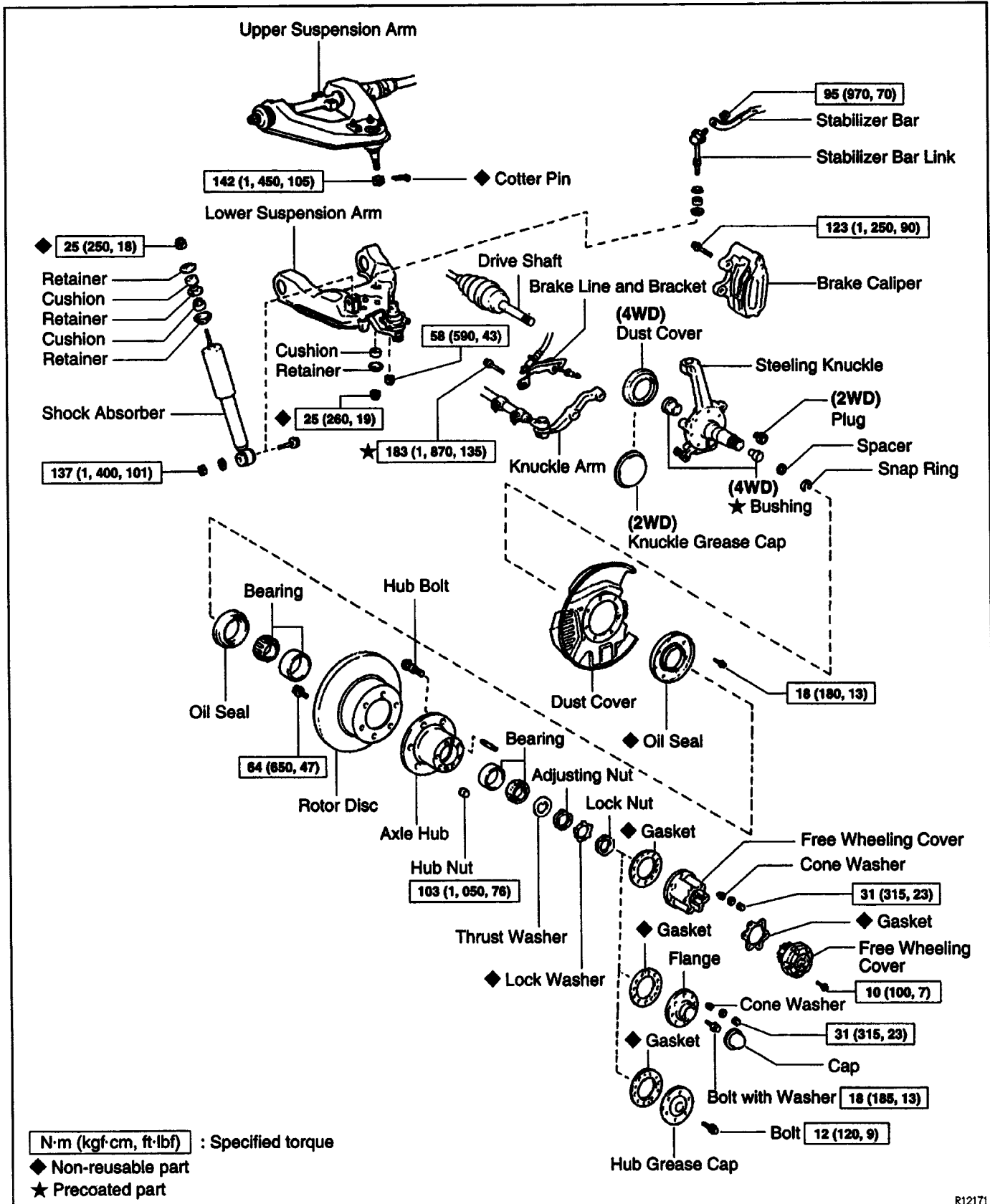
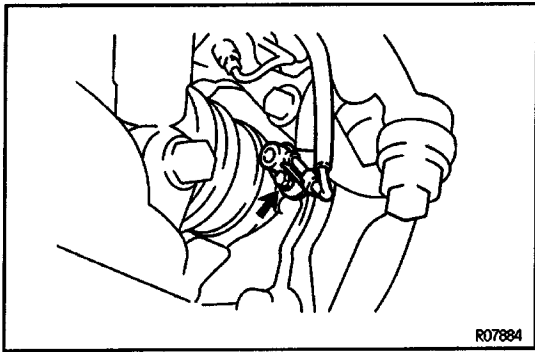


