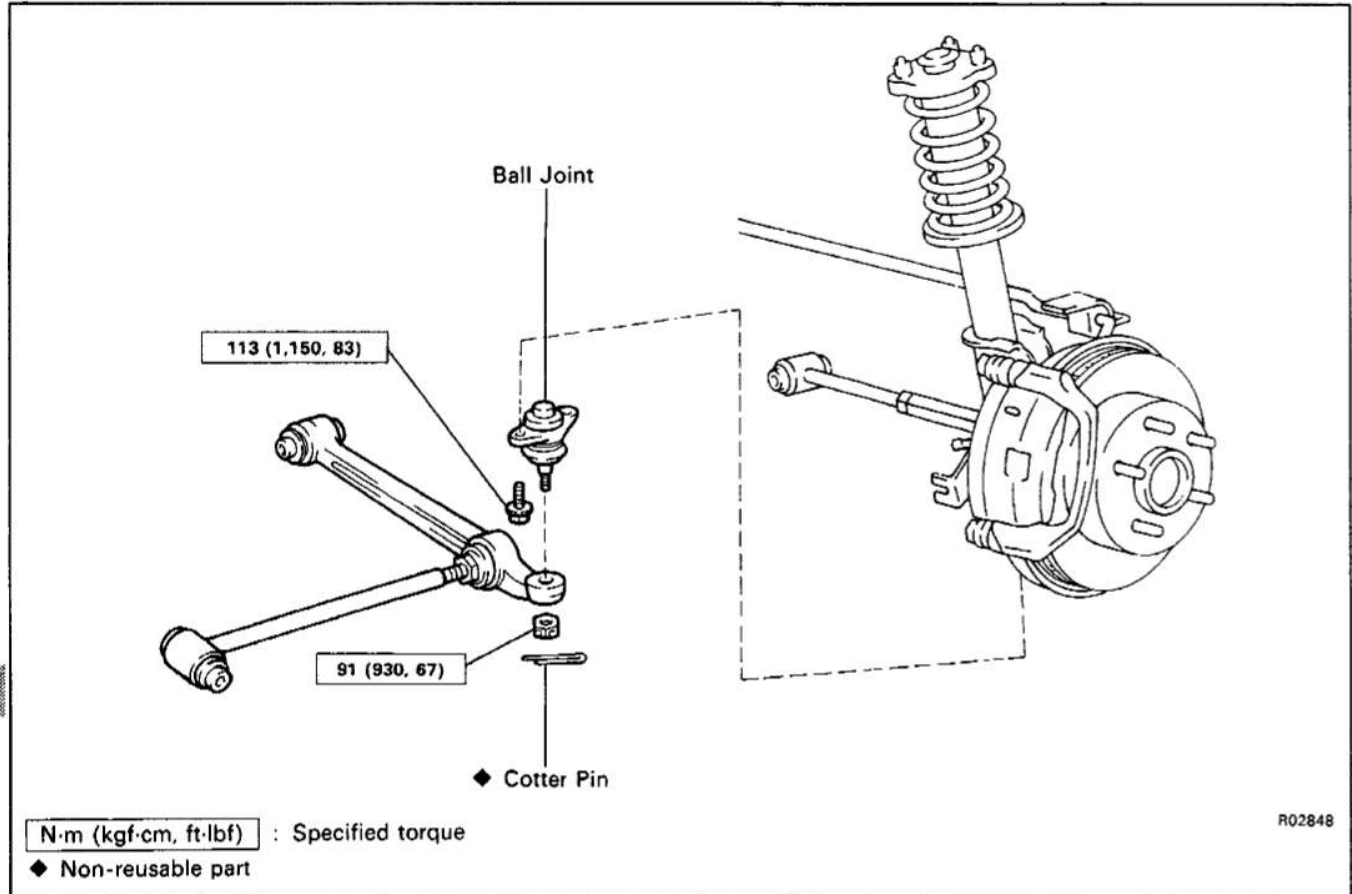


SA-94

SUSPENSION AND AXLE - REAR SUSPENSION

BALL JOINT COMPONENTS

SA000-01



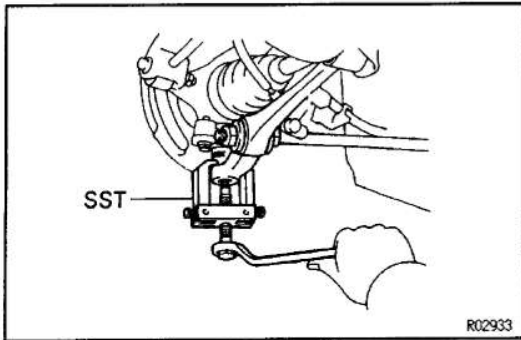
BALL JOINT ON-VEHICLE INSPECTION

INSPECT BALL JOINTS FOR EXCESSIVE LOOSENESS

- Jack up the rear of the vehicle and place wooden blocks with a height of 180–200 mm (7.09–7.87 in.) under one rear tire.
- Lower the jack until there is about half a load on the front coil spring. Place stands under the vehicle for safety.
- Move the lower arm up and down and check that the ball joint has no excessive play.

Ball joint vertical play:

0 mm (0 in.)

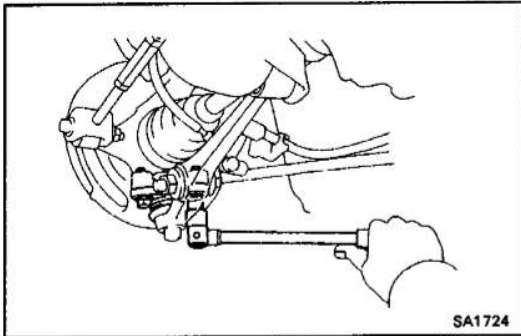


BALL JOINT REMOVAL

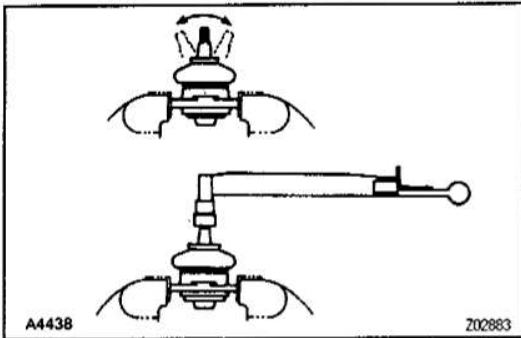
REMOVE BALL JOINTS

- Remove the cotter pin and nut from the lower arm.
- Using SST, disconnect the ball joint from the lower arm.

SST 09628-62011



- Remove the two bolts and ball joint from the rear axle carrier.



BALL JOINT INSPECTION

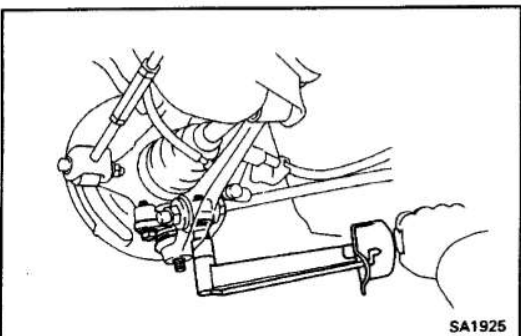
INSPECT BALL JOINT FOR ROTATION CONDITION

- Flip the ball joint stud back and forth 5 times as, shown in the figure, before installing the nut.
- Using a torque gauge, turn the nut continuously one turn each 2-4 seconds and take the torque reading on the fifth turn.

Torque (turning):

1.47-2.94 N-m (15-30 kgf-cm, 13-26 in.-lbf)

If not within specification, replace the ball joint.



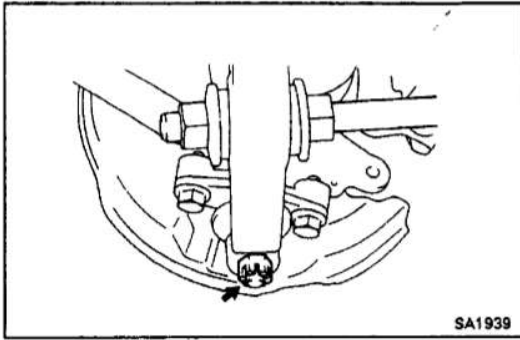
BALL JOINT INSTALLATION

1. INSTALL BALL JOINT TO REAR AXLE CARRIER

Install the ball joint in place with the two bolts.

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

SA-96**SUSPENSION AND AXLE – REAR SUSPENSION**

**2. CONNECT LOWER ARM**

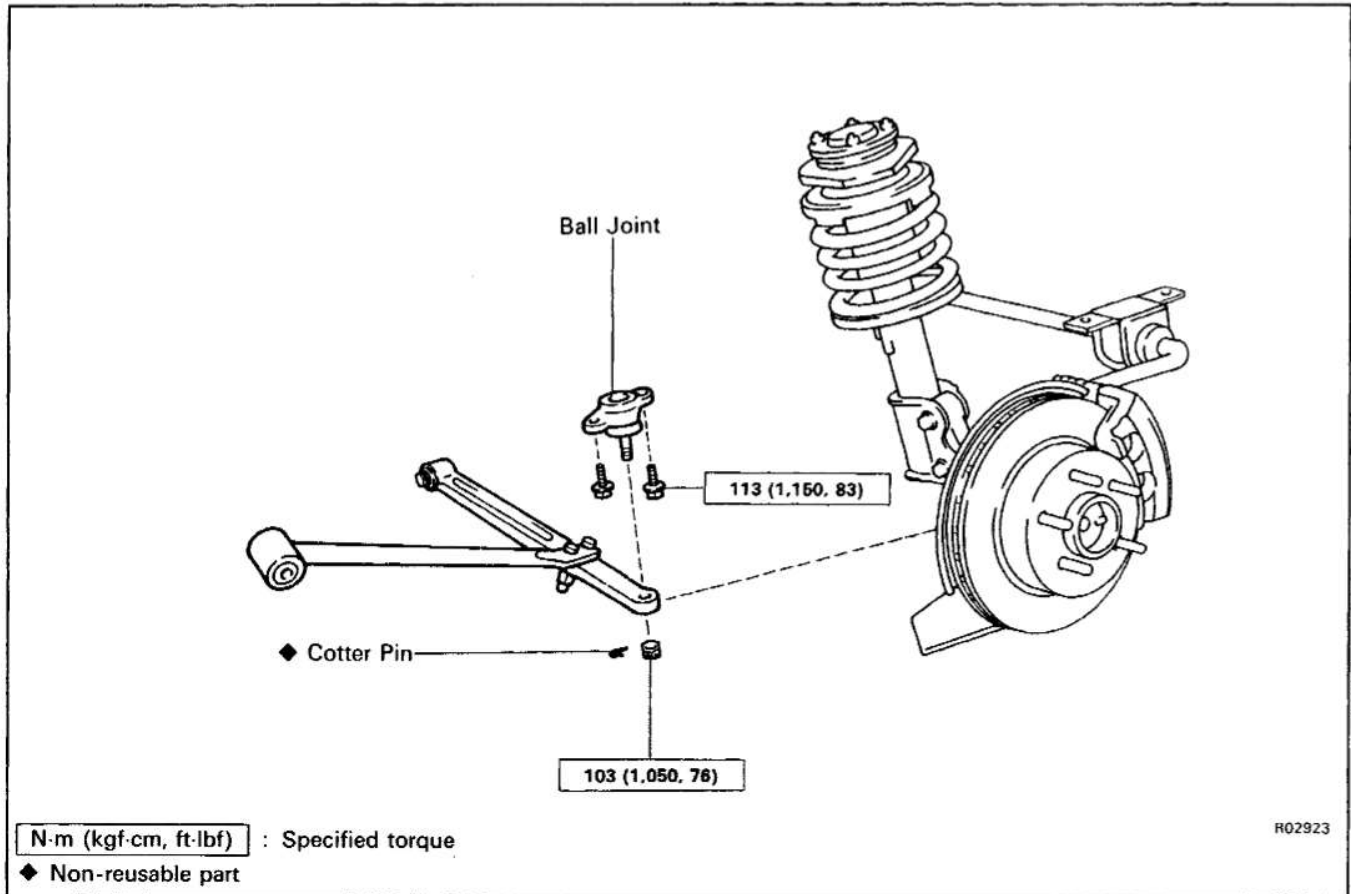
- (a) Connect the lower arm to the ball joint.
- (b) Install the nut.

Torque: 91 N-m (930 kgf-cm, 67 ft-lbf)

- (c) Install a new cotter pin.

BALL JOINT COMPONENTS

SA08C-01



BALL JOINT ON-VEHICLE INSPECTION

1. INSPECT BALL JOINTS FOR EXCESSIVE LOOSENESS

- Jack up the front of the vehicle and place a wooden block with a height of 180–200 mm (7.09–7.87 in.) under one front tire.
- Lower the jack until there is about half a load on the front coil spring. Place stands under the vehicle for safety.
- Make sure the front wheels are in a straight forward position and block the wheel with chocks.
- Move the lower arm up and down check that the ball joint no excessive play.

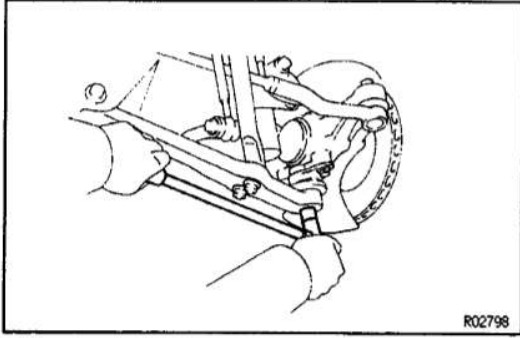
Ball joint vertical play:

0 mm (0 in.)

SA-28

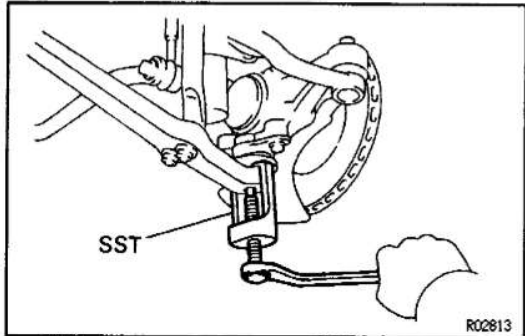
SUSPENSION AND AXLE – FRONT SUSPENSION

BA08E-01

**BALL JOINT REMOVAL**

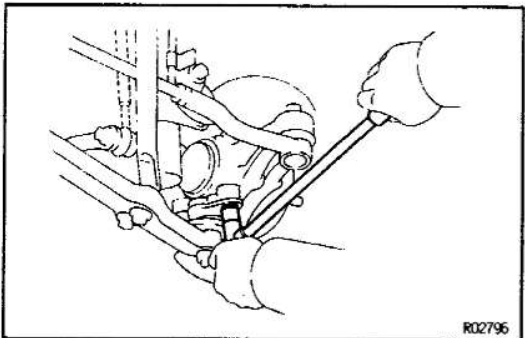
1. JACK UP VEHICLE AND REMOVE FRONT WHEEL
2. DISCONNECT LOWER ARM FROM BALL JOINT

(a) Remove the cotter pin and nut.

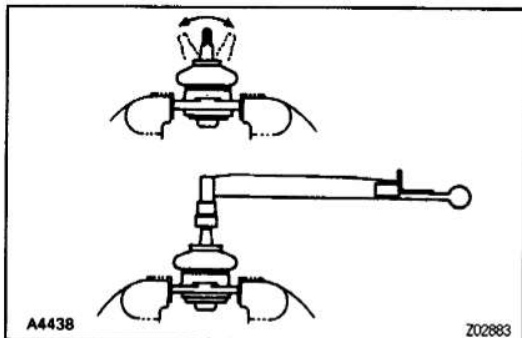


(b) Using SST, disconnect the lower arm from the ball joint.

SST 09610-20012

**3. REMOVE BALL JOINT FROM AXLE CARRIER**

Remove the two bolts and ball joint.



BA08F-01

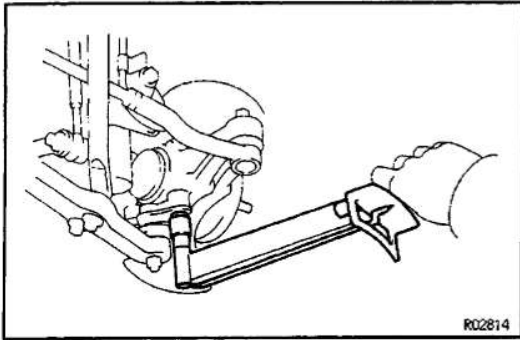
BALL JOINT INSPECTION**1. INSPECT BALL JOINT FOR ROTATION**

- (a) Remove the ball joint.
- (b) Flip the ball joint stud back and forth 5 times as shown in the figure, before installing the nut.
- (c) Using a torque gauge, turn the nut continuously one turn each 2-4 seconds and take the torque reading on the fifth turn.

Torque (turning):

0.8 N-m (8-25 kgf-cm, 7-22 in.·lbf)

If not within specification, replace the ball joint.

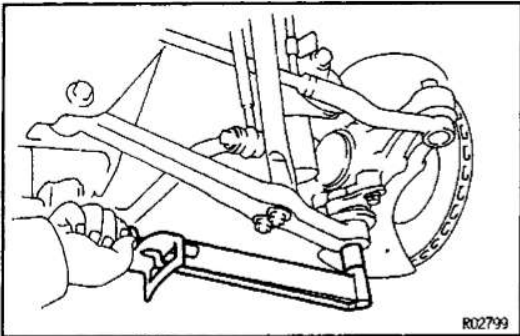


BALL JOINT INSTALLATION

1. INSTALL BALL JOINT TO AXLE CARRIER

Install ball joint to the axle carrier with the two bolts.

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



2. CONNECT BALL JOINT TO LOWER ARM

(a) Connect the ball joint to lower arm with the nut.

Torque: 78 N-m (800 kgf-cm, 58 ft-lbf)

(b) Install a new cotter pin.

SA-8

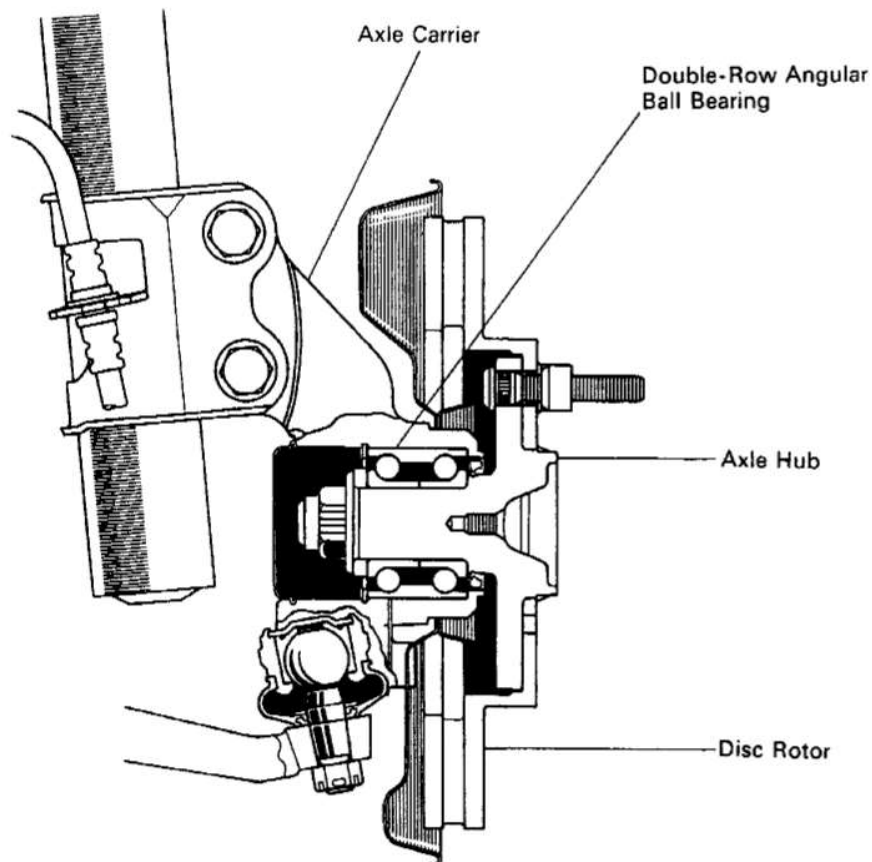
SUSPENSION AND AXLE - FRONT AXLE

FRONT AXLE

DESCRIPTION

The wheel bearings are double-row angular ball bearings combined with the oil seals having small rolling resistance and are free from maintenance.

There is no need for bearing grease maintenance or preload adjustment.



R02914

SA-86

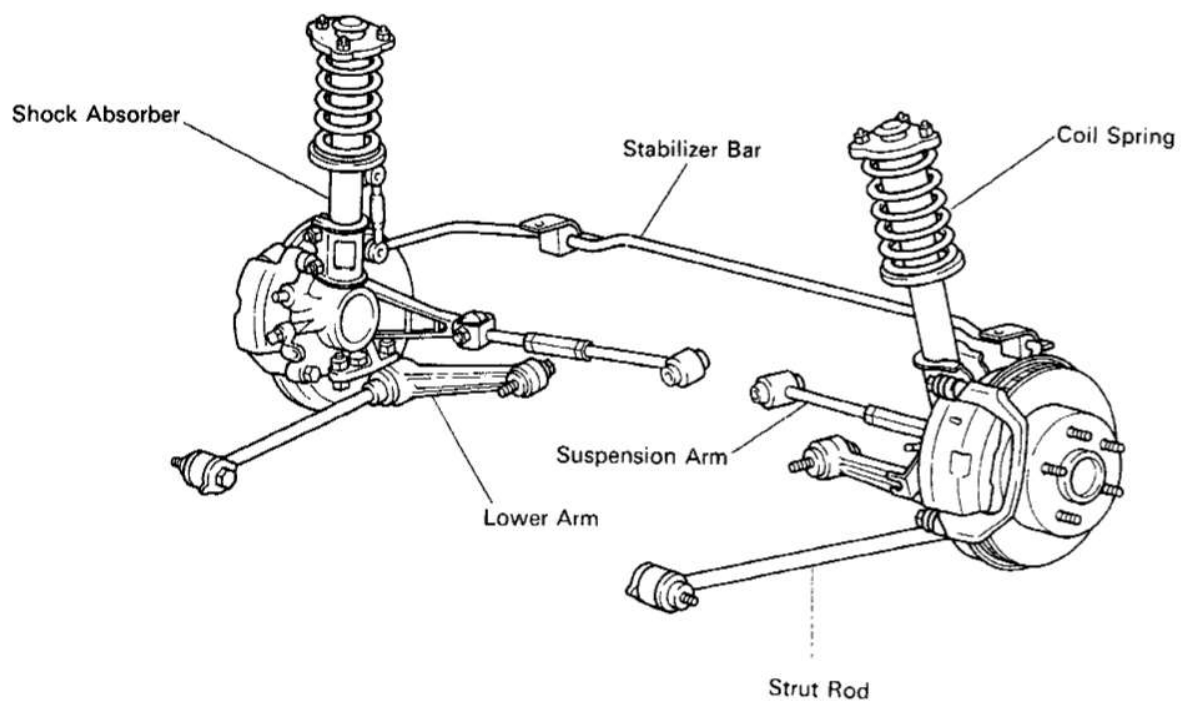
SUSPENSION AND AXLE - REAR SUSPENSION

REAR SUSPENSION

DESCRIPTION

SA00R-01

The rear suspensions of the new model use MacPherson struts as in the previous model. The basic construction and operation remain the same, but the suspension geometry and bushing have been modified to improve stability and riding comfort.



R02928

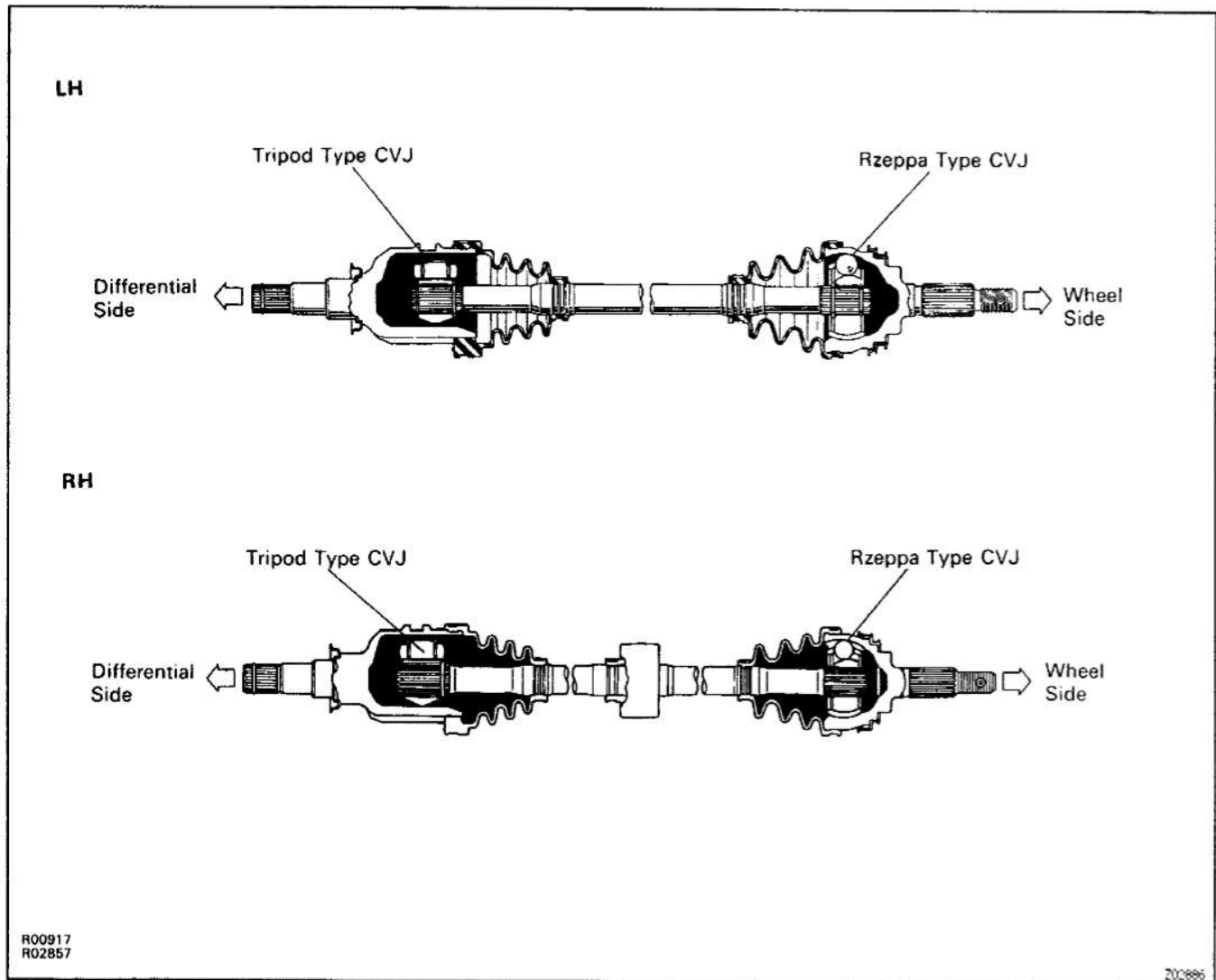
SA-50

SUSPENSION AND AXLE - REAR DRIVE SHAFT(5S-FE)

REAR DRIVE SHAFT (5S-FE)

DESCRIPTION

The drive has a tripod type CVJ (Constant Velocity Joint) on the differential side and Rzeppa type CVJ on the wheel side.



FRONT SUSPENSION

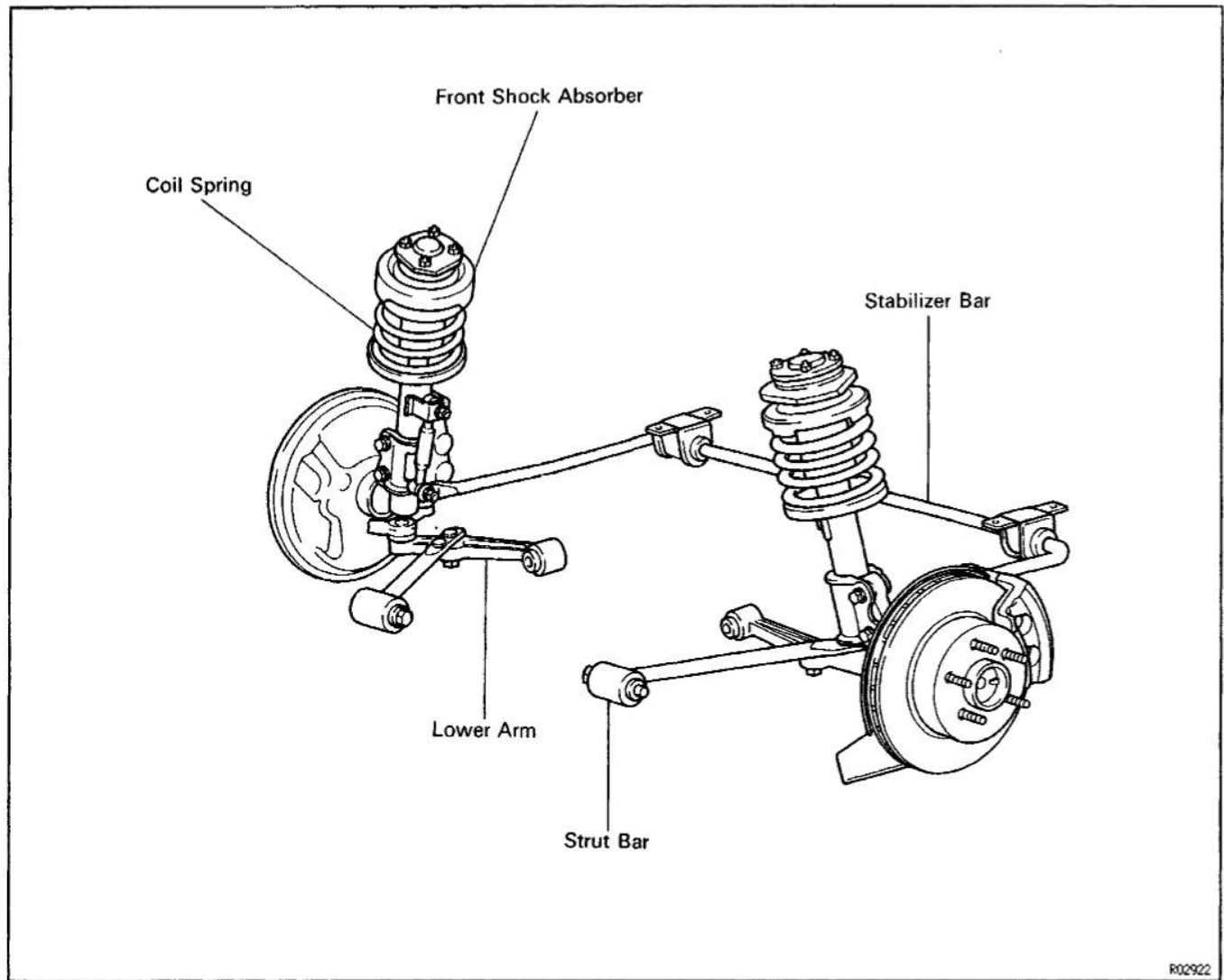
DESCRIPTION

SA084-01

The front suspension of the new model use MacPherson struts as in the previous model.

The strut bar changed the cushion type into the bushing type.

The basic construction and operation remain the same, but the suspension geometry and the bushings have been modified to improve stability and riding comfort.



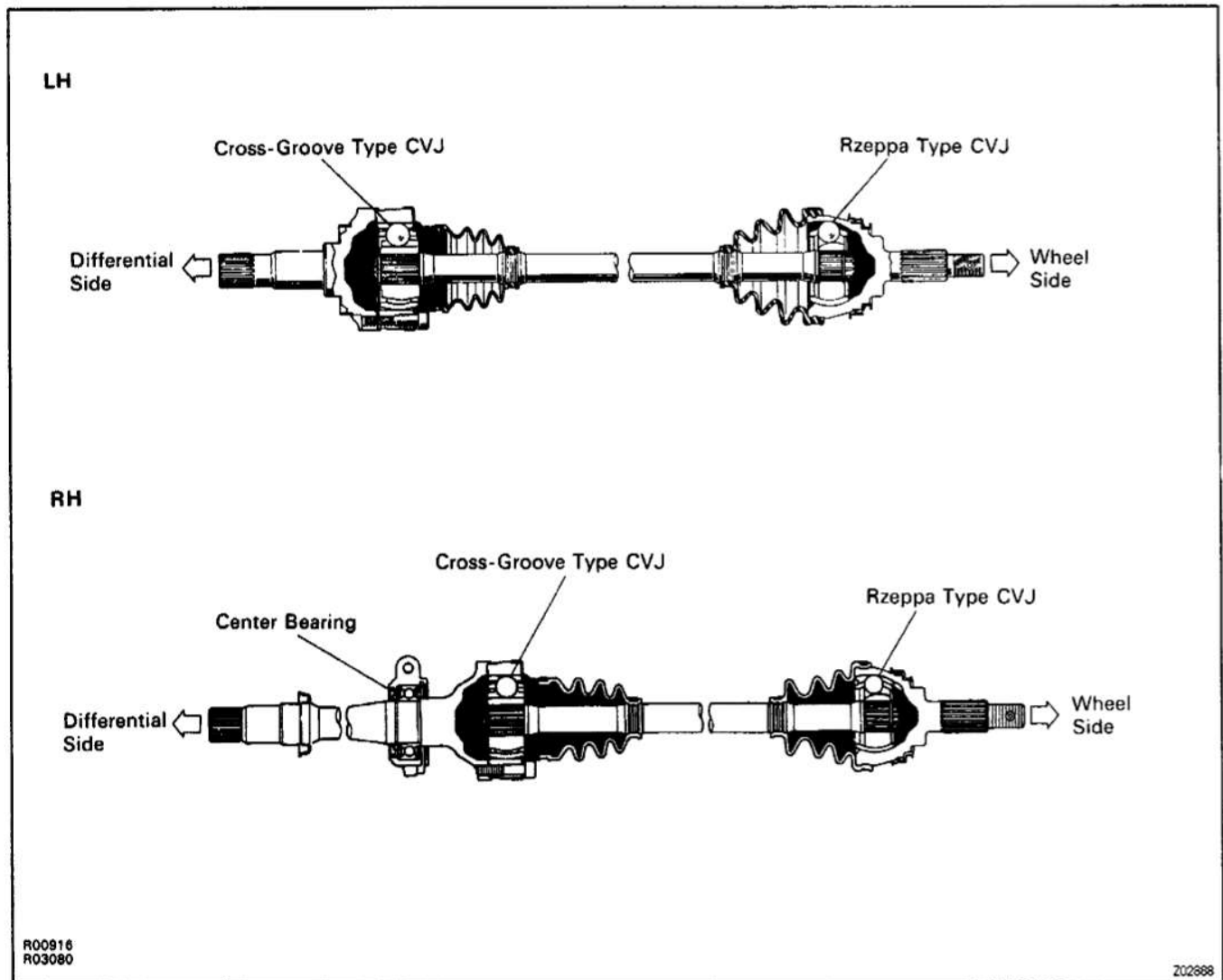
SA-66

SUSPENSION AND AXLE - REAR DRIVE SHAFT(3S-GTE)

REAR DRIVE SHAFT (3S-GTE)

DESCRIPTION

The drive shaft has a cross-groove type CVJ (Constant Velocity Joint) on the differential side and Rzeppa type CVJ on the wheel side.



SA-38

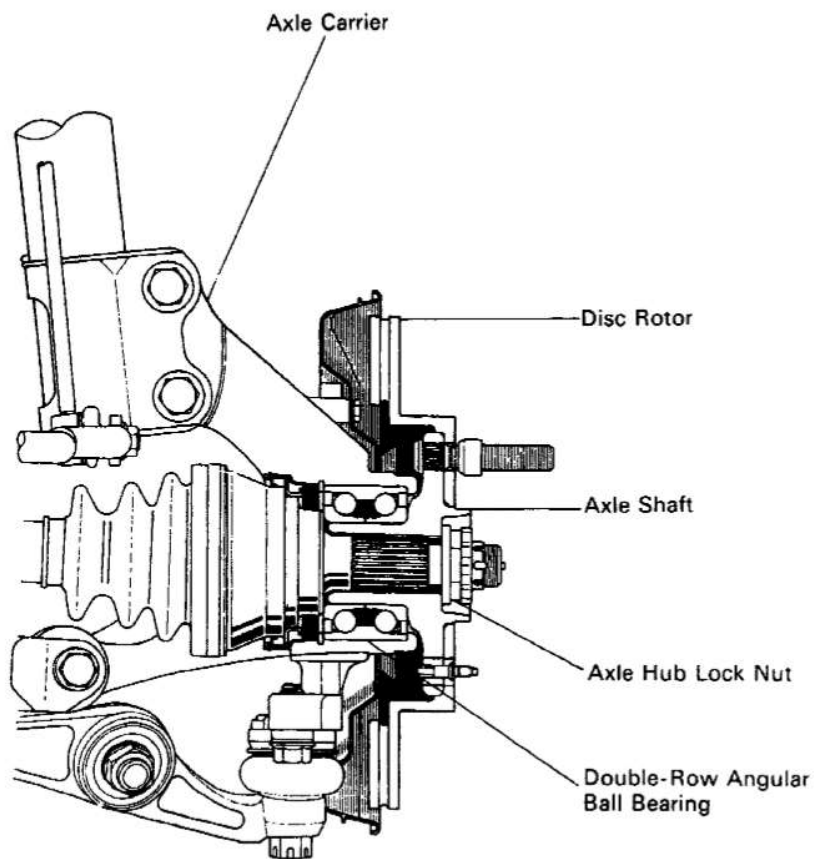
SUSPENSION AND AXLE - REAR AXLE

REAR AXLE

DESCRIPTION

The rear axle also uses oil-sealed double-row angular ball bearings for wheel bearings as the front axle.

The preload of the bearings can be determined only tightening the axle hub nut at a specified torque, improving serviceability.



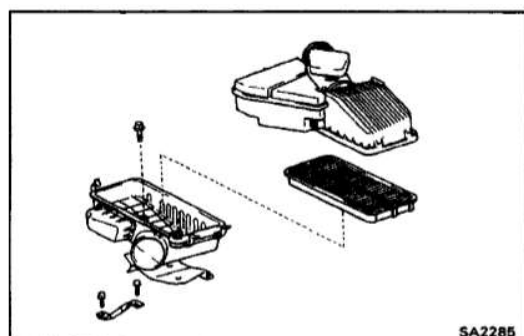
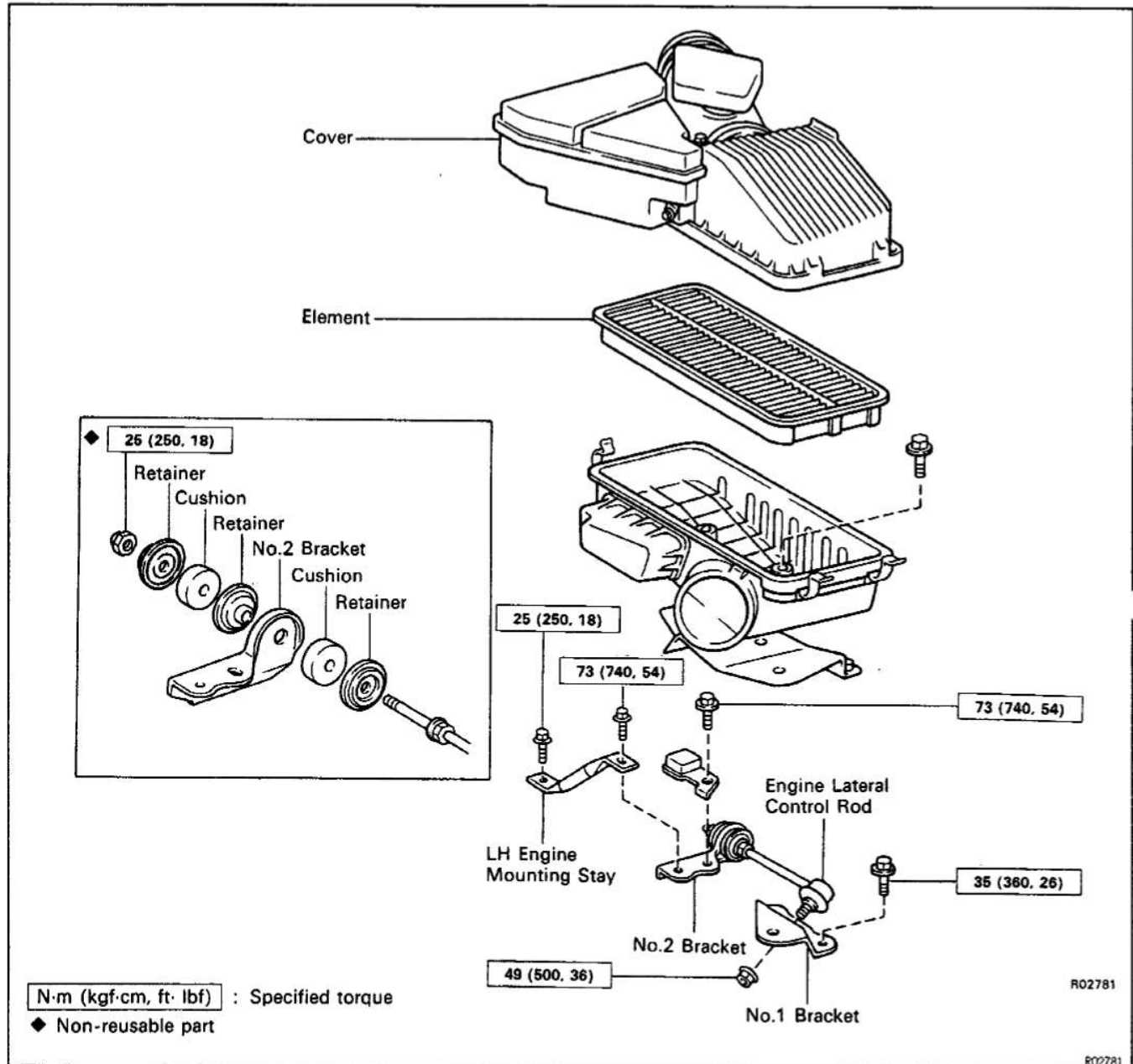
R02927

SA-110

SUSPENSION AND AXLE — REAR SUSPENSION

ENGINE LATERAL CONTROL ROD COMPONENTS

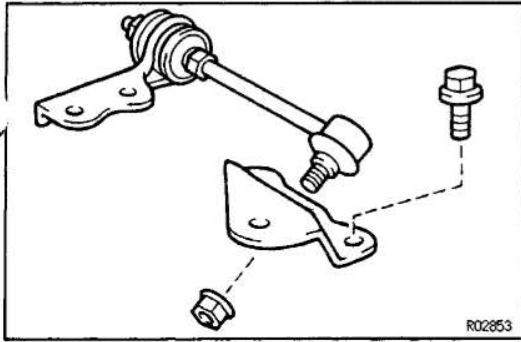
BA00L-01



ENGINE LATERAL CONTROL ROD REMOVAL

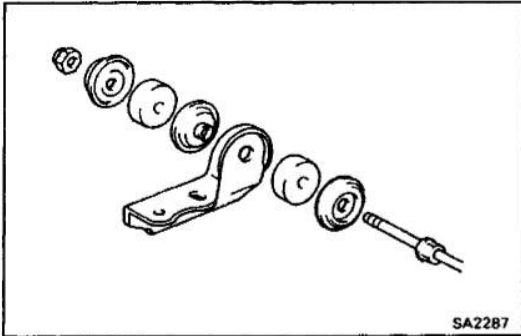
BA00M-01

1. REMOVE AIR CLEANER ASSEMBLY
2. REMOVE LH ENGINE MOUNTING STAY



3. REMOVE ENGINE LATERAL CONTROL ROD

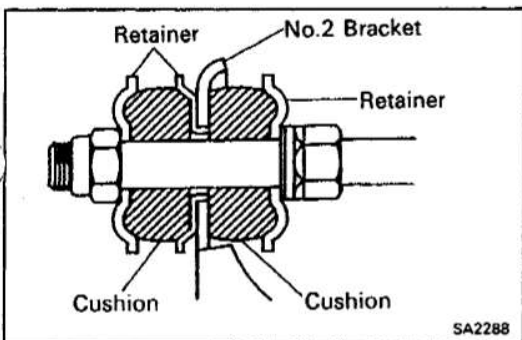
- Remove the engine lateral control rod with the No.1 and No.2 brackets.
- Remove the engine lateral control rod from the engine No.1 lateral control rod brackets.



4. DISASSEMBLY ENGINE LATERAL CONTROL ROD

Remove the following parts.

- Nut
- Three retainers
- Two cushions
- No.2 bracket

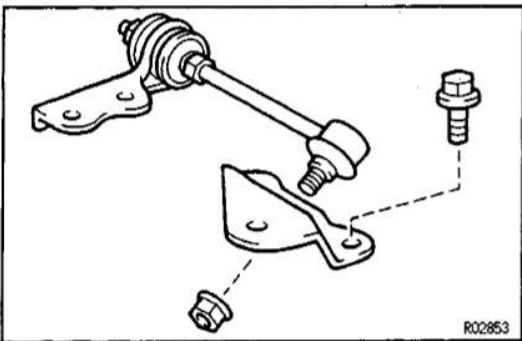


ENGINE LATERAL CONTROL ROD INSTALLATION

1. ASSEMBLE ENGINE LATERAL CONTROL ROD

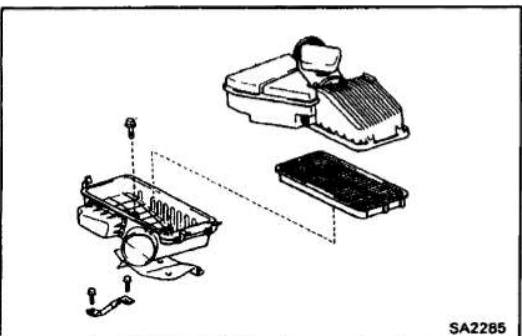
Assemble the parts in the correct direction as shown.

