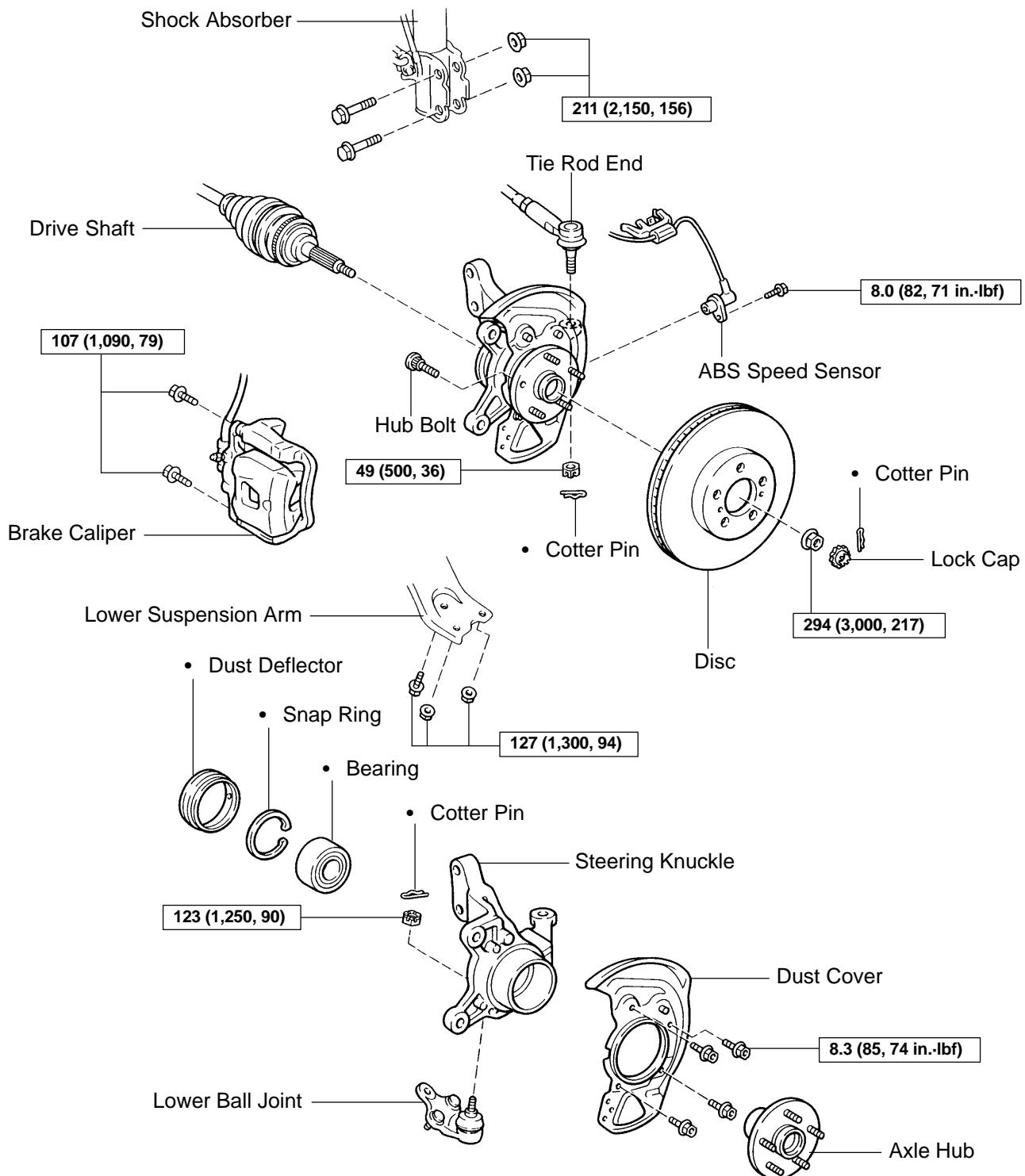


# FRONT AXLE HUB

## COMPONENTS

SA0VR-02



N·m (kgf·cm, ft·lbf) : Specified torque

- Non-reusable part

F04047

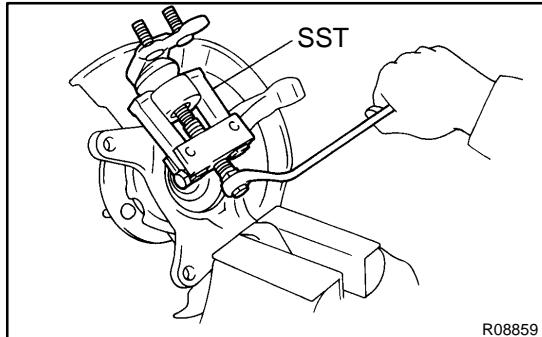
## DISASSEMBLY

### 1. REMOVE DUST DEFLECTOR

Using a screwdriver, remove the dust deflector.

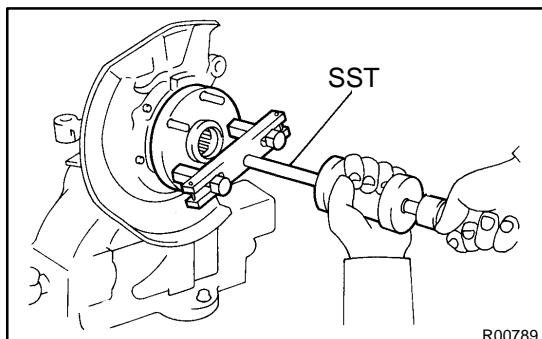
### 2. REMOVE LOWER BALL JOINT

- (a) Remove the cotter pin and nut.



- (b) Using SST, remove the lower ball joint.

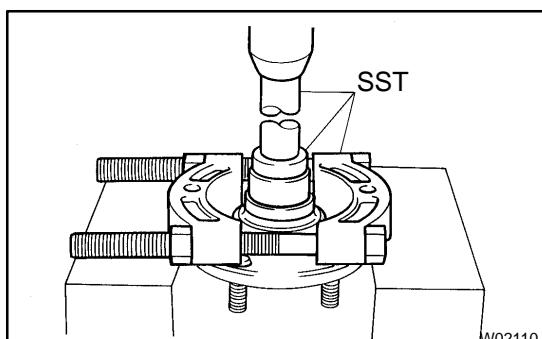
SST 09628-6201 1



### 3. REMOVE AXLE HUB

- (a) Using SST, remove the axle hub.

SST 09520-00031



- (b) Using SST and a press, remove the inner race (outside) from the axle hub.

SST 09950-00020, 09950-60010 (09951-00400),  
09950-70010 (09951-07100)

### 4. REMOVE DUST COVER

Using a torx wrench (T30), remove the 4 bolts and dust cover.

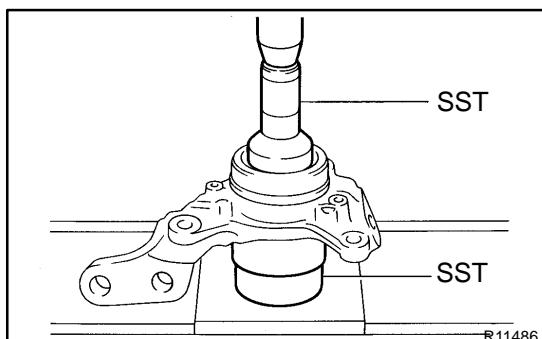
### 5. REMOVE BEARING FROM STEERING KNUCKLE

- (a) Using snap ring pliers, remove the snap ring.

- (b) Place the inner race on the outside of the bearing.

- (c) Using SST and a press, remove the bearing.

SST 09310-35010, 09527-17011



## INSTALLATION

Installation is in the reverse order of removal (See page [SA-9](#) ).

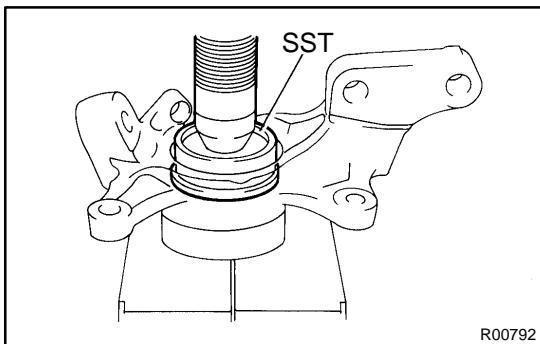
**HINT:**

After installation, check the ABS speed sensor signal (See page [DI-212](#) or [DI-252](#) ) and front wheel alignment (See page [SA-4](#) ).

**NOTICE:**

**w/ VSC:**

After installation, perform the steering angle sensor zero point calibration (See page [DI-252](#) ).



## REASSEMBLY

### 1. INSTALL BEARING

(a) Using SST and a press, install a new bearing to the steering knuckle.

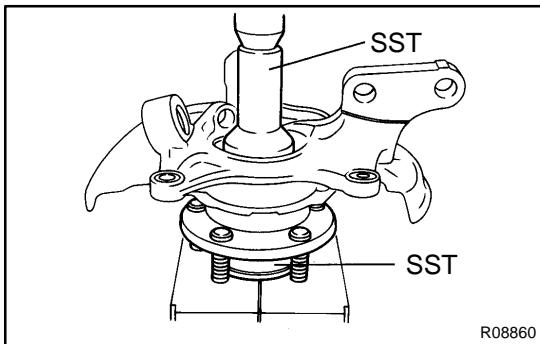
SST 09608-32010

(b) Using snap ring pliers, install a new snap ring.

### 2. INSTALL DUST COVER

Using a torx wrench (T30), install the dust cover with the 4 bolts.

**Torque: 8.3 N·m (85 kgf·cm, 74 in.-lbf)**



### 3. INSTALL FRONT AXLE HUB

Using SST and a press, install the axle hub.

SST 09310-35010, 09608-32010

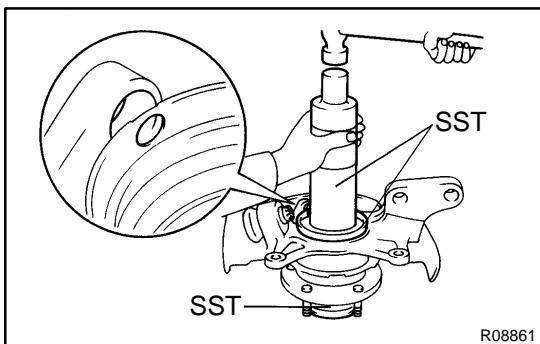
### 4. INSTALL LOWER BALL JOINT

(a) Install the lower ball joint and nut.

**Torque: 123 N·m (1,250 kgf·cm, 90 ft-lbf)**

(b) Install a new cotter pin.

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.



### 5. INSTALL DUST DEFLECTOR

Using SST and a hammer, install a new dust deflector.

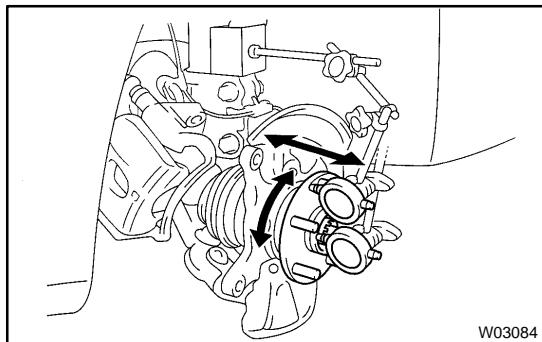
SST 09316-6001 1 (09316-00011, 09316-00041),  
09608-32010

#### HINT:

Align the hole for the ABS speed sensor in the dust deflector with the one in the steering knuckle.

## REMOVAL

1. **REMOVE FRONT WHEEL**  
**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**
2. **CHECK BEARING BACKLASH AND AXLE HUB DEVIATION**
  - (a) Remove the 2 bolts, brake caliper and disc.
  - (b) Support the brake caliper securely.



- (c) Using a dial indicator, check the backlash near the center of the axle hub.

**Maximum: 0.05 mm (0.0020 in.)**

If the backlash exceeds the maximum, replace the bearing.

- (d) Using a dial indicator, check the deviation at the surface of the axle hub outside the hub bolt.

**Maximum: 0.05 mm (0.0020 in.)**

If the deviation exceeds the maximum, replace the axle hub.

- (e) Install the disc, brake caliper and 2 bolts.

**Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)**

3. **REMOVE DRIVE SHAFT LOCK NUT**

- (a) Remove the cotter pin and lock cap.

- (b) While applying the brakes, remove the nut.

**Torque: 294 N·m (3,000 kgf·cm, 217 ft·lbf)**

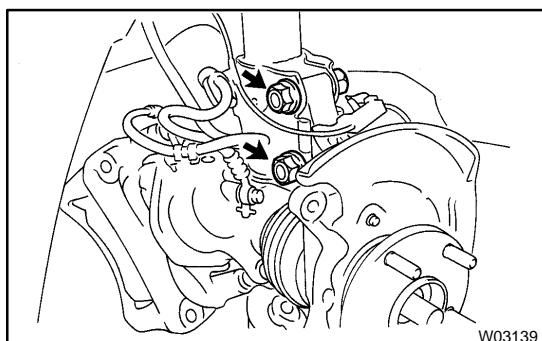
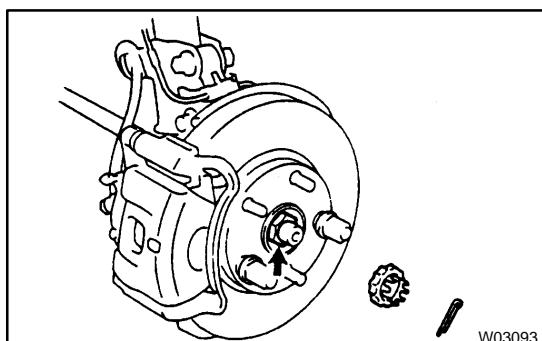
- (c) Remove the 2 bolts, brake caliper and disc.

- (d) Support the brake caliper securely.

4. **DISCONNECT ABS SPEED SENSOR AND WIRE HARNESS CLAMP**

Remove the bolt and disconnect the ABS speed sensor and wire harness clamp.

**Torque: 8.0 N·m (82 kgf·cm, 71 in.-lbf)**



5. **LOOSEN 2 NUTS ON LOWER SIDE OF SHOCK ABSORBER**

**HINT:**

Do not remove the bolts.

**Torque: 211 N·m (2,150 kgf·cm, 156 ft·lbf)**

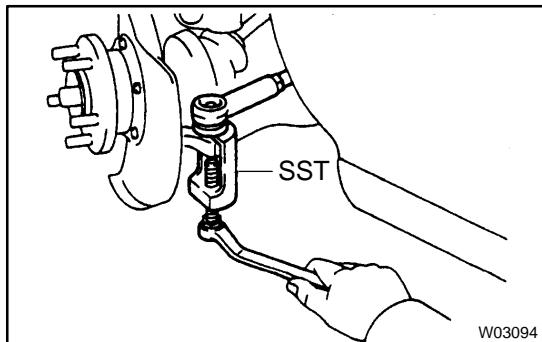
**HINT:**

At the this time of installation, coat the nut's thread with engine oil.

**6. DISCONNECT TIE ROD END FROM STEERING KNUCKLE**

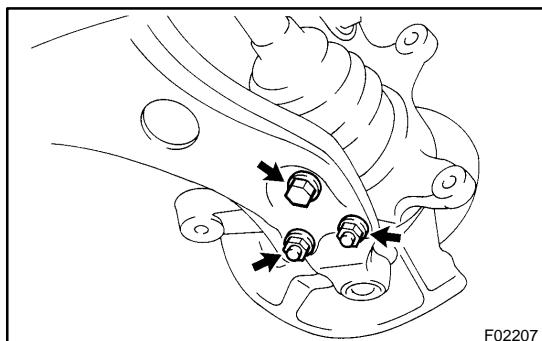
(a) Remove the cotter pin and nut.

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**



(b) Using SST, disconnect the tie rod end from the steering knuckle.

SST 09610-20012

**7. DISCONNECT LOWER BALL JOINT FROM LOWER SUSPENSION ARM**

Remove the 2 nuts and bolt.

**Torque: 127 N·m (1,300 kgf·cm, 94 ft·lbf)**

**8. REMOVE STEERING KNUCKLE WITH AXLE HUB**

(a) Remove the 2 nuts and bolts on the lower side of the shock absorber.

(b) Remove the steering knuckle with the axle hub.

