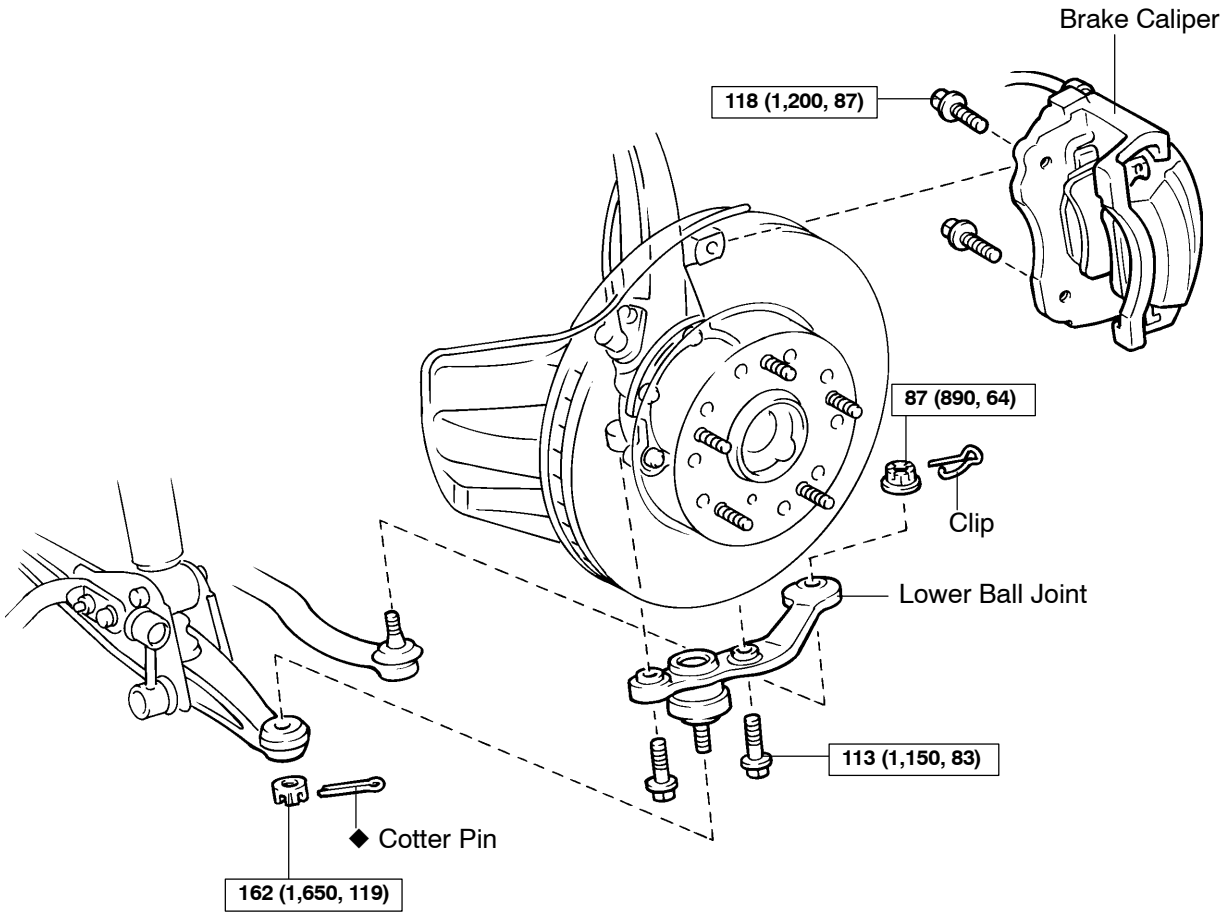
SA0RQ–01

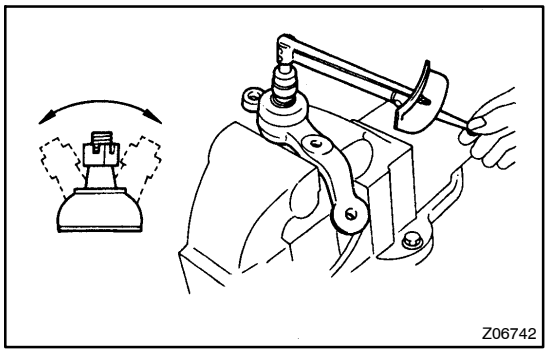
COMPONENTS



N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non–reusable part

F02338

SA0RS–01


Z06742

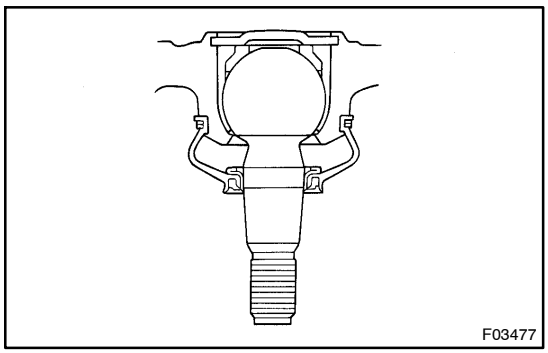
INSPECTION

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

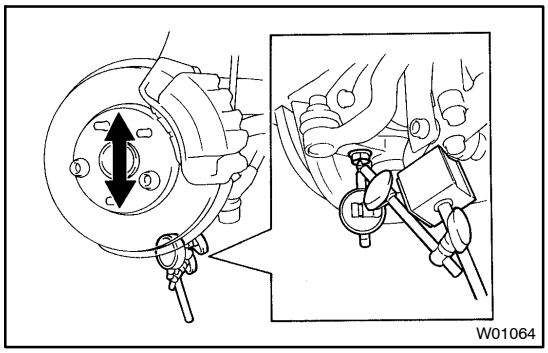

F03477

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

SA0RT–01

INSTALLATION

Installation is in the reverse order of removal (See page SA–36).
AFTER INSTALLATION, CHECK FRONT WHEEL ALIGNMENT (See page SA–4)



FRONT LOWER BALL JOINT

SA0RP–01

ON–VEHICLE INSPECTION

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).

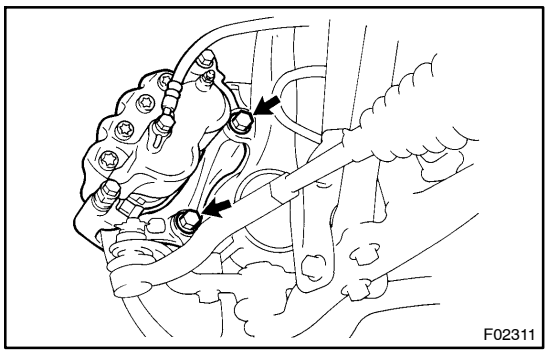
Maximum: 0.9 mm (0.035 in.)

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

SA0RR–01

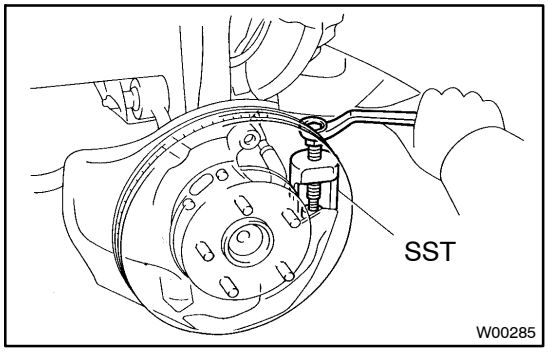
REMOVAL

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



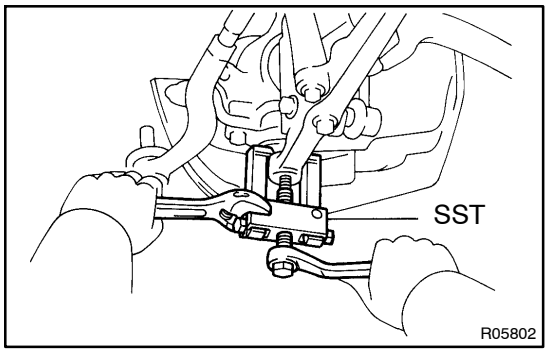
2. REMOVE BRAKE CALIPER
(a) Remove the 2 bolts and caliper.
Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)
(b) Support the brake caliper securely.

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)



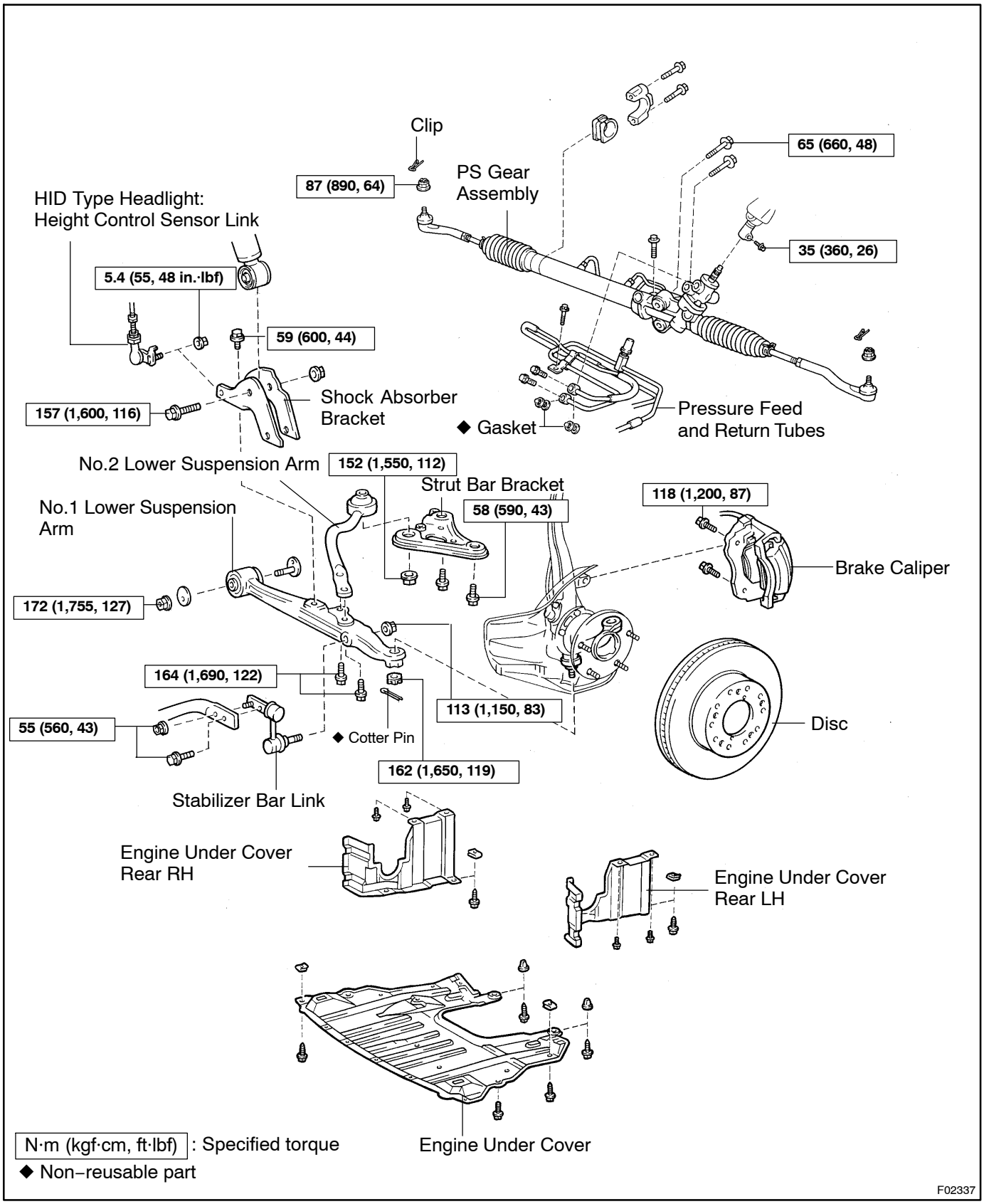
(b) Using SST, remove the lower ball joint.
SST 09628–62011

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)

FRONT LOWER SUSPENSION ARM

COMPONENTS

SA0RM–01



SA0RO–01

INSTALLATION

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

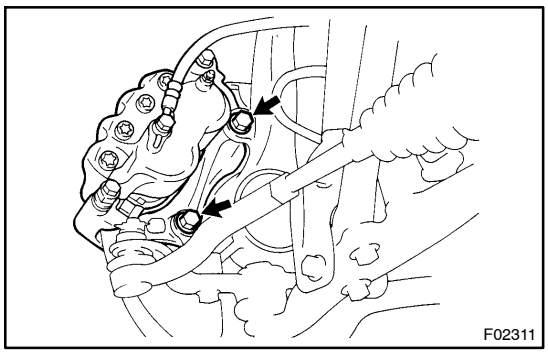
AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI–389) AND FRONT WHEEL ALIGNMENT (See page SA–4)

SA0RN–01

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

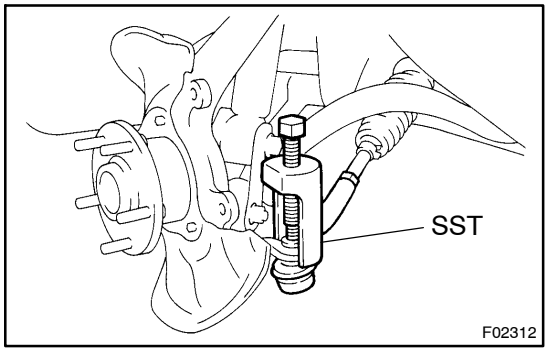
(a) Remove the 2 bolts and caliper.
Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)

(b) Support the brake caliper securely.

