

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

SA075-01

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	1. Tires (Worn or improperly inflated) 2. Wheel alignment (Incorrect) 3. Steering linkage (Loosen or worn) 4. Hub bearings (Loosen or worn) 5. Steering gear (Out of adjustment or broken) 6. Suspension parts (Worn out)	SA-2 SA-4 – SA-10 SA-52 SA-56 – –
Bottoming	1. Vehicle (Overloaded) 2. Spring (Weak) 3. Shock absorber (Worn out)	– SA-32 SA-95 SA-35 SA-92
Sways/pitches	1. Tires (Worn or improperly inflated) 2. Stabilizer bar (Bent or broken) 3. Shock absorber (Worn out)	SA-2 SA-49 SA-35 SA-92
Front wheel shimmy	1. Tires (Worn or improperly inflated) 2. Wheels (Out of balance) 3. Shock absorber (Worn out) 4. Wheel alignment (Incorrect) 5. Ball joints (Worn) 6. Hub bearings (Loosen or worn) 7. Steering linkage (Loosen or worn) 8. Steering gear (Out of adjustment or broken)	SA-2 SA-2 SA-35 SA-2 SA-45 SA-10 – –
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-35 SA-92
Noise in rear differential	1. Oil level (Low or wrong grade) 2. Excessive backlash between pinion and ring gear 3. Ring, pinion or side gears (Worn or chipped) 4. Pinion shaft bearing (Worn) 5. Side bearing (Worn) 6. Differential bearing (Loosen or worn)	SA-69 SA-79 SA-79 SA-79 SA-79 SA-79
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-69 SA-79 SA-79 SA-74 SA-79

TIRE AND WHEEL INSPECTION

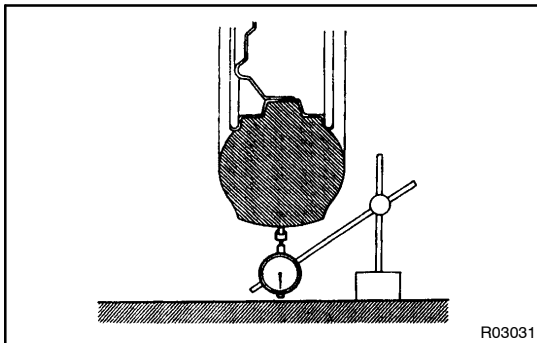
SA076-02

1. INSPECT TIRE

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

Cold tire inflation pressure

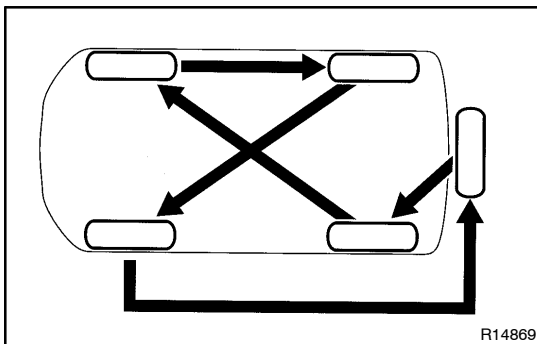
Tire size	Front kPa (kgf/cm ² or bar, psi)	Rear kPa (kgf/cm ² or bar, psi)
3 Door vehicle 215/70R16 99S	180 (1.8, 26)	180 (1.8, 26)
5 Door vehicle 215/70R16 99S	190 (1.9, 28)	180 (1.8, 26)



R03031

- (b) Check the tire runout.

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

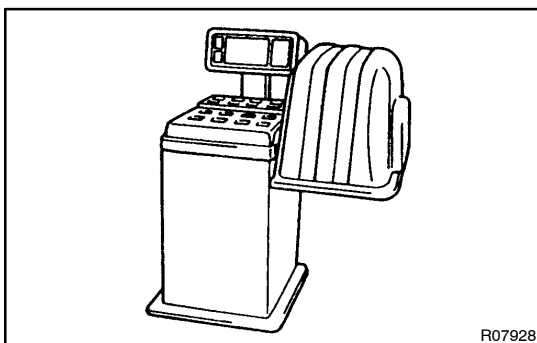


R14869

2. ROTATING TIRES

HINT:

See the illustration for where to rotate each tire.

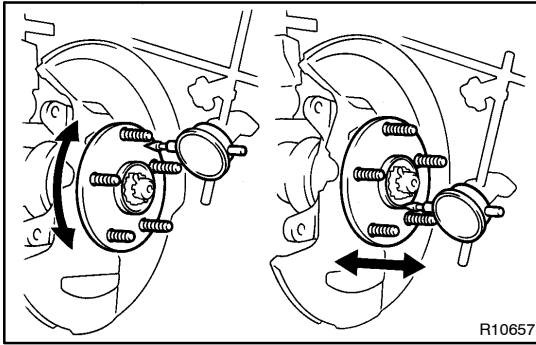


R07928

3. INSPECT WHEEL BALANCE

- (a) Check and adjust the Off-the-car balance.
(b) If necessary, check and adjust the On-the-car balance.

Imbalance after adjustment: 13.0 g (0.029 lb) or less

**4. CHECK WHEEL BEARING LOOSENESS**

- (a) Check the backlash in the bearing shaft direction.

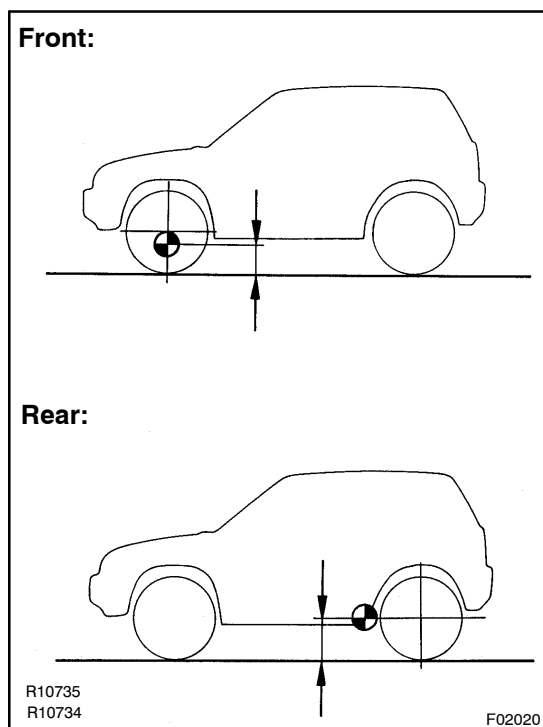
Maximum: 0.05 mm (0.0020 in.)

- (b) Check the axle hub deviation.

Maximum: 0.07 mm (0.0028 in.)

5. CHECK FRONT SUSPENSION FOR LOOSENESS**6. CHECK STEERING LINKAGE FOR LOOSENESS****7. CHECK BALL JOINT FOR LOOSENESS****8. CHECK SHOCK ABSORBER WORKS PROPERLY**

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



FRONT WHEEL ALIGNMENT INSPECTION

SA077-05

1. MEASURE VEHICLE HEIGHT

Tire size	Front*1 mm (in.)	Rear*2 mm (in.)
215/70R16 (2WD)	227 (8.94)	353 (13.90)
215/70R16 (4WD)	227 (8.94)	360 (14.17)

*1: Front measuring point:

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

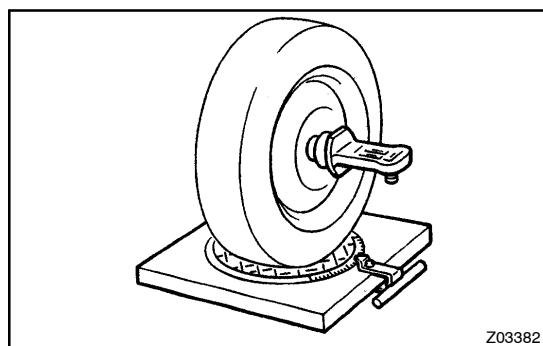
*2: Rear measuring point:

Measure from the ground to the center of the body side No.1 suspension arm mounting bolt.

NOTICE:

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

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



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

Follow the specific instructions of the equipment manufacturer.

3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

Tire size: 215/70R16

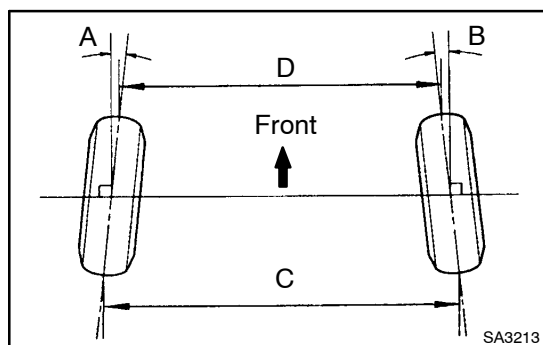
	2WD	4WD
Camber	$-0^{\circ}20' \pm 45'$ ($-0.33^{\circ} \pm 0.75^{\circ}$)	$-0^{\circ}15' \pm 45'$ ($-0.25^{\circ} \pm 0.75^{\circ}$)
Left-right error	45' (0.75°) or less	45' (0.75°) or less
Caster	$1^{\circ}25' \pm 45'$ ($1.42^{\circ} \pm 0.75^{\circ}$)	$1^{\circ}20' \pm 45'$ ($1.33^{\circ} \pm 0.75^{\circ}$)
Left-right error	45' (0.75°) or less	45' (0.75°) or less
Steering axis inclination	$11^{\circ}00' \pm 45'$ ($11^{\circ} \pm 0.75^{\circ}$)	$10^{\circ}45' \pm 45'$ ($10.75^{\circ} \pm 0.75^{\circ}$)
Left-right error	45' (0.75°) or less	45' (0.75°) or less

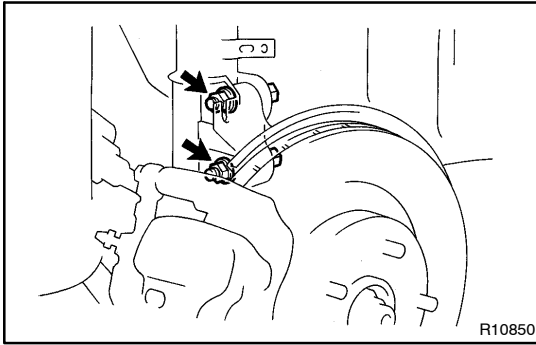
If the caster and steering axis inclination are not within the specification, after the camber has correctly adjusted, recheck the suspension parts for damaged and/or worn out parts.

4. INSPECT TOE-IN

Toe-in (total)	A + B: $0^{\circ} \pm 0^{\circ}10'$ ($0^{\circ} \pm 0.17^{\circ}$) C - D: 0 ± 2 mm (0 ± 0.08 in.)
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If the toe-in is not within the specification, adjust it by the tie rod end.



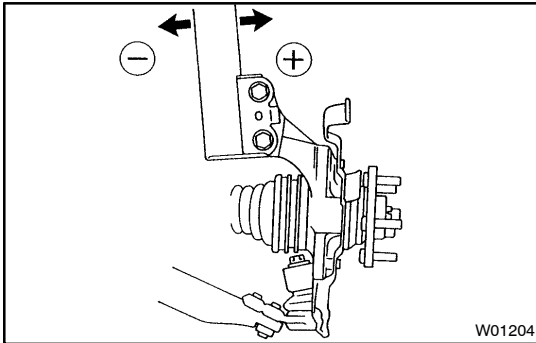


5. ADJUST CAMBER

NOTICE:

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

- Remove the front wheels.
- Remove the 2 nuts on the lower side of the shock absorber.
- Coat the threads of the nuts with engine oil.
- Temporarily install the 2 nuts.



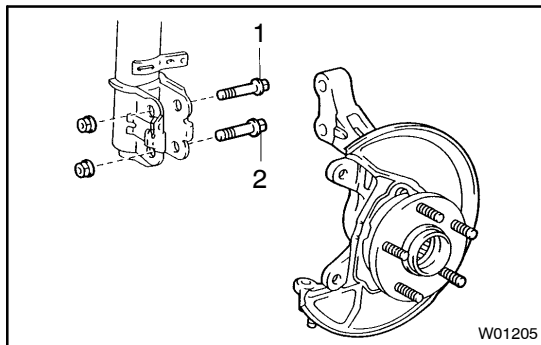
- Adjust the camber by pushing or pulling the lower side of the shock adjustment is required.
- Tighten the 2nuts.
Torque: 158 N·m (1,610 kgf·cm, 117 ft.lbf)
- Install the front wheels.
Torque: 103 N·m (1,050 kgf·cm, 76 ft.lbf)
- Check the camber.

HINT:

- Try to adjust the camber to the center value.
- Adjusting value for the set bolts is 6' – 30' (0.1° – 0.5°).

If the camber is not within the specification, using the table below, estimate for how much additional camber adjustment will be required, and select the camber adjusting bolt.

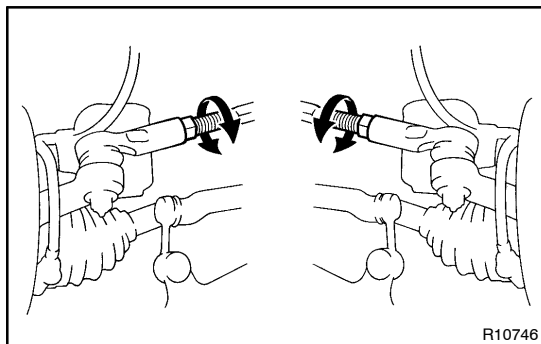
Bolt Adjusting Value	Set Bolt		Adjusting Bolt			
	Original		OD=13.9 mm	OD=13.3 mm	OD=12.4 mm	
			1 Dot	2 Dots	3 Dots	
15'	●			●		
30'	●				●	
45'	●					●
1°00'			●			●
1°15'				●		●
1°30'					●	●



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

HINT:

When exchanging the 2 bolts, exchange 1 bolt for each time.



6. ADJUST TOE-IN

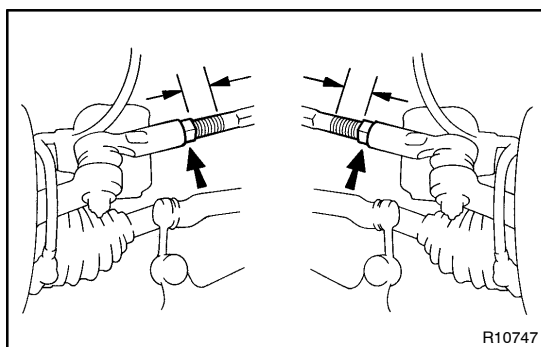
- Remove the boot clamps.
- Loosen the tie rod end lock nuts.
- Turn the left and right rack ends an equal amount to adjust the toe-in.

HINT:

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

Tie rod end length difference:

1.5 mm (0.059 in.) or less



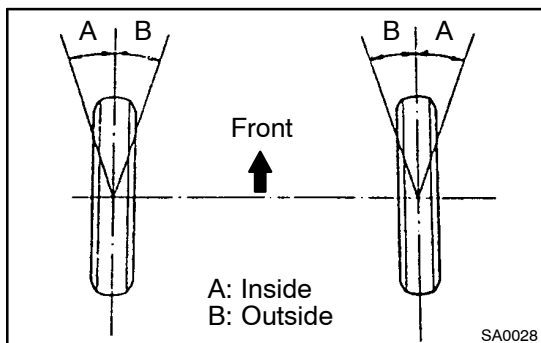
- (d) Torque the tie rod end lock nuts.

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

- (e) Place the boot on the seat and install the clamp.

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	$33^{\circ}15' \pm 2.0^{\circ}$ ($33.25^{\circ} \pm 2.0^{\circ}$)
Outside wheel: Reference	$28^{\circ}05'$ (28.08°)

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

REAR WHEEL ALIGNMENT INSPECTION

SA078-05

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

NOTICE:

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

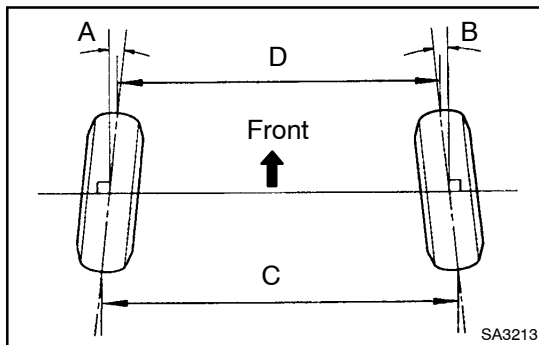
2. INSTALL CAMBER-CASTER-KINGPIN GAUGE OR ONTO WHEEL ALIGNMENT TESTER

Follow the specifications of the equipment manufacturer.

3. INSPECT CAMBER

	2WD	4WD
Camber	$-1^{\circ}20' \pm 45'$ ($-1.33^{\circ} \pm 0.75^{\circ}$)	$-1^{\circ}05' \pm 45'$ ($-1.08^{\circ} \pm 0.75^{\circ}$)
Left-right error	45' (0.75°) or less	45' (0.75°) or less

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



4. INSPECT TOE-IN

2WD

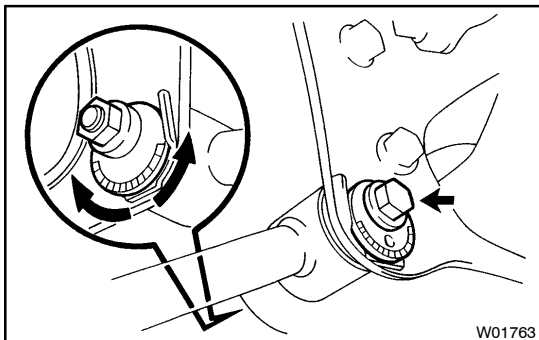
Toe-in (total)	A + B: $0^{\circ}20' \pm 0'10'$ ($0.33^{\circ} \pm 0.17^{\circ}$) C - D: 4 ± 2 mm (0.16 ± 0.08 in.)
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4WD

Toe-in (total)	A + B: $0^{\circ}15' \pm 0'10'$ ($0.25^{\circ} \pm 0.17^{\circ}$) C - D: 3 ± 2 mm (0.12 ± 0.08 in.)
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If the toe-in is not within the specification, adjust it by the toe-adjust cam.

If the toe-in is not within the specification, adjust it by the toe-adjust cam.



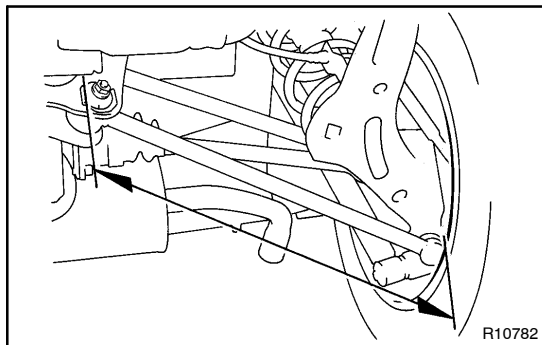
5. ADJUST CAMBER

- Loosen the camber adjust cam lock bolt.
- Turn the camber adjust cam to adjust camber.

HINT:

- Try to adjust the camber to the center value.
 - The camber will change about $16'$ (0.27°) with each graduation of the cam.
- Torque the lock bolt.

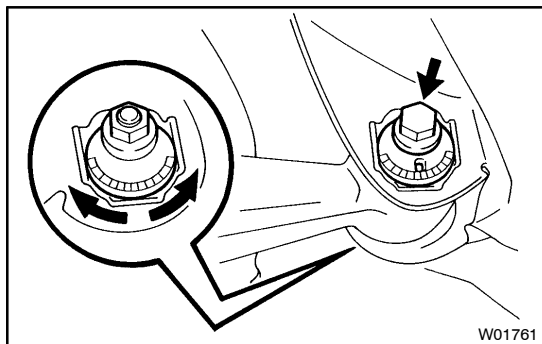
Torque: 113 N·m (1,150 kgf·cm, 83 ft·lbf)

**6. ADJUST TOE-IN**

- (a) Measure the distance between each wheel disc and corner of the cam bracket, then confirm that both are the same.

Left-right difference: 1 mm (0.04 in.) or less

If the left-right difference is larger than 1 mm (0.04 in.), adjust it by following the procedures below.



- (b) Loosen the toe-adjust cam lock bolt.
(c) Turn the toe-adjust cam an equal amount to adjust toe-in.

HINT:

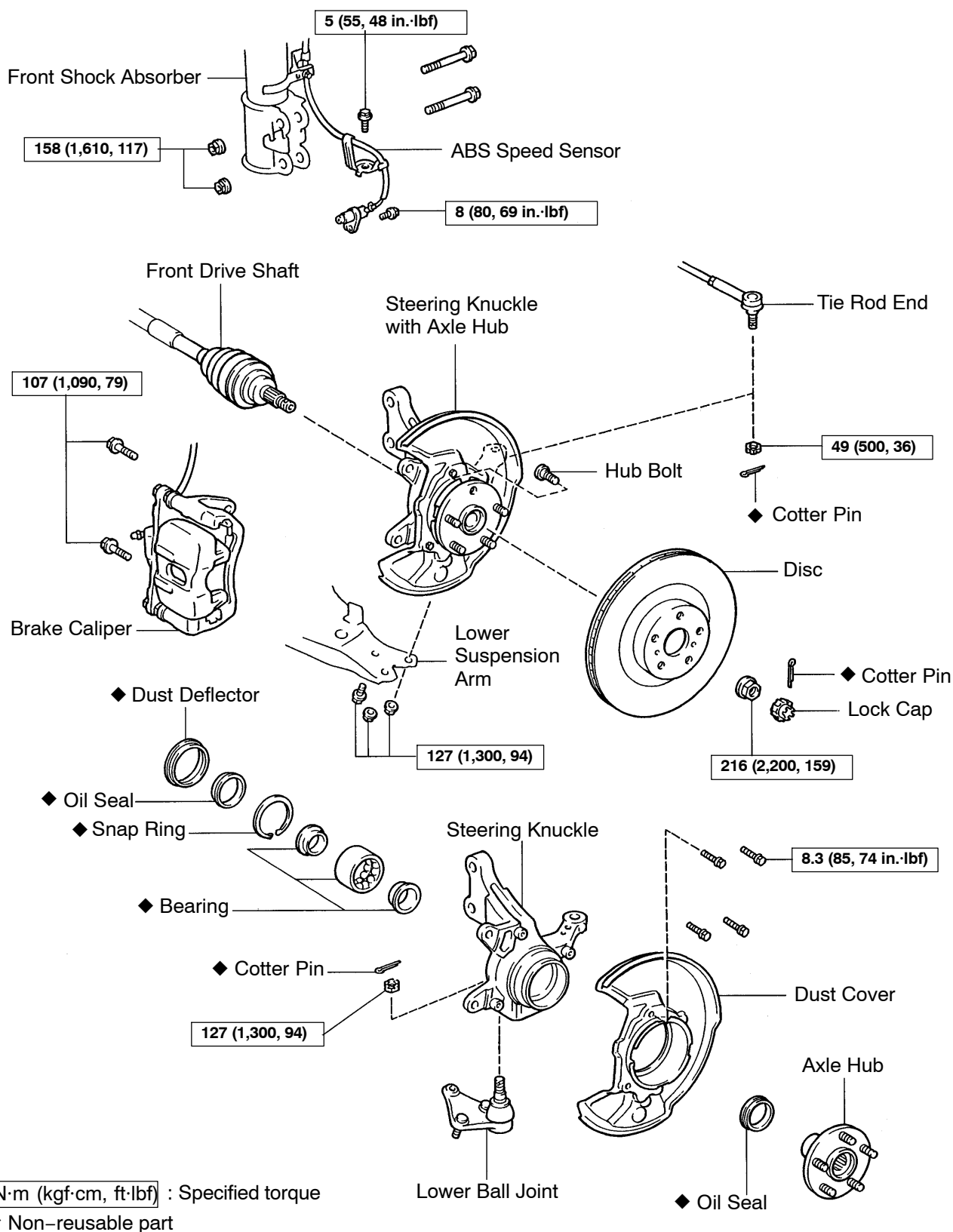
- Try it adjust the tie-in to the center value.
- The toe-in will change about 2.5 mm (0.10 in.) with each graduation of the cam (both side).

- (d) Torque the lock bolts.

Torque: 132 N·m (1,350 kgf·cm, 97 ft·lbf)

FRONT AXLE HUB COMPONENTS

SA079-03



Z19327

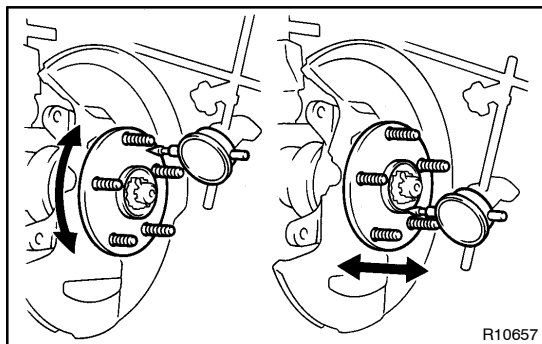
REMOVAL

1. REMOVE FRONT WHEEL

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

2. CHECK BEARING BACKLASH AND AXLE HUB DEVIATION

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



- (d) Using a dial indicator near the center of the axle hub and check the backlash in the bearing shaft direction.

Maximum: 0.05 mm (0.0020 in.)

If the backlash exceeds the maximum, replace the bearing.

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

Maximum: 0.07 mm (0.0028 in.)

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

3. REMOVE DRIVE SHAFT LOCK NUT

- (a) Install the disc and brake caliper.
Torque: 107 N·m (1,090 kgf·cm, 79 ft·lbf)
- (b) Remove the cotter pin and lock cap.
- (c) With applying the brakes, remove the nut.
Torque: 216 N·m (2,200 kgf·cm, 159 ft·lbf)
- (d) Remove the brake caliper and disc.

4. w/ ABS:

REMOVE ABS SPEED SENSOR AND WIRE HARNESS FROM STEERING KNUCKLE

Remove the 2 bolts, ABS speed sensor and wire harness.

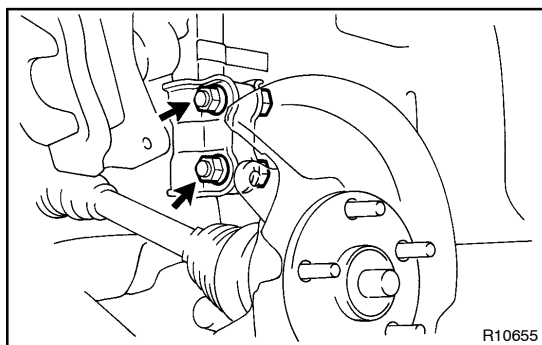
Torque:

ABS speed sensor x Steering knuckle:

8 N·m (80 kgf·cm, 69 in·lbf)

ABS speed sensor wire x Steering knuckle:

5 N·m (55 kgf·cm, 48 in·lbf)



5. LOOSEN 2 NUTS ON LOWER SIDE ON SHOCK ABSORBER

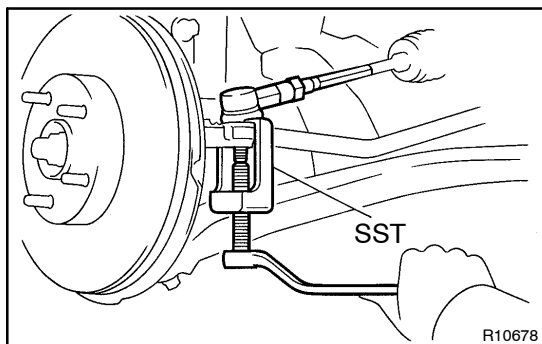
Torque: 158 N·m (1,610 kgf·cm, 117 ft·lbf)

HINT:

Do not remove the 2 nuts and bolts.

6. DISCONNECT TIE ROD END FROM STEERING KNUCKLE

- (a) Remove the cotter pin and nut.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)



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

SST 09610-20012

7. DISCONNECT LOWER BALL JOINT FROM LOWER ARM

Remove the bolt and 2 nuts.

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

8. REMOVE STEERING KNUCKLE WITH AXLE HUB

HINT:

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

Coat the threads of the nut's with engine oil.

NOTICE:

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

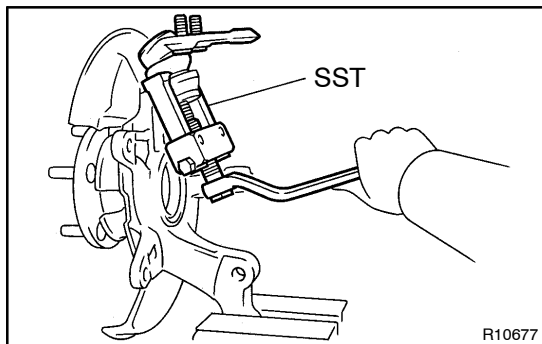
DISASSEMBLY

1. REMOVE DUST DEFLECTOR

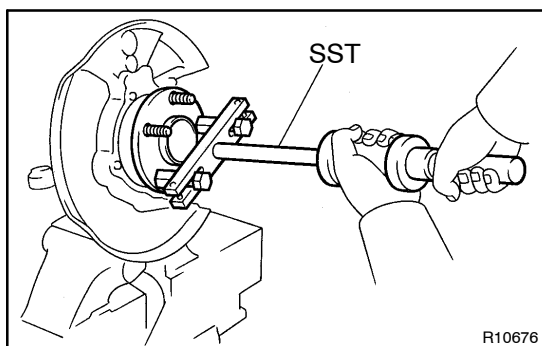
Using a screwdriver, remove the dust deflector.

2. REMOVE LOWER BALL JOINT

(a) Remove the cotter pin and nut.

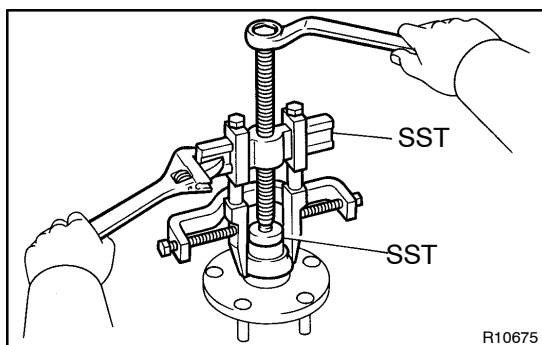


(b) Using SST, remove the lower ball joint.
SST 09628-62011



3. REMOVE AXLE HUB

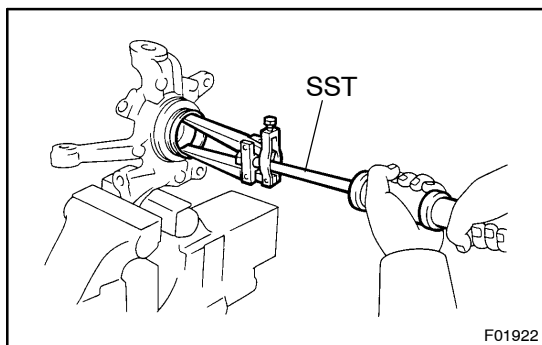
(a) Using SST, remove the axle hub.
SST 09520-00031



(b) Using SST, remove the inner race (outside) from the axle hub.
SST 09950-40010 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04060, 09957-04010, 09958-04010), 09950-60010 (09951-00370)

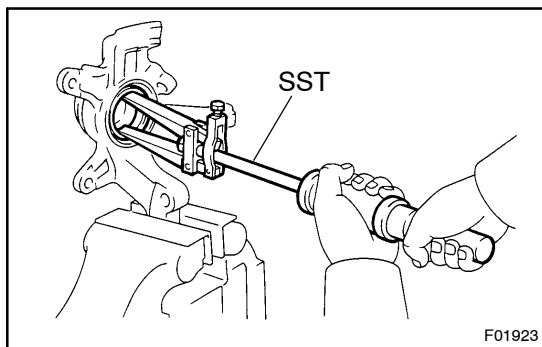
4. REMOVE DUST COVER

Remove the 4 bolts and dust cover.