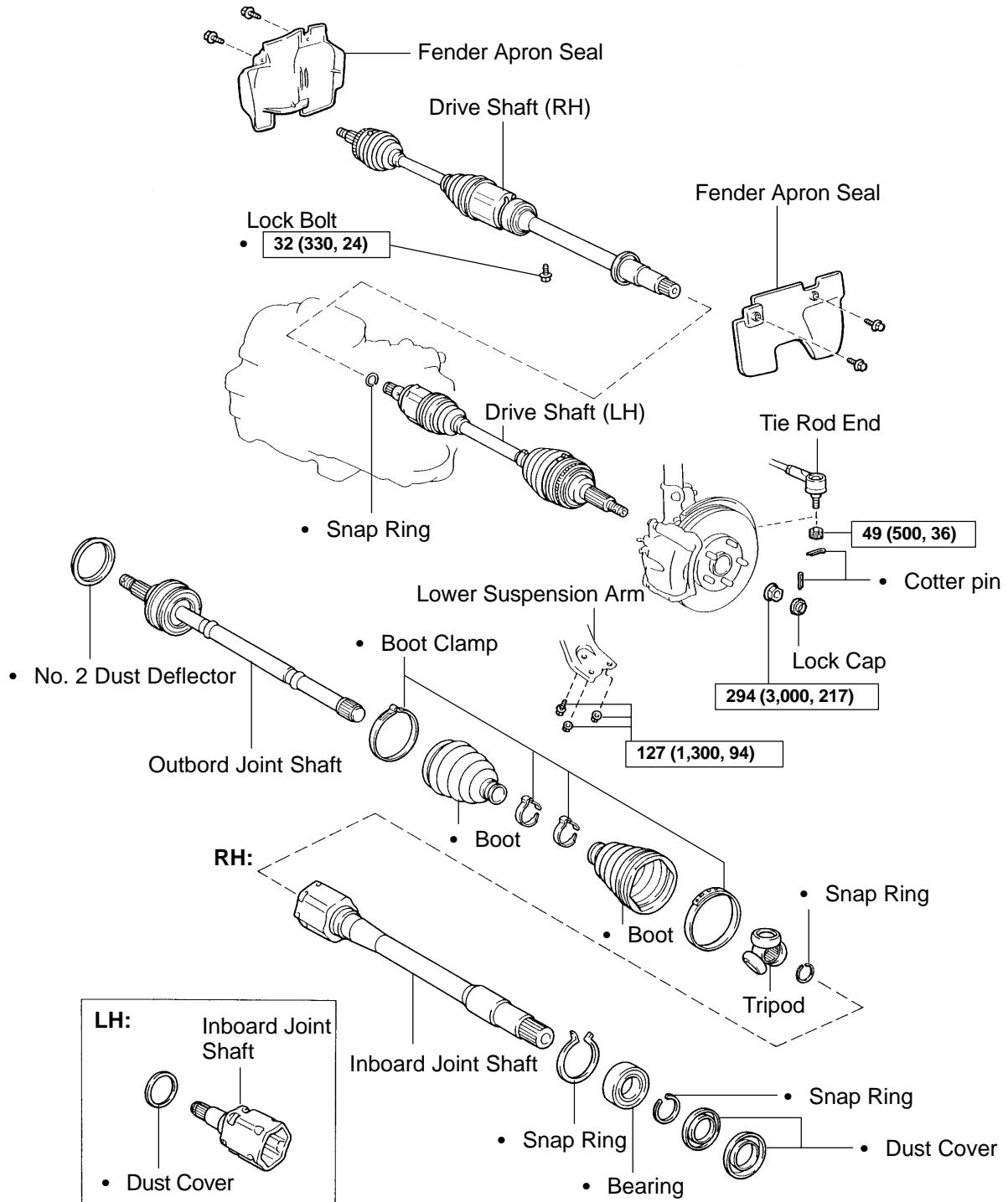
**NOTICE:**

**Be careful not to damage the boot and ABS speed sensor rotor.**

# FRONT DRIVE SHAFT

## COMPONENTS

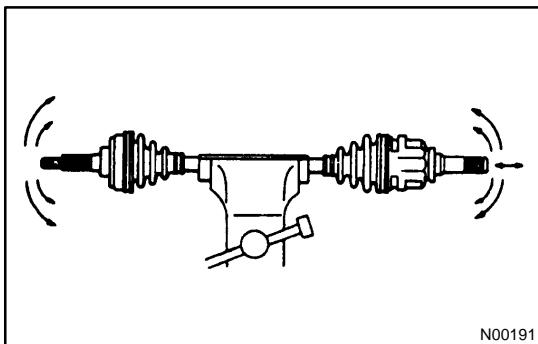
SA0VX-02



N · m (kgf·cm, ft·lbf) : Specified torque

• Non-reusable part

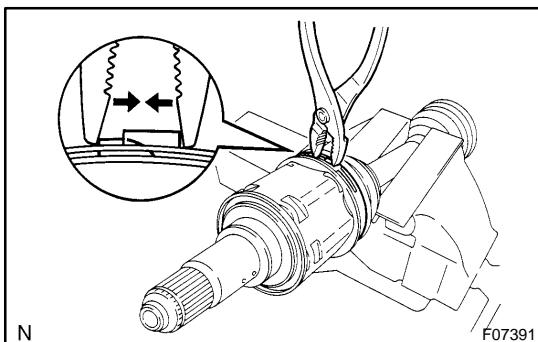
F07396



## DISASSEMBLY

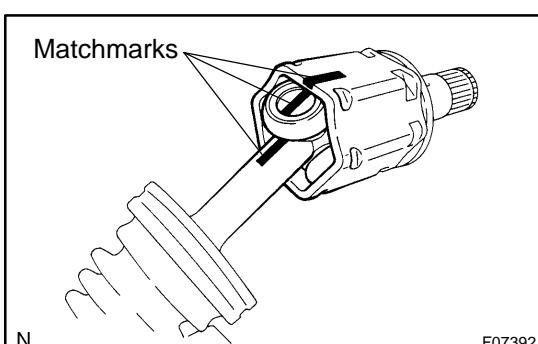
### 1. CHECK DRIVE SHAFT

- Check to see that there is no remarkable play in the outboard joint.
- Check to see that the inboard joint slides smoothly in the thrust direction.
- Check to see that there is no remarkable play in the radial direction of the inboard joint.
- Check the boots for damage.



### 2. REMOVE INBOARD AND OUTBOARD JOINT BOOT CLAMPS

- Using pliers, pinch the claws to compress the large inboard joint boot clamp and remove it.
- Using a side cutter, cut the small inboard joint boot clamp and remove it.
- Using a side cutter, cut the 2 outboard joint boot clamps and remove them.



### 3. REMOVE INBOARD JOINT SHAFT

- Place matchmarks on the tripod, inboard and outboard joint shafts.

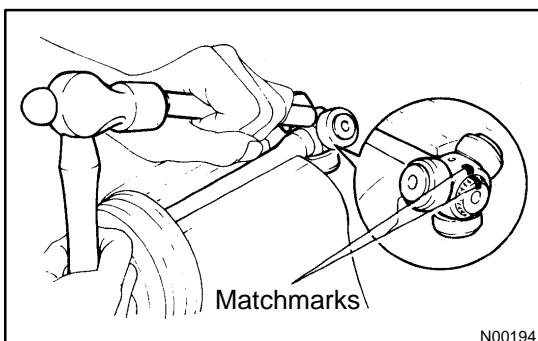
**NOTICE:**

**Do not punch the marks.**

- Remove the inboard joint shaft from the outboard joint shaft.

### 4. REMOVE TRIPOD

- Using a snap ring expander, remove the snap ring.



- Place matchmarks on the outboard joint shaft and tripod.

**NOTICE:**

**Do not punch the marks.**

- Using a brass bar and hammer, remove the tripod from the outboard joint shaft.

**NOTICE:**

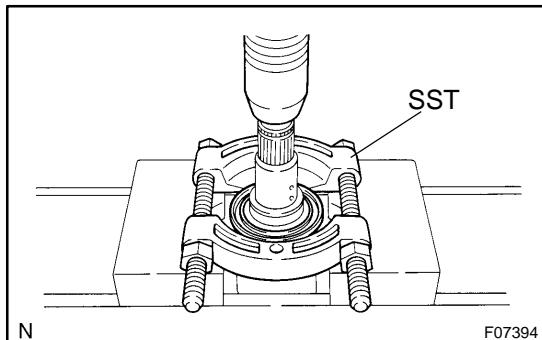
**Do not tap the roller.**

**5. REMOVE INBOARD AND OUTBOARD JOINT BOOTS**

Slide out the 2 boots.

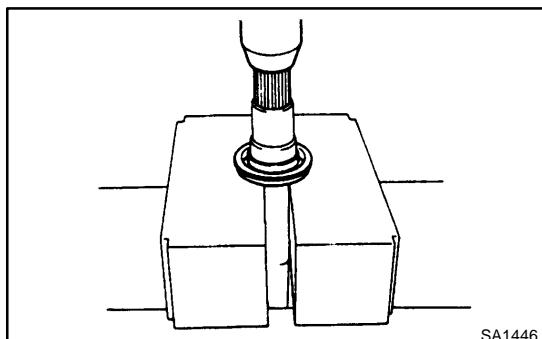
**NOTICE:**

**Do not disassemble the outboard joint.**

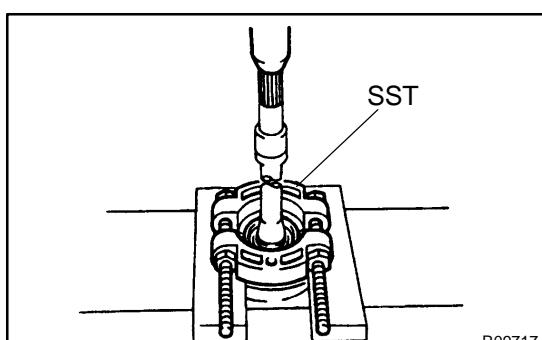
**6. LH drive shaft:  
REMOVE DUST COVER**

Using SST and a press, remove the dust cover from the inboard joint shaft.

SST 09950-00020

**7. RH drive shaft:  
DISASSEMBLE INBOARD JOINT SHAFT**

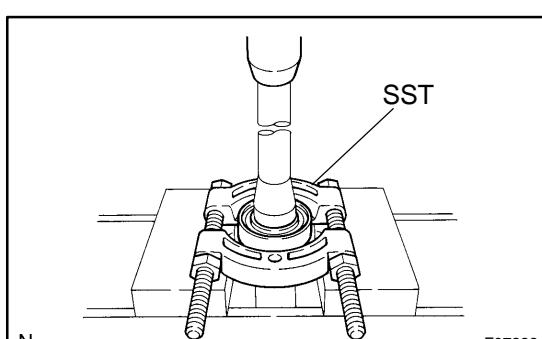
(a) Using a press, remove the transaxle side dust cover from the inboard joint shaft.



(b) Using SST and a press, remove the bearing side dust cover.

SST 09950-00020

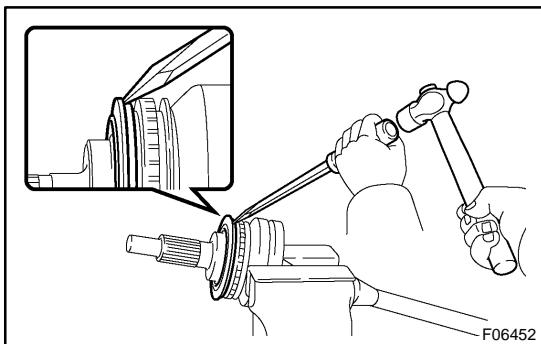
(c) Using a snap ring expander, remove the snap ring.



(d) Using SST and a press, remove the bearing.

SST 09950-00020

(e) Remove the snap ring.

**8. REMOVE NO. 2 DUST DEFLECTOR**

- (a) Mount the outboard joint shaft in a soft jaw vise.
- (b) Using a screwdriver and hammer, remove the No. 2 dust deflector.

**NOTICE:**

Be careful not to damage the ABS speed sensor rotor.

## INSTALLATION

Installation is in the reverse order of removal (See page [SA-16](#) ).

**HINT:**

After installation, check the ABS speed sensor signal (See page [DI-212](#) or [DI-252](#) ) and front wheel alignment (See page [SA-4](#) ).

**NOTICE:**

**w/ VSC:**

After installation, perform the steering angle sensor zero point calibration (See page [DI-252](#) ).

## REASSEMBLY

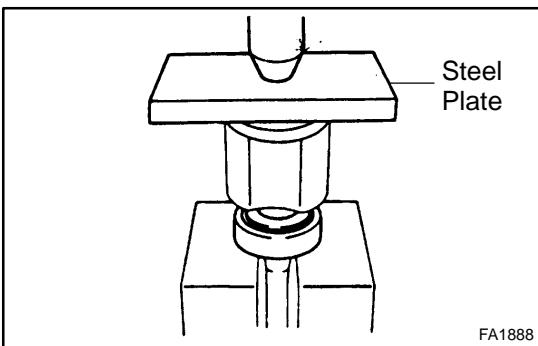
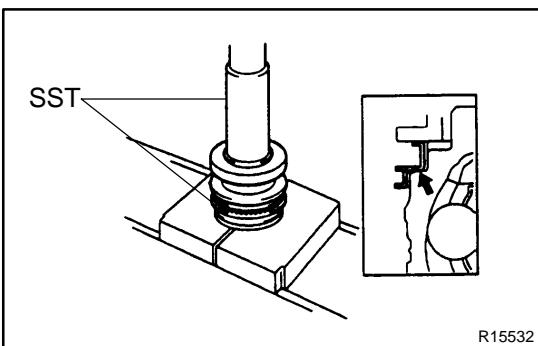
### 1. INSTALL NO. 2 DUST DEFLECTOR

Using SST and a press, install a new No. 2 dust deflector.  
SST 09309-36010, 09316-20011

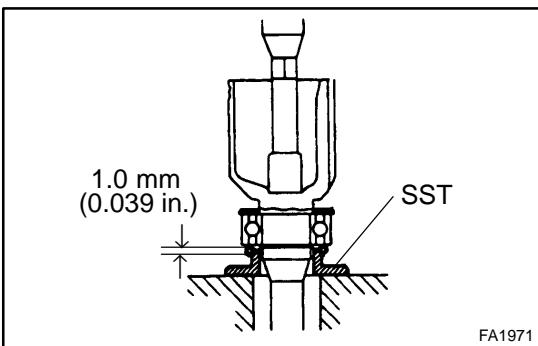
### 2. RH drive shaft:

#### ASSEMBLE INBOARD JOINT SHAFT

(a) Install a new snap ring to the inboard joint shaft.



(b) Using a steel plate and press, install a new bearing.  
(c) Using a snap ring expander, install a new snap ring.

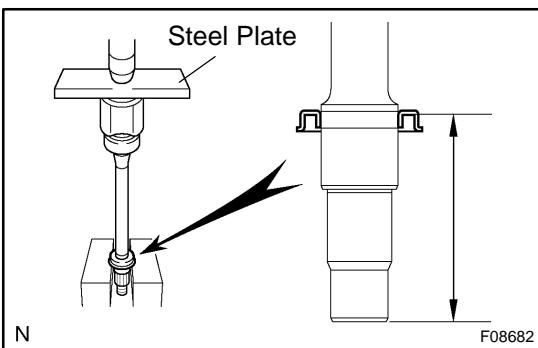


(d) Using SST, an extension bar and press, install a new bearing side dust cover.

SST 09506-35010

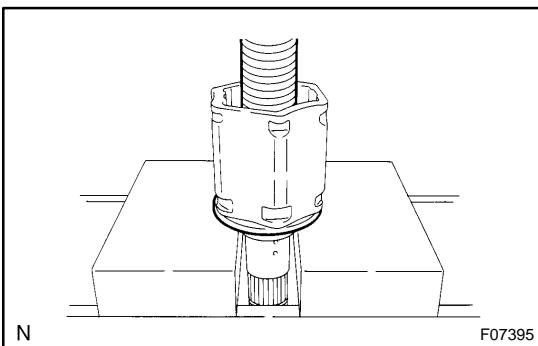
#### HINT:

The clearance between the dust cover and the bearing should be kept in the range shown in the illustration.



(e) Using a steel plate and press, install a new transaxle side dust cover until the distance from the tip of the inboard joint shaft to the dust cover falls within the specified value, as shown in the illustration.

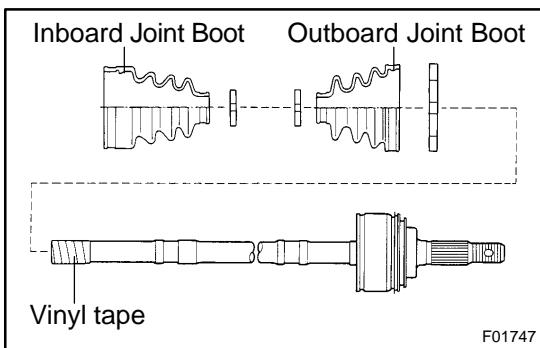
**Distance: 109.5 - 110.5 mm (4.31 - 4.35 in.)**



### 3. LH drive shaft:

#### INSTALL DUST COVER

Using a press, install a new dust cover.



#### 4. TEMPORARILY INSTALL OUTBOARD AND INBOARD JOINT BOOTS AND NEW BOOT CLAMPS

##### HINT:

- Before installing the boots, wrap the spline of the outboard joint shaft with vinyl tape to prevent the boots from being damaged.
- Before installing the boots, place 3 new clamps to the small boot ends and large boot end (outboard joint side).

#### 5. INSTALL TRIPOD

- Place the beveled side of the tripod axial spline toward the outboard joint.
- Align the matchmarks placed before removal.
- Using a brass bar and hammer, tap in the tripod to the outboard joint shaft.

##### NOTICE:

##### Do not tap the roller.

- Using a snap ring expander, install a new snap ring.

#### 6. INSTALL BOOT TO OUTBOARD JOINT

Before assembling the boot, pack the outboard joint and boot with grease in the boot kit.

##### Grease capacity (Color = Gray):

105 - 125 g (3.7 - 4.4 oz.)

#### 7. INSTALL INBOARD JOINT SHAFT TO OUTBOARD JOINT SHAFT

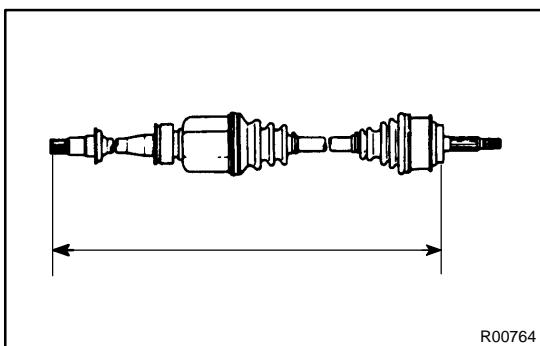
- Pack the inboard joint and boot with grease in the boot kit.

##### Grease capacity (Color = Yellow ochre):

170 - 190 g (6.0 - 6.7 oz.)

- Align the matchmarks placed before removal, and install the inboard joint shaft to the outboard joint shaft.

- Temporarily install the boot to the inboard joint shaft.



