

# REAR AXLE & REAR SUSPENSION

## SECTION **RA**

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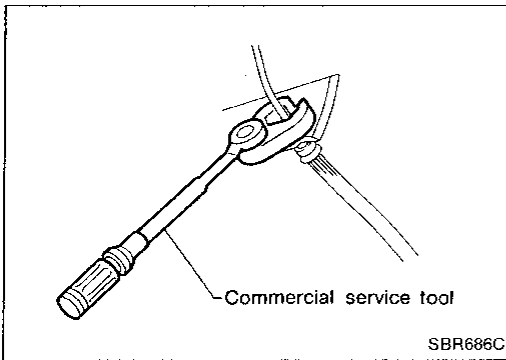
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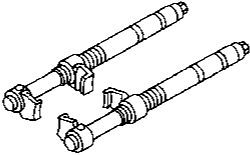
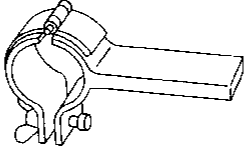
## PRECAUTIONS AND PREPARATION



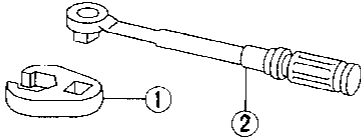
### Precautions

- When installing rubber parts, 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.
- When removing each suspension part, check wheel alignment and adjust if necessary.
- Do not jack up at the parallel links and radius rods.
- Always torque brake lines when installing.

### Special Service Tools

Tool number (Kent-Moore No.) Tool name	Description	
HT71780000 ( — ) Spring compressor	 NT144	Removing and installing coil spring
ST35652000 ( — ) Strut attachment	 NT145	Fixing strut assembly

