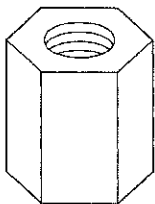


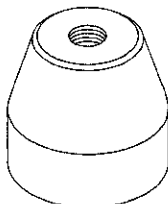
Front and Rear Suspension

Special Tools

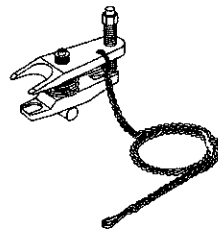
Ref. No.	Tool Number	Description	Qty
①	07AAE-SJAA100	Ball Joint Thread Protector, 14 mm	1
②	07AAF-SDAA100	Ball Joint Thread Protector, 12 mm	1
③	07AAF-SECA120	Ball Joint Thread Protector, 10 mm	1
④	070AG-SJA0200	Ball Joint Boot Clip Guide, 53 mm	1
⑤	070AG-SJA0300	Ball Joint Boot Clip Guide, 45 mm	1
⑥	07MAC-SL0A102	Ball Joint Remover, 32 mm	1
⑦	07MAC-SL0A202	Ball Joint Remover, 28 mm	1
⑧	07MAG-SL00200	Ball Joint Boot Clip Guide, 51 mm	1



①, ②, ③



④, ⑤, ⑧

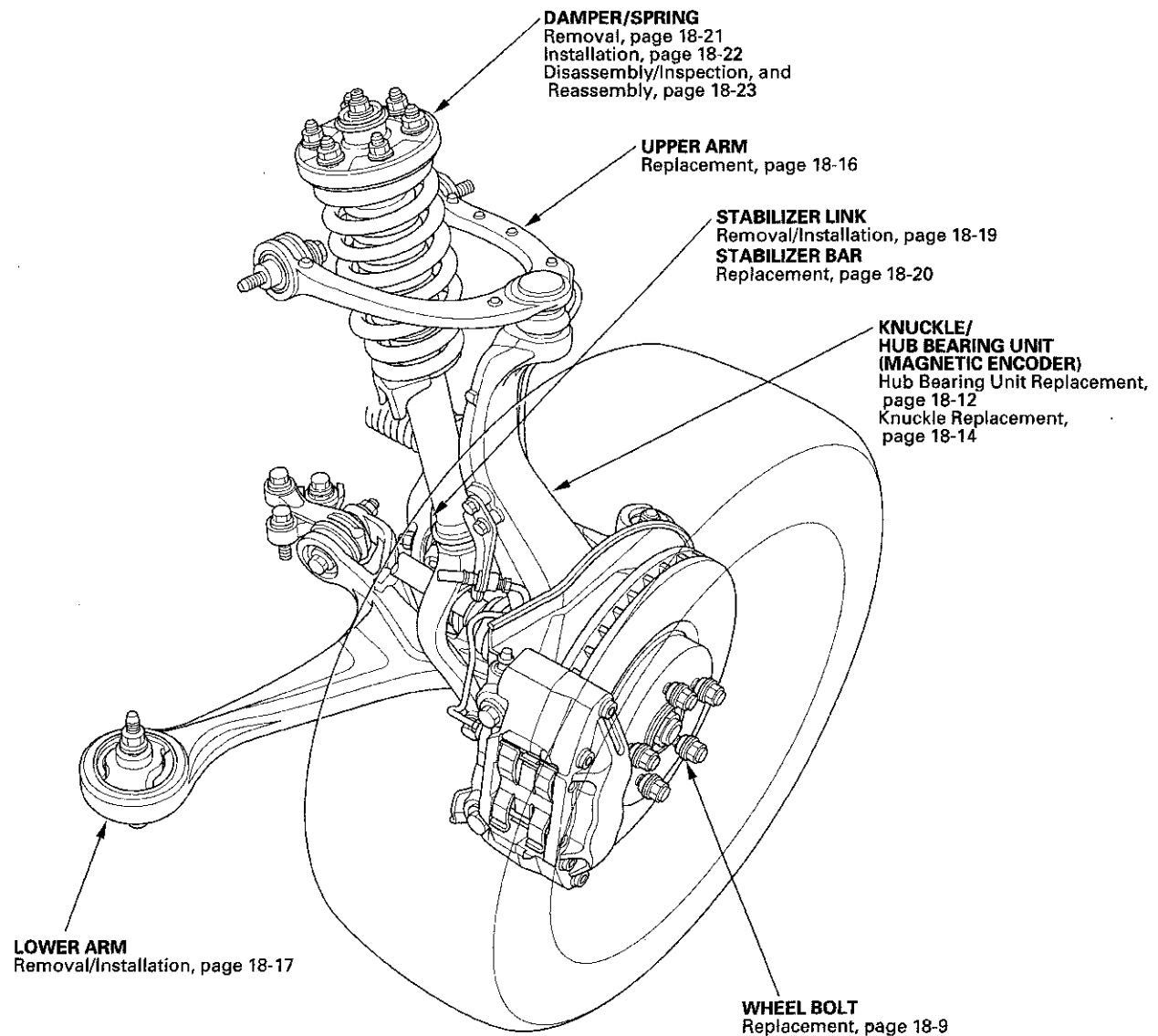


⑥, ⑦



Component Location Index

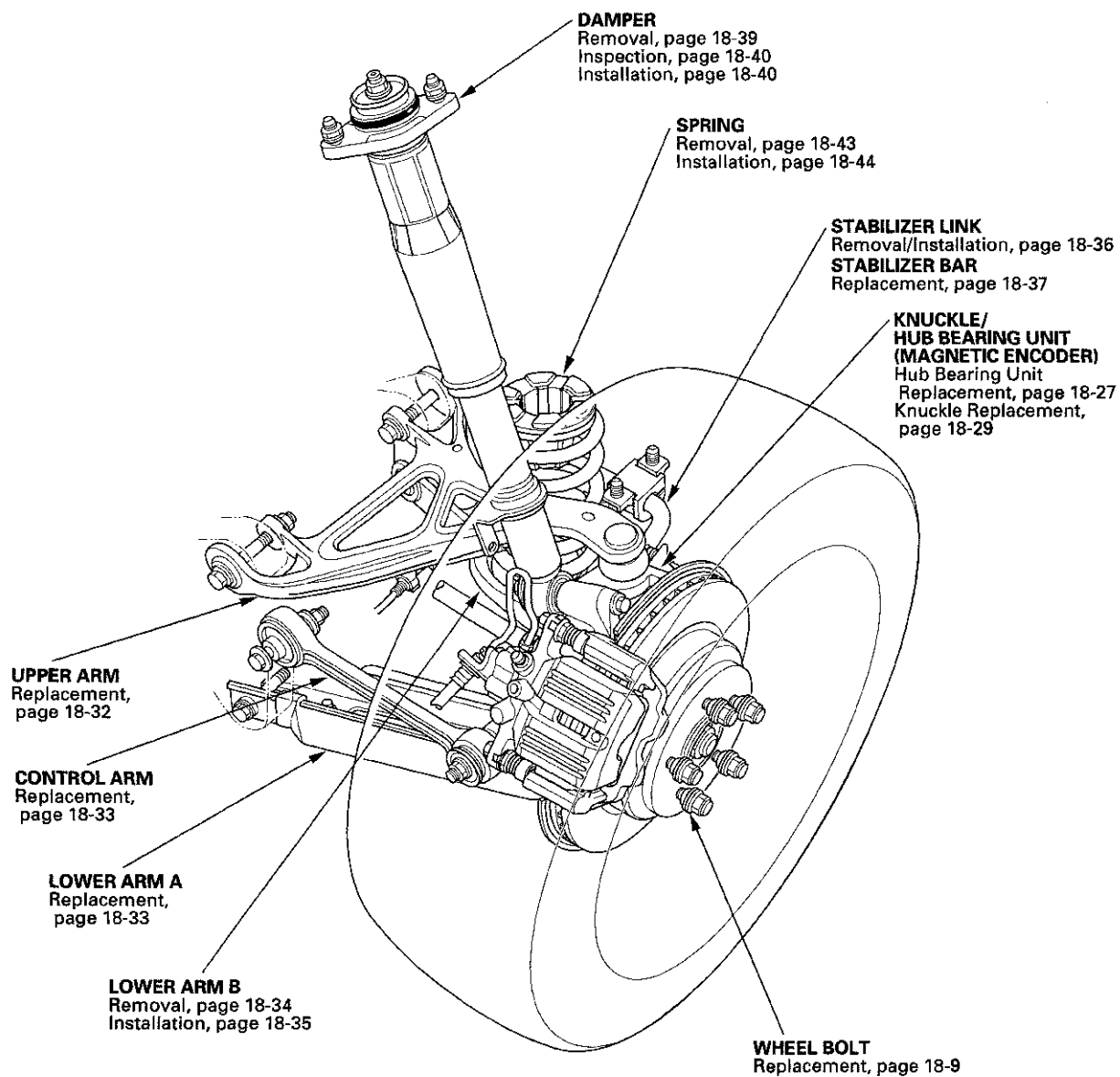
Front Suspension



Front and Rear Suspension

Component Location Index (cont'd)

Rear Suspension





Wheel Alignment

NOTE: After adjusting the wheel alignment, do the VSA sensor neutral position memorization (see page 19-104).

