

2000-06 STEERING

Power Steering - Insight

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (IF STEERING MAINTENANCE IS REQUIRED)

The Insight SRS includes a driver's airbag in the steering wheel hub, a passenger's airbag in the dashboard above the glove box, and seat belt tensioners in the seat belt retractors. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling or replacing these items require special precautions and tools, and should be done by an authorized Honda dealer.

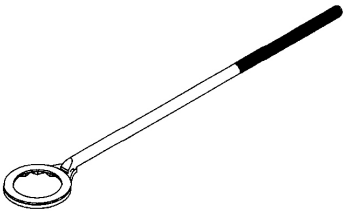
- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned OFF; otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical wiring harnesses are identified by yellow color coding. Related components are located in the steering column, console, dashboard, dashboard lower panel and in the dashboard above the glove box. Do not use electrical test equipment on these circuits.

SPECIAL TOOLS

2006 Honda Insight

2000-06 STEERING Power Steering - Insight

Ref. No.	Tool Number	Description	Qty
①	07916-SA50001	Locknut Wrench, 40 mm	1

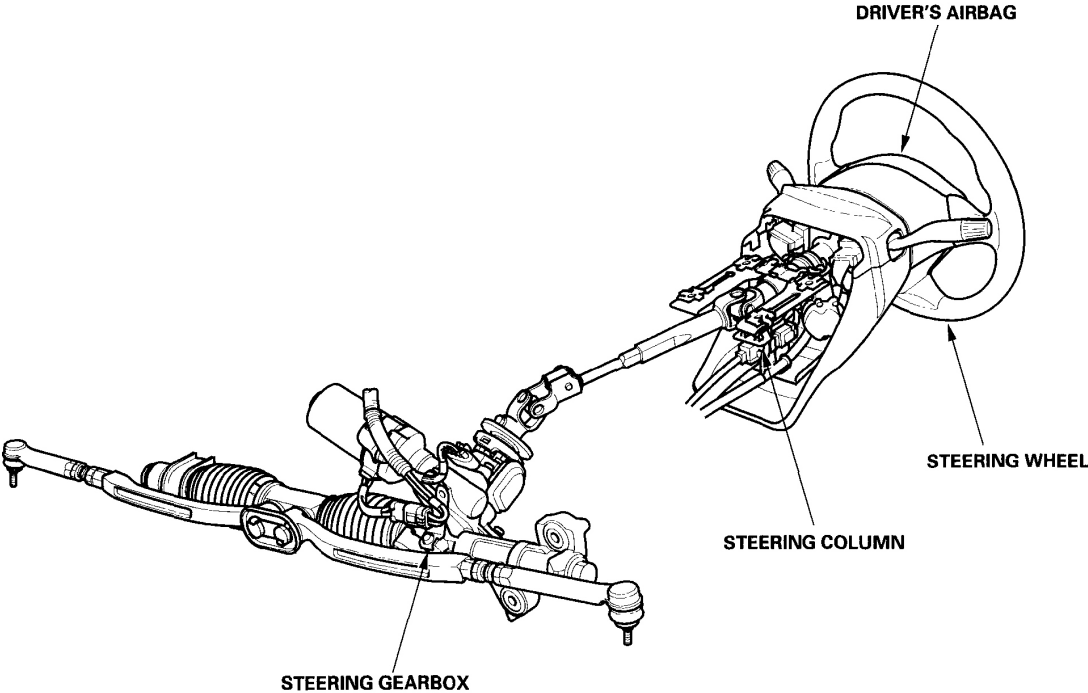


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Fig. 1: Identifying Steering Special Tools
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX



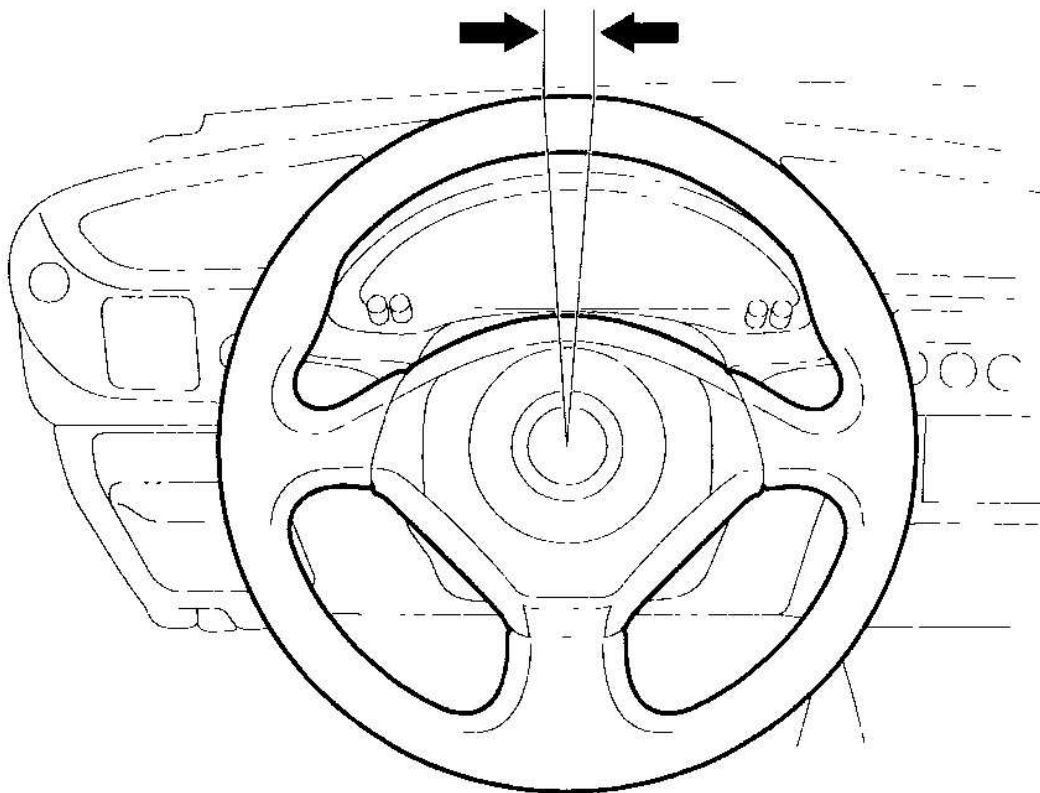
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Fig. 2: Identifying Steering Components
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL ROTATIONAL PLAY CHECK

1. Turn the front wheels to the straight ahead position.
2. Measure how far you can turn the steering wheel left and right without moving the front wheels.
 - If the play is within the limit, the gearbox and linkage are OK.
 - If the play exceeds the limit, adjust the rack guide (see **STEERING LOCK REPLACEMENT**). If the play is still excessive after rack guide adjustment, inspect the steering linkage and gearbox (see **STEERING LINKAGE AND GEARBOX INSPECTION**).

Rotational play: 0-10 mm (0-0.39 in.)



