

# FRONT AXLE & FRONT SUSPENSION

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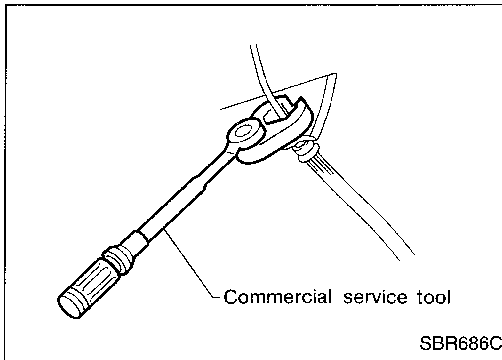
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## PRECAUTIONS AND PREPARATION

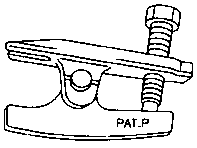
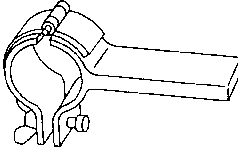
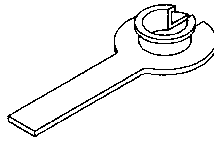


### Precautions

- 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.
- After installing removed suspension parts, check wheel alignment and adjust if necessary.
- Use flare nut wrench when removing or installing brake tubes.
- Always torque brake lines when installing.

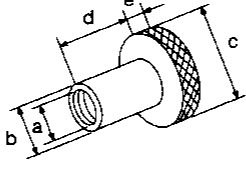
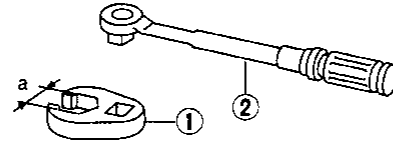
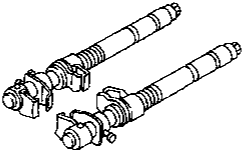
### Special Service Tools

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description	
HT72520000 (J25730-B) Ball joint remover	 NT146	Removing tie-rod outer end and lower ball joint
ST35652000 ( — ) Strut attachment	 NT145	Fixing strut assembly
KV38106700 (J34296) KV38106800 (J34297) Differential side oil seal protector	 NT147	Installing drive shaft  LH: KV38106700 RH: KV38106800

# PRECAUTIONS AND PREPARATION

## Commercial Service Tools

Tool name	Description
Attachment Wheel alignment	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: right;"> <p>Measuring wheel alignment</p> <p>                             a: Screw M22 x 1.5                              b: 35 (1.38) dia.                              c: 65 (2.56) dia.                              d: 56 (2.20)                              e: 12 (0.47)                         </p> <p>Unit: mm (in)</p> </div> </div> <p>NT148</p>
① Flare nut crowfoot ② Torque wrench	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: right;"> <p>Removing and installing brake piping</p> <p>a: 10 mm (0.39 in)</p> </div> </div> <p>NT360</p>
Spring compressor	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: right;"> <p>Removing and installing coil spring</p> </div> </div> <p>NT717</p>

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# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

## NVH Troubleshooting Chart

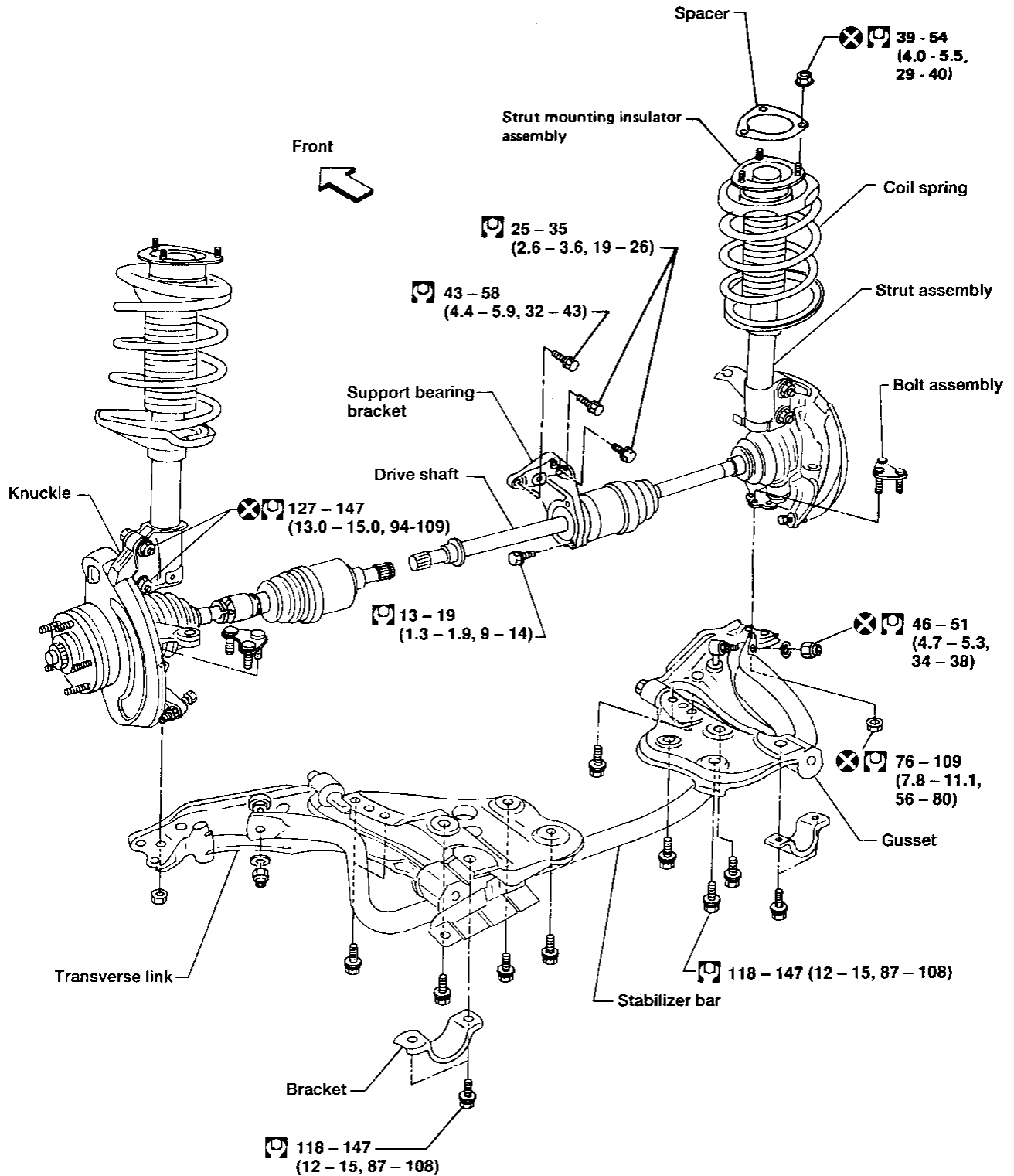
Use the chart below to find the cause of the problem. If necessary, repair or replace these parts.

Symptom		Possible cause and SUSPECTED PARTS		Reference page																				
				—	—	FA-5	FA-23	FA-25	—	—	FA-22	FA-7	—	FA-7	—	—	—	—	—	Refer to DRIVESHAFT in this chart.	Refer to FRONT AXLE AND FRONT SUSPENSION in this chart.	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	NVH in RA Section
DRIVESHAFT	Noise, Vibration, Slip	X	X															X	X	X	X	X	X	X
	Shake	X															X	X	X	X	X	X	X	X
FRONT AXLE AND FRONT SUSPENSION	Noise		X	X	X	X	X	X									X		X	X	X	X	X	X
	Shake		X	X	X	X	X	X									X		X	X	X	X	X	X
	Vibration		X	X	X	X	X										X				X			X
	Shimmy		X	X	X	X				X										X	X	X	X	X
	Judder		X	X	X															X	X	X	X	X
	Poor quality ride or handling		X	X	X	X	X		X	X	X								X	X	X			
TIRES	Noise		X								X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Shake		X								X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Vibration												X				X	X	X		X			X
	Shimmy		X									X	X	X	X	X	X	X	X	X	X	X	X	X
	Judder		X									X	X	X	X	X	X	X	X	X	X	X	X	X
	Poor quality ride or handling		X									X	X	X	X	X	X	X	X	X	X			
ROAD WHEEL	Noise		X									X	X			X	X	X	X	X	X	X	X	X
	Shake		X									X	X			X	X	X	X	X	X	X	X	X
	Shimmy, Judder		X									X	X			X	X	X	X	X	X	X	X	X
	Poor quality ride or handling		X									X	X			X	X	X	X	X				

X: Applicable

# FRONT AXLE AND FRONT SUSPENSION

SEC. 391-400-401



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.

: N·m (kg-m, ft-lb)

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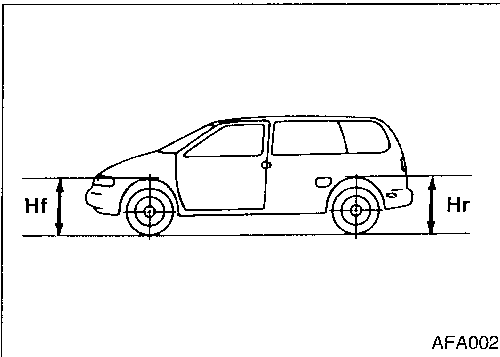
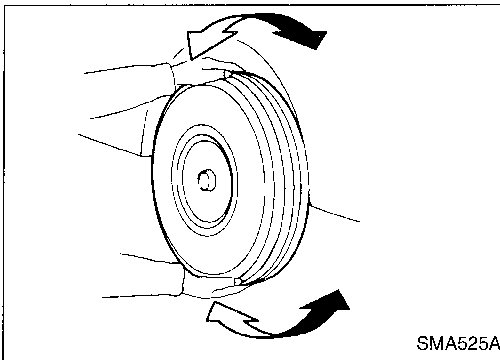
## Front Axle and Front Suspension Parts

Check front axle and front suspension parts for excessive play, cracks, wear and other damage.

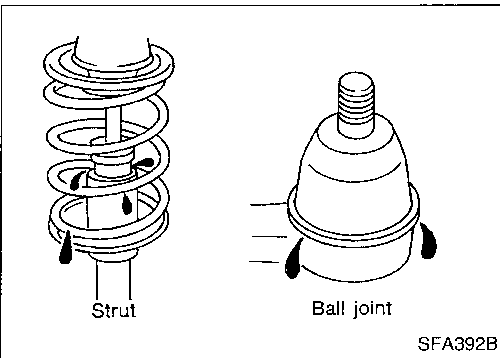
- Shake each front wheel to check for excessive play.
- Make sure that the cotter pin is inserted.
- Retighten all nuts and bolts to the specified torque.

