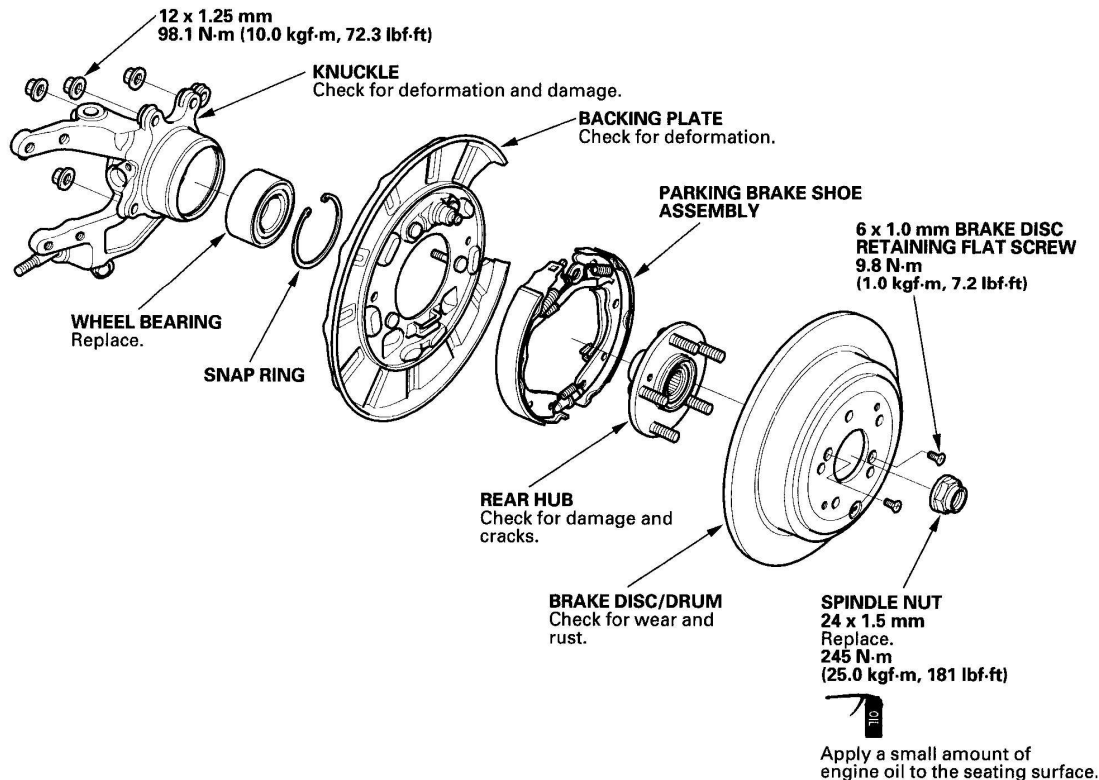


## 2003-06 SUSPENSION

### Rear Suspension - MDX

## KNUCKLE/HUB/WHEEL BEARING REPLACEMENT

### EXPLODED VIEW



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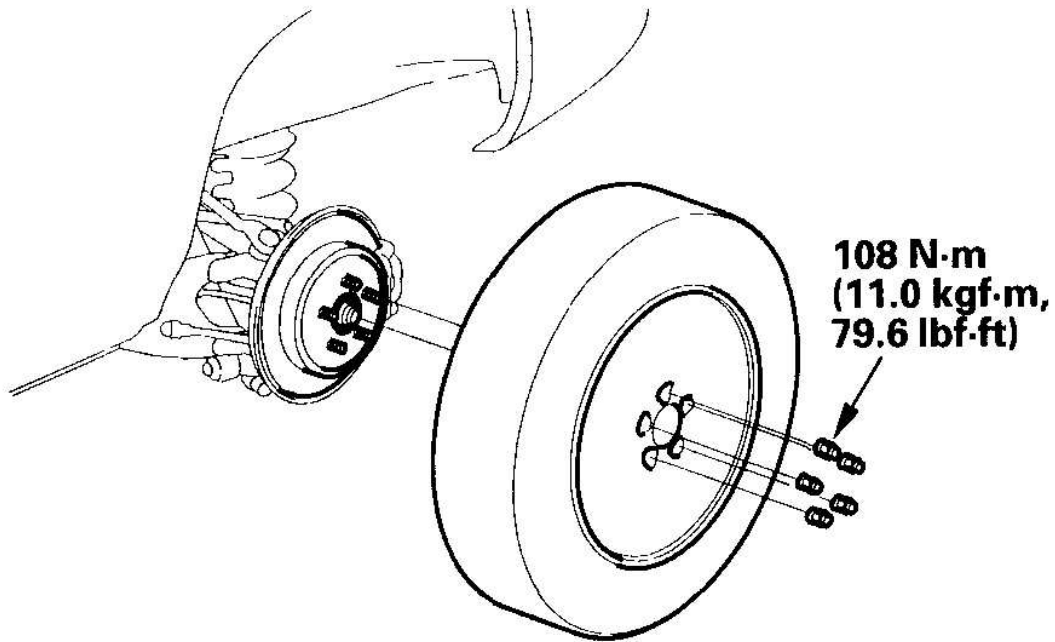
**Fig. 1: Exploded View Of Knuckle/Hub/Wheel Bearing**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Special Tools Required

- Ball joint remover, 28 mm 07MAC-SL0A202
- Hub dis/assembly tool, 42 mm 07GAF-SD40100
- Attachment, 62 x 68 mm 07746-0010500
- Driver 07749-0010000
- Support base 07965-SD90100

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

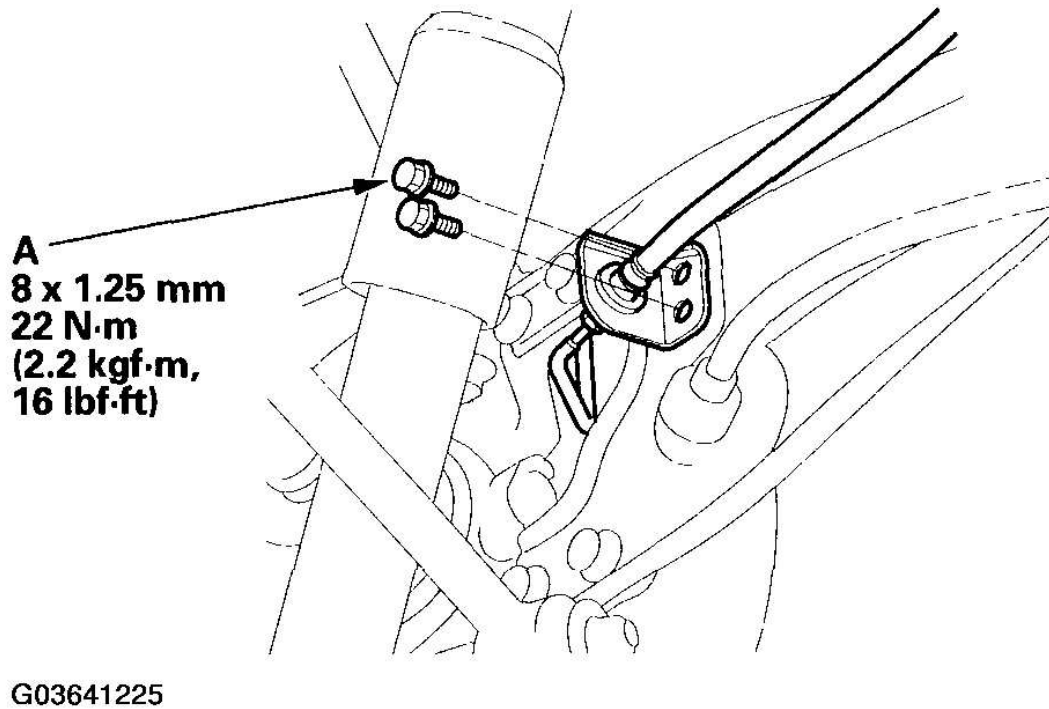
2. Remove the wheel nuts and rear wheels.



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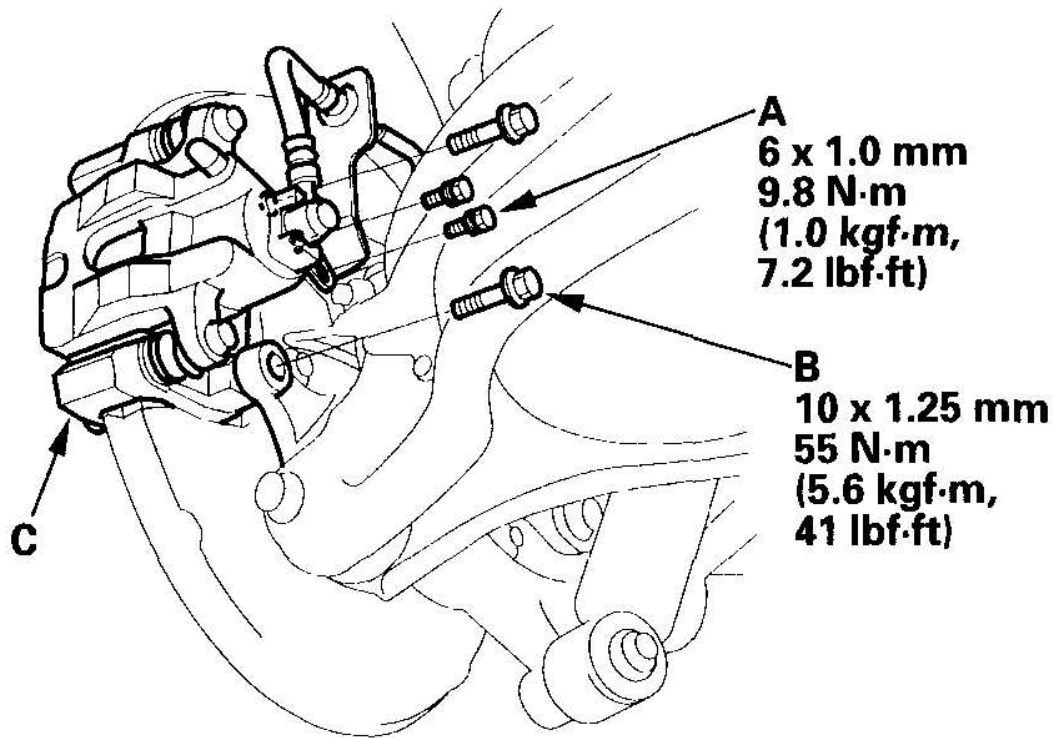
**Fig. 2: Removing Wheel Nuts And Rear Wheels**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the brake hose bracket mounting bolts (A) from the trailing arm.



**Fig. 3: Removing Brake Hose Bracket Mounting Bolts From Trailing Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake hose bracket mounting bolts (A) from the knuckle.

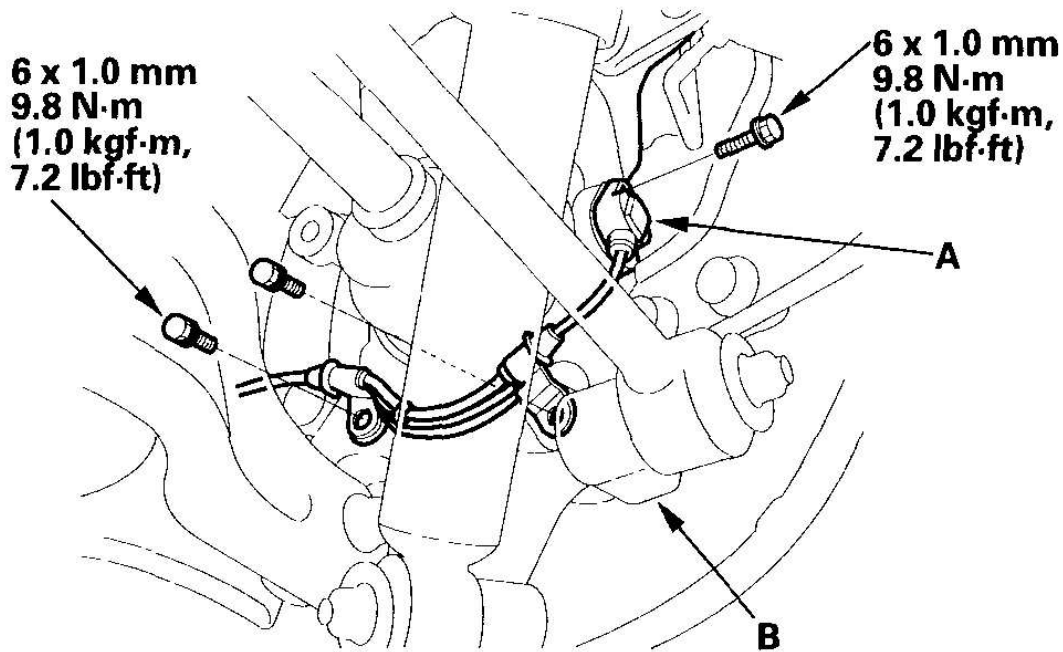


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**Fig. 4: Removing Brake Hose Bracket Mounting Bolts From Knuckle**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

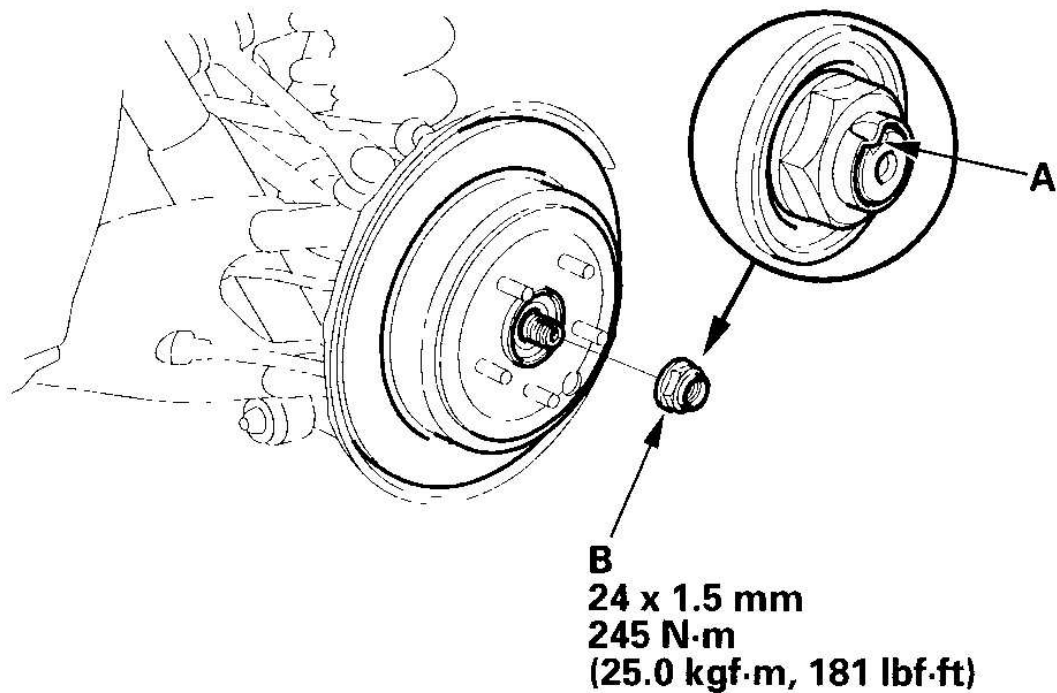
5. Remove the caliper mounting bolts (B), and hang the caliper assembly (C) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.
6. Remove the wheel sensor (A) and sensor harness from the knuckle (B). Do not disconnect the wheel sensor connector.



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**Fig. 5: Removing Wheel Sensor And Sensor Harness From Knuckle**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Raise the stake (A) of the spindle nut (B), then remove and discard the nut.

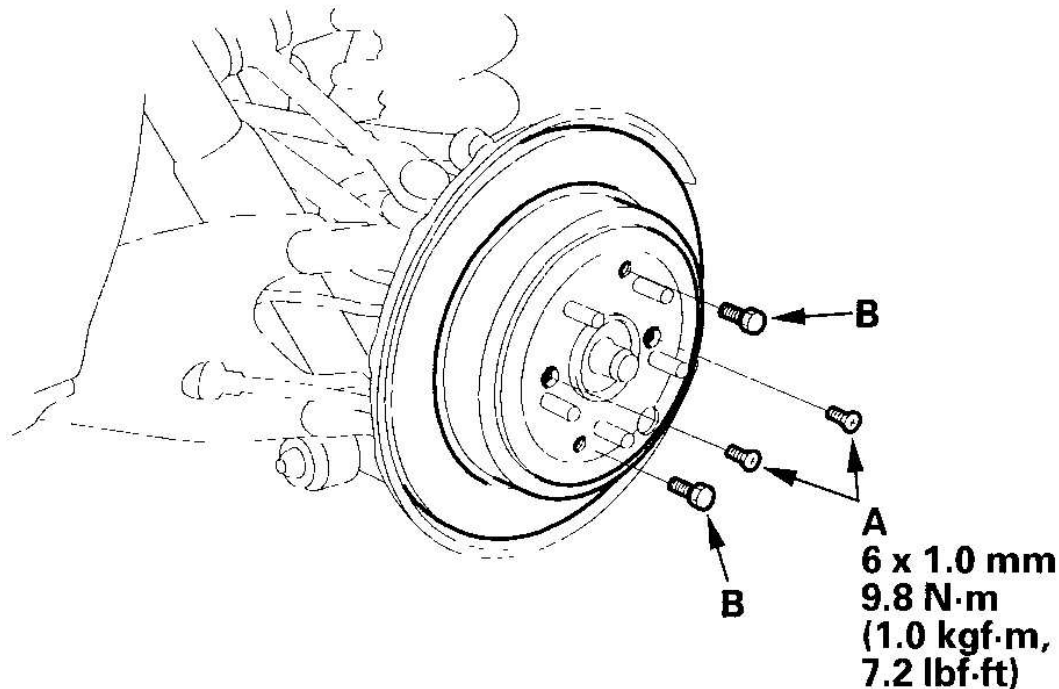


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**Fig. 6: Removing Spindle Nut**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the brake disc retaining flat screws (A).