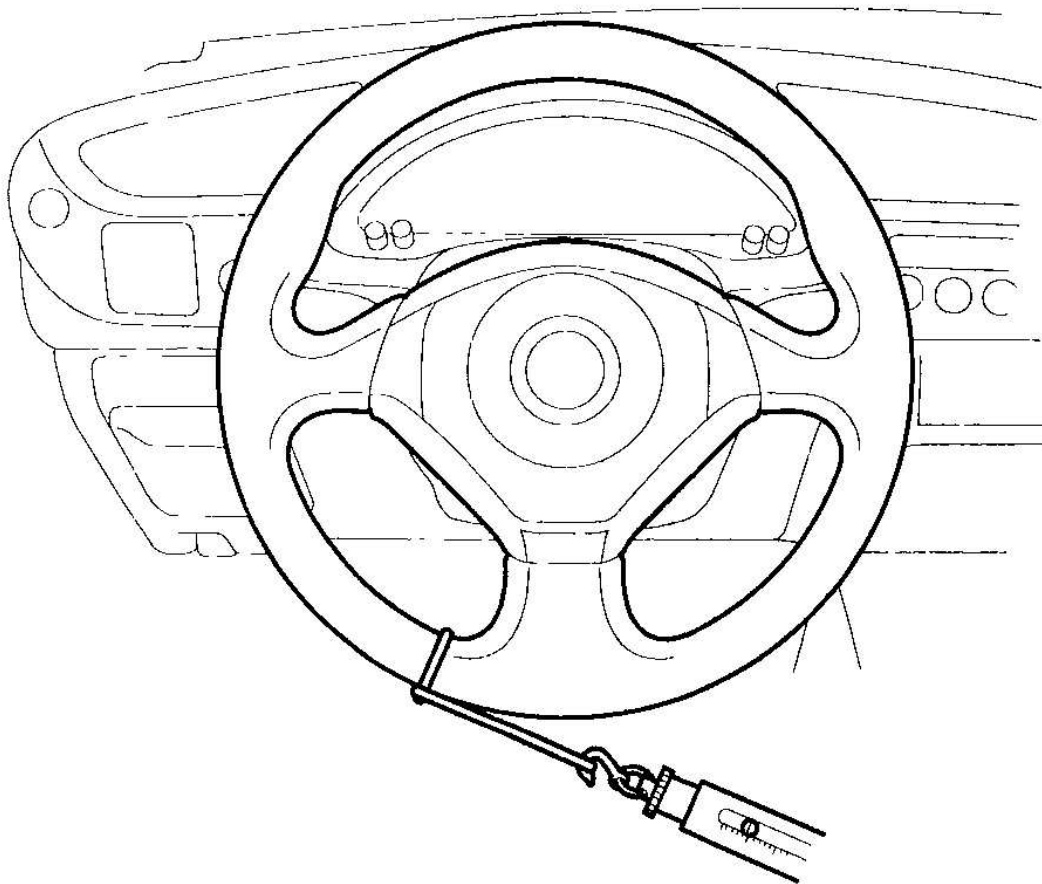
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Fig. 3: Checking Steering Wheel Rotational Play
Courtesy of AMERICAN HONDA MOTOR CO., INC.

POWER ASSIST CHECK

NOTE: This test should be done with original equipment tires and wheels at the correct tire pressure.

1. Start the engine, and let it idle.
2. Attach a commercially available spring scale to the steering wheel. With the engine idling and the vehicle on a clean, dry floor, pull the scale as shown, and read it as soon as the tires begin to turn.



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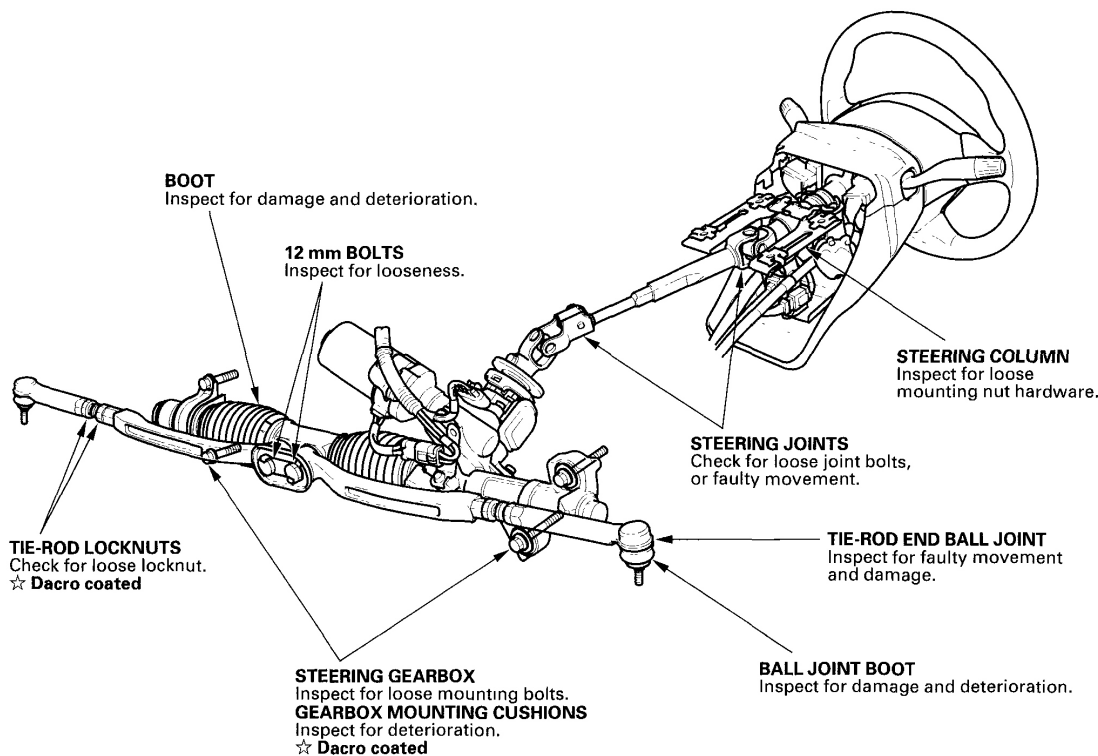
Fig. 4: Checking Power Assist
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the scale should read no more than 29 N (3.0 kgf, 6.6 lbf). If it reads more, check these items:

- Steering linkage (see **STEERING LINKAGE AND GEARBOX INSPECTION**)
- Rack guide adjustment (see **RACK GUIDE ADJUSTMENT**)
- EPS system for DTCs (see **GENERAL TROUBLESHOOTING INFORMATION**)

STEERING LINKAGE AND GEARBOX INSPECTION

NOTE: Bolts and nuts with the * mark are special corrosion-resistant Dacro fasteners. Use the same type if replacement is necessary.



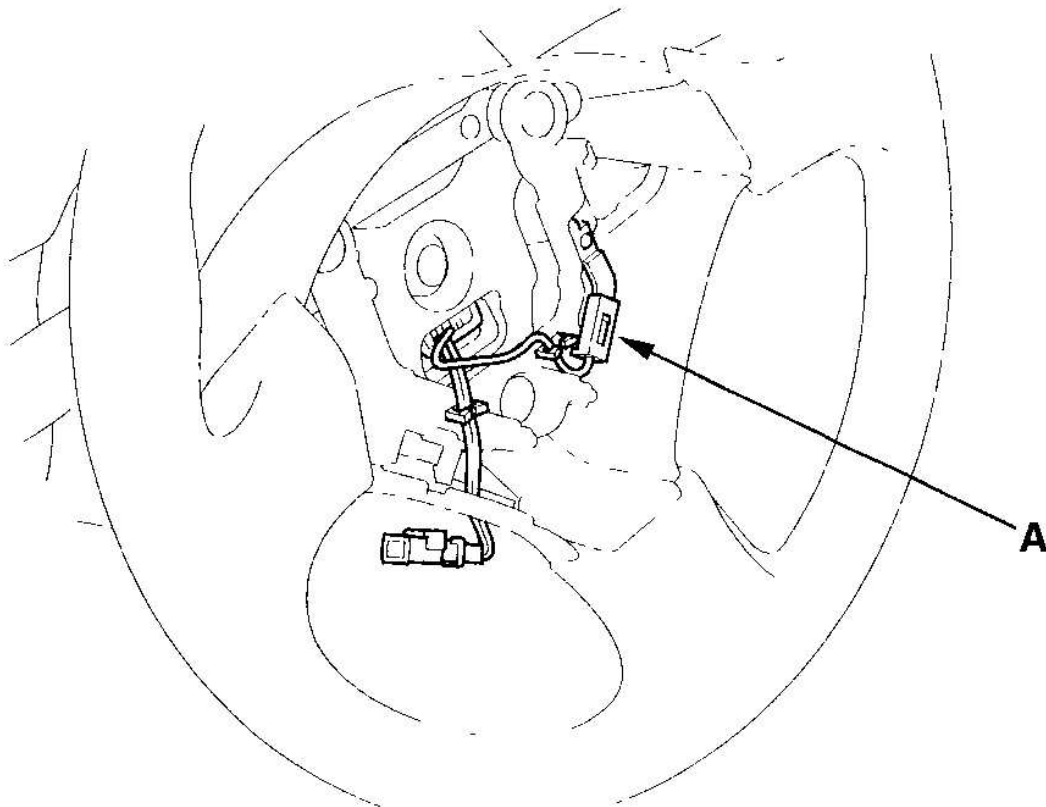
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Fig. 5: View Of Steering Linkage And Gearbox
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL REMOVAL