**Tightening torque:**

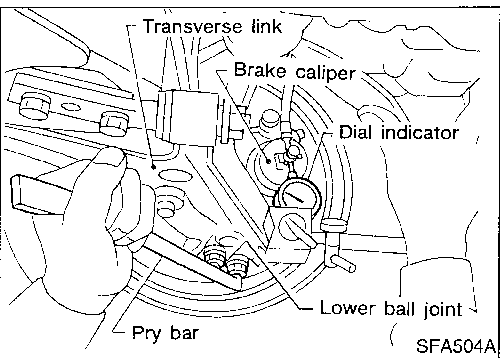
**Refer to FA-22.**



- Check spring height from top of wheelarch to ground using the following procedure.
  - a. Park vehicle on a level surface with vehicle unladen\* .
    - \*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
  - b. Check tires for proper inflation and wear (tread wear indicator must not be showing).
  - c. Bounce vehicle up and down several times and measure dimensions Hf and Hr. Refer to SDS, FA-27. Spring height is not adjustable. If out of specification, check for worn springs or suspension parts.



- Check strut for oil leakage and other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks and other damage. If ball joint dust cover is cracked or damaged, replace ball joint assembly.

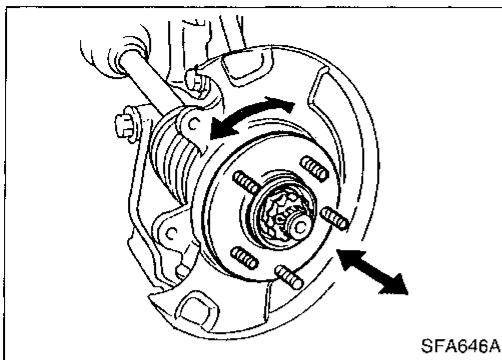


- Check suspension ball joint end play.
  - a. Jack up front of vehicle and set the stands.
  - b. Clamp dial indicator onto transverse link and place indicator tip on lower edge of brake caliper.
  - c. Make sure front wheels are straight and brake pedal is depressed.
  - d. Place a pry bar between transverse link and inner rim of road wheel.
  - e. While raising and releasing pry bar, observe maximum dial indicator value.

**Vertical end play:**

**0 mm (0 in)**

If ball joint vertical end play exists, replace ball joint and recheck vertical end play.



## Front Wheel Bearing

- Check that wheel bearings operate smoothly.
- Check axial end play.

### Axial end play:

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

- If axial end play is not within specification or wheel bearing does not turn smoothly, replace wheel bearing assembly. Refer to FA-12.

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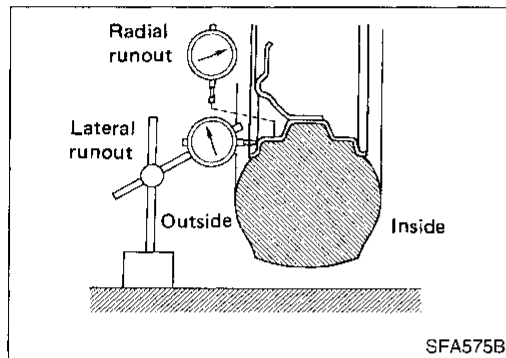
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## Front Wheel Alignment

Before checking front wheel alignment, be sure to make a preliminary inspection with vehicle unladen\*.

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

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### PRELIMINARY INSPECTION

1. Check tires for wear and proper inflation.
2. Check wheel runout.

#### Wheel runout:

**Refer to FA-28.**

3. Check front wheel bearings for looseness.
4. Check front suspension for looseness.
5. Check steering linkage for looseness.
6. Check that front struts work properly.
7. Check vehicle posture (unladen).

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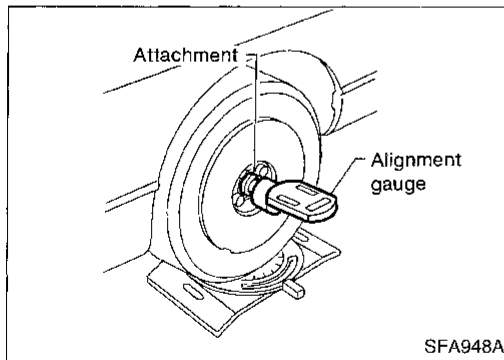
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### CAMBER, CASTER AND KINGPIN INCLINATION

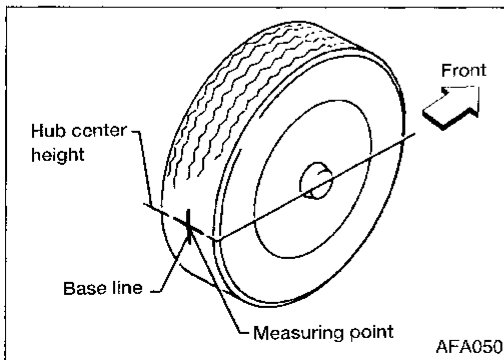
**Camber, caster and kingpin inclination are preset at factory and cannot be adjusted.**

1. Measure camber, caster and kingpin inclination of both right and left wheels with a suitable alignment gauge.

#### Camber, caster and kingpin inclination:

**Refer to FA-28.**

2. If camber, caster and kingpin inclination are not within specification, inspect front suspension parts. Replace any damaged or worn out parts.



### TOE-IN

Measure toe-in using the following procedure.

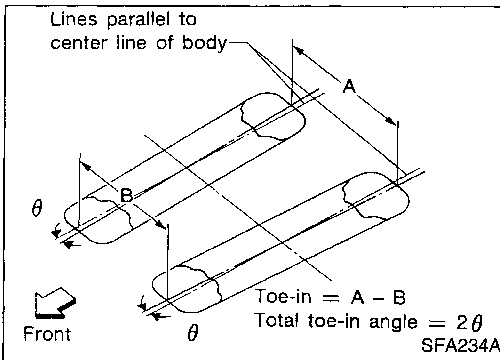
#### WARNING:

- Always perform the following procedure on a flat surface.
- Make sure that no one is in front of the vehicle before pushing it.

1. Bounce front 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 tread (rear side) of both front tires at the same height as hub center. These are measuring points.

## ON-VEHICLE SERVICE

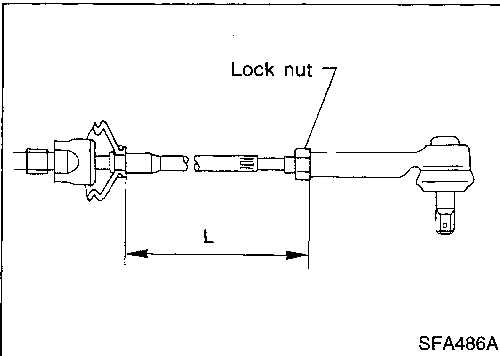
### Front Wheel Alignment (Cont'd)



4. Measure distance "A" (rear side).
5. Push the vehicle slowly ahead to rotate the wheels 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).

**Toe-in (A - B):**

**Refer to SDS, FA-28.**



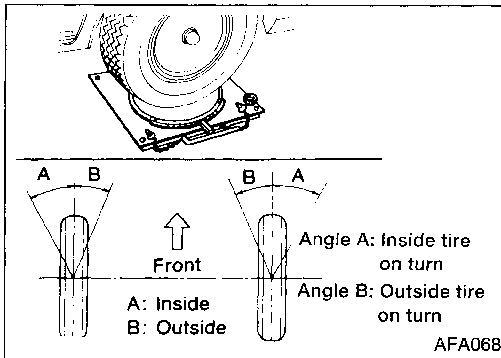
7. Adjust toe-in by varying the length of steering tie-rods.
  - a. Loosen lock nuts.
  - b. Adjust toe-in by screwing tie-rods in or out.

**Standard length "L":**

**Refer to ST section ("General Specifications", "SDS").**

- c. Tighten lock nuts to specified torque.

**Ⓜ: 41 - 81 N·m (4.2 - 8.3 kg-m, 30 - 60 ft-lb)**



### FRONT WHEEL TURNING ANGLE

1. Set wheels in straight-ahead position. Then move vehicle forward until front wheels rest on turning radius gauge.
2. Rotate steering wheel all the way right and left; measure turning angle.
- Turn steering wheel to full lock and apply force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine at idle.
- **Do not hold the steering wheel on full lock for more than 15 seconds.**

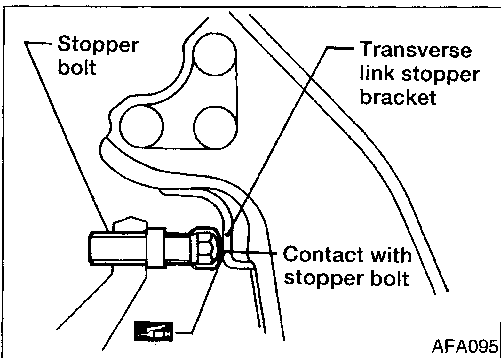
**Wheel turning angle (Full turn):**

**Refer to FA-28.**

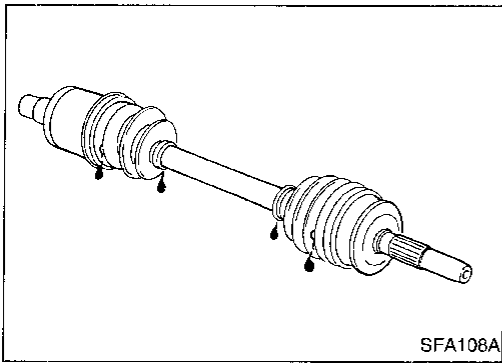
3. If stopper bolt head does not contact stopper bracket at specified outside wheel angle, make the following adjustment.
  - a. Remove stopper bolt cap.
  - b. Loosen stopper bolt lock nut.
  - c. Adjust stopper bolt to contact stopper bracket at the correct angle.
  - d. Install stopper bolt cap.
  - e. Apply grease to contact face of transverse link stopper bracket.

**Tighten stopper bolt lock nut.**

**Ⓜ: 54 - 72 N·m (5.5 - 7.3 kg-m, 40 - 53 ft-lb)**







## Drive Shaft

Check for grease leakage and other damage.