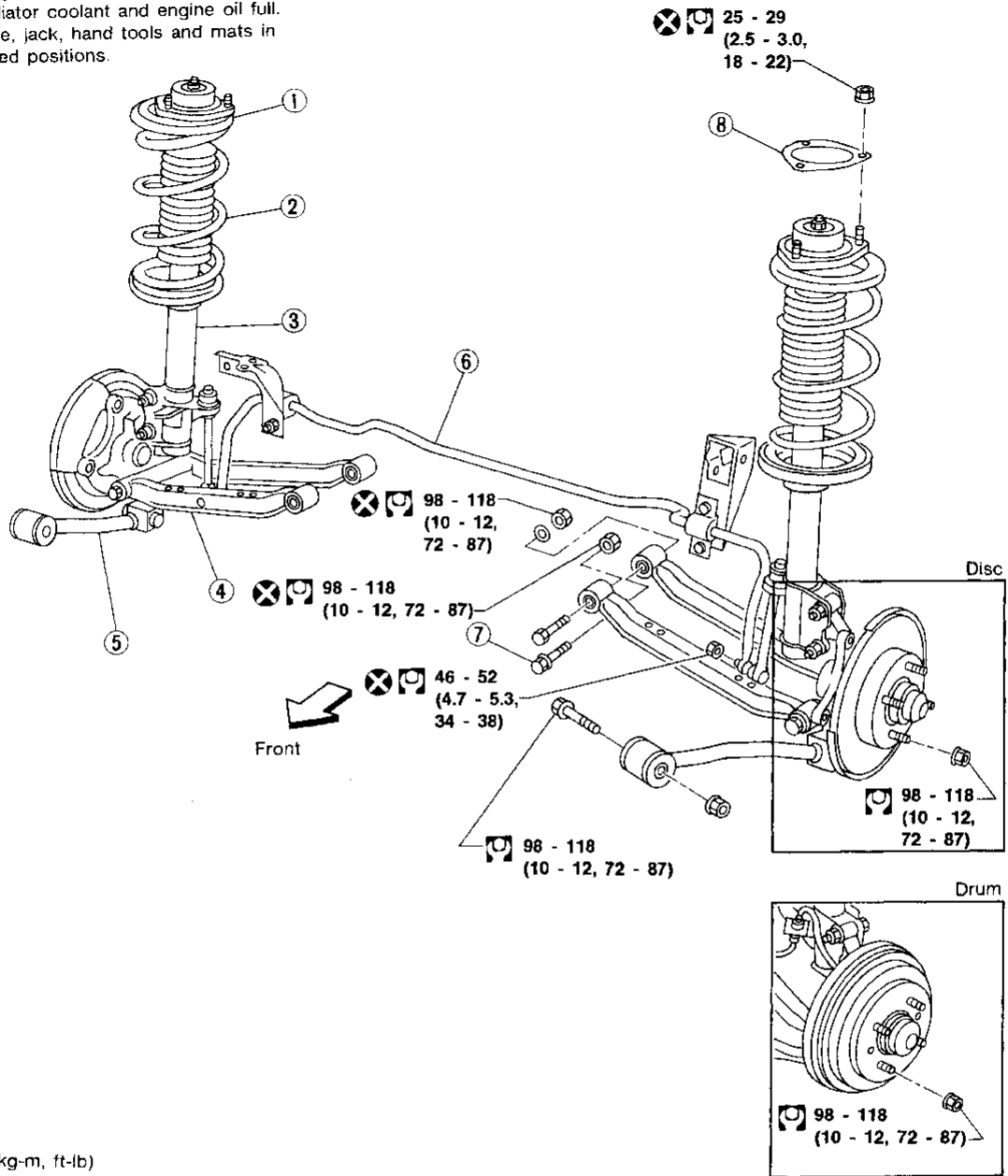
### Commercial Service Tools

Tool name	Description	
① Flare nut crows foot ② Torque wrench	 NT223	Removing and installing brake piping

# REAR AXLE AND REAR SUSPENSION

When installing rubber parts, 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.



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- ① Strut mounting insulator assembly
- ② Coil spring
- ③ Strut assembly

- ④ Parallel link
- ⑤ Radius rod
- ⑥ Stabilizer bar

- ⑦ Toe adjusting bolt
- ⑧ Gasket

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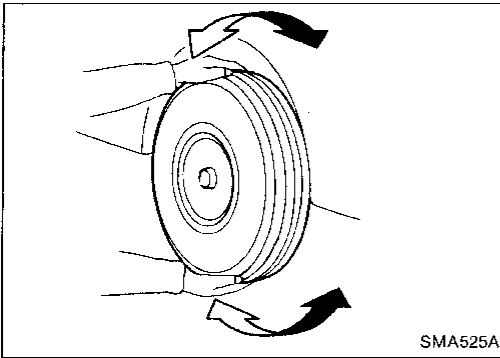
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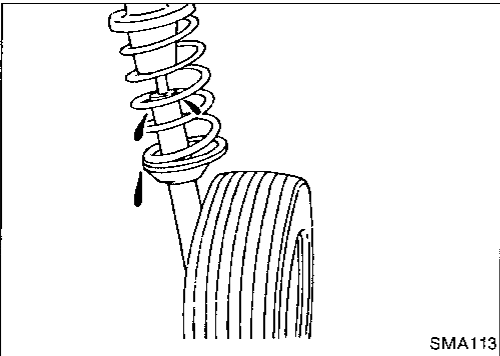


## Axle and Suspension Parts

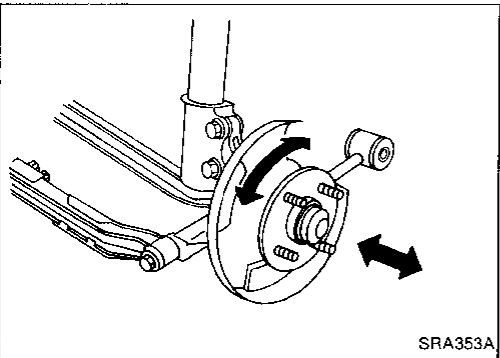
Check axle and suspension parts for looseness, wear or damage.

- Shake each rear wheel to see excessive play.
- Retighten all nuts and bolts to the specified torque.