5. REMOVE OIL SEALS

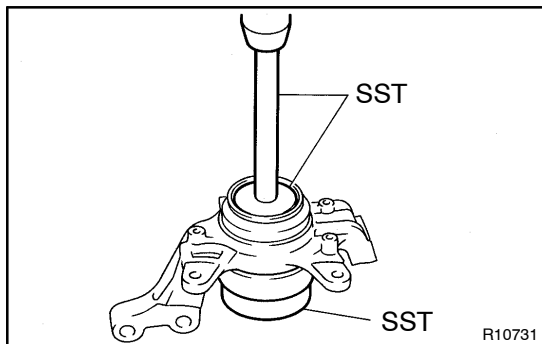
(a) Using SST, remove the inner oil seal.
SST 09308-00010



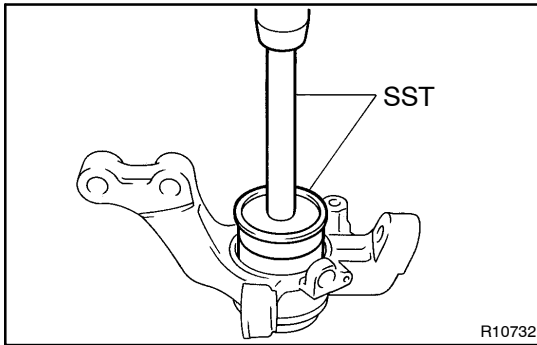
- (b) Using SST, remove the outer oil seal.
SST 09308-00010

6. REMOVE BEARING FROM STEERING KNUCKLE

- (a) Using snap ring pliers, remove the snap ring.
(b) Place the inner race on the outside of the bearing.



- (c) Using SST and a press, remove the bearing.
SST 09527-17011, 09950-60010 (09951-00540),
09950-70010 (09951-07150)



REASSEMBLY

1. INSTALL BEARING

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

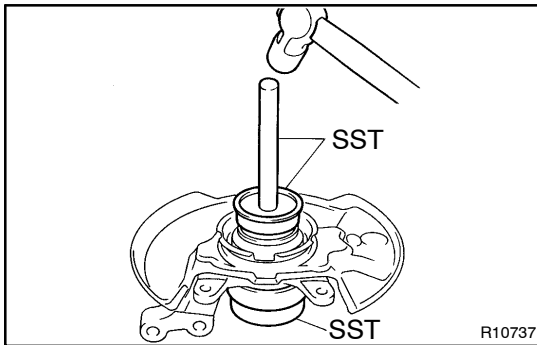
SST 09608-32010, 09950-70010 (09951-07150)

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

2. INSTALL DUST COVER

Install the dust cover with the 4 bolts.

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

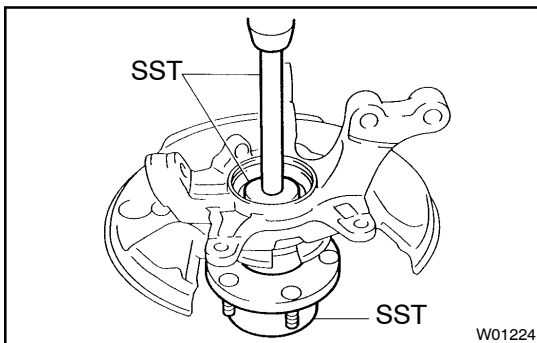


3. INSTALL NEW OUTER OIL SEAL

- (a) Using SST and a hammer, install a new outer oil seal.

SST 09608-32010, 09950-70010 (09951-07150)

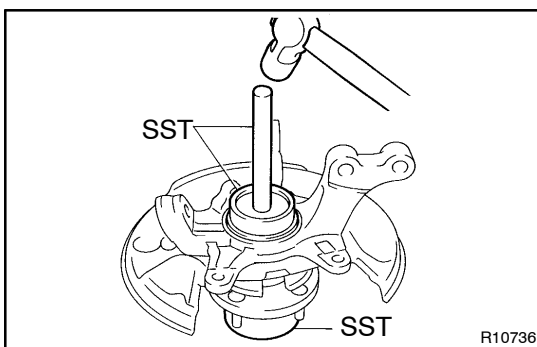
- (b) Apply MP grease to the oil seal lip.



4. INSTALL FRONT AXLE HUB

Using SST and a press, install the axle hub.

SST 09527-17011, 09950-60010 (09951-00370),
09950-70010 (09951-07150)

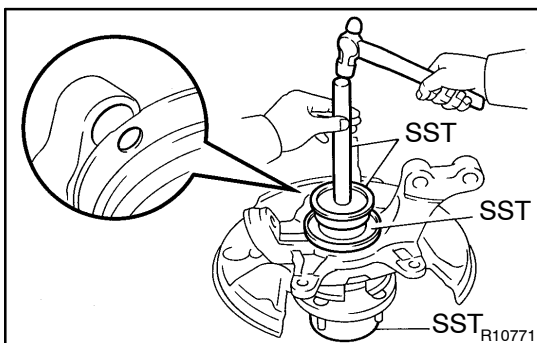


5. INSTALL NEW INNER OIL SEAL

- (a) Using SST and a hammer, install a new inner oil seal.

SST 09608-32010, 09950-70010 (09951-07150)

- (b) Apply MP grease to the oil seal lip.



6. INSTALL DUST DEFLECTOR

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

SST 09316-20011, 09608-32010, 09950-70010
(09951-07150)

HINT:

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

7. INSTALL LOWER BALL JOINT

- (a) Install the lower ball joint and torque the nut.
Torque: 127 N·m (1,300 kgf·cm, 94 ft·lbf)
- (b) Install a new cotter pin.

INSTALLATION

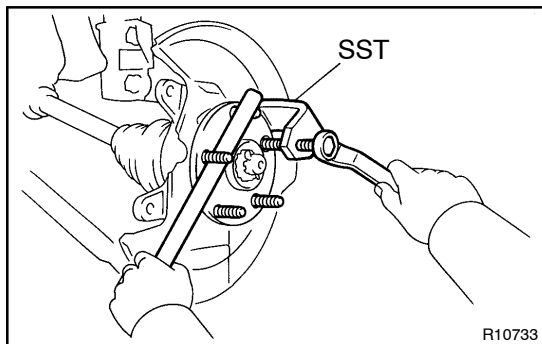
Installation is in the reverse order of removal (See page [SA-10](#)).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page [DI-257](#)) AND FRONT WHEEL ALIGNMENT (See page [SA-4](#))

FRONT WHEEL HUB BOLT REPLACEMENT

SA0TE-01

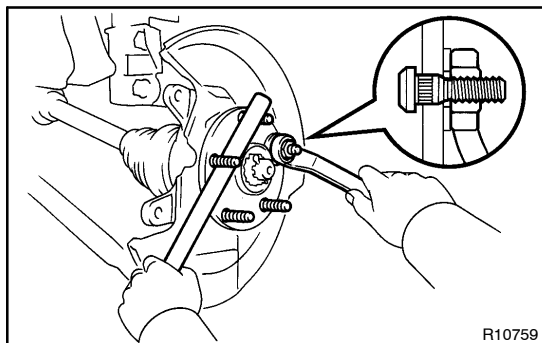
1. **REMOVE FRONT WHEEL**
2. **REMOVE FRONT BRAKE CALIPER AND DISC**
 - (a) Remove the 2 bolts and brake caliper from the steering knuckle.
 - (b) Support the brake caliper securely and remove the disc.



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 hub bolt, as shown in the illustration.
- (b) Install the hub bolt with torquing the nut.

5. INSTALL FRONT BRAKE DISC AND CALIPER

Install the disc and brake caliper with the 2 bolts.

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

HINT:

Check the disc runout (See page [BR-26](#)).

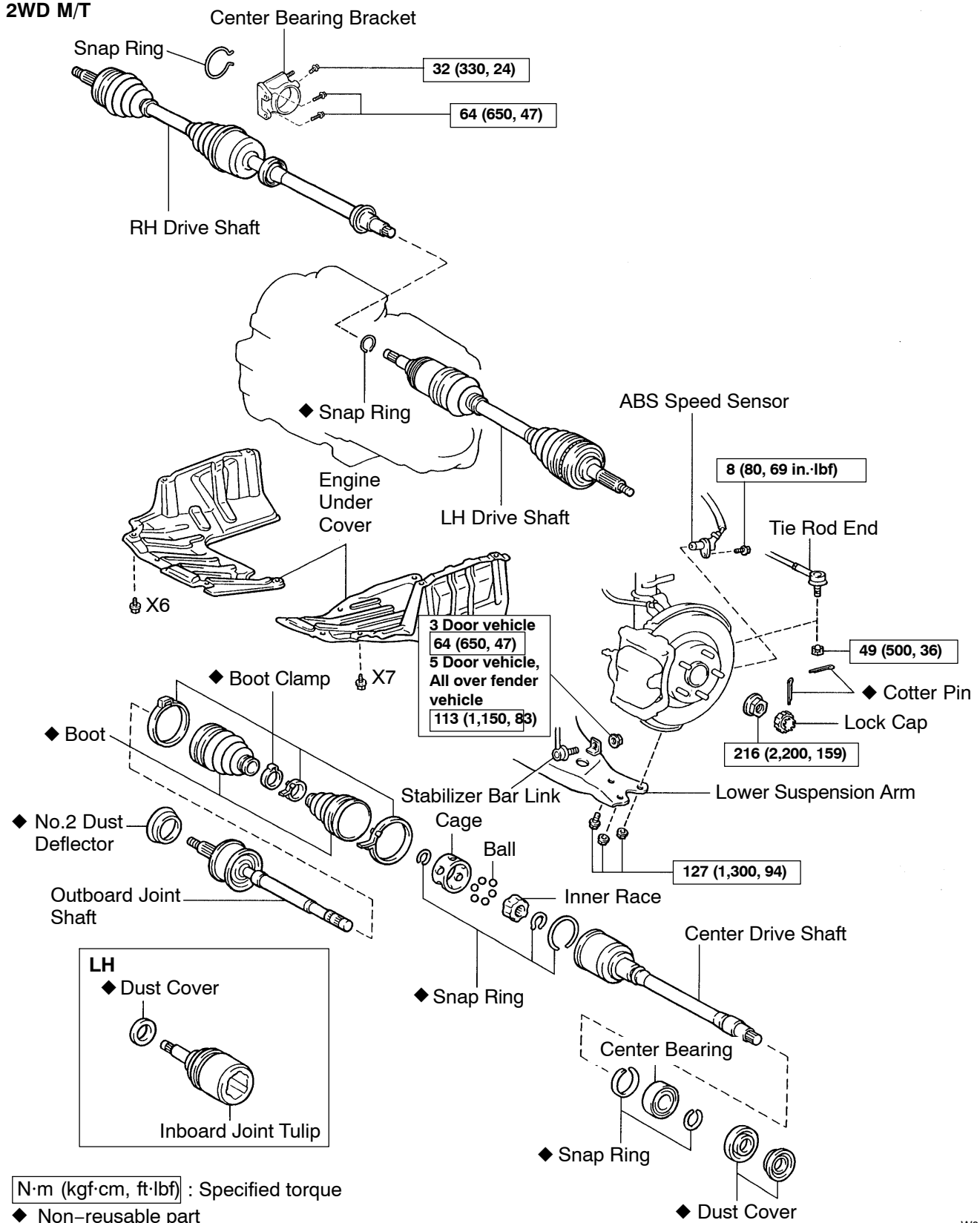
6. INSTALL FRONT WHEEL

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

FRONT DRIVE SHAFT COMPONENTS

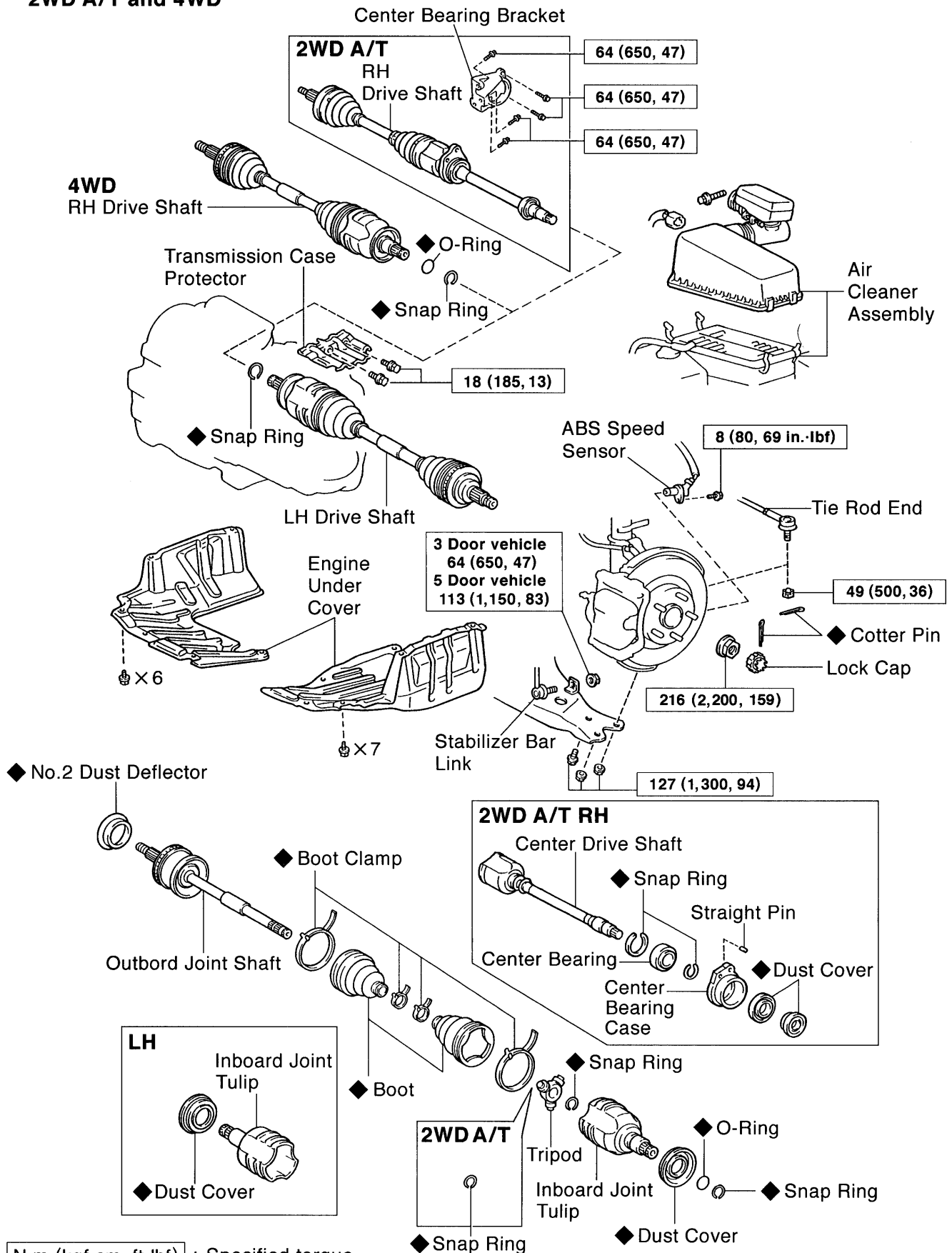
SA0TF-06

2WD M/T



W04172

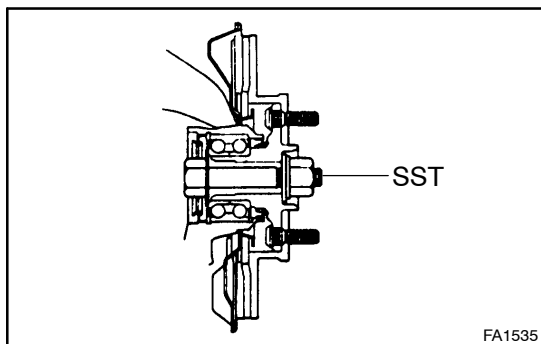
2WD A/T and 4WD



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

◆ Non-reusable part

W01219



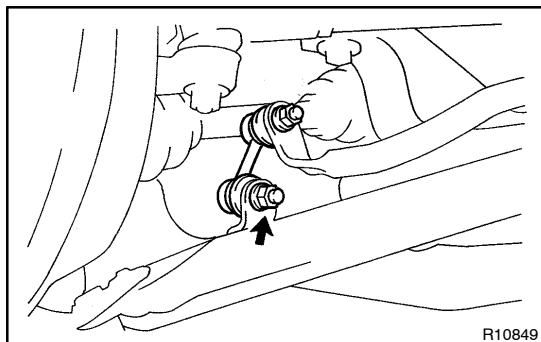
REMOVAL

NOTICE:

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

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

- w/ ABS:
After disconnecting the drive shaft from the axle hub, work carefully so as not to damage ABS speed sensor rotor serrations on the drive shaft.
- REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
 - REMOVE ENGINE UNDER COVER**
 - DRAIN GEAR OIL (M/T) OR ATF (A/T)**
 - w/ABS:**
REMOVE BOLT AND ABS SPEED SENSOR
Torque: 8 N·m (80 kgf·cm, 69 in·lbf)
 - REMOVE COTTER PIN, LOCK CAP AND LOCK NUT**
 - Remove the cotter pin and lock cap.
 - With applying the brakes, remove the nut.
Torque: 216 N·m (2,200 kgf·cm, 159 ft·lbf)
 - DISCONNECT TIE ROD END FROM STEERING KNUCKLE** (See page [SA-10](#))



- DISCONNECT STABILIZER BAR LINK FROM LOWER SUSPENSION ARM**

HINT:

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

Torque:

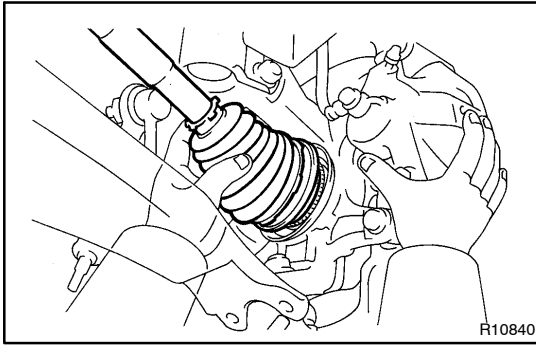
3 Door vehicle

64 N·m (650 kgf·cm, 47ft·lbf)

5 Door vehicle and all over fender vehicle

113 N·m (1,150 kgf·cm, 83 ft·lbf)

- DISCONNECT LOWER BALL JOINT FROM LOWER SUSPENSION ARM** (See page [SA-12](#))



9. DISCONNECT DRIVE SHAFT FROM AXLE HUB

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

NOTICE:

Be careful not to damage the inner oil seal and ABS speed sensor rotor.

10. 2WD (M/T) RH:

REMOVE DRIVE SHAFT

NOTICE:

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

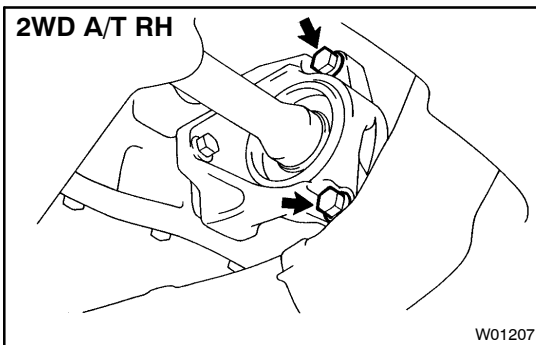
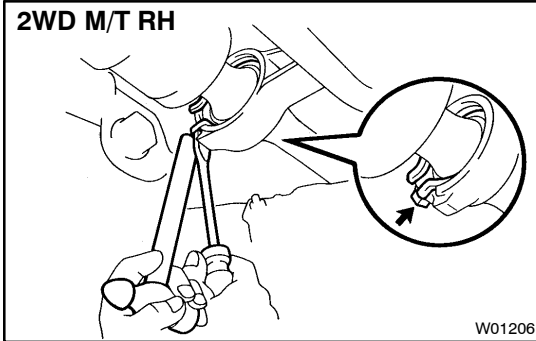
- Using a screwdriver and hammer, remove the snap ring from the center bearing bracket.
- Remove the bolt from the center bearing bracket.
Torque: 32 N·m (330 kgf·cm, 24 ft·lbf)
- Remove the drive shaft with the center drive shaft.

HINT:

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

- Remove the 2 bolts and center bearing bracket.

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

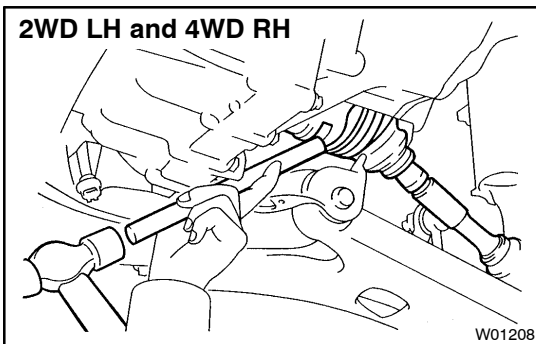


11. 2WD (A/T) RH:

REMOVE DRIVE SHAFT

- Remove the 2 bolts of the center bearing bracket and pull out the drive shaft together with the center bearing case and center drive shaft.
Torque: 64 N·m (650 kgf·cm, 47 ft·lbf)
- Remove the center drive shaft with the drive shaft to the transaxle through the center bearing bracket.
- Remove the 3 bolts and center bearing bracket.

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



12. 2WD LH:

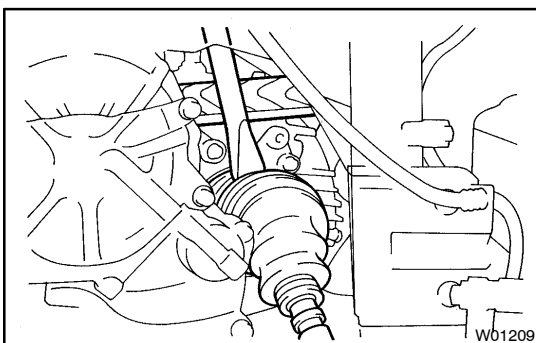
REMOVE DRIVE SHAFT

- Using a brass bar and hammer, remove the drive shaft.
- Using a screwdriver, remove the snap ring.

13. 4WD RH:

REMOVE DRIVE SHAFT

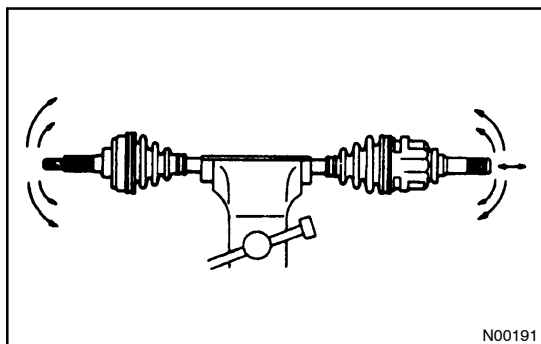
- Using a brass bar and hammer, remove the drive shaft.
- Using a screwdriver, remove the snap ring.
- Using a screwdriver, remove the O-ring.



14. 4WD LH:

REMOVE DRIVE SHAFT

- Remove the air cleaner.
- Remove the transmission case protector.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)
- Using a hub nut wrench or an equivalent, remove the drive shaft.
- Using a screwdriver, remove the snap ring.

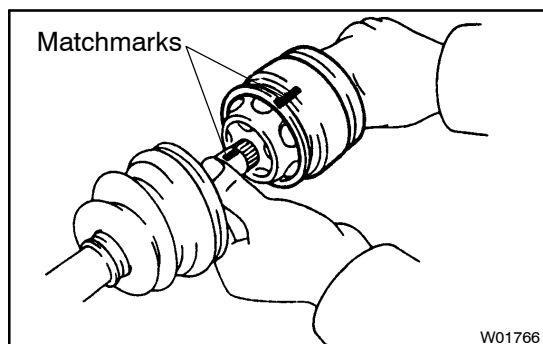


DISASSEMBLY

1. 2WD M/T:

DISASSEMBLE DRIVE SHAFT

- (a) Check the drive shaft.
 - (1) Check to see that there is no play in the outboard joint.
 - (2) Check to see that the inboard joint slides smoothly in the thrust direction.
 - (3) Check to see that there is no significant play in the radial direction of the inboard joint.
 - (4) Check for damage to boots.
- (b) Remove the inboard and outboard joint boot clamps.
 - (1) Using a screwdriver, remove the 2 inboard joint boot clamps.
 - (2) Using a side cutter, cut the 2 outboard joint boot clamps and remove them.

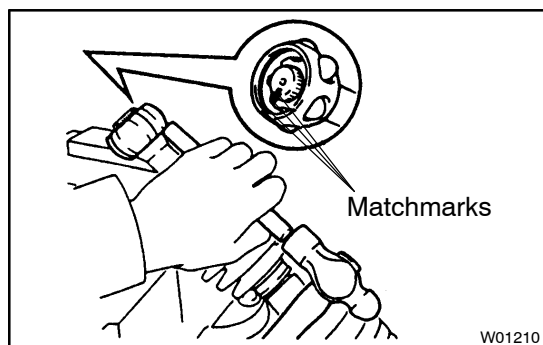


- (c) Remove the inboard joint tulip (or center drive shaft)
 - (1) Place matchmarks on the inboard joint tulip or center drive shaft and drive shaft.

NOTICE:

Do not punch the marks.

- (2) Using a screwdriver, remove the snap ring.
- (3) Remove the inboard joint tulip from the drive shaft.



- (d) Disassemble the inboard joint.
 - (1) Place matchmarks on the drive shaft, inner race and cage.
 - (2) Remove the 6 balls and cage.
 - (3) Using a snap ring expander, remove the snap ring.
 - (4) Using a brass bar and hammer, remove the inner race.

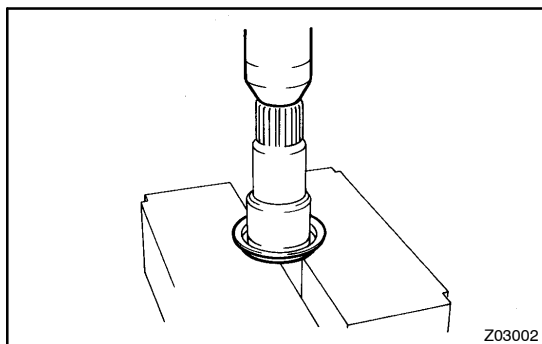
NOTICE:

Be careful not to damage the inner race.

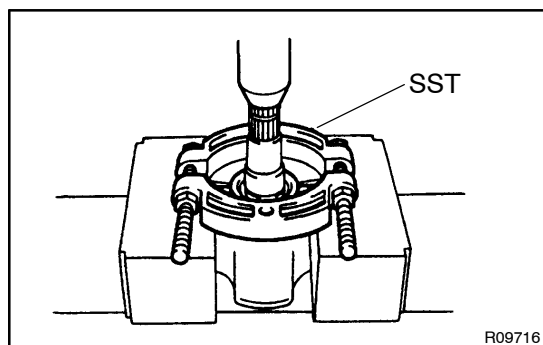
- (5) Using a snap ring expander, remove the snap ring.
- (e) Remove inboard and outboard joint boots and inboard joint clamps. Slide out the 2 boots and clamps.

NOTICE:

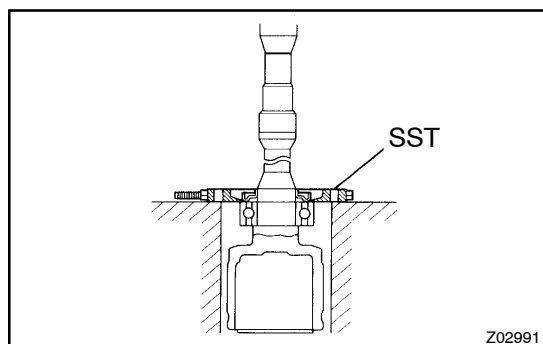
Do not disassemble the outboard joint.



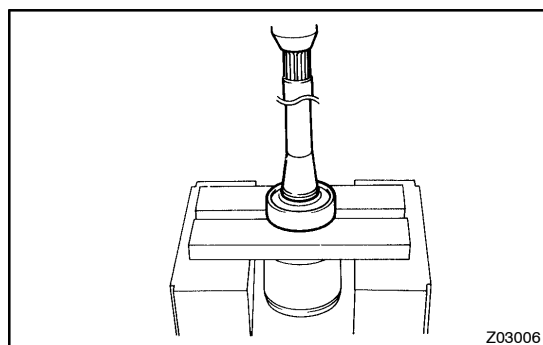
- (f) RH:
Remove the dust cover.
Using a press, remove the dust cover from the center drive shaft.



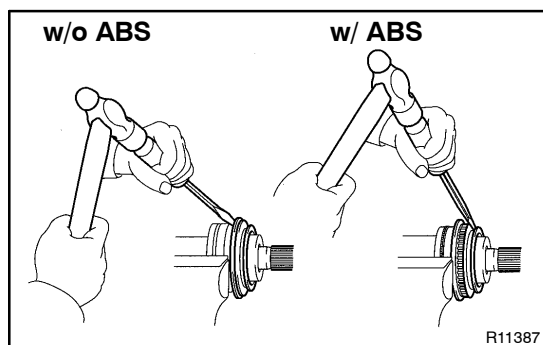
- (g) LH:
Remove the dust cover.
Using SST and a press, remove the dust cover from the inboard joint tulip.
SST 09950-00020



- (h) Remove the bearing.
(1) Using SST and a press, remove the dust cover from the center drive shaft.
SST 09950-00020

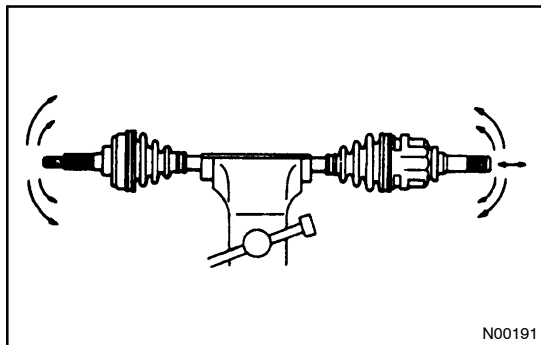


- (2) Using a snap ring expander, remove the snap ring.
(3) Using a press, remove the bearing.
(4) Remove the snap ring.