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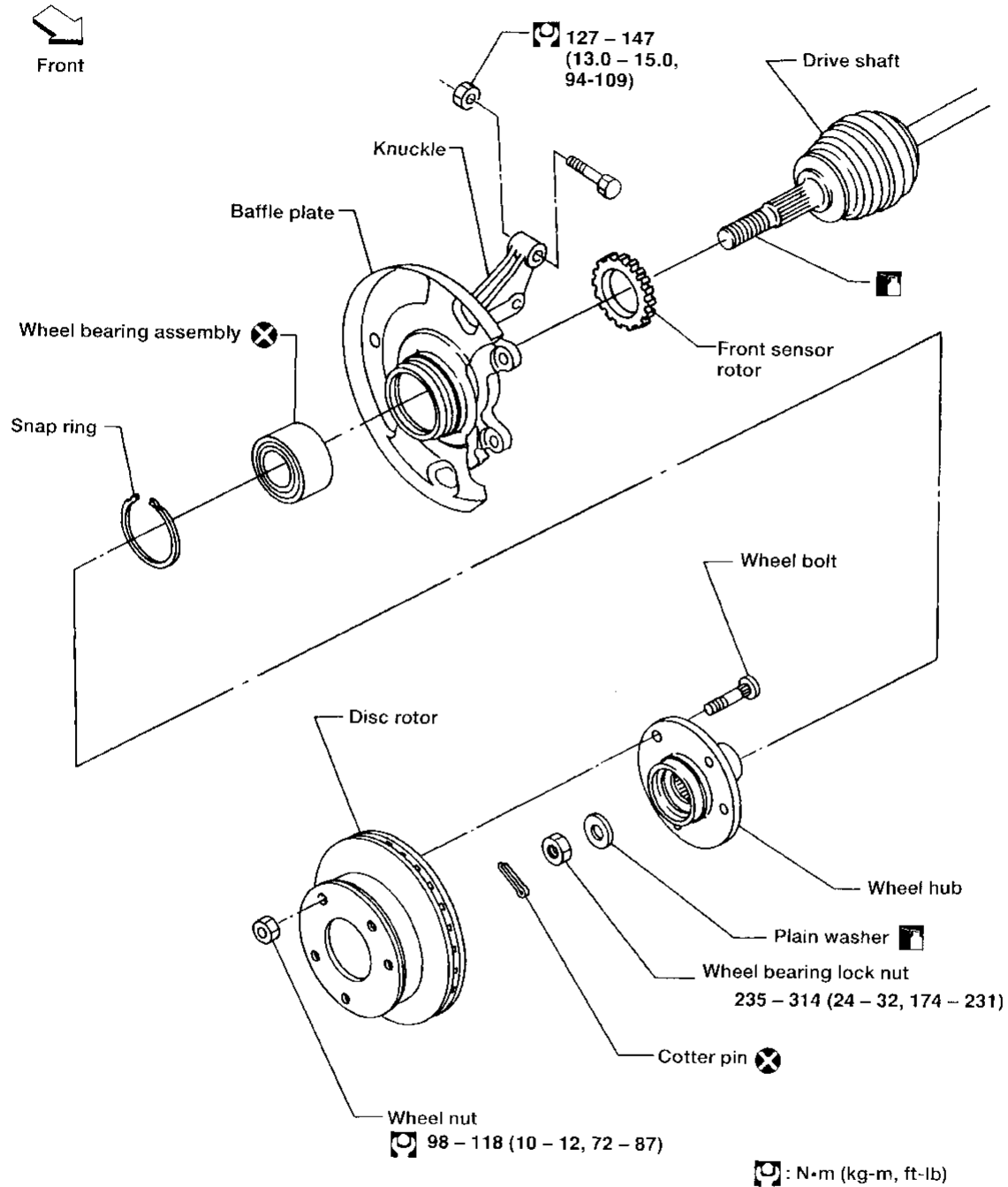
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# FRONT AXLE

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# FRONT AXLE

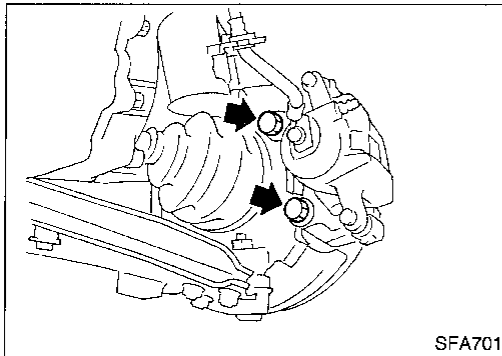
## Wheel Hub and Knuckle

### REMOVAL

#### CAUTION:

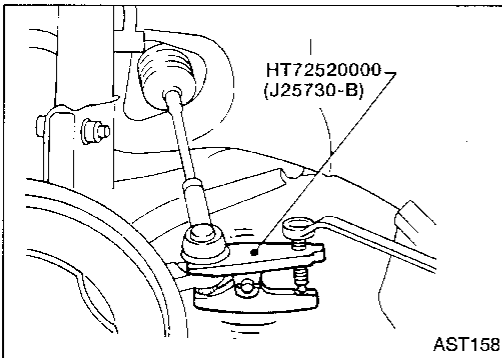
Before removing front axle assembly, disconnect ABS wheel sensor from assembly. Move it from front axle assembly area. Failure to do so may result in damage to sensor wires and the sensor becoming inoperative.

1. Remove wheel bearing lock nut.



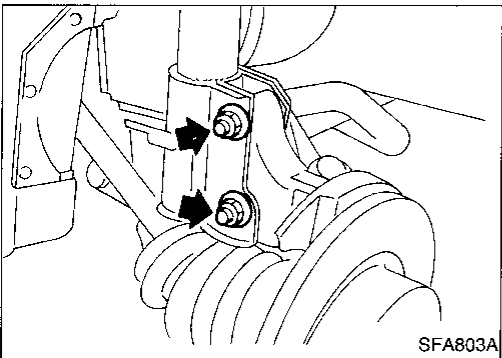
2. Remove brake caliper assembly and rotor.

- Brake hose need not be disconnected from brake caliper. Suspend brake caliper with wire so as not to stretch brake hose.
- Be careful not to depress brake pedal, or caliper piston will pop out.
- Make sure brake hose is not twisted.

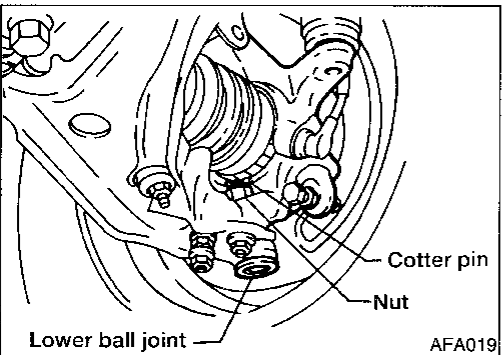


3. Separate tie-rod from knuckle with Tool.

- Install stud nut on stud bolt with castellated side facing up to prevent damage to stud bolt.



4. Remove strut lower mounting bolts.

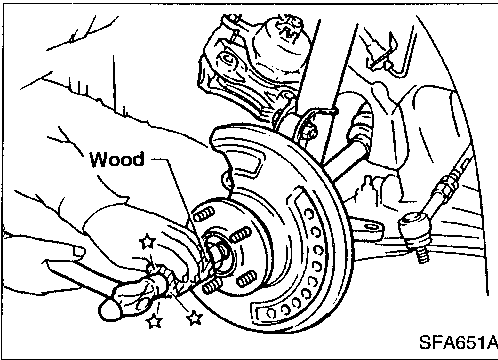


5. Remove cotter pin and nut securing lower ball joint to knuckle.
6. Strike knuckle with a hammer and pull down transverse link to separate lower ball joint from knuckle.

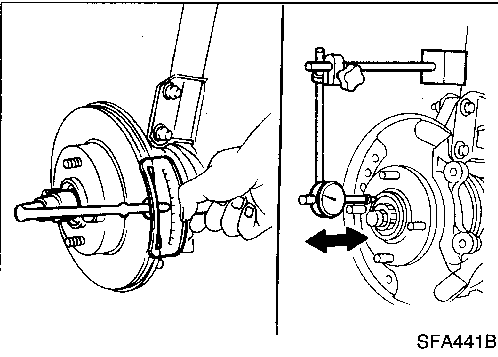
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## FRONT AXLE

### Wheel Hub and Knuckle (Cont'd)

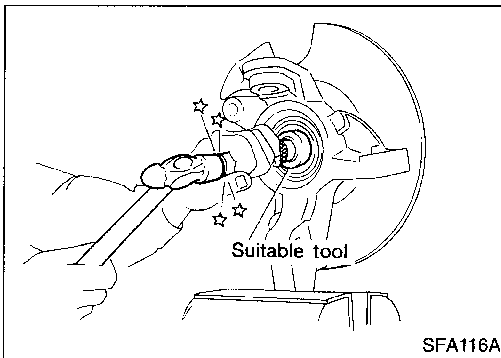


7. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.
- **When removing drive shaft, cover boots with a shop towel to prevent damage to them.**
8. Remove knuckle with wheel hub.



### INSTALLATION

1. Install knuckle with wheel hub.- Replace strut lower mounting nuts.- **When installing knuckle to strut, be sure to hold bolts and tighten nuts.**  
⌚: 127 - 147 N·m (13.0 - 15.0 kg·m, 94 - 108 ft·lb)
- 2. Tighten tie-rod ball joint nut.  
⌚: 29 - 39 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb)
- **Apply oil to threaded portion of drive shaft and to both sides of plain washer.**
- 3. Tighten wheel bearing lock nut.  
⌚: 235 - 314 N·m (24 - 32 kg·m, 174 - 231 ft·lb)
- 4. Check wheel bearing axial end play.  
**Axial end play:**  
0.05 mm (0.0020 in) or less



### DISASSEMBLY

#### CAUTION:

**When removing wheel hub or wheel bearing from knuckle, replace wheel bearing assembly (outer race and inner race) with a new one.**

**Wheel bearing does not require maintenance. If any of the following symptoms are noted, replace wheel bearing assembly.**

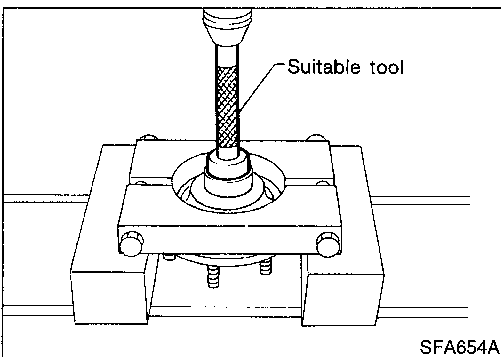
- Growling noise is emitted from wheel bearing during operation.
- Wheel bearing drags or turns roughly. This occurs when turning hub by hand after bearing lock nut is tightened to specified torque.

#### Wheel hub

Drive out wheel hub from knuckle with a suitable tool.