The suspension can be adjusted for front and rear toe.

Pre-Alignment Checks

For proper inspection and adjustment of the wheel alignment, do these checks:

1. Release the parking brake to avoid an incorrect measurement.
2. Make sure the suspension is not modified.
3. Make sure the fuel tank is full, and that the spare tire, the jack, and the tools are in place on the vehicle.
4. Check the tire size and tire pressure.

Tire size:

Front/Rear: P245/45R18 96V

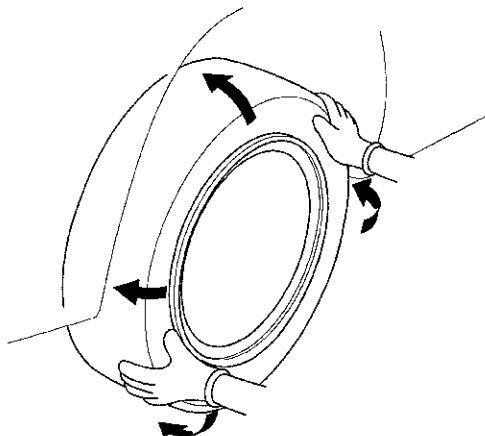
Tire pressure (at cold):

Front: 220 kPa (2.2 kgf/cm², 32 psi), cold

Rear: 210 kPa (2.1 kgf/cm², 30 psi), cold

5. Check the runout of the wheels and tires (see page 18-8).

6. Check the suspension ball joints (Hold a tire with your hands, and move it up and down and right and left to check for movement).



7. Before doing alignment inspections, be sure to remove all extra weight from the vehicle, and no one should be inside the vehicle (driver or passengers).
8. Bounce the vehicle up and down several times to stabilize the suspension.
9. Check that the steering column is set at the center tilt and telescopic position.

Caster Inspection

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Check the caster angle.

Caster angle: 2° 10' ±30'

(Maximum difference between the right and left side: 0° 30')

- If the measurement is within specifications, measure the camber angle.
- If the measurement is not within specifications, check for bent or damaged suspension components.

(cont'd)

Front and Rear Suspension

Wheel Alignment (cont'd)

Camber Inspection

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Check the camber angle.

Camber angle:

Front: $-0^{\circ}08' \pm 30'$

Rear: $-1^{\circ}15' \pm 30'$

(Maximum difference between the right and left side: $0^{\circ}30'$)

- If the measurement is within specifications, measure the toe-in.
- If the measurement is not within specifications, check for bent or damaged suspension components.

Front Toe Inspection/Adjustment

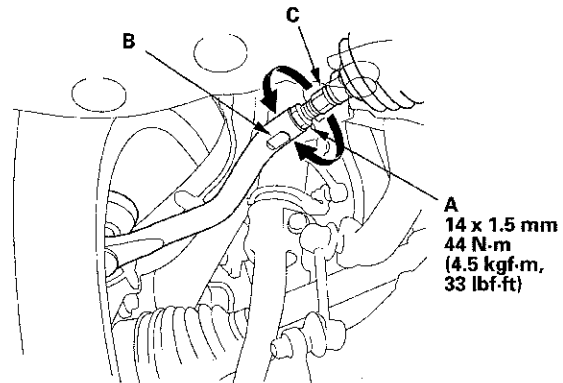
Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Center the steering wheel spokes.
2. Check the toe with the wheels pointed straight ahead.

Front toe-in: 0 ± 2 mm (0 ± 0.08 in)

- If adjustment is required, go to step 3.
- If no adjustment is required, go to rear toe inspection/adjustment.

3. Loosen the tie-rod locknuts (A) while holding the flat surface sections (B) of the tie-rod end with a wrench, and turn both rack ends (C) until the front toe is within specifications.



4. After adjusting, tighten the tie-rod locknuts to the specified torque. Reposition the rack-end boots if it is twisted or displaced.
5. Go to rear toe inspection/adjustment.



