

2007-08 SUSPENSION

Front Suspension - Element

KNUCKLE/HUB/WHEEL BEARING REPLACEMENT

EXPLODED VIEW

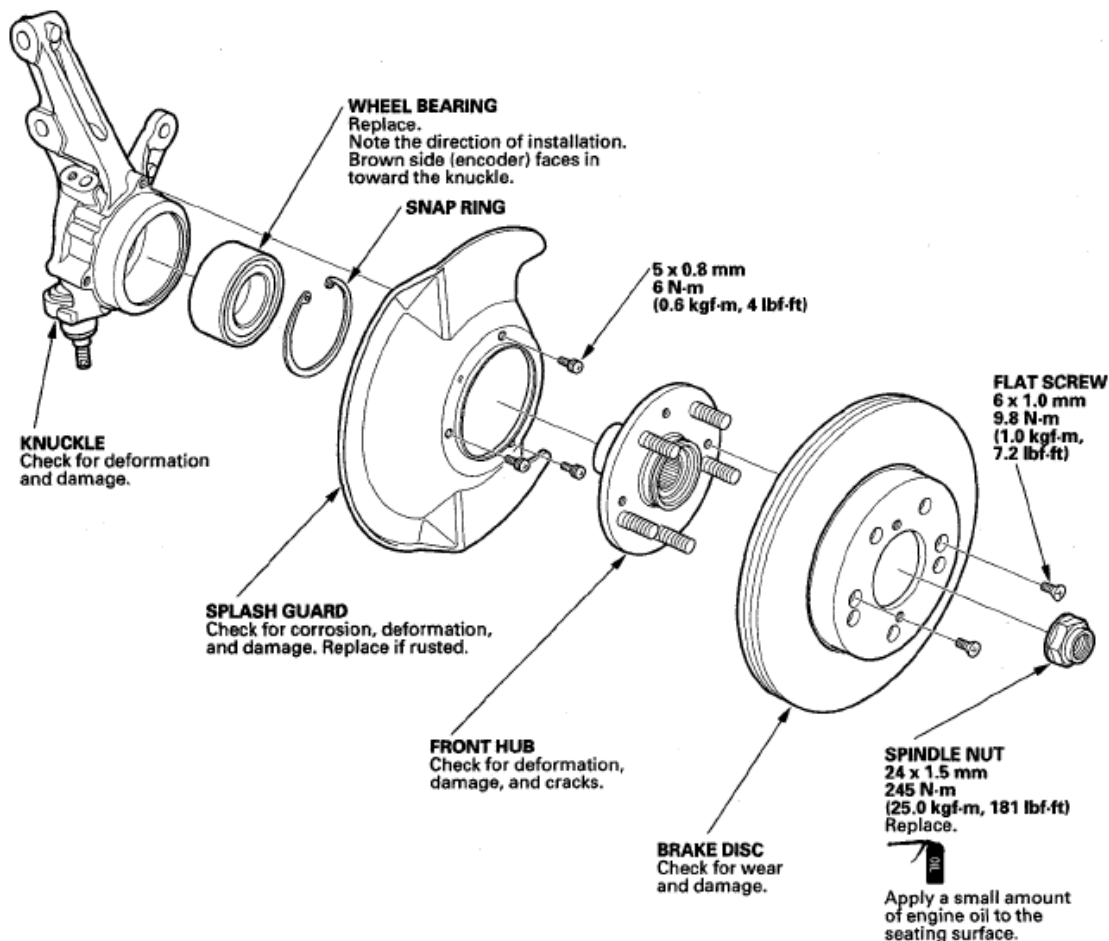


Fig. 1: Exploded View Of Knuckle/Hub/Wheel Bearing With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Special Tools Required

- Ball joint thread protector, 12 mm 07AAF-SDAA100
- Hub dis/assembly tool 07GAF-SD40100
- Ball joint remover, 32 mm 07MAC-SL0A102
- Ball joint remover, 28 mm 07MAC-SL0A202
- Ball joint thread protector, 14 mm 071AF-S3VA000

- Attachment, 62 x 68 mm 07746-0010500
- Driver 07749-0010000
- Support base 07965-SD90100

KNUCKLE/HUB REPLACEMENT

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the wheel nuts and front wheel.

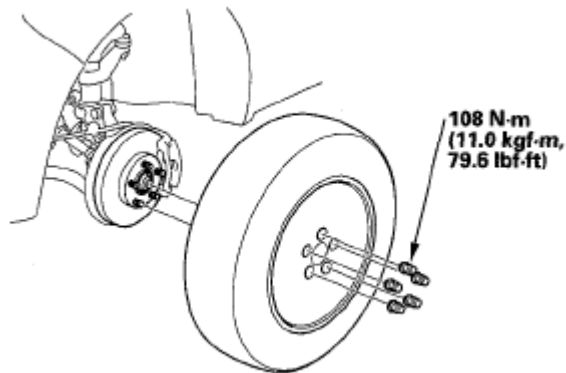


Fig. 2: Identifying Front Wheel With Wheel Nuts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the brake hose bracket mounting bolt (A).

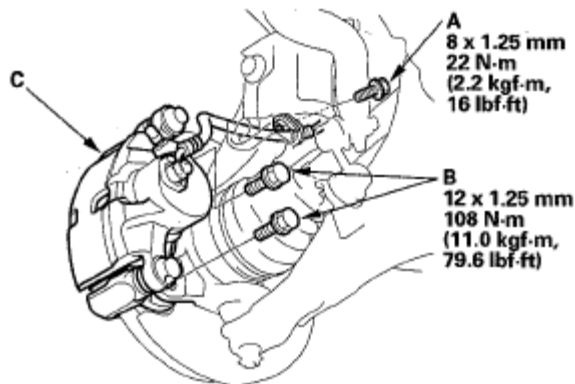


Fig. 3: Identifying Brake Hose Bracket Mounting Bolt With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Raise the stake (A), then remove the spindle nut (B).

2007 Honda Element EX

2007-08 SUSPENSION Front Suspension - Element

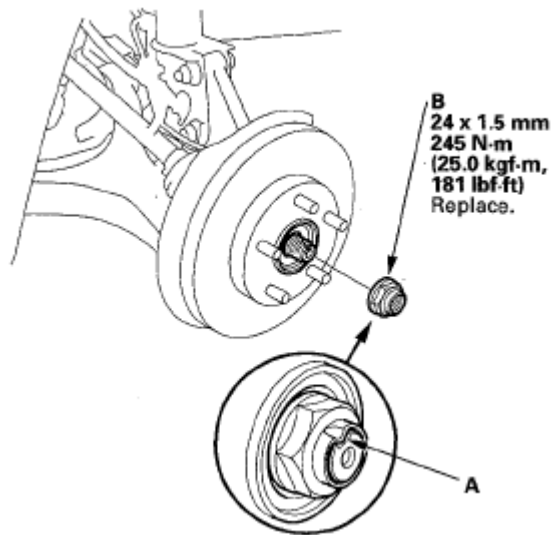


Fig. 4: Identifying Spindle Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the brake disc (see **FRONT BRAKE DISC REPLACEMENT**).
7. Check the front hub for damage and cracks.
8. Remove the flange bolt (A) and wheel sensor (B) from the knuckle. Do not disconnect the wheel sensor connector.