#### 8. CHECK DRIVE SHAFT LENGTH

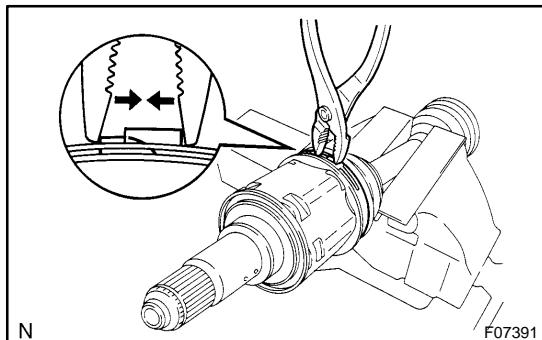
- Make sure that the 2 boots are on the shaft groove.
- Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.

##### Drive shaft standard length:

|    |                                     |
|----|-------------------------------------|
| LH | 586.0 ± 2.0 mm (23.071 ± 0.079 in.) |
| RH | 881.6 ± 2.0 mm (34.709 ± 0.079 in.) |

**9. Large inboard joint boot clamp:  
INSTALL BOOT CLAMP TO INBOARD JOINT SHAFT  
BOOT**

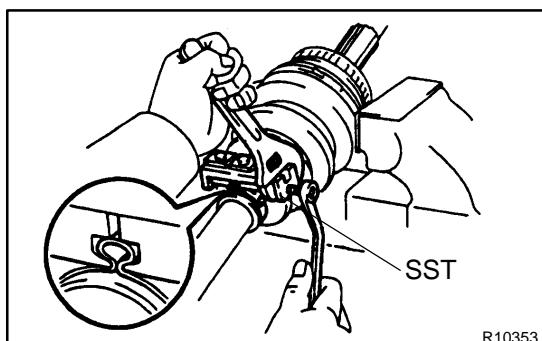
(a) Place the large inboard joint boot clamp.



(b) Using pliers, pinch the claws to compress the clamp and engage the other claws.

**10. Others:  
INSTALL BOOT CLAMPS TO BOTH BOOTS**

(a) Secure the preplaced 3 clamps onto the boots.

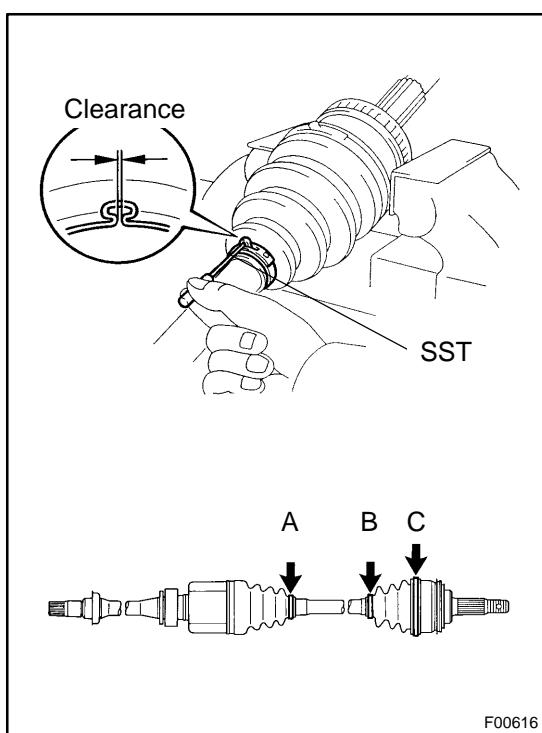


(b) Place SST onto the clamp.  
SST 09521-24010

(c) Tighten the SST so that the clamp is pinched.

**NOTICE:**

**Do not overtighten the SST.**

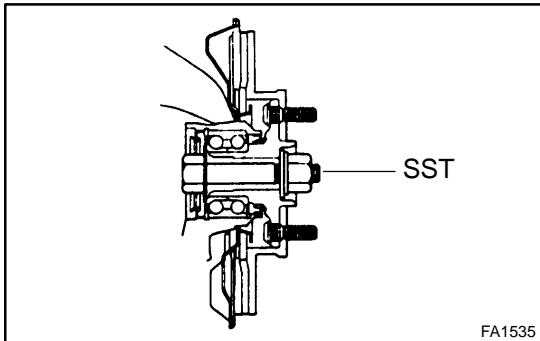


(d) Using SST, adjust the clearance of the clamp.  
SST 09240-00020

**Clearance:**

A : 1.9 mm (0.075 in.) or less  
B : 1.5 - 2.5 mm (0.059 - 0.098 in.)  
C : 3.0 - 4.0 mm (0.118 - 0.157 in.)

**11. CHECK DRIVE SHAFT (See page [SA-18](#) )**



## REMOVAL

### NOTICE:

- The hub bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft removed.

Therefore, if it is absolutely necessary to place the vehicle weight on the hub bearing, first support it with SST.

SST 09608-16042 (09608-02021, 09608-02041)

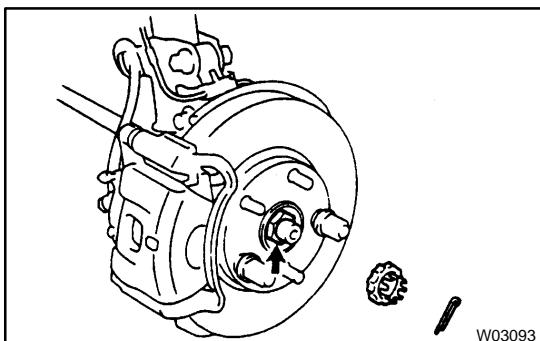
- After disconnecting the drive shaft from the axle hub, work carefully so as not to damage the ABS speed sensor rotor serration on the drive shaft.

### 1. REMOVE FRONT WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

### 2. REMOVE FRONT FENDER APRON SEAL

### 3. DRAIN ATF



### 4. REMOVE DRIVE SHAFT LOCK NUT

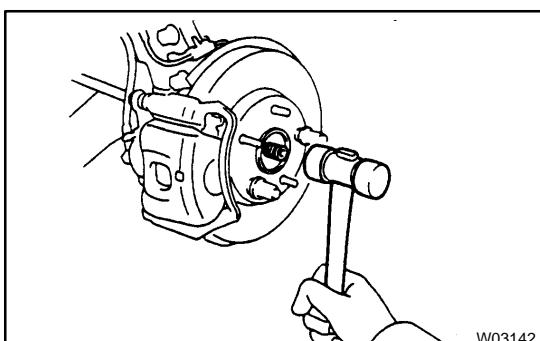
(a) Remove the cotter pin and lock cap.

(b) While applying brakes, remove the nut.

Torque: 294 N·m (3,000 kgf·cm, 217 ft·lbf)

### 5. DISCONNECT TIE ROD END FROM STEERING KNUCKLE (See page SA-9)

### 6. DISCONNECT LOWER SUSPENSION ARM FROM LOWER BALL JOINT (See page SA-9)

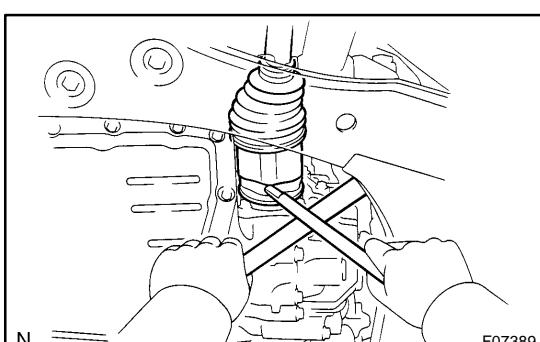


### 7. DISCONNECT DRIVE SHAFT FROM AXLE HUB

Using a plastic hammer, disconnect the drive shaft from the axle hub.

### NOTICE:

Be careful not to damage the boot and ABS speed sensor rotor.



### 8. LH drive shaft:

#### REMOVE DRIVE SHAFT

(a) Using a hub nut wrench and hammer handle or an equivalent, remove the drive shaft.

### NOTICE:

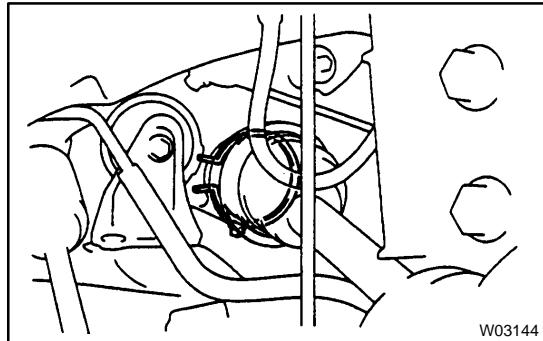
Be careful not to damage the dust cover and oil seal.

**HINT:**

At the time of installation, please refer to the following items.

- Coat gear oil to the inboard joint shaft and differential case sliding surface.
- Before installing the drive shaft, set the snap ring opening side facing downward.
- Whether or not the inboard joint shaft is making contact with the pinion shaft can be known by the sound or feeling when driving it in.
- After installation, check that there is 2 - 3 mm (0.08 - 0.12 in.) of play in the axial direction.
- After installation, check that the drive shaft cannot be removed by hand.

(b) Using a screwdriver, remove the snap ring from the inboard joint shaft.

**9. RH drive shaft:****REMOVE DRIVE SHAFT**

(a) Remove the bearing lock bolt.

**Torque: 32 N·m (330 kgf·cm, 24 ft·lbf)**

(b) Using pliers, remove the snap ring and drive shaft.

**NOTICE:**

**Be careful not to damage the dust cover and oil seal.**

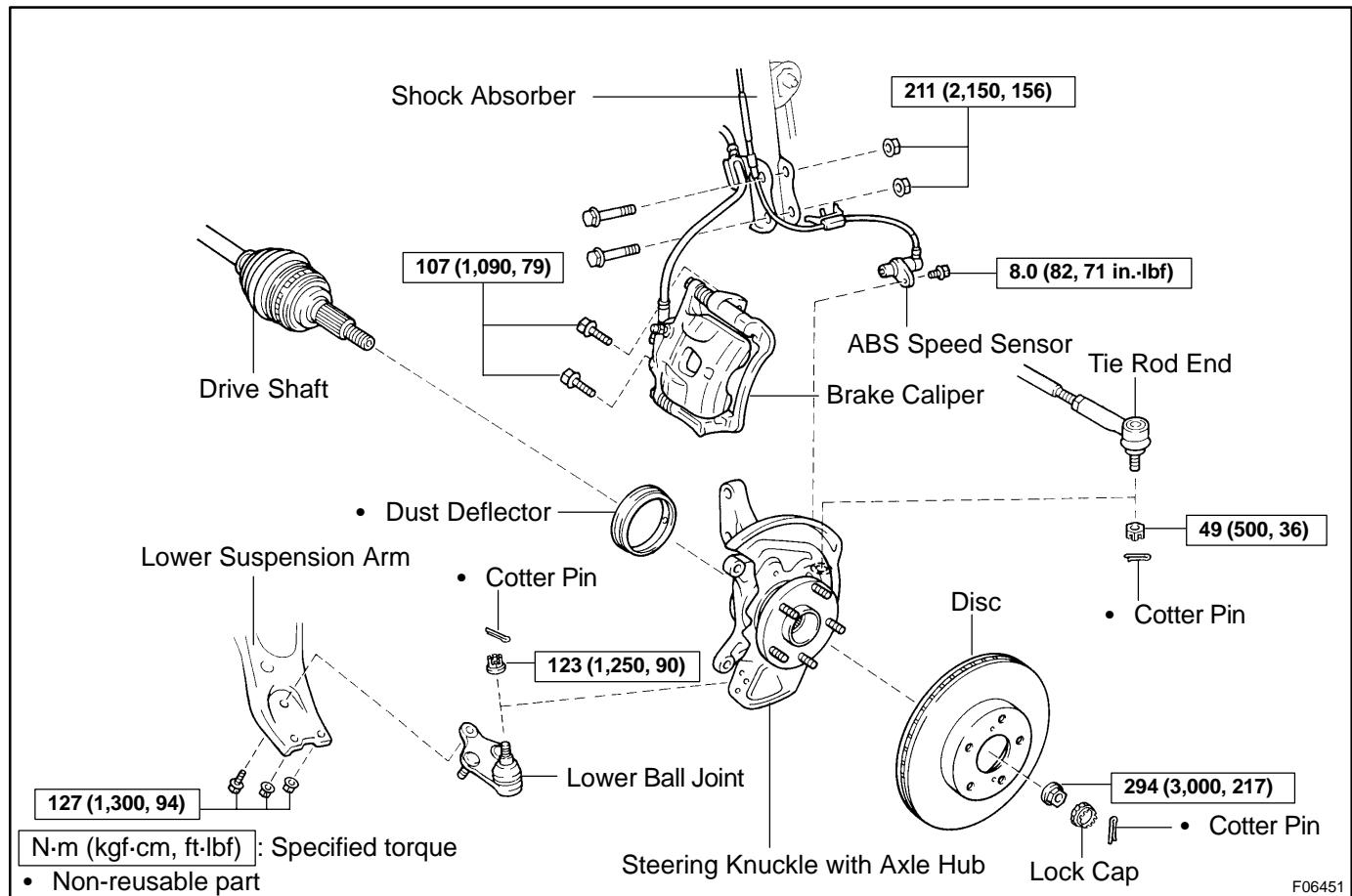
**HINT:**

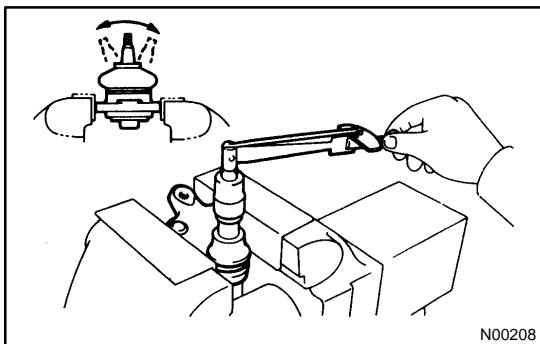
At the time of installation, coat gear oil to the inboard joint shaft and differential case sliding surface.

# FRONT LOWER BALL JOINT

## COMPONENTS

SA0VA-02





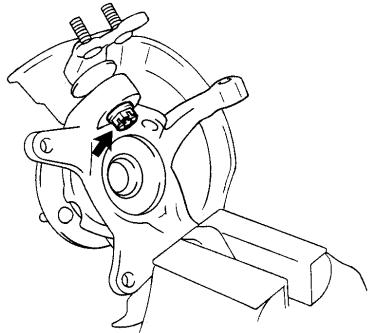
## INSPECTION

### INSPECT LOWER BALL JOINT FOR ROTATION CONDITION

- (a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.
- (b) Using a torque wrench, turn the nut continuously at a rate of 2 - 4 seconds per 1 turn and take the torque reading on the 5th turn.

#### Turning torque:

1.0 - 3.4 N·m (10 - 35 kgf·cm, 8.7 - 30 in.-lbf)



## INSTALLATION

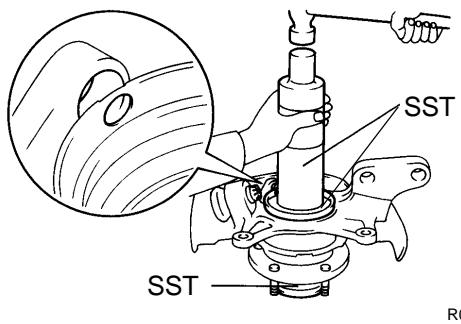
### 1. INSTALL LOWER BALL JOINT

(a) Install the lower ball joint and nut.

**Torque: 123 N·m (1,250 kgf·cm, 90 ft·lbf)**

(b) Install a new cotter pin.

If the holes for the cotter pin are not aligned, tighten the nut further up to 60°.



### 2. INSTALL NEW DUST DEFLECTOR

Using SST and a hammer, install a new dust deflector.

SST 09316-6001 1 (09316-00011, 09316-00041),  
09608-32010

#### HINT:

Align the holes for the ABS speed sensor in the dust deflector and steering knuckle.

### 3. INSTALL FRONT AXLE HUB (See page [SA-13](#) )

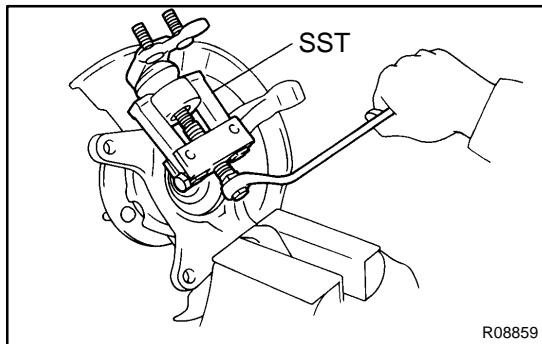
### 4. CHECK ABS SPEED SENSOR SIGNAL (See page [DI-212](#) or [DI-252](#) ) AND FRONT WHEEL ALIGNMENT (See page [SA-4](#) )

### 5. w/ VSC:

**PERFORM STEERING ANGLE SENSOR ZERO POINT CALIBRATION (See page [DI-252](#) )**

## REMOVAL

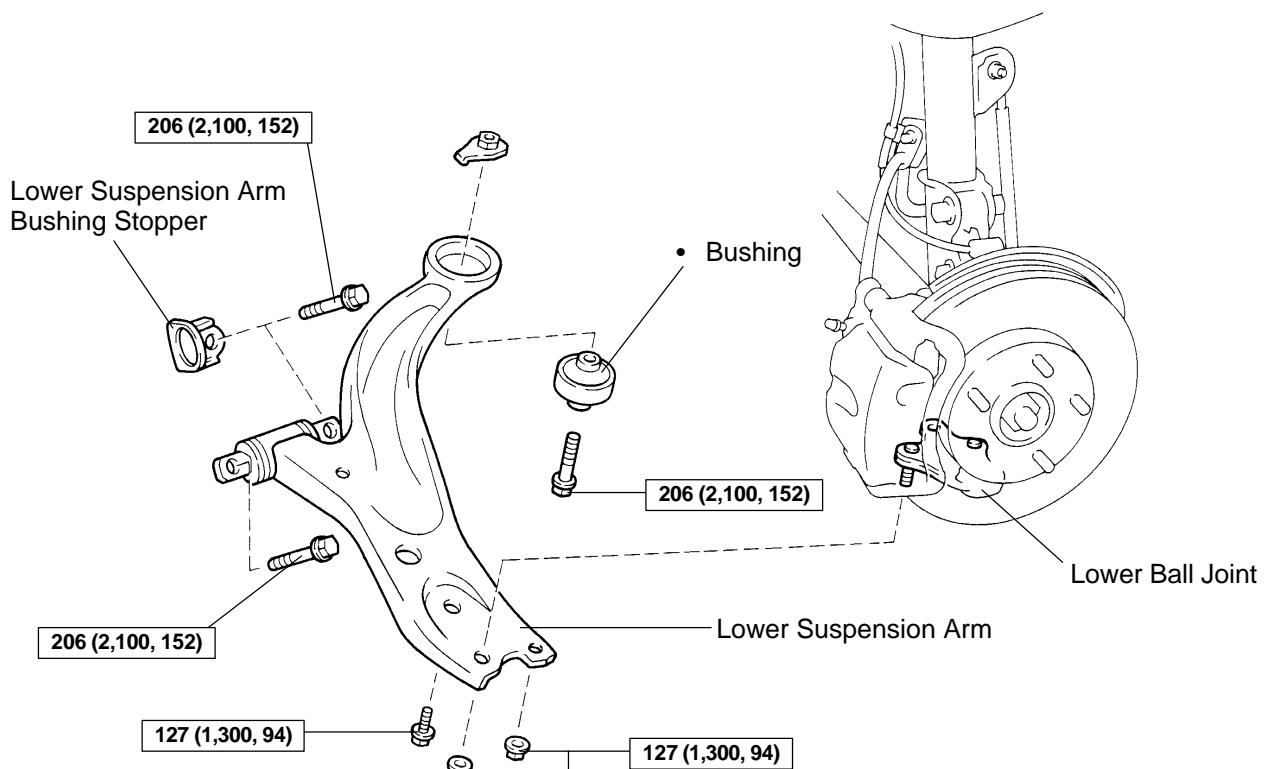
1. REMOVE FRONT AXLE HUB (See page **SA-9**)
2. REMOVE LOWER BALL JOINT
  - (a) Using a screwdriver, remove the dust deflector.
  - (b) Remove the cotter pin and nut.