Torque: 25 N-m (250 kgf-cm, 18 ft-lbf)



2. INSTALL ENGINE LATERAL CONTROL ROD

- Install the No.1 bracket to the control rod.
Torque: 49 N-m (500 kgf-cm, 36 ft-lbf)
- Install the control rod in place and torque the No.1 bracket installation bolts.
Torque: 35 N-m (360 kgf-cm, 26 ft-lbf)
- Install and torque the No.2 bracket installation bolt.
Torque: 73 N-m (740 kgf-cm, 54 ft-lbf)



3. INSTALL LH ENGINE MOUNTING STAY

Torque:

No.2 bracket side **73 N-m (740 kgf-cm, 54 ft-lbf)**

Body side **25 N-m (250 kgf-cm, 18 ft-lbf)**

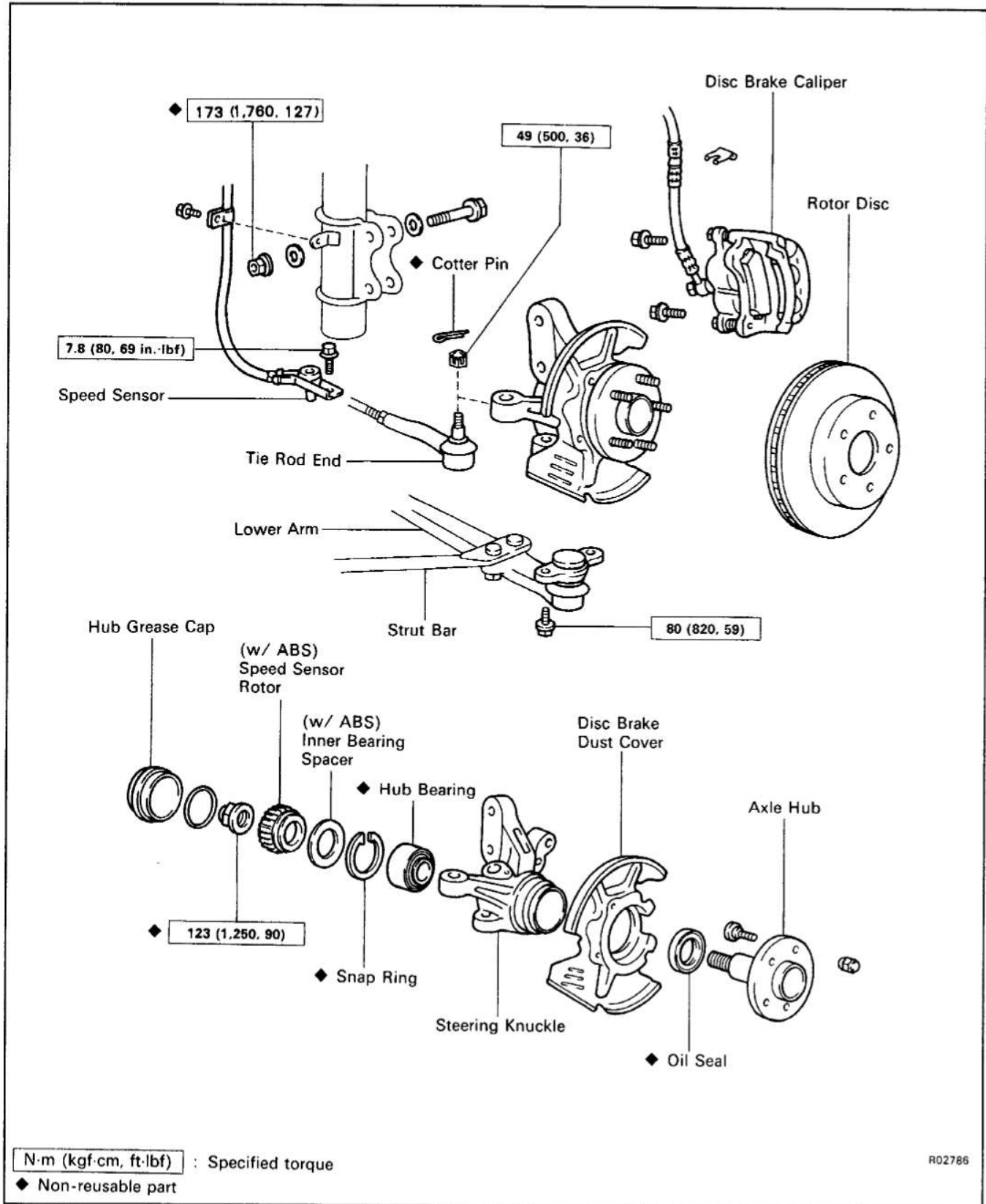
4. INSTALL AIR CLEANER ASSEMBLY

SA-10

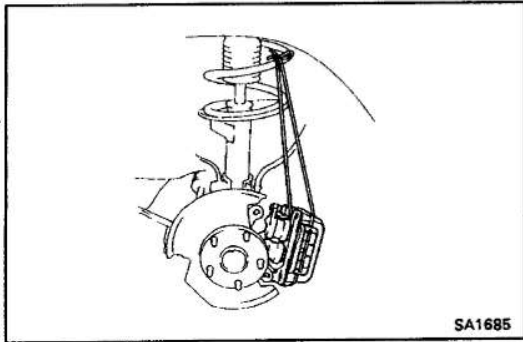
SUSPENSION AND AXLE - FRONT AXLE

FRONT AXLE HUB COMPONENTS

8AGAY-01



R02786



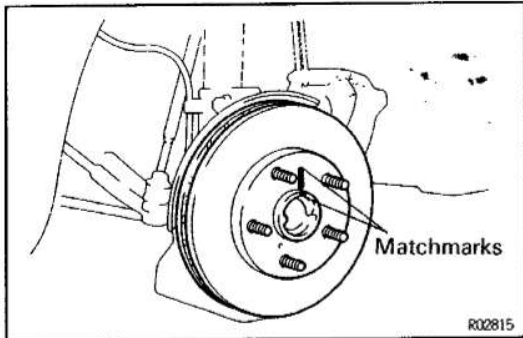
FRONT AXLE HUB REMOVAL

1. JACK UP VEHICLE AND REMOVE FRONT WHEEL

2. REMOVE BRAKE CALIPER AND ROTOR DISC

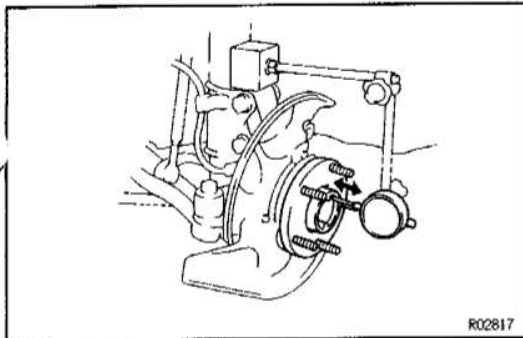
(a) Remove the two bolts.

(b) Remove the brake caliper from the steering knuckle and suspend it with wire.



(c) Remove the rotor disc.

HINT: Before removing the rotor disc, place the matchmarks on the axle hub and rotor disc.

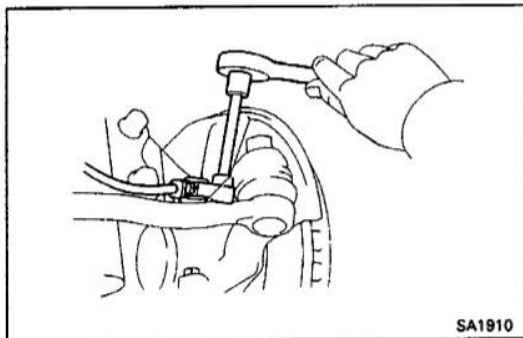


3. CHECK BEARING PLAY IN AXIAL DIRECTION

Bearing play:

0.05 mm (0.0020) or less

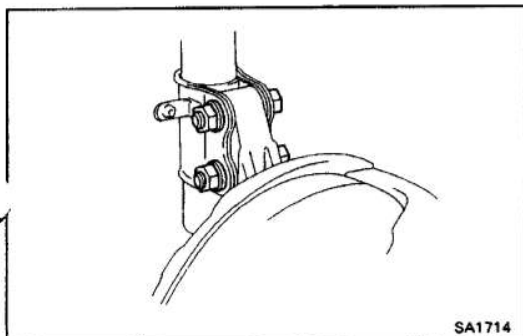
If the bearing play is greater than the maximum, replace the bearing.



4. (W/ ABS)

REMOVE SPEED SENSOR

Remove the bolt and pull out the speed sensor.



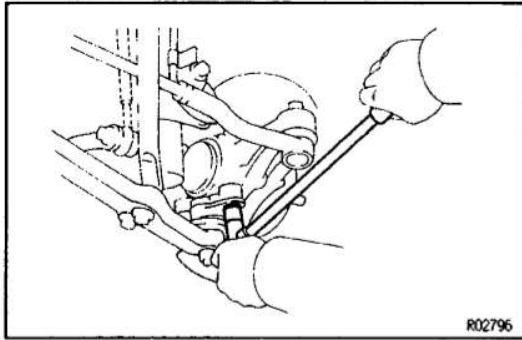
5. LOOSEN BOLTS AND NUTS OF SHOCK ABSORBER LOWER BRACKET

Loosen the nuts and bolts, and remove the washers and nuts.

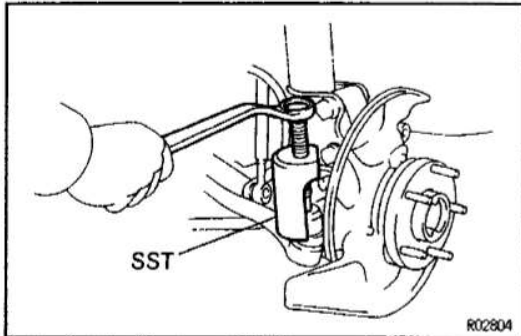
HINT: Leave the bolts not to drop the steering knuckle assembly.

SA-12

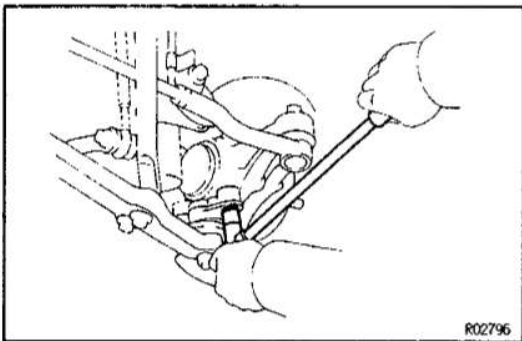
SUSPENSION AND AXLE – FRONT AXLE

**6. DISCONNECT LOWER BALL JOINT AND TIE ROD END**

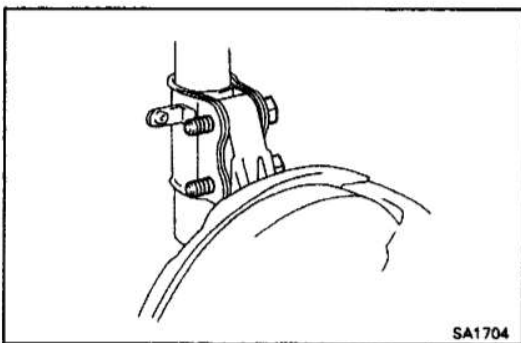
- (a) Loosen the two ball joint set bolts.
- (b) Remove the cotter pin and nut from the tie rod end.



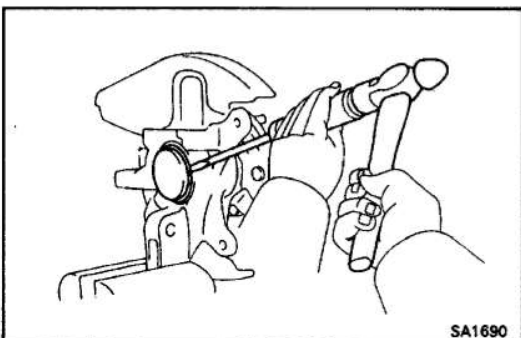
- (c) Using SST, disconnect the tie rod end from the steering knuckle.
SST 09610-20012



- (d) Remove the two bolts and ball joint from the steering knuckle.

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

Remove the two bolts and washer-s, and remove the steering knuckle.

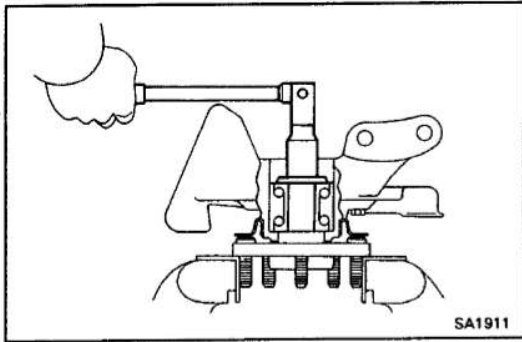
**FRONT AXLE HUB DISASSEMBLY**

SA080-01

1. REMOVE HUB BEARING CAP

- (a) Clamp the steering knuckle in a soft jaw vice.
- (b) Using a screwdriver and hammer, remove the hub bearing cap.

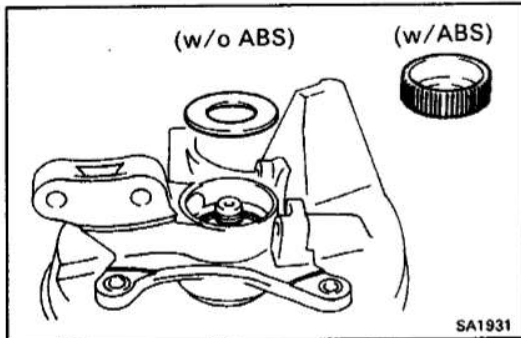
SUSPENSION AND AXLE – FRONT AXLE

**2. REMOVE FRONT AXLE HUB LOCK NUT**

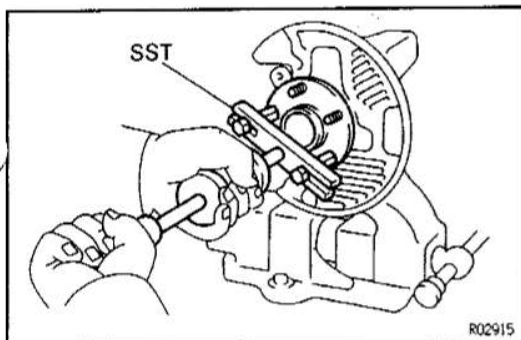
(a) Clamp the axle hub in soft jaw vice.

HINT: Close vice until it holds hub bolt. Do not tighten further.

(b) Using a hammer and chisel, loosen the staked part of the nut and remove the lock nut.

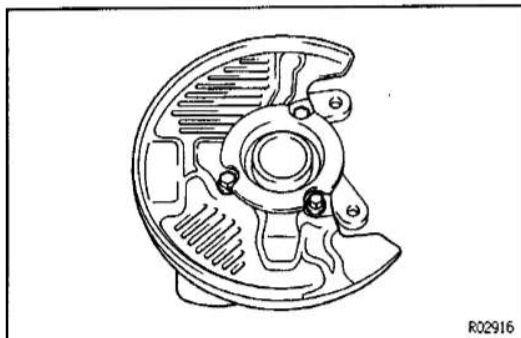
**3. (w/ ABS)****REMOVE SPEED SENSOR ROTOR**

NOTICE: Take care to not scratch the serrations of speed sensor rotor.

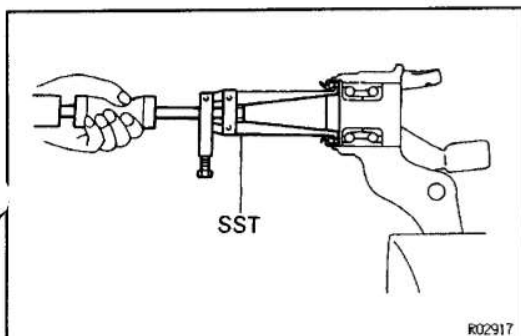
4. (w/o ABS)**REMOVE BEARING INNER SPACER****5. REMOVE AXLE HUB**

Using SST, remove the axle hub from the steering knuckle.

SST 09520-00031

**6. REMOVE DISC BRAKE DUST COVER**

Using a tor-x driver, remove the four bolts and the dust cover.

**7. REMOVE OIL SEAL**

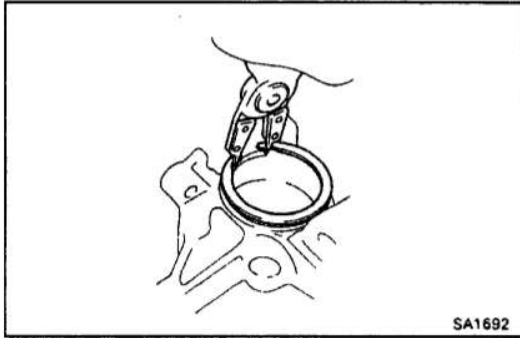
(a) Clamp the steering knuckle in a soft jaw vice.

(b) Using SST, remove the oil seal from the rear axle carrier.

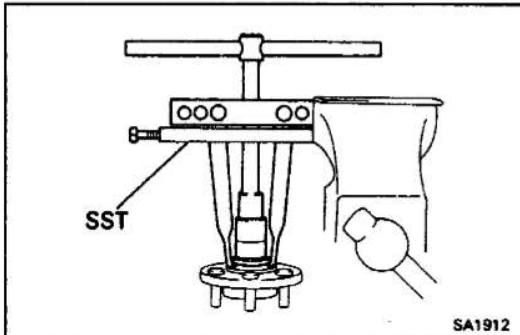
SST 09308-00010

SA-14

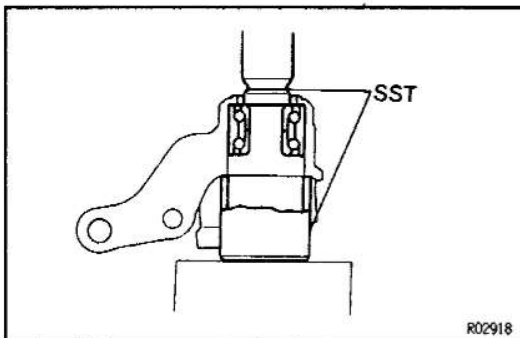
SUSPENSION AND AXLE - FRONT AXLE

**8. REMOVE HUB BEARING**

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

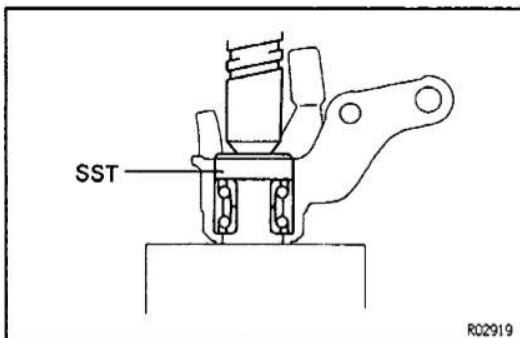


(b) Using SST, remove the hub bearing inner race (outside) from the axle hub.
SST 09950-20017



(c) First place the removed inner race (outside) in the bearing.

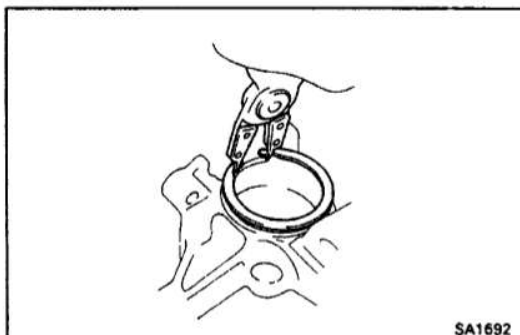
(d) Using SST, drive out the hub bearing from the steering knuckle.
SST 09608-30012 (09608-04060),
09649-17010

**FRONT AXLE HUB ASSEMBLY**

SA081-01

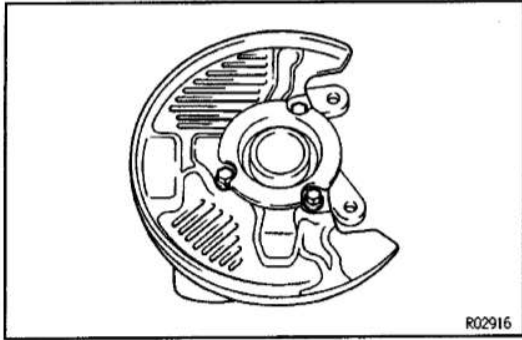
1. INSTALL HUB BEARING

(a) Using SST, install a new axle hub bearing.
SST 09608-30012 (09608-04070)



(b) Using snap ring pliers, install the hole snap ring.

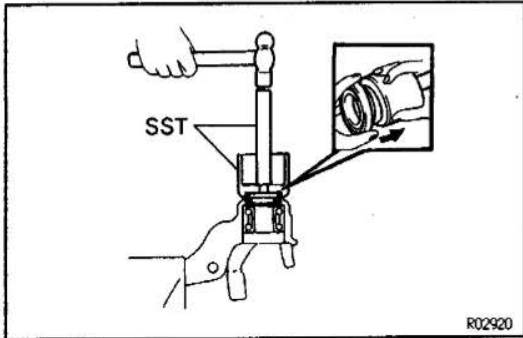
SUSPENSION AND AXLE - FRONT AXLE

**2. INSTALL DISC BRAKE DUST COVER**

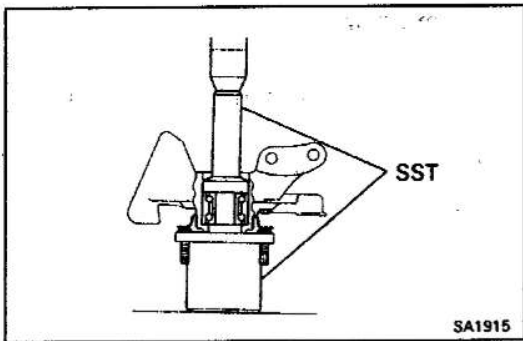
HINT: Apply liquid sealer or sealant the dust cover and steering knuckle connection before assemble.

- (a) Install the dust cover in place.
- (b) Using a torx driver, install and torque the four bolts.

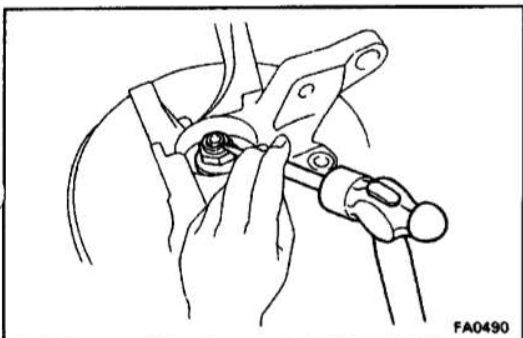
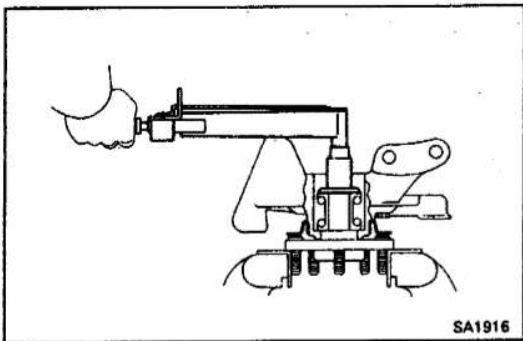
Torque: 8.3 N-m (85 kgf-cm, 74 ft-lbf)

**3. INSTALL OIL SEAL**

- (a) Rotate and insert the side lip of a new oil seal into the SST.
- (b) Using SST, drive the oil seal into the steering knuckle.
SST 09608-30012 (09608-04020),
09649-17010
- (c) Apply MP grease to the oil seal lip.

**4. INSTALL AXLE HUB**

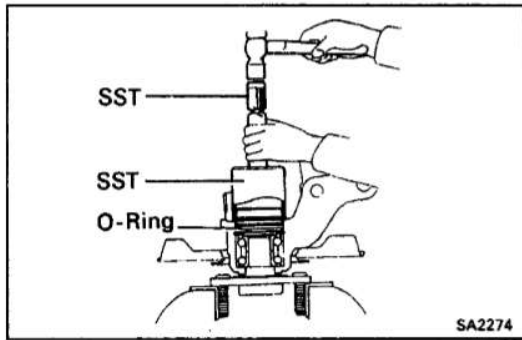
- (a) Coat the MP grease to the oil seal lip.
- (b) Install the bearing outer and inner race into the axle bearing.
- (c) Using SST, install the axle hub to the steering knuckle.
SST 09608-34012 (09608-04020)
- (d) (w/ ABS)
Install the speed sensor rotor.
NOTICE: Take care to not scratch the serrations of speed sensor rotor.
- (e) (w/o ABS)
Install the bearing inner spacer.
- (f) Install and torque a new axle hub lock nut.
Torque: 123 N-m (1,250 kgf-cm, 90 ft-lbf)



- (g) Using a hammer and punch, stake the nut.

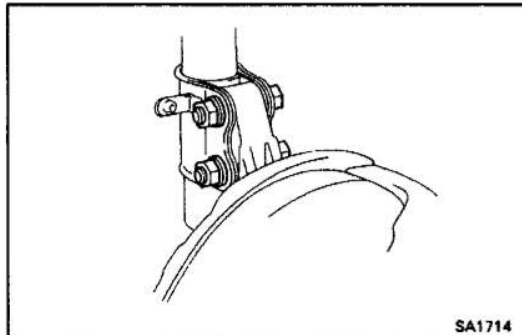
SA-16

SUSPENSION AND AXLE – FRONT AXLE

**5. INSTALL HUB GREASE CAP**

Using SST, install the hub grease cap.

SST 09608-30012 (09608-04020),
09649-17010

**FRONT AXLE HUB INSTALLATION**

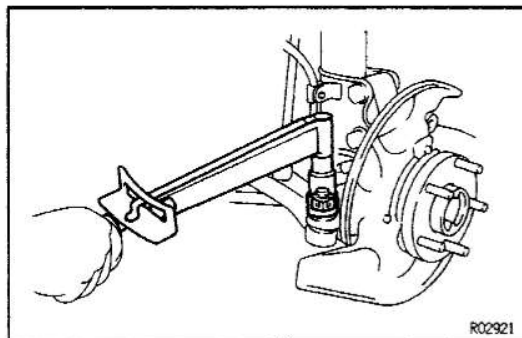
SA082-01

1. INSTALL STEERING KNUCKLE TO SHOCK ABSORBER

- (a) Connect the steering knuckle to the shock absorber lower bracket with the two washers and bolts.

HINT: Install the two bolts from the rear side.

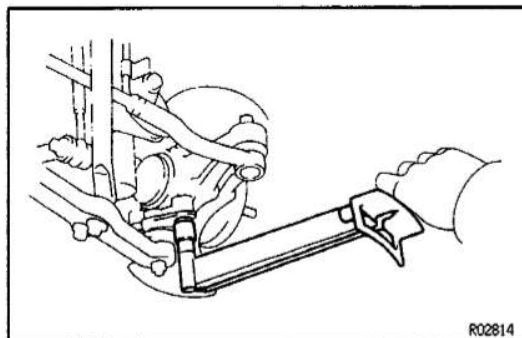
- (b) Temporarily install the washer and new nuts.

**2. CONNECT TIE ROD END TO STEERING KNUCKLE**

Torque the castle nut and secure it with a new cotter pin.

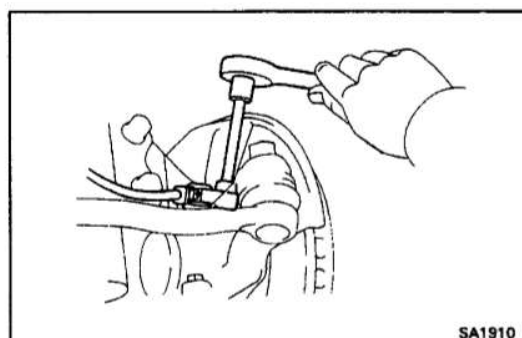
HINT: If the hole in the ball joint is not aligned with the grooves of the nut, tighten the nut until they match.

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

**3. TORQUE STEERING KNUCKLE TO BALL JOINT**

Install and torque the two bolts.

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

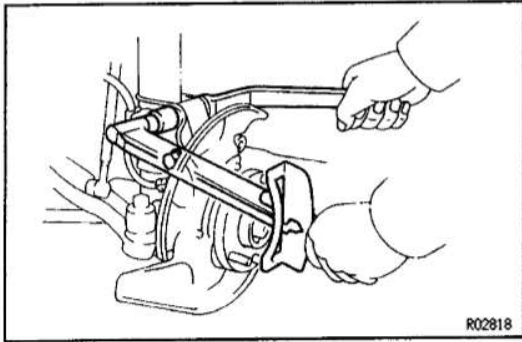
**4. (w/ ABS)****INSTALL SPEED SENSOR**

Install the speed sensor in place, then install and torque toe bolt.

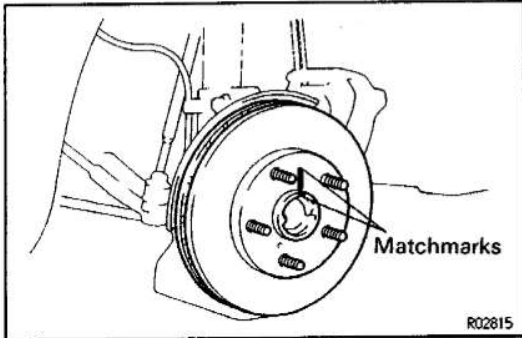
HINT: Before installing, check that there is no ferric chip or foreign material on the sensor tip.

Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)

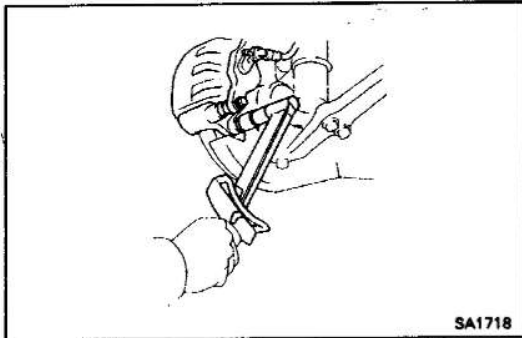
SUSPENSION AND AXLE – FRONT AXLE

**5. TORQUE STEERING KNUCKLE TO SHOCK ABSORBER**

Torque: 173 N-m (1,760 kgf-cm, 127 ft-lbf)

**6. INSTALL ROTOR DISC TO AXLE HUB**

HINT: Before removing the rotor disc, place the matchmarks on the axle hub and rotor disc.

**7. INSTALL DISC BRAKE CALIPER TO STEERING KNUCKLE**

Install and torque the two bolts.

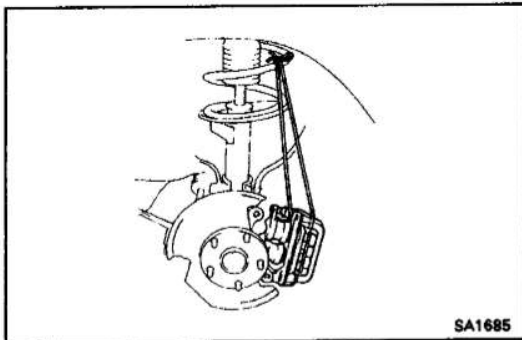
Torque: 88 N-m (900 kgf-cm, 66 ft-lbf)

8. INSTALL FRONT WHEEL AND LOWER VEHICLE

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

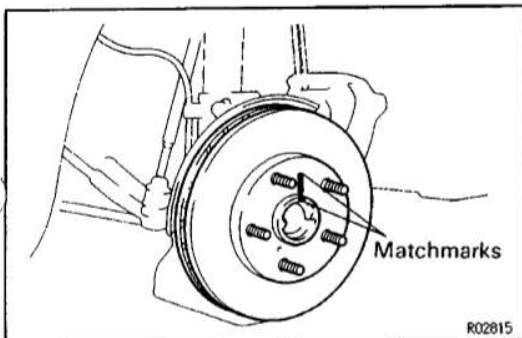
9. CHECK FRONT WHEEL ALIGNMENT

(See page [SA-3](#))

**FRONT AXLE HUB BOLT REPLACEMENT****1. JACK UP VEHICLE AND REMOVE FRONT WHEEL****2. REMOVE BRAKE CALIPER**

(a) Remove the two bolts.

(b) Remove the brake caliper from the steering knuckle and suspend it with a wire.

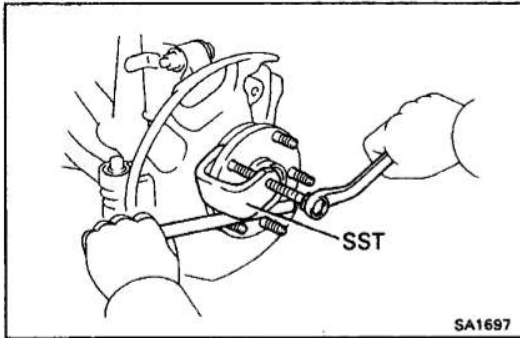
**3. REMOVE ROTOR DISC**

Remove the rotor disc.

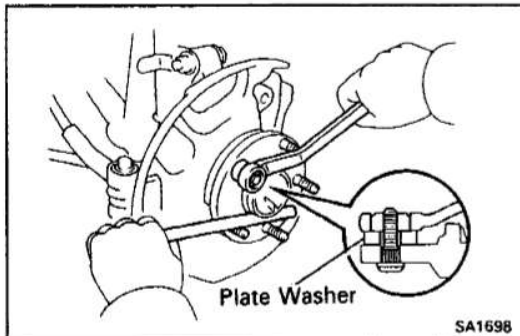
HINT: Before removing the rotor disc, place the matchmarks on the axle hub and rotor disc.

SA-18

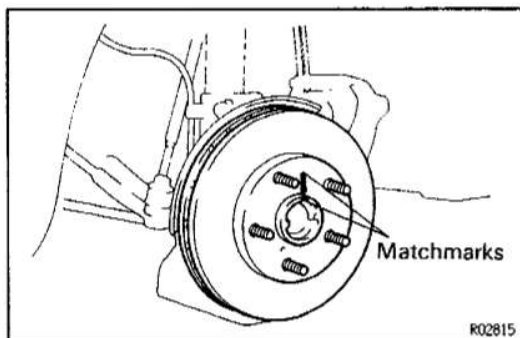
SUSPENSION AND AXLE – FRONT AXLE

**4. REMOVE FRONT AXLE HUB BOLT**

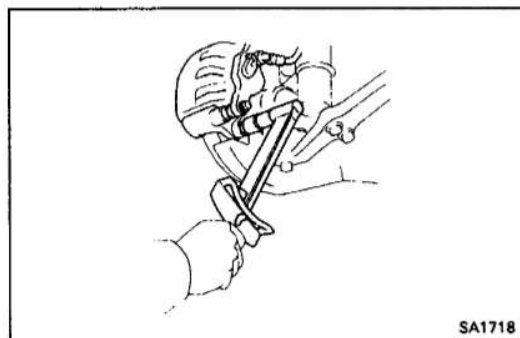
- (a) Align the disc brake dust cover cutting portion and axle hub bolt.
- (b) Using SST, remove the axle hub bolt.
SST 09628-1001 1

**5. INSTALL FRONT AXLE HUB BOLT**

- (a) Install a new hub bolt from the backing plate side.
- (b) Install the suitable washer and nut.
- (c) Tighten the nut, while holding the axle hub.

**6. INSTALL ROTOR DISC**

Align the matchmarks and install the rotor disc to the axle hub.

**7. INSTALL DISC BRAKE CALIPER TO STEERING KNUCKLE**

Install and torque the two bolts.

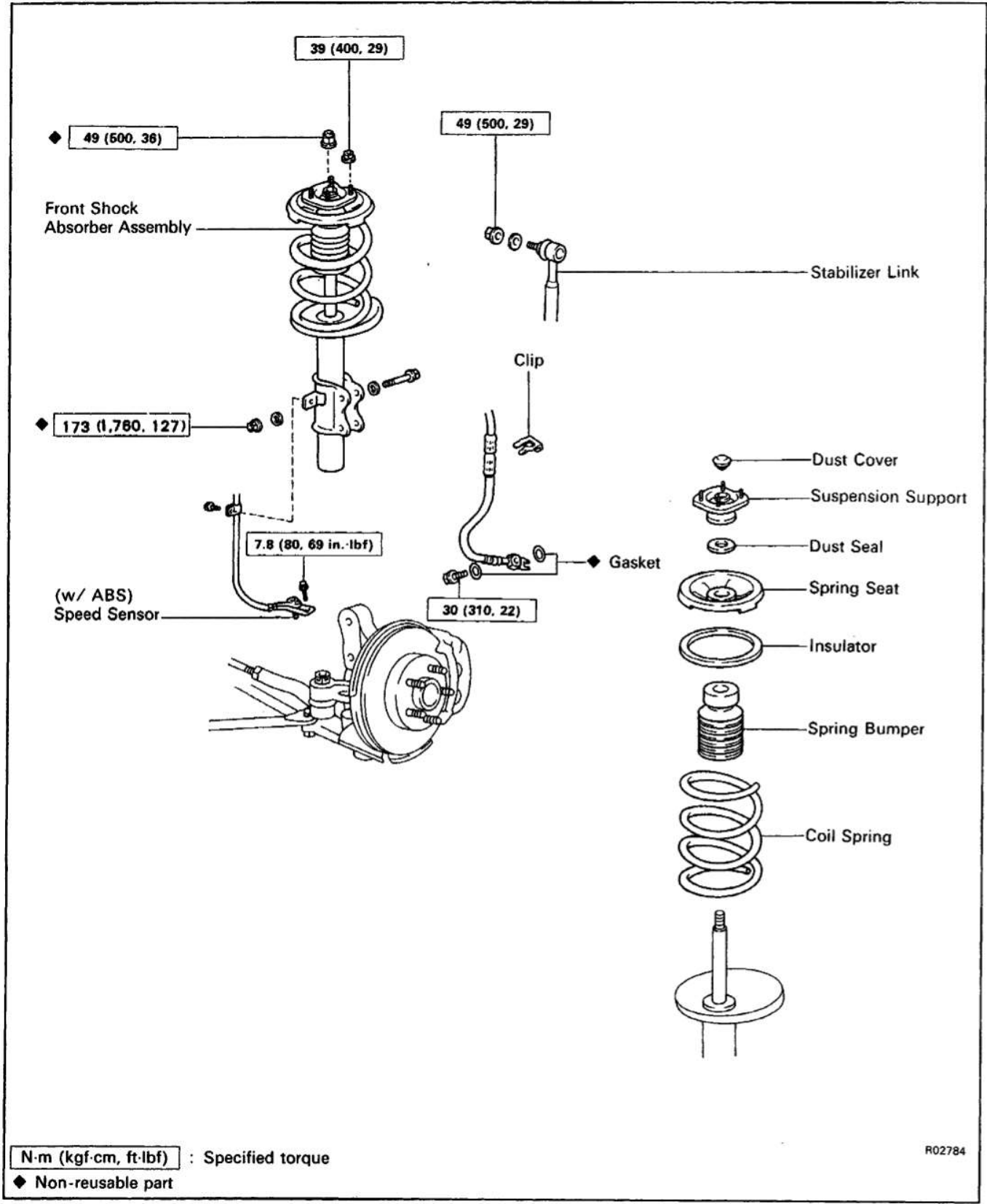
Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

8. INSTALL FRONT WHEEL AND LOWER VEHICLE

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

FRONT SHOCK ABSORBER
COMPONENTS

SA098-01



SA-22

SUSPENSION AND AXLE – FRONT SUSPENSION

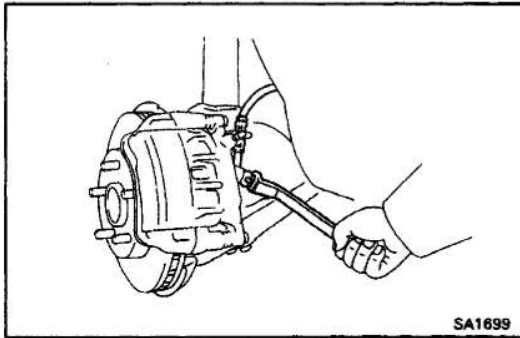
FRONT SHOCK ABSORBER ASSEMBLY REMOVAL

1. JACK UP VEHICLE AND REMOVE FRONT WHEEL

2. DISCONNECT BRAKE HOSE

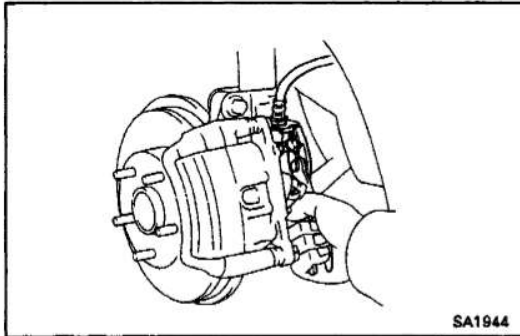
- (a) Remove the union bolt and two gaskets, and disconnect the brake hose from the disc brake caliper.

HINT: Drain the brake fluid into a container.



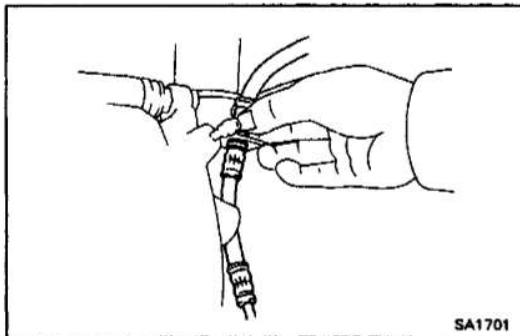
SA1699

- (b) Remove the clip from the brake hose.



SA1944

- (c) Pull off the brake hose from the brake hose bracket.

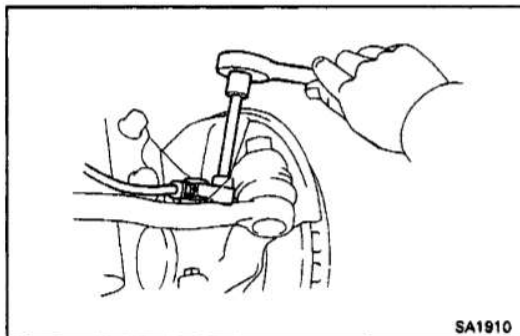


SA1701

3. (w/ ABS)

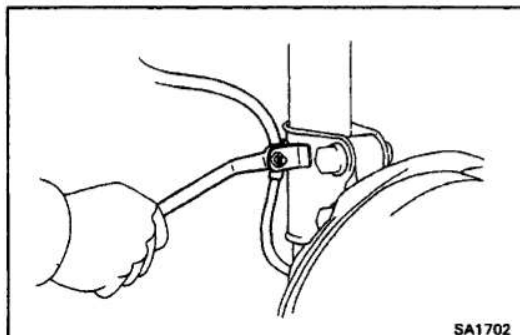
REMOVE SPEED SENSOR AND WIRE HARNESS CLAMP

- (a) Remove the bolt and pull out the speed sensor.



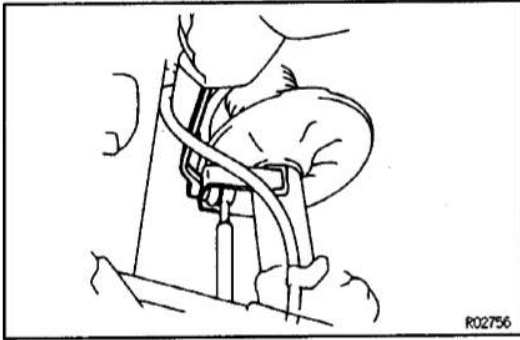
SA1910

- (b) Remove the speed sensor wire harness clamp bracket bolt.



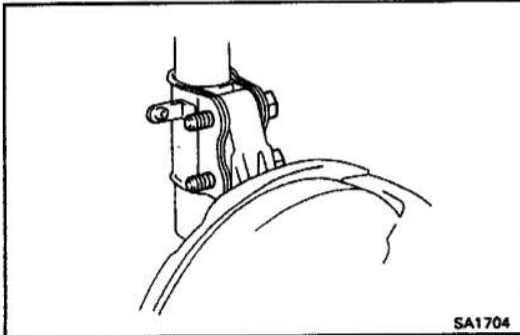
SA1702

SUSPENSION AND AXLE - FRONT SUSPENSION

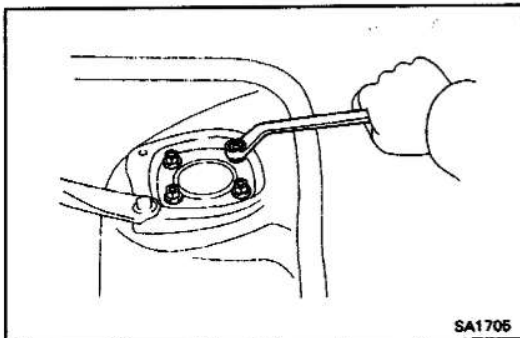
**4. DISCONNECT STABILIZER LINK**

Disconnect the stabilizer link from the shock absorber.

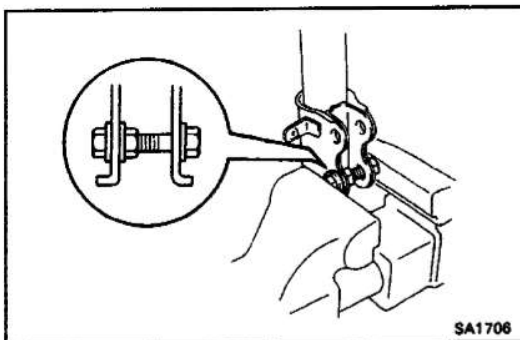
HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

**5. DISCONNECT SHOCK ABSORBER FROM STEERING KNUCKLE**

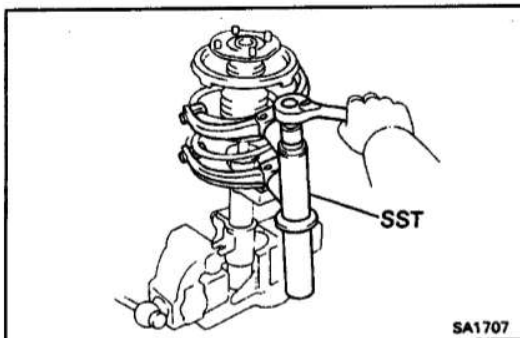
Remove the washers, bolts and nuts, disconnect the shock absorber from the steering knuckle.

**6. REMOVE SHOCK ABSORBER FROM BODY**

- (a) Remove the four nuts holding the top of the suspension support.
- (b) Remove the shock absorber from the body.

**7. CLAMP SHOCK ABSORBER IN VISE**

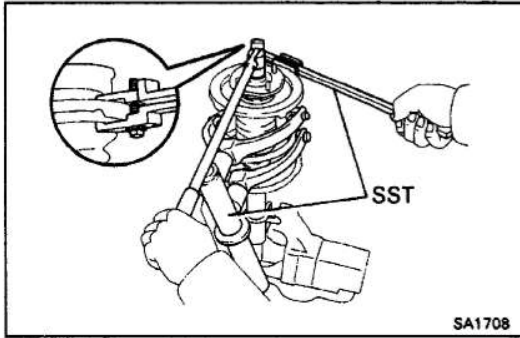
Install a bolt and two nuts to the bracket at the lower portion of the shock absorber shell and secure it in a vise.

**8. REMOVE COIL SPRING**

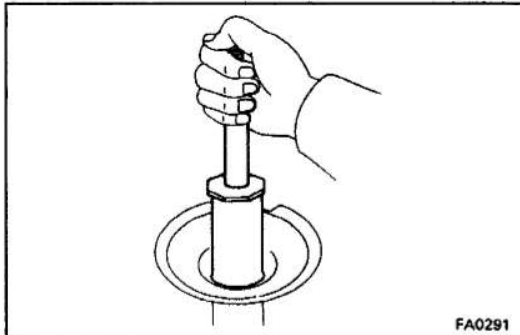
- (a) Using SST, compress the coil spring.
SST 09727-00045, 09727-30020

SA-24

SUSPENSION AND AXLE – FRONT SUSPENSION



- (b) Remove the dust cover.
- (c) Using SST, hold the spring seat so that it will not turn, and remove the nut.
SST 09729-22031
- (d) Remove the suspension support, dust seal, spring seat, spring, insulators and bumper.



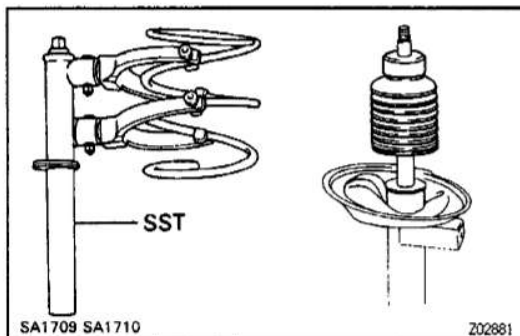
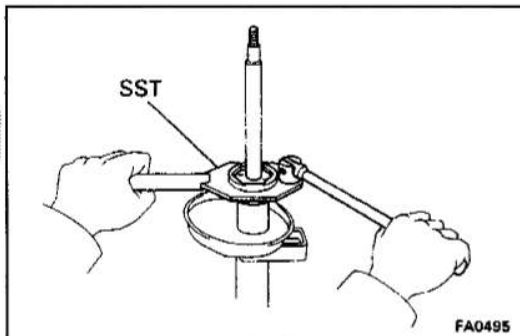
FRONT SHOCK ABSORBER ASSEMBLY INSPECTION

INSPECT OPERATION OF SHOCK ABSORBER

- (a) While pushing rod, check that the pull throughout the stroke is even, and there is no abnormal resistance or noise.
 - (b) Push the piston rod in fully and release it. Check that it returns at a constant speed throughout.
- If the absorber operation is defective, replace the absorber, as and assembly.

NOTICE: Before discarding the shock absorber, first loosen the ring nut 2 or 3 turns with SST to release the gas completely.