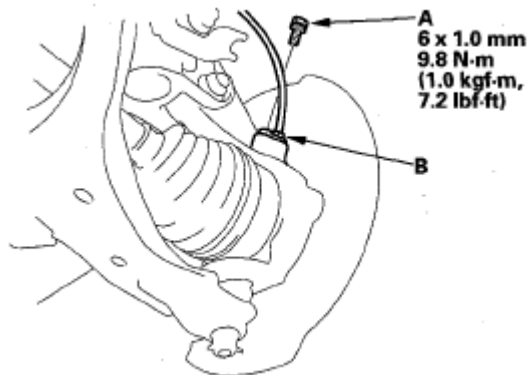


Fig. 5: Identifying Wheel Sensor With Flange Bolt And Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the flange nut (A) while holding the joint pin (B) with a hex wrench (C), and disconnect the stabilizer link (D) from the lower arm (E).

NOTE: Use a new flange nut during reassembly.

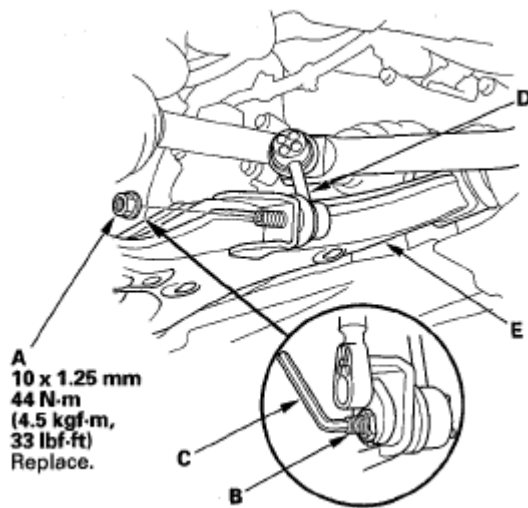


Fig. 6: Identifying Joint Pin Flange Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Remove the lock pin (A) from the knuckle ball joint, then remove the castle nut (B).

NOTE: During installation, insert the lock pin as shown after tightening the new nut.

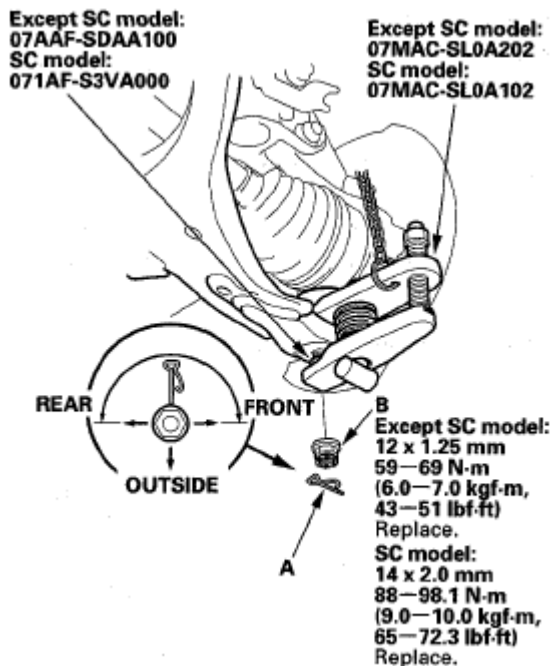


Fig. 7: Identifying Knuckle Ball Joint Lock With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Disconnect the lower arm from the knuckle using the ball joint thread protector and ball joint remover

(see **BALL JOINT REMOVAL**).

12. Loosen the damper pinch bolts (A) while holding the nuts (B), and remove the bolts and the nuts.

NOTE: During installation, install new damper pinch bolts and new nuts.

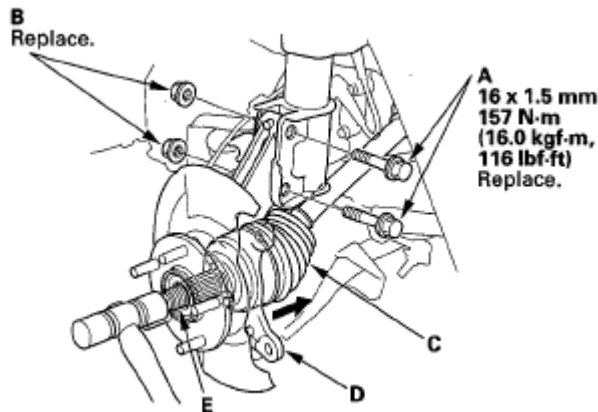


Fig. 8: Identifying Pinch Bolts And Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the driveshaft outboard joint (C) from the knuckle (D) by tapping the driveshaft end (E) with a plastic hammer while drawing the hub outward, then remove the knuckle.

NOTE:

- Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.
- During installation, apply grease to the mating surfaces of the wheel bearing and the driveshaft outboard joint (see step 1 on page 16-18).

14. Install the knuckle/hub in the reverse order of removal, and note these items:
- First install all the components, and lightly tighten the bolts and nuts, then raise the suspension with a floor jack to load it with the vehicle's weight before fully tightening to the specified torque values. Do not place the jack against the ball joint pin of the knuckle.
 - Be careful not to damage the ball joint boot when installing the knuckle.
 - Before connecting the knuckle ball joint to the lower arm, degrease the threaded section and tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section, and mating surface of the castle nut.
 - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
 - Use a new spindle nut during reassembly.
 - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
 - Before installing the brake disc, clean the mating surfaces of the front hub and the inside of the brake disc.

- Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.
- Check the wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

WHEEL BEARING REPLACEMENT

1. Separate the hub (A) from the knuckle (B) using the hub dis/assembly tool and a hydraulic press. Hold the knuckle with the attachment (C) of the hydraulic press or equivalent tool. Be careful not to deform the splash guard (D). Hold onto the hub to keep it from falling when pressed clear.

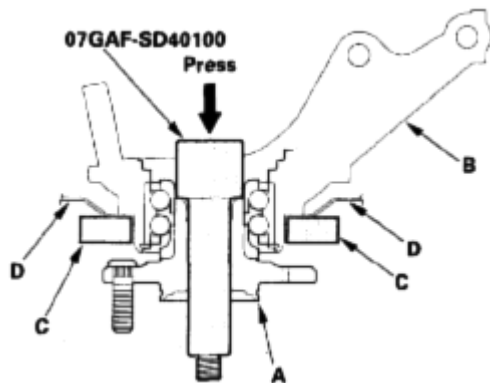


Fig. 9: Separating Hub From Knuckle Using Hub Dis/Assembly Tool And Hydraulic Press
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Press the wheel bearing inner race (A) out of the hub (B) using the hub dis/assembly tool, a commercially available bearing separator (C), and a press.

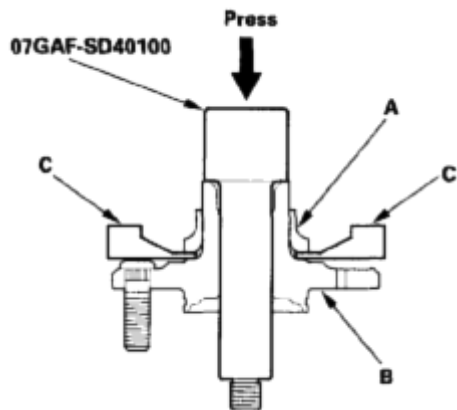


Fig. 10: Pressing Wheel Bearing Inner Race Out Of Hub Using Hub Dis/Assembly Tool
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the snap ring (A) and the splash guard (B) from the knuckle (C).