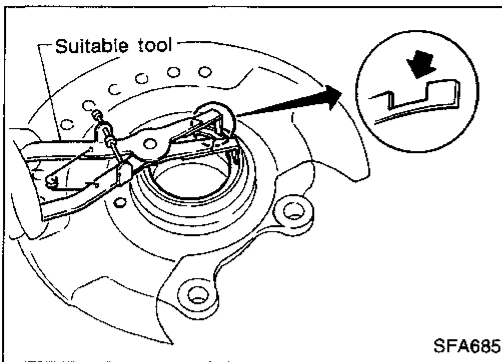
#### Wheel bearing

1. If wheel bearing inner race (outside) is removed together with wheel hub, press out wheel bearing inner race.



# FRONT AXLE

## Wheel Hub and Knuckle (Cont'd)



2. Remove snap ring.

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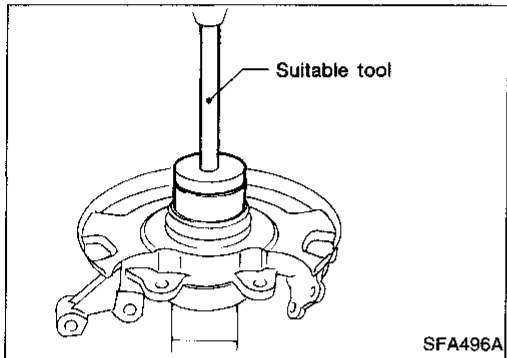
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3. Press out bearing outer race.

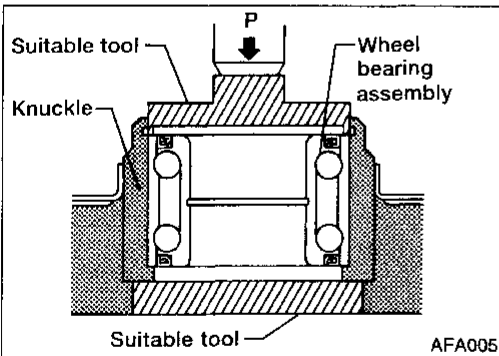
### INSPECTION

#### Wheel hub and knuckle

Check wheel hub and knuckle for cracks by using a magnetic exploration or dyeing test.

#### Snap ring

Check snap ring for wear and cracks. Replace if necessary.



### ASSEMBLY

1. Press new wheel bearing assembly into knuckle.

**Maximum load P:**

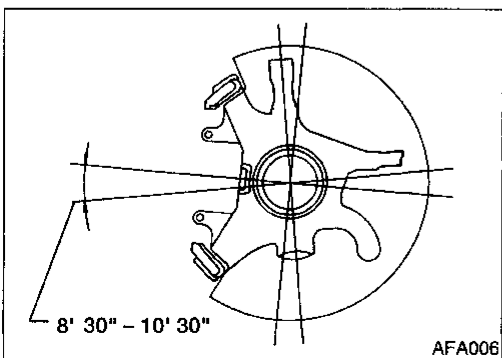
**29 kN (3 ton, 3.3 US ton, 3.0 Imp ton)**

#### CAUTION:

- Do not press on inner race of wheel bearing assembly.
- Do not apply oil or grease to mating surfaces of wheel bearing outer race and knuckle.

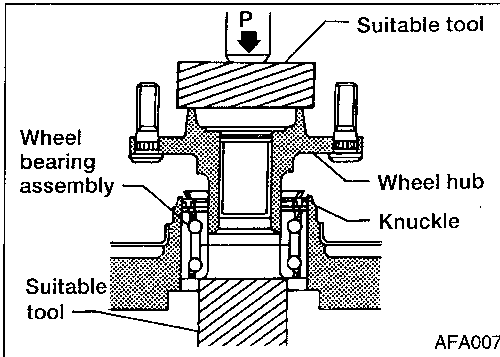
2. Install snap ring into groove of knuckle.

3. Install baffle plate and splash guard onto knuckle.

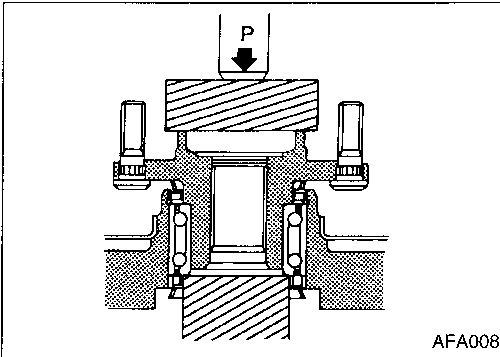


## FRONT AXLE

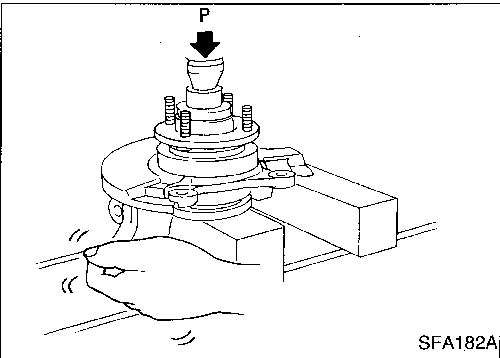
### Wheel Hub and Knuckle (Cont'd)



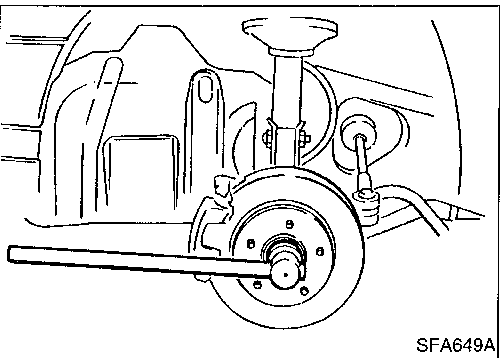
4. Press wheel hub into wheel bearing.  
**Maximum load P:**  
29 kN (3 ton, 3.3 US ton, 3.0 Imp ton)
- Wheel bearing inner race must be held as shown.



5. Check bearing operation.
  - a. Add load P with press.  
**Load P:**  
39.2 - 82.4 kN  
(4.0 - 8.4 ton, 4.4 - 9.3 US ton, 3.94 - 8.27 Imp ton)



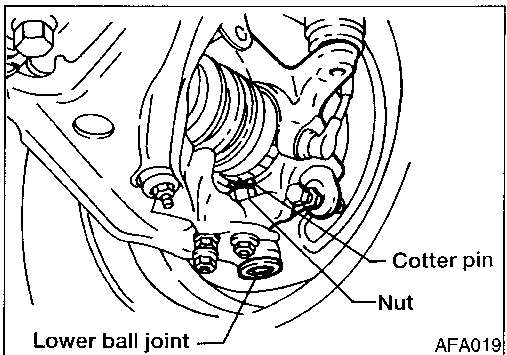
- b. Spin knuckle several turns in both directions.
- c. Make sure that wheel bearing operates smoothly.



### Drive Shaft

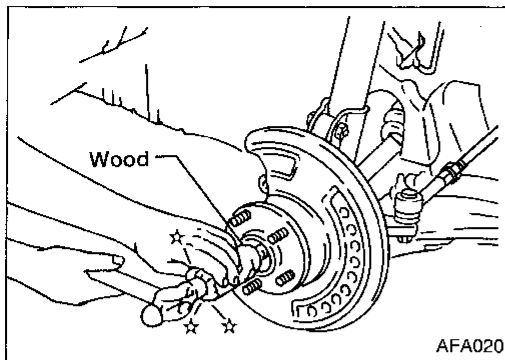
#### REMOVAL

1. Remove wheel bearing lock nut.
    - Tie-rod does not need to be disconnected from knuckle.
    - Suspend knuckle with wire so as not to stretch brake hose.
    - Do not pull or twist brake hose.
  2. Remove clip and separate brake hose from strut.
  3. Remove strut lower mounting bolts.
- 
4. Remove cotter pin and nut securing lower ball joint to knuckle.
  5. Strike knuckle with a hammer and pull down control arm to separate lower ball joint from knuckle.

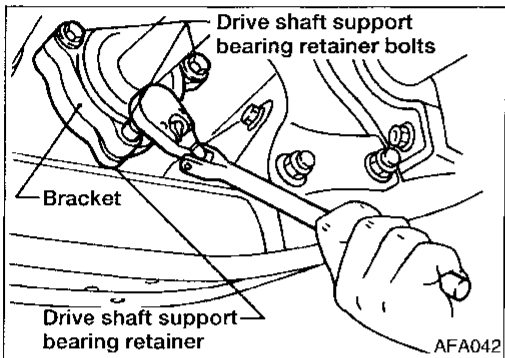


## FRONT AXLE

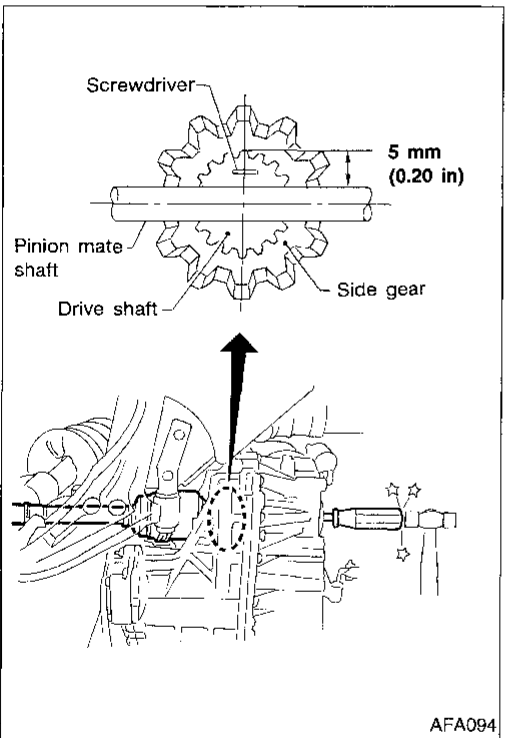
### Drive Shaft (Cont'd)



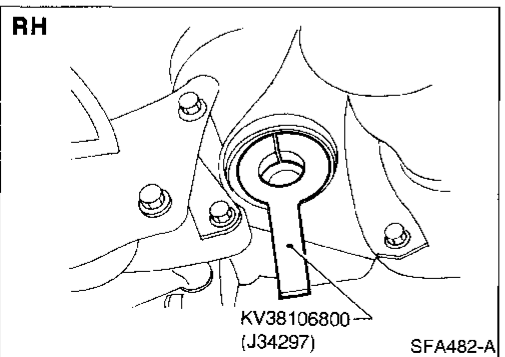
6. Separate drive shaft from knuckle by lightly tapping it. If it is hard to remove, use a puller.
- When removing drive shaft, cover boots with a shop towel to prevent damage to them.



7. Remove right drive shaft from transaxle.
- Position drain pan beneath transaxle.
  - Remove support bearing bolts and pull drive shaft from transaxle.



8. Remove left drive shaft from transaxle.
- Insert screwdriver into transaxle opening for right drive shaft and strike with a hammer.
  - Be careful not to damage pinion mate shaft and side gear.



## INSTALLATION

### Transaxle side

1. Drive a new oil seal to transaxle. Refer to AT section ("Differential Side Oil Seal Replacement", "ON-VEHICLE SERVICE").
2. Set Tool along the inner circumference of oil seal.