**Tightening torque: Refer to REAR SUSPENSION. (RA-8)**



- Check strut (shock absorber) for oil leakage or other damage.
- Check wheelarch height. Refer to ON-VEHICLE SERVICE in FA section.



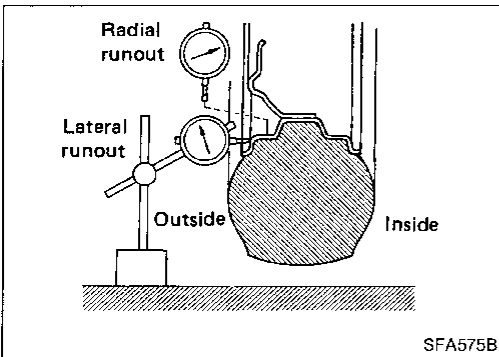
## Wheel Bearing

- Check axial end play.

**Axial end play:**

**0.05 mm (0.0020 in) or less**

- Check that wheel bearings operate smoothly.
- Check tightening torque of wheel bearing lock nut.  
**□: 186 - 255 N·m (19 - 26 kg·m, 137 - 188 ft·lb)**
- If there is any axial end play or wheel bearing does not turn smoothly, replace wheel bearing assembly. Refer to REAR AXLE — Wheel Hub. (RA-6)



## Wheel Alignment

### PRELIMINARY INSPECTION

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

- Check tires for wear and for improper inflation.
- Check rear wheel bearings for looseness.
- Check wheel runout.

**Wheel runout: Refer to SDS in FA section.**

- Check that rear strut (shock absorber) works properly.
- Check rear axle and rear suspension parts for looseness.
- Check vehicle posture (Unladen\*).

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

### CAMBER

**Camber is preset at factory and cannot be adjusted.**

**Camber:**

**Refer to SDS. (RA-12)**

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

# ON-VEHICLE SERVICE

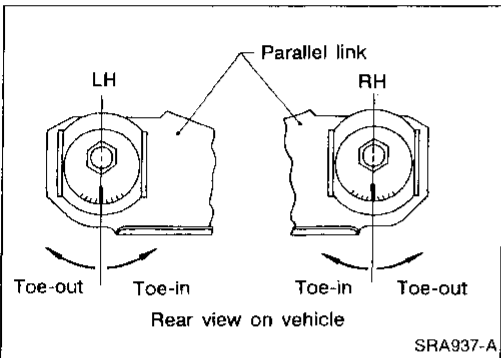
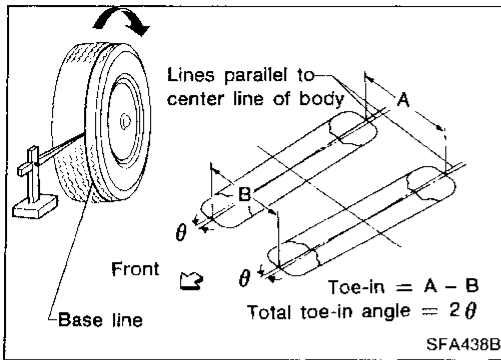
## Wheel Alignment (Cont'd)

### TOE-IN

1. Draw a base line across the tread.
  - After lowering rear of vehicle, move it up and down to eliminate friction.
2. Measure toe-in.
  - Measure distance "A" and "B" at the same height as hub center.

