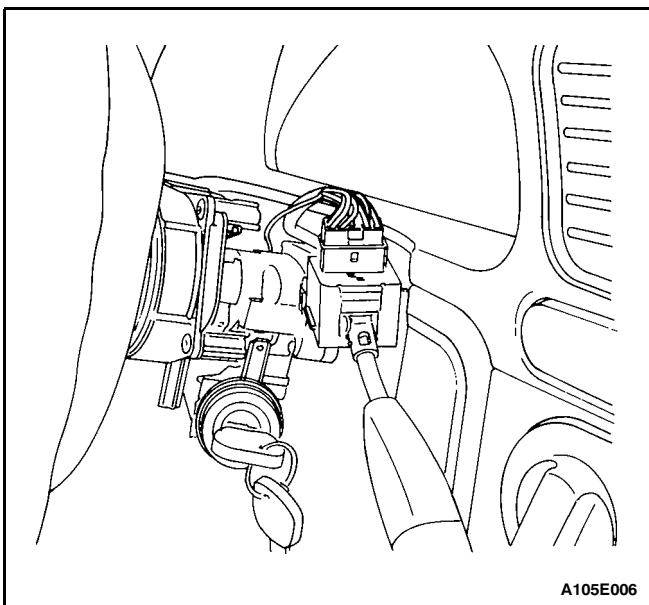
1. Disconnect the negative battery cable.
2. Remove the lower steering column cover panel screws and remove the lower steering column cover panel.



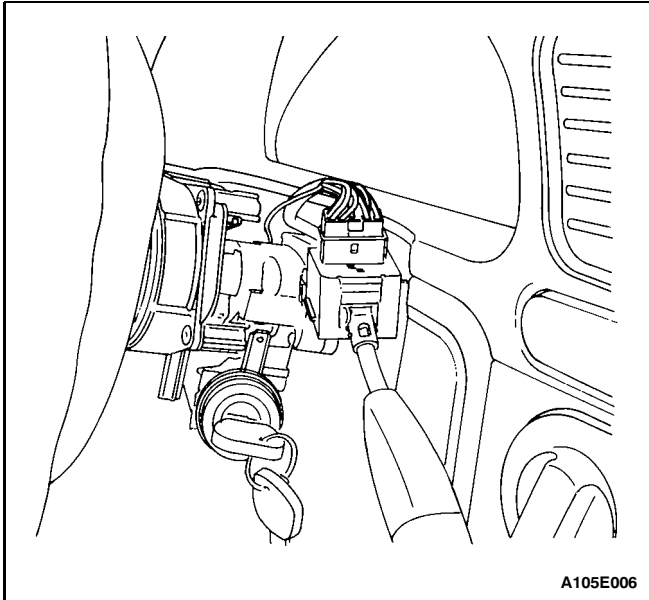
3. Turn the steering wheel to expose the upper steering column cover panel connecting screws. Remove the upper steering column cover panel screws and remove the upper steering column cover panel.



4. Remove the wiper switch by pushing in on the tabs on either side of the switch housing.

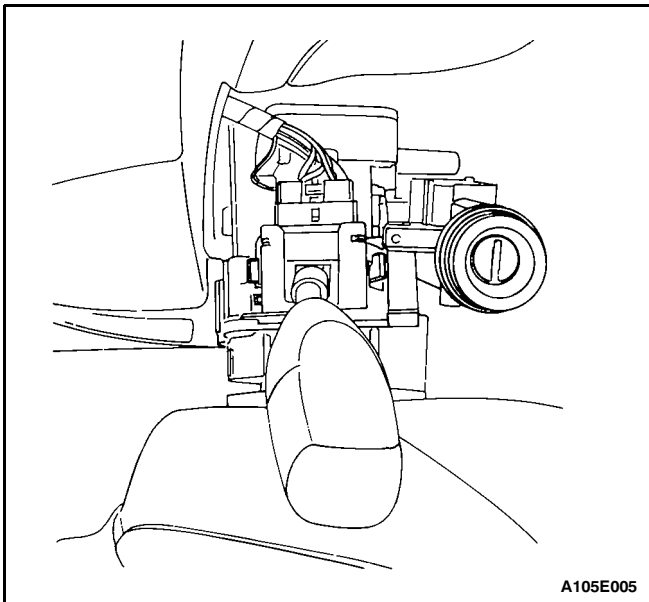


5. Disconnect the electrical connections from the wiper switch.

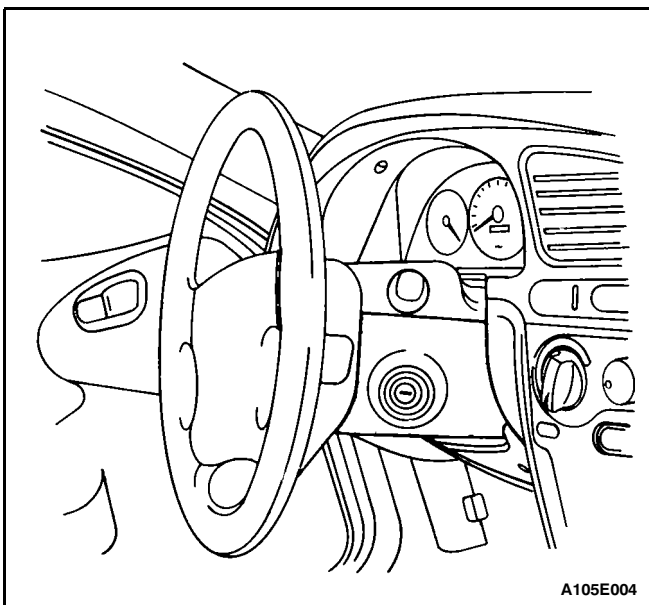


Installation Procedure

1. Connect the electrical connections to the wiper switch.



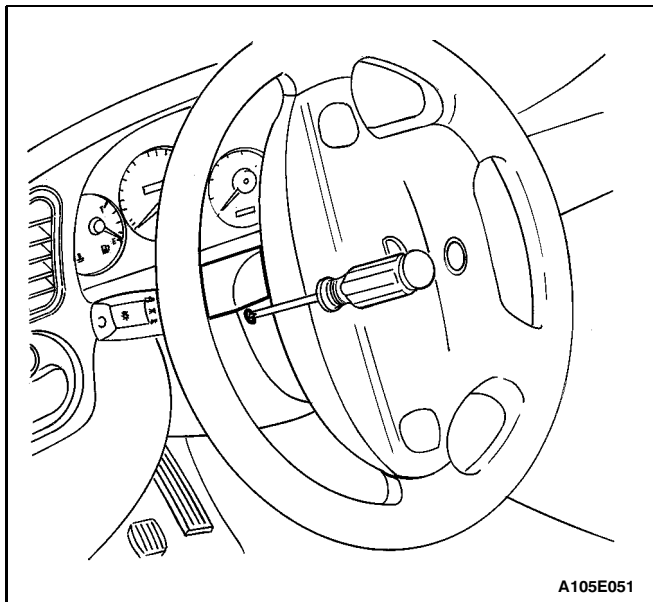
2. Install the wiper switch by snapping it into the switch housing.



3. Install the lower steering column cover panel. Install the lower steering column cover panel screws.

Tighten

Tighten the lower steering column cover panel screws to 3 N•m (27 lb-in).

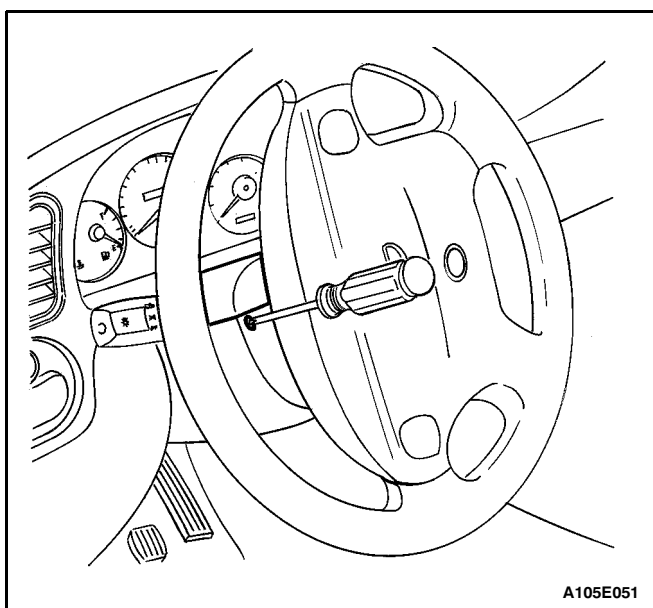


4. Install the upper steering column cover panel. Install the upper steering column cover panel screws.

Tighten

Tighten the upper steering column cover panel screws to 3 N•m (27 lb-in).

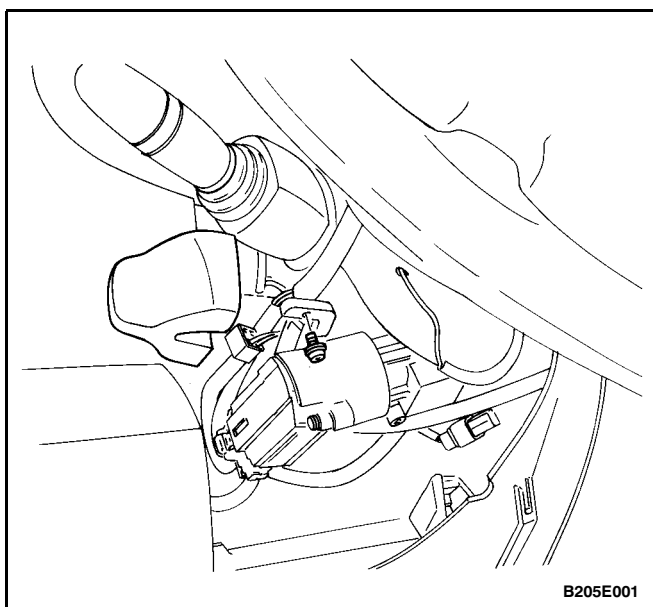
5. Connect the negative battery cable.



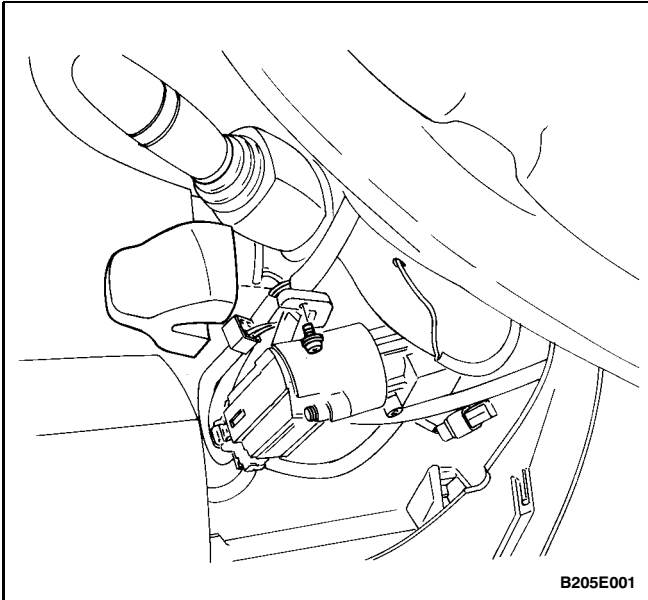
TILT STEERING LEVER CAP

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the lower steering column cover panel screws.
3. Remove the upper and the lower steering column cover panels.



4. Remove the tilt steering lever cap screw and the tilt steering lever cap.

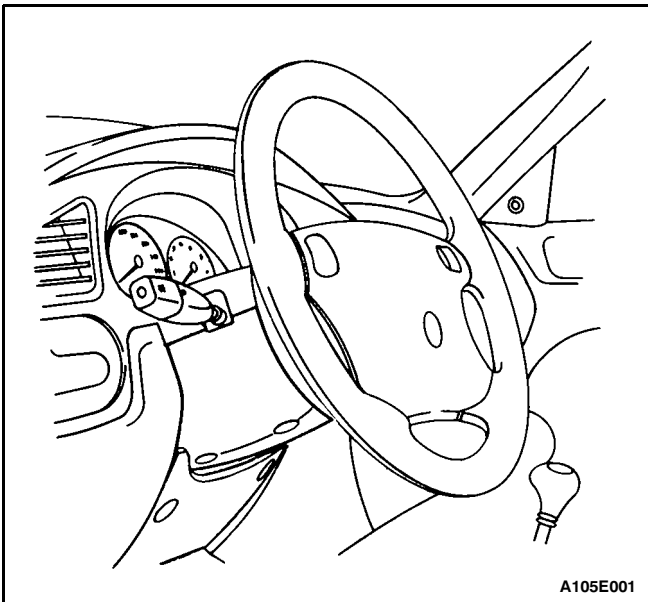


Installation Procedure

1. Install the tilt steering lever cap and the tilt steering lever cap screw.

Tighten

Tighten the tilt steering lever cap screw to 3 N•m (27 lb-in).



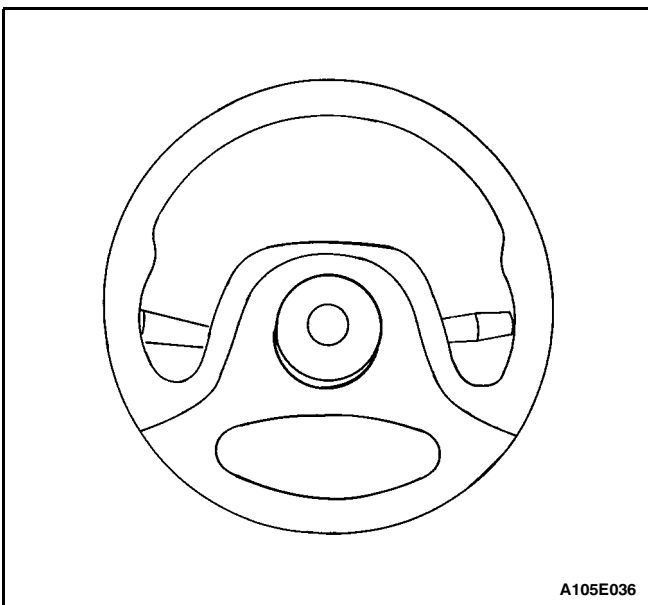
2. Install the upper and the lower steering column cover panels.

3. Install the lower steering column cover panel screws.

Tighten

Tighten the lower steering column cover panel screws to 3 N•m (27 lb-in).

4. Connect the negative battery cable.



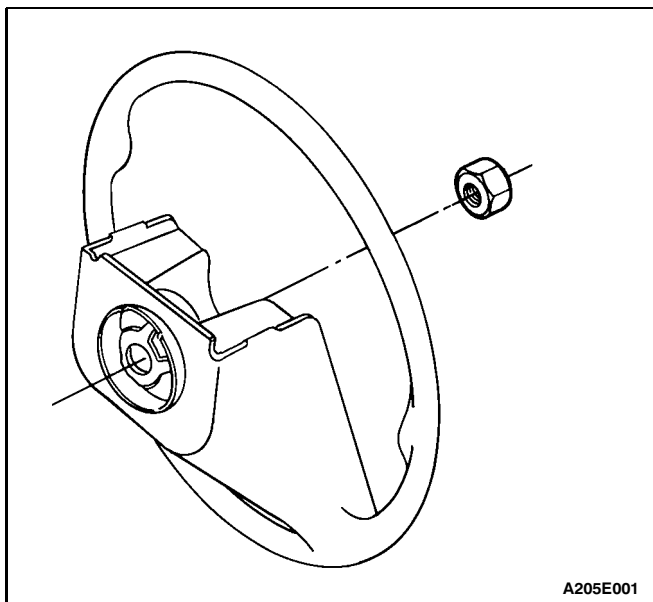
STEERING WHEEL WITHOUT SIR

Tools Required

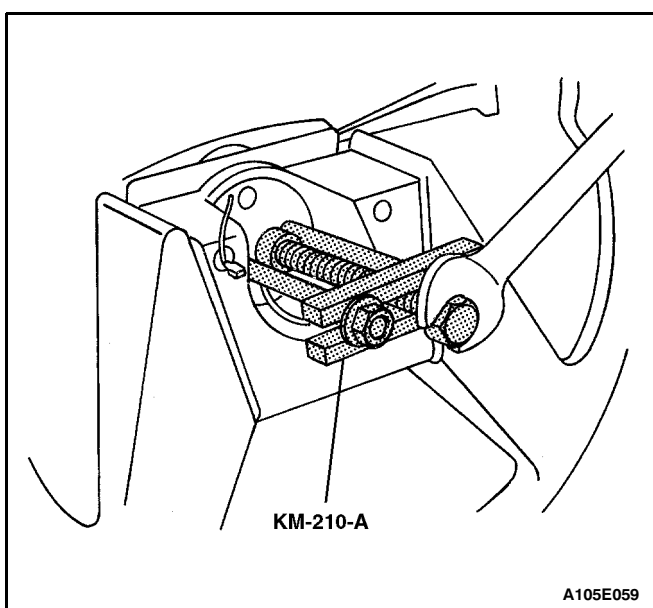
KM-210-A Steering Wheel Puller

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the steering wheel horn cap with a screwdriver. Disconnect the horn leads.