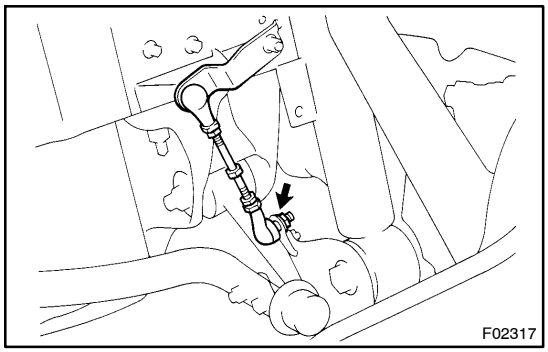
(c) Remove the disc.

4. DISCONNECT TIE ROD END

(a) Remove the clip and nut.
Torque: 87 N·m (890 kgf·cm, 64 ft·lbf)

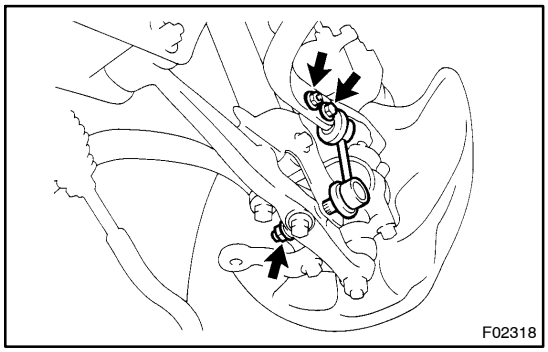


(b) Using SST, disconnect the tie rod end from the steering knuckle.
SST 09610–20012



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

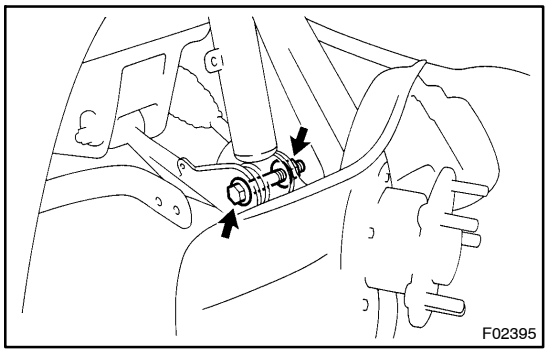
Remove the nut and disconnect the height control sensor link from the shock absorber bracket.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



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)

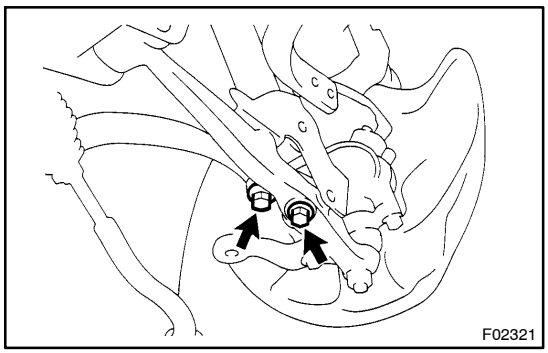
(b) Remove the nut and stabilizer bar link.
Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)



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)

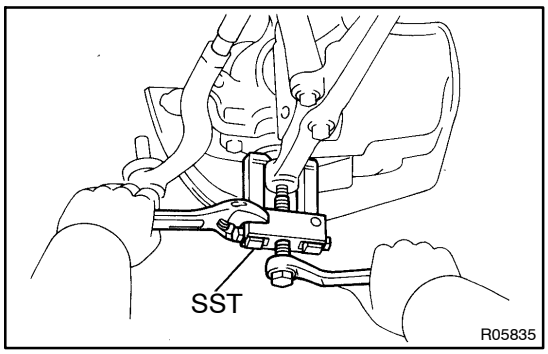
HINT:

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

9. DISCONNECT NO.2 LOWER SUSPENSION ARM

(a) Remove the cotter pin and nuts.

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

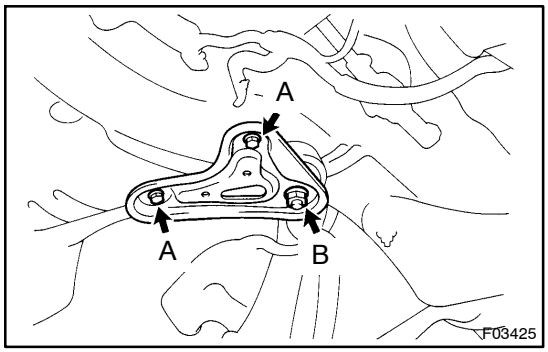


(b) Using SST, disconnect the No.2 lower suspension arm from the lower ball joint.

SST 09628–62011

10. REMOVE STEERING GEAR ASSEMBLY

(See page SR–45)



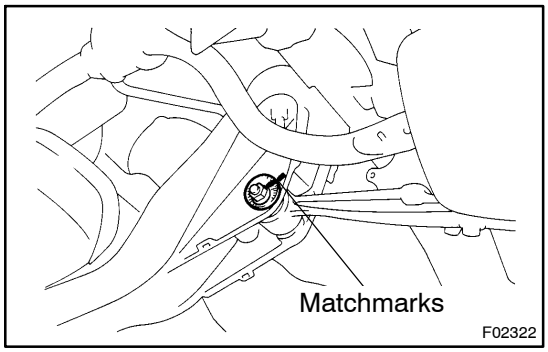
11. REMOVE STRUT BAR BRACKET

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)



12. REMOVE LOWER SUSPENSION ARM ASSEMBLY

(a) Place matchmarks on the camber adjusting cam and suspension crossmember.

(b) Remove the bolt, nut 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.

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

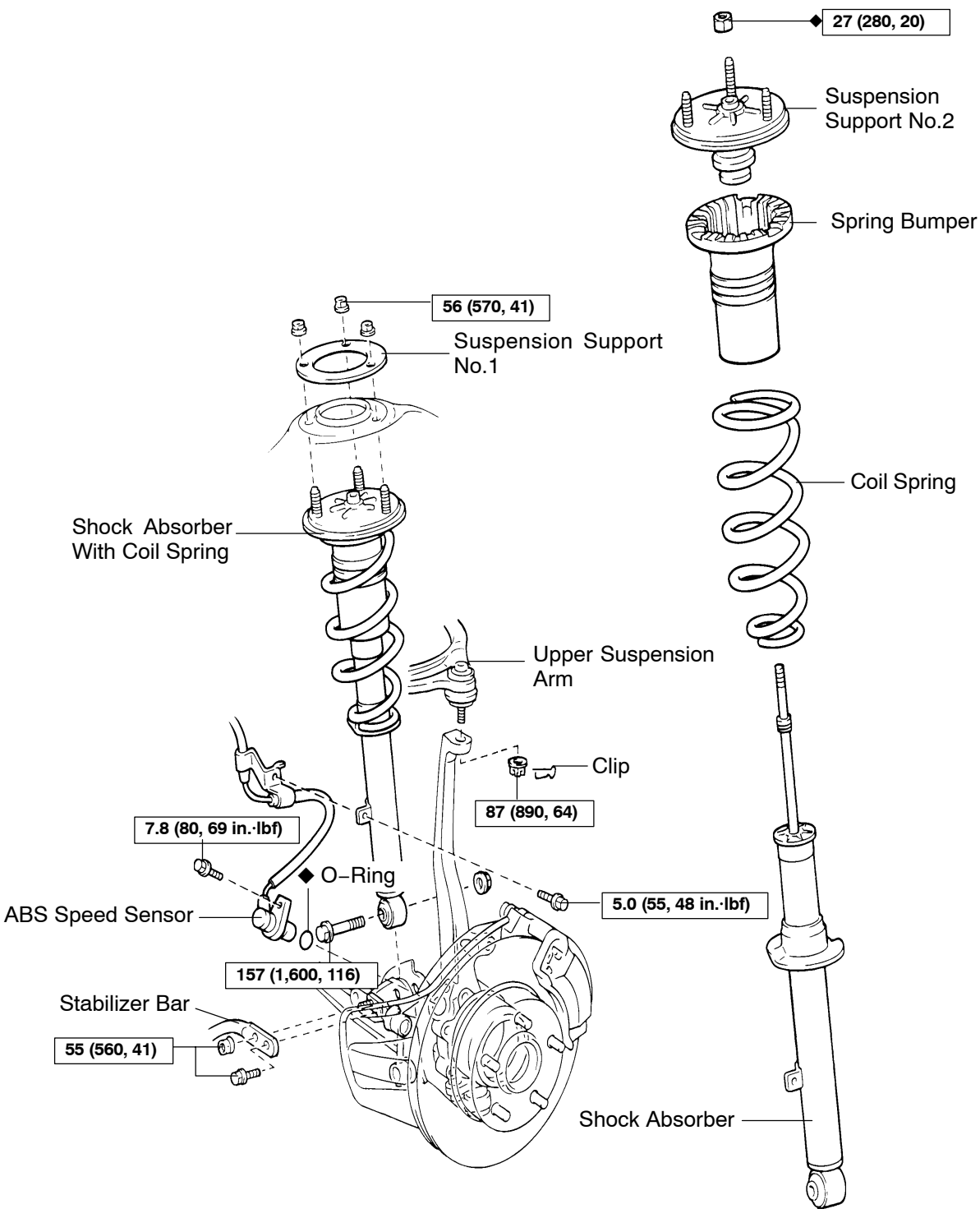
(a) Remove the bolt, shock absorber bracket from the No.1 lower suspension arm.
Torque: 59 N·m (600 kgf·cm, 44 ft·lbf)

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

FRONT SHOCK ABSORBER

COMPONENTS

SA0RB–03

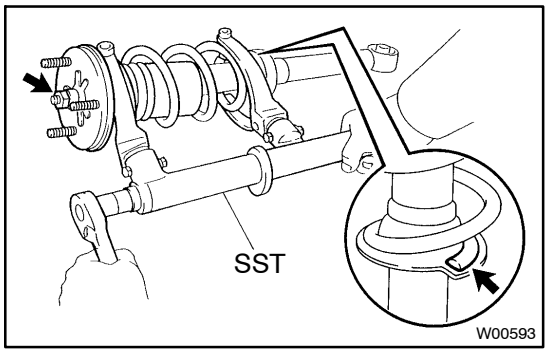


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non–reusable part

F02335

SA0RD–01



DISASSEMBLY

REMOVE SUSPENSION SUPPORT AND COIL SPRING

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

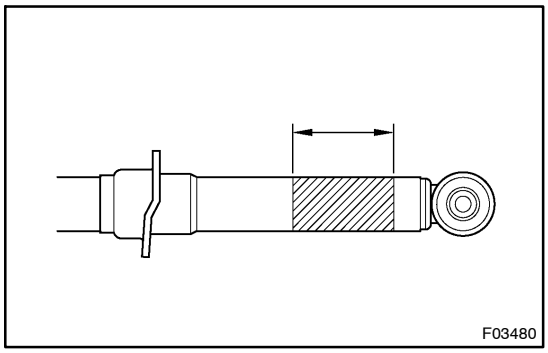
NOTICE:

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

(b) Remove the piston rod lock nut.

