

REAR AXLE & REAR SUSPENSION

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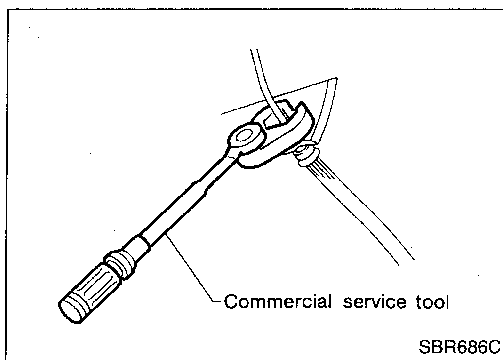
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PRECAUTIONS AND PREPARATION

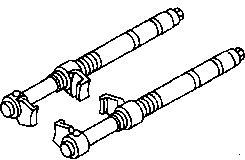
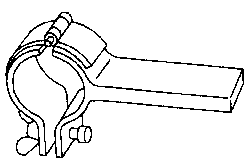
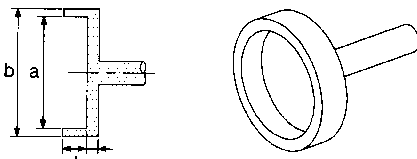


Precautions

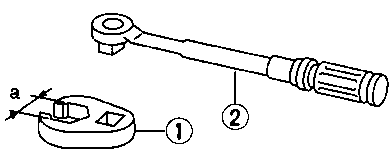
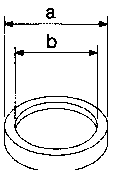
- When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground.
- *: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- Use flare nut wrench when removing or installing brake tubes.
- After installing removed suspension parts, check wheel alignment.
- Do not jack up at the trailing arm and lateral link.
- Always torque brake lines when installing.

Preparation

SPECIAL SERVICE TOOLS

Tool number (Kent-Moore No.) Tool name	Description
HT71780000 (—) Spring compressor	 <p>Removing and installing coil spring</p> <p>NT144</p>
ST35652000 (—) Strut attachment	 <p>Fixing strut assembly</p> <p>NT145</p>
ST15310000 (—) Drift	 <p>a: 84 mm (3.31 in) dia. b: 96 mm (3.78 in) dia. c: 8 mm (0.31 in) d: 20 mm (0.79 in)</p> <p>NT607</p>

COMMERCIAL SERVICE TOOLS

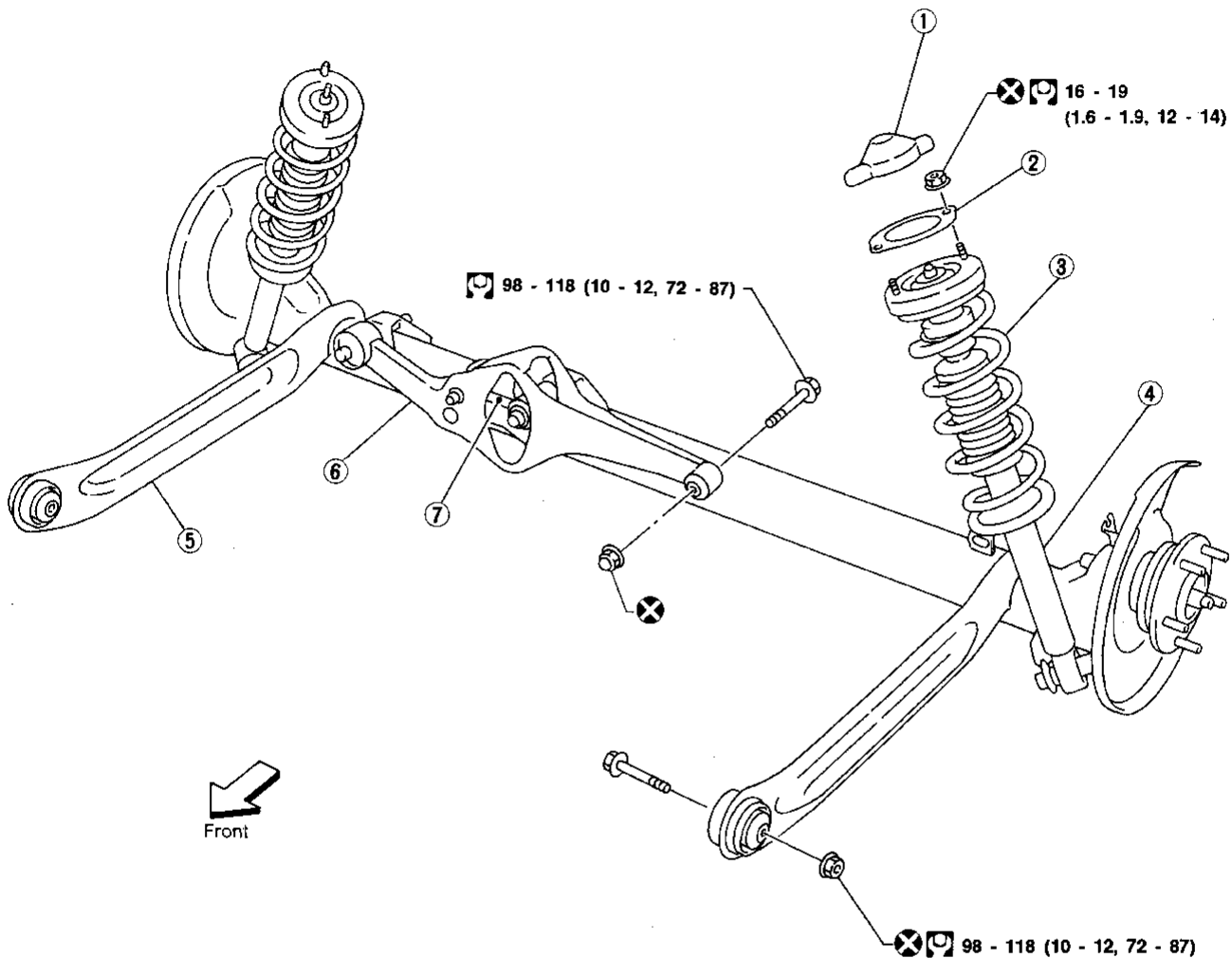
Tool name	Description
① Flare nut crowfoot ② Torque wrench	 <p>Removing and installing brake piping</p> <p>a: 10 mm (0.39 in)</p> <p>NT360</p>
Drift	 <p>a: 75 mm (2.95 in) dia. b: 62 mm (2.44 in) dia.</p> <p>NT371</p>