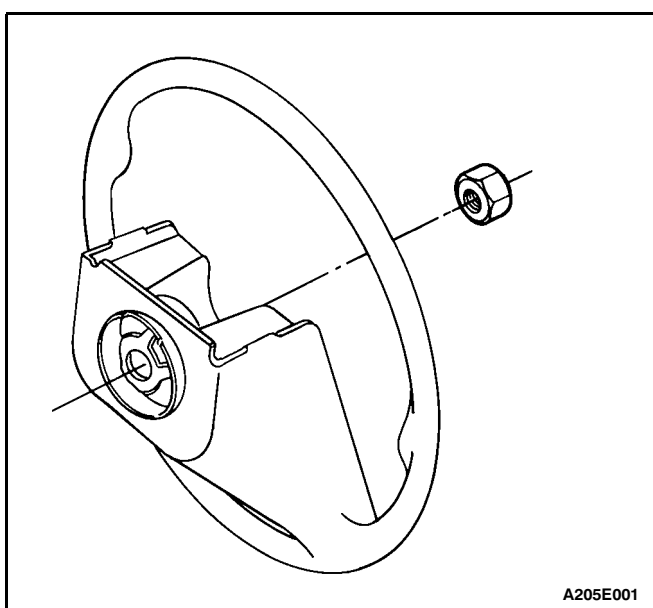
3. Remove the steering wheel nut.



Important: In order to correctly install the steering wheel, match-mark the steering column shaft to the steering wheel.

4. Remove the steering wheel using the steering wheel puller KM-210-A.

5. Unclip the contact ring from the steering wheel, if necessary.



Installation Procedure

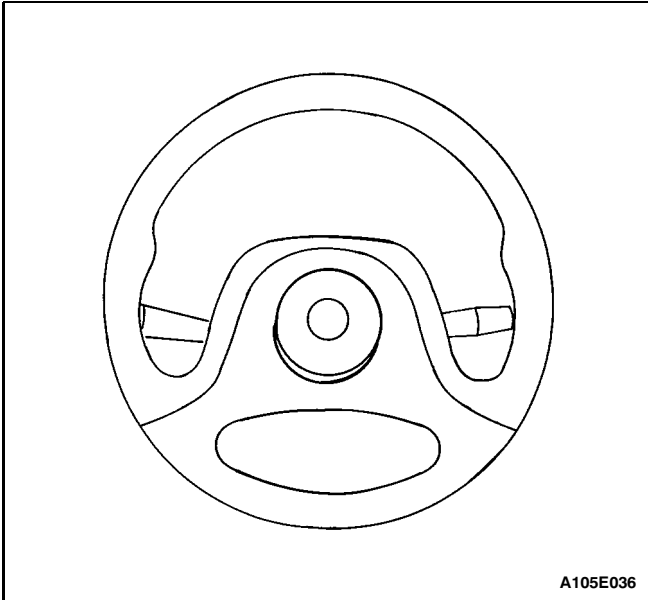
1. Clip the contact ring on the steering wheel, if necessary.

2. Align the match marks on the steering wheel and the steering column shaft.

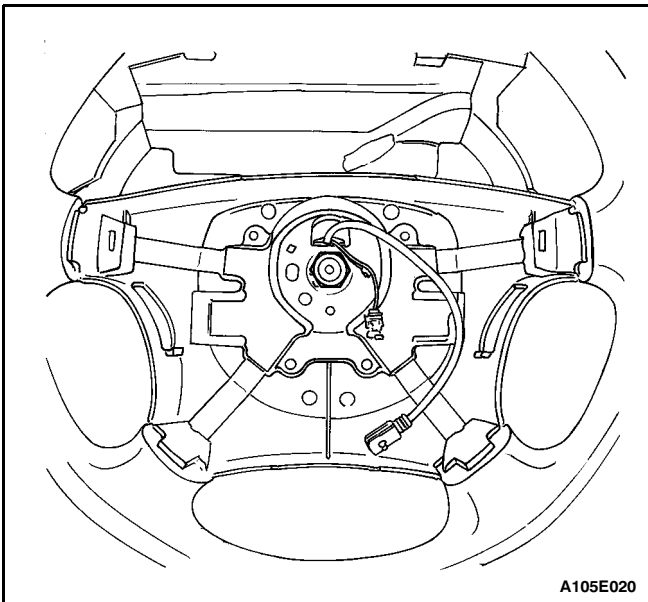
3. Install the steering wheel nut.

Tighten

Tighten the steering wheel nut to 38 N•m (28 lb-ft).



4. Connect the horn leads and install the steering wheel horn cap.
5. Connect the negative battery cable.



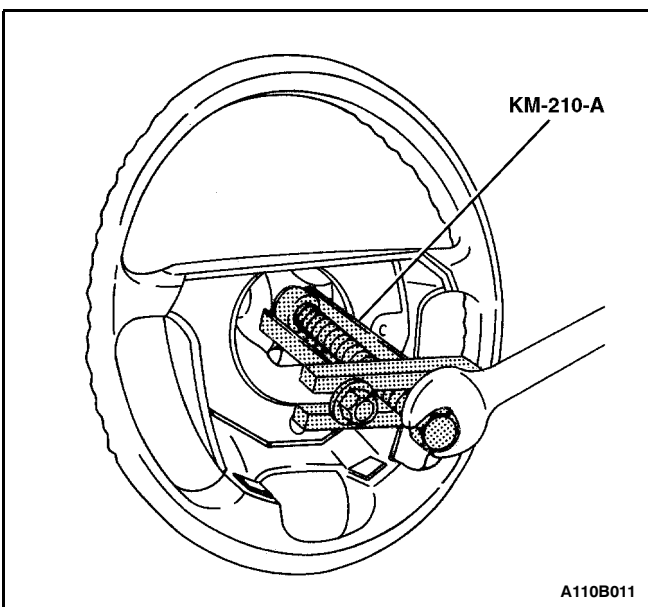
STEERING WHEEL WITH SIR

Tools Required

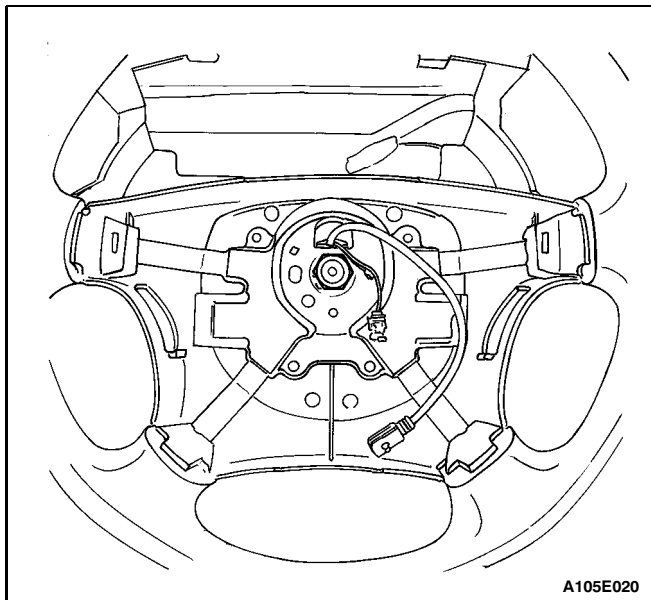
KM-210-A Steering Wheel Puller

Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the SIR module. Refer to Section 8B, Supplemental Inflatable Restraints.
3. Remove the steering wheel nut and the retaining clip.



4. Remove the steering wheel using the steering wheel puller KM-210-A.
5. Unclip the contact ring from the steering wheel, if necessary.



Installation Procedure

1. Clip the contact ring on the steering wheel, if necessary.

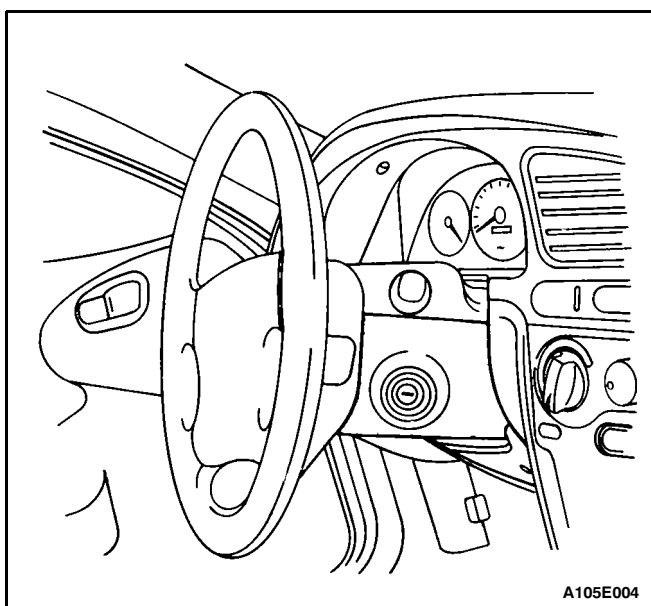
Important: In order to correctly install the steering wheel, match-mark the steering column shaft to the steering wheel.

2. Align the match marks on the steering wheel and the steering column shaft. Turn the signal canceling cam on the wheel to the left.
3. Install the retaining clip and the steering wheel nut.

Tighten

Tighten the steering wheel nut to 22 N•m (16 lb-ft).

4. Bend the tabs to secure the retaining clip.
5. Install SIR Module. Refer to Section 8B, Supplemental Inflatable Restraints.
6. Connect the negative battery cable.

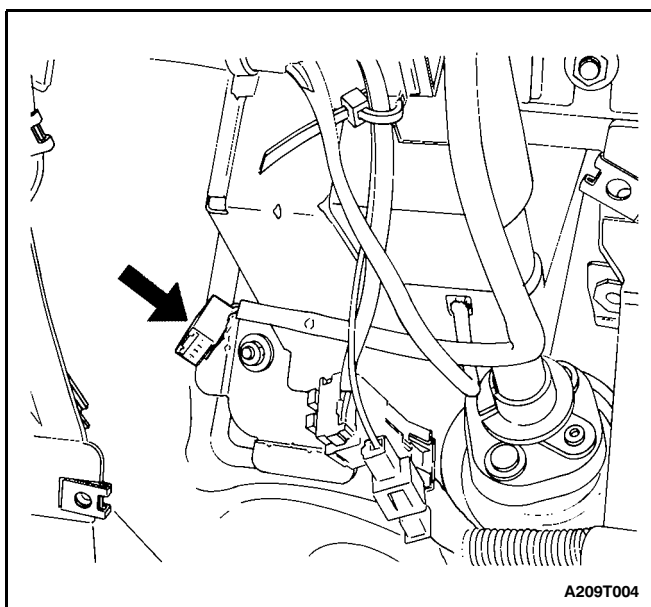


IGNITION LOCK CYLINDER AND SWITCH

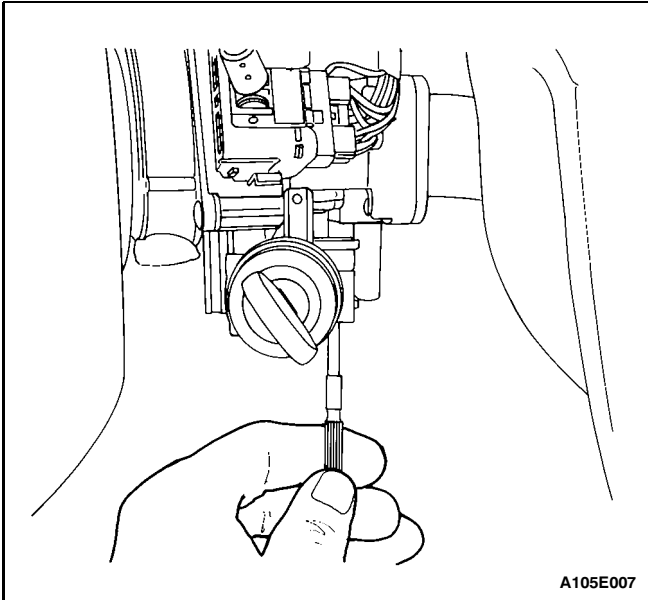
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

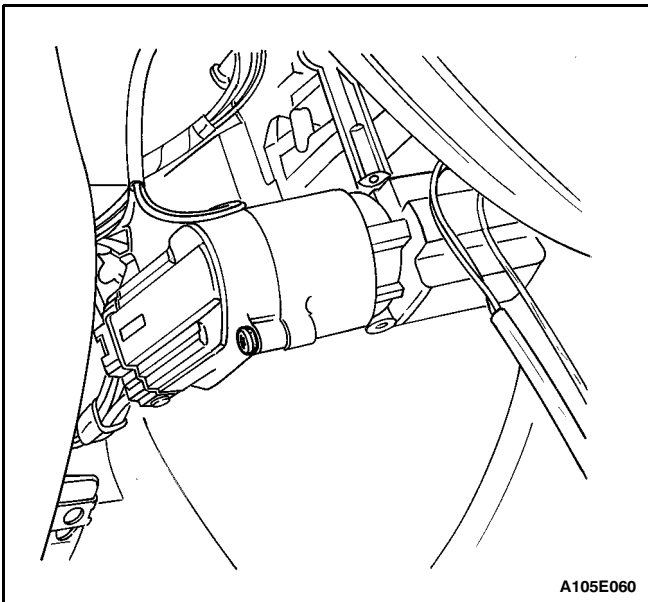
1. Disconnect the negative battery cable.
2. Remove the lower steering column cover panel by removing the screws.



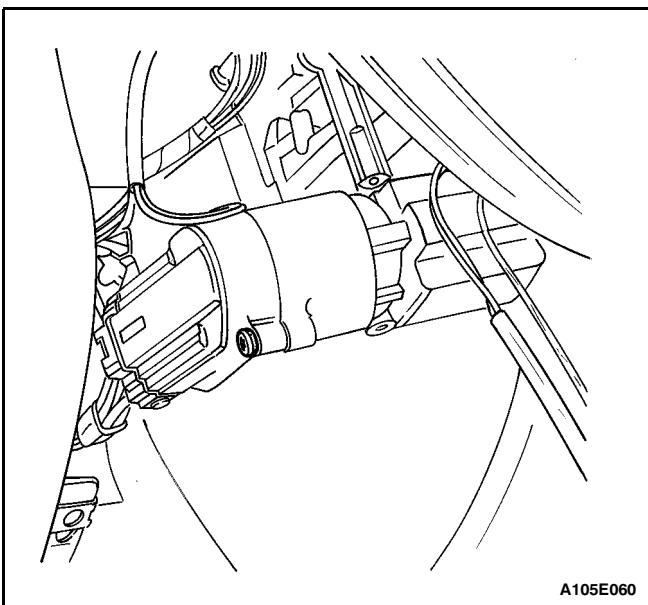
3. Disconnect the electrical connector for the immobilizer detection coil, if equipped.



4. With the key in the ignition, turned to the position designated ACC, remove the lock cylinder by pressing down the detent spring and pulling the lock cylinder out of the switch cylinder housing.