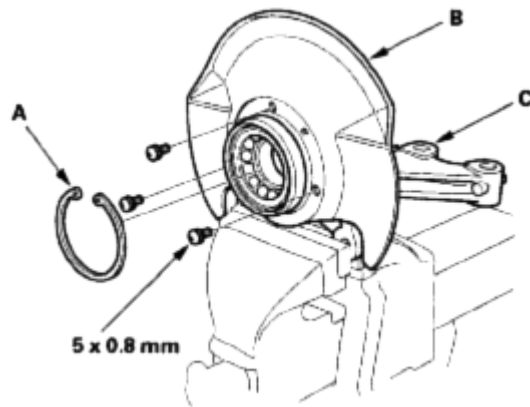


Fig. 11: Identifying Snap Ring, Splash Guard And Knuckle
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Press the wheel bearing (A) out of the knuckle (B) using the driver, the attachment, and a press.

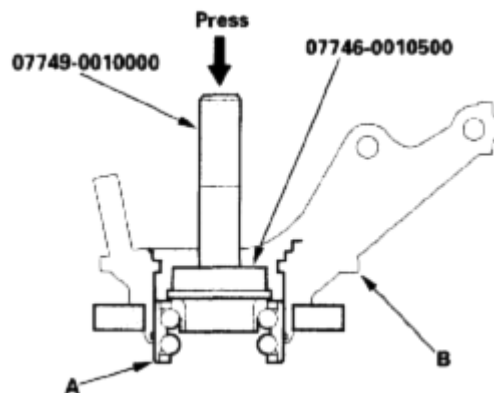


Fig. 12: Pressing Wheel Bearing Out Of Knuckle Using Driver
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Wash the knuckle and hub thoroughly in a high flash point solvent before reassembly.
6. Press a new wheel bearing (A) into the knuckle (B) using the old bearing (C), a steel plate (D), the support base, and a press. Be careful not to damage the bearing seal (E).

NOTE:

- Install the wheel bearing with the magnetic encoder (F) (brown color) toward the inside of the knuckle.
- Remove any oil, grease, dust, metal debris, and other foreign material from the encoder surface.
- Keep magnetic tools away from the encoder surface.
- Be careful not to damage the encoder surface when you insert the wheel bearing.

2007 Honda Element EX

2007-08 SUSPENSION Front Suspension - Element

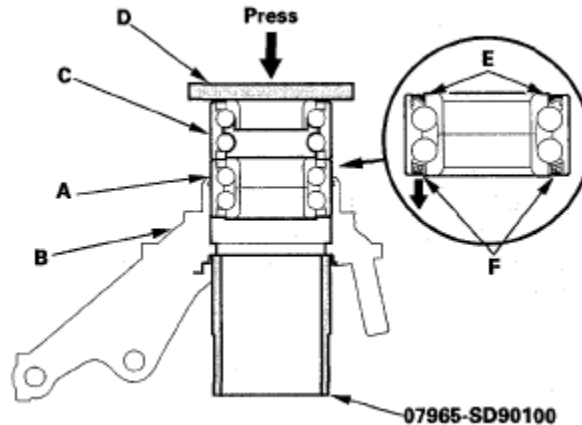


Fig. 13: Pressing Wheel Bearing Into Knuckle Using Old Bearing, Steel Plate And Support Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the snap ring (A) securely in the knuckle (B).

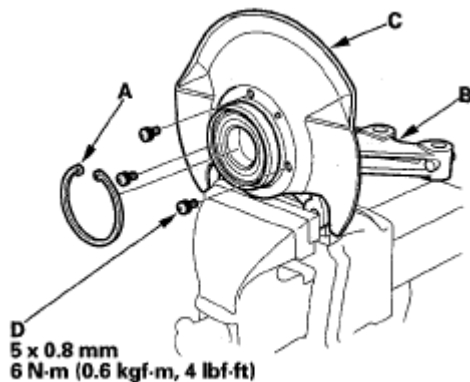


Fig. 14: Identifying Knuckle Snap Ring With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Install the splash guard (C), and tighten the screws (D) to the specified torque value.
9. Press a wheel bearing (A) onto the hub (B) using the driver, the attachment, the support base, and a press.

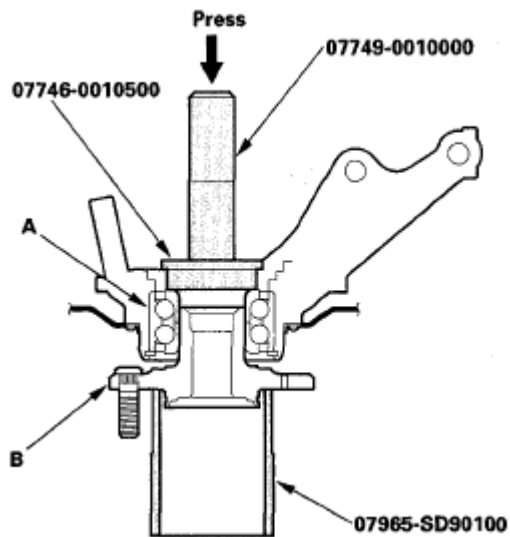


Fig. 15: Pressing Wheel Bearing Onto Hub Using Driver
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

BALL JOINT BOOT REPLACEMENT

Special Tools Required

- Ball joint boot clip guide 07GAG-SD40700
- Front hub dis/assembly tool 07965-SA50500

1. Remove the knuckle (see **KNUCKLE/HUB REPLACEMENT**).
2. Remove the boot. Check for a gap between the ball joint (A) and the knuckle. If there is a gap, replace the knuckle assembly. Do not press the ball joint back into the knuckle.

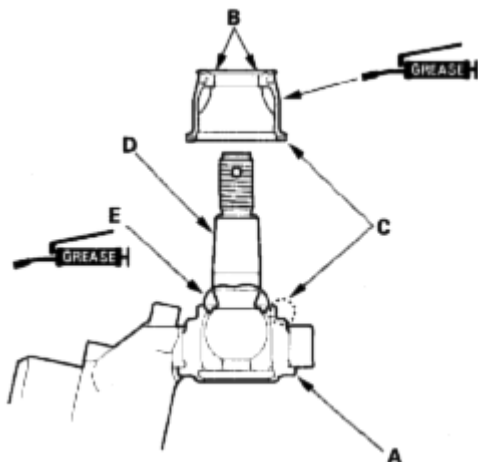


Fig. 16: Identifying Gap Between Ball Joint And Knuckle
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pack the interior and lip (B) of a new boot with fresh grease. Keep the grease off of the boot-to-knuckle mating surfaces (C).
4. Wipe the grease off the tapered section of the ball joint pin (D), and pack fresh grease onto the base (E). Do not let dirt or other foreign materials get into the boot.
5. Install the boot onto the ball joint pin, then squeeze it gently to force out any air.
6. Except SC model: Press the boot with the hub dis/assembly tool until the bottom seats on the knuckle (A) all the way around.

