

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

SAOR1-02

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

Symptom	Suspect Area	See page
Wanders/pulls	1. Tire (Worn or improperly inflated) 2. Wheel alignment (Incorrect) 3. Steering linkage (Loosen or worn) 4. Hub bearing (Loosen or worn) 5. Steering gear (Out of adjustment or broken) 6. Suspension parts (Worn out)	SA-2 SA-4 SA-7 – SA-9 SA-43 – –
Bottoming	1. Vehicle (Overloaded) 2. Spring (Weak) 3. Shock absorber (Worn out)	– SA-17 SA-86 SA-21 SA-89
Sways/pitches	1. Tires (Worn or improperly inflated) 2. Stabilizer bar (Bent or broken) 3. Shock absorber (Worn out)	SA-2 SA-39 SA-105 SA-21 SA-89
Front wheel shimmy	1. Tires (Worn or improperly inflated) 2. Wheel (Out of balance) 3. Shock absorber (Worn out) 4. Wheel alignment (Incorrect) 5. Ball joints (Worn) 6. Hub bearing (Loosen or worn) 7. Steering linkage (Loosen or worn) 8. Steering gear (Out of adjustment or broken)	SA-2 SA-2 SA-21 SA-4 SA-34 SA-9 – –
Abnormal tire wear	1. Tires (Improperly inflated) 2. Wheel alignment (Incorrect) 3. Suspension parts (Worn out) 4. Shock absorber (Worn out)	SA-2 SA-4 SA-7 – SA-21 SA-89
Noise in rear differential	1. Oil level (Low or wrong grade) 2. Excessive backlash between pinion and ring gear 3. Ring, pinion or side gear (Worn or chipped) 4. Pinion shaft bearing (Worn) 5. Side bearing (Worn)	SA-61 SA-63 SA-63 SA-63 SA-63
Oil leak from rear differential	1. Oil level (Too high or wrong grade) 2. Drive pinion oil seal (Worn or damaged) 3. Side gear oil seal (Worn or damaged) 4. Companion flange (Loose or damaged) 5. Side gear shaft (Damaged)	SA-61 SA-63 SA-60 SA-67 SA-63

TIRE AND WHEEL INSPECTION

1. INSPECT TIRE

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

Cold tire inflation pressure

Europe and middle east (tire size: 225/55R16 94V)

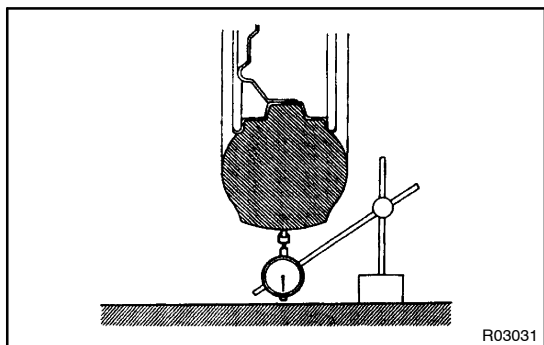
Vehicle speed	Front kPa (kgf/cm ² , psi)	Rear kPa (kgf/cm ² , psi)
Less than 160 km/h (100 mph)	* ¹ 220 (2.2, 32) * ² 240 (2.4, 35)	* ¹ 220 (2.2, 32) * ² 250 (2.6, 36)
More than 160 km/h (100 mph)	* ¹ 240 (2.4, 35) * ² 300 (3.1, 44)	* ¹ 250 (2.6, 36) * ² 340 (3.5, 49)

Australia and others (tire size: 225/55R16 94V)

Vehicle speed	Front kPa (kgf/cm ² , psi)	Rear kPa (kgf/cm ² , psi)
Less than 140 km/h (87 mph)	* ¹ 220 (2.2, 32) * ² 240 (2.4, 35)	* ¹ 220 (2.2, 32) * ² 250 (2.6, 36)
More than 140 km/h (87 mph)	* ¹ 240 (2.4, 35) * ² 300 (3.1, 44)	* ¹ 270 (2.8, 39) * ² 340 (3.5, 49)

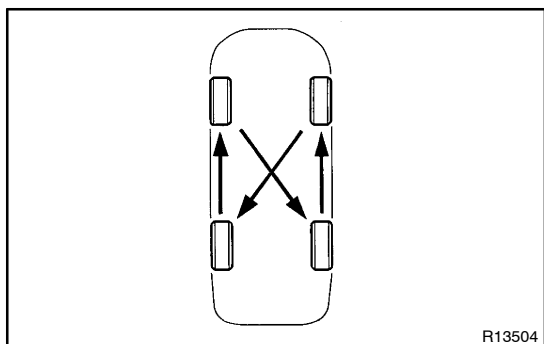
*¹: Up to 4 passengers

*²: More than 4 passengers



- (b) Check the tire runout.

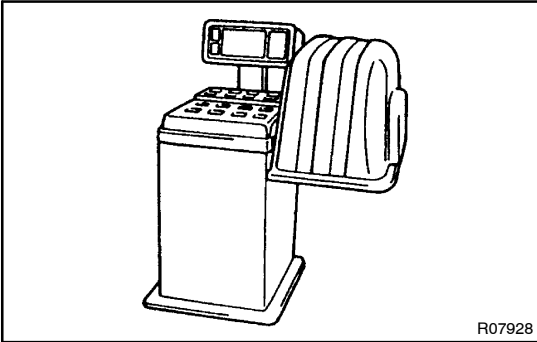
Tire runout: 1.4 mm (0.055 in.) or less



2. ROTATING TIRES

HINT:

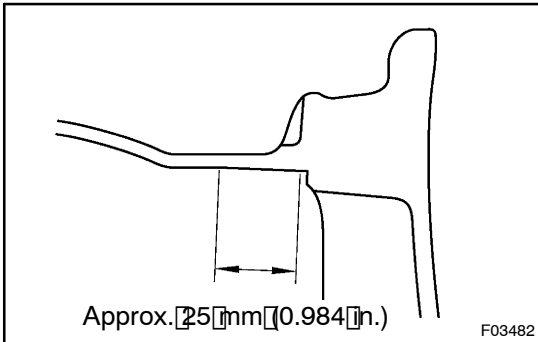
See the illustration for where to rotate each tire.



R07928

3. INSPECT WHEEL BALANCE

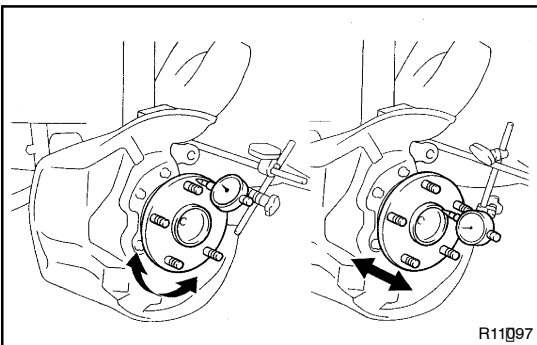
- (a) Check and adjust the off-the-car balance.
 - (b) If necessary, check and adjust the on-the-car balance.
- Unbalance after adjustment: 8.0 g (0.018 lb) or less**



F03482

NOTICE:

- Adhere the sticking type balance weight to the flat position shown in the illustration.
- Push the balance weight securely with a finger to adhere it to the position.
(Pushing force: 10 kgf/more than 2 secs.)
- After cleaning the surface which the balance weight will be adhered to of dirt, oil and water with a cleaning detergent, adhere the balance weight to the surface.
- Do not touch the sticking surface of the tape.
- Do not use the once used balance weight.
- Please use the TOYOTA genuine sticking type balance weight.



R11097

4. CHECK WHEEL BEARING LOOSENESS

- (a) Check the backlash in the bearing shaft direction.
Maximum: 0.05 mm (0.0020 in.)
- (b) Check the axle hub deviation.
Maximum: 0.05 mm (0.0020 in.)

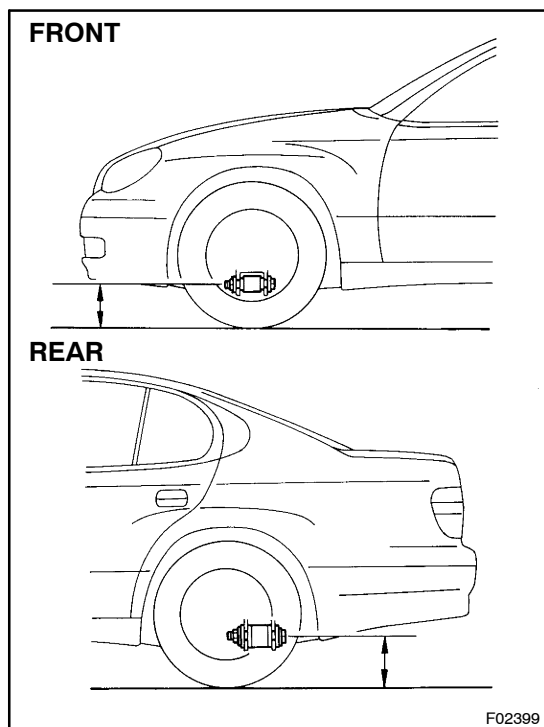
5. CHECK FRONT SUSPENSION FOR LOOSENESS

6. CHECK STEERING LINKAGE FOR LOOSENESS

7. CHECK BALL JOINT FOR LOOSENESS AND EXCESSIVE PLAY (See page SA-34)

8. CHECK SHOCK ABSORBER WORKS PROPERLY

- Check for oil leak
- Check mounting bushings for wear
- Bounce front and rear of the vehicle



FRONT WHEEL ALIGNMENT INSPECTION

SA0R3-02

1. MEASURE VEHICLE HEIGHT

Tire size	Front* ¹ mm (in.)	Rear* ² mm (in.)
225/55R16 94V	239 (9.41)	225 (8.86)

*1: Front measuring point

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

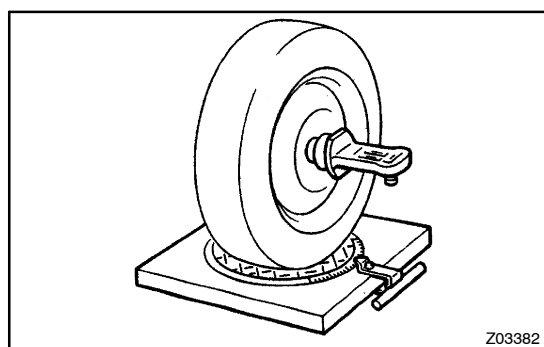
*2: Rear measuring point

Measure the distance from the ground to the center of the No.2 lower suspension arm mounting bolt.

NOTICE:

Before inspecting the wheel alignment, adjust the vehicle height to the specification.

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



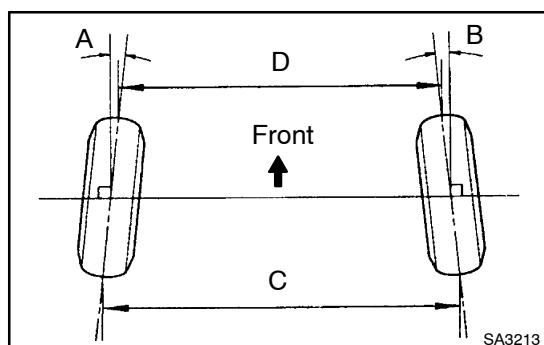
2. INSTALL CAMBER-CASTER-KINGPIN GAUGE ONTO WHEEL ALIGNMENT TESTER

Follow the specific instructions of the equipment manufacturer.

3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

Camber	$-0^{\circ}18' \pm 30'$ ($-0.3^{\circ} \pm 0.5^{\circ}$)
Left-right error	30' (0.5°) or less
Caster	$7^{\circ}28' \pm 30'$ ($7.47^{\circ} \pm 0.5^{\circ}$)
Left-right error	30' (0.5°) or less
Steering axis inclination	$8^{\circ}54' \pm 30'$ ($8.9^{\circ} \pm 0.5^{\circ}$)
Left-right error	30' (0.5°) or less

If the camber is not within the specification, adjust it by adjusting cam.



4. INSPECT TOE-IN

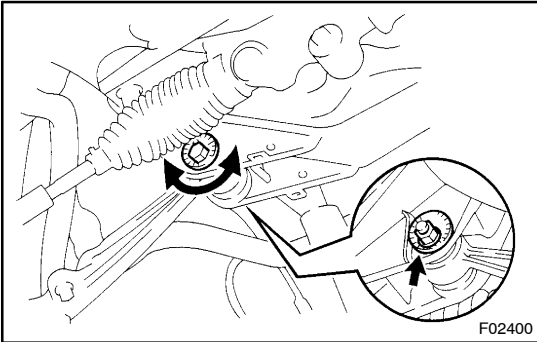
Toe-in (total)	A + B: $0^{\circ}09' \pm 12'$ ($0.15^{\circ} \pm 0.2^{\circ}$) C - D: 1.5 ± 2 mm (0.06 ± 0.08 in.)
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If the toe-in is not within the specification, adjust it at the rack ends.

5. ADJUST CAMBER

HINT:

- After adjusting the camber, inspect the caster and toe-in.
- Try adjusting the camber to the center value of the specification.



- Loosen the camber adjusting cam nut of the lower suspension arm.
- Turn the camber adjusting cam of the lower suspension arm and adjust the camber.

HINT:

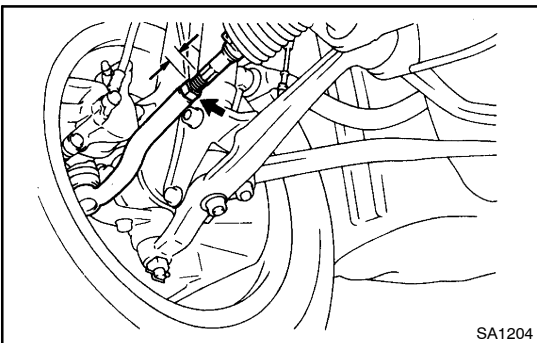
Camber changes about 5' (0.08°) with each graduation of the adjusting cam.

- Torque the camber adjusting cam nut of lower suspension arm.

Torque: 172 N·m (1,755 kgf·cm, 127 ft·lbf)

6. ADJUST TOE-IN

- Remove the boot clips.



- Loosen the tie rod end lock nuts.
- Turn the left and right rack ends an equal amount to adjust the toe-in.

HINT:

- Try to adjust the toe-in to the center value.
- Make sure that the lengths of the left and right rack ends are same.

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

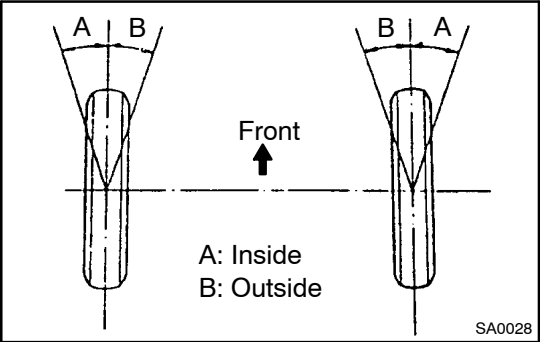
- Torque the tie rod end lock nuts.

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

- Place the boot on the seat and clamp it.

HINT:

Make sure that the boots are not twisted.



7. INSPECT WHEEL ANGLE

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

Inside wheel	38°51' (36°51' – 39°51') 38.85° (36.85° – 39.85°)
Outside wheel (Reference)	32°08' 32.13°

If the wheel angles differ from the standard of the specification, inspect the toe-in.

REAR WHEEL ALIGNMENT INSPECTION

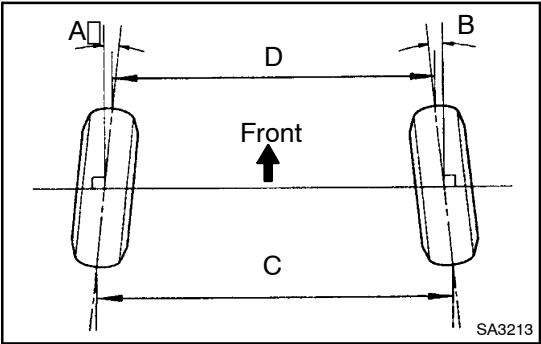
SA0R4-02

- 1. MEASURE VEHICLE HEIGHT (See page SA-4)
- 2. INSTALL CAMBER-CASTER-KINGPIN GAUGE ONTO WHEEL ALIGNMENT TESTER

Follow the specific instructions of the equipment manufacturer.

3. INSPECT CAMBER

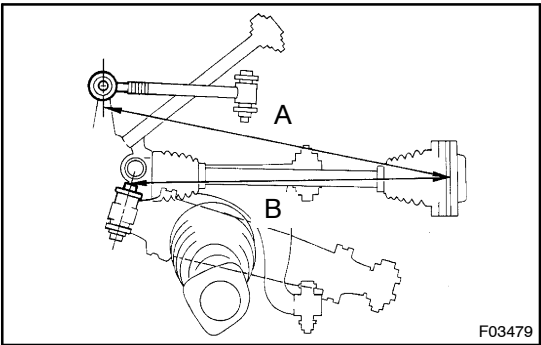
Camber	$-0^{\circ}30' \pm 30' (-0.5^{\circ} \pm 0.5^{\circ})$
Left-right error	$30' (0.5^{\circ})$ or less



SA3213

4. INSPECT TOE-IN

Toe-in (total)	A - B: $0^{\circ}03' \pm 12' (0.05^{\circ} \pm 0.2^{\circ})$ C - D: $0.5 \pm 2 \text{ mm} (0.02 \pm 0.08 \text{ in.})$
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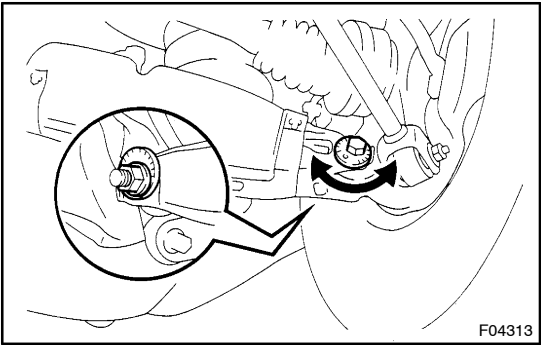
5. ADJUST CAMBER AND TOE-IN

- (a) Measure the lengths of the toe control link and No. 2 lower suspension arm, as shown in the illustration.

Length: A - B $\pm 4.0 \text{ mm} (0.16 \text{ in.})$ or less

If they are not within the specifications, adjust the lengths of them by turning the adjusting cam, as shown, until A - B is less than $4.0 \text{ mm} (0.16 \text{ in.})$.

- (b) Measure the camber and toe-in.



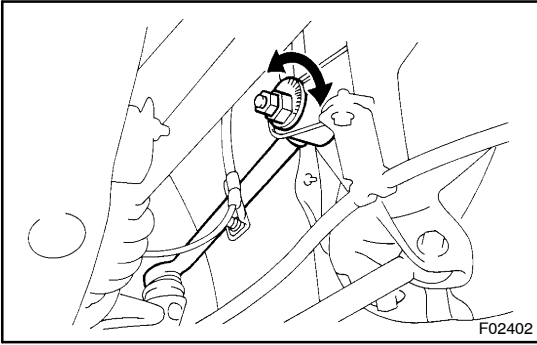
F04313

- (c) Adjust the camber.
 - (1) Loosen the camber adjusting cam nut of No. 2 lower suspension arm.
 - (2) Turn the camber adjusting cam of No. 2 lower suspension arm and adjust camber.

HINT:
Camber changes about $5.0' (0.08^{\circ})$ with each graduation of the cam.

- (3) Torque the camber adjusting cam nut.

Torque: $110 \text{ N}\cdot\text{m} (1,120 \text{ kgf}\cdot\text{cm}, 81 \text{ ft}\cdot\text{lb})$



- (d) Adjust the toe-in.
- (1) Loosen the camber adjusting cam nut of toe control link.
 - (2) Turn the camber adjusting cam of toe control link and adjust toe-in.

HINT:

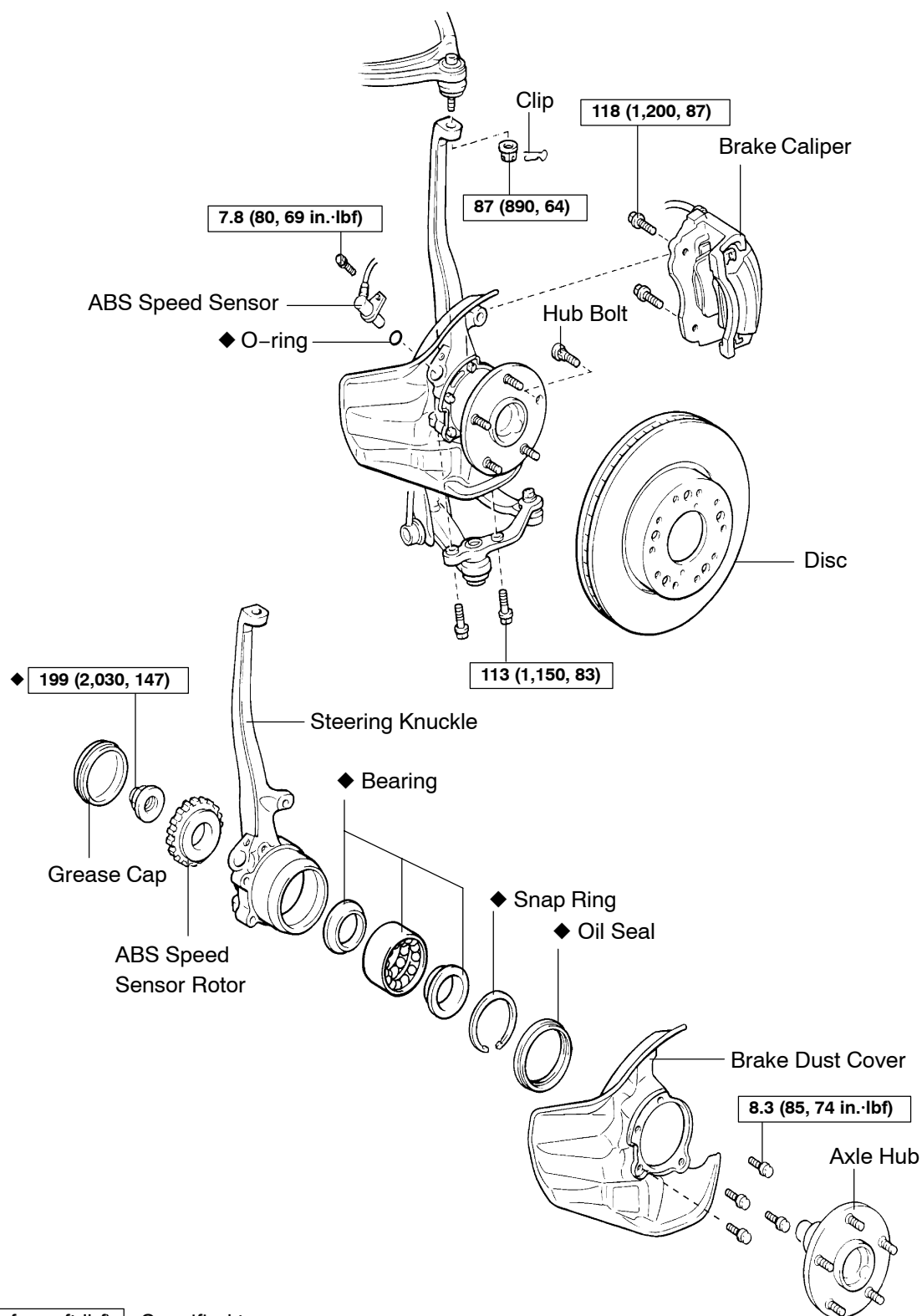
Camber changes about 5.0' (0.08°) with each graduation of the cam.

- (3) Torque the camber adjusting cam nut.

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

FRONT AXLE HUB COMPONENTS

SAORS-02

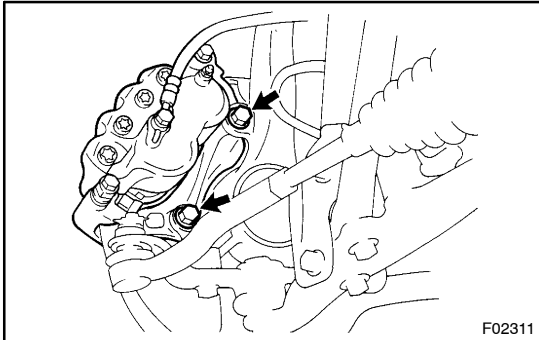


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REMOVAL

1. REMOVE FRONT WHEEL

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

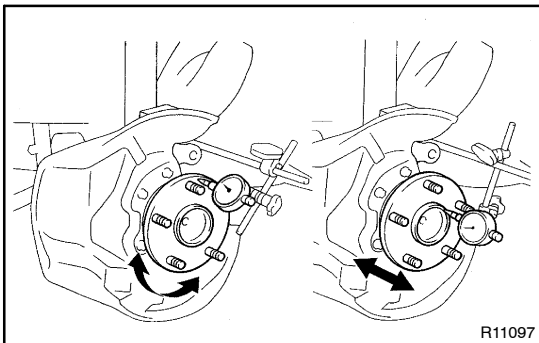


2. REMOVE FRONT BRAKE CALIPER AND DISC

- (a) Remove the 2 bolts and brake caliper from the steering knuckle.

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

- (b) Support the brake caliper securely.
(c) Remove the disc.



3. CHECK BEARING BACKLASH AND AXLE HUB DEVIATION

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

Maximum: 0.05 mm (0.0020 in.)

If the backlash exceeds the maximum, replace the bearing.

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

Maximum: 0.05 mm (0.0020 in.)

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

4. REMOVE ABS SPEED SENSOR

- (a) Remove the bolt and ABS speed sensor.

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

- (b) Remove the O-ring from the ABS speed sensor.

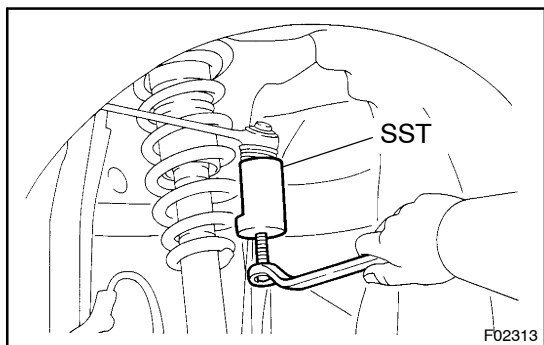
NOTICE:

At the time of installation, check that there is no foreign object attached to the tip and installation part of the ABS speed sensor.

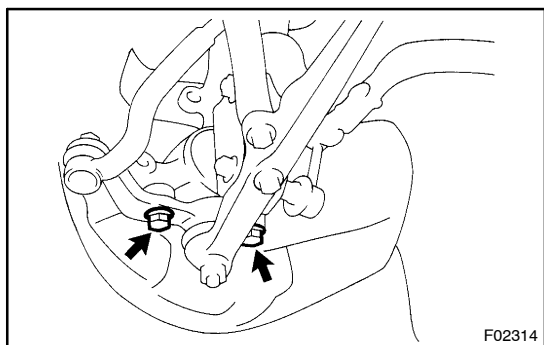
5. REMOVE STEERING KNUCKLE

- (a) Remove the upper side of the clip and nut.

Torque: 87 N·m (890 kgf·cm, 64 ft·lbf)



- (b) Using SST, remove the steering knuckle from the upper suspension arm.
SST 09610-20012

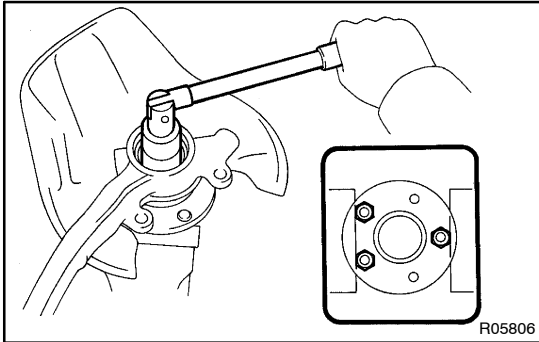


- (c) Remove the 2 bolts and steering knuckle from the lower ball joint.
Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

DISASSEMBLY

1. REMOVE FRONT HUB GREASE CAP

Using a screwdriver, remove the grease cap from the steering knuckle.



2. REMOVE FRONT AXLE HUB LOCK NUT AND ABS SPEED SENSOR ROTOR

- (a) Clamp the axle hub in a soft jaw vise.

HINT:

Close vise until it holds hub bolt. Do not tighten further.

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

- (c) Using a 36 mm socket wrench, remove the lock nut.

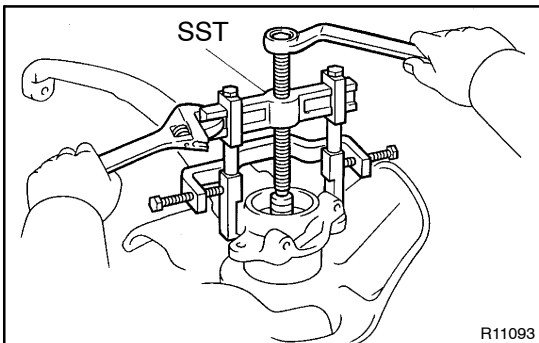
- (d) Remove the ABS speed sensor rotor.

NOTICE:

Take care not to scratch the serrations of the sensor rotor.

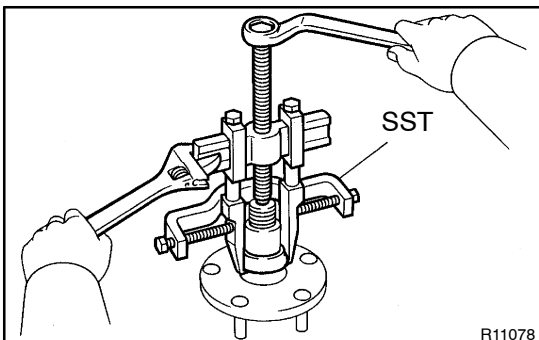
3. REMOVE AXLE HUB FROM STEERING KNUCKLE

- (a) Remove the 4 bolts and shift the brake dust cover toward the outside.



- (b) Using SST, remove the axle hub from the steering knuckle.