5. Remove the ignition switch retaining screw.
6. Disconnect the wiring and remove the ignition switch.



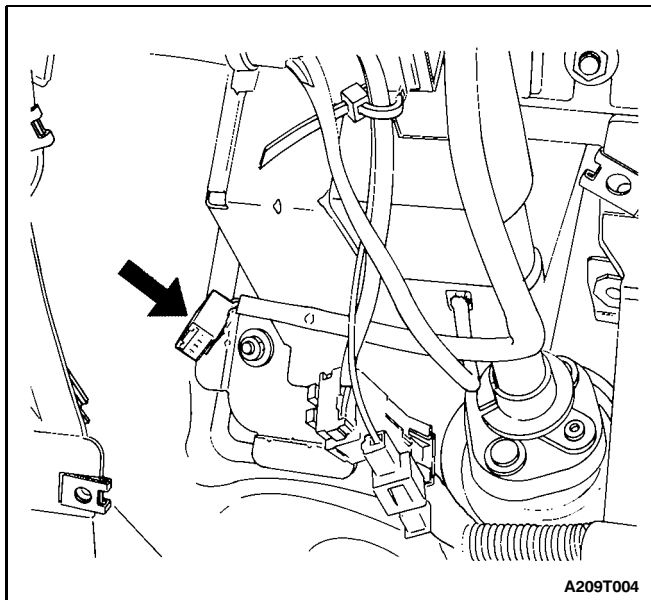
Installation Procedure

1. Install the ignition switch with the ignition switch retaining screw.

Tighten

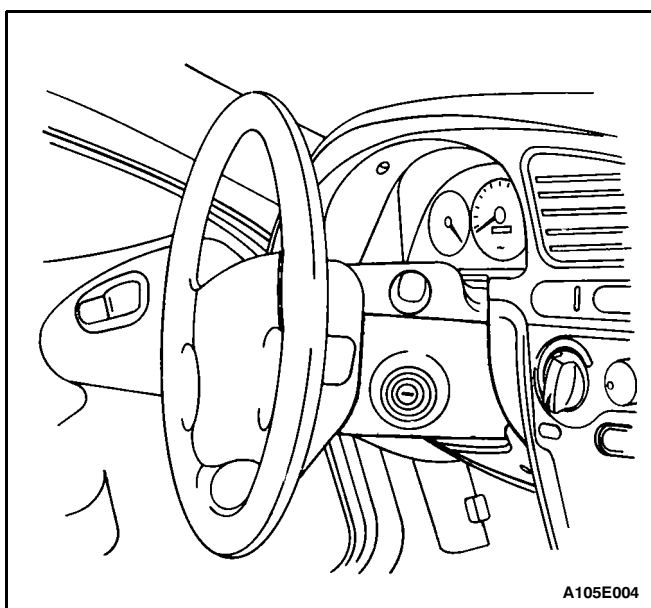
Tighten the ignition switch retaining screw to 2 N•m (18 lb-in).

2. Connect the wiring to the ignition switch.



3. Install the lock cylinder.

4. Connect the electrical connector for the immobilizer detection coil, if equipped.

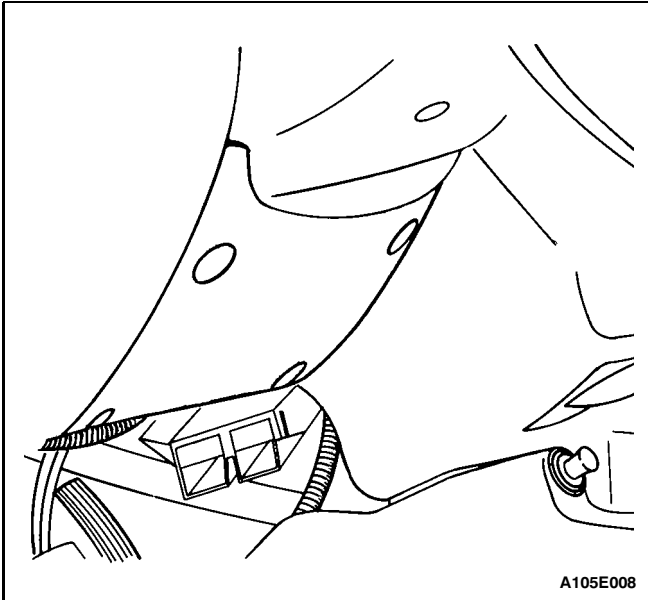


5. Install the lower steering column cover panel with the screws.

Tighten

Tighten the lower steering column cover panel screws to 3 N•m (27 lb-in).

6. Connect the negative battery cable.



FLEXIBLE COUPLING

Refer to Section 6C, Power Steering Gear.

STEERING COLUMN

(Left-Hand Drive Shown, Right-Hand Drive Similar)

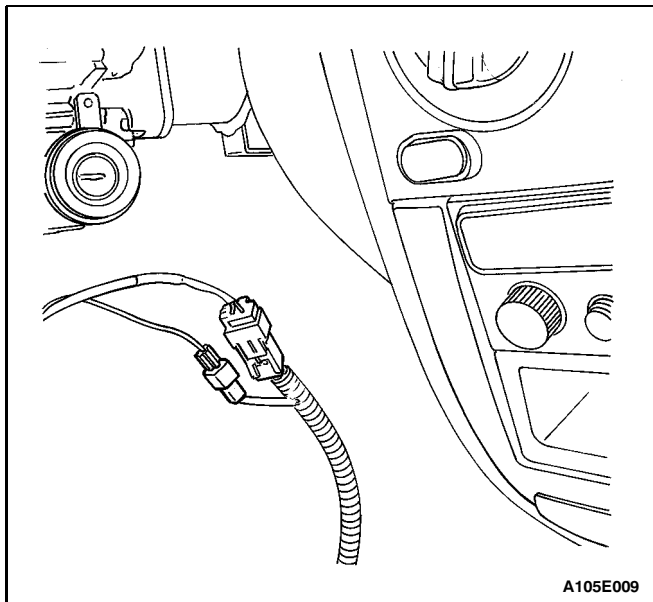
Important: Remove the steering column only if the following conditions exist:

- The steering column requires replacement.
- The steering and the ignition lock housing require replacement.
- Another operation requires the removal of the steering column.

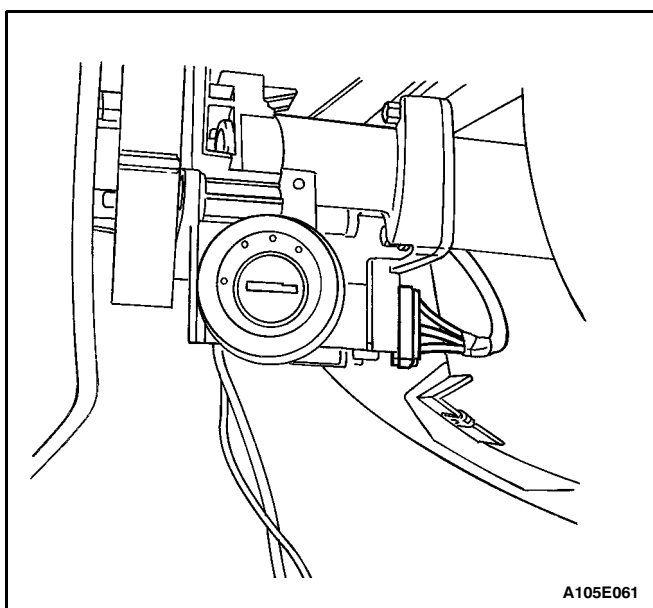
Notice: The steering column is extremely susceptible to damage after it has been removed from the vehicle. Dropping the column assembly on its end or hammering the end of the steering shaft can collapse the steering shaft or loosen plastic injections which maintain column rigidity. Leaning on the column can cause it to bend or deform. Any of the above damage can impair the column's collapsible design. If it is necessary to remove the steering wheel, use only the specified steering wheel puller.

Removal Procedure

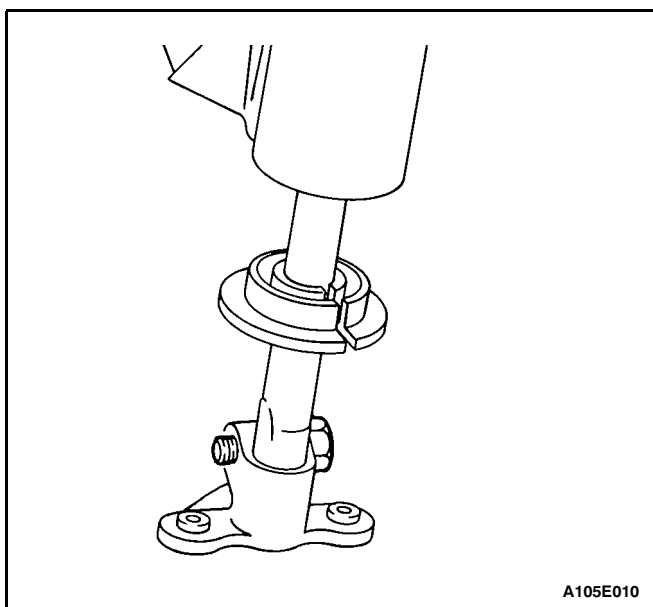
1. Disconnect the negative battery cable and let the vehicle sit for one minute to deactivate the air bag.
2. Remove the switch levers. Refer to "Turn Signal Switch and Lever" and "Wiper Switch and Lever" in this section.
3. Remove the lower instrument trim panel by removing the screws.



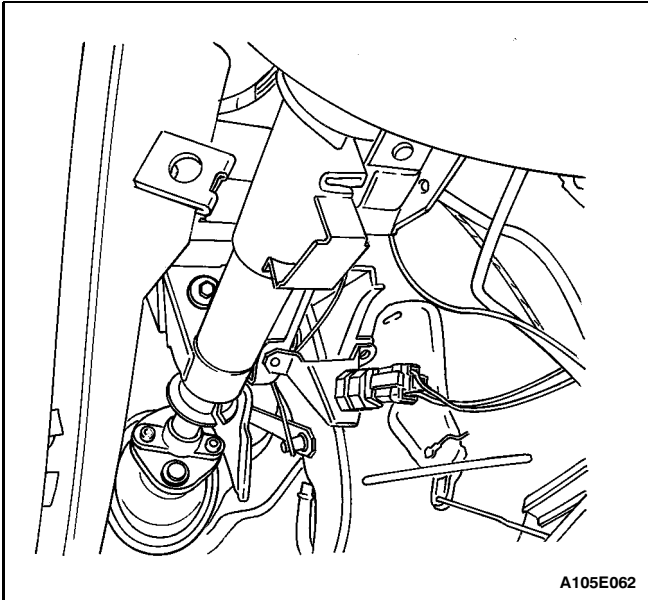
4. Disconnect the airbag electrical connections.
5. Remove the immobilizer module if equipped. Refer to Section 9T, Immobilizer Anti- Theft System.



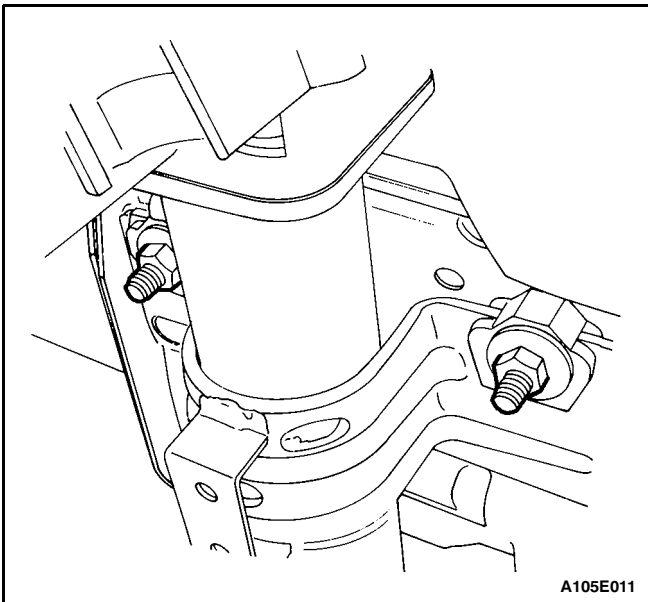
6. Disconnect the ignition switch electrical connection.



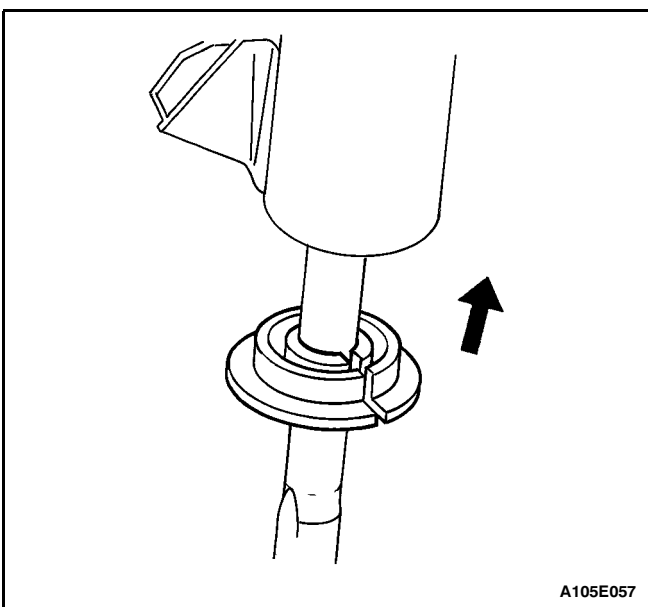
7. Adjust the steering to the straight-ahead position.
8. Remove the pinch bolt from the steering shaft coupling flange.



9. Remove the nut holding the steering column jacket assembly rear bracket.



10. Remove the nuts holding the steering column jacket assembly front bracket.
11. Guide the steering column assembly out of steering shaft flange and carefully lay down the assembly.



Installation Procedure

Important: For proper installation of the steering column, be sure the steering wheel spokes are centered diagonally and pointed downwards and the front wheels are positioned in the straight-ahead position.

1. Place the alignment bushing onto the end of the steering column shaft.
2. Carefully guide the steering shaft into the steering shaft coupling flange.

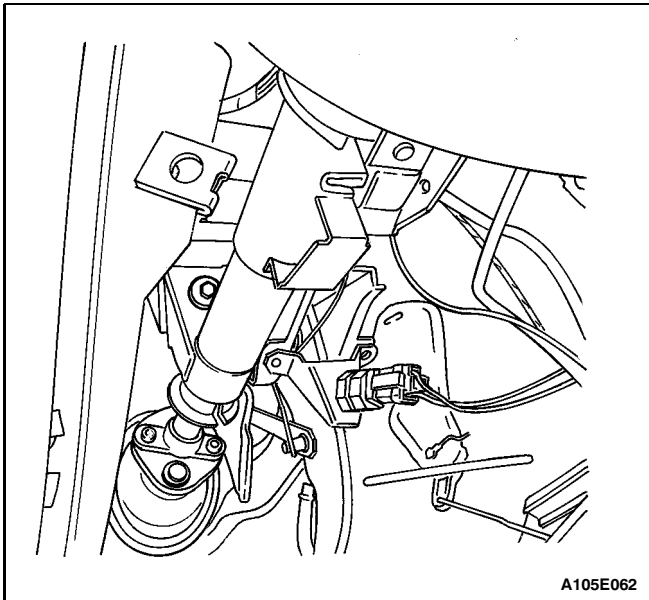
Important: Provide support for the steering column assembly until the mounting nuts are fastened. Do not let the steering column assembly hang unsupported.

3. Install the pinch bolt into the non-threaded hole of the flange.

Tighten

Tighten the coupling flange pinch bolt to 25 N•m (18 lb-ft).

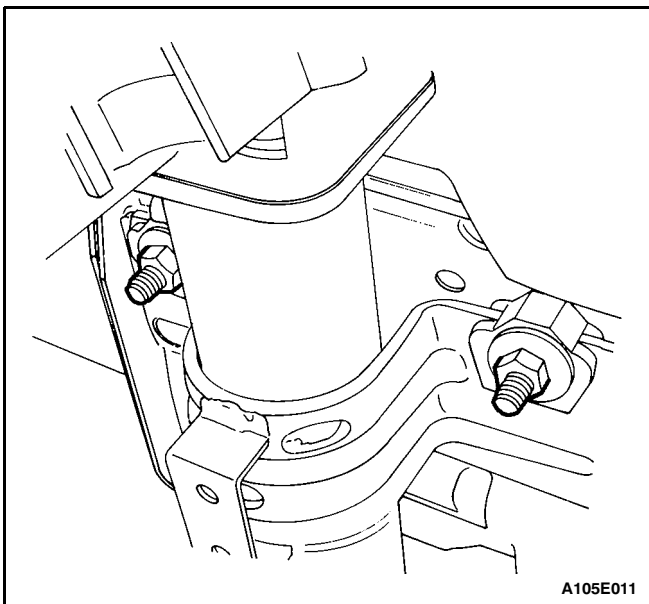
4. Slide the alignment bushing into the steering column housing.



5. Install the nut for the rear bracket of the steering column jacket assembly.

Tighten

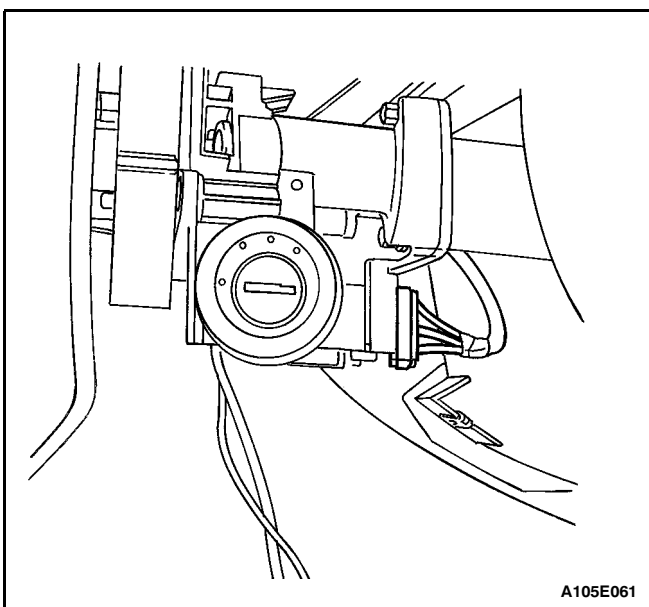
Tighten the steering column jacket assembly rear bracket nut to 22 N•m (16 lb-ft).