FRONT AXLE HUB AND STEERING KNUCKLE COMPONENTS



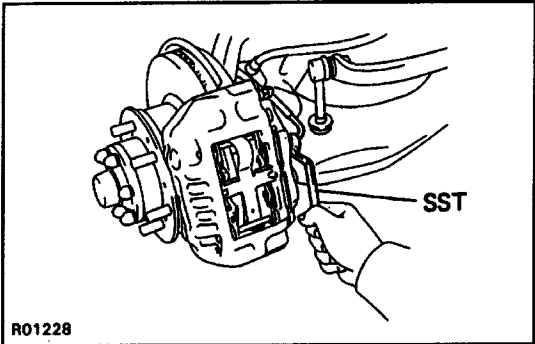


FRONT AXLE HUB REMOVAL

1. JACK UP VEHICLE AND REMOVE FRONT WHEEL

2. w/ 4 WHEEL ABS:

DISCONNECT ABS SPEED SENSOR FROM STEERING KNUCKLE



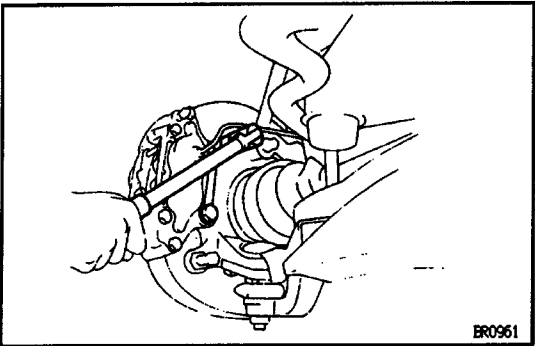
3. REMOVE BRAKE CALIPER

(a) Using SST, disconnect the brake line from the brake caliper.

SST 09751-36011

(b) Drain the brake fluid to a container.

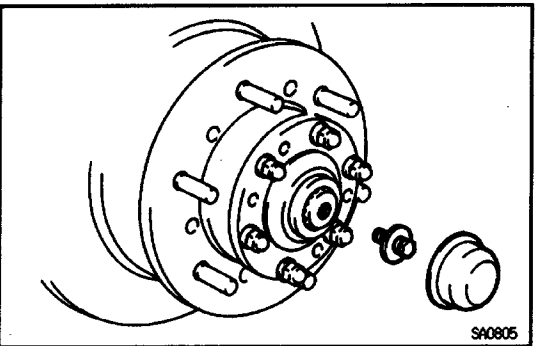
(c) Remove the brake caliper from the steering knuckle.



4. 4WD, w/ FREE WHEELING HUB:

REMOVE FREE WHEELING HUB

(See page [SA-26](#))

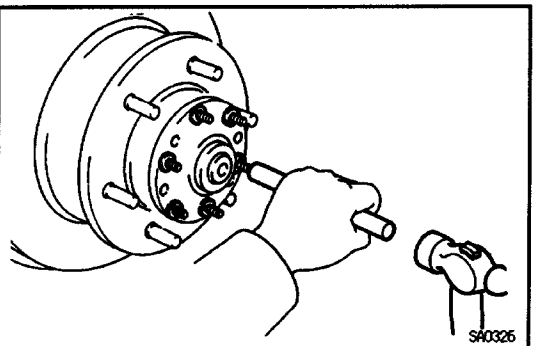


5. 4WD, w/o FREE WHEELING HUB:

REMOVE FLANGE

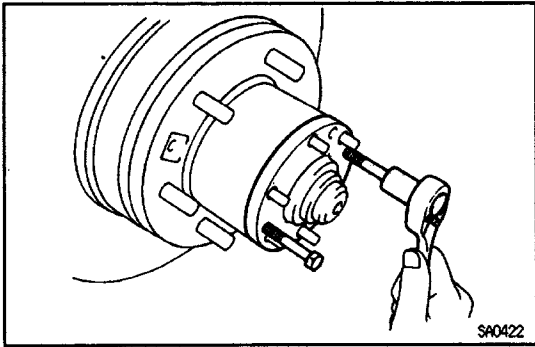
(a) Remove the cap from the flange.