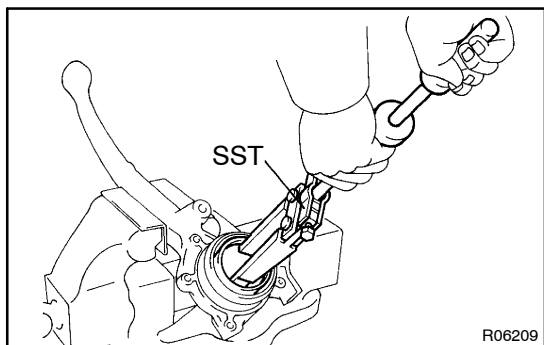
SST 09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04050, 09957-04010, 09958-04010)



4. REMOVE INNER RACE (OUTSIDE) FROM AXLE HUB

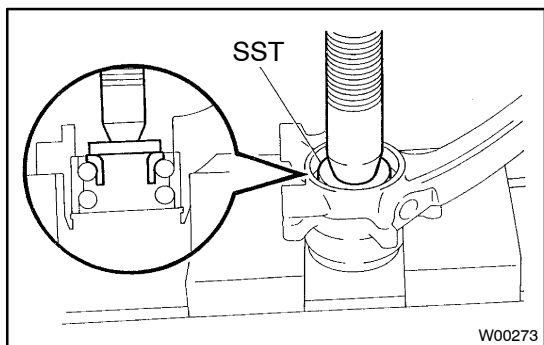
Using SST, remove the inner race from the axle hub.

SST 09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04060, 09957-04010, 09958-04010)

**5. REMOVE OIL SEAL**

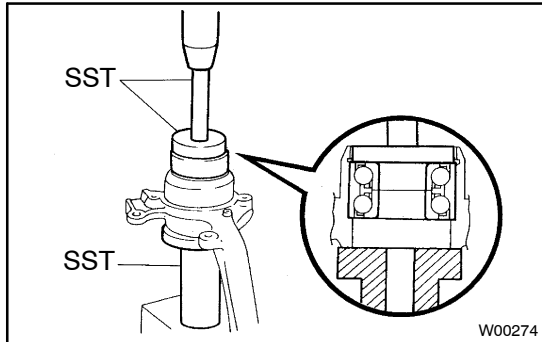
Using SST, remove the oil seal from the steering knuckle.

SST 09308-00010

**6. REMOVE BEARING FROM STEERING KNUCKLE**

- (a) Using snap ring pliers, remove the snap ring.
- (b) Using SST and a press, remove the bearing from the steering knuckle.

SST 09950-60010 (09951-00560)



REASSEMBLY

1. INSTALL BEARING

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

SST 09309-36010, 09950-60020 (09951-00720),
09950-70010 (09951-07150)

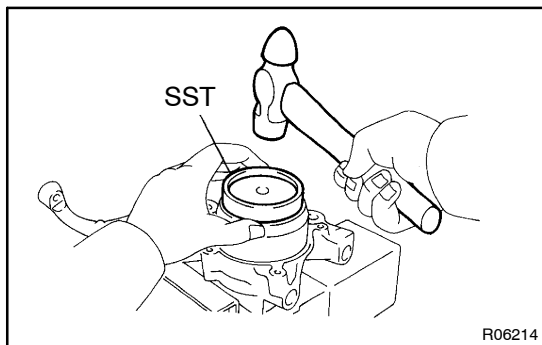
NOTICE:

If the inner race and balls come loose from the bearing outer race, make sure to install them on the same side as before.

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

2. INSTALL OIL SEAL

- (a) Install the inner race (outside).



- (b) Using SST and a hammer, install a new oil seal until it is flush with the end surface of the steering knuckle.

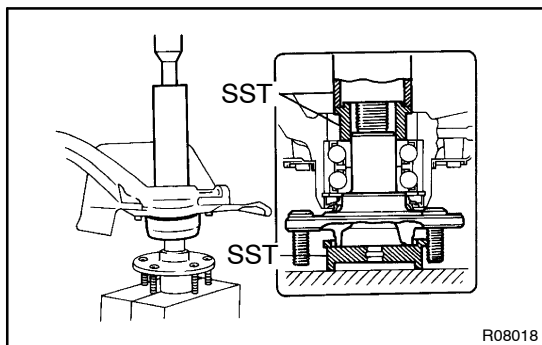
SST 09608-32010

- (c) Coat MP grease to the oil seal lip.

3. INSTALL AXLE HUB TO STEERING KNUCKLE

- (a) Install the brake dust cover to the steering knuckle with the 4 bolts.

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



- (b) Using SST and a press, install the axle hub to the steering knuckle.

SST 09316-60011 (09316-00011, 09316-00071),
09608-32010

4. INSTALL ABS SPEED SENSOR ROTOR

NOTICE:

Do not scratch the serrations of the sensor rotor.

5. INSTALL AXLE HUB LOCK NUT

- (a) Install a new axle hub lock nut.

Torque: 199 N·m (2,030 kgf·cm, 147 ft·lbf)

- (b) Using a chisel and hammer, stake the lock nut.

6. INSTALL FRONT HUB GREASE CAP

Using a screwdriver and hammer, install the grease cap to the steering knuckle.

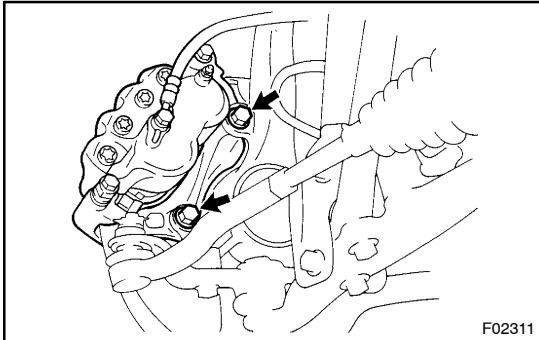
INSTALLATION

Installation is in the reverse order of removal (See page SA-10).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI-210) AND FRONT WHEEL ALIGNMENT (See page SA-4)

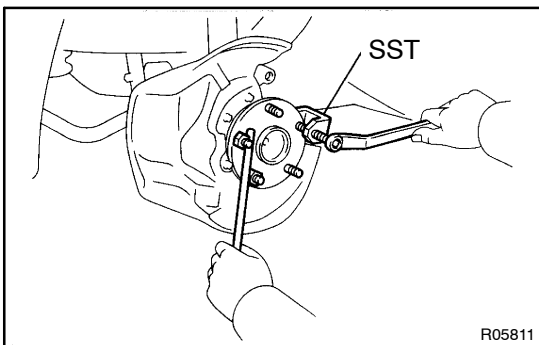
FRONT WHEEL HUB BOLT REPLACEMENT

1. REMOVE FRONT WHEEL



2. REMOVE BRAKE CALIPER AND DISC

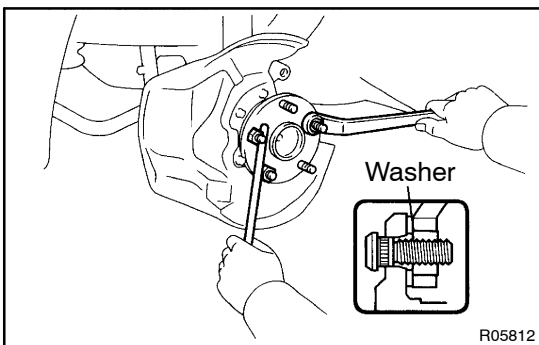
- Remove the 2 bolts and remove the brake caliper from the steering knuckle.
- Support the brake caliper securely.
- Remove the disc.



3. REMOVE HUB BOLT

Using SST, remove the hub bolt.

SST 09628-10011



4. INSTALL HUB BOLT

- Install a washer and nut to the bolt, as shown in the illustration.
- Turn the wheel nut to pull the hub bolt until the underside of the hub bolt head touches the axle hub.

5. INSTALL DISC AND BRAKE CALIPER

- Install the disc.
- Install the brake caliper and 2 bolts to the steering knuckle.

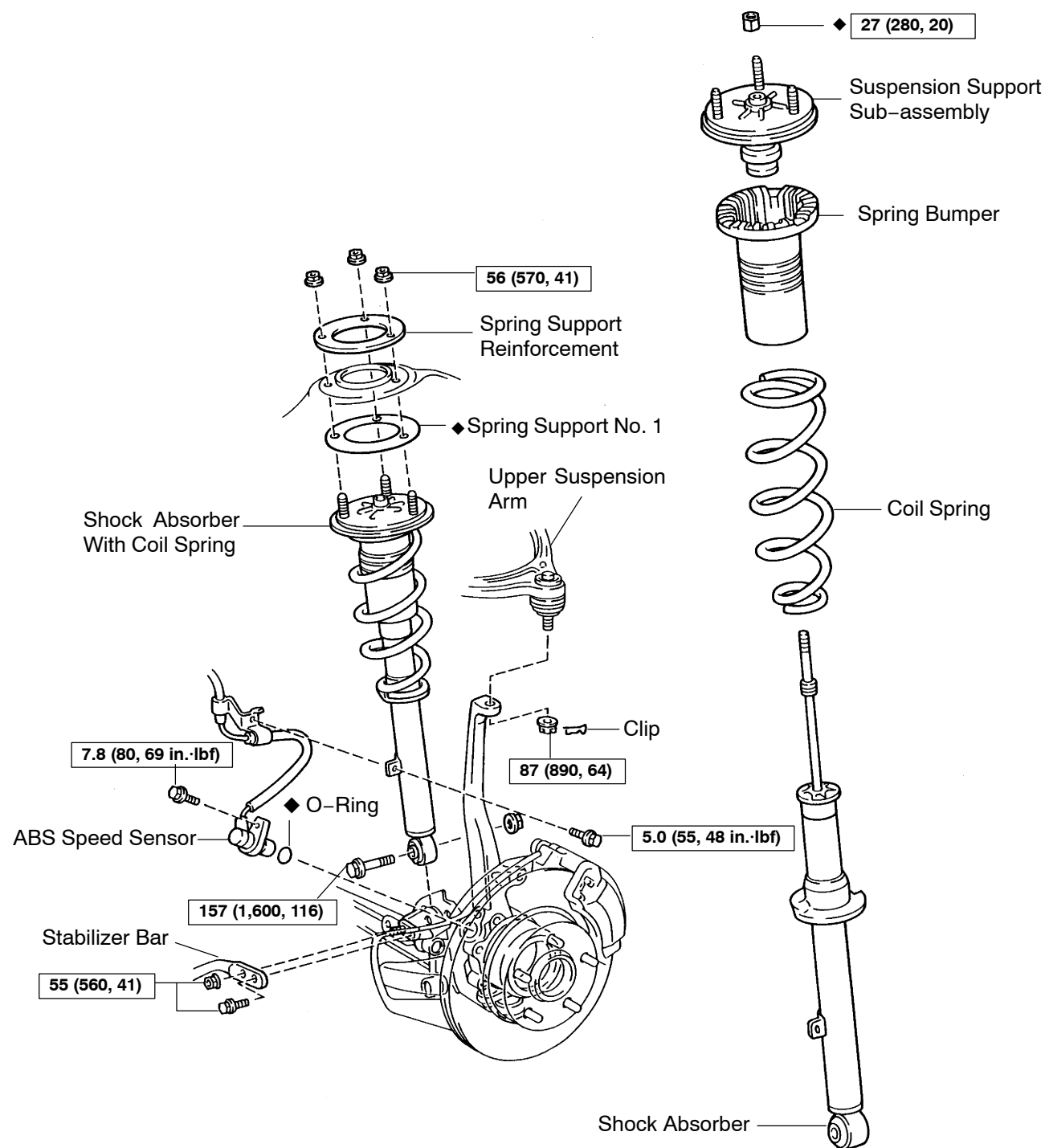
Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)

6. INSTALL FRONT WHEEL

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

FRONT SHOCK ABSORBER COMPONENTS

SAORB-02



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

◆ Non-reusable part

N

F11661

REMOVAL

1. REMOVE FRONT WHEEL

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

2. DISCONNECT ABS SPEED SENSOR AND WIRE HARNESS

- (a) Remove the bolt and ABS speed sensor.

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

- (b) Remove the O-ring from the ABS speed sensor.

NOTICE:

At the time of installation, check that there is no foreign object attached to the tip and installation part of the ABS speed sensor.

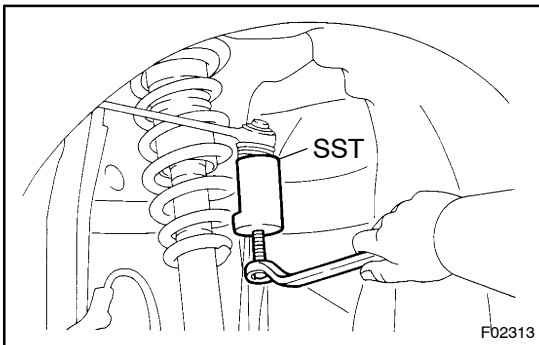
- (c) Remove the bolt and ABS speed sensor wire harness.

Torque: 5.0 N·m (55 kgf·cm, 48 in·lbf)

3. DISCONNECT UPPER SUSPENSION ARM FROM STEERING KNUCKLE

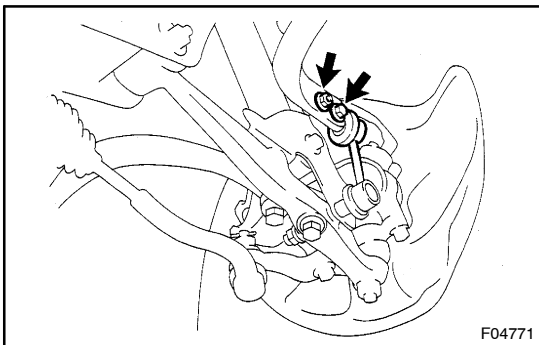
- (a) Remove the clip and nut.

Torque: 87 N·m (890 kgf·cm, 64 ft·lbf)



- (b) Using SST, disconnect the upper suspension arm from the steering knuckle.

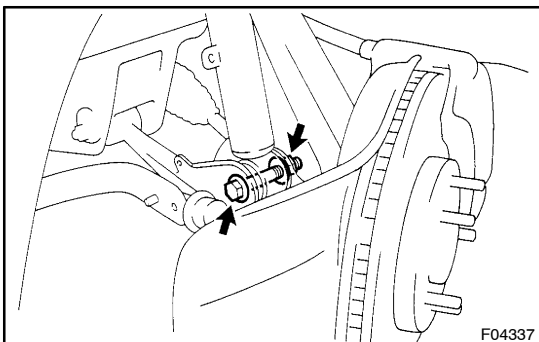
SST 09610-20012



4. DISCONNECT STABILIZER BAR FROM STABILIZER BAR LINK

Remove the bolt and nut, and disconnect the stabilizer bar from the stabilizer bar link

Torque: 55 N·m (560 kgf·cm, 41 ft·lbf)



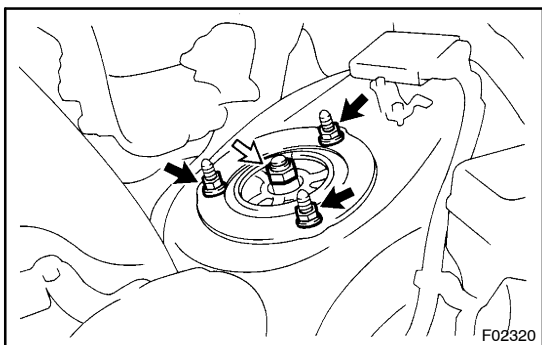
5. REMOVE FRONT SHOCK ABSORBER

- (a) Remove the bolt and nut, and disconnect the shock absorber from the shock absorber bracket.

Torque: 157 N·m (1,600 kgf·cm, 116 ft·lbf)

HINT:

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



- (b) Loosen the piston rod lock nut.

NOTICE:

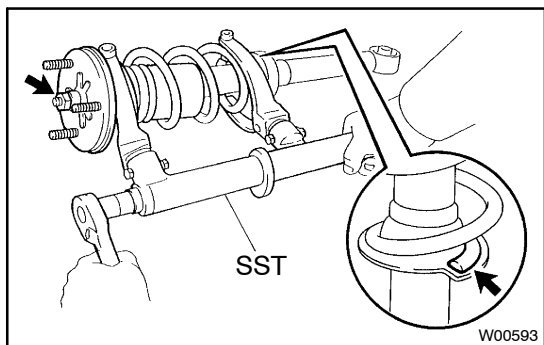
Do not remove it.

Torque: 27 N·m (280 kgf·cm, 20 ft·lbf)

- (c) Remove the 3 nuts, spring support reinforcement and shock absorber with coil spring.

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

- (d) Remove the suspension support No. 1 from the shock absorber with coil spring.



DISASSEMBLY

REMOVE SUSPENSION SUPPORT AND COIL SPRING

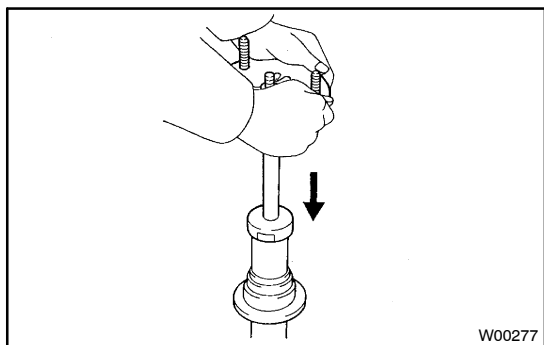
- (a) Using SST, compress the coil spring.

SST 09727-30021

NOTICE:

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

- (b) Remove the piston rod lock nut.
(c) Remove the suspension support sub-assembly, spring bumper and coil spring.



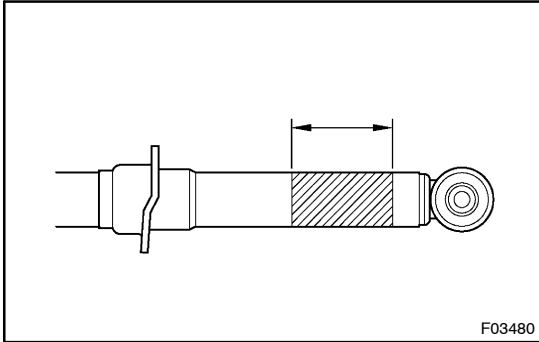
INSPECTION

INSPECT SHOCK ABSORBER

Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual operation sounds. If there is any abnormality, replace the shock absorber with a new one.

NOTICE:

When disposing the shock absorber, see DISPOSAL on [page SA-22](#).

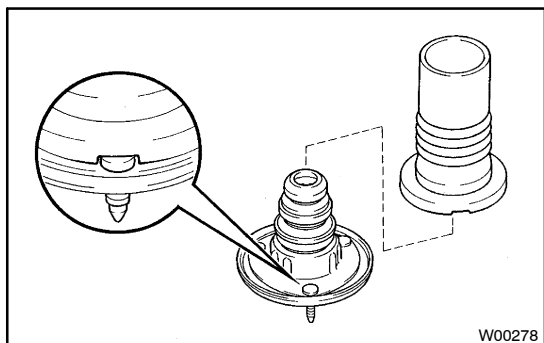


DISPOSAL

1. **FULLY EXTEND SHOCK ABSORBER ROD**
2. **DRILL HOLE TO REMOVE GAS FROM CYLINDER**
 - (a) Place the shock absorber horizontally to prevent the oil from coming out.
 - (b) Using a drill, make a hole on the top of the shell as shown to discharge the gas inside.

CAUTION:

The gas coming out is harmless, but be careful of chips which may fly up when drilling.

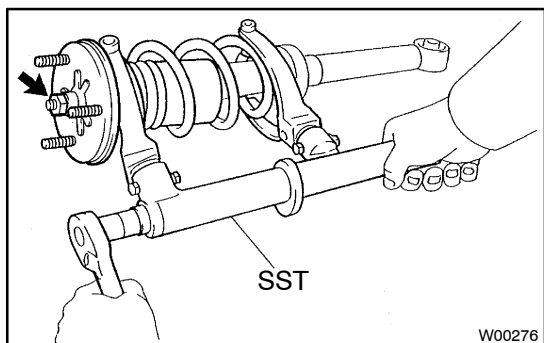


REASSEMBLY

1. INSTALL SPRING BUMPER TO SUSPENSION SUPPORT

HINT:

Match the bolt of the suspension support with the cut-out part of the spring bumper.



2. INSTALL COIL SPRING TO SHOCK ABSORBER

(a) Using SST, compress the coil spring.

SST 09727-30021

NOTICE:

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

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

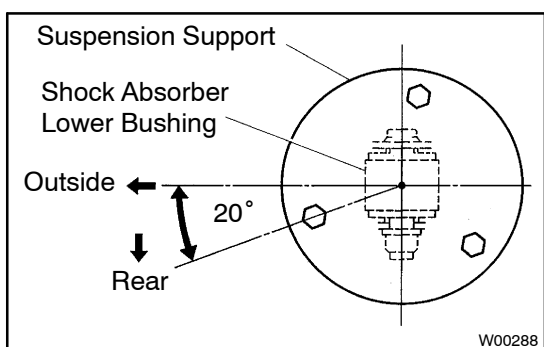
HINT:

Fit the lower end of the coil spring into the recess of the spring seat of the shock absorber.

3. INSTALL SUSPENSION SUPPORT

(a) Install the suspension support sub-assembly to the shock absorber.

(b) Temporarily tighten a new lock nut.



(c) Align the suspension support with the shock absorber lower bolt, as shown.

4. REMOVE SST

HINT:

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

INSTALLATION

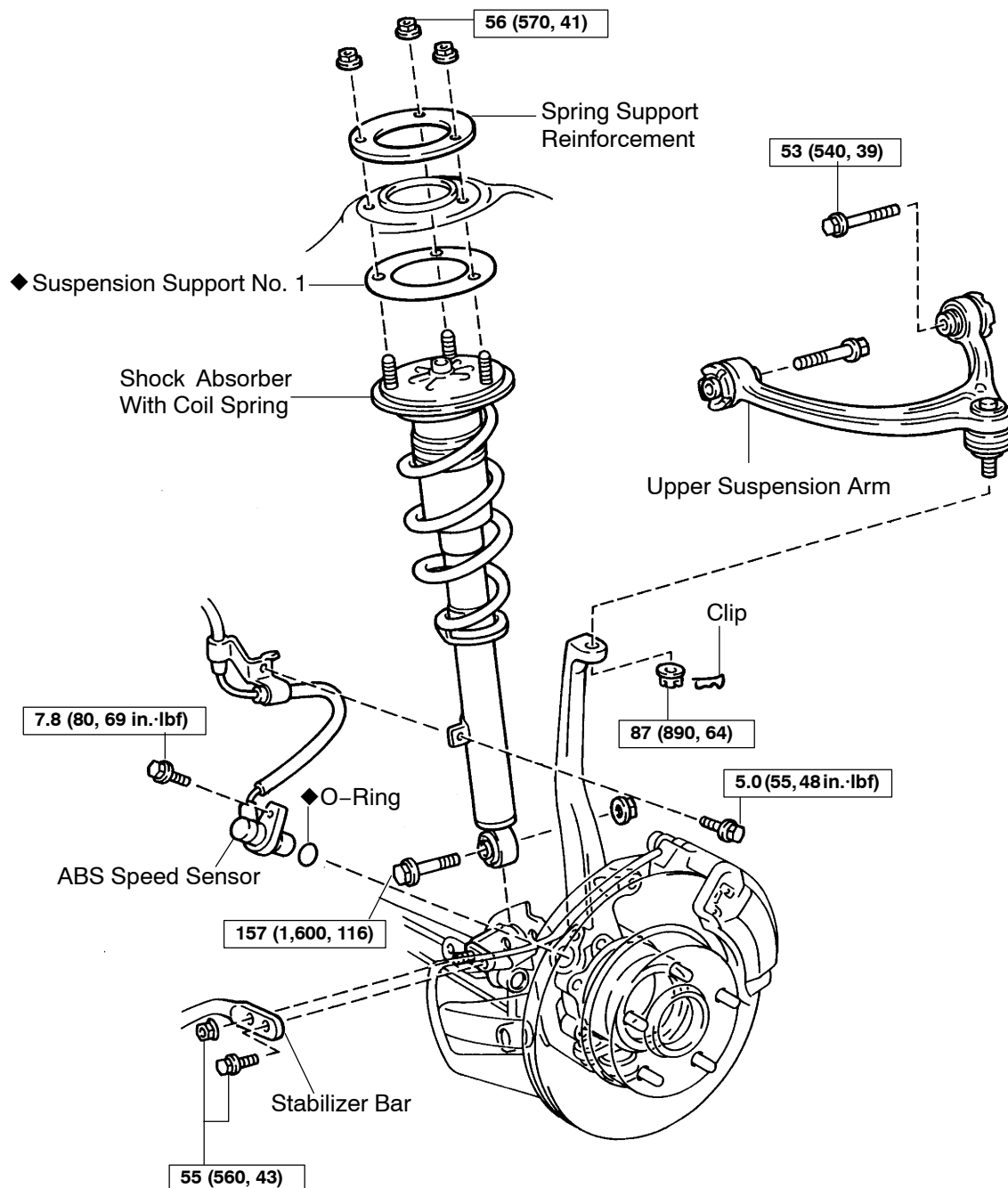
Installation is in the reverse order of removal (See page SA-18).

HINT:

After installation, check the ABS speed sensor signal (See page DI-210) and front wheel alignment (See page SA-4).

FRONT UPPER SUSPENSION ARM COMPONENTS

SAORI-02



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

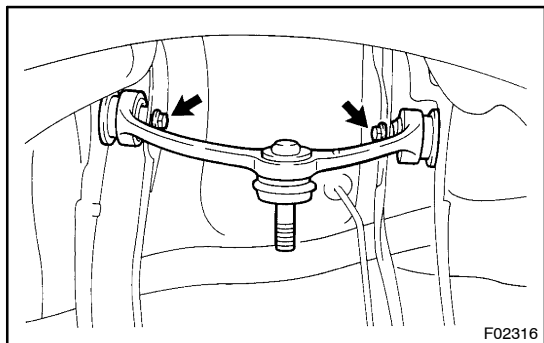
◆ Non-reusable part

N

F11660

REMOVAL

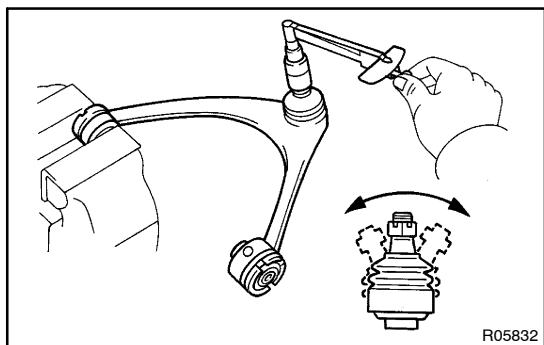
1. **REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **REMOVE FRONT SHOCK ABSORBER**
(See [page SA-18](#))



3. **REMOVE UPPER SUSPENSION ARM**
Remove the 2 bolts and upper suspension arm.
Torque: 53 N·m (540 kgf·cm, 39 ft·lbf)

HINT:

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



INSPECTION

INSPECT FRONT UPPER SUSPENSION ARM BALL JOINT FOR ROTATION CONDITION

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

Turning torque:

1.0 – 3.4 N·m (10 – 35 kgf·cm, 9 – 30 in.·lbf)

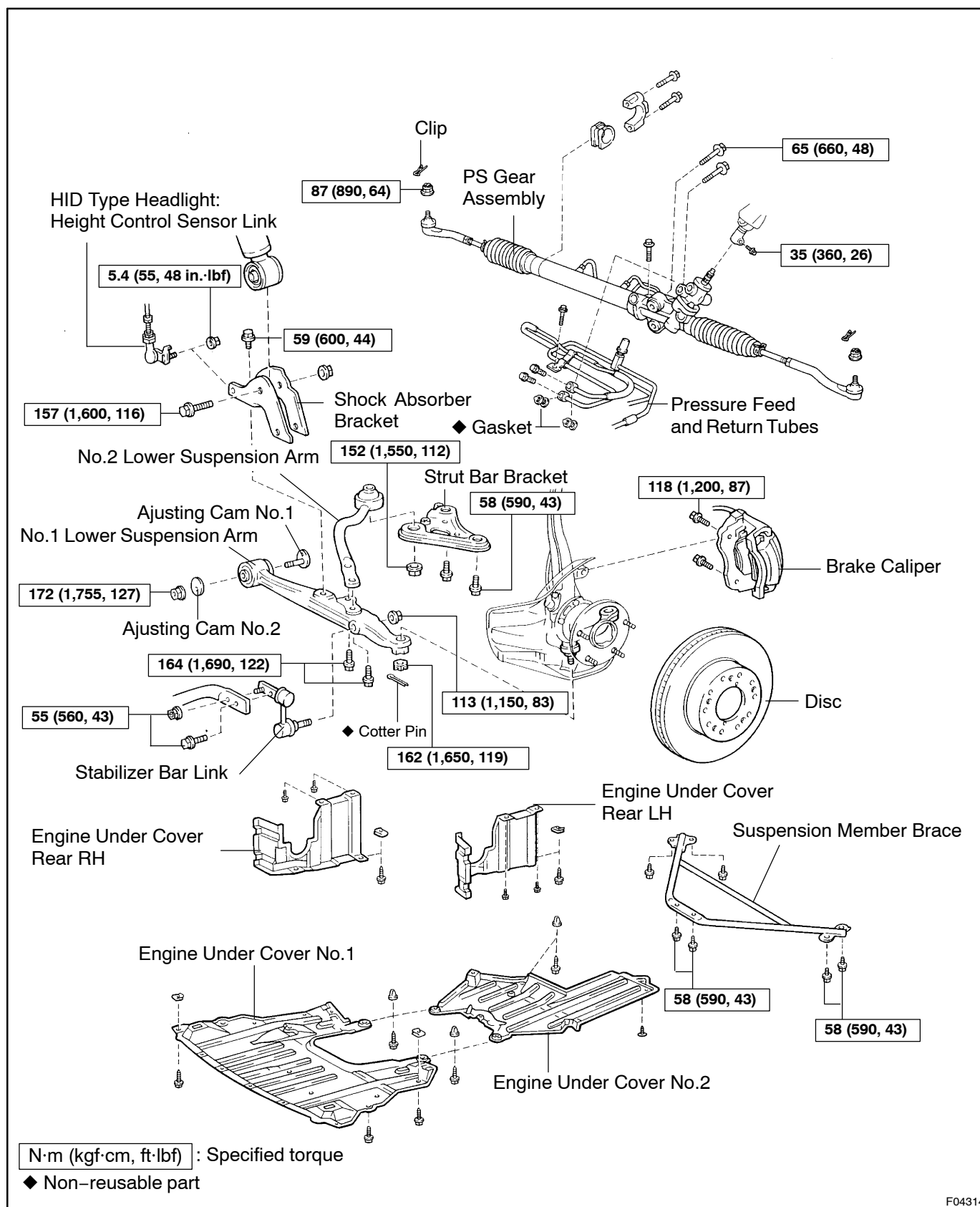
INSTALLATION

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

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI-210) AND FRONT WHEEL ALIGNMENT (See page SA-4)

FRONT LOWER SUSPENSION ARM COMPONENTS

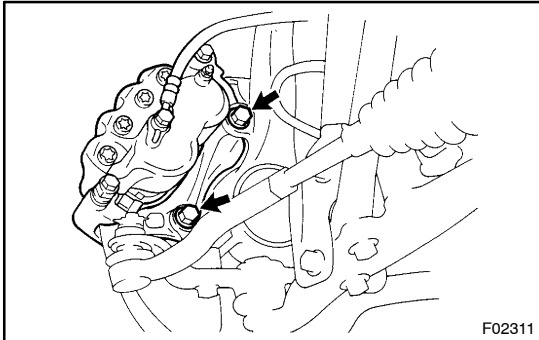
SAORM-02



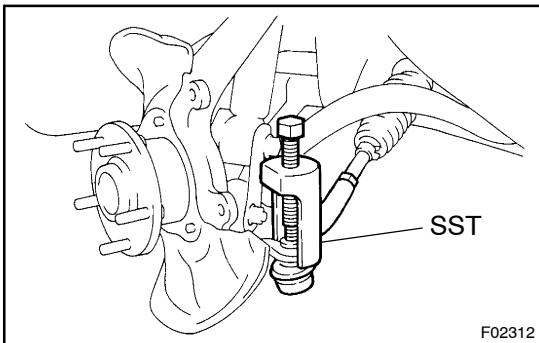
F04314

REMOVAL

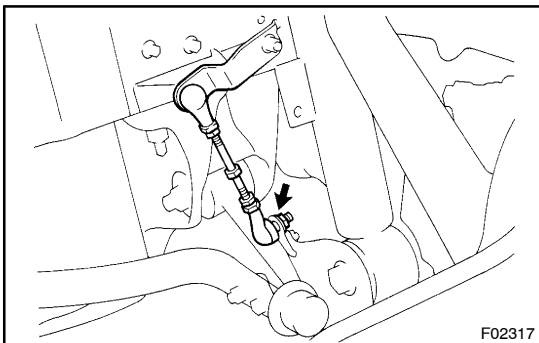
1. **REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **REMOVE ENGINE UNDER COVERS**



3. **REMOVE BRAKE CALIPER**
 - (a) Remove the 2 bolts and brake caliper.
Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)
 - (b) Support the brake caliper securely.
 - (c) Remove the disc.
4. **DISCONNECT TIE ROD END**
 - (a) Remove the clip and nut.
Torque: 87 N·m (890 kgf·cm, 64 ft·lbf)



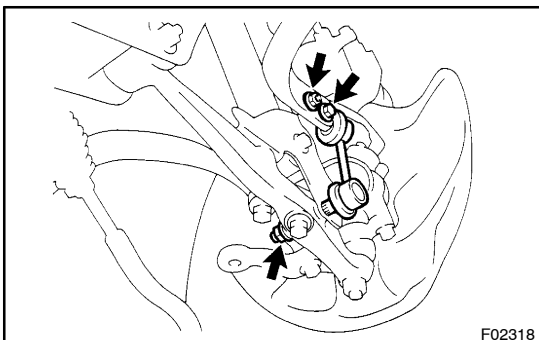
- (b) Using SST, disconnect the tie rod end from the steering knuckle.
SST 09610-20012



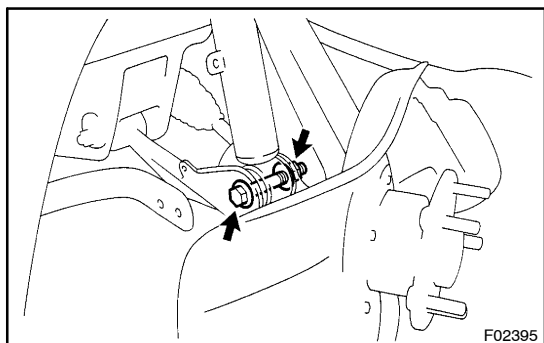
5. **HID TYPE HEADLIGHT:**
DISCONNECT HEIGHT CONTROL SENSOR LINK FROM SHOCK ABSORBER BRACKET

Remove the nut and disconnect the height control sensor link from the shock absorber bracket.