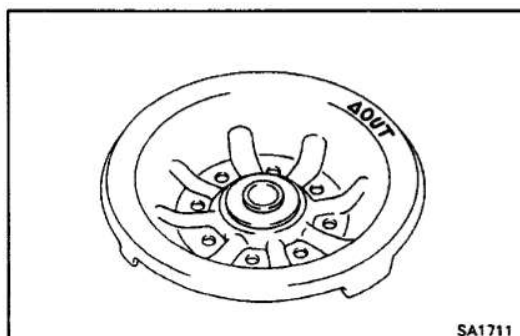
SST 09720-00012



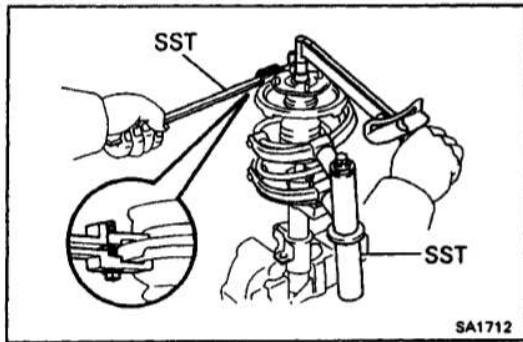
FRONT SHOCK ABSORBER ASSEMBLY INSTALLATION

1. INSTALL BUMPER COIL SPRING, SPRING SEAT AND DUST SEAL

- (a) Using SST, compress the coil spring.
SST 09727-00045, 09727-30020
- (b) Install the bumper to the piston rod.
- (c) Align the coil spring end with the lower seat hollow and install.
- (d) Face the "OUT" mark of the spring seat toward the outside of the vehicle, and install it.
- (e) Install the dust seal on the spring seat.
- (f) Install the suspension support.



SUSPENSION AND AXLE - FRONT SUSPENSION

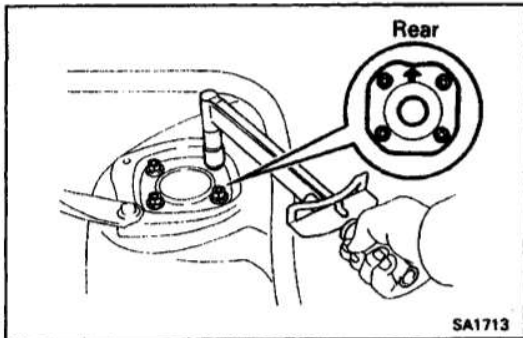


- (g) Using SST, install and torque a new suspension support nut.

SST 09729-22031

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

- (h) Install the dust cover.

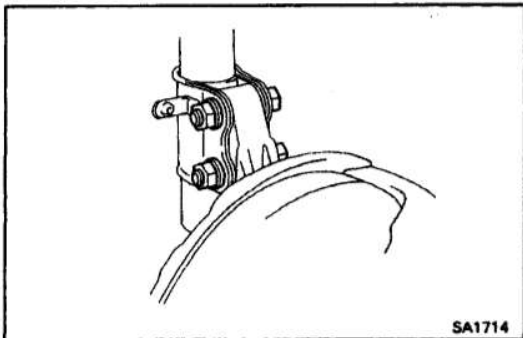


2. INSTALL SHOCK ABSORBER ASSEMBLY TO BODY

Install the four bolts holding the shock absorber to the body. Torque the nuts.

HINT: install the shock absorber with the hollow part to the rearward.

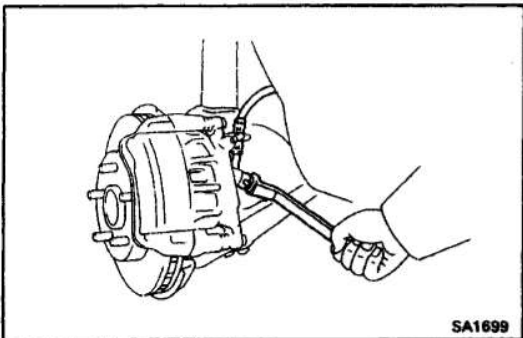
Torque: 39 N-m (400 kgf-cm, 29 ft-lbf)



3. CONNECT SHOCK ABSORBER TO STEERING KNUCKLE

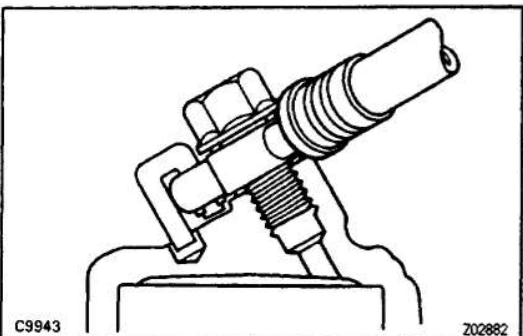
- (a) Connect the steering knuckle to the shock absorber.
 (b) Install the washers and bolts from the rear side.
 (c) Install the two washers and nuts.

Torque: 173 N-m (1,760 kgf-cm, 127 ft-lbf)



4. CONNECT BRAKE HOSE

- (a) Run the brake hose through the brake hose bracket.

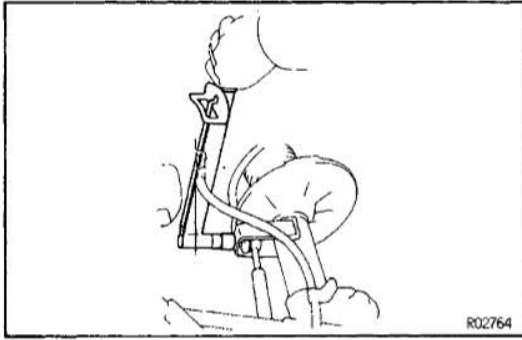


- (b) Connect the brake hose through the disc brake caliper with the union and new gaskets.

Torque: 30 N-m (310 kgf-cm, 22 ft-lbf)

SA-26

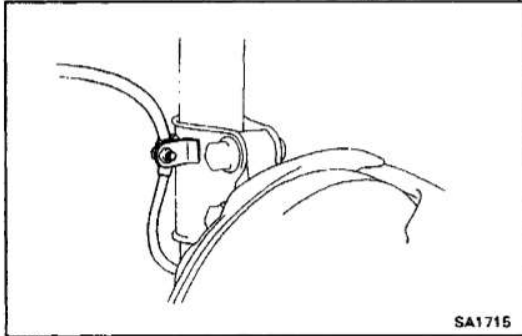
SUSPENSION AND AXLE – FRONT SUSPENSION

**5. CONNECT STABILIZER LINK**

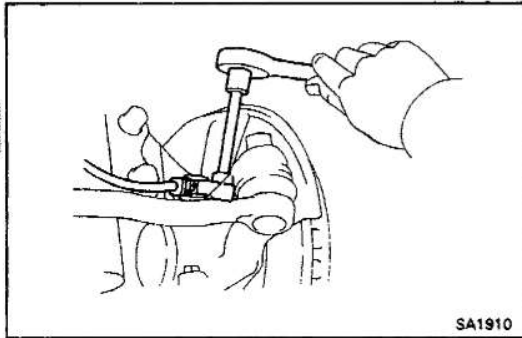
Connect the stabilizer link to the shock absorber with the washer and nut.

HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold stud.

Torque: 64 N-m (650 kgf-cm, 47 ft-lbf)

**6. (w/ ABS)****INSTALL WIRE HARNESS CLAMP AND SPEED SENSOR**

(a) Install the speed sensor wire harness clamp to the shock absorber with the bolt.



(b) Install the speed sensor to the axle carrier with the bolt.

Torque: 7.8 N-m (80 kgf-cm, 69 ft-lbf)

7. BLEED BRAKE SYSTEM

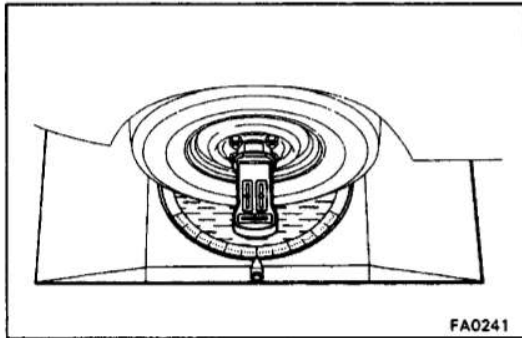
(See page [BR-9](#))

8. INSTALL FRONT WHEEL AND LOWER VEHICLE**9. CHECK FRONT WHEEL ALIGNMENT**

(See page [SA-3](#))

SA-4

SUSPENSION AND AXLE – WHEEL ALIGNMENT

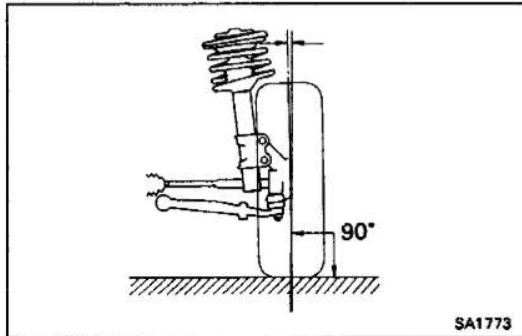


FRONT WHEEL ALIGNMENT

FRONT WHEEL ALIGNMENT INSPECTION AND ADJUSTMENT

1. INSTALL WHEEL ALIGNMENT EQUIPMENT

Follow the specific instructions of the equipment manufacturer.



2. INSPECT CAMBER

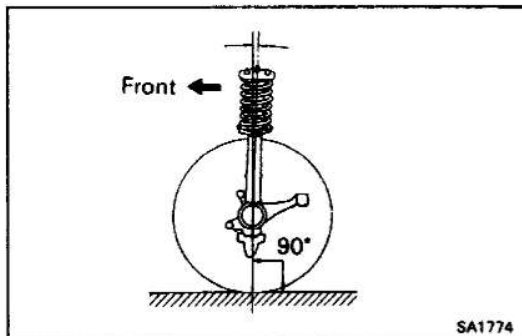
Camber:

$-1^{\circ}00' \pm 45'$

Cross camber:

30' or less

HINT: Camber is not adjustable, if measurement is not within specification, inspect and replace the suspension parts as necessary.



3. INSPECT CASTER

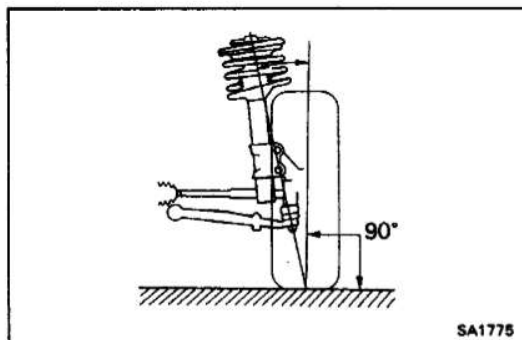
Caster:

$2^{\circ}50' \pm 45'$

Cross caster:

30' or less

HINT: Caster is not adjustable, if measurement is not within specification, inspect and replace the suspension parts as necessary.

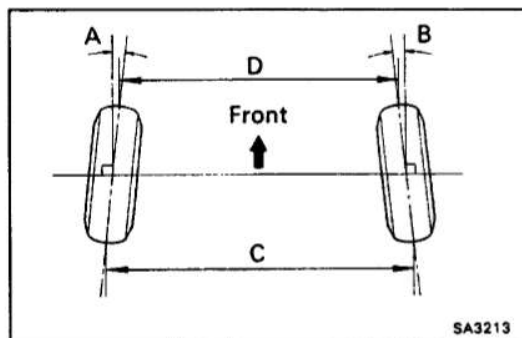


4. INSPECT STEERING AXIS INCLINATION

Steering axis inclination:

$13^{\circ}50' \pm 45'$

HINT: Steering axis inclination is not adjustable, if measurement is not within specification, inspect and replace the suspension parts as necessary.



5. INSPECT TOE-IN

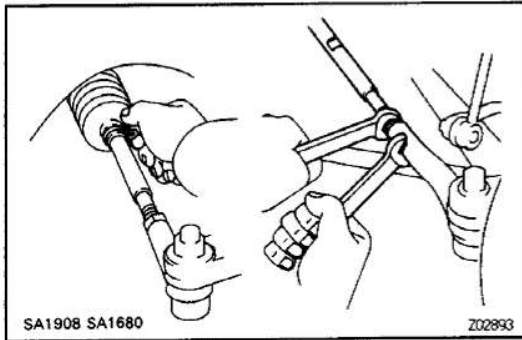
Toe-in (total):

$A+B 0.1^{\circ} \pm 0.2^{\circ}$

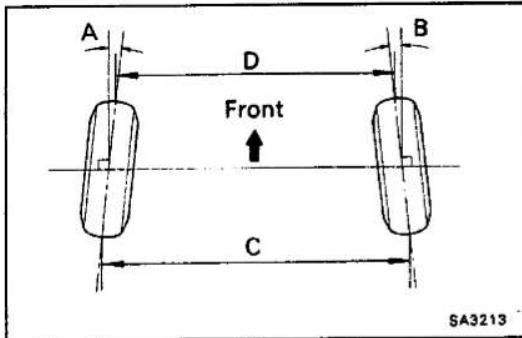
$(C-D 1 \pm 2 \text{ mm}, 0.04 \pm 0.08 \text{ in.})$

If toe-in is not within specification, adjust by the tie rod end.

SUSPENSION AND AXLE - WHEEL ALIGNMENT

**6. ADJUST TOE-IN**

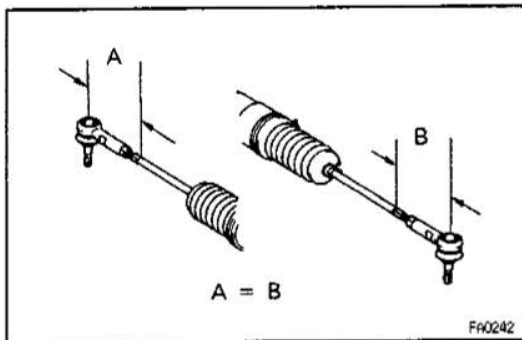
- Remove the boot clips.
- Loosen tie rod end lock nut.
- Turn the left and right tie rod ends an equal amount to adjust the toe-in.



Toe-in (total):

$$A + 13 \text{ } 0.1^{\circ} \pm 0.1^{\circ}$$

$$(C - D \text{ } 1 \pm 1 \text{ mm, } 0 \pm 0.08 \text{ in.})$$



HINT: Insure that the lengths of the left and right tie rod ends are the same.

Tie rod end length left-right error:

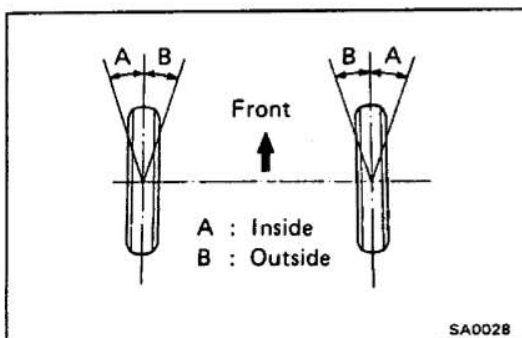
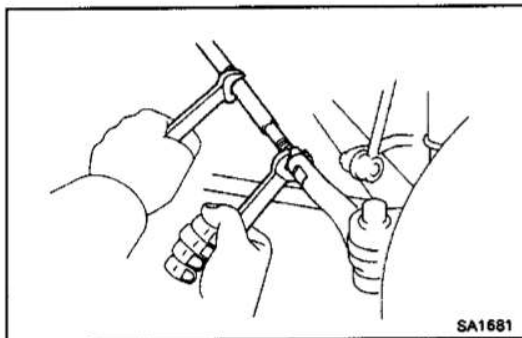
$$1.0 \text{ mm } (0.039 \text{ in.}) \text{ or less}$$

- Torque the tie rod end lock nuts.

Torque: 47 N-m (480 kgf-cm, 35 ft-lbf)

- Place the boot on the seat and clamp it.

HINT: Insure that the boots are not twisted.

**7. CHECK WHEEL ANGLE**

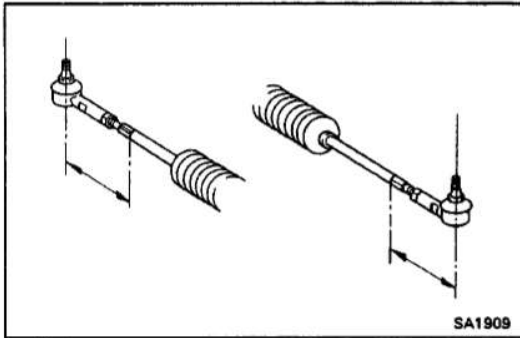
Wheel Angle (Maximum):

$$\text{Inside wheel } 37^{\circ} 00' \pm 1^{\circ} 30'$$

$$\text{Outside wheel } 32^{\circ}$$

SA-6

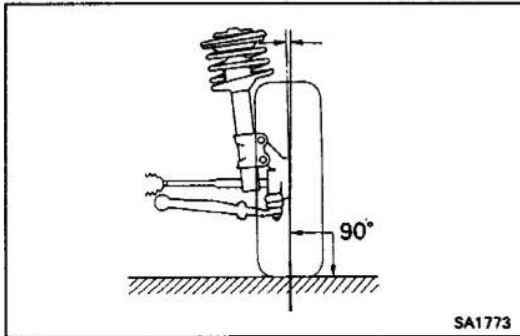
SUSPENSION AND AXLE - WHEEL ALIGNMENT



If wheel angles differ from the standard specifications, check to see if the lengths of the left and right tie rods are the same.

HINT: If the rod lengths are not equal, the wheel angle cannot be adjusted properly.

If the tie rod lengths were changed to adjust the wheel angle, inspect the toe-in.



REAR WHEEL ALIGNMENT

REAR WHEEL ALIGNMENT INSPECTION AND ADJUSTMENT

1. INSPECT CAMBER

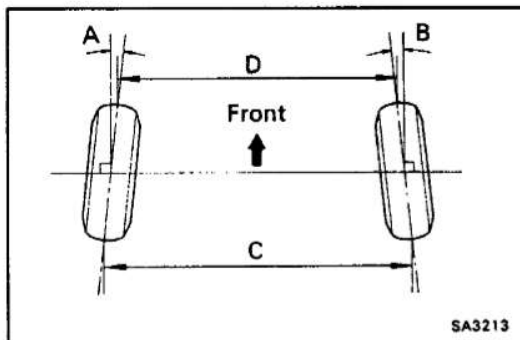
Camber:

$-1^{\circ}35' \pm 45'$

Cross camber:

30' or less

HINT: Camber is not adjustable, if measurement is not within specification, inspect and replace the suspension parts as necessary.



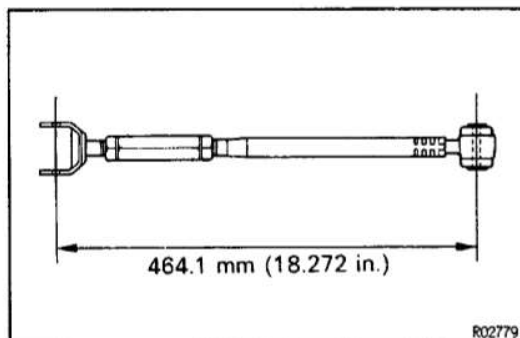
2. INSPECT TOE-IN

Toe-In (total):

$A+13 \ 0.6^{\circ} \pm 0.1^{\circ}$

$(C-D \ 6 \pm 1 \text{ mm } (0.24 \pm 0.04 \text{ in.}))$

If toe-in is not within specification adjust it.



3. ADJUST TOE-IN

(a) Measure the lengths of the left and right suspension arms to see that the lengths are equal.

If not equal, adjust following the procedures below.

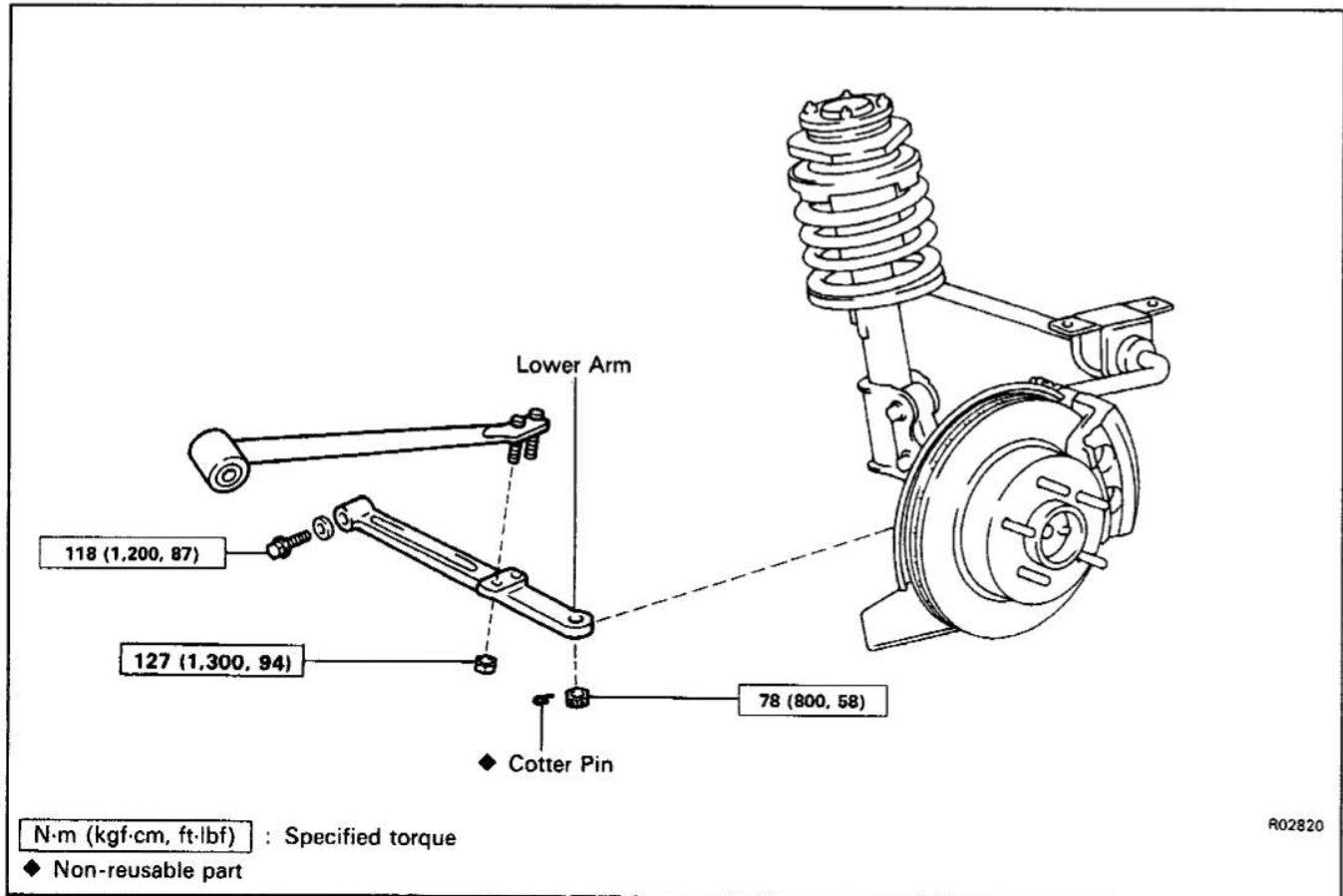
- If the toe-in is less than standard, shorten the tie rod by turning the tie rod tube.
- If the toe-in is greater than standard, lengthen the tie rod by turning the tie rod tube.

SA-30

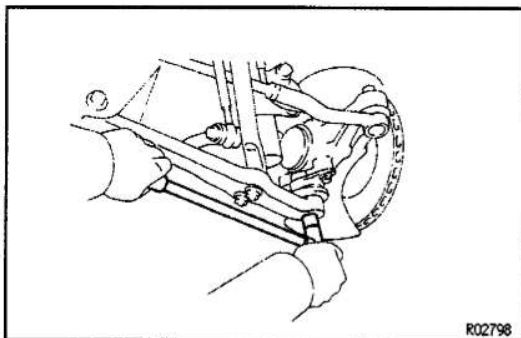
SUSPENSION AND AXLE - FRONT SUSPENSION

LOWER SUSPENSION ARM COMPONENTS

BA08H-01



BA08J-01

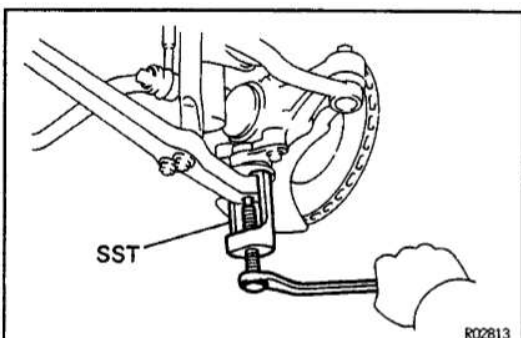


LOWER ARM REMOVAL

1. JACK UP VEHICLE AND REMOVE FRONT WHEEL

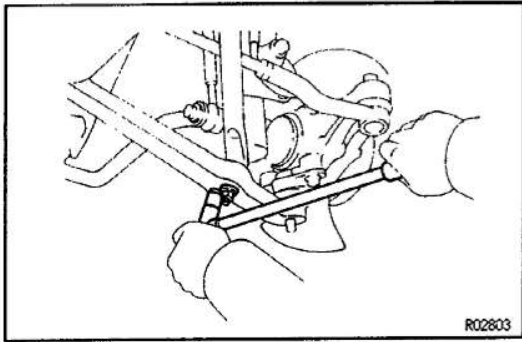
2. DISCONNECT LOWER ARM FROM BALL JOINT

(a) Remove the cotter pin and castle nut.



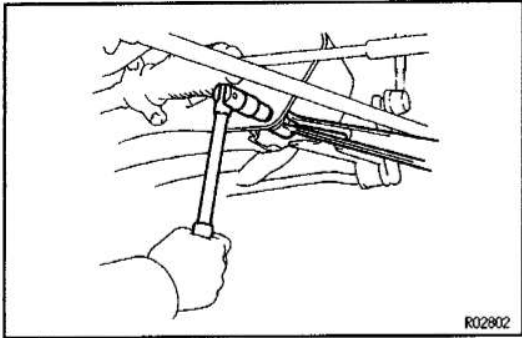
(b) Using SST, disconnect the lower arm from the ball joint.

SST 09610-20012



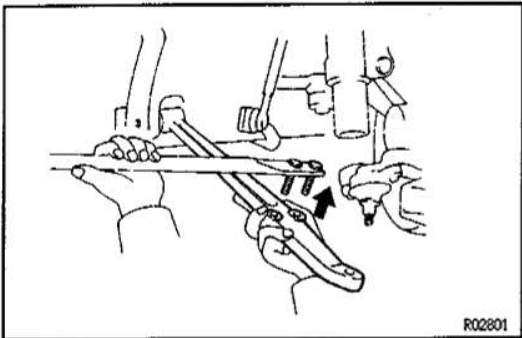
3. DISCONNECT STRUT BAR FROM LOWER ARM

Remove the two nuts and disconnect the strut bar from the lower arm.



4. REMOVE LOWER ARM

- (a) Remove the bolt and washer.
- (b) Remove the lower arm from the body.

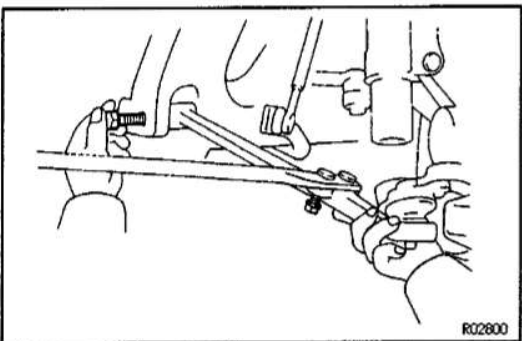


LOWER ARM INSTALLATION

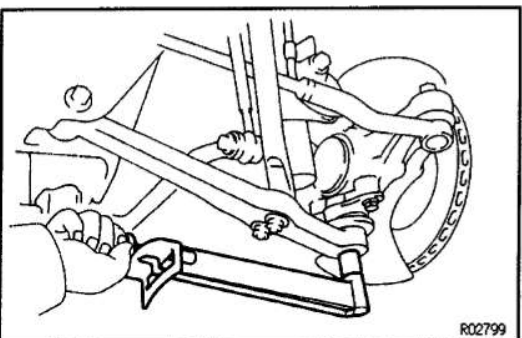
BA09K-01

1. INSTALL LOWER ARM

- (a) Temporarily install the strut bar to the lower arm with the nuts.



- (b) Temporarily install the lower arm to the body with the washer and bolt.



2. CONNECT LOWER ARM TO BALL JOINT

- (a) Connect the lower arm to the ball joint and torque the castle nut.

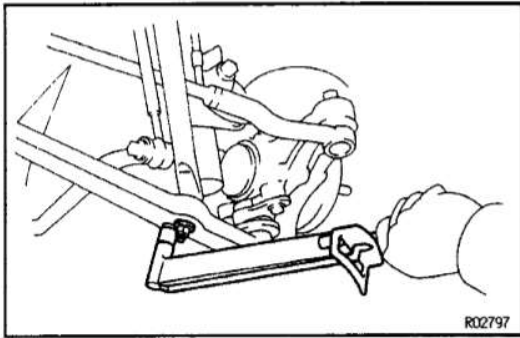
HINT: If the hole in the ball joint is not aligned with the grooves of the nut, tighten the nut until they match.

Torque: 78 N-m (800 kgf-cm, 58 ft-lbf)

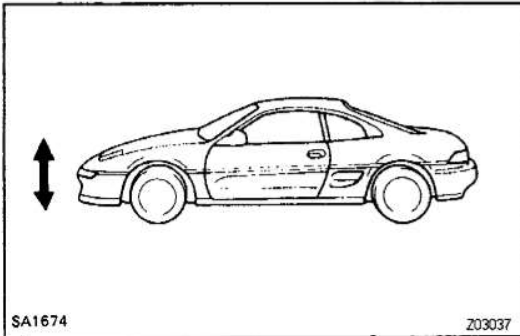
- (b) Install a new cotter pin.

SA-32

SUSPENSION AND AXLE – FRONT SUSPENSION

**3. TORQUE STRUT BAR TO LOWER ARM**

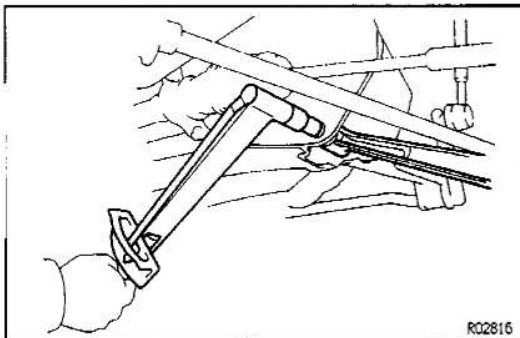
Torque: 127 N-m (1,300 kgf-cm, 94 ft-lbf)

**4. TORQUE LOWER ARM TO BODY**

(a) Install the wheel and lower the vehicle.

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

(b) Bounce the vehicle up and down several times allow the suspension to settle.

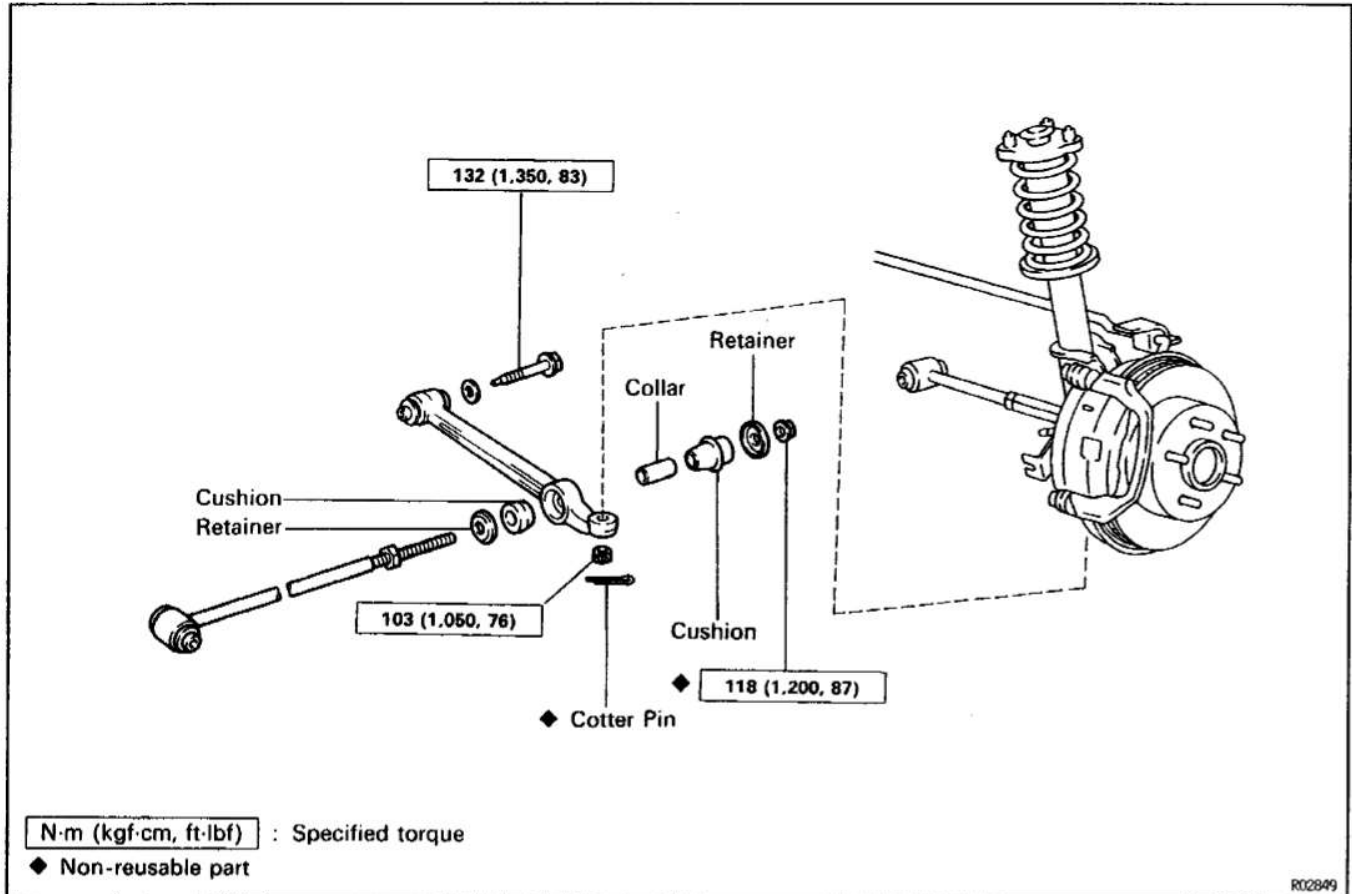


(c) Torque the bolts with the vehicle load applied on the suspension.

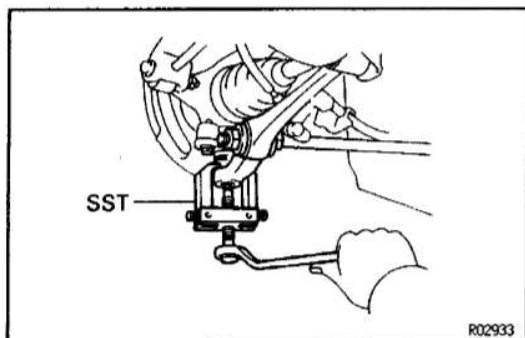
Torque: 118 N-m (1,200 kgf-cm, 87 ft-lbf)

LOWER SUSPENSION ARM COMPONENTS

SA008-01



SA008-01

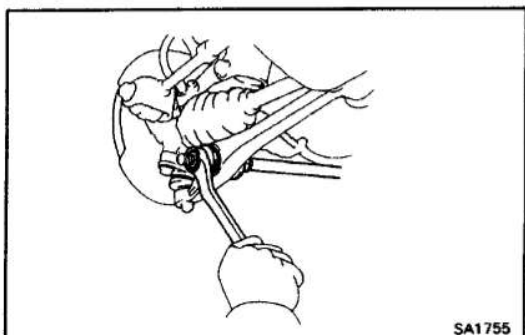


LOWER ARM REMOVAL

1. JACK UP VEHICLE AND REMOVE REAR WHEEL
2. DISCONNECT LOWER ARM FROM BALL JOINT

- (a) Remove the cotter pin and nut.
- (b) Using SST, disconnect the lower arm from the ball joint.

SST 09628-62011

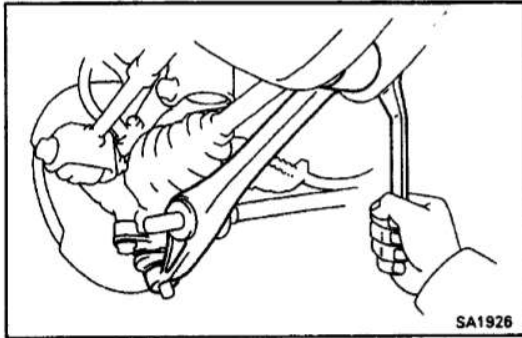


3. REMOVE STRUT BAR NUT AND RETAINER

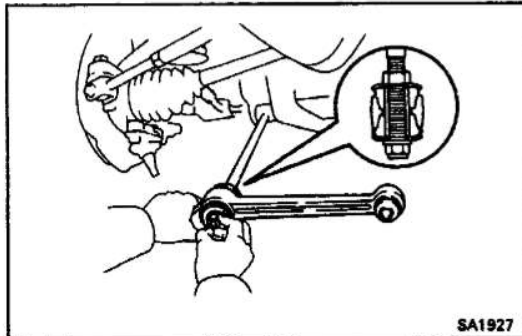
Remove the strut bar nut and retainer from the lower arm.

SA-98

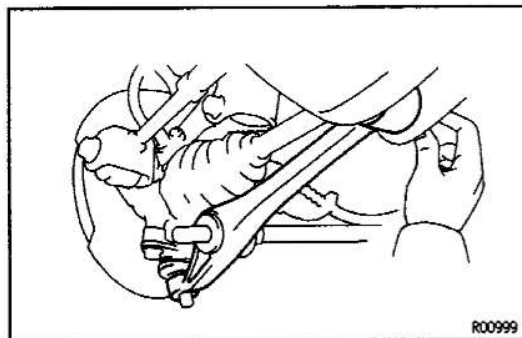
SUSPENSION AND AXLE – REAR SUSPENSION

**4. REMOVE LOWER ARM**

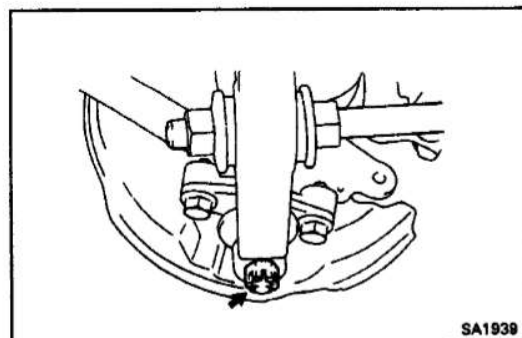
- (a) Remove the bolt holding the lower arm to the body and remove the lower arm.
- (b) Remove the strut bar cushions, collar and retainer from the lower arm.

**LOWER ARM INSTALLATION****1. INSTALL LOWER ARM**

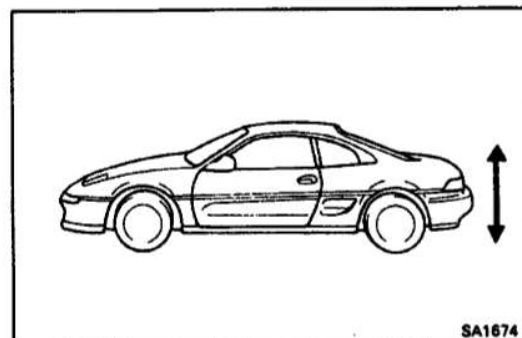
- (a) Install the strut bar retainer, cushions, and collar to the strut bar.
- (b) Connect the lower arm to the strut bar.
- (c) Temporarily install a new strut bar nut.



- (d) Install the lower arm to the body. Do not torque the bolt.

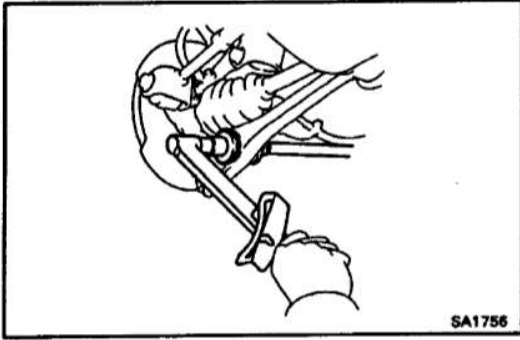
**2. CONNECT LOWER ARM TO BALL JOINT**

- (a) Connect the lower arm to the ball joint.
- (b) Install the nut.
Torque: 91 N-m (930 kgf-cm, 67 ft-lbf)
- (c) Install a new cotter pin.

**3. STABILIZE SUSPENSION**

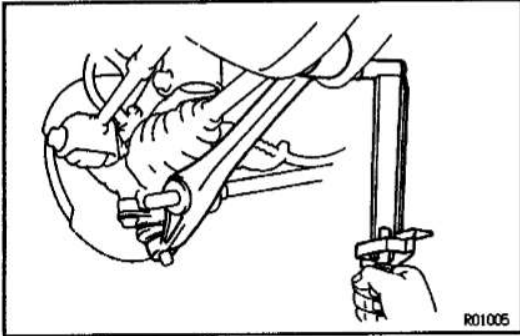
- (a) Install the rear wheel and lower vehicle.
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)
- (b) Bounce the vehicle up and down several times to allow the suspension to settle.

SUSPENSION AND AXLE – REAR SUSPENSION

**4. TORQUE LOWER ARM HOLDING NUT**

- (a) Torque the strut bar nut with the vehicle load applied on the suspension.

Torque: 118 N-m (1,200 kgf.cm, 87 ft.lbf)



- (b) Torque the lower arm holding nut with the vehicle load applied on the suspension.

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

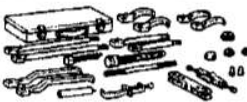
5. CHECK REAR WHEEL ALIGNMENT

(See page [SA-3](#))

PREPARATION

SST (SPECIAL SERVICE TOOLS)

8A0AV-01

	09308-00010 Oil Seal Puller	
	09520-00031 Rear Axle Shaft Puller	
	09608-30012 Front Hub & Drive Pinion Bearing Tool Set	
	(09608-04020) Handle	
	(09608-04060) Front Hub Outer Bearing Cup Replacer	
	(09608-04070) Front Hub Inner Bearing Cup Replacer	
	09628-10011 Ball Joint Puller	
	09649-17010 Steering Knuckle Tool	
	09950-20017 Universal Puller	

RECOMMENDED TOOLS

8A0AW-01

	09905-00013 Snap Ring Pliers	
---	------------------------------	--

EQUIPMENT

8A0AX-01

Dial indicator	
Torque wrench	

SA-20

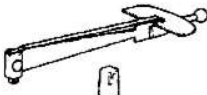
SUSPENSION AND AXLE – FRONT SUSPENSION

PREPARATION
SST (SPECIAL SERVICE TOOL)

	09610-20012 Pitman Arm Puller	
	09720-00012 Shock Absorber Overhaul Tool Set	
	(09721-00071) Front Shock Absorber Ring Nut Wrench	
	09727-00045 Arm Set	
	09727-30020 Coil Spring Compressor	
	09729-22031 Front Spring Upper Seat Holder	

RECOMMENDED TOOLS

SA086-01

	09025-00010 Small Torque Wrench	
---	---------------------------------	--

EQUIPMENT

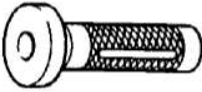
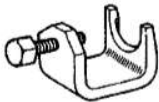
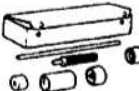
SA087-01

Torque wrench	
---------------	--

PREPARATION

SST (SPECIAL SERVICE TOOLS)

SA08U-01

	09310-35010 Countershaft Bearing Replacer	
	09315-00021 Clutch Release Bearing Remover & Replacer	
	09316-60010 Transmission & Transfer Bearing Replacer	
	(09316-00010) Replacer Pipe	
	(09316-00040) Replacer "C"	
	09520-00031 Rear Axle Shaft Puller	
	09527-17010 Rear Axle Shaft Bearing Remover	
	09608-20012 Front Hub & Drive Pinion Bearing Tool Set	
	(09608-00040) Replacer	
	(09608-03020) Handle	
	09628-10011 Ball Joint Puller	
	09710-22041 Rear Suspension Bushing Tool Set	
	(09710-02050) Base	

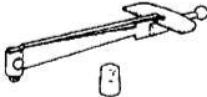
SA-40

SUSPENSION AND AXLE – REAR AXLE

	09950-00020 Bearing Remover	
---	-----------------------------	--

SA08V-01

RECOMMENDED TOOLS

	09025-00010 Small Torque Wrench	
	09905-00013 Snap Ring Pliers	

SA08W-01

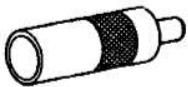
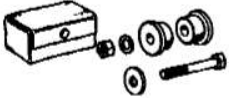
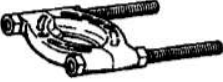
EQUIPMENT

Dial indicator	
Torque wrench	

PREPARATION

SST (SPECIAL SERVICE TOOLS)

SA607-01

	09223-15010 Crankshaft Rear Oil Seal Replacer	
	09308-00010, Oil Seal Puller	
	09318-60010 Transmission & Transfer Bearing Replacer	
	(09316-00010) Replacer Pipe	
	09570-22011 Differential Mounting Cushion Remover & Replacer	
	09608-16041 Front Hub Bearing Adjusting Tool	
	(09608-02010) Cover	
	09726-10010 Lower Suspension Arm Bushing Remover & Replacer	Drive shaft inboard joint
	(09726-00030) Spacer	
	09923-00020 Hexagon 8 mm Wrench	
	09950-00020 Bearing Remover	Center drive shaft dust cover

SA608-01

RECOMMENDED TOOLS

	09905-00012 Snap Ring No. 1 Expander	For removing and installing snap ring
---	--------------------------------------	---------------------------------------

SA-68

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)

SA0CH-01

EQUIPMENT

Torque wrench	
---------------	--

SA0CJ-01

LUBRICANT

Item	Capacity	Classification
Outboard joint grease	120–130 g (0.26–0.29 lb)	
Inboard joint grease	90–100 g (0.20–0.22 lb)	
Side gear shaft grease	43–53 g (0.09–0.12 lb)	

SA0CK-01

SSM (SPECIAL SERVICE MATERIALS)

08826-00801	Seal Packing 1121, Three bond 1121, or equivalent	Drive shaft inboard joint cover
-------------	--	---------------------------------

PREPARATION

SST (SPECIAL SERVICE TOOLS)

SA0C4-01

	09316-60010 Transmission & Transfer Bearing Replacer (09316-00010) Replacer Pipe	
   	09350-32014 TOYOTA Automatic Transmission Tool Set (09351-32111 Side Bearing Race Replacer (09351-32130) Handle (09351-32150) Oil Seal Replacer	
  	09608-16041 Front Hub Bearing Adjusting Tool (096008-02020) Bolt & Nut (096008-02040) Retainer	
	09950-00020 Bearing Remover	Center drive shaft dust cover

SA0C8-01

RECOMMENDED TOOLS

	09905-00012 Snap Ring No. 1 Expander	For removing and installing snap ring
---	--------------------------------------	---------------------------------------

SA0C8-01

EQUIPMENT

Torque wrench	
---------------	--

SA-52

SUSPENSION AND AXLE – REAR DRIVE SHAFT(5S-FE)

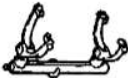
LUBRICANT

SA0C7-01

Item	Capacity	Classification
Outboard joint grease	120 – 130 g (4.2 – 4.6 oz.)	
Inboard joint grease	232 – 242 g (8.2 – 8.5 oz.)	