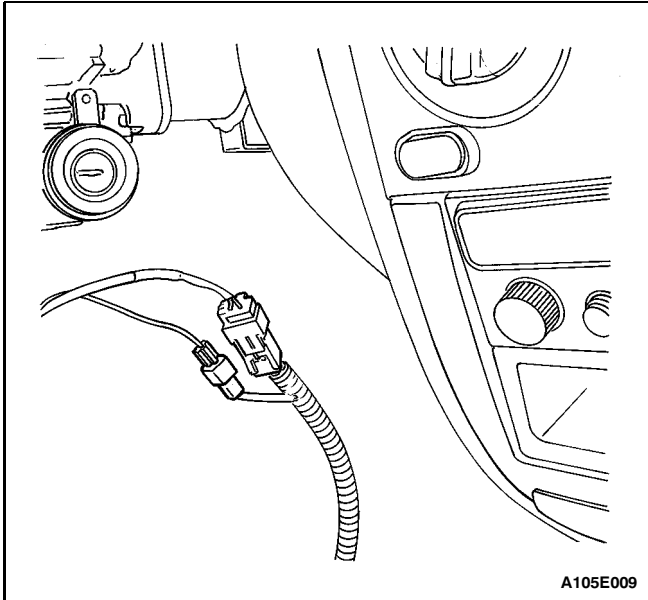
6. Install the nuts for the steering column jacket assembly front bracket.

Tighten

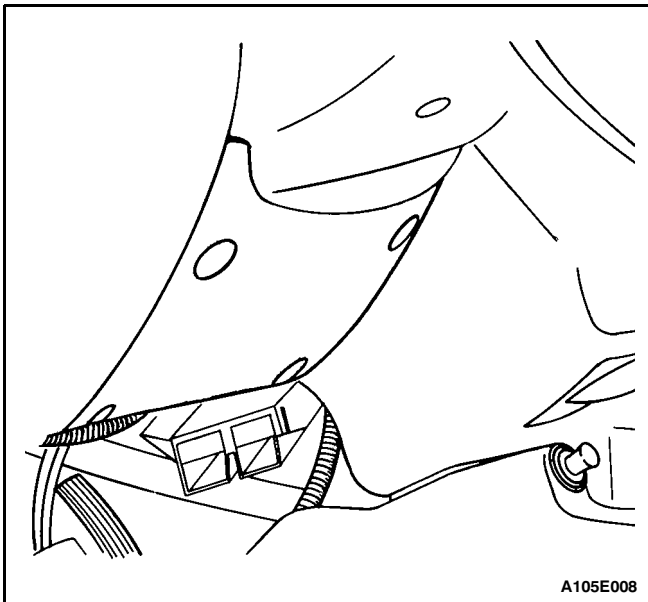
Tighten the steering column jacket assembly front bracket nuts to 22 N•m (16 lb-ft).



7. Connect the ignition switch electrical connection.
8. Install the immobilizer module, if equipped. Refer to Section 9T, Immobilizer Anti- Theft System.



9. Connect the airbag electrical connections.



10. Install the lower instrument trim panel screws.

Tighten

Tighten the lower instrument trim panel screws to 3 N·m (27 lb-in).

11. Install the switch levers. Refer to "Turn Signal Switch and Lever" and "Wiper Switch and Lever" in this section.

12. Inspect the steering wheel in a straight-ahead position. Refer to Section 6C, Power Steering Gear.

13. Connect the negative battery cable.

UNIT REPAIR

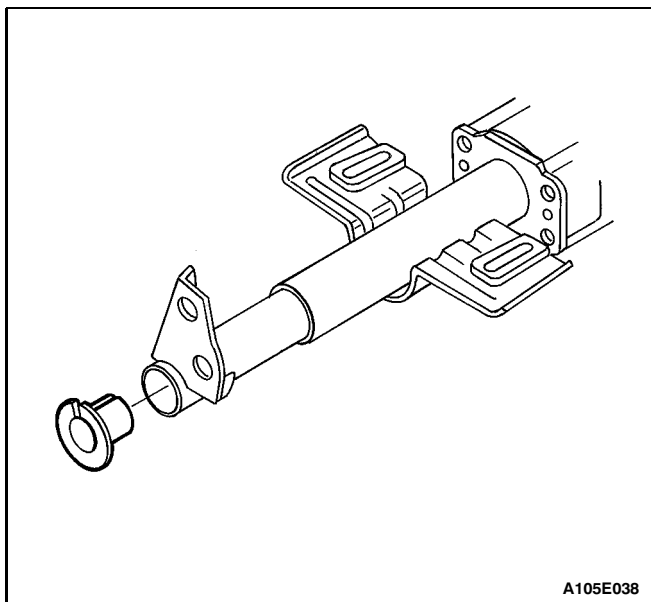
STANDARD STEERING COLUMN

Tools Required

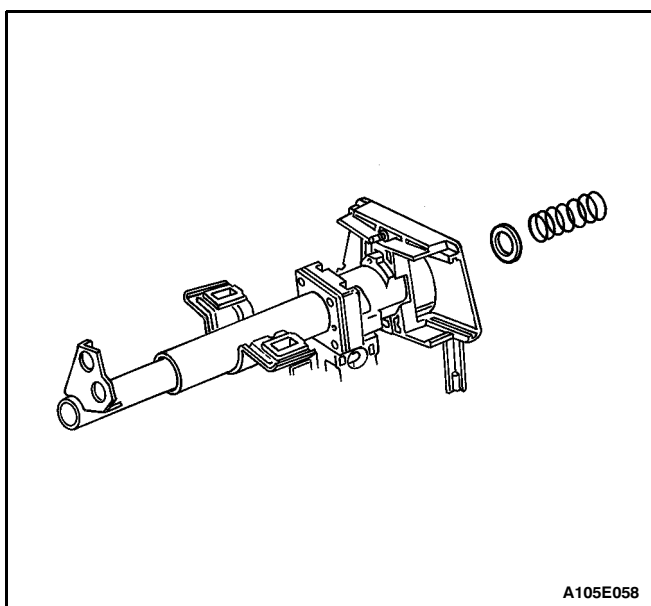
KM-108 Remover/Installer

Disassembly Procedure

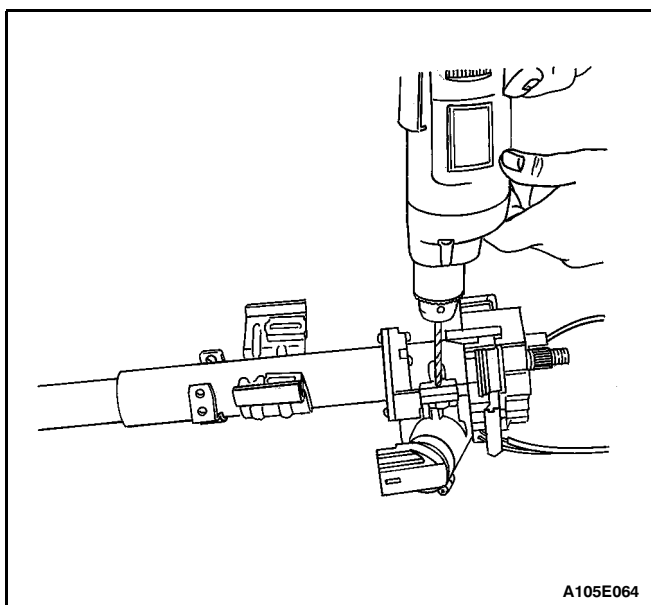
1. Remove the steering column from the vehicle. Refer to "Steering Column" in this section.
2. Remove the steering wheel from the steering column. Refer to "Steering Wheel without SIR" or "Steering Wheel with SIR" in this section.
3. Pull the alignment bushing from the lower end of the shaft assembly, if it was not previously removed.



A105E038



A105E058



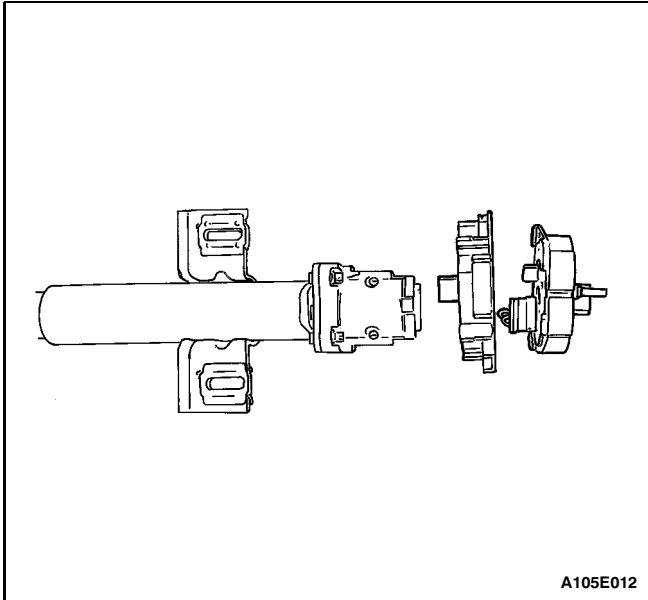
A105E064

4. Remove the upper steering shaft spring and the thrust washer.

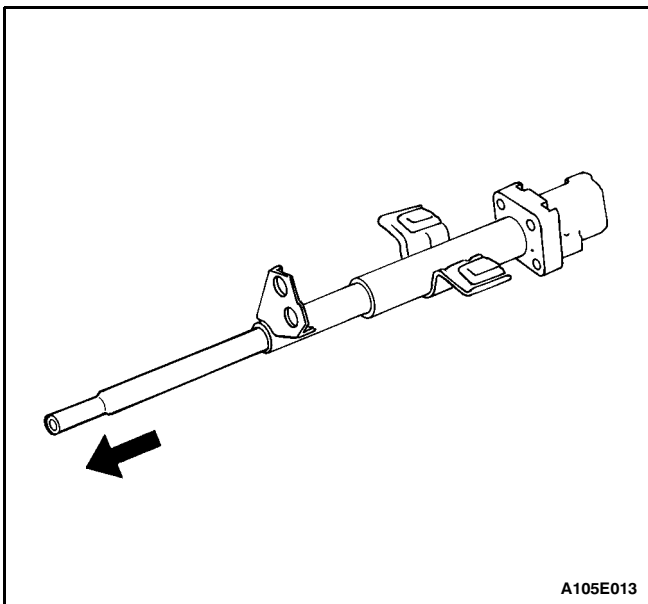
5. Remove the shear bolts, the shear bolt washers, and the ignition switch housing from the steering column housing as follows:

- 5.1 Use a metal punch to start the drill head.
- 5.2 Drill off the head of the shear bolts down to the steel shear bolt washers with a 6.5 mm (1/4 inch) drill bit.
- 5.3 Separate the washers and the ignition switch housing from the column housing.
- 5.4 Remove the threaded end of the shear bolts from the ignition switch housing with locking pliers.

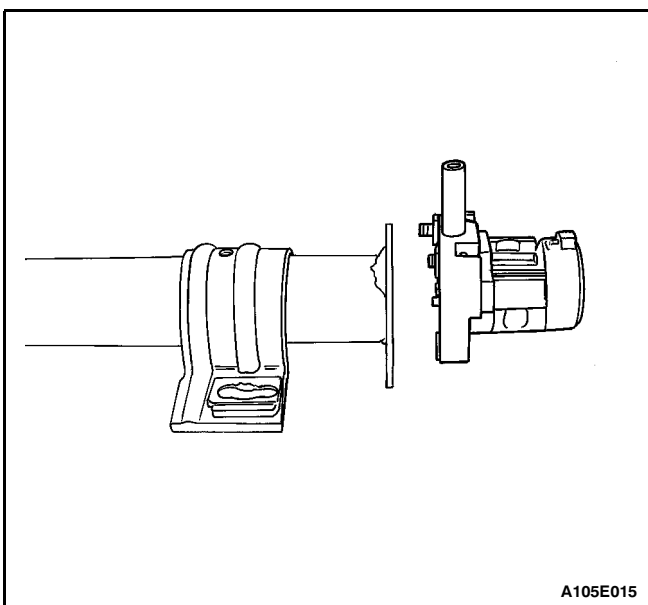
Important: After drilling and removing the threaded end of the shear bolts, all the metal shavings must be cleaned from all the parts.



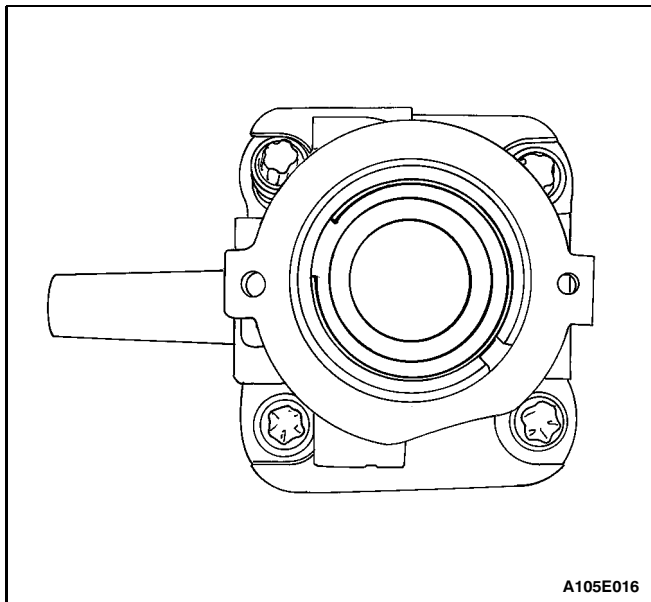
6. Remove the turn signal switch housing screws. Remove the upper part of the turn signal switch housing assembly, then remove the lower part of the turn signal switch housing assembly.



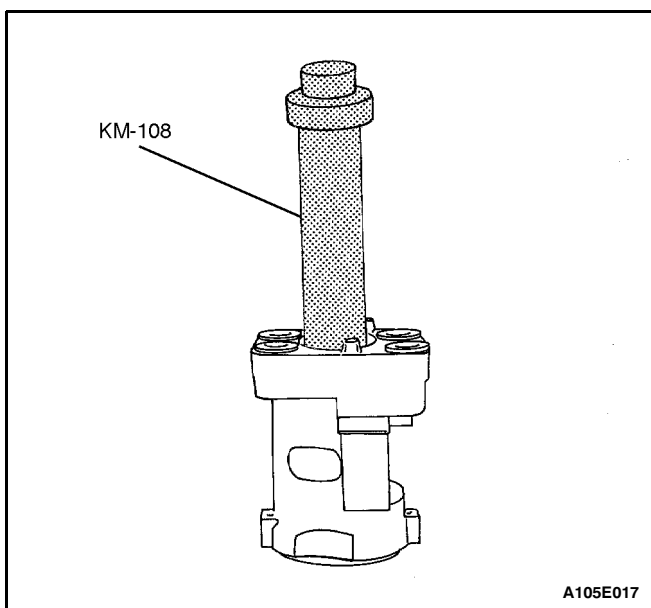
7. Remove the steering shaft assembly from the lower end of the jacket assembly.



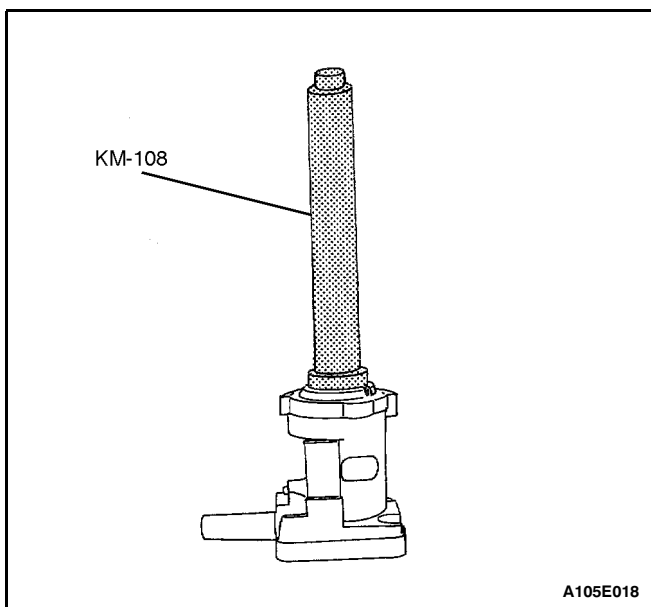
8. Remove the column housing from the jacket assembly.