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



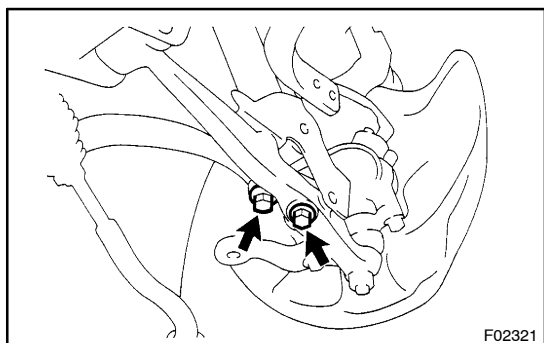
6. **REMOVE STABILIZER BAR LINK**
 - (a) Remove the bolt and nut, disconnect the stabilizer bar link from the stabilizer bar.
Torque: 55 N·m (560 kgf·cm, 43 ft·lbf)
 - (b) Remove the nut and stabilizer bar link.
Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)



7. DISCONNECT SHOCK ABSORBER

Remove the bolt and nut, disconnect the shock absorber from the shock absorber bracket.

Torque: 157 N·m (1,600 kgf·cm, 116 ft·lbf)



8. LOOSEN NO.1 AND NO.2 LOWER SUSPENSION ARM SET BOLTS

Torque: 164 N·m (1,690 kgf·cm, 122 ft·lbf)

HINT:

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

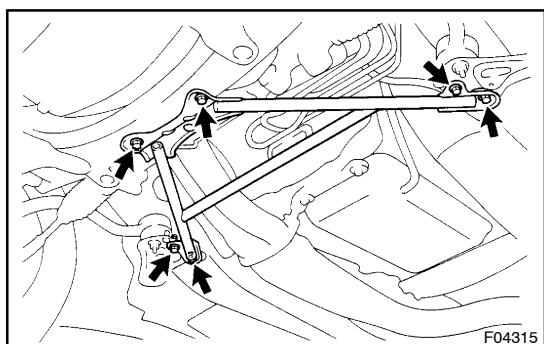
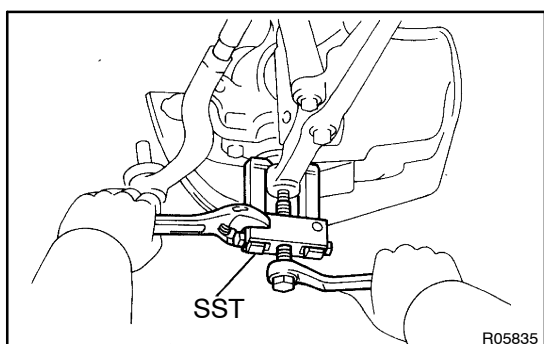
9. DISCONNECT NO.1 LOWER SUSPENSION ARM

(a) Remove the cotter pin and nuts.

Torque: 162 N·m (1,650 kgf·cm, 119 ft·lbf)

(b) Using SST, disconnect the No.1 lower suspension arm from the lower ball joint.

SST 09628-62011

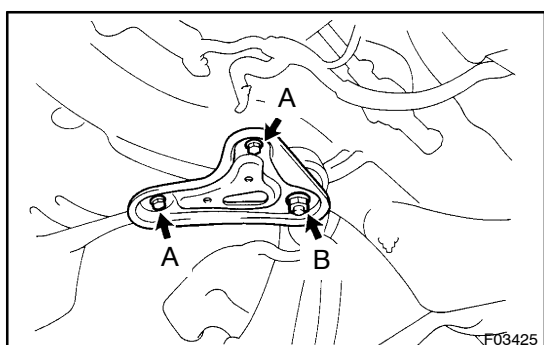


10. REMOVE SUSPENSION MEMBER BRACE

Remove the 6 bolts and suspension member brace.

Torque: 58 N·m (590 kgf·cm, 43 ft·lbf)

11. REMOVE STEERING GEAR ASSEMBLY (See page SR-32)



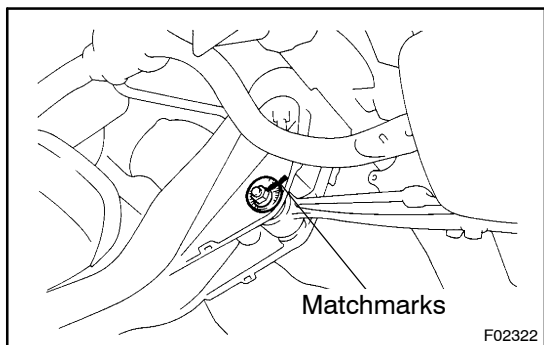
12. REMOVE STRUT BAR BRACKET

Remove the nut, 2 bolts and strut bar bracket.

Torque:

A: 58 N·m (590 kgf·cm, 43 ft·lbf)

B: 152 N·m (1,550 kgf·cm, 112 ft·lbf)

**13. REMOVE LOWER SUSPENSION ARM ASSEMBLY**

- (a) Place matchmarks on the camber adjusting cam and suspension crossmember.
- (b) Remove the nut, adjusting cam No.2, adjusting cam No.1 and lower suspension arm assembly.

Torque: 172 N·m (1,755 kgf·cm, 127 ft·lbf)

HINT:

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

14. REMOVE NO.1 AND NO.2 LOWER SUSPENSION ARMS

- (a) Remove the bolt, shock absorber bracket from the No.1 lower suspension arm.

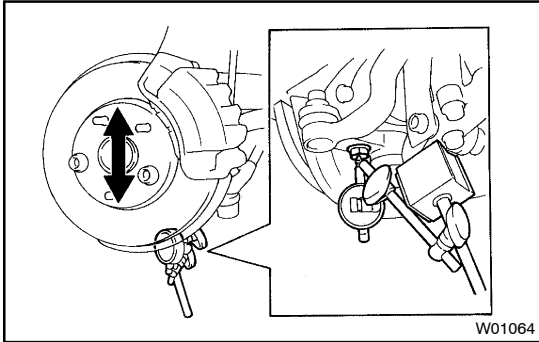
Torque: 59 N·m (600 kgf·cm, 44 ft·lbf)

- (b) Remove the 2 bolts and separate the No.1 and No.2 lower suspension arms.

INSTALLATION

Installation is in the reverse order of removal (See page SA-30).

AFTER INSTALLATION, CHECK FRONT WHEEL ALIGNMENT (See page SA-4)



FRONT LOWER BALL JOINT ON-VEHICLE INSPECTION

SAORP-02

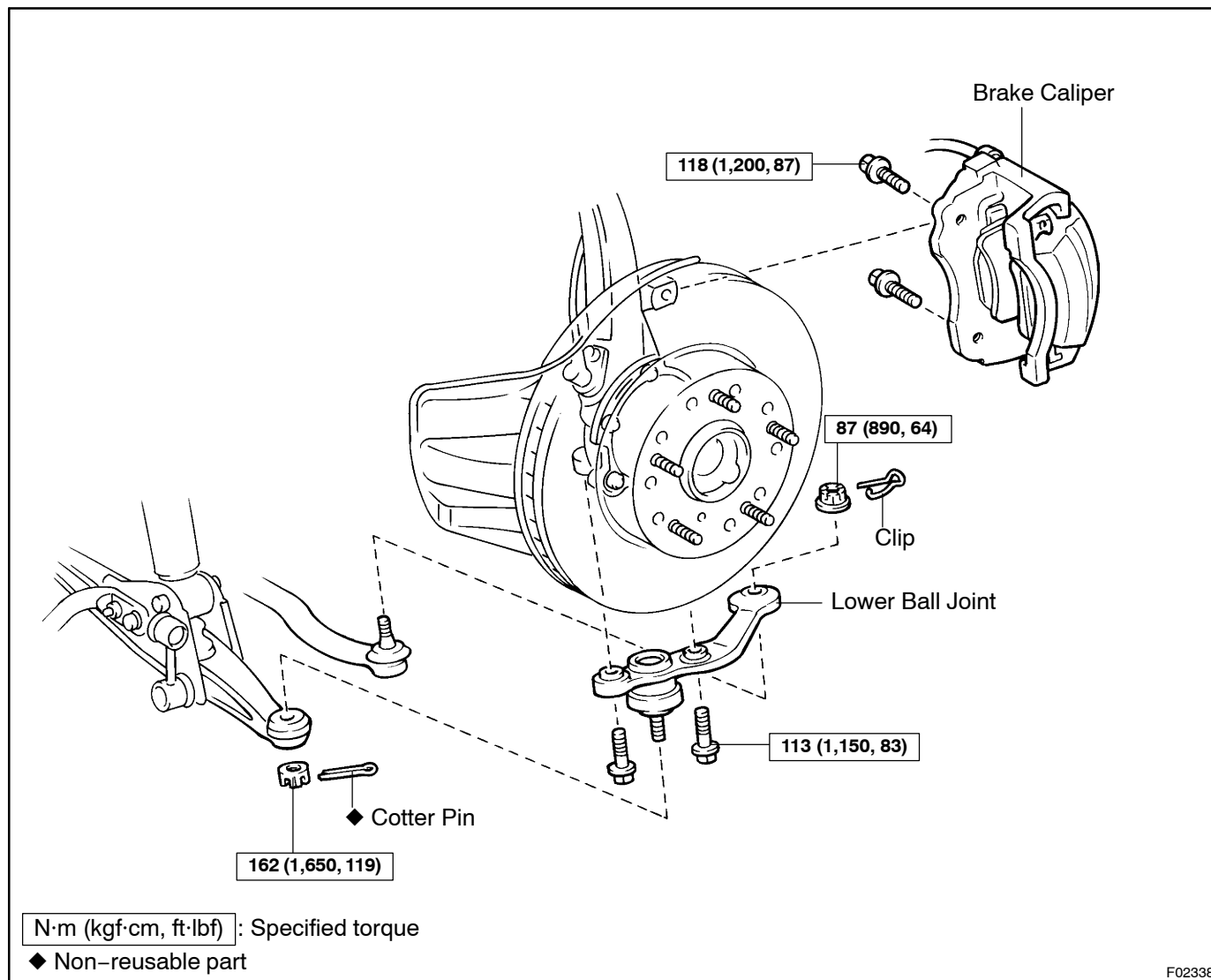
INSPECT LOWER BALL JOINT EXCESSIVE PLAY ON-VEHICLE

- (a) Remove the tire and install the hub nuts to the disc.
- (b) Using a dial indicator, check the lower ball joint for excessive play when you push the hub nuts up and down with a force of 294 N (30 kgf, 66 lbf).

Maximum: 0.9 mm (0.035 in.)

If it is not within the specification, replace the lower ball joint.

COMPONENTS

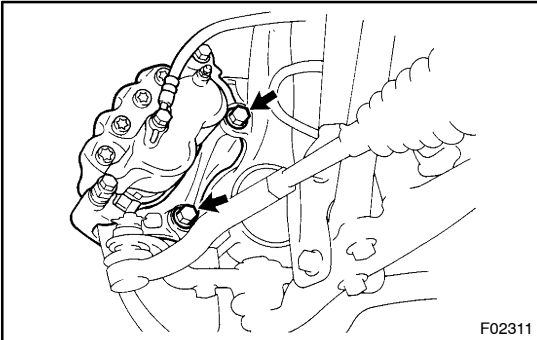


F02338

REMOVAL

1. REMOVE FRONT WHEEL

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



2. REMOVE BRAKE CALIPER

- (a) Remove the 2 bolts and brake caliper.

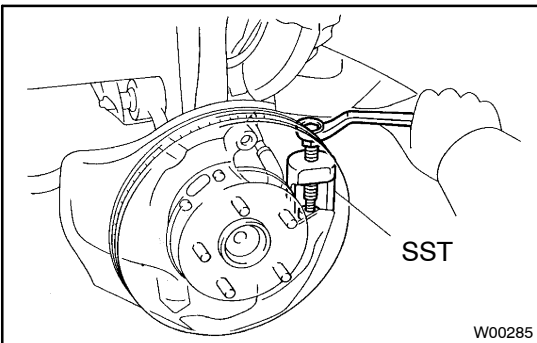
Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)

- (b) Support the brake caliper securely.

3. DISCONNECT TIE ROD END FROM LOWER BALL JOINT

- (a) Remove the clip and nut.

Torque: 87 N·m (890 kgf·cm, 64 ft·lbf)



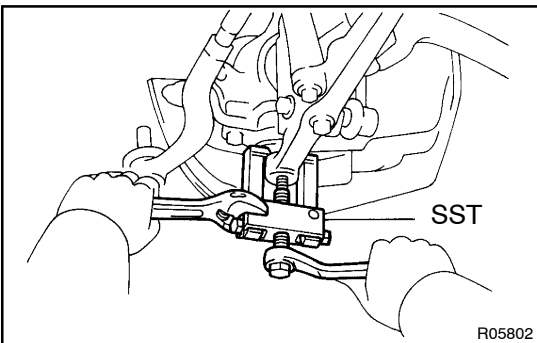
- (b) Using SST, disconnect the tie rod end from the lower ball joint.

SST 09610-20012

4. DISCONNECT LOWER BALL JOINT FROM LOWER SUSPENSION ARM

- (a) Remove the cotter pin and nut.

Torque: 162 N·m (1,650 kgf·cm, 119 ft·lbf)



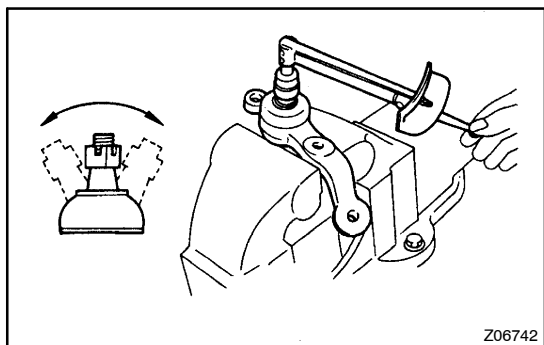
- (b) Using SST, remove the lower ball joint.

SST 09628-62011

5. REMOVE LOWER BALL JOINT FROM STEERING KNUCKLE

Remove the 2 bolts and lower ball joint.

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



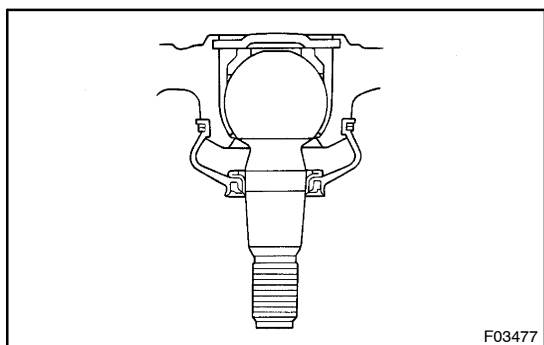
INSPECTION

INSPECT FRONT LOWER BALL JOINT FOR ROTATION CONDITION

- As shown, flip the ball joint stud back and forth 5 times, before installing the nut.
- Using torque wrench, turn the nut continuously one turn per 2 – 4 seconds and take the torque reading on the 5th turn.

Turning torque:

0.1 – 3.0 N·m (1 – 30 kgf·cm, 0.9 – 26 in·lbf)



HINT:

Check for unusual resistance or looseness as you turn the torque wrench.

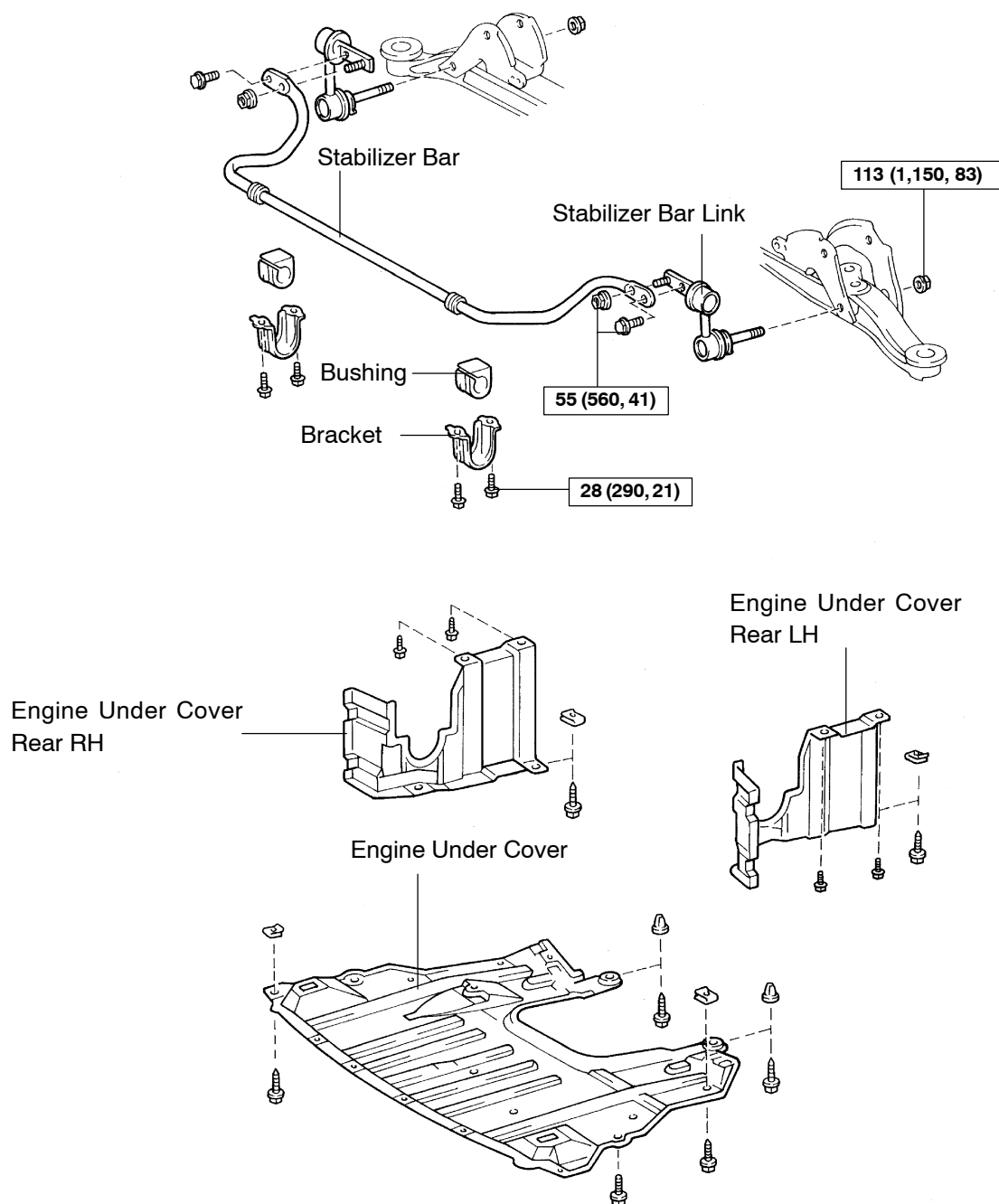
INSTALLATION

Installation is in the reverse order of removal (See page SA-36).

AFTER INSTALLATION, CHECK FRONT WHEEL ALIGNMENT (See page SA-4)

FRONT STABILIZER BAR COMPONENTS

SAORU-02

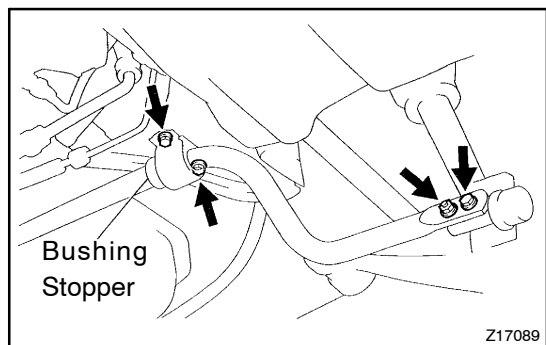


N·m (kgf·cm, ft·lbf) : Specified torque

F02339

REMOVAL

1. REMOVE ENGINE UNDER COVERS



2. REMOVE STABILIZER BAR

- (a) Remove the 2 bolts and nuts, disconnect the stabilizer bar from the 2 stabilizer bar links.

Torque: 55 N·m (560 kgf·cm, 41 ft·lbf)

- (b) Remove the 4 bolts and stabilizer bar.

Torque: 28 N·m (290 kgf·cm, 21 ft·lbf)

3. REMOVE BOTH BUSHINGS AND BRACKETS

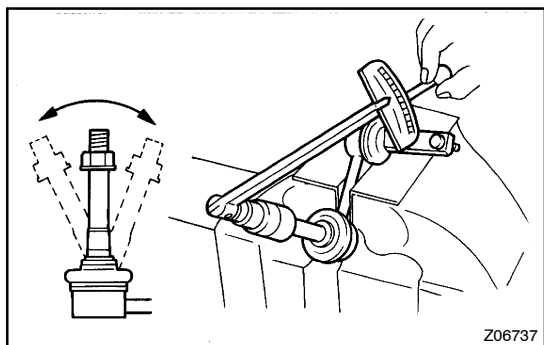
HINT:

At the time of installation, install the bushing to the outside of bushing stopper.

4. REMOVE BOTH STABILIZER BAR LINKS FROM BOTH LOWER SUSPENSION ARMS

Remove the 2 nuts and stabilizer bar links.

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



INSPECTION

INSPECT FRONT STABILIZER BAR LINK BALL JOINT FOR ROTATION CONDITION

- As shown, flip the ball joint stud back and forth 5 times before installing the nut.
- Using a torque wrench, turn the stud continuously one turn per 2 – 4 seconds and take the torque reading on the 5th turn.

Turning torque:

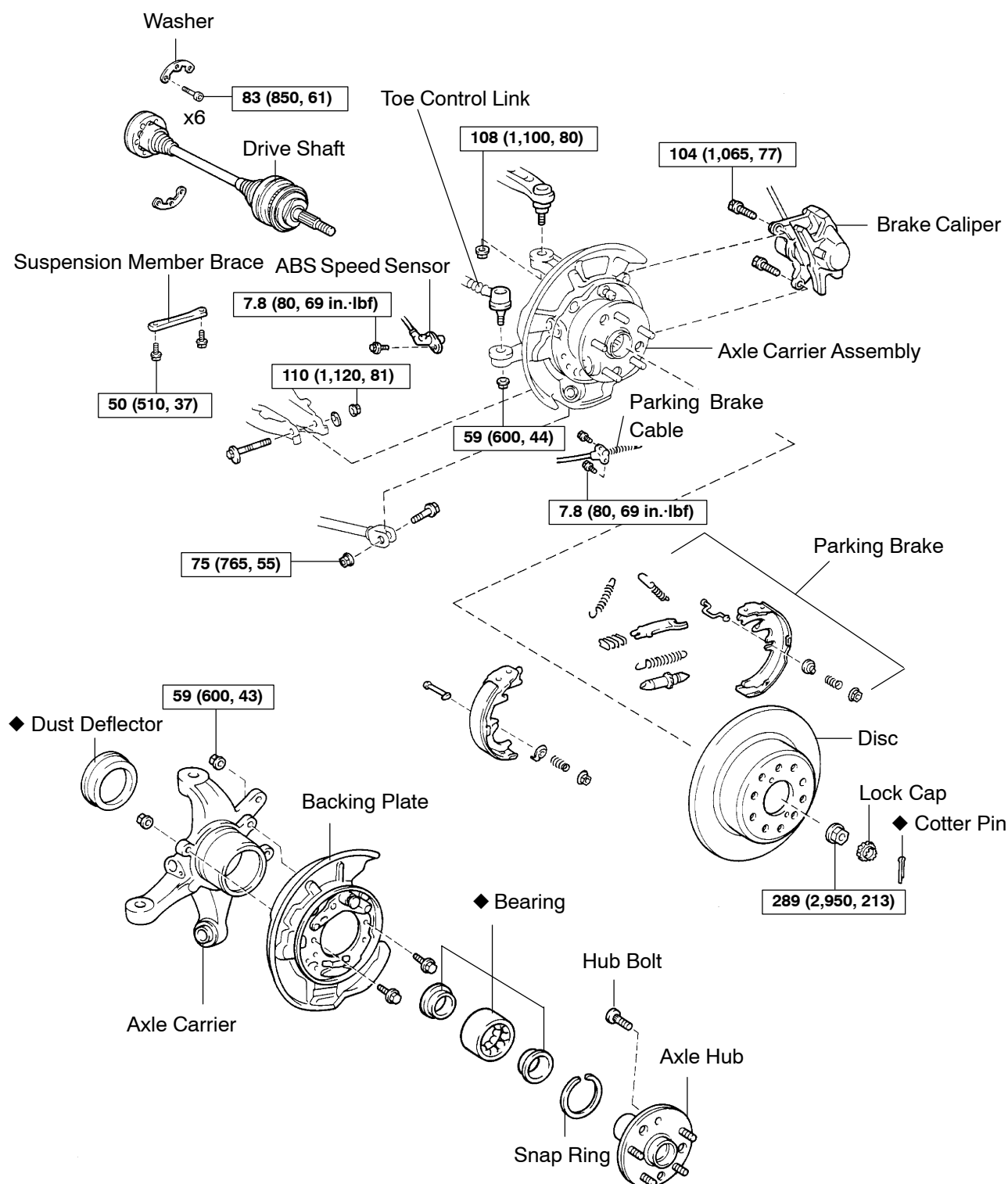
0.05 – 1.5 N·m (0.5 – 15 kgf·cm, 0.4 – 13 in.·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page SA-40).

REAR AXLE CARRIER COMPONENTS

SAORY-02



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

◆ Non-reusable part

F03420

REMOVAL

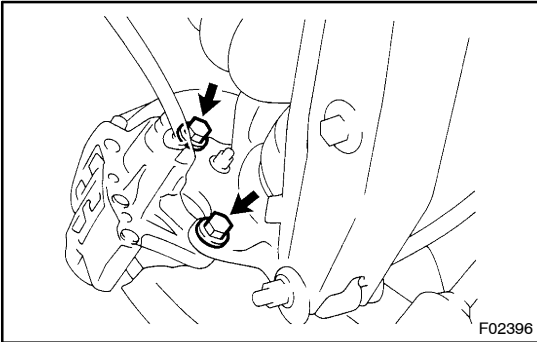
1. REMOVE REAR WHEEL

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

2. REMOVE ABS SPEED SENSOR

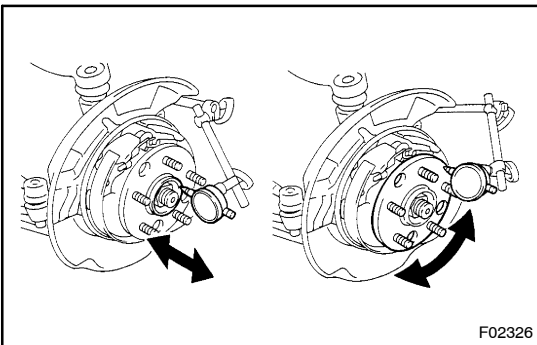
Remove the bolt and ABS speed sensor.

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



3. REMOVE REAR BRAKE CALIPER AND DISC

- Remove the 2 bolts and brake caliper from the axle hub.
- Support the brake caliper securely.
- Remove the disc.



4. CHECK BEARING BACKLASH AND AXLE HUB DEVIATION

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

Maximum: 0.05 mm (0.0020 in.)