REAR SUSPENSION SYSTEM

SEC. 431

When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground.

* Fuel, radiator coolant and engine oil full.
Spare tire, jack, hand tools and mats in designated positions.

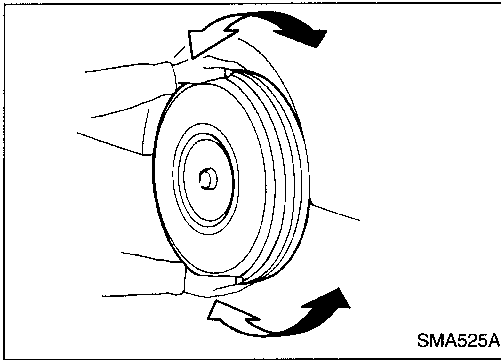


: N·m (kg-m, ft-lb)

- ① Shock absorber cap
- ② Shock absorber mounting seal
- ③ Coil spring
- ④ Shock absorber
- ⑤ Torsion beam
- ⑥ Lateral link
- ⑦ Control rod

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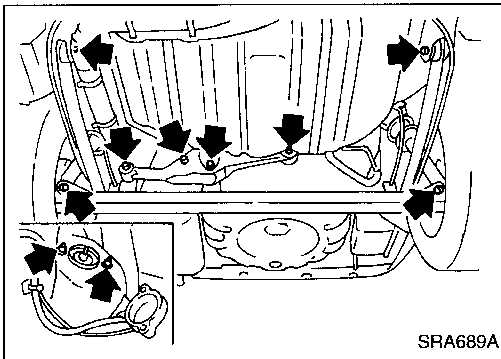
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Rear Axle and Rear Suspension Parts

Check axle and suspension parts for excessive play, wear or damage.

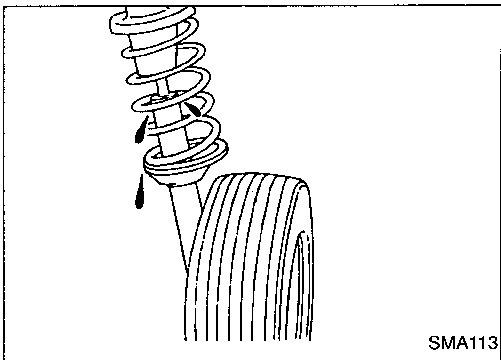
- Shake each rear wheel to check for excessive play.



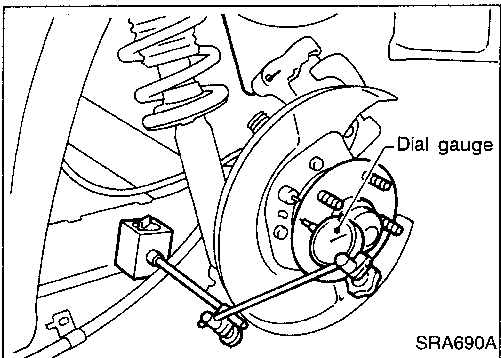
- Retighten all nuts and bolts to the specified torque.

Tightening torque:

Refer to REAR SUSPENSION (RA-9).



- Check shock absorber for oil leakage or other damage.
- Check wheelarch height. Refer to FA section.



Rear Wheel Bearing

- Check axial end play.

Axial end play:

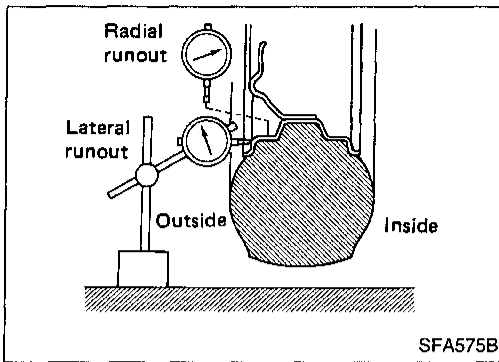
0.05 mm (0.0020 in) or less

- Check that wheel hub bearings operate smoothly.
- Check tightening torque of wheel bearing lock nut.