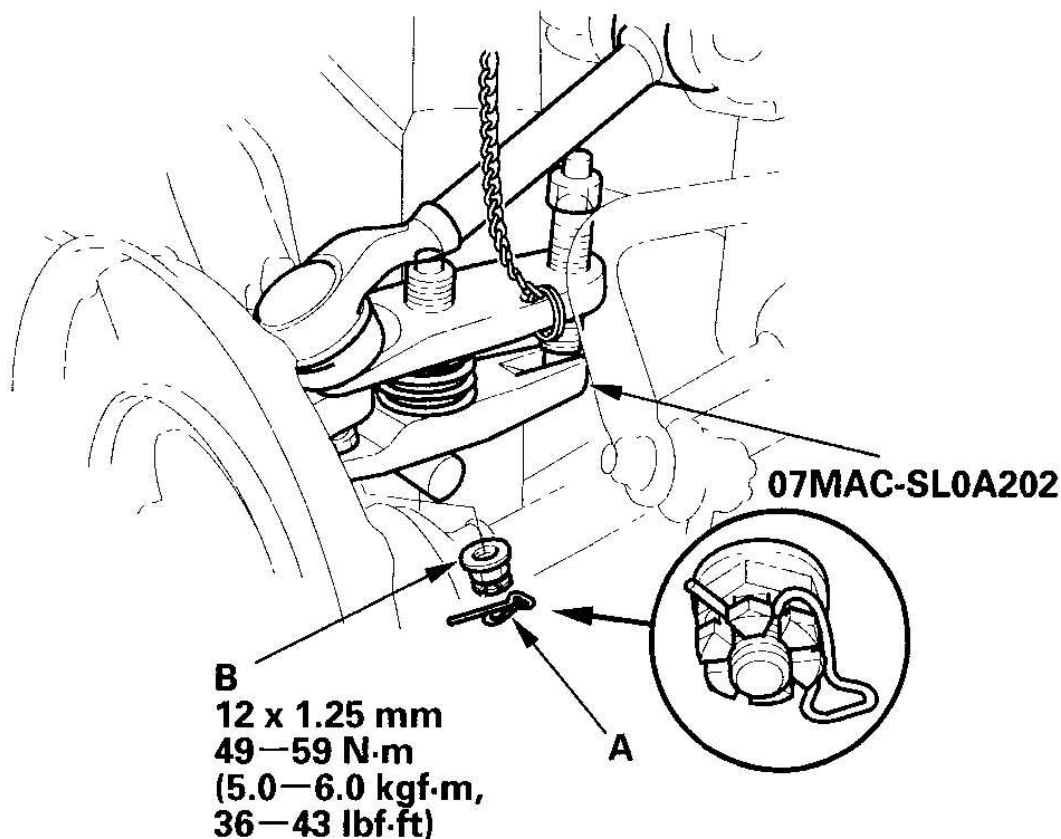
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**Fig. 7: Removing Brake Disc Retaining Flat Screws**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Screw two 8 x 1.25 mm bolts (B) into the brake disc/drum to push it away from the hub. Turn each bolt two turns at a time to prevent cocking the disc excessively.
10. Remove the brake disc/drum and rear hub. Check the rear hub for damage and cracks.
11. Remove the parking brake shoes (see **PARKING BRAKE SHOE REPLACEMENT** ) and parking brake cable (see **PARKING BRAKE CABLE REPLACEMENT** ).
12. Remove the lock pin (A) from the upper arm ball joint, then loosen the nut (B).

**NOTE:** During installation, install the new lock pin after tightening the nut.



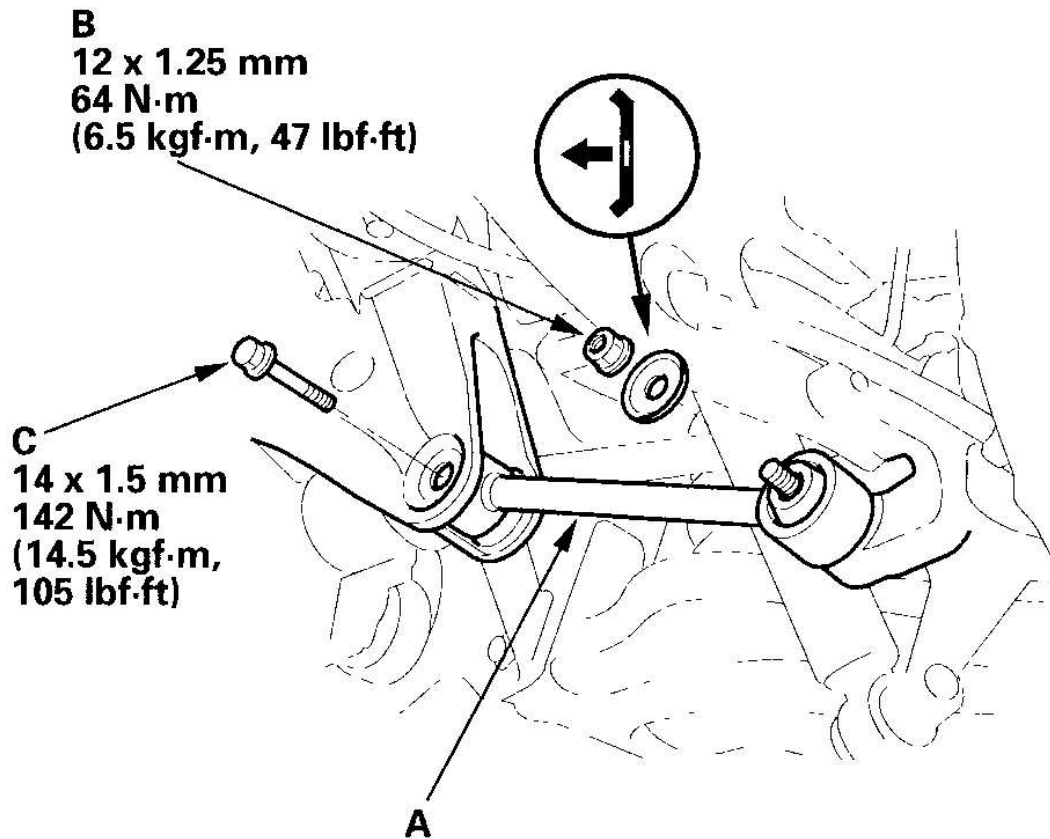


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**Fig. 8: Disconnecting Upper Arm Ball Joint From Knuckle Using Special Tool**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Disconnect the upper arm ball joint from the knuckle using the special tool (see **BALL JOINT REMOVAL**).
14. Remove the flange nut (B), washer, and flange bolt (C), then remove the lower arm A.





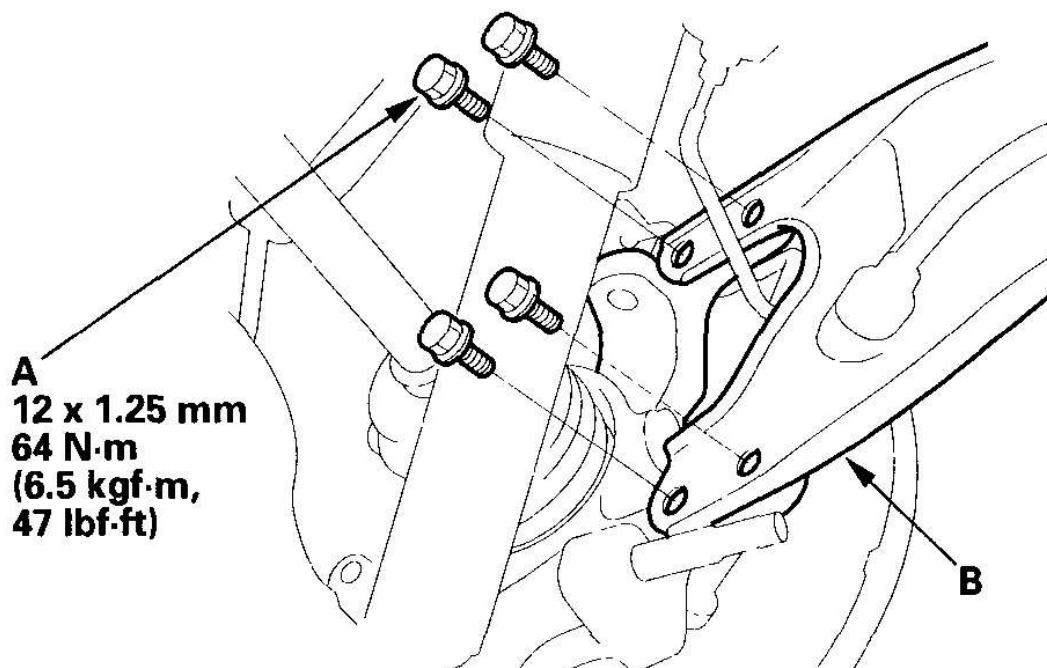
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**Fig. 9: Removing Lower Arm**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Remove the flange bolts (A), and separate the knuckle from the trailing arm (B).

**NOTE:** During installation, install the new flange bolts.

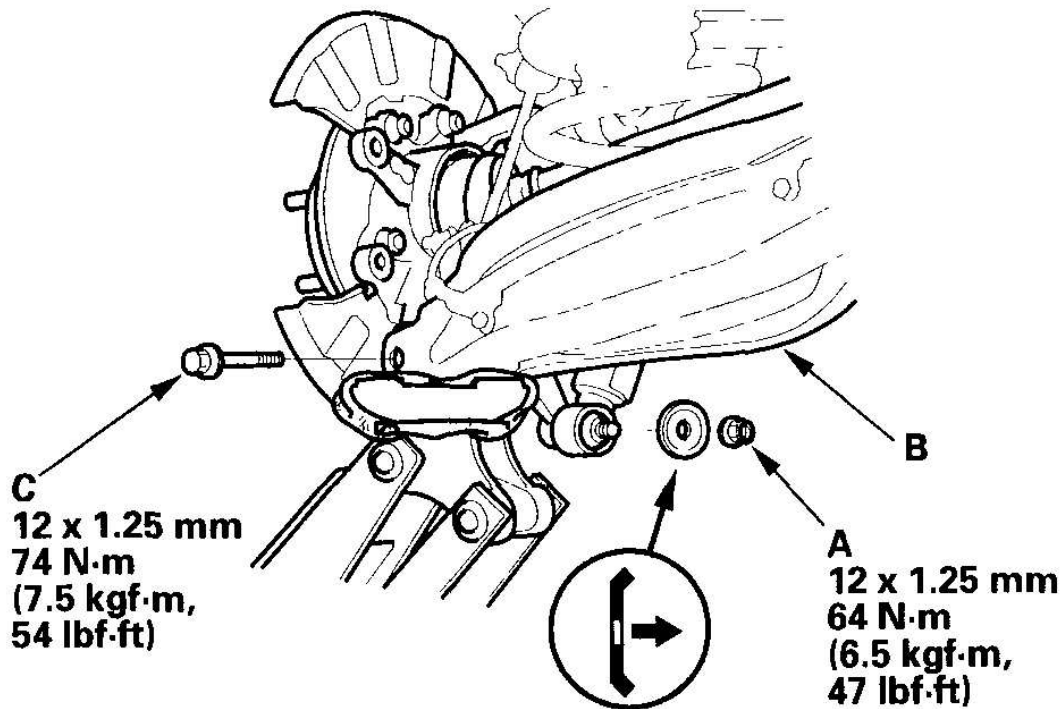


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**Fig. 10: Separating Knuckle From Trailing Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Place a floor jack under lower arm B. Remove the self-locking nut (A), washer, and flange bolt (C).

**NOTE:** During installation, install the new self-locking nut and new flange nut.



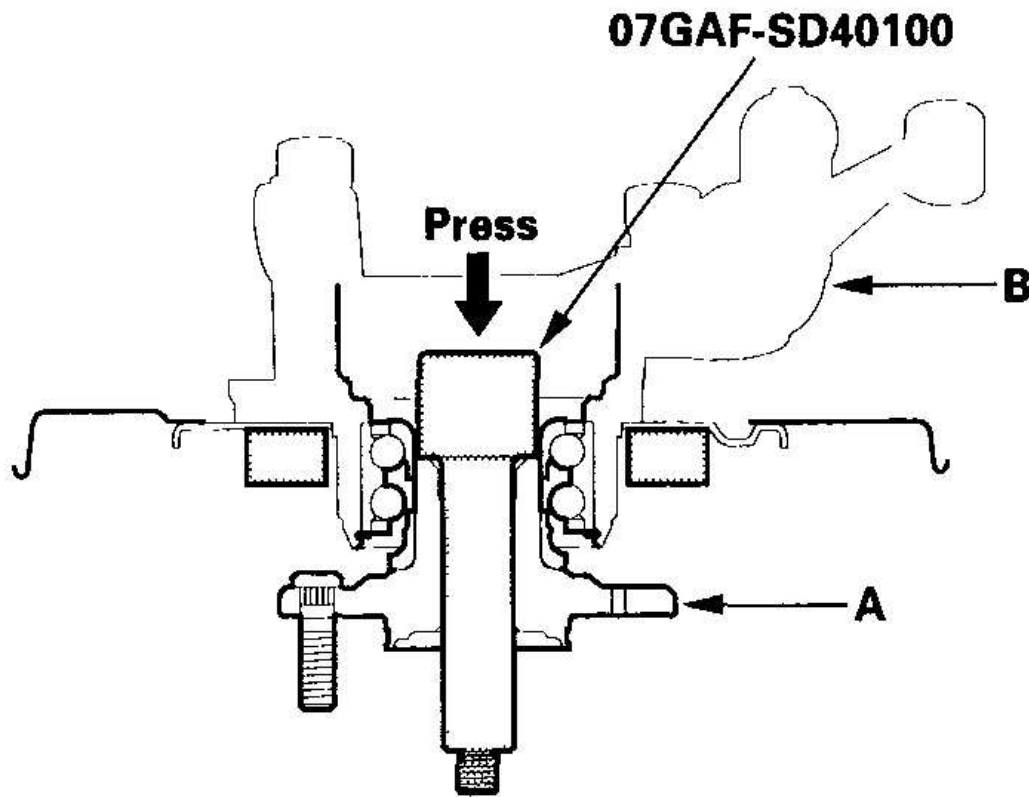
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**Fig. 11: Removing Self-Locking Nut, Washer And Flange Bolt**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

17. Remove the knuckle while pushing in the driveshaft and holding the driveshaft outboard joint.

**NOTE:** Do not pull the driveshaft end outward. The inner driveshaft joint may come apart.

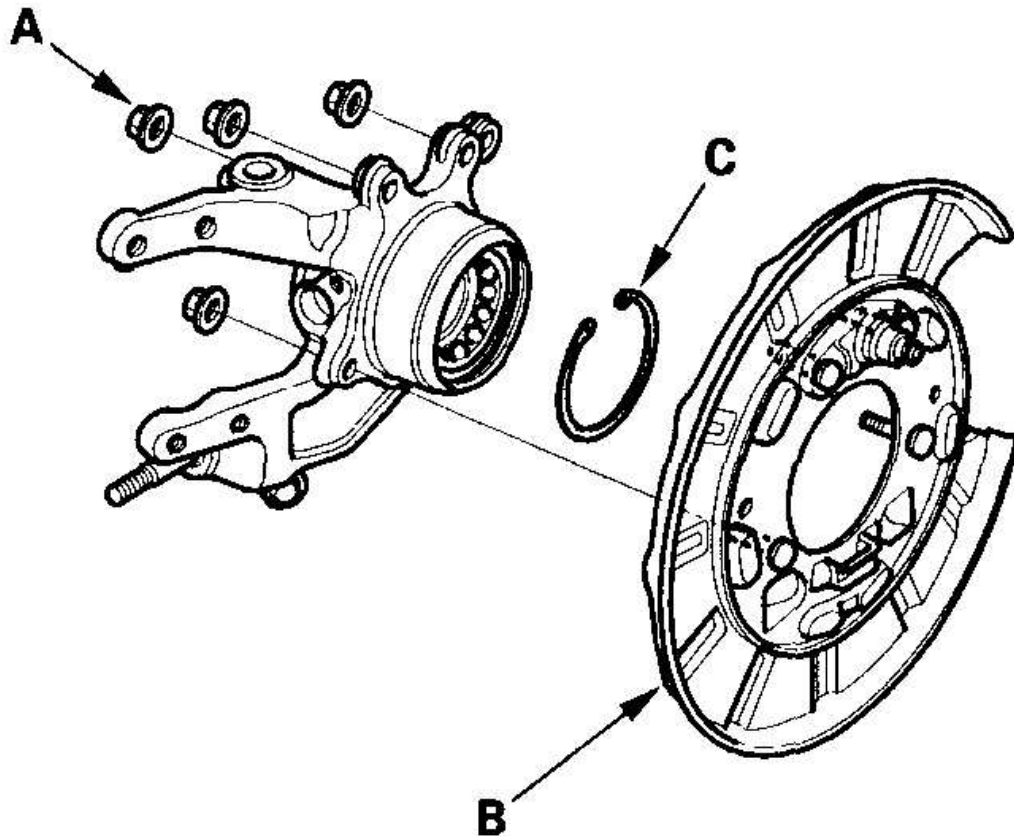
18. Separate the hub (A) from the knuckle (B) using the special tool and a hydraulic press. Hold the knuckle with the attachment (C) of the hydraulic press or equivalent tool. Be careful not to deform the splash guard. Hold onto the hub to keep it from falling when pressed clear.