- (c) Using SST, remove the lower ball joint.  
SST 09628-6201 1

# FRONT LOWER SUSPENSION ARM COMPONENTS

SA0V6-02



N·m (kgf·cm, ft·lbf) : Specified torque

- Non-reusable part

F02228

## INSTALLATION

Installation is in the reverse order of removal (See page [SA-33](#) ).

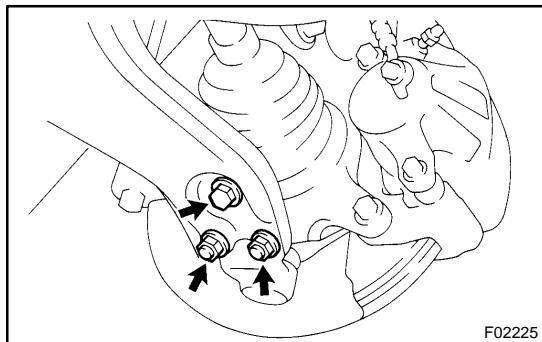
HINT:

After installation, check the front wheel alignment (See page [SA-4](#) ).

## REMOVAL

### 1. REMOVE FRONT WHEEL

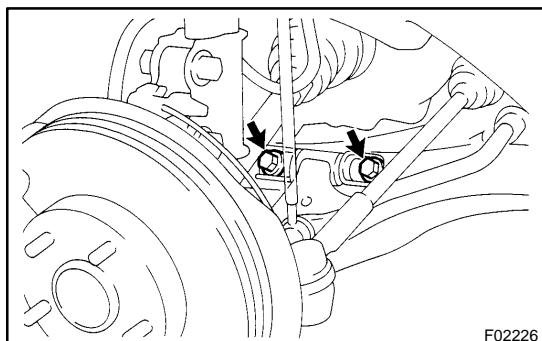
**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**



### 2. DISCONNECT LOWER SUSPENSION ARM FROM LOWER BALL JOINT

Remove the 2 nuts and bolt, and disconnect the lower suspension arm from the lower ball joint.

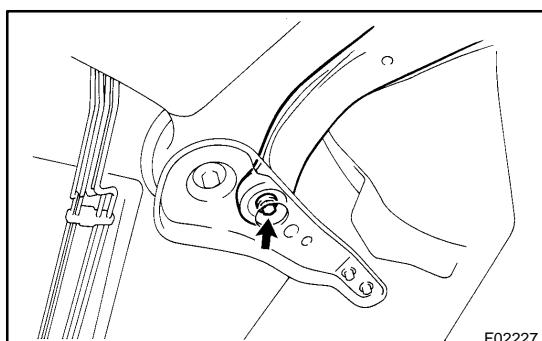
**Torque: 127 N·m (1,300 kgf·cm, 94 ft·lbf)**



### 3. REMOVE LOWER SUSPENSION ARM

(a) Remove the 2 bolts on the front side of the lower suspension arm.

**Torque: 206 N·m (2,100 kgf·cm, 152 ft·lbf)**

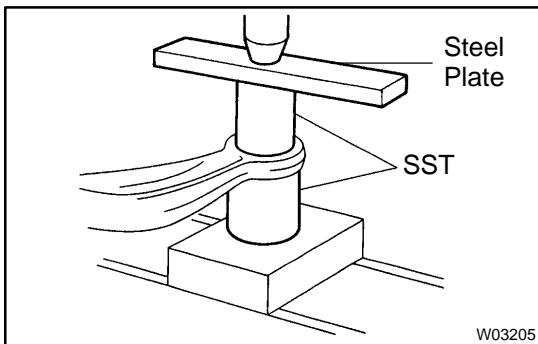


(b) Remove the bolt and nut on the rear side of the lower suspension arm.

**Torque: 206 N·m (2,100 kgf·cm, 152 ft·lbf)**

(c) Remove the lower suspension arm.

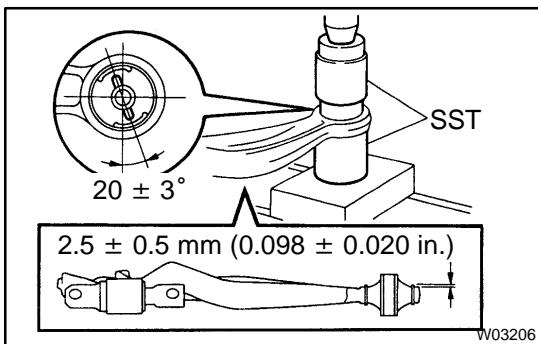
(d) Remove the lower suspension arm bushing stopper from the lower suspension arm.



## REPLACEMENT

### REPLACE BUSHING

(a) Using SST, a steel plate and press, remove the bushing.  
SST 09649-17010, 09710-04081



(b) Using SST and a press, install a new bushing.

SST 09238-47012, 09649-17010

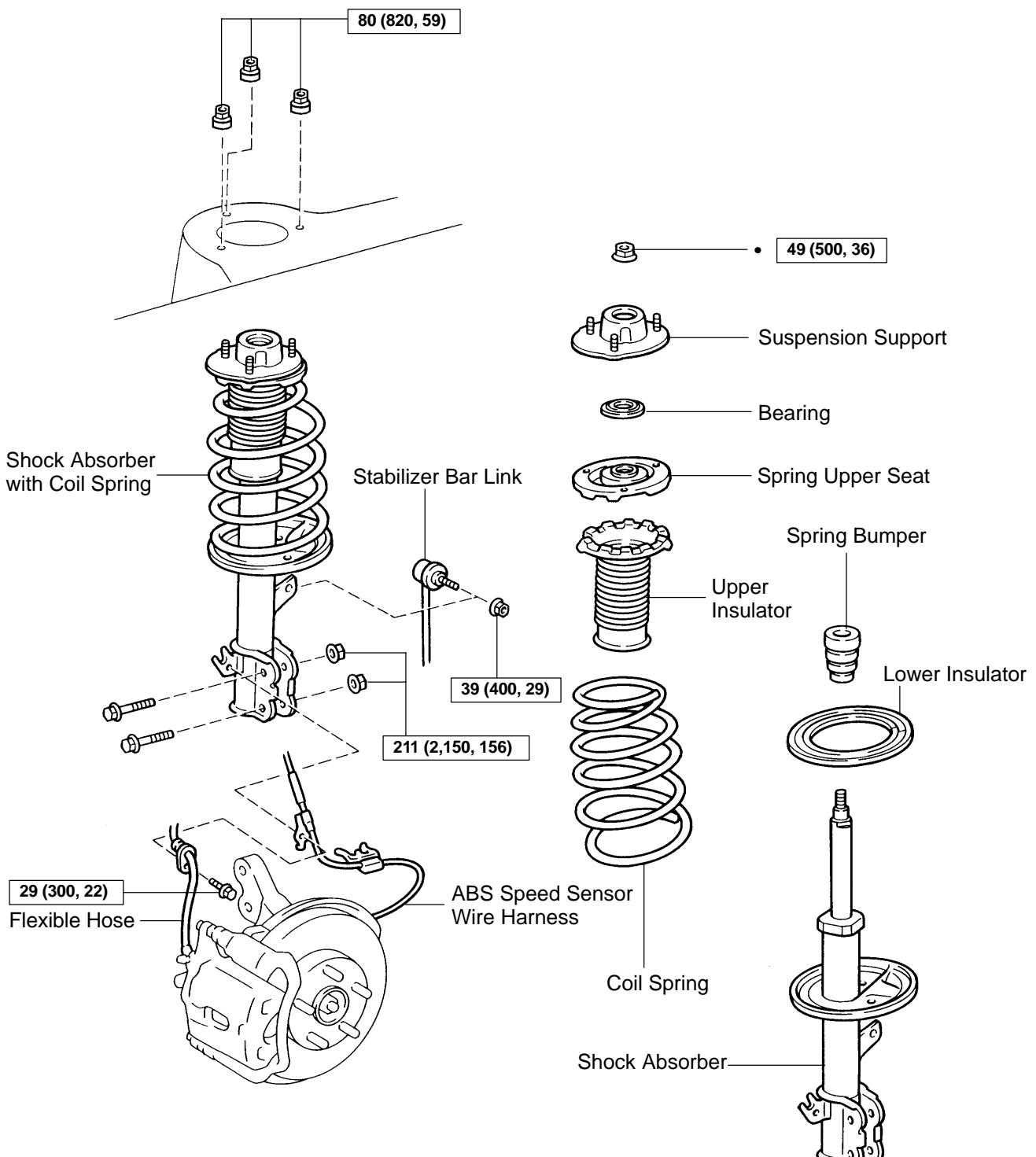
#### HINT:

Before installing the bushing, set it in the correct direction, as shown in the illustration.

# FRONT SHOCK ABSORBER

## COMPONENTS

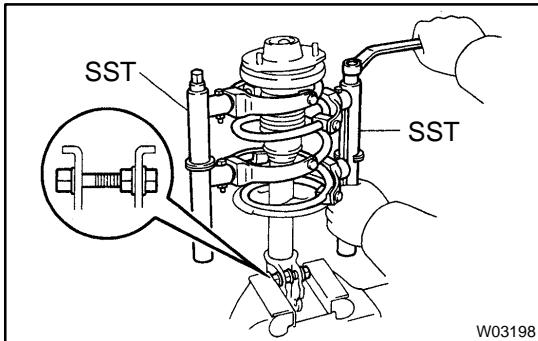
SA0UZ-02



N·m (kgf·cm, ft·lbf) : Specified torque

• Non-reusable part

F07387



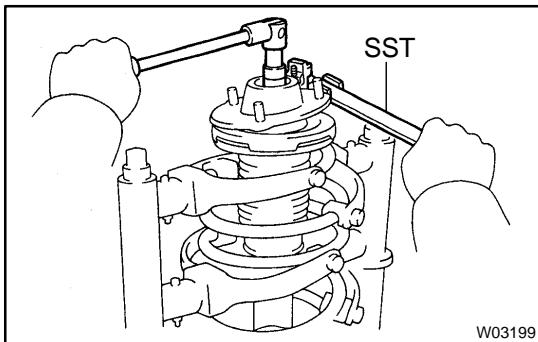
## DISASSEMBLY

### REMOVE COIL SPRING

- (a) Install 2 nuts and a bolt to the bracket at the lower side of the shock absorber and secure it in a vise.
- (b) Using 2 SST of the same type, compress the coil spring.  
SST 09727-30021

### NOTICE:

**Do not use an impact wrench. It will damage the SST.**



- (c) Using SST to hold the suspension support, remove the nut.  
SST 09729-22031
- (d) Remove the suspension support, bearing, spring upper seat, upper insulator, coil spring, lower insulator and spring bumper.

## DISPOSAL

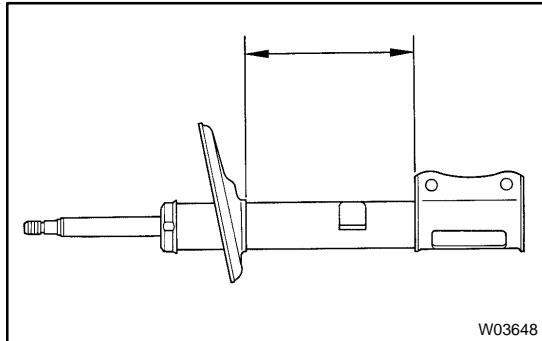
### 1. FULLY EXTEND SHOCK ABSORBER ROD

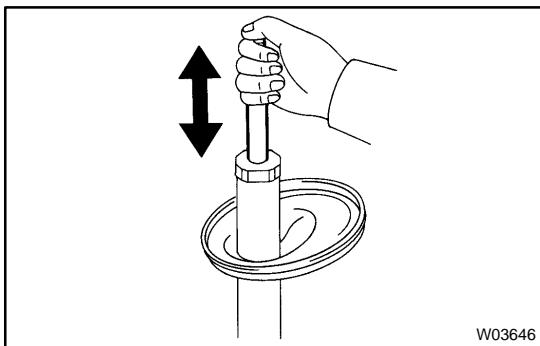
### 2. DRILL HOLE TO DISCHARGE GAS FROM CYLINDER

Using a drill, make a hole in the cylinder as shown in the illustration to discharge the gas inside.

#### CAUTION:

- When drilling, chips may fly out, work carefully.
- The gas is colorless, odorless and non-poisonous.





## INSPECTION

### INSPECT SHOCK ABSORBER

Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual sound during operation.

If there is any abnormality, replace the shock absorber with a new one.

#### NOTICE:

When disposing of the shock absorber, see **DISPOSAL** on page [SA-29](#) .

## INSTALLATION

Installation is in the reverse order of removal (See page [SA-26](#) ).

**HINT:**

After installation, check the front wheel alignment (See page [SA-4](#) ).

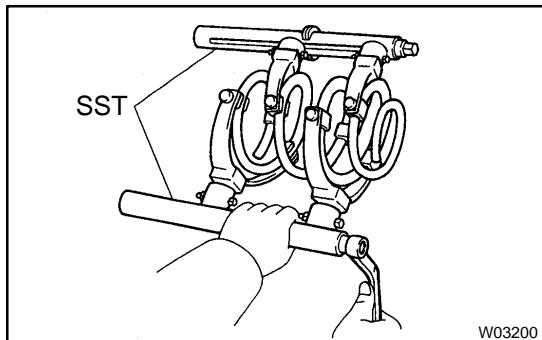
**NOTICE:**

w/ VSC:

After installation, perform the steering angle sensor zero point calibration (See page [DI-252](#) ).

## REASSEMBLY

1. INSTALL LOWER INSULATOR ONTO SHOCK ABSORBER
2. INSTALL SPRING BUMPER TO PISTON ROD

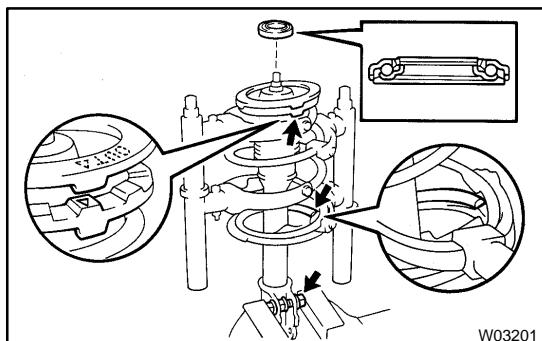


### 3. INSTALL COIL SPRING

- (a) Using 2 SST of the same type, compress the coil spring.  
SST 09727-30021

#### NOTICE:

**Do not use an impact wrench. It will damage the SST.**



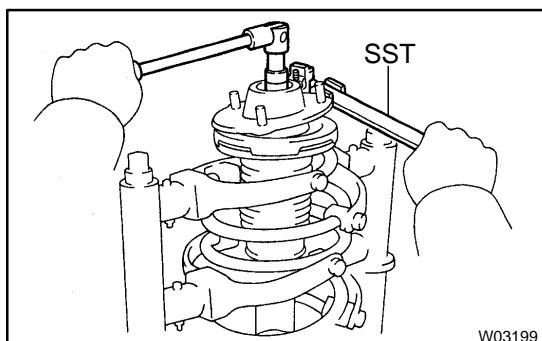
- (b) Install the coil spring to the shock absorber.

#### HINT:

Fit the lower end of the coil spring into the gap of the spring lower seat.

### 4. INSTALL SPRING UPPER SEAT AND INSULATOR

- (a) Align the 'OUT' mark of spring upper seat with the mark of the upper insulator.
- (b) Install the spring upper seat with upper insulator to the shock absorber with the mark facing to the outside of the vehicle.
- (c) Install the bearing and suspension support.



- (d) Using SST to hold the suspension support, install a new nut.

SST 09729-22031

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**

- (e) Remove the 2 SST from the coil spring.