If the backlash exceeds the specified maximum, replace the bearing.

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

Maximum: 0.07 mm (0.0028 in.)

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

5. INSTALL DISC AND BRAKE CALIPER

- Install the disc.
- Install the brake caliper and 2 bolts to the axle carrier.

Torque: 104 N·m (1,065 kgf·cm, 77 ft·lbf)

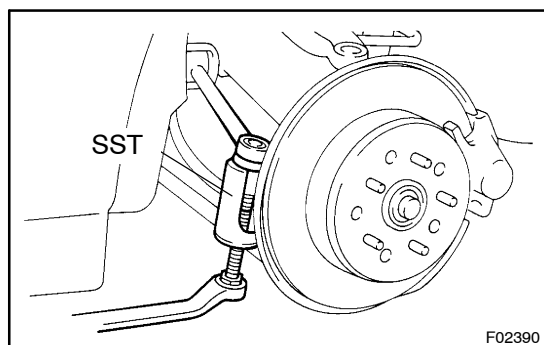
6. DISCONNECT TOE CONTROL LINK

- Remove the nut.

Torque: 59 N·m (600 kgf·cm, 44 ft·lbf)

HINT:

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



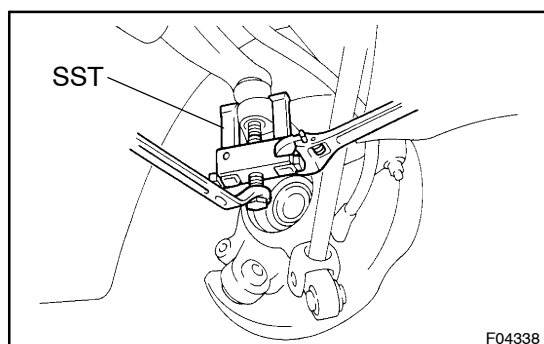
- (b) Using SST, disconnect the toe control link from the axle carrier.

SST 09610-20012

NOTICE:

Be careful not to damage the dust cover.

7. REMOVE DRIVE SHAFT (See page SA-52)
8. REMOVE BRAKE CALIPER AND DISC (See step 3)
9. REMOVE PARKING BRAKE SHOE (See page BR-33)
10. DISCONNECT PARKING BRAKE CABLE
Remove the 2 bolts and disconnect the parking brake cable.
Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)
11. DISCONNECT UPPER SUSPENSION ARM FROM AXLE CARRIER
 - (a) Remove the nut.
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)



- (b) Using SST, disconnect the upper suspension arm from the axle carrier.

SST 09628-62011

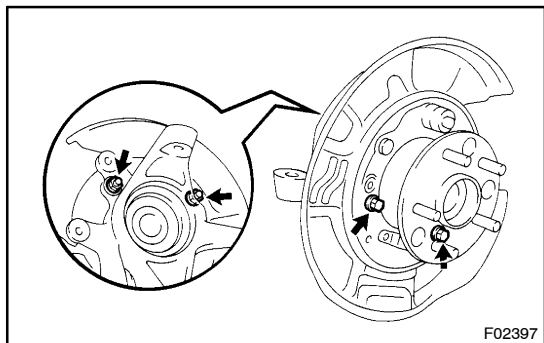
NOTICE:

- Be careful not to damage the dust cover.
 - Support the axle carrier.
- (c) Remove the axle carrier.

DISASSEMBLY

1. REMOVE DUST DEFLECTOR

Using a screwdriver, remove the dust deflector.



2. REMOVE AXLE HUB

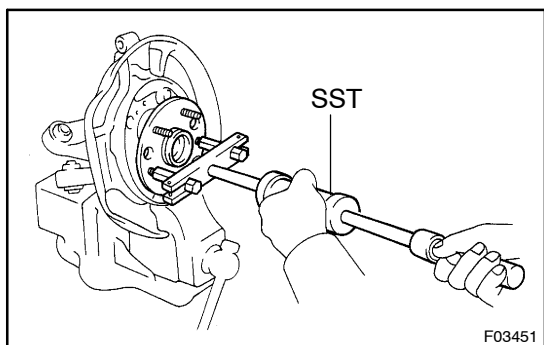
- (a) Remove the 2 bolts and nuts.
- (b) Mount the axle carrier in a vise.

HINT:

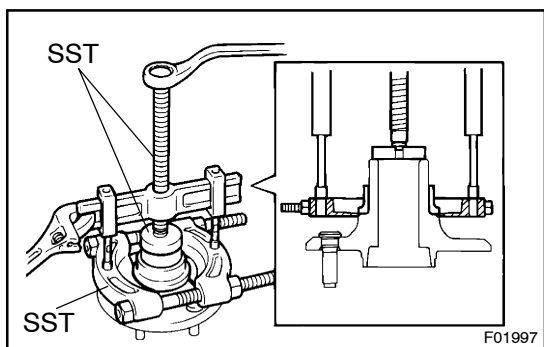
Use a set of soft jaws in the vise to protect the axle carrier.

NOTICE:

Do not tighten the vise too tight.



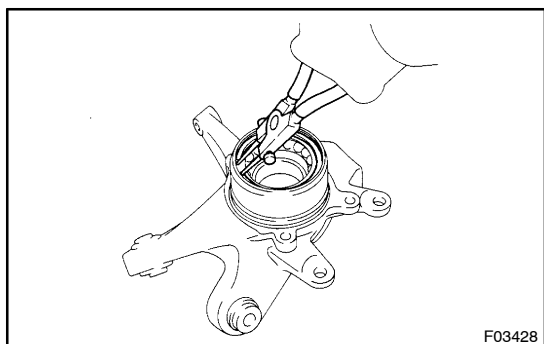
- (c) Using SST, remove the axle hub from the axle carrier.
SST 09520-00031
- (d) Remove the backing plate.



- (e) Using SST, remove the bearing inner race from the axle hub.
SST 09950-00020, 09950-60010 (09951-00480),
09950-40011 (09951-04020, 09952-04010,
09953-04030, 09954-04020, 09955-04040)

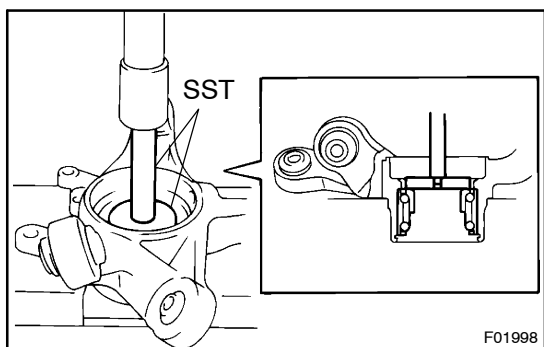
NOTICE:

Be careful not to damage the axle hub.



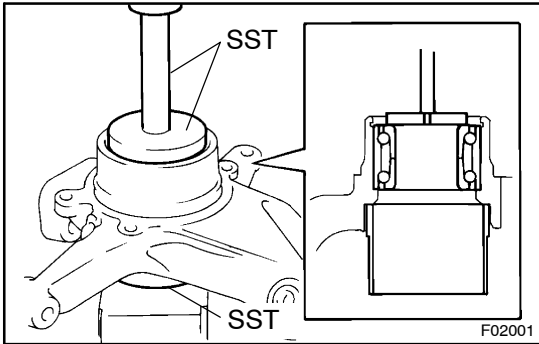
3. REMOVE HUB BEARING

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



- (b) Using SST and a press, remove the hub bearing from the axle carrier.

SST 09950-60010 (09951-00650),
09950-70010 (09951-07100)



REASSEMBLY

1. INSTALL HUB BEARING

- (a) Using SST and a press, install a new hub bearing to the axle carrier.

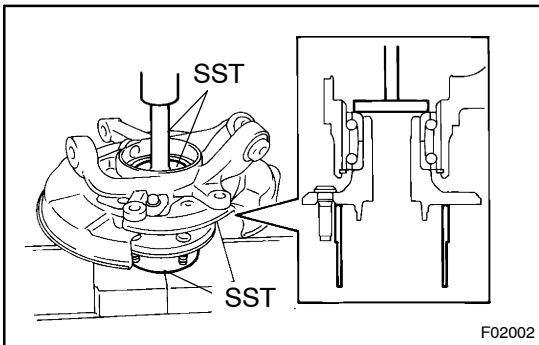
SST 09527-17011, 09950-60020 (09951-00810),
09950-70010 (09951-07100)

- (b) Using snap ring pliers, install the snap ring to the axle carrier.

2. INSTALL AXLE HUB

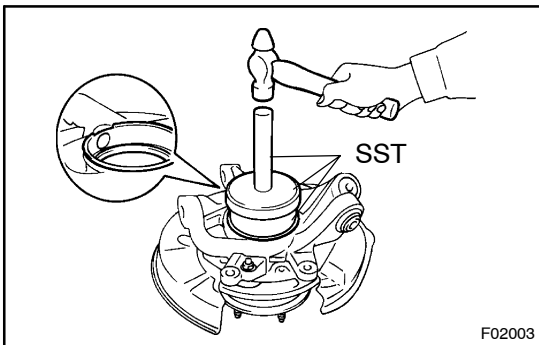
- (a) Install the backing plate with the 2 bolts and nuts.

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



- (b) Using SST and a press, install the axle hub to the axle carrier.

SST 09527-17011, 09950-60010 (09551-00650),
09950-70010 (09951-07100)



3. INSTALL DUST DEFLECTOR

Using SST and a hammer, install a new dust deflector to the axle carrier.

SST 09527-17011, 09950-60020 (09951-01030),
09950-70010 (09951-07100)

HINT:

Align the speed sensor installation hole of dust deflector and that of axle carrier.

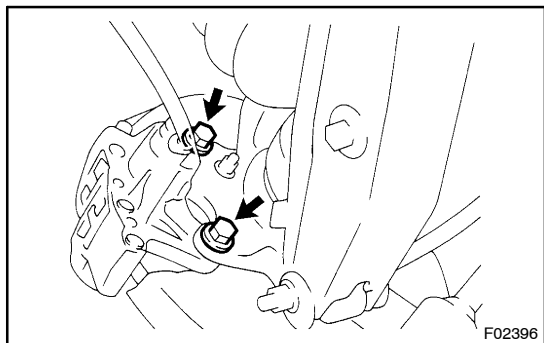
INSTALLATION

Installation is in the reverse order of removal (See page SA-44).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI-210) AND REAR WHEEL ALIGNMENT (See page SA-7)

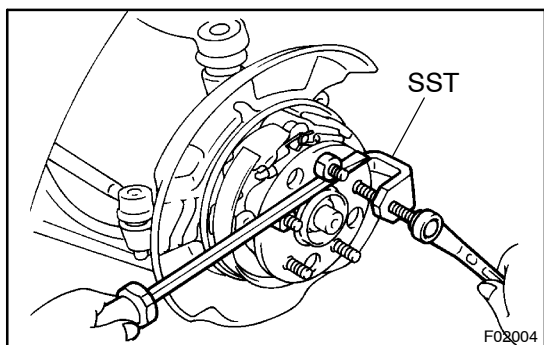
REAR WHEEL HUB BOLT REPLACEMENT

1. REMOVE REAR WHEEL



2. REMOVE BRAKE CALIPER AND DISC

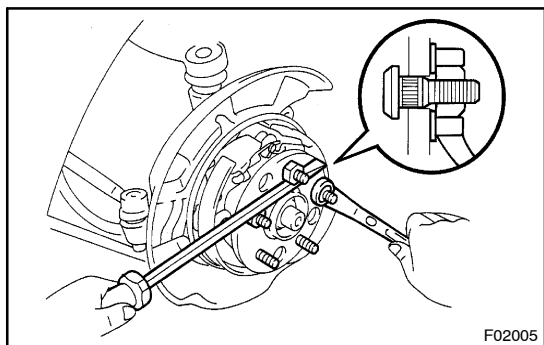
- (a) Remove the 2 bolts and remove the brake caliper from the axle carrier.
- (b) Support the brake caliper securely.
- (c) Remove the disc.



3. REMOVE HUB BOLT

Using SST, remove the hub bolt.

SST 09628-10011



4. INSTALL HUB BOLT

- (a) Install a washer and nut to the bolt, as shown in the illustration.
- (b) Turn the wheel nut to pull the hub bolt until the underside of the hub bolt head touches the axle hub.

5. INSTALL DISC AND BRAKE CALIPER

- (a) Install the disc.
- (b) Install the brake caliper and 2 bolts to the axle carrier.

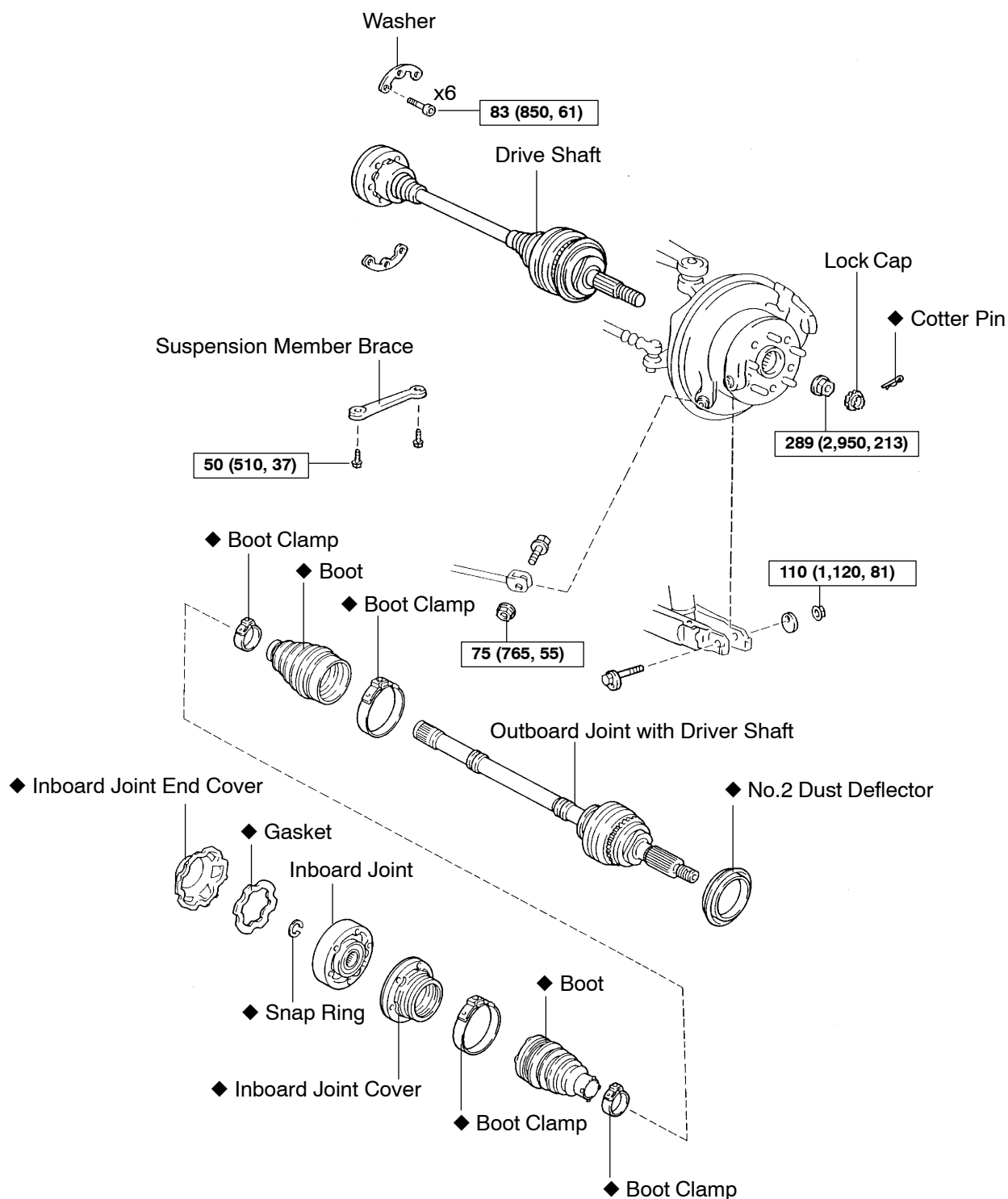
Torque: 104 N·m (1,065 kgf·cm, 77 ft·lbf)

6. INSTALL REAR WHEEL

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

REAR DRIVE SHAFT COMPONENTS

SA0S4-02



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

◆ Non-reusable part

F04316

REMOVAL

1. REMOVE REAR WHEEL

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

2. REMOVE SUSPENSION MEMBER BRACE

Remove the 2 bolts and suspension member brace.

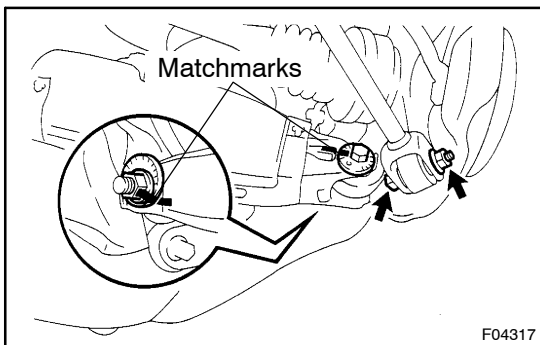
Torque: 50 N·m (510 kgf·cm, 37 ft·lbf)

3. REMOVE COTTER PIN, LOCK CAP AND LOCK NUT

(a) Remove the cotter pin and lock cap.

(b) While depressing the brake pedal, remove the nut.

Torque: 289 N·m (2,950 kgf·cm, 213 ft·lbf)



4. REMOVE DRIVE SHAFT

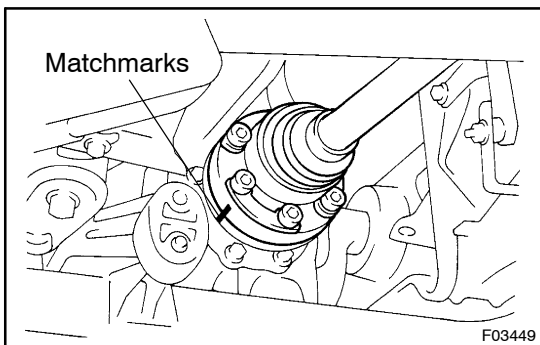
(a) Place matchmarks on the adjusting cam and lower suspension arm.

(b) Remove the bolt and nut, disconnect the No.2 lower suspension arm from the axle hub.

Torque: 110 N·m (1,120 kgf·cm, 81 ft·lbf)

(c) Remove the bolt and nut, disconnect the No.1 lower suspension arm from the axle hub.

Torque: 75 N·m (765 kgf·cm, 55 ft·lbf)



(d) Place matchmarks on the drive shaft and side gear shaft.

NOTICE:

Do not punch to mark the matchmarks. Use paint etc.

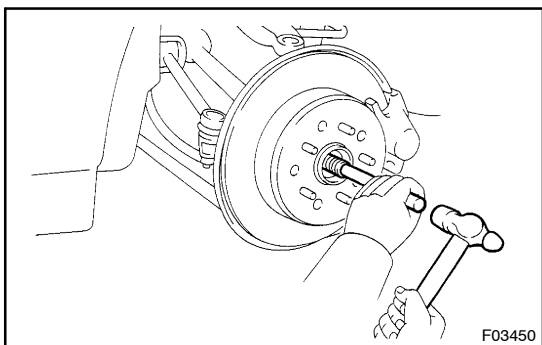
(e) Using a 10 mm hexagon wrench, remove the 6 hexagon bolts and 2 washers while depressing the brake pedal.

Torque: 83 N·m (850 kgf·cm, 61 ft·lbf)

HINT:

At the time of installation, apply a light coat of engine oil on the threads of the bolts.

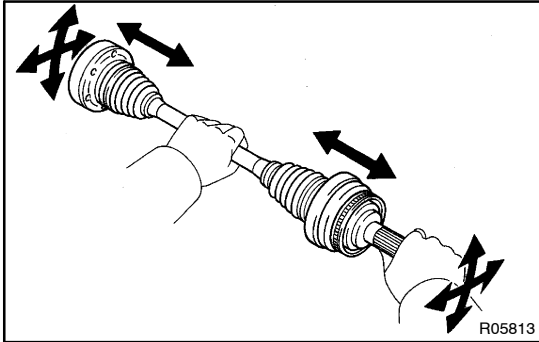
(f) Hold the inboard joint side of the drive shaft so that the outboard joint side does not bend too much.



- (g) Using a brass bar and hammer, lightly tap the end of the drive shaft, disengage the axle hub and remove the drive shaft.

NOTICE:

Be careful not to damage the boots, end cover, speed sensor rotor of the drive shaft and oil seal of the axle hub.



DISASSEMBLY

1. CHECK DRIVE SHAFT

- (a) Check that operation of the joint is smooth within the sliding region in the axial direction.

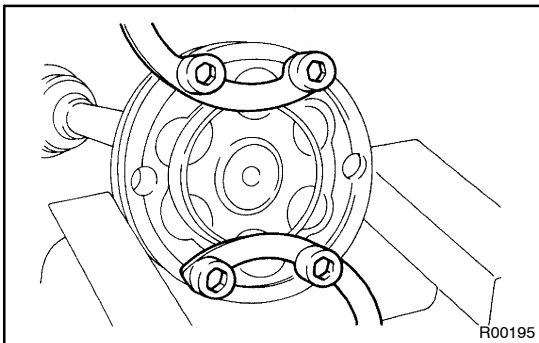
HINT:

If a large angle is used for the cross-groove type joint, the joint will feel like it is catching, but this does not indicate an abnormality.

- (b) Check that the boots are not cracked, damaged or leaking.
- (c) Check that there are no scratches on the speed sensor rotor.

2. REMOVE END COVER

- (a) Using a screwdriver, remove the end cover.



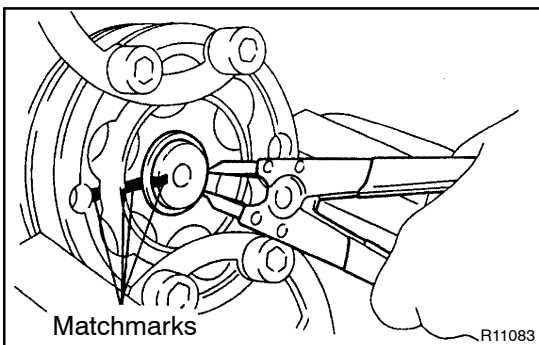
- (b) Use bolts, nuts and washers to keep the inboard joint together.

NOTICE:

Tighten the bolt by hand to avoid scratching the flange surface.

3. REMOVE BOOT CLAMPS

Using a side cutter or pliers, remove the 4 boot clamps.



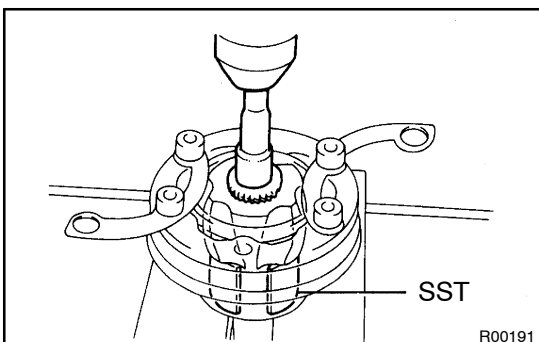
4. REMOVE INBOARD JOINT

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

NOTICE:

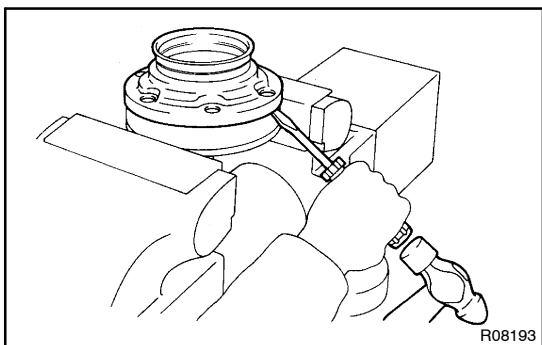
Do not punch the marks.

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



- (c) Using SST, an extension bar and a press, press out the inboard joint from the drive shaft.

SST 09726-12023 (09726-01031)



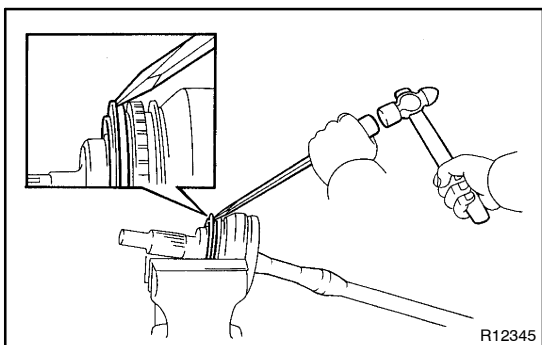
- (d) Mount the inboard joint in a soft jaw vise.
- (e) Using a screwdriver and hammer, tap out the inboard joint cover from the inboard joint.

NOTICE:

Make sure the cage and inner race are not positioned too much to one side of the outer race.

5. REMOVE BOOTS

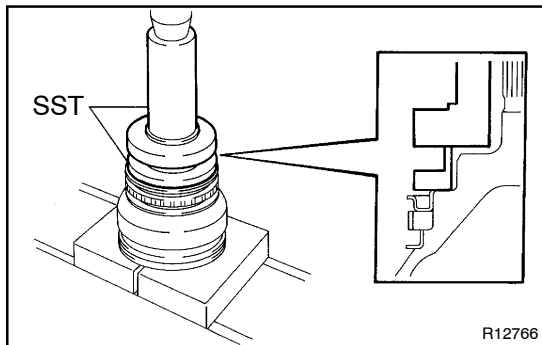
Remove the inboard and outboard joint boots.

**6. REMOVE NO.2 DUST DEFLECTOR**

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

NOTICE:

Be careful not to damage the ABS speed sensor rotor.



REASSEMBLY

1. INSTALL NEW NO.2 DUST DEFLECTOR

Using SST and a press, install a new No.2 dust deflector.

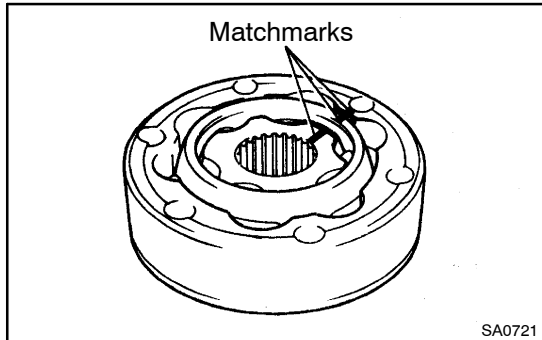
SST 09309-36010, 09502-12010

NOTICE:

Be careful not to damage the ABS speed sensor rotor.

2. ASSEMBLE INBOARD JOINT

If the joint has come apart, reassemble it in the following order.

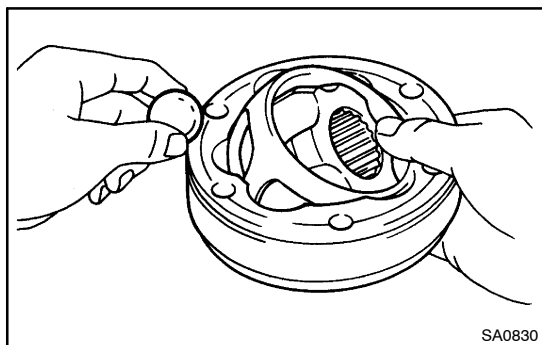
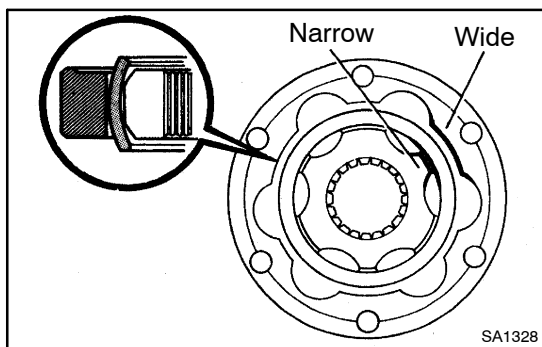


(a) Align the matchmarks placed before removal.

HINT:

When the matchmarks have disappeared, do the following procedure.

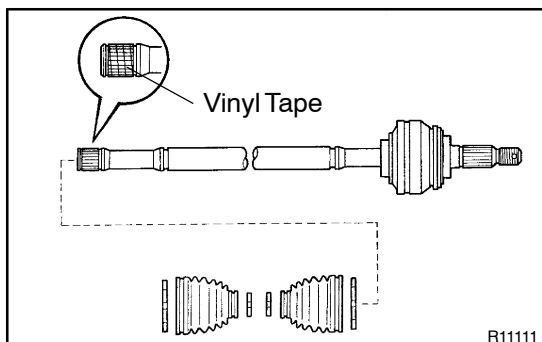
- (1) Install the inner race to the cage so that the indented bevelled part of the inner race is on the opposite side to the bevelled top of the cage.
- (2) Install the outer race so that the indented side of the outer race is facing the same side as the bevelled surface of the cage.
- (3) Match the narrow projections of the inner race with the wide projections of the outer race.



(b) Tilt the cage and inner race to the side and insert the balls one by one.

NOTICE:

When the cage and inner race are tilted over, support the joint with your hand to prevent the balls from falling out.



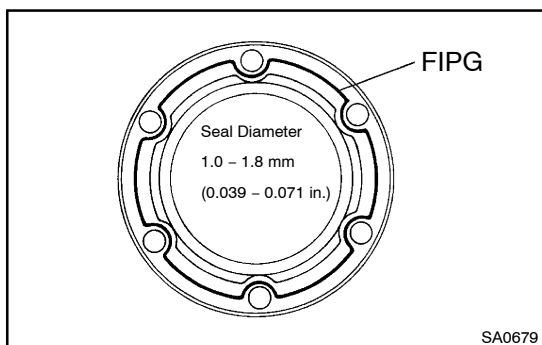
3. TEMPORARILY INSTALL NEW BOOTS AND NEW BOOT CLAMPS

(a) Place 4 new boot clamps to each boots.

HINT:

Before installing the boots, wrap vinyl tape around the spline of the shaft to prevent damaging the boots.

(b) Install the 2 boots to the drive shaft.



4. INSTALL INBOARD JOINT COVER

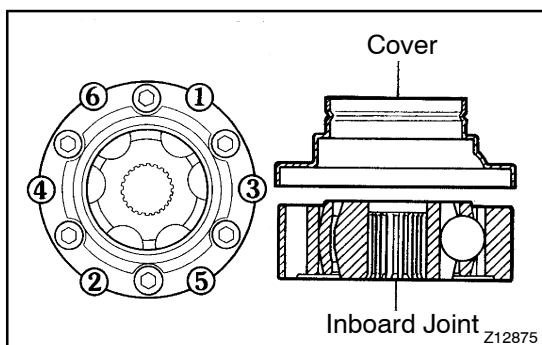
- (a) Apply FIPG to the inboard joint cover as shown in the illustration.