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**Fig. 12: Separating Hub From Knuckle Using Special Tool And A Hydraulic Press**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

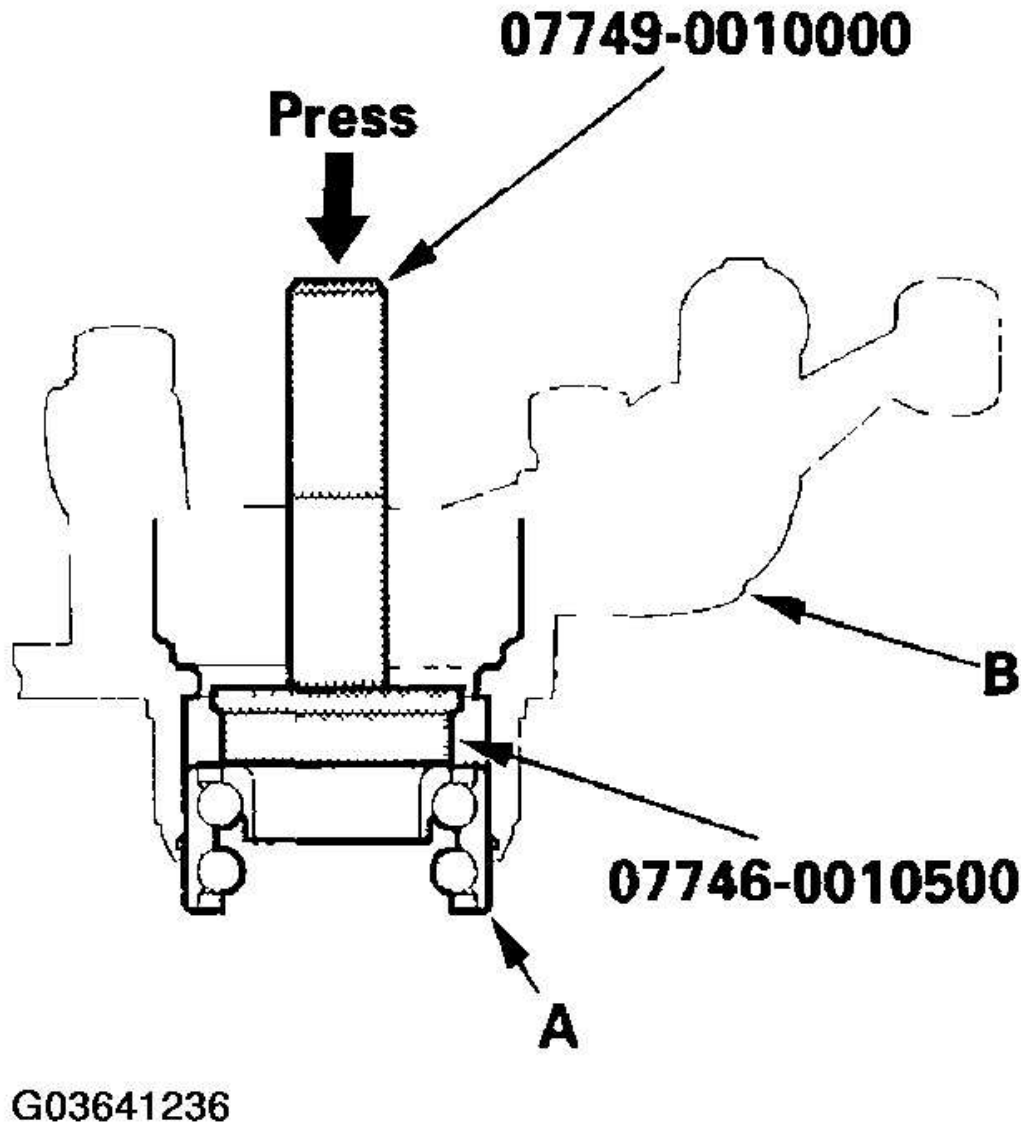
19. Remove the flange nuts (A), backing plate (B), and snap ring (C).



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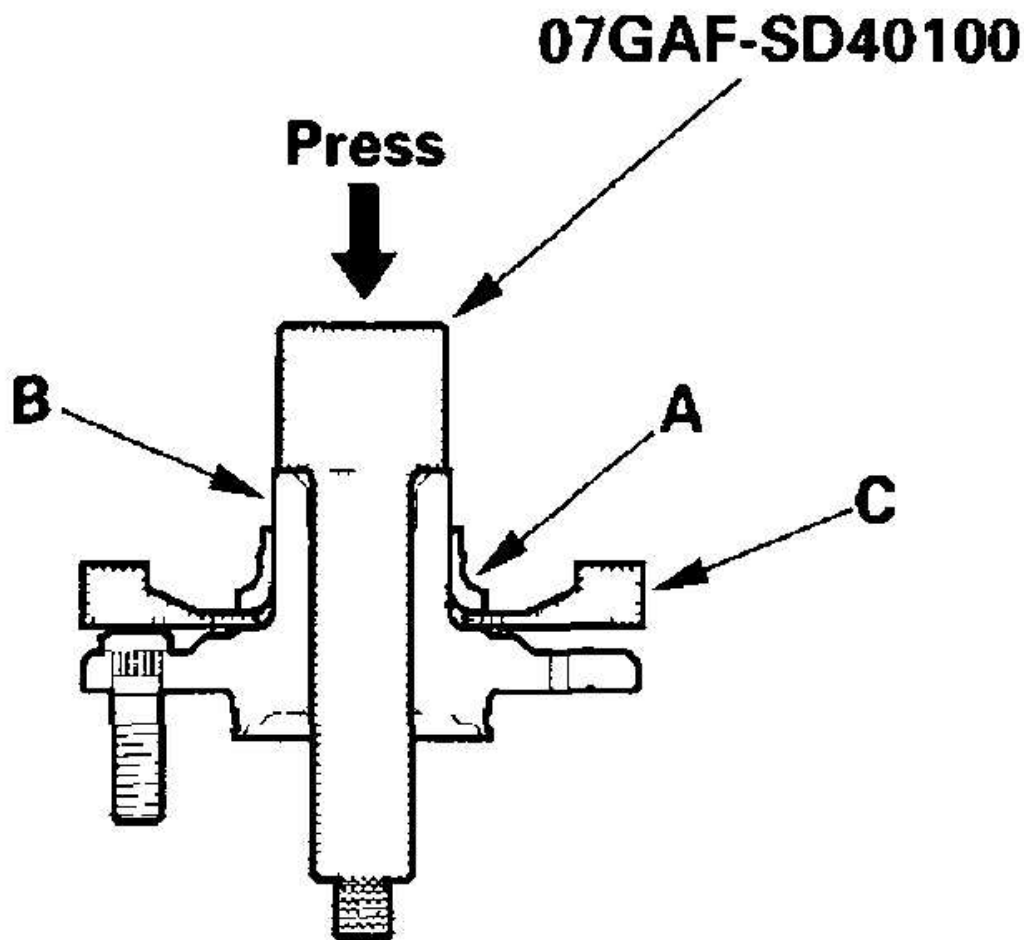
**Fig. 13: Removing Flange Nuts, Backing Plate And Snap Ring**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Press the wheel bearing (A) out of the knuckle (B) using the special tools and a press.



**Fig. 14: Pressing Wheel Bearing Out Of Knuckle**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

21. Press the wheel bearing inner race (A) from the hub (B) using the special tool, commercially available bearing separator (C), and a press.

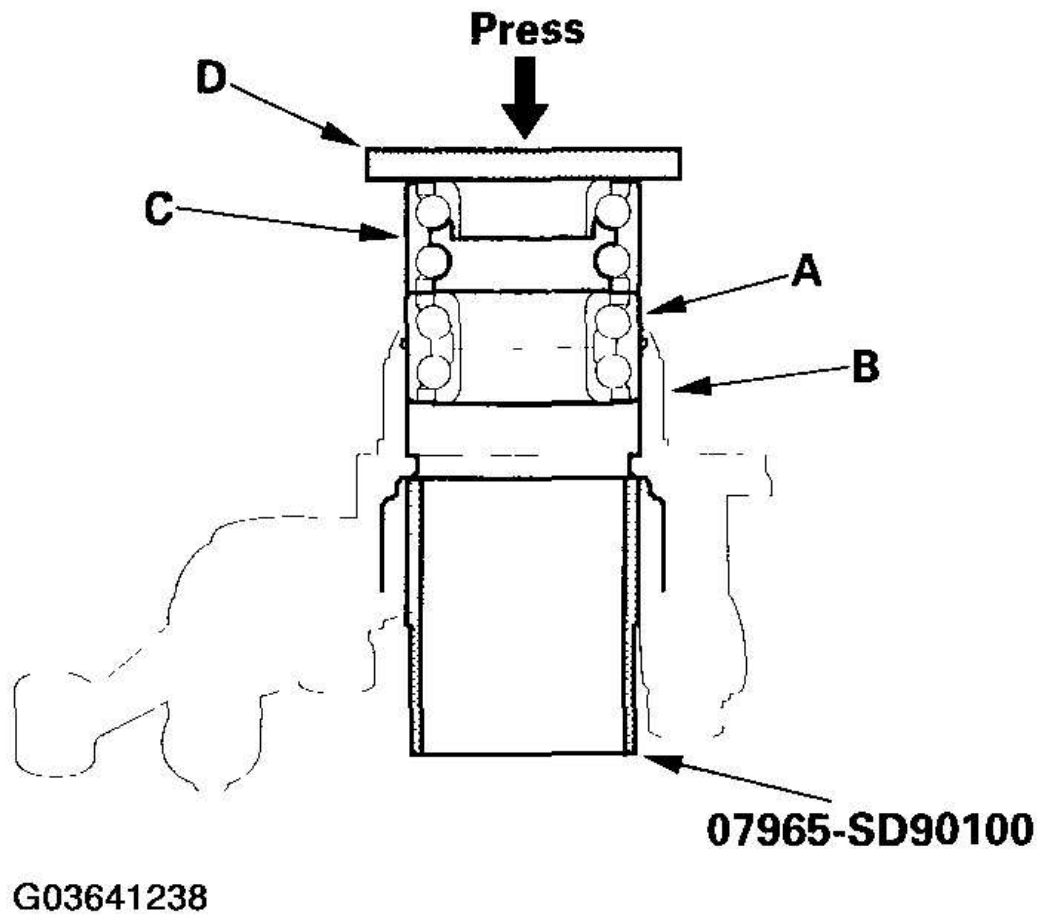


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**Fig. 15: Pressing Wheel Bearing Inner Race From Hub Using special Tool And Press**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

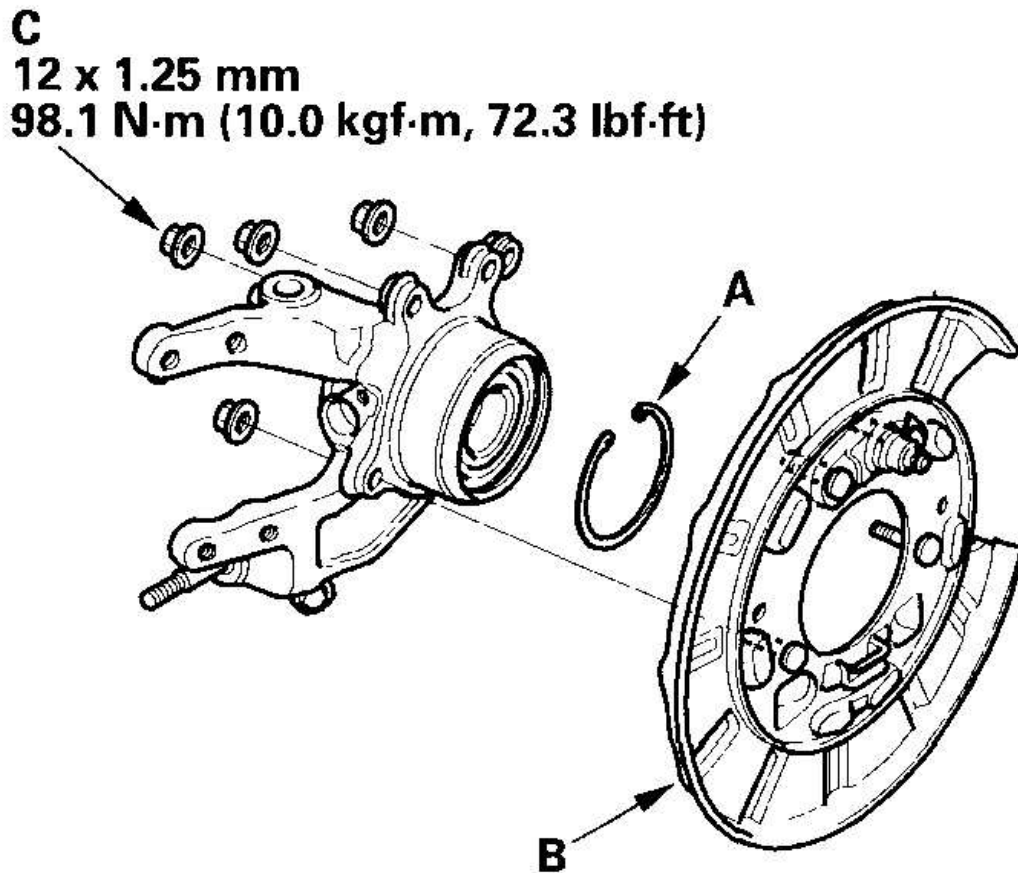
22. Wash the knuckle and hub thoroughly in high flash point solvent before reassembly.
23. Press a new wheel bearing (A) into the knuckle (B) using the old bearing (C), a steel plate (D), the special tool, and a press. Be careful not to damage the sleeve of the pack seal.





**Fig. 16: Pressing New Wheel Bearing Into Knuckle**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

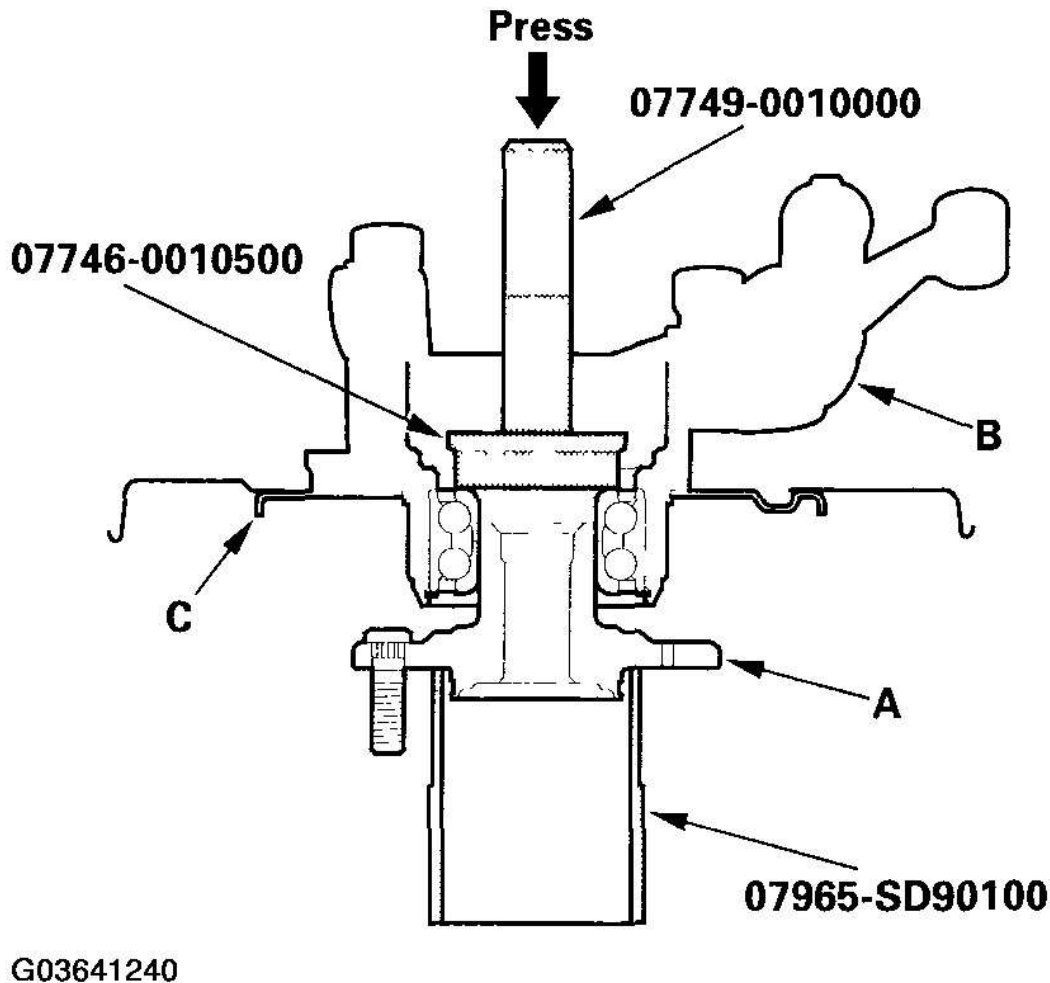
24. Install the snap ring (A), backing plate (B), and flange nuts (C). Tighten the flange nuts to the specified torque.