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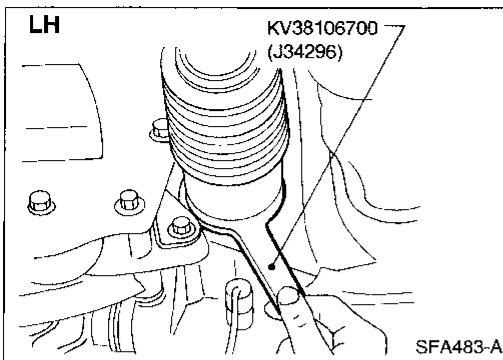
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# FRONT AXLE

## Drive Shaft (Cont'd)



3. Insert drive shaft into transaxle. Be sure to properly align the serrations and then withdraw Tool.
  - No circular clip is used on RH side.
  - Use new circular clip on LH side.
4. Push drive shaft, then press-fit circular clip on the drive shaft into circular clip groove of side gear.
5. After its insertion, try to pull the slide joint out of the transaxle by hand. If it pulls out, the circular clip is not properly meshed with the side gear.

## Wheel side

1. Install drive shaft into knuckle.
2. Tighten wheel bearing lock nut. Refer to FA-12.

## COMPONENTS

### CAUTION:

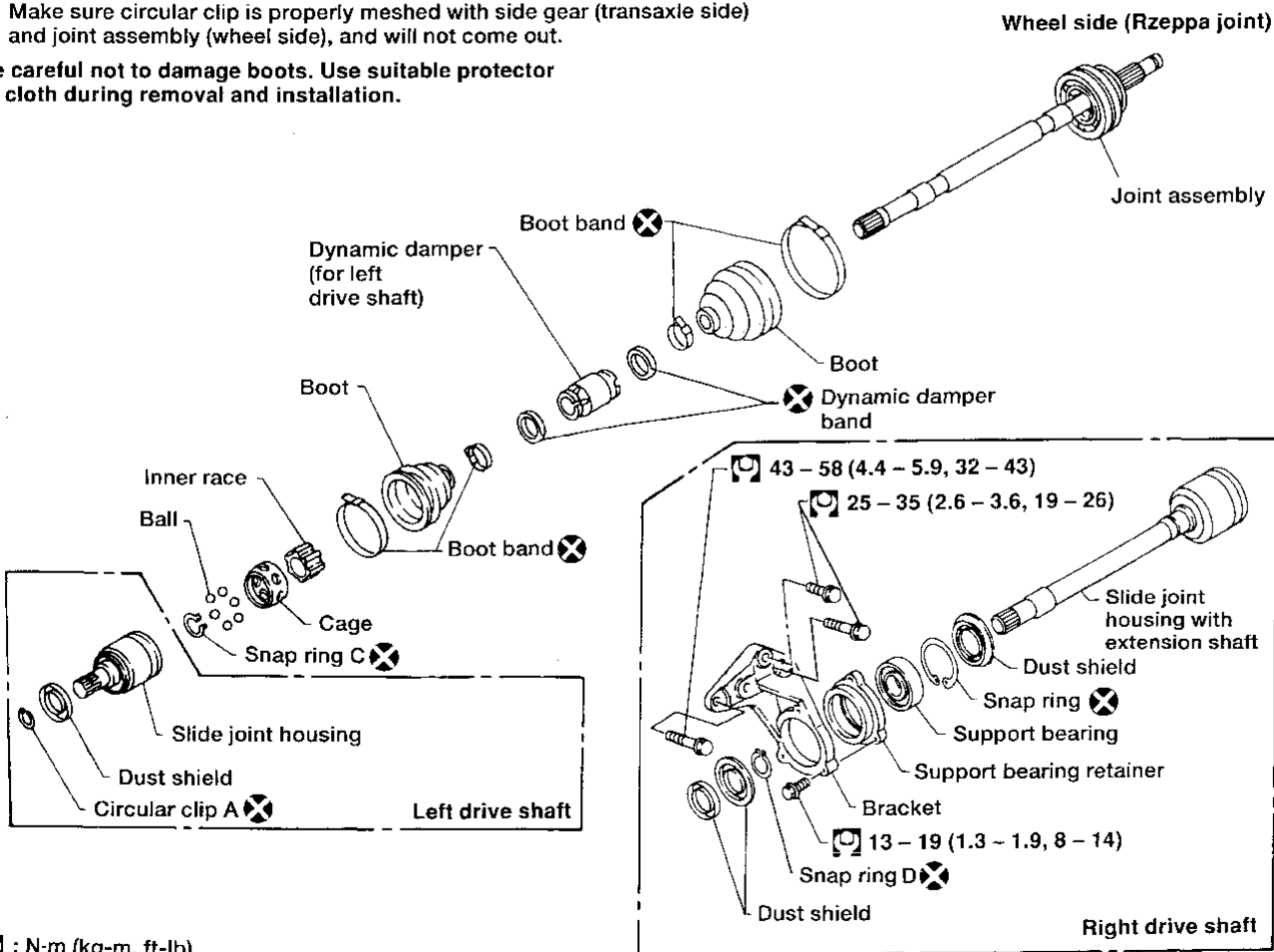
- Circular clips should be properly meshed with differential side gear (transaxle side) and with joint assembly (wheel side). Make sure they will not come out.
- Be careful not to damage boots. Use suitable protector or cloth during removal and installation.

### SEC. 391

#### Circular clip:

Make sure circular clip is properly meshed with side gear (transaxle side) and joint assembly (wheel side), and will not come out.

Be careful not to damage boots. Use suitable protector or cloth during removal and installation.



: N·m (kg·m, ft·lb)

Transaxle side (Double offset joint)

AFA092



## FRONT AXLE

### Drive Shaft (Cont'd)

#### DISASSEMBLY

##### Transaxle side

1. Remove boot bands.
2. Put matching marks on slide joint housing and inner race, before separating joint assembly.
3. Pry off snap ring "A" with a screwdriver, and pull out slide joint housing.

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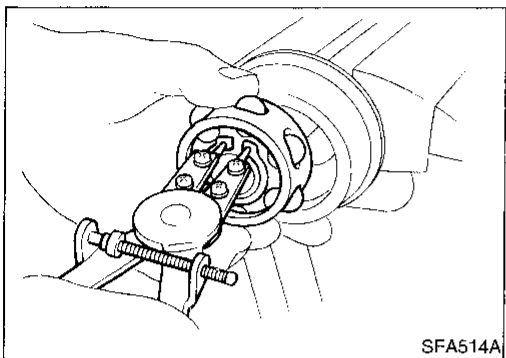
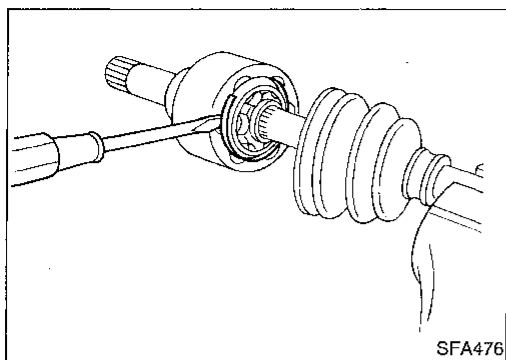
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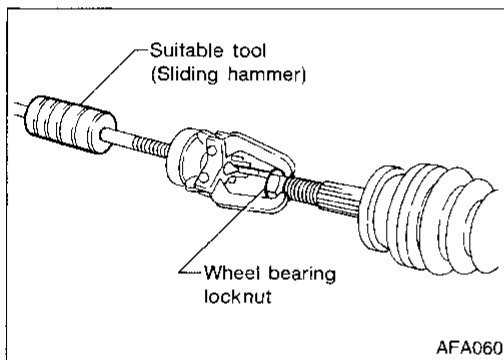
4. Put matching marks on inner race and drive shaft.
  5. Remove snap ring "C", then remove ball cage, inner race and balls as a unit.
  6. Draw out boot.
- **Cover drive shaft serrations with tape so as not to damage the boot.**

##### Wheel side

#### CAUTION:

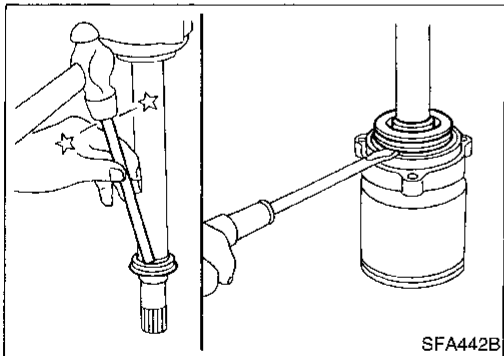
**The joint on the wheel side cannot be disassembled.**

1. Before separating joint assembly, put matching marks on drive shaft and joint assembly.
  2. Separate joint assembly with a suitable tool.
- **Be careful not to damage threads on drive shaft.**
3. Remove boot bands.

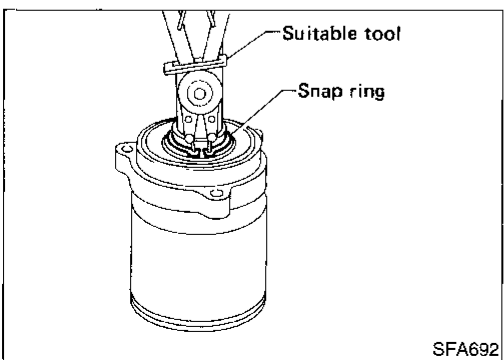


##### Support bearing

1. Remove dust shield.

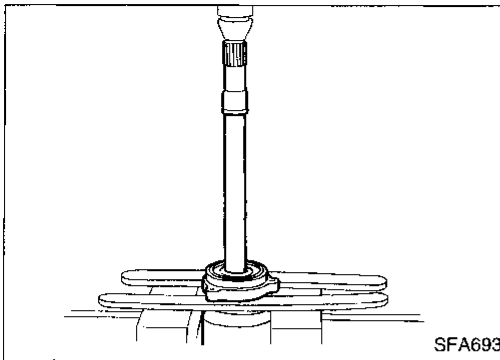


2. Remove snap ring.

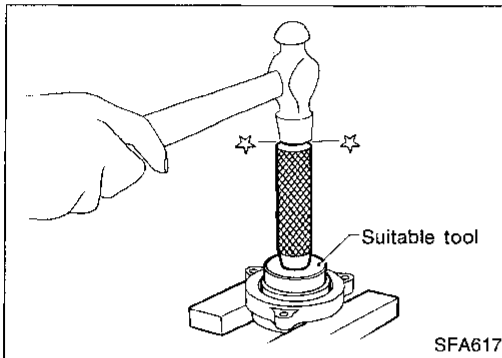


## FRONT AXLE

### Drive Shaft (Cont'd)



3. Press support bearing assembly off of drive shaft.



4. Remove dust shield.

5. Remove snap ring.

6. Separate support bearing from retainer.

### INSPECTION

Thoroughly clean all parts in cleaning solvent, and dry with compressed air. Check parts for evidence of deformation and other damage.