FIPG:

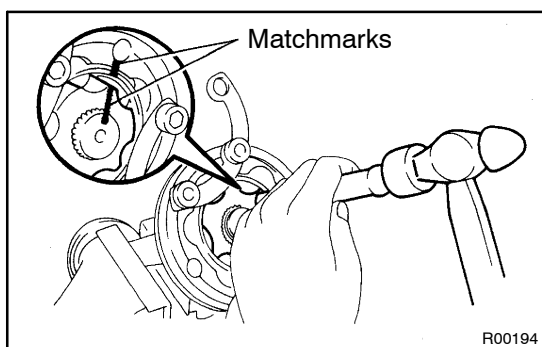
Part No.08826-00801, THREE BOND 1121 or equivalent

HINT:

Avoid applying an excessive amount to the surface.



- (b) Remove grease from the surface of the inboard joint facing to the cover.
- (c) Align the bolt holes of the cover with those of the inboard joint, then insert the hexagon bolts.
- (d) Use a plastic hammer to tap the rim of the inboard joint cover into place. Do this in the order shown, and repeat several times.



5. INSTALL INBOARD JOINT

- (a) Align the matchmarks placed before removal.
- (b) Using a brass bar and hammer, tap the inboard joint onto the drive shaft.

NOTICE:

Check that the brass bar is touching the inner race, and not the cage.

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

6. ASSEMBLE BOOTS TO JOINTS

Before assembling the boots, pack with only the same amount of grease that was wiped off.

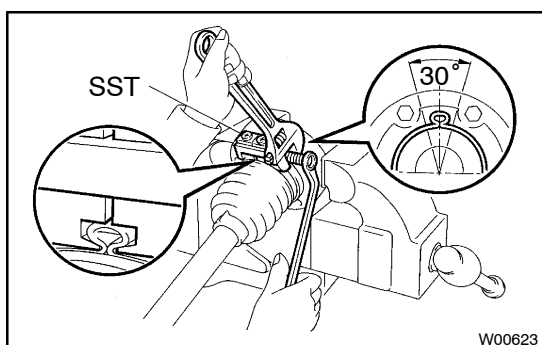
Grease capacity	100 - 105 g (3.5 - 3.7 oz.)
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HINT:

Use the grease supplied in the boot kit.

NOTICE:

- **Keep grease off the joint connection groove of the boot.**
- **Pack with grease all over the ball contact surface inside the joint.**

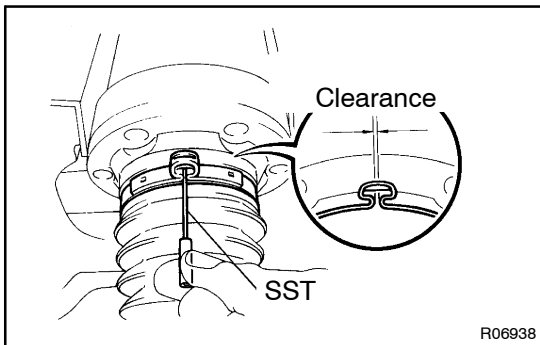


7. INSTALL NEW BOOT CLAMPS TO BOTH BOOTS

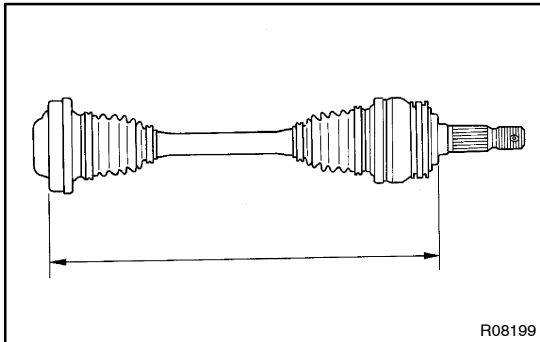
- (a) Position the clamp onto the boot.
- (b) Place SST onto the clamp.
SST 09521-24010
- (c) Tighten SST so that the clamp is pinched as shown in the illustration.

NOTICE:

Do not overtighten the SST.



- (d) Using SST, adjust the clearance of the clamp.
SST 09240-00020 (09242-00080)
Clearance: 0.8 mm (0.031 in.) or less



- (e) The drive shaft is designed to move ± 20 mm (0.79 in.) from the normal position.

Drive shaft standard length

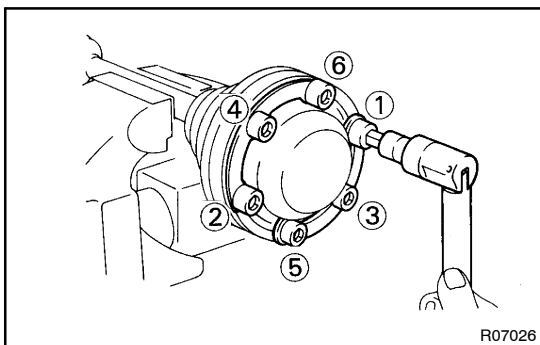
RH	598.5 mm (23.563 in.)
LH	553.5 mm (21.791 in.)

8. INSTALL NEW END COVER

- (a) Pack grease into the end cover.

Grease capacity	50 – 55 g (1.8 – 1.9 oz.)
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- (b) Remove grease from the surface of the inboard joint facing to the cover.
(c) Glue on a new gasket, with the glued side facing toward the outer face side of the inboard joint.
(d) Align the bolt holes of the cover with those of the inboard joint.



- (e) Install the 6 hexagon bolts and washers from the end cover side.
(f) Install the 6 nuts to the boot side.
(g) Using a 10 mm hexagon wrench, tighten the bolts. Do this in the order shown, and repeat several times.
(h) Check that the claw of the end cover touches the inboard joint.

9. CHECK DRIVE SHAFT (See page SA-54)

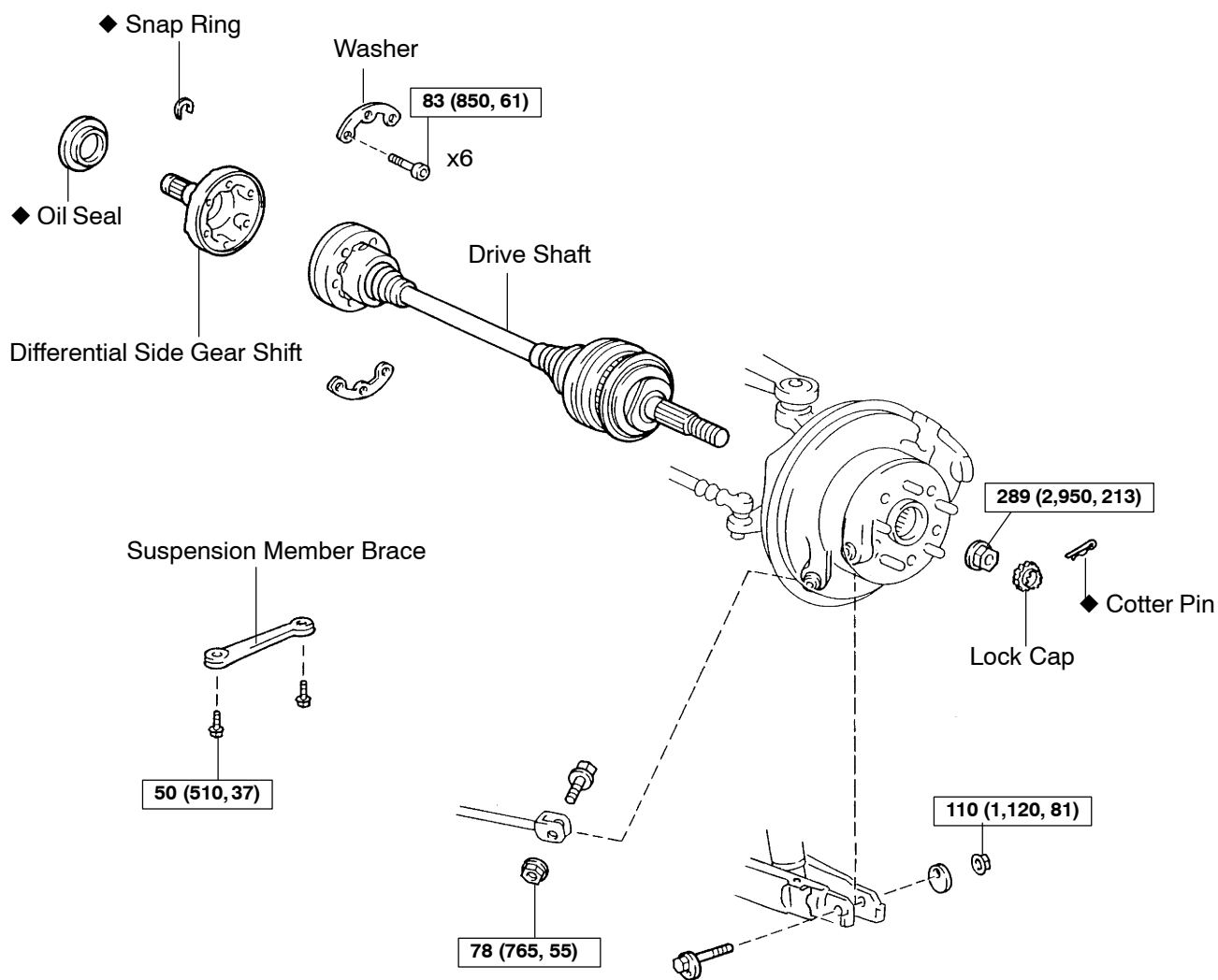
INSTALLATION

Installation is in the reverse order of removal (See page SA-52).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI-210) AND REAR WHEEL ALIGNMENT (See page SA-7)

REAR DIFFERENTIAL SIDE GEAR SHAFT OIL SEAL COMPONENTS

SA059-02



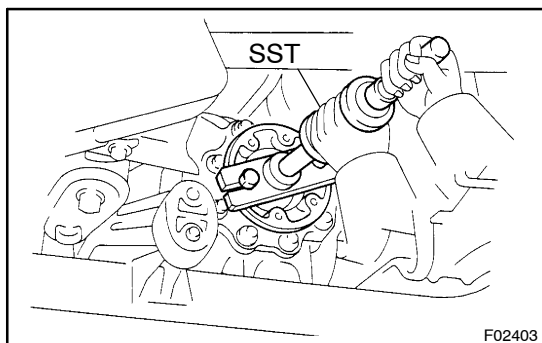
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

F04318

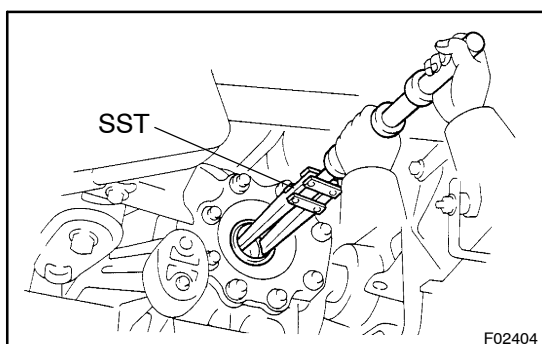
REPLACEMENT

1. DRAIN DIFFERENTIAL OIL
2. REMOVE DRIVE SHAFT (See page SA-52)



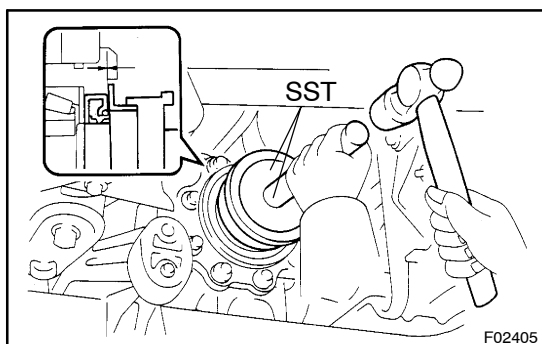
3. REMOVE SIDE GEAR SHAFT

- (a) Using SST and 2 bolts, remove the side gear shaft.
SST 09520-24010
- (b) Remove the snap ring from the side gear shaft.



4. REMOVE SIDE GEAR SHAFT OIL SEAL

- Using SST, remove the oil seal.
SST 09308-00010

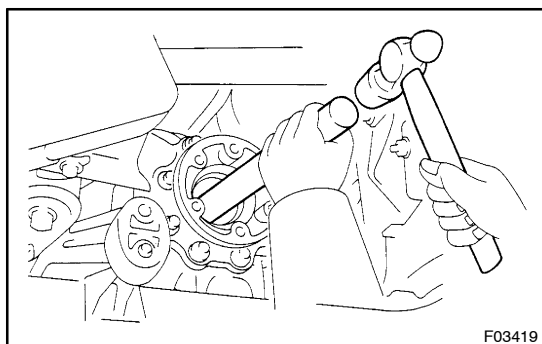


5. INSTALL SIDE GEAR SHAFT OIL SEAL

- (a) Using SST and a hammer, install a new oil seal.
SST 09608-32010, 09950-70010 (09951-07150)
- (b) Apply MP grease to the oil seal lip.

6. INSTALL SIDE GEAR SHAFT

- (a) Install a new snap ring to the side gear shaft.



- (b) Using a brass bar and hammer, install the side gear shaft to the differential.

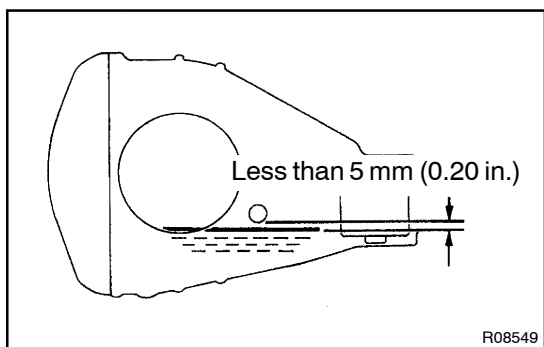
NOTICE:

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

7. CHECK INSTALLATION OF SIDE GEAR SHAFT

- (a) Check that there is 2 - 3 mm (0.08 - 0.12 in.) of play in the axial direction.
- (b) Check that the side gear shaft will not come out by trying to pulling it out by hand.

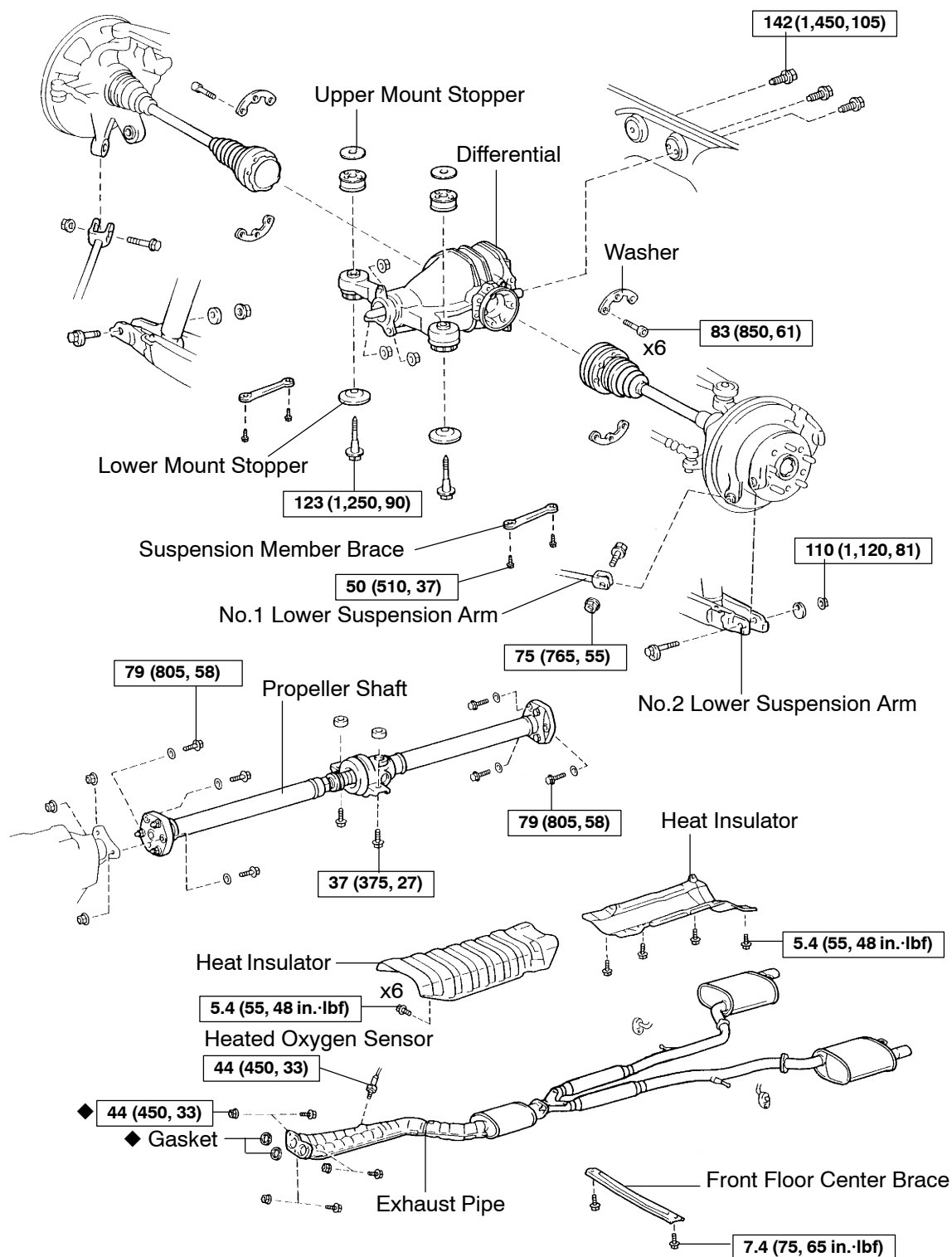
8. INSTALL DRIVE SHAFT (See page SA-59)



- 9. FILL AND CHECK DIFFERENTIAL OIL LEVEL**
Torque: 49 N·m (500 kgf·cm, 39 ft·lbf)
Oil grade: Hypoid gear oil API GL-5
Viscosity:
Above -18°C (0°F) SAE 90
Below -18°C (0°F) SAE 80W-90 or 80W
Capacity: 1.35 liters (1.43 US qts, 1.19 Imp qts)

REAR DIFFERENTIAL CARRIER COMPONENTS

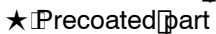
SA0SB-02



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

◆ Non-reusable part

F04319



REMOVAL

1. REMOVE EXHAUST PIPE

- (a) Disconnect the heated oxygen sensor.

Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

HINT:

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

- Before installing the oxygen sensor, twist the sensor wire counterclockwise 3 and 1/2 turns.
 - After installing oxygen sensor, check that the sensor wire should not twist. If it is twisted, remove the oxygen sensor and reinstall it.
- (b) Remove the 2 bolts and front floor center brace.
- (c) Disconnect the exhaust pipe from the O-rings.
- (d) Remove the 3 bolts, nuts and 2 gaskets from the exhaust manifold.

Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

- (e) Remove the exhaust pipe.

2. REMOVE PROPELLER SHAFT (See page PR-4)

3. DISCONNECT REAR DRIVE SHAFTS

- (a) Place matchmarks on the adjusting cam and lower suspension arm.
- (b) Remove the nut, adjusting cam No.2 and adjusting cam No.1, disconnect the No.2 lower suspension arm from the axle hub.

Torque: 110 N·m (1,120 kgf·cm, 81 ft·lbf)

- (c) Remove the bolt and nut, disconnect the No.1 lower suspension arm from the axle hub.

Torque: 75 N·m (765 kgf·cm, 55 ft·lbf)

- (d) Place matchmarks on the 2 drive shafts and side gear shafts.

NOTICE:

Do not punch to mark the matchmarks. Use paint etc.

- (e) Using a 10 mm hexagon wrench, remove the 6 hexagon bolts and 2 washers while depressing the brake pedal.

Torque: 83 N·m (850 kgf·cm, 61 ft·lbf)

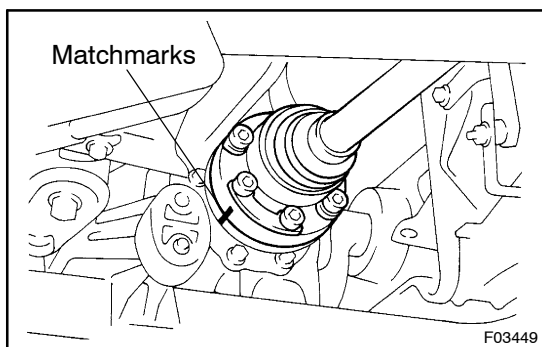
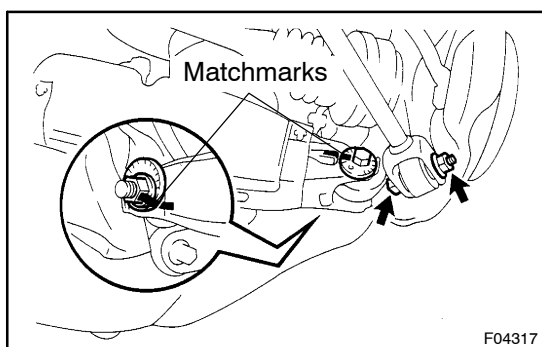
HINT:

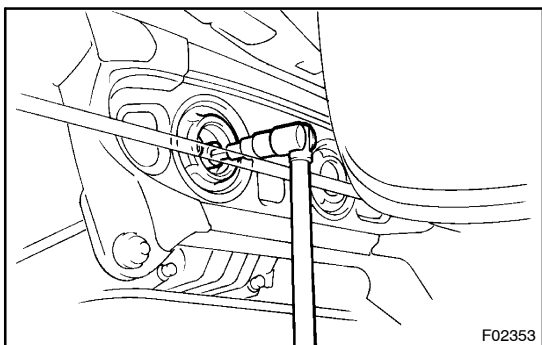
At the time of installation, apply a light coat of engine oil on the threads of the bolts.

- (f) Disconnect the drive shafts from the differential carrier.

4. REMOVE DIFFERENTIAL

- (a) Support the differential carrier with a jack.





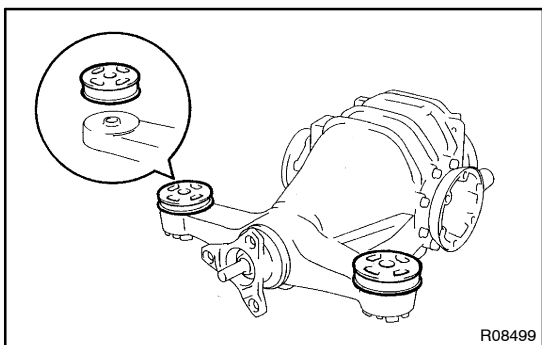
- (b) Using a 12 mm hexagon wrench, remove the 3 hexagon bolts

Torque: 142 N·m (1,450 kgf·cm, 105 ft·lbf)

- (c) Remove the 2 bolts and lower mount stoppers.

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

- (d) Remove the differential.

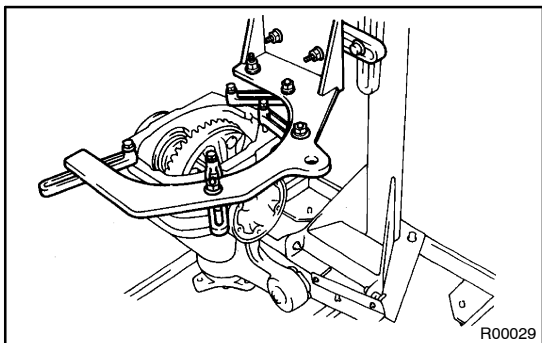


- (e) Remove the 2 upper mount stoppers from the differential carrier.

DISASSEMBLY

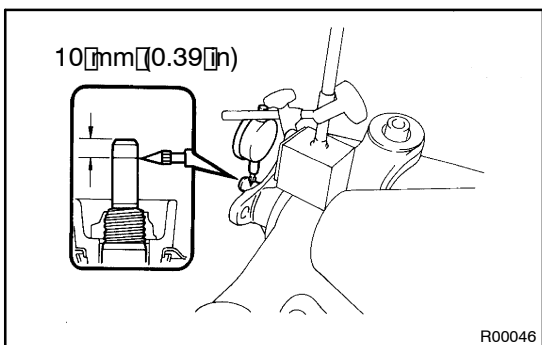
1. REMOVE DIFFERENTIAL CARRIER COVER

- Remove the 8 bolts from the carrier cover.
- Using a brass bar and hammer, separate the cover from carrier.
- Remove the breather plug from the differential carrier cover.



R00029

2. SET DIFFERENTIAL CARRIER TO OVERHAUL STAND ETC., AS SHOWN



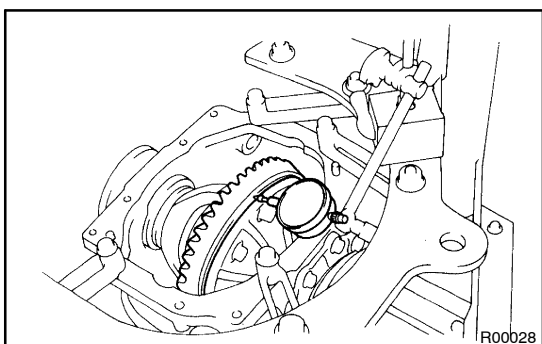
R00046

3. CHECK RUNOUT OF DRIVE PINION SHAFT

Using a dial indicator, measure the runout of the drive pinion shaft at a position 10 mm (0.39 in.) away from the end of the shaft.

Maximum runout: 0.08 mm (0.0031 in.)

If the runout is greater than the maximum, replace the drive pinion and ring gear.



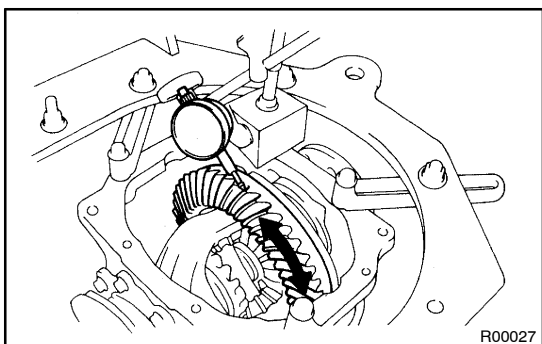
R00028

4. CHECK RING GEAR RUNOUT

Using a dial indicator, measure the ring gear runout.

Maximum runout: 0.05 mm (0.0020 in.)

If the runout is greater than the maximum, replace the drive pinion, ring gear and differential case.



R00027

5. CHECK RING GEAR BACKLASH

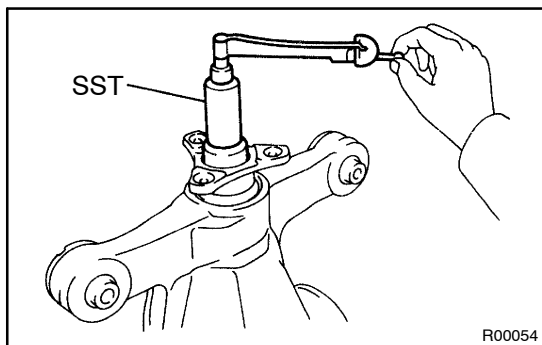
Using a dial indicator, measure the backlash of the ring gear at 3 points at least and check that the average value is within the specification.

Backlash: 0.08 - 0.13 mm (0.0031 - 0.0051 in.)

NOTICE:

The difference between the maximum and minimum measured values must be less than 0.05 mm (0.0020 in.).

If the backlash is not within the specification, adjust the backlash (See page SA-73).



6. MEASURE DRIVE PINION PRELOAD

Using SST and a torque wrench, measure the preload using the backlash of the drive pinion and ring gear.

Preload (at starting):

0.5 – 0.8 N·m (5 – 8 kgf·cm, 4.3 – 6.9 in.·lbf)

HINT:

For vehicles which have run less than 8,000 km (5,000 miles), the preload may be large.

SST 09229-55010

Maximum preload (at starting):

1.8 N·m (18 kgf·cm, 16.0 in.·lbf)

7. CHECK TOTAL PRELOAD

Using SST and a torque wrench, measure the preload with the teeth of the drive pinion and ring gear in contact.

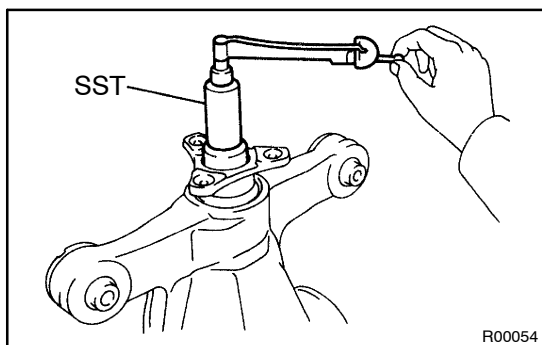
SST 09229-55010

Total preload (at starting):

Drive pinion preload plus

0.5 – 0.8 N·m (5 – 8 kgf·cm, 4.3 – 6.9 in.·lbf)

If necessary, disassemble and inspect the differential.



8. CHECK PINION GEAR BACKLASH

Using a dial indicator, measure the pinion gear backlash with holding one side gear toward the case.

Maximum: 0.15 mm (0.0059 in.)

NOTICE:

Differential gears should be able to rotate.

If the backlash is not within the specification, install the correct thrust washer (See page SA-73).

9. CHECK TOOTH CONTACT PATTERN

(See page SA-73)

10. REMOVE SIDE GEAR SHAFTS

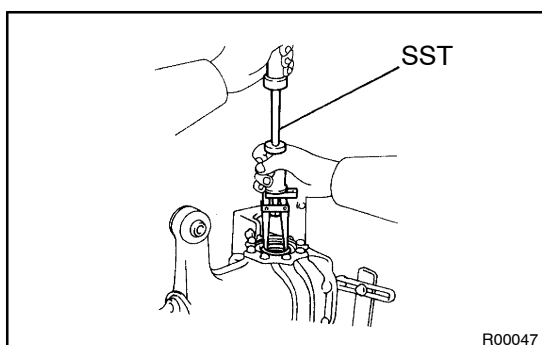
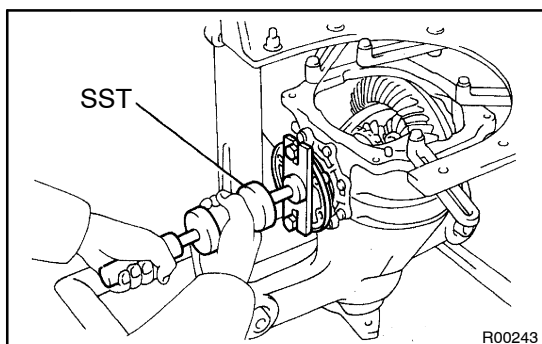
(a) Using SST, remove the 2 side gear shafts.

SST 09520-24010

NOTICE:

Be careful not to damage the oil seal.