Ⓜ: 186 - 255 N·m

(19 - 26 kg·m, 137 - 188 ft·lb)

- Replace wheel bearing assembly if there is axial end play or wheel bearing does not turn smoothly. Refer to REAR AXLE — Wheel Hub (RA-6).



Rear Wheel Alignment

PRELIMINARY INSPECTION

Make following checks. Adjust, repair or replace if necessary.

- Check tires for wear and for proper inflation.
- Check rear wheel bearings for excessive play.
- Check wheel runout.
- **Wheel runout: Refer to SDS in FA section.**
- Check that rear shock absorber works properly.
- Check rear axle and rear suspension parts for excessive play.
- Check vehicle posture (Unladen*).

*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

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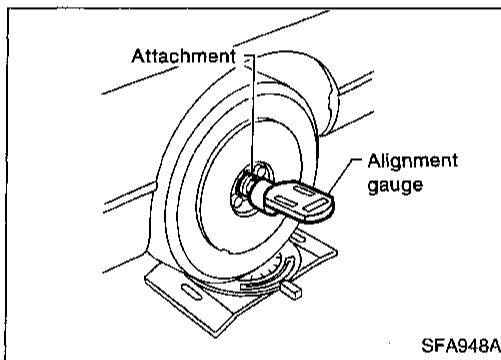
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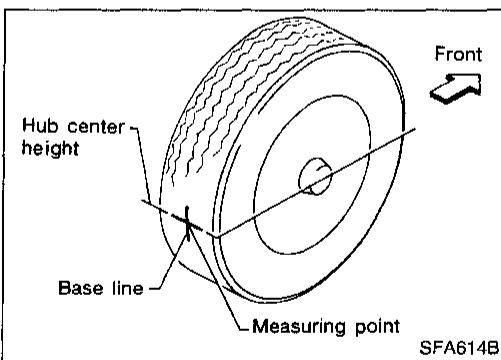
CAMBER

Camber is preset at factory and cannot be adjusted.

Camber:

Refer to SDS (RA-13).

- If the camber is not within specification, inspect and replace any damaged or worn rear suspension parts.



TOE-IN

Toe-in is preset at factory and cannot be adjusted.

Measure toe-in using following procedure. If out of specification, inspect and replace any damaged or worn rear suspension parts.

WARNING:

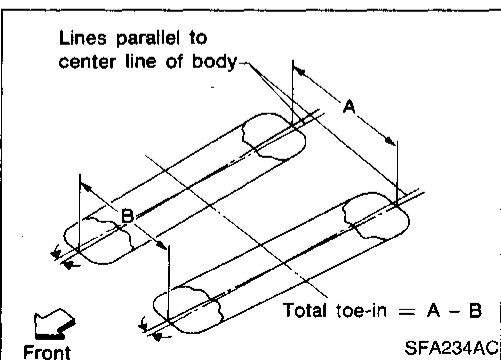
- **Always perform the following procedure on a flat surface.**
 - **Make sure that no person is in front of the vehicle before pushing it.**
1. Bounce rear of vehicle up and down to stabilize the posture.
 2. Push the vehicle straight ahead about 5 m (16 ft).
 3. Put a mark on base line of the tread (rear side) of both tires at the same height as hub center. This mark is to be a measuring point.
 4. Measure distance "A" (rear side).
 5. Push the vehicle slowly ahead to turn the wheels around 180 degrees (1/2 turn).

If the wheels have rotated more than 180 degrees (1/2 turn), try the above procedure again from the beginning. Never push vehicle backward.