#### Drive shaft

Replace drive shaft if it is twisted or cracked.

#### Boot

Check boot for fatigue, cracks, and wear. Replace boot with new boot bands.

#### Joint assembly (Transaxle side)

- Replace any parts of double offset joint which show signs of scorching, rust, wear or excessive play.
- Check serration for deformation. Replace if necessary.
- Check slide joint housing for any damage. Replace if necessary.

#### Joint assembly (Wheel side)

Replace joint assembly if it is deformed or damaged.

#### Support bearing

Make sure wheel bearing rolls freely and is free from noise, cracks, pitting and wear.

#### Support bearing bracket

Check support bearing bracket for cracks with a magnetic exploration or dye test.

### ASSEMBLY

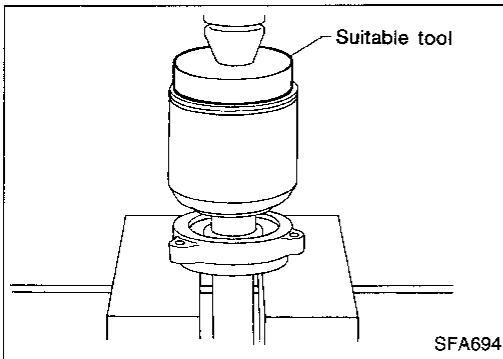
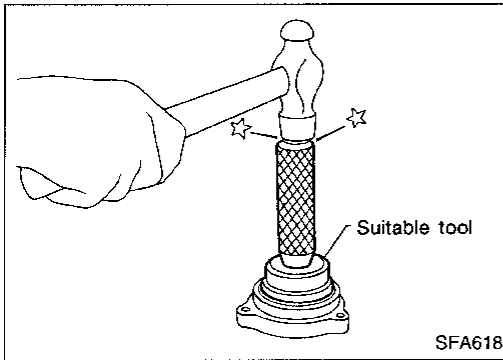
- After drive shaft has been assembled, ensure that it moves smoothly over its entire range without binding.
- Use NISSAN GENUINE GREASE or equivalent after every overhaul.

## FRONT AXLE

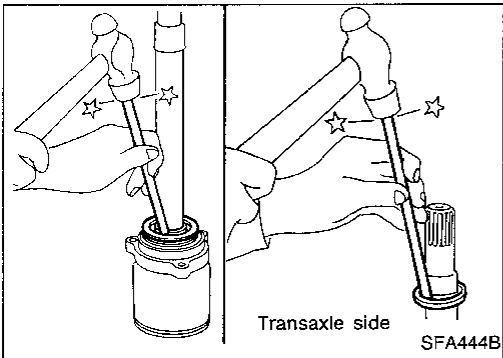
### Drive Shaft (Cont'd)

#### Support bearing

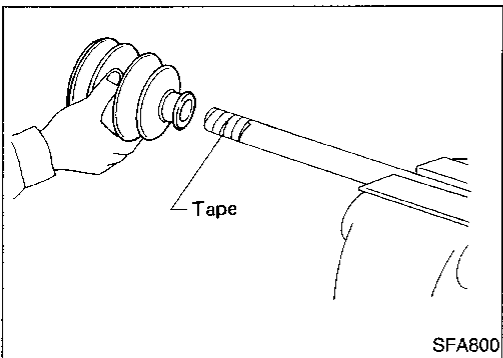
1. Install bearing into retainer.



2. Install snap ring.
3. Install dust shield.
4. Press drive shaft into bearing.

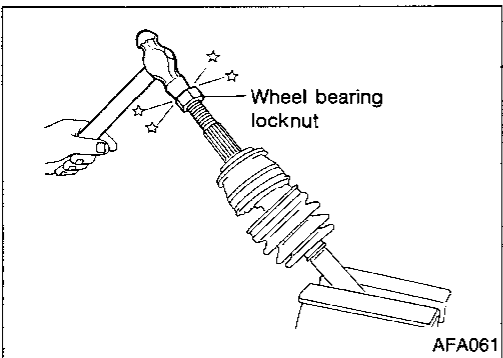


5. Install snap ring.
6. Install new dust shield.



#### Wheel side

1. Install boot and new small boot band on drive shaft.
  - Cover drive shaft serration with tape so as not to damage boot during installation.

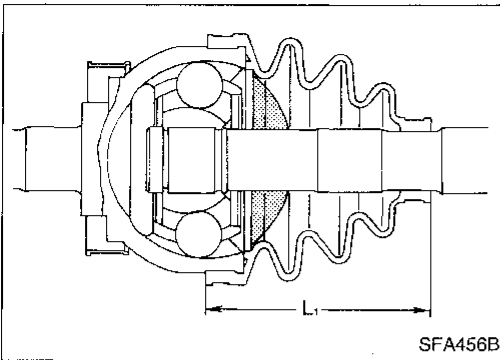


2. Set joint assembly onto drive shaft by lightly tapping it. Ensure that marks which were made during disassembly are properly aligned.

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## FRONT AXLE

### Drive Shaft (Cont'd)



3. Pack drive shaft with specified amount of grease.

**Specified amount of grease:**

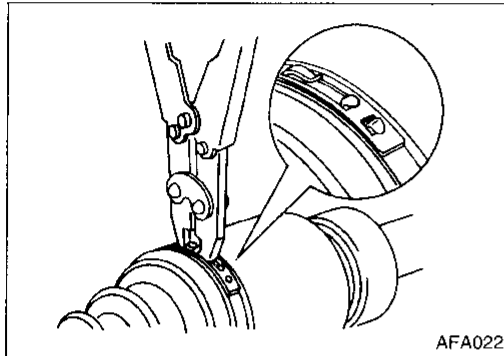
**175 - 195 g (6.17 - 6.88 oz)**

4. Make sure that boot is properly installed on the drive shaft groove.

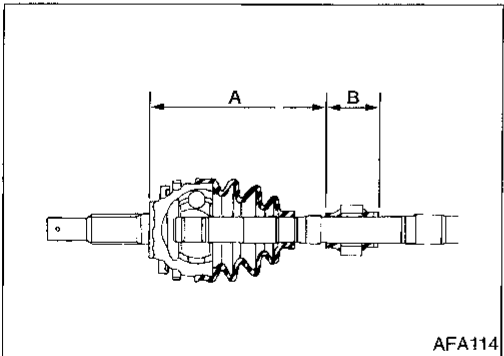
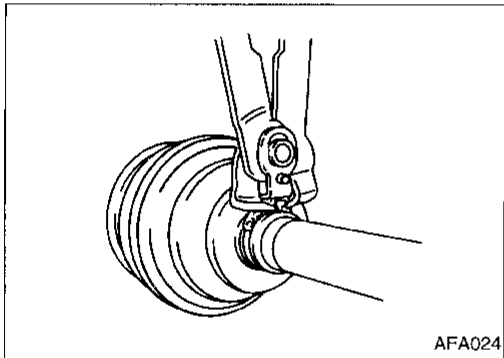
Set boot so that it does not swell and deform when its length is "L<sub>1</sub>".

**Length "L<sub>1</sub>":**

**86.5 - 88.5 mm (3.406 - 3.484 in)**



5. Lock new larger and smaller boot bands securely with a suitable tool.



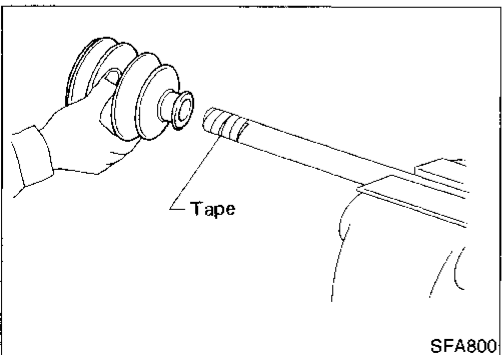
### Dynamic damper

1. Use a new damper band when reinstalling.
2. Install dynamic damper from stationary-joint side while holding it securely:

**Length:**

**"A" 199 - 205 mm (7.83 - 8.07 in)**

**"B" 70 mm (2.76 in)**

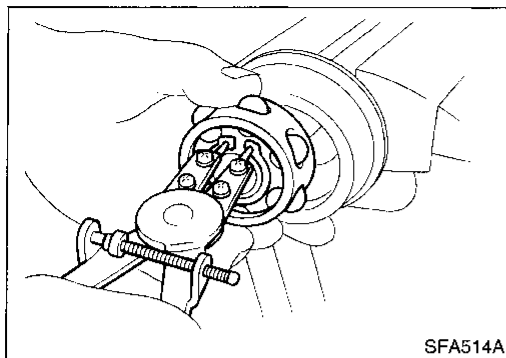


### Transaxle side

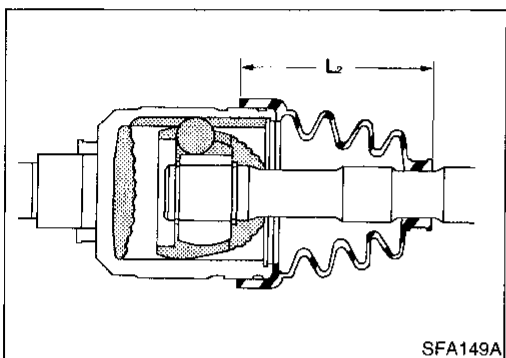
1. Install boot and new small boot band on drive shaft.
- **Cover drive shaft serration with tape to prevent damage to boot during installation.**

## FRONT AXLE

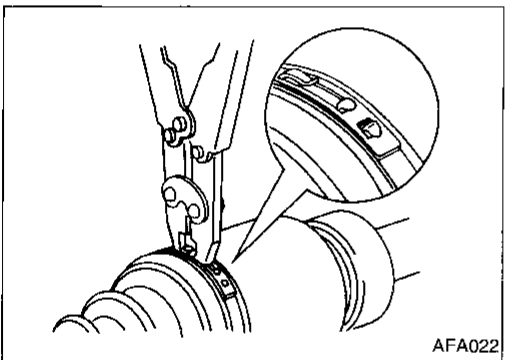
### Drive Shaft (Cont'd)



2. Install ball cage, inner race and balls as a unit, making sure that the matching marks which were made during disassembly are properly aligned.
3. Install new snap ring "C".