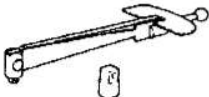
PREPARATION
SST (SPECIAL SERVICE TOOLS)

SAOC8-01

	
 09720-00012 Shock Absorber Overhaul Tool Set	
 (09721-00071) Front Shock Absorber Ring Nut Wrench	
 09727-30020 Coil Spring Compressor	

SAOCT-01

RECOMMENDED TOOLS

 09025-00010 Small Torque Wrench	Small Torque Wrench
---	---------------------

EQUIPMENT

SAOCU-01

Torque wrench	
---------------	--

WHEEL ALIGNMENT

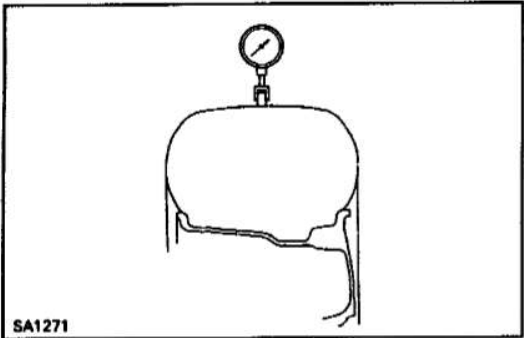
PRIMARY INSPECTION

1. MAKE FOLLOWING CHECKS AND CORRECT ANY PROBLEMS

(a) Check the tires for wear, size and proper inflation pressure.

Cold tire inflation pressure:

Tire size	Front	Rear
195/55R 15 83V	200 kPa (2.0 kgf/cm², 26 psi)	—
225/50R15 91V	—	230 kPa (2,3 kgf/cm², 33 psi)

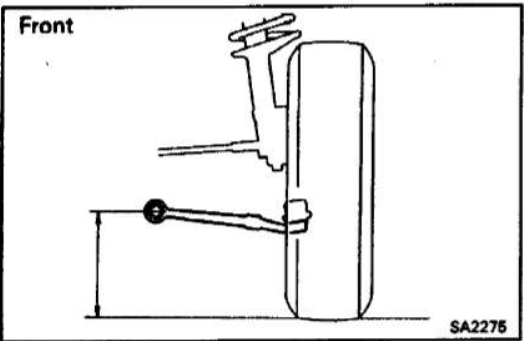


(b) Check the wheel runout.

lateral runout:

Less than 1.4 mm (0.055 in.)

- (c) Check the wheel bearings for looseness.
- (d) Check the suspension for looseness.
- (e) Check the steering linkage for looseness.
- (f) Check the ball joint for excessive looseness.
- (g) Check that the shock absorber work properly by using the standard bounce test.



2. MEASURE VEHICLE HEIGHT

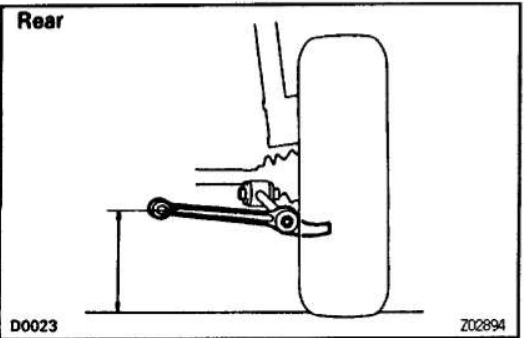
Vehicle height:

Front 216.5 mm (8.524 in.)

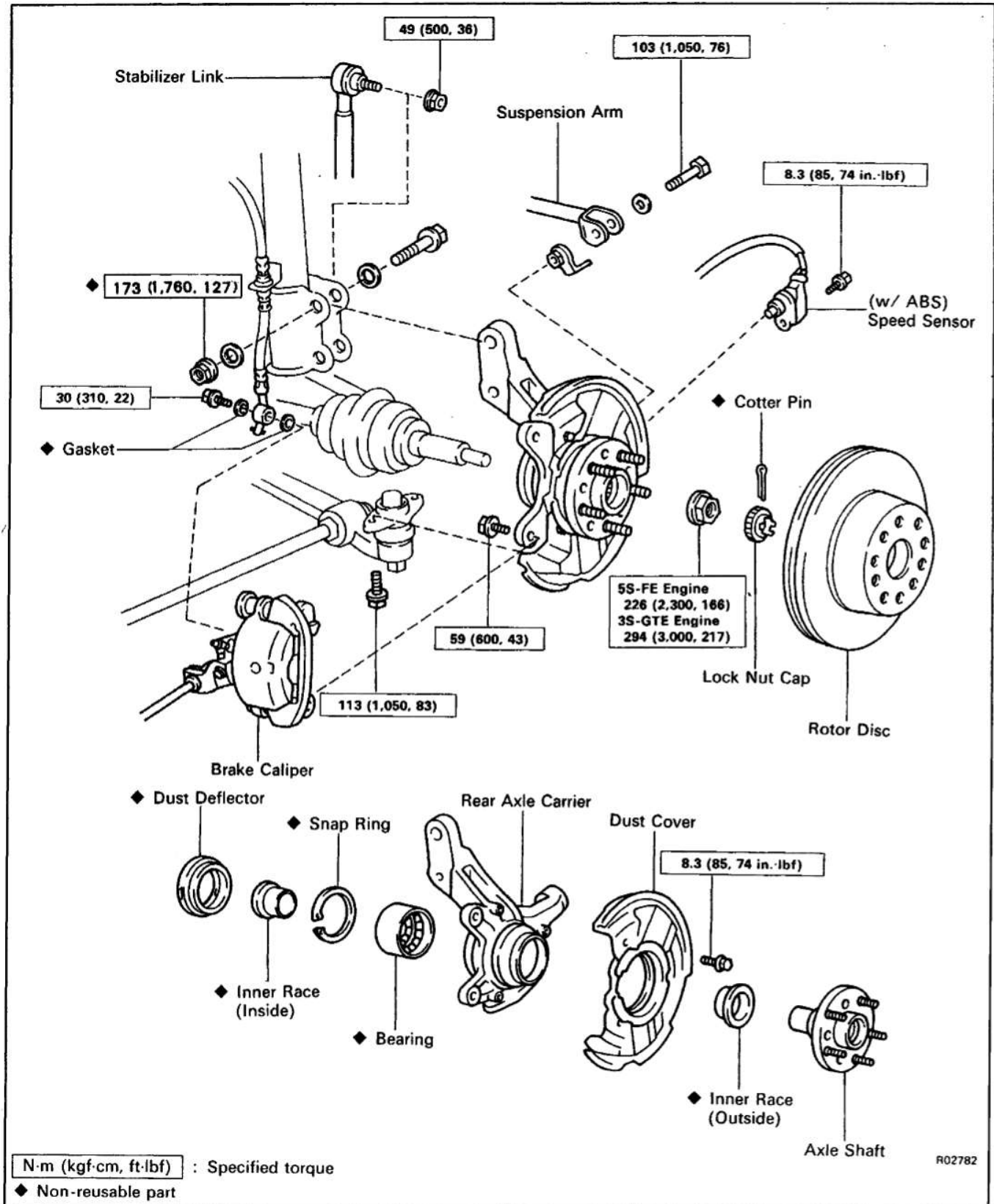
Rear 193.4 mm (7.614 in.)

HINT:

- Measuring point
Front—Measure from the ground to the center of the lower suspension arm mounting bolt.
Rear—Measure from the ground to the center of the body side Rear suspension No.1 mounting.
- Before inspecting the wheel alignment, adjust the chassis ground clearance to specification.
If the clearance of the vehicle is not standard, try to adjust it by pushing down in the body or by lifting the body. If still not correct, check for bad springs or suspension parts.



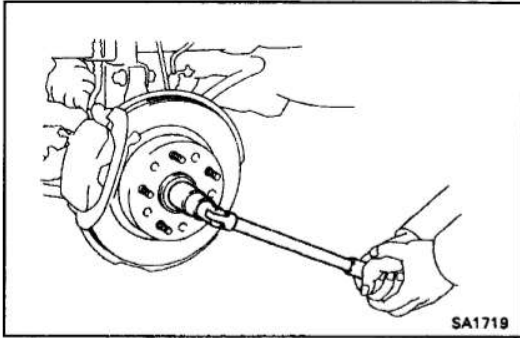
REAR AXLE SHAFT AND CARRIER COMPONENTS



SA-42

SUSPENSION AND AXLE - REAR AXLE

SA08Y-01



SA1719

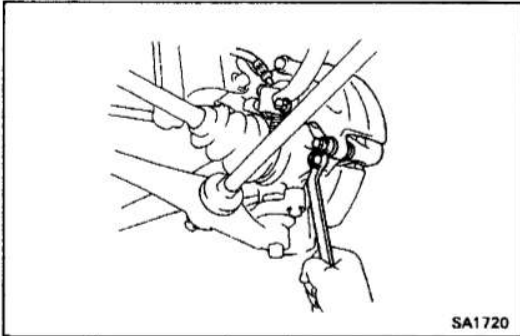
REAR AXLE SHAFT AND CARRIER REMOVAL

1. JACK UP VEHICLE AND REMOVE REAR WHEEL
2. REMOVE COTTER PIN, BEARING LOCK NUT CAP AND BEARING LOCK NUT

- (a) Remove the cotter pin and bearing lock nut cap.
- (b) With the parking brake lever pulled, remove the bearing lock nut.
- (c) Release the parking brake lever.

3. REMOVE BRAKE CALIPER

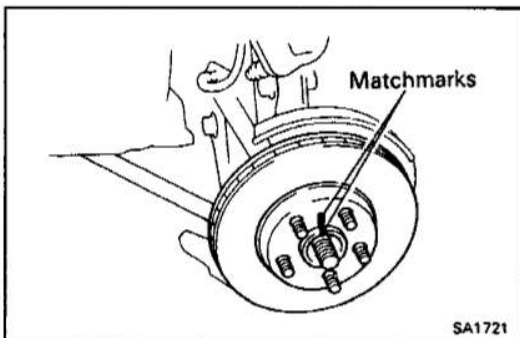
Remove the brake caliper from the rear axle carrier and suspend it with wire.



SA1720

4. REMOVE ROTOR DISC

HINT: Before removing the rotor disc, place the matchmarks on the axle shaft and rotor disc.



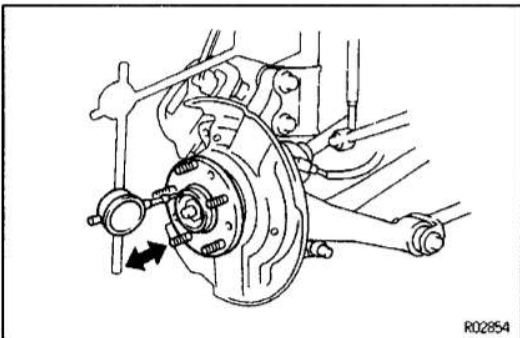
SA1721

5. CHECK BEARING PLAY IN AXIAL DIRECTION

Bearing play:

0.05 mm (0.0020 in.) or less

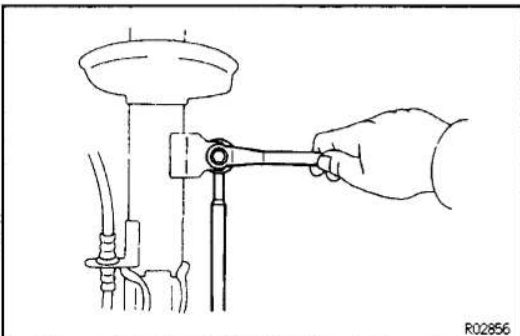
HINT: Measure the bearing play when install the lock nut to the drive shaft.



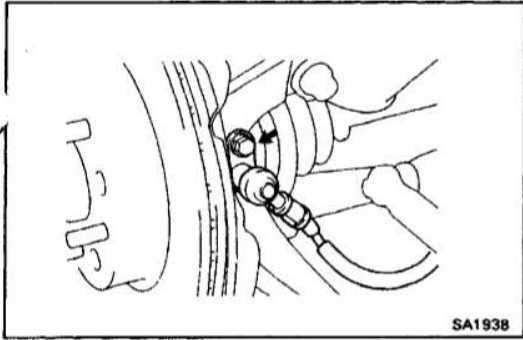
R02854

6. DISCONNECT STABILIZER LINK

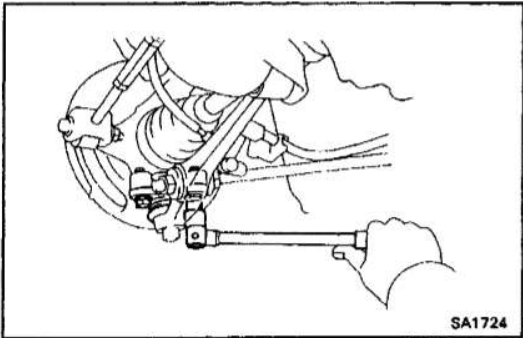
Remove the nut and disconnect the stabilizer bar link.
HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.



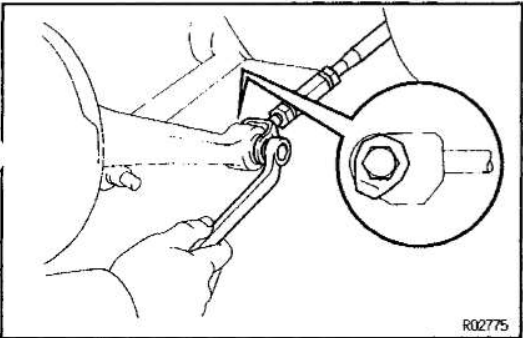
R02856

**7. (w/ABS)****REMOVE SPEED SENSOR FROM AXLE CARRIER**

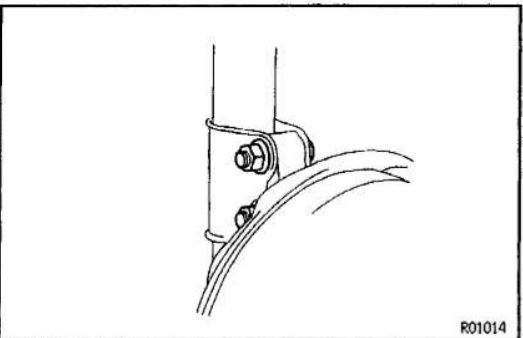
Remove the bolt and pull out the speed sensor.

**8. DISCONNECT BALL JOINT AND LOWER ARM**

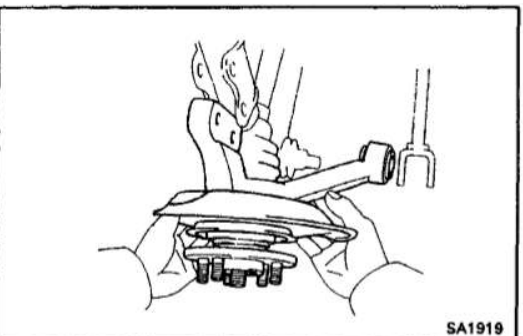
Remove the two bolts holding the ball joint to the rear axle carrier.

**9. DISCONNECT SUSPENSION ARM**

Remove the nut and bolt, then disconnect the suspension arm.

**10. REMOVE REAR AXLE CARRIER WITH AXLE SHAFT**

(a) Remove the nuts, washers and bolts.



(b) Remove the rear axle carrier.

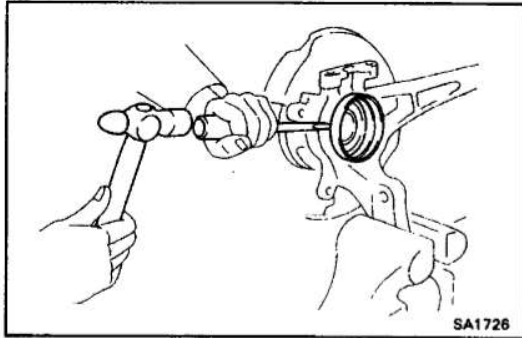
NOTICE: Cover the drive shaft boot with cloth to protect it from damage.

(w/ ABS)

NOTICE: Be careful not to damage the speed sensor rotor of the drive shaft.

SA-44

SUSPENSION AND AXLE – REAR AXLE

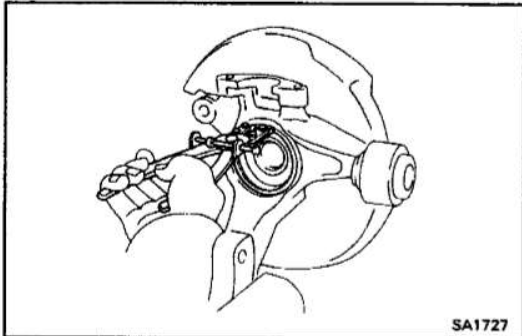


REAR AXLE SHAFT AND CARRIER DISASSEMBLY

SA082-01

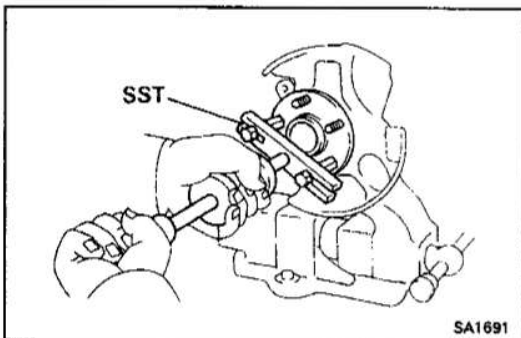
1. REMOVE DUST DEFLECTOR

- (a) Clamp the rear axle carrier and carrier in a soft jaw vise.
- (b) Using a screwdriver, remove the dust deflector.



2. REMOVE HOLE SNAP RING

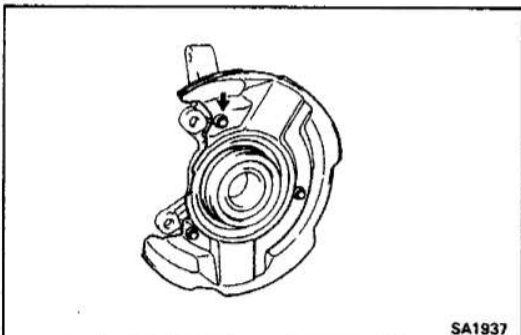
- Using snap ring pliers, remove the hole snap ring.



3. REMOVE AXLE SHAFT

Using SST, remove the axle shaft from the rear axle carrier.

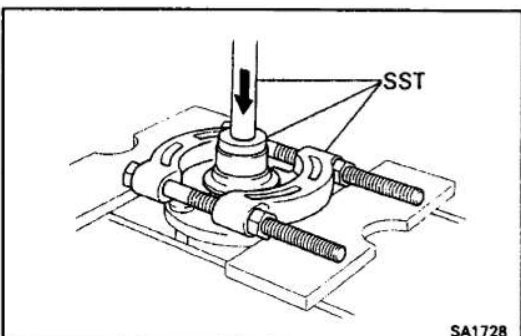
SST 09520-00031



4. REMOVE DISC BRAKE DUST COVER

- (a) Remove the three bolts holding the disc brake dust cover to the rear axle carrier.
- (b) Remove the disc brake dust cover.

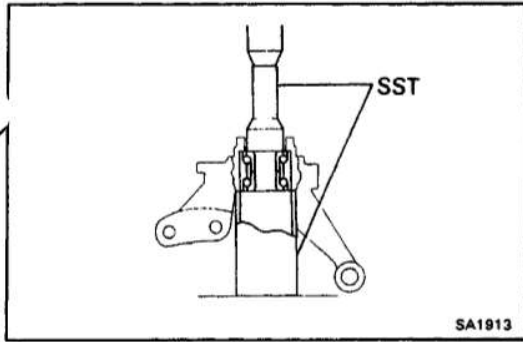
5. REMOVE BEARING INNER RACE (INSIDE)



6. REMOVE BEARING INNER RACE (OUTSIDE)

Using SST, remove the inner race (outside) from the rear axle shaft.

SST 09608-20012 (09608-00040, 09608-03020),
09950-00020



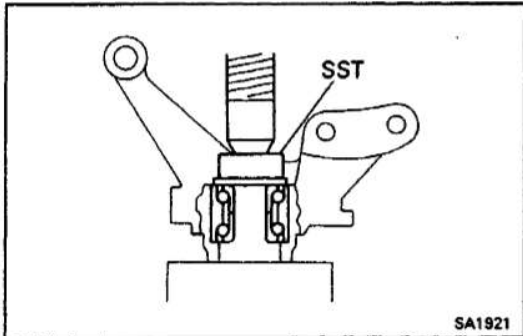
7. REMOVE AXLE BEARING

(a) First place the removed inner race (outside) in the bearing.

(b) Using SST and a press, press out the bearing.

SST 09310-35010, 09527-17010

NOTICE: Always replace the bearing as an assembly.



REAR AXLE SHAFT AND CARRIER ASSEMBLY

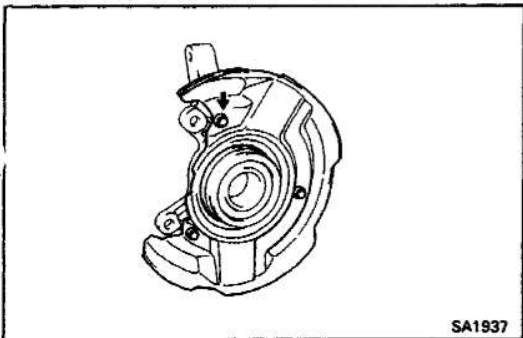
SA000-01

1. INSTALL AXLE BEARING

Using SST and a press, press a new bearing into the rear axle carrier.

SST 09710-22041(09710-02050)

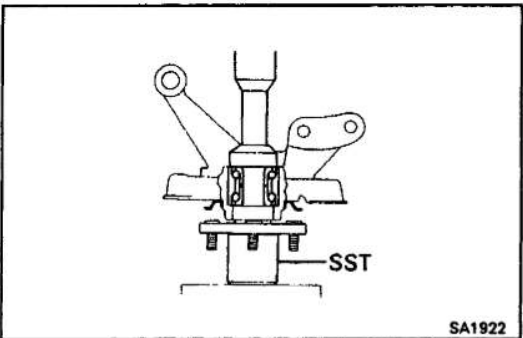
NOTICE: Be careful not to damage the bearing.



2. INSTALL DISC BRAKE DUST COVER

Install the disc brake dust cover with the three bolts.

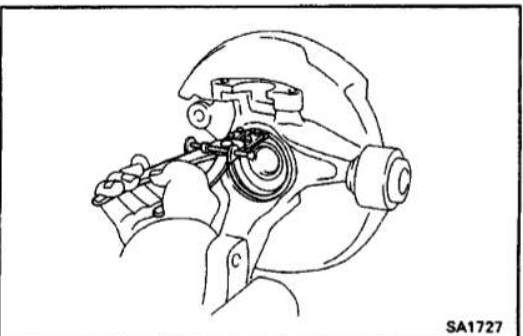
Torque: 8.3 N-m (85 kgf-cm, 73 in.·lbf)



3. INSTALL AXLE SHAFT

Using SST and a press, press the shaft into the rear axle carrier.

SST 09310-35010, 09315-00021



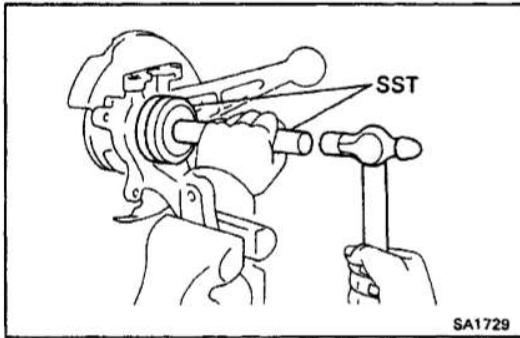
4. INSTALL HOLE SNAP RING

Using snap ring pliers, install a hole snap ring into the rear axle carrier.

NOTICE: Be careful not damage the bearing.

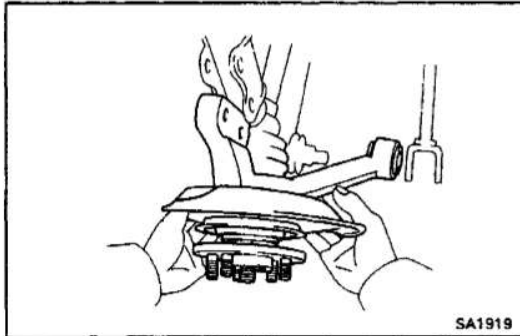
SA-46

SUSPENSION AND AXLE - REAR AXLE

**5. INSTALL DUST DEFLECTOR**

Using SST and a hammer, drive in a new dust deflector to the rear axle carrier.

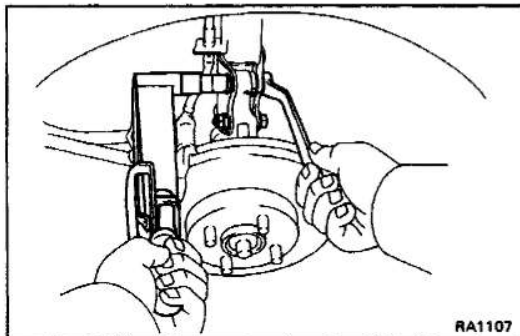
SST 09316-60010 (09316-00010, 09316-00040)

**REAR AXLE SHAFT AND CARRIER INSTALLATION**

SA061-01

1. INSTALL REAR AXLE CARRIER WITH AXLE SHAFT

(a) Place the rear axle carrier to the shock absorber lower bracket.

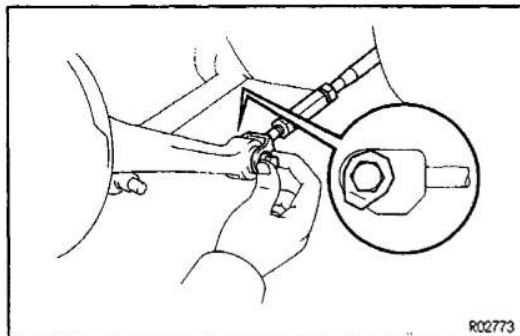


(b) Install the two set bolts, washers and nuts.

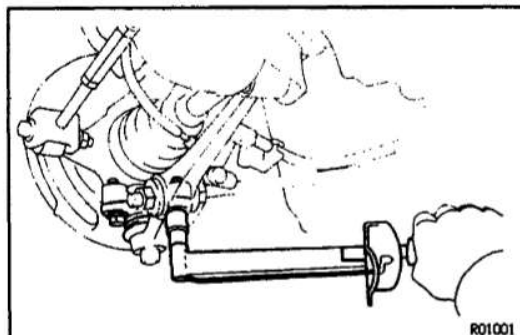
HINT: Install the bolts from the rear side.

(c) Torque the nuts.

Torque: 173 N-m (1,760 kgf-cm, 127 ft-lbf)

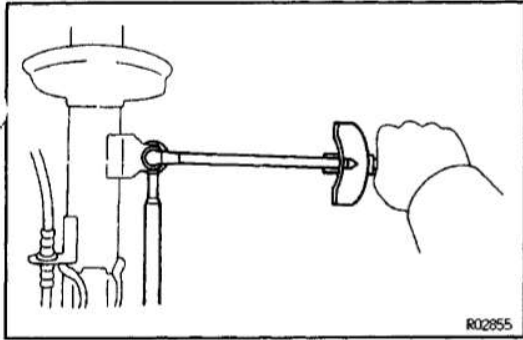
**2. CONNECT SUSPENSION ARM**

Install the suspension arm in place, then temporarily torque the bolt and nut.

**3. CONNECT REAR AXLE CARRIER TO LOWER ARM**

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

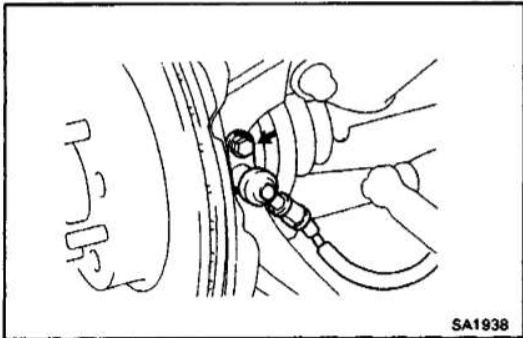
SUSPENSION AND AXLE - REAR AXLE

**4. CONNECT STABILIZER LINK**

Connect the stabilizer bar link with the nut.

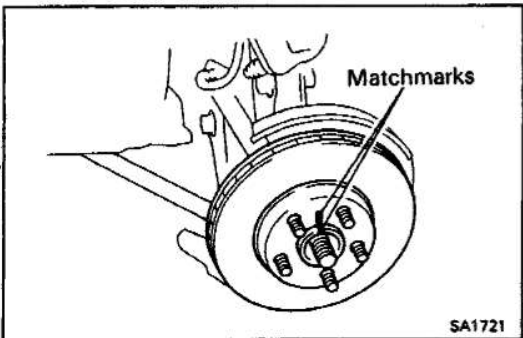
Torque: 49 N-m (500 kgf-cm, 36 ft-lbf)

HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

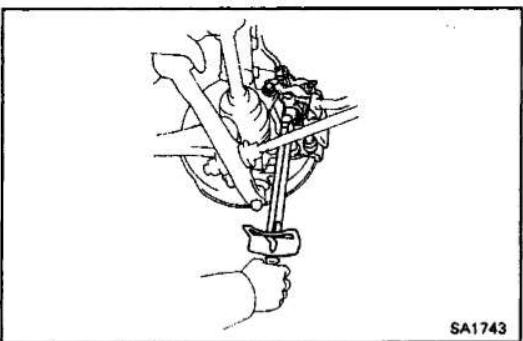
**5. (w/ ABS)****INSTALL SPEED SENSOR TO AXLE CARRIER**

HINT: Before installing, check that there is no ferric chip or foreign material on the sensor tip.

Torque: 7.8 N-m (80 kgf-cm, 69 in.-lbf)

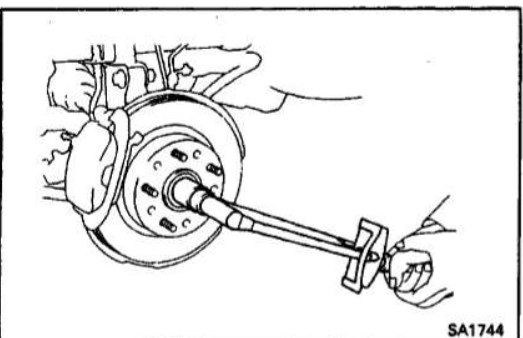
**6. INSTALL ROTOR DISC**

Align the matchmarks and install the rotor disc to the axle hub.

**7. INSTALL BRAKE CALIPER**

Install the brake caliper with the two bolts.

Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

**8. INSTALL BEARING LOCK NUT, BEARING LOCK NUT CAP AND NEW COTTER PIN**

(a) Install the lock nut.

(b) With the parking brake engaged, and tighten the nut.

Torque:

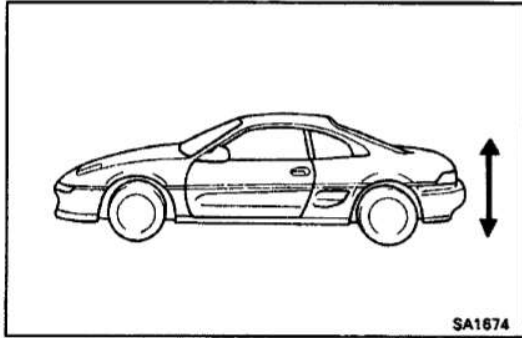
5S-FE 226 N-m (2,300 kgf-cm, 166 ft-lbf)

3S-GTE 294 N-m (3,000 kgf-cm, 217 ft-lbf)

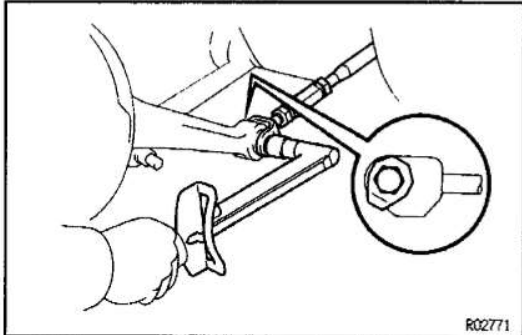
(c) Install the lock cap and a new cotter pin.

SA-48

SUSPENSION AND AXLE - REAR AXLE

**9. STABILIZE SUSPENSION**

- (a) Install the rear wheel and lower vehicle.
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)
- (b) Bounce the vehicle up and down several times to allow the suspension to settle.

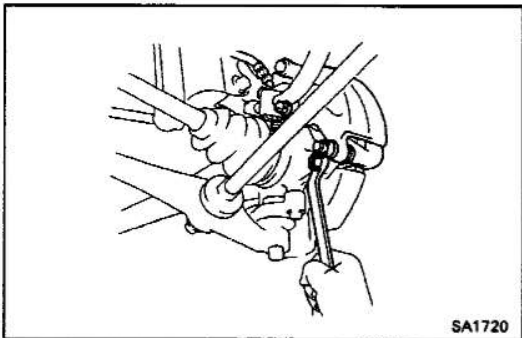
**10. TIGHTEN BOLT AND NUT**

Tighten the bolt and nut with the vehicle load applied onto the suspension.

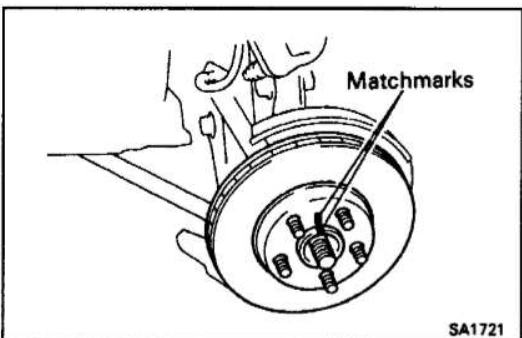
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)

11. CHECK REAR WHEEL ALIGNMENT

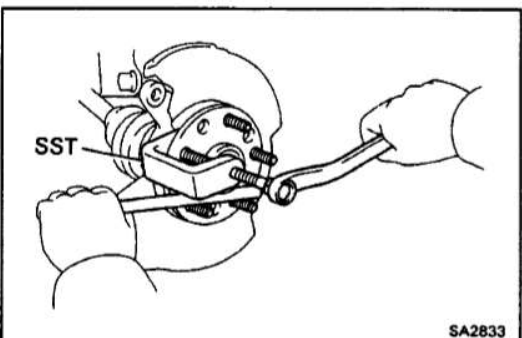
(See page [SA-3](#))

**REAR AXLE SHAFT BOLT REPLACEMENT**

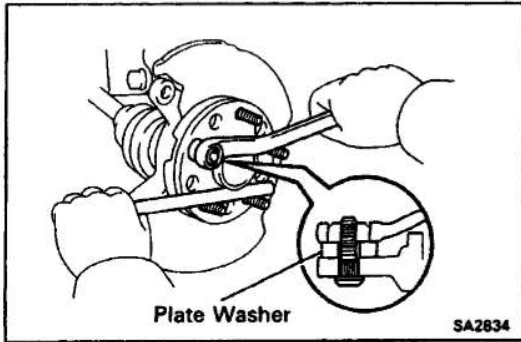
1. JACK UP VEHICLE AND REMOVE REAR WHEEL
2. DISCONNECT BRAKE CALIPER FROM AXLE CARRIER

**3. REMOVE ROTOR DISC**

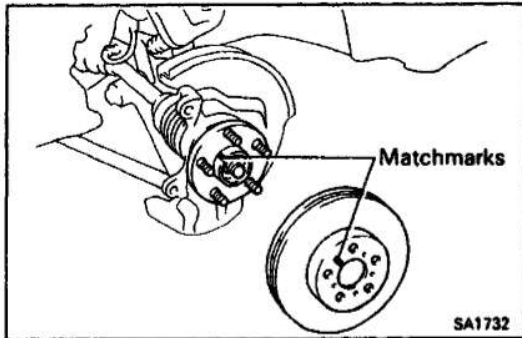
HINT: Before removing the rotor disc, place the matchmarks on the axle shaft and rotor disc.

**4. REMOVE REAR AXLE SHAFT BOLT**

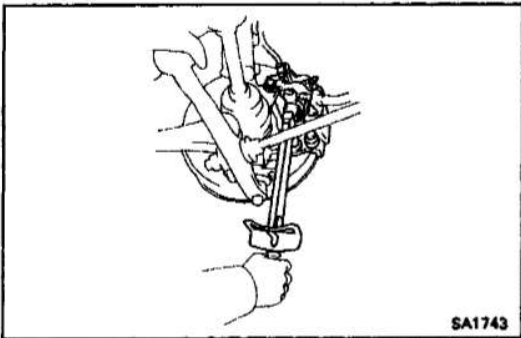
- (a) Align the brake dust cover cut portion and axle shaft bolt.
- (b) Using SST, remove the axle shaft bolt.
SST 09628-1001 1

**5. INSTALL REAR AXLE SHAFT BOLT**

- (a) Install a new bolt from the backing plate side.
- (b) Install the suitable plate washer and nut.
- (c) Tighten the nut, while holding the axle shaft.

**6. INSTALL ROTOR DISC**

Align the matchmarks and install the rotor disc to the axle shaft.

**7. INSTALL DISC BRAKE CALIPER TO REAR AXLE CARRIER**

Install and torque the two bolts.

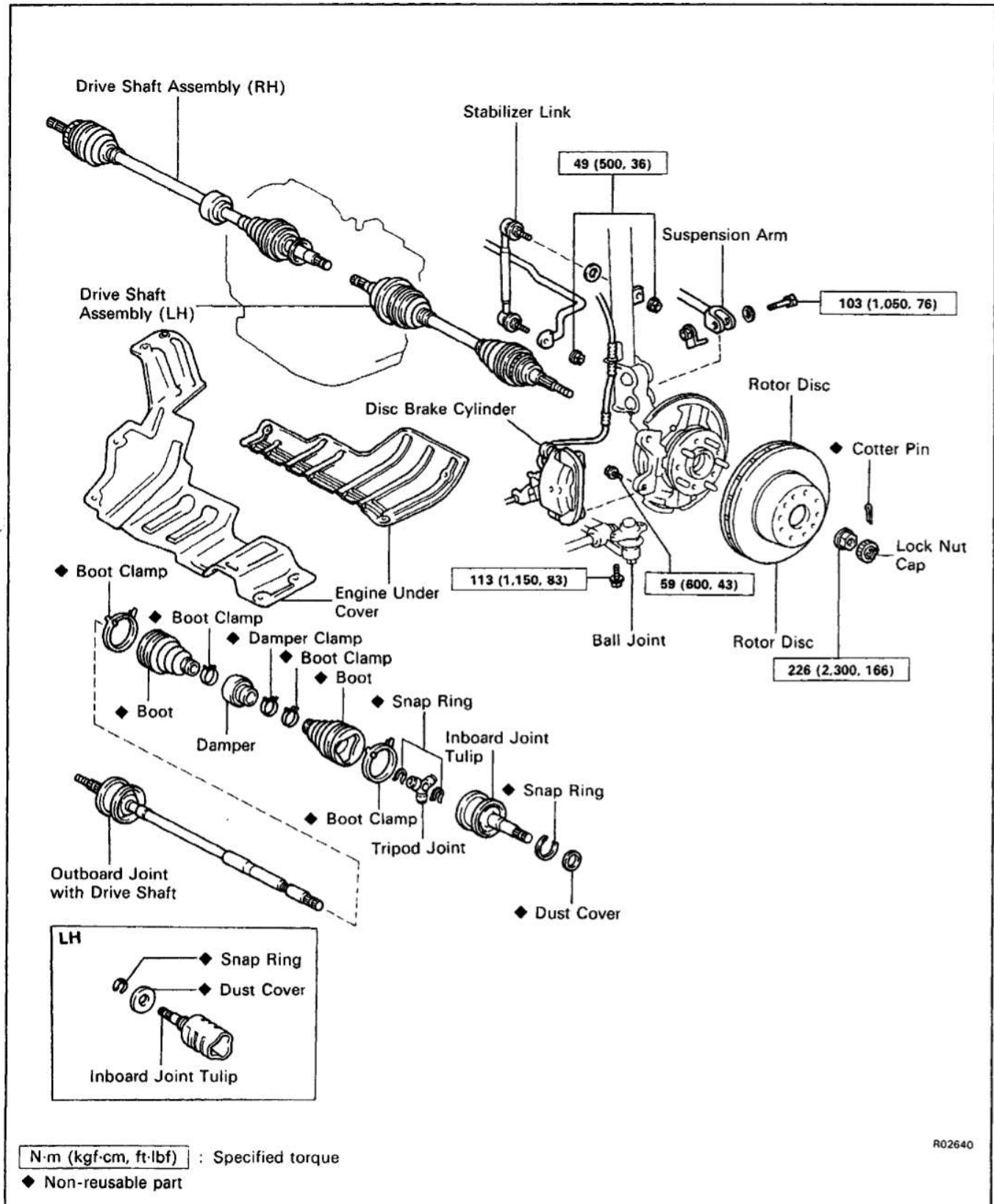
Torque: 59 N·m (600 kgf·cm, 43 ft·lbf)

8. INSTALL REAR WHEEL AND LOWER VEHICLE

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

REAR DRIVE SHAFT COMPONENTS

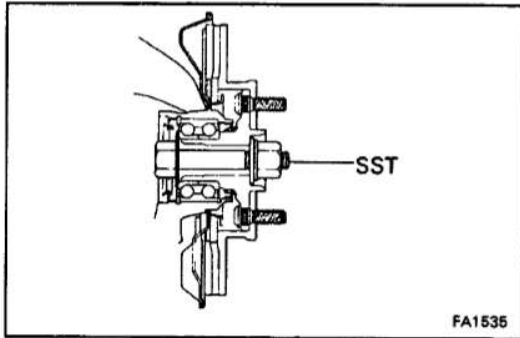
8A0C8-01



SA-54

SUSPENSION AND AXLE – REAR DRIVE SHAFT(5S-FE)

8A0C8-01

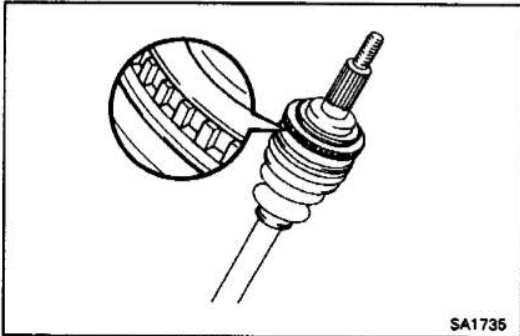


REAR DRIVE SHAFT REMOVAL

NOTICE:

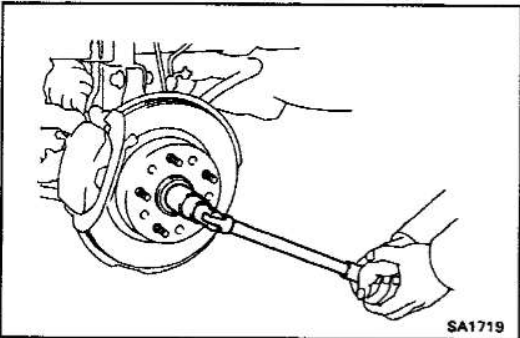
- The axle bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft removed. Therefore, if it is absolutely necessary to place the vehicle weight on the axle bearing, first support it with SST.

SST 09608-16441 (09608-02020, 09608-02040)



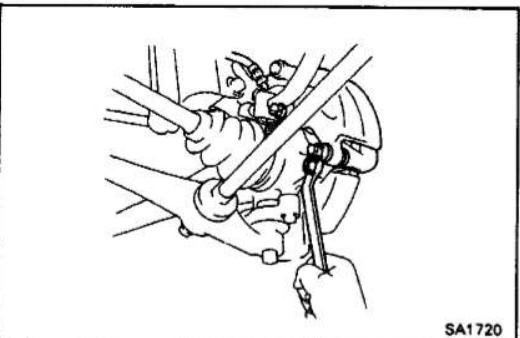
• (w/ ABS)

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



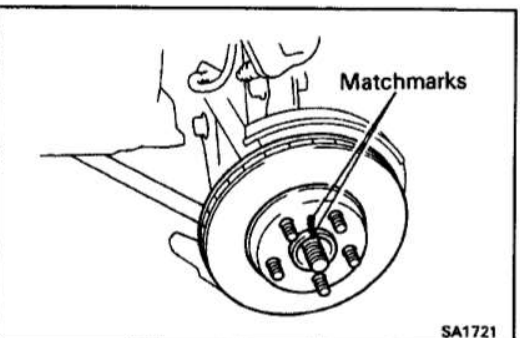
- JACK UP VEHICLE AND REMOVE REAR WHEEL
- REMOVE ENGINE UNDER COVER
- DRAIN TRANSAXLE OIL
- REMOVE COTTER PIN, LOCK NUT CAP, BEARING LOCK NUT AND PLATE WASHER

- Remove the cotter pin and lock nut cap.
- With the parking brake engaged, remove the bearing lock nut.



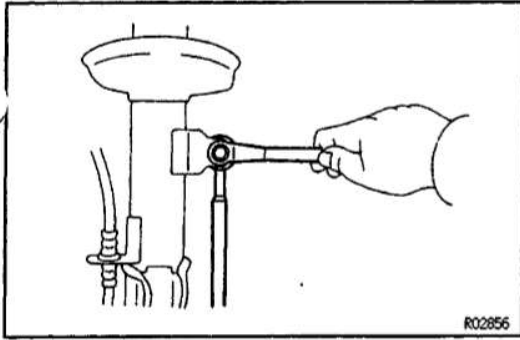
5. REMOVE BRAKE CALIPER

Remove the two bolts and brake caliper from the axle carrier and suspend it with wire.

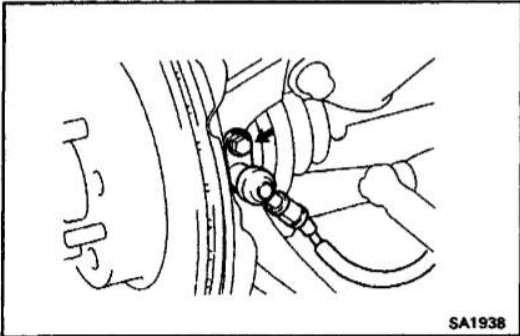


6. REMOVE ROTOR DISC

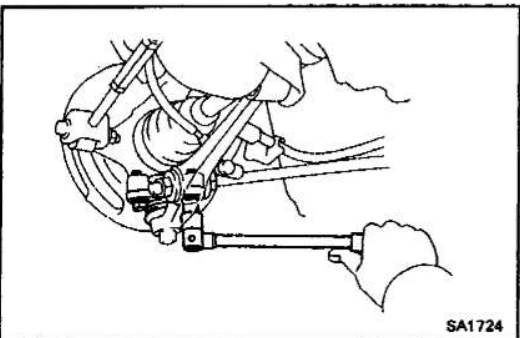
HINT: Before removing the rotor disc, place the matchmarks on the axle shaft and rotor disc.

**7. DISCONNECT STABILIZER LINK**

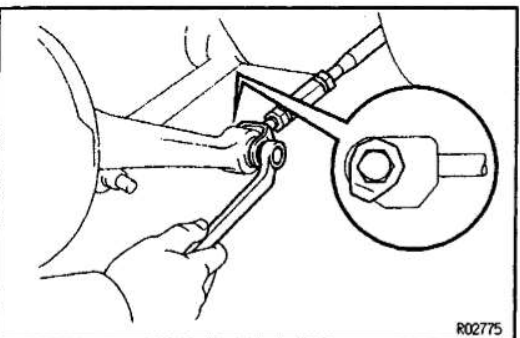
Remove the upper side nut and disconnect the link.
 HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

**8. (w/ ABS)****REMOVE SPEED SENSOR FROM AXLE CARRIER**

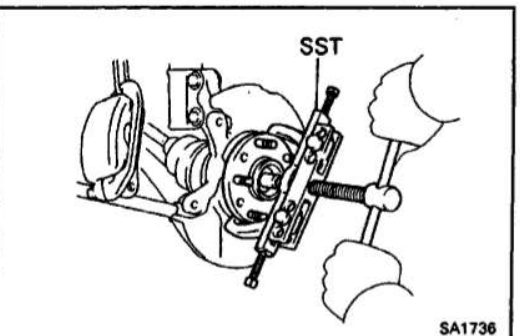
Remove the bolt and pull out the speed sensor.