**Total toe-in:**

**Refer to SDS. (RA-12)**



3. Loosen adjusting bolt fixing nuts.
4. Adjust toe-in by turning adjusting bolts.

**Toe changes about 2.0 mm (0.079 in) [One side] with each graduation of the adjusting bolt.**

5. Tighten adjusting bolt fixing nuts to the specified torque.

**⚙️: 98 - 118 N·m (10 - 12 kg·m, 72 - 87 ft·lb)**

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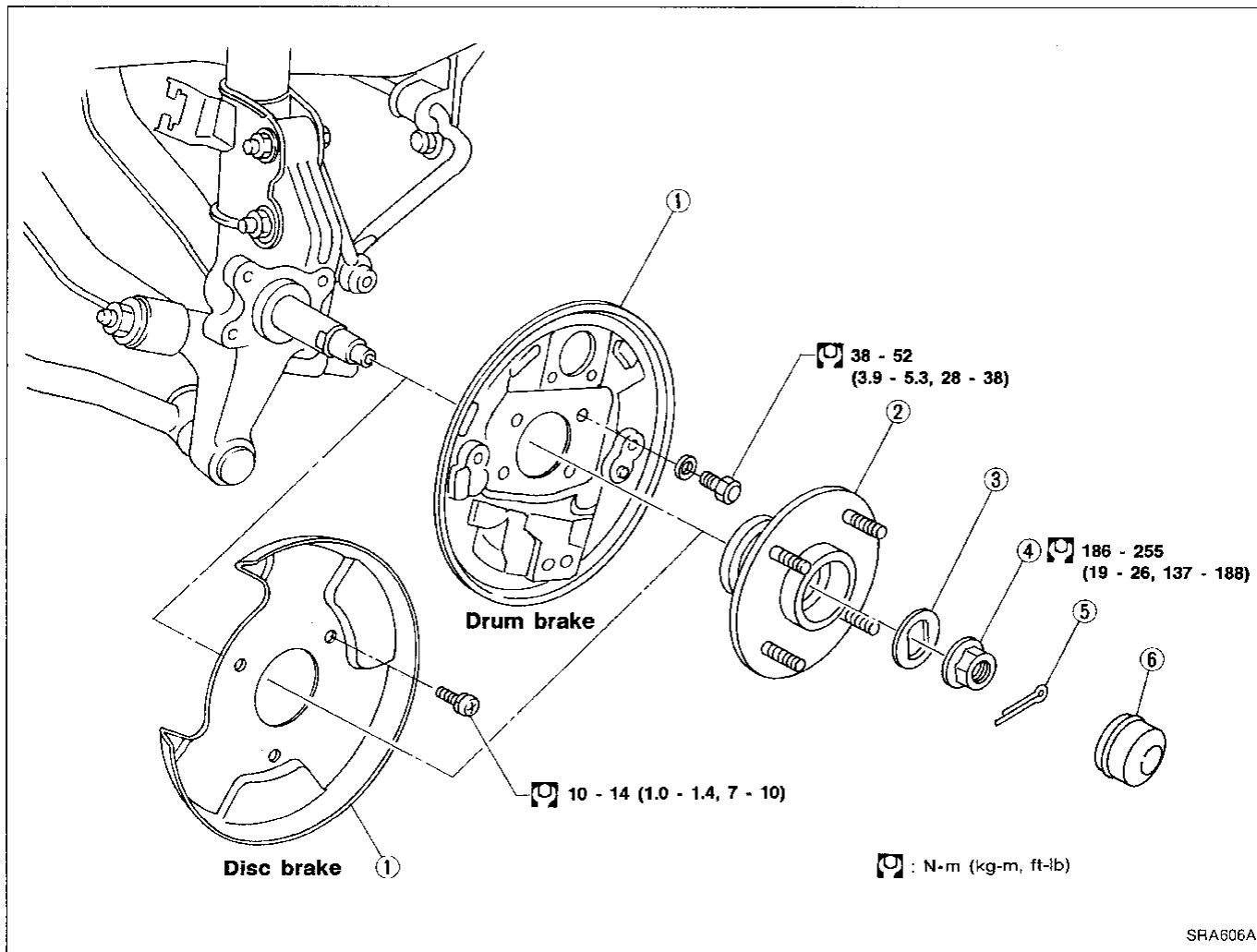
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# REAR AXLE