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**Fig. 17: Installing Snap Ring, Backing Plate And Flange Nuts**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Install the hub (A) on the knuckle (B) using the special tools and a hydraulic press. Be careful not to deform the splash guard (C).



**Fig. 18: Installing Hub On Knuckle Using Special Tools And Hydraulic Press**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

26. Install the knuckle in the reverse order of removal, and note these items:
- Be careful not to damage the ball joint boot when installing the knuckle.
  - First install all the components and lightly tighten the bolts and nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque values.
  - Tighten all mounting hardware to the specified torque values.
  - 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.
  - Install a new lock pin on the castle nut after torquing.
  - Use a new spindle nut on reassembly.
  - Before installing the new 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.

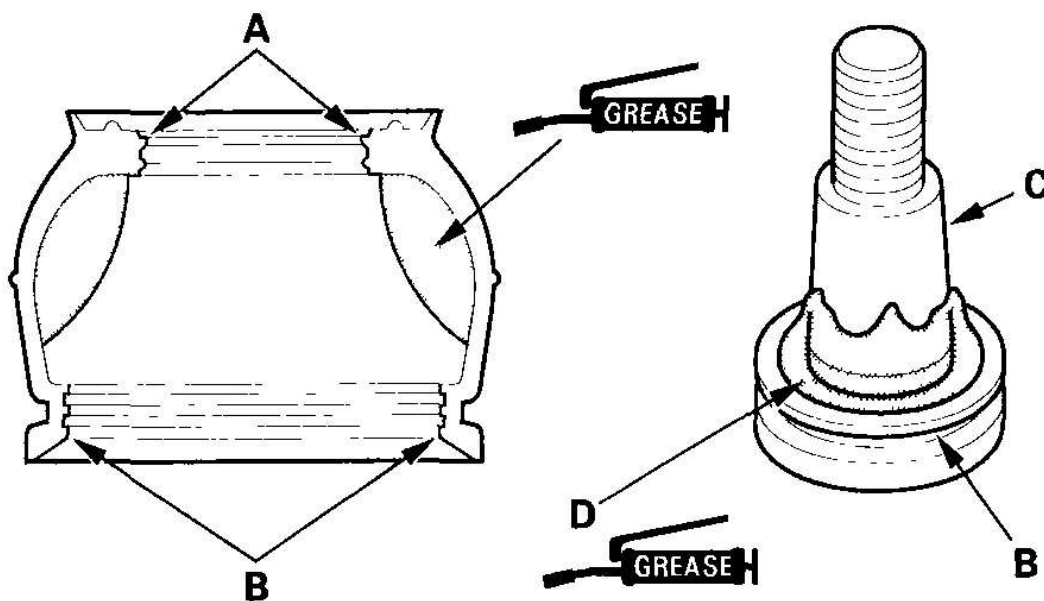
- Before installing the brake disc/drum, clean the mating surfaces of the rear hub and the inside of the brake disc/drum.
- Before installing the wheel, clean the mating surfaces of the brake disc/drum and the inside of the wheel.
- Check the rear wheel alignment, and adjust it if necessary (see **WHEEL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

## BALL JOINT BOOT REPLACEMENT

### Special Tools Required

Ball joint boot clip guide 07974-SA50700

1. Remove the boot clip and the boot.
2. Pack the interior and lip (A) of a new boot with grease. Do not contaminate the lower collar of the boot (B) with grease.

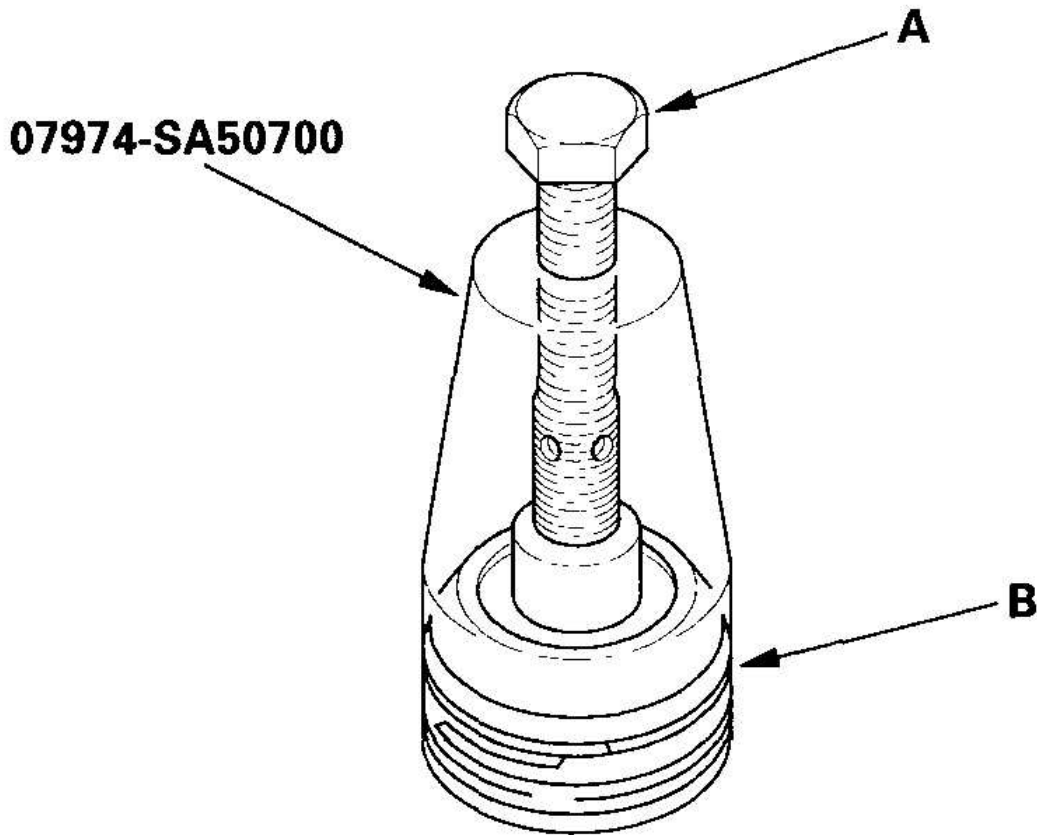


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**Fig. 19: Packing Interior And Lip Of New Boot With Grease**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Wipe the grease off the tapered section (C) of the pin, and pack fresh grease into the base (D). Do not let dirt or other foreign materials get into the boot.

4. Install the boot onto the ball joint, then squeeze it gently to force out any air.
5. Adjust the special tool 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.



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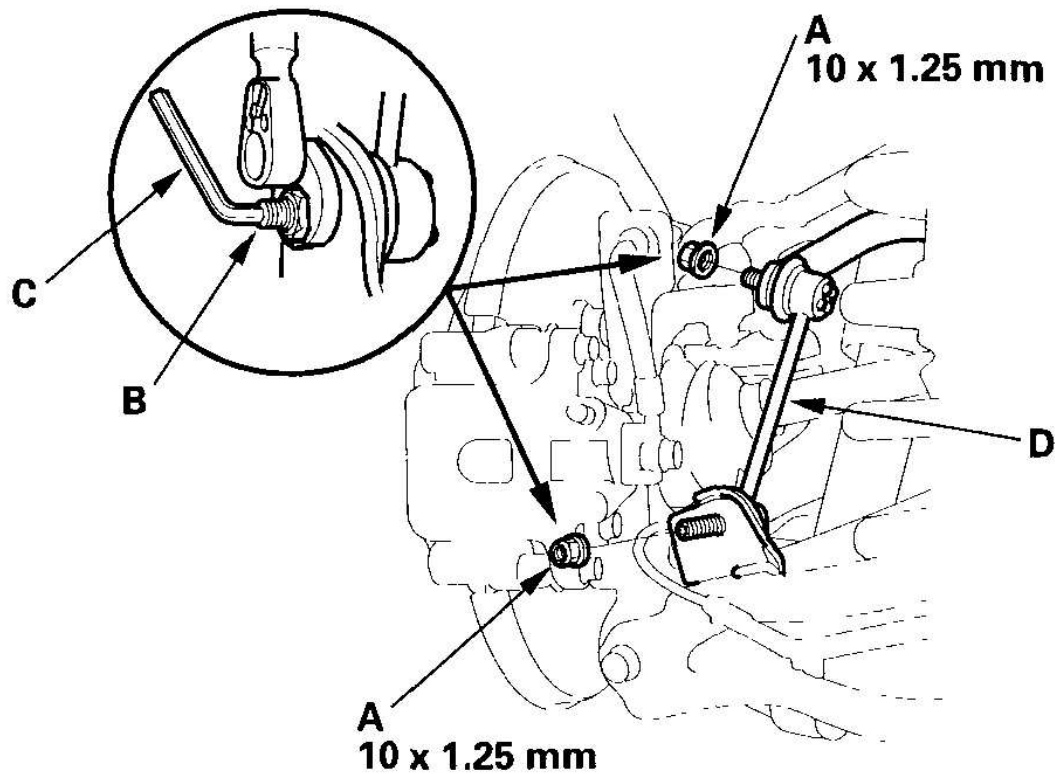
**Fig. 20: Positioning Boot**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. After installing a boot, wipe any grease off the exposed portion of the ball joint pin.

## STABILIZER LINK REMOVAL/INSTALLATION

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS** ). Remove the rear wheels.
2. Remove the flange nuts (A) while holding the respective joint pin (B) with a hex wrench (C), and remove the stabilizer link (D).

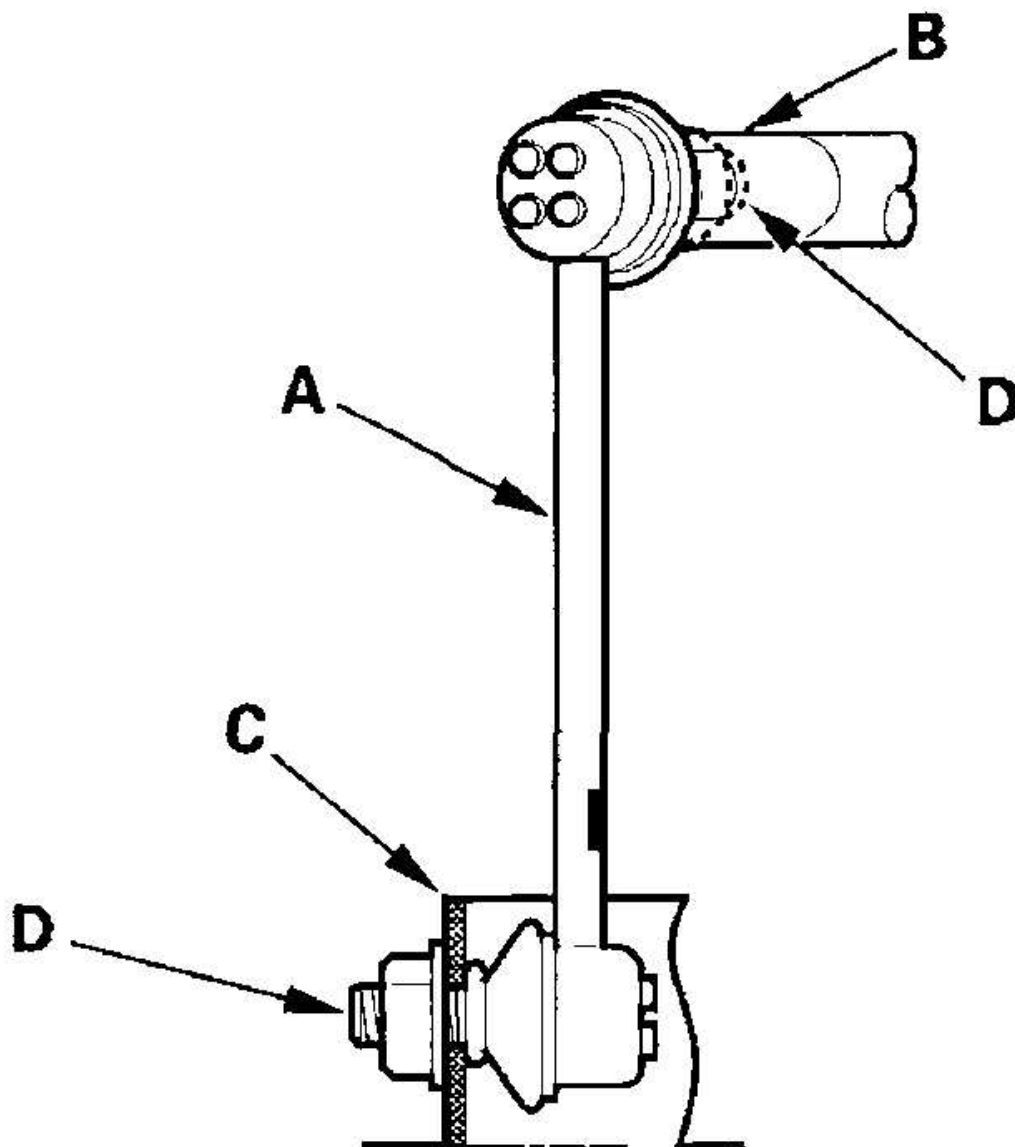


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**Fig. 21: Removing Flange Nuts**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the stabilizer link (A) on the stabilizer bar (B) and stabilizer link bracket (C) with the joint pins (D) set at the center of each moving range.



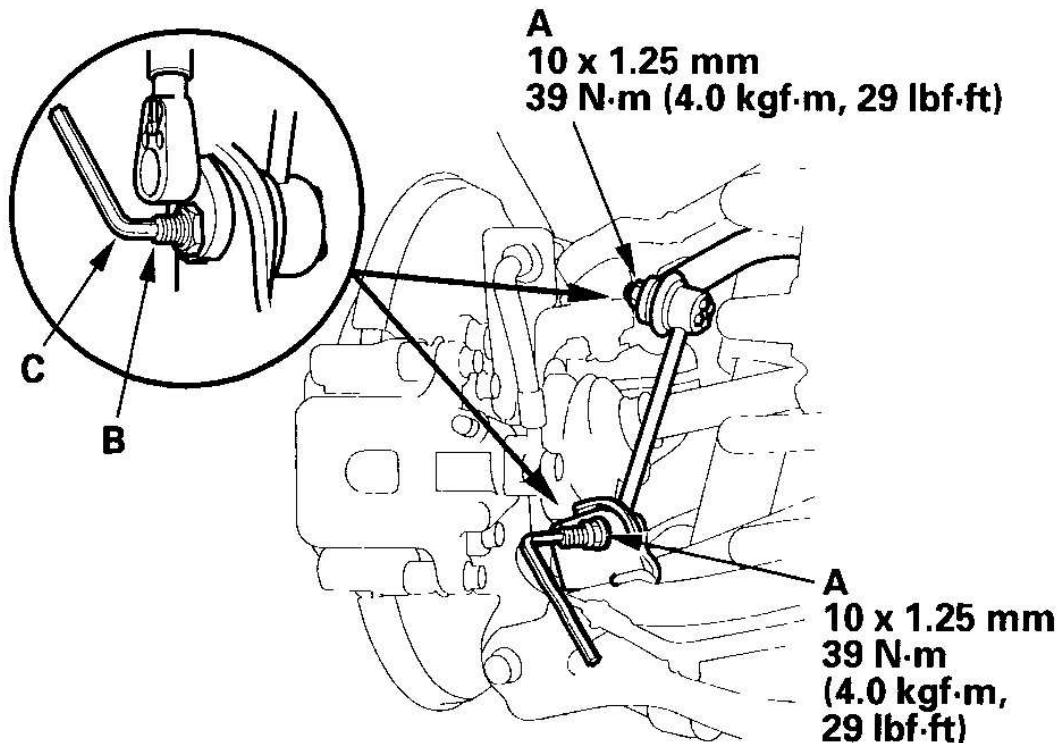
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**Fig. 22: Installing Stabilizer Link On Stabilizer Bar And Stabilizer Link Bracket With Joint Pins**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the new flange nuts, and lightly tighten them.
5. Place a floor jack at the connecting point of lower arm B and the knuckle, and raise the suspension to load it with the vehicle's weight.