**9. DISCONNECT LOWER ARM FROM REAR AXLE CARRIER**

- (a) Remove the two bolts holding the ball joint to the lower arm.
- (b) Disconnect the lower arm.

**10. DISCONNECT SUSPENSION ARM**

- (a) Remove the suspension arm mounting nut and bolt, disconnect the suspension arm from the rear axle carrier.
- (b) Similarly disconnect the other side.

**11. DISCONNECT DRIVE SHAFT FROM AXLE CARRIER**

Using SST, disconnect the drive shaft from the axle carrier.

SST 09950-20017

NOTICE:

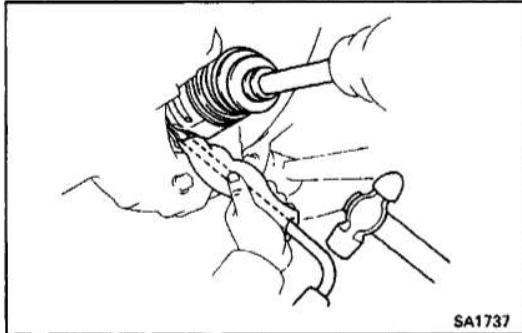
- Cover the drive shaft boot with cloth to protect it from damage.

SA-56

SUSPENSION AND AXLE – REAR DRIVE SHAFT(5S-FE)

- (w/ ABS)

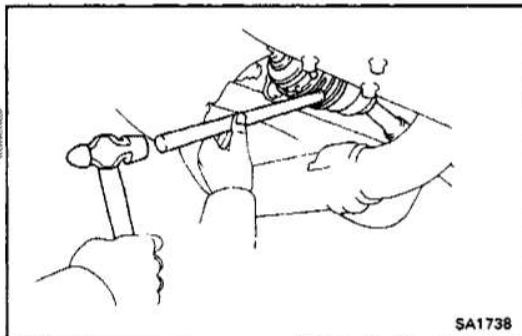
Be careful not to damage the sensor rotor of the drive shaft.

**12. REMOVE LH DRIVE SHAFT**

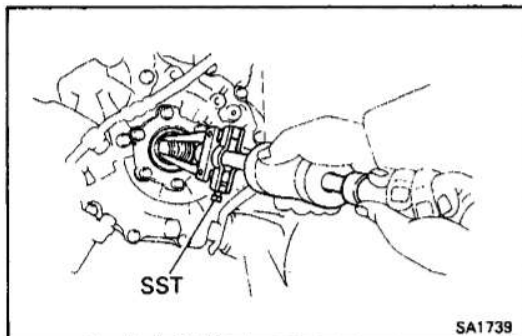
Using a hammer and hub nut wrench or an equivalent, remove the LH drive shaft.

NOTICE:

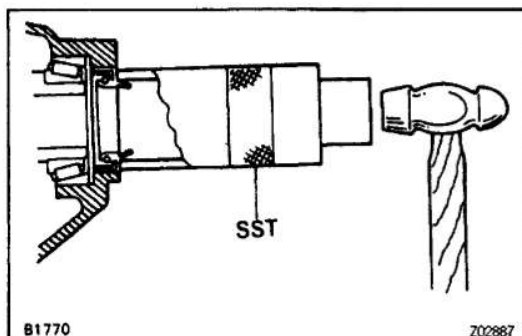
- Be careful not to damage the dust cover.
- Cover the hub nut wrench or an equivalent with cloth so as not to damage the transaxle body.

**13. REMOVE RH DRIVE SHAFT**

Using a hammer and brass bar, drive out the RH drive shaft.

**OIL SEAL REPLACEMENT****1. REMOVE OIL SEAL**

Using SST, drive out the oil seal.
SST 09308 = 00010

**2. INSTALL NEW OIL SEAL**

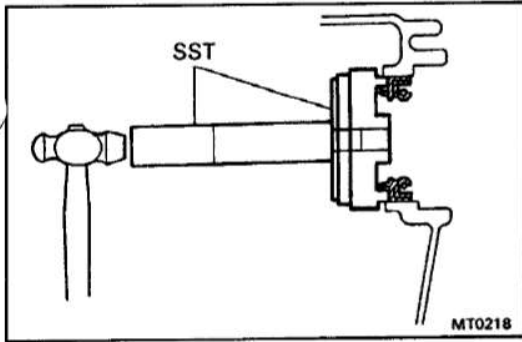
(a) (M/T)

Using SST and hammer, tap in a new oil seal.

SST 09316-60010 (09316-00010)

HINT: Coat the oil seal lip with MP grease.

SUSPENSION AND AXLE - REAR DRIVE SHAFT(5S-FE)

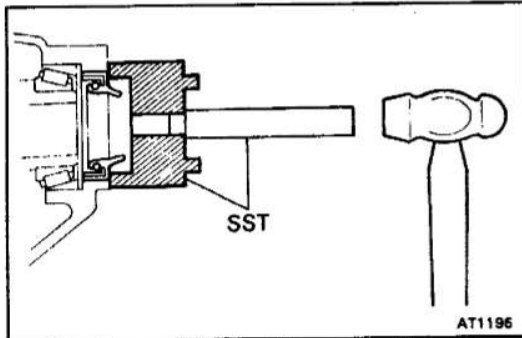


(b) (A/T)

Using SST and hammer, tap in a new LH oil seal.

SST 09350-32014 (09351-32111, 09351-32150)

HINT: Coat the oil seal lip with MP grease.

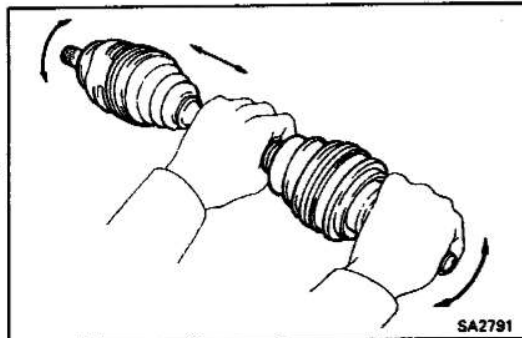


(c) (A/T)

Using SST and hammer, tap in a new RH oil seal.

SST 09350-32014 (09351-32130, 09351-32150)

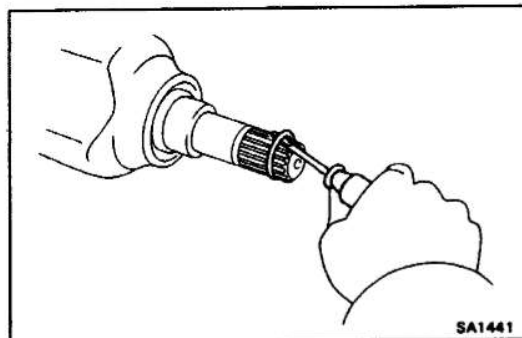
HINT: Coat the oil seal lip with MP grease.

**REAR DRIVE SHAFT DISASSEMBLY****1. CHECK DRIVE SHAFT**

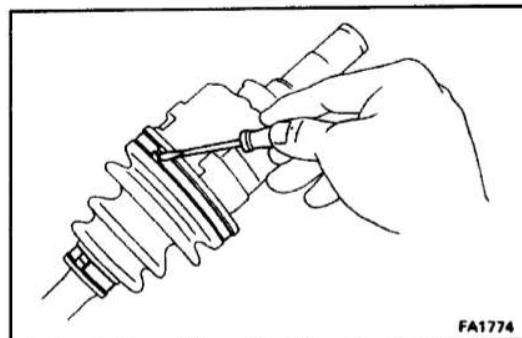
- (a) Check to see that there is no play in the outboard joint.
- (b) Check to see that inboard joint slides smoothly in the thrust direction.
- (c) Check to see that there is no remarkable play in the radial direction of the inboard joint.
- (d) Check for damage to boots.

2. REMOVE SNAP RING FROM INBOARD JOINT SHAFT

Using a screwdriver, pry out the snap ring.

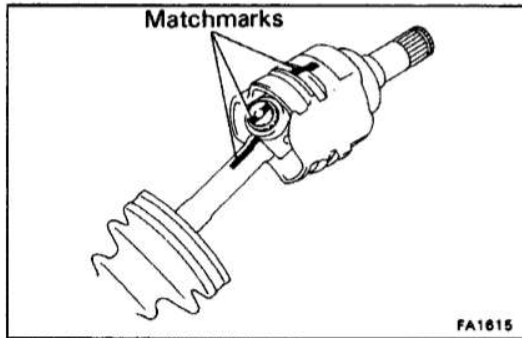
**3. REMOVE INBOARD JOINT BOOT CLAMPS**

- (a) Using a screwdriver, remove the two boot clamps.
- (b) Slide the inboard joint boot toward the outboard joint.



SA-58

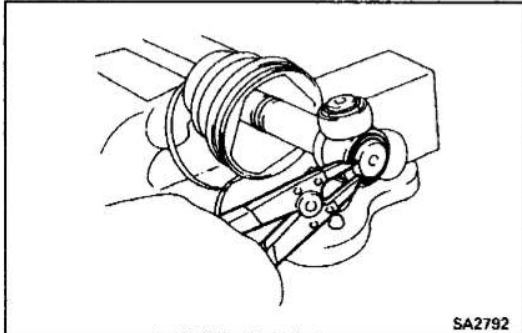
SUSPENSION AND AXLE – REAR DRIVE SHAFT(5S-FE)

**4. DISASSEMBLY INBOARD JOINT**

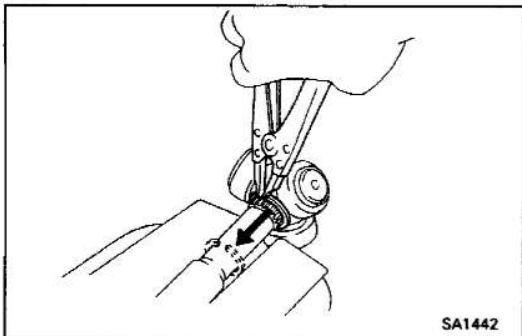
- (a) Place matchmarks on the inboard joint tulip, tripod and the shaft.

NOTICE: Do not punch the marks.

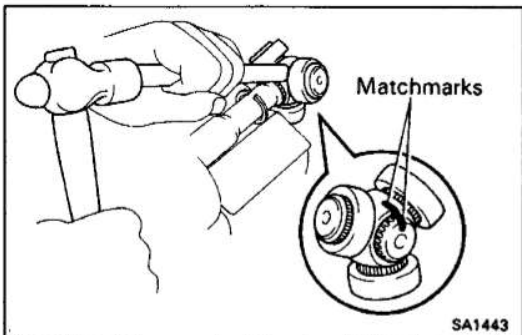
- (b) Remove the inboard joint tulip from the drive shaft.

**5. DISASSEMBLY TRIPOD JOINT**

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



- (b) Using a snap ring expander, temporarily slide the snap ring toward the outboard joint side.

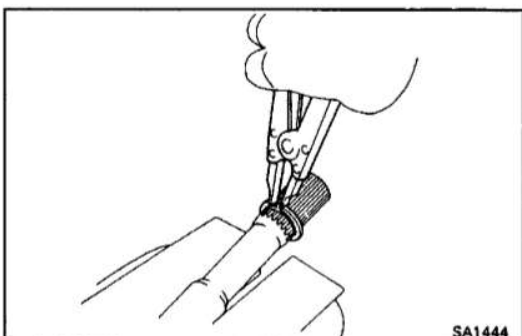


- (c) Place the matchmarks on the drive shaft and tripod.

NOTICE: Do not punch the marks.

- (d) Using a brass bar and a hammer, remove the tripod joint from the drive shaft.

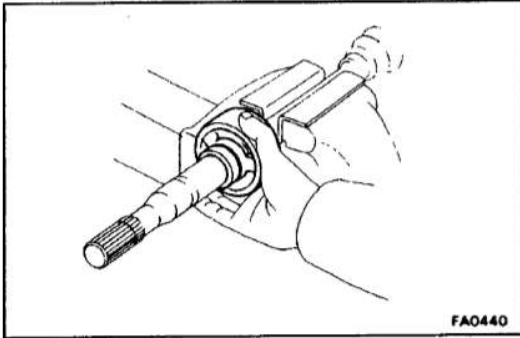
NOTICE: Do not tap the roller.



- (e) Using a snap ring expander, remove the snap ring.

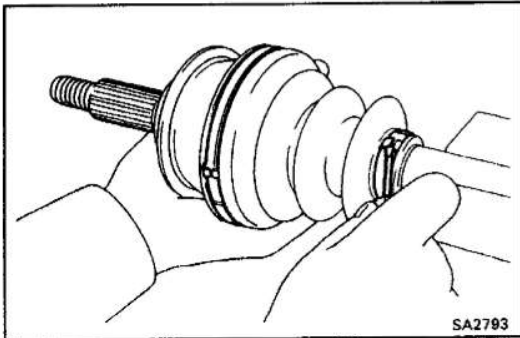
6. REMOVE INBOARD JOINT BOOT

Slide out the inboard joint boot.



7. REMOVE DAMPER

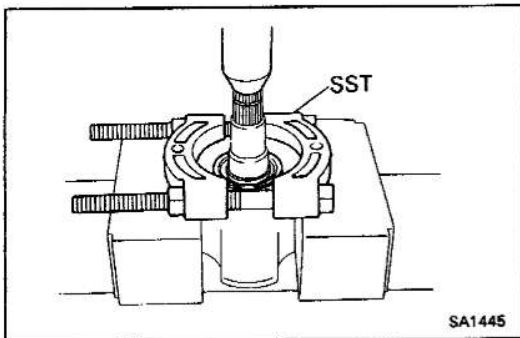
- (a) Using a screwdriver, remove the damper clamp.
- (b) Slide out the damper.



8. REMOVE OUTBOARD JOINT BOOT CLAMPS AND BOOT

- (a) Using a screwdriver, remove the two boot clamps of the outboard joint boot.
- (b) Slide out the boot from the outboard joint.

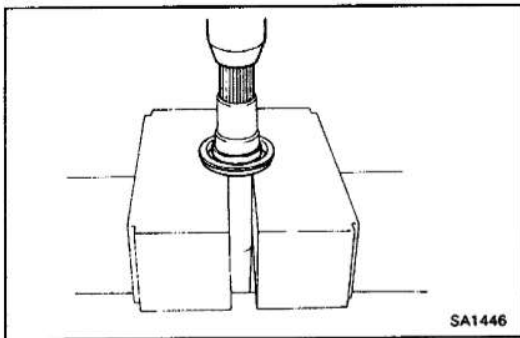
NOTICE: Do not disassemble the outboard joint.



9. REMOVE DUST COVER

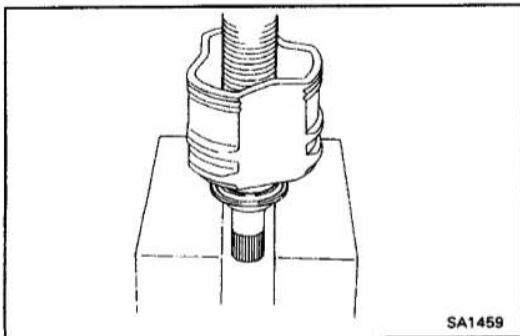
- (a) (LH Drive Shaft)

Using SST and press, press out the dust cover from the inboard joint tulip.
SST 09950-00020



- (b) (RH Drive Shaft)

Using a press, press out the dust cover.



REAR DRIVE SHAFT ASSEMBLY

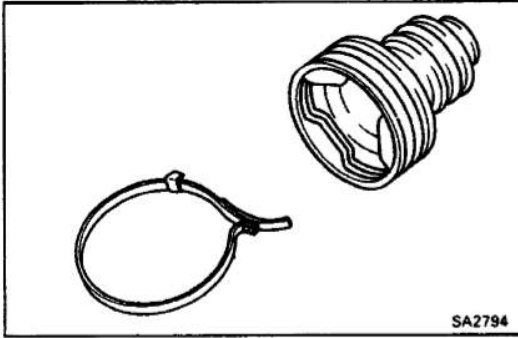
1. INSTALL DUST COVER

Using a press, press into a new dust cover.

SA00C-01

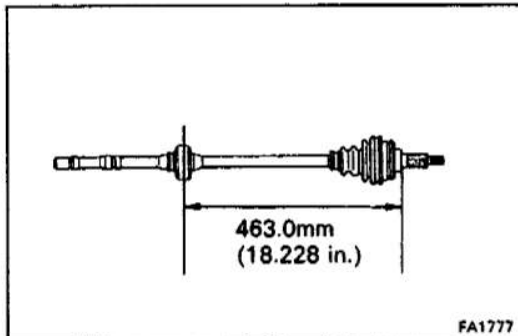
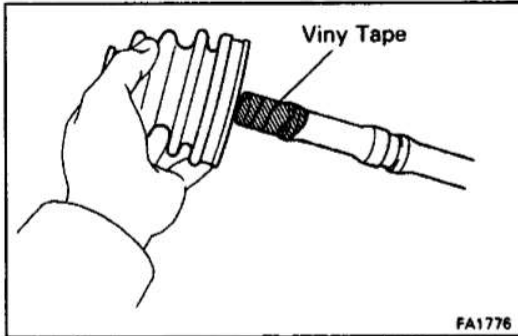
SA-60

SUSPENSION AND AXLE – REAR DRIVE SHAFT(5S-FE)



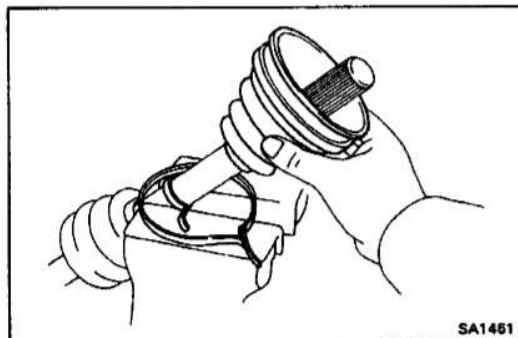
2. TEMPORARILY INSTALL NEW OUTBOARD JOINT BOOT AND NEW BOOT CLAMPS

Temporarily install a new boot and two new boot clamps for the outboard joint to the drive shaft.
 HINT: Before installing the boot, wrap vinyl tape around the spline of the drive shaft to prevent damaging the boot.



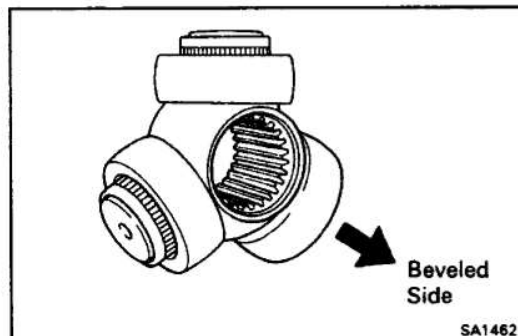
3. TEMPORARILY INSTALL DAMPER AND NEW DAMPER CLAMP

HINT: Fix the clamp position in line with the groove of the drive shaft.



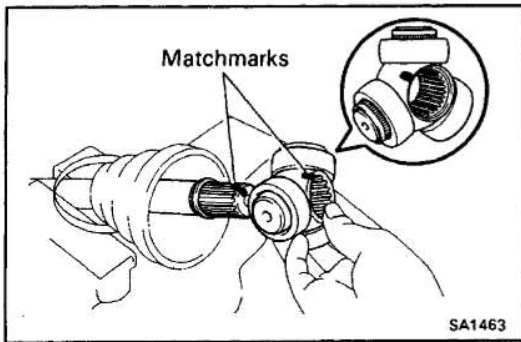
4. TEMPORARILY INSTALL NEW INBOARD JOINT BOOT AND NEW BOOT CLAMPS

Temporarily install a new boot and two new boot clamps for the inboard joint to the drive shaft.

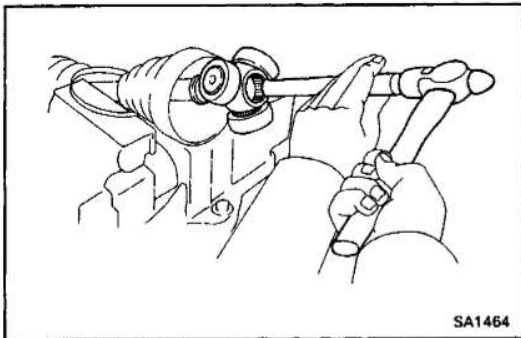


5. ASSEMBLE TRIPOD JOINT

(a) Place the beveled side of the tripod axial spline toward outboard joint.

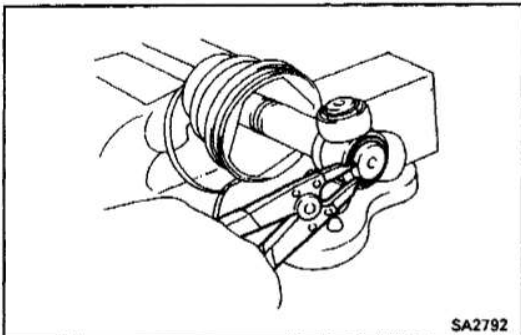


(b) Align the matchmarks placed before disassembly.

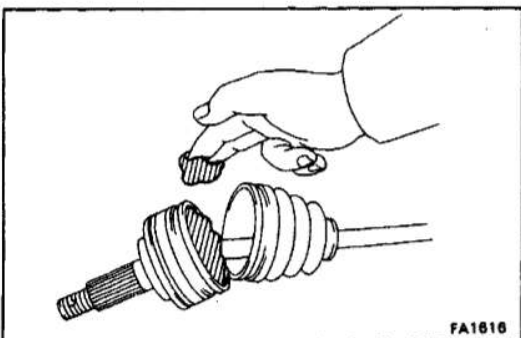


(c) Using a brass bar and hammer, tap in the tripod joint to the drive shaft.

NOTICE: Do not tap the roller.



(d) Using a snap ring expander, install a new snap ring.



6. INSTALL BOOT TO OUTBOARD JOINT

Before assembling the boot, fill grease into the outboard joint and boot.

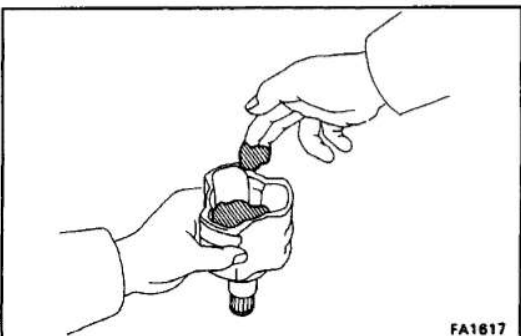
HINT: Use the grease supplier in the boot kit.

Grease capacity:

120–130 g (0–26–0.29 lb)

Grease color:

Black



7. INSTALL INBOARD JOINT TULIP TO REAR DRIVE SHAFT

(a) Pack in the grease to the boot and inboard joint tulip.

HINT: Use the grease supplied in the boot kit.

Grease capacity:

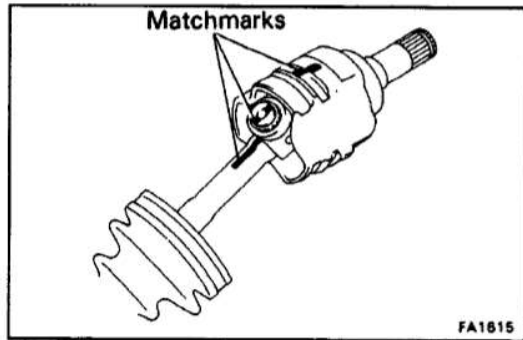
232–242 g (0.51–0.53 lb)

Grease color:

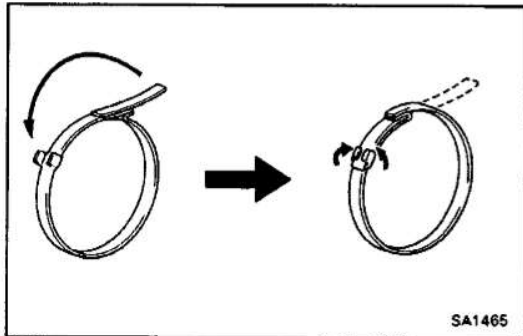
Yellow ocher

SA-62

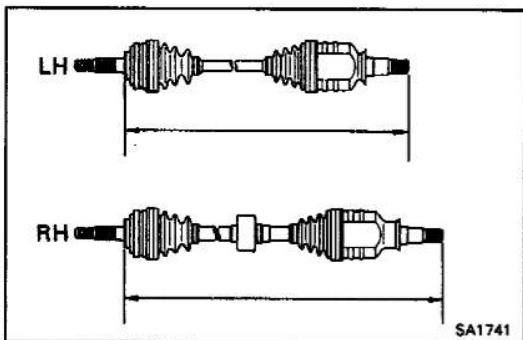
SUSPENSION AND AXLE – REAR DRIVE SHAFT(5S-FE)



- (b) Align the matchmarks placed before remove, and install the inboard joint tulip to the drive shaft.
- (c) Install the boot to the inboard joint tulip.

**8. ASSEMBLE BOOT CLAMPS AND DAMPER CLAMP**

- (a) Be sure the boot is on the shaft groove.
- (b) Using a screwdriver, bend the clamp and lock it as shown.

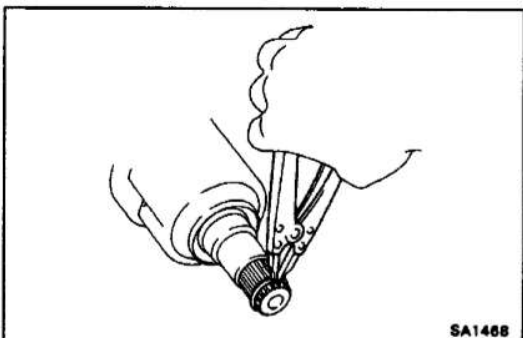


- (c) Insure that the boot is not stretched or contacted when the drive shaft is at standard length.

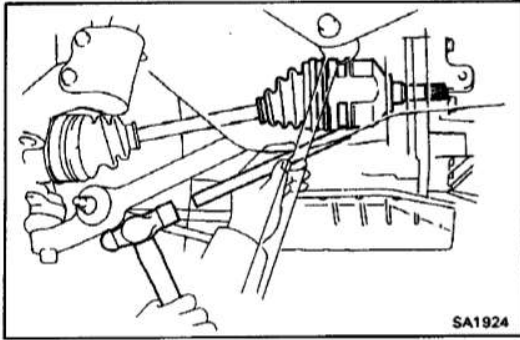
Drive shaft standard length:

LH 540.3±5.0 mm (21.272±0.197 in.)

RH 831.4±5.0 mm (32.732±0.197 in.)



- (d) Using a snap ring expander, install a new snap ring.



REAR DRIVE SHAFT INSTALLATION

1. INSTALL LH DRIVE SHAFT

- Coat the oil seal lip with MP grease.
- Using a brass bar and hammer, drive in the drive shaft until it marks contact with the pinion shaft.

NOTICE: Be careful not to damage the boots.

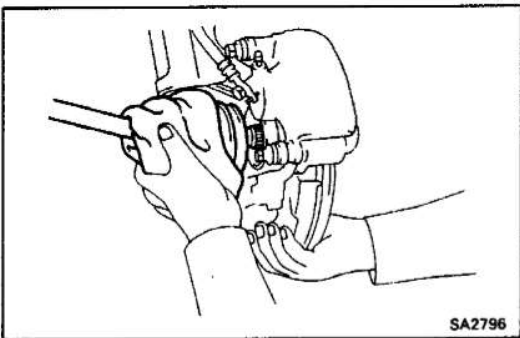
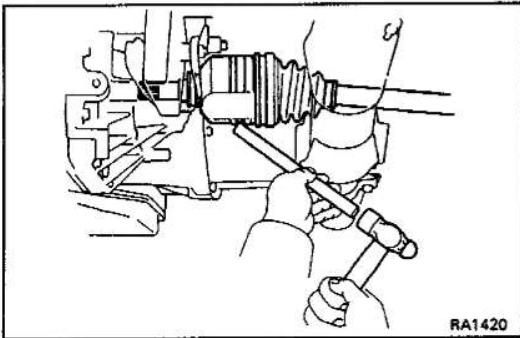
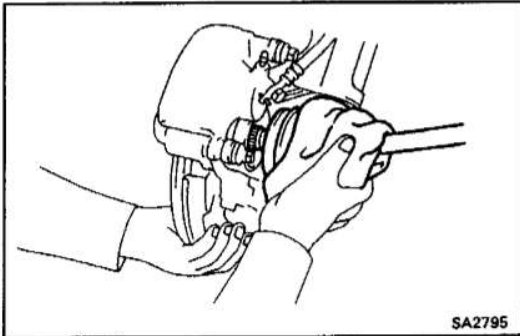
HINT:

- Before installing the drive shaft, set the snap ring opening side facing downward.
- Whether or not the drive shaft is making contact with the pinion shaft can be known by sound or feeling when driving it in.

- Install the outboard joint side of the drive shaft to the axle shaft.

NOTICE:

- Be careful not to damage the boots.
- (w/ ABS)
Be careful not to damage the speed sensor rotor of the drive shaft.



2. INSTALL RH DRIVE SHAFT

- Coat the oil seal lip with MP grease.
- Using a brass bar and hammer, drive in the drive shaft until it makes contact with the pinion shaft.

NOTICE: Be careful not to damage the boots.

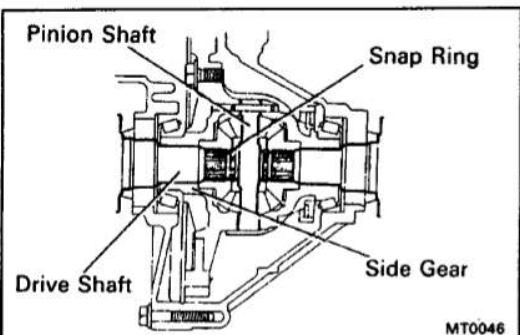
HINT:

- Before installing the drive shaft, set the snap ring opening side facing downward.
- Whether or not the drive shaft is making contact with the pinion shaft can be known by sound or feeling when driving it in.

- Install the outboard joint side of the drive shaft to the axle shaft.

NOTICE:

- Be careful not to damage the boots.
- (w/ ABS)
Be careful not to damage the speed sensor rotor of the drive shaft.



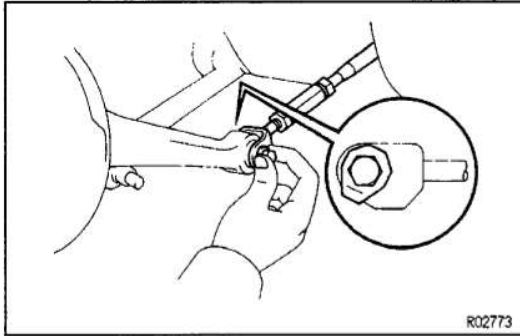
3. CHECK INSTALLATION OF REAR DRIVE SHAFT

- Check that there is 2–3 mm (0.08–0.12 in.) of play in axial direction.
- Check that the drive shaft will not come out by trying to pull it completely out by hand.

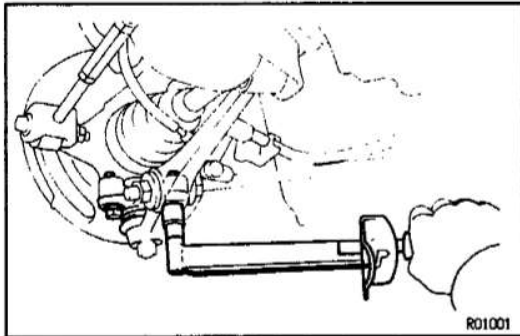
HINT: When checking pull the inboard joint so as not to damage the boots.

SA-64

SUSPENSION AND AXLE - REAR DRIVE SHAFT(5S-FE)

**4. CONNECT SUSPENSION ARM**

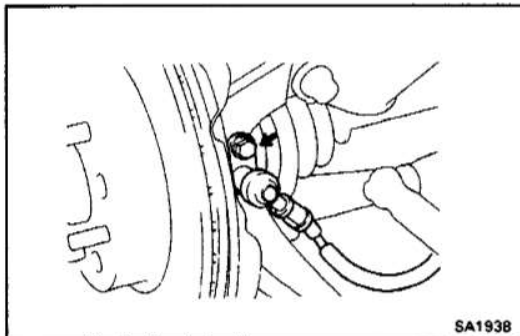
Temporarily connect the suspension arm to rear axle carrier with the bolt and nut.

**5. CONNECT BALL JOINT TO AXLE CARRIER**

(a) Connect the ball joint to the axle shaft.

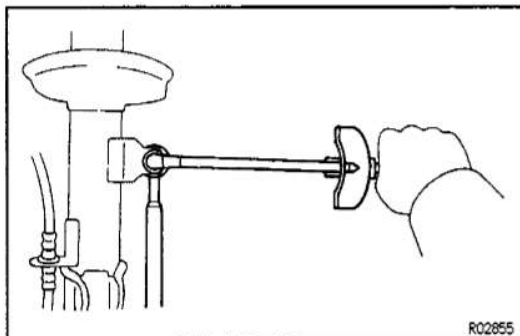
(b) Install and torque the two bolts.

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

**6. (w/ ABS)****INSTALL SPEED SENSOR TO AXLE CARRIER**

Torque: 7.4 N-m (80 kgf-cm, 69 ft-lbf)

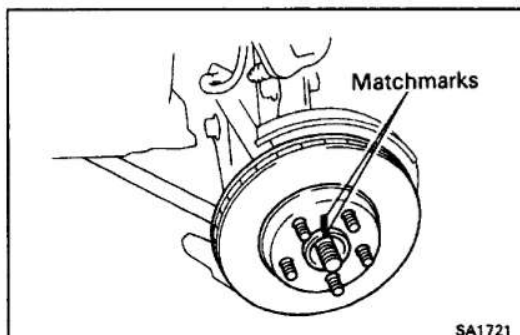
HINT: Before installing, check that there is no ferric clip or foreign material on the sensor tip.

**7. CONNECT STABILIZER LINK**

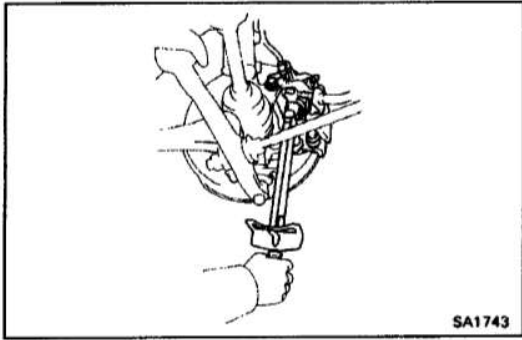
Connect the upper side nut to the stabilizer link.

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

HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

**8. INSTALL ROTOR DISC TO AXLE CARRIER**

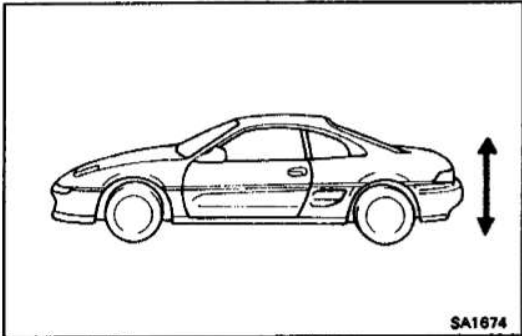
HINT: Before removing the rotor disc, place the matchmarks on the axle shaft and rotor disc.



9. INSTALL BRAKE CALIPER

Install the brake caliper to the axle carrier with the two bolts.

Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

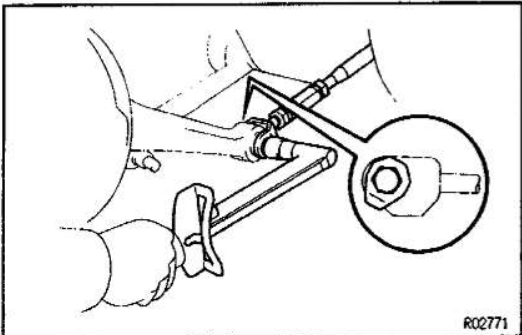


10. STABILIZE SUSPENSION

(a) Install the rear wheel and lower the vehicle.

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

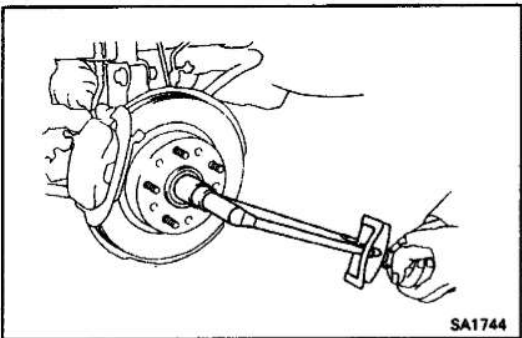
(b) Bounce the vehicle up and down several times to allow the suspension to settle.



11. TORQUE BOLT AND NUT

Torque the suspension arm mount bolt and nut with the vehicle load applied on the suspension.

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



12. INSTALL BEARING LOCK NUT, LOCK NUT CAP AND COTTER PIN

(a) Remove the rear wheel.

(b) Install the washer and lock nut.

(c) With the parking brake engaged, and tighten the nut.

Torque: 226 N-m (2,300 kgf-cm, 166 ft-lbf)

(d) Install the lock cap, and using pliers, install a new cotter pin.

13. FILL TRANSAXLE WITH GEAR OIL

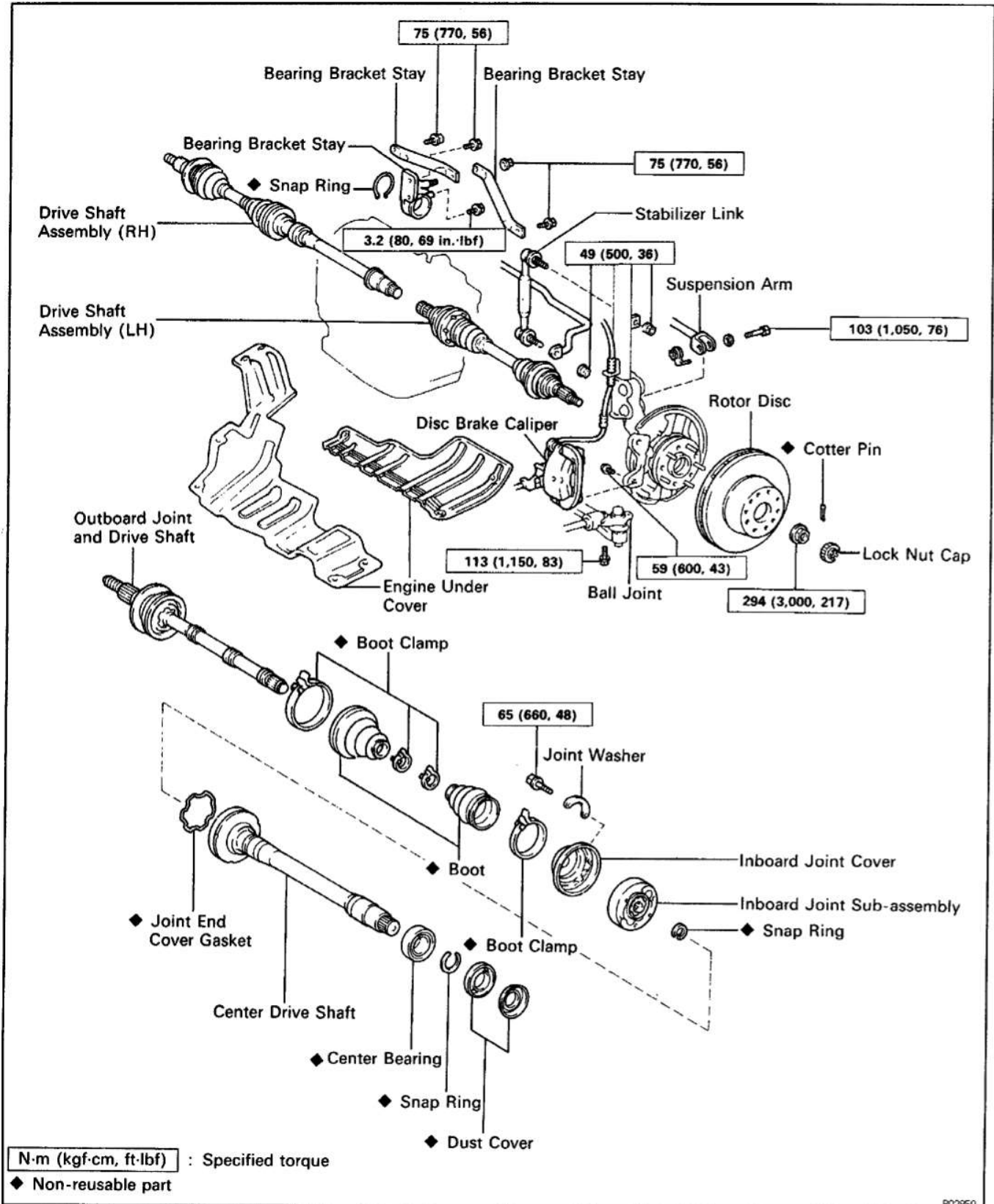
Fluid type:

ATF DEXRON® II

14. INSTALL ENGINE UNDER COVER

REAR DRIVE-SHAFT COMPONENT

BAOGL-01

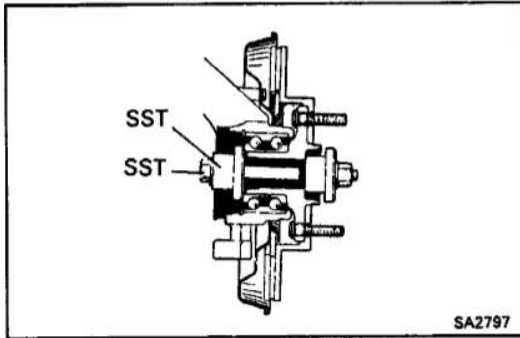


R02859

SA-70

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)

SAOCM-01

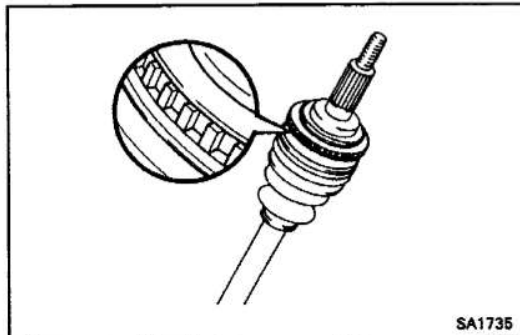


REAR DRIVE SHAFT REMOVAL

NOTICE:

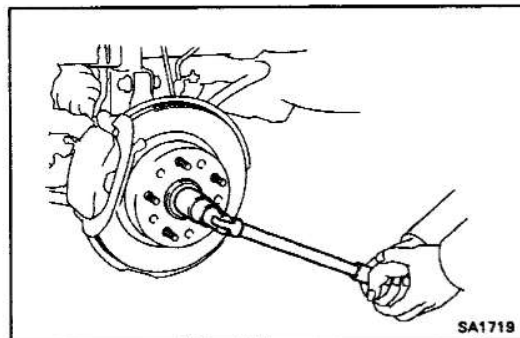
- The axle bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft removed. Therefore, if it is absolutely necessary to place the vehicle weight on the axle bearing, first support it with SST.

SST 09570-22010, 09608-16041 (09608-02010)



- (w/ ABS)

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



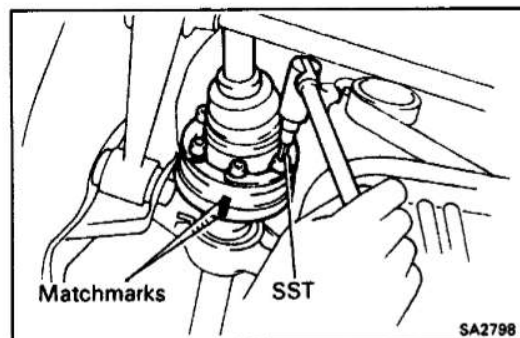
1. JACK UP VEHICLE AND REMOVE REAR WHEEL

2. REMOVE ENGINE UNDER COVER

3. DRAIN TRANSAXLE OIL

4. REMOVE COTTER PIN, LOCK NUT CAP AND BEARING LOCK NUT

- Remove the cotter pin and lock nut cap.
- With the parking brake engaged, remove the bearing lock nut.



5. LOOSEN SIX BOLTS HOLDING DRIVE SHAFT TO DIFFERENTIAL SIDE GEAR SHAFT OR CENTER DRIVE SHAFT

- Place the matchmarks on the drive shaft and side gear shaft.

NOTICE: Do not punch the marks.

Use paint, etc.

- With the parking brake engaged, using SST, loosen the six hexagon bolts.

SST 09923-00020

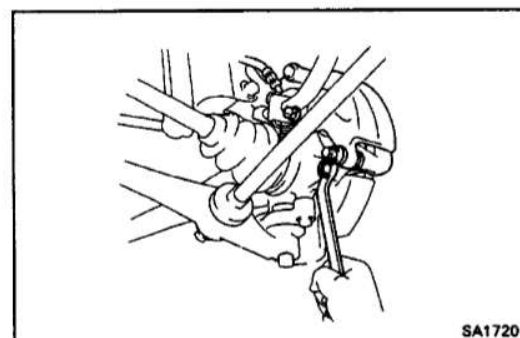
HINT: Do not remove the bolts, finger tighten them not to drop down the drive shaft.

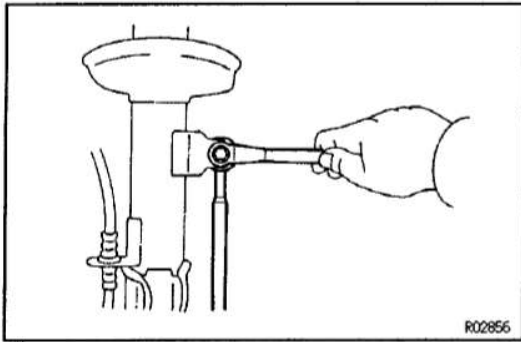
6. REMOVE BRAKE CALIPER

Remove the brake caliper from the axle carrier and suspend it with wire.

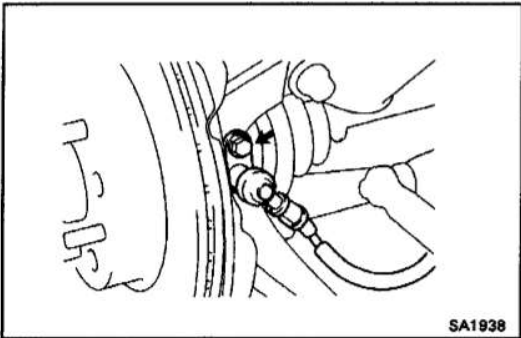
7. REMOVE ROTOR DISC

HINT: Before removing the rotor disc, place matchmarks on the axle shaft and rotor disc.

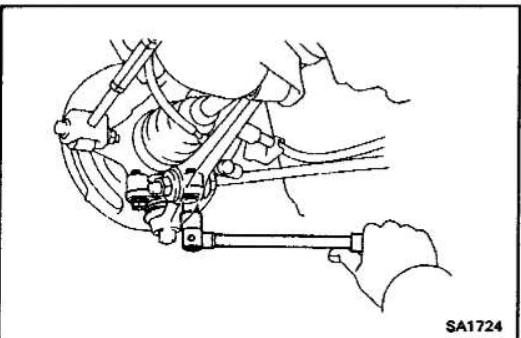


**8. DISCONNECT STABILIZER LINK**

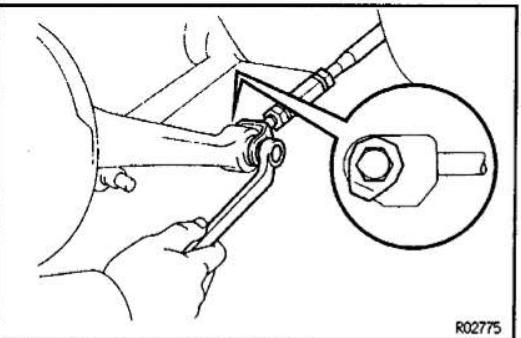
Remove the nut and disconnect the stabilizer links.
 HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

**9. (w/ ABS)****REMOVE SPEED SENSOR FROM AXLE CARRIER**

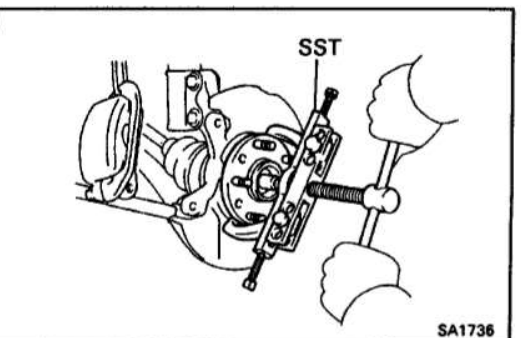
Remove the bolt and pull out the speed sensor.