(c) Remove these parts from the shock absorber:
- Suspension support No.2
- Spring bumper
- Coil spring

SA0RF–01



DISPOSAL

1. FULLY EXTEND SHOCK ABSORBER ROD

2. DRILL HOLE TO REMOVE GAS FROM CYLINDER

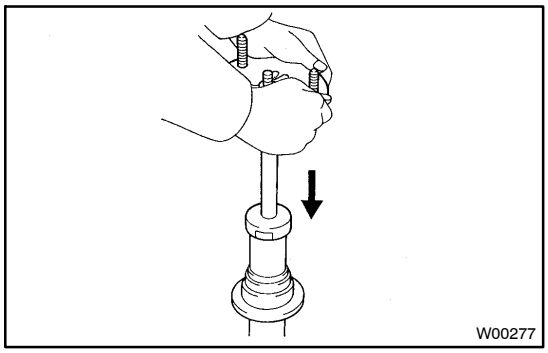
(a) Place the shock absorber horizontally to prevent the oil from coming out.

(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.

SA0RE–01



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 discarding the shock absorber, see DISPOSAL on page SA–22.

SA0RH–01

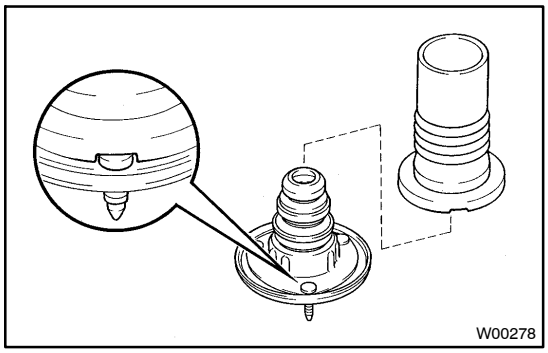
INSTALLATION

Installation is in the reverse order or removal (See page SA–18).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page DI–389) AND FRONT WHEEL ALIGNMENT (See page SA–4)

SA0RG–01

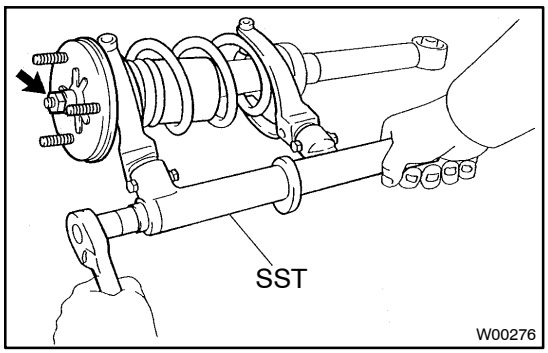
REASSEMBLY



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.

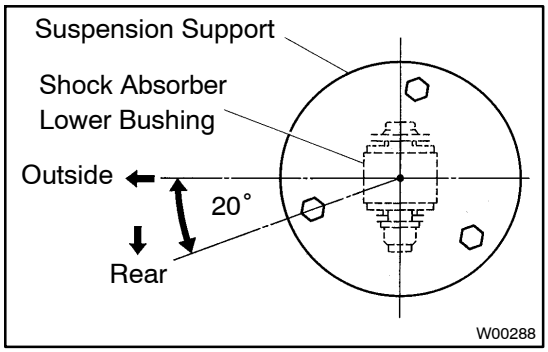
HINT:

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 to the rod.

(b) Temporarily tighten a new lock nut.



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

4. REMOVE SST

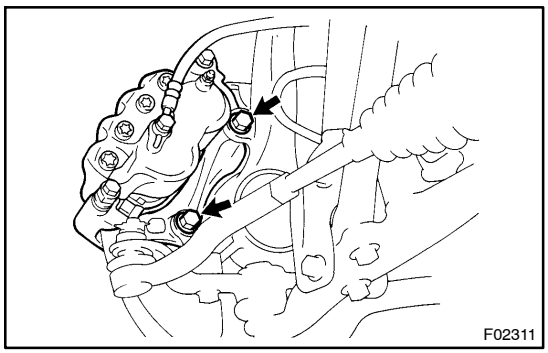
HINT:

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

SA0RC–01

REMOVAL

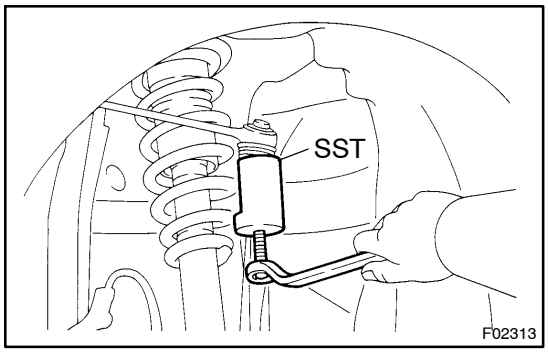
1. REMOVE FRONT WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



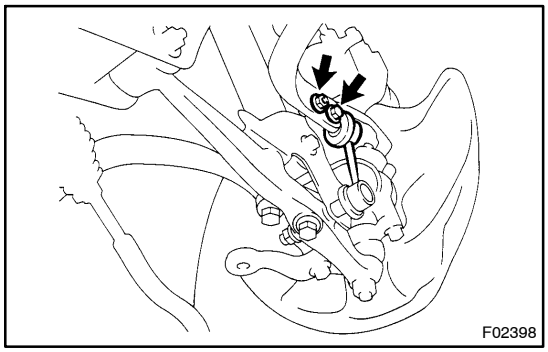
2. REMOVE BRAKE CALIPER
(a) Remove the 2 bolts and caliper from the steering knuckle.
Torque: 118 N·m (1,200 kgf·cm, 87 ft·lbf)
(b) Support the brake caliper securely.

3. 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 bolt and ABS speed sensor wire harness.
Torque: 5.0 N·m (55 kgf·cm, 48 in.·lbf)

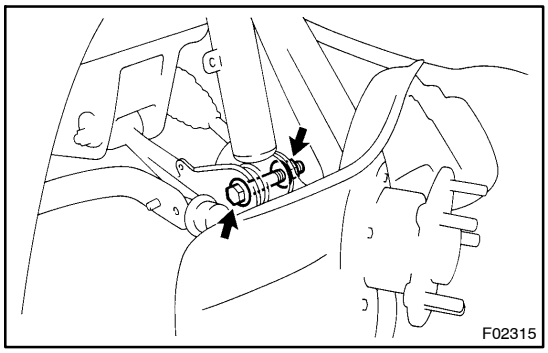
4. DISCONNECT UPPER SUSPENSION ARM FROM STEERING KNUCKLE
(a) Remove the clip and nut.
Torque: 87 N·m (890 kgf·cm, 64 ft·lbf)



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



5. 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)



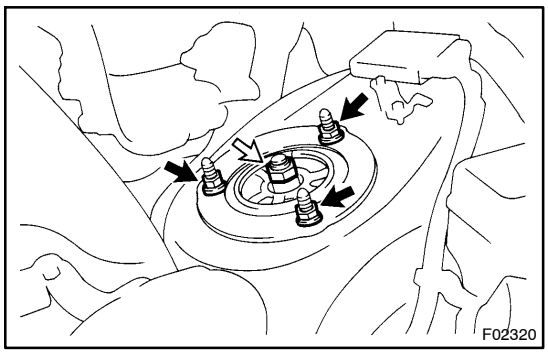
6. REMOVE FRONT SHOCK ABSORBER

(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)

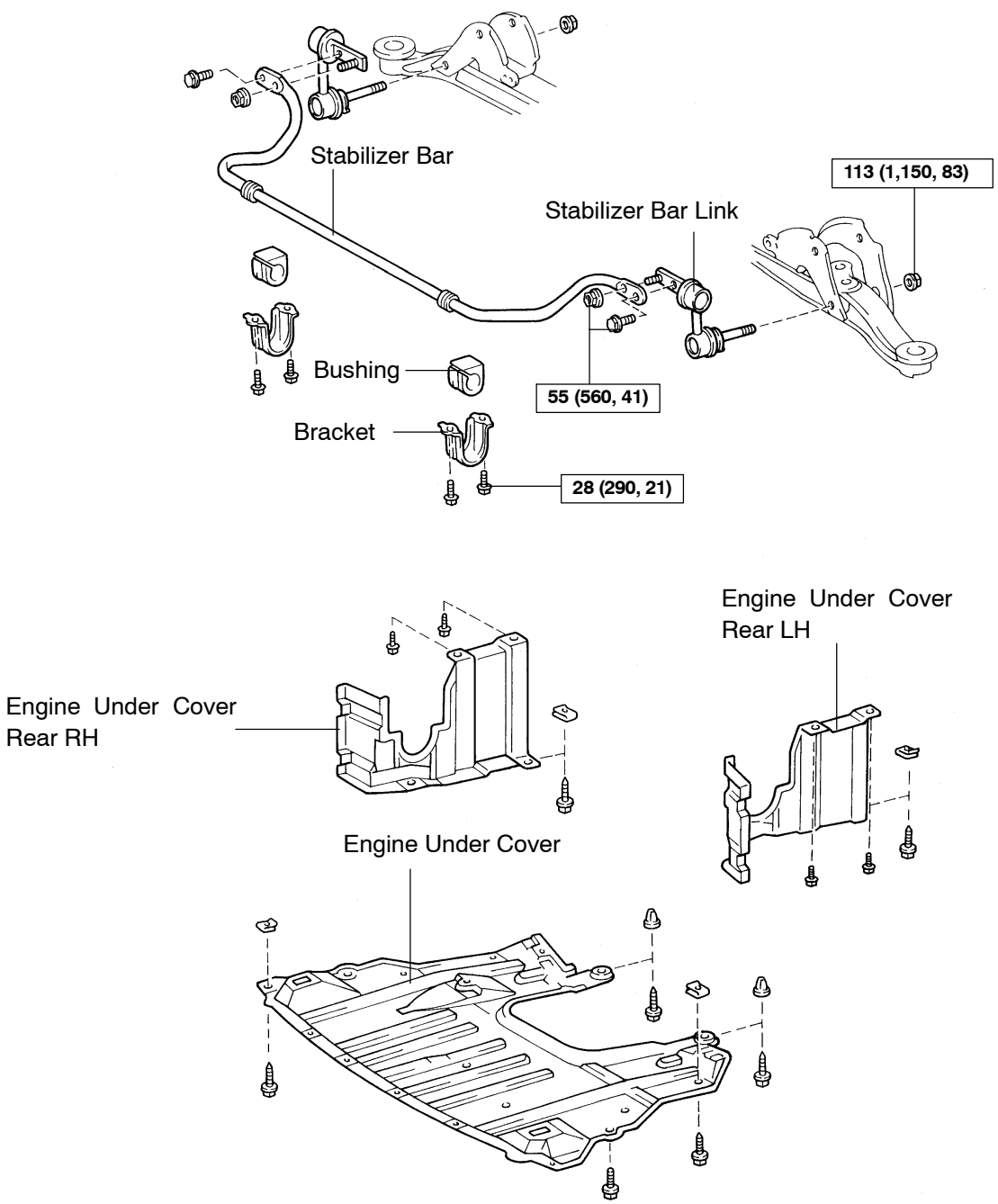
(c) Remove the 3 nuts and shock absorber and suspension support No.1 from the body.

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

FRONT STABILIZER BAR

COMPONENTS

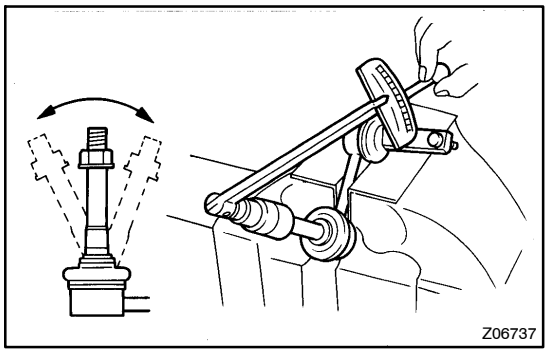
SA0RU–01



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

F02339

SA0RW–01



INSPECTION

INSPECT 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 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)

SA0RX–01

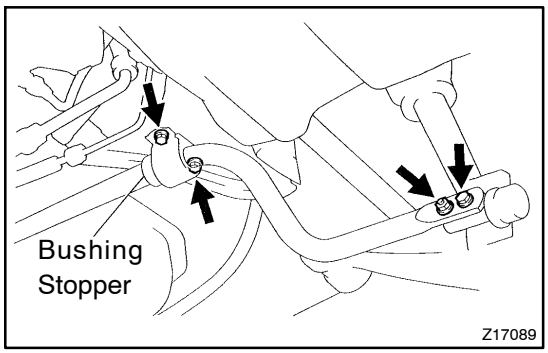
INSTALLATION

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

SA0RV–01

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 2 stabilizer bar brackets.
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.