Rear Toe Inspection/Adjustment

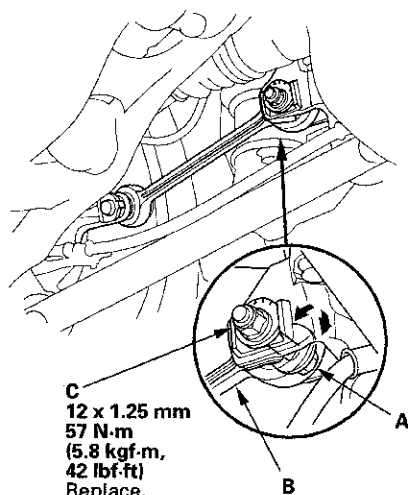
Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Release the parking brake to avoid an incorrect measurement.
2. Check the toe.

Rear toe-in: 2 ± 2 mm (0.08 ± 0.08 in)

- If adjustment is required, go to step 3.
- If no adjustment is required, go to turning angle inspection.

3. Hold the adjusting bolt (A) on the rear control arm (B), and loosen the self-locking nut (C).



4. Replace the self-locking nut with a new one, and lightly tighten it.

NOTE:

- Always use a new self-locking nut whenever it has been tightened to the specified torque.
- Assemble the adjusting bolt and cam-plate with the eccentric facing up.

5. Adjust the rear toe by turning the adjusting bolt until the toe is correct.
6. While holding the adjusting bolt, tighten the self-locking nut to the specified torque.

Turning Angle Inspection

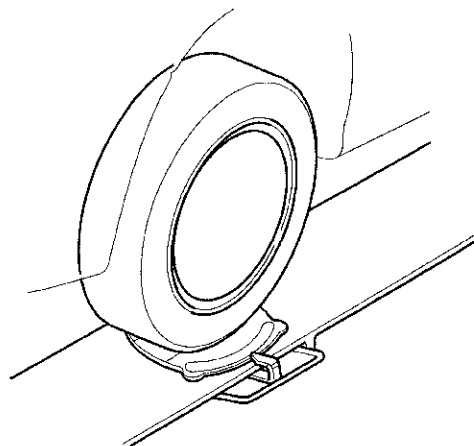
Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Turn the wheel right and left while applying the brake, and measure the turning angle of both wheels.

Turning angle:

Inward: $37^{\circ} 19' \pm 2^{\circ}$

Outward: $30^{\circ} 39'$ (reference)



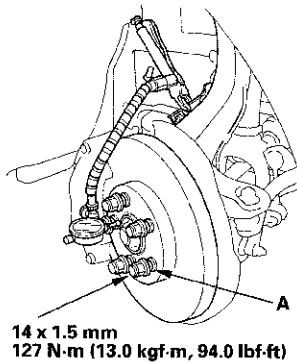
2. If the measurement is not within the specifications, even up both sides of the tie-rod threaded section length while adjusting the front toe. If it is correct, but the turning angle is not within the specifications, check for bent or damaged suspension components.

Front and Rear Suspension

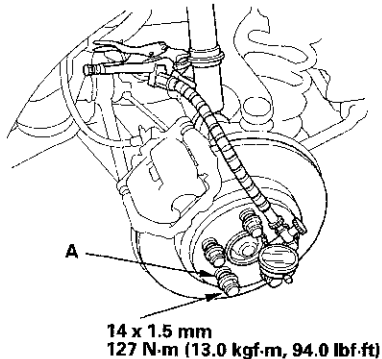
Wheel Bearing End Play Inspection

1. Raise the vehicle on a lift (see page 1-8).
2. Remove the wheel nuts, and the wheels, taking care not to scratch the caliper.
3. Install suitable flat washers (A) and the wheel nuts. Tighten the nuts to the specified torque to hold the brake disc securely against the hub.

Front



Rear



4. Attach the dial gauge. Place the dial gauge against the hub flange or hub cap.
5. Measure the bearing end play while moving the brake disc or the brake disc/drum inward and outward.