## Wheel Hub



- ① Baffle plate
- ② Wheel hub bearing

- ③ Washer
- ④ Wheel bearing lock nut

- ⑤ Cotter pin
- ⑥ Hub cap

### REMOVAL

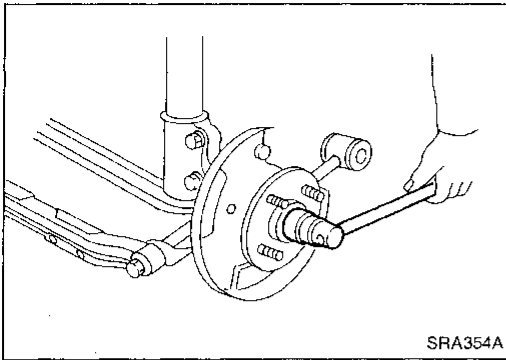
#### CAUTION:

Wheel hub bearing usually 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 when hub is turned with your hand after bearing lock nut is tightened to specified torque.
- If the wheel hub bearing assembly is removed, it must be renewed. The old assembly must not be re-used.

## REAR AXLE

### Wheel Hub (Cont'd)



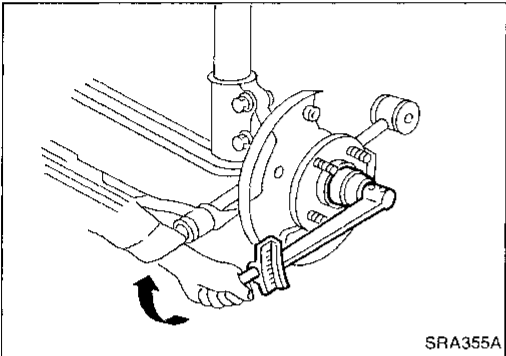
1. Remove brake caliper assembly and rotor.

2. Remove wheel bearing lock nut.

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

**Be careful not to depress brake pedal, or piston will pop out.**

**Make sure brake hose is not twisted.**



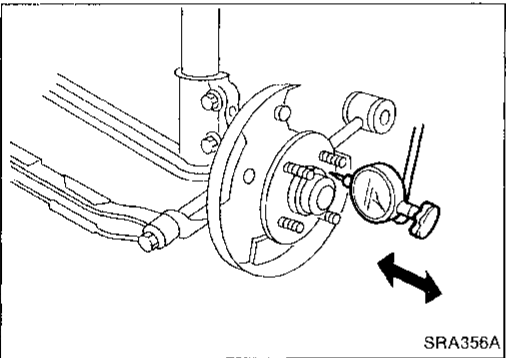
### INSTALLATION

● Install wheel hub bearing.

● Tighten wheel bearing lock nut.

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

● Check that wheel bearings operate smoothly.



● Check wheel bearing axial end play.