(b) Using screwdriver, remove the 2 snap rings from the side gear shafts.



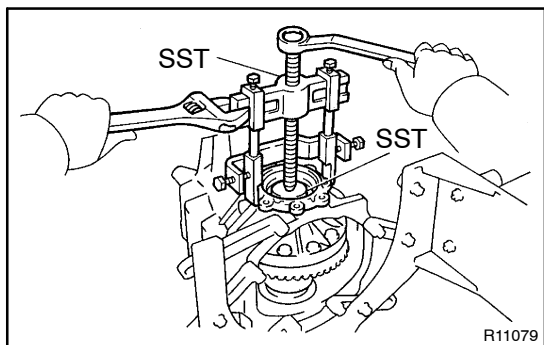
11. REMOVE SIDE GEAR SHAFT OIL SEALS

Using SST, remove the 2 oil seals.

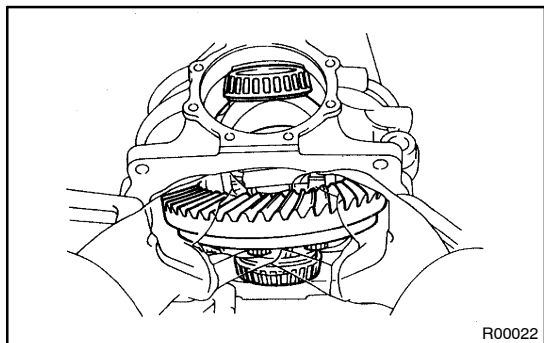
SST 09308-00010

12. REMOVE DIFFERENTIAL CARRIER RETAINERS

(a) Remove the 16 bolts.



- (b) Using SST, remove the 2 carrier retainers and washers.
 SST 09950-40011, (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04060, 09957-04010, 09958-04010), 09950-60010 (09951-00450)

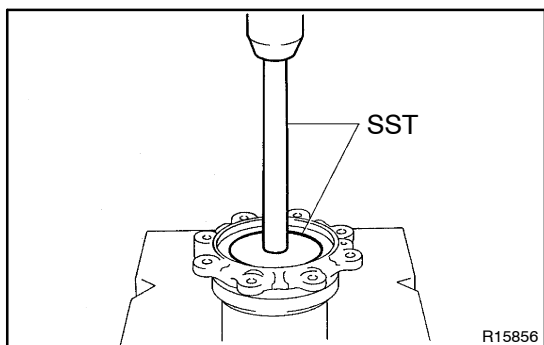


13. REMOVE DIFFERENTIAL CASE

Take the differential case out of the carrier with lifting the ring gear side, as shown in the illustration.

14. REMOVE O-RINGS FROM DIFFERENTIAL CARRIER RETAINERS

Using a screwdriver, remove the 2 O-rings from the differential carrier retainers.



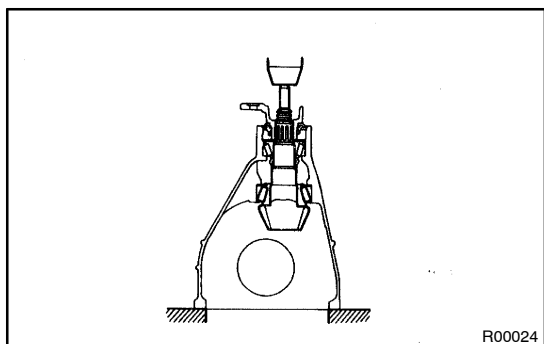
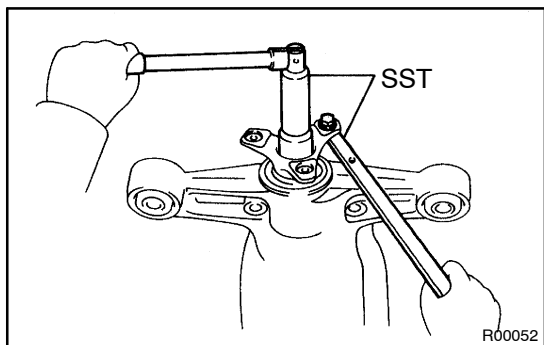
15. REMOVE SIDE BEARING OUTER RACES AND ADJUSTING PLATE WASHERS

Using SST and a press, remove the 2 outer races and adjusting plate washers.

SST 09950-60020 (09951-00710), 09950-70010 (09951-07150)

16. REMOVE DRIVE PINION, SPACER AND COMPANION FLANGE

- (a) Using a chisel and hammer, loosen the staked part of the nut.
 (b) Using SST, remove the nut.
 SST 09229-55010, 09330-00021

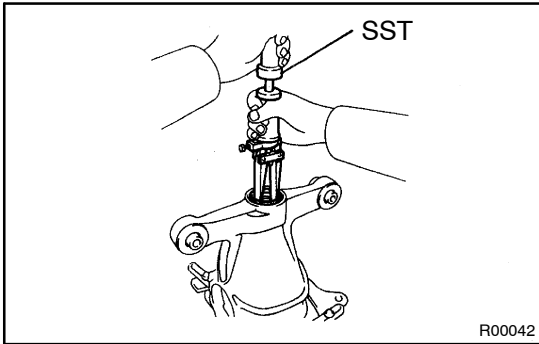


- (c) Using a press, remove the drive pinion with the rear bearing and remove the companion flange.

NOTICE:

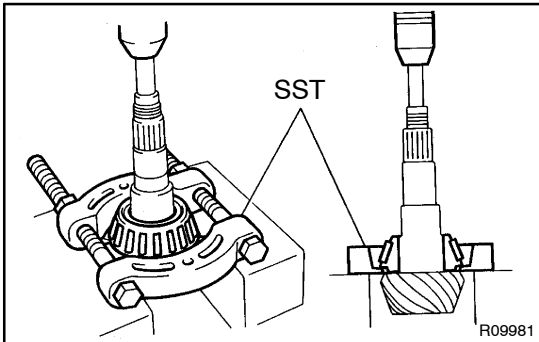
Be careful not to drop the drive pinion.

- (d) Remove the spacer from the drive pinion.

**17. REMOVE OIL SEAL**

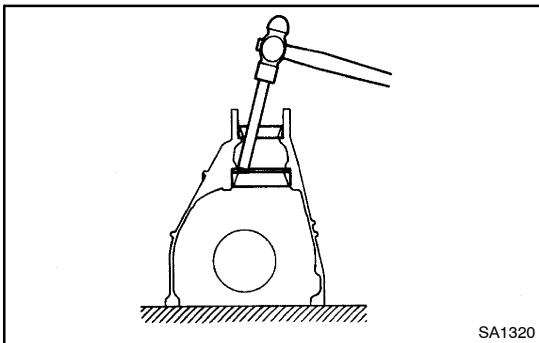
Using SST, remove the oil seal.

SST 09308-00010

18. REMOVE OIL SLINGER AND FRONT BEARING**19. REMOVE REAR BEARING FRONT DRIVE PINION**

Using SST and a press, remove the rear bearing from the drive pinion.

SST 09950-00020

**20. REMOVE FRONT AND REAR BEARING OUTER RACES AND ADJUSTING PLATE WASHER**

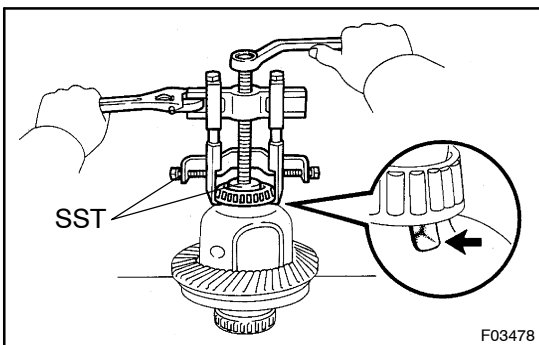
Using a brass bar and hammer, remove the front and rear races and plate washer.

NOTICE:

Do not remove the outer race except when replacing the bearings.

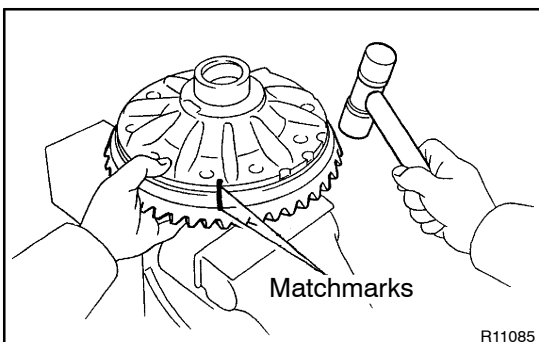
HINT:

Measure the washer and note the thickness for reassembly.

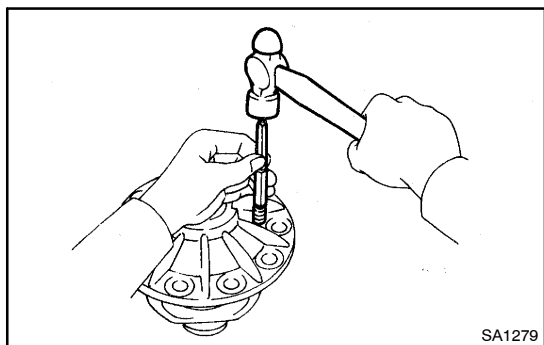
**21. REMOVE SIDE BEARINGS**

Using SST, remove the 2 side bearings from the differential case.

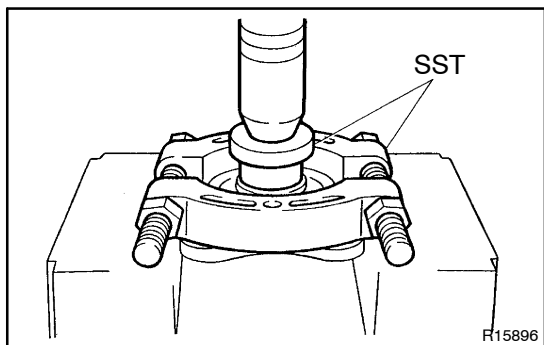
SST 09950-40011, (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04060, 09957-04010, 09958-04010), 09950-60010 (09951-00450)

**22. REMOVE RING GEAR**

- Place matchmarks on the ring gear and differential case.
- Remove the 10 ring gear set bolts.
- Using a plastic hammer, tap on the ring gear to separate it from the differential case.

**23. DISASSEMBLE DIFFERENTIAL CASE**

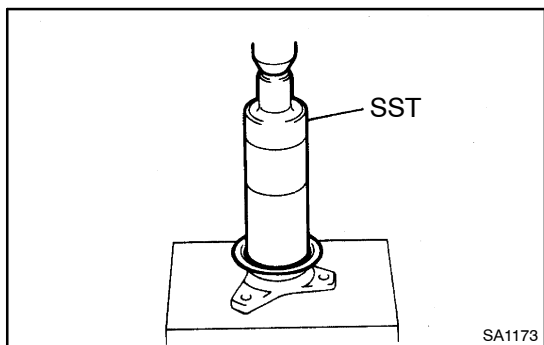
- (a) Using a pin punch and hammer, remove the straight pin.
- (b) Remove these parts from the differential case:
- Pinion gear shaft
 - 2 pinion gears
 - 2 pinion gear thrust washers
 - 2 side gears
 - 2 side gear thrust washers



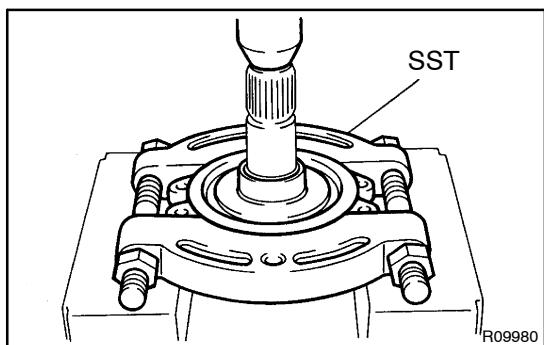
REPLACEMENT

1. REPLACE COMPANION FLANGE DUST DEFLECTOR

- (a) Using SST and a press, remove the dust deflector.
 SST 09950-00020, 09950-60010 (09951-00510)

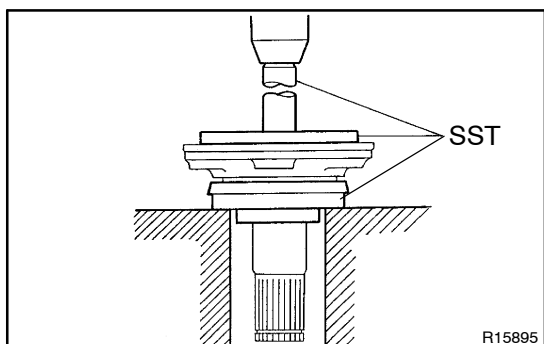


- (b) Using SST and a press, install a new dust deflector.
 SST 09316-60011 (09316-00011)

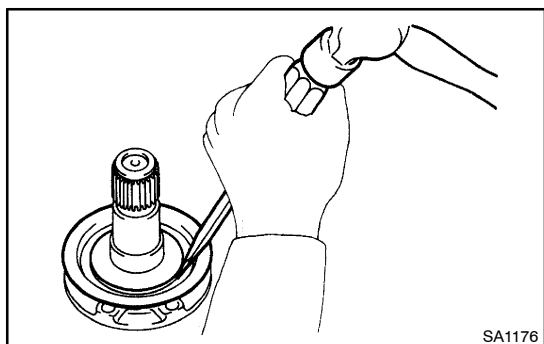


2. REPLACE SIDE GEAR SHAFT DUST COVER

- (a) Using SST and a press, remove the dust cover.
 SST 09950-00020

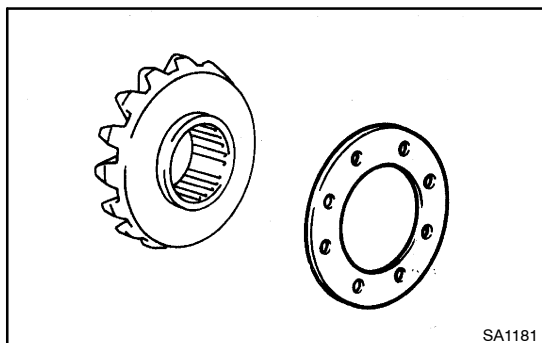


- (b) Using SST and a press, install a new dust cover.
 SST 09502-24010, 09950-60020 (09951-00780),
 09950-70010 (09951-07150)



HINT:

If the dust cover does not fit snugly against the flange of the side gear shaft, use a screwdriver to drive it down.



REASSEMBLY

1. ADJUST DIFFERENTIAL PINION GEAR BACKLASH

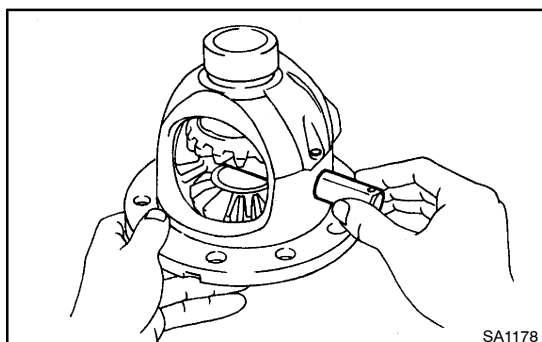
- (a) Install the 2 proper thrust washers on the side gears.

HINT:

Using the table below, select thrust washers which will ensure that the backlash is within the specification.

Thrust washer thickness

Thickness mm (in.)	Thickness mm (in.)
1.50 (0.059)	1.75 (0.069)
1.55 (0.061)	1.80 (0.071)
1.60 (0.063)	1.85 (0.073)
1.65 (0.065)	1.90 (0.075)
1.70 (0.067)	–

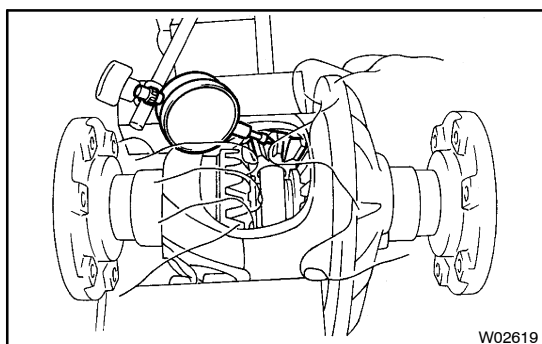


- (b) Install the 2 side gears, pinion gears, pinion gear thrust washers and pinion shaft in the differential case.

HINT:

Align the holes of the differential case and pinion shaft.

- (c) Push the 2 side gear shafts gently into the differential case by hand and install them.



- (d) Using a dial indicator, measure the pinion gear backlash with holding one side gear toward the case.

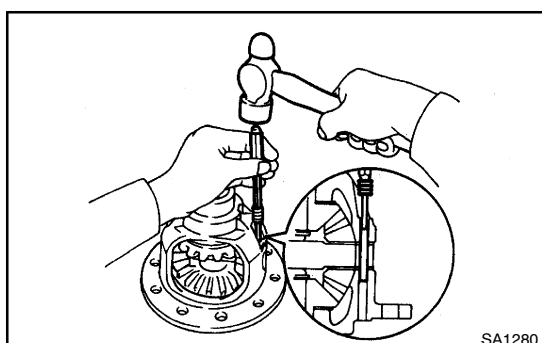
Maximum: 0.15 mm (0.0059 in.)

NOTICE:

Differential gears should be able to rotate.

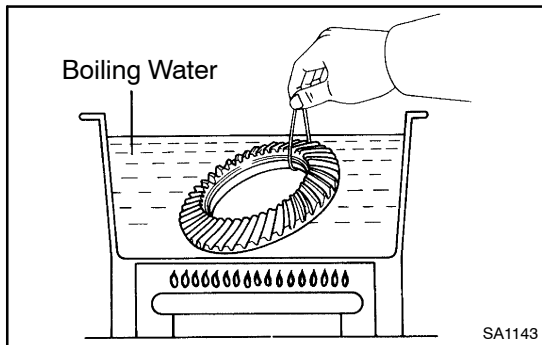
If the backlash is not within the specification, install the 2 side gear thrust washers with different thicknesses.

- (e) Remove the 2 side gear shafts.



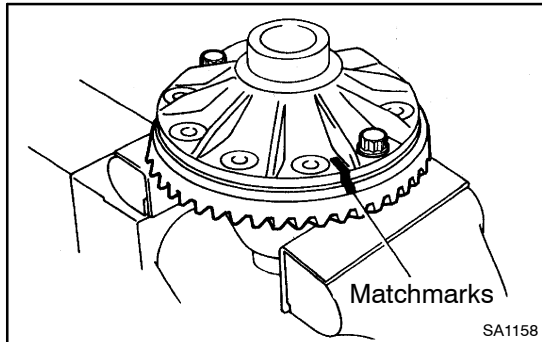
2. INSTALL STRAIGHT PIN AND STAKE DIFFERENTIAL CASE

- (a) Using a pin punch and hammer, install the straight pin through the differential case and hole of the pinion shaft.
- (b) Stake the differential case.



3. INSTALL RING GEAR ON DIFFERENTIAL CASE

- Clean the contact surfaces of the differential case and the threads of the ring gear and differential case.
- Heat the ring gear in boiling water.
- Carefully remove the ring gear from the boiling water.



- After the moisture on the ring gear has completely evaporated, quickly install the ring gear to the differential case.

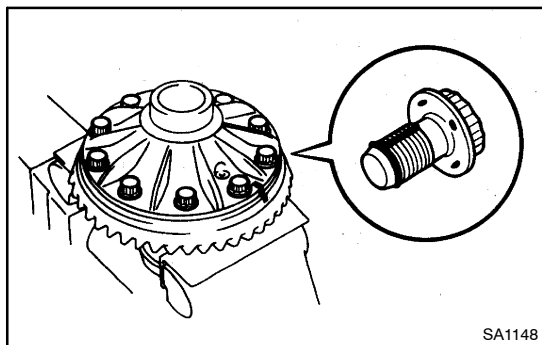
HINT:

Align the matchmarks on the ring gear and the differential case.

- Tighten 2 of the bolts temporarily so that the bolt holes in the ring gear and differential case are not misaligned.

NOTICE:

The ring gear set bolts should not be tightened until the ring gear has cooled sufficiently.



4. INSTALL RING GEAR SET BOLTS

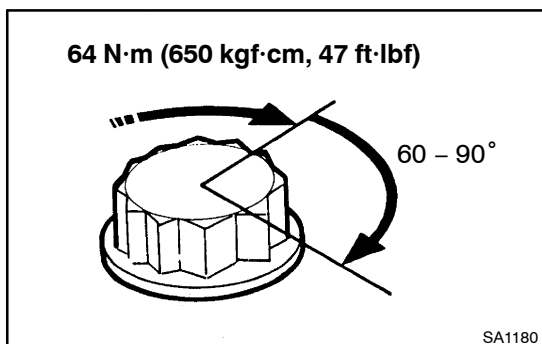
- After the ring gear has cooled sufficiently, install new 10 ring gear set bolts to which thread lock has been applied.

Thread lock:

Part No. 08833-00100, THREE BOND 1360 K or equivalent.

NOTICE:

New ring gear set bolts should be used in every case.



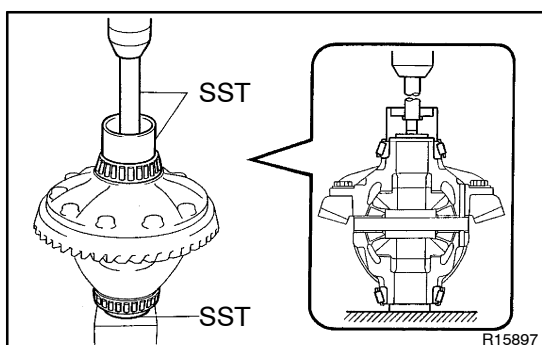
- Torque the 10 set bolts uniformly and a little at a time.

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

- Tighten the bolts further by 60 - 90°.

NOTICE:

Tighten the bolts in diagonally opposite pairs.



5. INSTALL SIDE BEARINGS

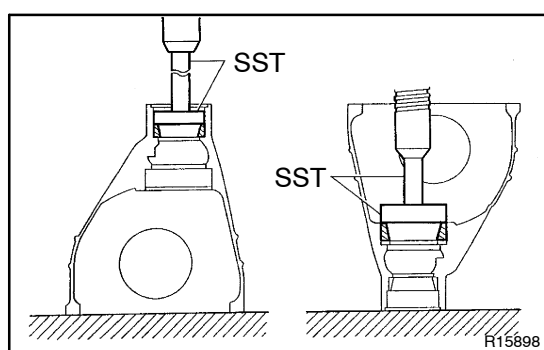
Using SST and a press, install the 2 side bearings.

SST 09710-30050, 09950-60010 (09951-00450),
09950-70010 (09951-07150)

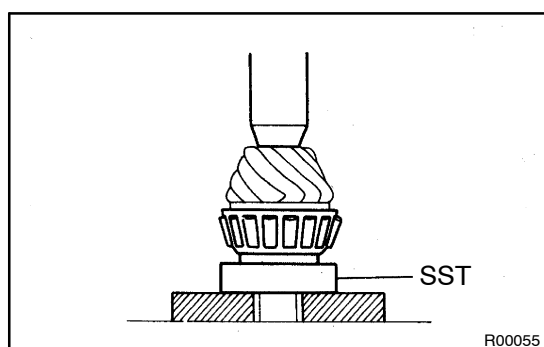
6. INSTALL DRIVE PINION BEARING OUTER RACES AND ADJUSTING WASHER

HINT:

- The adjusting washer is used for adjusting the tooth contact pattern. 42 types of washer with different thicknesses are available.
- First fit a washer with the same thickness as the washer which was removed, then after checking the tooth contact pattern, replace the washer with one of a different thickness if necessary.
- When removing an adjusting washer, be sure to replace it with a new one.



- Using SST and a press, install the front bearing outer race.
SST 09950-60020 (09951-00710),
09950-70010 (09951-07150)
- Using SST and a press, install a new adjusting washer to the rear bearing outer race.
SST 09250-10011 (09255-10011),
09950-70010 (09951-07150)



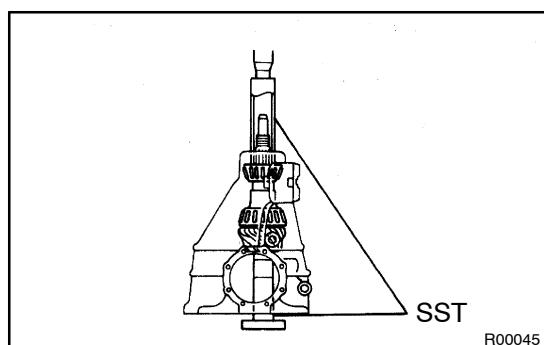
7. INSTALL REAR BEARING TO DRIVE PINION

Using SST and a press, install the rear bearing.

SST 09502-24010

8. TEMPORARILY INSTALL DRIVE PINION, FRONT BEARING, OIL SLINGER AND COMPANION FLANGE

- Install the drive pinion in the differential carrier.

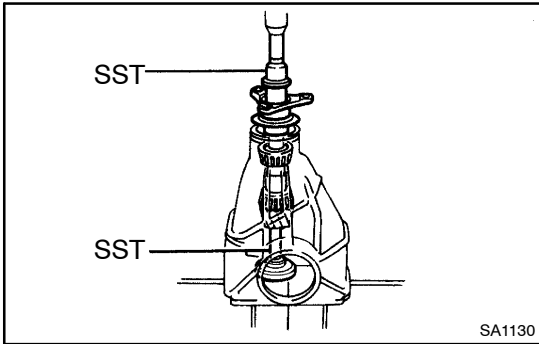


- Using SST and a press, install the front bearing on the drive pinion.
SST 09316-60011 (09316-00011),
09608-04031

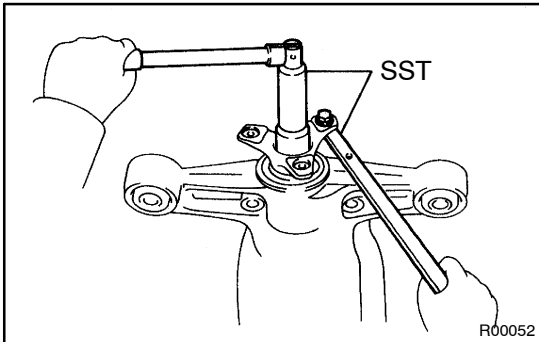
HINT:

Assemble the spacer and oil seal after adjusting the tooth contact pattern.

- Install the oil slinger.



- (d) Using SST and a press, install the companion flange.
SST 09223-46011, 09325-40010



9. TEMPORARILY ADJUST DRIVE PINION PRELOAD

- (a) Adjust the drive pinion preload by tightening the companion flange nut.

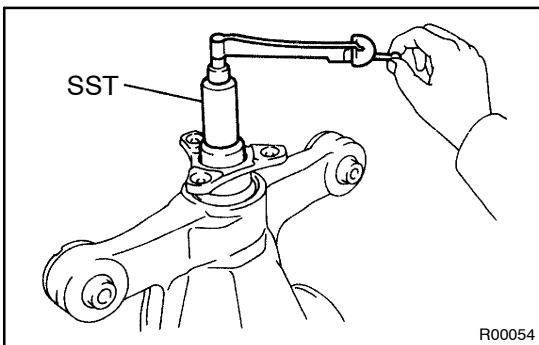
HINT:

Using SST to hold the flange, tighten the nut.

SST 09229-55010, 09330-00021

NOTICE:

As there is no spacer, tighten the nut a little at a time, being careful not to overtighten it.



- (b) Using SST and a torque wrench, measure the preload.

SST 09229-55010

Preload (at starting):

New bearing:

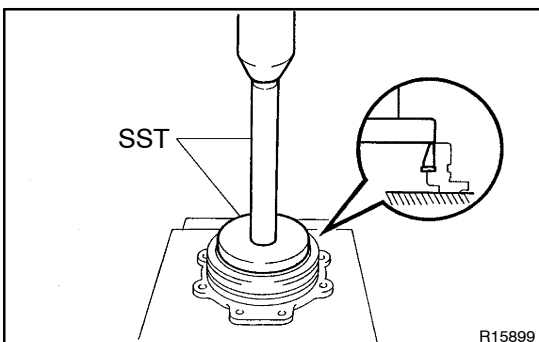
1.5 – 1.8 N·m (15 – 18 kgf·cm, 13.0 – 15.6 in.·lbf)

Reused bearing:

0.5 – 0.8 N·m (5 – 8 kgf·cm, 4.3 – 6.9 in.·lbf)

HINT:

For vehicles which have run 8,000 km (5,000 miles) or less, if the preload value measured before disassembly is greater than the specification for a reused bearing, return the preload to the same as before disassembly.

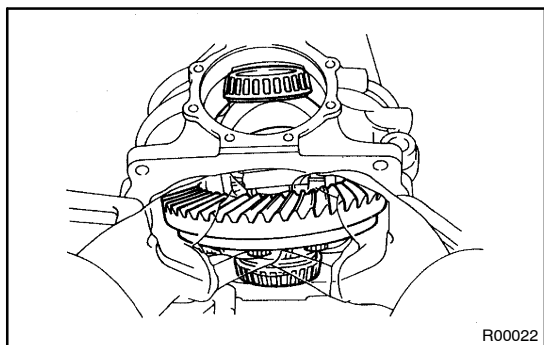


10. INSTALL SIDE BEARING OUTER RACES AND ADJUSTING PLATE WASHERS

Using SST and a press, install the 2 adjusting plate washers and outer races.

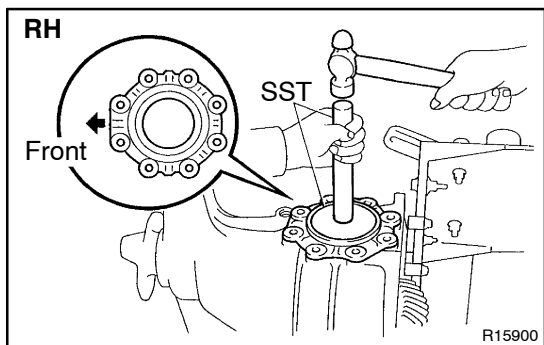
SST 09950-60020 (09951-00810),

09950-70010 (09951-07150)



11. INSTALL DIFFERENTIAL CASE IN CARRIER

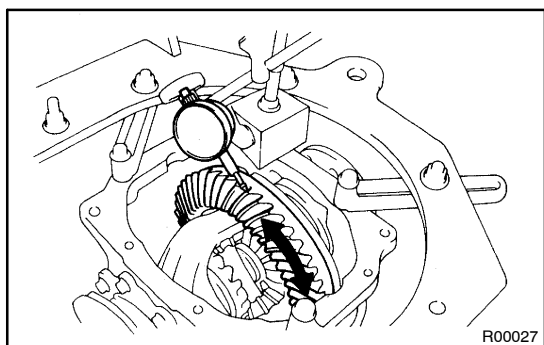
Install the drive side bearing in the differential carrier first, as shown in the illustration, then install the differential case.