9. Remove the washer and the retaining ring.



10. Press out the steering column housing bearing using the remover/installer KM-108.

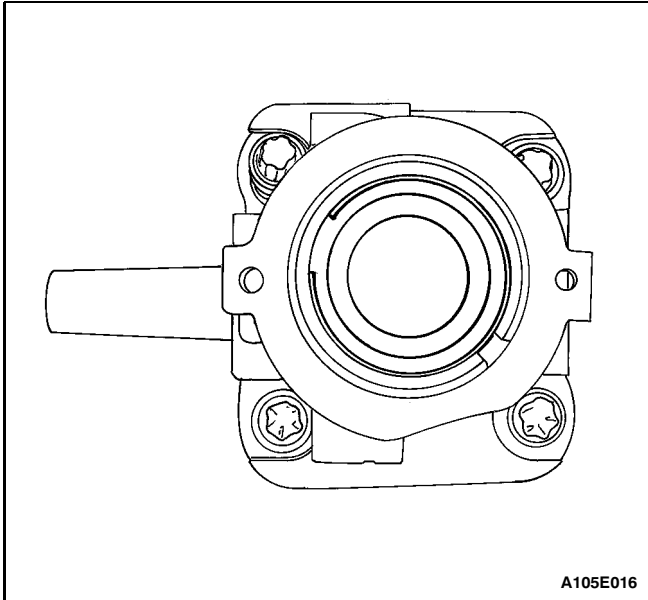


Assembly Procedure

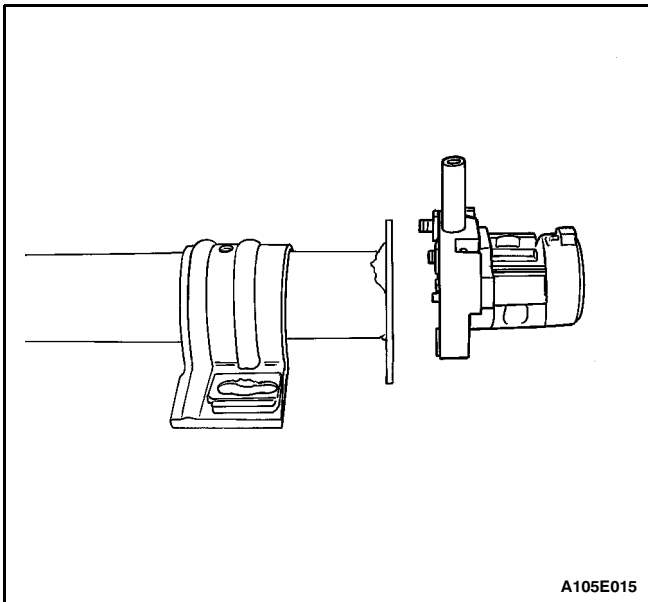
Important: All fasteners in the following steps must be firmly seated before being tightened to specifications.

1. Press in the steering column housing bearing using the remover/installer KM-108.

2. Install the retaining ring and the washer.



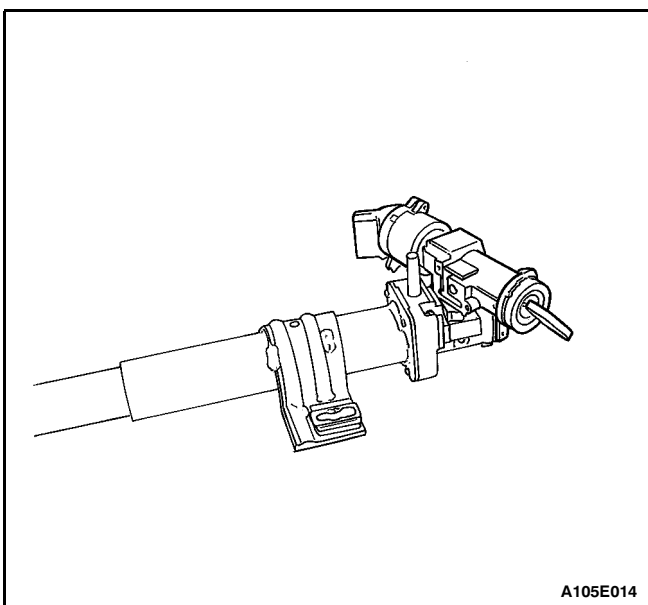
3. Connect the column housing to the jacket assembly.

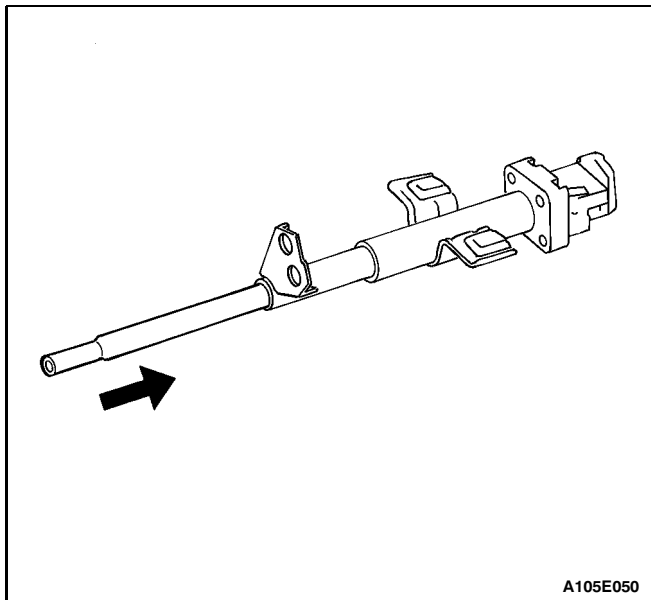


4. Attach the ignition switch housing to the column housing with the shear bolt washers and the shear bolts.

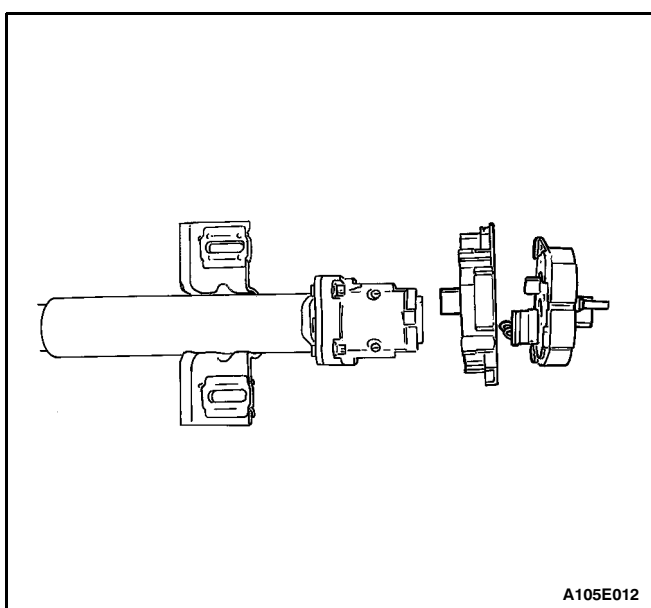
Tighten

Tighten the shear bolts until the bolt head separates from the body, approximately 11 N•m (97 lb-in).





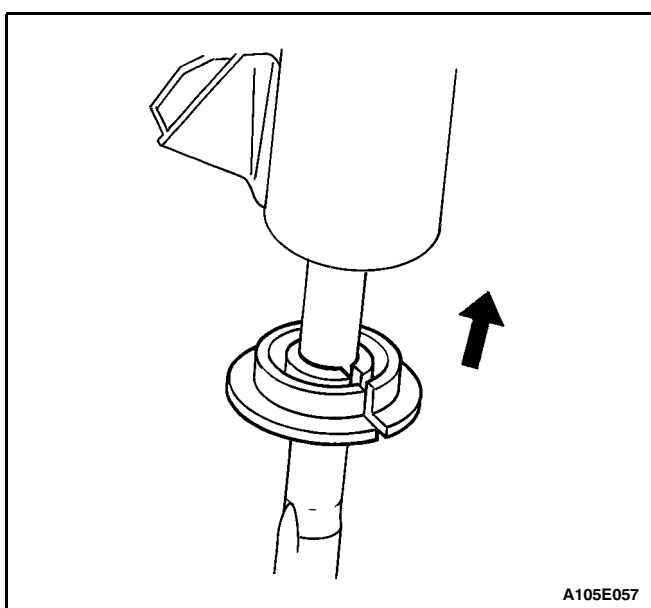
5. Place the lock cylinder in the ACC position.
6. Slide the steering shaft assembly into the lower end of jacket assembly until the steering shaft assembly is bottomed.
7. Place the lock cylinder in the LOCK position and remove the key.
8. Rotate the steering shaft until the lock bolt engages and locks the steering shaft in position.



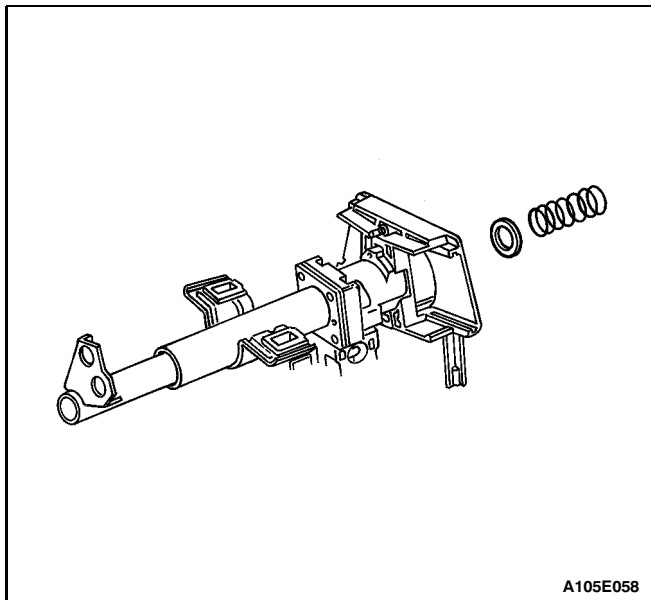
9. Install the lower part of the turn signal switch housing assembly, then install the upper part of the turn signal switch housing assembly. Install the screws.

Tighten

Tighten the turn signal switch housing screws to 3 N·m (27 lb-in).



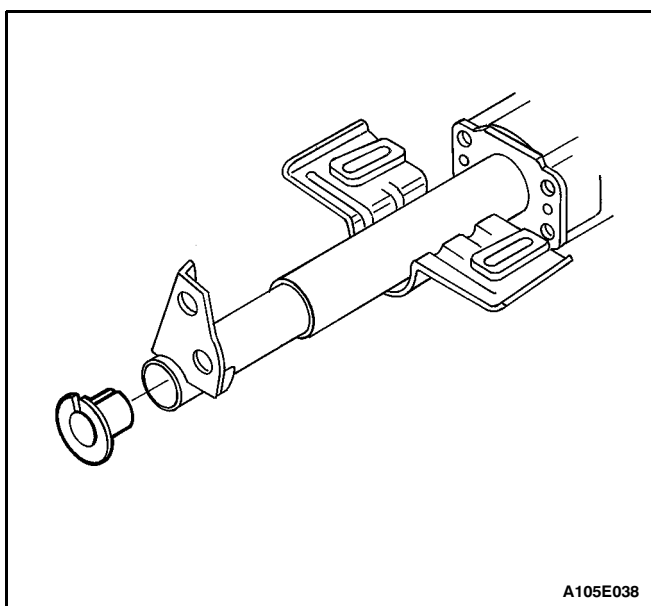
10. Slide the alignment bushing over the lower end of the steering shaft and into the lower end of the jacket assembly.



A105E058

11. Install the thrust washer and the upper steering shaft spring onto the steering shaft.
12. Install the steering wheel onto the steering column. Refer to "Steering Wheel without SIR" or "Steering Wheel with SIR" in this section.
13. Install the steering column into the vehicle. Refer to "Steering Column" in this section.

Important: After the steering column is connected to the coupling flange, pull the alignment bushing away from jacket assembly and leave the bushing on the steering shaft for later use.



A105E038

TILT STEERING COLUMN

Tools Required

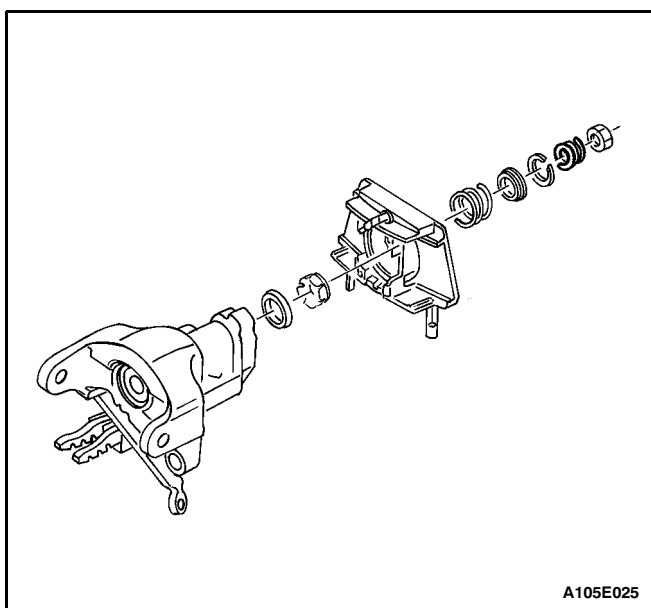
J-36667 Lock Plate Adapter

J-23653-D Lock Plate Compressor

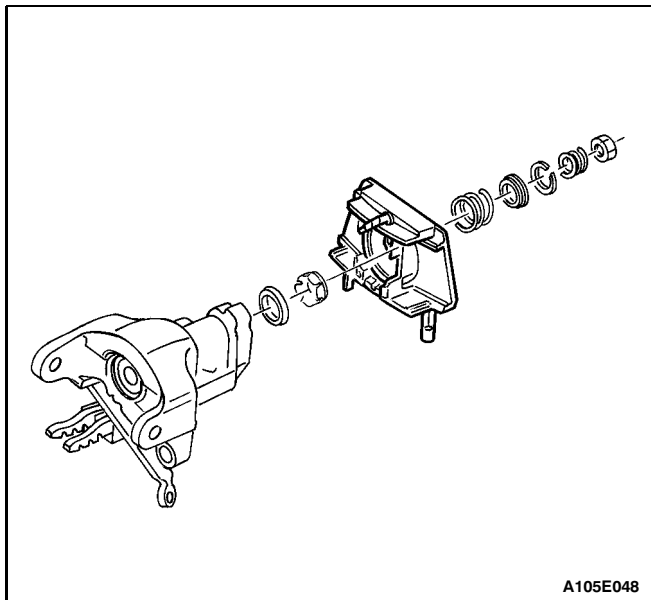
J-21854-01 Pivot Pin Remover

Disassembly Procedure

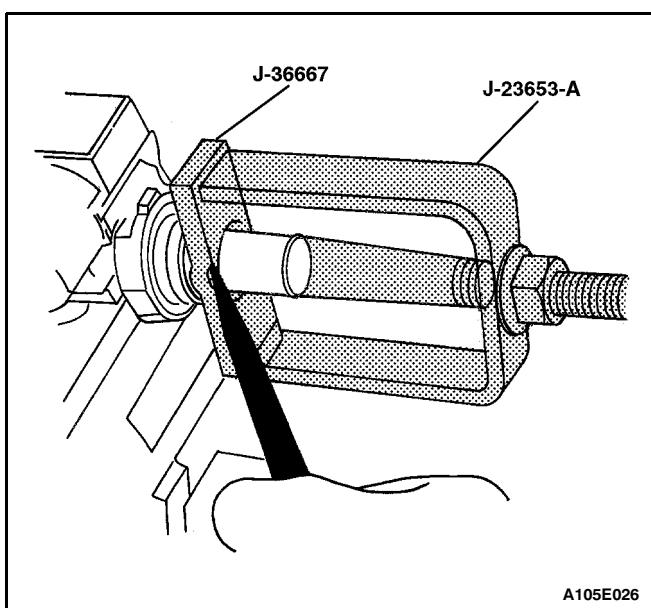
1. Remove the steering column from the vehicle. Refer to "Steering Column" in this section.
2. Remove the steering wheel from the steering column. Refer to "Steering Wheel without SIR" or "Steering Wheel with SIR" in this section.
3. Pull the alignment bushing from the lower end of the shaft assembly, if it has not been previously removed.
4. Pull the canceling cam spring from the upper end of the shaft assembly, if it has not been previously removed.