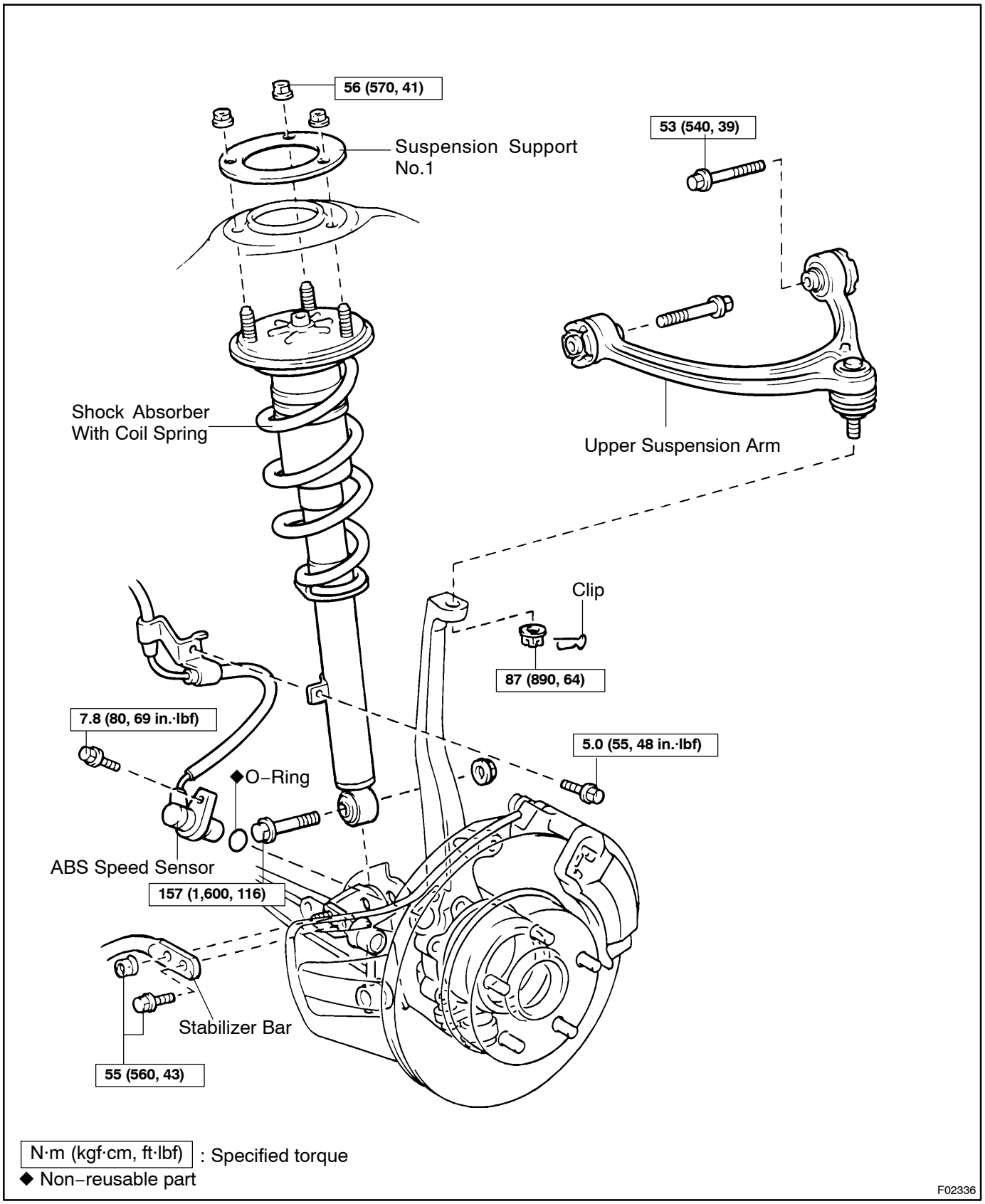
4. REMOVE BOTH STABILIZER BAR LINKS FROM BOTH LOWER SUSPENSION ARMS

Remove the 2 nuts and stabilizer bar links.
Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

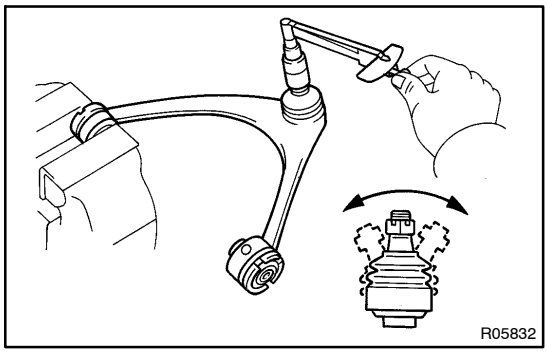
FRONT UPPER SUSPENSION ARM

COMPONENTS

SA0RI–03



SA0RK–01



INSPECTION

INSPECT 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)

SA0RL–01

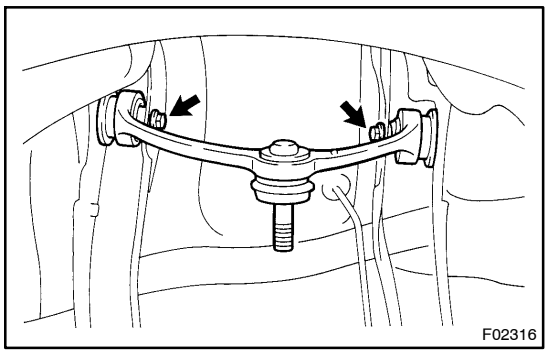
INSTALLATION

Installation is in the reverse order of removal (See page SA–26).
AFTER INSTALLATION, CHECK ABS SPEED SENSOR (See page DI–389) AND FRONT WHEEL ALIGNMENT (See page SA–4)

SA0RJ–01

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)



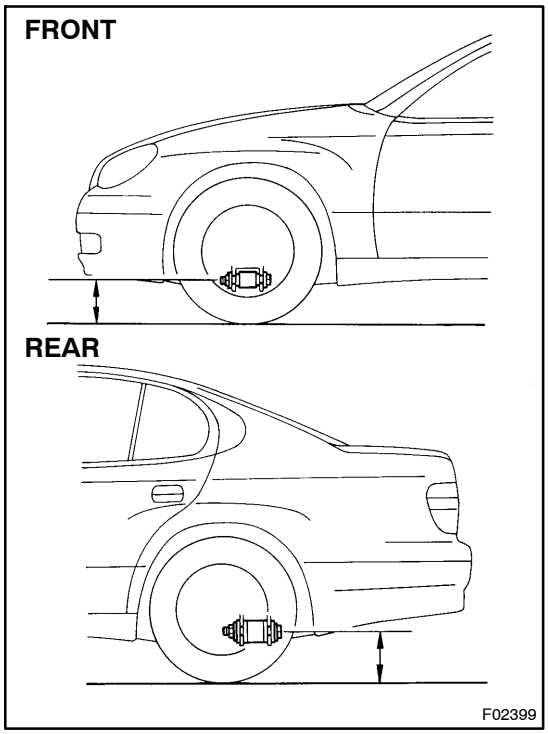
3. **REMOVE UPPER SUSPENSION ARM**

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.



FRONT WHEEL ALIGNMENT

SA0R3–01

INSPECTION

1. MEASURE VEHICLE HEIGHT

Tire size	Front*1 mm (in.)	Rear*2 mm (in.)
P215/60R16 94V	245 (9.63)	226 (8.90)
225/55R16 94V	240 (9.45)	221 (8.70)
235/45ZR17	238 (9.37)	219 (8.62)

***1: Front measuring point**

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

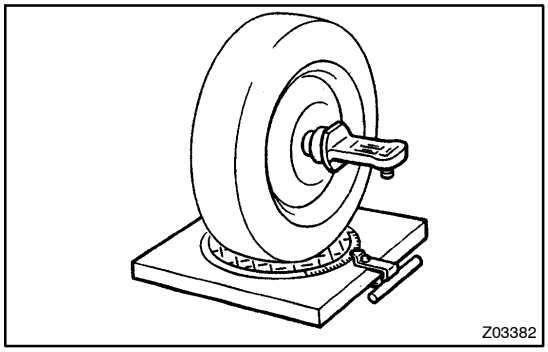
***2: Rear measuring point**

Measure 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.



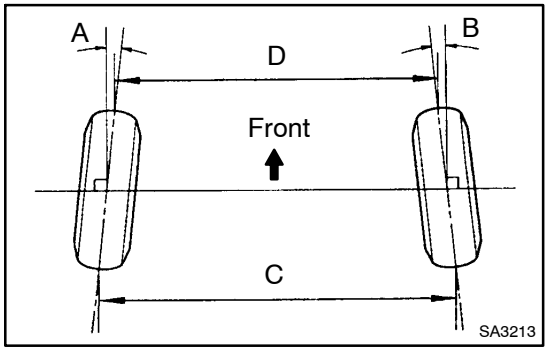
2. INSTALL CAMBER–CASTER–KINGPIN GAUGE ONTO WHEEL ALIGNMENT TESTER

Follow the specific instructions of the equipment manufacturer.

3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

Camber	–0°16' ± 30' (–0.27° ± 0.5°)
Left–right error	30' (0.5°) or less
Caster	7°33' ± 30' (7.55° ± 0.5°)
Left–right error	30' (0.5°) or less
Steering axis inclination	8°52' ± 30' (8.87° ± 0.5°)
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

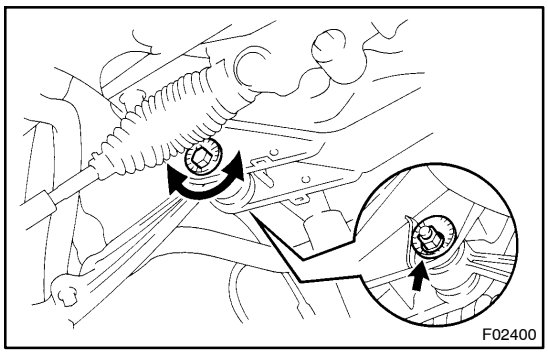
Toe–in (total)	A + B: 0°09' ± 12' (0.15° ± 0.2°)
	C – D: 1.5 ± 2 mm (0.06 ± 0.08 in.)

If the toe–in is not within the specification, adjust it at the tie rod end.

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.



(a) Loosen the camber adjusting cam nut of the lower suspension arm.

(b) Turn the camber adjusting cam of the lower suspension arm and adjust camber.

HINT:

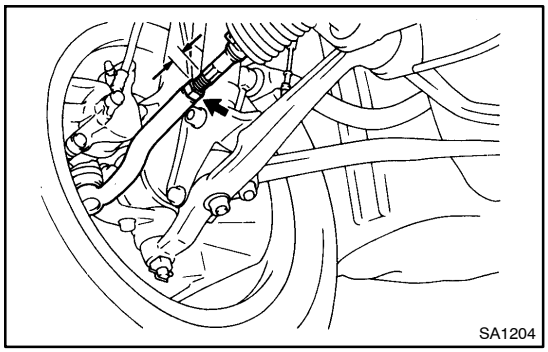
Camber changes about 5' (0.08°) with each graduation of the adjusting cam.

(c) 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

(a) Remove the boot clips.



(b) Loosen the tie rod end lock nuts.

(c) 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

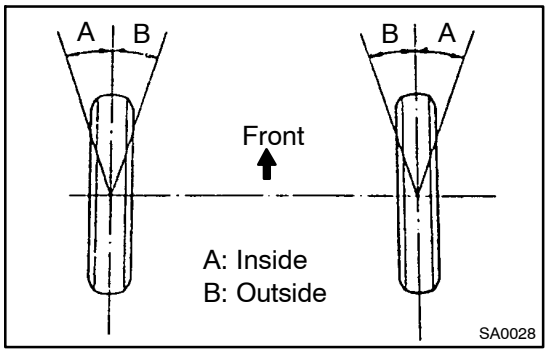
(d) Torque the tie rod end lock nuts.