4. Pack drive shaft with specified amount of grease.  
**Specified amount of grease:**  
210 - 230 g (7.41 - 8.11 oz)
5. Install slide joint housing, then install new snap ring "A".
6. Make sure that boot is properly installed on the drive shaft groove.  
Set boot so that it does not swell and deform when its length is "L<sub>2</sub>".  
**Length "L<sub>2</sub>":**  
101.4 - 103.4 mm (3.99 - 4.07 in)



7. Lock new larger and smaller boot bands securely with a suitable tool.

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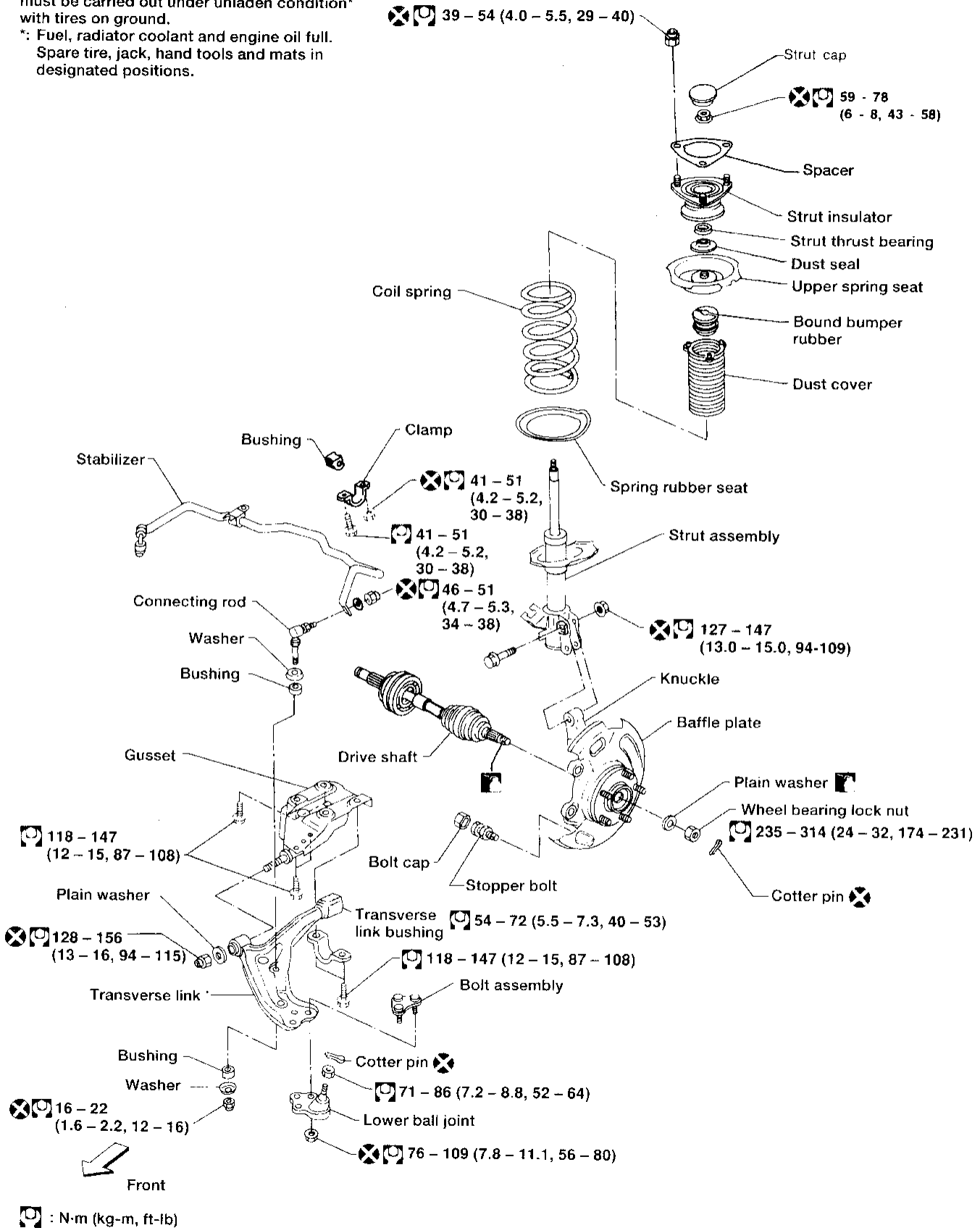
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# FRONT SUSPENSION

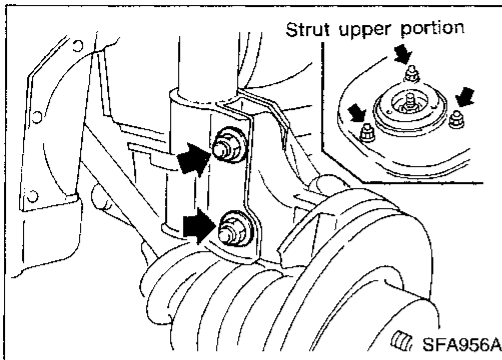
## SEC. 391-400-401

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.



# FRONT SUSPENSION



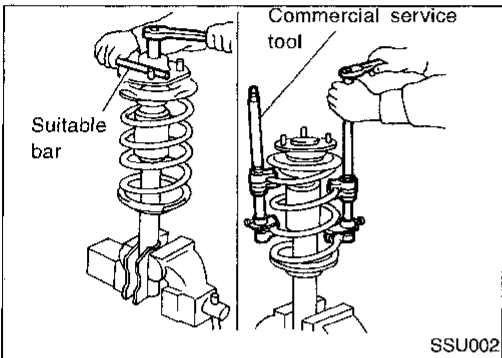
## Coil Spring and Strut Assembly

### REMOVAL AND INSTALLATION

- Remove strut assembly fixing bolts and nuts (to hood ledge).

#### WARNING:

Do not remove piston rod lock nut on vehicle.



### DISASSEMBLY

1. Set strut assembly on vise, then loosen piston rod lock nut.

#### WARNING:

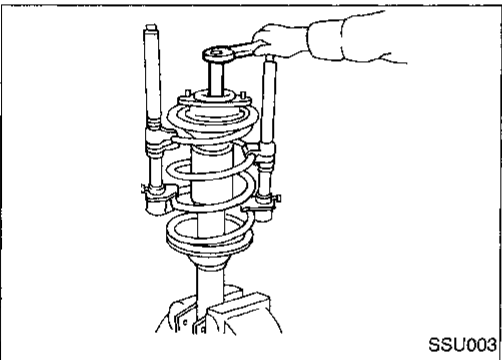
Do not remove piston rod lock nut at this time.

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

#### WARNING:

Make sure that the pawls of the two spring compressors are firmly hooked on the spring. The spring compressors must be tightened alternately so as not to tilt the spring.

3. Remove piston rod lock nut.



### INSPECTION

#### Strut assembly

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

#### Strut mounting insulator

- Check cemented rubber-to-metal portion for separation and cracks.
- Check rubber parts for deterioration.

#### Thrust bearing

- Check thrust bearing parts for abnormal noise or excessive rattle in axial direction.
- Replace if necessary.

#### Coil spring and insulator

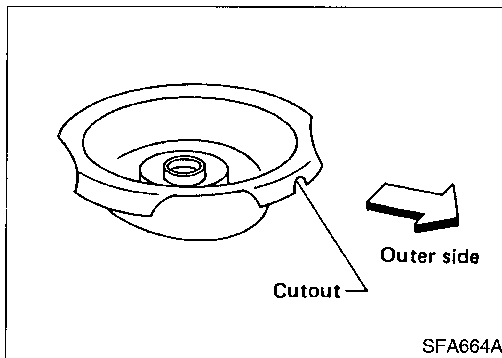
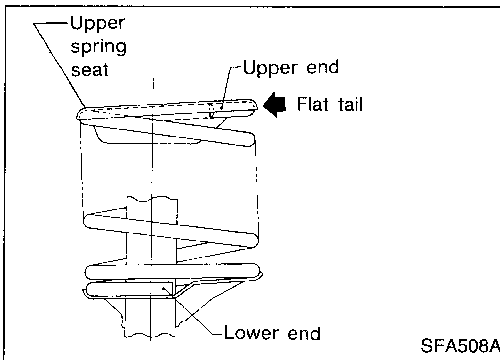
- Check for cracks, deformation and other damage. Replace if necessary.

## FRONT SUSPENSION


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

#### ASSEMBLY

- When installing coil spring on strut, it must be positioned as shown in the figure at left.



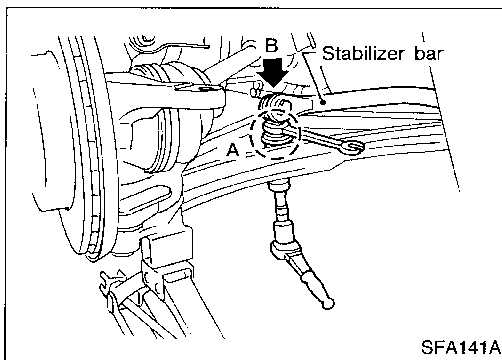
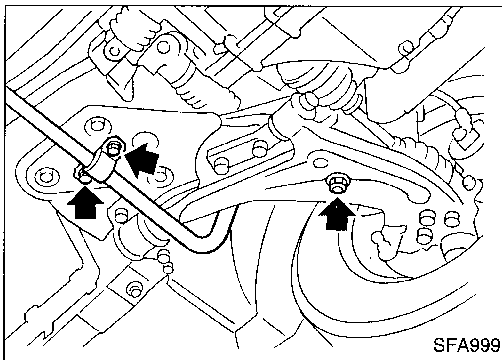
- Install upper spring seat with alignment mark facing outside of vehicle, in line with strut-to-knuckle attachment points ( $\pm 3^\circ$ ).
- Replace strut lower mounting nuts.
- **When installing strut to knuckle, be sure to hold bolts and tighten nuts.**

: 127 - 147 N·m (13.0 - 15.0 kg·m, 94 - 108 ft·lb)

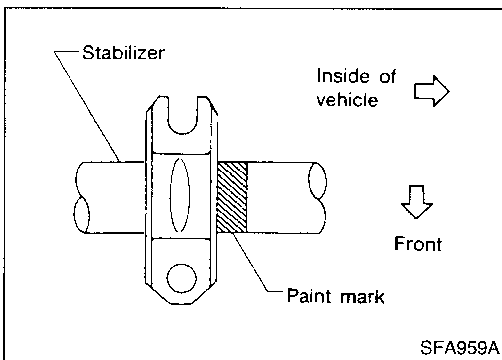
#### Stabilizer Bar

#### REMOVAL AND INSTALLATION

- Remove stabilizer bar.



- When removing or installing stabilizer bar, secure portion A with wrench as shown.