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before performing repairs or service.

1. Make sure you have the anti-theft codes for the radio, then write down the radio presets.
2. Disconnect the negative cable from the battery.
3. Align the front wheels straight ahead, then remove the driver's airbag from the steering wheel (see **DRIVER'S AIRBAG REPLACEMENT**).
4. Disconnect the horn switch connector (A).

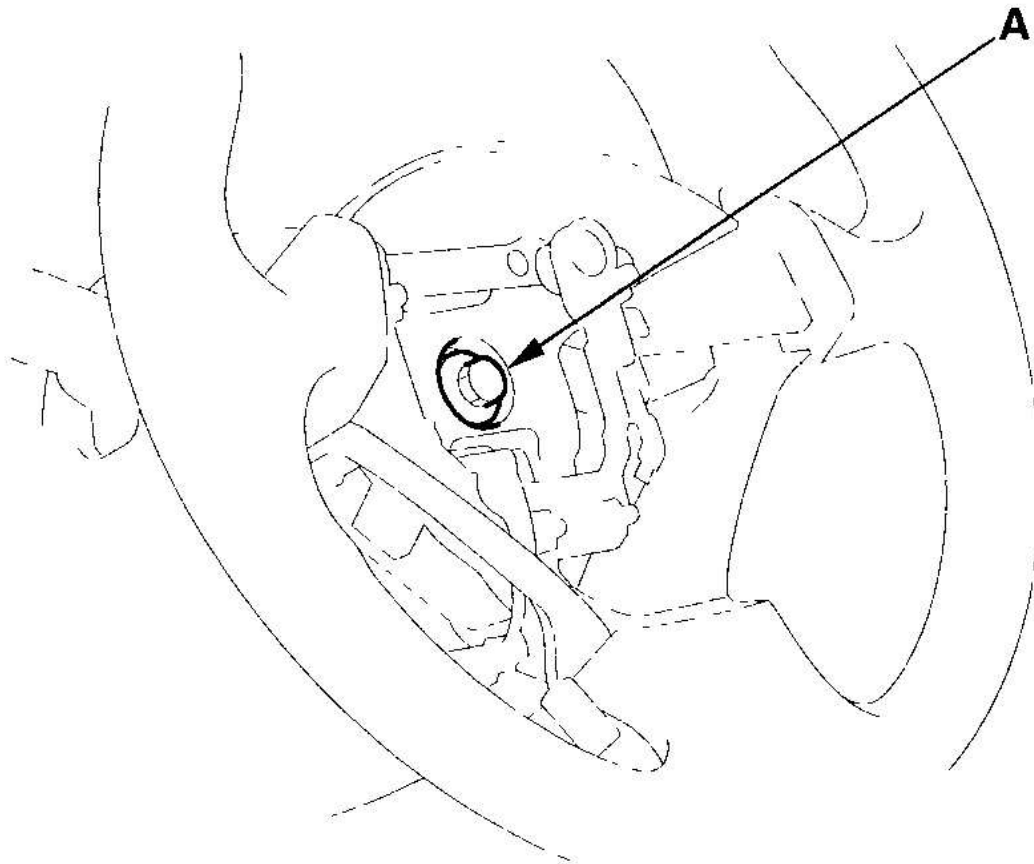


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Fig. 6: Disconnecting Horn Switch Connector

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Loosen the steering wheel bolt (A).



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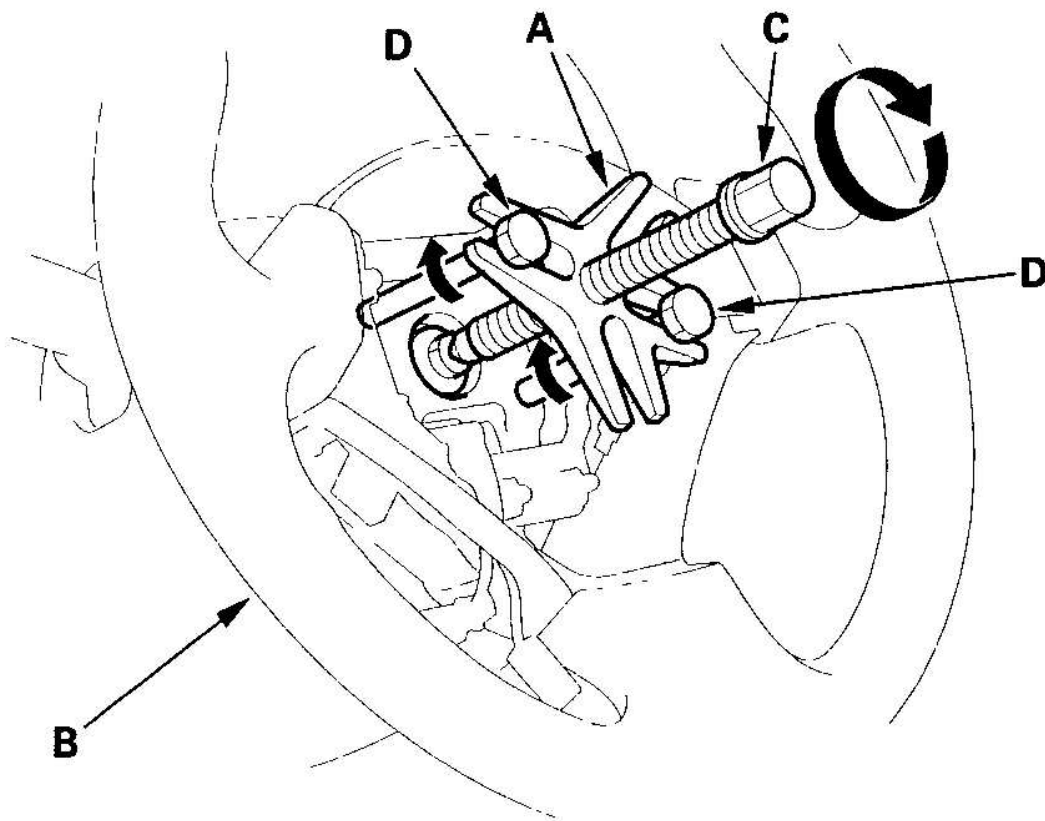
Fig. 7: Loosening Steering Wheel Bolt

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install a commercially available steering wheel puller (A) on the steering wheel (B). Free the steering wheel from the steering column shaft by turning the pressure bolt (C) off of the puller.