6. Measure distance "B" (front side).

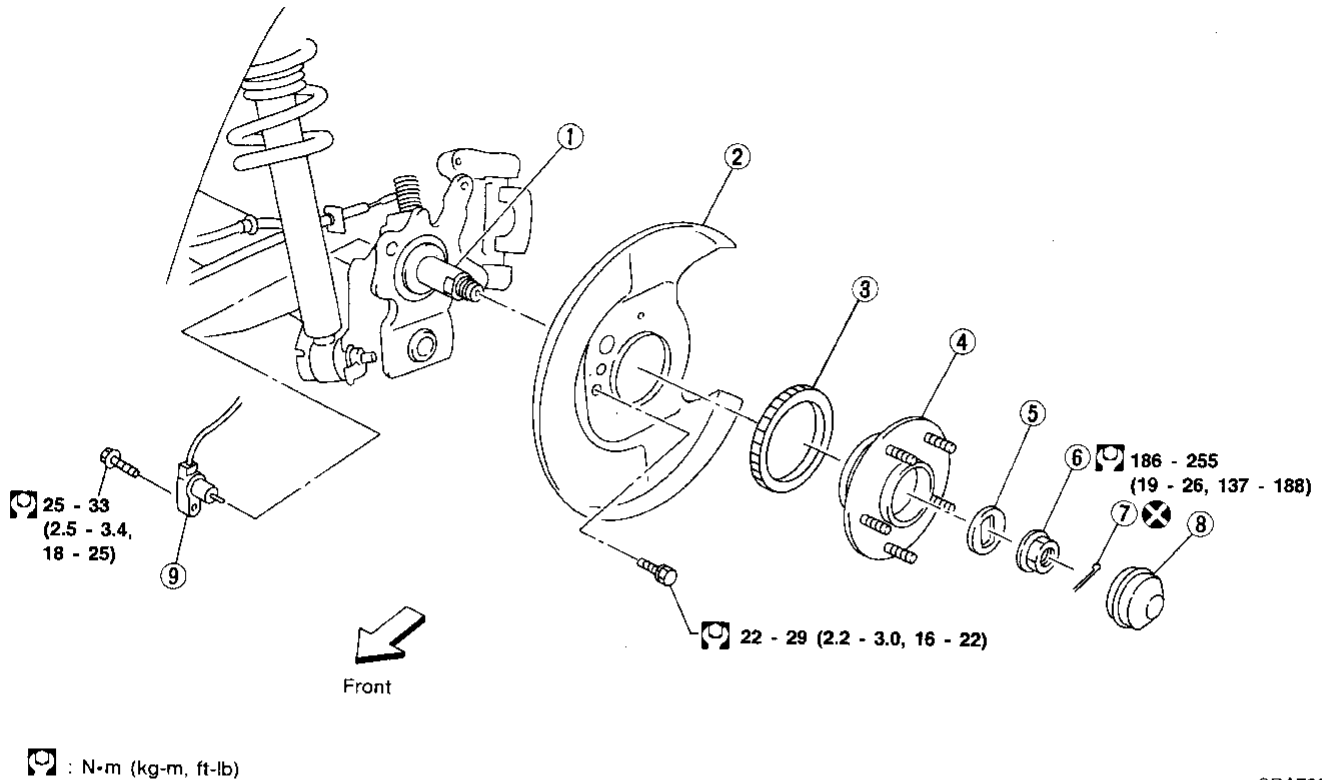
Total toe-in:

Refer to SDS (RA-13).



Wheel Hub

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|--------------------|--------------------------|--------------|
| ① Spindle | ④ Wheel hub bearing | ⑦ Cotter pin |
| ② Baffle plate | ⑤ Washer | ⑧ Hub cap |
| ③ ABS sensor rotor | ⑥ Wheel bearing lock nut | ⑨ ABS sensor |

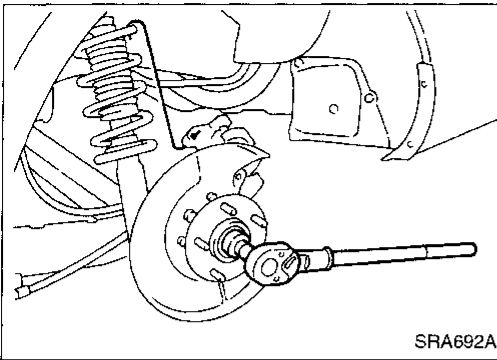
REMOVAL

CAUTION:

- Before removing the rear wheel hub assembly, disconnect the ABS wheel sensor from the assembly. Then move it away from the hub assembly. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.
- Wheel hub bearing does not require maintenance. If any of the following symptoms are noted, replace wheel hub bearing assembly.
- Growling noise is emitted from wheel hub bearing during operation.
- Wheel hub bearing drags or turns roughly. This occurs when turning hub by hand after bearing lock nut is tightened to specified torque.

REAR AXLE

Wheel Hub (Cont'd)

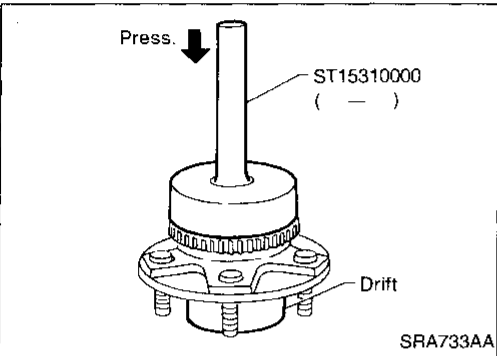


1. Remove brake caliper assembly.
2. Remove wheel bearing lock nut.
3. Remove brake rotor.
4. Remove wheel hub bearing from spindle.

Brake hose does not need to be disconnected from brake caliper.

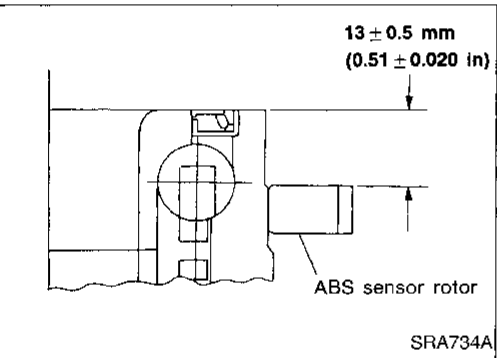
Suspend caliper assembly with wire so as not to stretch brake hose.

Be careful not to depress brake pedal, or piston will pop out. Make sure brake hose is not twisted.