(b) Remove the bolt.

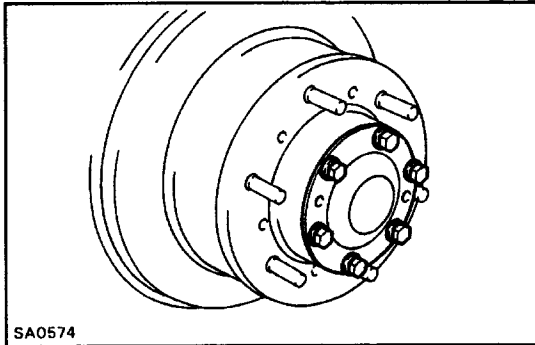


(c) Remove the 6 nuts and washers.

(d) Using a brass bar and hammer, tap on the bolts head and remove the 6 cone washers.



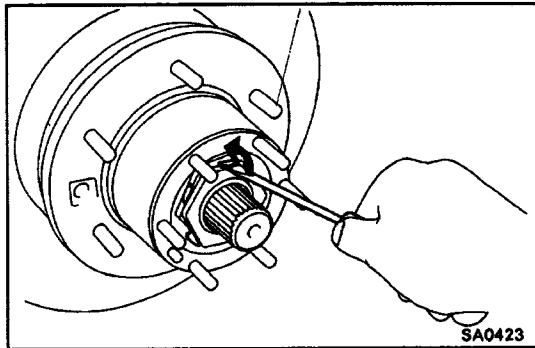
- (e) Install and tighten 2 bolts and remove the flange.
 (f) Remove the gasket.



6. 2WD:

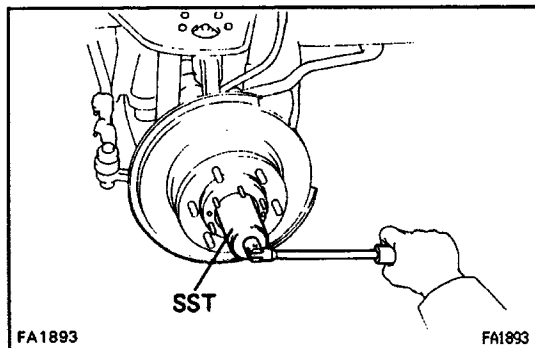
REMOVE HUB GREASE CAP

Remove the 6 bolts and hub grease cap from the axle hub.

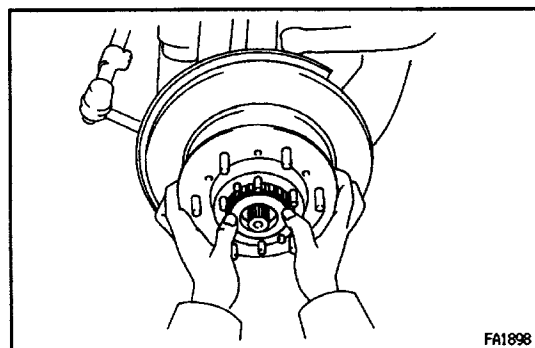


7. REMOVE AXLE HUB WITH DISC

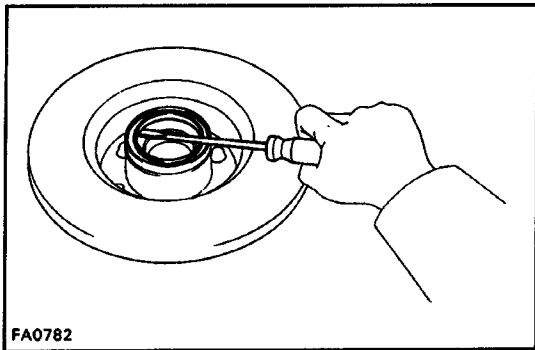
- (a) Using a screwdriver, release the lock washer.