Note these items when removing the steering wheel:

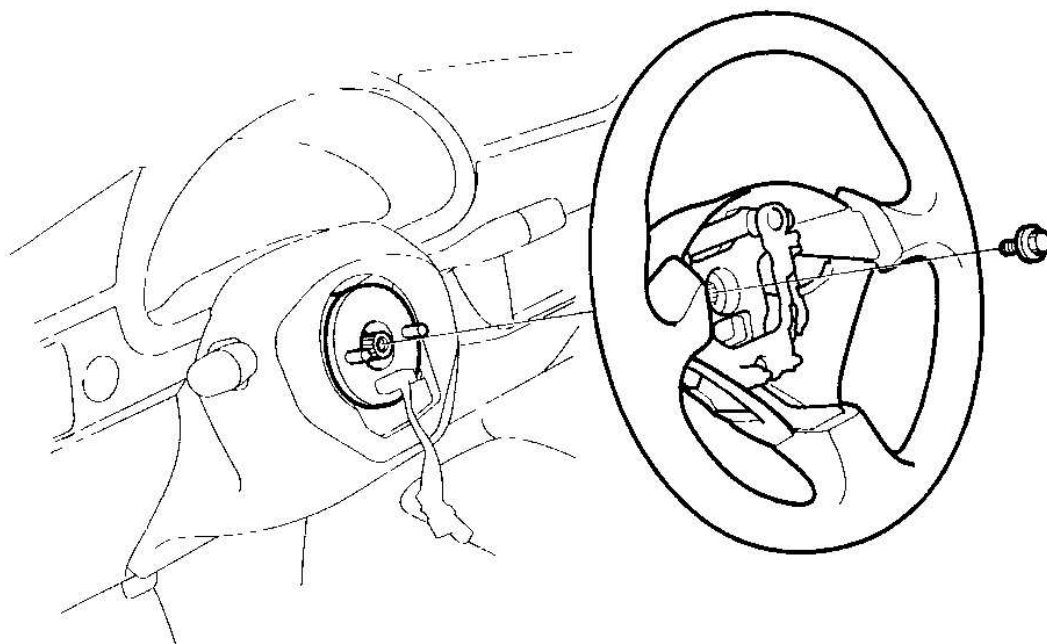
- Do not tap on the steering wheel or the steering column shaft when removing the steering wheel.
- If you thread the puller bolts (D) into the wheel hub more than five threads, the bolts will hit the cable reel and damage it. To prevent this, install a pair of jam nuts five threads up on each puller bolt.



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Fig. 8: Installing Steering Wheel Puller**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

7. Remove the steering wheel puller, then remove the steering wheel bolt and steering wheel from the steering column.

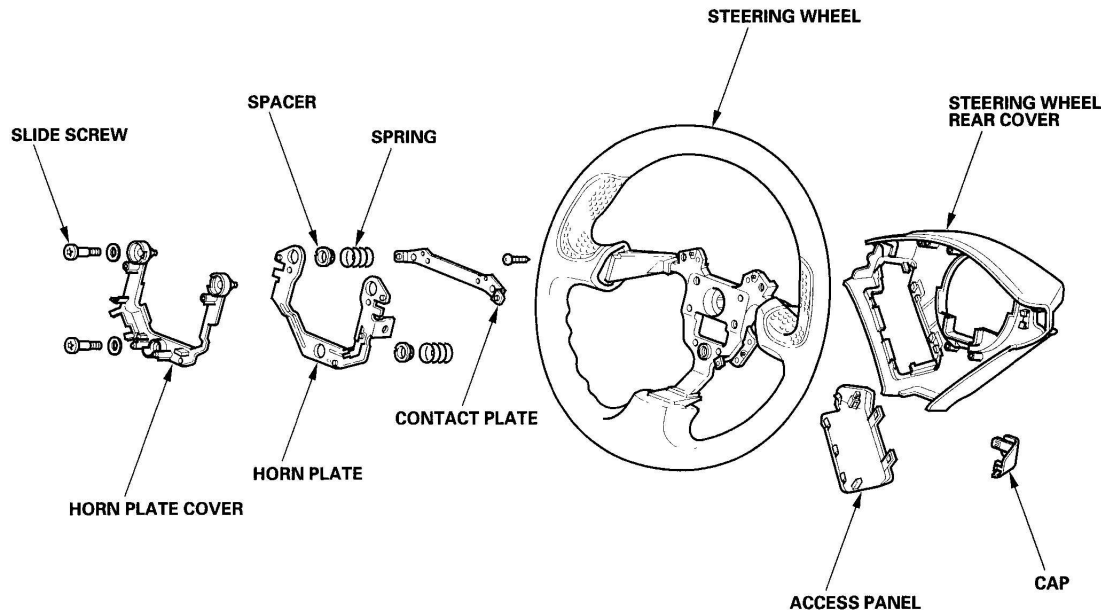


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Fig. 9: Removing Steering Wheel Puller

Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL DISASSEMBLY/REASSEMBLY

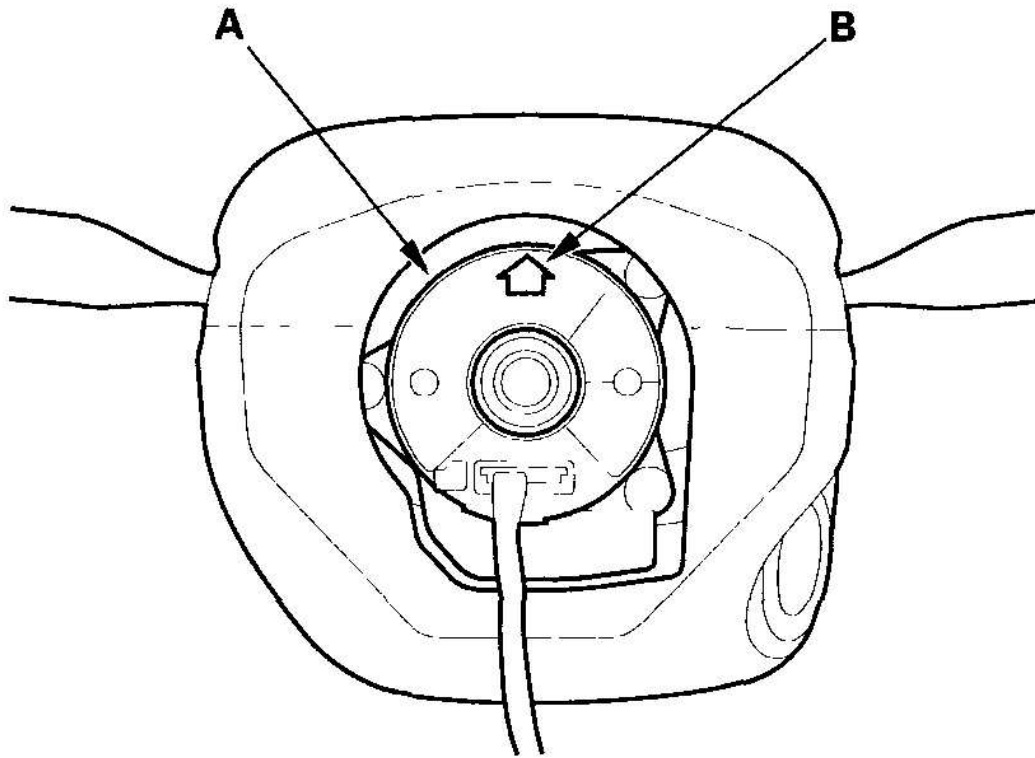


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Fig. 10: Exploded View Of Steering Wheel
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING WHEEL INSTALLATION

1. Before installing the steering wheel, make sure the front wheels are aligned straight ahead, then center the cable reel (A). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise approximately two and half turns. The arrow mark (B) on the cable reel label point should point straight up.