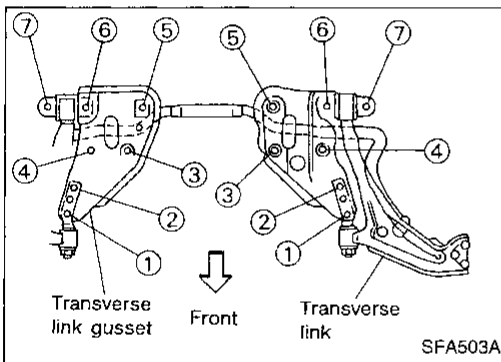
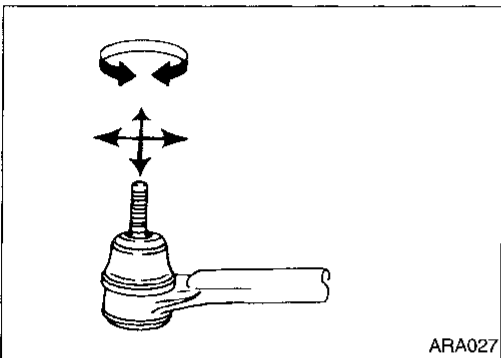
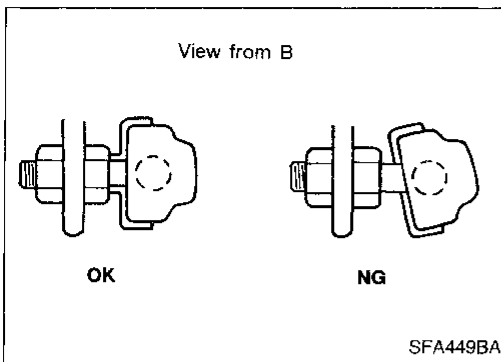
- When installing stabilizer, make sure that paint mark and clamp are in the correct positions.



# FRONT SUSPENSION

## Stabilizer Bar (Cont'd)

- Install stabilizer bar with ball joint socket properly placed.



## INSPECTION

- Check stabilizer for deformation and cracks. Replace if necessary.
- Check rubber bushings for deterioration and cracks. Replace if necessary.
- Check that ball joint can rotate in all directions. If movement is not smooth and free, replace stabilizer bar link.

## Transverse Link and Transverse Link Gusset

### REMOVAL AND INSTALLATION

1. Remove stabilizer bar.
  2. Remove attaching bolts.
  3. Install bolts in numerical order as shown at left.
- **During installation, final tightening must be carried out at curb weight with wheels on the ground.**

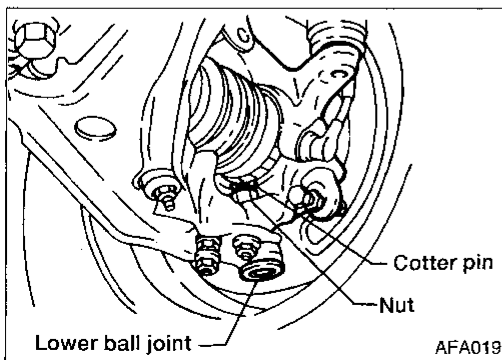
**Tightening torque:**

**Refer to Front Suspension, FA-22.**

4. After installation, check wheel alignment. Refer to FA-7.

## INSPECTION

- Check transverse link for damage, cracks and deformation. Replace if necessary.
- Check rubber bushing for damage, cracks and deformation. Replace transverse link if necessary.
- Check transverse link gusset for damage, cracks and deformation. Replace if necessary.



## Lower Ball Joint

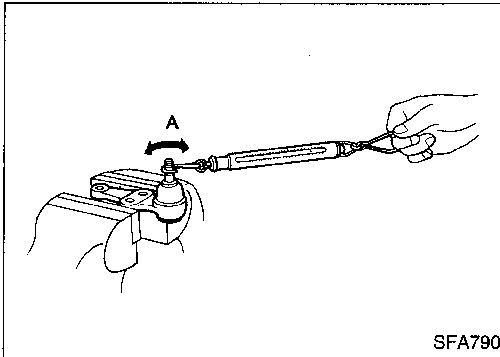
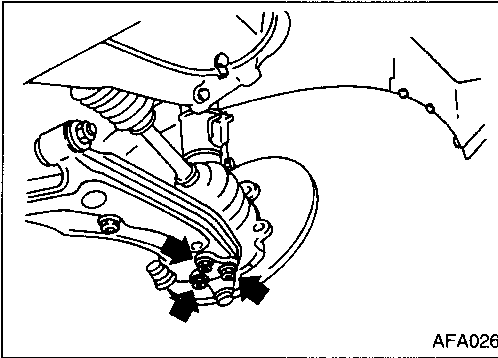
### REMOVAL AND INSTALLATION

1. Remove cotter pin and nut securing lower ball joint to knuckle.
2. Strike knuckle with a hammer and pull down control arm to separate lower ball joint from knuckle.

## FRONT SUSPENSION

### Lower Ball Joint (Cont'd)

3. Remove nuts shown at left.



### INSPECTION

- Check ball joint for excessive play. Replace lower ball joint if any of the following exists:
  - Ball stud is worn.
  - Joint is hard to swing.
  - Play in axial direction is excessive.Before checking, turn ball joint at least 10 revolutions so that ball joint is properly broken in.

#### Swinging force "A":

(measuring point: cotter pin hole of ball stud)

7.8 - 51.0 N (0.8 - 5.2 kg, 1.8 - 11.5 lb)

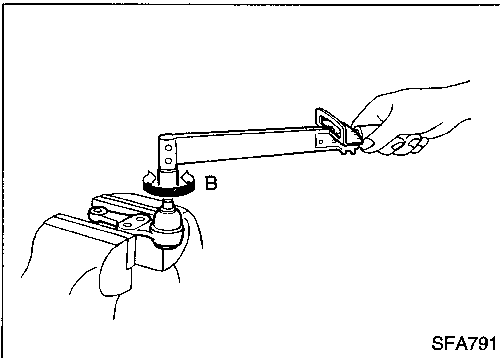
#### Turning torque "B":

0.5 - 3.4 N·m (5 - 35 kg-cm, 4.3 - 30.4 in-lb)

#### Vertical end play:

0 mm (0 in)

- Check dust cover for damage. Replace dust cover and cover clamp if necessary.



# SERVICE DATA AND SPECIFICATIONS (SDS)

## General Specifications

### COIL SPRING

Applied model	All	
Wire diameter	mm (in)	15 (0.59)
Coil diameter	mm (in)	160 (6.30)
Free length	mm (in)	391 (15.39)
Spring constant	26.5 (2.7, 151)	
	N/mm (kg/mm, lb/in)	
Identification	VXE	

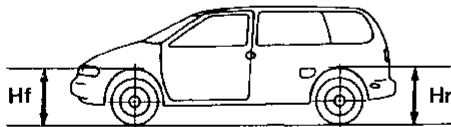
### STRUT

Applied model	Standard	Option
Piston rod diameter	22 (0.87)	
	mm (in)	
Damping force [at 0.3 m (1.0 ft)/sec.]	N (kg, lb)	
Expansion	902 - 1,216 (92 - 124, 203 - 273)	941 - 1,275 (96 - 130, 212 - 287)
Compression	235 - 373 (24 - 38, 53 - 84)	265 - 402 (27 - 41, 60 - 90)

### FRONT STABILIZER BAR

Applied model	All	
Stabilizer diameter	mm (in)	33 (1.30) Solid
Identification color	Orange	

### WHEELARCH HEIGHT (Unladen\*)



AFA002

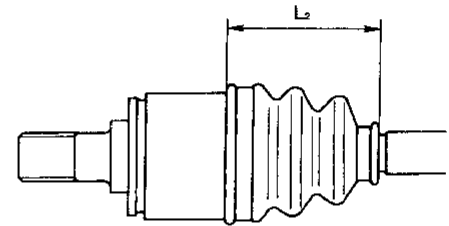
Applied model	All	
Front (Hf)	mm (in)	
Standard/Optional suspension	772 ± 10 (30.39 ± 0.39)	
Rear (Hr)	mm (in)	
Standard suspension	793 ± 10 (31.22 ± 0.39)	
Optional suspension	793 ± 10 (31.22 ± 0.39)	

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

### DRIVE SHAFT

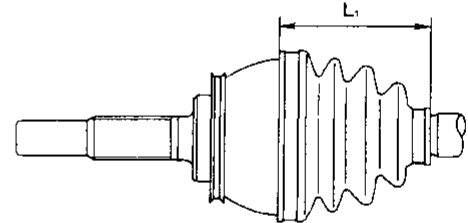
Applied model	All	
Joint type	DOJ	
Transaxle side	DOJ	
Wheel side	Rzeppa	
Grease	Nissan genuine grease or equivalent	
Capacity	g (oz)	
Transaxle side	210 - 230 (7.41 - 8.11)	
Wheel side	175 - 195 (6.17 - 6.88)	
Boot length	mm (in)	
Transaxle side "L <sub>2</sub> "	101.4 - 103.4 (3.99 - 4.07)	
Wheel side "L <sub>1</sub> "	86.5 - 88.5 (3.406 - 3.484)	

Transaxle side



SFA961A

Wheel side



SFA962A

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# SERVICE DATA AND SPECIFICATIONS (SDS)

## Inspection and Adjustment

### WHEEL ALIGNMENT (Unladen\*1)

Applied model	All	
Camber	Minimum	-27' (-0.45°)
	Nominal	18' (0.3°)
	Maximum	1°0.3' (1.0°)
	Left and right difference	45' (0.75°)
Caster	Minimum	3' (0.05°)
	Nominal	48' (0.8°)
	Maximum	1°33' (1.55°)
	Left and right difference	45' (0.75°)
Kingpin inclination	Minimum	12°50' (12.83°)
	Nominal	13°35' (13.58°)
	Maximum	14°20' (14.33°)
Total toe-in	Minimum	2 (0.08)
	Nominal	3 (0.12)
	Maximum	4 (0.16)
Distance (A - B) mm (in)	Minimum	11.0' (0.18°)
	Nominal	16.5' (0.26°)
	Maximum	22.0' (0.36°)
Angle (left plus right) Degree minute (Decimal degree)	Minimum	36° (36.00°)
	Nominal	38° (38.00°)
	Maximum	40° (40.00°)
Wheel turning angle Inside Degree minute (Decimal degree)	Minimum	28° (28.00°)
	Nominal	30° (30.00°)
	Maximum	32° (32.00°)
Full turn*2 Outside Degree minute (Decimal degree)	Minimum	28° (28.00°)
	Nominal	30° (30.00°)
	Maximum	32° (32.00°)

\*1: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

\*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

### WHEEL BEARING

Wheel bearing axial end play mm (in)	0.05 (0.0020) or less
Wheel bearing lock nut tightening torque N·m (kg·m, ft·lb)	235 - 314 (24 - 32, 174 - 231)

### WHEEL RUNOUT

Unit: mm (in)

Wheel type	Aluminum wheel	Steel wheel
Maximum radial runout limit	0.3 (0.012)	0.8 (0.031)
Maximum lateral runout limit	0.3 (0.012)	0.8 (0.031)

### LOWER BALL JOINT

Swinging force (Measured at cotter pin hole) N (kg, lb)	7.8 - 51.0 (0.8 - 5.2, 1.8 - 11.5)
Turning torque N·m (kg·cm, in·lb)	0.5 - 3.4 (5 - 35, 4.3 - 30.4)
Vertical end play limit mm (in)	0 (0)