- (b) Using SST, remove the lock nut and lock washer.
 SST 09607-60020
 (c) Using SST, remove the adjusting nut.
 SST 09607-60020



- (d) Remove the hub and disc together with the outer bearing and thrust washer.

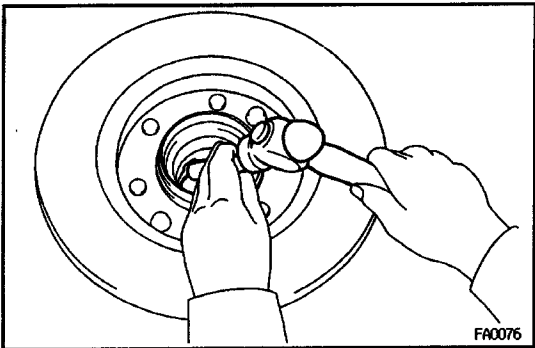


8. REMOVE OIL SEAL AND INNER BEARING

(a) Using a screwdriver, pry out the oil seal.

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

(b) Remove the inner bearing from the hub.



FRONT AXLE HUB BEARING INSPECTION AND REPAIR

1. INSPECT BEARINGS

Clean the bearings and outer races and inspect them for wear or damage.

2. REPLACE BEARING OUTER RACES

(a) Using a brass bar and hammer, drive out the bearing outer races.

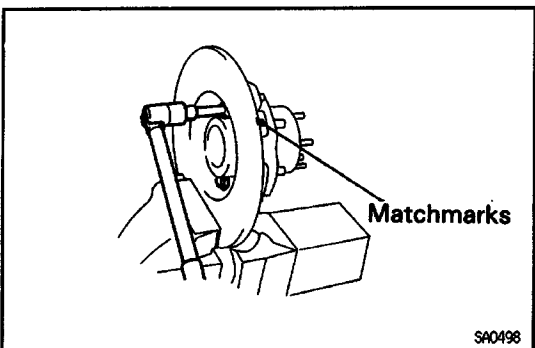
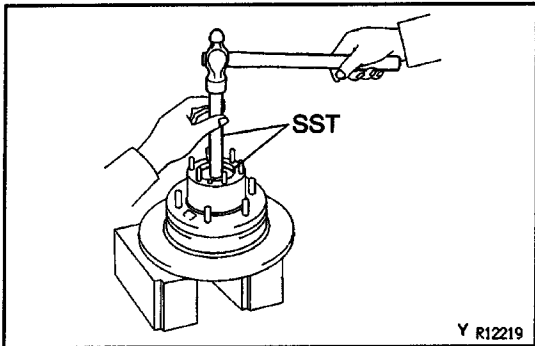
NOTICE: Be careful not to damage the ABS speed sensor rotor.

(b) Using SST, carefully drive in new bearing outer races.

SST 09608-35014,

Outside race (09608-06020, 09608-06200)

Inside race (09608-06020, 09608-06210)

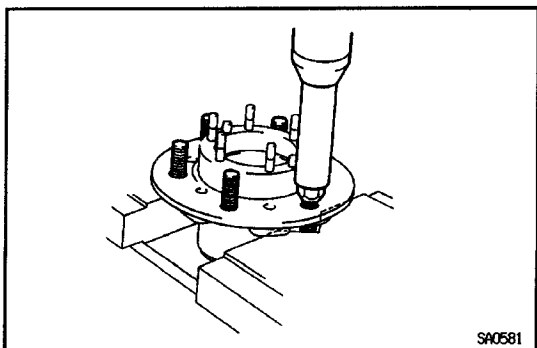


HUB BOLT REPLACEMENT

1. REMOVE HUB BOLT

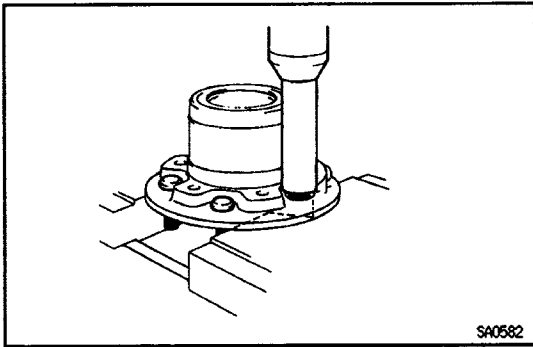
(a) Place matchmarks on the disc and axle hub.