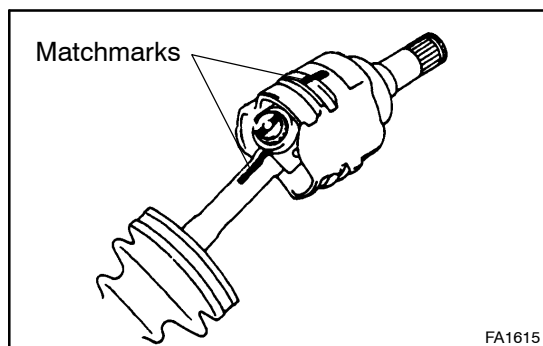
- (i) Remove the No.2 dust deflector.
(1) Mount outboard joint shaft in a soft jaw vise.
(2) Using a screwdriver and hammer, remove the No.2 dust deflector.

NOTICE:
Be careful not to damage the ABS speed sensor rotor.



2. 2WD A/T and 4WD: DISASSEMBLE DRIVE SHAFT

- (a) Check the drive shaft.
 - (1) Check to see that there is no play in the outboard joint.
 - (2) Check to see that the inboard joint slides smoothly in the thrust direction.
 - (3) Check to see that there is no significant play in the radial direction of the inboard joint.
 - (4) Check for damage to boots.
- (b) Remove the inboard and outboard joint boot clamps. Using a screwdriver, remove the 4 boot clamps.
- (c) Remove the inboard joint tulip (or center drive shaft).

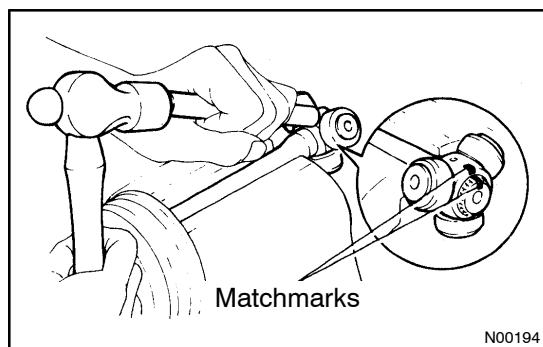


- (1) Place matchmarks on the tripod, inboard joint tulip or center drive shaft and drive shaft.

NOTICE:

Do not punch the marks.

- (2) Remove the inboard joint tulip from the drive shaft.
- (d) Remove the tripod.
 - (1) Using a snap ring expander, remove the snap ring.

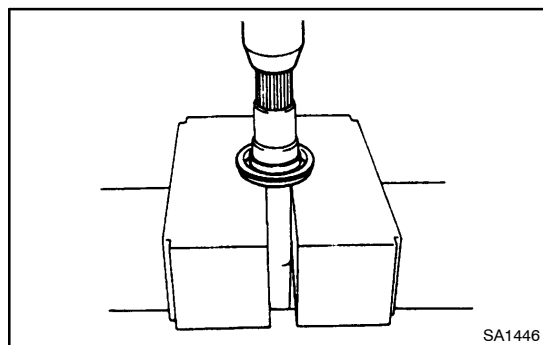


- (2) Place matchmarks on the drive shaft and tripod.
- (3) Using a brass bar and hammer, remove the tripod from the drive shaft.

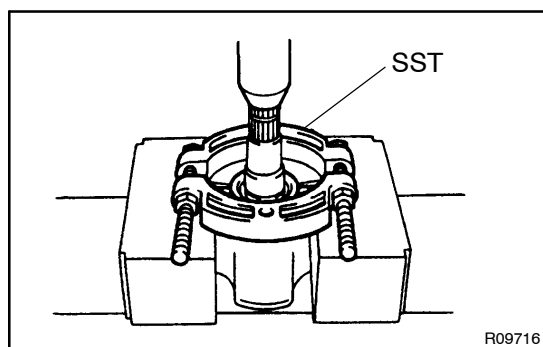
- (e) Remove the inboard and outboard joint boots and clamps. Slide out the 2 boots and 4 clamps.

NOTICE:

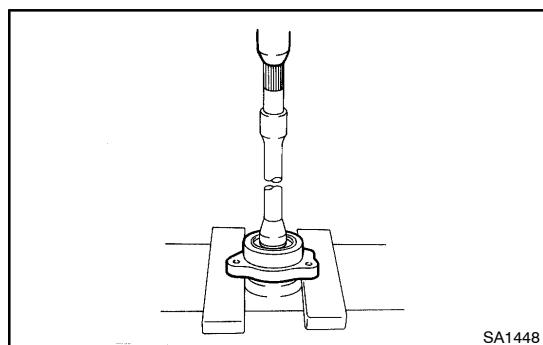
Do not disassemble the out board joint.



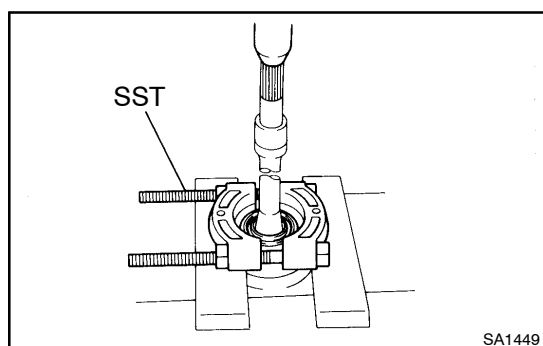
- (f) 2WD RH:
Remove the dust cover.
Using a press, remove the dust cover from the center drive shaft.



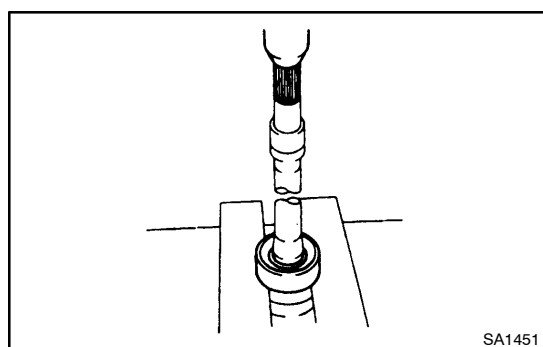
- (g) 2WD LH and 4WD:
Remove the dust cover.
Using SST and a press, remove the dust cover from the inboard joint tulip.
SST 09950-00020



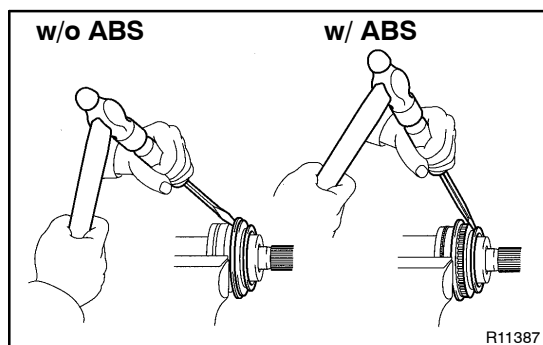
- (h) 2WD RH:
Disassemble the center drive shaft.
(1) Using a screwdriver, remove the snap ring.
(2) Using a press, remove the bearing case.
(3) Using a pin punch and hammer, remove the straight pin from the bearing case.



- (4) Using SST and a press, remove the dust cover.
SST 09950-00020
(5) Using a snap ring expander, remove the snap ring.

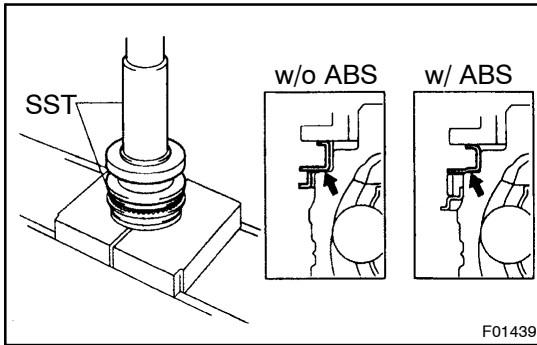


- (6) Using a press, remove the bearing.



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

NOTICE:
Be careful not to damage the ABS speed sensor rotor.



REASSEMBLY

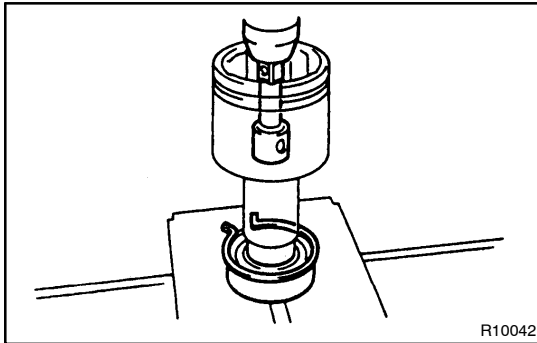
1. 2WD M/T:

REASSEMBLE DRIVE SHAFT

(a) Install No.2 dust deflector.

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

SST 09309-36010, 09316-20011

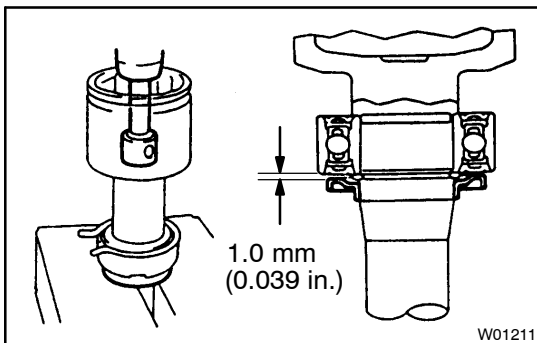


(b) Install the bearing.

(1) Install a new snap ring.

(2) Using a press, install the bearing.

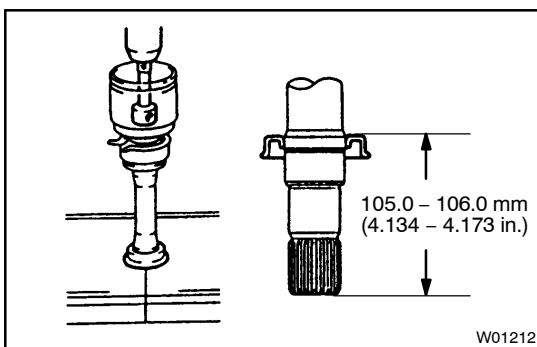
(3) Using a snap ring expander, install a new snap ring.



(4) Using a press, install a new dust cover.

HINT:

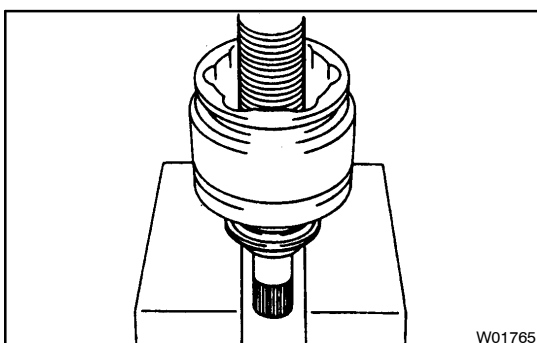
The clearance between the dust cover and bearing should be kept in the ranges shown in the illustration.



(c) RH:

Install the dust cover.

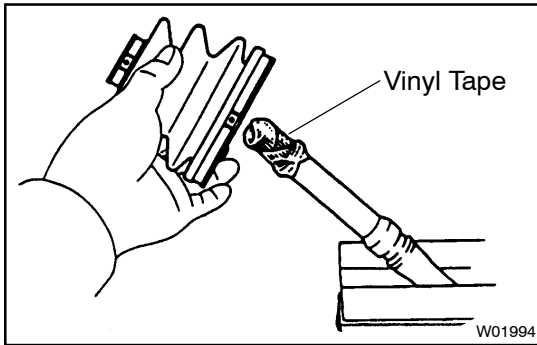
Using a press, install a new dust cover until the distance from the tip of the center drive shaft reaches the specification, as shown in the illustration.



(d) LH:

Install the dust cover.

Using a press, install a new dust cover.



- (e) Temporarily install new outboard and inboard joint boots and new boot clamps.

HINT:

Before installing the 2 boots, wrap vinyl tape around the spline of the drive shaft to prevent damaging the boots.

- (1) Place 2 new clamps on a new outboard joint boot and install the boot to the drive shaft.
- (2) Temporarily install a new inboard joint boot to the drive shaft.

- (f) Assemble the inboard joint.

- (1) Using a snap ring expander, install a new snap ring.
- (2) Install the cage to the drive shaft.

NOTICE:

The side with smaller diameter must face outboard.

- (3) Align the matchmarks placed before disassembly.
- (4) Using a brass bar and hammer, tap in the inner race to the drive shaft.

NOTICE:

Be careful not to damage the inner race.

- (5) Using a snap ring expander, install a new snap ring.
- (g) Install the boot to outboard joint.
Before assembling the boot, pack the outboard joint and boot with grease in the boot kit.

HINT:

Use the grease supplied in the boot kit.

Grease capacity (Color = Black):

115 – 135 g (4.1 – 4.8 oz.)

- (h) Install the inboard joint tulip (or center drive shaft) to front drive shaft.
- (1) Pack the inboard joint and boot with grease in the boot kit.

HINT:

Use the grease supplied in the boot kit.

Grease capacity (Color = Yellow ochre):

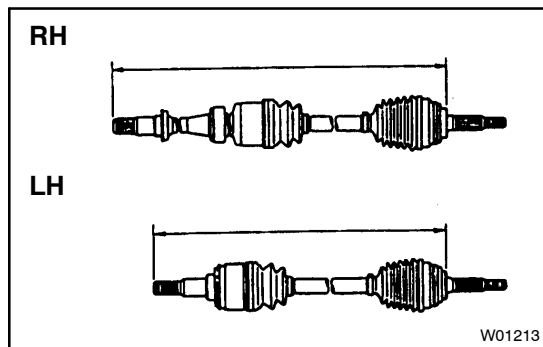
115 – 135 g (4.1 – 4.8 oz.)

- (2) Align the matchmarks placed before removal, and install the cage to the inner race.
- (3) Install the 6 balls.

HINT:

Apply grease onto the balls to keep them from falling.

- (4) Align the matchmarks placed before assembly, and install the inboard joint tulip or center drive shaft to the drive shaft.
 - (5) Install a new snap ring.
 - (6) Temporarily install the boot to the inboard joint tulip.
- (i) Assemble the boot clamps to both boots.
- (1) Make sure that the 2 boots are on the shaft groove.

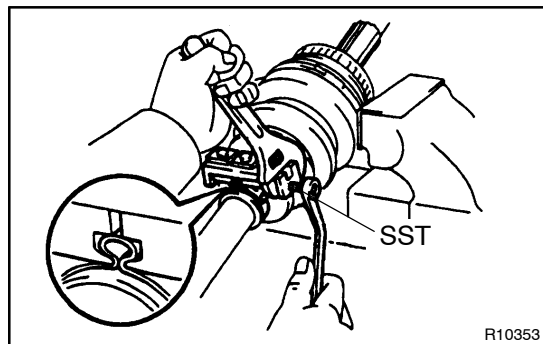


- (2) Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.

Drive shaft standard length:

RH	842.9 ± 5.0 mm (33.185 ± 0.197 in.)
LH	542.6 ± 5.0 mm (21.362 ± 0.197 in.)

- (3) Place 2 new boot clamps to the inboard joint boot.
 (4) Bend the band and lock it with a screwdriver.



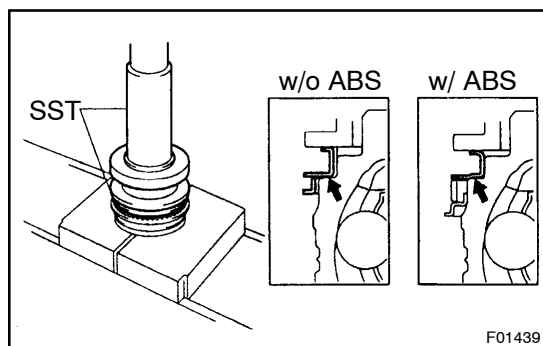
- (5) Secure the 2 clamps onto the boot.
 (6) Place SST onto the clamps.
 SST 09521-24010
 (7) Tighten the SST so that the clamps.

NOTICE:

Do not overtighten the SST.

- (8) Using SST, adjust the clearance of the clamps.
 SST 09240-00020

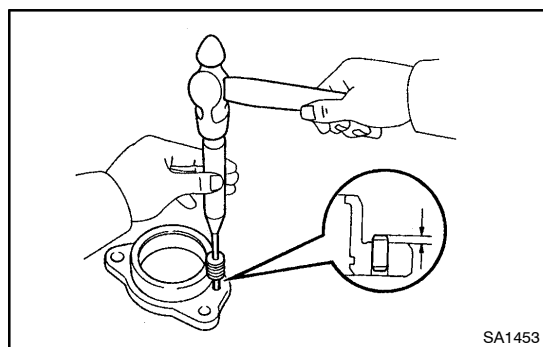
Clearance: 1.9 mm (0.075 in.)



2. 2WD A/T and 4WD:

REASSEMBLE DRIVE SHAFT

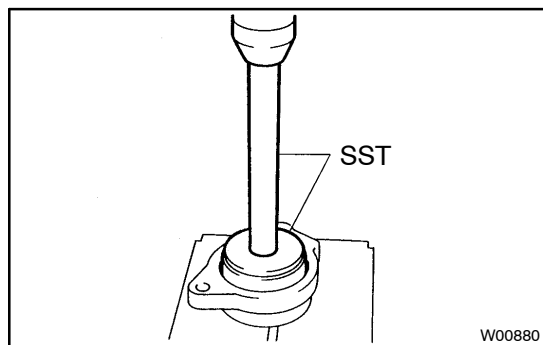
- (a) Install the No.2 dust deflector.
 Using SST and a press, install a new No.2 dust deflector.
 SST 09309-36010, 09316-20011



(b) 2WD RH:

Assemble the center drive shaft.

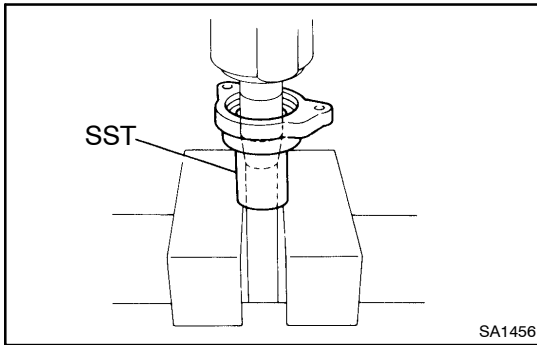
- (1) Using a pin punch and hammer, install the straight pin into the bearing case.



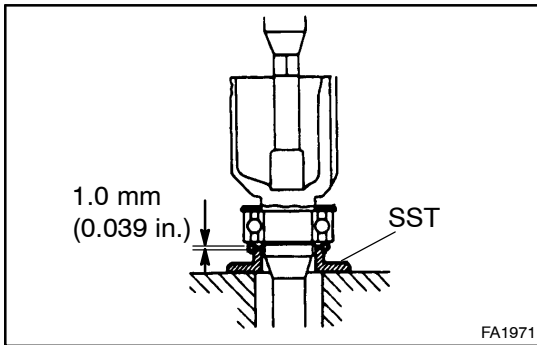
- (2) Using SST and a press, install a new bearing into the bearing case.

SST 09950-60010 (09951-00580),
 09950-70010 (09951-07150)

- (3) Using a screwdriver, install a new snap ring.



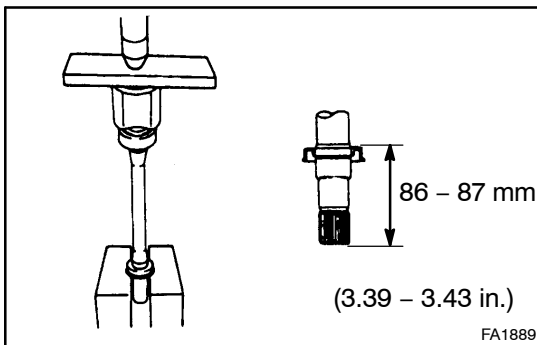
- (4) Using SST and a press, install the bearing with the bearing case assembly to the center drive shaft.
SST 09710-30021 (09710-03141)
- (5) Using a snap ring expander, install a new snap ring.



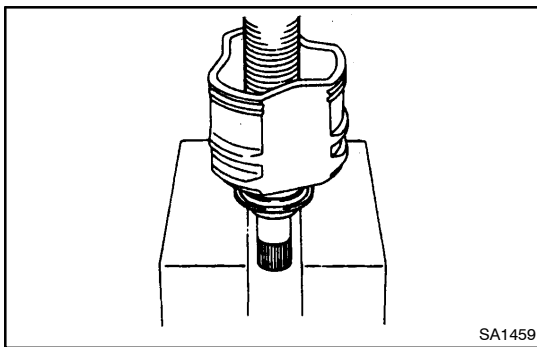
- (6) Using SST, an extension bar and press, install a new dust cover.
SST 09506-35010

HINT:

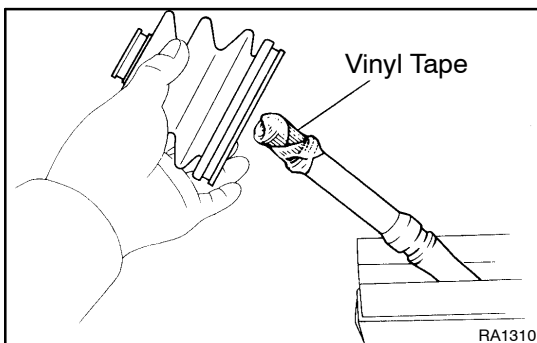
The clearance between the dust cover and bearing should be kept in the ranges shown in the illustration.



- (c) 2WD RH:
Install the dust cover.
Using a steel plate and press, install a new dust cover until the distance from the tip of the center drive shaft to the dust cover reaches the specification, as shown in the illustration.



- (d) 2WD LH and 4WD:
Install the dust cover.
Using a press, install a new dust cover.



- (e) Temporarily install the new outboard and inboard joint boots.

HINT:

Before installing the 2 boots, wrap vinyl tape around the spline of the drive shaft to prevent damaging the boots.

- (1) Temporarily install a new outboard joint boot to the drive shaft.
- (2) Temporarily install a new inboard joint boot to the drive shaft.

- (f) Install the tripod.

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

NOTICE:**Do not tap the roller.**

- (4) Using a snap ring expander, install a new snap ring.
- (g) Install the boot to outboard joint.
Before assembling the boot, pack the outboard joint and boot with grease in the boot kit.

HINT:

Use the grease supplied in the boot kit.

Grease capacity (Color = Black):

120 – 130 g (4.2 – 4.6 oz.)

- (h) Install the inboard joint tulip or center drive shaft to front drive shaft.
 - (1) Pack the inboard joint and boot with grease in the boot kit.

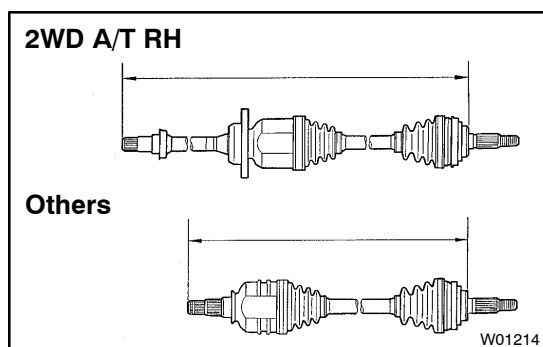
HINT:

Use the grease supplied in the boot kit.

Grease capacity (Color = Yellow ochre):

180 – 190 g (6.3 – 6.7 oz.)

- (2) Align the matchmarks placed before removal, and install the inboard joint tulip on center drive shaft to the drive shaft.
- (3) Temporarily install the boot to the inboard joint tulip.



- (i) Assemble the boot clamps to both boots.
 - (1) Make sure that the 2 boots are on the shaft groove.
 - (2) Make sure that the 2 boots are not stretched or contracted when the drive shaft is at standard length.

Drive shaft standard length:

2WD A/T RH	844.6 ± 5.0 mm (33.252 ± 0.197 in.)
2WD A/T LH	548.5 ± 5.0 mm (21.594 ± 0.197 in.)
4WD RH	511.2 ± 5.0 mm (20.126 ± 0.197 in.)
4WD LH	508.0 ± 5.0 mm (20.000 ± 0.197 in.)

- (3) Place 4 new boot clamps to the 2 boots.
- (4) Bend the band and lock it with a screwdriver.

INSTALLATION

Installation is in the reverse order removal (See page [SA-20](#)).

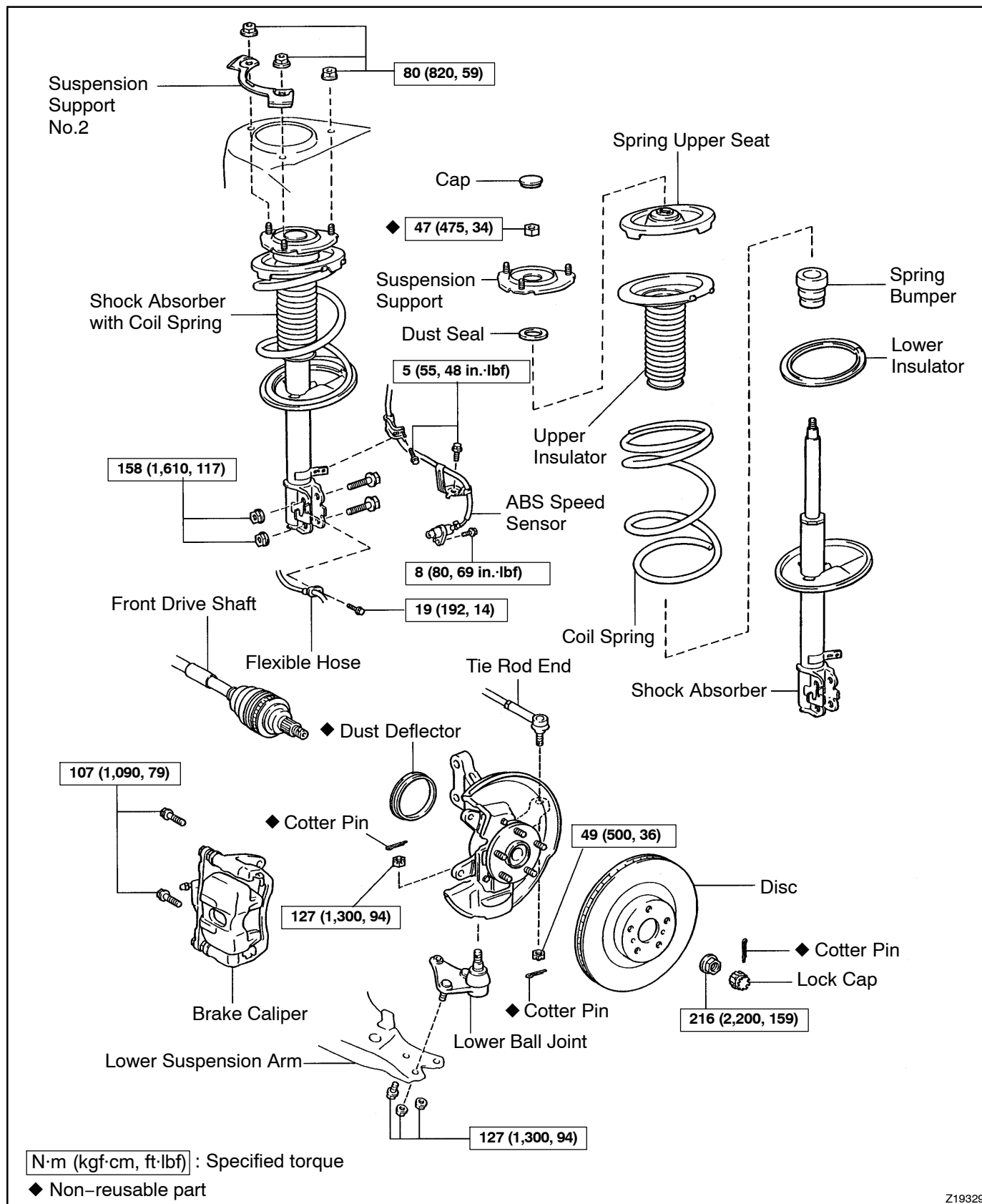
AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page [DI-257](#)) AND FRONT WHEEL ALIGNMENT (See page [SA-4](#))

HINT:

- Coat the oil seal lip with MP grease.
- Except 2WD RH:
Before installing the drive shaft, set the snap ring opening side facing downward.
- Except 2WD RH:
Whether or not the drive shaft is making contact with the pinion shaft can be known by sound or feeling when driving it in.
- Except 2WD RH:
After installation, check that there is 2 – 3 mm (0.08 – 0.12 in.) of play in axial direction.
- Except 2WD RH:
After installation, check that the drive shaft can not be pulled out by hand.

FRONT SHOCK ABSORBER COMPONENTS

SA0TK-03



Z19329

REMOVAL

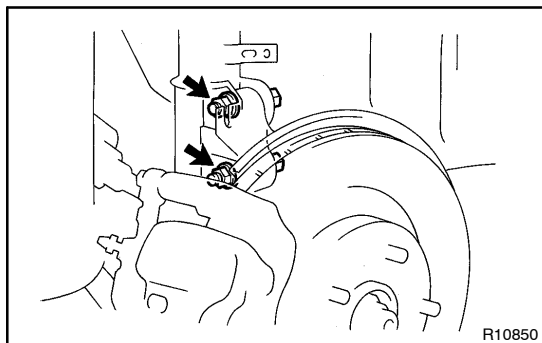
1. **REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **DISCONNECT FLEXIBLE HOSE AND ABS SPEED SENSOR WIRE HARNESS (w/ ABS) FROM SHOCK ABSORBER**

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

Torque:

Flexible hose: 19 N·m (192 kgf·cm, 14 ft·lbf)

ABS wire harness: 5 N·m (55 kgf·cm, 48 in·lbf)

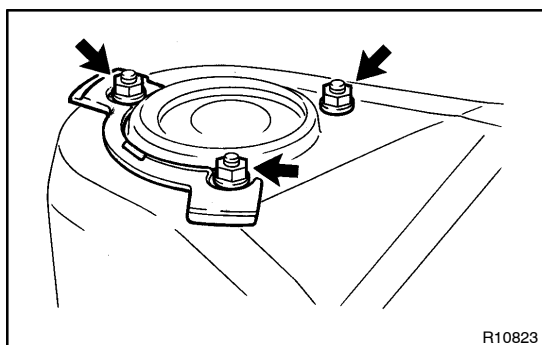


3. **DISCONNECT SHOCK ABSORBER FROM STEERING KNUCKLE**

Torque: 158 N·m (1,610 kgf·cm, 117 ft·lbf)

HINT:

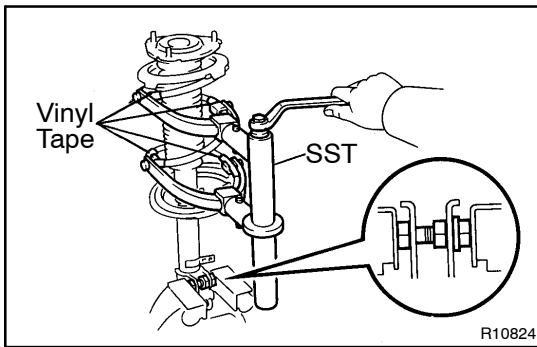
At the time of installation, please refer to the following item.
Coat the nut's threads with engine oil.