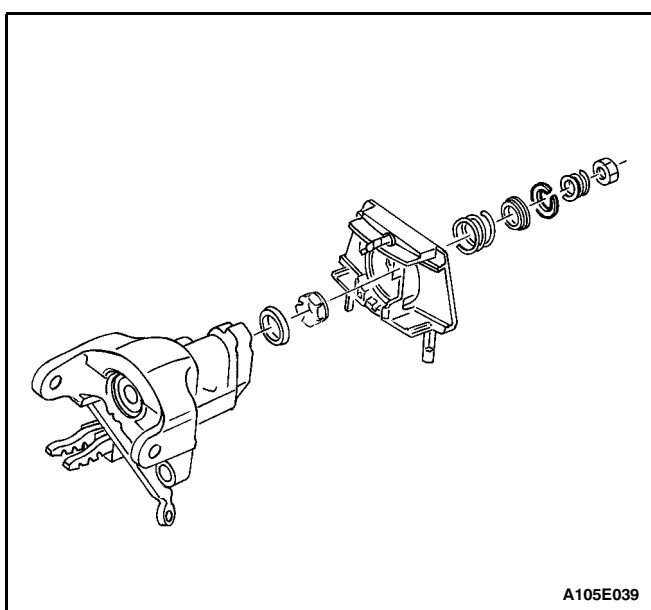
A105E025



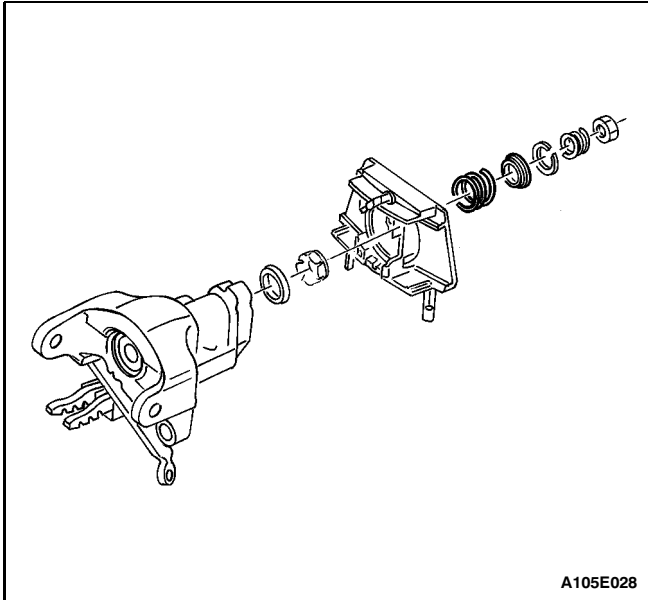
5. Remove the turn signal switch housing screws. Remove the turn signal switch housing from the steering column housing.



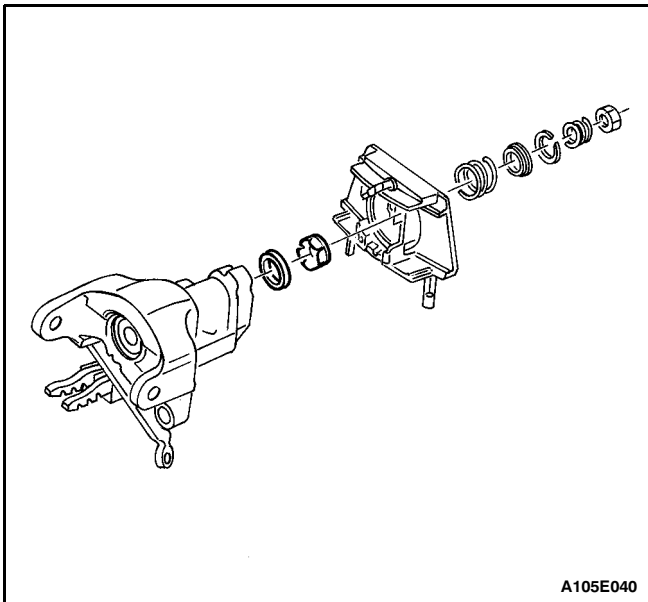
6. Compress the spring retainer and upper bearing spring with the lock plate adapter J-36667 and the lock plate compressor J-23653-D.



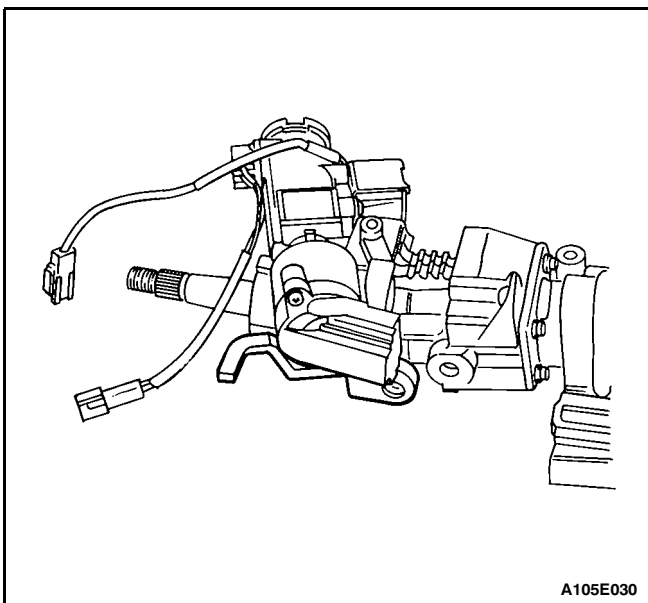
7. Remove the retaining ring.



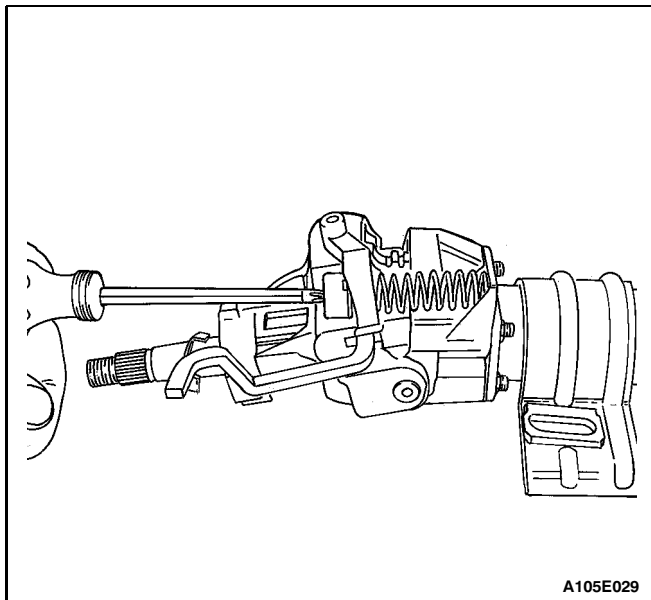
8. Remove the spring retainer and the upper bearing spring.



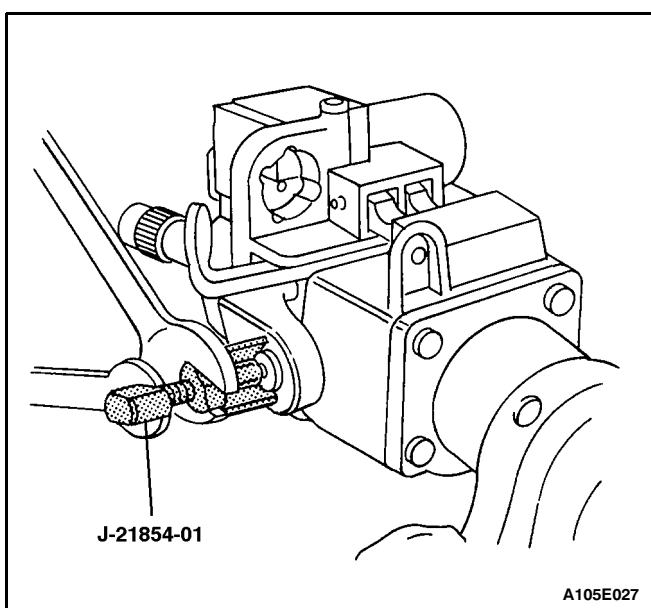
9. Remove the inner race seat and the inner race.



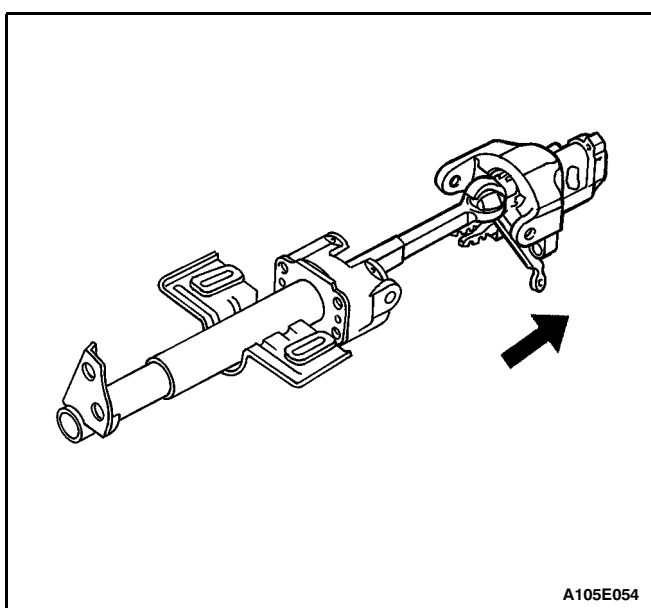
10. Pull the tilt level on the column housing assembly and tilt the column all the way up.



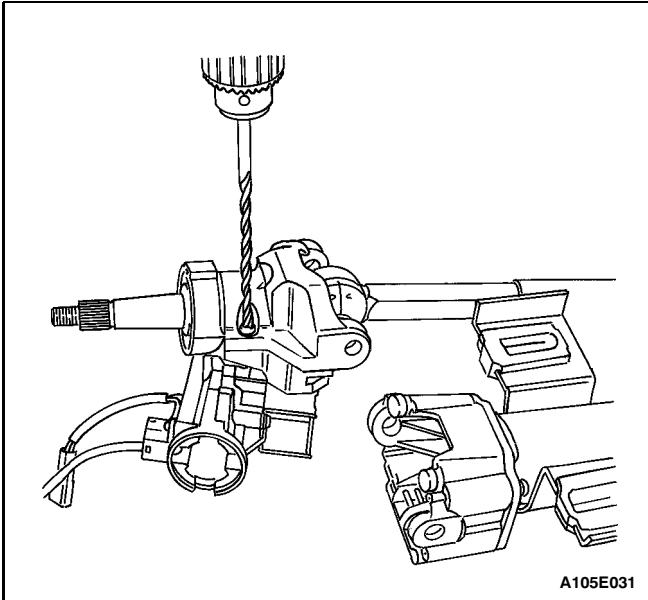
11. Insert a Phillips screwdriver into the square opening at the bottom of the spring retainer. Push and turn left to release the spring retainer and the wheel-tilt spring.
12. Remove the spring retainer and the wheel-tilt spring.



13. Remove the two pivot pins using the pivot pin remover J-21854-01.



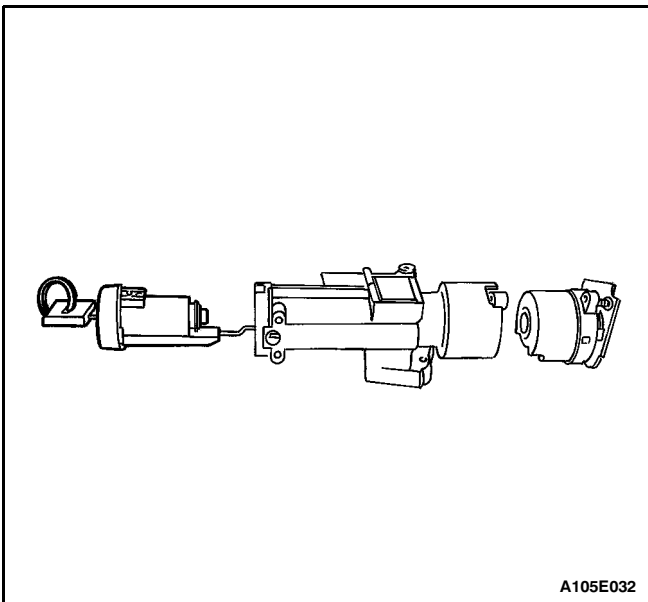
14. Place the lock cylinder in the ACC position.
15. Pull the tilt lever to release the column housing. Remove the column housing and the steering shaft from the housing support.



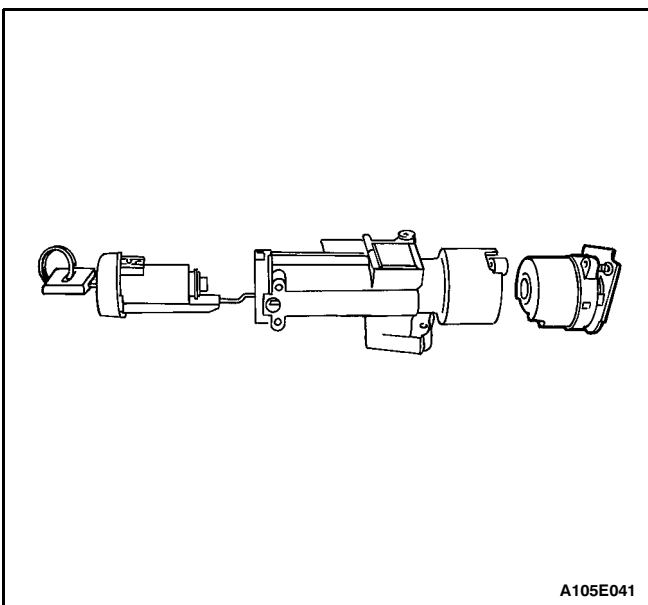
16. Remove the shear bolts, the shear bolt washers, and the ignition switch housing from the steering column housing as follows:

- 16.1 Use a metal punch to start the drill head.
- 16.2 Drill off the head of the shear bolts down to the steel shear bolt washers with a 6.5 mm (1/4 inch) drill bit.
- 16.3 Separate the washers and the ignition switch housing from the column housing.
- 16.4 Remove the threaded end of the shear bolts from the ignition switch housing with locking pliers.

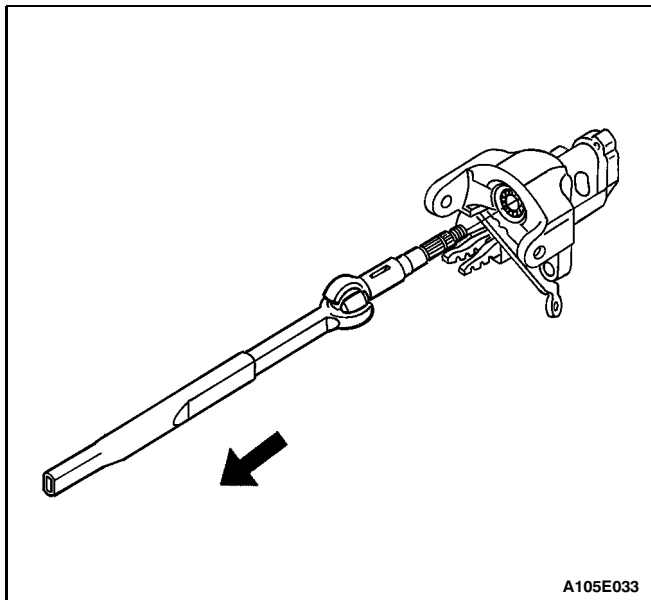
Important: After drilling and removing the threaded end of the shear bolts, all the metal shavings must be cleaned from all the parts.



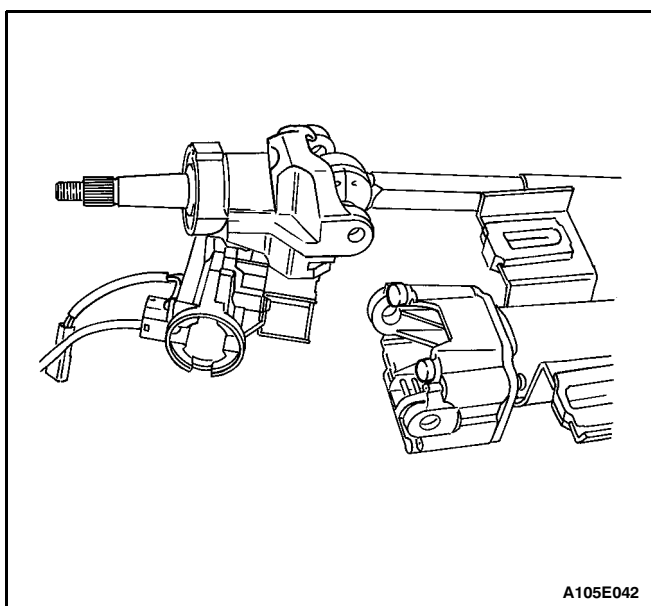
17. Remove the lock cylinder from the ignition switch housing by pushing the lock cylinder release tab.