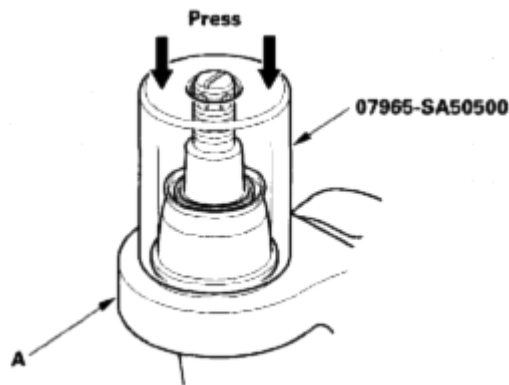


Fig. 17: Pressing Boot With Hub Dis/Assembly Tool
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. SC model: Adjust the ball joint boot clip guide with the adjusting bolt (A) until its base is just above the groove around the bottom of the boot. Then slide the clip (B) over the tool and into position on the boot.

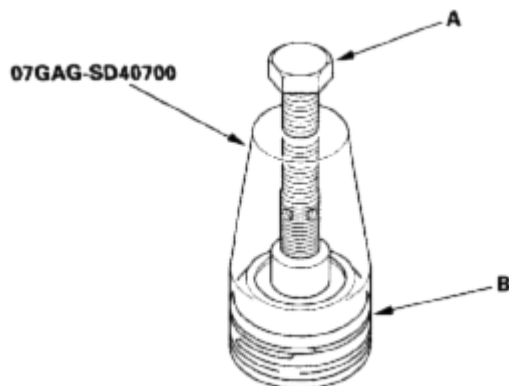


Fig. 18: Adjusting Ball Joint Boot Clip Guide With Adjusting Bolt
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. After installing a boot, wipe any grease off the exposed portion of the ball joint pin.
9. Install the knuckle (see **KNUCKLE/HUB REPLACEMENT**).

LOWER ARM REPLACEMENT

Special Tools Required

- Ball joint thread protector, 12 mm 07AAF-SDAA100
 - Ball joint remover, 32 mm 07MAC-SL0A102
 - Ball joint remover, 28 mm 07MAC-SL0A202
 - Ball joint thread protector, 14 mm 071AF-S3VA000
1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
 2. Remove the front wheel.
 3. Remove the flange nut (A) while holding the joint pin (B) with a hex wrench (C), and disconnect the stabilizer link (D) from the lower arm (E).

NOTE: Use a new flange nut during reassembly.

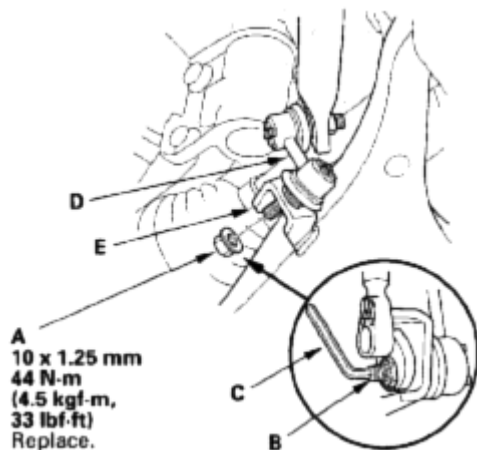


Fig. 19: Identifying Joint Pin Flange Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the lock pin (A) from the knuckle ball joint, then remove the castle nut (B).

NOTE: During installation, insert the lock pin as shown after tightening the new nut.

2007 Honda Element EX

2007-08 SUSPENSION Front Suspension - Element

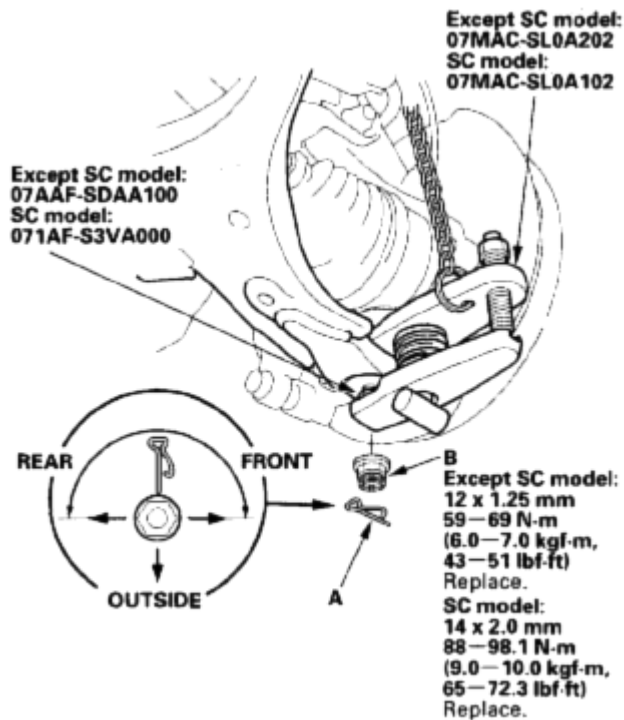


Fig. 20: Identifying Knuckle Ball Joint Lock Pin With Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Disconnect the lower arm from the knuckle using the ball joint thread protector and ball joint remover (see **BALL JOINT REMOVAL**).
6. Remove the flange bolts, and remove the lower arm (A).

NOTE: Use new flange bolts during reassembly.

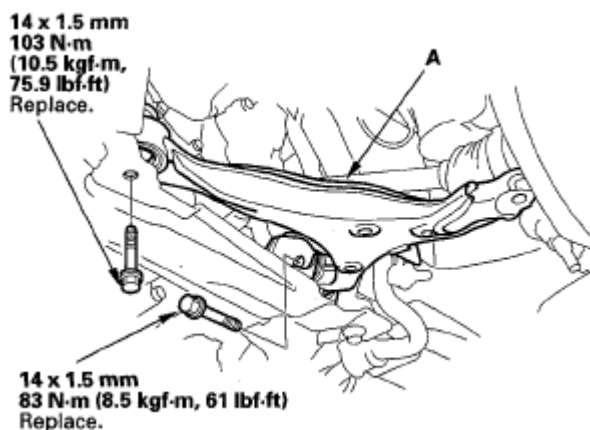


Fig. 21: Identifying Lower Arm With Flange Bolts And Torque Specifications
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the lower arm in the reverse order of removal, and note these items:
 - First install all the components, and lightly tighten the bolts and nuts, then raise the suspension with a floor jack to load it with the vehicle's weight before fully tightening it to the specified torque values. Do not place the jack against the ball joint pin of the knuckle.
 - Be careful not to damage the ball joint boot when connecting the lower arm to the knuckle.
 - Before connecting the knuckle ball joint to the lower arm, degrease the threaded section and tapered portion of the ball joint pin, the ball joint connecting hole, the threaded section, and mating surface of the castle nut.
 - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
 - Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.
 - Check the wheel alignment, and adjust it if necessary (see WHEEL ALIGNMENT).

STABILIZER LINK REMOVAL/INSTALLATION

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see LIFT AND SUPPORT POINTS).
2. Remove the front wheel.
3. Remove the self-locking nut (A) and flange nut (B) while holding the respective joint pin (C) with a hex wrench (D), and remove the stabilizer link (E).