12. INSTALL DIFFERENTIAL CARRIER RETAINERS

- (a) Using SST and a hammer, install 2 carrier retainers.
SST 09950-60020 (09951-00890),
09950-70010 (09951-07150)
- (b) Tighten the 16 bolts.

Torque: 22 N·m (225 kgf·cm, 16 ft·lbf)



13. CHECK RING GEAR BACKLASH

Using a dial indicator, measure the backlash of the ring gear at 3 positions at least.

Backlash: 0.08 – 0.13 mm (0.0031 – 0.0051 in.)

NOTICE:

The difference between the maximum and minimum measure values must be less than 0.05 mm (0.0020 in.).

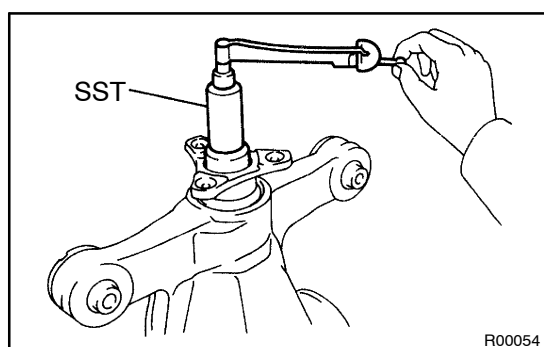
HINT:

The measured values should be used as reference when selecting washers, so take a note of the values.

If the backlash is not within the specification replace the washer on the ring gear side with one of a different thickness using the following procedure.

Adjusting washer thickness

No.	Thickness mm (in.)	No.	Thickness mm (in.)	No.	Thickness mm (in.)
02	2.02 (0.0795)	32	2.32 (0.0913)	62	2.62 (0.1031)
04	2.04 (0.0803)	34	2.34 (0.0921)	64	2.64 (0.1039)
06	2.06 (0.0811)	36	2.36 (0.0929)	66	2.66 (0.1047)
08	2.08 (0.0819)	38	2.38 (0.0937)	68	2.68 (0.1055)
10	2.10 (0.0827)	40	2.40 (0.0945)	70	2.70 (0.1063)
12	2.12 (0.0835)	42	2.42 (0.0953)	72	2.72 (0.1071)
14	2.14 (0.0843)	44	2.44 (0.0961)	74	2.74 (0.1079)
16	2.16 (0.0850)	46	2.46 (0.0969)	76	2.76 (0.1087)
18	2.18 (0.0858)	48	2.48 (0.0976)	78	2.78 (0.1094)
20	2.20 (0.0866)	50	2.50 (0.0984)	80	2.80 (0.1102)
22	2.22 (0.0874)	52	2.52 (0.0992)	82	2.82 (0.1100)
24	2.24 (0.0882)	54	2.54 (0.1000)	84	2.84 (0.1118)
26	2.26 (0.0890)	56	2.56 (0.1008)	86	2.86 (0.1126)
28	2.28 (0.0898)	58	2.58 (0.1016)		–
30	2.30 (0.0906)	60	2.60 (0.1024)		–



14. MEASURE TOTAL PRELOAD

Using SST and a torque wrench, measure the preload with the teeth of the drive pinion and ring gear in contact.

SST 09229-55010

Total preload (at starting):

Drive pinion preload plus

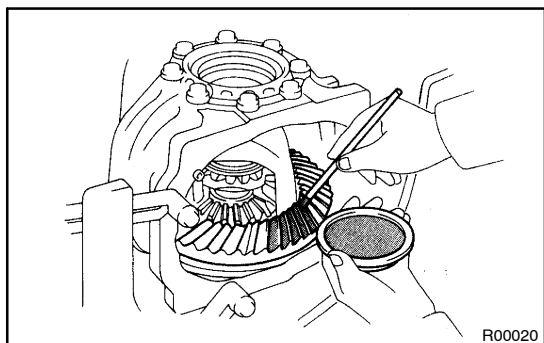
0.5 – 0.8 N·m (5 – 8 kgf·cm, 4.3 – 6.9 in.·lbf)

If the measured preload is less than the specification, replace the washer of the ring gear's tooth surface side with a thicker one.

If the preload is greater than the specification, replace the washer of the ring gear's tooth surface side with a thinner one.

HINT:

Changing the washer thickness by 0.02 mm (0.0008 in.) will change the total preload by approx. 0.1 N·m (1 kgf·cm, 0.9 in.·lbf).



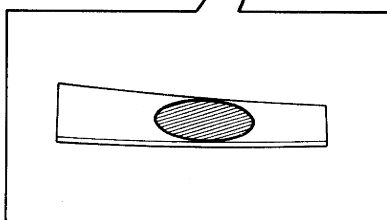
R00020

15. INSPECT TOOTH CONTACT PATTERN

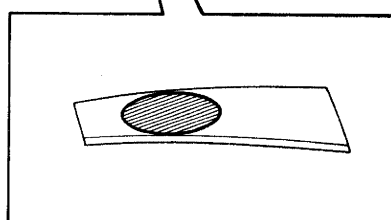
- (a) Coat 3 or 4 teeth at the 3 different positions on the ring gear with red lead.
- (b) Hold the companion flange firmly and rotate the ring gear in both directions.
- (c) Inspect the tooth contact pattern.

Proper Contact Pattern

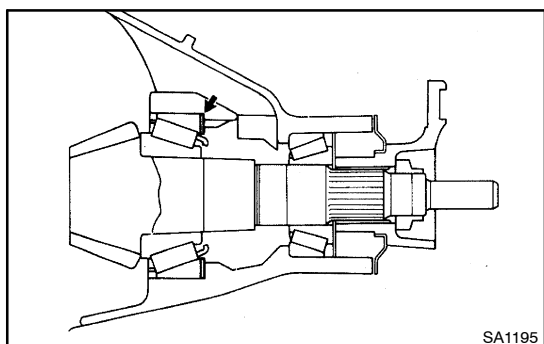
Forward



Reverse



SA1125



SA1195

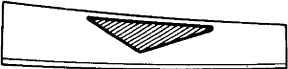
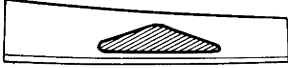
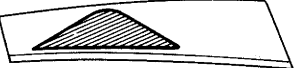
If tooth contact pattern is not correct, replace the adjusting washer installed on the front of the drive pinion rear bearing to adjust it.

NOTICE:

Make sure to always use a new one when replacing adjusting washer.

HINT:

Refer to the table on the next page for selection of the adjusting washer.

Tooth contact pattern		Adjusting washer selection	
Forward	Reverse		
		+0.08 mm (+0.0031 in.)	Replacing the washer with one 0.08 mm (0.0031 in.) thicker will give proper contact pattern.
		+0.14 mm (+0.0055 in.)	Replacing the washer with one 0.14 mm (0.0055 in.) thicker will give proper contact pattern.
		-0.08 mm (-0.0031 in.)	Replacing the washer with one 0.08 mm (0.0031 in.) thicker will give proper contact pattern.
		-0.14 mm (-0.0055 in.)	Replacing the washer with one 0.14 mm (0.0055 in.) thicker will give proper contact pattern.

V02917

HINT:

Adjust washers in 42 different thickness in 0.01 mm (0.004 in.) units are available.

No.	Thickness mm (in.)	No.	Thickness mm (in.)	No.	Thickness mm (in.)
87	1.87 (0.0736)	01	2.01 (0.0791)	15	2.15 (0.0846)
88	1.88 (0.0740)	02	2.02 (0.0795)	16	2.16 (0.0850)
89	1.89 (0.0744)	03	2.03 (0.0799)	17	2.17 (0.0854)
90	1.90 (0.0748)	04	2.04 (0.0803)	18	2.18 (0.0858)
91	1.91 (0.0752)	05	2.05 (0.0807)	19	2.19 (0.0862)
92	1.92 (0.0756)	06	2.06 (0.0811)	20	2.20 (0.0866)
93	1.93 (0.0760)	07	2.07 (0.0815)	21	2.21 (0.0870)
94	1.94 (0.0764)	08	2.08 (0.0819)	22	2.22 (0.0874)
95	1.95 (0.0768)	09	2.09 (0.0823)	23	2.23 (0.0878)
96	1.96 (0.0772)	10	2.10 (0.0827)	24	2.24 (0.0882)
97	1.97 (0.0776)	11	2.11 (0.0831)	25	2.25 (0.0886)
98	1.98 (0.0780)	12	2.12 (0.0835)	26	2.26 (0.0890)
99	1.99 (0.0783)	13	2.13 (0.0839)	27	2.27 (0.0894)
00	2.00 (0.0787)	14	2.14 (0.0843)	28	2.28 (0.0898)

16. REMOVE DIFFERENTIAL CARRIER RETAINERS
(See page SA-67)

17. REMOVE DIFFERENTIAL CASE (See page SA-67)

18. REMOVE DRIVE PINION (See page SA-67)

19. INSTALL SPACER ON DRIVE PINION

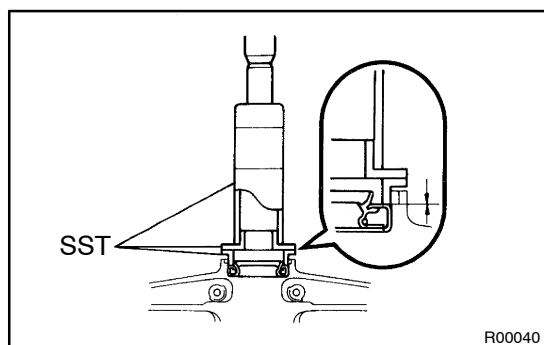
Install a new spacer on the drive pinion.

20. INSTALL DRIVE PINION AND FRONT BEARING
(See step 8)

21. INSTALL OIL SLINGER (See step 8)

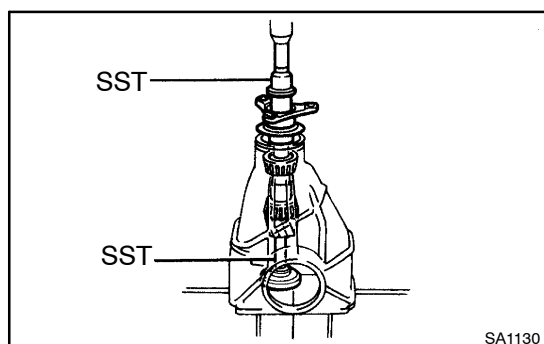
22. INSTALL OIL SEAL

- (a) Apply MP grease to a new oil seal lip.



- (b) Using SST, install the oil seal until its end is flush with the surface of the differential carrier.

SST 09316-60011 (09316-00011, 09316-00041),
09502-12010

**23. INSTALL COMPANION FLANGE**

Using SST and a press, install the companion flange.

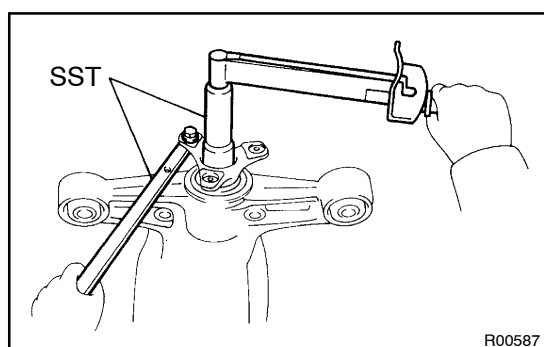
SST 09223-56010, 09325-40010

NOTICE:

Be careful not to damage the oil seal.

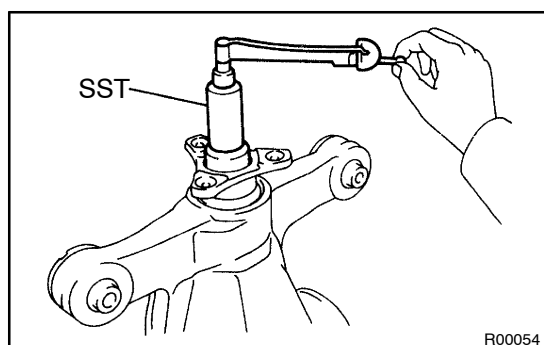
24. ADJUST DRIVE PINION PRELOAD

- (a) Coat the threads and flange of a new nut with hypoid gear oil for LSD.



- (b) Using SST, tighten the nut.

SST 09229-55010, 09330-00021



- (c) Using SST and a torque wrench, measure the preload.

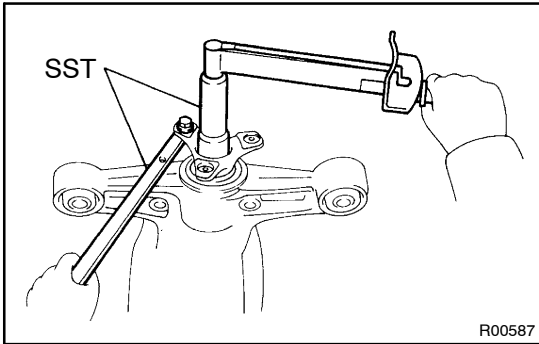
SST 09229-55010

Preload (at starting):**New bearing:**

1.5 - 1.8 N·m (15 - 18 kgf·cm, 13.0 - 15.6 in.·lbf)

Reused bearing:

0.5 - 0.8 N·m (5 - 8 kgf·cm, 4.3 - 6.9 in.·lbf)



If the preload is greater than the specification, replace the spacer.

If the preload is less than the specification, retighten the nut with a force of 13 N·m (130 kgf·cm, 9 ft·lbf) at a time until the specified preload is reached.

Torque: 490 N·m (5,000 kgf·cm, 362 ft·lbf) or less

If the maximum torque is exceeded while retightening the nut, replace the spacer and repeat the preload procedure.

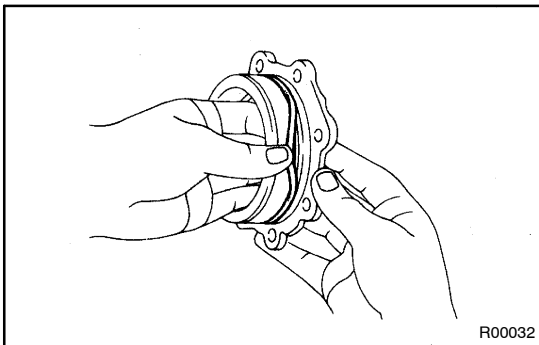
Do not back off the nut to reduce the preload.

25. CHECK RUNOUT OF DRIVE PINION SHAFT

(See page SA-67)

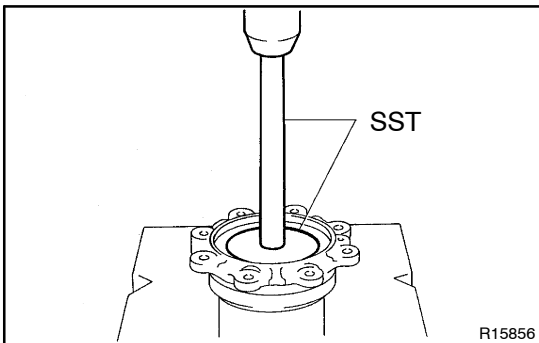
26. INSTALL DIFFERENTIAL CASE IN CARRIER

(See step 11)



27. INSTALL O-RING FROM DIFFERENTIAL CARRIER RETAINERS

- Coat 2 new O-rings with hypoid gear oil.
- Install the 2 O-rings to the carrier retainers.



28. INSTALL OIL SEALS FROM DIFFERENTIAL CARRIER RETAINERS

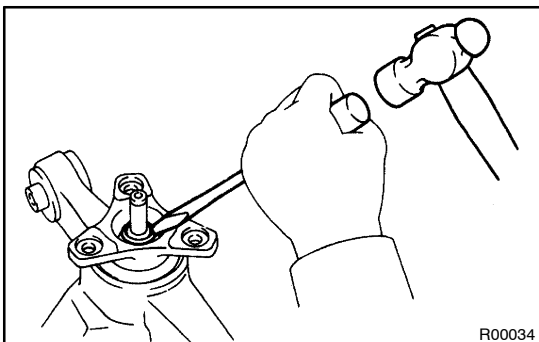
- Using SST and a press, install 2 new oil seals to the carrier retainers.

SST 09608-32010, 09950-70010 (09950-07150)

- Coat the MP grease to the oil seal lip.

29. INSTALL DIFFERENTIAL CARRIER RETAINERS

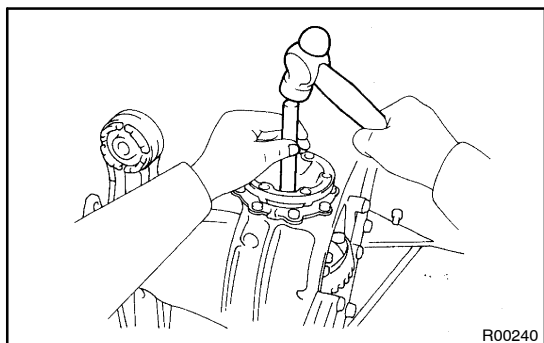
30. RECHECK BACKLASH, TOTAL PRELOAD AND TOOTH CONTACT PATTERN



31. STAKE DRIVE PINION NUT

32. INSTALL SNAP RINGS TO SIDE GEAR SHAFTS

- Install 2 new snap rings to the side gear shafts.
- Coat the MP grease to the snap rings.

**33. INSTALL SIDE GEAR SHAFTS**

Using a brass bar and hammer, install the 2 side gear shafts.

HINT:

Whether or not the side gear shaft is making contact with the pinion shaft can be known by the sound or feeling when driving it in.

NOTICE:

Be careful not to damage the oil seal.

34. REMOVE DIFFERENTIAL CARRIER FROM OVERHAUL STAND, ETC.**35. INSTALL DIFFERENTIAL CARRIER COVER**

- (a) Clean the contact surfaces of the carrier and cover of any residual FIPG material using cleaner.
- (b) Coat FIPG to the carrier or cover.

FIPG:

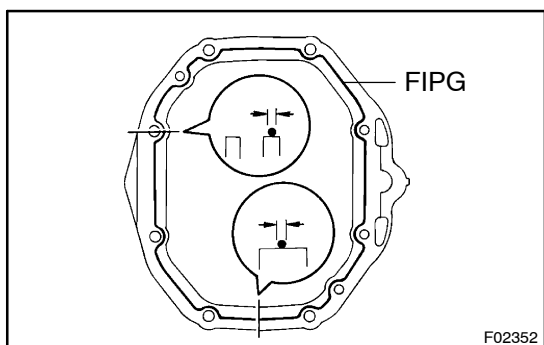
Part No. 08826-00090, THREE BOND 1281 or equivalent

- (c) Install the carrier cover to the carrier with the 8 bolts.

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

- (d) Install the breather plug.

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



INSTALLATION

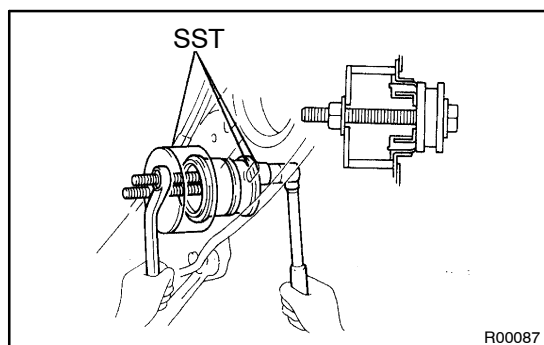
Installation is in the reverse order of removal (See page SA-65).

AFTER INSTALLATION, FILL DIFFERENTIAL OIL (See page SA-61) AND REAR WHEEL ALIGNMENT (See page SA-7)

DIFFERENTIAL MOUNTING CUSHION REPLACEMENT

SAOSH-02

1. REMOVE DIFFERENTIAL (See page SA-65)

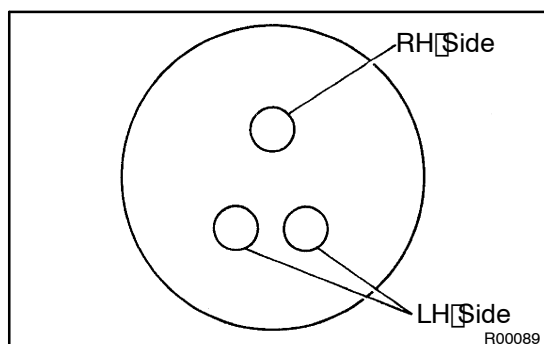


R00087

2. REMOVE DIFFERENTIAL MOUNTING CUSHION

Using SST, remove the differential mounting cushion.

SST 09316-12010, 09570-24010



R00089

NOTICE:

- When driving out the mounting cushion, be careful not to touch the suspension member with the SST.
- Align the SST straight so that the bolt of the SST is parallel with the center line of the mounting cushion.
- When installing the bolts to the LH and RH differential mounting cushions, make sure that the bolts are passed through the correct holes in the SST, as shown in the illustration.

3. INSTALL DIFFERENTIAL MOUNTING CUSHION

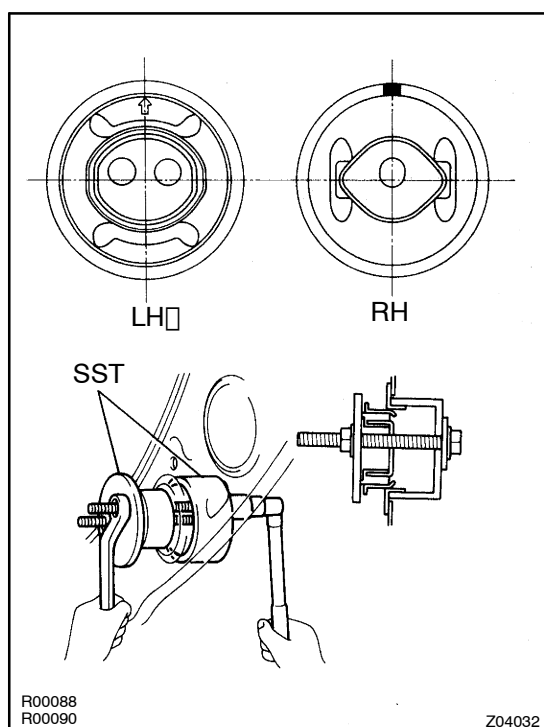
Using SST, install the cushion so that the marks are positioned, as shown in the illustration.

SST 09570-24010

NOTICE:

- Pay enough attention to LH and RH sides or top and bottom.
- Set the SST after temporarily installing the differential mounting cushion into the member so as not to install at an angle.
- To confirm that the differential mounting cushion is aligned straight in relation to the member, check that the SST is fully in contact with all of the cushion.

4. INSTALL DIFFERENTIAL (See page SA-84)

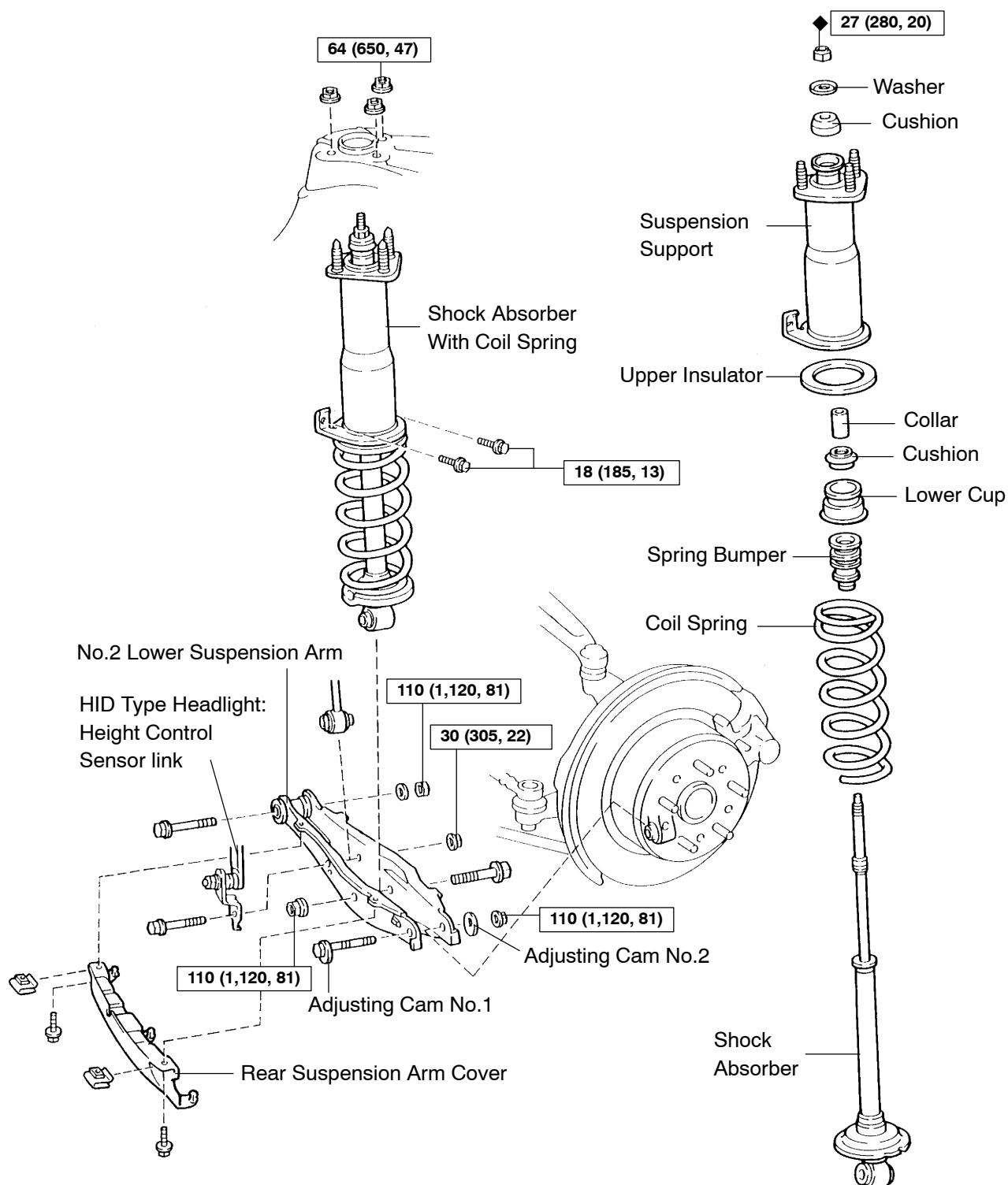


R00088
R00090

Z04032

REAR SHOCK ABSORBER COMPONENTS

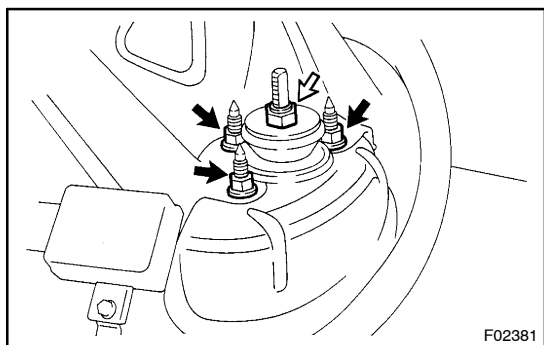
SA0SI-02



F04331

REMOVAL

1. **REMOVE REAR WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **REMOVE LUGGAGE COMPARTMENT TRIM FRONT COVER** (See page BO-28)
3. **REMOVE REAR SUSPENSION ARM COVER**
Remove the 2 bolts, nuts and rear suspension arm cover.
4. **REMOVE NO.2 LOWER SUSPENSION ARM** (See page SA-98)

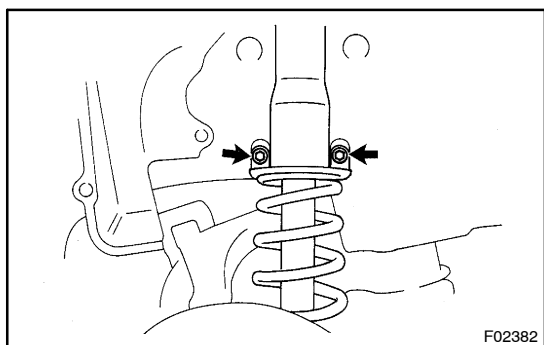


5. **REMOVE SHOCK ABSORBER WITH COIL SPRING**
 - (a) Loosen the nut in the center of the suspension support.

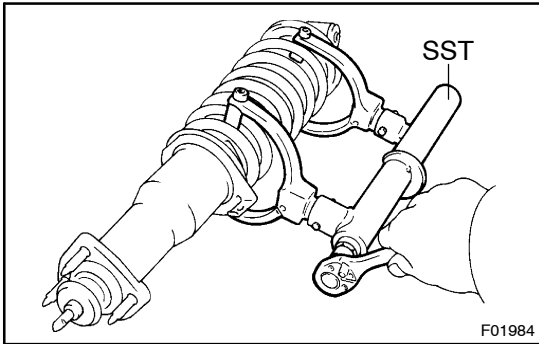
NOTICE:

Do not remove it.

- (a) Loosen the nut in the center of the suspension support.
Torque: 27 N·m (280 kgf·cm, 20 ft·lbf)
- (b) Remove the 3 nuts.
Torque: 64 N·m (650 kgf·cm, 47 ft·lbf)



- (c) Remove the 2 bolts and shock absorber with the coil spring.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)



DISASSEMBLY

REMOVE SUSPENSION SUPPORT AND COIL SPRING

(a) Using SST, compress the coil spring.

SST 09727-30021

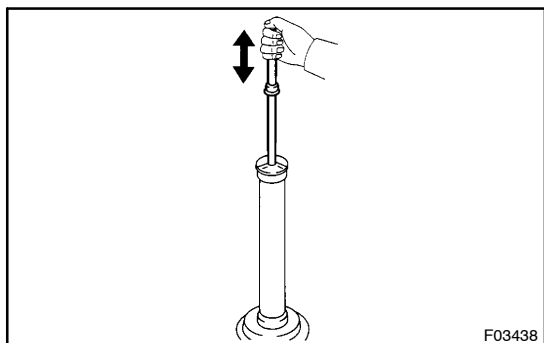
NOTICE:

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

(b) Remove the suspension support nut.

(c) Remove these parts from the shock absorber:

- Washer
- 2 cushions
- Suspension support
- Upper insulator
- Collar
- Coil spring
- Lower cup
- Spring bumper



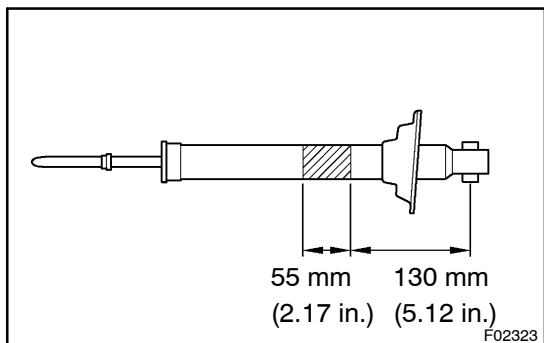
INSPECTION

INSPECT SHOCK ABSORBER

Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual operation sound. If there is any abnormality, replace the shock absorber with a new one.