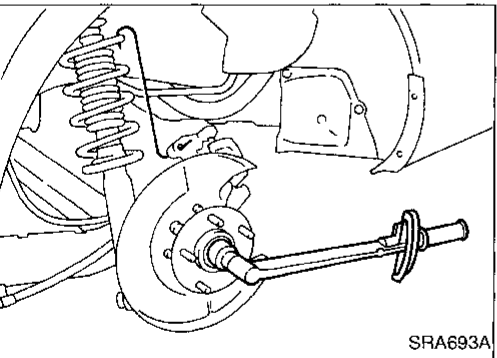


INSTALLATION

- With vehicles equipped with ABS, press-fit ABS sensor rotor into wheel hub bearing using a drift.



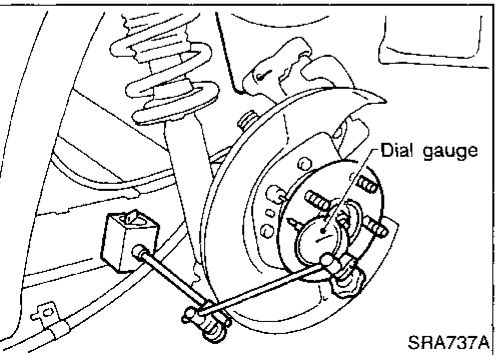
- Press-fit ABS sensor rotor as far as the location shown in figure at left.



- Install wheel hub bearing.
- Tighten wheel bearing lock nut. Before tightening, apply oil to threaded portion of rear spindle and both sides of plain washer.

**Ⓜ: 186 - 255 N·m
(19 - 26 kg·m, 137 - 188 ft·lb)**

- Check that wheel bearings operate smoothly.



- Check wheel hub bearing axial end play.

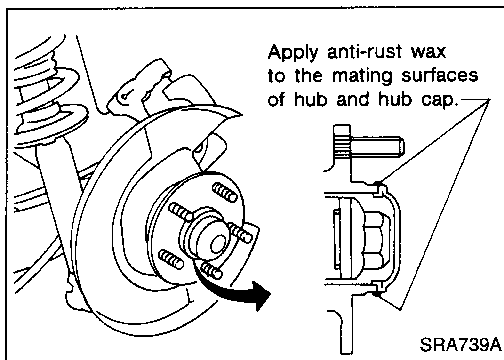
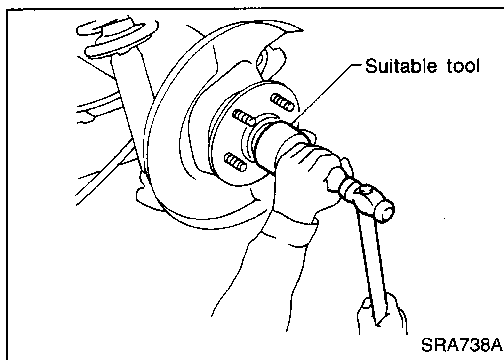
**Axial end play:
0.05 mm (0.0020 in) or less**

REAR AXLE

Wheel Hub (Cont'd)

- Install hub cap using a suitable tool.

Do not reuse hub cap. When installing, replace it with a new one.



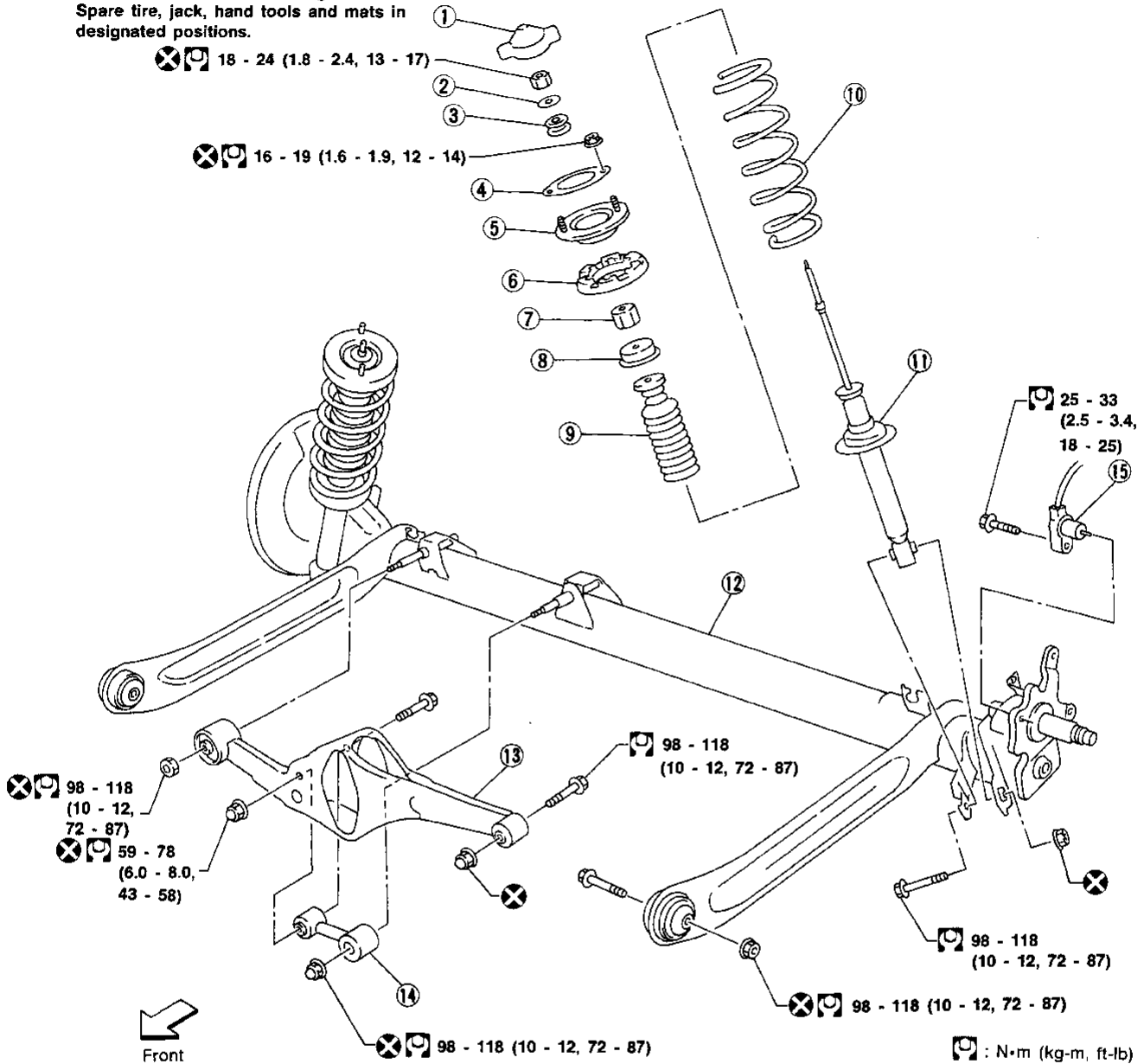
- Apply anti-rust wax to the mating surfaces of hub and hub cap.