**Axial end play:**

**0.05 mm (0.0020 in) or less**

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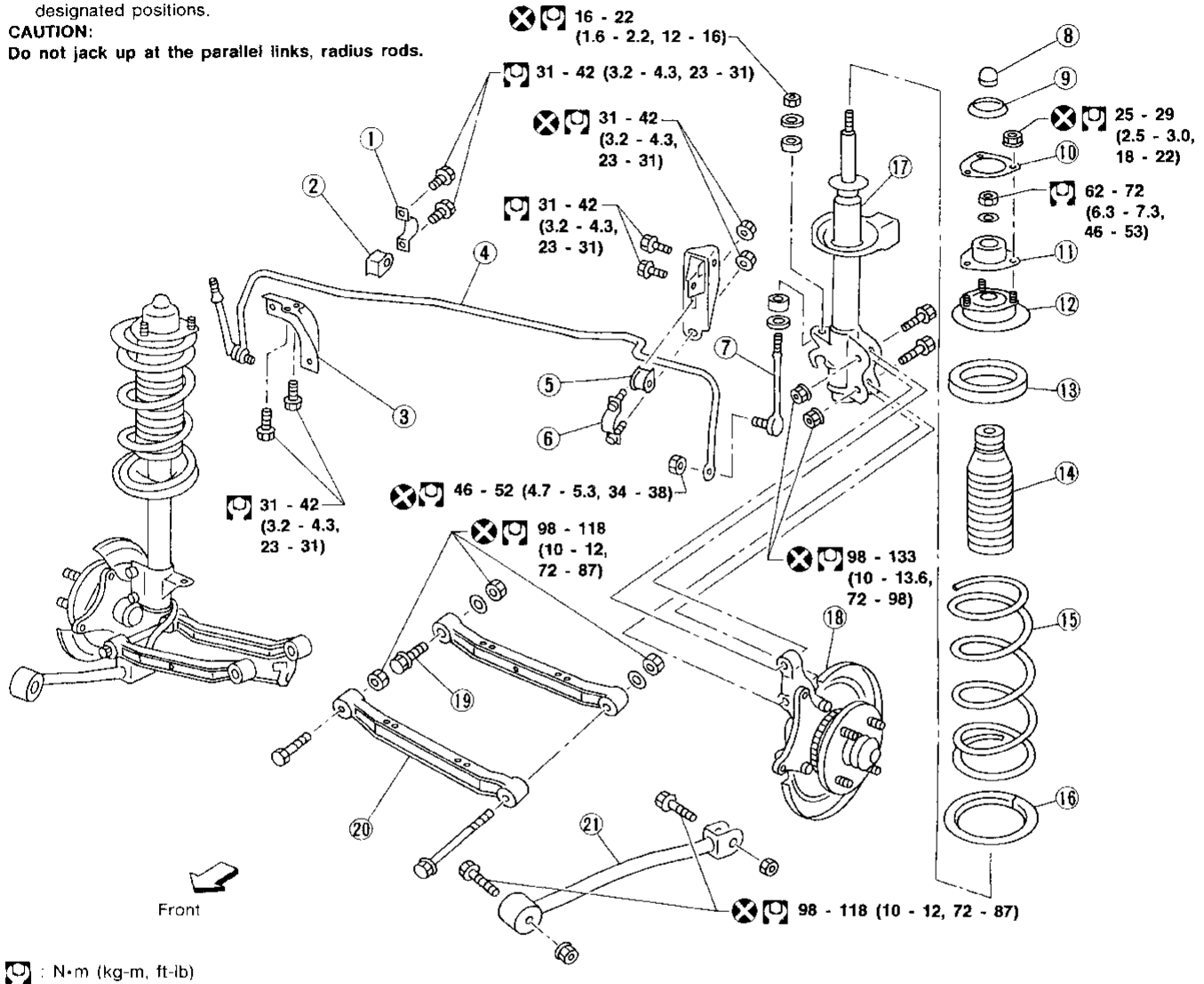
# REAR SUSPENSION

When installing rubber parts, 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.

**CAUTION:**

Do not jack up at the parallel links, radius rods.



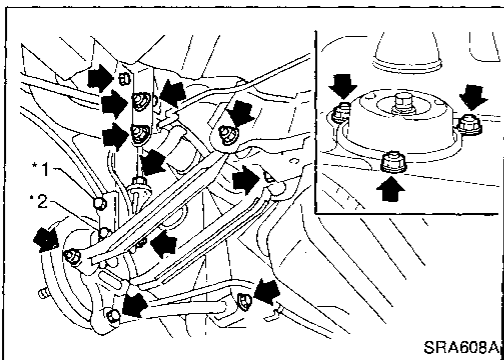
- ① Clamp
- ② Bushing
- ③ Bracket
- ④ Stabilizer bar
- ⑤ Bushing
- ⑥ Clamp
- ⑦ Connecting rod

- ⑧ Cap
- ⑨ Strut seal
- ⑩ Gasket
- ⑪ Strut mounting insulator
- ⑫ Upper seat
- ⑬ Rubber seat
- ⑭ Bound bumper rubber

- ⑮ Coil spring
- ⑯ Rubber seat
- ⑰ Strut assembly
- ⑱ Knuckle assembly
- ⑲ Adjusting bolt
- ⑳ Parallel link
- ㉑ Radius rod

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## Removal and Installation

### CAUTION:

Do not jack up at the parallel links or radius rods.