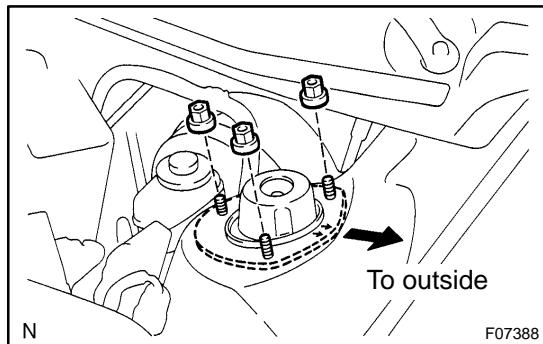
#### NOTICE:

**Check that the bearing fits into the recess in the suspension support.**

## REMOVAL

1. **REMOVE FRONT WHEEL**  
**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**
2. **DISCONNECT FLEXIBLE HOSE AND ABS SPEED SENSOR WIRE HARNESS CLAMP**  
Remove the bolt and disconnect the flexible hose and ABS speed sensor wire harness clamp from the shock absorber.  
**Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)**
3. **DISCONNECT STABILIZER BAR LINK FROM SHOCK ABSORBER (See page [SA-41](#) )**
4. **DISCONNECT SHOCK ABSORBER FROM STEERING KNUCKLE**
  - (a) Remove the 2 nuts and bolts on the lower side of the shock absorber.  
**Torque: 211 N·m (2,150 kgf·cm, 156 ft·lbf)**
  - (b) Remove the shock absorber from the steering knuckle.

**HINT:**  
At the time of installation, coat the nut's threads with engine oil.



5. **REMOVE SHOCK ABSORBER WITH COIL SPRING**

Remove the 3 nuts and shock absorber with the coil spring.

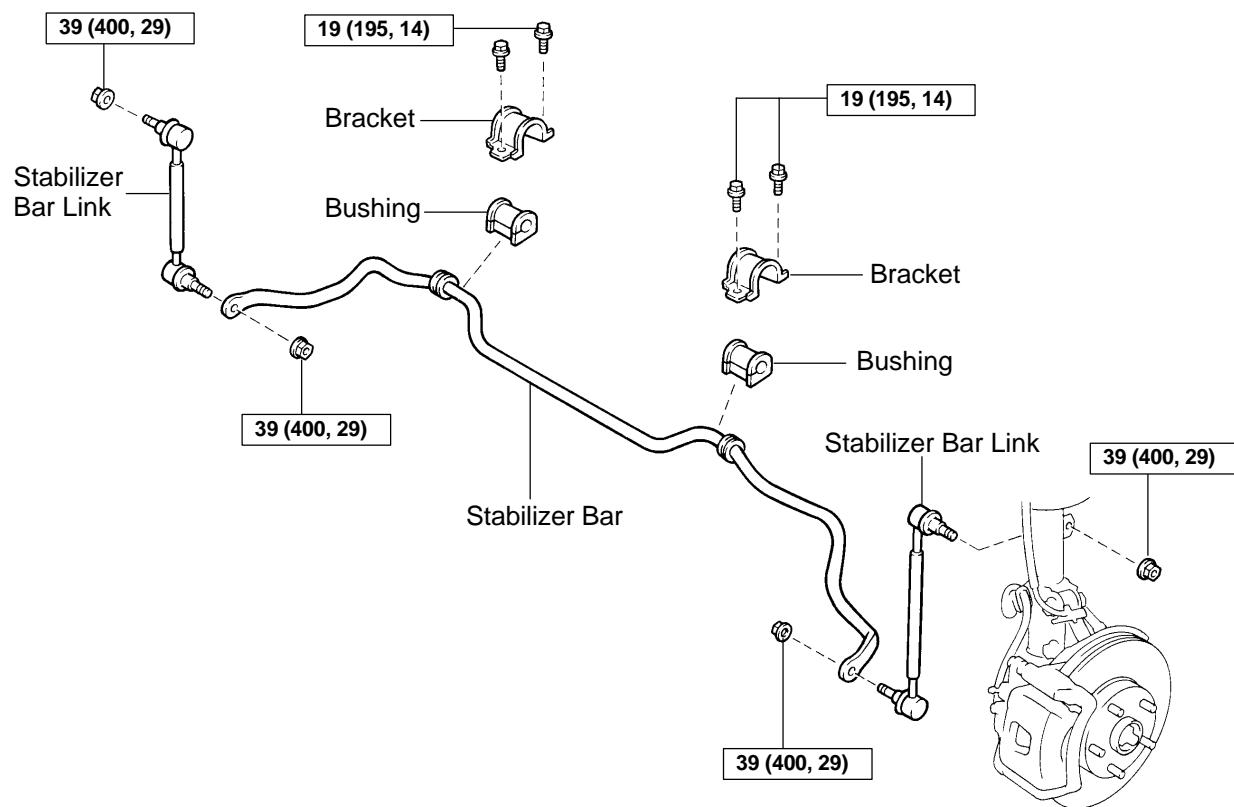
**Torque: 80 N·m (820 kgf·cm, 59 ft·lbf)**

**HINT:**

At the time of installation, rotate the suspension support and set it in the direction, as shown.

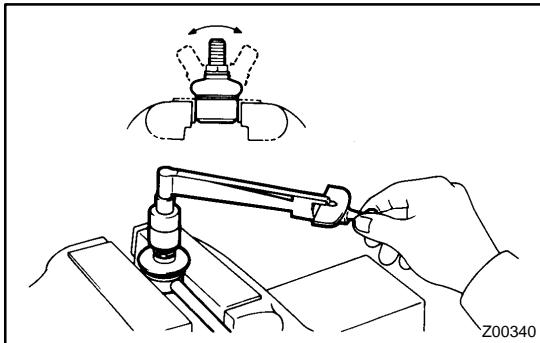
# FRONT STABILIZER BAR COMPONENTS

SA0W2-02



N·m (kgf·cm, ft-lbf) : Specified torque

F06453



## INSPECTION

### INSPECT STABILIZER BAR LINK BALL JOINT FOR ROTATION CONDITION

- (a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.
- (b) Using a torque wrench, turn the nut continuously at a rate of 2 - 4 seconds per 1 turn and take the torque reading on the 5th turn.

#### Turning torque:

**0.05 - 1.0 N·m (0.5 - 10 kgf·cm, 0.4 - 8.7 in.-lbf)**

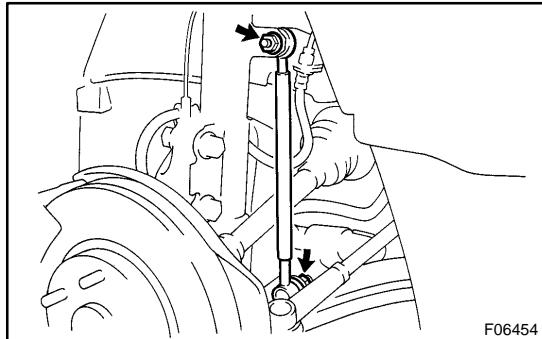
## INSTALLATION

Installation is in the reverse order of removal (See page [SA-41](#) ).

## REMOVAL

### 1. REMOVE FRONT WHEELS

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



### 2. REMOVE STABILIZER BAR LINKS

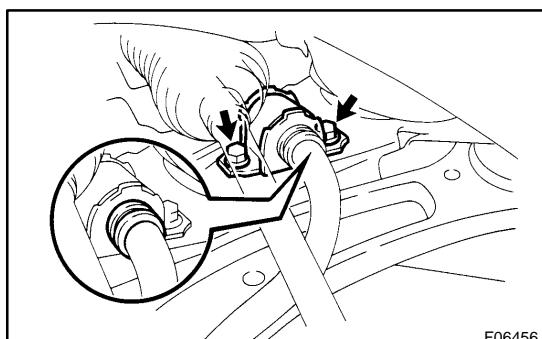
(a) Remove the 2 nuts and stabilizer bar link.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

#### HINT:

If the ball joint turns together with the nut, use a hexagon (5 mm) wrench to hold the stud.

(b) Employ the same manner described above to the other side.



### 3. REMOVE BRACKETS AND BUSHINGS

(a) Remove the 2 bolts, bracket and bushing.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

#### HINT:

At the time of installation, install the bushing to the inside of the bushing stopper on the stabilizer bar.

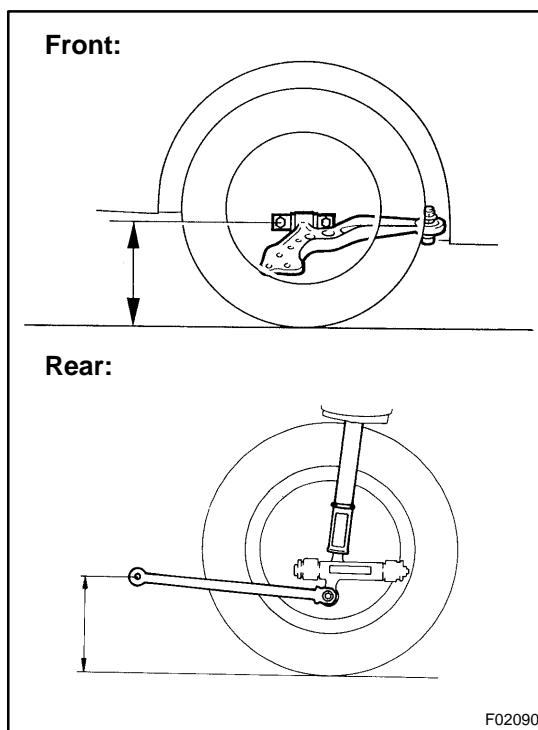
(b) Employ the same manner described above to the other side.

### 4. REMOVE STABILIZER BAR

Remove the stabilizer bar from the left hand side.

#### NOTICE:

Be careful not to damage the pressure feed tube.



## FRONT WHEEL ALIGNMENT INSPECTION

SA1DP-04

### NOTICE:

w/ VSC:

Be sure to perform the steering angle sensor zero point calibration after adjusting the front wheel alignment (See page [DI-252](#) ).

### 1. MEASURE VEHICLE HEIGHT

#### Vehicle height:

| Front* <sup>1</sup> mm (in.) | Rear* <sup>2</sup> mm (in.) |
|------------------------------|-----------------------------|
| 213 (8.39)                   | 266 (10.47)                 |

\*<sup>1</sup>: Front measuring point

Measure the distance from the ground to the center of the front side lower suspension arm mounting bolt.

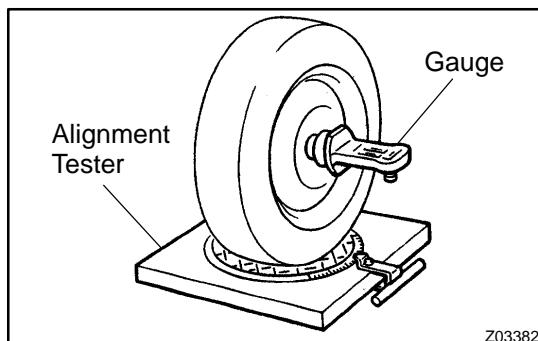
\*<sup>2</sup>: Rear measuring point

Measure the distance from the ground to the center of the front side strut rod mounting bolt.

### NOTICE:

Before inspecting the wheel alignment, adjust the vehicle height to the specified value.

If the vehicle height is not the specified value, try to adjust it by pushing down on or lifting the body.



### 2. INSTALL CAMBER-CASTER-KINGPIN GAUGE OR POSITION VEHICLE ON WHEEL ALIGNMENT TESTER

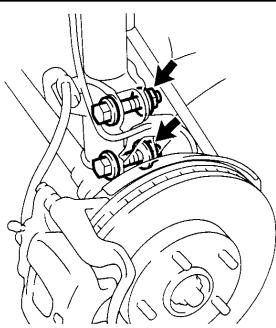
Follow the specific instructions of the equipment manufacturer.

### 3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

#### Camber, caster and steering axis inclination:

|                           |                  |  |
|---------------------------|------------------|--|
| Camber                    | Right-left error | -0°37' ± 45' (-0.62° ± 0.75°)<br>45' (0.75°) or less |
| Caster                    | Right-left error | 2°10' ± 45' (2.17° ± 0.75°)<br>45' (0.75°) or less   |
| Steering axis inclination | Right-left error | 13°04' ± 45' (13.07° ± 0.75°)<br>45' (0.75°) or less |

If the caster and steering axis inclination are not within the specified values, after the camber has been correctly adjusted, re-check the suspension parts for damaged and/or worn out parts.



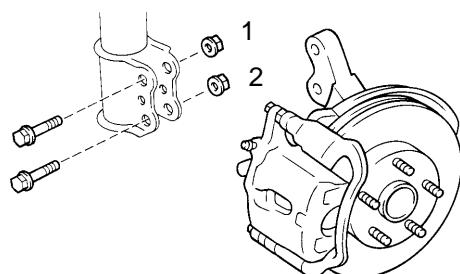
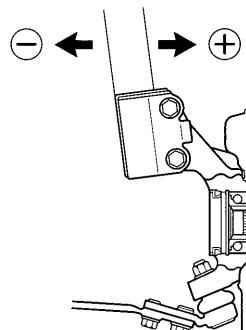
F04031

#### 4. ADJUST CAMBER

##### NOTICE:

After the camber has been adjusted, inspect the toe-in.

- Remove the front wheel and ABS speed sensor clamp.
- Remove the 2 nuts on the lower side of the shock absorber.
- Coat the threads of the nuts with engine oil.
- Temporarily install the 2 nuts.



F04048

- Adjust the camber by pushing or pulling the lower side of the shock absorber in the direction in which the camber adjustment is required.

- Tighten the nuts.

**Torque: 211 N·m (2,150 kgf·cm, 156 ft·lbf)**

- Install the ABS speed sensor clamp and front wheel.

**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**

- Check the camber.

##### HINT:

- Try to adjust the camber to the center of the specified value.
- Adjusting value for the set bolts is 6' - 30' (0.1° - 0.5°). If the camber is not within the specified value, using the following table, estimate how much additional camber adjustment will be required, and select the camber adjusting bolt.

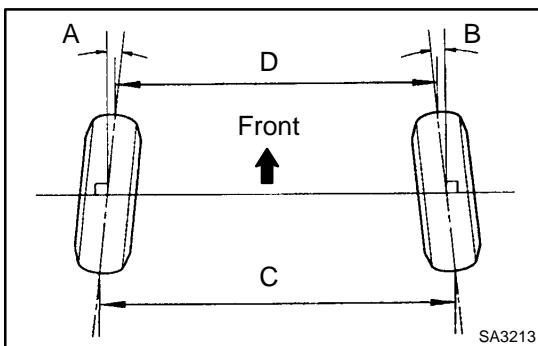
| Bolt<br>Adjusting<br>Value | Set Bolt    |  | Adjusting Bolt |             |             |   |
|----------------------------|-------------|--|----------------|-------------|-------------|---|
|                            | 90105-17001 |  | 90105-17003    | 90105-17004 | 90105-17005 |   |
|                            |             |  | 1 Dot          | 2 Dots      | 3 Dots      |   |
| 15'                        | ●           |  |                | ●           |             |   |
| 30'                        | ●           |  |                |             | ●           |   |
| 45'                        | ●           |  |                |             |             | ● |
| 1°00'                      |             |  | ●              |             |             | ● |
| 1°15'                      |             |  |                | ●           |             | ● |
| 1°30'                      |             |  |                |             | ●           | ● |

F01195

- Do the steps mentioned above again. Between step (b) and (c), replace 1 or 2 selected bolts.

##### HINT:

When replacing the 2 bolts, replace 1 bolt for each time.



## 5. INSPECT TOE-IN

### Toe-in:

|                   |   |
|-------------------|---|
| Toe-in<br>(total) | A + B: $0^\circ \pm 12'$ ( $0^\circ \pm 0.2^\circ$ )<br>C - D: $0 \pm 2$ mm ( $0 \pm 0.08$ in.) |
|-------------------|---|

If the toe-in is not within the specified value, adjust it at the rack ends.

## 6. ADJUST TOE-IN

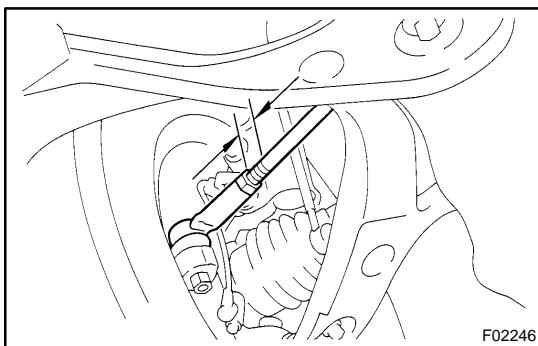
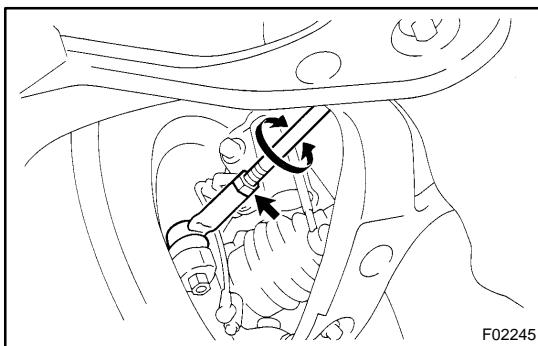
(a) Remove the rack boot set clips.

(b) Loosen the tie rod end lock nuts.

(c) Turn the right and left rack ends by an equal amount to adjust the toe-in.

### HINT:

Try to adjust the toe-in to the center of the specified value.



(d) Make sure that the lengths of the right and left rack ends are the same.

**Rack end length difference: 1.5 mm (0.059 in.) or less**

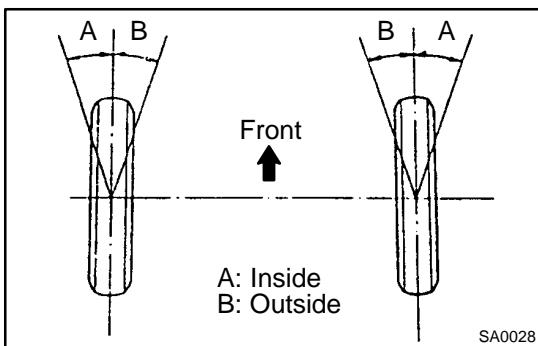
(e) Torque the tie rod end lock nuts.