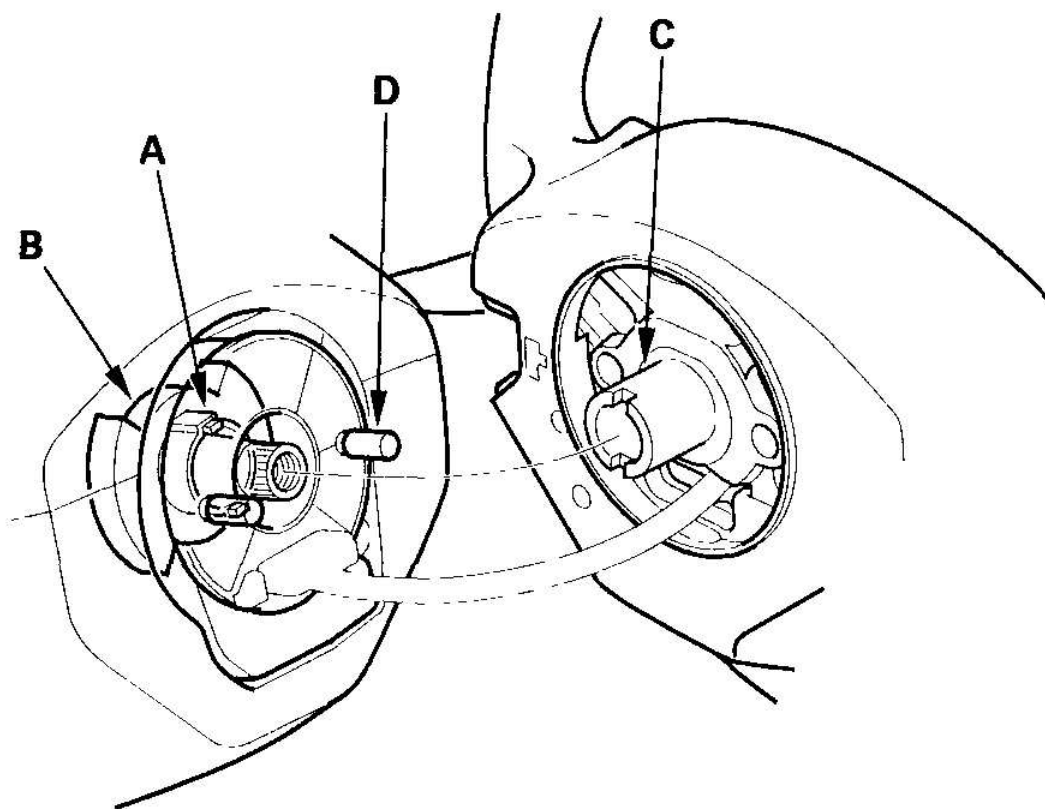


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Fig. 11: Installing Steering Wheel

Courtesy of AMERICAN HONDA MOTOR CO., INC.

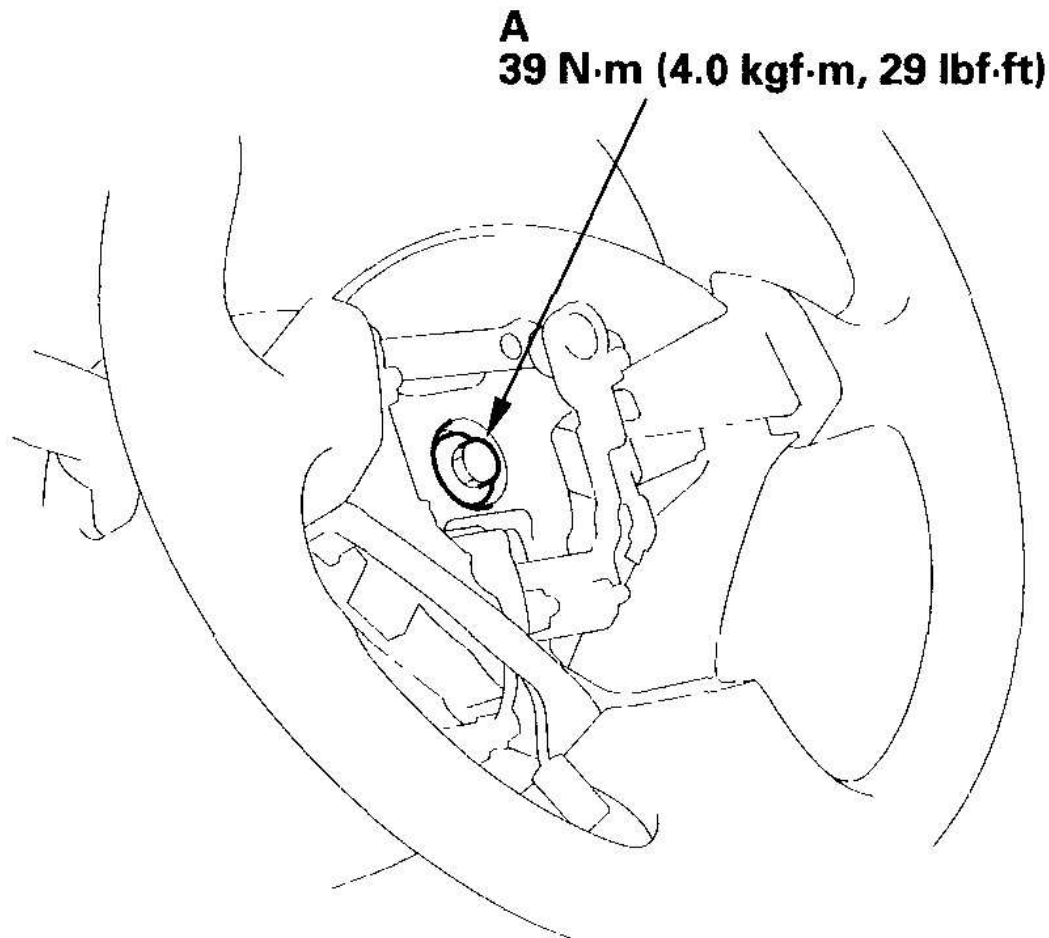
2. Position the two tabs (A) of the turn signal cancelling sleeve (B) as shown, and install the steering wheel on to the steering column shaft, making sure the steering wheel hub (C) engages the pins (D) of the cable reel and tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.



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Fig. 12: Positioning Two Tabs Of Turn Signal Cancelling Sleeve
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the steering wheel bolt (A), and tighten it.



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Fig. 13: Installing Steering Wheel Bolt And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Connect the horn switch connector.
5. Install the driver's airbag, and confirm that the system is operating properly (see **DRIVER'S AIRBAG REPLACEMENT**).
6. Check the horn and turn signal canceling for proper operation.
7. Reconnect the battery, and do the following:
 - Enter the anti-theft codes for the radio, then reset the customer's radio presets.