6. Tighten the flange nuts (A) to the specified torque values while holding the respective joint pin (B) with a hex wrench (C).



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**Fig. 23: Tightening Flange Nuts**

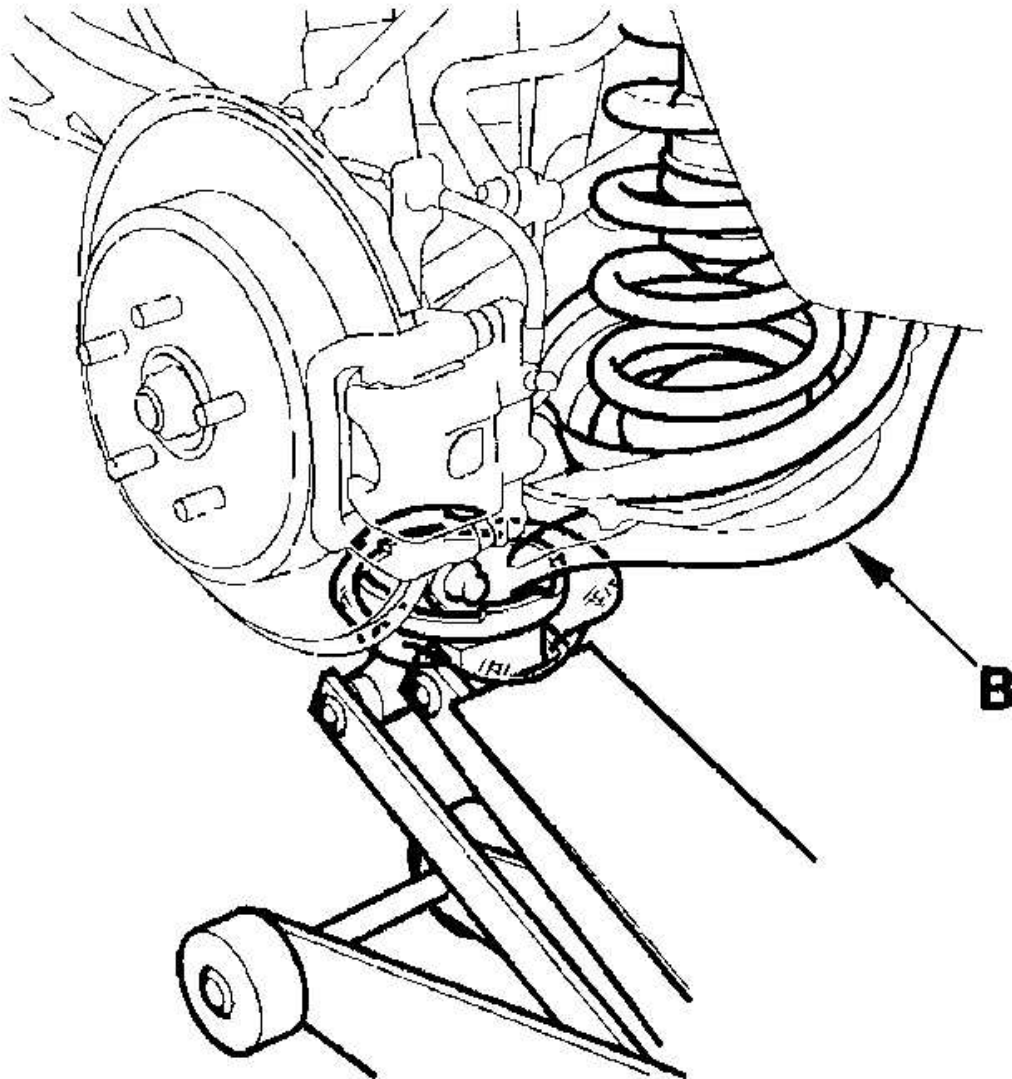
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## UPPER ARM REMOVAL/INSTALLATION

### Special Tools Required

Ball joint remover, 28 mm 07MAC-SL0A202

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS**). Remove the rear wheels.
2. Place a floor jack at the connecting point of lower arm B and the knuckle.

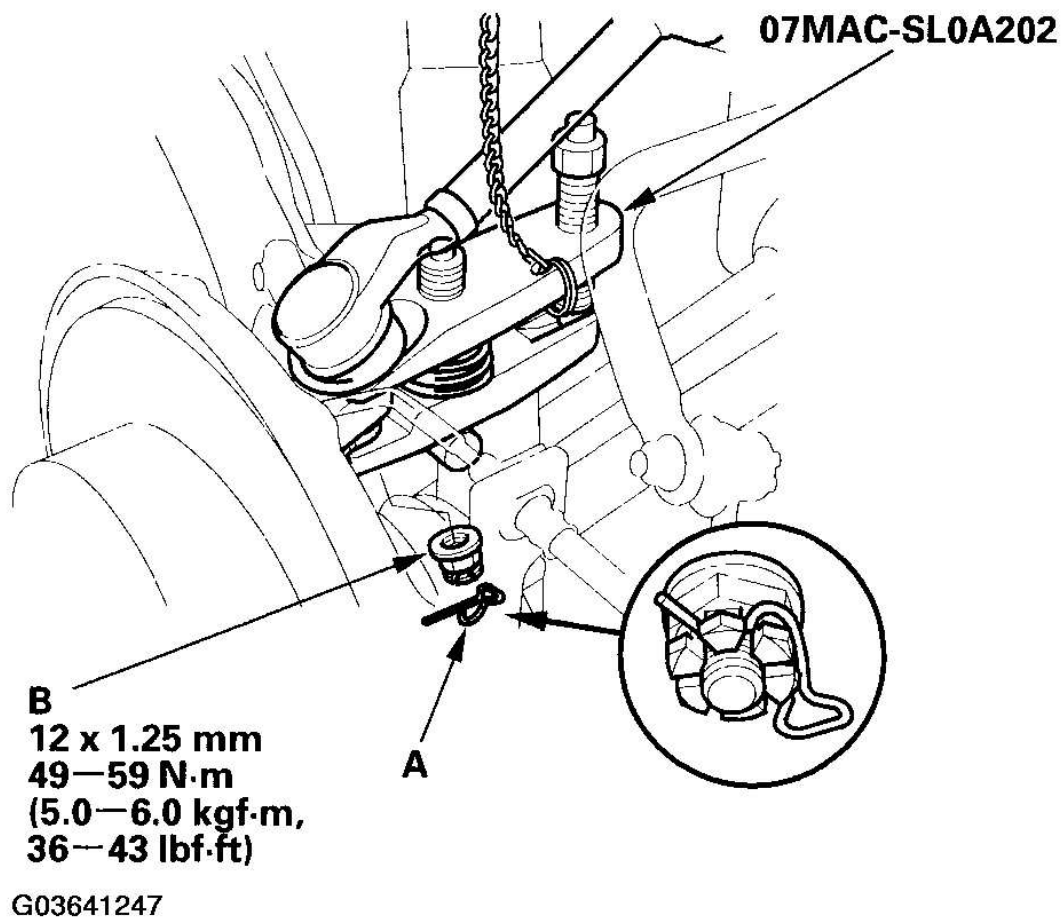


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**Fig. 24: Placing Floor Jack At Connecting Point Of Lower Arm And Knuckle**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the lock pin (A) from the upper arm ball joint castle nut (B), and remove the nut.

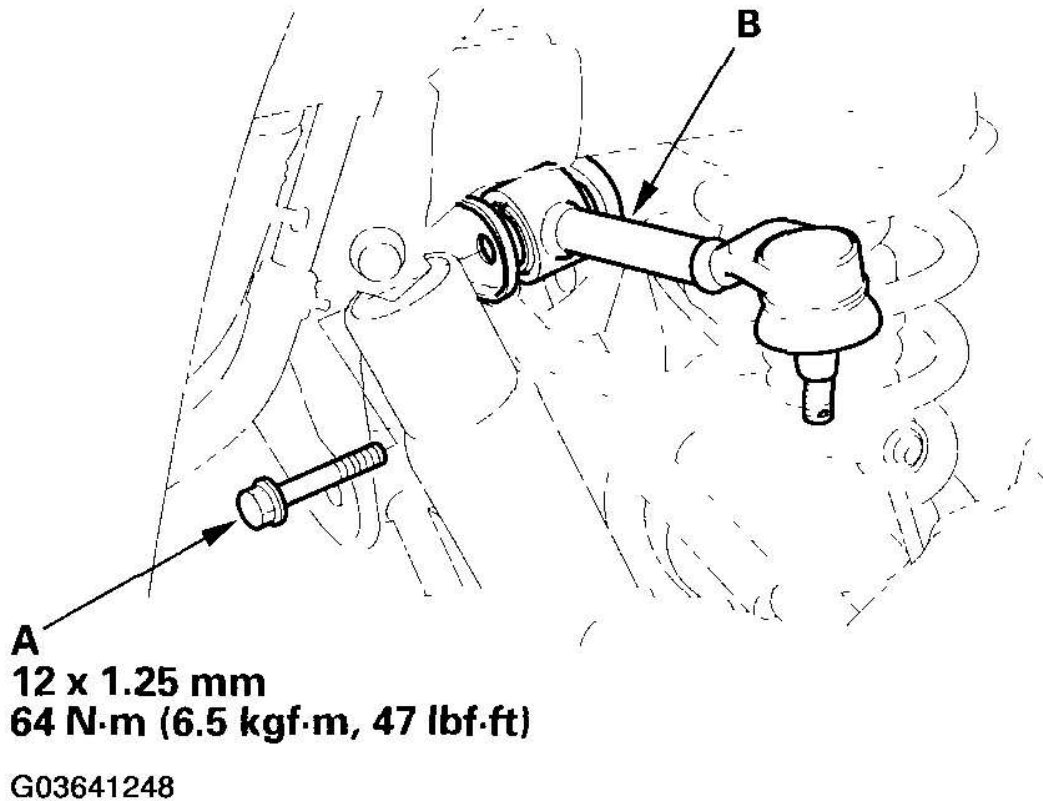
**NOTE:** During installation, install the new lock pin after tightening the nut.



**Fig. 25: Removing Lock Pin From Upper Arm Ball Joint Castle Nut**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the upper arm ball joint from the knuckle using the special tool (see **BALL JOINT REMOVAL** ).
5. Remove the upper arm bolt (A). Remove the upper arm (B) from the vehicle.

**NOTE:** During installation, install the new mounting bolt.



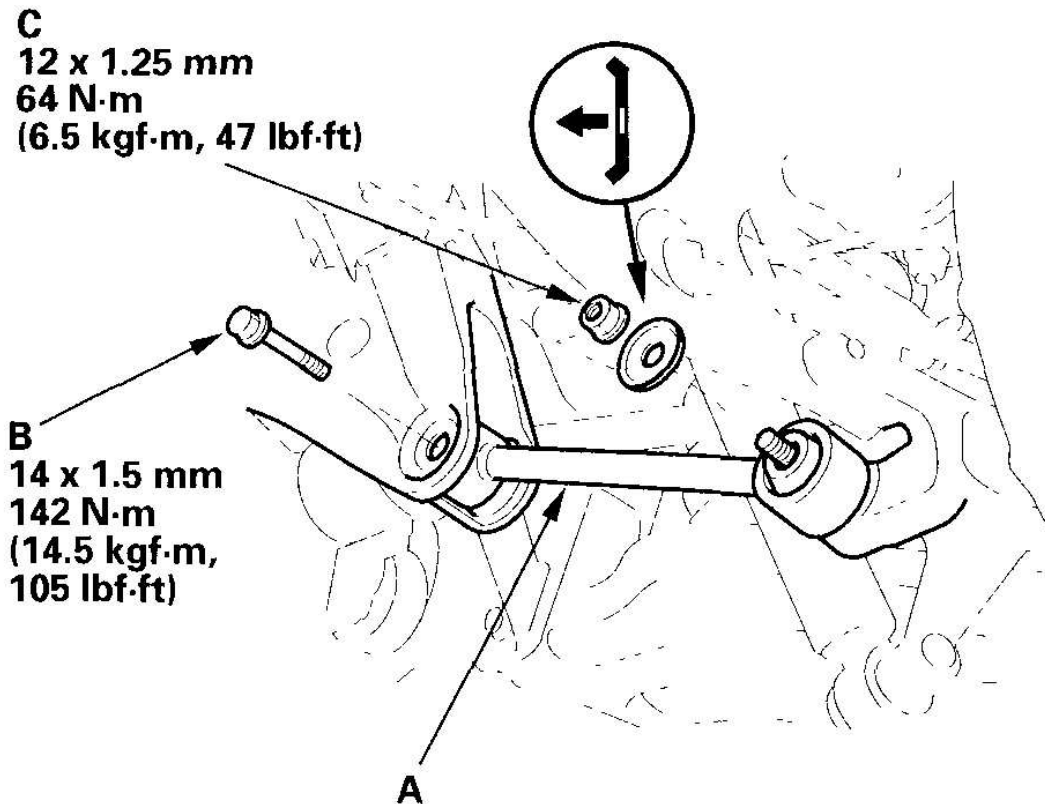
**Fig. 26: Removing Upper Arm Bolt**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the upper arm in the reverse order of removal, and note these items:
  - Be careful not to damage the ball joint boot when connecting the upper arm to the knuckle.
  - First install all the components and lightly tighten the bolts and nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque values.
  - Tighten all mounting hardware to the specified torque values.
  - 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.
  - Install a new lock pin on the castle nut after torquing.
  - Before installing the wheel, clean the mating surfaces of the brake disc/drum and the inside of the wheel.
  - Check the rear wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT** ).

## **LOWER ARM A REMOVAL/INSTALLATION**

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS** ). Remove the rear wheels.
2. Remove lower arm A mounting bolt (B).



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**Fig. 27: Removing Lower Arm Mounting Bolt**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove lower arm A mounting nut (C).

**NOTE:** During installation, install the new mounting bolt.

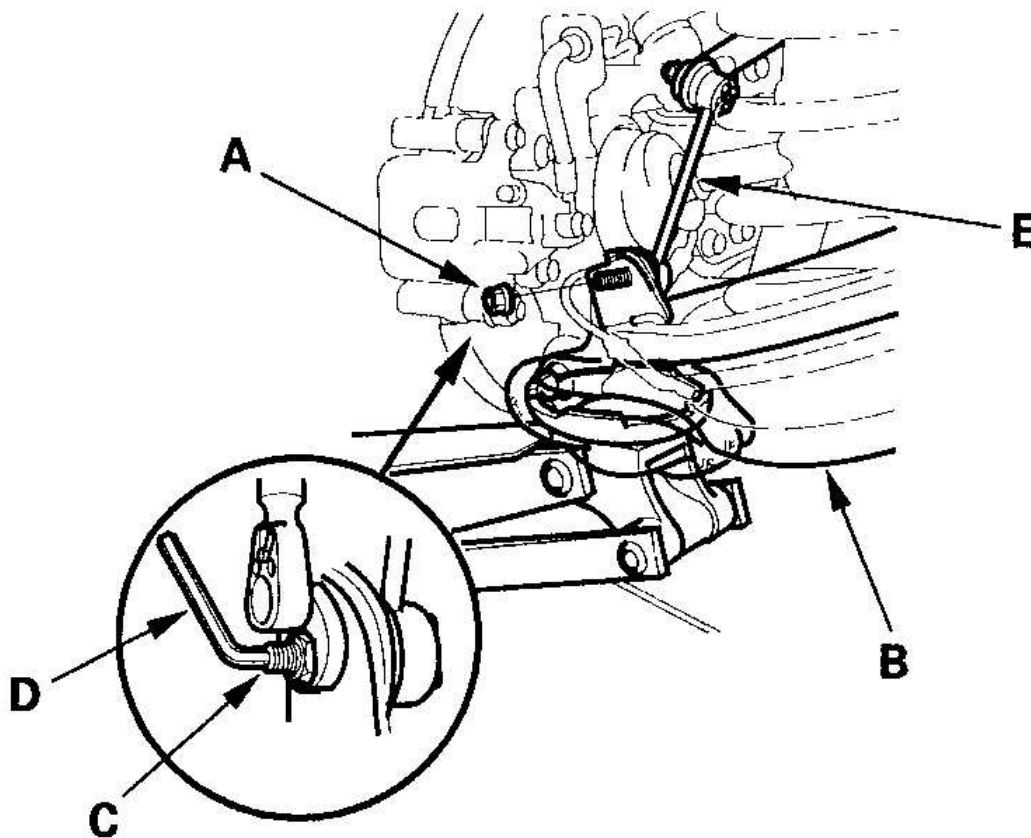
4. Remove lower arm A from the vehicle.
5. Install lower arm A in the reverse order of removal, and note these items:
  - First install all the components and lightly tighten the bolts and nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque values.
  - Tighten all mounting hardware to the specified torque values.

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

## LOWER ARM B REMOVAL AND INSTALLATION

### REMOVAL

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS** ). Remove the rear wheels.
2. Place a floor jack at the connecting point of lower arm B and the knuckle.