REAR SUSPENSION

SEC. 431

When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground.

* Fuel, radiator coolant and engine oil full.
Spare tire, jack, hand tools and mats in designated positions.



- ① Shock absorber cap
- ② Washer
- ③ Bushing
- ④ Shock absorber mounting seal
- ⑤ Shock absorber mounting bracket

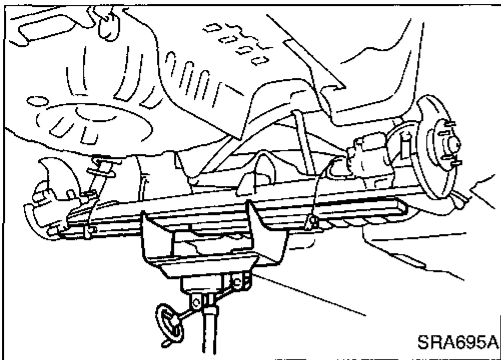
- ⑥ Upper spring seat rubber
- ⑦ Bushing
- ⑧ Bound bumper cover
- ⑨ Bound bumper
- ⑩ Coil spring

- ⑪ Shock absorber
- ⑫ Torsion beam
- ⑬ Lateral link
- ⑭ Control rod
- ⑮ ABS sensor

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REAR SUSPENSION



Removal and Installation

CAUTION:

- Before removing the rear suspension assembly, disconnect the ABS wheel sensor from the assembly. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.

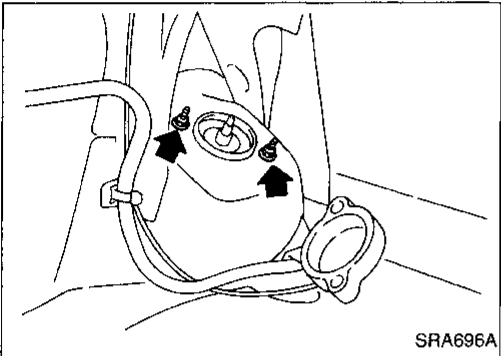
REMOVAL

1. Disconnect parking brake cable from caliper and remove brake caliper and rotor.

Suspend caliper assembly with wire so as not to stretch brake hose.

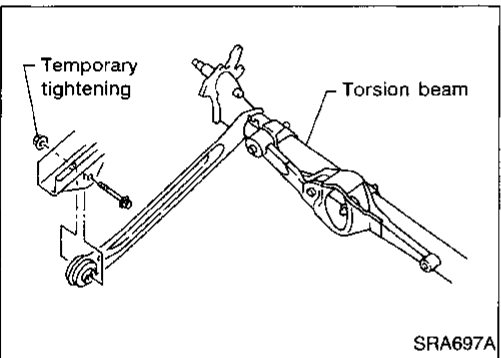
Be careful not to depress brake pedal, or piston will pop out. Make sure brake hose is not twisted.

2. Using a transmission jack, raise torsion beam a little, and remove nuts and bolts from the trailing arm, shock absorber assembly (lower side) and lateral link.
3. Lower transmission jack, and remove suspension.
4. Remove luggage compartment trim. Refer to BT section.
5. Remove shock absorber securing nuts (upper side). Then pull out shock absorber assembly.