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

Remove the 3 nuts, suspension support No.2 and shock absorber with the coil spring.

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



DISASSEMBLY

REMOVE COIL SPRING

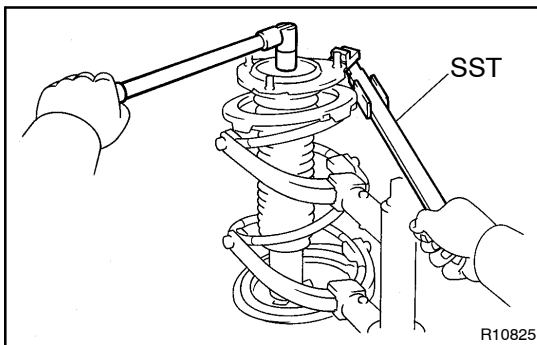
- (a) Install 2 nuts and a bolt to the bracket at the lower portion of the shock absorber and secure it in a vise.
- (b) Using SST, compress the coil spring.
SST 09727-30021

HINT:

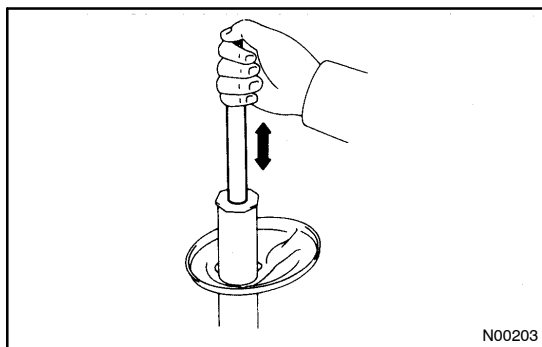
To prevent the coil spring from damaging, wind vinyl tape on the coil spring.

NOTICE:

- When holding the shock absorber with the coil spring removed, do not hold it by the spring lower seat. Also, do not knock the spring lower seat.
 - Do not use an impact wrench. It will damage the SST.
- (c) Remove the cap.



- (d) Using SST to hold the spring upper seat, remove the nut.
SST 09729-22031
- (e) Remove these parts from the shock absorber:
 - Suspension support
 - Dust seal
 - Spring upper seat
 - Upper insulator and coil spring
 - Spring bumper and lower insulator



INSPECTION

INSPECT SHOCK ABSORBER

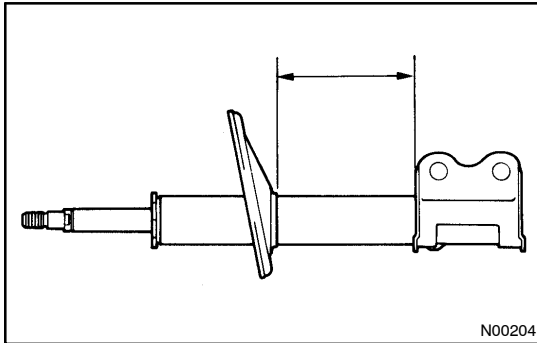
Compress and extend the shock absorber rod and check that there is no abnormal resistance or unusual operation sounds. If there is any abnormality, replace the shock absorber with a new one.

NOTICE:

When discarding the shock absorber, see **DISPOSAL** on page [SA-36](#).

DISPOSAL

1. FULLY EXTEND SHOCK ABSORBER ROD



2. DRILL HOLE TO REMOVE GAS FROM CYLINDER

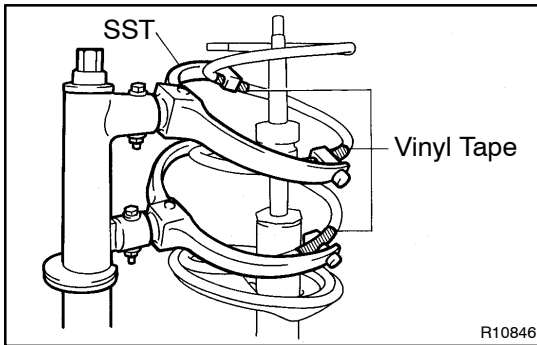
Using a drill, make a hole between the lines, as shown.

CAUTION:

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

REASSEMBLY

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



3. INSTALL COIL SPRING AND SUSPENSION SUPPORT

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

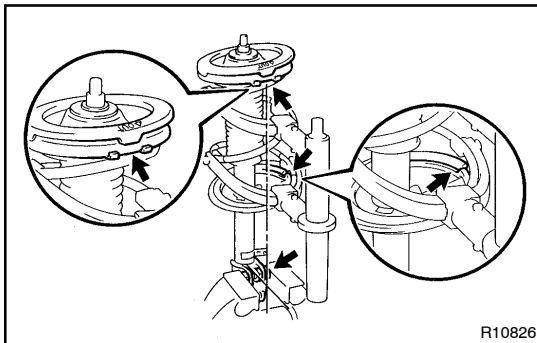
SST 09727-30021

HINT:

To prevent the coil spring from damaging, wind vinyl tape on the coil spring.

NOTICE:

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

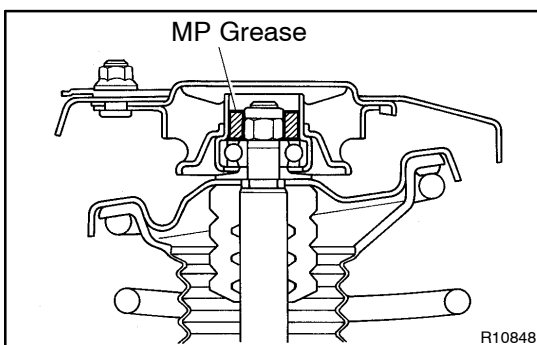
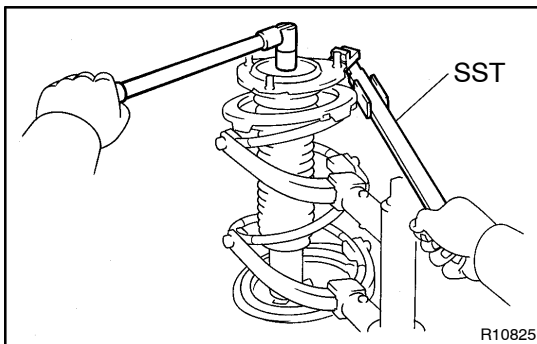


- (b) Install the coil spring to the shock absorber.

HINT:

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

- (c) Align the tab of spring upper seat with the tabs of the upper insulator.
- (d) Install the spring upper seat with upper insulator to the shock absorber with the 'OUT' mark facing the outside of the vehicle.
- (e) Install the dust seal and suspension support.
- (f) Using SST to hold the spring upper seat, install a new nut.
SST 09729-22031
Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)
- (g) Remove the SST.



- (h) Pack MP grease into the suspension support.
- (i) Install the cap.

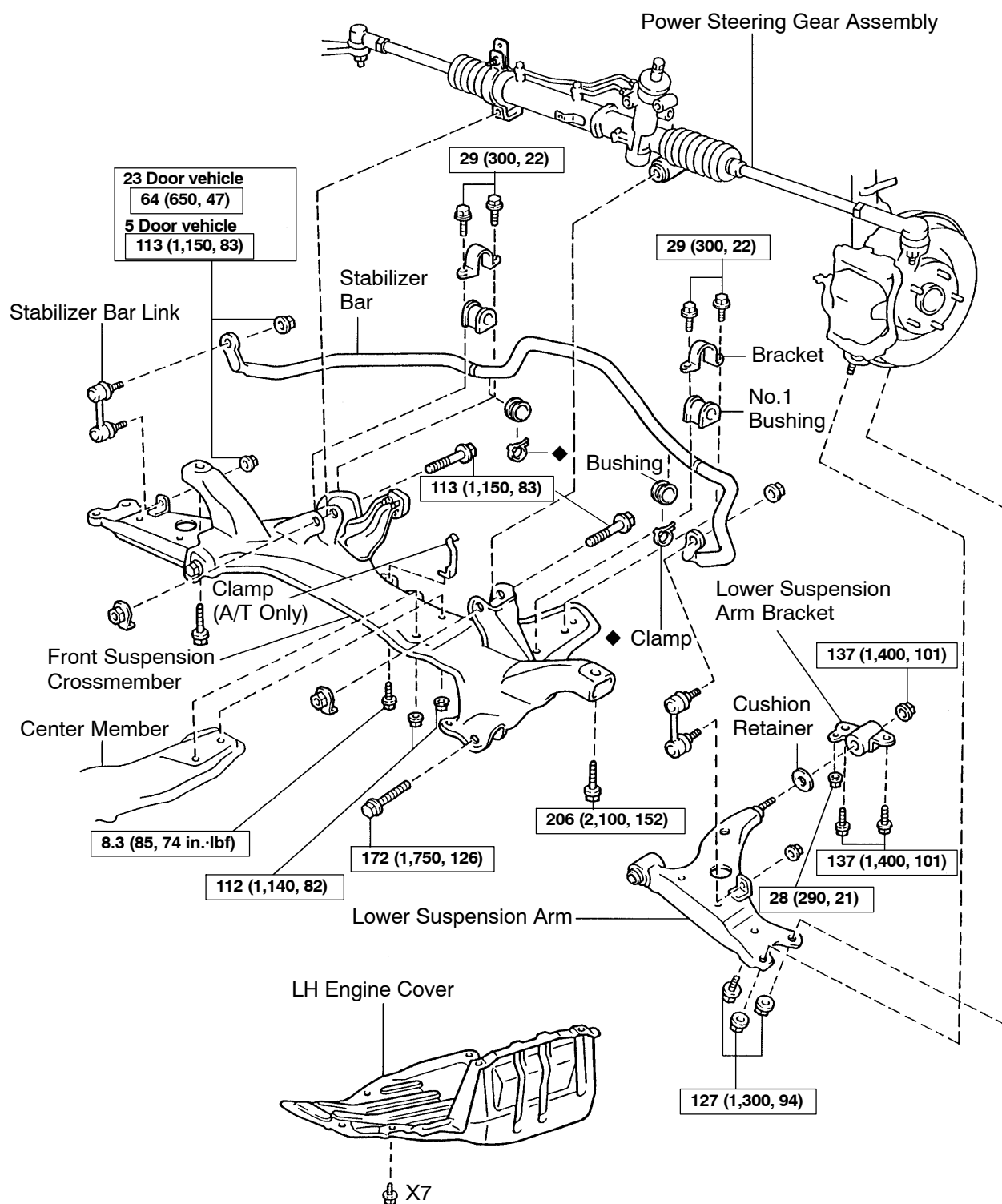
INSTALLATION

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

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

FRONT LOWER SUSPENSION ARM COMPONENTS

SA0TR-03



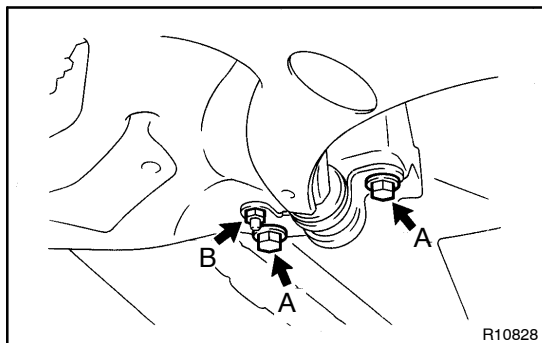
Z19330

REMOVAL

1. **REMOVE FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **A/T LH:**
REMOVE LH ENGINE UNDER COVER
3. **EXCEPT A/T LH:**
DISCONNECT STABILIZER BAR LINK FROM LOWER SUSPENSION ARM (See page SA-48)
4. **A/T LH:**
REMOVE STABILIZER BAR (See page SA-48)
5. **DISCONNECT LOWER SUSPENSION ARM FROM LOWER BALL JOINT**

Remove the bolt and 2 nuts.

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



6. **DISCONNECT LOWER SUSPENSION ARM BRACKET**

Remove the nut and 2 bolts.

Torque:

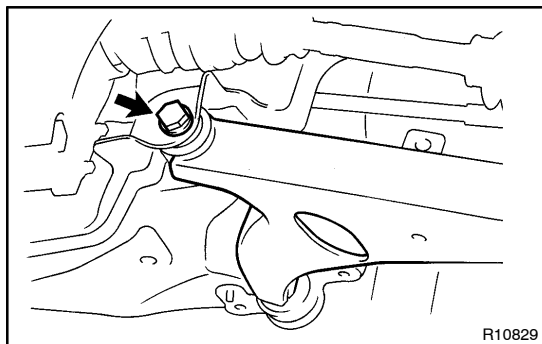
Bolt A: 137 N·m (1,400 kgf·cm, 101 ft·lbf)

Nut B: 28 N·m (290 kgf·cm, 21 ft·lbf)

HINT:

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

After stabilizing the suspension, torque the bolts and nut.



7. **EXCEPT A/T LH:**
REMOVE LOWER SUSPENSION ARM

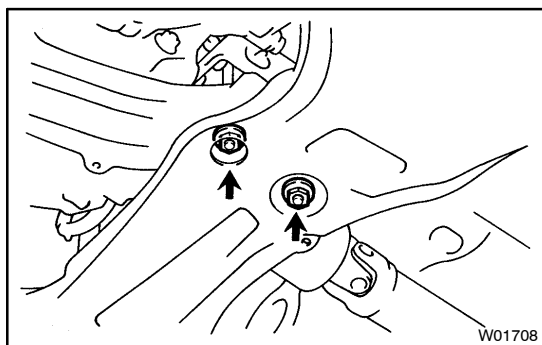
Remove the bolt and lower suspension arm.

Torque: 172 N·m (1,750 kgf·cm, 126 ft·lbf)

HINT:

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

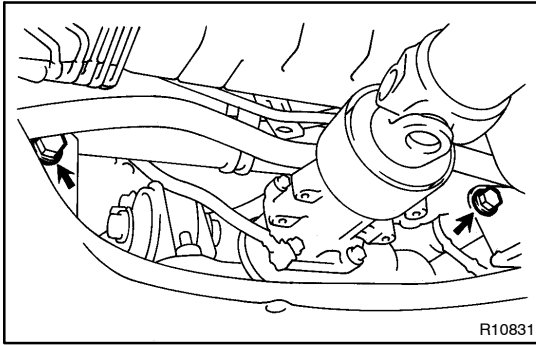
After stabilizing the suspension, torque the bolt.



8. **A/T LH:**
REMOVE LOWER SUSPENSION ARM

- (a) Remove the 2 center member set nuts and disconnect the center member.

Torque: 112 N·m (1,140 kgf·cm, 82 ft·lbf)



- (b) Remove the 2 power steering gear assembly set bolts and nuts.

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

- (c) Remove the exhaust pipe No.1 support bracket from the front exhaust pipe.

- (d) Remove the bolt and clamp.

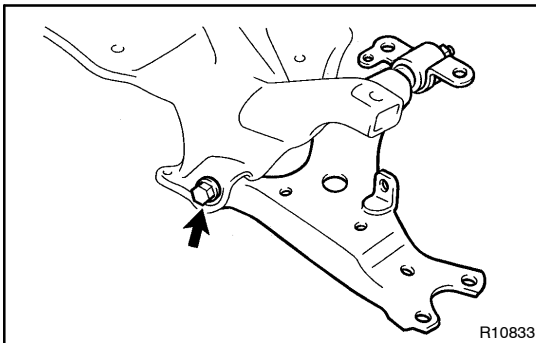
Torque: 8.3 N·m (85 kgf·cm, 74 in·lbf)

- (e) Support the front suspension crossmember with a jack.



- (f) Remove the 2 bolts and front suspension crossmember with the lower suspension arms.

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

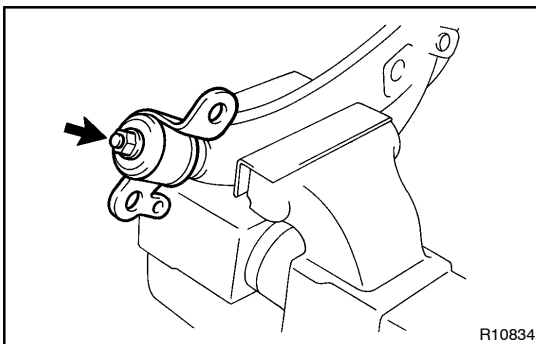


- (g) Remove the bolt and lower suspension arm.

Torque: 172 N·m (1,750 kgf·cm, 126 ft·lbf)

HINT:

At the time of installation, please refer to the following item.
After stabilizing the suspension, torque the bolt.



9. REMOVE LOWER SUSPENSION ARM BRACKET

Remove the bolt, lower suspension arm bracket and cushion retainer.

Torque: 137 N·m (1,400 kgf·cm, 101 ft·lbf)

HINT:

At the time of installation, please refer to the following item.
After stabilizing the suspension, torque the bolt.

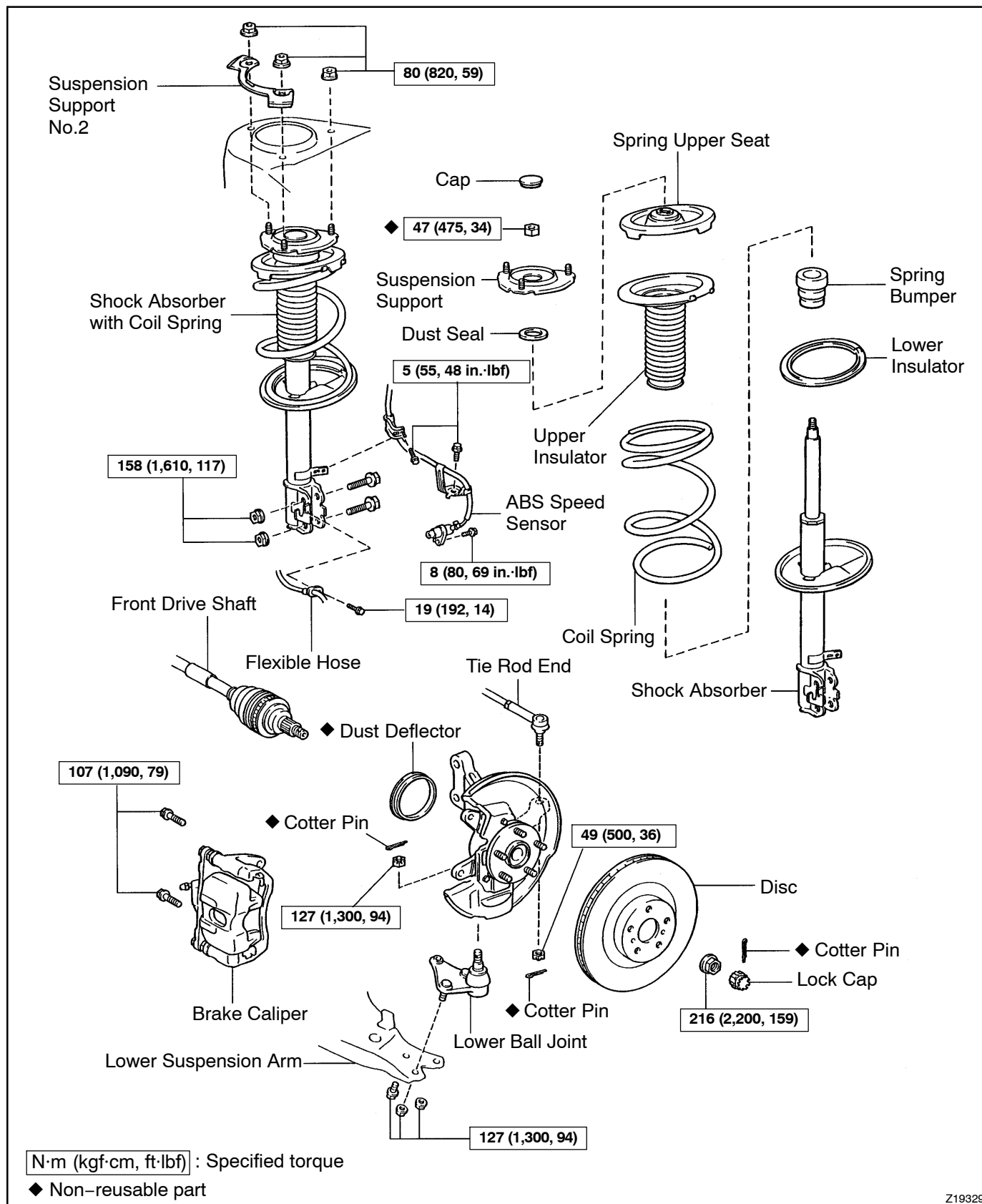
INSTALLATION

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

AFTER INSTALLATION CHECK FRONT WHEEL ALIGNMENT (See page [SA-4](#))

FRONT LOWER BALL JOINT COMPONENTS

SA0TU-02



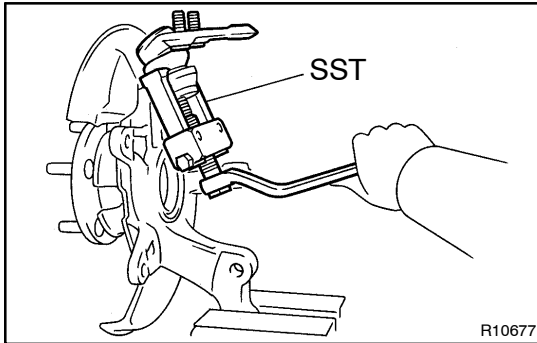
Z19329

REMOVAL

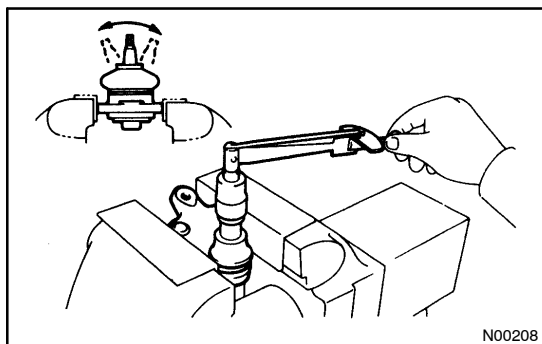
1. REMOVE STEERING KNUCKLE WITH AXLE HUB (See page [SA-10](#))

2. REMOVE LOWER BALL JOINT

- (a) Using a screwdriver, remove the dust deflector.
- (b) Remove the cotter pin and nut.



- (c) Using SST, remove the lower ball joint.
SST 09628-62011



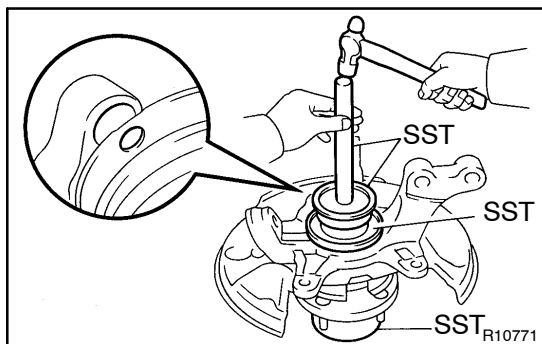
INSPECTION

INSPECT BALL JOINT FOR ROTATION CONDITION

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

Turning torque:

1.0 – 4.4 N·m (10 – 45 kgf·cm, 8.7 – 39 in.·lbf)



INSTALLATION

1. INSTALL NEW DUST DEFLECTOR

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

SST 09316-20011, 09608-32010,
09950-70010 (09951-07150)

HINT:

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

2. INSTALL LOWER BALL JOINT

- (a) Install the lower ball joint and tighten the nut.

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

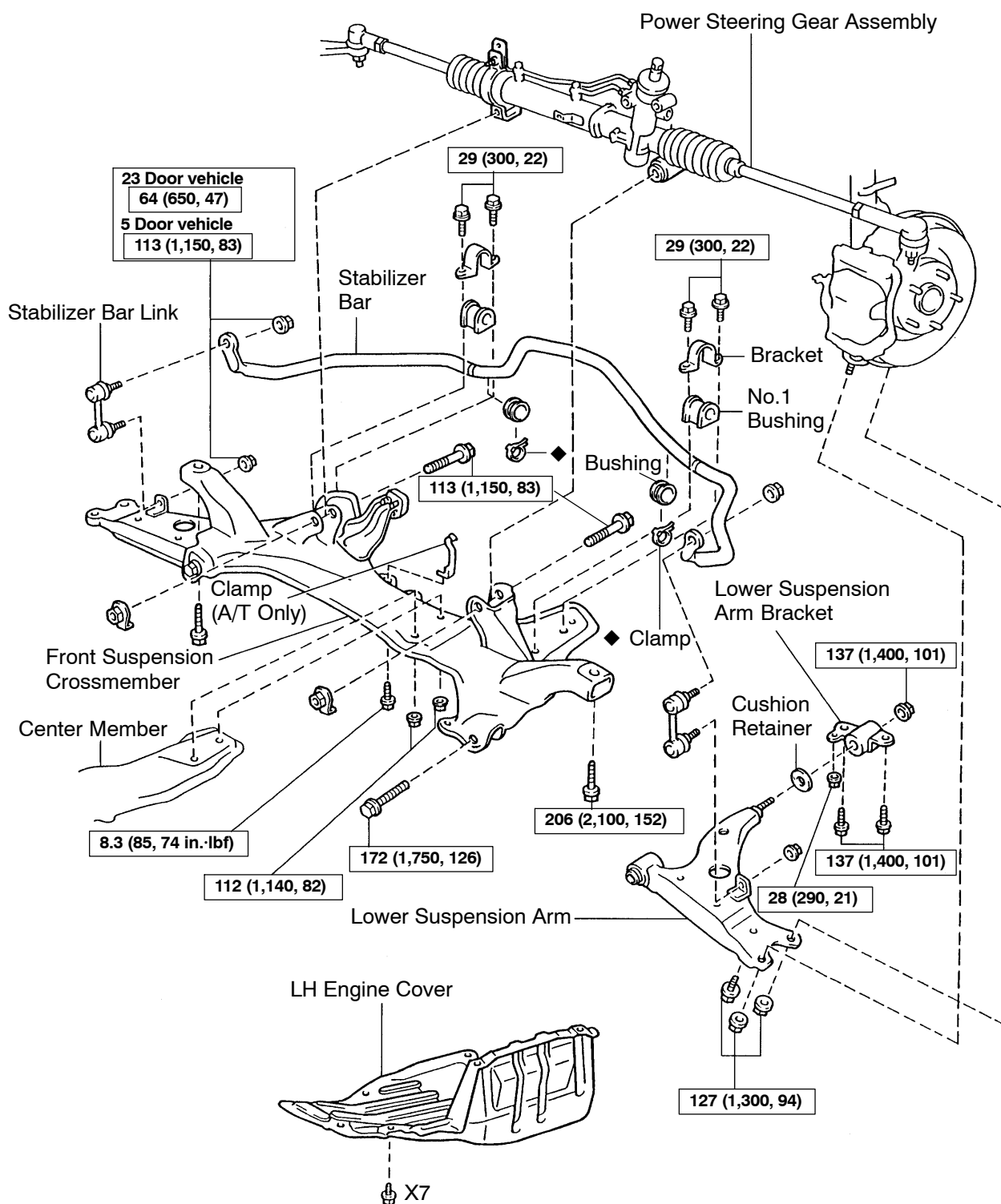
- (b) Install a new cotter pin.

3. INSTALL STEERING KNUCKLE WITH AXLE HUB

4. CHECK ABS SPEED SENSOR SIGNAL (See page [DI-257](#))

FRONT STABILIZER BAR COMPONENTS

SA0TY-03



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

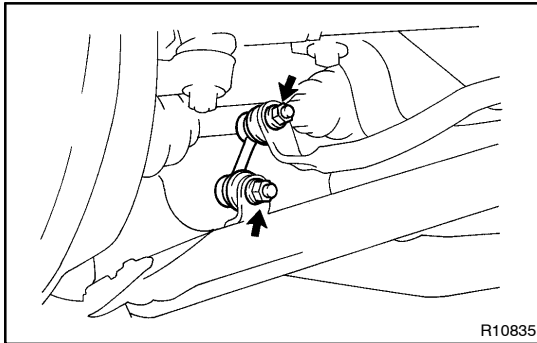
◆ Non-reusable part

Z19330

REMOVAL

1. REMOVE FRONT WHEELS

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



2. REMOVE BOTH STABILIZER BAR LINKS

Remove the 4 nuts and 2 stabilizer bar links.

Torque:

3 Door vehicle:

64 N·m (650 kgf·cm, 76 ft·lbf)

5 Door vehicle and all over fender vehicle:

113 N·m (1,150 kgf·cm, 83 ft·lbf)

HINT:

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

3. REMOVE STABILIZER BAR

(a) Remove the 4 bolts, 2 brackets and No.1 bushings.

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

HINT:

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

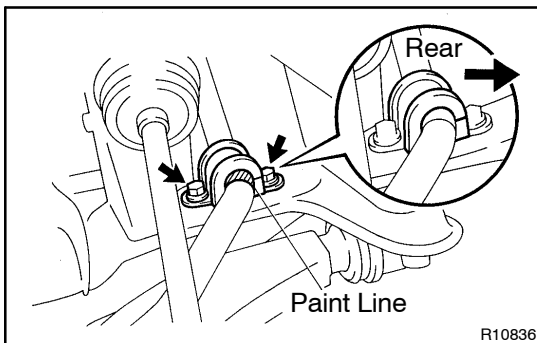
- Install the No.1 bushing to the outside of the paint line.
- Install the No.1 bushing to the stabilizer bar so that the cutout of the bushing faces the rear of the vehicle, as shown.

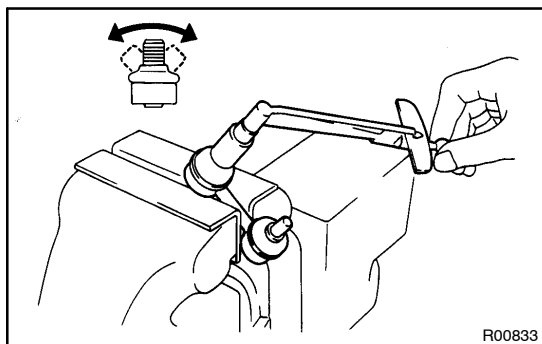
(b) Remove the stabilizer bar from the right hand side.

4. REMOVE BOTH CLAMPS AND BOTH BUSHINGS

(a) Using a screwdriver, through out the 2 bushings.

(b) Remove the 2 cushions.