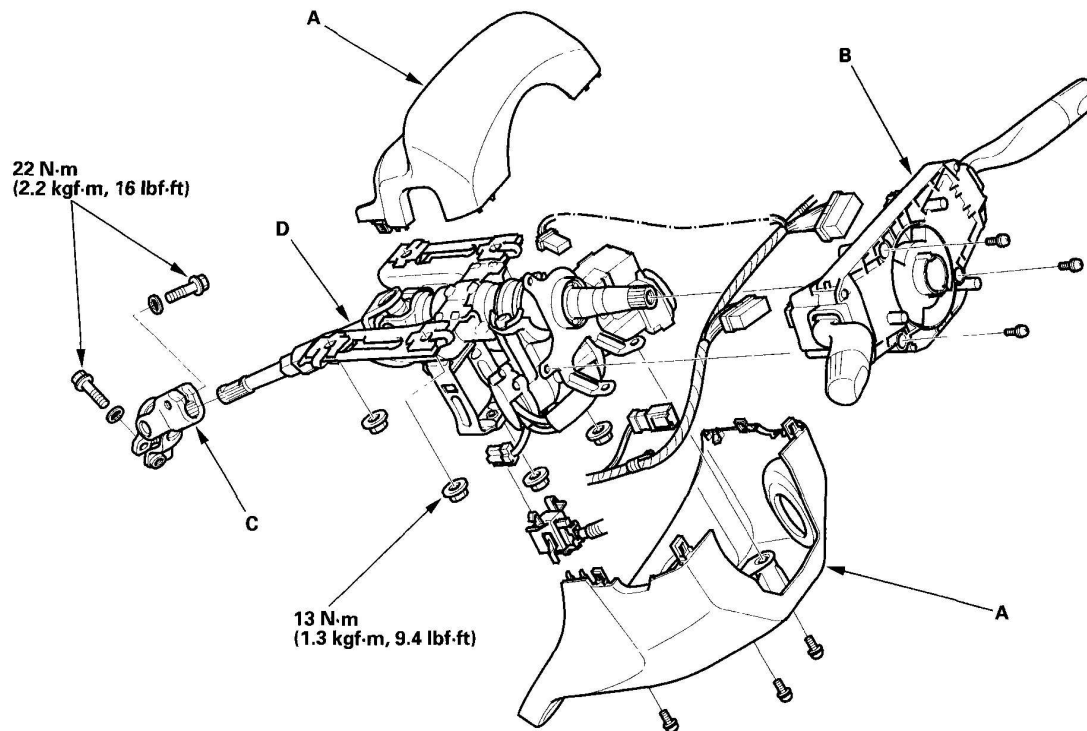
- Set the clock.
 - Do the ECM idle learn procedure (see **ECM IDLE LEARN PROCEDURE**).
8. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
 9. If the IMA battery level gauge (BAT) displays no segments, start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.
 10. Reinstall the No. 15 EPS (40 A) fuse.

STEERING COLUMN REMOVAL AND INSTALLATION

SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX**) and the precautions and procedures (see **PRECAUTIONS AND PROCEDURES**) before performing repairs or service.

REMOVAL

1. Make sure you have the anti-theft codes for the radio, then write down the radio presets.
2. Disconnect the negative cable from the battery.
3. Remove the driver's airbag (see **DRIVER'S AIRBAG REPLACEMENT**).
4. Remove the steering wheel (see **STEERING WHEEL REMOVAL**).
5. Remove the cable reel (see **CABLE REEL REPLACEMENT**).
6. Remove the column covers (A).



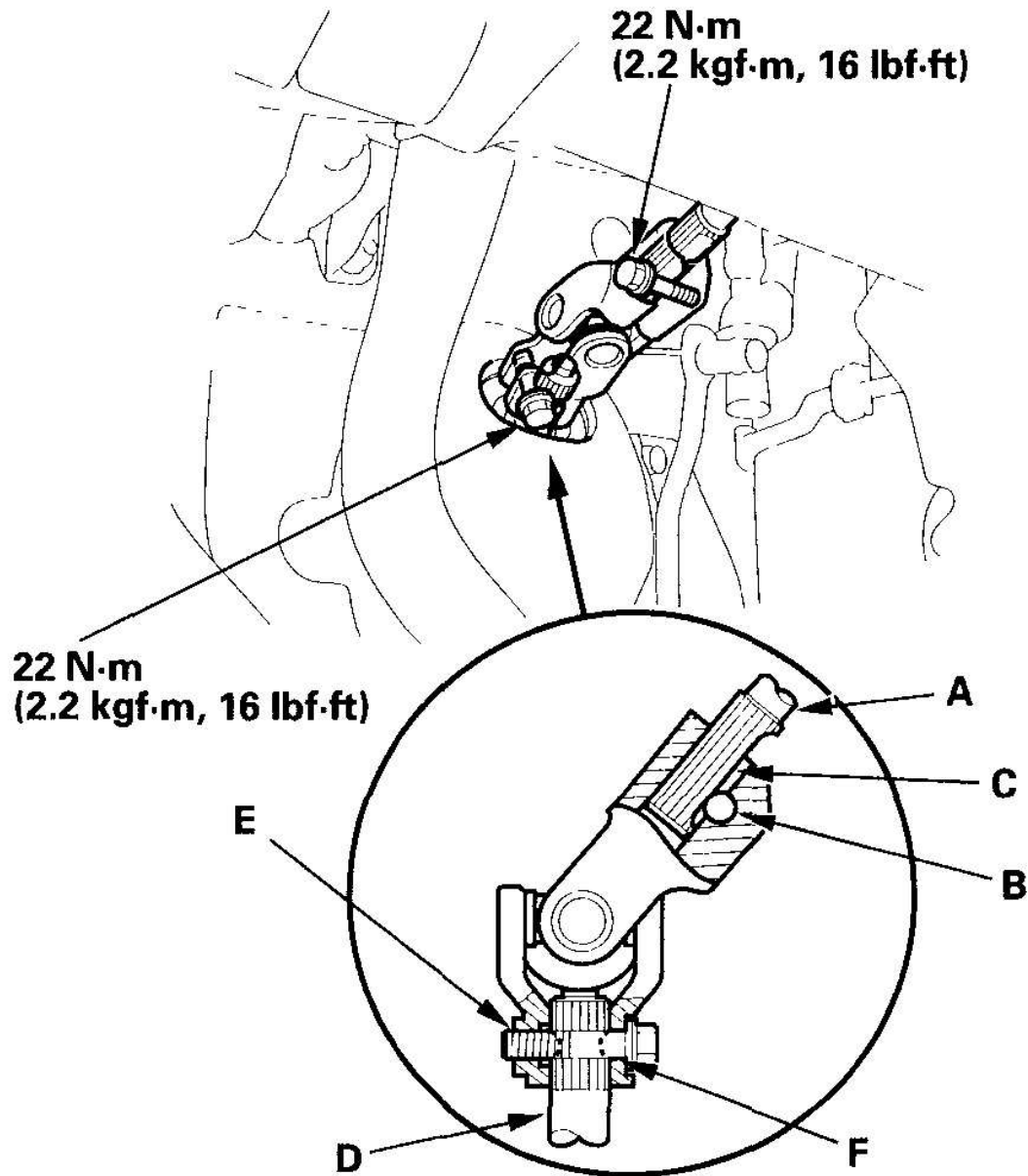
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Fig. 14: Exploded View Of Steering Column And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the combination switch assembly (B) from the steering column shaft by disconnecting the connectors.
8. Disconnect the ignition switch connectors.
9. Disconnect the steering joint (C), and remove it from the column shaft.
10. Remove the steering column (D) by removing the attaching nuts.

INSTALLATION

1. Install the steering column, and make sure the wires are not caught or pinched by any parts.
2. Insert the upper end of the steering joint onto the steering shaft (A) (line up the bolt hole (B) with the flat portion (C) on the shaft).