- Remove suspension assembly.

### CAUTION:

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

- 1) Remove brake caliper assembly and rotor.
- 2) Remove parallel link fixing bolt, radius rod fixing bolt, stabilizer fixing bolt and stabilizer connecting rod.
- 3) Remove rear seat and finisher. Refer to BF section.
- 4) Remove strut securing bolts and nuts. Then pull out strut assembly.

\*1: Can be installed (inserted) in either direction (nut front bolt rear — bolt front nut rear). When tightening, bolt must be held firmly while turning nut only.

\*2: For drum brake equipped vehicles:  
Bolt can be installed in any direction.  
Torque: 98 to 133 N·m (10.0 to 13.6 kg-m, 72.3 to 98.1 ft-lb) to be applied to nut only.

For disc brake equipped vehicles:  
Bolt to be installed rear to front only.  
Torque: 98 to 133 N·m (10.0 to 13.6 kg-m, 72.3 to 98.1 ft-lb) to be applied to either bolt or nut.

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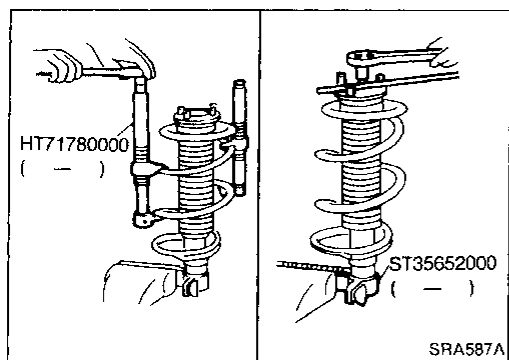
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## Coil Spring and Strut Assembly

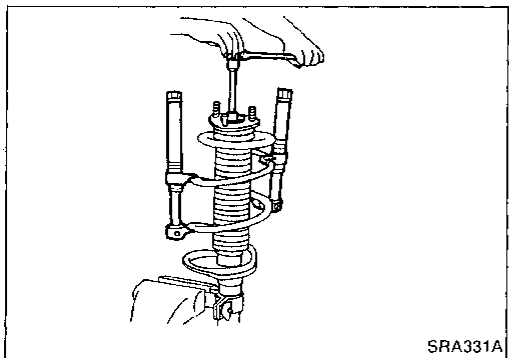
### DISASSEMBLY

1. Set strut assembly in vise with attachment, then loosen piston rod lock nut.

Do not remove piston rod lock nut.

2. Compress spring with Tool so that the strut mounting insulator can be turned by hand.

3. Remove piston rod lock nut.
4. Remove spring, complete with Tool.



## REAR SUSPENSION

### Coil Spring and Strut Assembly (Cont'd)

#### INSPECTION

##### Strut assembly

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

##### Spring rubber seat and dust cover

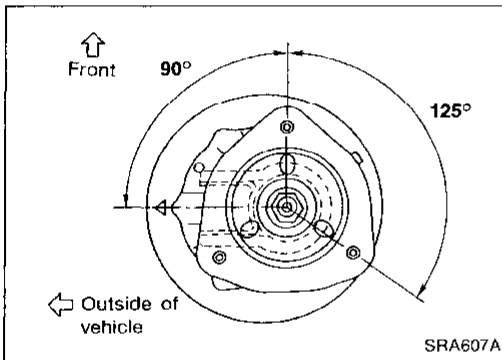
Check rubber parts for deterioration or cracks.  
Replace if necessary.

##### Strut mounting insulator

- Check cemented rubber-to-metal portion for melting or cracks.
- Check rubber parts for deterioration.