**Torque: 74 N·m (750 kgf·cm, 54 ft·lbf)**

(f) Place the boots on the seats and install the clips.

### HINT:

Make sure that the boots are not twisted.



## 7. INSPECT WHEEL ANGLE

Turn the steering wheel fully, and measure the turning angle.

### Wheel turning angle:

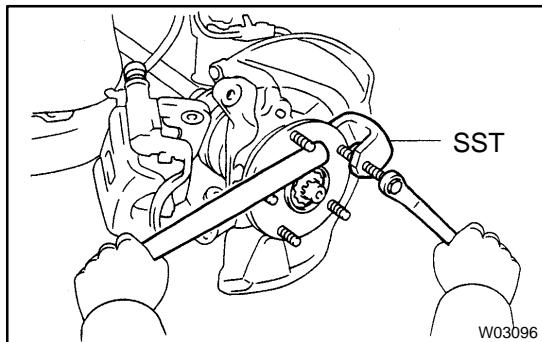
|                          |   |
|--------------------------|---|
| Inside wheel             | $35^\circ 45' \pm 1'$ ( $35.75^\circ \pm 1^\circ$ ) |
| Outside wheel: Reference | $31^\circ 23' (31.38^\circ)$                        |

If the right and left inside wheel angles differ from the specified value, check the right and left rack end lengths.

# FRONT WHEEL HUB BOLT REPLACEMENT

SA0VW-02

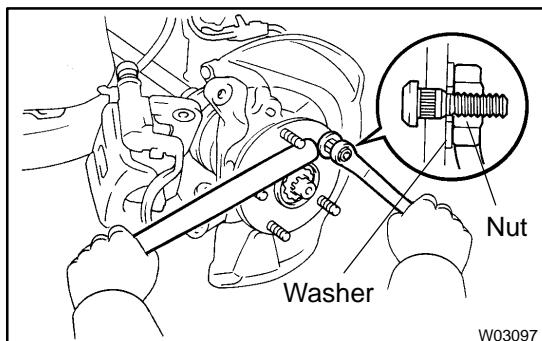
1. **REMOVE FRONT WHEEL**
2. **REMOVE BRAKE CALIPER AND DISC**
  - (a) Remove the 2 bolts, brake caliper and disc.
  - (b) Support the brake caliper securely.



## 3. REMOVE HUB BOLT

Using SST and a hammer handle or an equivalent, remove the hub bolt.

SST 09628-1001 1



## 4. INSTALL HUB BOLT

- (a) Install a washer and nut to a new hub bolt, as shown in the illustration.
- (b) Using a hammer handle or an equivalent to hold, install the hub bolt by torquing the nut.

## 5. INSTALL DISC AND BRAKE CALIPER

Install the disc and brake caliper with the 2 bolts.

**Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)**

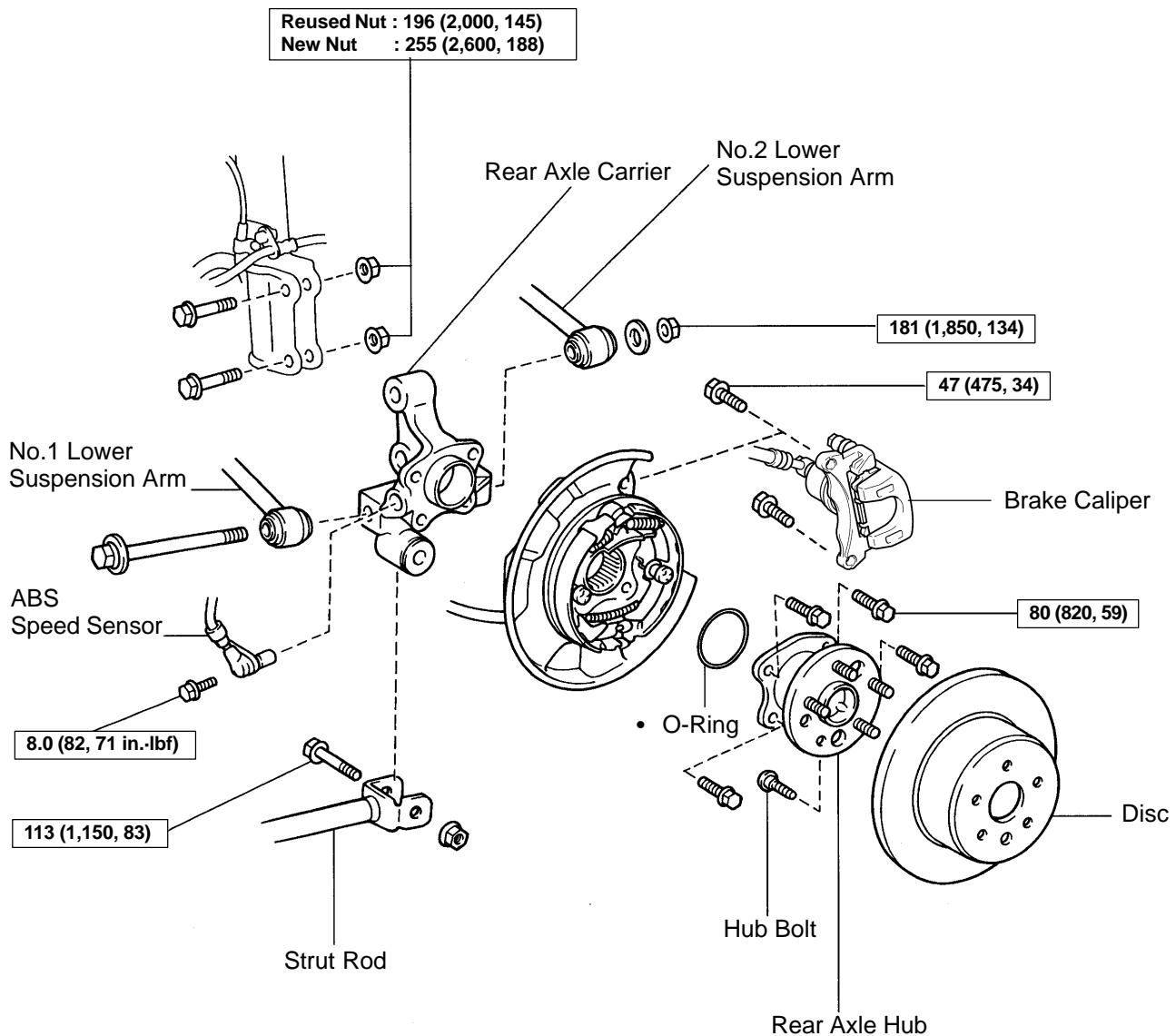
## 6. INSTALL FRONT WHEEL

**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**

# REAR AXLE HUB

## COMPONENTS

SA0ER-03



N·m (kgf·cm, ft·lbf) : Specified torque

- Non-reusable part

F08681

## INSTALLATION

Installation is in the reverse order of removal (See page [SA-45](#) ).

HINT:

After installation, check the ABS speed sensor signal (See page [DI-212](#) or [DI-252](#) ) and rear wheel alignment (See page [SA-7](#) ).

## REMOVAL

### 1. REMOVE REAR WHEEL

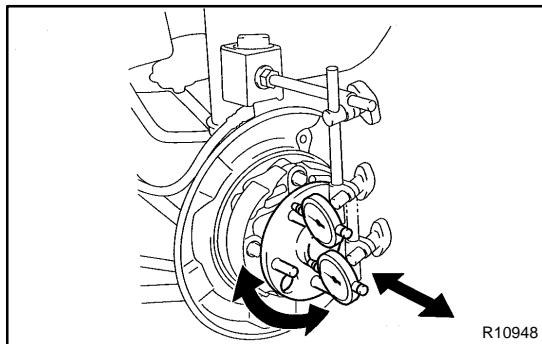
**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**

### 2. REMOVE BRAKE CALIPER AND DISC

(a) Remove the brake caliper and disc.

**Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)**

(b) Support the brake caliper securely.



### 3. CHECK BEARING BACKLASH AND AXLE HUB DEVIATION

(a) Using a dial indicator, check the backlash near the center of the axle hub.

**Maximum: 0.05 mm (0.0020 in.)**

If the backlash exceeds the maximum, replace the axle hub.

(b) Using a dial indicator, check the deviation at the surface of the axle hub outside the hub bolt.

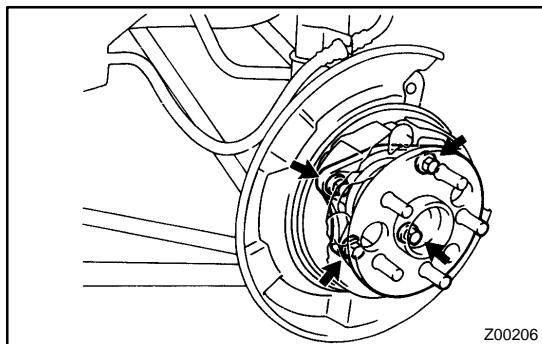
**Maximum: 0.07 mm (0.0028 in.)**

If the deviation exceeds the maximum, replace the axle hub.

### 4. DISCONNECT ABS SPEED SENSOR

Remove the bolt and disconnect the ABS speed sensor.

**Torque: 8.0 N·m (82 kgf·cm, 71 in·lbf)**



### 5. REMOVE REAR AXLE HUB

(a) Remove the 4 bolts and rear axle hub.

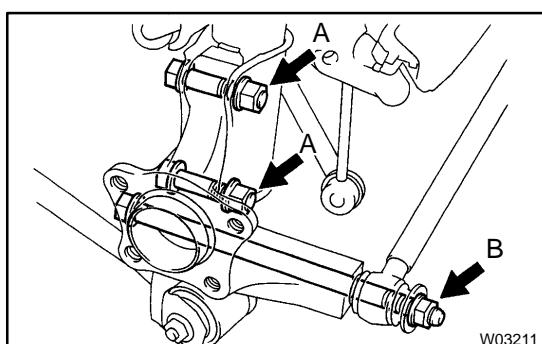
**Torque: 80 N·m (820 kgf·cm, 59 ft·lbf)**

(b) Remove the O-ring.

#### HINT:

At the time of installation, coat a new O-ring with MP grease.

(c) Support the backing plate securely.



### 6. REMOVE REAR AXLE CARRIER

(a) Loosen the 3 nuts.

**Torque:**

**Nut A (Reused nut): 196 N·m (2,000 kgf·cm, 145 ft·lbf)**

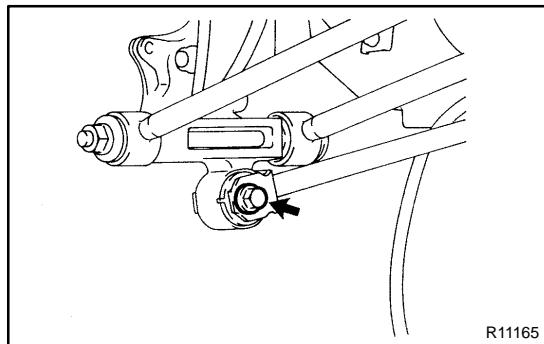
**Nut A (New nut): 255 N·m (2,600 kgf·cm, 188 ft·lbf)**

**Nut B: 181 N·m (1,850 kgf·cm, 134 ft·lbf)**

## HINT:

At the time of installation, please refer to the following items.

- After stabilizing the suspension, torque the nuts.
- If reusing the 2 nuts A, coat the nut's threads with engine oil.



(b) Remove the bolt and nut, and disconnect the strut rod from the rear axle carrier.

## NOTICE:

**Do not turn the nut.**

**Torque: 113 N·m (1,150 kgf·cm, 83 ft-lbf)**

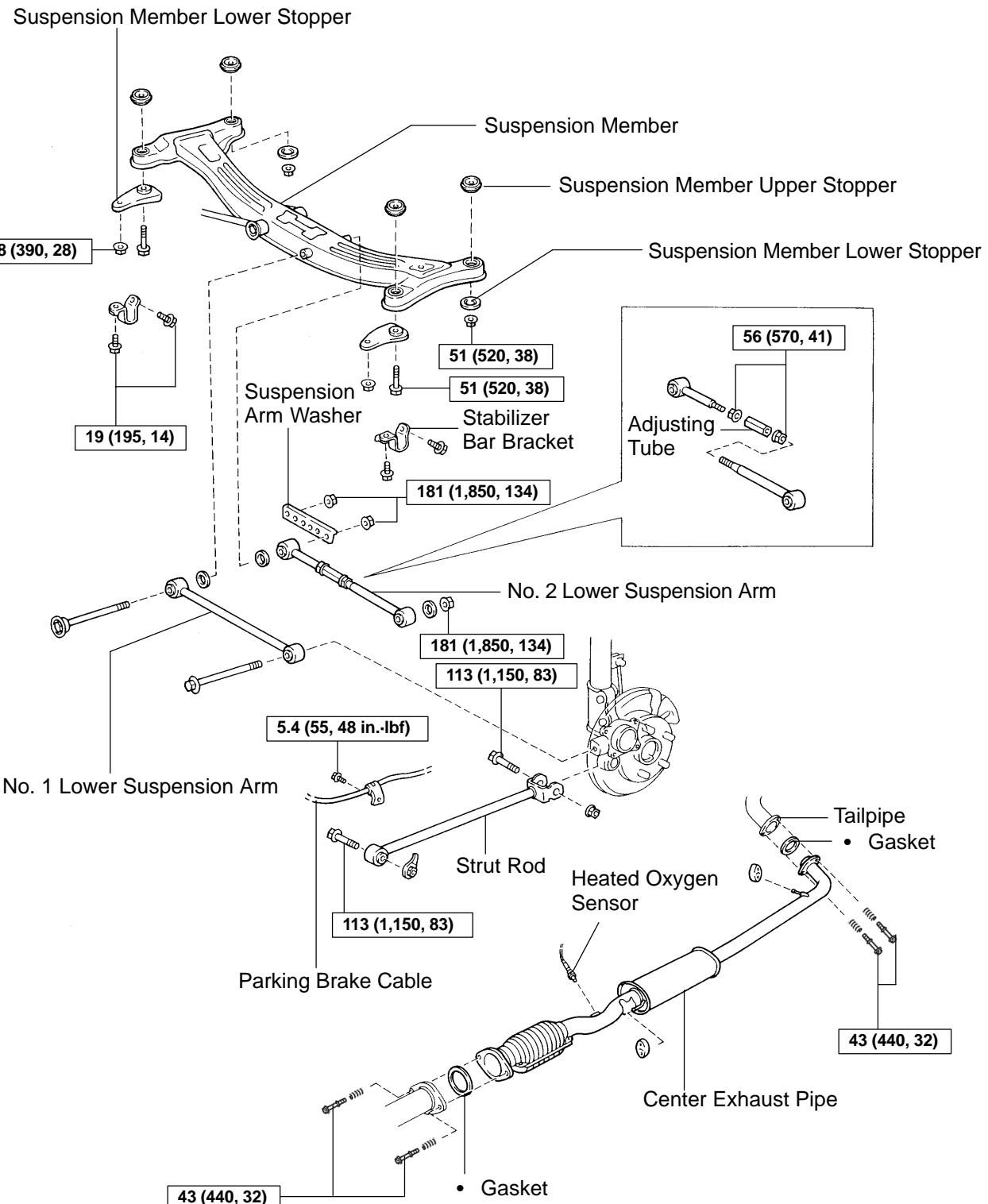
(c) Remove the 2 nuts and bolts on the lower side of the shock absorber.

(d) Remove the nut, washer and bolt and disconnect the No. 1 and No. 2 lower suspension arm from the rear axle carrier.

(e) Remove the rear axle carrier.

# REAR LOWER SUSPENSION ARM AND STRUT ROD COMPONENTS

SA0VF-02



N·m (kgf·cm, ft·lbf) : Specified torque

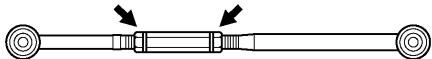
N • Non-reusable part

F07385

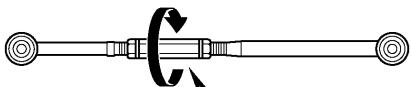
## DISASSEMBLY

### DISASSEMBLE NO. 2 LOWER SUSPENSION ARM

(a) Loosen the 2 lock nuts.



F06459



F06461

(b) Turn the adjusting tube and disassemble the No. 2 lower suspension arm.  
(c) Remove the 2 lock nuts.

## INSTALLATION

Installation is in the reverse order of removal (See page [SA-57](#) ).

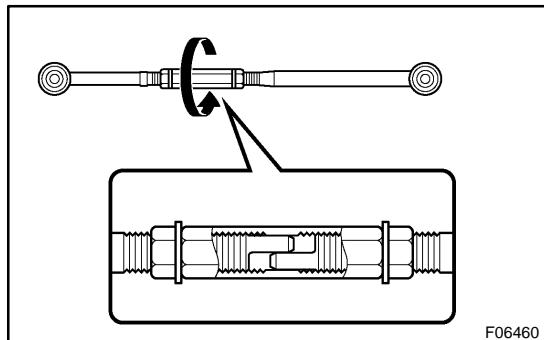
HINT:

After installation, check the rear wheel alignment (See page [SA-7](#) ).

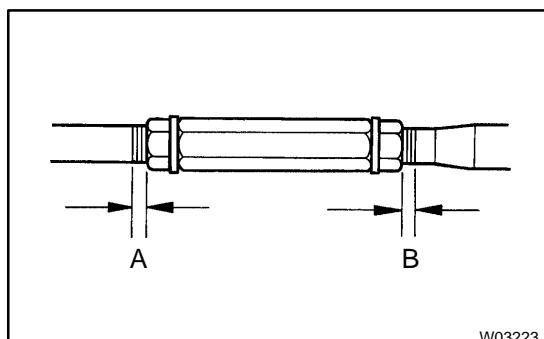
## REASSEMBLY

### ASSEMBLE NO. 2 LOWER SUSPENSION ARM

(a) Install the 2 lock nuts.