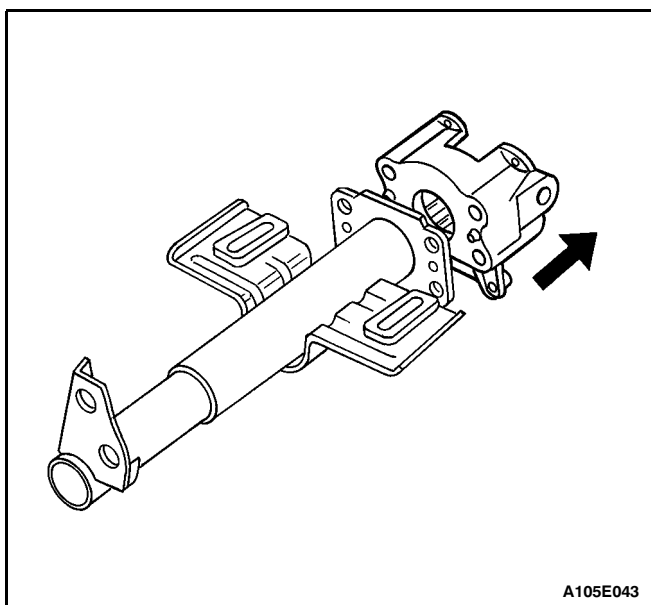
18. Remove the ignition switch retaining screw and remove the ignition switch assembly.



19. Remove the steering shaft assembly from the housing support.



20. Remove the tilt bumpers with a pair of pliers.

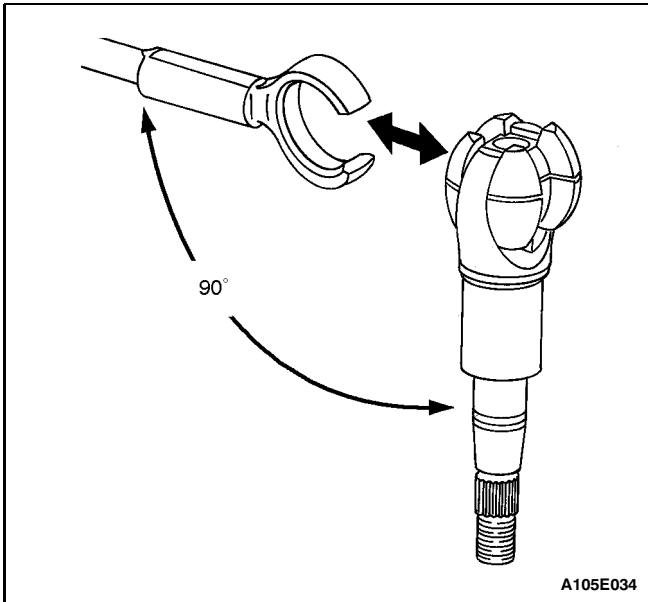


21. Remove the support screws and remove the support housing from the jacket assembly.

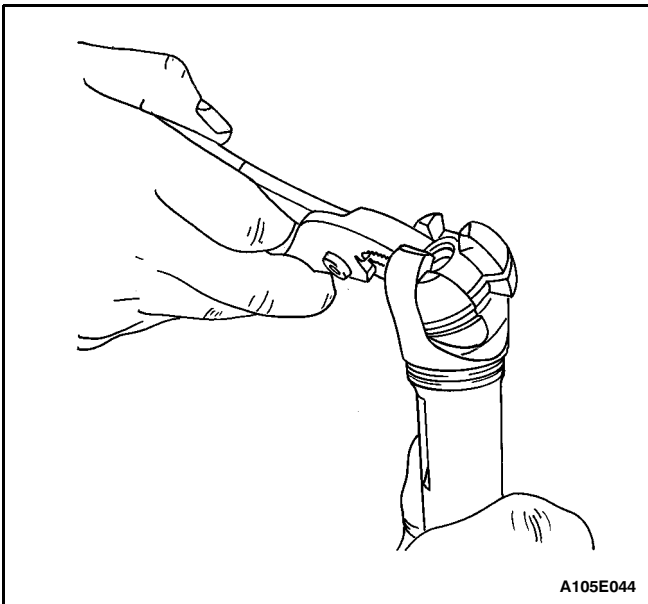
Disassembly Procedure for the Steering Shaft Assembly

Important: Prior to separating the upper shaft from the lower shaft, note the relationship of the upper shaft, with the lock bolt slot at the 12 o'clock position, to the lower shaft pinch bolt groove at the 7 o'clock position. Refer to this orientation for proper assembly.

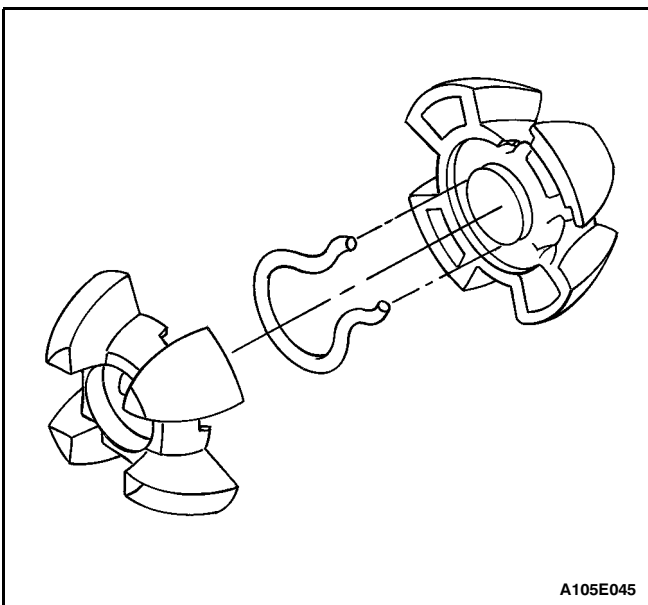
1. Position the upper shaft 90 degrees to the lower shaft and separate the two parts.

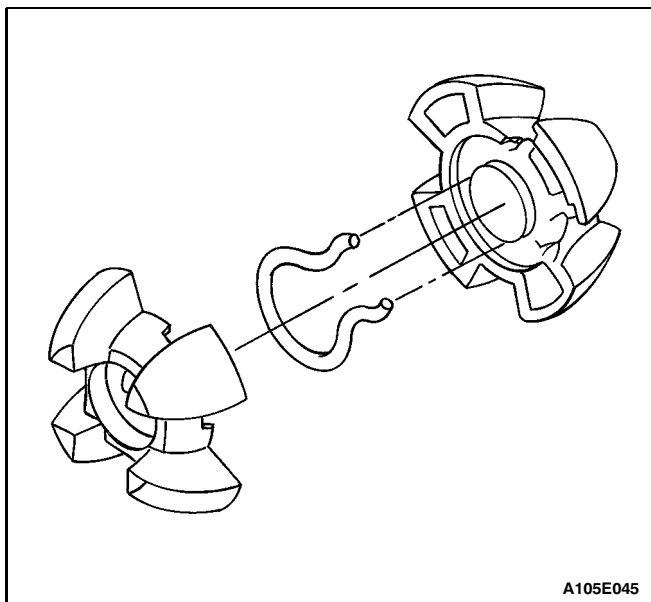


2. Rotate the centering sphere 90 degrees and remove it from the upper shaft.



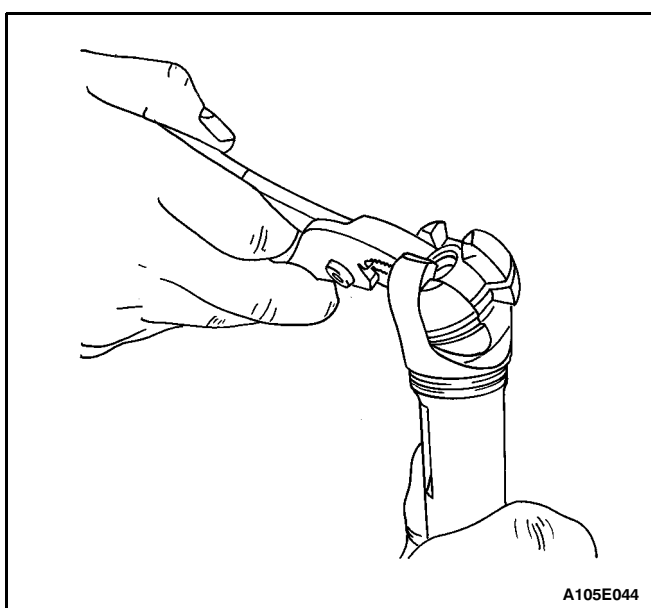
3. Separate the sphere halves and remove the joint pre-load spring.



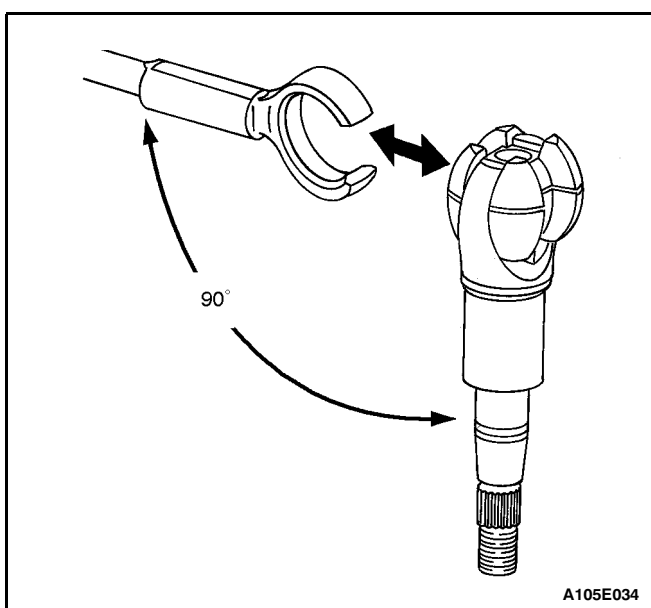


Assembly Procedure for the Steering Shaft Assembly

1. Lubricate the centering sphere halves and the joint preload spring with lithium grease.
2. Place the joint preload spring between the sphere halves with the ends of the spring in the notches.



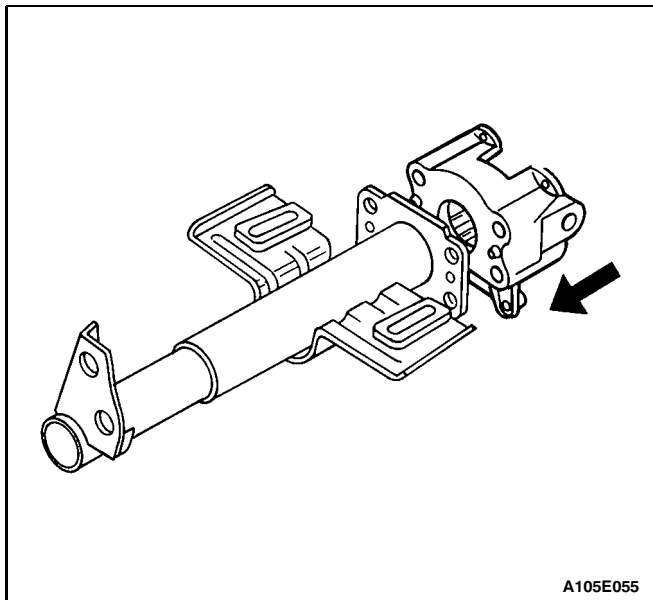
3. Lubricate the sphere end of the upper shaft with lithium grease.
4. Place the sphere into the upper shaft and rotate the sphere 90 degrees.



5. Lubricate the sphere end of the lower shaft with lithium grease.

Important: To insure proper operation, the upper shaft and the lower shaft must be aligned correctly when they are connected.

6. Place the lock bolt slot on the upper shaft at the 12 o'clock position.
7. Place the pinch bolt groove near the end of the lower shaft at the 7 o'clock position.
8. Connect the upper shaft to the lower shaft.



A105E055

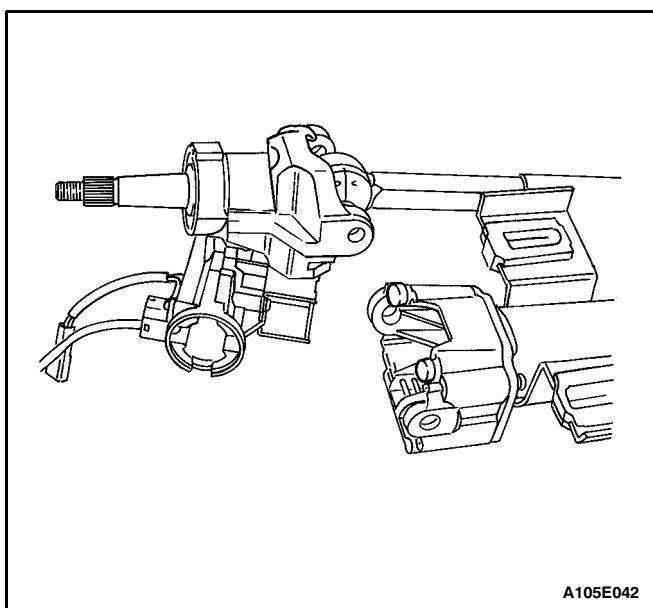
Assembly Procedure

Important: All fasteners in the following steps must be seated firmly before being tightened to specifications.

1. Connect the support housing to the jacket assembly with the support screws.

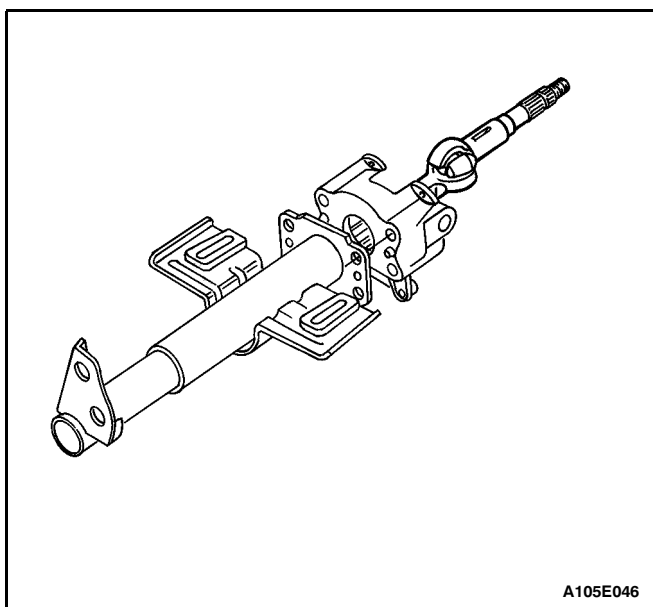
Tighten

Tighten the support housing screws to 16 N•m (12 lb-ft).