(b) Remove the 6 bolts, disc and axle hub.



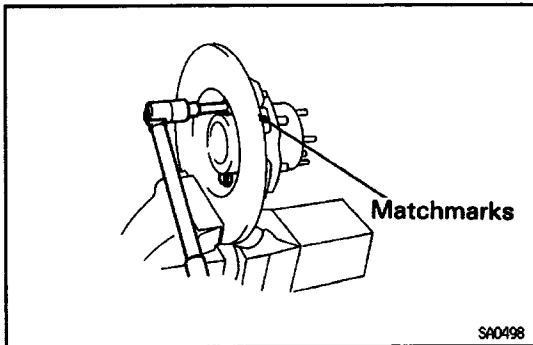
(c) install the nut to the hub bolt.

(d) Using an extension bar and press, press out the hub bolt.



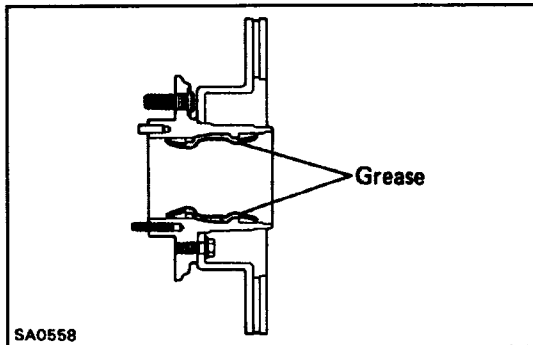
2. INSTALL HUB BOLT

- (a) Using an extension bar and press, press in the hub bolt.



- (b) Align the matchmarks and install the axle hub to the disc with the 6 bolts.

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

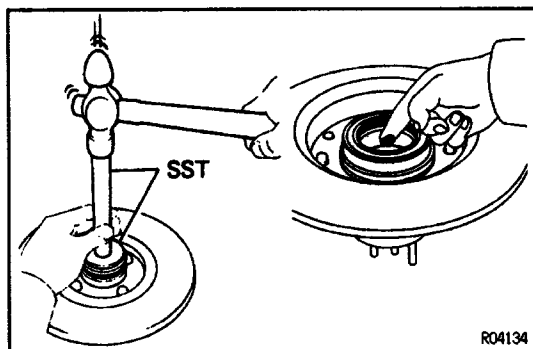


FRONT AXLE HUB INSTALLATION

1. PACK BEARING WITH MP GREASE

- (a) Place MP grease in the palm of your hand.
- (b) Pack grease into the bearing, continuing until the grease oozes out from the other side.
- (c) Do the same around the bearing circumference.

2. COAT INSIDE OF HUB WITH MP GREASE



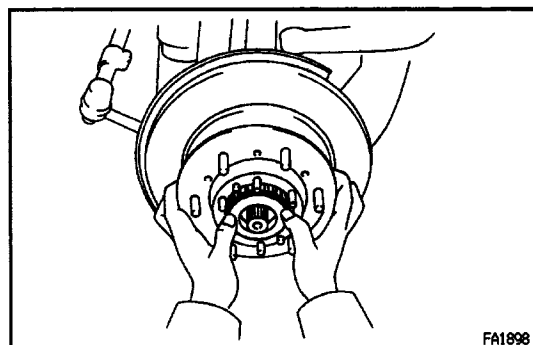
3. INSTALL INNER BEARING AND OIL SEAL

- (a) Place the inner bearing into the hub.
- (b) Using SST and a hammer, drive in a new oil seal into the hub.