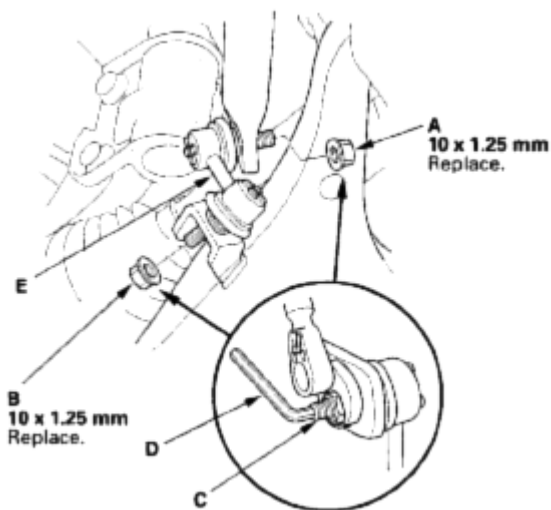


Fig. 22: Identifying Self-Locking Nut And Flange Nut
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the stabilizer link (A) on the stabilizer bar (B) and lower arm (C) with the joint pins (D) set at the center of their range of movement.

NOTE:

- **Except SC model: The left stabilizer has a yellow paint mark (E), while the right stabilizer link has a white paint mark.**

- SC model: The left stabilizer link has a red paint mark, while the right stabilizer link has a blue paint mark.

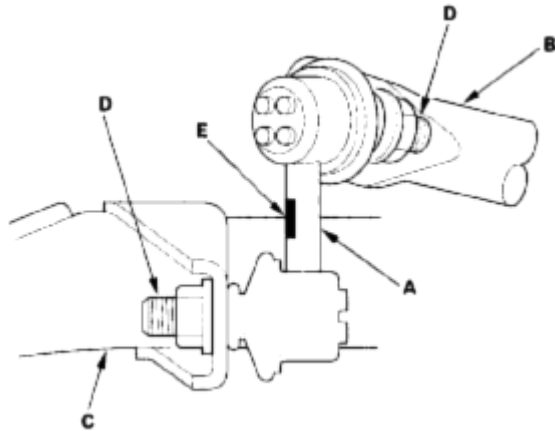


Fig. 23: Identifying Stabilizer Link, Stabilizer Bar, Lower Arm And Joint Pins
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install a new self-locking nut and a new flange nut, and lightly tighten them.
6. Place a jack under the lower arm, and raise the suspension to load it with the vehicle's weight.

NOTE: Do not place the jack against the ball joint pin.

7. Tighten the self-locking nut (A) and flange nut (B) to the specified torque values while holding the respective joint pin (C) with a hex wrench (D).

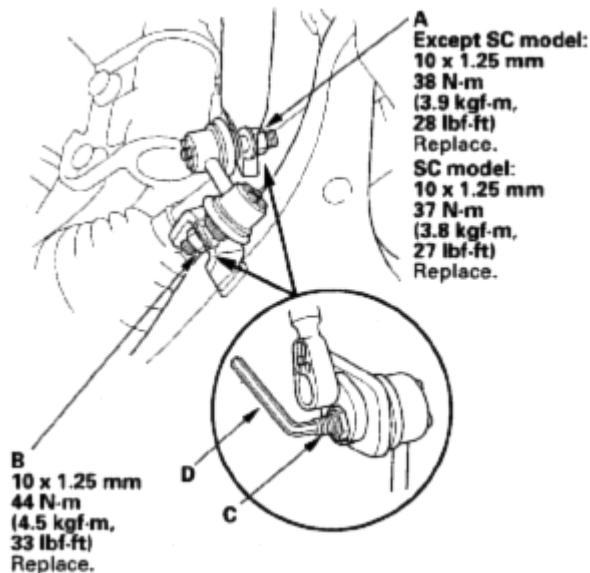


Fig. 24: Tightening Self-Locking Nut And Flange Nut With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel, and test-drive the vehicle.
9. After 5 minutes of driving, torque the self-locking nut torque value again.

STABILIZER BAR REPLACEMENT

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheels.
3. Disconnect the stabilizer links from the stabilizer bar on the right and left sides (see **STABILIZER LINK REMOVAL/INSTALLATION**).
4. Remove the flange bolts (A) and the bushing holders (B), then remove the bushings (C) and the stabilizer bar (D).

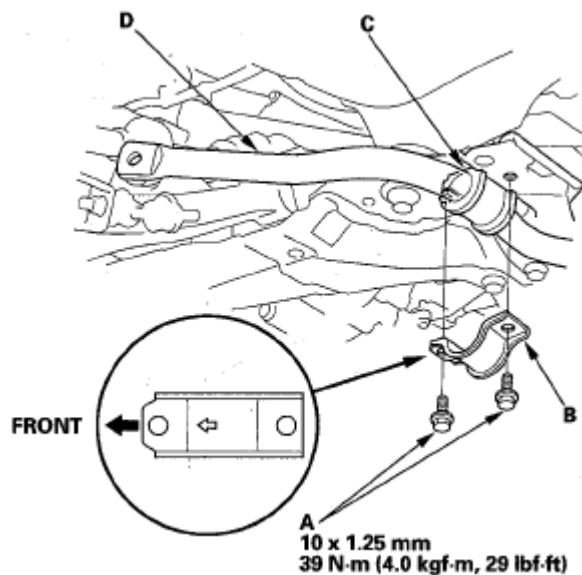


Fig. 25: Identifying Bushing Holders Flange Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the stabilizer bar in the reverse order of removal, and note these items:
 - Note the right and left direction of the stabilizer bar. The paint mark (A) on the stabilizer bar shows the right side (except SC model).
 - Do not set the bushings on the bent or curved part of the stabilizer bar.
 - Note the fore/aft direction of the bushings and the bushing holders.
 - Refer to stabilizer link removal/installation to connect the stabilizer bar to the links (see **STABILIZER LINK REMOVAL/INSTALLATION**).
 - Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.

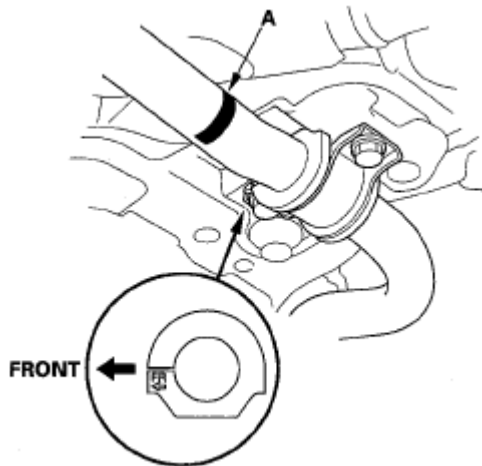


Fig. 26: Identifying Stabilizer Bar

Courtesy of AMERICAN HONDA MOTOR CO., INC.

DAMPER/SPRING REMOVAL AND INSTALLATION

Special Tools Required

- Ball joint thread protector, 12 mm 07AAF-SDAA100
- Ball joint remover, 28 mm 07MAC-SL0A202

REMOVAL

1. Raise the front of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**).
2. Remove the front wheel.
3. Remove the cotter pin (A) from the tie-rod end ball joint, then remove the nut (B).