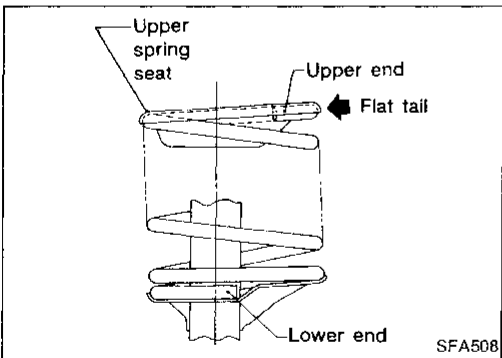
##### Coil spring

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

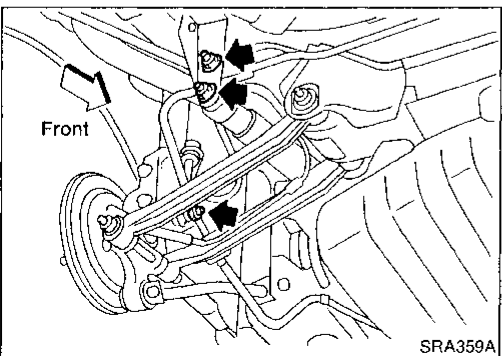


#### ASSEMBLY

1. Locate upper spring seat as shown.



2. When installing coil spring on strut, there must be 2 identification color marks on the lower side.
3. After placing coil spring in position on lower spring seat tighten lock nut, and release spring compressor gradually.



##### Stabilizer Bar

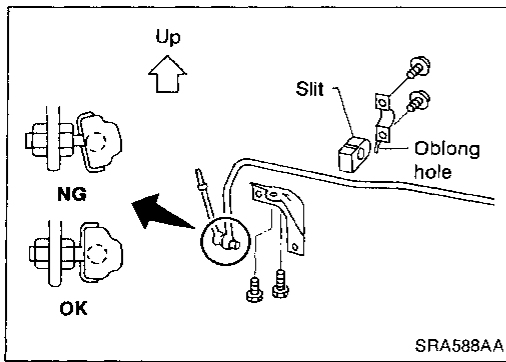
#### REMOVAL AND INSTALLATION

- Remove stabilizer bar.

## REAR SUSPENSION

### Stabilizer Bar (Cont'd)

- When installing stabilizer, it must be positioned as shown.
- Install stabilizer bar with ball joint socket properly placed.



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# SERVICE DATA AND SPECIFICATIONS (SDS)

## General Specifications

### SUSPENSION

Suspension type	Strut type parallel link independent suspension
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### COIL SPRING

Applied model	GA16DE			SR20DE	
	STD	GXE	XE & STD with P/S		
Wire diameter	mm (in)	11.2 (0.441)	11.2 (0.441)	11.1 (0.437)	11.6 (0.457)
Coil diameter	mm (in)	130 (5.12)			
Free length	mm (in)	321 (12.64)	351 (13.82)	341 (13.43)	318.5 (12.54)
Identification color		Pink x 2 Light green x 1	Purple x 2 Orange x 1	Pink x 2 Pink x 1	Light blue x 2 White x 1

### STRUT

Applied model	GA16DE	SR20DE
Strut type	Double-acting hydraulic	
Piston rod	mm (in)	
Rod diameter	18 (0.71)	

### STABILIZER BAR

Applied model	GA16D		SR20DE
	DX	*1	
	Without power steering	With power steering	—
Bar diameter	mm (in)	10 (0.39)	
		15 (0.59)	

\*1: Except DX model

## Inspection and Adjustment

### WHEEL ALIGNMENT (Unladen\*1)

Camber	degree	-1°40' to -0°10'
Toe-in		
A - B	mm (in)	-1 to 3 (-0.04 to 0.12)
Total angle 2θ	degree	-6' to 18'

\*1: 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)	Less than 0.05 (0.0020)
Wheel bearing lock nuts		
Tightening torque	N·m (kg·m, ft·lb)	186 - 255 (19 - 26, 137 - 188)
Wheel bearing preload		
At wheel center	N·m (kg·cm, in·lb)	0.18 - 0.94 (1.8 - 9.6, 1.6 - 8.3)
At wheel hub bolt	N (kg, lb)	3.9 - 18.6 (0.4 - 1.9, 0.9 - 4.2)