INSPECTION

INSPECT STABILIZER BAR LINK FOR ROTATION CONDITION

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

Turning torque:

3 Door vehicle:

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

5 Door vehicle:

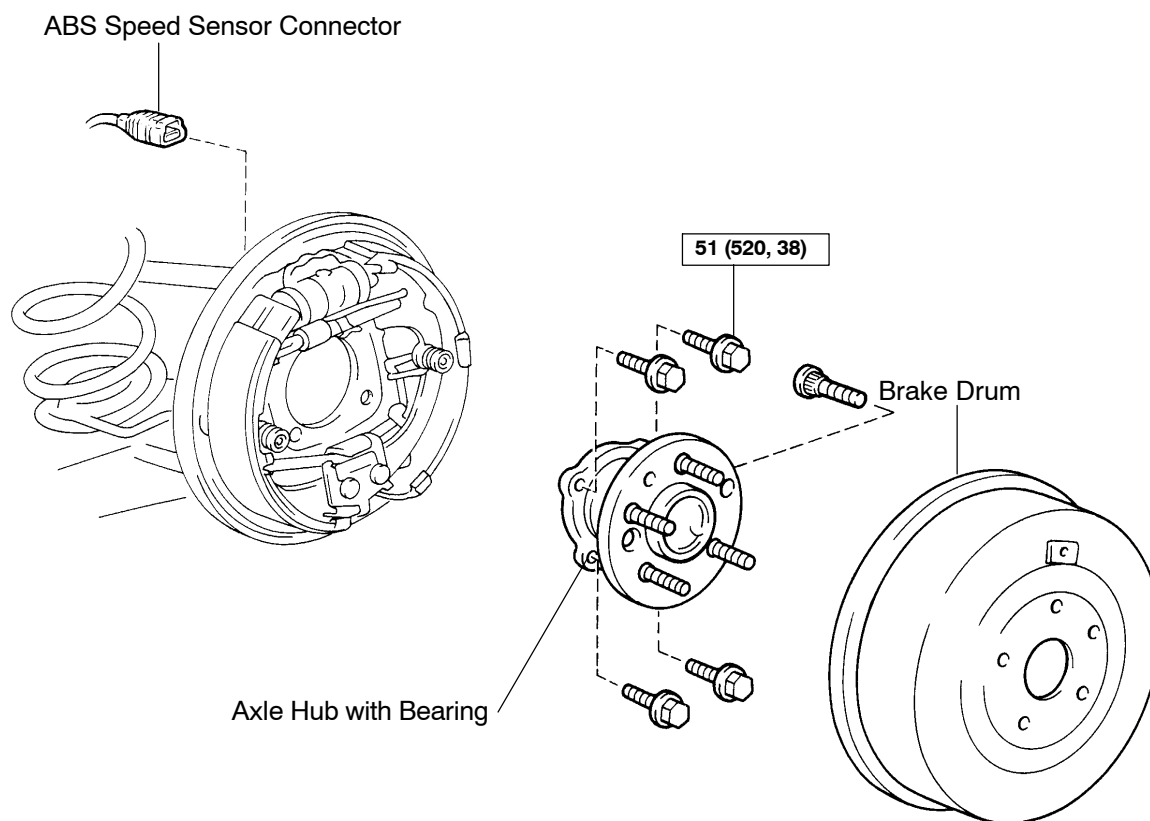
0.05 – 2.0 N·m (0.5 – 20 kgf·cm, 0.4 – 17.4 in.·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page [SA-48](#)).

REAR AXLE HUB (2WD) COMPONENTS

SA0U2-01

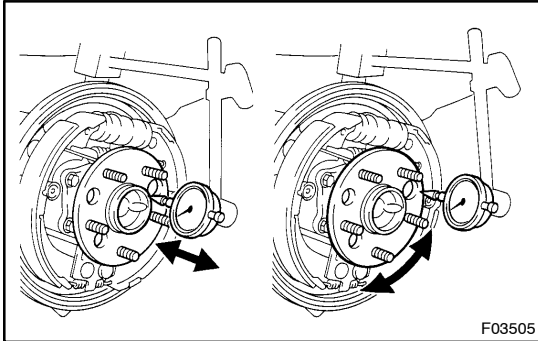


N·m (kgf·cm, ft·lbf) : Specified torque

F03487

REMOVAL

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



F03505

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

- (a) Using a dial indicator near the center of the axle hub and check the backlash in bearing shaft direction.

Maximum: 0.05 mm (0.0020 in.)

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

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

Maximum: 0.07 mm (0.0028 in.)

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

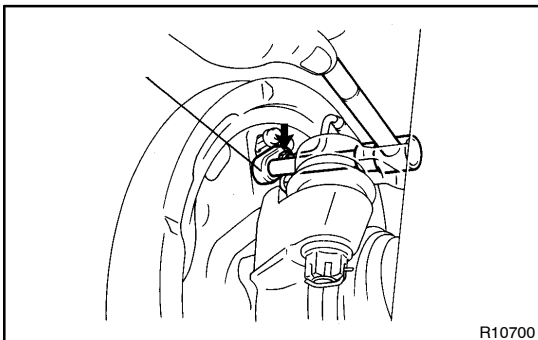
4. **w/ ABS:**
DISCONNECT ABS SPEED SENSOR
Torque: 8 N·m (80 kgf·cm, 69 in·lbf)

5. **w/ ABS:**
REMOVE AXLE SHAFT

- (a) Remove the cotter pin and lock cap.
- (b) With applying the brakes, remove the nut.
- (c) Remove the axle shaft.

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

6. **DISASSEMBLE REAR BRAKE** (See page [BR-30](#))



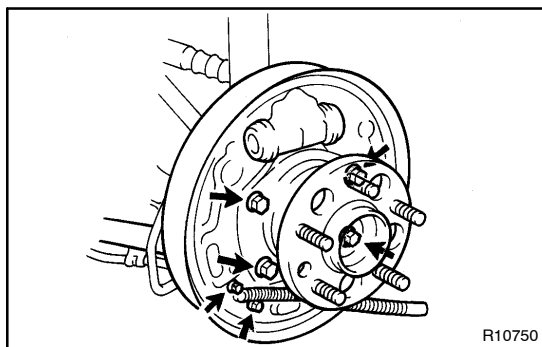
R10700

7. **DISCONNECT BRAKE LINE**

Using SST, disconnect the brake line from the wheel cylinder.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

**8. REMOVE REAR AXLE HUB WITH BACKING PLATE**

- (a) Remove the 2 bolts and disconnect the parking brake cable.

Torque: 8 N·m (80 kgf·cm, 69 in·lbf)

- (b) Remove the 4 bolts, spacer (w/o ABS) and rear axle hub.

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

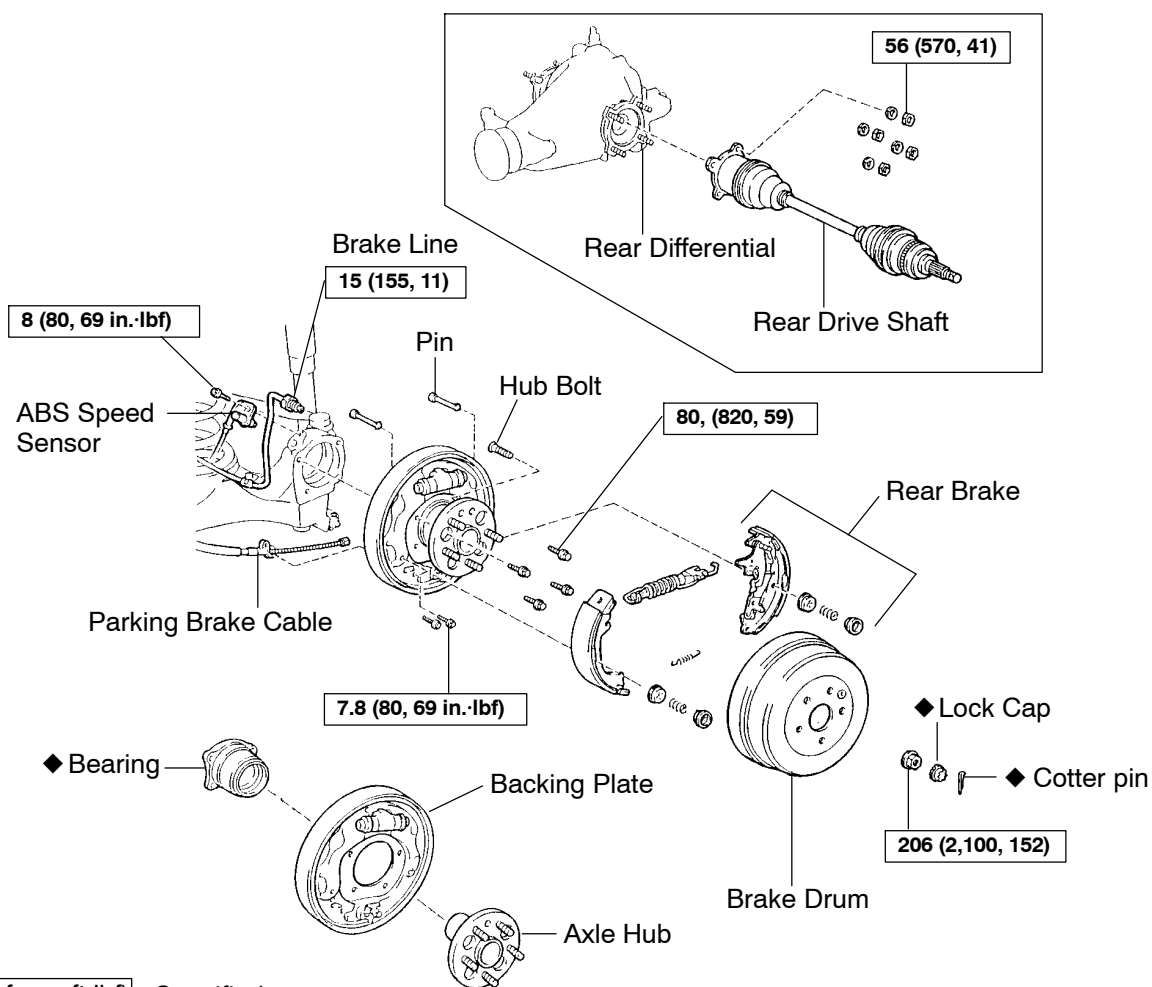
INSTALLATION

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

AFTER INSTALLATION, BLEED BRAKE SYSTEM AND CHECK FOR LEAKS (See page [BR-4](#))

REAR AXLE HUB (4WD) COMPONENTS

SA0U5-02



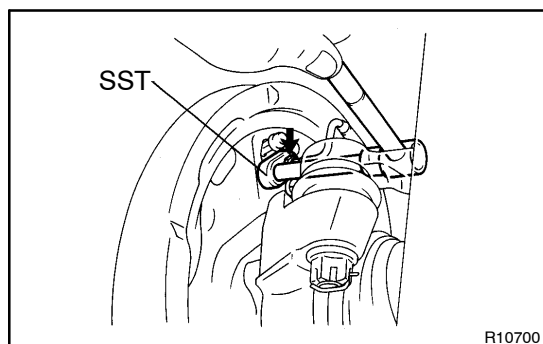
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

F03767

REMOVAL

1. **REMOVE REAR WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **REMOVE BRAKE DRUM**
3. **CHECK BEARING BACKLASH AND AXLE HUB DEVIATION** (See page [SA-52](#))
4. **REMOVE BOLT AND ABS SPEED SENSOR**
Torque: 8 N·m (80 kgf·cm, 69 in·lbf)
5. **REMOVE REAR DRIVE SHAFT** (See page [SA-62](#))
6. **DISASSEMBLE REAR BRAKE** (See page [BR-30](#))

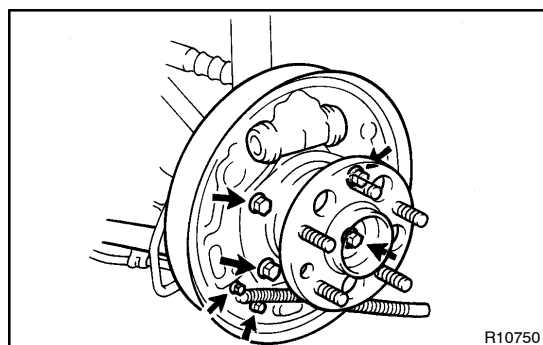


7. DISCONNECT BRAKE LINE

Using SST, disconnect the brake line from the wheel cylinder.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)



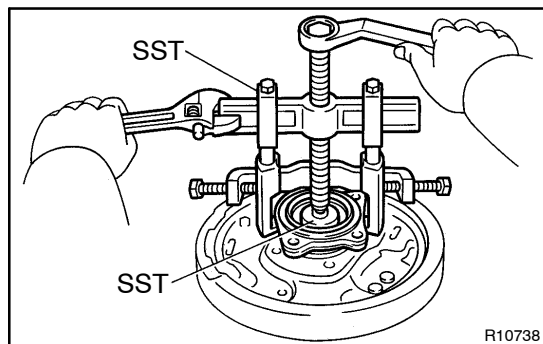
8. REMOVE REAR AXLE HUB WITH BACKING PLATE

- (a) Remove the 2 bolts and disconnect the parking brake cable.

Torque: 8 N·m (80 kgf·cm, 69 in·lbf)

- (b) Remove the 4 bolts and rear axle hub.

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

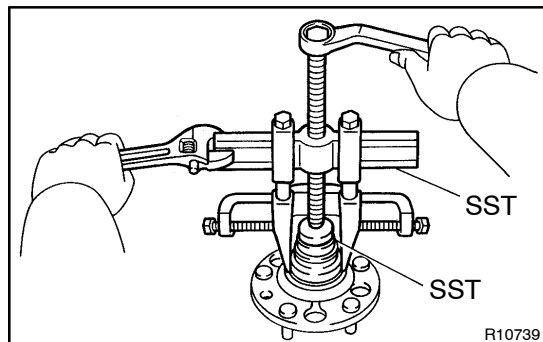


DISASSEMBLY

REMOVE AXLE HUB FROM BEARING

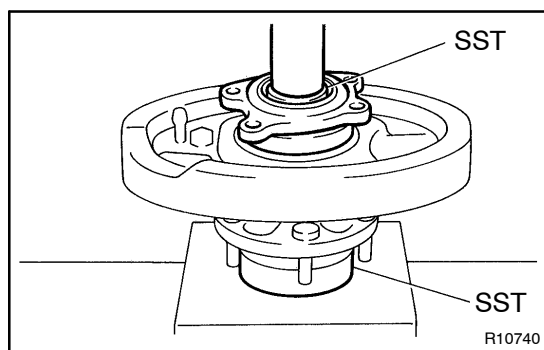
- (a) Using SST, remove the axle hub from the bearing.

SST 09950-60010 (09951-00370),
09950-40010 (09951-04020, 09952-04010,
09953-04020, 09954-04010, 09955-04060,
09957-04010, 09958-04010)



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

SST 09950-60010 (09951-00370),
09950-40010 (09951-04020, 09952-04010,
09953-04020, 09954-04010, 09955-04060,
09957-04010, 09958-04010)



REASSEMBLY

INSTALL AXLE HUB TO NEW BEARING

Using SST and a press, install the axle hub to a new bearing.

SST 09527-17011, 09550-60010 (09951-00530)

HINT:

Before install the bearing, place the backing plate on the axle hub.

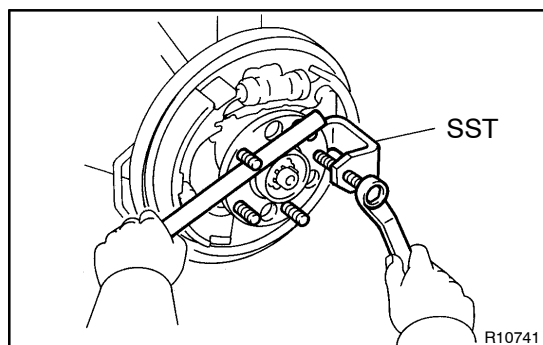
INSTALLATION

Installation is in the reverse order of removal (See page [SA-56](#)).

AFTER INSTALLATION, BLEED BRAKE SYSTEM (See page [BR-4](#)) AND CHECK FOR LEAKS

REAR WHEEL HUB BOLT REPLACEMENT

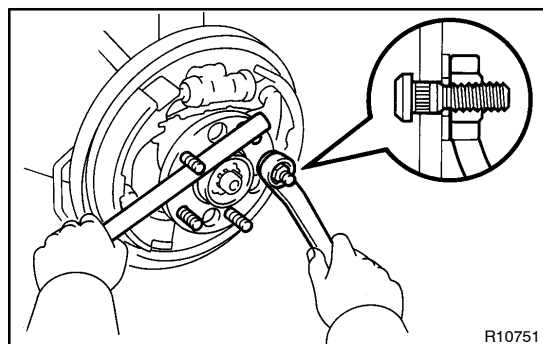
1. REMOVE REAR WHEEL
2. REMOVE BRAKE DRUM



3. REMOVE HUB BOLT

Using SST, remove the hub bolt.

SST 09628-10011



4. INSTALL HUB BOLT

Install a washer and nut to the hub bolt, as shown in the illustration, and install the hub bolt by tightening the nut.

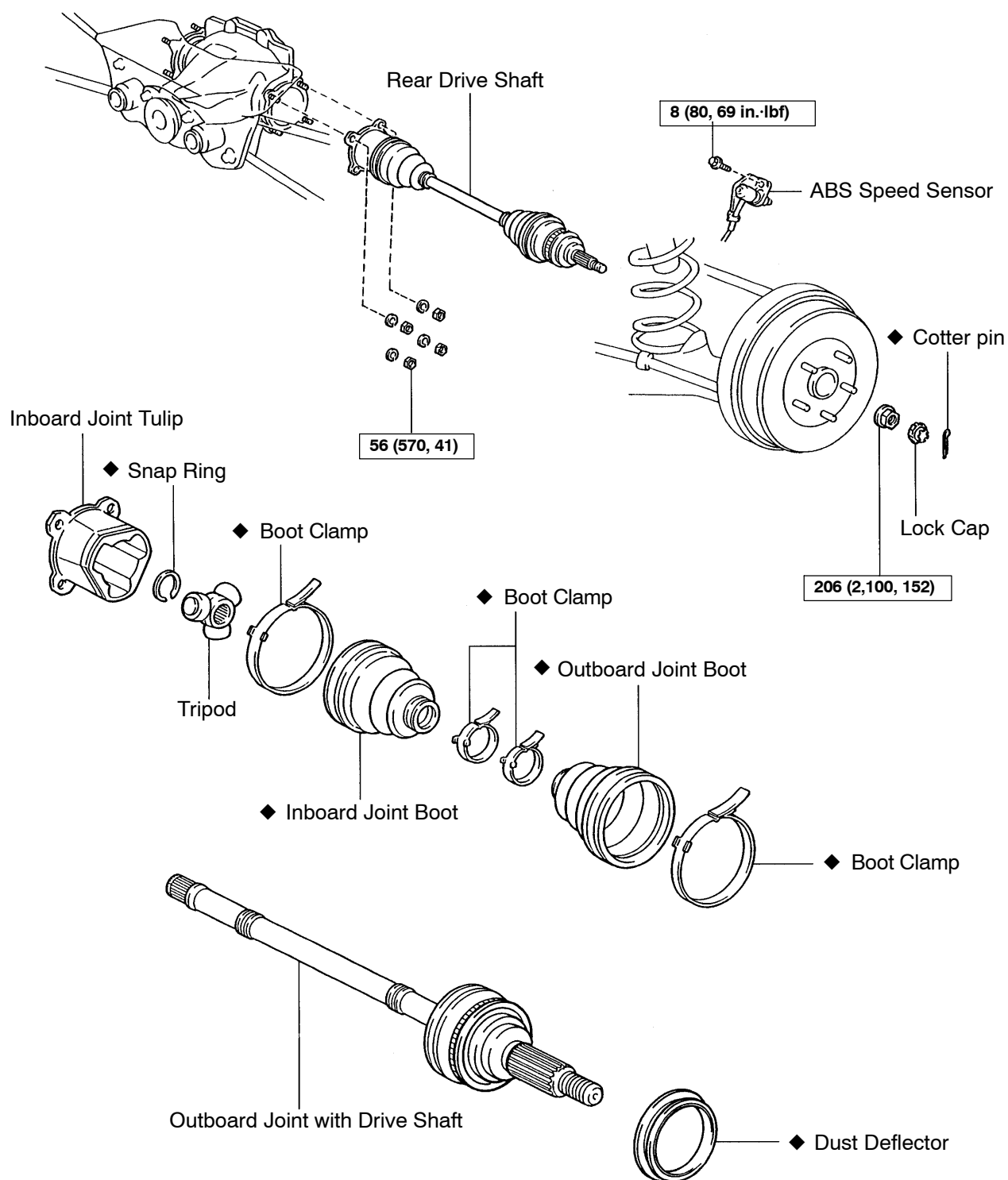
5. INSTALL BRAKE DRUM

6. INSTALL REAR WHEEL

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

REAR DRIVE SHAFT COMPONENTS

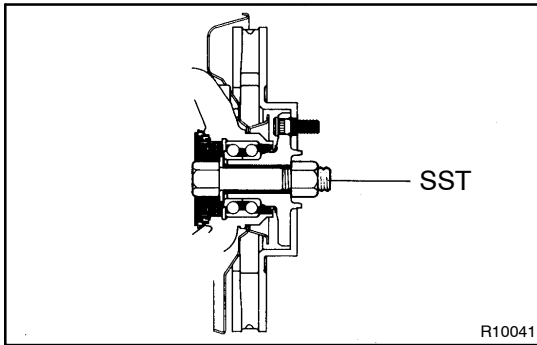
SA0UB-06



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

◆ Non-reusable part

Z19331



REMOVAL

NOTICE:

- The hub bearing could be damaged if it is subjected to the vehicle weight, such as when moving the vehicle with the drive shaft bearing removed. Therefore, if it is absolutely necessary to place the vehicle weight on the hub bearing, first support it with SST. SST 09608-16042 (09608-02021, 09608-02041)

w/ ABS:

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

1. REMOVE REAR WHEEL

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

2. w/ ABS:

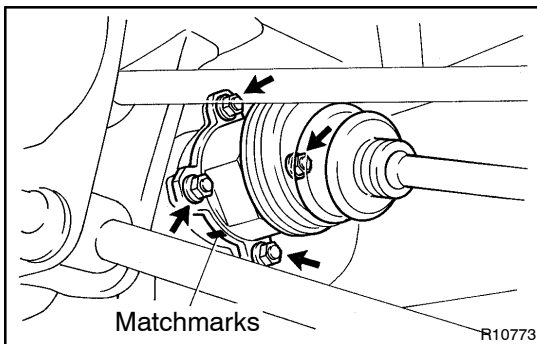
REMOVE BOLT AND ABS SPEED SENSOR

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

3. REMOVE DRIVE SHAFT LOCK NUT

- Remove the cotter pin and lock cap.
- With depressing the brakes, remove the nut.

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



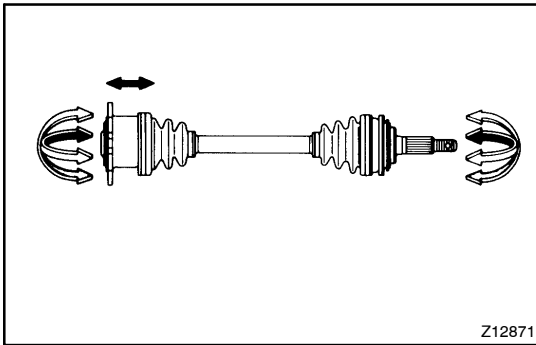
4. REMOVE DRIVE SHAFT

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

- Remove the 4 nuts and washers, and disconnect the drive shaft from the differential side gear shaft.

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

- Remove the drive shaft from the axle carrier.



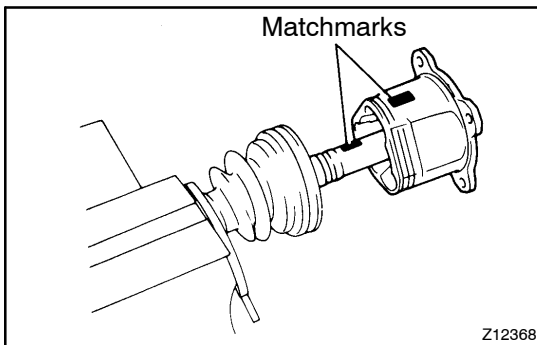
DISASSEMBLY

1. CHECK DRIVE SHAFT

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

2. REMOVE INBOARD AND OUTBOARD JOINT BOOT CLAMPS

Using a screwdriver, remove the 4 boot clamps.



3. REMOVE INBOARD JOINT TULIP

- Place matchmarks on the inboard joint tulip and drive shaft.

NOTICE:

Do not punch the marks.

- Remove the inboard joint tulip from the drive shaft.

4. REMOVE TRIPOD

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

- Place matchmarks on the shaft and tripod.

NOTICE:

Do not punch the marks.

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

NOTICE:

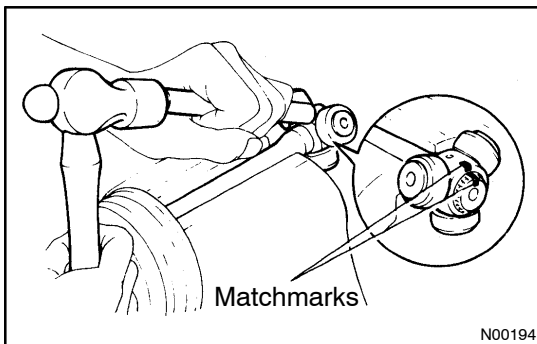
Do not tap the roller.

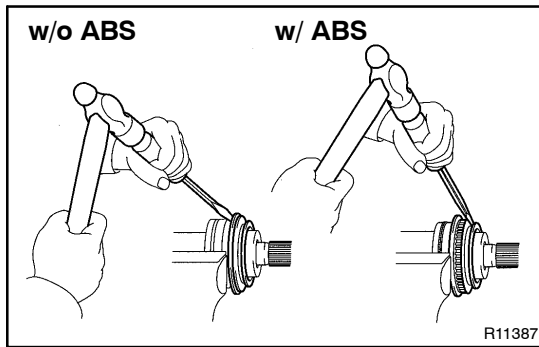
5. REMOVE INBOARD AND OUTBOARD JOINT BOOTS AND CLAMPS

Slide out the 2 boots and 4 clamps.

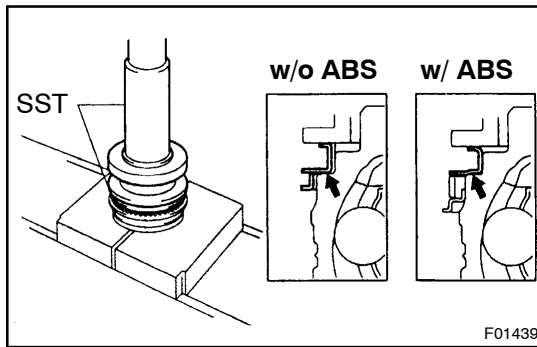
NOTICE:

Do not disassemble the outboard joint.



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

Using a screwdriver and hammer, remove the No.2 dust deflector.



REASSEMBLY

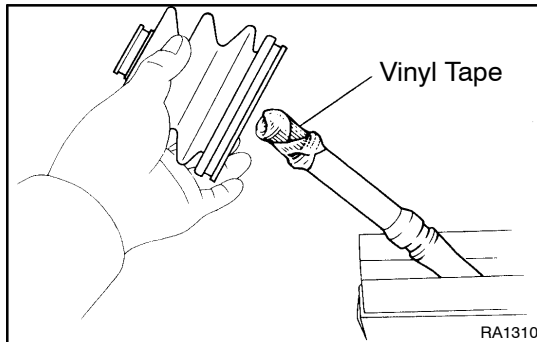
1. INSTALL NEW NO.2 DUST DEFLECTOR

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

SST 09309-36010, 09316-20011

NOTICE:

Be careful not to damage the ABS speed sensor rotor.



2. TEMPORARILY INSTALL NEW OUTBOARD AND INBOARD JOINT BOOTS

HINT:

Before installing the 2 boots, wrap vinyl tape around the spline of the drive shaft to prevent damaging the boots.

- Temporarily install a new outboard joint boot to the drive shaft.
- Temporarily install a new inboard joint boot to the drive shaft.

3. INSTALL TRIPOD

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

NOTICE:

Do not tap the roller.

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

4. INSTALL INBOARD JOINT TULIP

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

HINT:

Use the grease supplied in the boot kit.

Grease capacity (Color = Yellow ocher):

180 – 190 g (6.3 – 6.7 oz.)

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

5. ASSEMBLE BOOT CLAMPS TO BOTH BOOTS

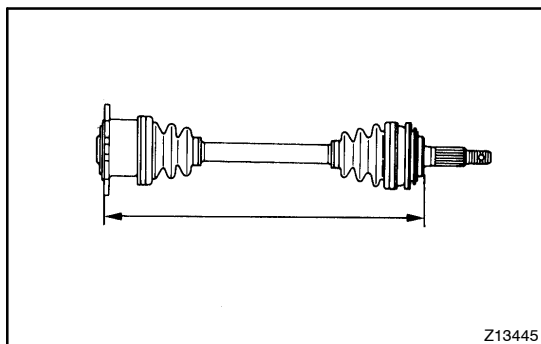
- Before assembling the boot, pack the outboard joint and boot with grease in the boot kit.

Use the grease supplied in the boot kit.

Grease capacity (Color = Black):

100 – 110 g (3.5 – 3.9 oz.)

- Make sure that the 2 boots are on the shaft groove.



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

Standard length:

RH	599.4 ± 5.0 mm (23.598 ± 0.197 in.)
LH	553.4 ± 5.0 mm (21.787 ± 0.197 in.)

- (d) Place 4 new boot clamps to the 2 boots.
(e) Bend the band and lock it with a screwdriver.