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

(e) 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°05' 32.08°

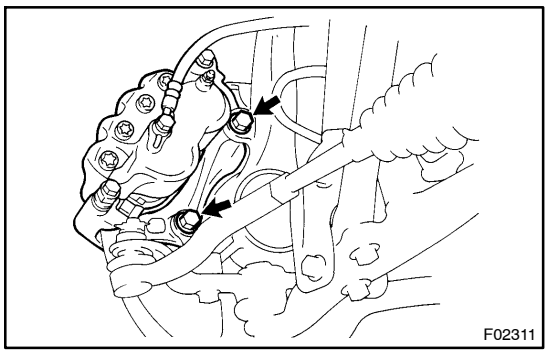
If the wheel angles differ from the standard of the specification, inspect the toe–in.

FRONT WHEEL HUB BOLT

SA0RA–01

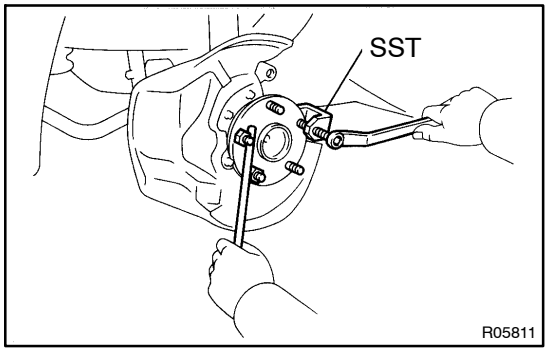
REPLACEMENT

1. REMOVE FRONT WHEEL



2. REMOVE BRAKE CALIPER AND DISC

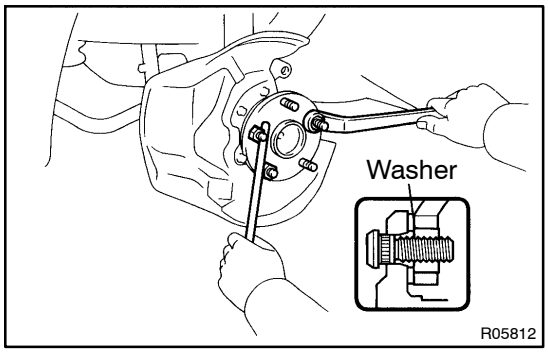
(a) Remove the 2 bolts and remove the brake caliper from the steering knuckle.
(b) Support the brake caliper securely.
(c) Remove the disc.



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 steering knuckle.

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

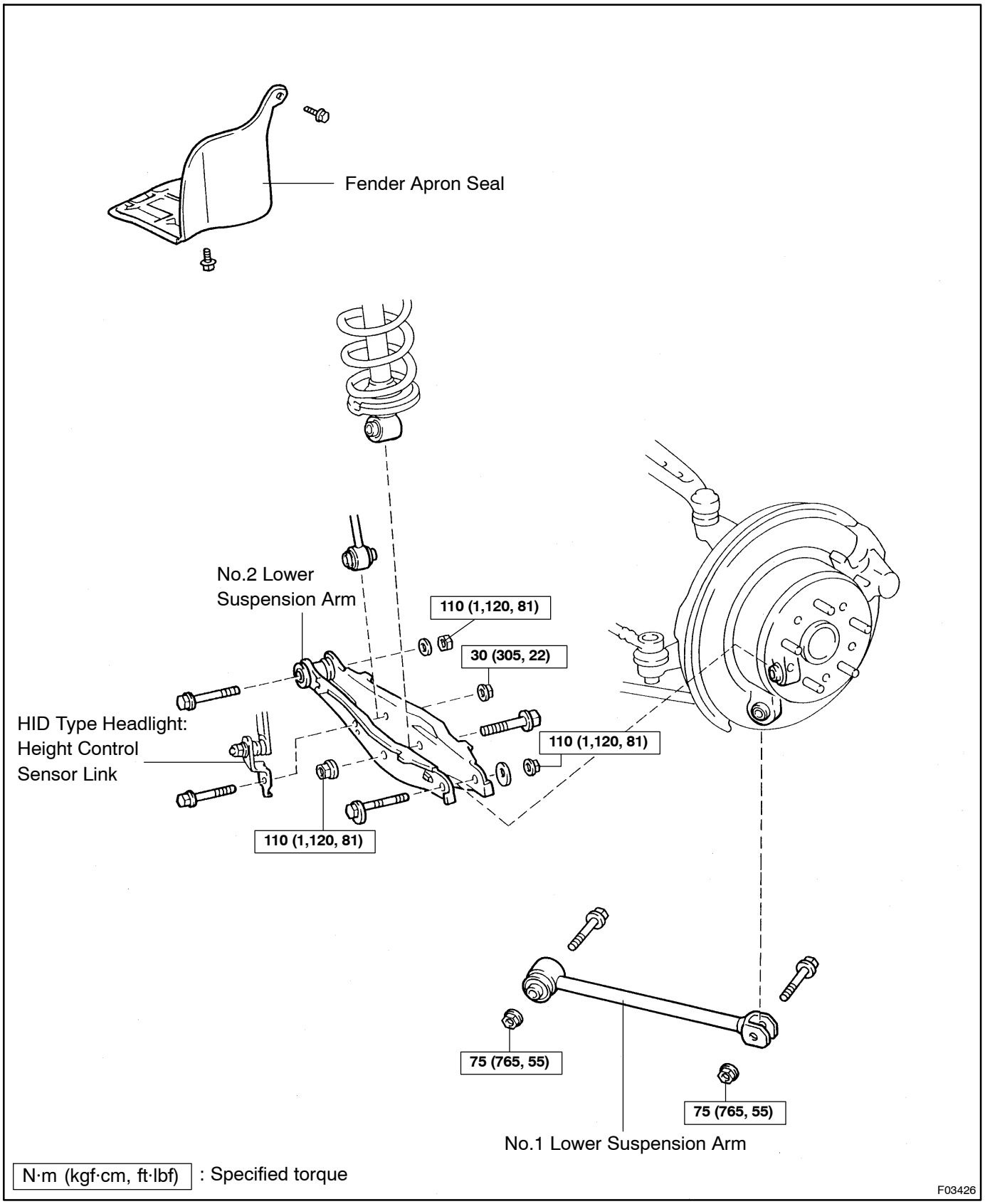
6. INSTALL FRONT WHEEL

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

REAR LOWER SUSPENSION ARM

SA0ST–01

COMPONENTS



SA0SV–01

INSTALLATION

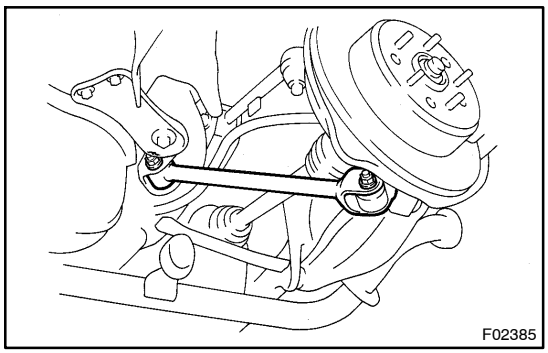
Installation is in the reverse order of removal (See page SA–98).
AFTER INSTALLATION, CHECK REAR WHEEL ALIGNMENT (See page SA–7)

SA0SU–01

REMOVAL

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

2. REMOVE REAR FENDER APRON SEAL


F02385

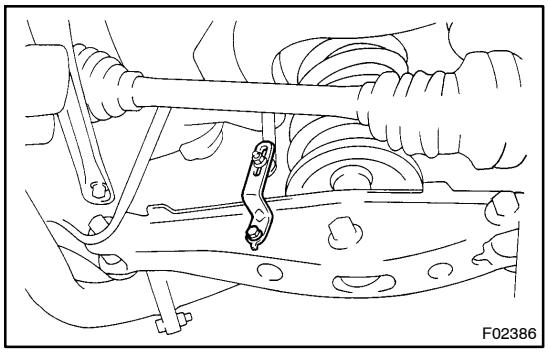
3. REMOVE NO.1 LOWER SUSPENSION ARM

Remove the 2 bolts, nuts, and No.1 lower suspension arm.
Torque: 75 N·m (765 kgf·cm, 55 ft·lbf)

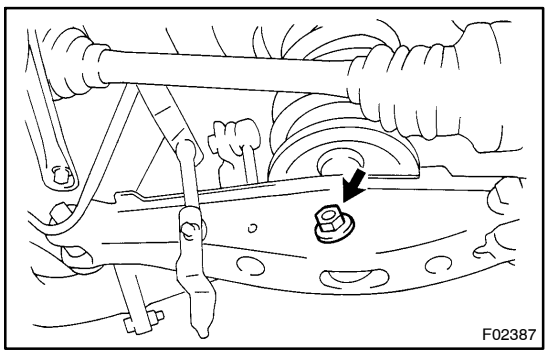
HINT:
At the time of installation, after stabilizing the suspension, torque the nuts.

4. 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)

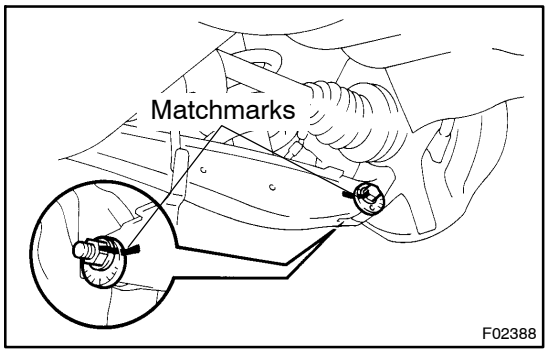

F02386

(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)


F02387

(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.



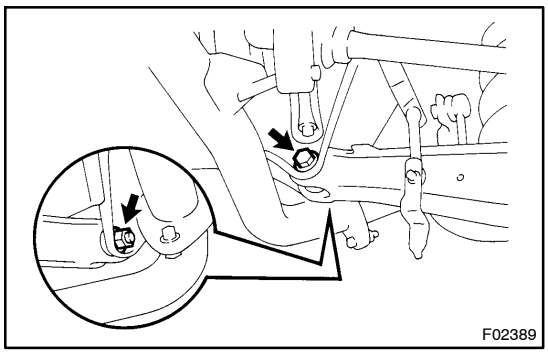
(d) Place matchmarks on the adjusting cam and No.2 lower suspension arm.

(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)

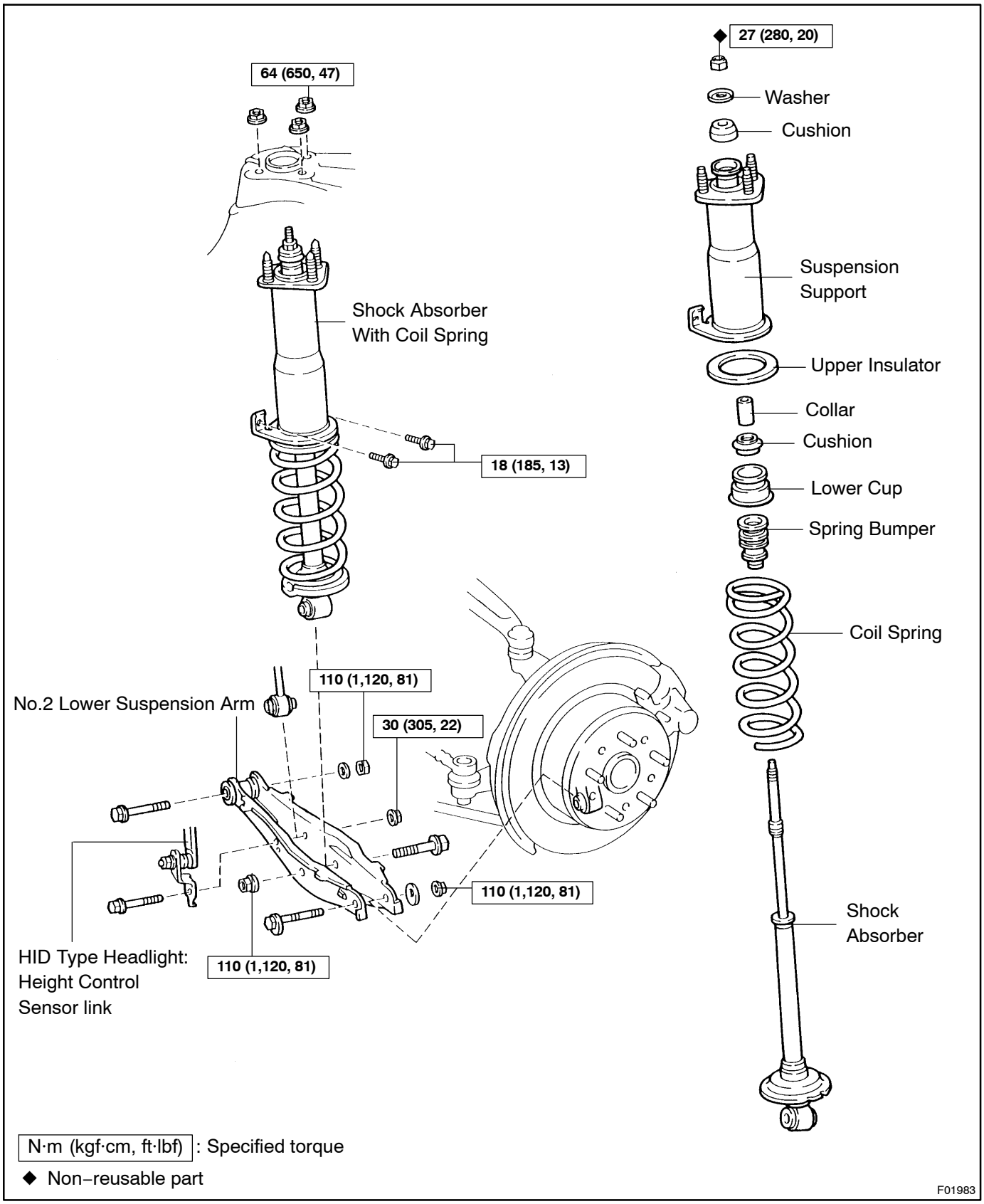
HINT:

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

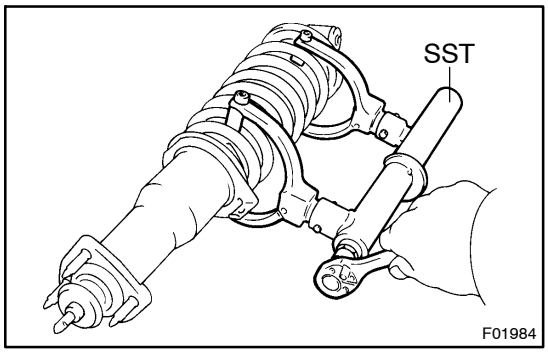
REAR SHOCK ABSORBER

COMPONENTS

SA0SI–01



SA0SK–01



DISASSEMBLY

REMOVE SUSPENSION SUPPORT AND COIL SPRING

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

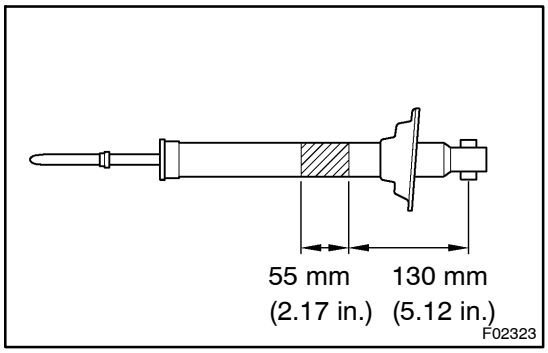
NOTICE:

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

SA0SM–01



DISPOSAL

1. FULLY EXTEND SHOCK ABSORBER ROD

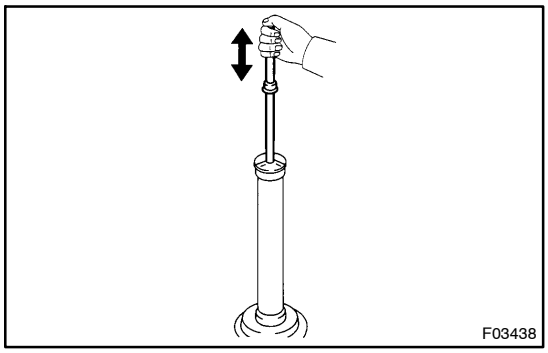
2. DRILL HOLE TO DISCHARGE GAS FROM CYLINDER

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.

SA0SL–01



INSPECTION

INSPECT SHOCK ABSORBER

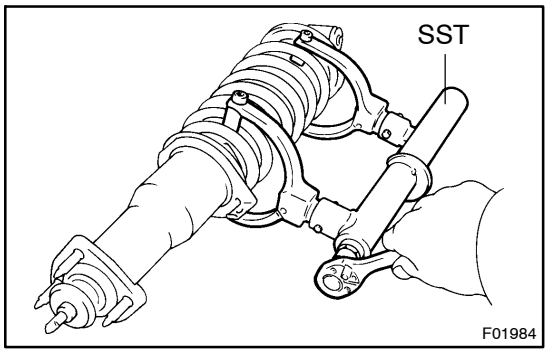
Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual operation sound.

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

NOTICE:

When discarding the shock absorber, see DISPOSAL on page SA–90.

SA0SN–01



REASSEMBLY

INSTALL SUSPENSION SUPPORT AND COIL SPRING

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

NOTICE:

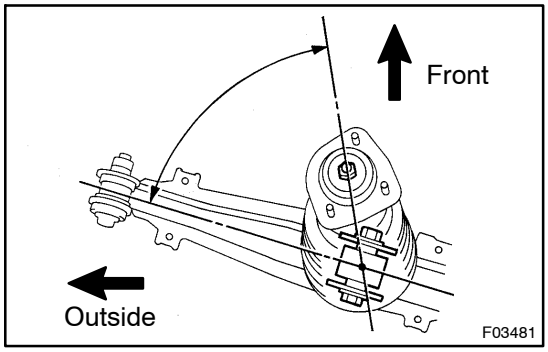
Do not use an impact wrench. It will damage the SST.

(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

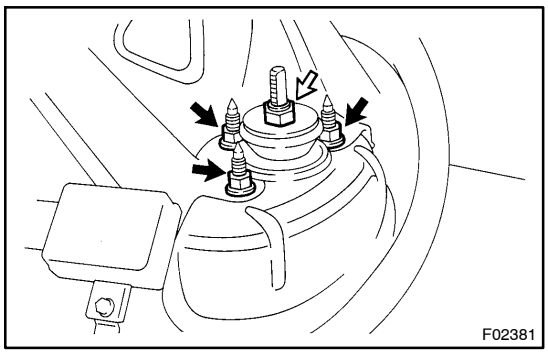
HINT:

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

SA0SJ–01

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 NO.2 (See page SA–98)**



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

(a) Loosen the nut in the center of the suspension support.

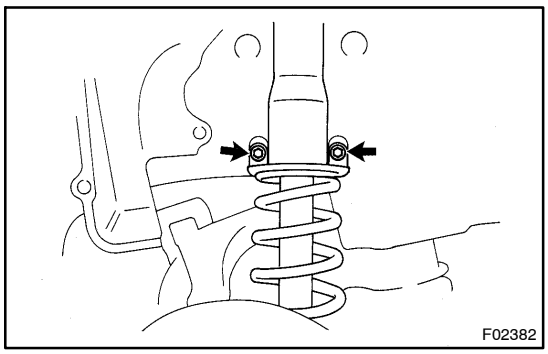
NOTICE:

Do not remove it.

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)



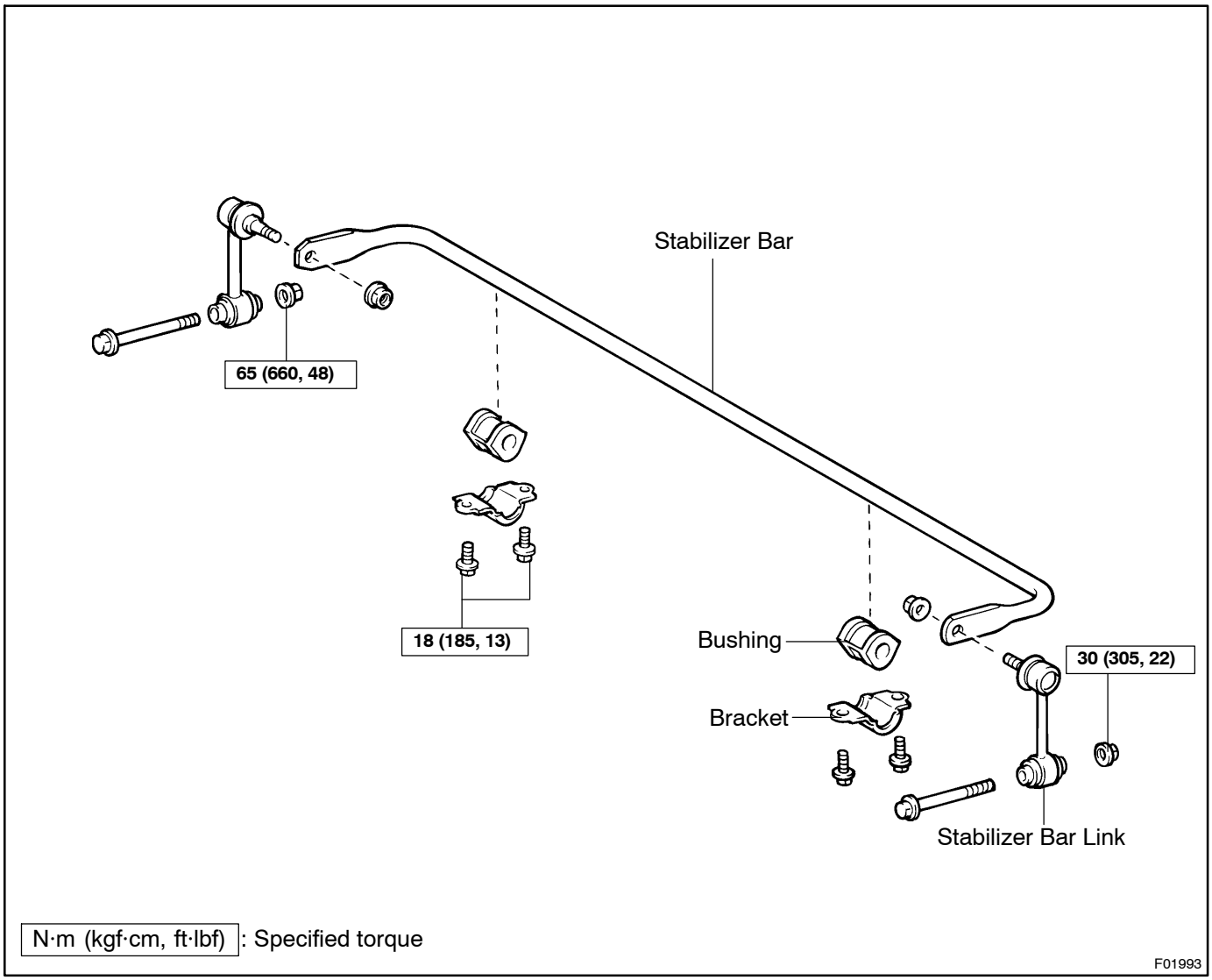
(c) Remove the 2 bolts and shock absorber with the coil spring.