Front/Rear:

Standard: 0—0.05 mm (0—0.002 in)

6. If the bearing end play measurement is more than the standard, replace the wheel bearing or the hub bearing unit.

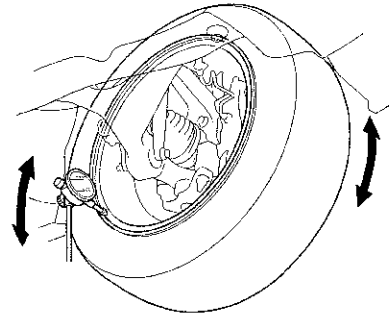
Wheel Runout Inspection

1. Raise the vehicle on a lift (see page 1-8).
2. Check for a bent or a deformed wheel.
3. Set up the dial gauge as shown, and measure the axial runout by rotating the wheel.

Front and rear wheel axial runout:

Standard: 0—0.7 mm (0—0.03 in)

Service limit: 2.0 mm (0.08 in)

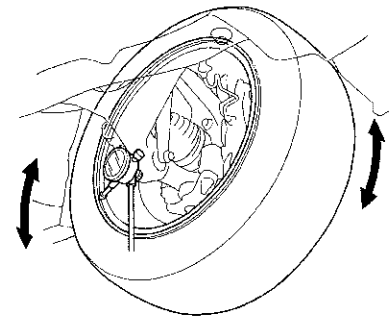


4. Reset the dial gauge to the position shown, and measure the radial runout.

Front and rear wheel radial runout:

Standard: 0—0.7 mm (0—0.03 in)

Service limit: 1.5 mm (0.06 in)



5. If the wheel runout is not within the specification, check the wheel bearing end play (see page 18-8), and make sure the mating surfaces on the brake disc and the inside of the wheel are clean.
6. If the bearing end play is within the specification (see page 18-8), but the wheel runout is more than the service limit, replace the wheel.



Wheel Bolt Replacement

Special Tools Required

Ball joint remover, 28 mm 07MAC-SL0A202

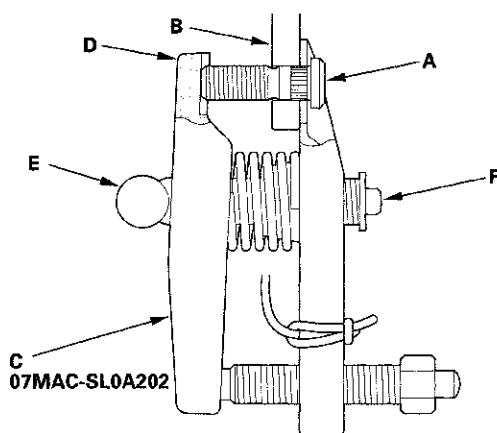
NOTICE

- Do not use a hammer, air, or electric impact tools to remove and install the wheel bolts.
- Be careful not to damage the threads of the wheel bolts.

1. Raise the vehicle on a lift (see page 1-8).
2. Remove the brake disc or disc/drum: front (see page 18-12), rear (see page 18-27).
3. Separate the wheel bolt (A) from the hub (B) using the ball joint remover (C), and keep the jaw (D) of ball joint remover vertical against the wheel bolt (see page 18-10).

NOTE:

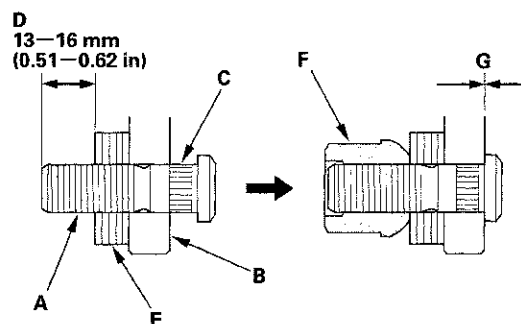
- Adjust the jaws of the ball joint remover so that they are parallel to each other when applying pressure to the wheel bolt. With each adjustment, return the head (E) of the adjusting bolt (F) to the position shown before applying pressure.
- Before installing the new wheel bolt, clean the mating surface on the bolt and the hub.



4. Insert the new wheel bolt (A) into the hub (B) while aligning the splined surfaces (C) on the hub hole with the wheel bolt. Adjust the measurement (D) with washers (P/N 94101-14800 or equivalent) (E), then install a nut (P/N 90304-SHJ-A91 or equivalent) (F) hand-tight.

NOTE:

- Degrease the area around the wheel bolt and the threaded section of the nut.
- Make sure the wheel bolt is installed vertically in relation to the hub disc surface.
- Do not install the nut and washers that have been used as tools on a vehicle.



5. Tighten the nut until the wheel bolt is drawn fully into the hub. Do not exceed the maximum torque limit. Make sure there is no gap (G) between the bolt and the hub.