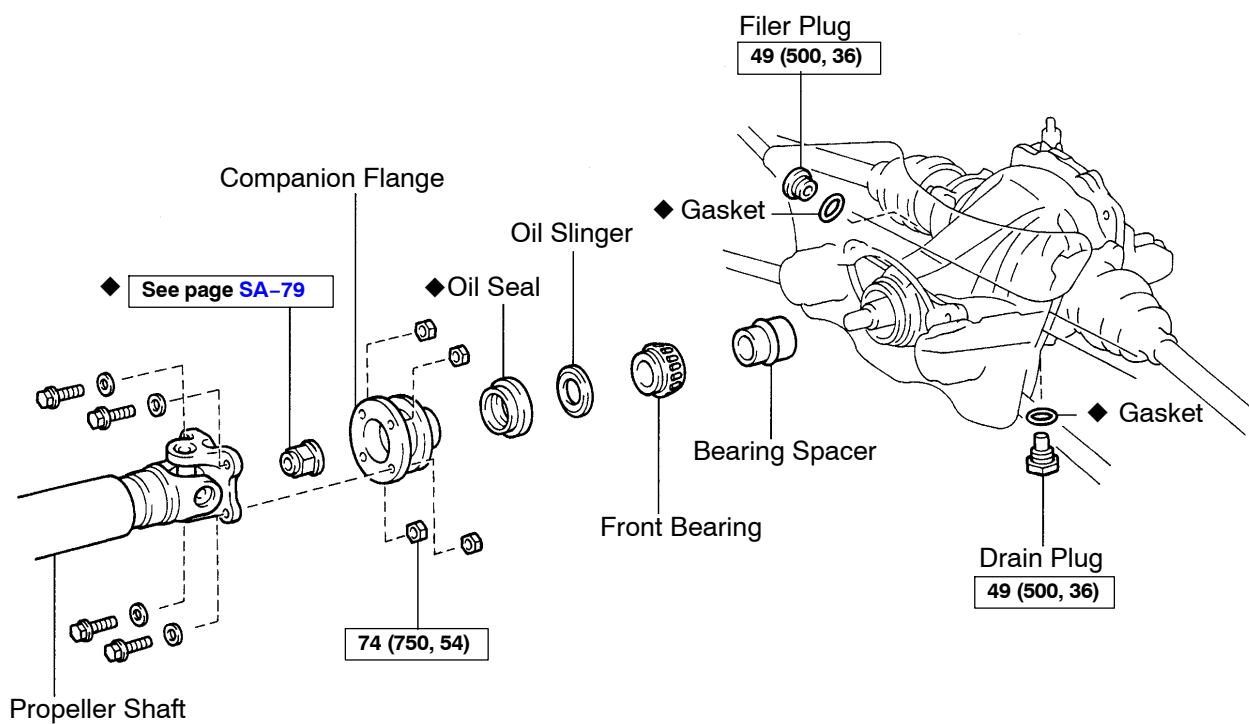
INSTALLATION

Installation is in the reverse order of removal (See page [SA-62](#)).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page [DI-257](#))

REAR DIFFERENTIAL FRONT OIL SEAL COMPONENTS

SA0UG-01



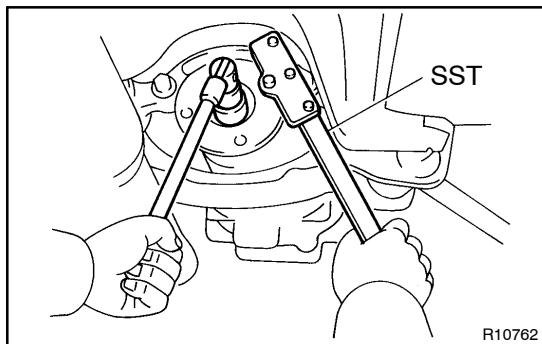
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

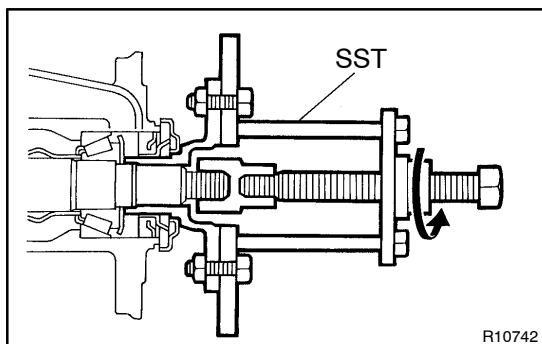
W04154

REPLACEMENT

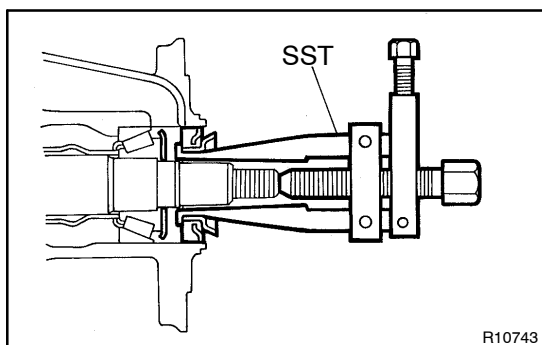
1. **REMOVE PROPELLER SHAFT (See page PR-3)**
2. **REMOVE COMPANION FLANGE**
 - (a) Using a chisel and hammer, unstake the staked part of the nut.



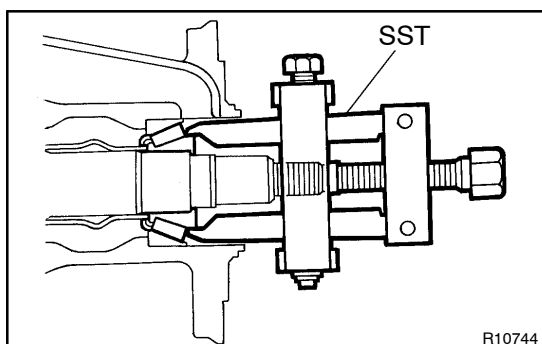
- (b) Using SST to hold the flange, remove the nut.
SST 09330-00021



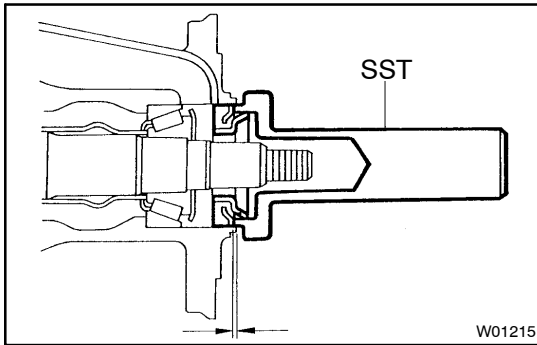
- (c) Using SST, remove the companion flange.
SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03040, 09956-03020)



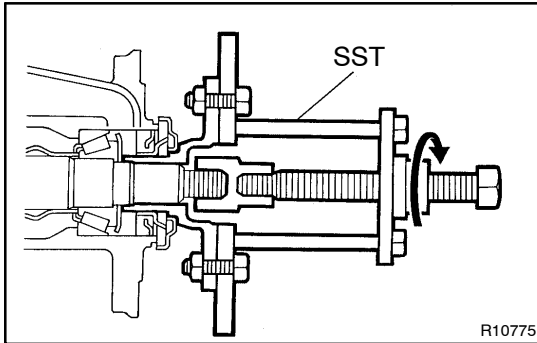
3. **REMOVE FRONT OIL SEAL AND OIL SLINGER**
 - (a) Using SST, remove the oil seal.
SST 09308-10010
 - (b) Remove the oil slinger.



4. **REMOVE FRONT BEARING AND BEARING SPACER**
 - (a) Using SST, remove the front bearing.
SST 09556-22010
 - (b) Remove the bearing spacer.
5. **INSTALL NEW BEARING SPACER AND FRONT BEARING**
 - (a) Install a new bearing spacer on the shaft.
 - (b) Install the front bearing on the shaft.
6. **INSTALL OIL SLINGER AND NEW OIL SEAL**
 - (a) Install the oil slinger.

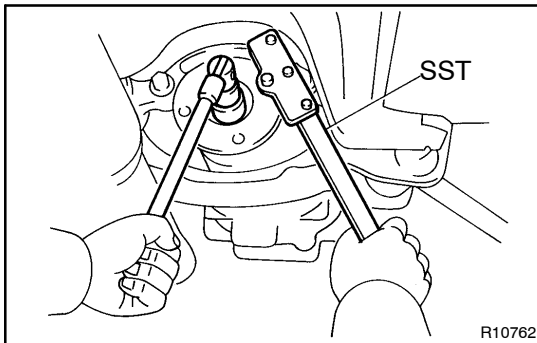


- (b) Using SST, install a new oil seal.
SST 09554-22010
Oil seal drive in depth: 2.0 mm (0.079 in.)
- (c) Apply MP grease to the oil seal lip.



7. INSTALL COMPANION FLANGE

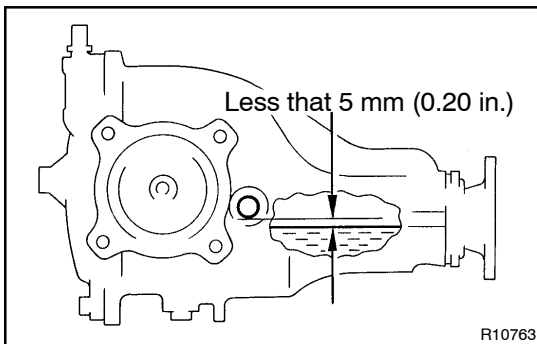
- (a) Using SST, install the companion flange on the shaft.
SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03040, 09956-03020)



- (b) Coat the threads of a new nut with hypoid gear oil.
- (c) Using SST to hold the flange, torque the nut.
SST 09330-00021
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)
- (d) Adjust the preload of bearing on drive pinion (See page [SA-79](#)).

8. STAKE DRIVE PINION NUT

9. INSTALL PROPELLER SHAFT (See page [PR-2](#))

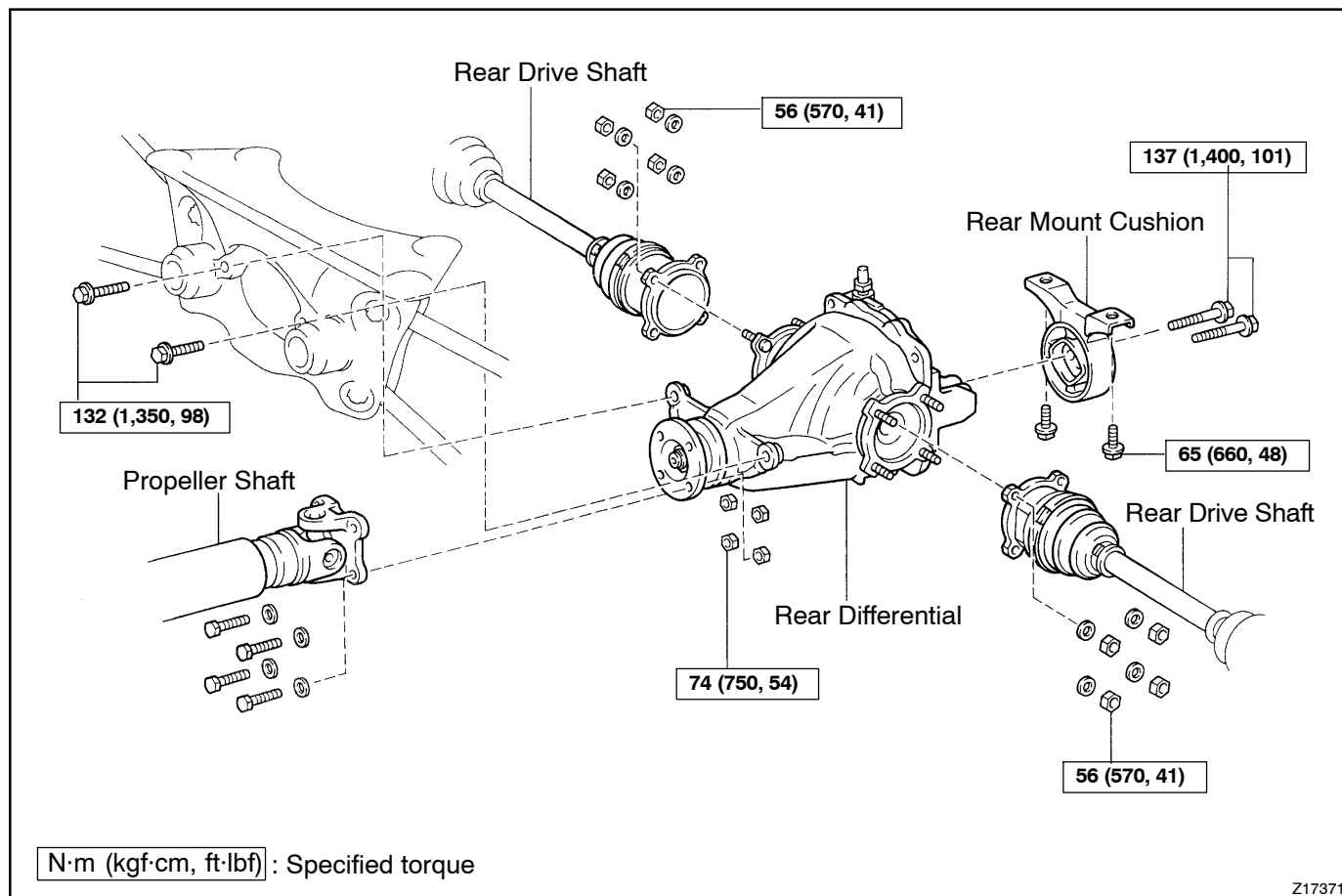


10. FILL DIFFERENTIAL WITH DIFFERENTIAL OIL

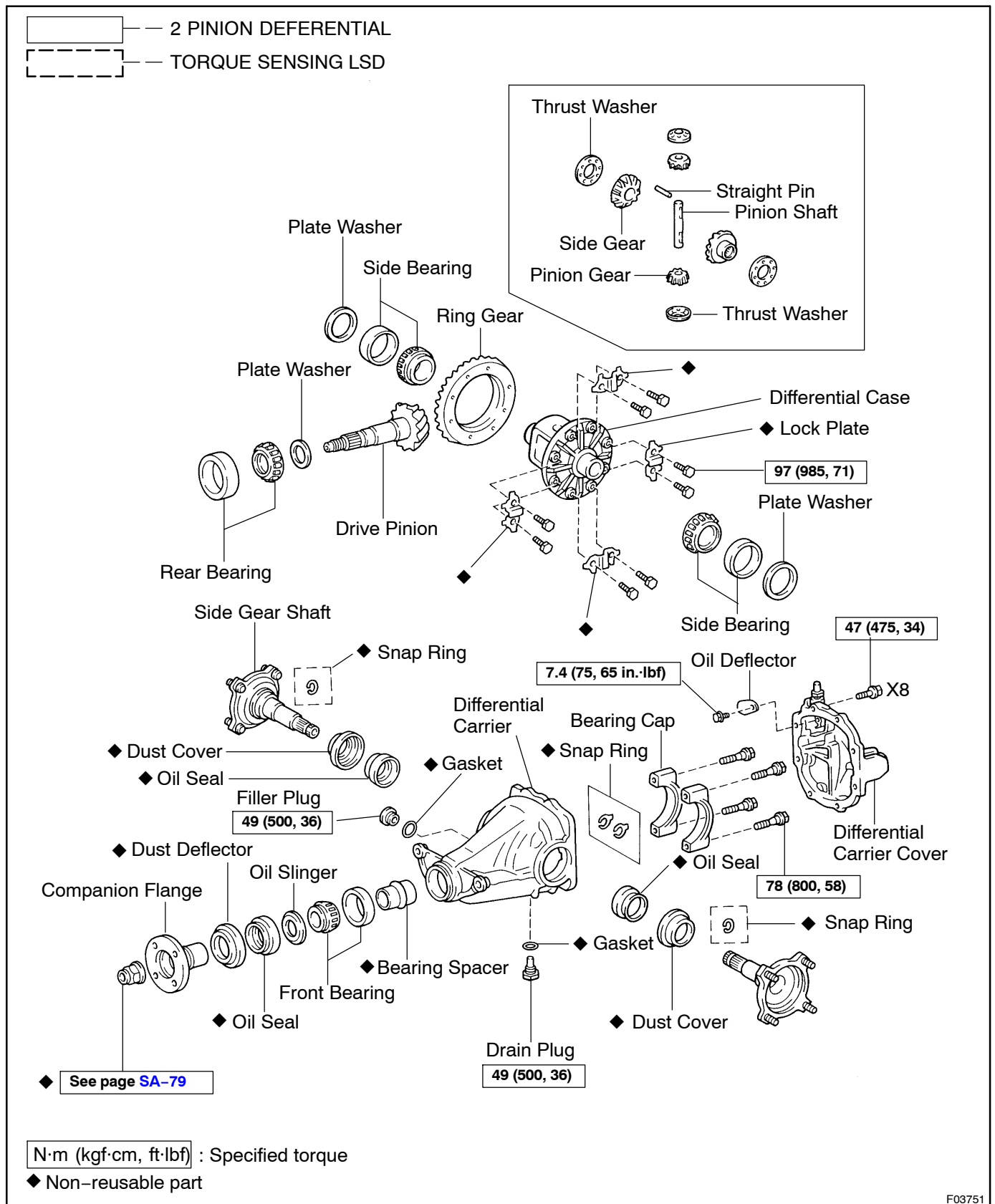
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)
Oil grade: Hypoid gear oil API GL-5
Recommended oil viscosity:
Above -18°C (0°F) SAE 90
Below -18°C (0°F) SAE 80W or 80W-90
Capacity: 0.9 liter (1.0 US qts, 0.8 Imp. qts)

REAR DIFFERENTIAL CARRIER COMPONENTS

SA0UI-03



Z17371



REMOVAL

1. REMOVE DRIVE SHAFTS (See page SA-62)

HINT:

Support the drive shafts securely.

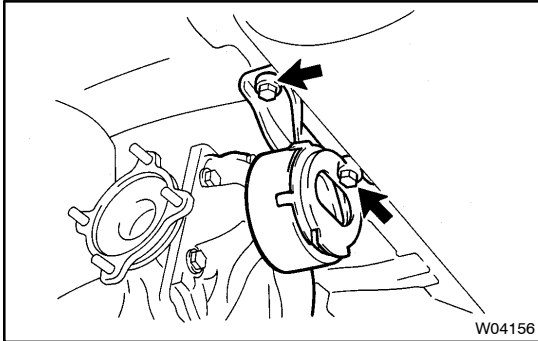
2. REMOVAL PROPELLER SHAFT (See page PR-2)

HINT:

Support the propeller shaft securely.

3. DRAIN DIFFERENTIAL OIL

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

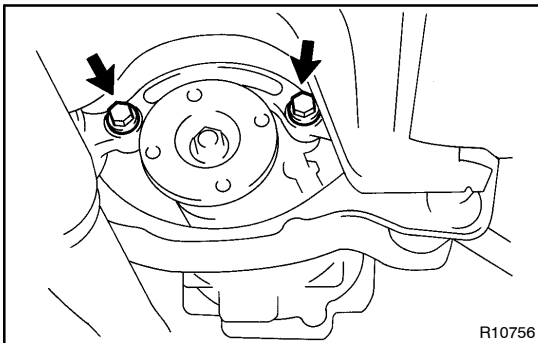


4. REMOVE DIFFERENTIAL

(a) Support the differential with a jack.

(b) Remove the 2 rear mounting bolts.

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



(c) Remove the 2 front mounting bolts and differential.

Torque: 132 N·m (1,350 kgf·cm, 98 ft·lbf)

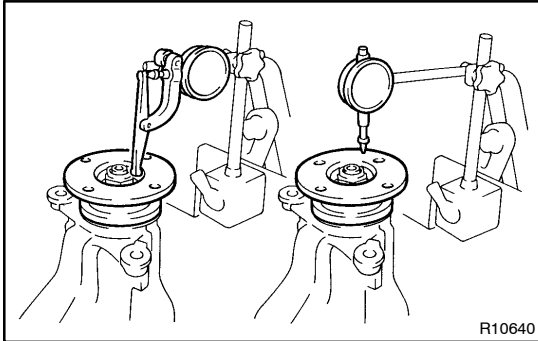
(d) Remove the 2 bolts and differential rear mount cushion from the differential.

Torque: 137 N·m (1,400 kgf·cm, 101 ft·lbf)

DISASSEMBLY

1. REMOVE DIFFERENTIAL CARRIER COVER

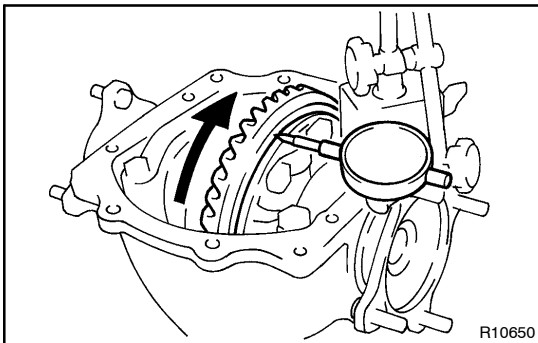
- Remove the 8 bolts from the carrier cover.
- Using a brass bar and hammer, separate the cover and carrier.



2. CHECK RUNOUT OF COMPANION FLANGE

Using a dial indicator, measure the runout of the companion flange vertically and horizontally.

Maximum runout: 0.10 mm (0.0039 in.)

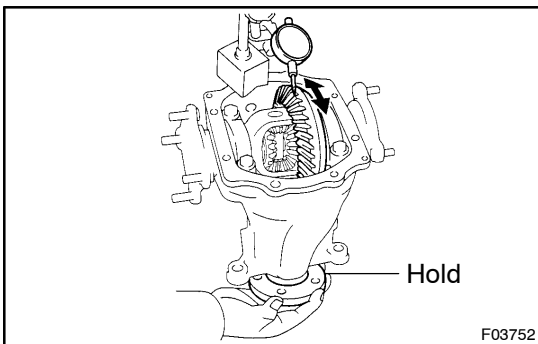


3. CHECK RING GEAR RUNOUT

Using a dial indicator, check the runout of the ring gear.

Maximum runout: 0.07 mm (0.0028 in.)

If the runout is greater than the maximum, replace with a new ring gear.



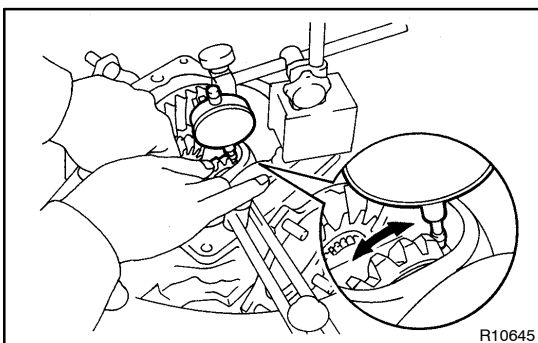
4. CHECK RING GEAR BACKLASH

Using a dial indicator, check the backlash of the ring gear.

Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)

If the backlash is not within the specification, adjust the side bearing preload or repair as necessary.

5. CHECK TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION (See page SA-79)



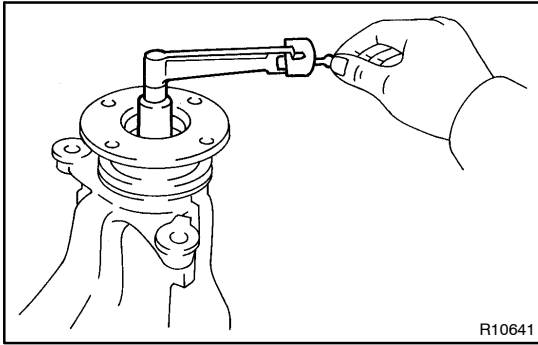
6. 2 PINION DIFFERENTIAL:

CHECK SIDE GEAR BACKLASH

Using a dial indicator, check the backlash of the side gear with holding 1 pinion gear toward the differential case.

Backlash: 0.05 – 0.20 mm (0.0020 – 0.0079 in.)

If the backlash is not within the specification, install the 2 side gear thrust washers of different thickness (See page SA-79).



7. MEASURE DRIVE PINION PRELOAD

Using a torque wrench, measure the preload of the backlash between 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)

8. CHECK TOTAL PRELOAD

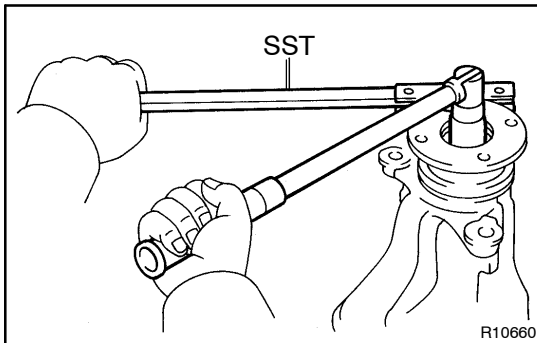
Using a torque wrench, measure the preload.

Total preload (at starting):

Drive pinion preload plus

0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in.·lbf)

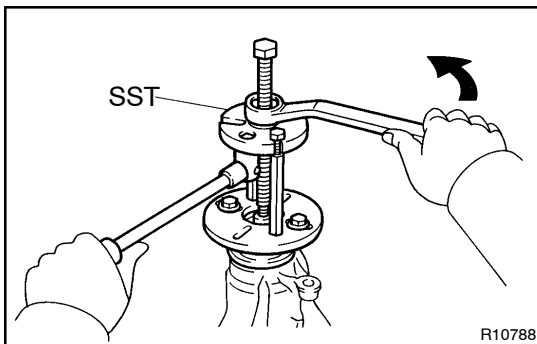
If necessary, disassemble and inspect the differential.



9. REMOVE COMPANION FLANGE

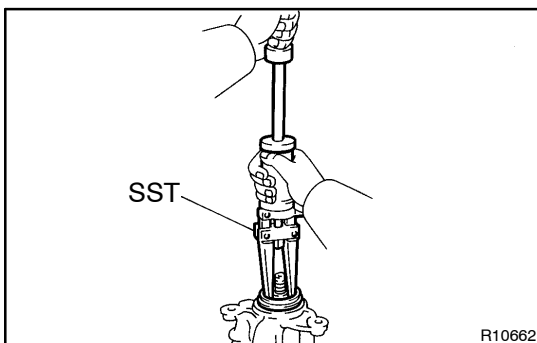
(a) Using a chisel and hammer, unstake the staked part of the nut.

(b) Using SST to hold the flange, remove the nut.
SST 09330-00021



(c) Using SST, remove the companion flange.

SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03040, 09956-03020)

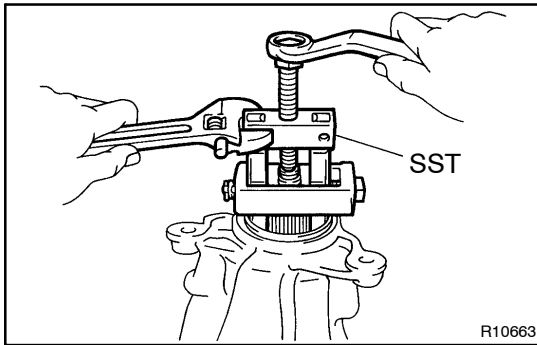


10. REMOVE FRONT OIL SEAL AND OIL SLINGER

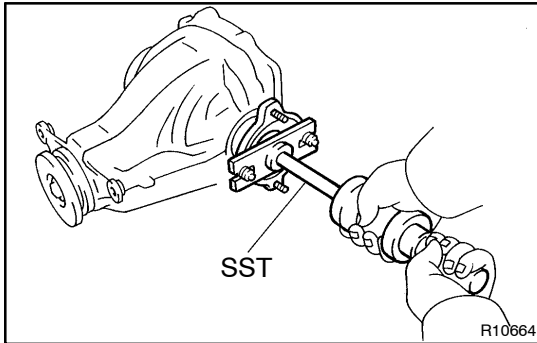
(a) Using SST, remove the oil seal from the housing.

SST 09308-10010

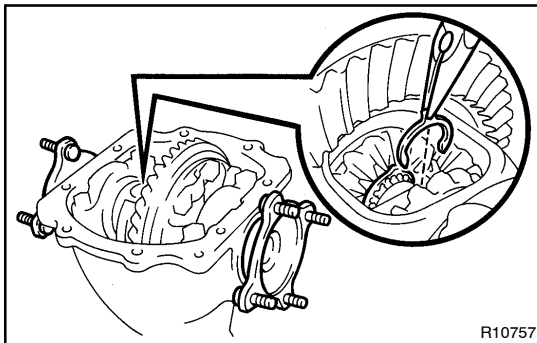
(b) Remove the oil slinger.



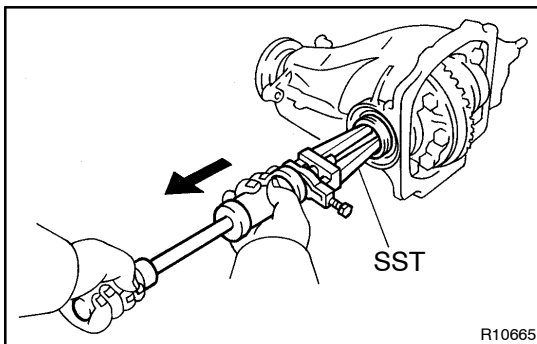
- 11. REMOVE FRONT BEARING AND BEARING SPACER**
- (a) Using SST, remove the front bearing from the drive pinion.
SST 09556-22010
 - (b) Remove the bearing spacer.



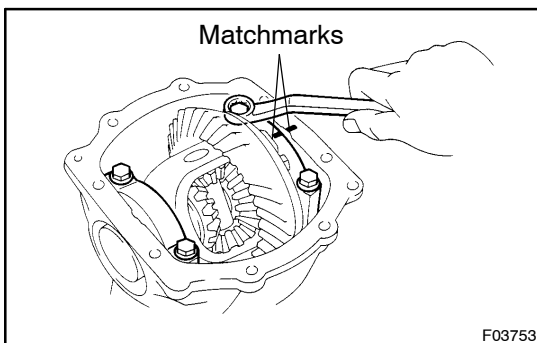
- 12. Torque Sensing LSD:
REMOVE SIDE GEAR SHAFTS**
- (a) Using SST, remove the 2 side gear shafts from the differential.
SST 09520-24010
 - (b) Using a screwdriver, remove the 2 snap rings from the 2 side gear shafts.



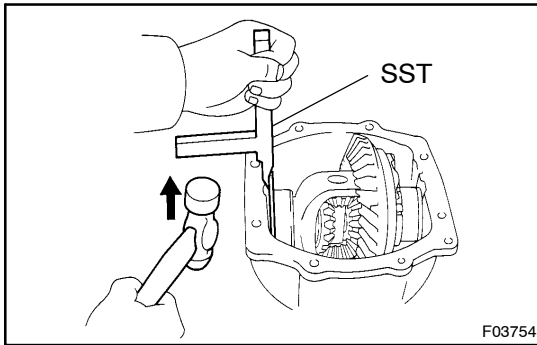
- 13. 2 Pinion Differential:
REMOVE SIDE GEAR SHAFTS**
- (a) Using needle nose pliers, remove the 2 snap rings from the 2 side gear shafts.
 - (b) Remove the 2 side gear shafts.



- 14. REMOVE SIDE GEAR SHAFT OIL SEALS**
- Using SST, remove the 2 oil seals from the housing.
SST 09308-00010



- 15. REMOVE DIFFERENTIAL CASE**
- (a) Place matchmarks on the bearing cap and differential carrier.
 - (b) Remove the 4 bolts and 2 bearing caps.



- (c) Using SST and a hammer, remove the 2 plate washers.
SST 09504-22011

HINT:

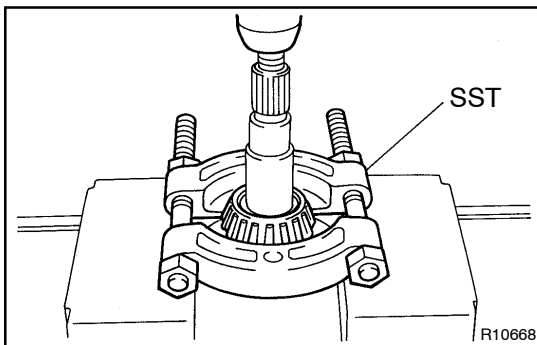
Measure the plate washer and note down the thickness.

- (d) Remove the differential case and 2 bearing outer races from the carrier.

HINT:

Tag the 2 bearing outer races to show the location for reassembling.

16. REMOVE DRIVE PINION FROM DIFFERENTIAL CARRIER



17. REMOVE DRIVE PINION REAR BEARING

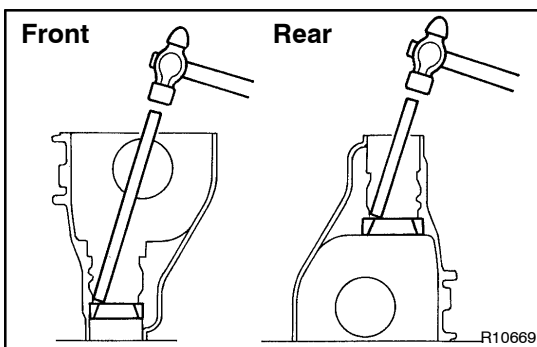
- (a) Using SST and a press, remove the bearing from the drive pinion.