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

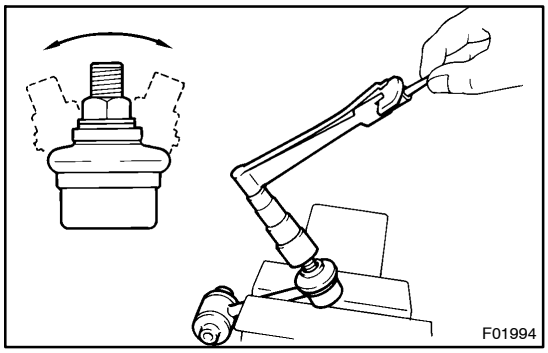
REAR STABILIZER BAR

COMPONENTS

SA0T0-01



SA0T2–01



INSPECTION

INSPECT 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)

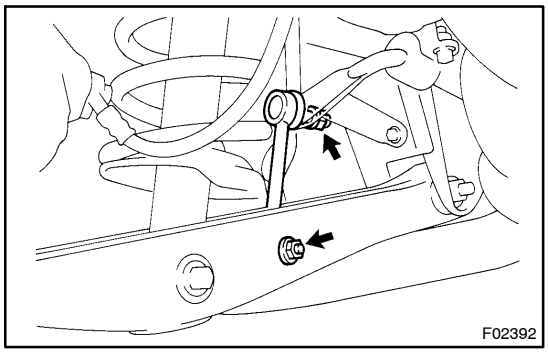
SA0T3–01

INSTALLATION

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

SA0T1–01

REMOVAL

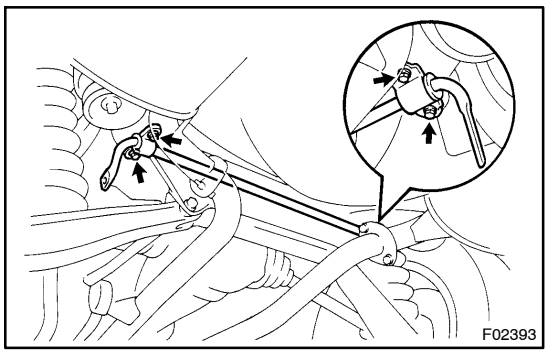


1. REMOVE BOTH STABILIZER BAR LINKS

(a) Remove the bolt and nut.
Torque: 30 N·m (305 kgf·cm, 22 ft·lbf)

(b) Remove the nut and stabilizer bar link.
Torque: 65 N·m (660 kgf·cm, 48 ft·lbf)

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



2. 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)

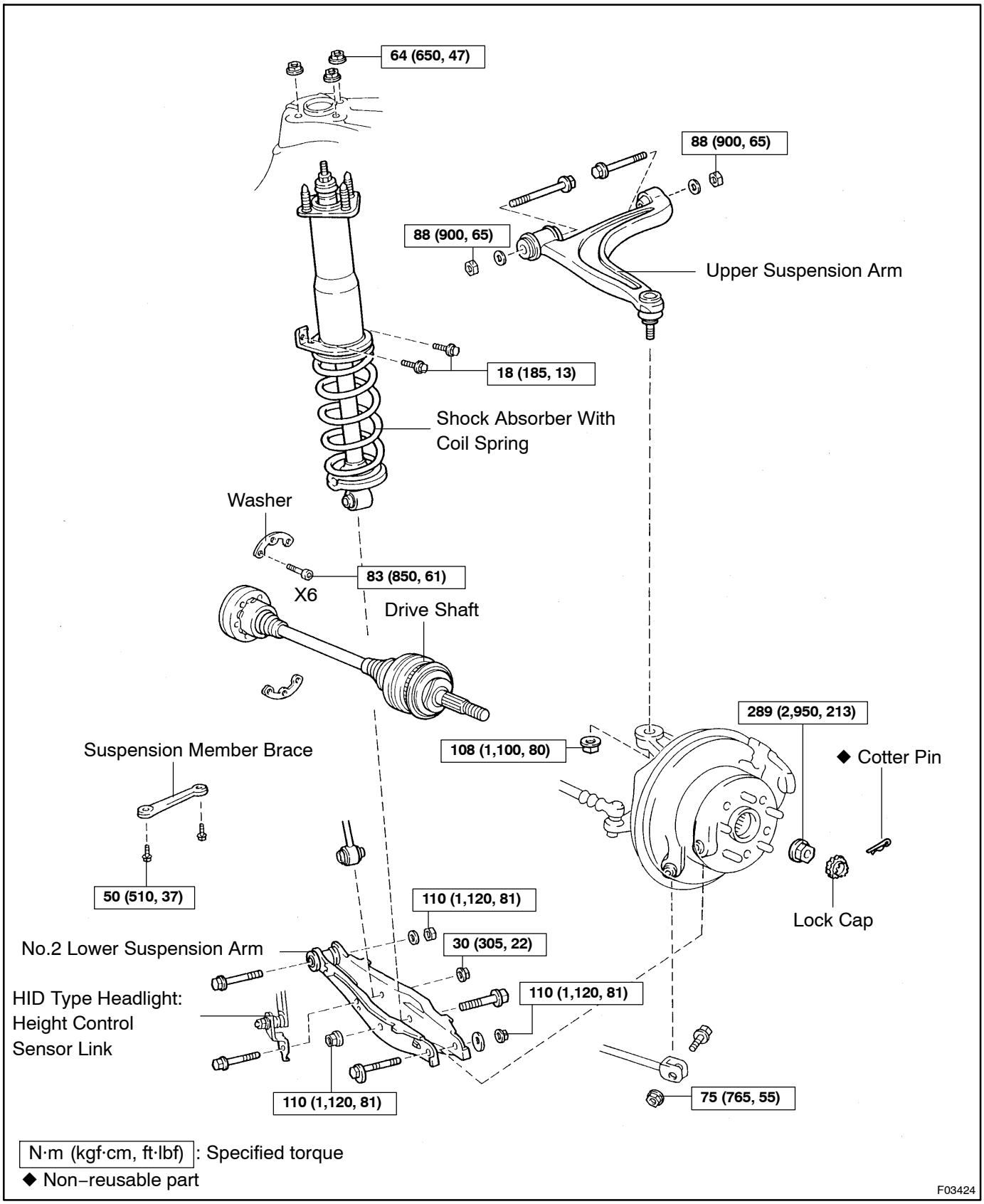
(b) Remove the stabilizer bar.

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

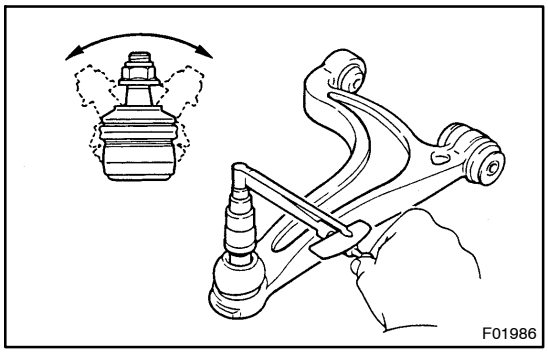
REAR UPPER SUSPENSION ARM

COMPONENTS

SA0SP–01



SA0SR–01



INSPECTION

INSPECT 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)

SA0SS–01

INSTALLATION

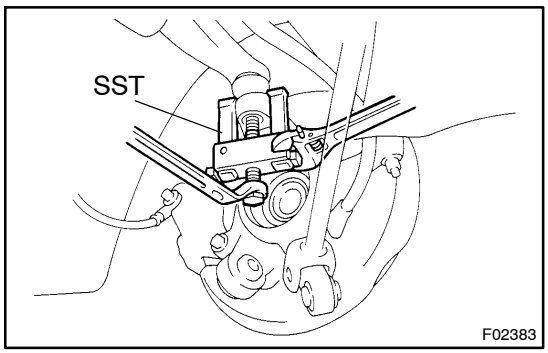
Installation is in the reverse order of removal (See page SA–94).
AFTER INSTALLATION, CHECK ABS SPEED SIGNAL (See page DI–389) AND REAR WHEEL ALIGNMENT (See page SA–7)

SA0SQ–01

REMOVAL

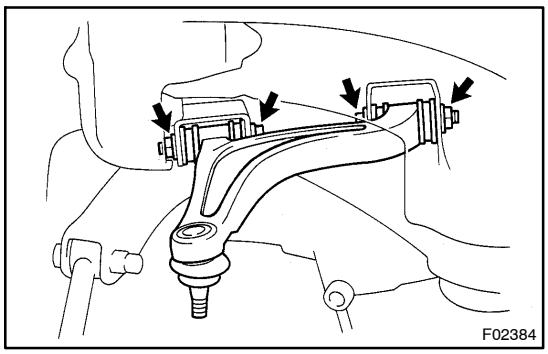
1. REMOVE REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. REMOVE DRIVE SHAFT (See page SA–52)
3. REMOVE SHOCK ABSORBER (See page SA–87)
4. REMOVE UPPER SUSPENSION ARM

(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.

REAR WHEEL ALIGNMENT

SA0R4–01

INSPECTION

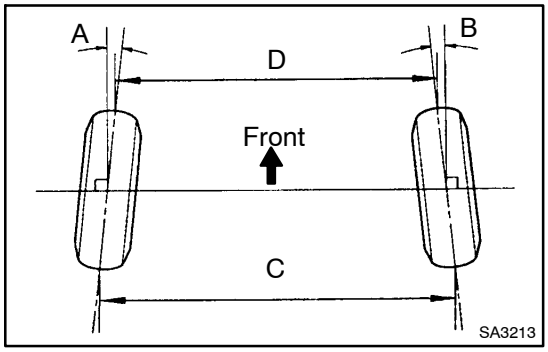
1. MEASURE VEHICLE HEIGHT (See page SA–4)

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

Follow the specific instructions of the equipment manufacturer.

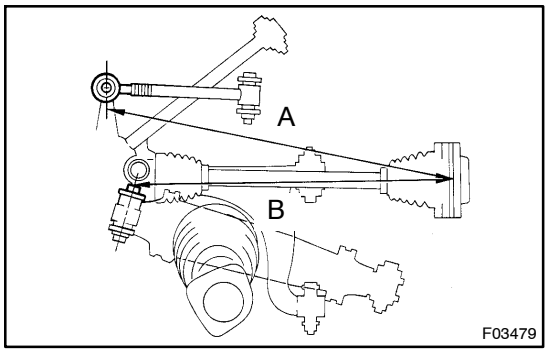
3. INSPECT CAMBER

Camber	–0°47' ± 30' (–0.78° ± 0.5°)
Left–right error	30' (0.5°) or less



4. INSPECT TOE–IN

Toe–in (total)	A + B: 0°08' ± 12' (0.13° ± 0.2°) C – D: 1.4 ± 2 mm (0.056 ± 0.08 in.)



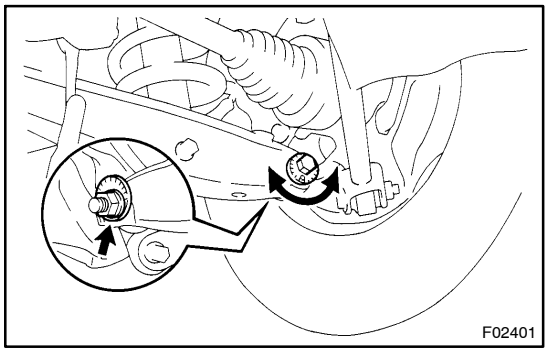
5. ADJUST CAMBER AND TOE–IN

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

Length: A – B = 4.0 mm (0.16 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 mm (0.16 in.).

(b) Measure the camber and toe–in.



(c) Adjust the camber.

(1) Loosen the camber adjusting cam nut of lower suspension arm No.2.

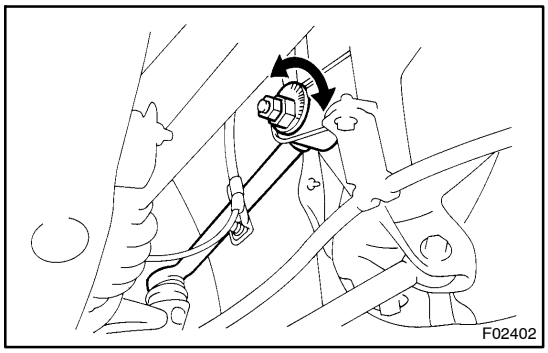
(2) Turn the camber adjusting cam of lower suspension arm No.2 and adjust camber.

HINT:

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

(3) Torque the camber adjusting cam nut.

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



(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.

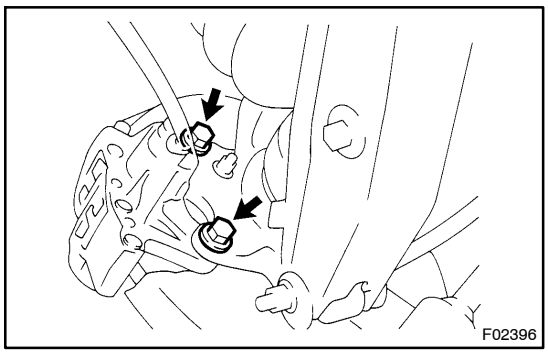
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

REAR WHEEL HUB BOLT

SA0S3–01

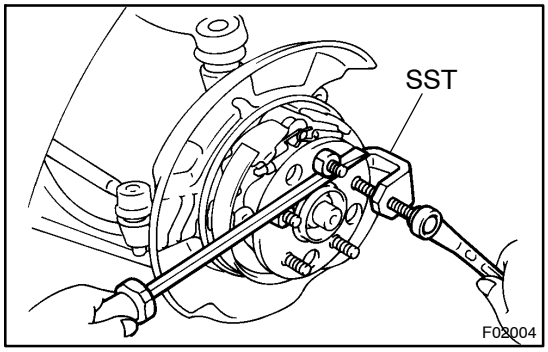
REPLACEMENT

1. REMOVE REAR WHEEL



2. REMOVE BRAKE CALIPER AND DISC

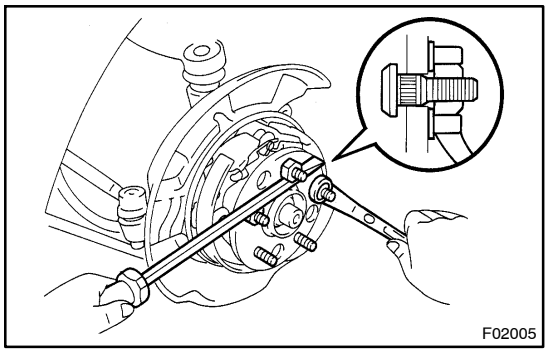
(a) Remove the 2 bolts and remove the brake caliper from the axle carrier.
(b) Support the brake caliper securely.
(c) Remove the disc.