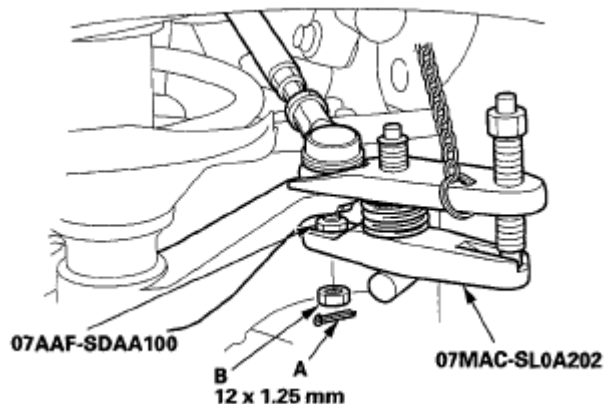


Fig. 27: Identifying Cotter Pin And Nut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the tie-rod end from the steering arm on the damper using the ball joint thread protector and ball joint remover (see **BALL JOINT REMOVAL**).
5. Remove the bolts, and remove the wheel sensor harness bracket (A) and brake hose bracket (B) from the damper. Do not disconnect the wheel sensor connector.

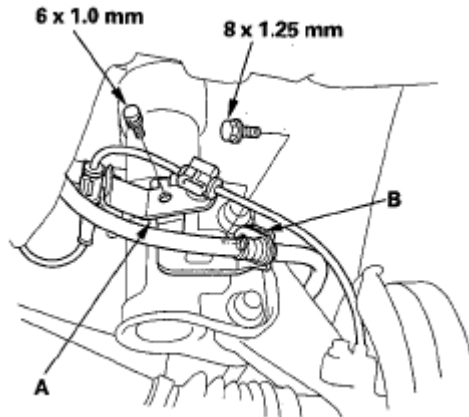


Fig. 28: Identifying Wheel Sensor Harness Bracket And Brake Hose Bracket Bolts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove the damper pinch bolts (A) while holding the nuts (B).

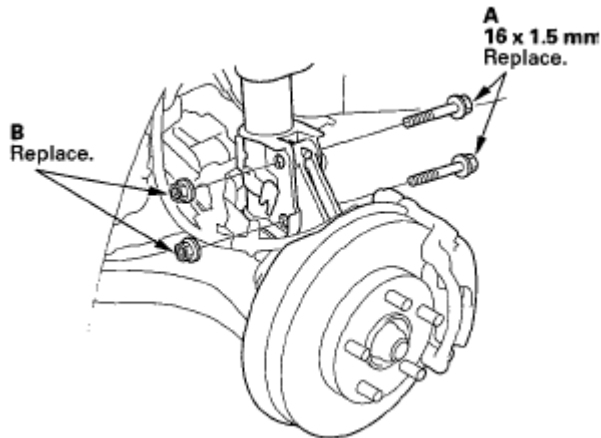


Fig. 29: Identifying Damper Pinch Bolts And Nuts
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the flange nuts (A) from the top of the damper.

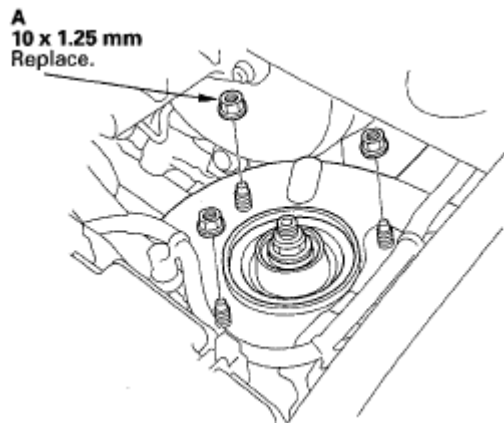


Fig. 30: Identifying Damper Flange Nuts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Lower the lower arm, and remove the damper assembly (A).

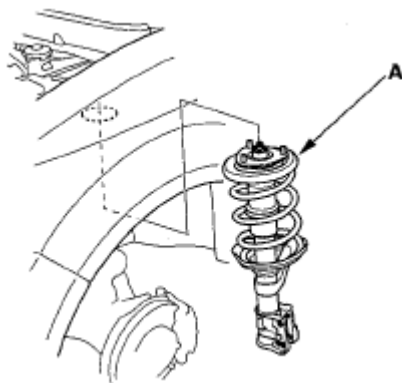


Fig. 31: Identifying Damper Assembly
Courtesy of AMERICAN HONDA MOTOR CO., INC.

INSTALLATION

1. Lower the lower arm, and position the damper assembly in the body. Turn the damper mounting base so the "delta L" or "delta R" mark (A) faces toward the outside of the vehicle.

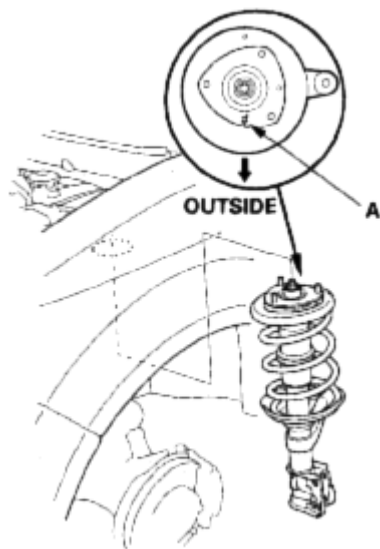


Fig. 32: Identifying Damper Mounting Base
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Loosely install the new flange nuts (A) onto the top of the damper.

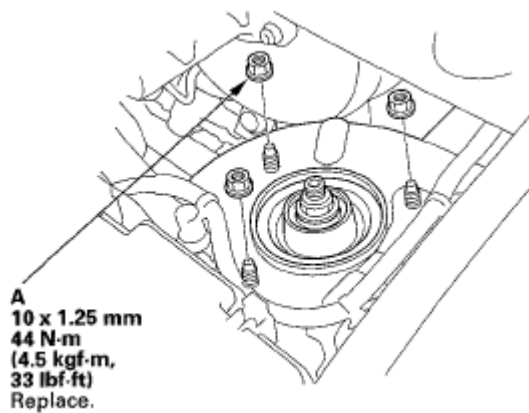


Fig. 33: Identifying Damper Flange Nuts With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Position the damper on the knuckle, and install the new damper pinch bolts (A) and the new flange nuts (B), and lightly tighten the nuts.

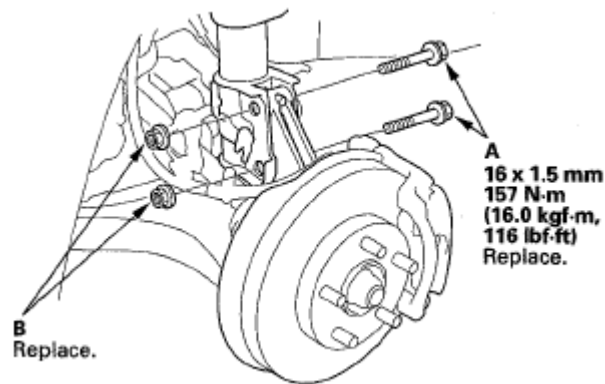


Fig. 34: Identifying Damper Pinch Bolts And Flange Nuts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Place a jack under the lower arm, and raise the suspension to load it with the vehicle's weight.

NOTE: Do not place the jack against the lower arm ball joint.

- Tighten the flange nuts on the top of the damper to the specified torque value.
- Tighten the damper pinch bolts to the specified torque value.
- Install the brake hose bracket (A) and the wheel sensor harness bracket (B) onto the damper, and tighten the bolt to the specified torque values.