SST 09950-00020

HINT:

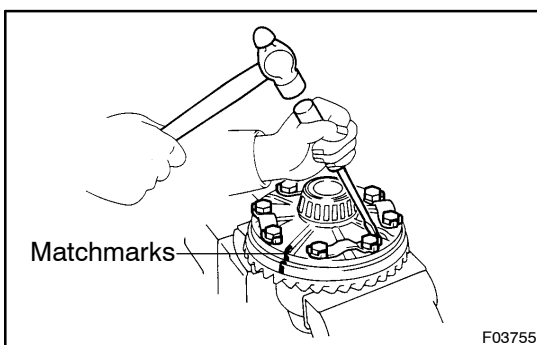
If the drive pinion or ring gear are damaged, replace them a set.

- (b) Remove the plate washer.



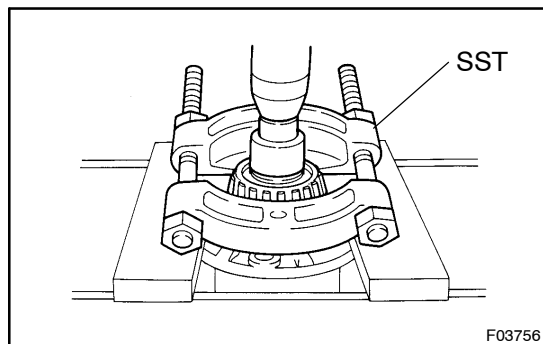
18. REMOVE FRONT AND REAR BEARING OUTER RACES

Using a brass bar and hammer, remove the 2 outer races from the carrier.



19. REMOVE RING GEAR

- (a) Place matchmarks on the ring gear and differential case.
(b) Using a screwdriver and hammer, unstick the 4 lock plates.
(c) Remove the 8 ring gear set bolts and 4 lock plates.
(d) Using a plastic hammer, tap on the ring gear to separate it from the differential case.

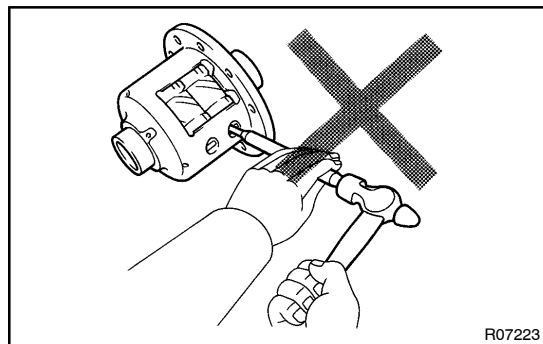
**20. REMOVE SIDE BEARINGS**

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

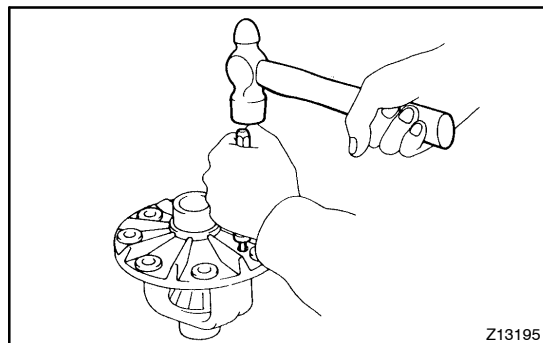
SST 09950-00020

NOTICE:

Be careful not to drop the differential case.

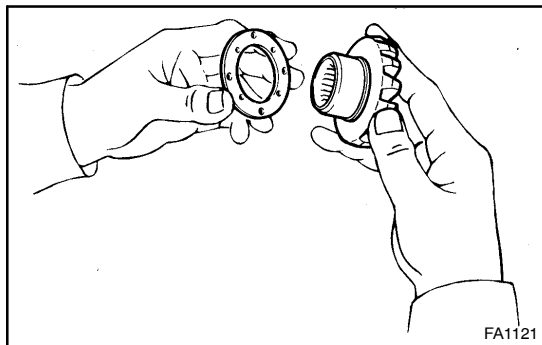
**21. 2 Pinion Differential Only:****DISASSEMBLE DIFFERENTIAL CASE****NOTICE:**

If equipped with Torque Sensing LSD, do not disassemble the differential case.



- (a) Using a pin punch and hammer, remove the straight pin.
(b) Remove these parts from the differential case:

- Pinion shaft
- 2 pinion gears
- 2 pinion gear thrust washers
- 2 side gears
- 2 side gear thrust washers



REASSEMBLY

1. 2 Pinion Differential:

ADJUST DIFFERENTIAL SIDE GEAR BACKLASH

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

HINT:

Refer to the table below to table, select 2 thrust washers which will ensure that the backlash is within the specification.

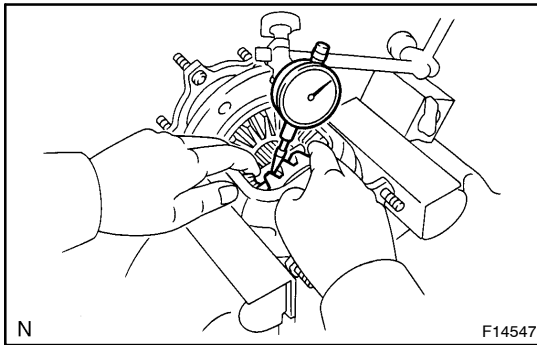
Thrust washer thickness

Thickness mm (in.)	Thickness mm (in.)
0.93 – 0.97 (0.0366 – 0.0382)	1.08 – 1.12 (0.0425 – 0.0441)
0.98 – 1.02 (0.0386 – 0.0402)	1.13 – 1.17 (0.0445 – 0.0461)
1.03 – 1.07 (0.0406 – 0.0421)	1.18 – 1.22 (0.0465 – 0.0480)

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

HINT:

Align the holes of the differential case and pinion shaft.

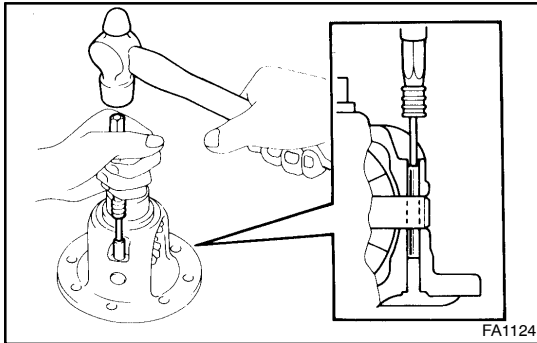


- (c) Measure the side gear backlash.
- (1) Install the 2 side gear shafts.
 - (2) Measure the side gear backlash with holding 1 pinion gear toward the differential case.

Backlash: 0.05 – 0.20 mm (0.0020 – 0.0079 in.)

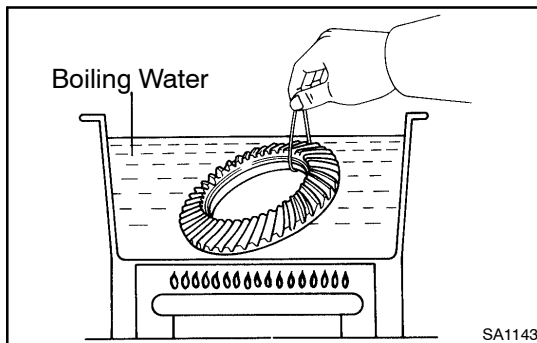
If the backlash is not within the specification, install the 2 side gear thrust washers with different thicknesses.

- (3) Remove the 2 side gear shafts.



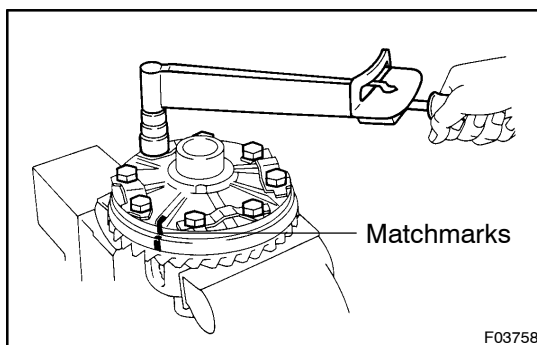
2. 2 PINION DIFFERENTIAL: INSTALL STRAIGHT PIN AND STAKE DIFFERENTIAL CASE

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



3. INSTALL RING GEAR ON DIFFERENTIAL CASE

- (a) Clean the contact surfaces of the differential case and ring gear.
- (b) Heat the ring gear in boiling water.
- (c) Carefully remove the ring gear from the boiling water.



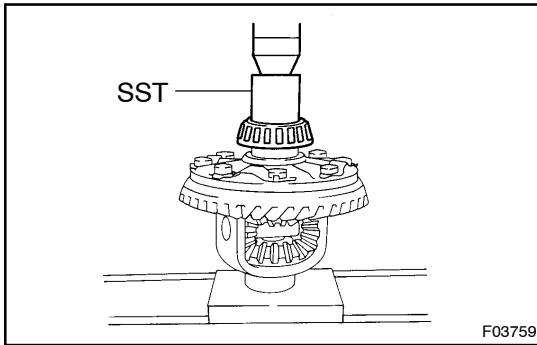
- (d) After the moisture on the ring gear has completely evaporated, quickly install the ring gear to the differential case.
- (e) Align the matchmarks on the ring gear and differential case.
- (f) Temporarily install the 4 lock plates and 8 bolts.
- (g) After the ring gear cools down enough, torque the 8 bolts uniformly at a time.

Torque: 97 N·m (985 kgf·cm, 71 ft·lbf)

- (h) Using a chisel and hammer, stake the 4 lock plates.

HINT:

Stake one claw flush with the flat surface of the bolt. For the claw contacting the protruding portion of the bolt, stake only the half of it on the tightening side.



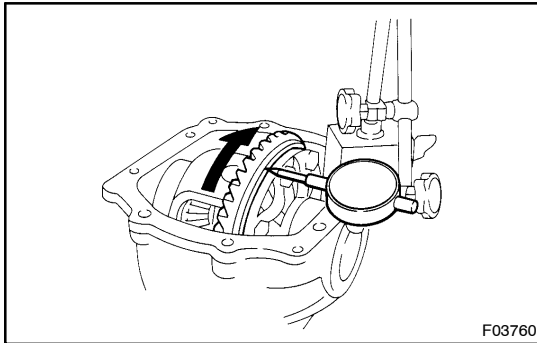
4. INSTALL SIDE BEARINGS

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

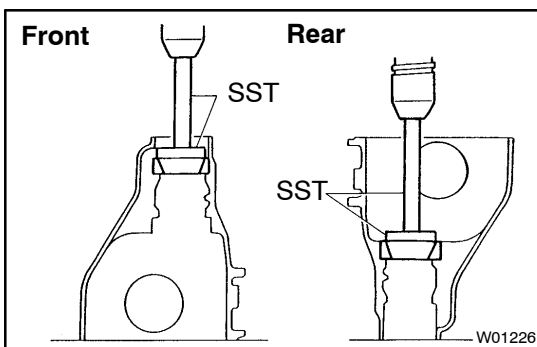
SST 09710-22021 (09710-01031)

5. INSPECT RING GEAR RUNOUT

- Install the differential case on the carrier, and install the 2 plate washers to fill the no play in the bearing.
- Install the bearing caps (See page SA-79).



- Using a dial indicator, measure the runout of the ring gear.
Maximum runout: 0.07 mm (0.0028 in.)
- Remove the 2 bearing caps, 2 plate washers and differential carrier (See page SA-74).



6. INSTALL FRONT AND REAR BEARING OUTER RACES

- Front side:
Using SST and a press, install the 2 outer races to the carrier.

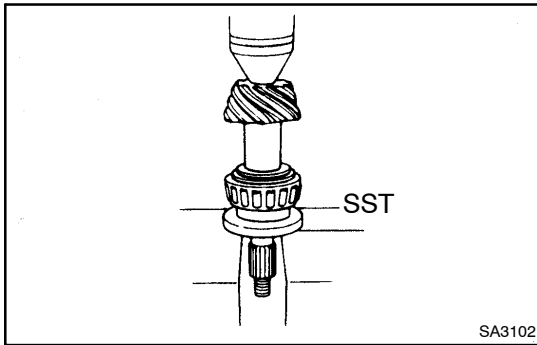
SST 09950-60020 (09951-00790),
09950-70010 (09951-07150)

- Rear side:
Using SST and a press, install the 2 outer races to the carrier.

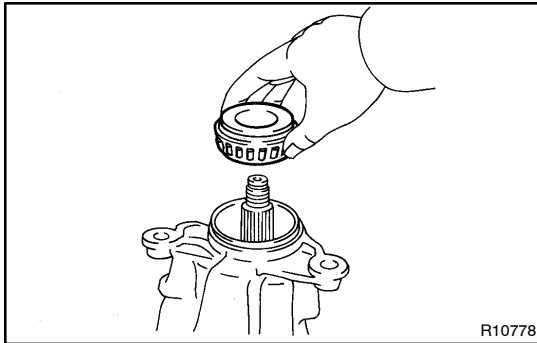
SST 09950-60020 (09951-00710),
09950-70010 (09951-07150)

7. INSTALL DRIVE PINION REAR BEARING

- Install the reused washer on the drive pinion.



- (b) Using SST and a press, install the rear bearing onto the drive pinion.
SST 09506-30012

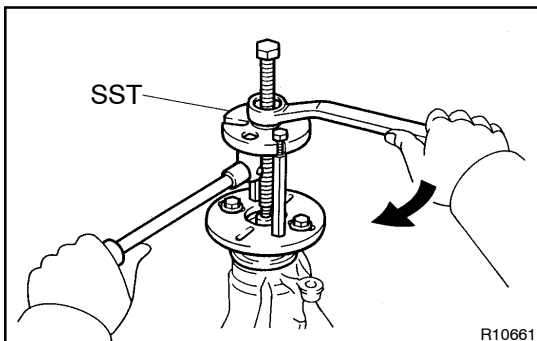


8. TEMPORARILY ADJUST DRIVE PINION PRELOAD

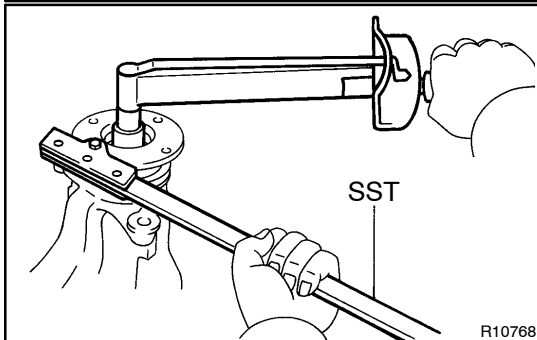
- (a) Install the drive pinion and front bearing.

HINT:

Assemble the spacer, oil slinger and oil seal after adjusting the gear contact pattern.



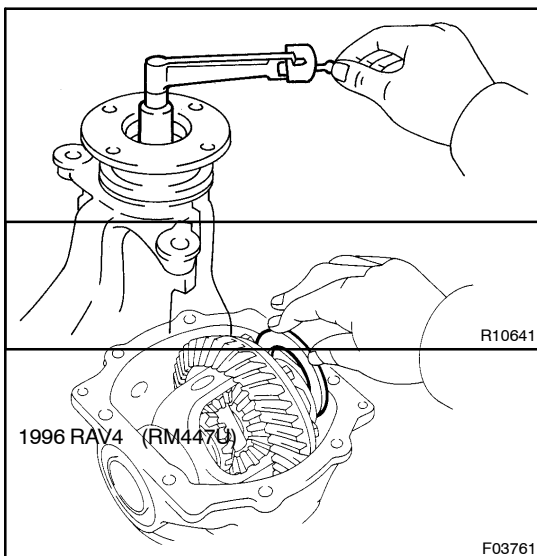
- (b) Using SST, install the companion flange.
SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03040, 09956-03020)
(c) Coat the threads of the nut with MP grease.



- (d) Adjusting the drive pinion preload by tightening the companion flange nut.
Using SST to hold the flange, torque the nut.
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)
SST 09330-00021

NOTICE:

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



- (e) Using a torque wrench, measure the preload.

Preload (at starting):

New bearing:

1.0 - 1.6 N·m (10 - 16 kgf·cm, 8.7 - 13.9 in·lbf)

Reused bearing:

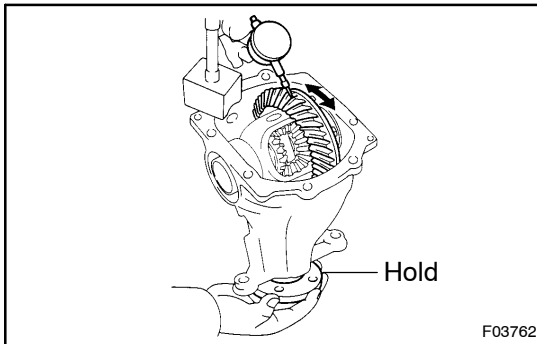
0.5 - 0.8 N·m (5 - 8 kgf·cm, 4.3 - 6.9 in·lbf)

9. INSTALL DIFFERENTIAL CASE IN CARRIER

- (a) Place the 2 bearing outer races on their respective bearings. Make sure the left and right races are not interchanged.
- (b) Install the differential case in the carrier.

10. ADJUST RING GEAR BACKLASH

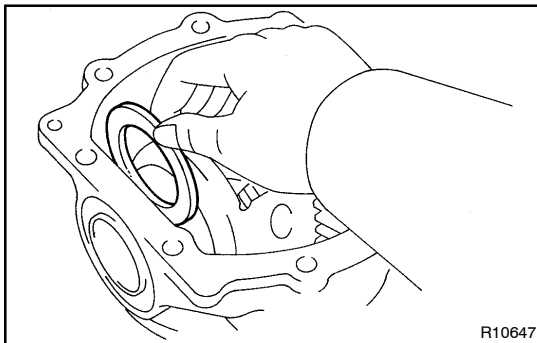
- (a) Install only the plate washer on the ring gear back side.
- (b) Snug down the washer and bearing by tapping on the ring gear with a plastic hammer.



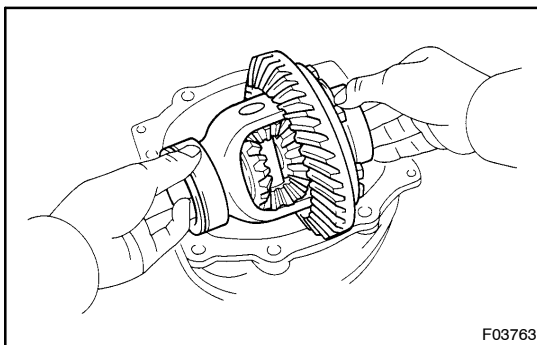
- (c) Using a dial indicator, hold the side bearing boss on the teeth surface of the ring gear and measure the ring gear backlash.

Backlash (reference): 0.13 mm (0.0051 in.)

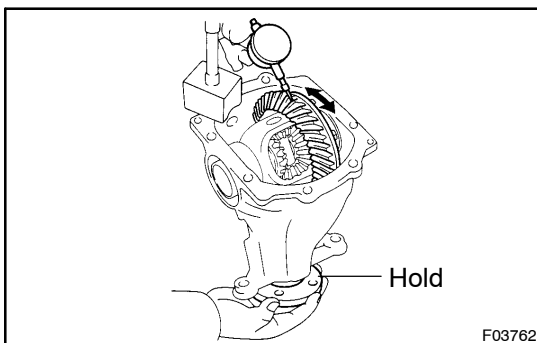
- (d) Select a ring gear back side plate washer so that the backlash is 0.13 mm (0.0051 in.).



- (e) Select a ring gear teeth side washer with a thickness which eliminates any clearance between the outer race and case.
- (f) Remove the plate washer and differential case.
- (g) Install the plate washer into the ring gear back side.



- (h) Place the outer plate washer onto the differential case together with the outer race, and install the differential case with the outer race into the carrier.
- (i) Using a plastic hammer, snug down the washer and bearing by tapping the ring gear.



- (j) Using a dial indicator, measure the ring gear backlash.

Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)

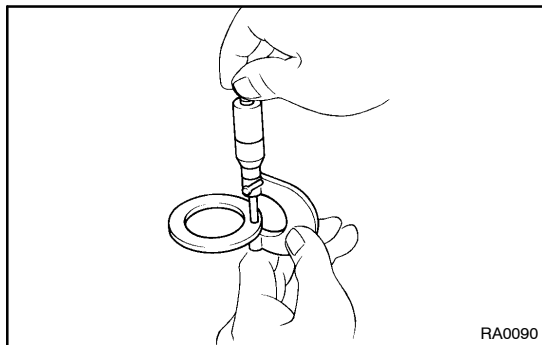
If it is not within the specification, adjust it by either increasing or decreasing the thickness of washers on both sides by an equal amount.

HINT:

There should be clearance between the plate washer and case. Ensure that there is ring gear backlash.

11. ADJUST SIDE BEARING PRELOAD

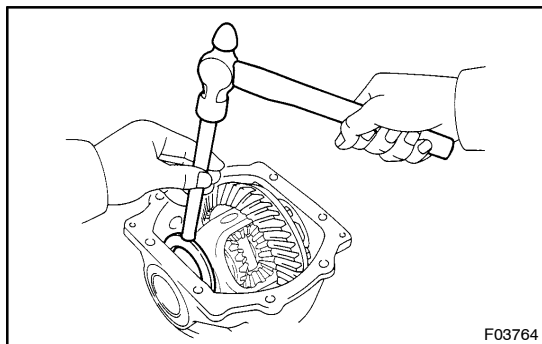
- (a) After adjustment with the ring gear backlash as reference, remove the teeth side plate washer.



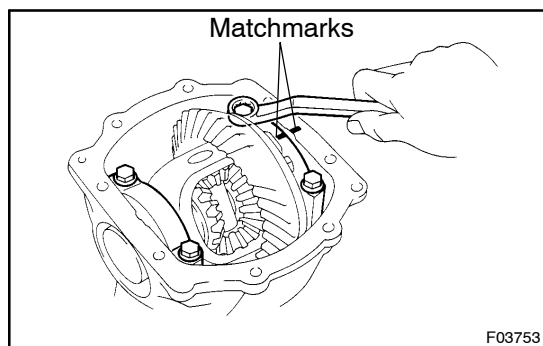
- (b) Using a micrometer, measure the thickness of the removed plate washer.
- (c) Install a new washer 0.06 – 0.09 mm (0.0024 – 0.0035 in.) thicker than the removed washer.

HINT:

Select a washer which can be pressed in 2/3 of the way by finger.

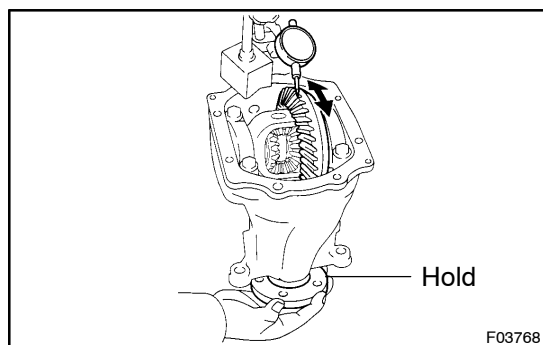


- (d) Using a brass bar and hammer, tap in the plate washer.



- (e) Align the matchmarks on the cap and carrier, and install the 2 bearing caps and 4 bolts.

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



- (f) Recheck the ring gear backlash.

Backlash: 0.13 – 0.18 mm (0.0051 – 0.0071 in.)

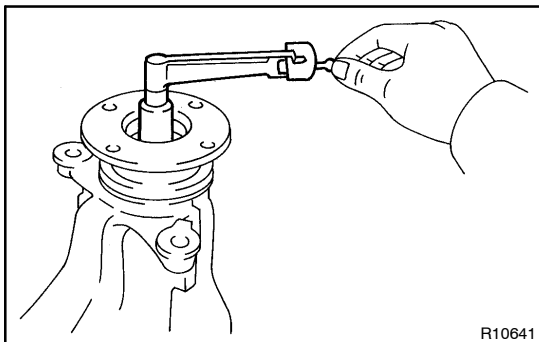
If it is not within the specification, adjust it by either increasing or decreasing the thickness washers on both sides by equal amount.

HINT:

The backlash will change by about 0.02 mm (0.0008 in.) every 0.03 mm (0.0012 in.) change in the plate washer thickness.

Washer thickness

Thickness mm (in.)	Thickness mm (in.)	Thickness mm (in.)
2.26 – 2.28 (0.0890 – 0.0898)	2.41 – 2.43 (0.0949 – 0.0957)	2.56 – 2.58 (0.1008 – 0.1016)
2.29 – 2.31 (0.0902 – 0.0909)	2.44 – 2.46 (0.0961 – 0.0969)	2.59 – 2.61 (0.1020 – 0.1028)
2.32 – 2.34 (0.0913 – 0.0921)	2.47 – 2.49 (0.0972 – 0.0980)	2.62 – 2.64 (0.1031 – 0.1039)
2.35 – 2.37 (0.0925 – 0.0933)	2.50 – 2.52 (0.0984 – 0.0992)	2.65 – 2.67 (0.1043 – 0.1051)
2.38 – 2.40 (0.0937 – 0.0945)	2.53 – 2.55 (0.0996 – 0.1004)	2.68 – 2.70 (0.1055 – 0.1063)



R10641

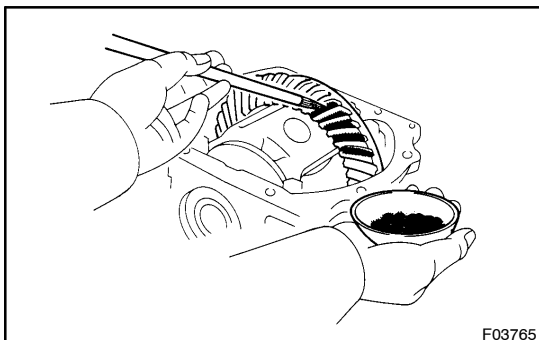
12. MEASURE TOTAL PRELOAD

Using a torque wrench, measure the preload.

Total preload (at starting):

Drive pinion preload plus

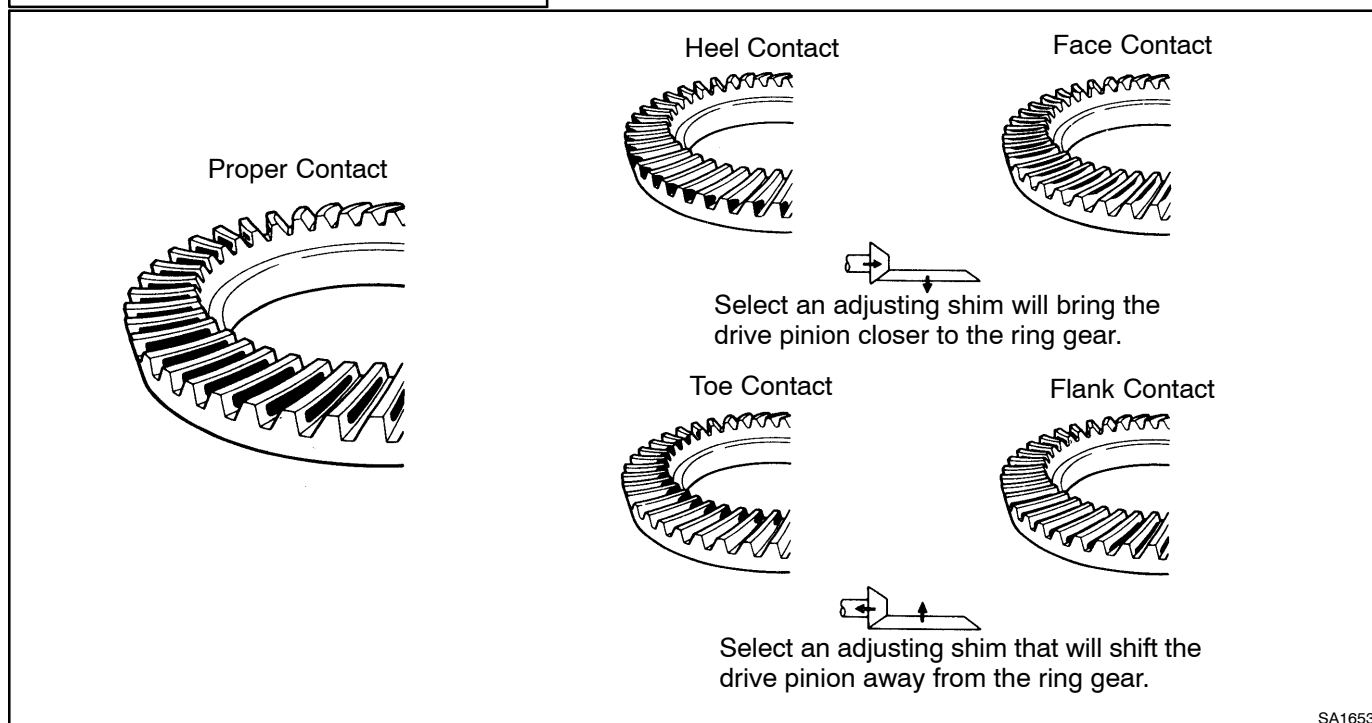
0.3 – 0.5 N·m (3 – 5 kgf·cm, 2.6 – 4.3 in.·lbf)



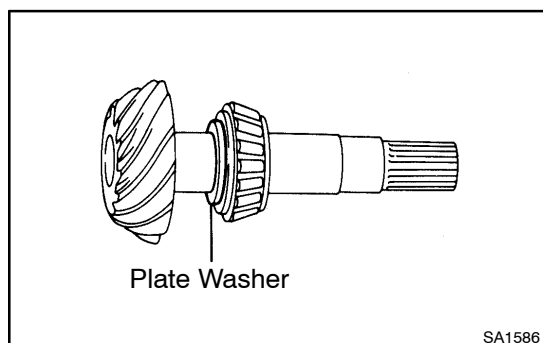
F03765

13. INSPECT TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION

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



SA1653

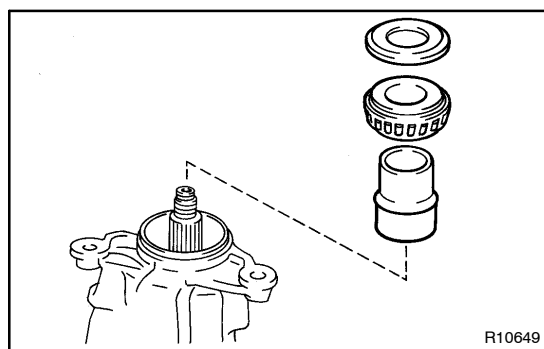


SA1586

If the teeth are not contacting properly, use the following chart to select a proper washer for correction.