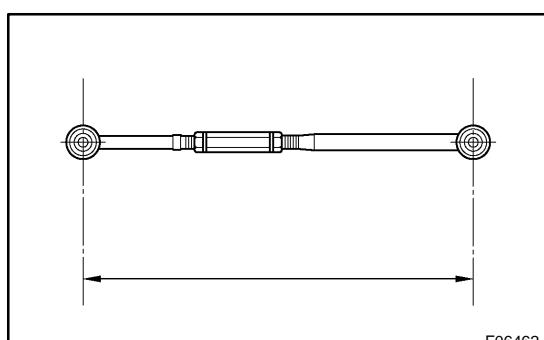
(b) Turn the adjusting tube and assemble the No. 2 lower suspension arm.



#### HINT:

When assembling the No. 2 lower suspension arm, try to make sure that the lengths of A and B shown in the illustration are the same.

**Maximum difference: 3.0 mm (0.118 in.)**



(c) Adjust the No. 2 lower suspension arm length by turning the adjusting tube.

**Arm length: 512.3 mm (20.169 in.)**

(d) Temporarily tighten the 2 lock nuts.

#### HINT:

After adjusting the rear wheel alignment, torque the lock nuts (See page [SA-7](#) ).

**Torque: 56 N·m (570 kgf·cm, 41 ft·lbf)**

## REMOVAL

### 1. REMOVE REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

### 2. REMOVE CENTER EXHAUST PIPE

### 3. REMOVE STRUT ROD

(a) Remove the bolt and disconnect the parking brake cable.

Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)

(b) Remove the 2 bolts and nuts.

Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

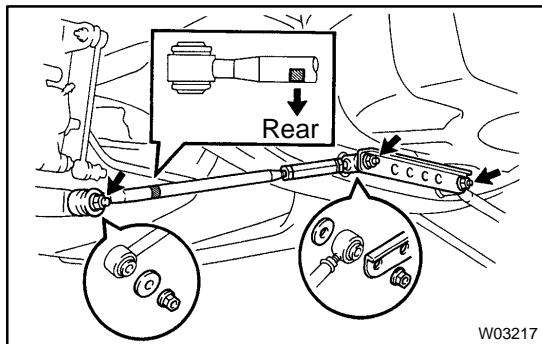
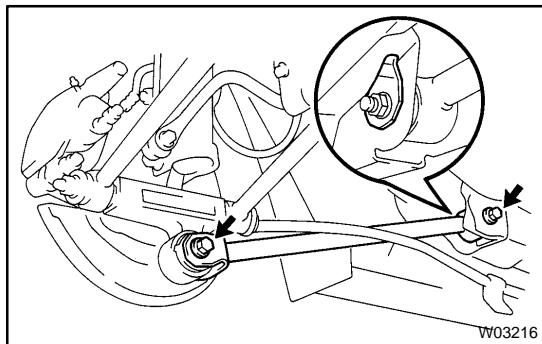
#### NOTICE:

**Do not turn the nut.**

#### HINT:

At the time of installation, after stabilizing the suspension, torque the bolts.

(c) Remove the strut rod.



### 4. REMOVE NO. 2 LOWER SUSPENSION ARM

(a) Remove the 3 nuts, suspension arm washer and washer.

Torque: 181 N·m (1,850 kgf·cm, 134 ft·lbf)

#### HINT:

At the time of installation, after stabilizing the suspension, torque the nuts.

(b) Remove the No. 2 lower suspension arm.

#### HINT:

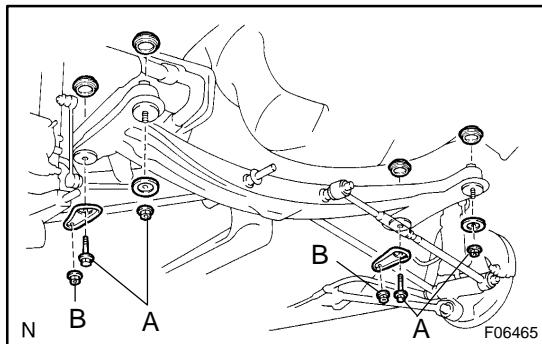
At the time of installation, face the paint mark to the rearward.

### 5. REMOVE STABILIZER BAR BRACKETS

(See page [SA-63](#))

### 6. REMOVE NO. 1 LOWER SUSPENSION ARM

(a) Support the suspension member with a jack.



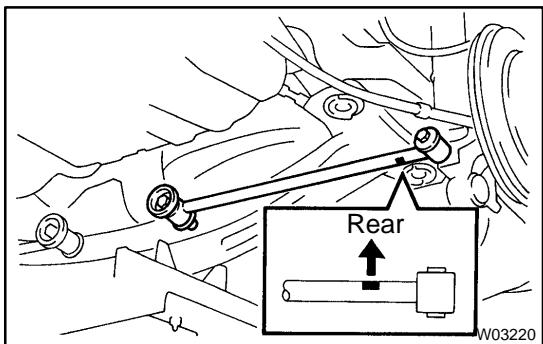
(b) Remove the 4 nuts, 2 bolts and 8 suspension member stoppers.

#### Torque:

A: 51 N·m (520 kgf·cm, 38 ft·lbf)

B: 38 N·m (390 kgf·cm, 28 ft·lbf)

(c) Lower the suspension member.



(d) Remove the 2 bolts, washers and No. 1 lower suspension arm.

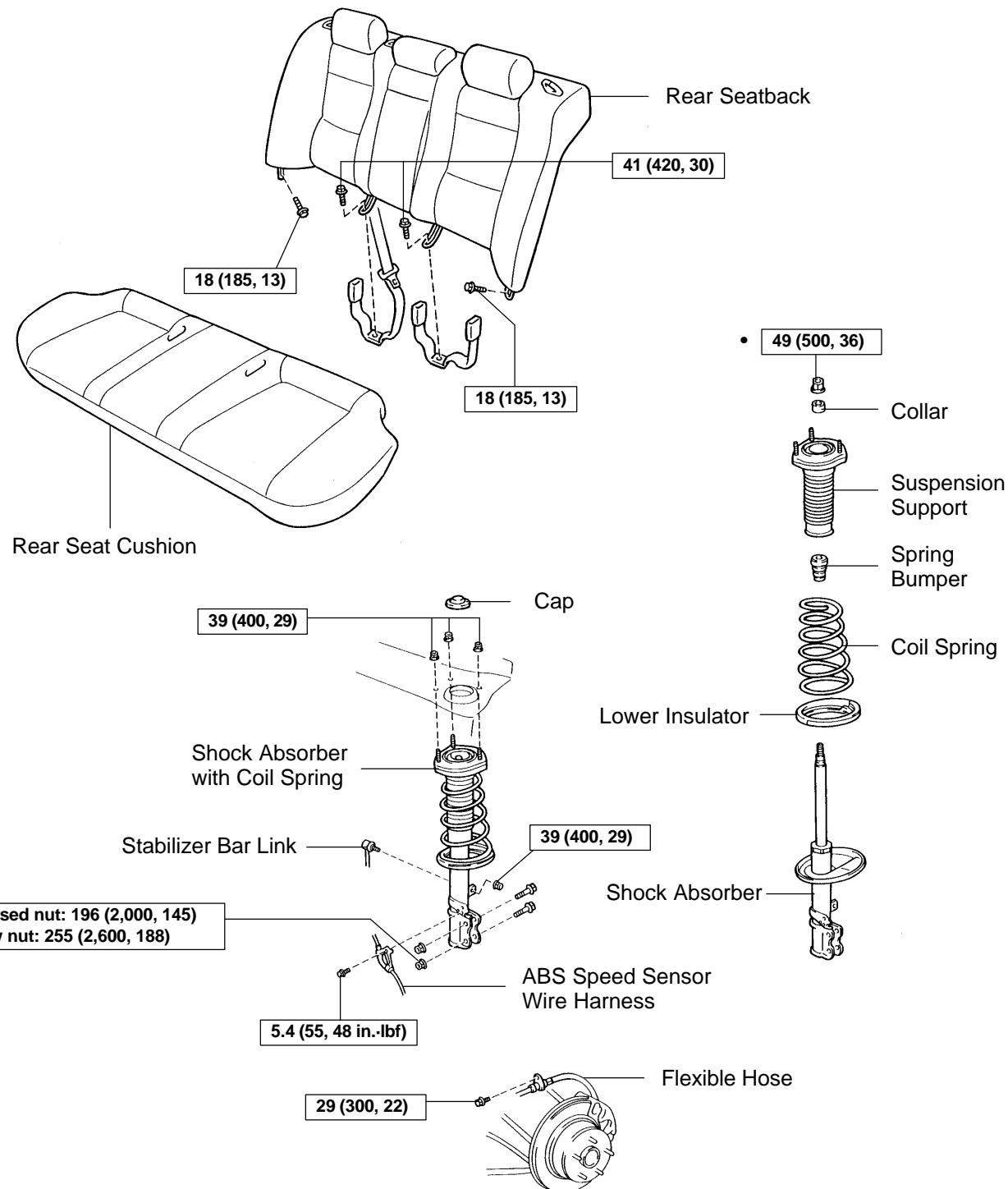
HINT:

At the time of installation, face the paint mark to the rearward.

# REAR SHOCK ABSORBER

## COMPONENTS

SA0W9-02



[N·m (kgf·cm, ft·lbf)] : Specified torque

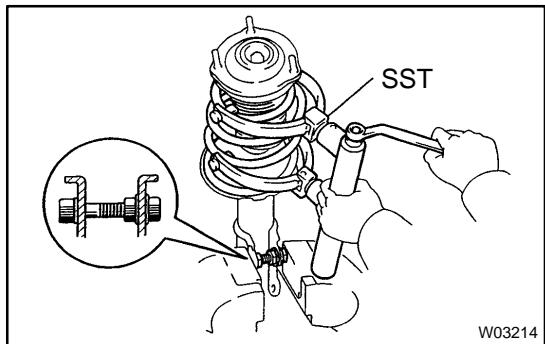
N • Non-reusable part

F07384

## DISASSEMBLY

### REMOVE COIL SPRING

(a) Install 2 nuts and a bolt to the bracket at the lower side of the shock absorber and secure it in a vise.



(b) Using SST, compress the coil spring.  
SST 09727-30021

#### NOTICE:

**Do not use an impact wrench. It will damage the SST.**

(c) Remove the nut.  
(d) Remove the collar, suspension support, coil spring, lower insulator and spring bumper.

## DISPOSAL

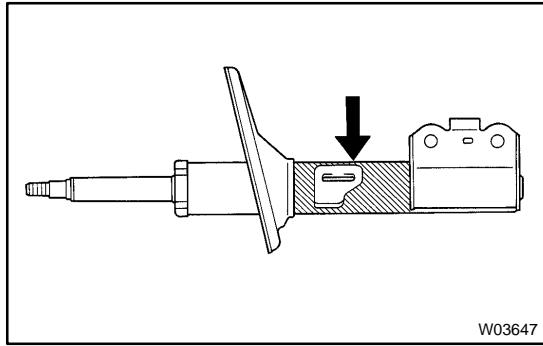
### 1. FULLY EXTEND SHOCK ABSORBER ROD

### 2. DRILL HOLE TO DISCHARGE GAS FROM CYLINDER

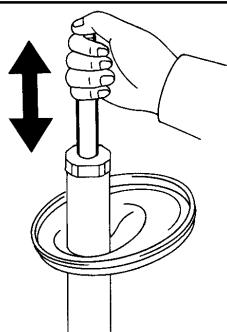
Using a drill, make a hole in the cylinder as shown in the illustration to discharge the gas inside.

#### CAUTION:

- When drilling, chips may fly out, work carefully.
- The gas is colorless, odorless and non-poisonous.



W03647



W03646

## INSPECTION

### INSPECT SHOCK ABSORBER

Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual sound during operation.

If there is any abnormality, replace the shock absorber with a new one.

#### NOTICE:

When disposing of the shock absorber, see **DISPOSAL** on page [SA-53](#) .

## INSTALLATION

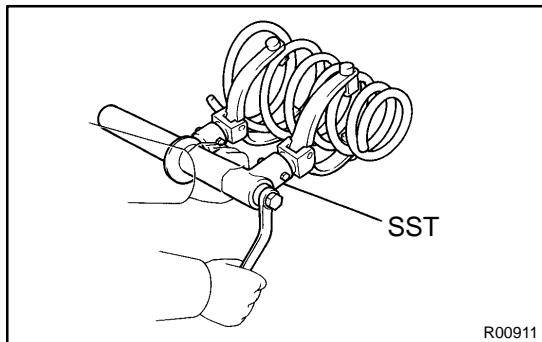
Installation is in the reverse order of removal (See page [SA-50](#) ).

HINT:

After installation, check the rear wheel alignment (See page [SA-7](#) ).

## REASSEMBLY

1. INSTALL LOWER INSULATOR
2. INSTALL SPRING BUMPER TO PISTON ROD

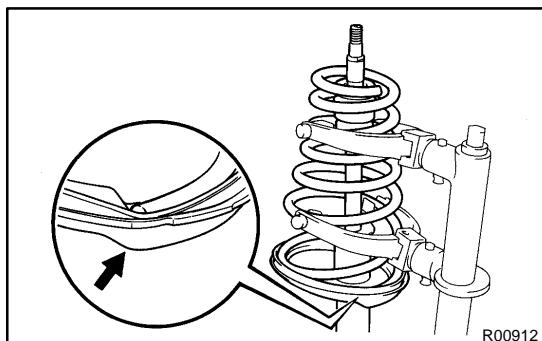


### 3. INSTALL COIL SPRING

- (a) Using SST, compress the coil spring.  
SST 09727-30021

#### NOTICE:

**Do not use an impact wrench. It will damage the SST.**



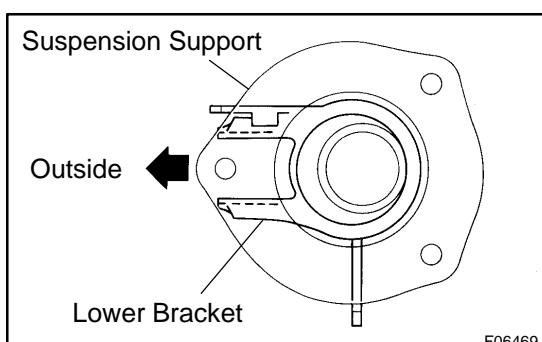
- (b) Install the coil spring to the shock absorber.

#### HINT:

Fit the lower end of the coil spring into the gap of the lower insulator.

### 4. INSTALL SUSPENSION SUPPORT

- (a) Install the suspension support to the piston rod.
- (b) Install the collar.
- (c) Temporarily tighten a new nut.



- (d) Rotate the suspension support to set it in the correct direction shown in the illustration.

- (e) Remove the SST.

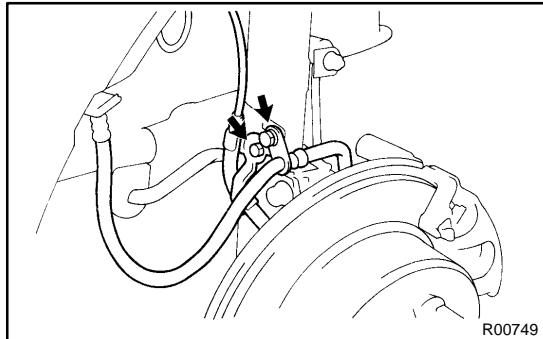
SST 09727-30021

#### HINT:

After removing SST, recheck the direction of the suspension support.

## REMOVAL

1. REMOVE REAR SEAT (See page [BO-1 19](#))
2. REMOVE REAR WHEEL  
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



3. DISCONNECT FLEXIBLE HOSE AND ABS SPEED SENSOR WIRE HARNESS CLAMP

Remove the 2 bolts and disconnect the flexible hose and ABS speed sensor wire harness clamp.

**Torque:**

Flexible hose: 29 N·m (300 kgf·cm, 22 ft·lbf)

ABS speed sensor wire harness:

5.4 N·m (55 kgf·cm, 48 in.-lbf)

4. DISCONNECT STABILIZER BAR LINK FROM SHOCK ABSORBER (See page [SA-63](#))

5. REMOVE SHOCK ABSORBER WITH COIL SPRING

- (a) Loosen the 2 nuts on the lower side of the shock absorber.

**Torque:**

Reused nut: 196 N·m (2,000 kgf·cm, 145 ft·lbf)

New nut: 255 N·m (2,600 kgf·cm, 188 ft·lbf)

**HINT:**

At the time of installation, coat the nut's threads with engine oil.

- (b) Support the rear axle carrier with a jack.

- (c) Remove the cap.

- (d) Loosen the nut in the center of the suspension support.

**NOTICE:**

**Do not remove it.**

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**

**HINT:**

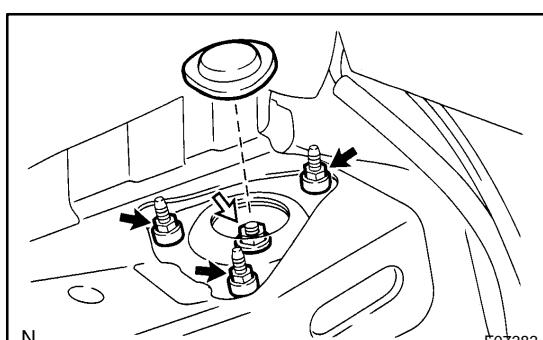
If not disassembling the shock absorber, it is not necessary to loosen the nut.

- (e) Remove the 3 nuts of the suspension support.

**Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)**

- (f) Lower the rear axle carrier and remove the 2 bolts on the lower side of the shock absorber.