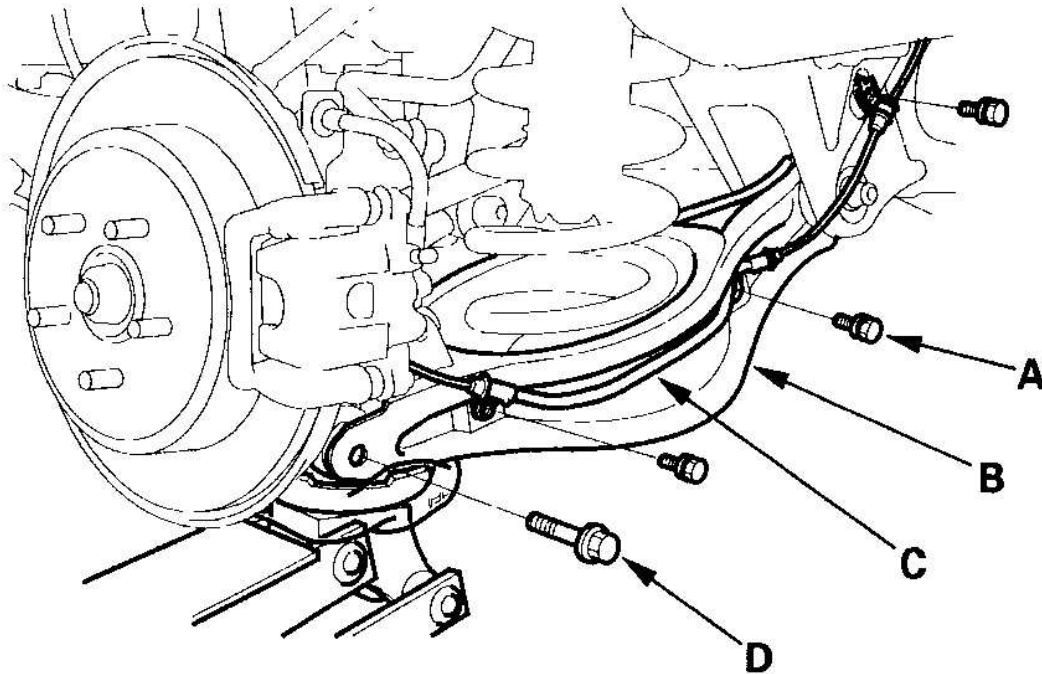


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**Fig. 28: Placing Floor Jack At Connecting Point Of Lower Arm And Knuckle**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.



3. Remove the flange nut (A) while holding the joint pin (C) with a hex wrench (D), and disconnect the stabilizer link (E) from lower arm B.
4. Remove the three flange bolts (A) and the wheel sensor harness (C) from lower arm B. Do not disconnect the wheel sensor connector.

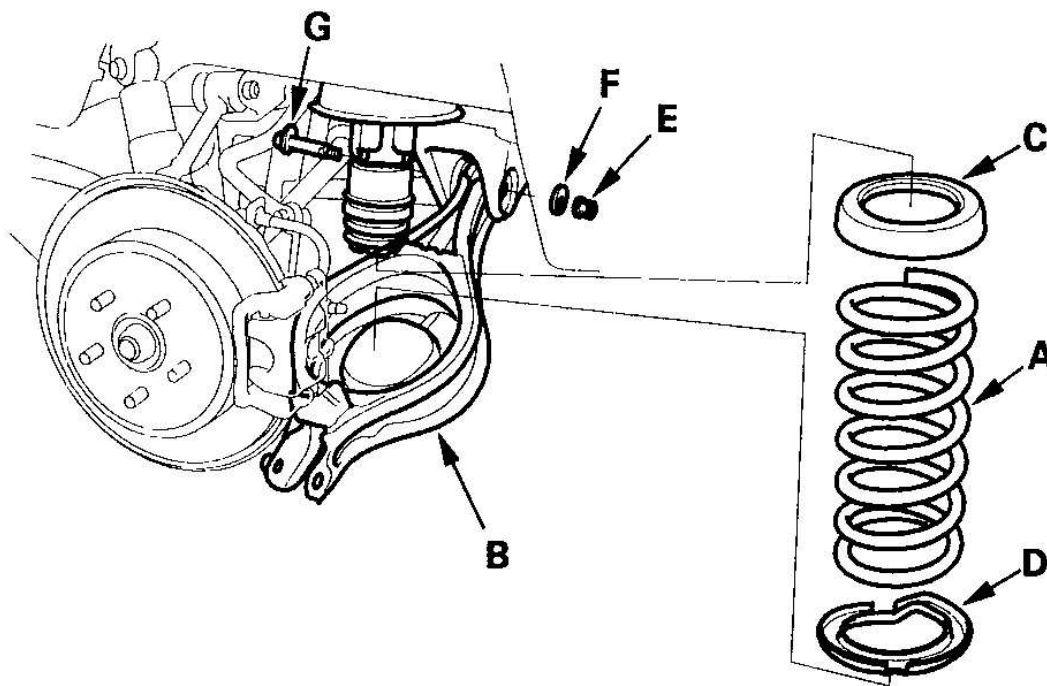


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**Fig. 29: Removing Three Flange Bolts And Wheel Sensor Harness From Lower Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the flange bolt (D) that connects lower arm B and the knuckle.
6. Lower the floor jack gradually.
7. Remove the spring (A), upper spring seat (C), and lower spring seat (D).





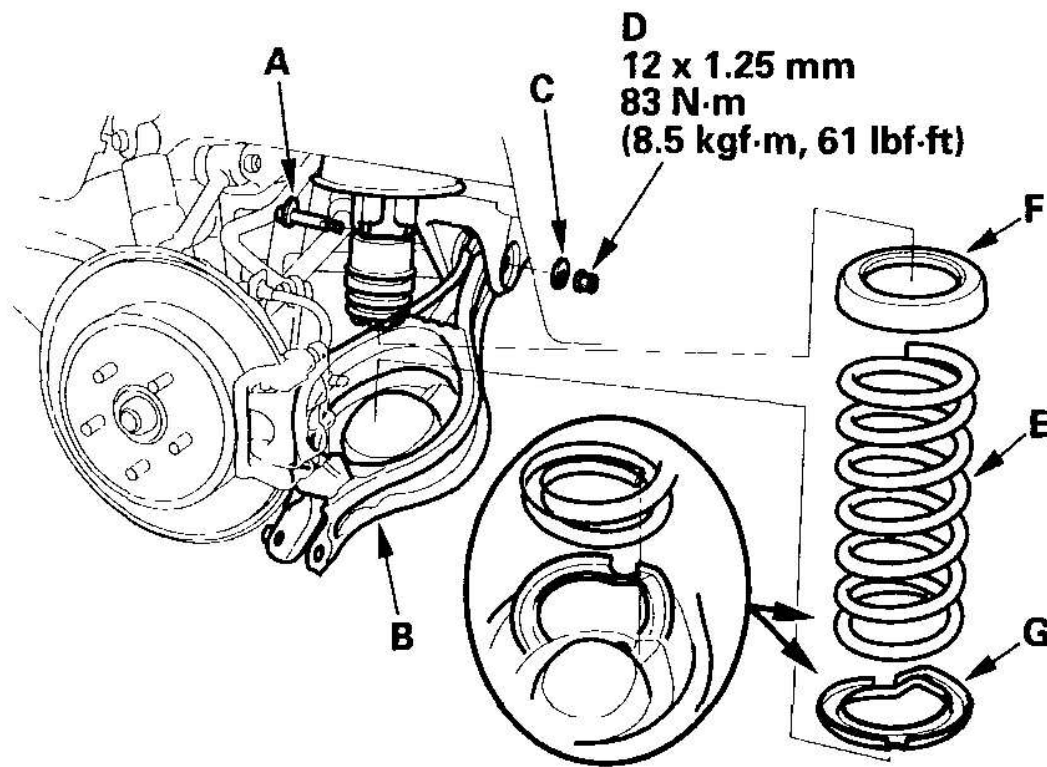
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**Fig. 30: Removing Spring, Upper Spring Seat And Lower Spring Seat**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the self-locking nut (E), adjusting collar (F), and adjusting bolt (G), then remove lower arm B.

## INSTALLATION

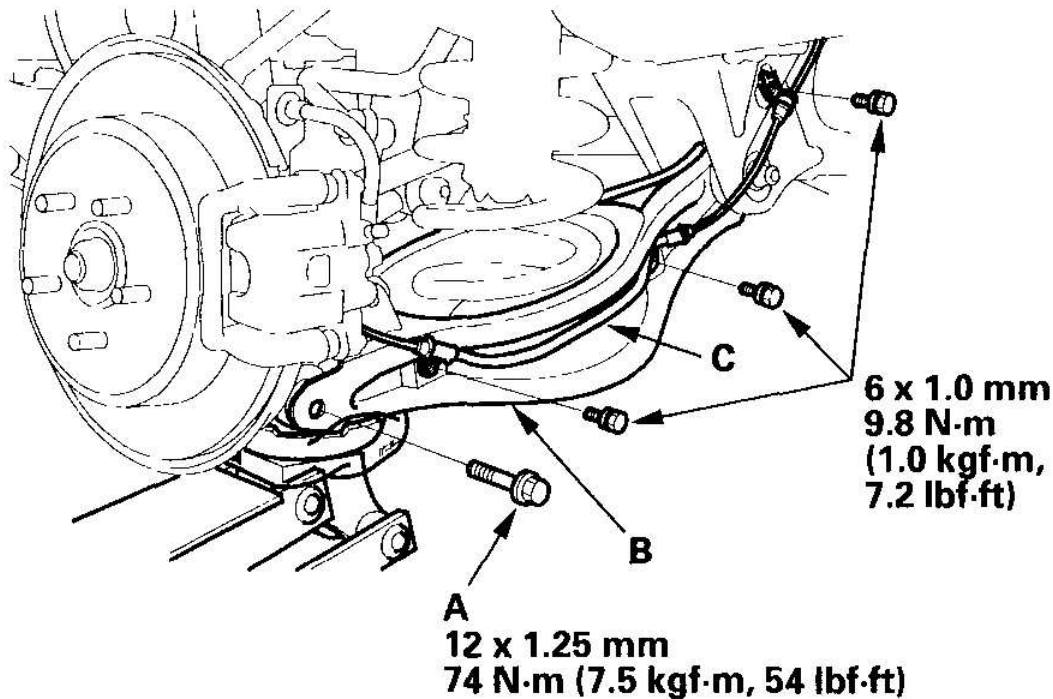
1. Position lower arm B, install the adjusting bolt (A), adjusting collar (C), and loosely install the new self-locking nut (D).



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**Fig. 31: Installing Spring, Upper Spring Seat And Lower Spring Seat**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

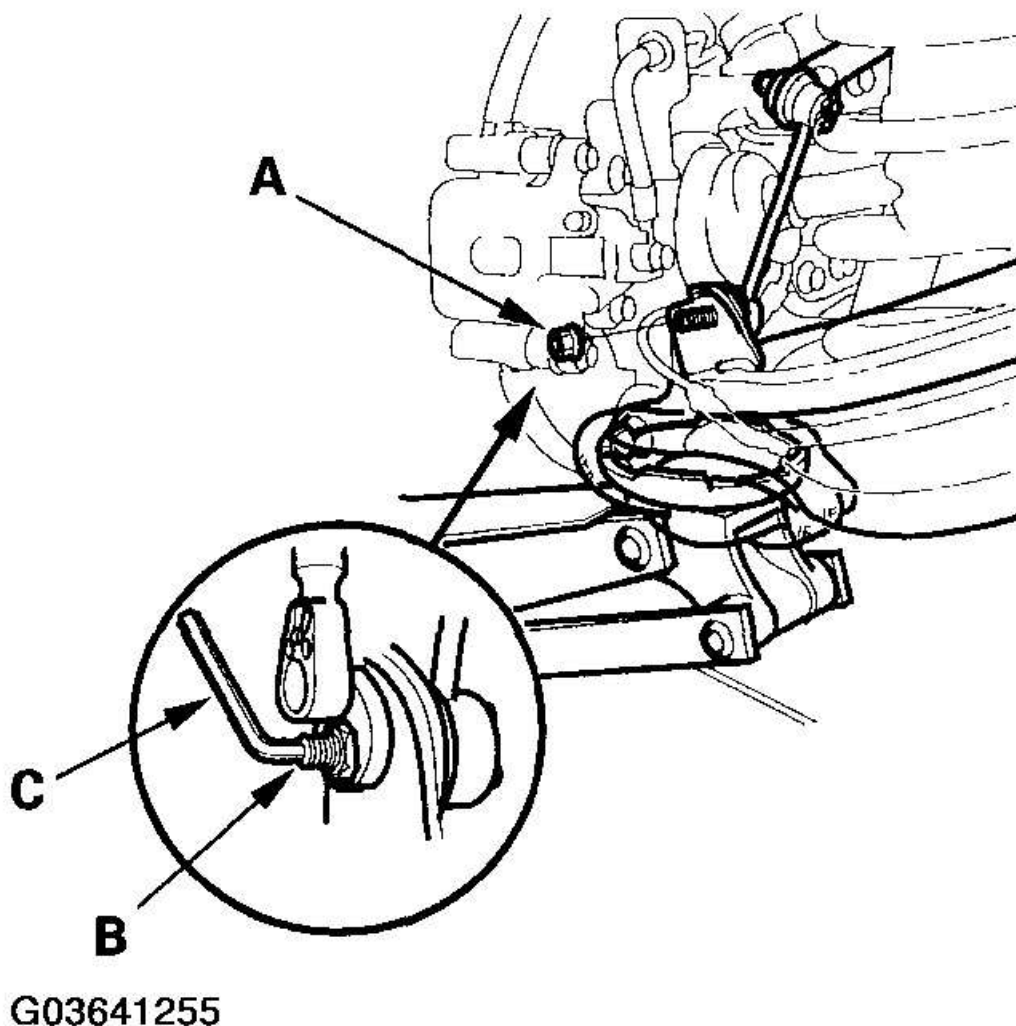
2. Install the spring (E), and upper spring seat (F). Align the bottom of the spring and the lower spring seat (G) with lower arm B as shown.
3. Place a floor jack at the connecting point of lower arm B and the knuckle.
4. Raise the jack slowly until you can align the bolt holes of lower arm B and the knuckle, then loosely install the new flange bolt (A).



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**Fig. 32: Installing New Flange Bolt**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the stabilizer link to the lower arm B, then loosely install the flange nut.
6. Raise the rear suspension with a floor jack to load it with the vehicle's weight.
7. Tighten the flange bolt and self-locking nut on the adjusting bolt to the specified torque values.
8. Install the wheel sensor harness (C).
9. Tighten the new flange nut (A) to the specified torque values while holding the joint pin (B) with a hex wrench (C).



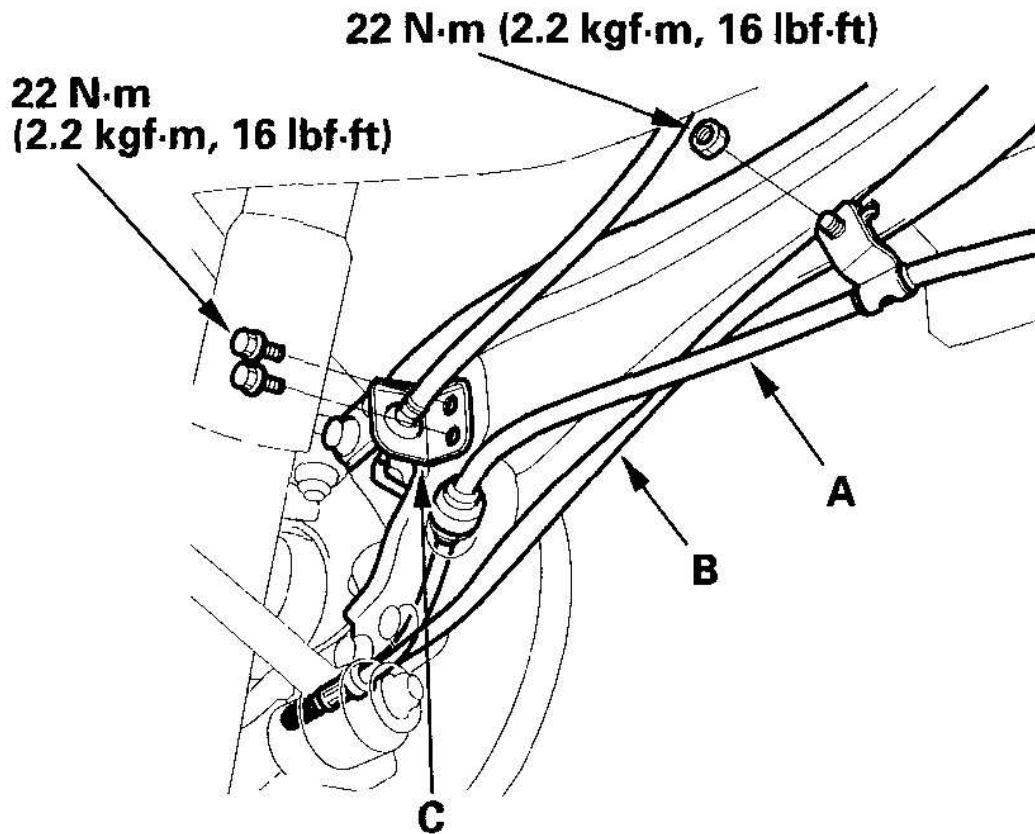
**Fig. 33: Tightening New Flange Nut**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the rear wheels.
11. Check the rear wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT** ).