Washer thickness

Thickness mm (in.)	Thickness mm (in.)	Thickness mm (in.)
2.21 - 2.23 (0.0870 - 0.0878)	2.57 - 2.59 (0.1012 - 0.1020)	2.93 - 2.95 (0.1154 - 0.1161)
2.24 - 2.26 (0.0882 - 0.0890)	2.60 - 2.62 (0.1024 - 0.1031)	2.96 - 2.98 (0.1165 - 0.1173)
2.27 - 2.29 (0.0894 - 0.0902)	2.63 - 2.65 (0.1035 - 0.1043)	2.99 - 3.01 (0.1177 - 0.1185)
2.30 - 2.32 (0.0906 - 0.0913)	2.66 - 2.68 (0.1047 - 0.1055)	3.02 - 3.04 (0.1189 - 0.1197)
2.33 - 2.35 (0.0917 - 0.0925)	2.69 - 2.71 (0.1059 - 0.1067)	3.05 - 3.07 (0.1201 - 0.1209)
2.36 - 2.38 (0.0929 - 0.0937)	2.72 - 2.74 (0.1071 - 0.1079)	3.08 - 3.10 (0.1213 - 0.1220)
2.39 - 2.41 (0.0941 - 0.0949)	2.75 - 2.77 (0.1083 - 0.1091)	3.11 - 3.13 (0.1224 - 0.1232)
2.42 - 2.44 (0.0953 - 0.0961)	2.78 - 2.80 (0.1094 - 0.1102)	3.14 - 3.16 (0.1236 - 0.1244)
2.45 - 2.47 (0.0965 - 0.0972)	2.81 - 2.83 (0.1106 - 0.1114)	3.17 - 3.19 (0.1248 - 0.1256)
2.48 - 2.50 (0.0976 - 0.0984)	2.84 - 2.86 (0.1118 - 0.1126)	3.20 - 3.22 (0.1260 - 0.1268)
2.51 - 2.53 (0.0988 - 0.0996)	2.87 - 2.89 (0.1130 - 0.1138)	-
2.54 - 2.56 (0.1000 - 0.1008)	2.90 - 2.92 (0.1142 - 0.1150)	-



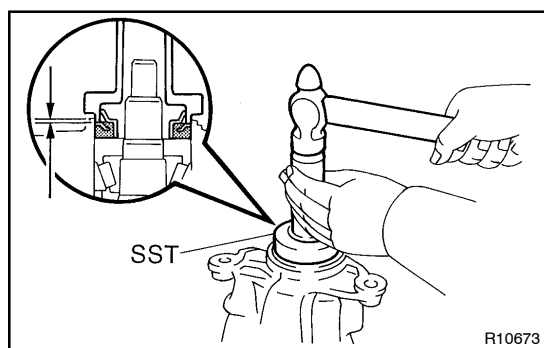
14. REMOVE COMPANION FLANGE (See page SA-69)

15. REMOVE FRONT BEARING (See page SA-74)

16. INSTALL NEW BEARING SPACER AND FRONT BEARING

Install a new bearing spacer and front bearing on the drive pinion.

17. INSTALL OIL SLINGER



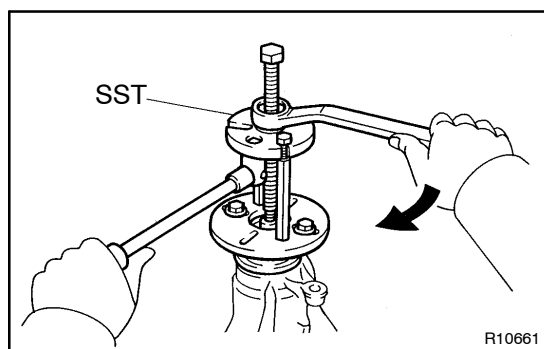
18. INSTALL NEW FRONT OIL SEAL

(a) Using SST and hammer, install a new oil seal.

SST 09554-22010

Oil seal drive in depth: 2.0 mm (0.079 in.)

(b) Apply MP grease to the oil seal lip.

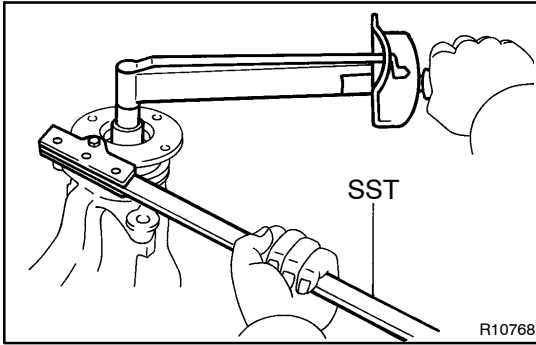


19. INSTALL COMPANION FLANGE

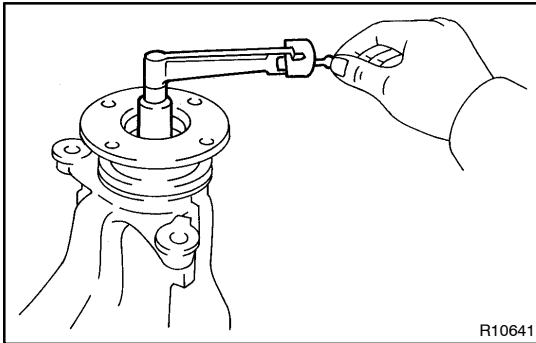
(a) Using SST, install the companion flange on the drive pinion.

SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03040, 09956-03020)

(b) Coat the threads of a new nut with hypoid gear oil.



- (c) Using SST to hold the flange, torque the nut.
 SST 09330-00021
Torque: 108 N·m (1,100 kgf·cm, 80 ft·lbf)



20. CHECK DRIVE PINION PRELOAD

- (a) Using a torque wrench, measure the preload of the backlash between the drive pinion and ring gear.

Preload (at starting):

New bearing:

1.0 – 1.6 N·m (10 – 16 kgf·cm, 8.7 – 13.9 in.·lbf)

Reused bearing:

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

If preload is larger than the specification, replace the bearing spacer.

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

Torque: 235 N·m (2,400 kgf·cm, 174 ft·lbf) or less

If the maximum torque is exceeded while retighten the nut, replace the bearing spacer and repeat the preload procedure. Do not loosen the pinion nut to reduce the preload.

21. RECHECK TOTAL PRELOAD (See page SA-74)

22. RECHECK RING GEAR BACKLASH

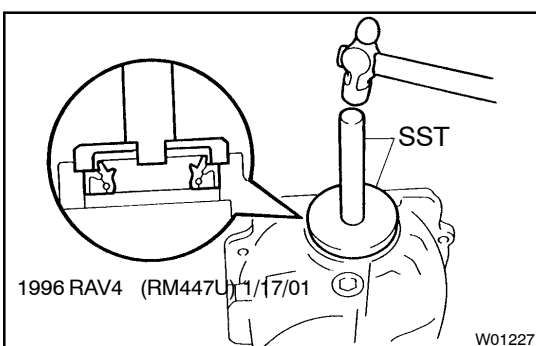
(See page SA-74)

23. RECHECK TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION (See page SA-79)

24. CHECK COMPANION FLANGE RUNOUT

(See page SA-74)

25. STAKE DRIVE PINION NUT



26. INSTALL SIDE GEAR SHAFT OIL SEALS

- (a) Using SST and a hammer, install 2 oil seals until they are flush with the carrier end surface.

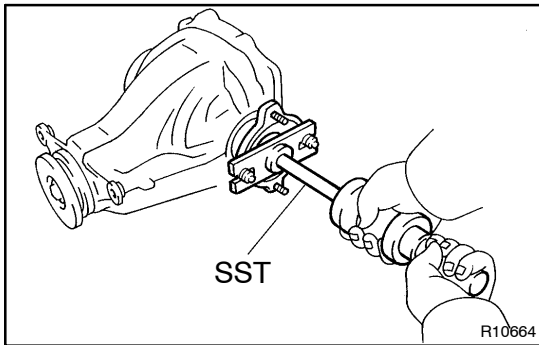
SST 09550-00032, 09950-70010 (09951-07150)

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

27. Torque Sensing LSD:

INSTALL SIDE GEAR SHAFTS

- (a) Install 2 new snap rings to the side gear shafts.

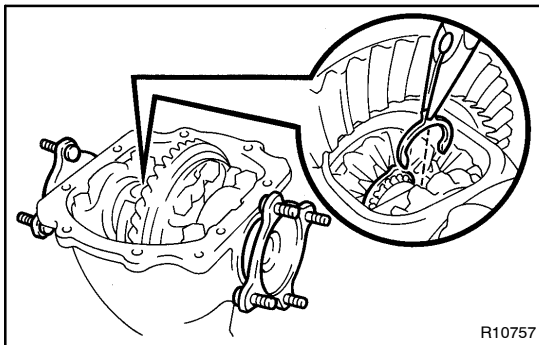


- (b) Using SST, install the 2 side gear shafts until it contacts the pinion shaft.

SST 09520-24010

HINT:

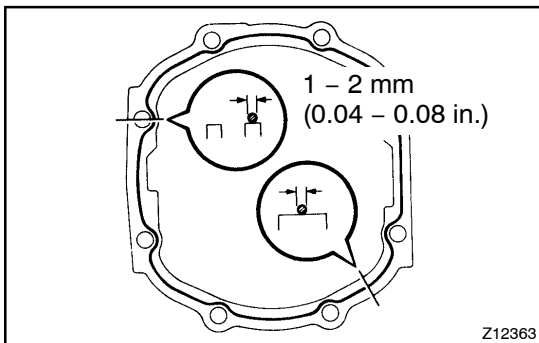
Check that the shaft is fully inserted by confirming the noise it should make when it is tapped.



28. 2 Pinion Differential:

INSTALL SIDE GEAR SHAFTS

- (a) Install the 2 side gear shafts to the differential case.
(b) Install 2 new snap rings to the 2 side gear shafts.



29. INSTALL DIFFERENTIAL CARRIER COVER

- (a) Clean contacting surfaces of any residual FIPG material using gasoline or alcohol.
(b) Apply FIPG to the carrier.

FIPG:

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

HINT:

Install the carrier cover within 3 minutes after applying FIPG.

- (c) Torque the 8 bolts.

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

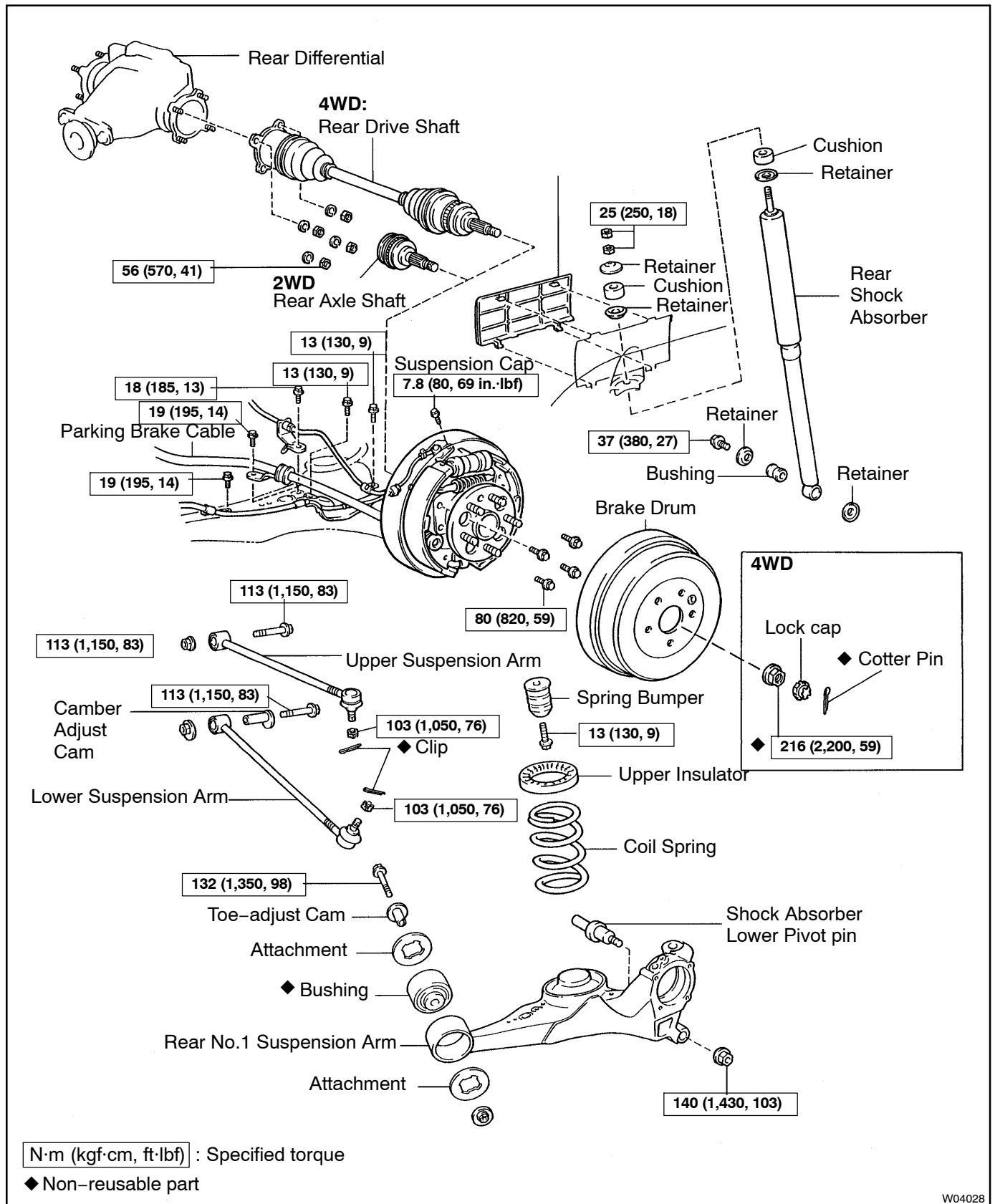
INSTALLATION

Installation is in the reverse order of removal (See page [SA-73](#)).

AFTER INSTALLATION, FILL DIFFERENTIAL WITH DIFFERENTIAL OIL (See page [SA-69](#))

REAR SHOCK ABSORBER COMPONENTS

SA0UO-04



W04028

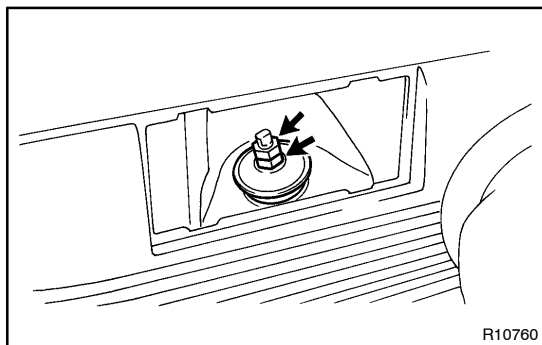
REMOVAL

1. JACK UP VEHICLE AND SUPPORT BODY WITH STANDS
2. REMOVE REAR WHEEL AND SUPPORT NO. 1 SUSPENSION WITH JACK

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

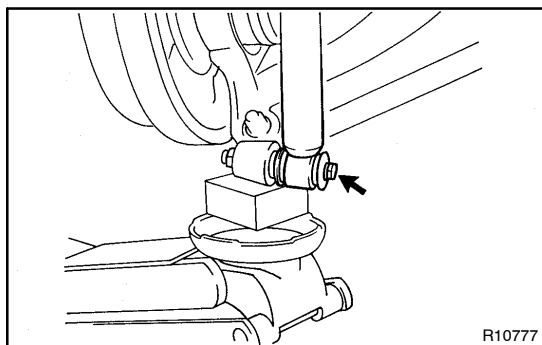
3. REMOVE SHOCK ABSORBER

(a) Remove the suspension cap.



(b) Remove the 2 nuts, 2 retainers and cushion.

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

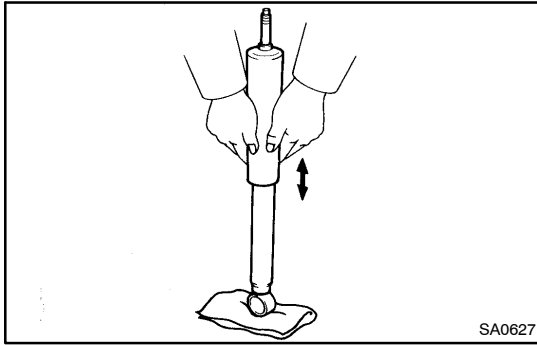


(c) Insert the wood chip between the No.1 suspension arm made of cast iron and jack, then support the No.1 suspension arm with the jack.

(d) Remove the bolt, 2 retainers and shock absorber.

Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

(e) Remove the lower bushing from the shock absorber.



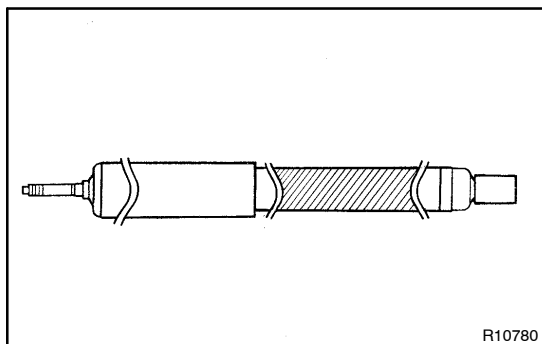
INSPECTION

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-93](#).



DISPOSAL

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

Using a drill, make a hole near the center of the cylinder as shown to remove the gas inside.

CAUTION:

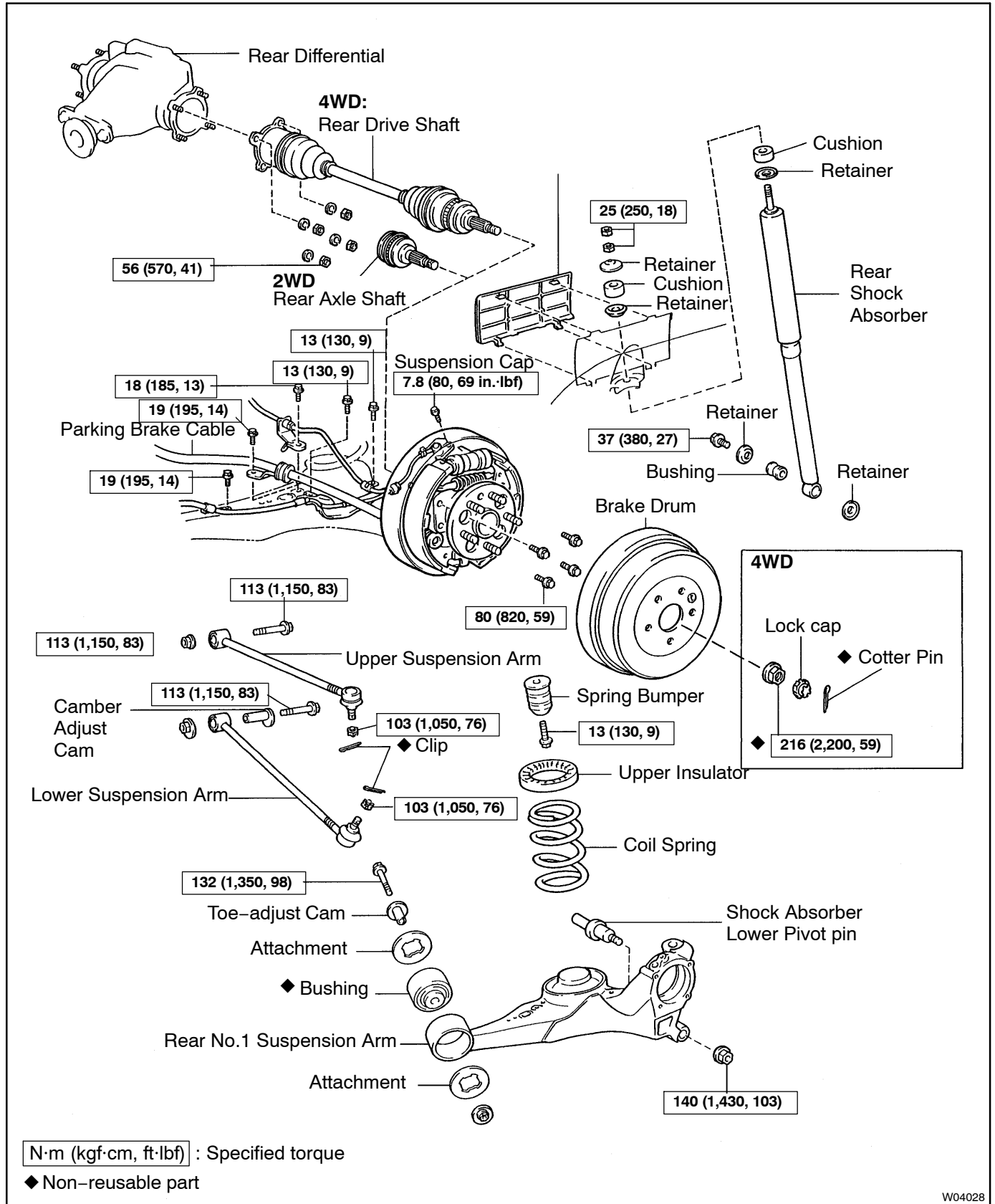
The gas coming out is harmless, but be careful of chips which may fly up when drilling.

INSTALLATION

Installation is in the reverse order of removal (See page [SA-91](#)).

REAR SUSPENSION ARM AND COIL SPRING COMPONENTS

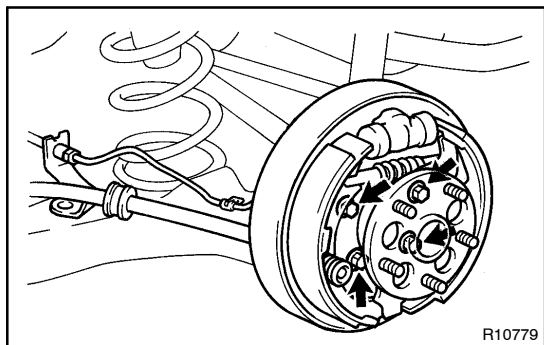
SAOUT-03



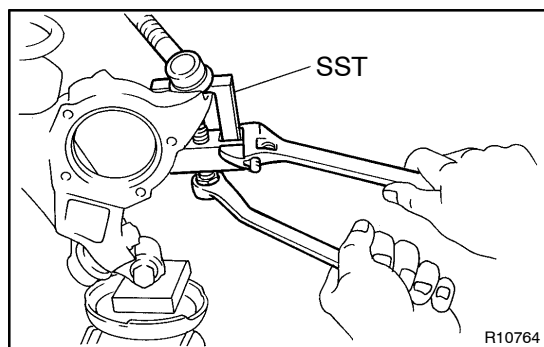
W04028

REMOVAL

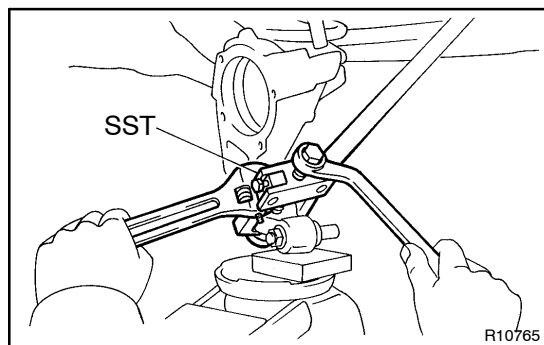
1. **REMOVE REAR WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
2. **2WD:**
REMOVE AXLE SHAFT (See page [SA-52](#))
3. **4WD:**
REMOVE REAR DRIVE SHAFT (See page [SA-62](#))
4. **REMOVE BRAKE DRUM**
5. **REMOVE 2 BRAKE LINE CLAMP BOLTS**
Torque:
Bracket: 18 N·m (185 kgf·cm, 13 ft·lbf)
Clamp: 13 N·m (130 kgf·cm, 9 ft·lbf)
6. **REMOVE PARKING BRAKE CABLE CLAMP BOLT**
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)
7. **w/ ABS:**
REMOVE ABS SPEED SENSOR AND WIRE HARNESS
Torque:
ABS speed sensor: 8 N·m (80 kgf·cm, 69 in·lbf)
Wire harness: 13 N·m (130 kgf·cm, 9 ft·lbf)



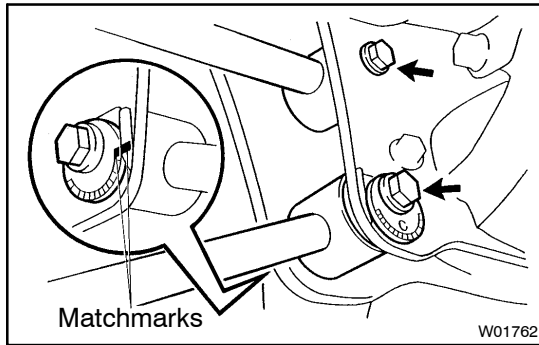
8. **REMOVE REAR AXLE HUB WITH BRAKE**
 - (a) Remove the 4 bolts and rear axle hub with brake.
Torque: 80 N·m (820 kgf·cm, 59 ft·lbf)
 - (b) Support it securely.
9. **DISCONNECT LOWER SIDE OF SHOCK ABSORBER** (See page [SA-91](#))
10. **REMOVE UPPER AND LOWER SUSPENSION ARMS**
 - (a) Remove the 2 clips and 2 nuts.
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



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



- (c) Using SST, disconnect the lower suspension arm.
SST 09628-62011



- (d) Place matchmarks on the camber adjust cam and suspension member.
- (e) Remove the bolt, camber adjust cam, nut and lower suspension arm.

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

HINT:

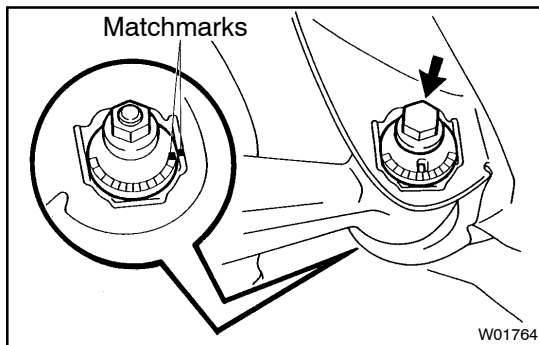
At the time of installation, please refer to the following item.
After stabilizing the suspension, torque the bolt.

- (f) Remove the bolt, nut and upper suspension arm.

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

HINT:

At the time of installation, please refer to the following item.
After stabilizing the suspension, torque the bolt.



11. REMOVE COIL SPRING AND REAR NO.1 SUSPENSION ARM

- (a) Place matchmarks on the toe-adjust cam and body.
- (b) Loosen the bolt and remove the coil spring and upper insulator.

HINT:

At the time of installation, please refer to the following item.
Fit the lower end of the coil spring into the gap of the No.1 suspension arm.

- (c) Remove the bolt, toe-adjust cam, 2 attachments, nut and lower suspension arm.

Torque: 132 N·m (1,350 kgf·cm, 98 ft·lbf)

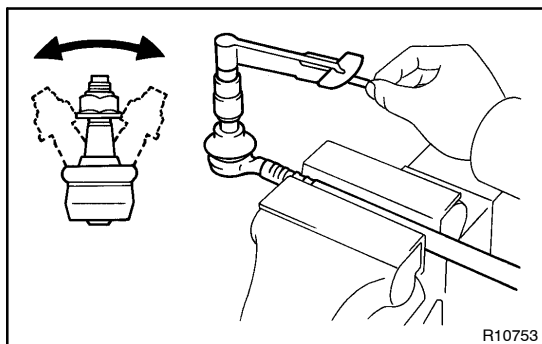
HINT:

At the time of installation, please refer to the following item.
After stabilizing the suspension, torque the bolt.

12. REMOVE SPRING BUMPER

Remove the bolt and spring bumper.

Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)



INSPECTION

INSPECT BALL JOINT FOR ROTATION CONDITION

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

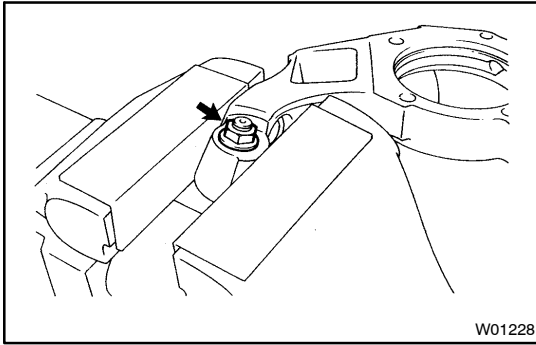
Turning Torque:

Upper suspension arm:

0.5 – 3.5 N·m (5 – 35 kgf·cm, 7 – 30 in.·lbf)

Lower suspension arm:

0.5 – 3.5 N·m (5 – 35 kgf·cm, 7 – 30 in.·lbf)



REPLACEMENT

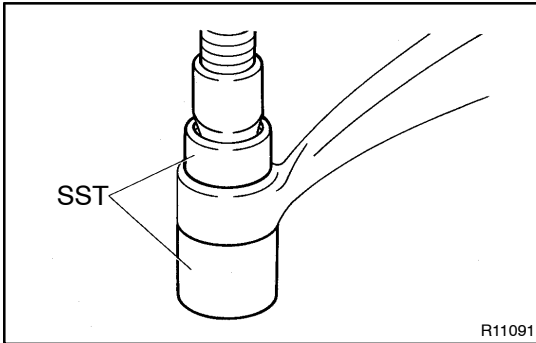
1. REMOVE SHOCK ABSORBER LOWER PIVOT PIN

- (a) Mount No.1 suspension arm in a vise.
- (b) Remove the nut.
- (c) Using a plastic hammer, remove the pivot pin.

2. INSTALL SHOCK ABSORBER LOWER PIVOT PIN

- (a) Install the pivot pin.
- (b) Install the nut.

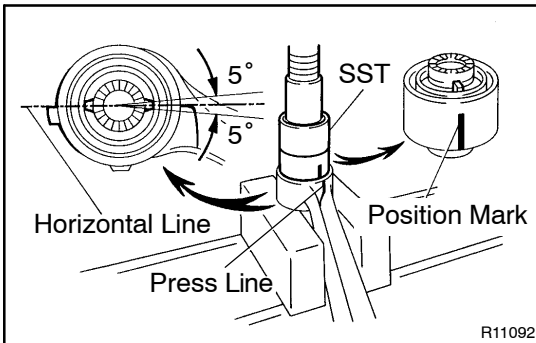
Torque: 140 N·m (1,430 kgf·cm, 103 ft·lbf)



3. REMOVE REAR NO.1 SUSPENSION ARM BUSHING

Using SST and a press, remove the bushing.

SST 09649-17010, 09710-30050



4. INSTALL NEW BUSHING

- (a) Place position mark on to a new bushing, as shown.
- (b) Using SST and a press, install the bushing.

SST 09710-30050

HINT:

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

- Before installing the bushing, align the position mark and press line.
- When assembling the bushing, assemble it so that its projections are horizontal.
- Do not let grease or oil get on the bushing.

INSTALLATION

Installation is in the reverse order of removal (See page [SA-96](#)).

AFTER INSTALLATION, CHECK ABS SPEED SENSOR SIGNAL (See page [DI-257](#)) AND REAR WHEEL ALIGNMENT (See page [SA-7](#))