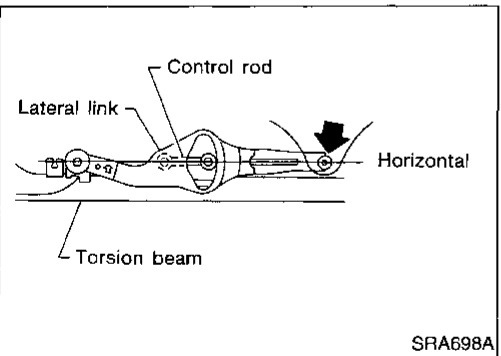


INSTALLATION

1. Attach torsion beam, at trailing arm and lateral link, to vehicle. Do not tighten bolts at this time.



2. Using a transmission jack, place lateral link and control rod horizontally against torsion beam. Tighten lateral link on vehicle.
3. Attach shock absorber assembly to vehicle. Then tighten the lower side of shock absorber assembly.
4. Lower torsion beam to fully extended position. Remove transmission jack and tighten torsion beam, at trailing arm, to specified torque. Refer to RA-9.



Coil Spring and Shock Absorber

REMOVAL

Remove shock absorber upper and lower fixing nuts.

Do not remove piston rod lock nut on vehicle.

REAR SUSPENSION

Coil Spring and Shock Absorber (Cont'd)

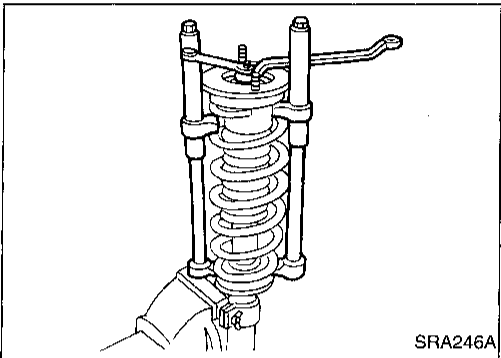
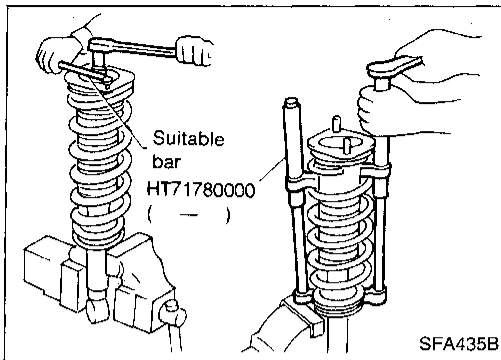
DISASSEMBLY

1. Set shock absorber in vise with attachment, then loosen piston rod lock nut.

Do not remove piston rod lock nut at this time.

2. Compress spring with Tool so that the shock absorber upper spring seat can be turned by hand.

3. Remove piston rod lock nut.



INSPECTION

Shock absorber assembly

- Check for smooth operation through a full stroke, both compression and extension.
- Check for oil leakage on welded or gland packing portions.
- Check piston rod for cracks, deformation or other damage. Replace if necessary.

Upper rubber seat and bushing

Check rubber parts for deterioration or cracks. Replace if necessary.

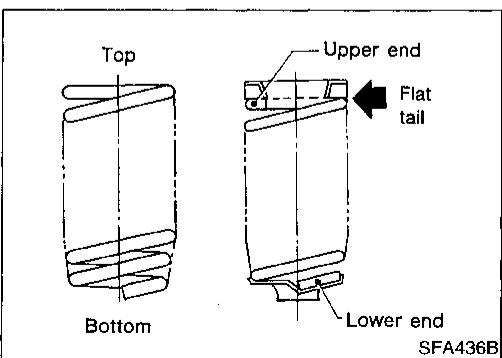
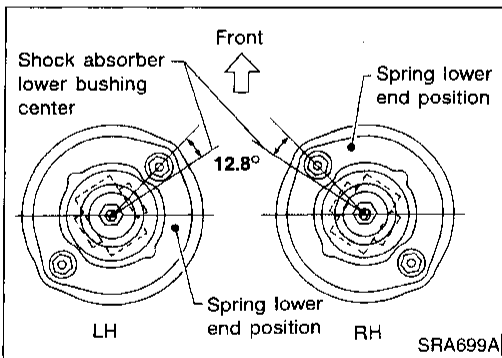
Coil spring

Check for cracks, deformation or other damage. Replace if necessary.

ASSEMBLY

- Locate upper spring seat as shown.

- When installing coil spring, be careful not to reverse top and bottom direction. (Top end is flat.)
- When installing coil spring on shock absorber, it must be positioned as shown in figure at left.



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REAR SUSPENSION

Torsion Beam, Lateral Link and Control Rod

DISASSEMBLY

- Remove torsion beam assembly. Refer to Removal and Installation in REAR SUSPENSION (RA-10).
- Remove lateral link and control rod from torsion beam.

INSPECTION

- Check for cracks, distortion or other damage. Replace if necessary.