Maximum torque limit:

127 N·m (13.0 kgf·m, 94.0 lbf·ft) max.

6. Install the brake disc or disc/drum: front (see page 18-12), rear (see page 18-27).

NOTE:

- If you cannot tighten the wheel nut to the specified torque when installing the wheel, replace the hub bearing unit as an assembly.
- Before installing the wheel, clean the mating surfaces of the brake disc and the inside of the wheel.

Front and Rear Suspension

Ball Joint Removal

Special Tools Required

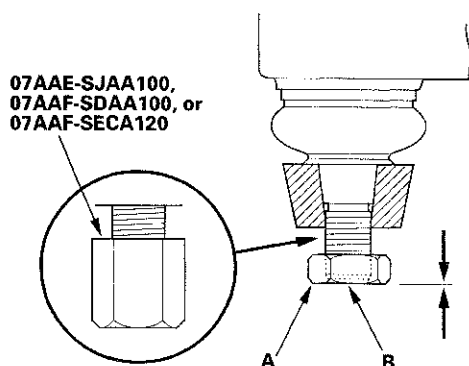
- Ball joint thread protector, 14 mm 07AAE-SJAA100
- Ball joint thread protector, 12 mm 07AAF-SDAA100
- Ball joint thread protector, 10 mm 07AAF-SECA120
- Ball joint remover, 32 mm 07MAC-SL0A102

NOTICE

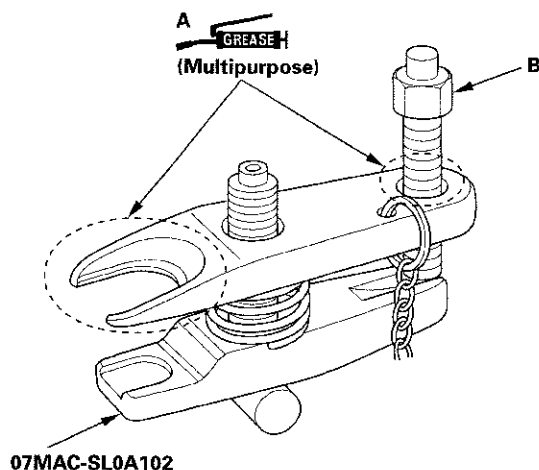
Always use a ball joint remover to disconnect a ball joint. Do not strike the housing or any other part of the ball joint connection to disconnect it.

1. Install a hex nut (A) or the ball joint thread protector onto the threads of the ball joint (B).

NOTE: Using a hex nut, make sure the nut is flush with the ball joint pin end to prevent damage to the threaded end of the ball joint pin.

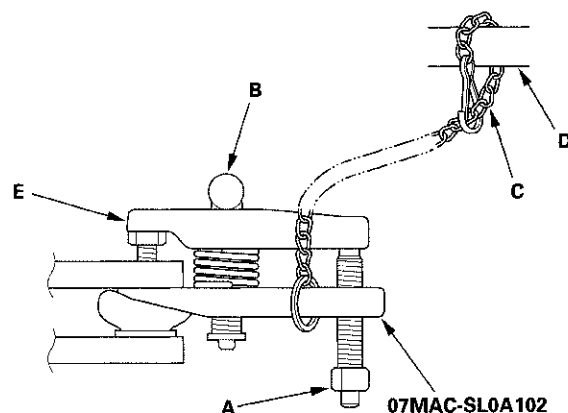


2. Apply grease to the ball joint remover on the areas shown (A). This will ease the installation of the tool, and prevent damage to the pressure bolt (B) threads.



3. Loosen the pressure bolt (A), and install the ball joint remover as shown. Insert the jaws carefully, making sure not to damage the ball joint boot. Adjust the jaw spacing by turning the adjusting bolt (B).

NOTE: Fasten the safety chain (C) securely to a suspension arm or the subframe (D). Do not fasten it to a brake line or wire harness.



4. After adjusting the adjusting bolt, make sure the head of the adjusting bolt is in the position shown to allow the jaw (E) to pivot.
5. With a wrench, tighten the pressure bolt until the ball joint pin pops loose from the ball joint connecting hole. If necessary, apply penetrating type lubricant to loosen the ball joint pin.

NOTE: Do not use pneumatic or electric tools on the pressure bolt.

6. Remove the ball joint remover, then remove the nut from the end of the ball joint pin, and pull the ball joint out of the ball joint connecting hole. Inspect the ball joint boot, and replace it if damaged.