SST 09608-35014 (09608-06020, 09608-06150)

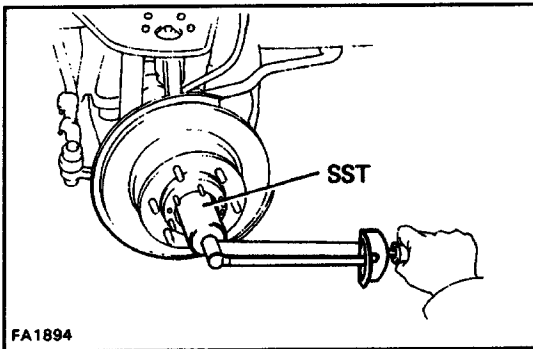
NOTICE: Be careful not to damage the ABS speed sensor rotor.

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



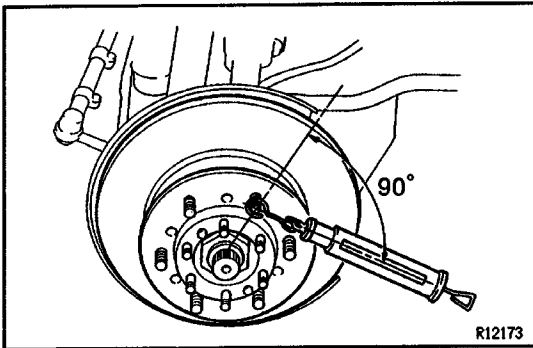
4. INSTALL AXLE HUB TO STEERING KNUCKLE

- (a) Place the axle hub to the steering knuckle.
- (b) Install the outer bearing.
- (c) Install the thrust washer.

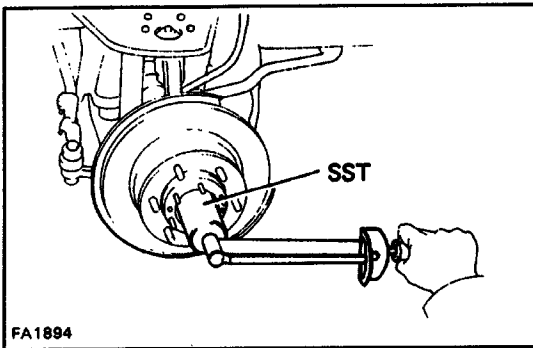


5. ADJUST PRELOAD

- (a) Using SST, torque the adjusting nut.
SST 09607-60020
Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)
- (b) Turn the hub right and left 2 or 3 times.
- (c) Loosen the nut until it can be turned by hand.
- (d) Using SST, retighten the adjusting nut.
SST 09607-60020
Torque: 25 N-m (250 kgf-cm, 18 ft-lbf)

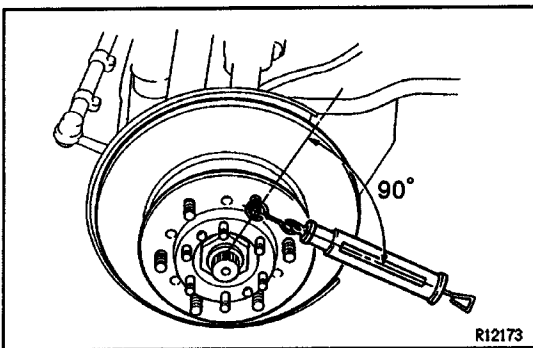


- (e) Using a spring tension gauge, check the preload.
Preload (starting):
28 - 56 N (2.9 - 5.7 kgf, 6.4 - 12.6 lbf)
HINT: Make sure to check preload in the direction.

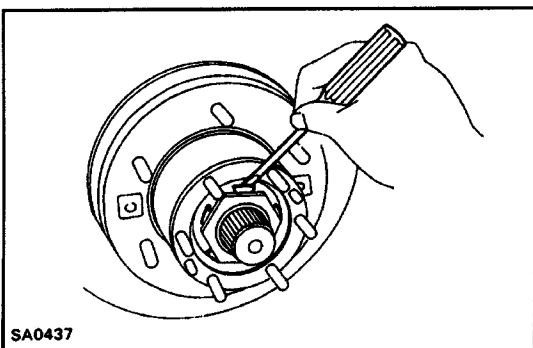


6. INSTALL LOCK WASHER AND LOCK NUT

- (a) Install a new lock washer and lock nut.
- (b) Using SST, torque the lock nut.
SST 09607-60020
Torque: 47 N-m (480 kgf-cm, 35 ft-lbf)
- (c) Check that the bearing has no play.