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Fig. 15: Installing Steering Column And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

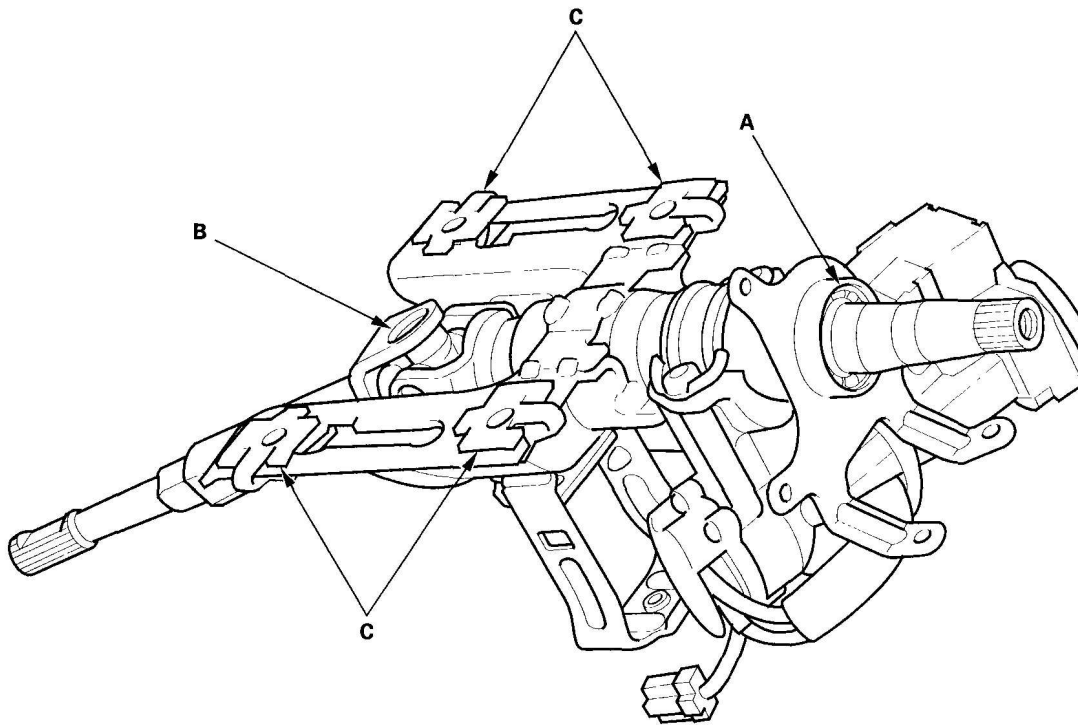
3. Slip the lower end of the steering joint onto the pinion shaft (D) (line up the bolt hole (E) with the groove (F) around the shaft), and loosely install the lower

joint bolt. Be sure that the lower joint bolt is securely in the groove in the pinion shaft.

4. Pull on the steering joint to make sure that the steering joint is fully seated. Then install the upper joint bolt and tighten both joint bolts.
5. Finish the installation, and note these items:
 - Make sure the wire harness is routed and fastened properly.
 - Make sure the connectors are properly connected.
 - Reinstall the steering wheel (see **STEERING WHEEL INSTALLATION**).
 - Reconnect the battery cable:
 - Enter the anti-theft codes for the radio, then reset the customer's radio presets.
 - Set the clock.
 - Do the ECM idle learn procedure (see **ECM IDLE LEARN PROCEDURE**).
 - Verify horn and turn signal switch operation.
 - Check wheel alignment (see **WHEEL ALIGNMENT**).
6. Remove the No. 15 EPS (40 A) fuse from the under-hood fuse/relay box.
7. If the IMA battery level gauge (BAT) displays no segments, start the engine, and hold it between 3,500 RPM and 4,000 RPM without load (in Park or neutral) until the BAT displays at least three segments.
8. Reinstall the No. 15 EPS (40 A) fuse.

STEERING COLUMN INSPECTION

- Check the steering column ball bearing (A) and the steering joint bearings (B) for play and proper movement. If any bearing is noisy or has excessive play, replace the steering column as an assembly.
- Check the sliding capsules (C) for distortion or breakage. If there is distortion or breakage, replace the steering column as an assembly.

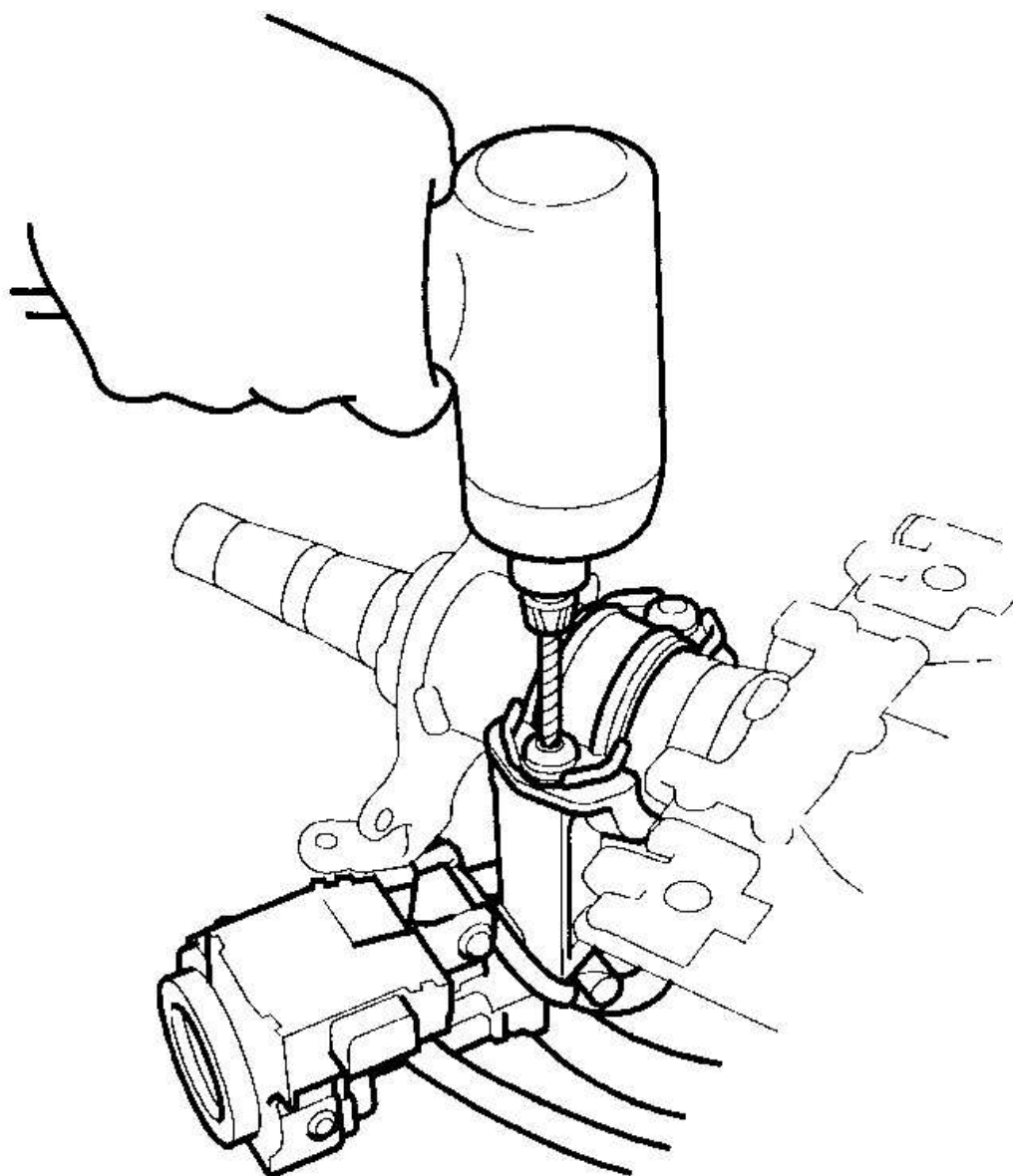


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Fig. 16: Checking Steering Column Ball Bearing And Steering Joint Bearings
Courtesy of AMERICAN HONDA MOTOR CO., INC.