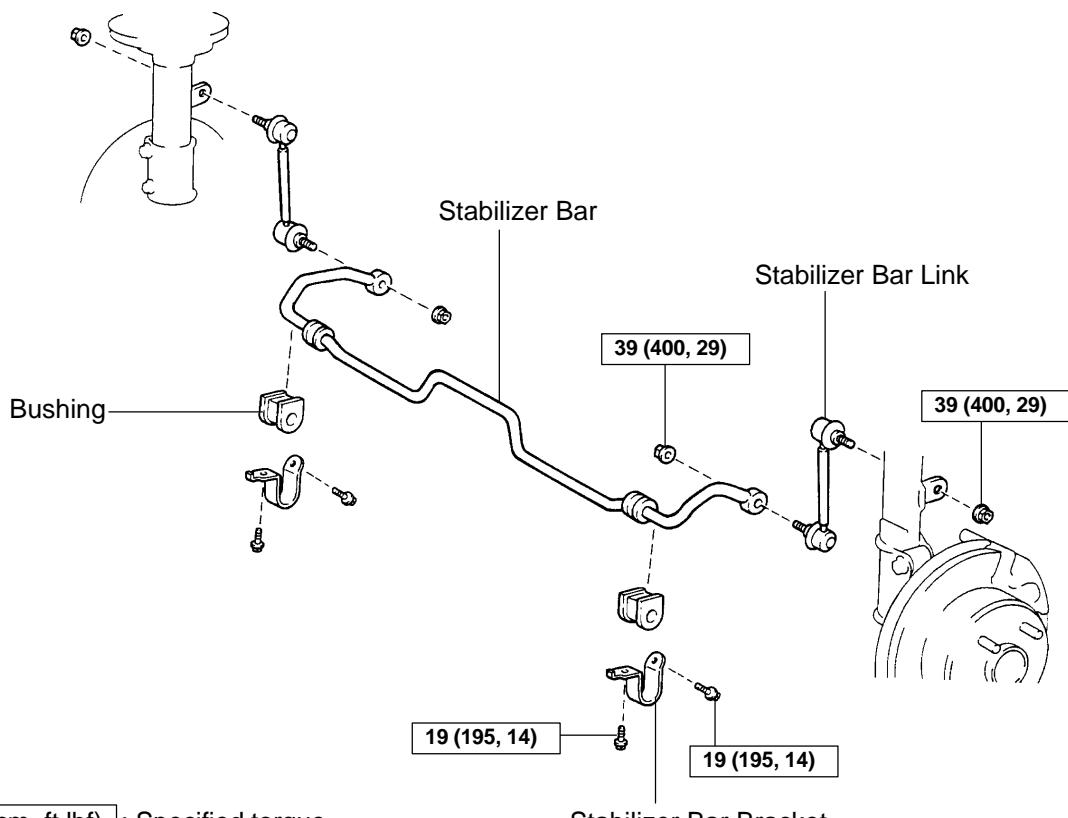
- (g) Remove the shock absorber with the coil spring.



N

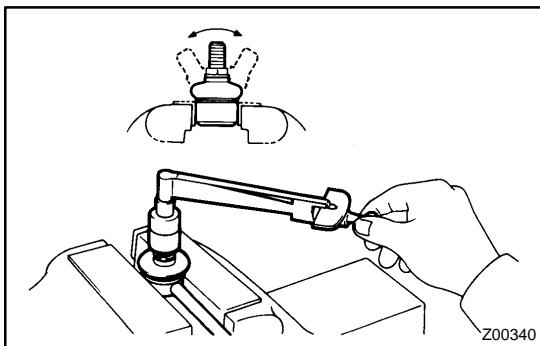
# REAR STABILIZER BAR COMPONENTS

SA0VK-02



N·m (kgf·cm, ft-lbf) : Specified torque

F07397



## INSPECTION

### INSPECT STABILIZER BAR LINK BALL JOINT FOR ROTATION CONDITION

- (a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.
- (b) Using a torque wrench, turn the nut continuously at a rate of 2 - 4 seconds per 1 turn and take the torque reading on the 5th turn.

#### Turning torque:

**0.05 - 1.0 N·m (0.5 - 10 kgf·cm, 0.4 - 8.7 in.-lbf)**

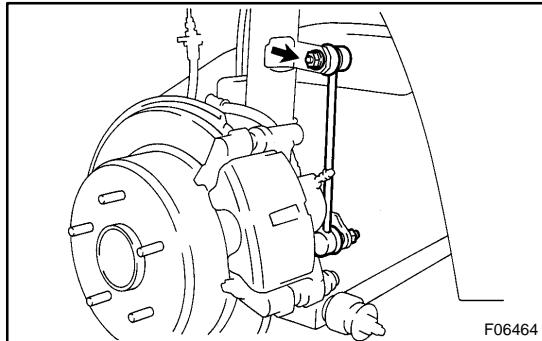
## INSTALLATION

Installation is in the reverse order of removal (See page [SA-63](#) ).

## REMOVAL

### 1. REMOVE REAR WHEELS

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



### 2. REMOVE STABILIZER BAR LINKS

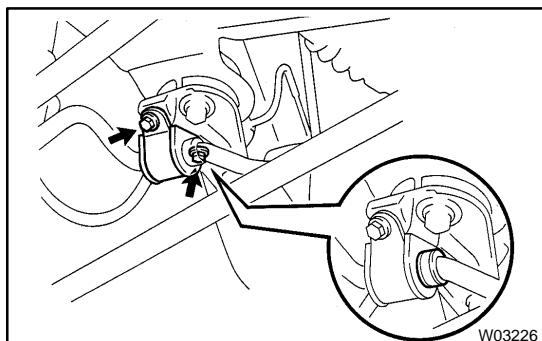
(a) Remove the 2 nuts and stabilizer bar link.

HINT:

If the ball joint turns together with the nut, use a hexagon (5 mm) wrench to hold the stud.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

(b) Employ the same manner described above to the other side.



### 3. REMOVE BRACKETS AND BUSHINGS

(a) Remove the 2 bolts, bracket and bushing.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

HINT:

At the time of installation, install the bushing to the outside of the bushing on the stabilizer bar.

(b) Employ the same manner described above to the other side.

### 4. REMOVE STABILIZER BAR

## REAR WHEEL ALIGNMENT

### INSPECTION

SA1DQ-03

1. MEASURE VEHICLE HEIGHT (See page [SA-4](#) )
2. INSTALL CAMBER-CASTER-KINGPIN GAUGE OR POSITION VEHICLE ON WHEEL ALIGNMENT TESTER

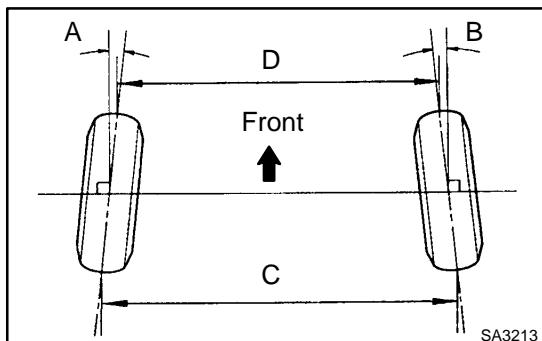
Follow the specific instructions of the equipment manufacturer.

#### 3. INSPECT CAMBER

##### Camber:

|                  |                                 |
|------------------|---------------------------------|
| Camber           | -0 ° 43' ± 45' (-0.72° ± 0.75°) |
| Right-left error | 45' (0.75°) or less             |

If the measured value is not within the specified value, inspect the suspension parts for damage and/or wear and replace them if necessary because camber is not adjustable.

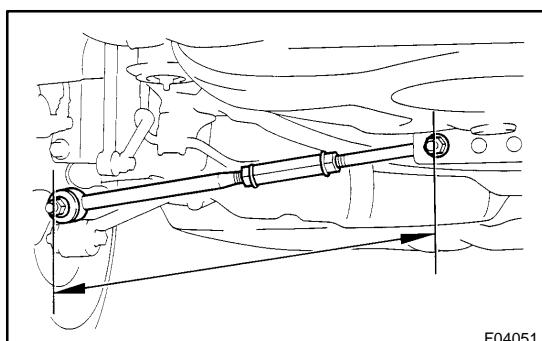


#### 4. INSPECT TOE-IN

##### Toe-in:

|                   |   |
|-------------------|---|
| Toe-in<br>(total) | A + B: 0°24' ± 12' (0.4° ± 0.2°)<br>C - D: 4 ± 2 mm (0.16 ± 0.08 in.) |
|-------------------|---|

If the toe-in is not within the specified value, adjust it at the No. 2 lower suspension arm.



#### 5. ADJUST TOE-IN

- (a) Measure the lengths of the right and left No. 2 lower suspension arms.

##### No. 2 lower suspension arm length difference:

**1 mm (0.04 in.) or less**

If the right-left difference is greater than the specified value, adjust the length.

- (b) Loosen the lock nuts.

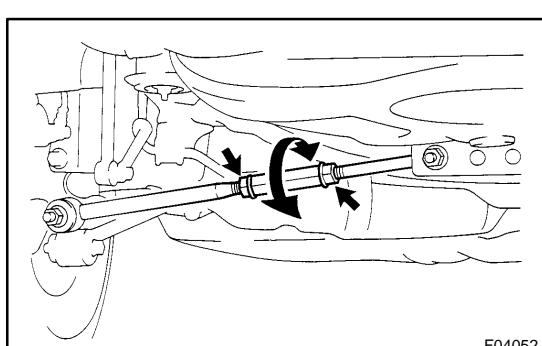
- (c) Turn the right and left adjusting tube by an equal amount to adjust toe-in.

##### HINT:

- Try to adjust the toe-in to the center value.
- One turn of the each adjusting tube will adjust the toe-in by about 36' (0.6°, 6.7 mm, 0.264 in.).

- (d) Torque the lock nuts.

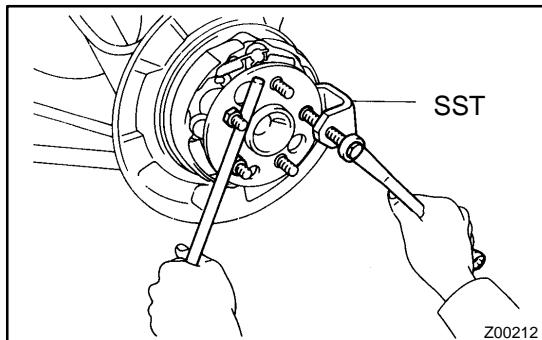
**Torque: 56 N·m (570 kgf·cm, 41 ft-lbf)**



## REAR WHEEL HUB BOLT REPLACEMENT

SA0W8-02

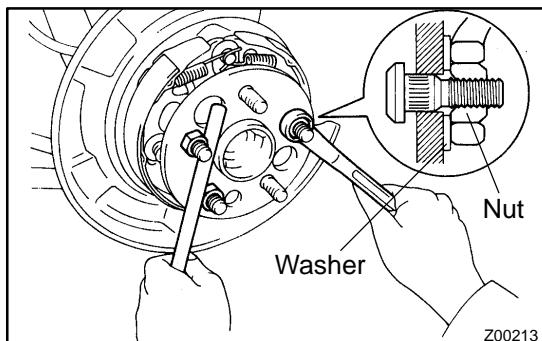
1. **REMOVE REAR WHEEL**
2. **REMOVE BRAKE CALIPER AND DISC**
  - (a) Remove the 2 bolts, brake caliper and disc.
  - (b) Support the brake caliper securely.



### 3. REMOVE HUB BOLT

Using SST and a hammer handle or an equivalent, remove the hub bolt.

SST 09628-1001 1



### 4. INSTALL HUB BOLT

- (a) Install a washer and nut to a new hub bolt as shown in the illustration.
- (b) Using a hammer handle or an equivalent to hold, install the hub bolt by torquing the nut.

### 5. INSTALL DISC AND BRAKE CALIPER

Install the disc and brake caliper with the 2 bolts.

**Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)**

### 6. INSTALL REAR WHEEL

**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**

# TIRE AND WHEEL

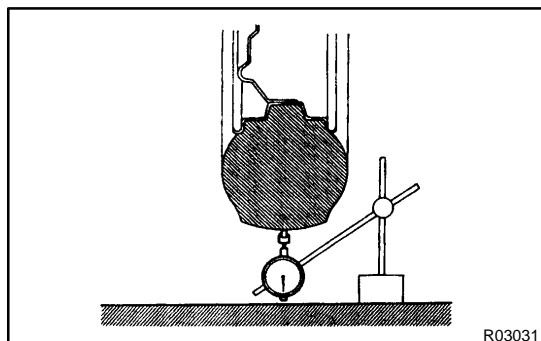
## INSPECTION

SA1DO-03

### 1. INSPECT TIRE

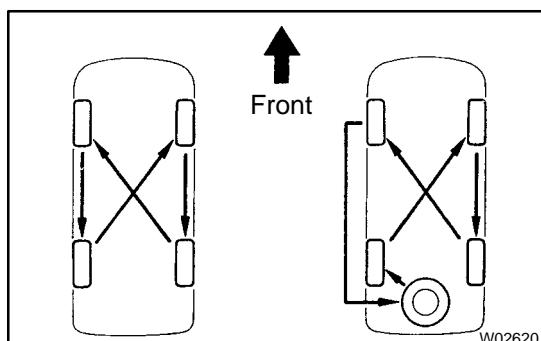
(a) Check the tires for wear and proper inflation pressure.  
**Cold tire inflation pressure:**

| Tire size      | Front, rear<br>kPa (kgf/cm <sup>2</sup> , psi) |
|----------------|--|
| P205/65R15 92H | 210 (2.1, 31)                                  |
| P205/60R16 91H | 220 (2.2, 32)                                  |



(b) Check the tire runout.

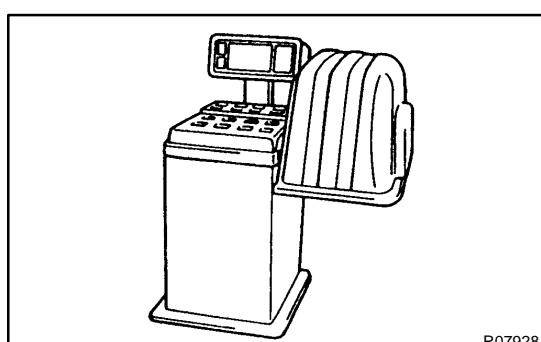
**Tire runout: 1.0 mm (0.039 in.) or less**



### 2. ROTATING TIRES

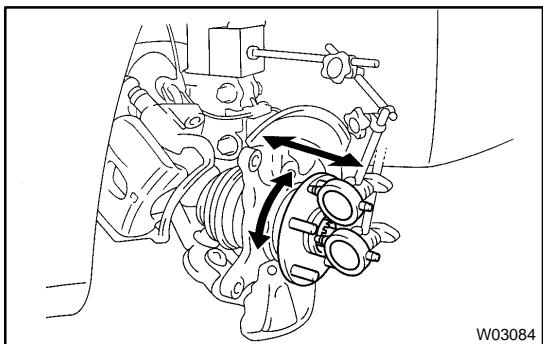
#### HINT:

See the illustration for where to rotate each tire when you include the spare tire in the rotation and when you do not.



### 3. INSPECT WHEEL BALANCE

(a) Check and adjust the Off-the-car balance.  
(b) If necessary, check and adjust the On-the-car balance.  
**Imbalance after adjustment: 8.0 g (0.018 lb) or less**



4. **CHECK WHEEL BEARING LOOSENESS**
  - (a) Check the backlash in the bearing shaft direction.  
**Maximum: 0.05 mm (0.0020 in.)**
  - (b) Check the axle hub deviation.  
**Maximum: 0.05 mm (0.0020 in.)**
5. **CHECK FRONT SUSPENSION FOR LOOSENESS**
6. **CHECK STEERING LINKAGE FOR LOOSENESS**
7. **CHECK BALL JOINT FOR LOOSENESS**
8. **CHECK SHOCK ABSORBER WORKS PROPERLY**
  - Check that oil leaks
  - Check mounting bushings for wear
  - Bounce front and rear of the vehicle

# TROUBLESHOOTING

## PROBLEM SYMPTOMS TABLE

SA0CB-02

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

| Symptom            | Suspect Area  | See page   |
|--------------------|---|--|
| Wander/pulls       | 3. Tire (Worn or improperly inflated)<br>4. Wheel alignment (Incorrect)<br><br>5. Steering linkage (Loosen or worn)<br>6. Hub bearing (Worn)<br><br>7. Steering gear (Out of adjustment or broken)<br>8. Suspension parts (Worn)  | SA-2<br>SA-4<br>SA-7<br><br>-<br>SA-9<br>SA-45<br>SR-37<br><br>- |
| Bottoming          | 1. Vehicle (Overloaded)<br>2. Spring (Weak)<br><br>3. Shock absorber (Worn)   | -<br>SA-25<br>SA-49<br>SA-28<br>SA-52                            |
| Sways/pitches      | 1. Tire (Worn or improperly inflated)<br>2. Stabilizer bar (Bent or broken)<br><br>3. Shock absorber (Worn)   | SA-2<br>SA-40<br>SA-62<br>SA-28<br>SA-52                         |
| Front wheel shimmy | 1. Tire (Worn or improperly inflated)<br>2. Wheel (Out of balance)<br>3. Shock absorber (Worn)<br>4. Wheel alignment (Incorrect)<br>5. Ball joint (Worn)<br>6. Hub bearing (Worn)<br>7. Steering linkage (Loosen or worn)<br>8. Steering gear (Out of adjustment or broken) | SA-2<br>SA-2<br>SA-28<br>SA-4<br>SA-38<br>SA-9<br><br>-          |
| Abnormal tire wear | 1. Tire (Worn or improperly inflated)<br>2. Wheel alignment (Incorrect)<br>3. Shock absorber (Worn)<br><br>4. Suspension parts (Worn)   | SA-2<br>SA-4<br>SA-28<br>SA-52<br><br>-                          |