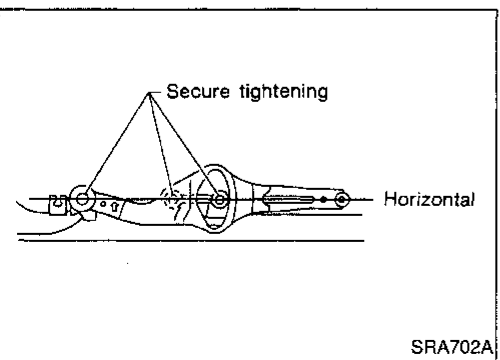
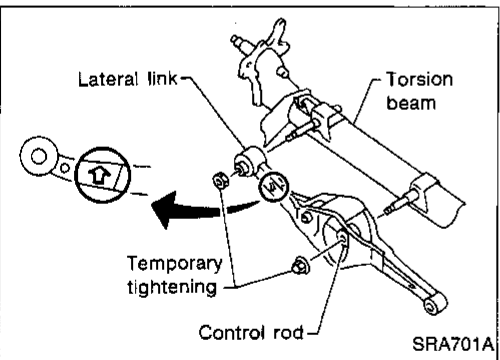
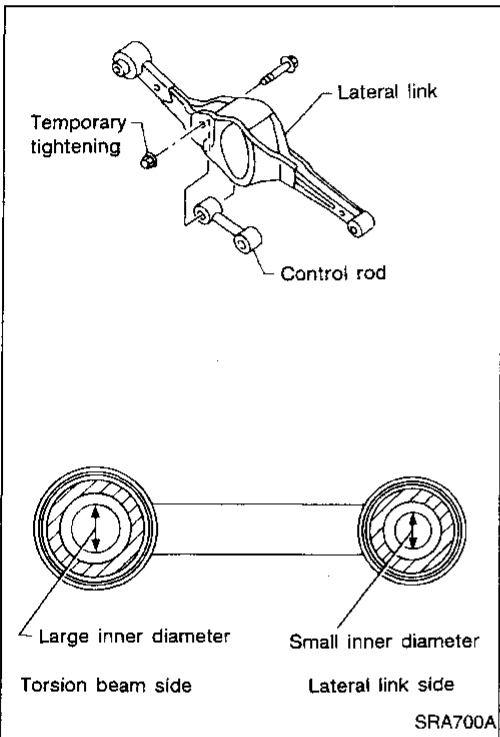
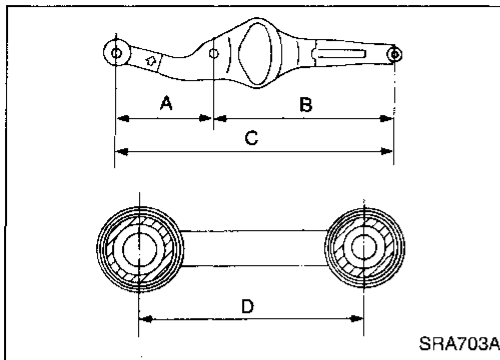
Standard length:

- A** 207 - 208 mm (8.15 - 8.19 in)
- B** 394 - 395 mm (15.51 - 15.55 in)
- C** 601 - 603 mm (23.66 - 23.74 in)
- D** 106 - 108 mm (4.17 - 4.25 in)

- Check all rubber parts for wear, cracks or deformation. Replace if necessary.

ASSEMBLY

1. Temporarily assemble lateral link and control rod.
 - When installing the control rod, connect the end with the smaller inner diameter to the lateral link.



2. Temporarily install lateral link and control rod on torsion beam.
 - Install lateral link with the arrow upward.

3. Ensure lateral link and control rod are horizontal against torsion beam, and tighten to the specified torque. Refer to RA-9.
4. Install torsion beam assembly. Refer to Removal and Installation in REAR SUSPENSION (RA-10).

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

COIL SPRING

Applied model	Except SE	SE
Wire diameter mm (in)	11.9 (0.469)	12.1 (0.476)
Coil diameter mm (in)	90.9 - 100.5 (3.579 - 3.957)	91.1 - 100.7 (3.587 - 3.965)
Free length mm (in)	320 (12.60)	310 (12.20)
Identification color		
RH	Yellow x 1, Gray x 1	Yellow x 1, Gray x 1, Blue x 1
LH	Blue x 1, Gray x 1	Blue x 1, Gray x 1, Blue x 1

SHOCK ABSORBER OR STRUT

Strut type	Double-acting hydraulic	
Piston rod		
Rod diameter mm (in)	12.5 (0.492)	

Inspection and Adjustment

WHEEL ALIGNMENT (Unladen*)

Camber Degree minute (Decimal degree)	Minimum	-1°45' (-1.75°)
	Nominal	-1°00' (-1.00°)
	Maximum	-0°15' (-0.25°)
Total toe-in Distance (A-B) mm (in)	Minimum	-3 (-0.12)
	Nominal	1 (0.04)
	Maximum	5 (0.20)
Angle (left plus right) Degree minute (Decimal degree)	Minimum	-16' (0.27°)
	Nominal	5.5' (0.09°)
	Maximum	26' (0.43°)

*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

WHEEL BEARING

Wheel bearing axial end play mm (in)	0.05 (0.0020)
Wheel bearing lock nut tightening torque N·m (kg·m, ft·lb)	186 - 255 (19 - 26, 137 - 188)

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