STEERING LOCK REPLACEMENT

1. Remove the steering column (see **STEERING COLUMN REMOVAL AND INSTALLATION**).
2. Center punch each of the two shear bolts, and drill their heads off with a 5 mm (3/16 in.) drill bit. Be careful not to damage the switch body when removing the shear bolts.



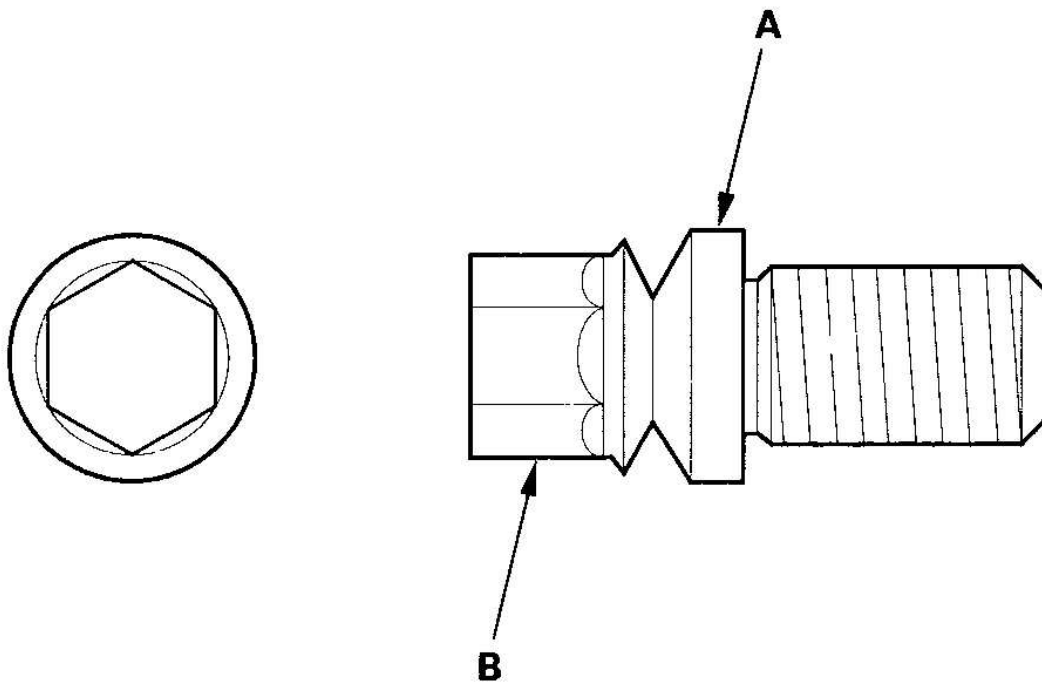
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Fig. 17: Removing Steering Column

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the shear bolts from the switch body.

4. Install the switch body without the ignition key inserted.
5. Loosely tighten the new shear bolts.
6. Insert the ignition key, and check for proper operation of the steering wheel lock and that the ignition key turns freely.
7. Tighten the shear bolts (A) until the hex heads (B) twist off.



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Fig. 18: Tightening Shear Bolts Until The Hex Heads Twist Off
Courtesy of AMERICAN HONDA MOTOR CO., INC.

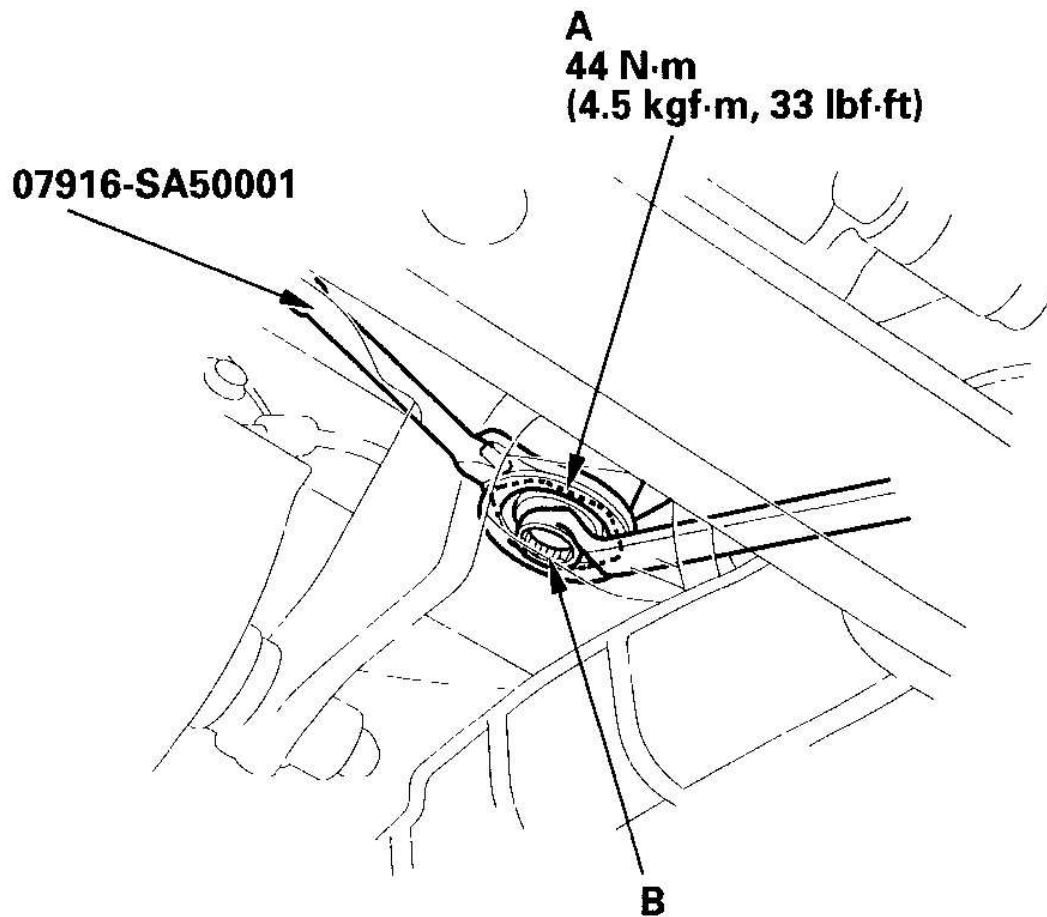
RACK GUIDE ADJUSTMENT

Special Tools Required

Locknut wrench, 40 mm 07916-SA50001

1. Set the wheels in the straight ahead position.

2. Remove the left side of splash shield (see step 3 on **STABILIZER BAR REPLACEMENT**).
3. Loosen the rack guide screw locknut (A) with the special tool, then remove the rack guide screw (B).



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Fig. 19: Removing Rack Guide Screw And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the old sealant from the rack guide screw, and apply new sealant all around the threads. Loosely install the rack guide screw on the steering gearbox.

5. Tighten the rack guide screw to 25 N.m (2.5 kgf.m, 18 lbf.ft), then loosen it.
6. Retighten the rack guide screw to 3.9 N.m (0.4 kgf.m, 2.9 lbf.ft) then back it off to specified angle.

Specified return angle: 15° Max.

7. Tighten the locknut while holding the rack guide screw.
8. Check for unusual steering effort through the complete turning range.
9. Check the steering wheel rotational play and the power assist (see **STEERING WHEEL ROTATIONAL PLAY CHECK**).
10. Install the splash shield (see step 3 on **STABILIZER BAR REPLACEMENT**).