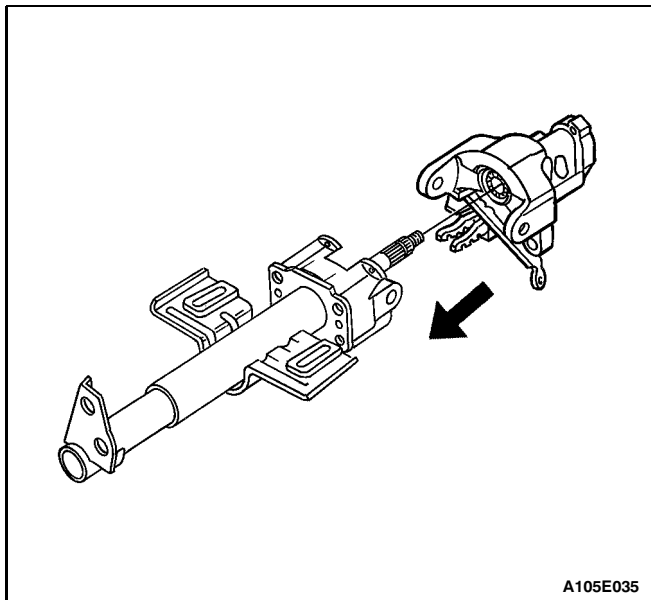
A105E042

2. Connect the tilt bumpers to the support housing and snap them in place.

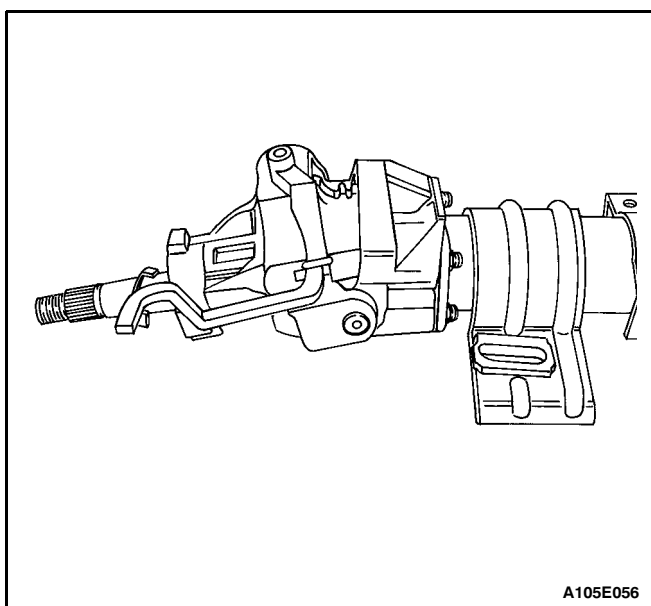


A105E046

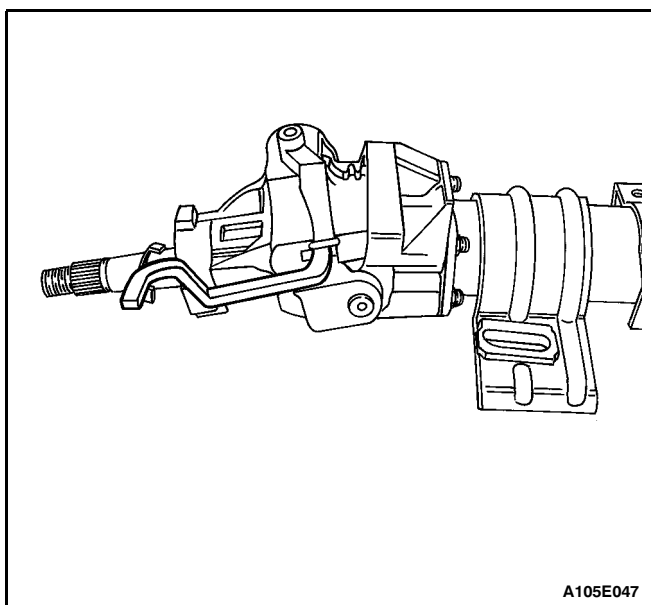
3. Slide the steering shaft assembly into the support housing.



4. Lubricate both bearings in the column housing with lithium grease. Slide the column housing onto the shaft assembly and the housing support.

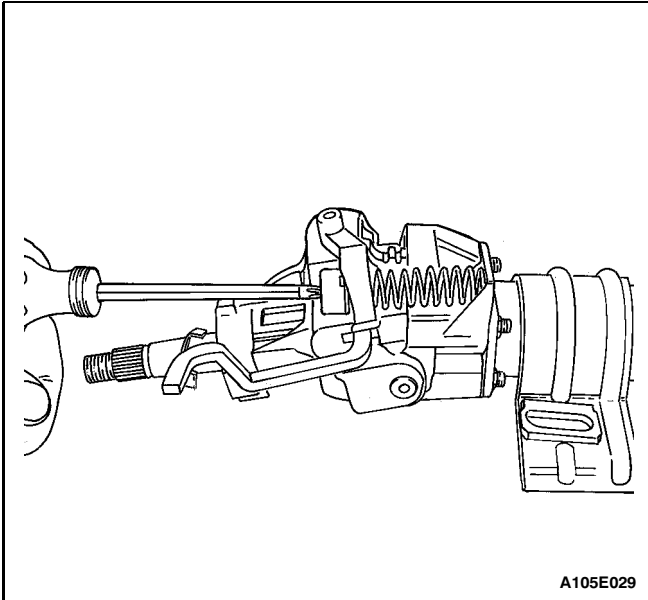


5. Lubricate the pivot pins with lithium grease and slide the pins into the housing until the pins are bottomed. Tap the pivot pins in place.



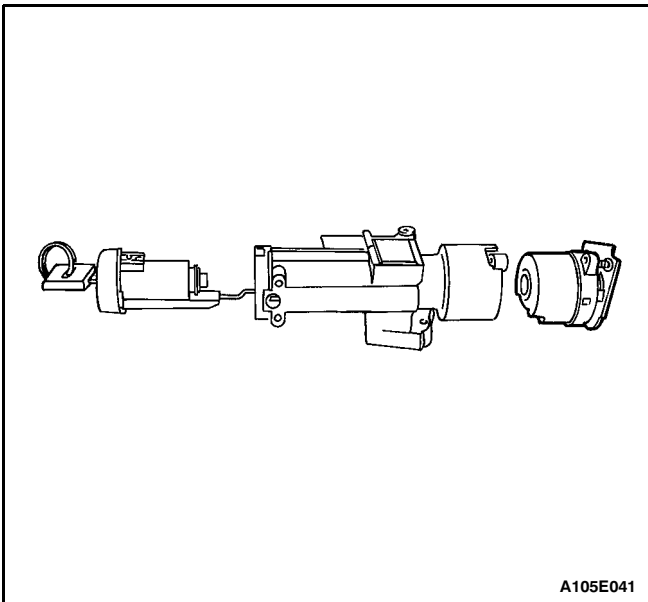
Important: The pivot pins must be staked to the column housing after installation. Stake each pin at three equally-spaced locations.

6. Pull the tilt lever on the column housing and tilt the column all the way up.



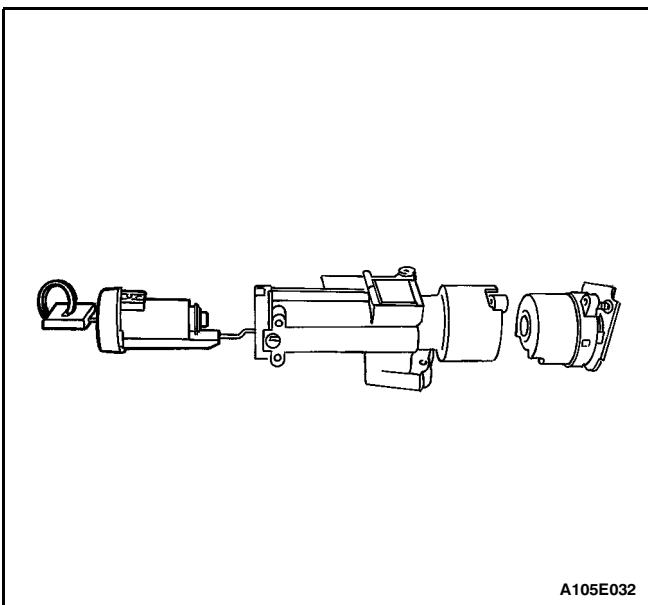
A105E029

7. Lubricate the tilt spring with lithium grease.
8. Install the tilt spring and the spring retainer. Be sure the spring engages the locating tab on the support housing. Insert a Phillips screwdriver into the square opening in the spring retainer, push down, and turn right to lock it in place.



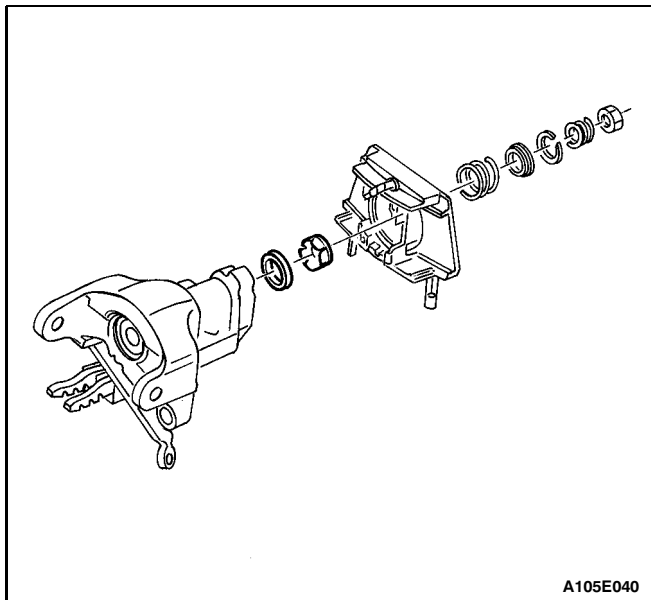
A105E041

9. Install the ignition switch with the ignition switch retaining screw. Connect the wiring. Refer to "Ignition Lock Cylinder and Switch" in this section.



A105E032

10. Important: To ensure that the tab on the lock-cylinder shaft and the slotted opening on the ignition switch are in alignment, the lock cylinder must be in the ACC position prior to installation.
11. Install the lock cylinder into the ignition switch housing.

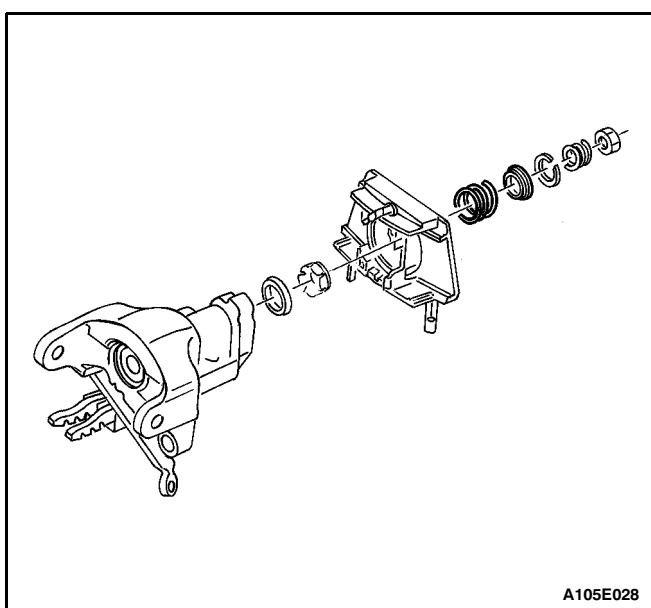


12. Attach the ignition switch housing to the column housing with the shear bolt washers and the shear bolts.

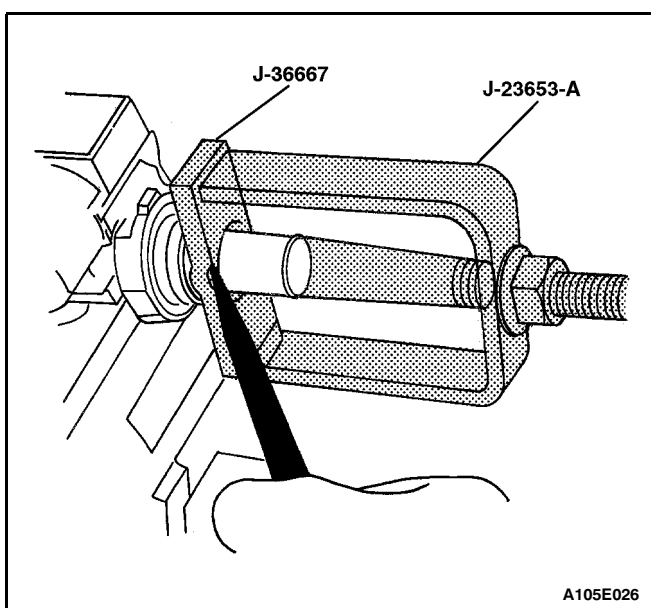
Tighten

Tighten the shear bolts until the bolt head separates from the body, approximately 11 N·m (97 lb-in).

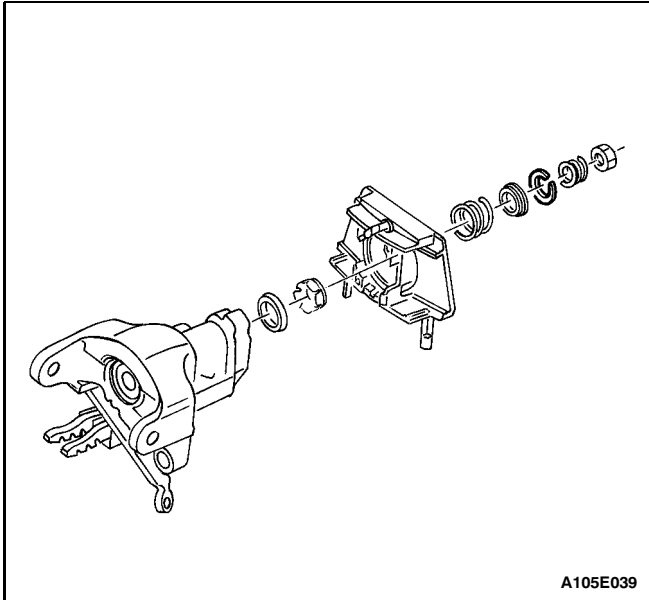
13. Place lock cylinder in the LOCK position and remove the key.
14. Rotate the steering shaft assembly until the lock bolt engages and locks the steering shaft in position.
15. Install the inner race and the inner race seat.



16. Install the upper bearing spring and the spring retainer.

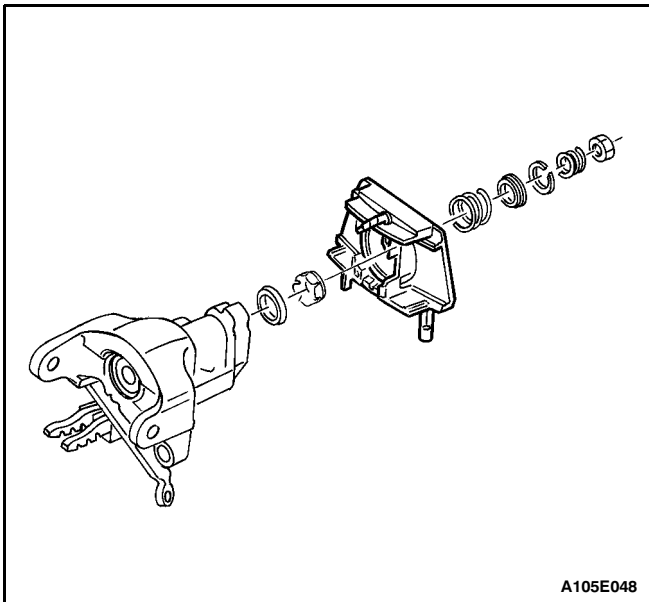


17. Compress the upper bearing spring and the spring retainer with lock plate adapter J-36667 and lock plate compressor J-23653-D.



A105E039

18. Place the retaining ring into the groove on the upper shaft.

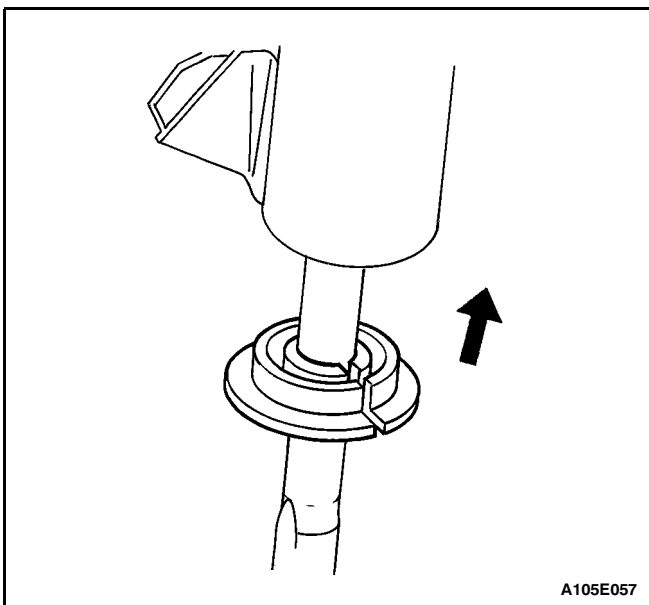


A105E048

19. Connect the turn signal switch housing to the steering column housing with the turn signal switch housing screws.

Tighten

Tighten the turn signal switch housing screws to 3 N·m (27 lb-in).



A105E057

20. Slide the alignment bushing over the lower end of the steering shaft and into the lower end of the jacket assembly.

21. Install the steering column into the vehicle. Refer to "Steering Column" in this section.

Important: After the steering column is connected to the coupling flange, pull the alignment bushing away from jacket assembly and leave the bushing on the steering shaft for later use.

22. Install the cancelling cam spring and the steering wheel onto the steering column. Refer to "Steering Wheel without SIR" or "Steering Wheel with SIR" in this section.

GENERAL DESCRIPTION AND SYSTEM OPERATION

STEERING WHEEL AND COLUMN

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

Caution: To ensure the energy-absorbing action, it is important to use only the specified screws, bolts, and nuts, tightened to the specified torque.

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 inhibit theft of the car.

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

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.

Notice: Apply a thin coat of lithium grease to all friction points when reassembling.

The column may be easily disassembled and assembled.