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)

TIRE AND WHEEL

SA0R2–01

INSPECTION

1. INSPECT TIRE

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

Cold tire inflation pressure:

(GS 400)

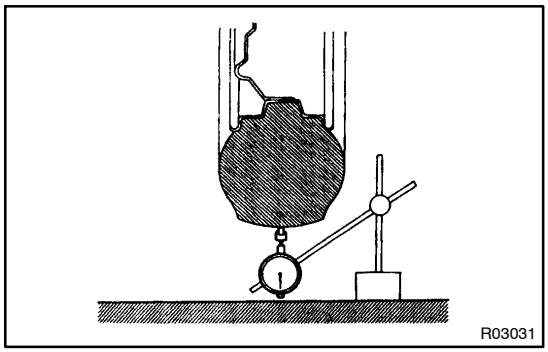
Tire size	Front kPa (kgf/cm^2 or bar, psi)	Rear kPa (kgf/cm^2 or bar, psi)
225/55R16 94V	*1220 (2.2, 32) *2290 (2.9, 42)	*1220 (2.2, 32) *2290 (2.9, 42)
235/45ZR17	*1230 (2.3, 33) *2300 (3.0, 44)	*1230 (2.3, 33) *2300 (3.0, 44)

(GS 300)

Tire size	Front kPa (kgf/cm^2 or bar, psi)	Rear kPa (kgf/cm^2 or bar, psi)
P215/60R16 94V	*1210 (2.1, 30) *2300 (3.0, 44)	*1210 (2.1, 30) *2300 (3.0, 44)
225/55R16 94V	*1220 (2.2, 32) *2300 (3.0, 44)	*1220 (2.2, 32) *2300 (3.0, 44)

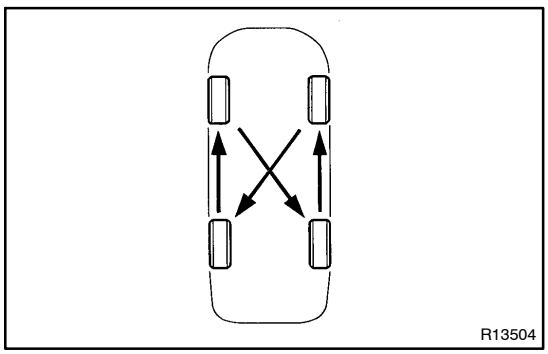
*1: For driving under 160 km/h (100 mph)

*2: For driving at 160 km/h (100 mph) or over



(b) Check the tire runout.

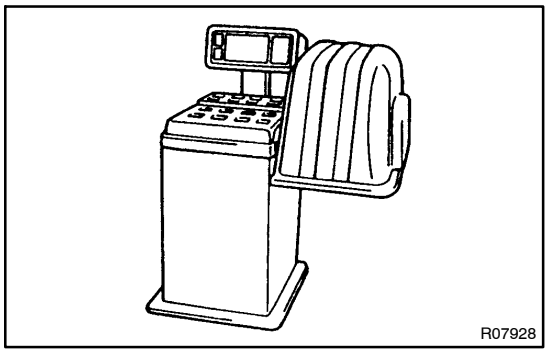
Tire runout: 1.4 mm (0.055 in.) or less



2. ROTATING TIRES

HINT:

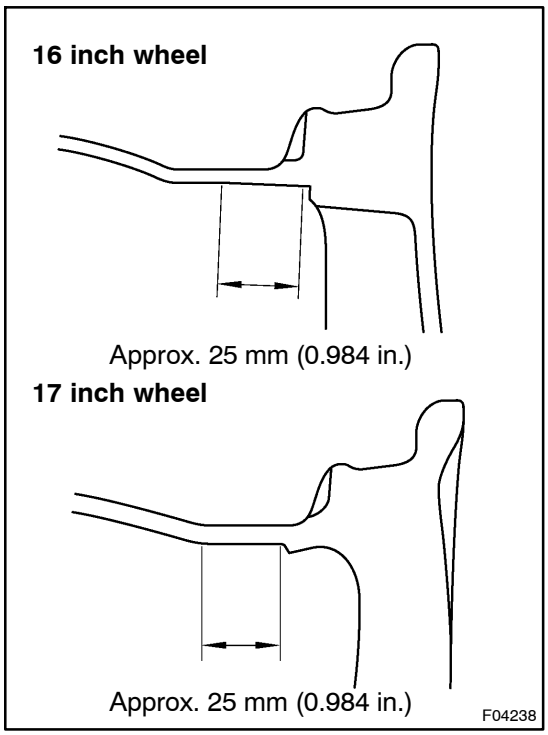
See the illustration for where to rotate each tire.



3. INSPECT WHEEL BALANCE

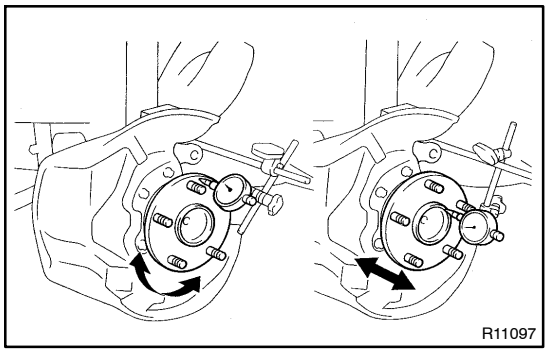
(a) Check and adjust the off–the–car balance.

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



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.**



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)

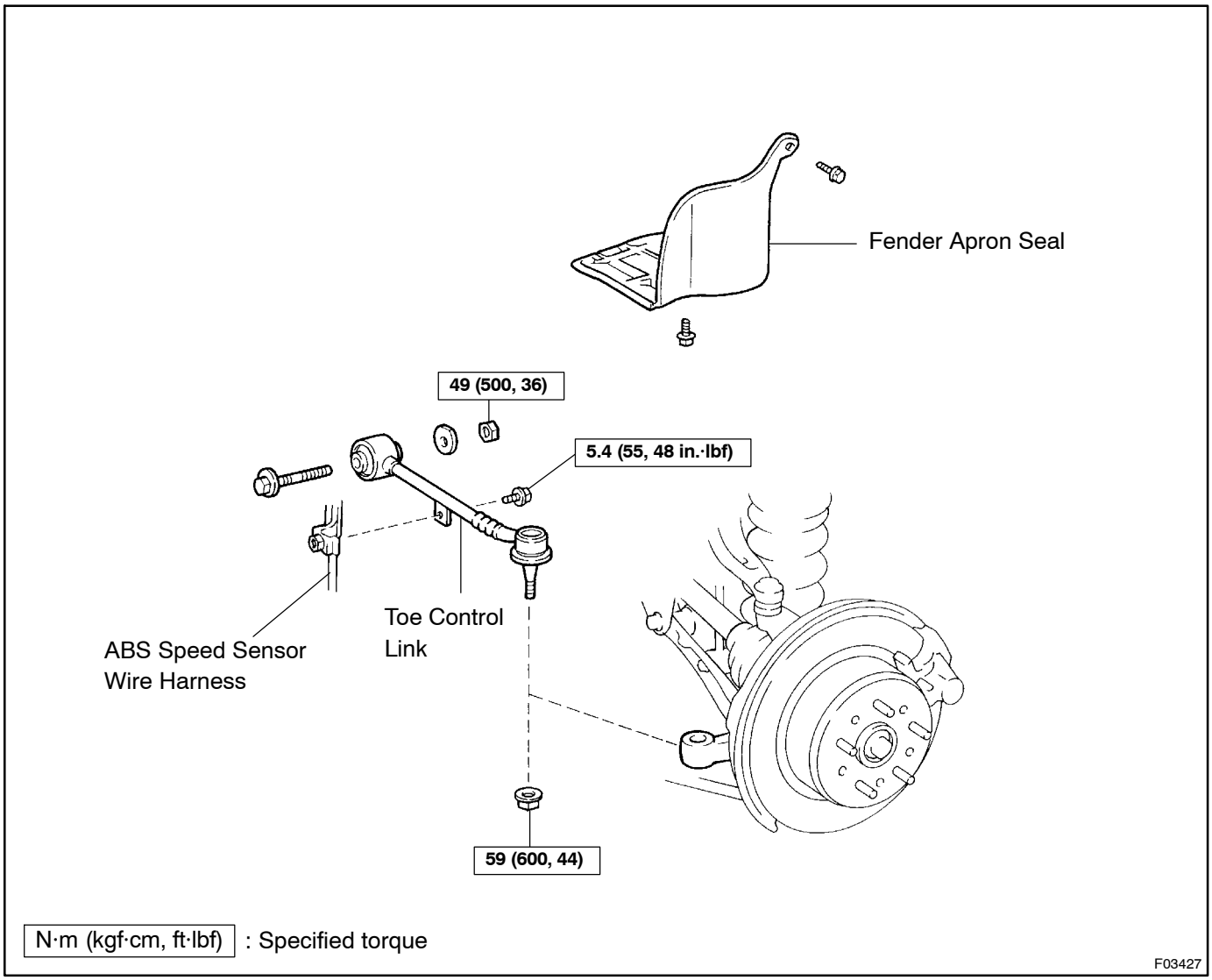
8. CHECK SHOCK ABSORBER WORKS PROPERLY

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

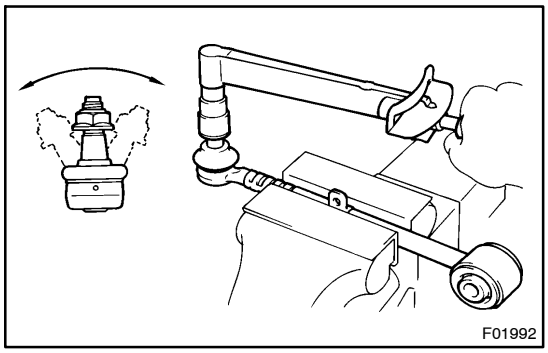
TOE CONTROL LINK

COMPONENTS

SA0SW–01



SA0SY–01



INSPECTION

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

SA0SZ–01

INSTALLATION

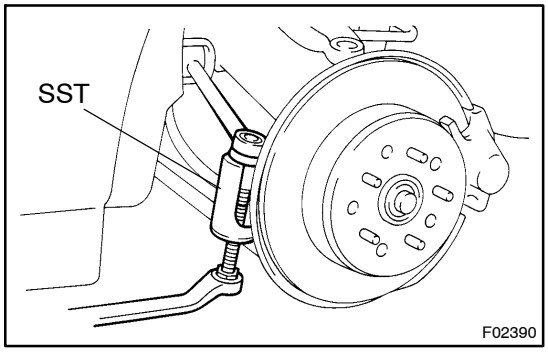
Installation is in the reverse order of removal (See page SA–102).
AFTER INSTALLATION, CHECK REAR WHEEL ALIGNMENT (See page SA–7)

SA0SX–01

REMOVAL

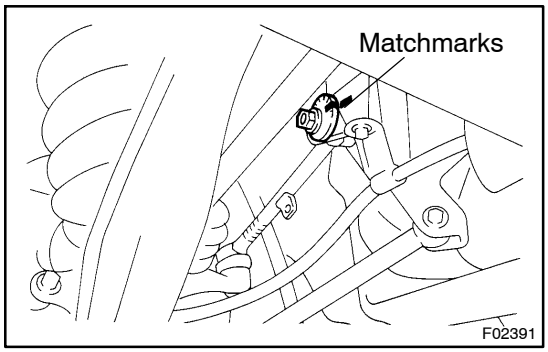
1. REMOVE REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. REMOVE REAR FENDER APRON SEAL
3. DISCONNECT ABS SPEED SENSOR WIRE HARNESS FROM TOE CONTROL LINK
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)
4. REMOVE TOE CONTROL LINK
(a) Remove the nut.
Torque: 59 N·m (600 kgf·cm, 44 ft·lbf)

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.1 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.

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

SA0R1–03

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

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