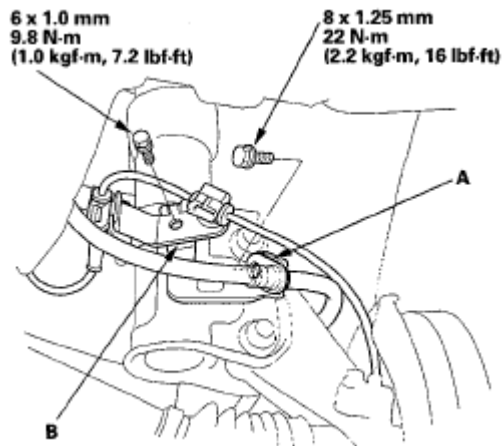


Fig. 35: Identifying Brake Hose Bracket And Wheel Sensor Harness Bracket With Torque Specifications
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Clean off any grease contamination from the ball joint tapered section and threads, then connect the tie-rod end to the steering arm. Tighten the nut (A) to the specified torque value. Install the cotter pin (B) after tightening, and bend its end as shown.

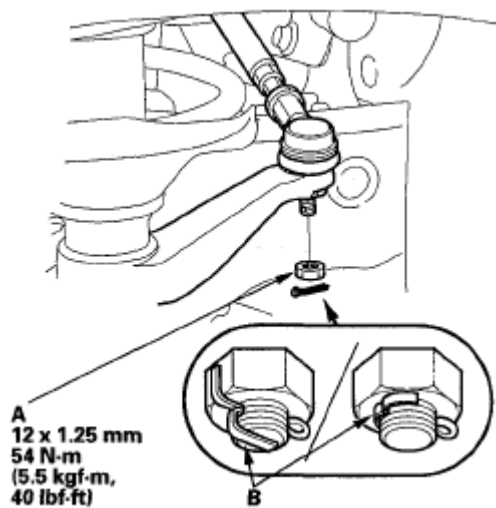


Fig. 36: Identifying Tie-Rod Nut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Clean the mating surfaces of the brake disc and the inside of the wheel, then install the front wheel.
10. Check the wheel alignment, and adjust it if necessary (see WHEEL ALIGNMENT).

DAMPER/SPRING DISASSEMBLY, INSPECTION, AND REASSEMBLY

EXPLODED VIEW

2007 Honda Element EX

2007-08 SUSPENSION Front Suspension - Element

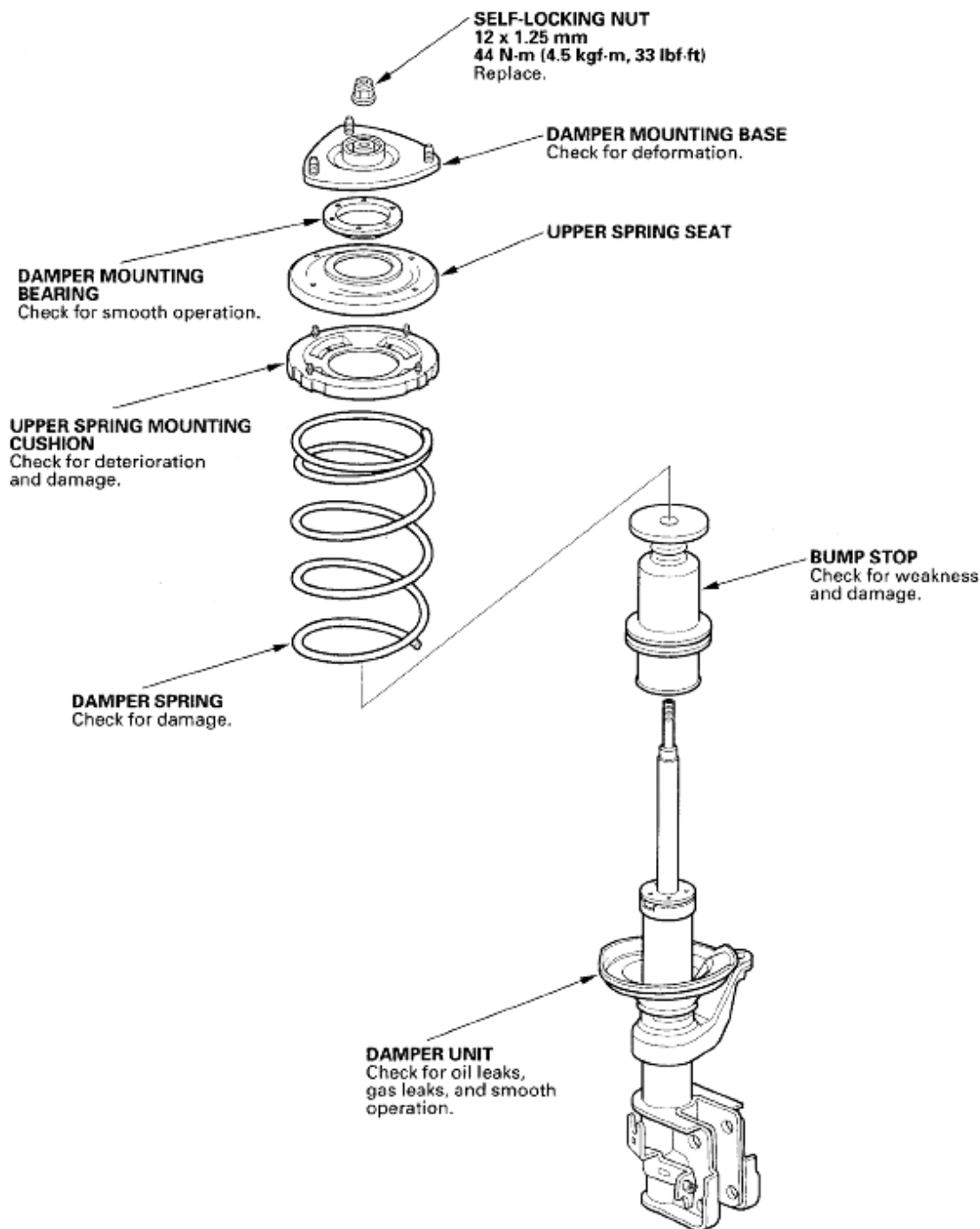


Fig. 37: Exploded View Of Damper/Spring With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: When compressing the damper spring, use a commercially available strut spring compressor (Branick MST-580A or Model 7200 or equivalent) according to the manufacturer's instructions.

DISASSEMBLY

1. Compress the damper spring, then remove the self-locking nut (A) while holding the damper shaft (B) with a hex wrench (C). Do not compress the spring more than necessary to remove the nut.

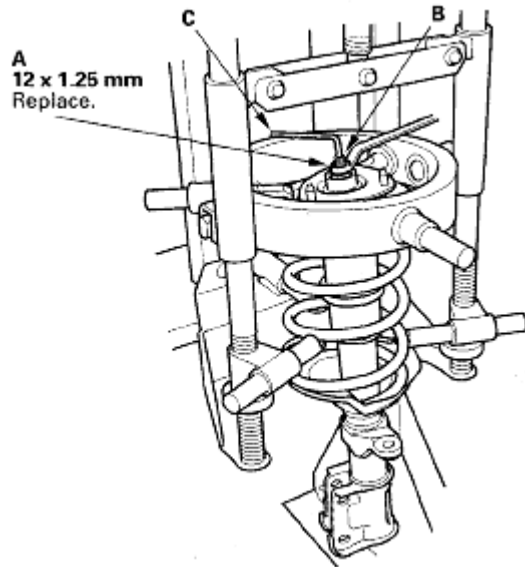


Fig. 38: Identifying Self-Locking Nut

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Release the pressure from the strut spring compressor, then disassemble the damper as shown in **Exploded View**.