**10. DISCONNECT LOWER ARM FROM REAR AXLE CARRIER**

- (a) Remove the two bolts holding the ball joint to the lower arm.
- (b) Disconnect the lower arm.

**11. DISCONNECT SUSPENSION ARM**

- (a) Remove the suspension arm mounting nut and bolt, disconnect the suspension arm from the rear axle carrier.
- (b) Similarly disconnect the other side.

**12. DISCONNECT DRIVE SHAFT FROM AXLE CARRIER**

Using SST, disconnect the drive shaft from the axle carrier.

SST 09950-20017

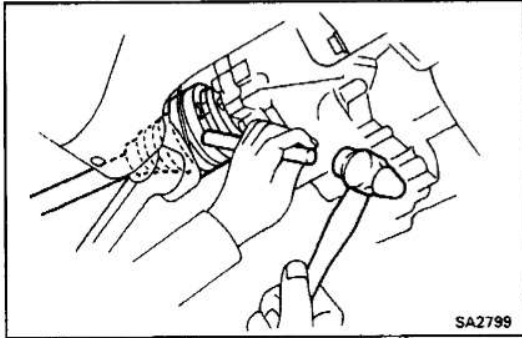
NOTICE:

- Cover the drive shaft boot with cloth to protect it from damage.

SA-72

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)

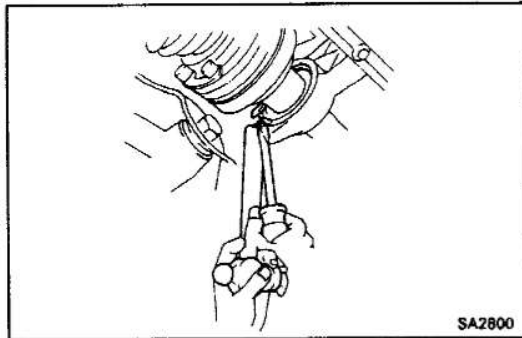
- (w/ ABS)
- Be careful not to damage the sensor rotor of the drive shaft.

**13. REMOVE LH DRIVE SHAFT**

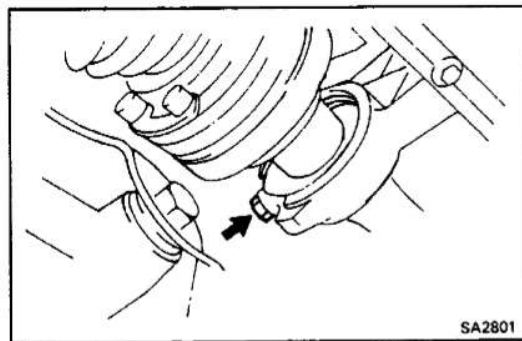
Using a hammer and brass bar, drive out the drive shaft from the transaxle.

NOTICE:

- Be careful not to damage the side gear shaft.
- Be careful not to damage the differential side oil seal.

**14. REMOVE RH DRIVE SHAFT**

- (a) Using a hammer and screwdriver, remove the snap ring from the bearing bracket.

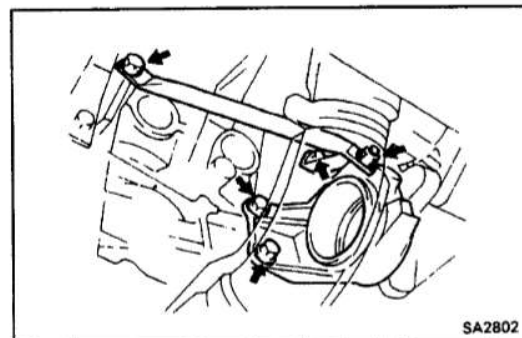


- (b) Remove the bolt from the bearing bracket.

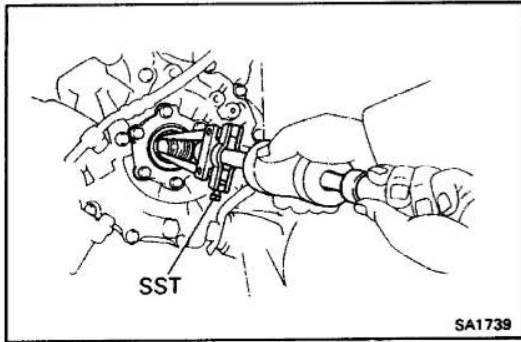
- (c) Remove the RH drive shaft with center drive shaft.

NOTICE: Be careful not to damage the differential side oil seal.

HINT: If it is hard to remove the bearing, use a brass bar and hammer and the drive flange end of the drive shaft.

**15. REMOVE DRIVE SHAFT BEARING BRACKET AND BEARING BRACKET STAY**

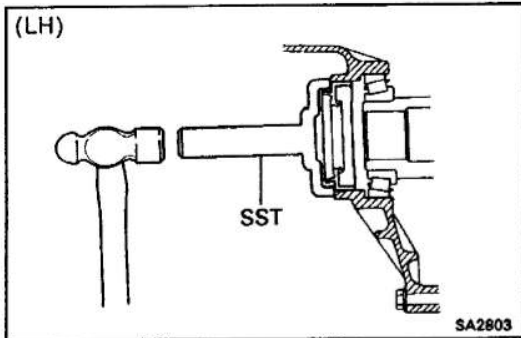
- (a) Remove the nut, two bolts and the two bearing bracket stays from the bearing bracket and engine.
- (b) Remove the two bolts and the bearing bracket from the engine.



OIL SEAL REPLACEMENT

1. REMOVE OIL SEALS

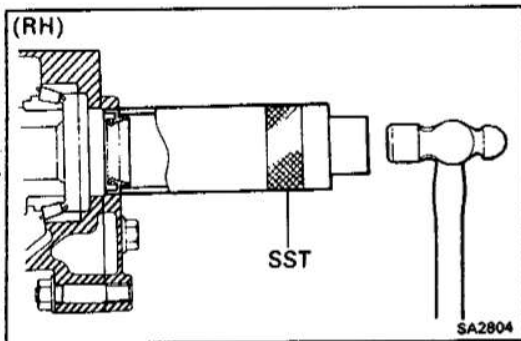
Using SST, drive out the oil seals.
SST 09308-00010



2. INSTALL NEW OIL SEAL

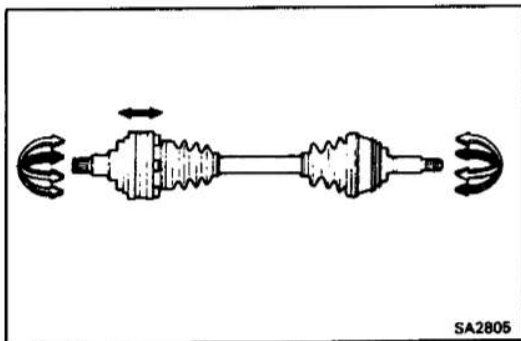
(a) (L H)

Using SST and hammer, tap in a new LH oil seal.
SST 09223-15010



(b) (R H)

Using SST and hammer, tap in a new RH oil seal.
SST 09316-60010 (09316-00010)



REAR DRIVE SHAFT DISASSEMBLY

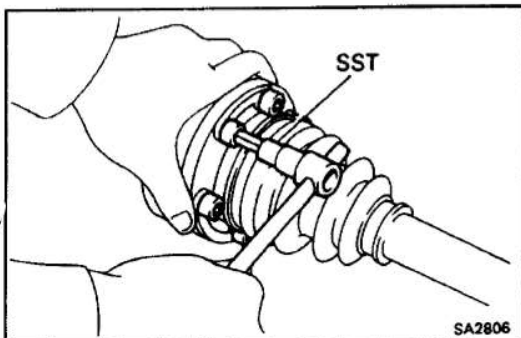
1. CHECK DRIVE SHAFT

- Check to see that there is no 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 for damage to boots.

2. DISCONNECT SIDE GEAR SHAFT

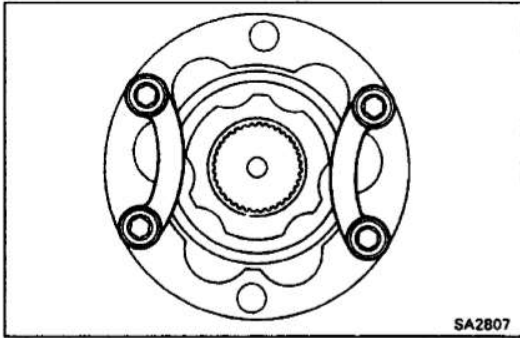
- Using SST, remove the six hexagon bolts and the three washers.
SST 09923-00020

- Disconnect the side gear shaft from the drive shaft.



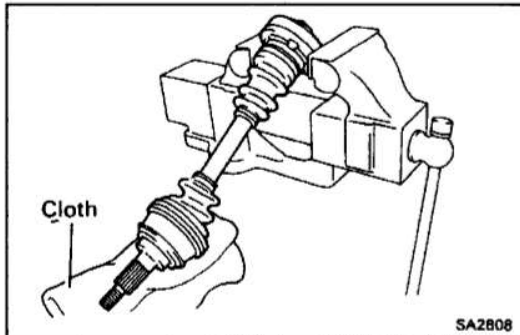
SA-74

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)



(c) Use bolts, nuts and washers to keep the inboard joint together.

NOTICE: Tighten the bolts by hand to avoid scratching the flange surface.

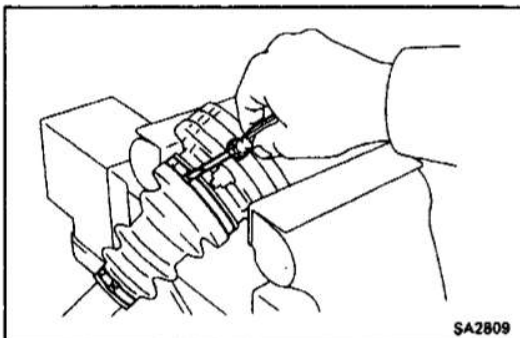


3. REMOVE INBOARD JOINT AND BOOT CLAMPS

(a) Mount the inboard joint sub-assembly in a vise.

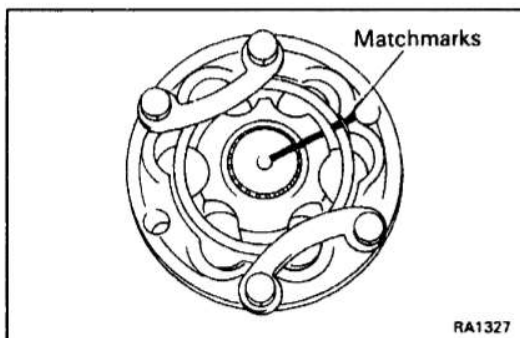
HINT:

- Use a set of soft jaws in the vise to protect the inboard joint sub-assembly.
- Cover the outboard joint side dust cover with cloth to protect in from damage.



(b) Using a screwdriver, remove the two inboard joint boot clamps.

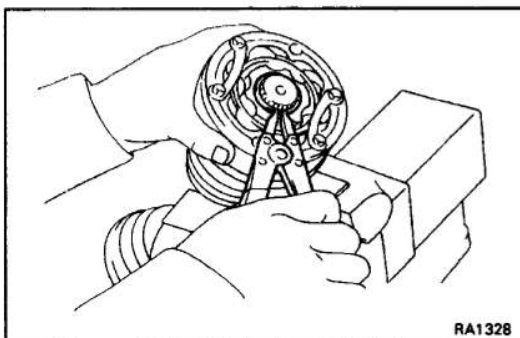
(c) Remove the inboard joint boot from the inboard joint cover.



4. DISASSEMBLE INBOARD JOINT

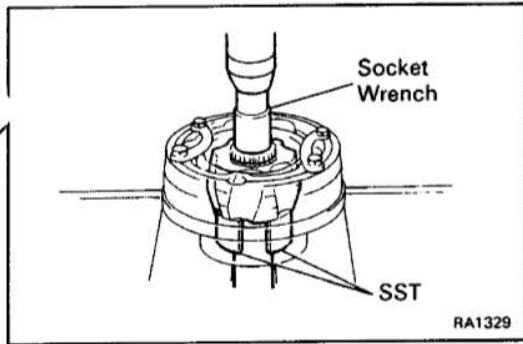
(a) Place matchmarks on the inboard joint and drive shaft.

NOTICE: Do not punch marks.



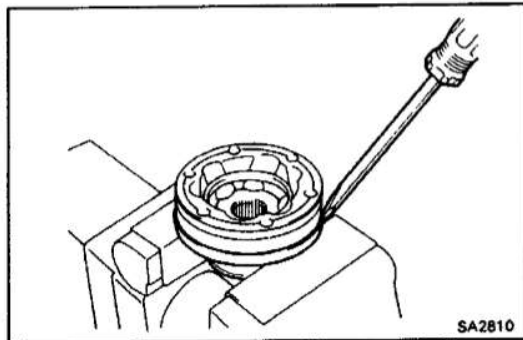
(b) Using a snap ring expander, remove the snap ring.

SUSPENSION AND AXLE - REAR DRIVE SHAFT(3S-GTE)



(c) Using SST, a socket wrench and a press, remove the inboard joint from the drive shaft.
SST 09726-10010 (09726-00030)

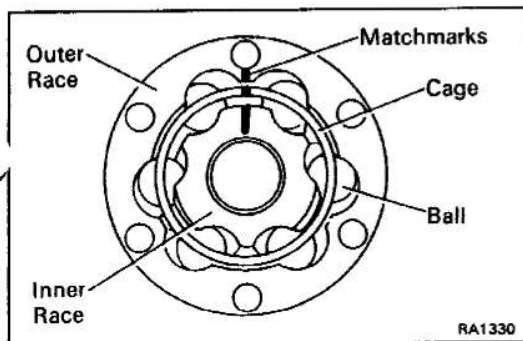
(d) Remove the bolts, nuts and washers from the inboard joint.



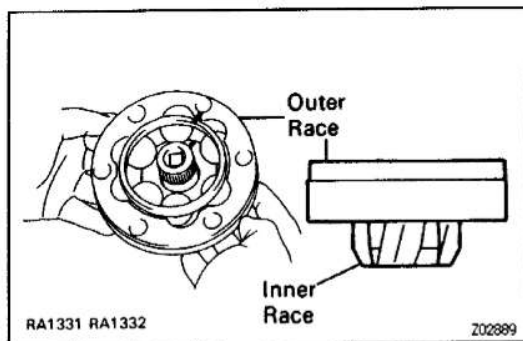
(e) Using a screwdriver, unstake the inboard joint cover.

(f) Using a screwdriver, pry out the inboard joint from the inboard joint cover.

NOTICE: When lifting the inboard joint, hold onto the inner race and outer race.

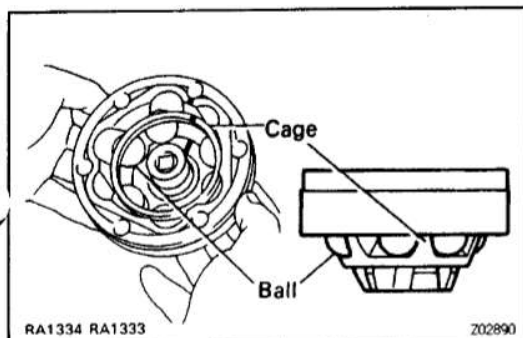


HINT: Should the joint become disassembled, reassemble it in the way shown.

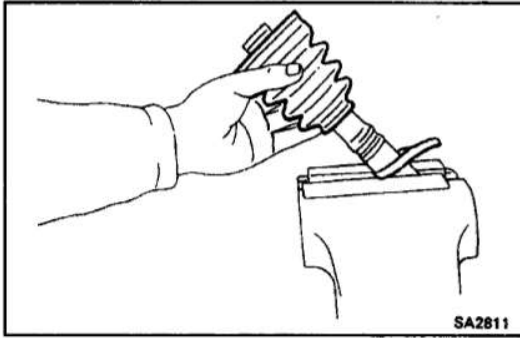


SERVICE HINT

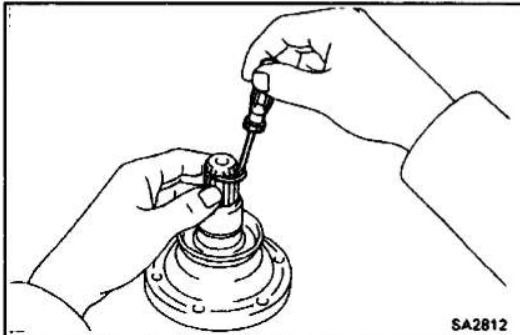
- (a) Align the matchmarks place before disassembly.
- (b) Insert the spark plug wrench into the inner race.
- (c) Lift the outer race and cage, and insert the six balls.



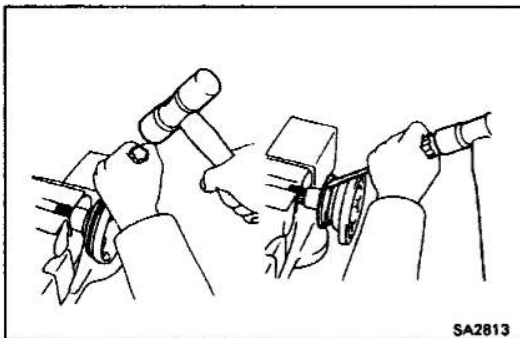
- (d) Jiggle the outer race and cage as shown to place the balls in their respective grooves.
- (e) Lower the outer race and cage so that fit tightly with the inner race.

SA-76**SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)****5. REMOVE BOOTS**

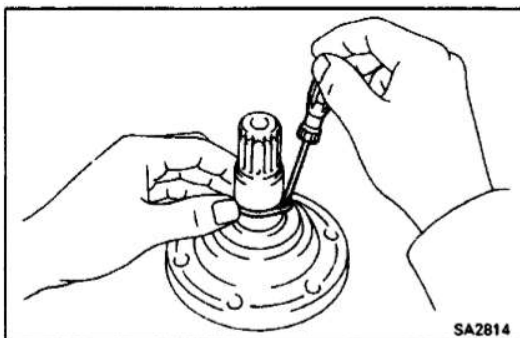
Remove boots of the inboard joint and outboard joint.

**6. REPLACE SIDE GEAR SHAFT SNAP RING**

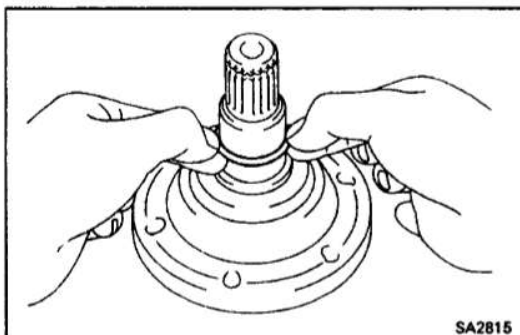
- (a) Using a screwdriver, pry out the snap ring.
- (b) Using a snap ring expander, install a new snap ring.

**7. REMOVE DUST COVER FROM SIDE GEAR SHAFT**

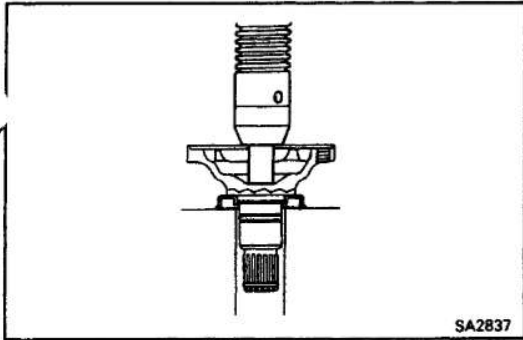
Using a screwdriver and hammer, tap out the dust cover.

**8. REPLACE SIDE GEAR SHAFT O-RING**

- (a) Using a screwdriver, remove the O-ring.

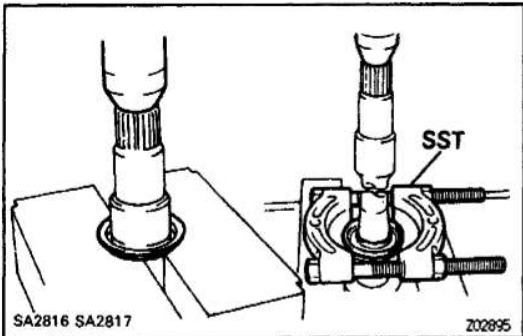


- (b) Coat O-ring with MP grease.
- (c) Install a new O-ring.



9. INSTALL DUST COVER TO SIDE GEAR SHAFT

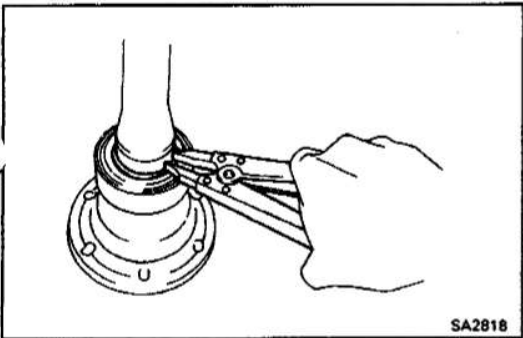
Using a press, install a new dust cover.



10. REMOVE DUST COVER FROM CENTER DRIVE SHAFT

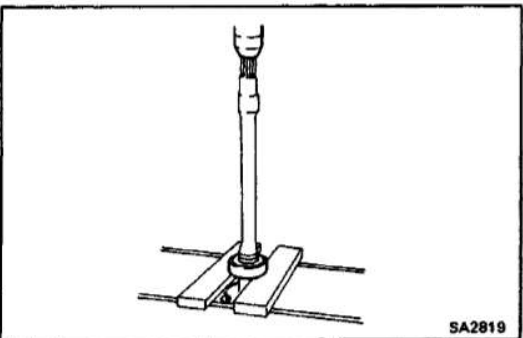
Using SST and press, remove the dust cover from the inboard joint.

SST 09950-00020

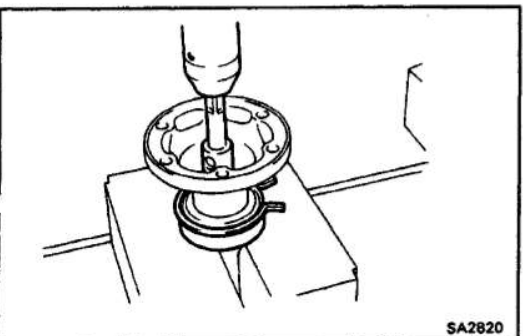


11. REMOVE BEARING FROM CENTER DRIVE SHAFT

(a) Using a snap ring expander, remove the snap ring from the inboard joint.



(b) Using a press, press out the bearing from the inboard joint.



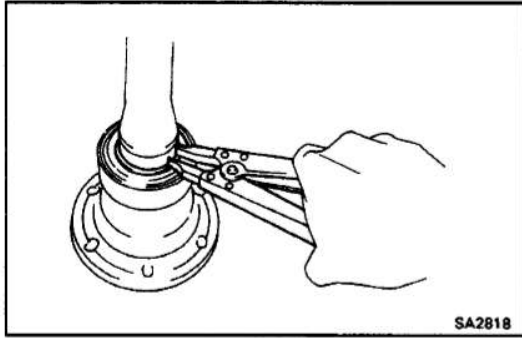
12. INSTALL BEARING TO CENTER DRIVE SHAFT

(a) Install a new snap ring to the center drive shaft.

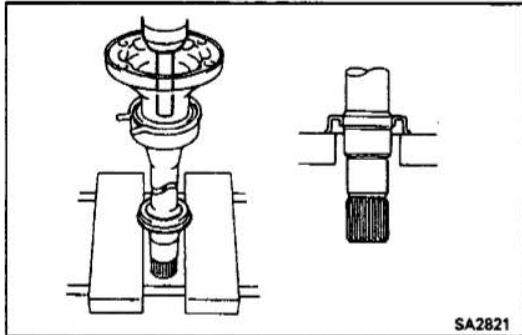
(b) Using a press and extension bar, press in a new bearing.

SA-78

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)

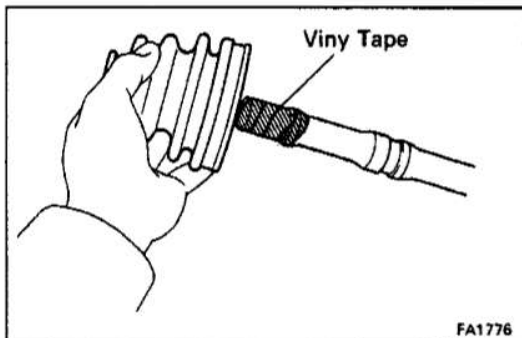


(c) Using a snap ring expander, install a new snap ring.



13. INSTALL DUST COVER TO CENTER DRIVE SHAFT

Using a press, press in a new dust cover to the inboard joint.



REAR DRIVE SHAFT ASSEMBLY

SA0CG-01

1. TEMPORARILY INSTALL NEW BOOTS AND NEW BOOT CLAMP

HINT: Before installing the boot, wrap vinyl tape around the spline of the shaft to prevent damaging the boot.

NOTICE: The boot and clamp of the outboard joint are smaller than those of the inboard joint. Temporarily install the two boots and four new clamps to the outboard joint and inboard joint.

2. INSTALL BOOT TO OUTBOARD JOINT

(a) Before assembling the boots, pack in grease.

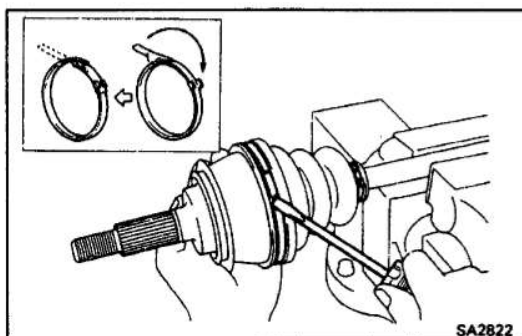
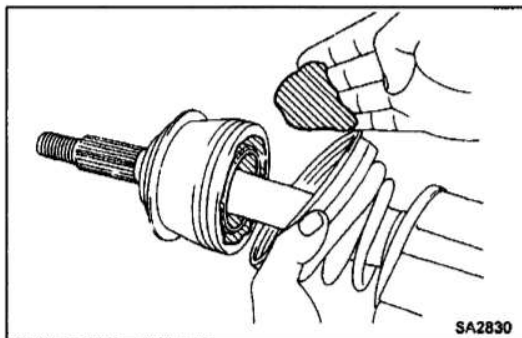
HINT: Use the grease supplied in the boot kit.

Grease capacity:

120–130 g (0.26–0.29 lb)

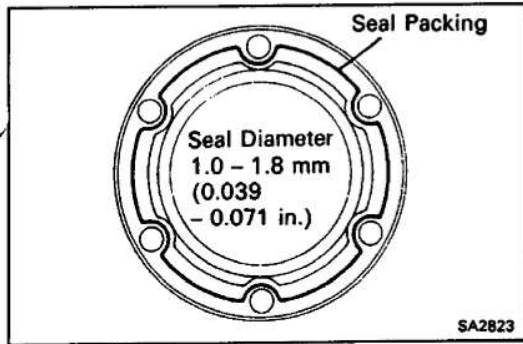
Grease color:

Black



(b) Install a new two boot clamps to the outboard joint boot.

(c) Bend the boot clamp and lock it as shown.



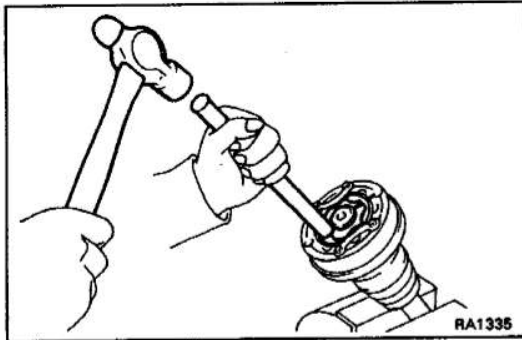
3. INSTALL INBOARD JOINT COVER

- Clean contacting surfaces of any residual packing material using gasoline or alcohol.
- Apply seal packing to the inboard joint cover as shown.

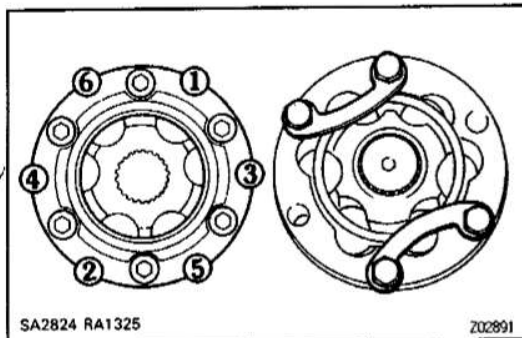
Seal packing:

Part No. 08826-00801, THREE BOND 1121 or equivalent

HINT: Avoid applying an excess amount to the surface.

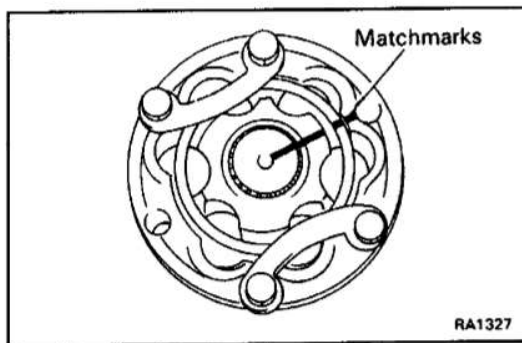


- Align the bolt holes of the cover with those of the inboard joint, then insert the hexagon bolts.
- Using a hammer and brass bar, tap the rim of the inboard joint cover into place.



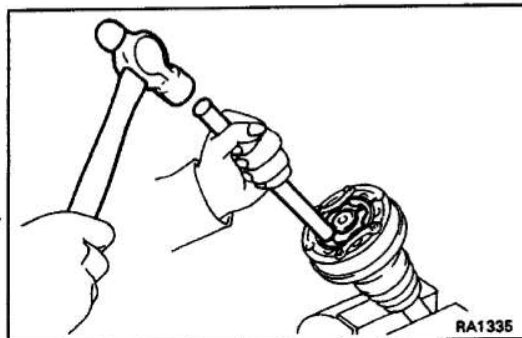
- Do this in the order shown, and repeat several time.
- Use bolts, nuts and washers to keep the inboard joint together.

NOTICE: Tighten the bolts by hand to avoid scratching the flange surface.



4. ASSEMBLE INBOARD JOINT

- Align the matchmarks placed before disassembly.

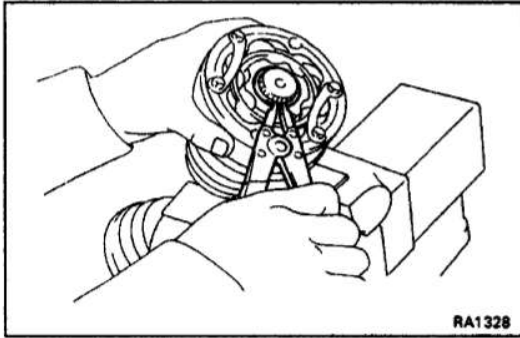


- Using a brass bar and hammer, tap the inboard joint onto the drive shaft.

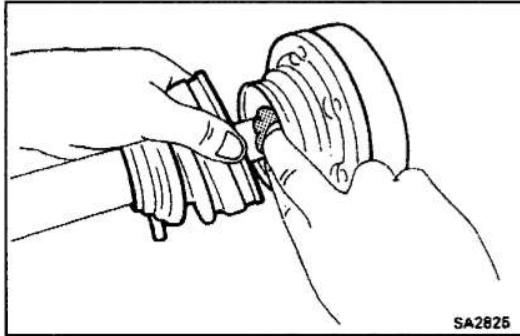
NOTICE: Make sure that the brass bar is touching the inner race, and not the cage.

SA-80

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)



(c) Using a snap ring expander, install a new snap ring.



(d) Pack in grease to the inboard tulip and boot.

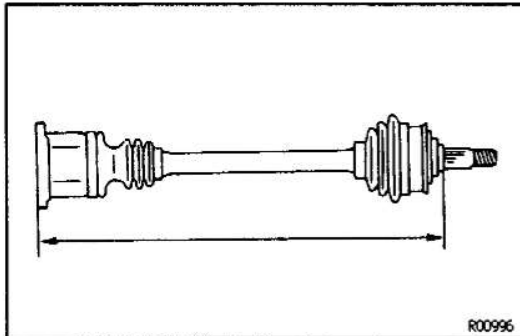
HINT: Use the grease supplied in the boot kit.

Grease capacity:

90–100 g (0.20–0.22 lb)

Grease color:

Black

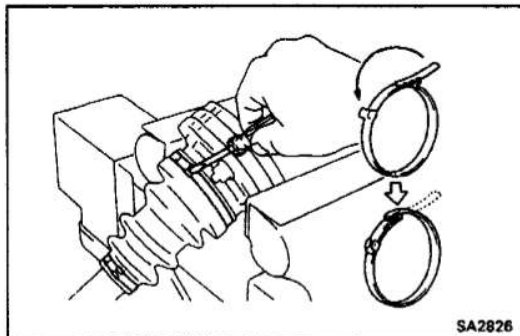


(e) Be sure the boot is on the shaft groove.

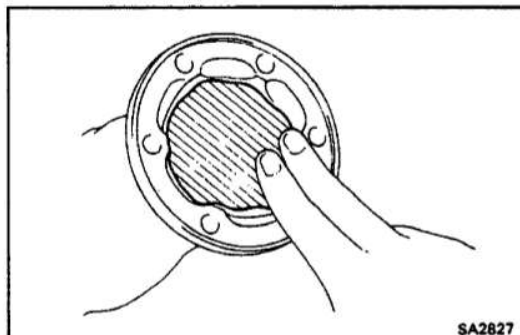
(f) Insure that the boot is no stretched or contracted when the drive shaft is at standard length.

Drive shaft length:

389.7±5.0 mm (15.343±0.197 in.)



(g) Bend the boot clamp and lock it as shown.



5. INSTALL SIDE GEAR SHAFT

(a) Pack in grease to the side gear shaft.

HINT: Use the grease supplied in the boot kit.

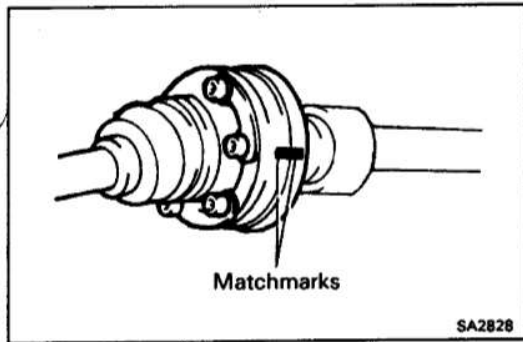
Grease capacity:

43–53 g (0.09–0.12 lb)

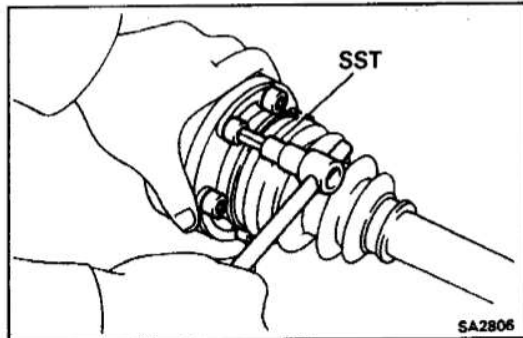
Grease color:

Black

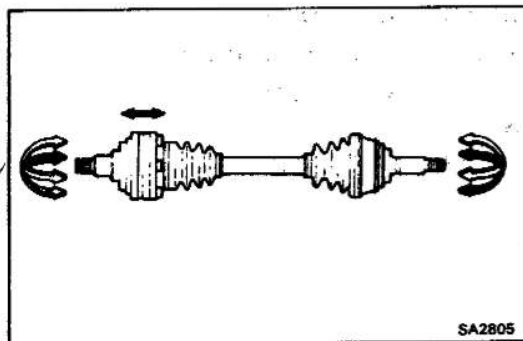
(b) Remove the two washers and four bolts from the drive shaft.



- (c) Align the matchmarks placed before remove, and install the side gear shaft or center drive shaft and a new gasket to the inboard joint sub-assembly.

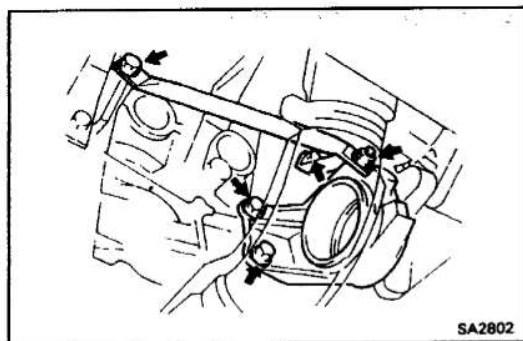


- (d) Using SST, temporarily tighten the six hexagon bolts with three washers.
SST 09923-00020



6. CHECK DRIVE SHAFT

- (a) Check to see that there is no play in the inboard joint and outboard joint.
(b) Check to see that the inboard slide smoothly in the thrust direction.



REAR DRIVE SHAFT INSTALLATION

SA2802-01

1. INSTALL DRIVE SHAFT BEARING BRACKET AND BEARING BRACKET STAY

- (a) Install the bearing bracket to the engine with the two bolts.
Torque: 64 N-m (650 kgf-cm, 47 ft-lbf)
(b) Install the two bearing bracket stays to the engine and bearing bracket with the two bolts and the nut.

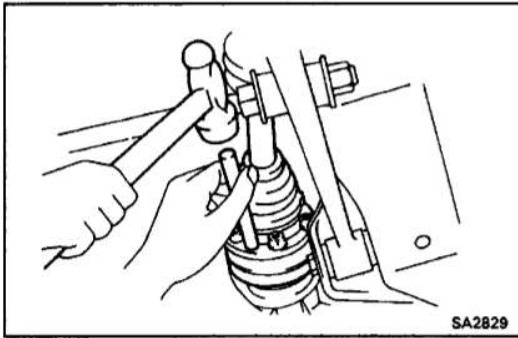
Torque:

Bolt 75 N-m (770 kgf-cm, 56 ft-lbf)

Nut 75 N-m (770 kgf-cm, 56 ft-lbf)

SA-82

SUSPENSION AND AXLE – REAR DRIVE SHAFT(3S-GTE)

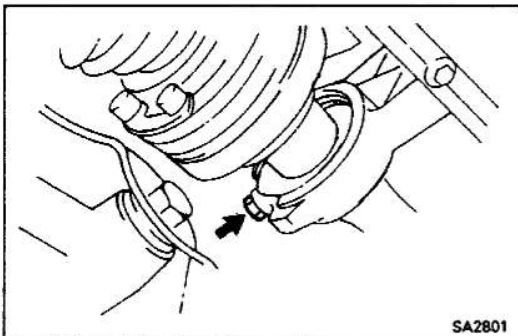
**2. INSTALL LH DRIVE SHAFT**

- (a) Apply the oil seal lip with MP grease.
- (b) Using a brass bar and hammer, drive in the drive shaft until it makes contact with the pinion shaft.

NOTICE: Be careful not to damage the boots.

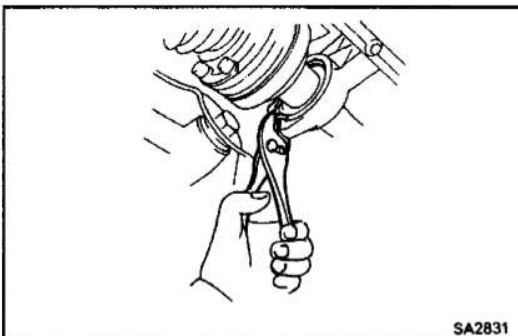
HINT:

- Before installing the drive shaft, set the snap ring opening side facing downward.
- Whether or not the drive shaft is making contact with the pinion shaft can be known by sound or feeling when driving it in.

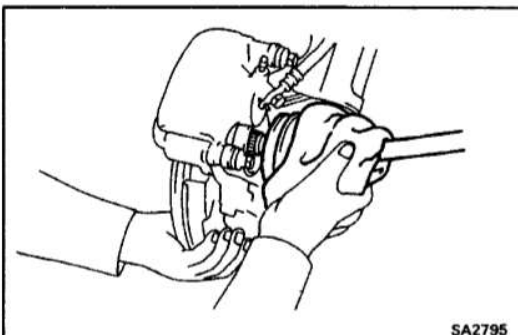
**3. INSTALL RH DRIVE SHAFT**

- (a) Apply MP grease to the transaxle oil lip.
- (b) Insert the center drive shaft with the RH drive shaft to the transaxle through the bearing bracket.
- (c) Install the bolt to the bearing bracket.

Torque: 32 N-m (320 kgf-cm, 24 ft-lbf)



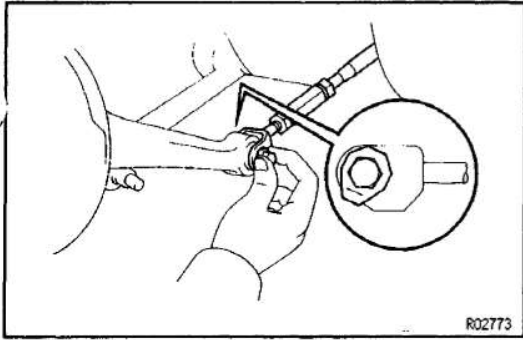
- (d) Using pliers, install a new snap ring to the bearing bracket

**4. CONNECT OUTBOARD JOINT SIDE OF DRIVE SHAFT**

Connect the outboard joint side of the drive shaft to the axle shaft.

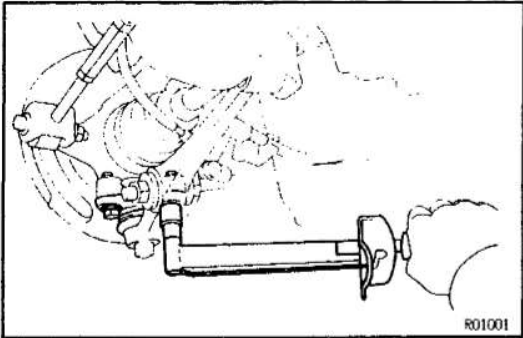
NOTICE:

- Be careful not to damage the boots.
- (w/ ABS)
Be careful not to damage the sensor rotor of the drive shaft.



5. CONNECT SUSPENSION ARM

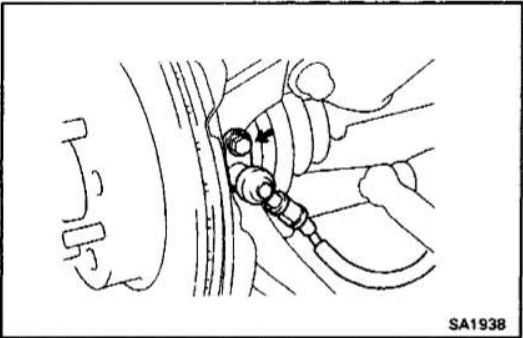
Temporarily connect the suspension arm to the rear axle carrier with the bolt and nut.



6. CONNECT BALL JOINT TO AXLE CARRIER

- (a) Connect the ball joint to the axle shaft.
- (b) Install and torque the two bolts.

Torque: 113 N-m (1,150 kgf-cm, 73 ft-lbf)

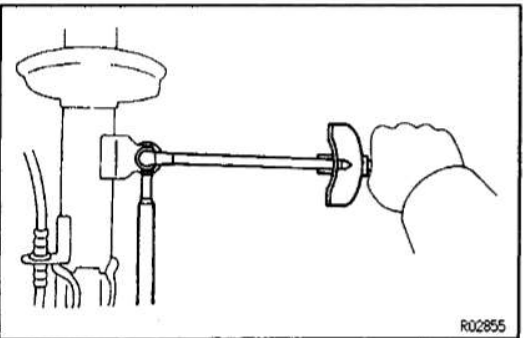


7. (w/ABS)

INSTALL SPEED SENSOR TO AXLE CARRIER

Torque: 7.4 N-m (80 kgf-cm, 69 in.-lbf)

HINT: Before installing, check that there is no ferric chip or foreign material on the sensor tip.

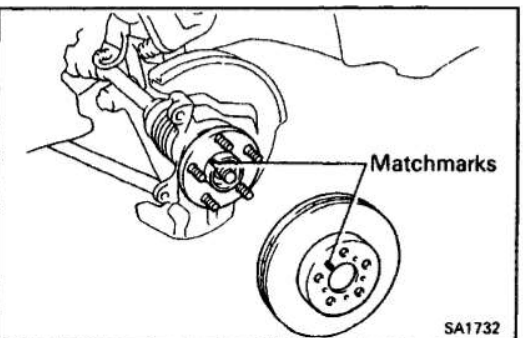


8. CONNECT STABILIZER LINK

Connect the stabilizer link, with the nut.

Torque: 48 N-m (500 kgf-cm, 36 ft-lbf)

HINT: If the ball joint stud together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

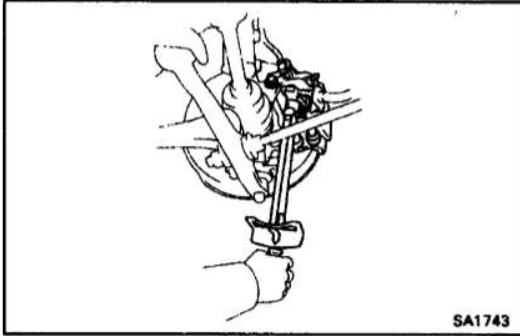


9. INSTALL ROTOR DISC TO AXLE CARRIER

HINT: Align the matchmarks, and install the rotor the axle shaft.

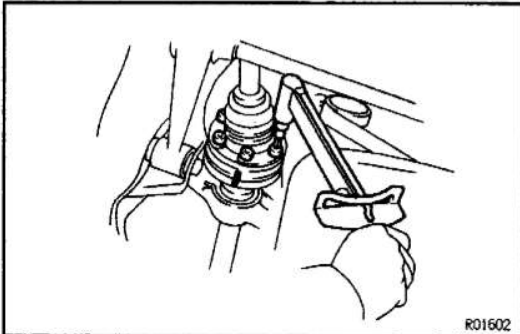
SA-84

SUSPENSION AND AXLE - REAR DRIVE SHAFT(3S-GTE)

**10. INSTALL BRAKE CALIPER**

Install the brake caliper to the axle carrier with the two bolts.

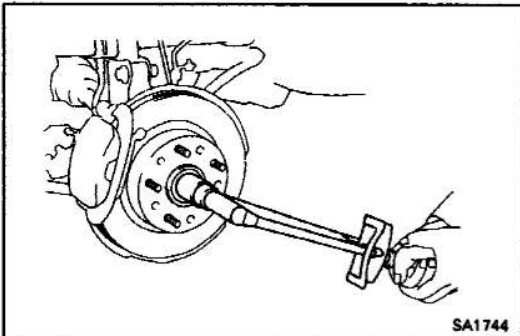
Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

**11. TIGHTEN INBOARD JOINT HOLDING SIX HEXAGON BOLTS.**

With the parking brake engaged, using SST torque the six hexagon bolts.