NOTICE:

When disposing the shock absorber, see DISPOSAL on page SA-90.



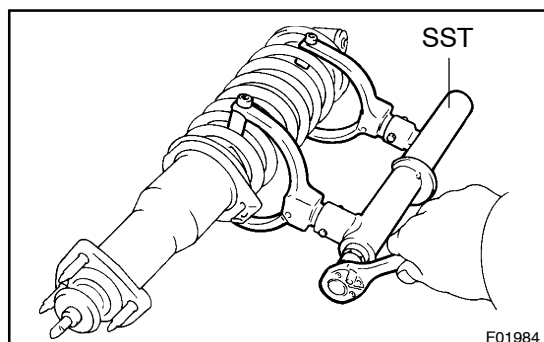
DISPOSAL

1. **FULLY EXTEND SHOCK ABSORBER ROD**
2. **DRILL HOLE TO DISCHARGE GAS FROM CYLINDER**

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

CAUTION:

The gas coming out is harmless, but be careful of chips which may fly up when drilling.



REASSEMBLY

INSTALL SUSPENSION SUPPORT AND COIL SPRING

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

SST 09727-30021

NOTICE:

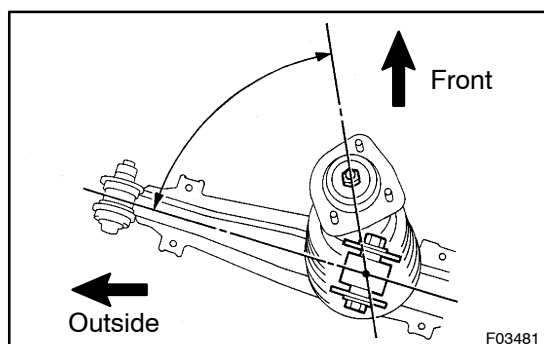
Do not use an impact wrench. It will damage the SST.

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

HINT:

Fit the lower end of the coil spring into the recess of the spring seat of the shock absorber.

- (c) Install the spring bumper, lower cup, cushion, collar, upper insulator, suspension support, cushion and washer to the shock absorber and temporarily tighten a new nut.



- (d) Rotate the suspension support so that the rod and 1 of the bolts on suspension support are aligned with lower shock absorber as shown in the illustration.

- (e) Remove the SST.

SST 09727-30021

HINT:

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

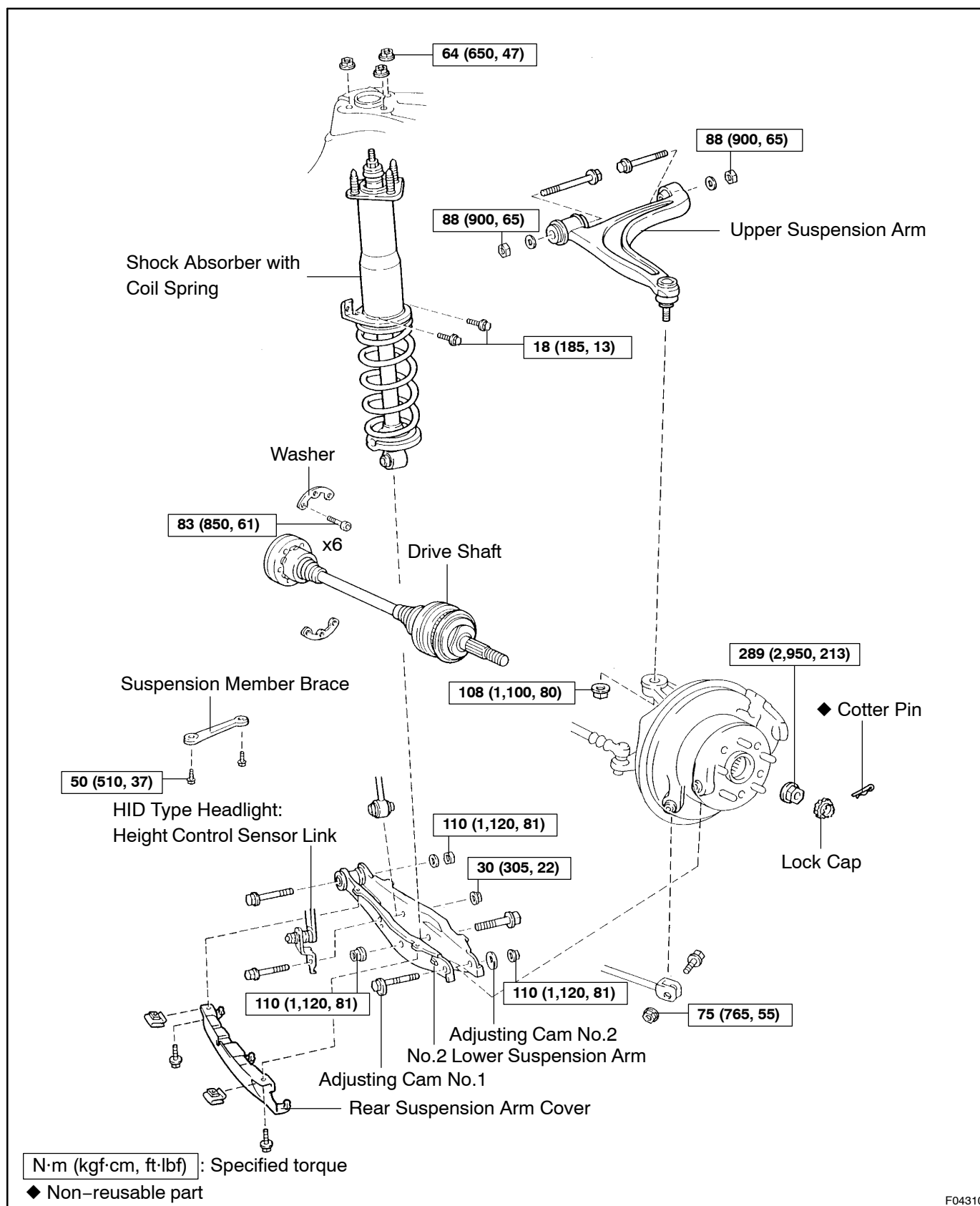
INSTALLATION

Installation is in the reverse order of removal (See page SA-87).

AFTER INSTALLATION, CHECK REAR WHEEL ALIGNMENT (See page SA-7)

REAR UPPER SUSPENSION ARM COMPONENTS

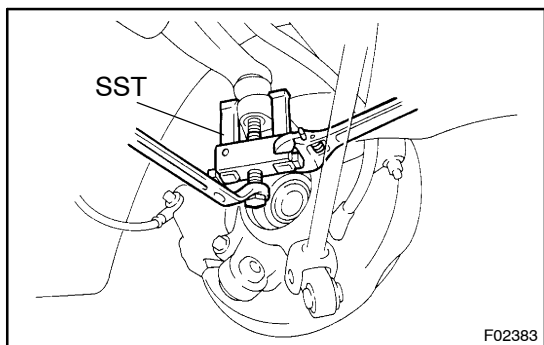
SA0SP-02



F04310

REMOVAL

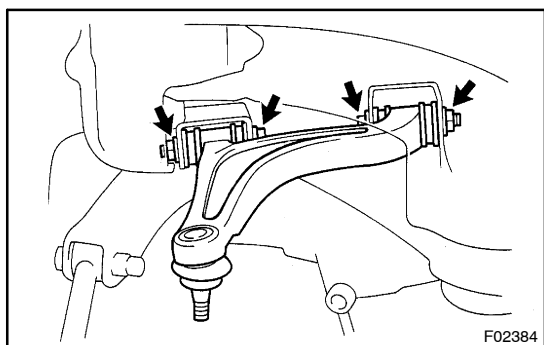
1. REMOVE REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. REMOVE DRIVE SHAFT (See page SA-52)
3. REMOVE SHOCK ABSORBER (See page SA-87)
4. REMOVE UPPER SUSPENSION ARM
 - (a) Remove the nut.
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)



- (b) Using SST, disconnect the upper suspension arm from the axle carrier.
SST 09628-62011

NOTICE:

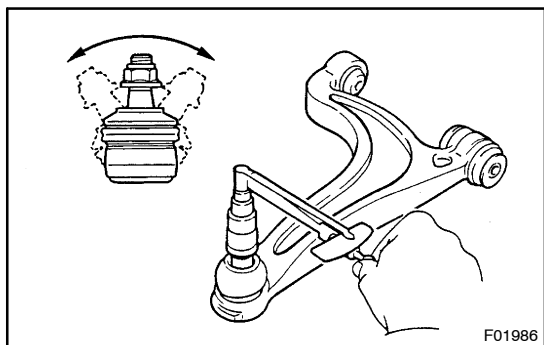
- Be careful not to damage the dust cover.
- Support the axle carrier.



- (c) Remove the 2 bolts, nuts, washers and upper suspension arm.
Torque: 88 N·m (900 kgf·cm, 65 ft·lbf)

HINT:

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



INSPECTION

INSPECT REAR UPPER SUSPENSION ARM BALL JOINT FOR ROTATION CONDITION

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

Turning torque:

1.0 – 3.4 N·m (10 – 35 kgf·cm, 9 – 30 in.·lbf)

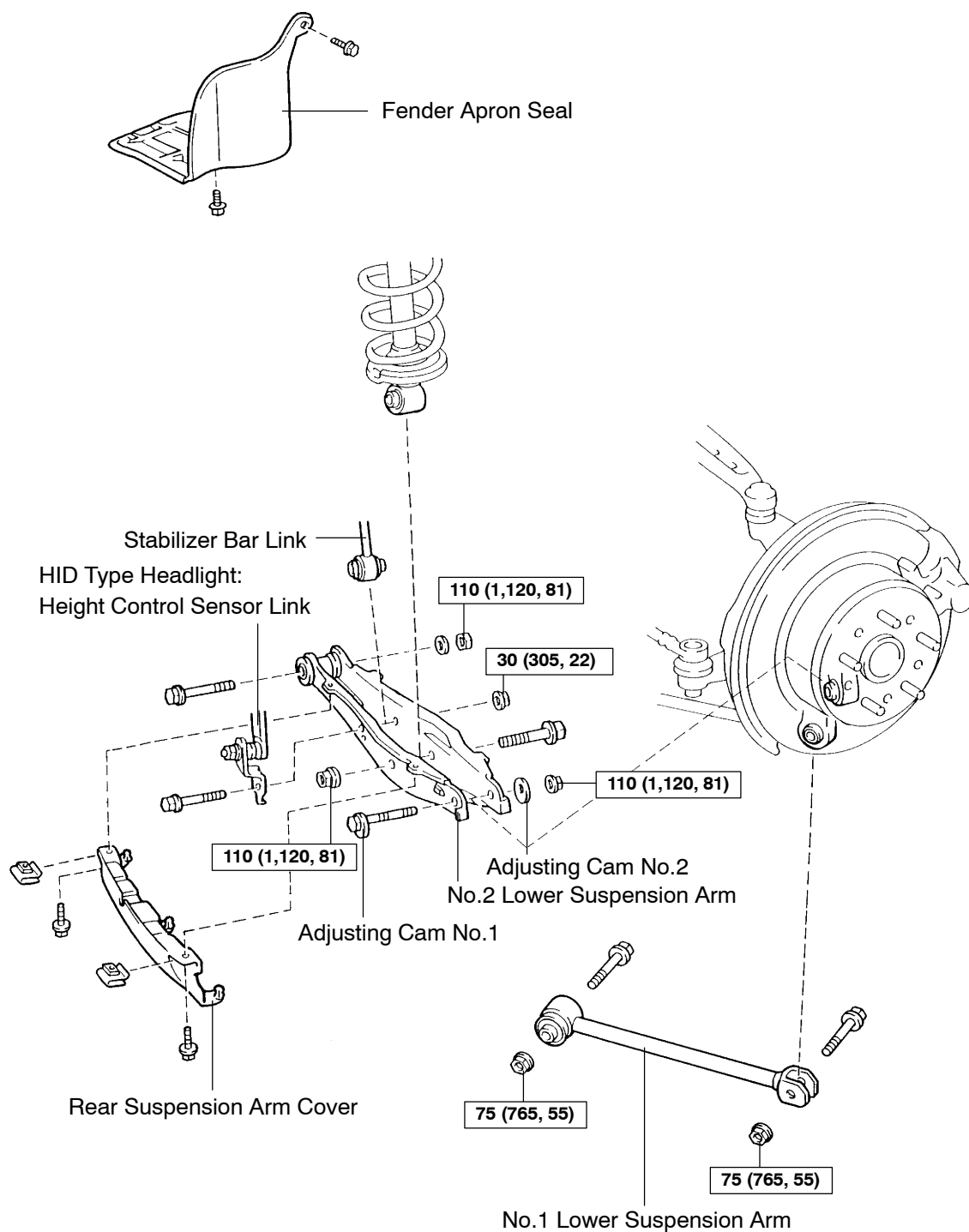
INSTALLATION

Installation is in the reverse order of removal (See page SA-94).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI-210) AND REAR WHEEL ALIGNMENT (See page SA-7)

REAR LOWER SUSPENSION ARM COMPONENTS

SA0ST-02



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

F04311

REMOVAL

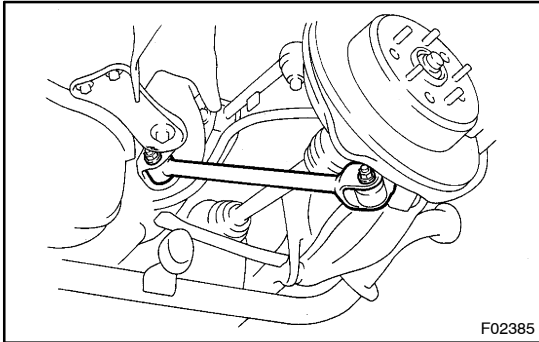
1. REMOVE REAR WHEEL

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

2. REMOVE REAR FENDER APRON SEAL

3. REMOVE REAR SUSPENSION ARM COVER

Remove the 2 bolts, nuts and rear suspension arm cover.



4. REMOVE NO.1 LOWER SUSPENSION ARM

Remove the 2 bolts, nuts and No.1 lower suspension arm.

Torque: 75 N·m (765 kgf·cm, 55 ft·lbf)

HINT:

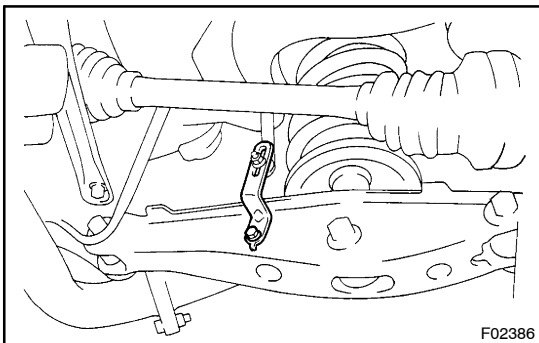
At the time of installation, after stabilizing the suspension, torque the nuts.

5. REMOVE NO.2 LOWER SUSPENSION ARM

(a) Halogen type headlight:

Remove the bolt, nut and disconnect the stabilizer bar link from the No.2 lower suspension arm.

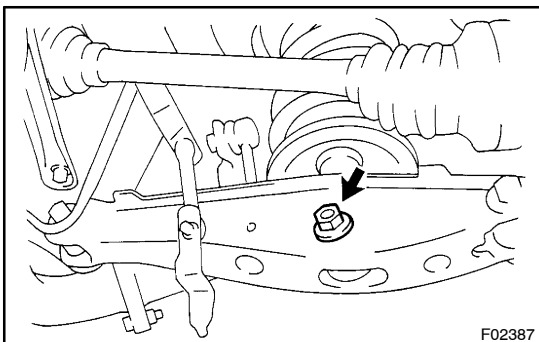
Torque: 30 N·m (305 kgf·cm, 22 ft·lbf)



(b) HID type headlight:

Remove the bolt, nut and disconnect the stabilizer bar link and the height control link from the No.2 lower suspension arm.

Torque: 30 N·m (305 kgf·cm, 22 ft·lbf)

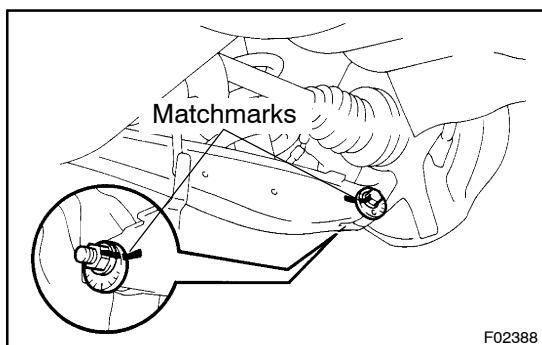


(c) Remove the bolt, nut and disconnect the shock absorber from the No.2 lower suspension arm.

Torque: 110 N·m (1,120 kgf·cm, 81 ft·lbf)

HINT:

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

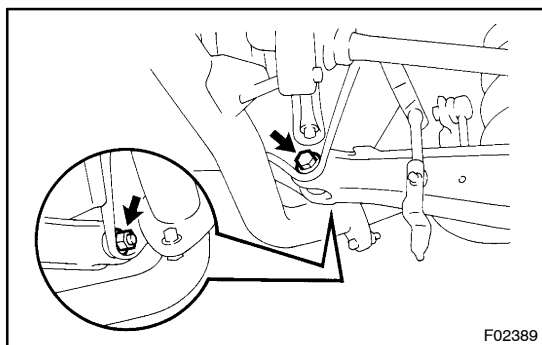


- (d) Place matchmarks on the adjusting cam and No.2 lower suspension arm.
- (e) Remove the nut, adjusting cam No.2 and adjusting cam No.1.

Torque: 110 N·m (1,120 kgf·cm, 81 ft·lbf)

HINT:

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



- (f) Remove the bolt, nut, washer and No.2 lower suspension arm.

Torque: 110 N·m (1,120 kgf·cm, 81 ft·lbf)

HINT:

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

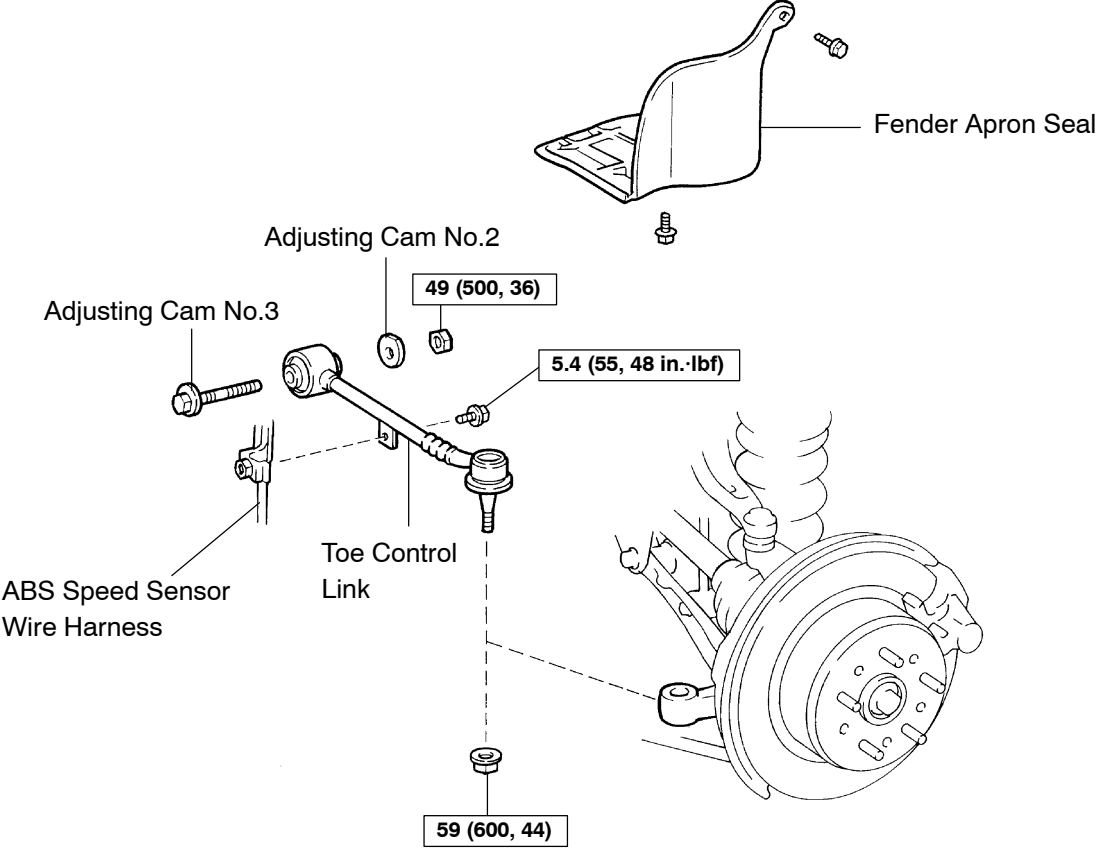
INSTALLATION

Installation is in the reverse order of removal (See page SA-98).

AFTER INSTALLATION, CHECK REAR WHEEL ALIGNMENT (See page SA-7)

TOE CONTROL LINK COMPONENTS

SA0SW-02



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

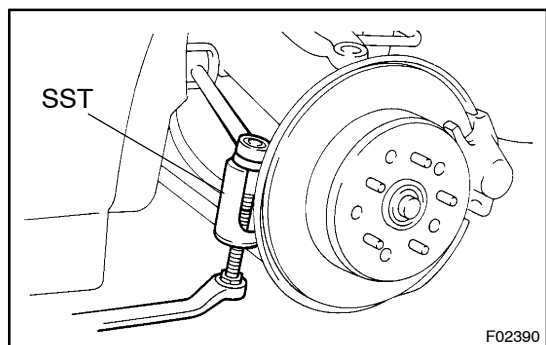
F03427

REMOVAL

1. **REMOVE REAR WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **REMOVE REAR FENDER APRON SEAL**
3. **DISCONNECT ABS SPEED SENSOR WIRE HARNESS FROM TOE CONTROL LINK**
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)
4. **REMOVE TOE CONTROL LINK**
 - (a) Remove the nut.
Torque: 59 N·m (600 kgf·cm, 44 ft·lbf)

HINT:

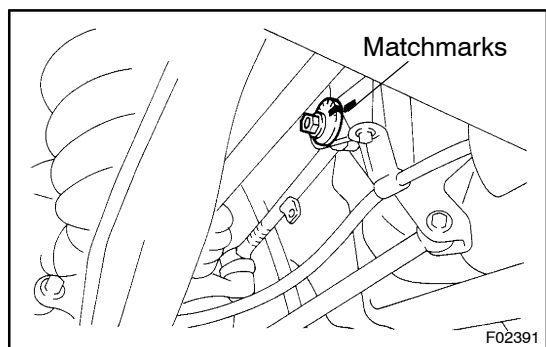
At the time of installation, after stabilizing the suspension, torque the nut.



- (b) Using SST, disconnect the toe control link from the axle carrier.
SST 09610-20012

NOTICE:

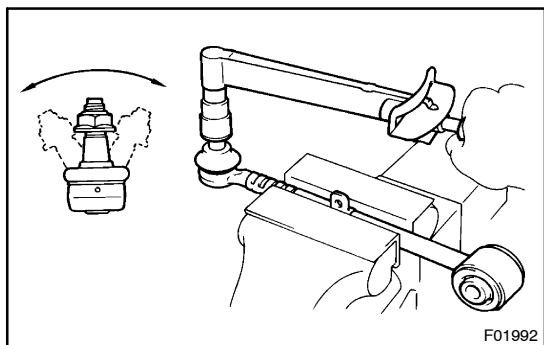
Be careful not to damage the dust cover.



- (c) Place the matchmarks on the adjusting cam and suspension member.
- (d) Remove the nut, adjusting cam No.2, adjusting cam No.3 and the toe control link.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

HINT:

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



INSPECTION

INSPECT TOE CONTROL LINK BALL JOINT FOR ROTATION CONDITION

- As shown, flip the ball joint stud back and forth 5 times, before installing the nut.
- Using a torque wrench, turn the nut continuously one turn per 2 – 4 seconds and take the torque reading on the 5th turn.

Turning torque:

1.0 – 2.5 N·m (10 – 25 kgf·cm, 9 – 22 in.·lbf)

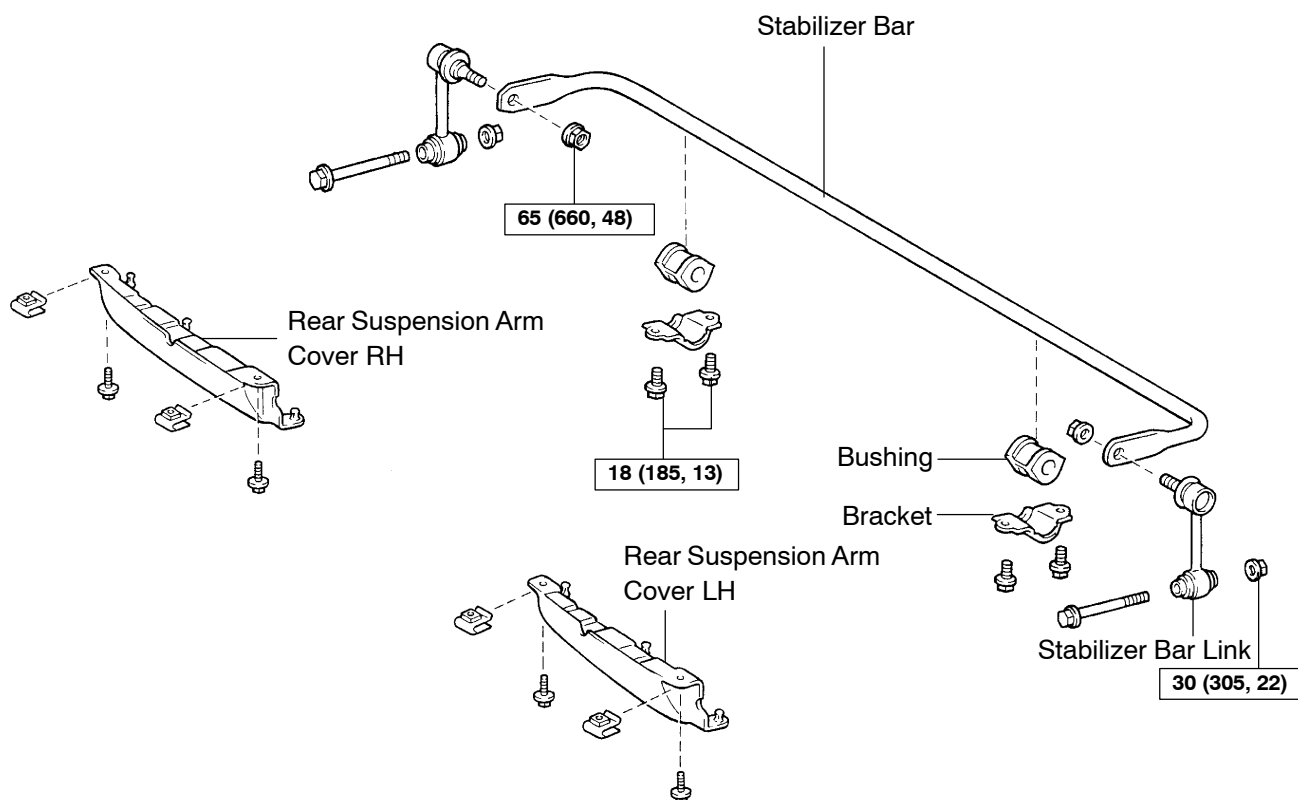
INSTALLATION

Installation is in the reverse order of removal (See page SA-102).

AFTER INSTALLATION, CHECK REAR WHEEL ALIGNMENT (See page SA-7)

REAR STABILIZER BAR COMPONENTS

SA0T0-02



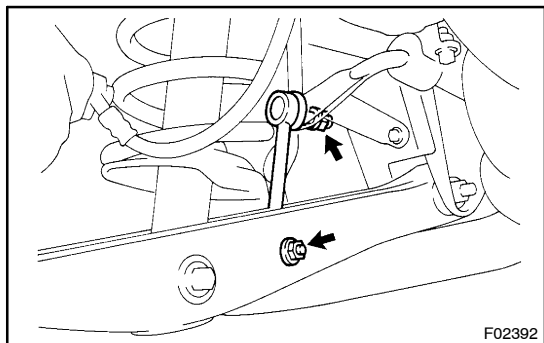
N·m (kgf·cm, ft·lbf) : Specified torque

F04312

REMOVAL

1. REMOVE BOTH REAR SUSPENSION ARM COVERS

Remove the 4 bolts, nuts and rear suspension arm covers.



2. REMOVE BOTH STABILIZER BAR LINKS

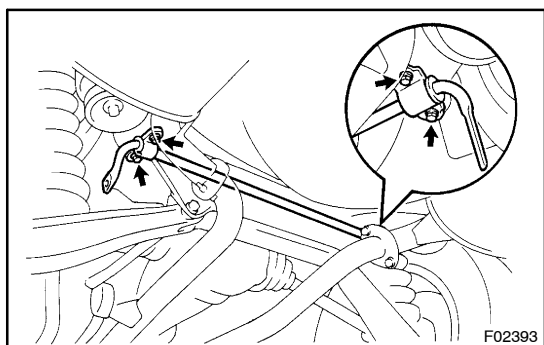
- (a) Remove the bolt and nut, disconnect the stabilizer bar link from the No.2 lower suspension arm.

Torque: 30 N·m (305 kgf·cm, 22 ft·lbf)

- (b) Remove the nut and stabilizer bar link from the stabilizer bar.

Torque: 65 N·m (660 kgf·cm, 48 ft·lbf)

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



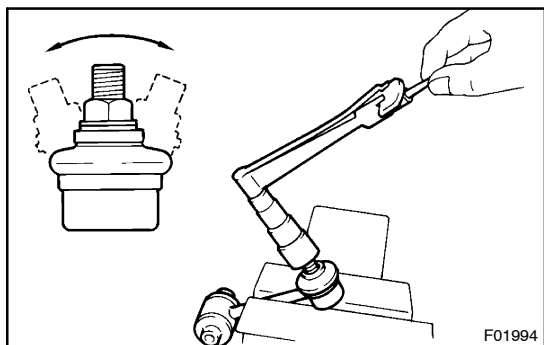
3. REMOVE STABILIZER BAR

- (a) Remove the 4 bolts and 2 stabilizer bar brackets from the suspension member.

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

- (b) Remove the stabilizer bar.

- (c) Remove the 2 bushings from the stabilizer bar.



INSPECTION

INSPECT REAR STABILIZER BAR LINK BALL JOINT FOR ROTATION CONDITION

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

Turning torque:

0.05 – 1.0 N·m (0.5 – 10 kgf·cm, 0.4 – 9 in.·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page SA-106).