INSPECTION

1. Reassemble all the parts, except for the damper mounting bearing, the upper spring seat, upper spring mounting cushion, and damper spring.
2. Compress the damper assembly by hand, and check for smooth operation through a full stroke, both compression and extension. The damper should extend smoothly and constantly when compression is released. If it does not, the gas is leaking and the damper should be replaced.

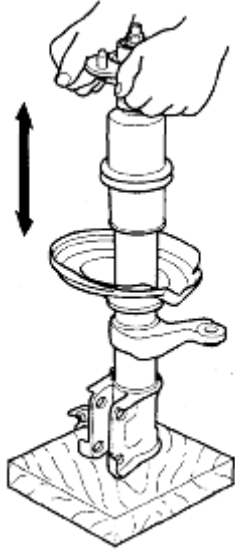


Fig. 39: Compressing Damper Assembly By Hand And Checking Smooth Operation
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Check for oil leaks, abnormal noises, and binding during these tests.

REASSEMBLY

NOTE: Refer to the EXPLODED VIEW as needed.

1. Install the upper spring mounting cushion (A) on the upper spring seat (B) by aligning the tab portion (C) on the cushion with the cutout (D) in the seat.

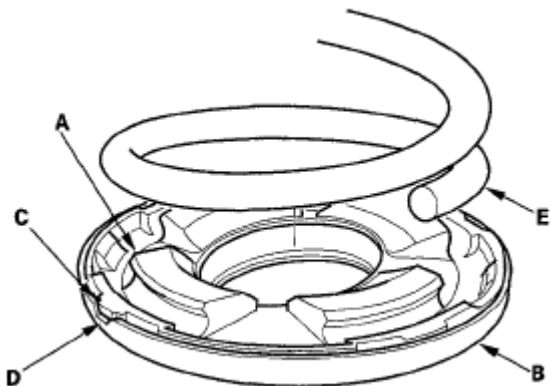


Fig. 40: Identifying Upper Spring Mounting Cushion, Upper Spring Seat, Tab Portion And Cutout
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the damper spring (E) in the groove of the cushion securely.
3. Install the damper mounting bearing and damper mounting base on the upper spring seat.
4. Install the upper spring seat and the spring on a strut spring compressor (A), and compress the spring

lightly.

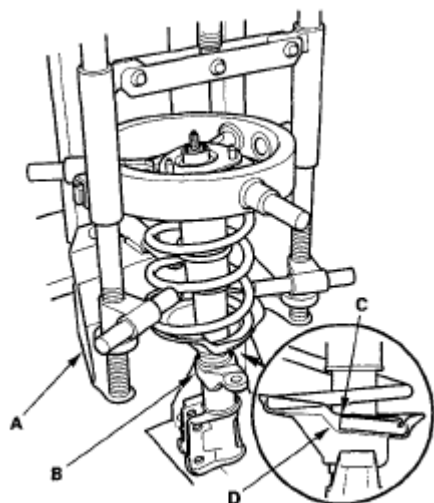


Fig. 41: Identifying Upper Spring Seat And Spring On Strut Spring Compressor
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Insert the damper unit (B) up through the compressed spring.
6. Align the bottom of the spring (C) and the stepped part (D) of the lower spring seat.
7. Align an angle (A) of the ball joint connecting hole (B) on the steering arm and the cutout (C) on the upper spring seat.

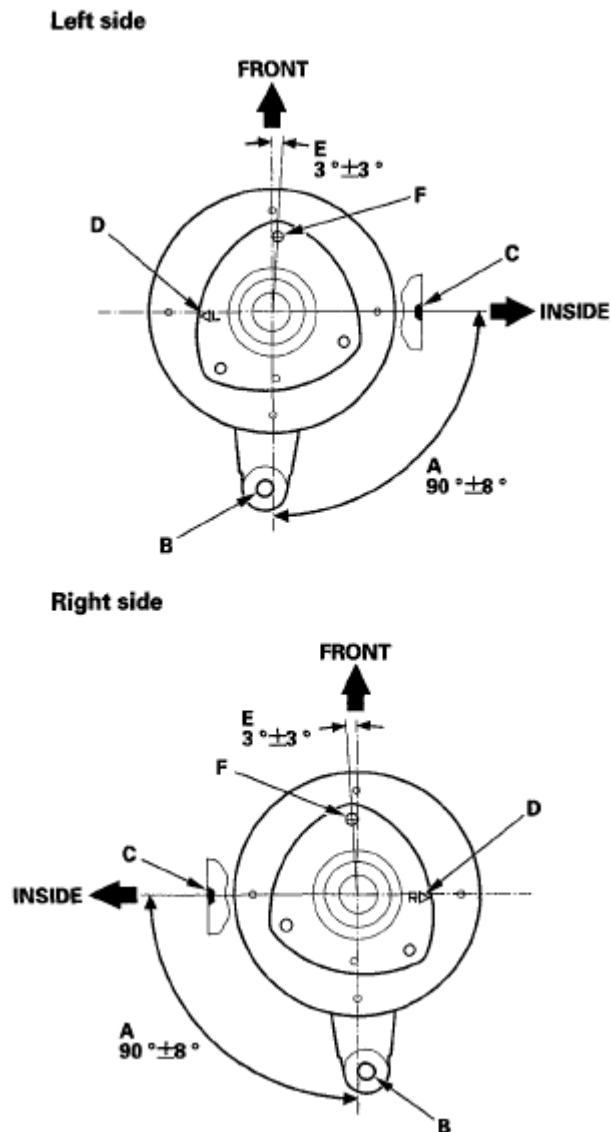


Fig. 42: Aligning Angle Of Ball Joint Connecting Hole And Cutout
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Turn the damper mounting base and L/R mark (D) faces toward the outside position, then align angle (E) of the ball joint connecting hole and stud bolt (F).
9. Hold the bottom of the damper with your hand, and compress the spring. Do not compress the spring excessively.
10. Install a new 12 mm self-locking nut (A) on the damper shaft (B).

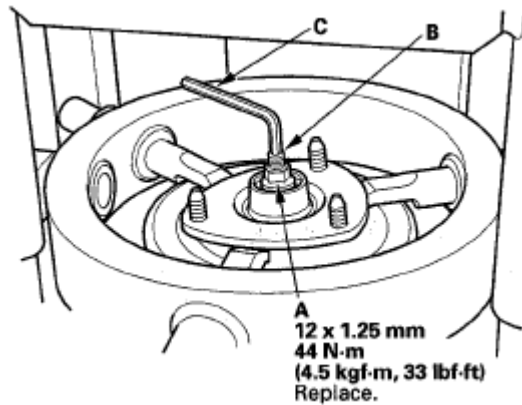


Fig. 43: Identifying Self-Locking Nut On Damper Shaft With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Hold the damper shaft with a hex wrench (C), and tighten the 12 mm self-locking nut to the specified torque value.
12. Remove the damper assembly from the strut spring compressor.