SST 09923-00020

Torque: 65 N-m (660 kgf-cm, 217 ft-lbf)

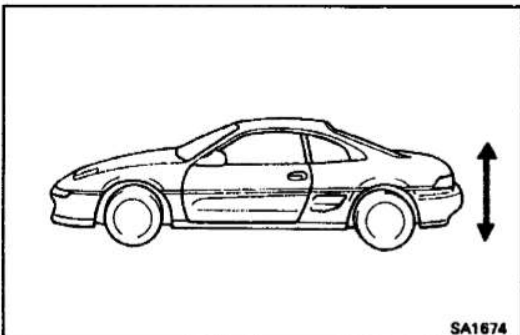
**12. INSTALL BEARING, LOCK NUT CAP AND COTTER PIN**

(a) Install the lock nut.

(b) With the parking brake engaged, and tighten the nut.

Torque: 284 N-m (3,000 kgf-cm, 217 ft-lbf)

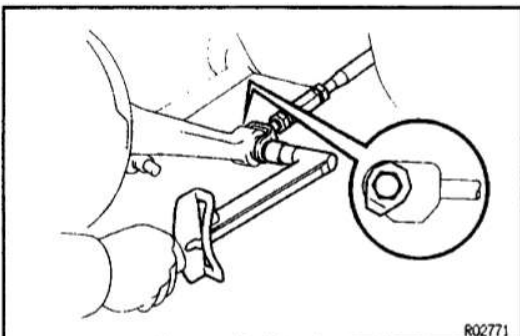
(c) Install the lock nut cap, and using pliers, install a new cotter pin.

**13. STABILIZE SUSPENSION**

(a) Install the rear wheel and lower vehicle.

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

(b) Bounce the vehicle up and down several times to allow the suspension to settle.

**14. TORQUE BOLT AND NUT**

Torque the suspension arm mount bolt and nut with the vehicle load applied on the 'suspension.

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

15. FILL TRANSAXLE WITH GEAR OIL

Oil grade:

API GL-4 or GL-5

Viscosity:

SAE 75W-90 or 85W-90

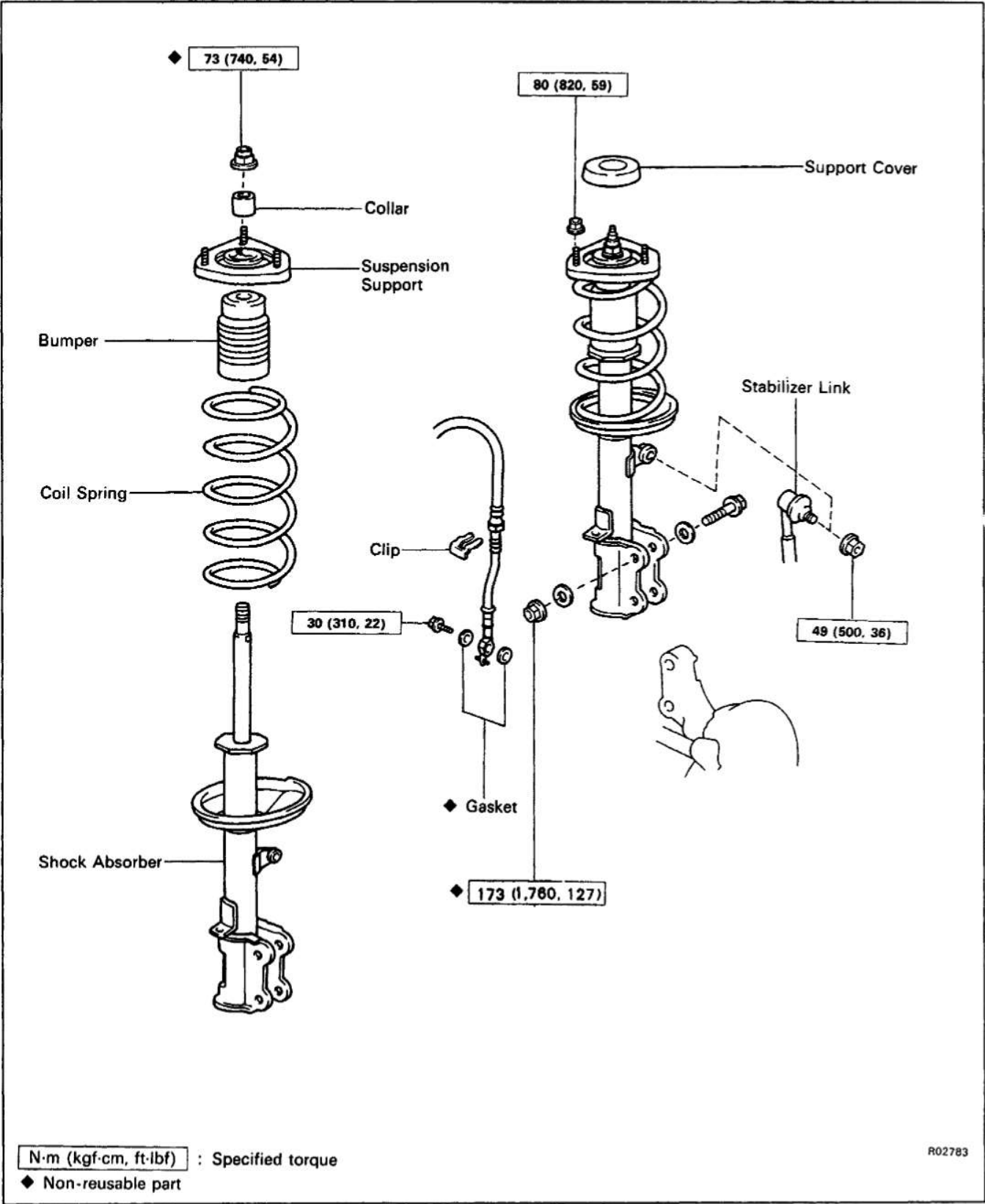
16. INSTALL ENGINE UNDERCOVER

SA-88

SUSPENSION AND AXLE – REAR SUSPENSION

REAR SHOCK ABSORBER COMPONENTS

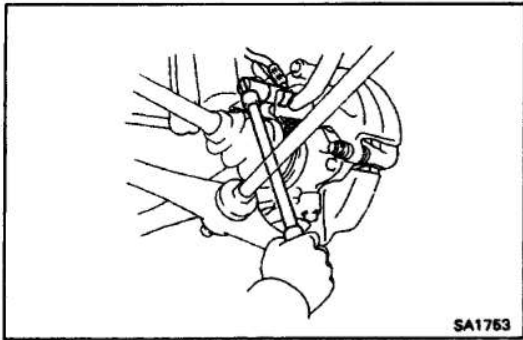
8A0CV-01



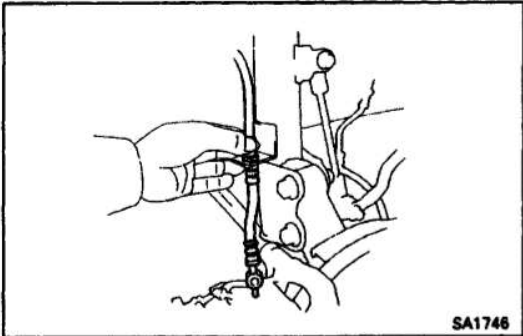
R02783

REAR SHOCK ABSORBER REMOVAL^{LOCW-01}**1. JACK UP VEHICLE AND REMOVE REAR WHEEL****2. DISCONNECT BRAKE HOSE**

- (a) Remove the union bolt and two gaskets and disconnect the brake hose.
- (b) Drain the brake fluid into a container.

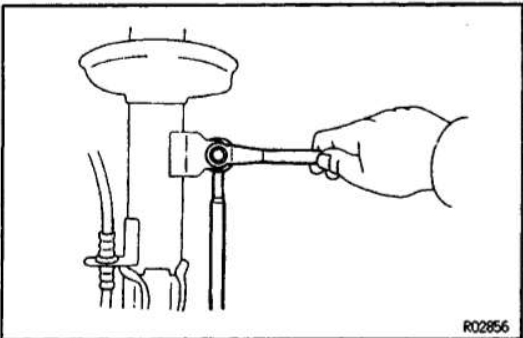
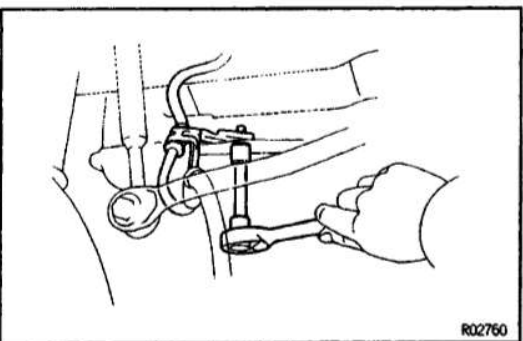


- (c) Remove the clip and remove brake hose from the shock absorber.

**2. DISCONNECT STABILIZER LINK**

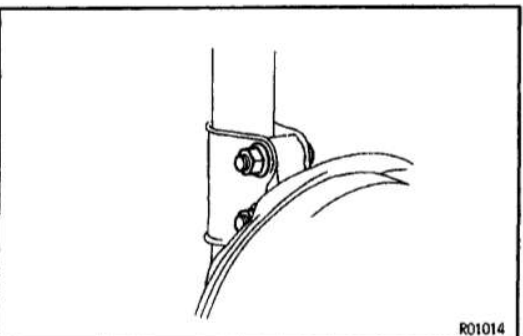
Remove the nut and disconnect the stabilizer link.

HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to cold the: stud.

**3. (w/ ABS)****REMOVE SPEED SENSOR WIRE HARNESS CLAMP:****4. DISCONNECT REAR AXLE CARRIER FROM SHOCK ABSORBER**

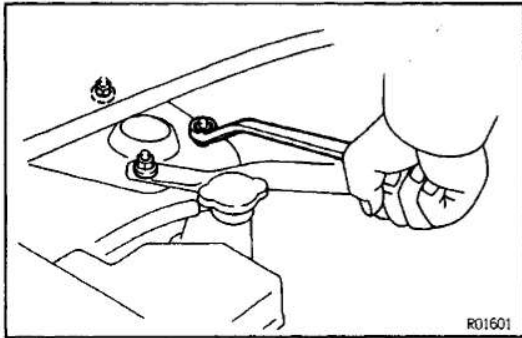
Loosen the bolts and nuts, and remove the nuts and washer.

HINT: Leave the bolts not to drop the axle carrier assembly.



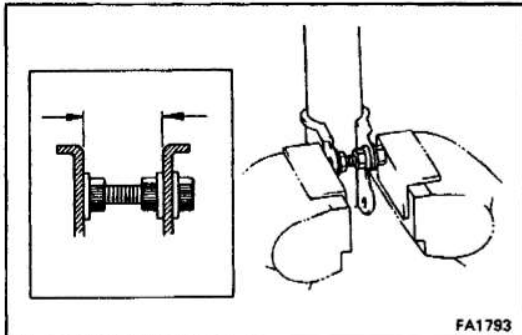
SA-90

SUSPENSION AND AXLE – REAR SUSPENSION

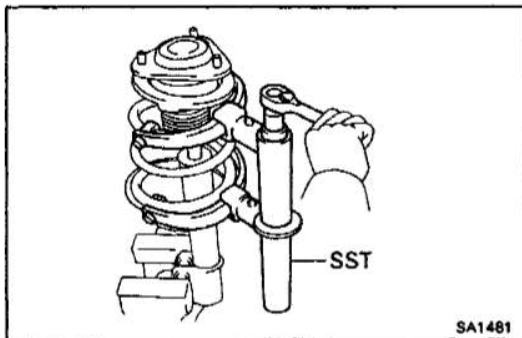
**5. REMOVE SHOCK ABSORBER**

- (a) Remove the three suspension holding nuts.
- (b) Remove the two upper bolts and remove the axle carrier assembly.
- (c) Remove the shock absorber.

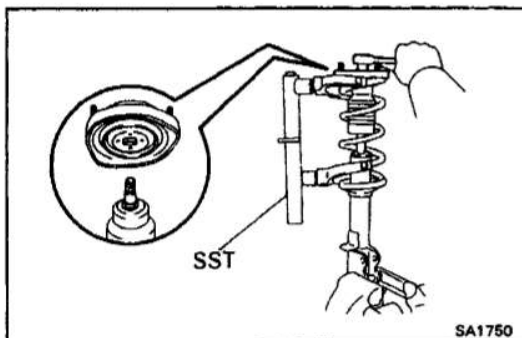
NOTICE: Cover the drive shaft boot with cloth to avoid damaging it.

**REAR SHOCK ABSORBER DISASSEMBLY****1. CLAMP SHOCK ABSORBER IN VISE**

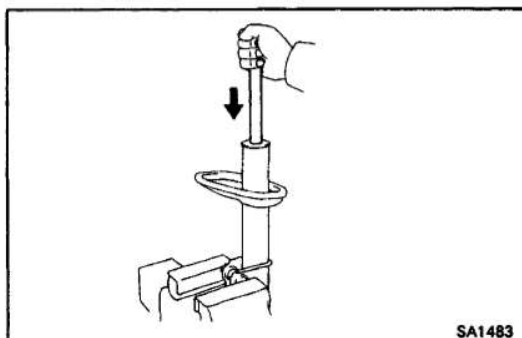
Install a bolt and two nuts to the bracket at the lower portion of the shock absorber shell and secure it in a vise.

**2. REMOVE OIL SPRING**

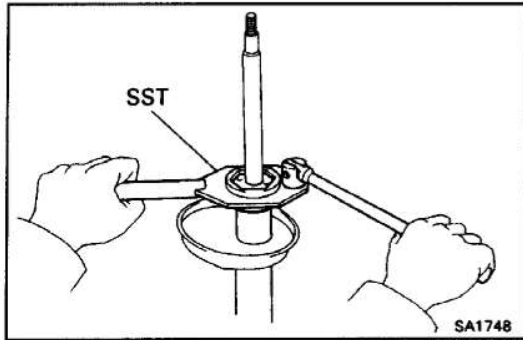
- (a) Using SST, compress the coil spring.
SST 09727-30020



- (b) Hold the octagon head of the suspension support in the vise.
- (c) Remove the suspension support cover.
- (d) Remove the suspension support nut.
- (e) Remove the collar, suspension support, bumper and coil spring.

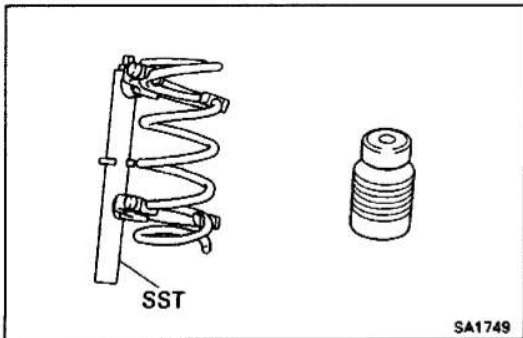
**3. INSPECT OPERATION OF SHOCK ABSORBER**

- (a) While pushing the piston rod, check that the pull throughout the stroke is even, and that there is no abnormal resistance or noise.
- (b) Push the piston rod fully and release it. Check that it returns at a constant speed.
If the absorber operation is defective, replace the absorber, as an assembly.



NOTICE: Before discarding the shock absorber, first loosen the ring nut 2 or 3 turns to release the gas completely.

SST 09720-00012 (09721-00071)



REAR SHOCK ABSORBER ASSEMBLY ^{SA91-01}

1. INSTALL COIL SPRING

(a) Install the bumper to piston rod.

(b) Using SST, compress the coil spring.

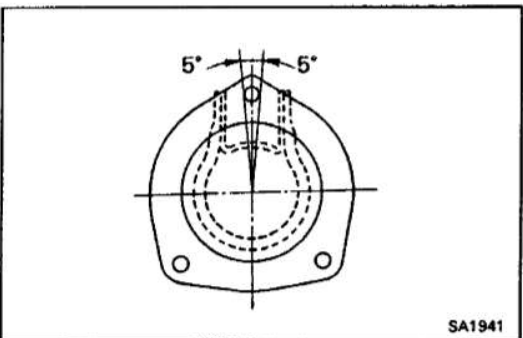
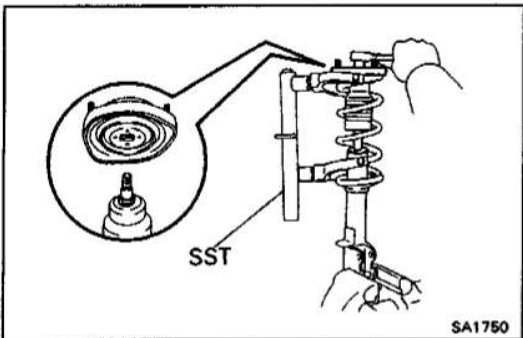
SST 09727-30020

(c) Align the coil spring end with the lower seat hollow and install.

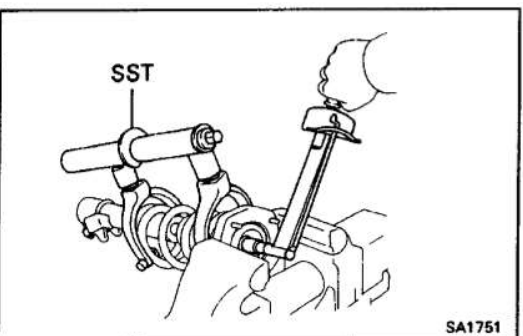
(d) Install the suspension support to piston rod.

HINT: Align the piston rod notch and the suspension support hole.

(e) Temporarily install a new suspension support nut.



(f) Align the suspension support with the shock absorber lower bracket as shown.



(g) Hold the octagon head of suspension support to the vise.

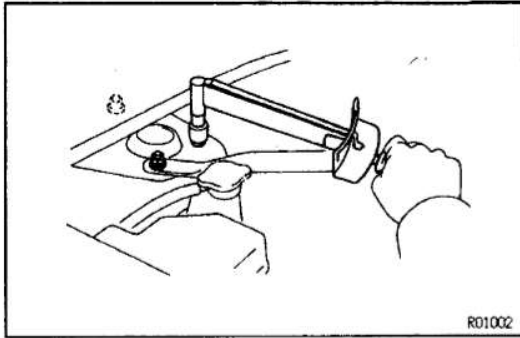
(h) Torque the suspension support nut.

Torque: 30 N-m (310 kgf-cm, 22 ft-lbf)

(i) Install the suspension support cover.

SA-92

SUSPENSION AND AXLE — REAR SUSPENSION



Ma-o~

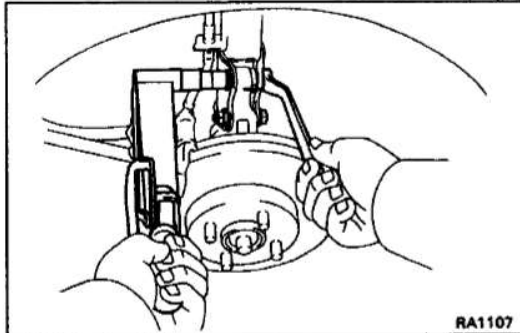
REAR SHOCK ABSORBER INSTALLATION

1. INSTALL SHOCK ABSORBER

Install the three nuts holding the shock absorber to the body. Torque the nuts.

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

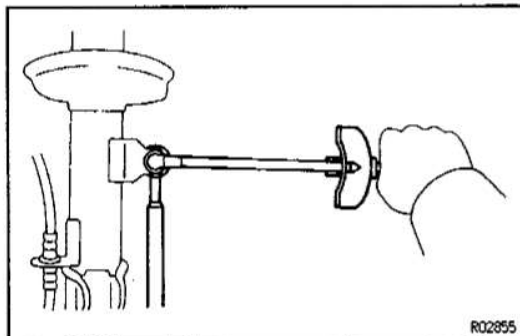
NOTICE: Be careful not to damage the drive shaft boot.



2. INSTALL REAR AXLE CARRIER TO SHOCK ABSORBER

- Connect the axle carrier to the shock absorber lower bracket.
- Install the washers and bolts from the rear side.
- Install the washers and nuts.

Torque: 173 N-m (1,760 kgf-cm, 127 ft-lbf)

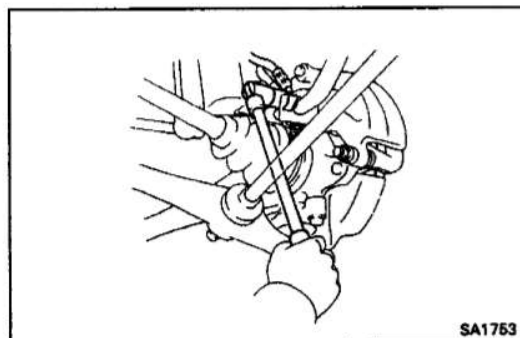


3. CONNECT STABILIZER LINK

Connect the stabilizer link with the nut.

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

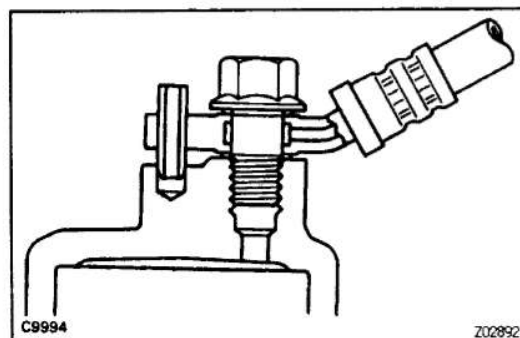
HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.



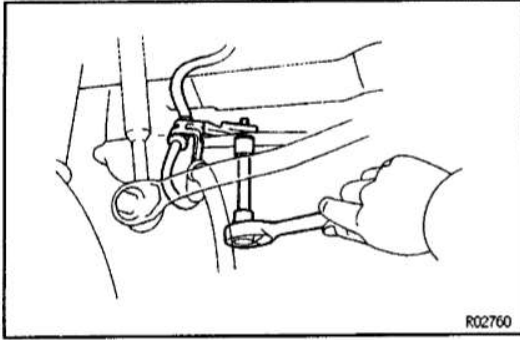
4. CONNECT BRAKE HOSE

- Install the brake hose and clip to the shock absorber.
- Install the union bolt and two gaskets and torque the union bolt.

Torque: 30 N-m (310 kgf-cm, 22 ft-lbf)



HINT: Install the flexible hose lock securely in the lock hole in the brake caliper.

**5. (w/ ABS)****INSTALL SPEED SENSOR WIRE HARNESS CLAMP**

Install ABS speed sensor wire harness clamp to suspension crossmember wire harness with the bolt.

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

6. BLEED BRAKE LINE

(See page [BR-9](#))

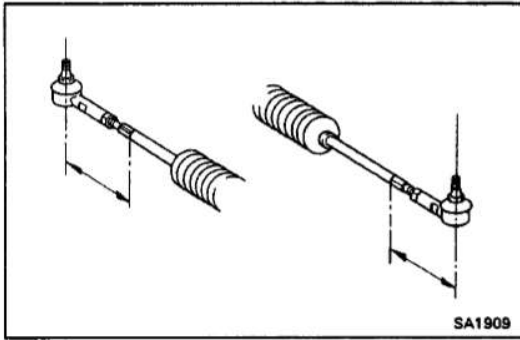
7. INSTALL REAR WHEEL AND LOWER VEHICLE

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

8. CHECK REAR WHEEL ALIGNMENT

SA-6

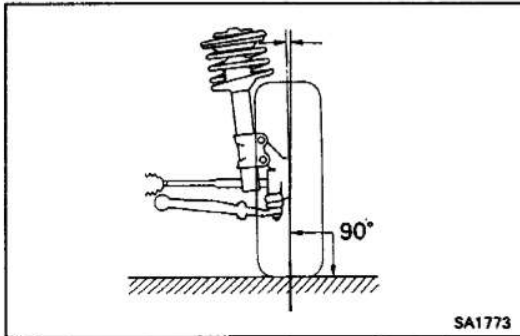
SUSPENSION AND AXLE - WHEEL ALIGNMENT



If wheel angles differ from the standard specifications, check to see if the lengths of the left and right tie rods are the same.

HINT: If the rod lengths are not equal, the wheel angle cannot be adjusted properly.

If the tie rod lengths were changed to adjust the wheel angle, inspect the toe-in.



REAR WHEEL ALIGNMENT

REAR WHEEL ALIGNMENT INSPECTION AND ADJUSTMENT

1. INSPECT CAMBER

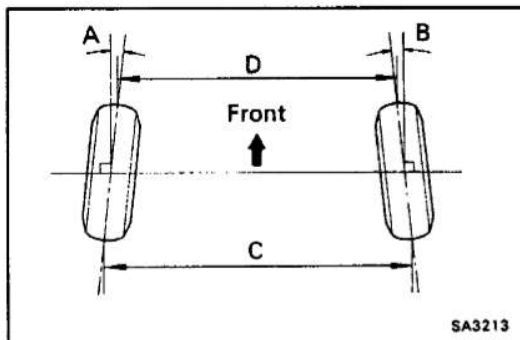
Camber:

$-1^{\circ}35' \pm 45'$

Cross camber:

30' or less

HINT: Camber is not adjustable, if measurement is not within specification, inspect and replace the suspension parts as necessary.



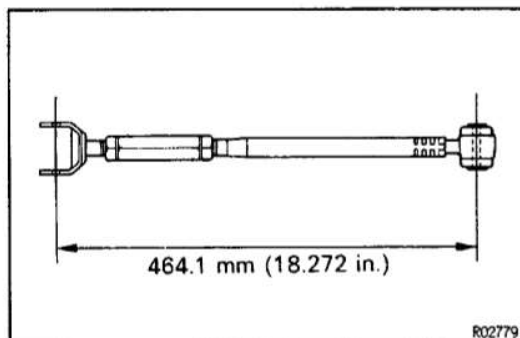
2. INSPECT TOE-IN

Toe-In (total):

$A+13 \ 0.6^{\circ} \pm 0.1^{\circ}$

$(C-D \ 6 \pm 1 \text{ mm } (0.24 \pm 0.04 \text{ in.}))$

If toe-in is not within specification adjust it.



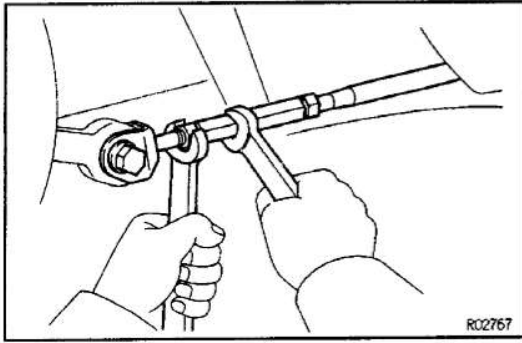
3. ADJUST TOE-IN

(a) Measure the lengths of the left and right suspension arms to see that the lengths are equal.

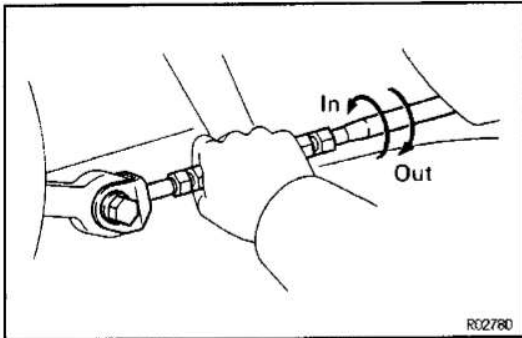
If not equal, adjust following the procedures below.

- If the toe-in is less than standard, shorten the tie rod by turning the tie rod tube.
- If the toe-in is greater than standard, lengthen the tie rod by turning the tie rod tube.

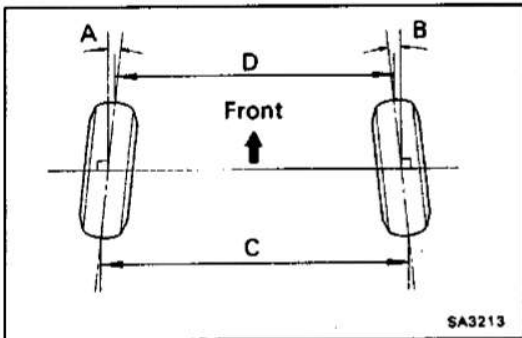
SUSPENSION AND AXLE - WHEEL ALIGNMENT



(b) Loosen the nuts.



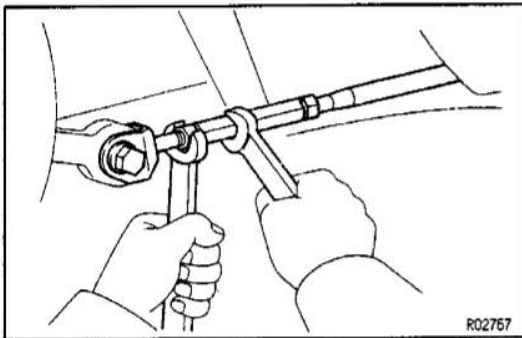
(c) Turn the left and right tie rod tubes an equal amount.



Too-in (total):

$A + 13 \ 0.6^\circ \pm 0.1^\circ$

$(C - D \ 6 \pm 1 \text{ mm}, 0.24 \pm 0.04 \text{ in.})$



(d) Tighten the nuts.

(e) After toe-in adjustment, check the rear wheel alignment.

SA-112

SUSPENSION AND AXLE - SERVICE SPECIFICATIONS

SERVICE SPECIFICATIONS

SERVICE DATE

SA00P-01

Cold tire inflation pressure kPa (kgf/cm ² , psi)	Tire size		Front	Rear
	195/55R15 83V		200 (2.0, 29)	—
	225/50R15 91V		—	230 (2.3, 33)
Chassis ground clearance mm (in.)	All models		216.5 (8.524)	193.4 (7.614)
Front wheel alignment	Toe-in Tie rod end length left-right error		1 ± 2 mm (0.04 ± 0.08 in.), 0.1° ± 0.2° 1.0 mm (0.039 in.) or less	
	Camber Cross camber		-1°00' ± 45' 30' or less	
	Caster Cross caster		2°50' ± 45' 30' or less	
	Steering axis inclination		13°50' ± 45	
	Wheel angle (Maximum)	Outside wheel	32°00'	
		Inside wheel	37°00' ± 1°30'	
Rear wheel alignment	Toe-in Tie rod end length left-right error		6 ± 1 mm (0.24 ± 0.04 in.), 0.6° ± 0.1° 1.0 mm (0.039 in.) or less	
	Camber Cross camber		-1°35' ± 45' 30' or less	
Wheel lateral runout	Less than 1.4 mm (0.055 in.)			
Front axle and suspension	Hub bearing axial direction	Limit	0.5 mm	0.0020 in.
	Ball joint rotation condition		0.8 – 2.5 N·m	
	Ball joint vertical play		(8 – 25 kgf·cm, 7 – 22 in.·lbf)	
	Strut bar length		0 mm	0 in.
Rear axle and suspension			362 mm	14.25 in.
	Hub bearing axial direction	Limit	0.5 mm	0.0020 in.
	Ball joint rotation condition		0.05 – 0.98 N·m	
	Ball joint vertical play		(0.5 – 10 kgf·cm, 0.43 – 8.68 in.·lbf)	
	Drive shaft grease capacity		0 mm	0 in.
	Outboard joint 5S-FE engine			
	3S-GTE engine		120 – 130 g	0.26 – 0.29 lb
	Inboard joint 5S-FE engine		120 – 130 g	0.26 – 0.29 lb
	3S-GTE engine		232 – 242 g	0.51 – 0.53 lb
	Side gear shaft 3S-GTE engine		90 – 100 g	0.20 – 0.22 lb
	Drive shaft standard length		43 – 53 g	0.09 – 0.12 lb
	5S-FE engine			
	3S-GTE engine			
		LH	540.3 ± 5.0 mm	21.272 ± 0.197 in.
		RH	831.4 ± 5.0 mm	32.732 ± 0.197 in.
		LH	389.7 ± 5.0 mm	15.343 ± 0.197 in.
		RH	389.7 ± 5.0 mm	15.343 ± 0.197 in.

VO1000

TORQUE SPECIFICATIONS (FRONT)

Part tightened	N-m	kgf-cm	ft-lbf
Disc brake dust cover x Steering knuckle	8.3	85	74 in.-lbf
Axle hub lock nut	123	1,250	90
Tie rod end x Steering knuckle	49	500	36
Ball joint x Steering knuckle	80	820	59
ABS speed sensor x Steering knuckle (w/ABS)	7.8	80	69 in.-lbf
Steering knuckle x Shock absorber	173	1,760	127
Brake caliper x Steering knuckle	59	600	43
Piston rod x Suspension support	49	500	36
Suspension support x Body	39	400	29
Brake hose x Disc brake caliper	30	310	22
Stabilizer link x Shock absorber	64	650	47
Lower arm x Ball joint	78	800	58
Strut bar x Lower arm	127	1,300	94
Lower arm x Body	118	1,200	87
Stabilizer bar x Body	64	650	47
Stabilizer bar x Stabilizer link	64	650	47
Strut bar x Body	113	1,150	83
Hub nut	103	1,050	76

(REAR)

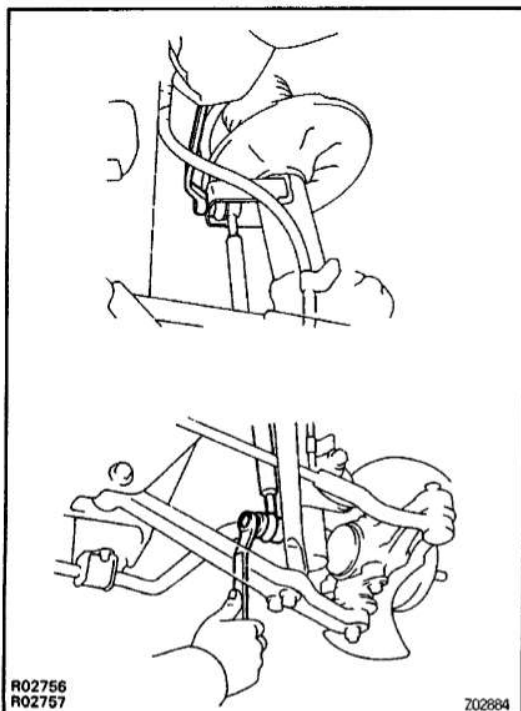
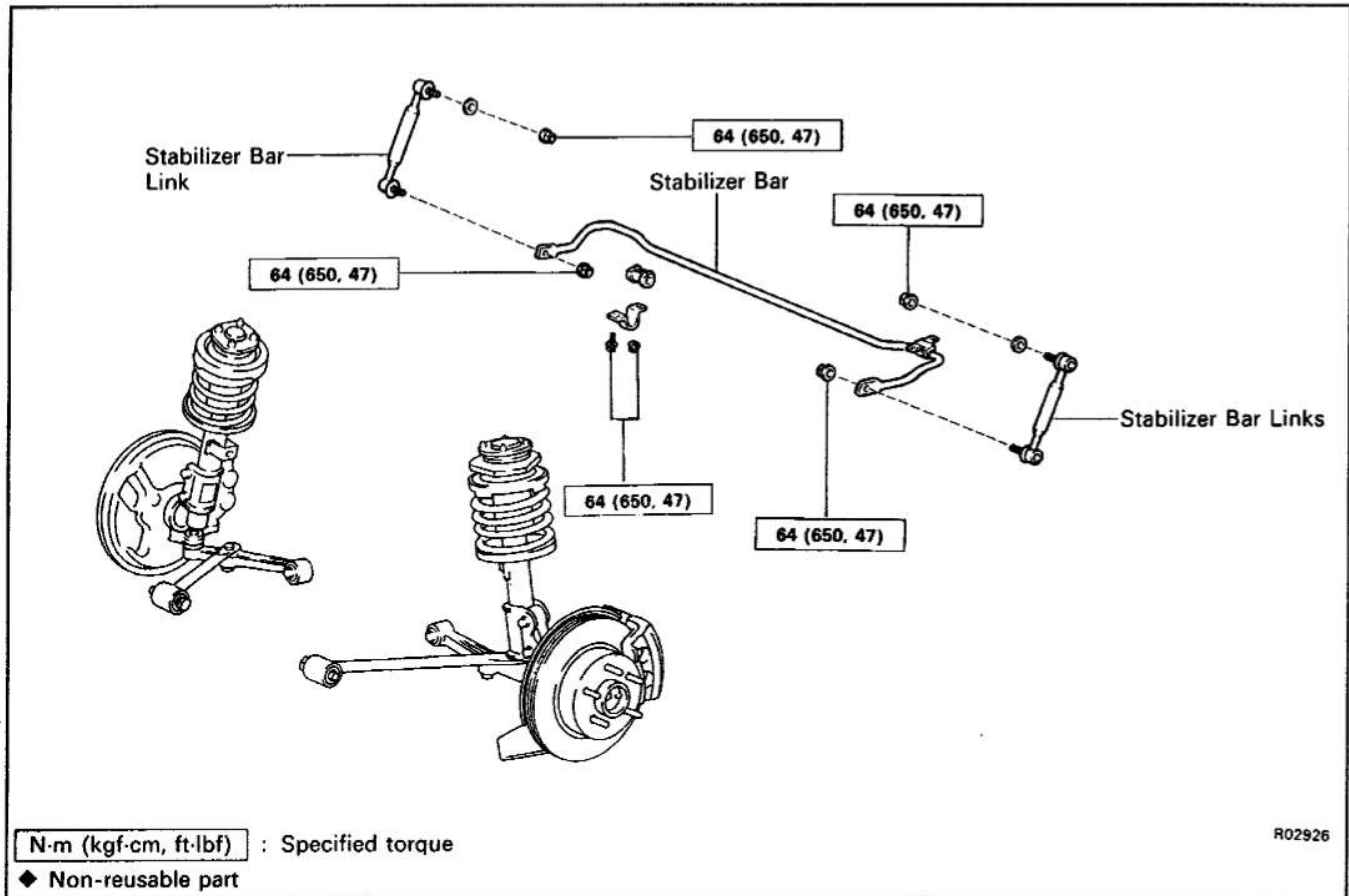
Part tightened	N-m	kgf-cm	ft-lbf
Axle carrier x Shock absorber	173	1,760	127
Axle carrier x Tie rod end	103	1,050	76
Axle carrier x Lower arm	113	1,150	83
Stabilizer link x Shock absorber	49	500	36
ABS speed sensor x Axle carrier	7.8	80	69 in.-lbf
Disc brake caliper x Axle carrier	59	600	43
Hub bearing lock nut (5S-FE engine)	226	2,300	166
Hub bearing lock nut (3S-GTE engine)	294	3,000	217
Axle carrier x Ball joint	113	1,150	83
Bearing bracket stay x Engine	75	770	56
Bearing bracket stay x Bearing bracket	75	770	56
Bearing bracket x Drive shaft center bearing	32	330	24
Bearing bracket x Engine	64	650	47
Drive shaft inboard joint holding hexagon bolts	65	660	48
Piston rod x Suspension support	73	740	54
Suspension support x Body	80	820	59
Brake hose x Disc brake caliper	30	310	22
ABS speed sensor wire harness x Suspension cross member	5.4	55	48 in.-lbf
Lower arm x Ball joint	91	930	67
Lower arm holding nut	132	1,350	98
Strut rod nut	118	1,200	87

SA-114**SUSPENSION AND AXLE – SERVICE SPECIFICATIONS**

Strut rod x Body	118	1,200	87
Suspension arm x Body	103	1,050	76
Stabilizer bar x Body	19	195	14
Suspension cross member x Body	113	1,150	83
Engine mount x Suspension cross member	77	790	57
Exhaust pipe x Suspension cross member	21	210	15
Stabilizer bar x Stabilizer link	49	500	36

STABILIZER BAR COMPONENTS

SA08P-01



STABILIZER BAR REMOVAL

SA08D-01

1. REMOVE LEFT AND RIGHT STABILIZER BAR LINKS

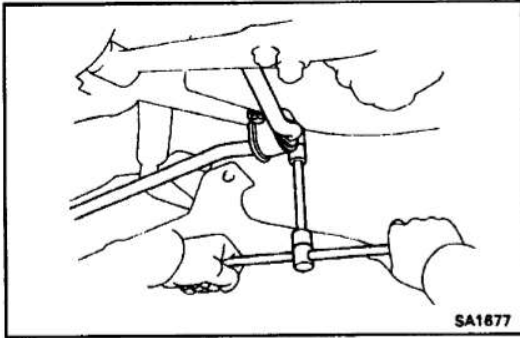
(a) Remove the nuts and washers.

(b) Remove the stabilizer bar links.

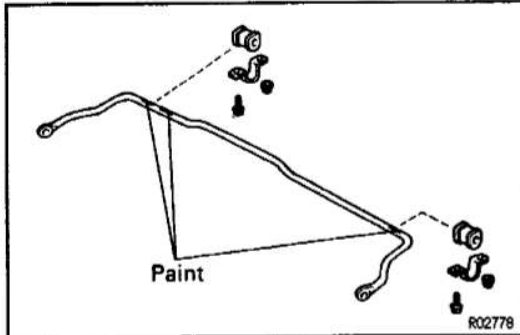
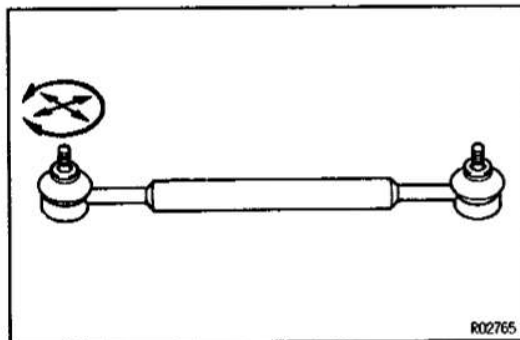
HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

SA-36

SUSPENSION AND AXLE - FRONT SUSPENSION

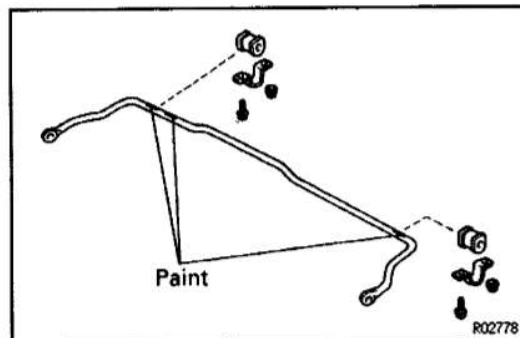
**2. REMOVE STABILIZER BAR FROM BODY**

- (a) Remove the nuts and bolts.
- (b) Remove the stabilizer bar with the brackets and cushion.

**3. REMOVE STABILIZER BAR BRACKETS AND STABILIZER BAR CUSHIONS FROM STABILIZER BAR****STABILIZER BAR INSPECTION****INSPECT STABILIZER LINK**

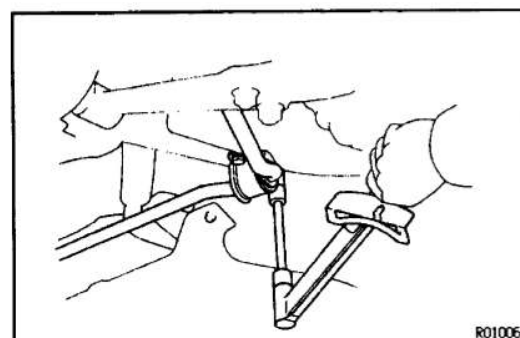
Rotate ball joint arm in all directions. If movement is not smooth and free, replace stabilizer link.

SA08R-01

**STABILIZER BAR INSTALLATION****1. INSTALL STABILIZER BAR**

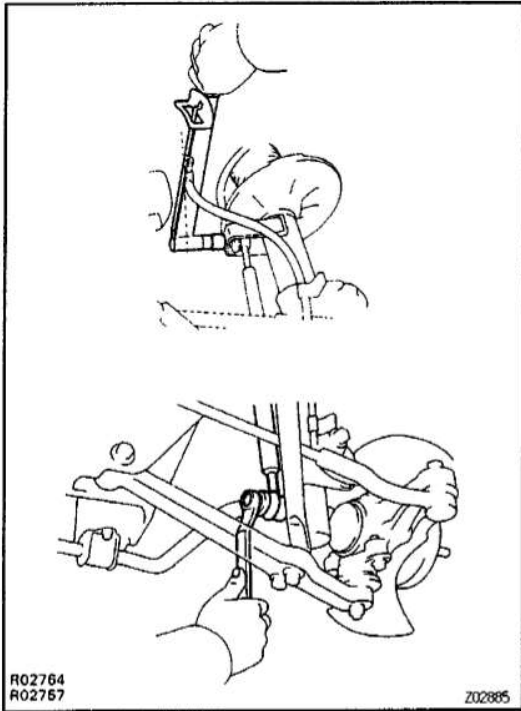
- (a) Install the stabilizer cushions on the painted portions of the stabilizer.
- (b) Install the stabilizer bar in place, then install the both stabilizer brackets.

SA08R-01

**2. INSTALL STABILIZER BAR TO BODY**

Install the stabilizer bar to the body with the bolts and nuts.

Torque: 64 N-m (650 kgf-cm, 47 ft-lbf)



3. INSTALL STABILIZER LINKS

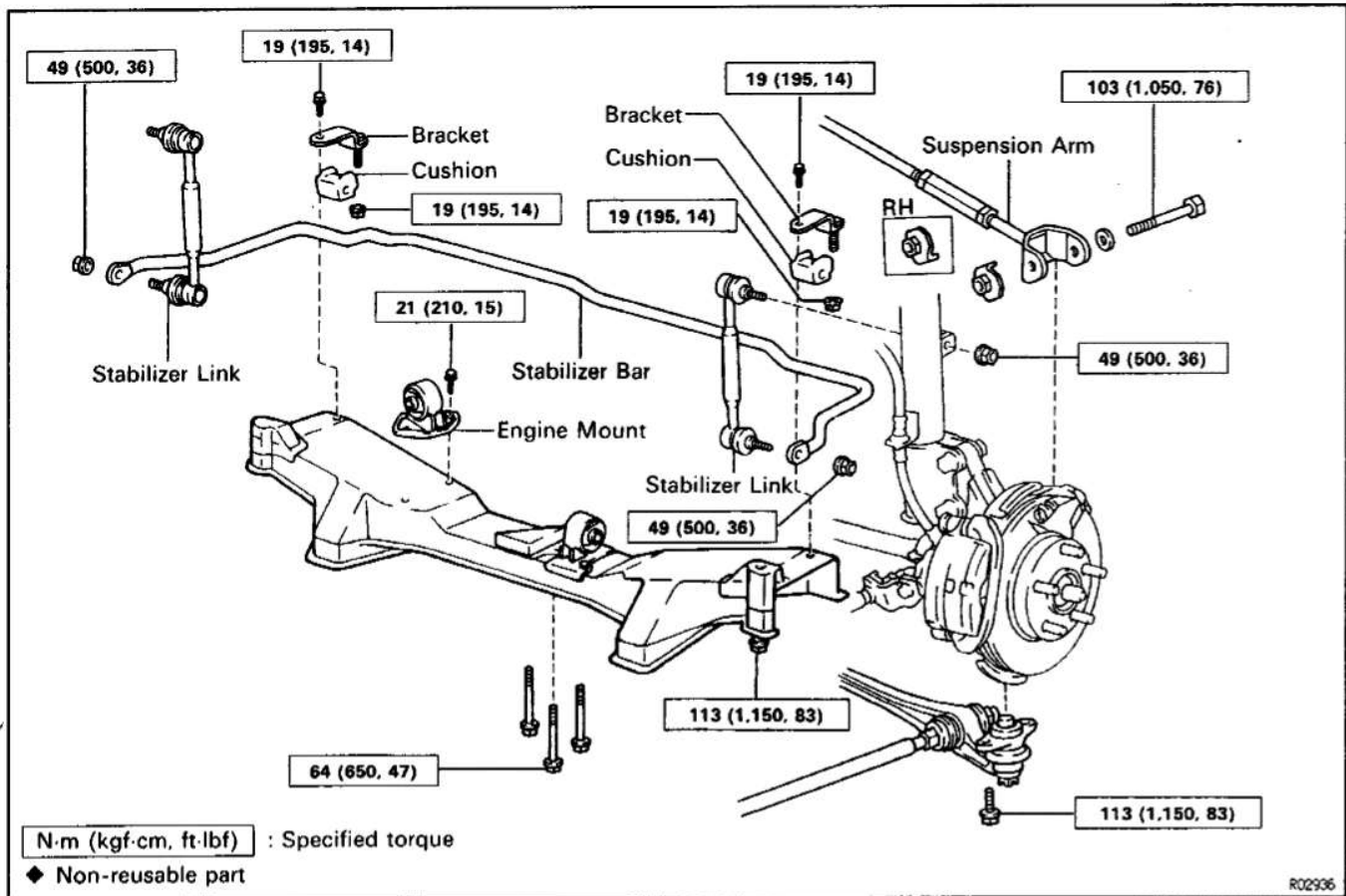
Install the stabilizer bar links with the washer and nuts.

HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

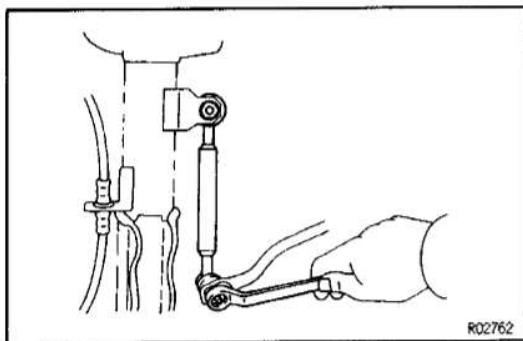
Torque: 64 N-m (650 kgf-cm, 47 ft-lbf)

STABILIZER BAR COMPONENTS

SA00G-01



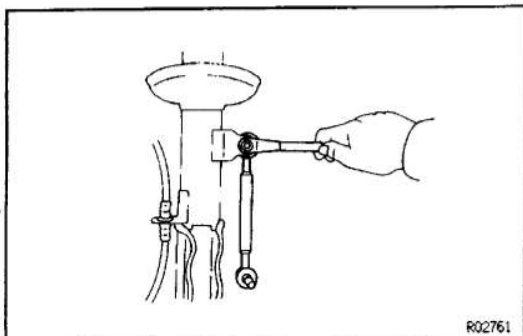
SA00H-01



STABILIZER BAR REMOVAL

1. JACK UP VEHICLE AND REMOVE REAR WHEEL
2. DISCONNECT STABILIZER LINK FROM STABILIZER BAR

Remove the nuts and remove the stabilizer link from the stabilizer bar.

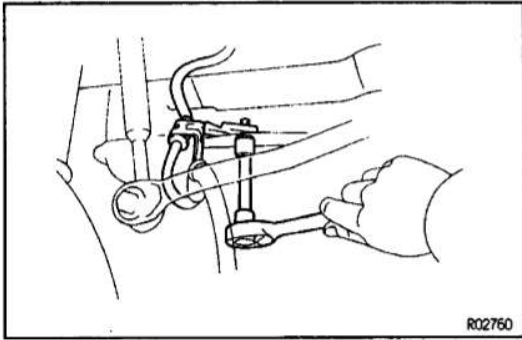


3. REMOVE STABILIZER LINK

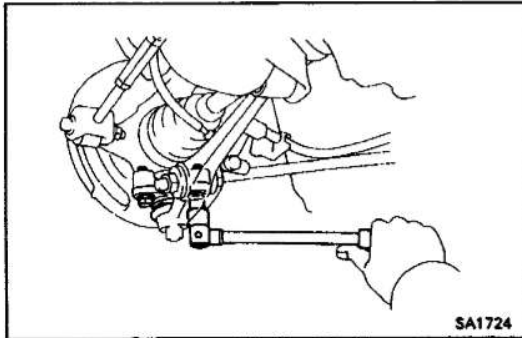
Remove the stabilizer link from the shock absorber.
HINT: If the ball joint stud turns together with the nut, use a hexagon wrench 5 mm (0.197 in.) to hold the stud.

SA-106

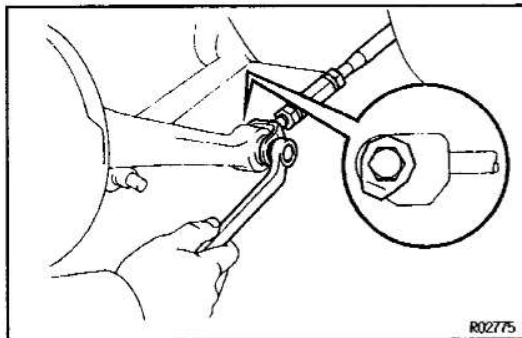
SUSPENSION AND AXLE – REAR SUSPENSION

**4. (w/ ABS)****REMOVE SPEED SENSOR BRACKET**

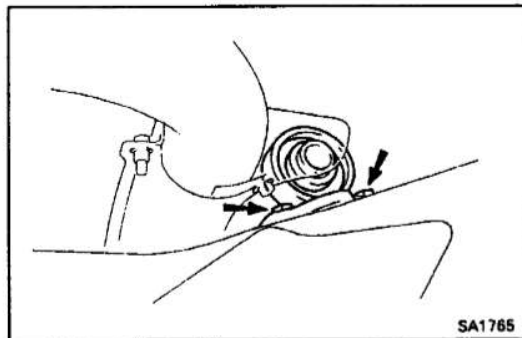
Remove the bolt and disconnect the speed sensor bracket from the rear suspension crossmember.

**5. DISCONNECT REAR AXLE CARRIER FROM LOWER ARM**

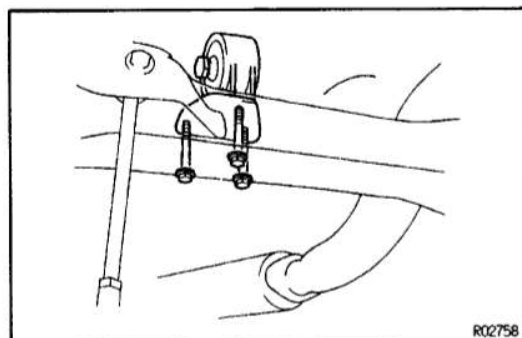
- (a) Remove the two bolts holding the lower arm to ball joint.
- (b) Disconnect the ball joint.

**6. DISCONNECT REAR AXLE CARRIER FROM SUSPENSION ARM**

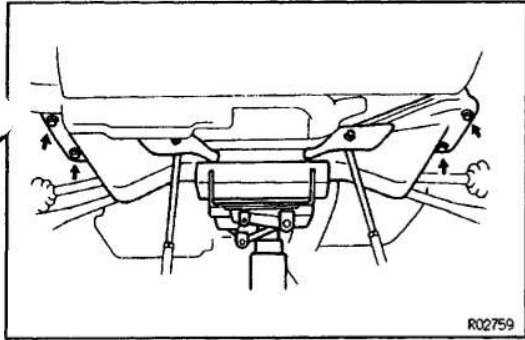
Remove the nut and bolt, disconnect the suspension arm from axle carrier.

**7. DISCONNECT EXHAUST PIPE MOUNTING FROM REAR SUSPENSION CROSSMEMBER**

Remove the two exhaust pipe mounting installation bolts.

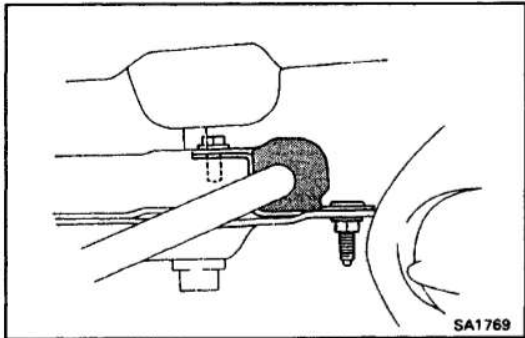
**8. DISCONNECT REAR ENGINE MOUNT FROM REAR SUSPENSION CROSSMEMBER**

Remove the three installation bolts of the rear engine mounting.



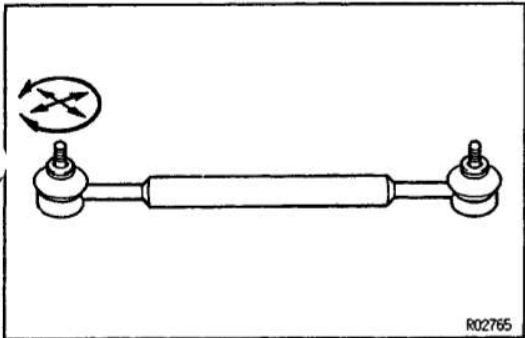
9. REMOVE SUSPENSION CROSSMEMBER MOUNTING BOLTS

- Hold the rear suspension crossmember with a jack.
- Remove the four bolts, then remove the rear suspension crossmember.



10. REMOVE STABILIZER BAR

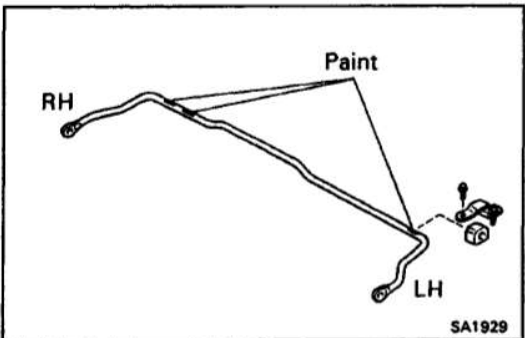
- Lift down the crossmember until the front side bolt of the stabilizer bar bracket can be removed.
NOTICE: Be careful not to damage the exhaust pipe by shoving with the stabilizer bar.
- Remove the two bolts and two nuts.
- Remove the stabilizer bar with brackets.
- Remove the brackets and cushions from the stabilizer bar.



STABILIZER LINK INSPECTION

INSPECT STABILIZER LINK

Rotate the ball joint arm in all directions, if the movement is not smooth and free, replace the stabilizer link.

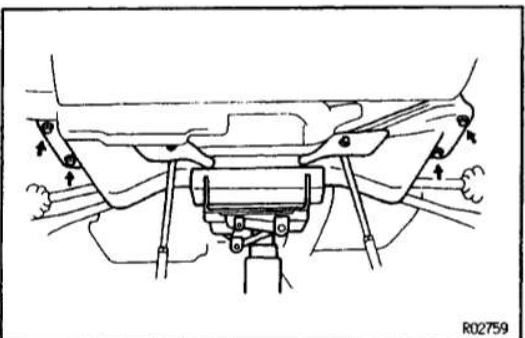


STABILIZER BAR INSTALLATION

1. INSTALL STABILIZER BAR

- Install the cushions and brackets touching the line painted on the stabilizer bar.
- Install the stabilizer bar to the rear suspension crossmember and tighten the bracket bolts.

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



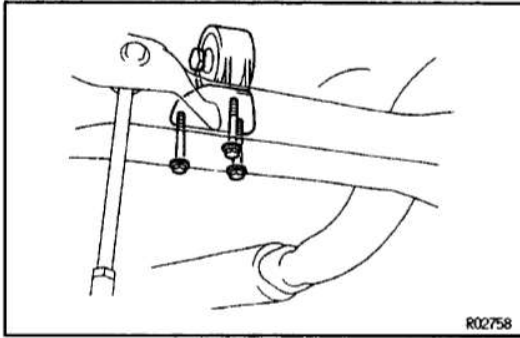
2. INSTALL SUSPENSION CROSSMEMBER

Install the suspension crossmember in place, then install and tighten the four bolts.

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

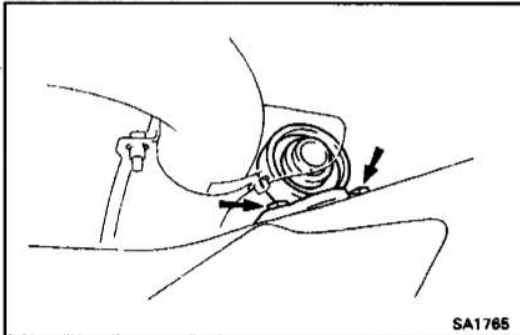
SA-108

SUSPENSION AND AXLE – REAR SUSPENSION

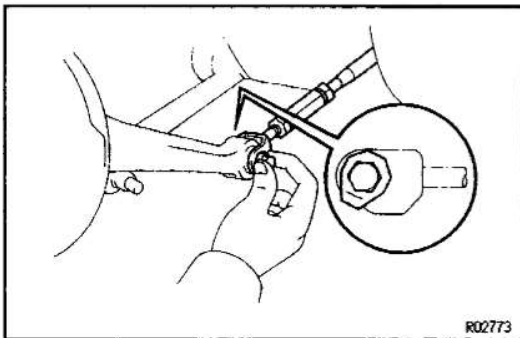
**3. CONNECT REAR ENGINE MOUNTING TO REAR SUSPENSION CROSSMEMBER**

Connect the engine mount to rear suspension crossmember in place with the three bolts.

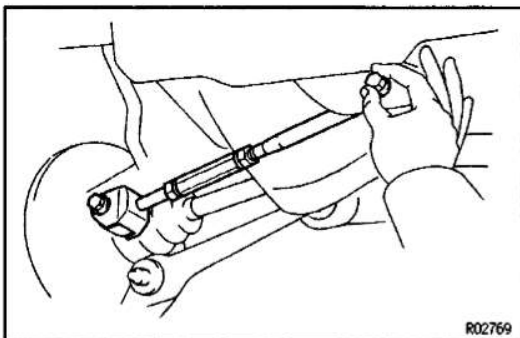
Torque: 77 N-m (780 kgf-cm, 57 ft-lbf)

**4. CONNECT EXHAUST PIPE MOUNTING TO REAR SUSPENSION CROSSMEMBER**

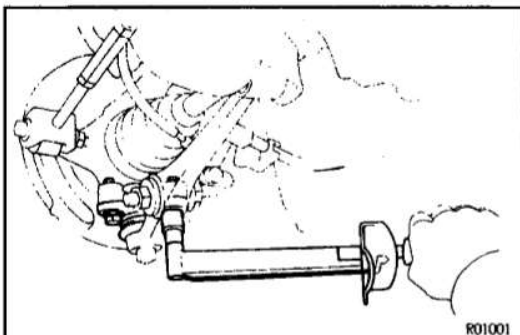
Torque: 21 N-m (210 kgf-cm, 15 ft-lbf)

**5. CONNECT SUSPENSION ARM TO REAR AXLE CARRIER**

(a) Temporarily connect the suspension arm to the rear axle carrier with the bolt and nut.

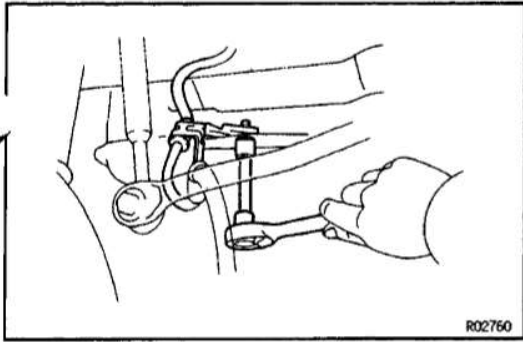


(b) Similarly connect the other side suspension arm.

**6. INSTALL REAR AXLE CARRIER TO LOWER ARM**

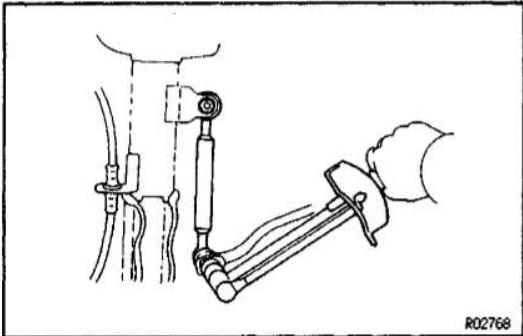
Torque: 113 N-m (1,150 kgf-cm, 83 ft-lbf)

SUSPENSION AND AXLE – REAR SUSPENSION

**7. (w/ ABS)****INSTALL ABS SPEED SENSOR BRACKET TO REAR SUSPENSION CROSSMEMBER**

Install the ABS speed sensor bracket to the rear suspension crossmember.

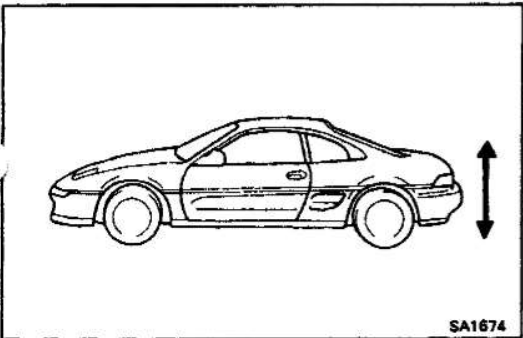
Torque: 5.4 N-m (55 kgf-cm, 48 in. lbf)

**8. INSTALL STABILIZER LINK**

Install the stabilizer link with the nuts.

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

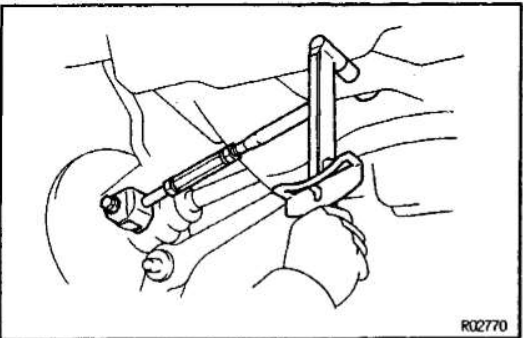
HINT: If the ball joint stud together with the nut, use hexagon wrench 5 mm (0.197 in.) to hold the stud.

**9. STABILIZE SUSPENSION**

(a) Install rear wheel and lower vehicle.

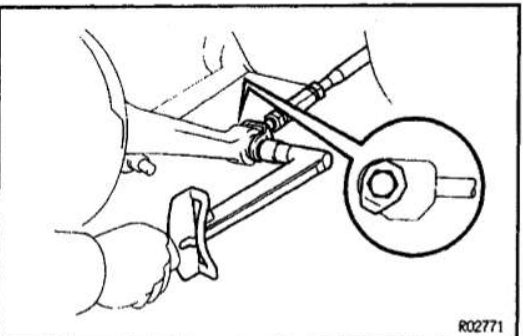
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)

(b) Bounce the vehicle up and down several times to allow the suspension to settle.

**10. TORQUE SUSPENSION ARM INSTALLATION BOLTS**

(a) Torque the body side mounting bolt with the vehicle load applied on the suspension.

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



(b) Torque the axle carrier side mounting bolt and nut with the vehicle load applied on the suspension.

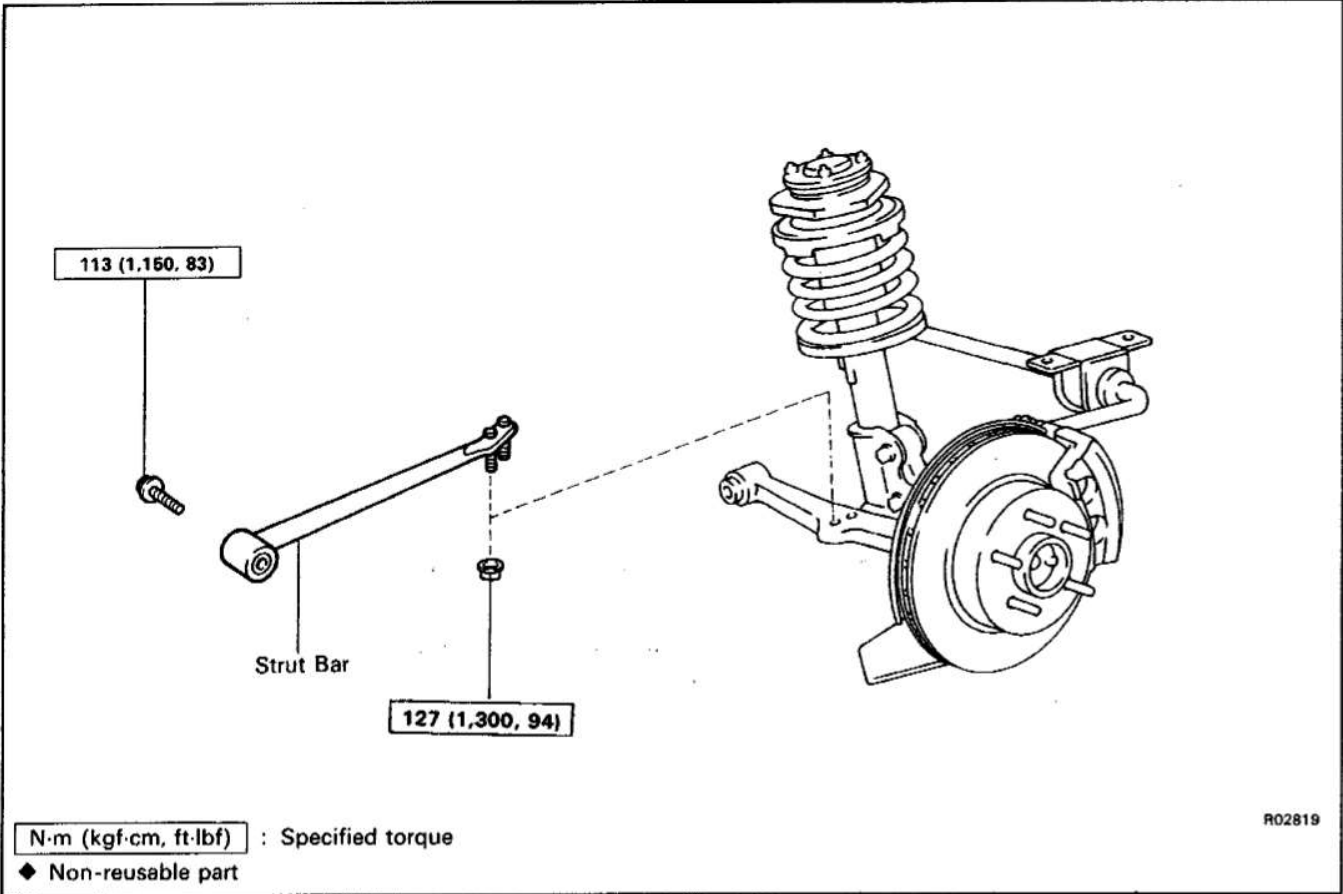
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)

11. CHECK REAR WHEEL ALIGNMENT

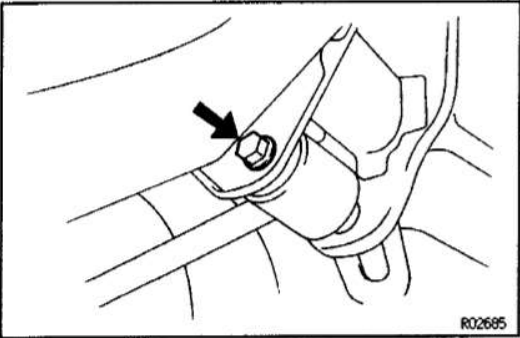
(See page [SA-3](#))

STRUT BAR
COMPONENTS

SA08L-01



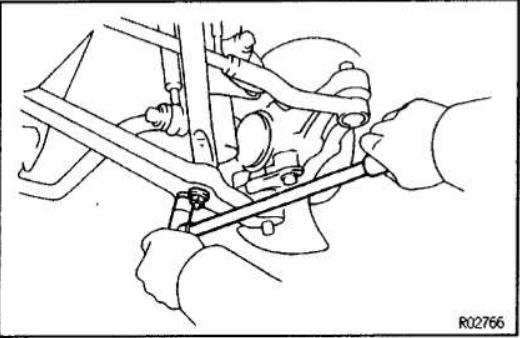
SA08M-01



STRUT BAR REMOVAL

1. REMOVE STRUT BAR

(a) Remove the bolt and disconnect the strut bar from the body.

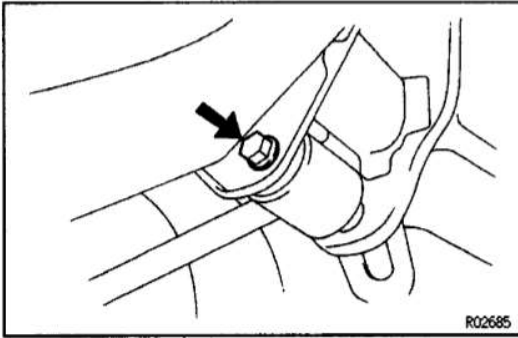


(b) Remove the two nuts and strut bar.

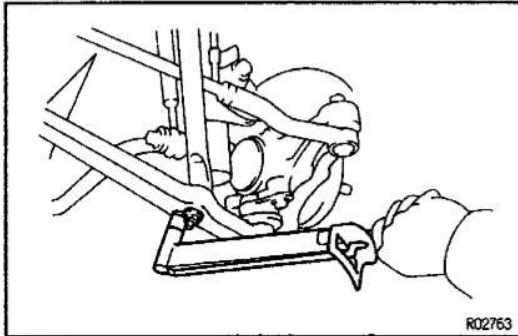
SA-34

SUSPENSION AND AXLE – FRONT SUSPENSION

SAGBN-01

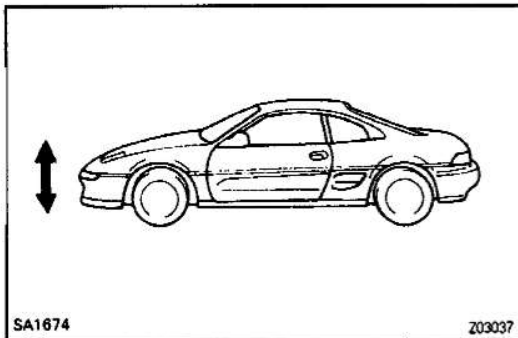
**STRUT BAR INSTALLATION****1. INSTALL STRUT BAR**

- (a) Temporarily install the strut bar to the body with the bolt.

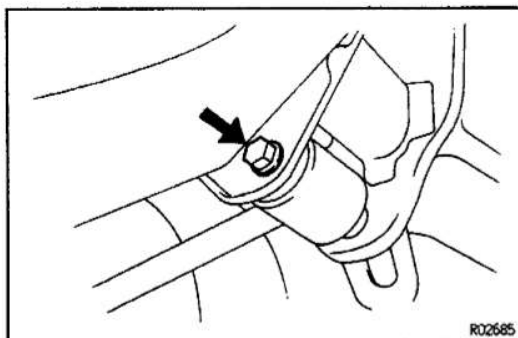


- (b) Install the strut bar to the lower arm with the two nuts.

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

**2. STABILIZE SUSPENSION**

- (a) Lower the vehicle.
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)
- (b) Bounce the vehicle up and down several times to allow the suspension to settle.

**3. TORQUE BOLT**

Torque bolt with the vehicle load applied on the suspension.

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

4. CHECK FRONT WHEEL ALIGNMENT

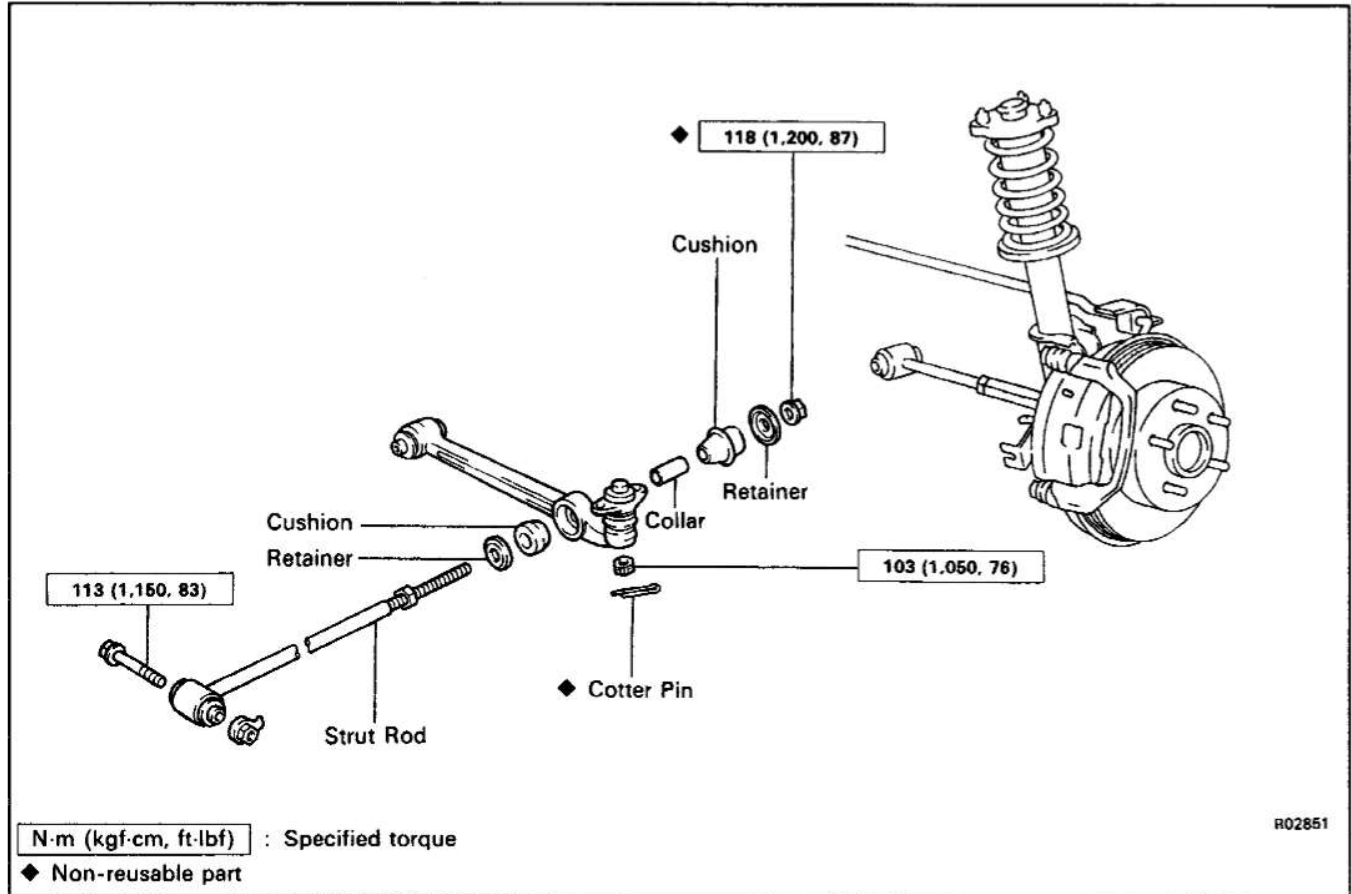
(See page [SA-3](#))

SA-100

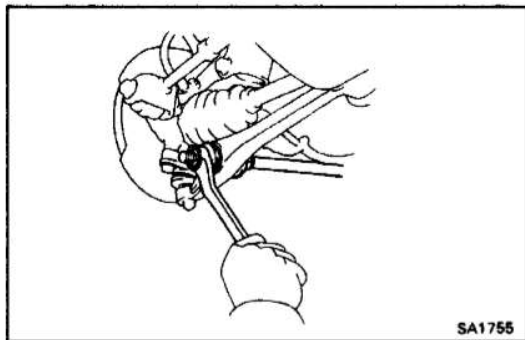
SUSPENSION AND AXLE - REAR SUSPENSION

STRUT BAR COMPONENTS

SA008-01

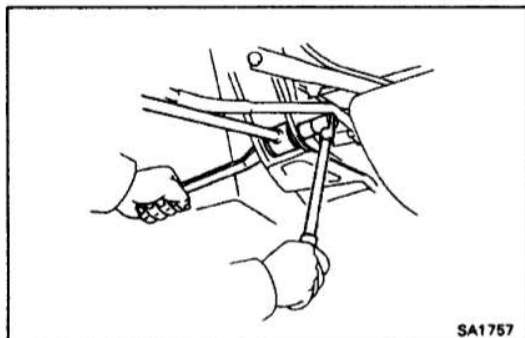


SA008-01



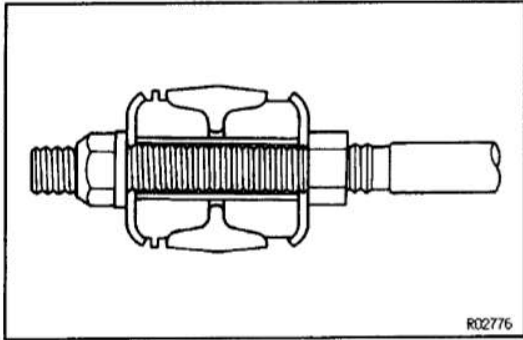
STRUT BAR REMOVAL

1. JACK UP VEHICLE AND REMOVE REAR WHEEL
2. REMOVE STRUT BAR NUT AND RETAINER



3. REMOVE STRUT BAR

- (a) Remove the strut bar holding nut and bolt.
- (b) Remove the cushion collar and retainer from the strut bar.



STRUT BAR INSTALLATION

1. INSTALL REAR SUSPENSION ARM NO.1

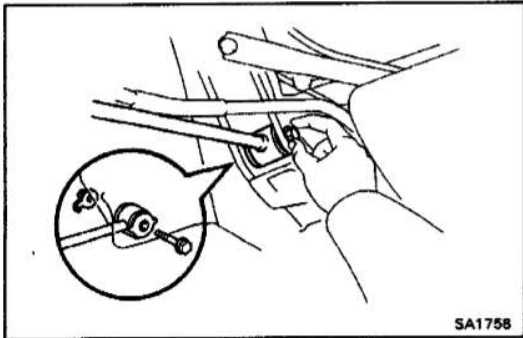
- (a) Install the retainers, cushions, collar and suspension arm No. 1 to the strut bar with the nuts as shown.

NOTICE:

- Install the nut to the bolt end.
- Do not misinstall the front and rear cushions.

- (b) Temporarily install the strut bar to the lower arm.

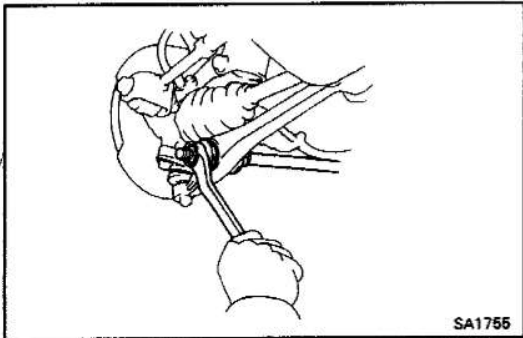
- (c) Temporarily install the strut bar holding bolt, nut and cushion to the body.



2. INSTALL STRUT BAR INSTALLATION NUT

Install the strut bar installation nut of the lower arm side.

Torque: 118 N-m (1,200 kgf-cm, 87 ft-lbf)

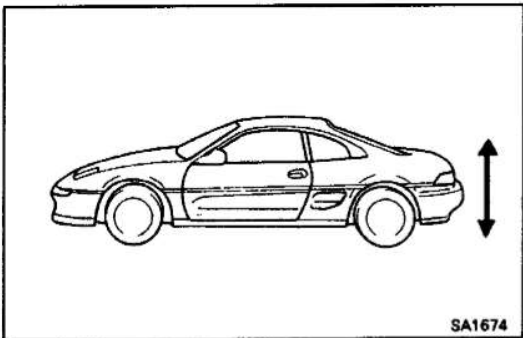


3. STABILIZE SUSPENSION

- (a) Install the rear wheel and lower the vehicle.

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

- (b) Bounce the vehicle up and down several times to allow the suspension settle.



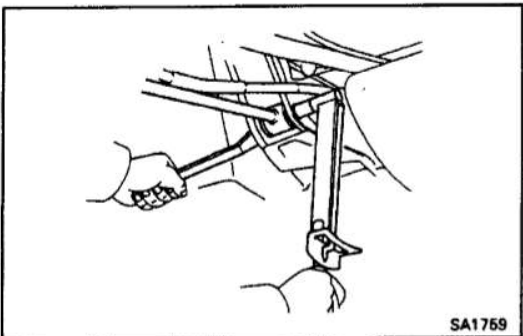
4. TORQUE STRUT BAR INSTALLATION BOLT

Torque the strut bar installation bolt of the body side with the vehicle load applied on the suspension.

Torque: 178 N-m (1,200 kgf-cm, 87 ft-lbf)

5. CHECK REAR WHEEL ALIGNMENT

(See page [SA-3](#))

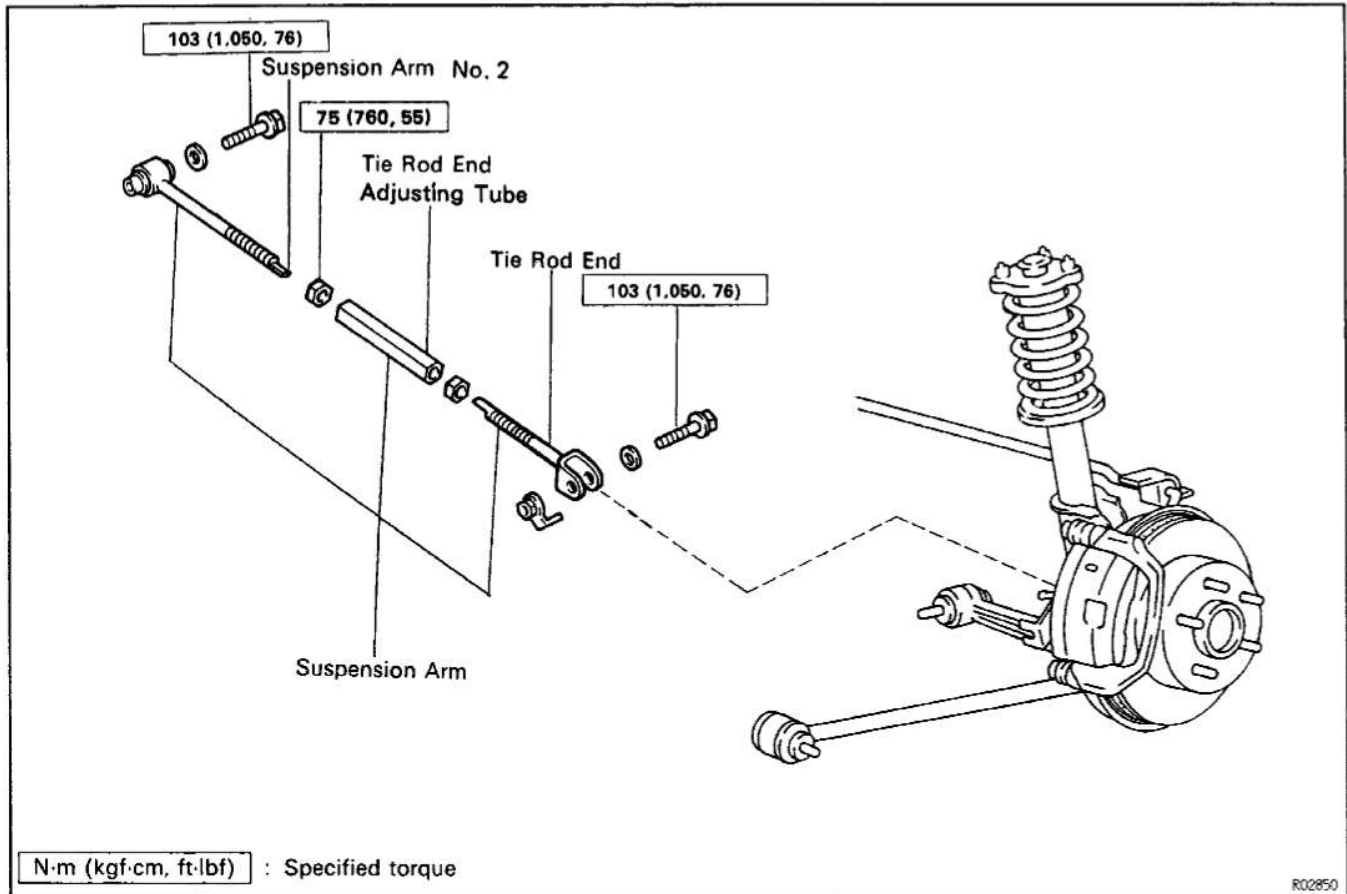


SA-102

SUSPENSION AND AXLE - REAR SUSPENSION

SUSPENSION ARM COMPONENTS

SA008-01

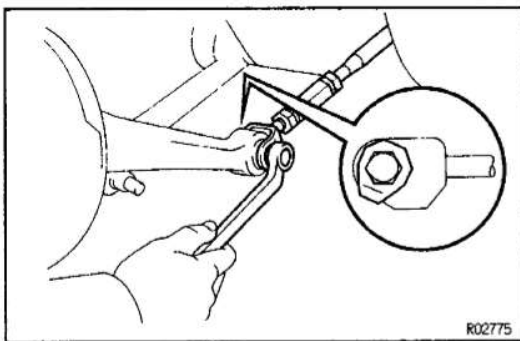


SA00C-01

SUSPENSION ARM REMOVAL

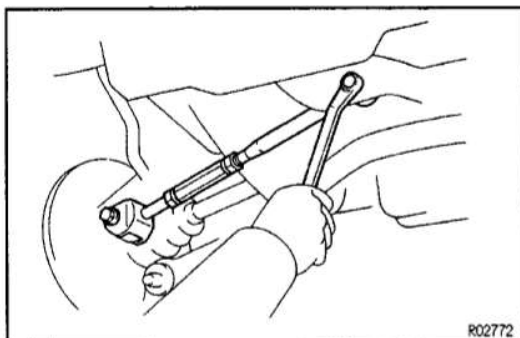
1. JACK UP VEHICLE AND REMOVE REAR WHEEL
2. DISCONNECT SUSPENSION ARM

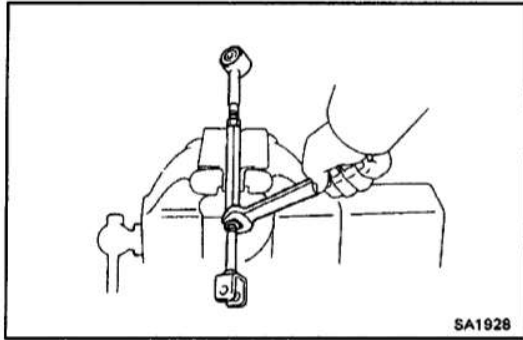
Loosen the nut and bolt.



3. REMOVE SUSPENSION ARM FROM BODY

- (a) Remove the suspension arm holding bolt.
- (b) Disconnect the suspension arm from the body.
- (c) Remove the nut, bolt and suspension.



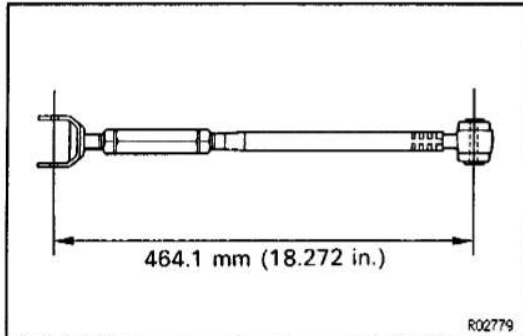


SUSPENSION ARM DISASSEMBLY

SA000-01

DISASSEMBLE SUSPENSION ARM

- Loosen the tie rod adjusting tube two nuts.
- Turn the tie rod adjusting tube, and remove the tie rod adjusting tube, and remove the tie rod end and the suspension arm No.2.

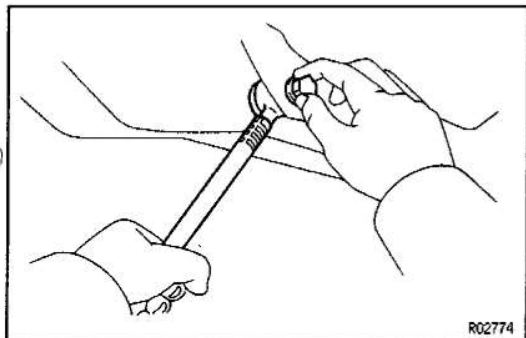


SUSPENSION ARM ASSEMBLY

SA000-01

INSTALL TIE ROD END AND SUSPENSION ARM NO. 2 TO TIE ROD TUBE

- Install the tie rod adjusting tube, tie rod adjusting tube nuts, tie rod end and rear suspension arm No. 2.
 - Adjust the rear suspension arm.
 - Temporarily tighten the tie rod adjusting tube nut.
- HINT: Fully tighten after adjusting the rear wheel alignment.

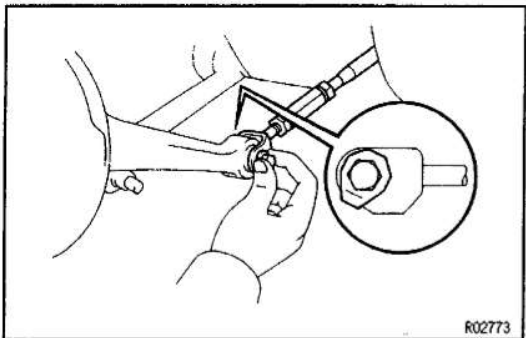


SUSPENSION ARM INSTALLATION

SA000-01

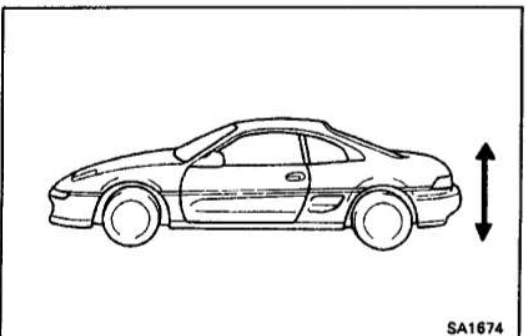
1. INSTALL SUSPENSION ARM TO BODY

Temporarily connect the suspension arm to the body with the bolt.



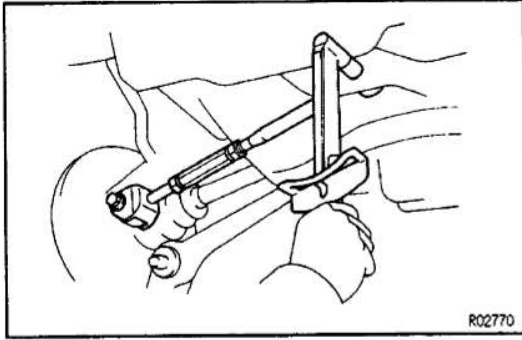
2. INSTALL SUSPENSION ARM TO REAR AXLE CARRIER

Temporarily install the suspension arm to the rear axle carrier with the bolt and nut.



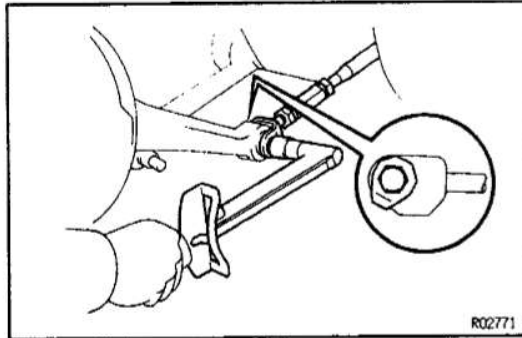
3. STABILIZE SUSPENSION

- Install the wheel and lower the vehicle.
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)
- Bounce the vehicle up and down several times to allow the suspension to settle.

SA-104**SUSPENSION AND AXLE – REAR SUSPENSION****4. TORQUE SUSPENSION ARM MOUNTING BOLTS AND NUT**

- (a) Torque the body side mounting bolts with the vehicle load applied on the suspension.

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



- (b) Torque the carrier side mounting bolts with the vehicle load applied on the suspension.

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

5. CHECK REAR WHEEL ALIGNMENT

(See page [SA-3](#))

SUSPENSION AND AXLE

TROUBLESHOOTING

You will find the troubles easier using the table well shown below. In this table, each number shows the priority of causes in troubles. Check each part in order. If necessary, replace these parts.

See Page Parts Name Trouble		-	SA-3	SA-3	SA-21, 88	SA-35, 105	SA-21, 88	SA-27, 94	SA-10, 41		-	-	-	-
		Tires	Cold tire inflation pressure	Wheel alignment	Springs	Stabilizer bar	Shock absorber	Ball joint	Hub bearings	Steering linkage	Steering gear	Suspension parts	Overloaded	Wheel balance
		1		2					4	3	5	6		
					2		3						1	
Wander/pulls		1		2					4	3	5	6		
Bottoming					2		3						1	
Sways/pitches		1				2	3							
Front wheel shimmy		1		4			3	5	6	7	8			2
Abnormal tire wear			1	2			4					3		

V00313