## TRAILING ARM REMOVAL/INSTALLATION

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS** ). Remove the rear wheels.
2. Remove the brake disc/drum (see step 4 ).

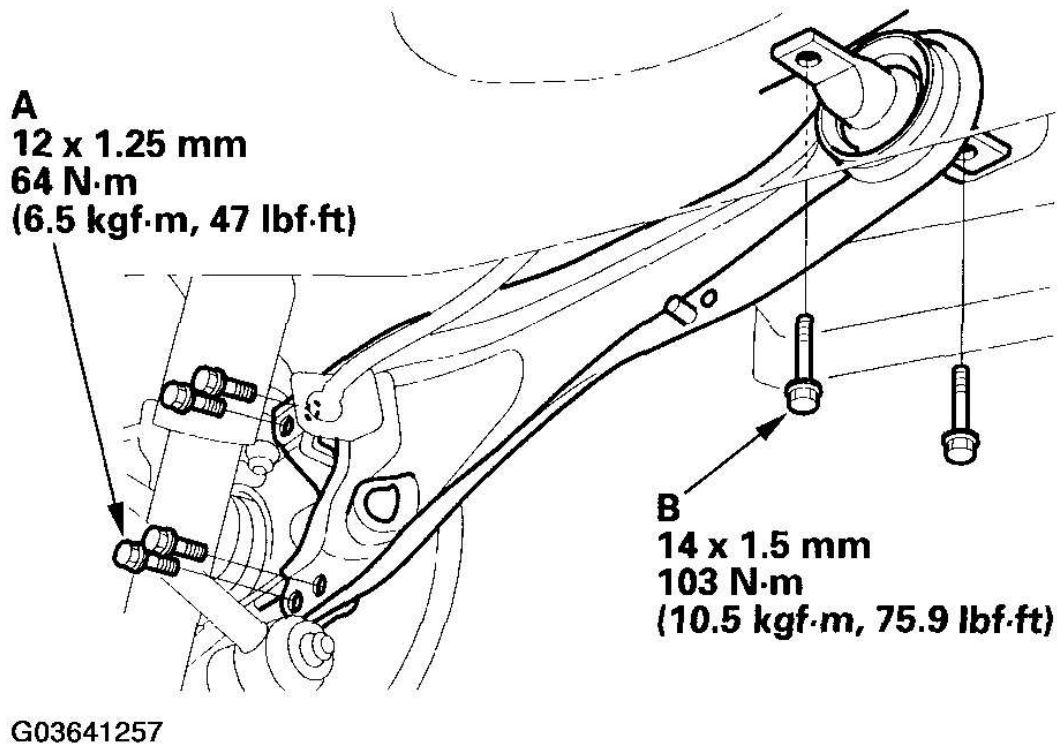
3. Remove the parking brake cable (A) from the trailing arm (B).



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**Fig. 34: Removing Parking Brake Cable From Trailing Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the brake hose bracket (C) from the trailing arm.
5. Place a floor jack at the connecting point of lower arm B and the knuckle.
6. Remove the flange bolts (A) and trailing arm mounting bolts (B) from the trailing arm, then remove the trailing arm.



**Fig. 35: Removing Trailing Arm**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install the trailing arm in the reverse order of removal, and note these items:
  - Install the trailing arm with new mounting bolts.
  - First install all the components and lightly tighten the bolts and nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque values.
  - Tighten all mounting hardware to the specified torque values.
  - Check the brake hose and line joint for leaks, and tighten if necessary.
  - Check the brake hose for interference and twisting.
  - Before installing the wheel, clean the mating surfaces of the brake disc/drum and the inside of the wheel.
  - Check the rear wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT**).

## DAMPER REMOVAL AND INSTALLATION

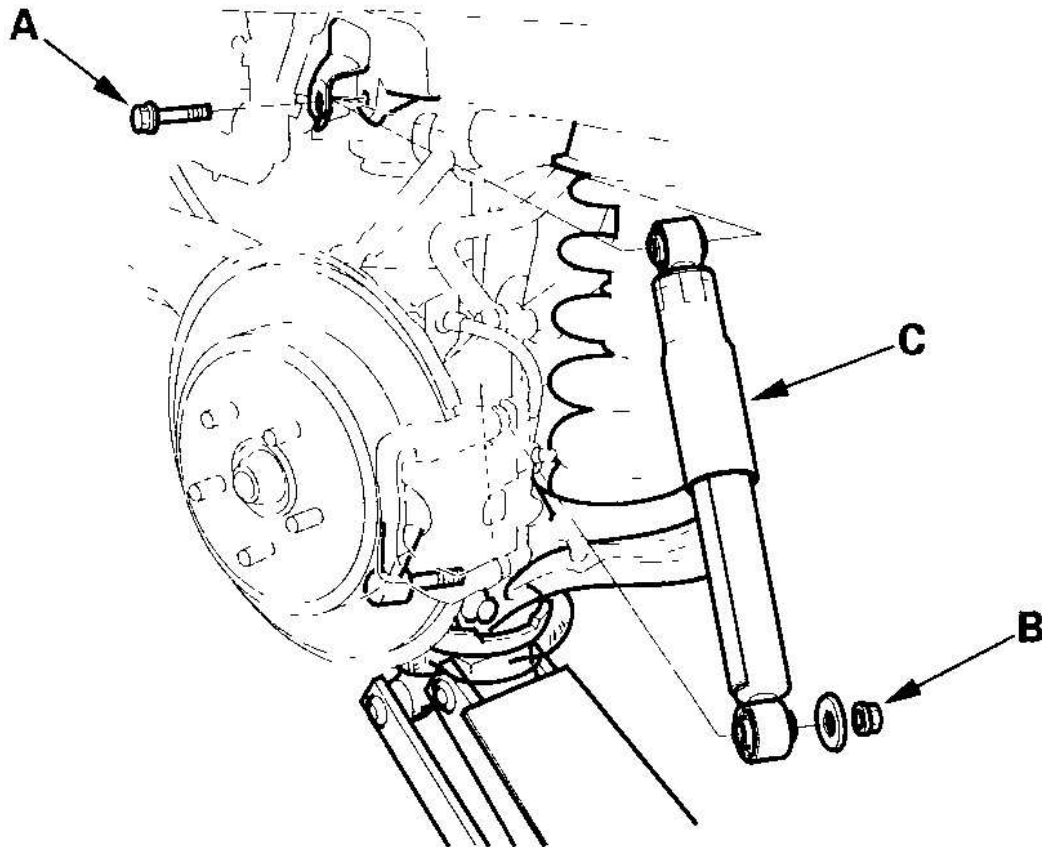
### REMOVAL

1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND**



**SUPPORT POINTS** ). Remove the rear wheels.

2. Place a floor jack at the connecting point of lower arm B and the knuckle.
3. Remove the flange bolt (A) from the body.



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**Fig. 36: Removing Damper**

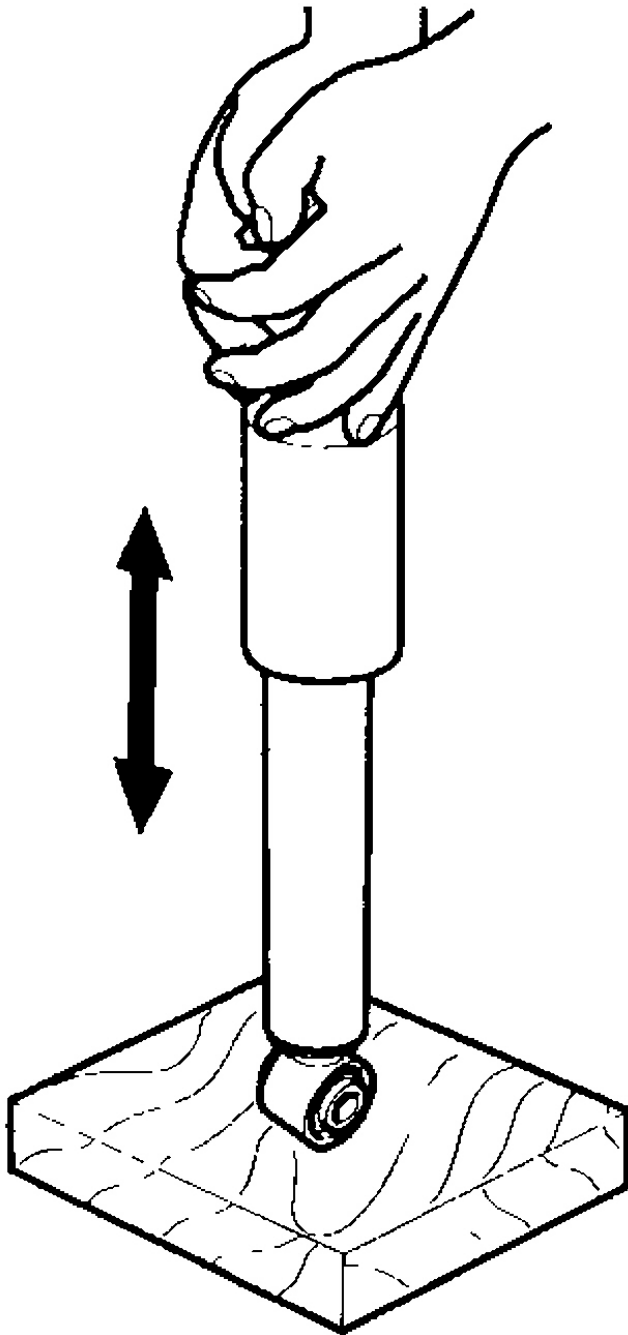
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Remove the self-locking nut (B) and washer from the knuckle.
5. Compress the damper (C) by hand, and remove it from the vehicle.

## INSPECTION

1. Push on the damper by hand as shown.





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**Fig. 37: Pushing On Damper By Hand**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

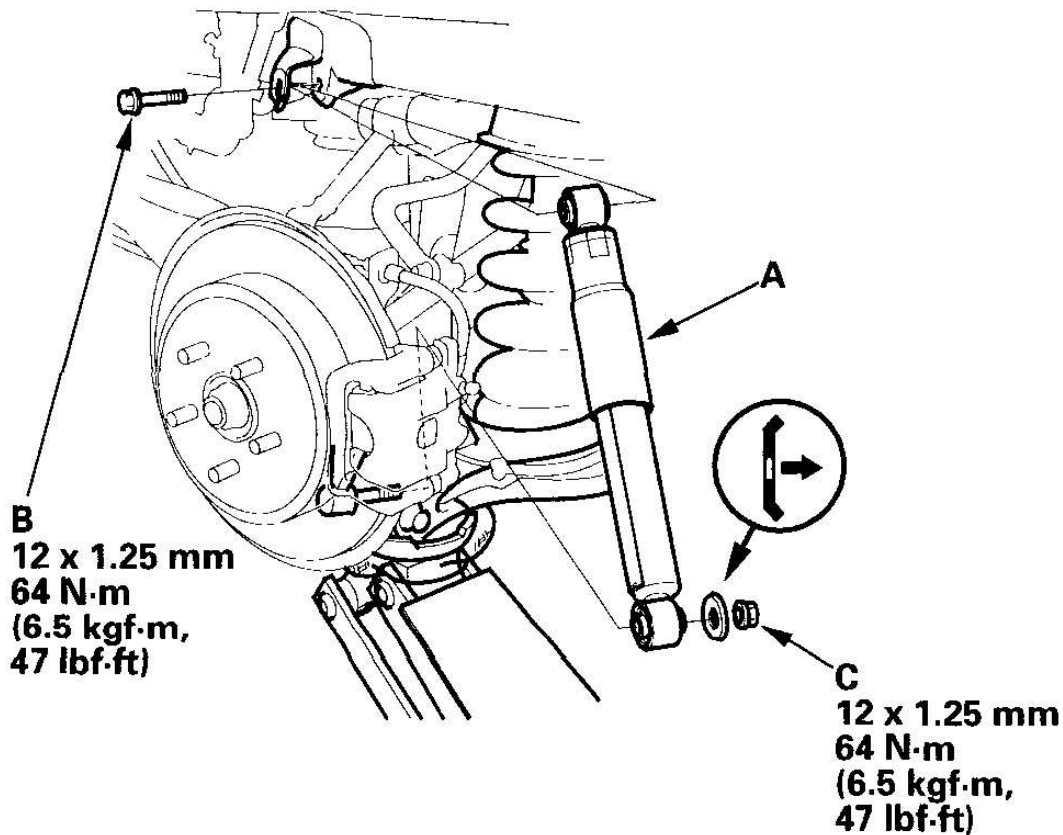
2. Compress the damper assembly by hand, and check for smooth operation through a full stroke, both

compression and extension. The damper should extend in a smooth, continuous motion when the compression is released. If it does not (no compression or no extension), the gas is leaking, and the damper should be replaced.

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

## INSTALLATION

1. Place a floor jack at the connecting point of lower arm B and the knuckle.
2. Compress the damper (A) by hand, and move it into position. Loosely install the new flange bolt (B), washer, and new self-locking nut (C).



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**Fig. 38: Installing Damper**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

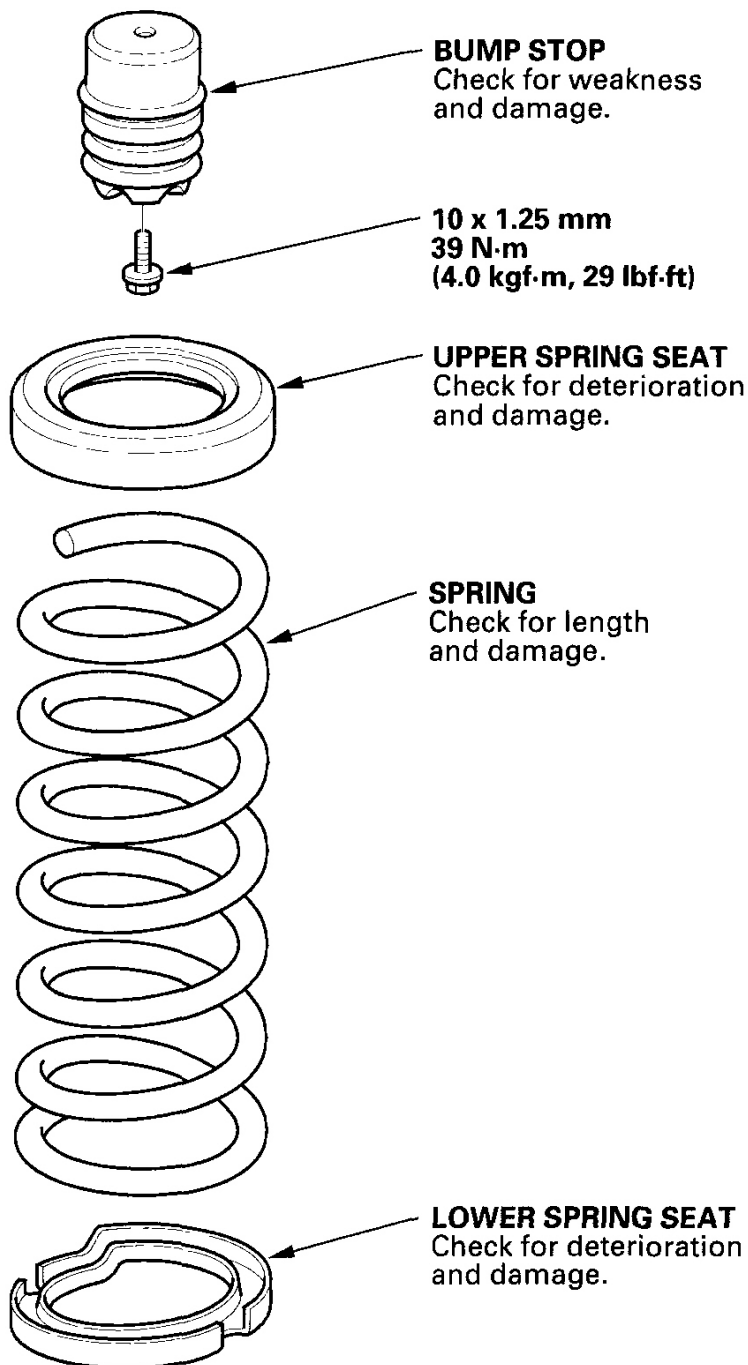
3. Raise the rear suspension with a floor jack to load it with the vehicle's weight.
4. Tighten the flange bolt and self-locking nut to the specified torque values.
5. Install the rear wheels.

<b>2006 Acura MDX</b>
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6. Check the rear wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT** ).

## **SPRING/BUMP STOP REPLACEMENT**

### **EXPLODED VIEW**

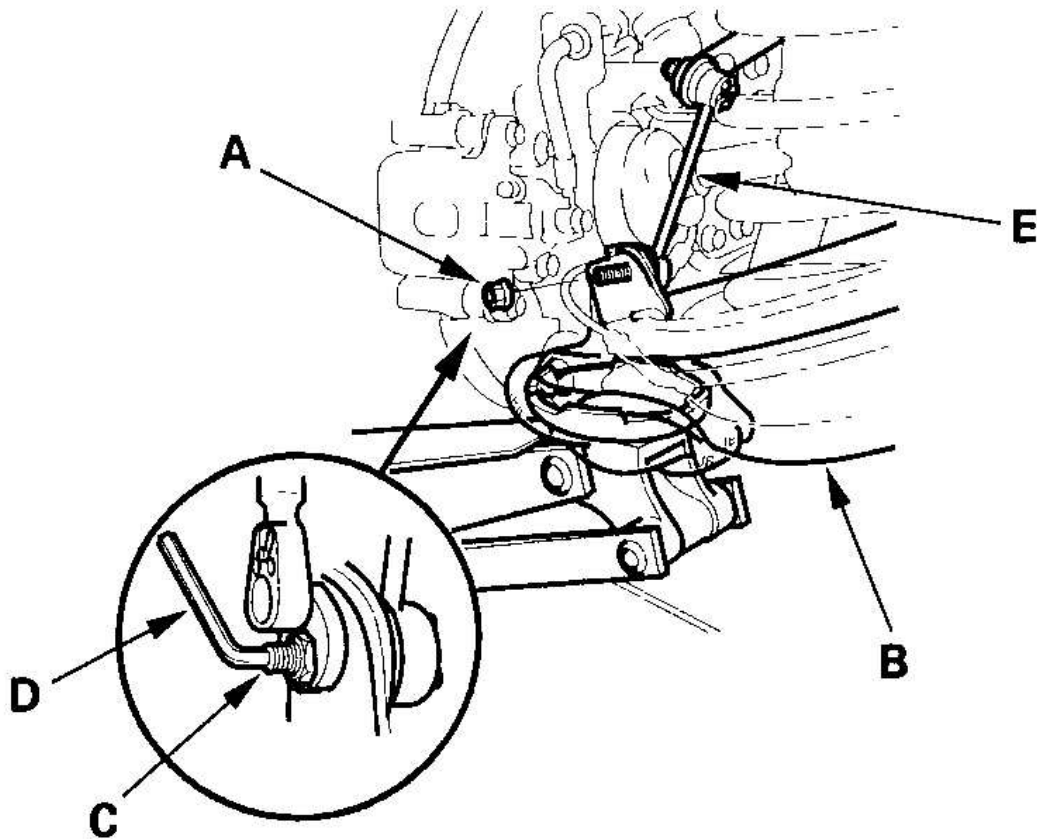


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**Fig. 39: Exploded View Of Spring/Bump**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

**REMOVAL**

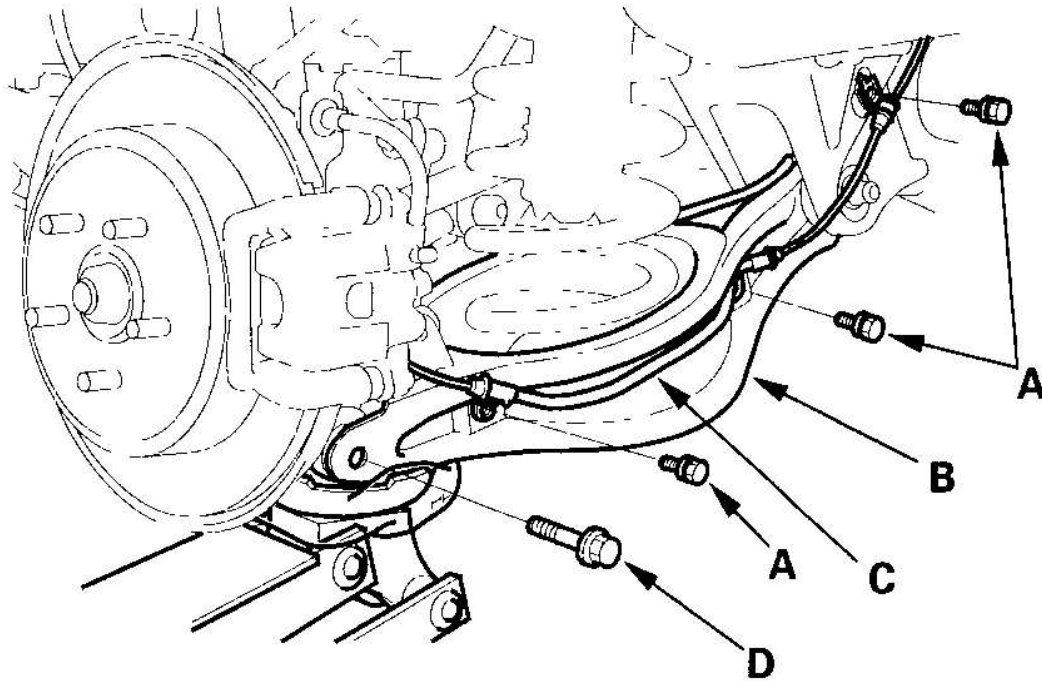
1. Raise the rear of the vehicle, and support it with safety stands in the proper locations (see **LIFT AND SUPPORT POINTS** ). Remove the rear wheels.
2. Place a floor jack at the connecting point of lower arm B and the knuckle.



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**Fig. 40: Placing Floor Jack At Connecting Point Of Lower Arm And Knuckle**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

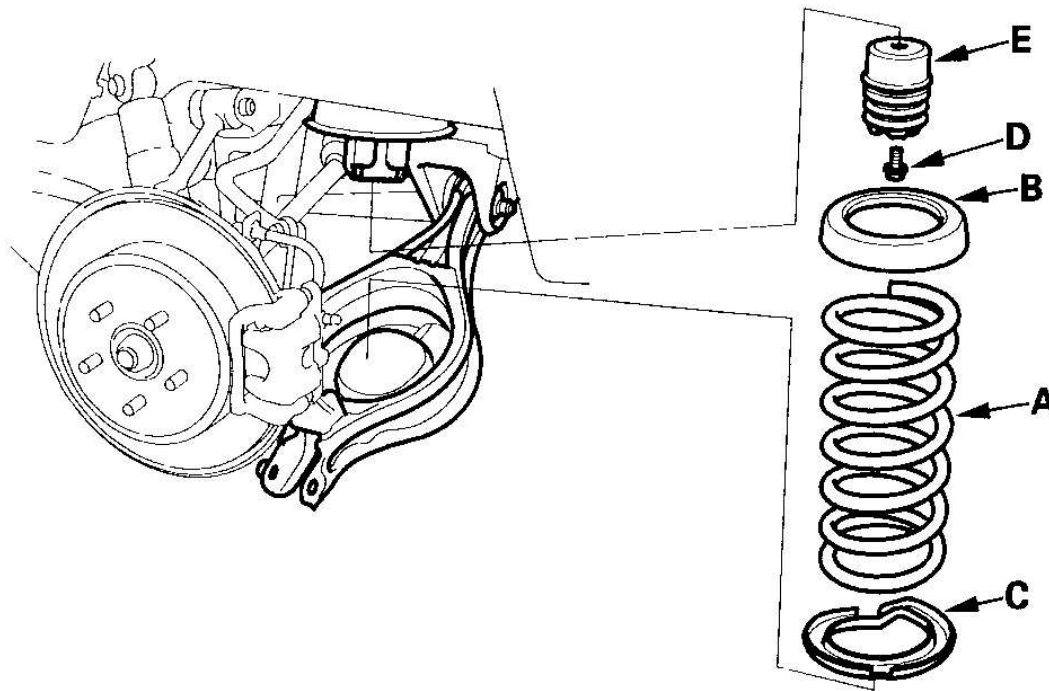
3. Remove the flange nut (A) while holding the joint pin (C) with a hex wrench (D), and disconnect the stabilizer link (E) from lower arm B.
4. Remove the three flange bolts (A) and the wheel sensor harness (C) from lower arm B. Do not disconnect the wheel sensor connector.



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**Fig. 41: Removing Three Flange Bolts And Wheel Sensor Harness From Lower Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the flange bolt (D) that connects lower arm Band the knuckle.
6. Lower the floor jack gradually.
7. Remove the spring (A), upper spring seat (B), and lower spring seat (C).



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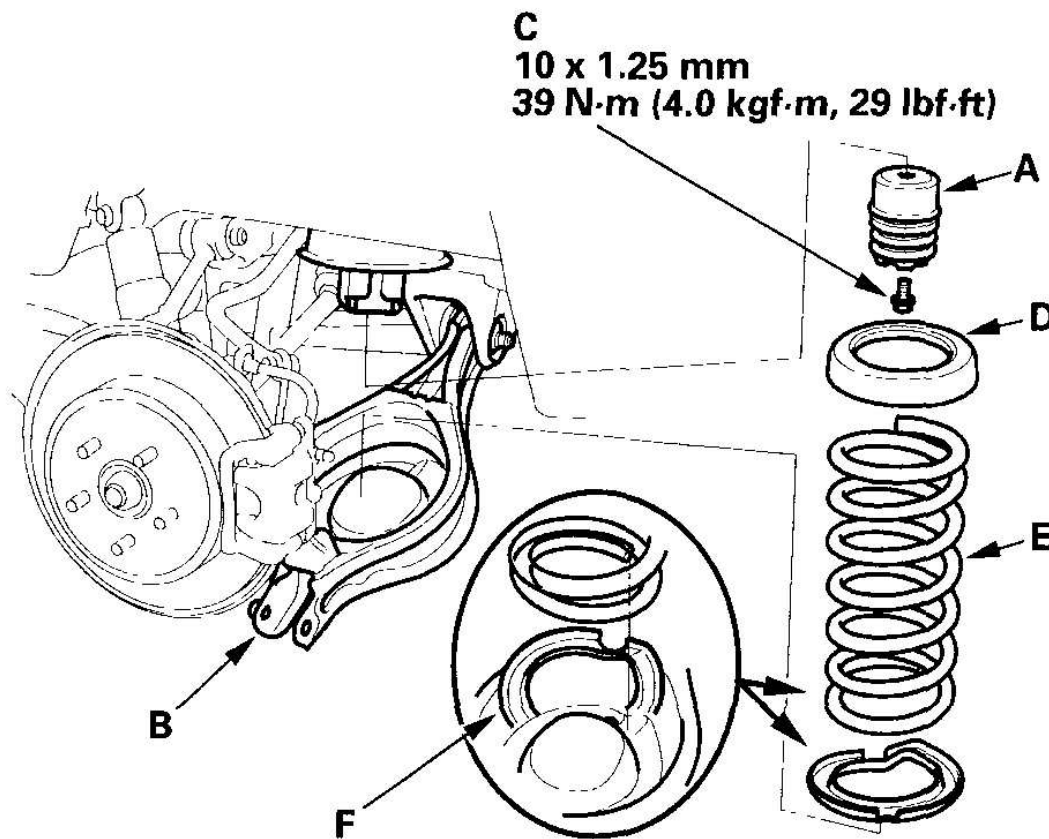
**Fig. 42: Removing Spring, Upper Spring And Lower Spring Seat**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the flange bolt (D) and bump stop (E).

## INSTALLATION

1. Install the bump stop (A), and tighten the flange bolt (C) to the specified torque value.



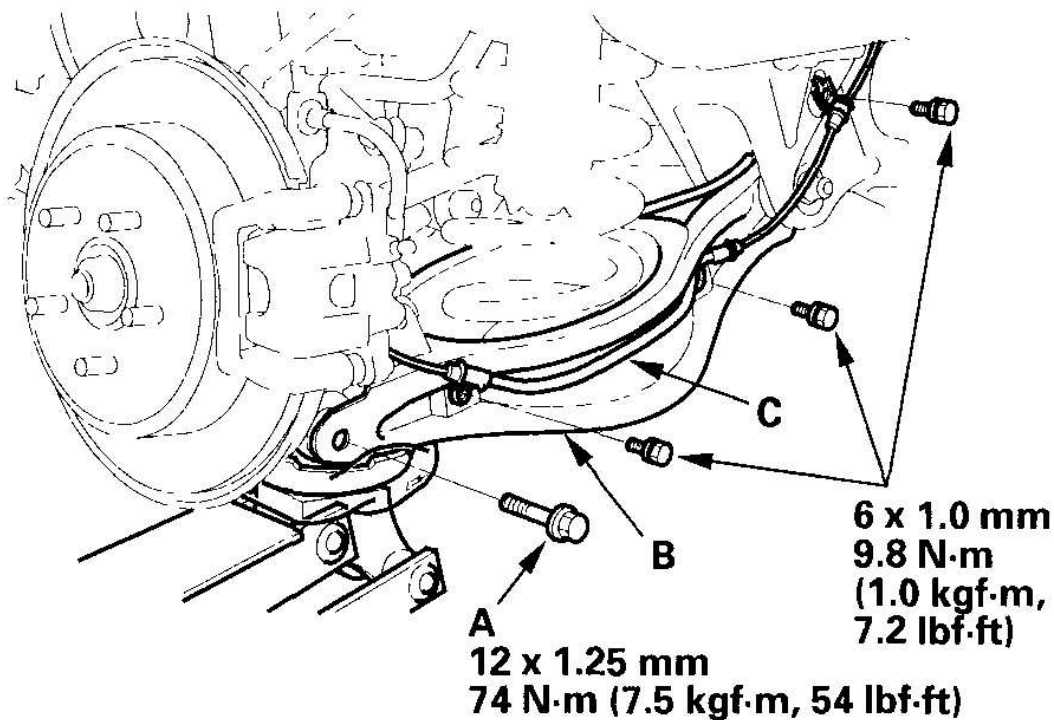


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**Fig. 43: Installing Bump Stop**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Install the upper spring seat (D) and spring (E). Align the bottom of the spring and the lower spring seat (F) with lower arm B as shown.
3. Place a floor jack at the connecting point of lower arm B and the knuckle.
4. Raise the jack slowly until you can align the bolt holes of lower arm B and the knuckle, then install the new flange bolt (A).

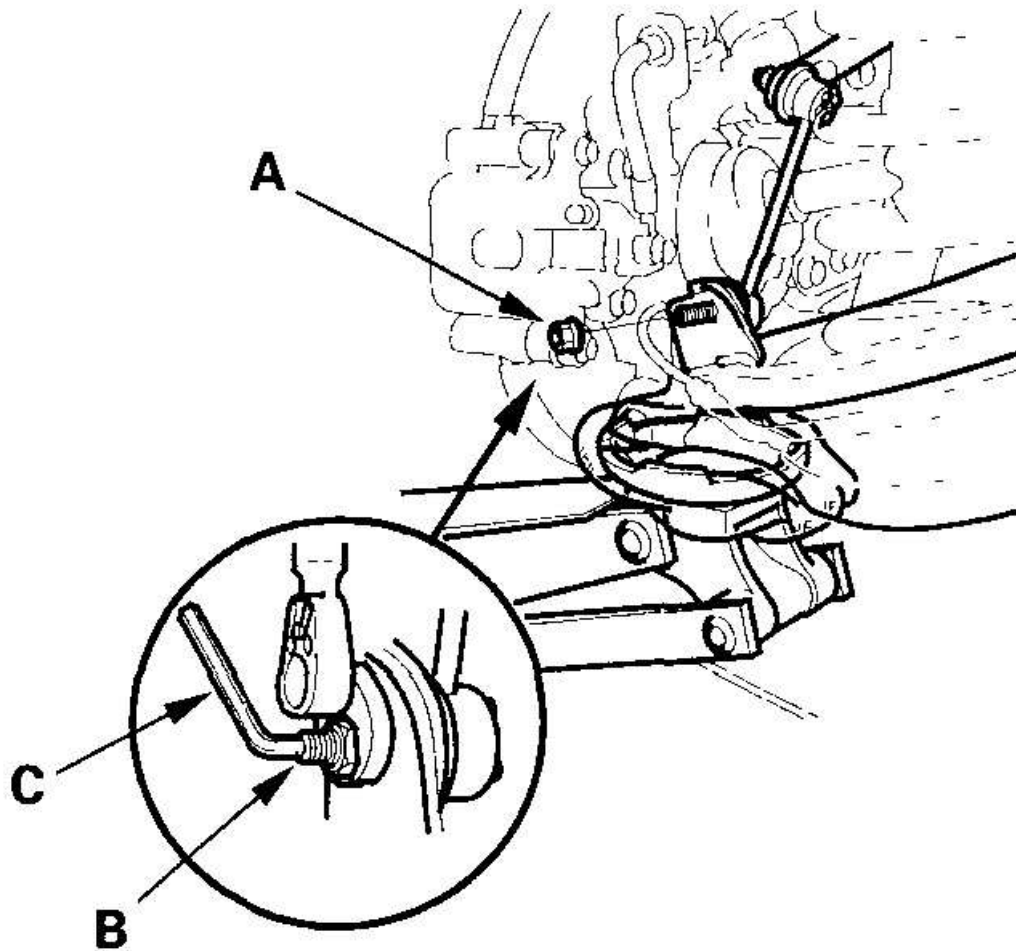


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**Fig. 44: Installing Flange Bolt**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Connect the stabilizer link to the lower arm B, then loosely install the flange nut.
6. Raise the rear suspension with a floor jack to load it with the vehicle's weight.
7. Tighten the flange bolt to the specified torque value.
8. Install the wheel sensor harness (C).
9. Tighten the new flange nut (A) to the specified torque values while holding the joint pin (B) with a hex wrench (C).



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**Fig. 45: Tightening New Flange Nut**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the rear wheels.
11. Check the rear wheel alignment, and adjust it if necessary (see **WHEEL ALIGNMENT** ).