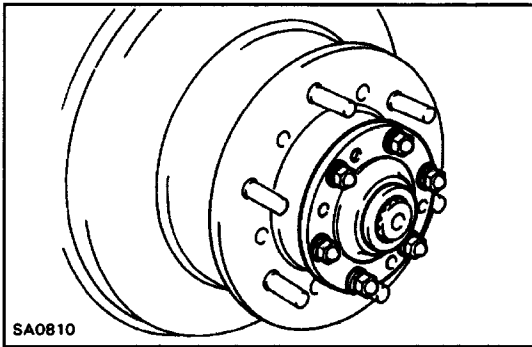


- (d) Using a spring tension gauge, check the preload.
Preload (starting) :
28 - 56N(2.9 - 5.7kgf,6.4 - 12.6 lbf)
HINT: Make sure to check preload in the direction.
If the preload not within specification, adjust it again with the adjusting nut.



- (e) Secure the lock nut by bending one of the lock washer teeth inward and the other lock washer teeth outward.

7. 4WD, w/ FREE WHEELING HUB: INSTALL FREE WHEELING HUB (See page SA-30)



SA0810

8. 4WD, w/o FREE WHEELING HUB:**INSTALL FLANGE**

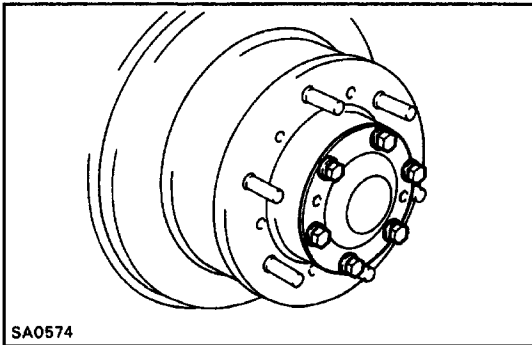
- (a) Place a new gasket in position on the axle hub.
- (b) Install the flange to the axle hub.
- (c) Install the 6 cone washers, plate washers and nuts.
- (d) Torque the 6 nuts.

Torque: 31 N-m (315 kgf-cm, 23 ft-lbf)

- (e) Coat inside of the cap with MP grease.

- (f) Install the bolt and cap.

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

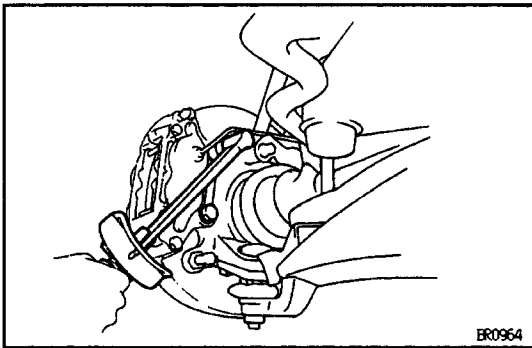


SA0574

9. 2WD:**INSTALL HUB GREASE CAP**

- (a) Place a new gasket in position on the axle hub.
- (b) Install the hub grease cap to axle hub with the 6 bolts.

Torque: 12 N-m (120 kgf-cm, 9 ft-lbf)

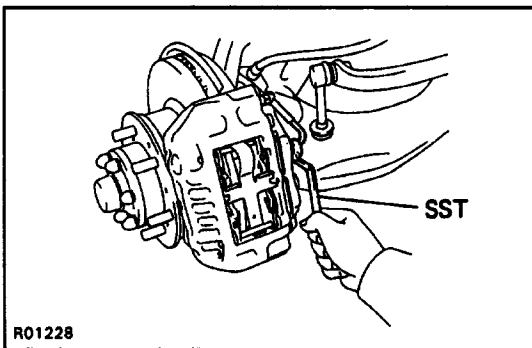


ER0964

10. INSTALL BRAKE CALIPER

- (a) Install the brake caliper to the steering knuckle.
- (b) Torque the 2 bolts.

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

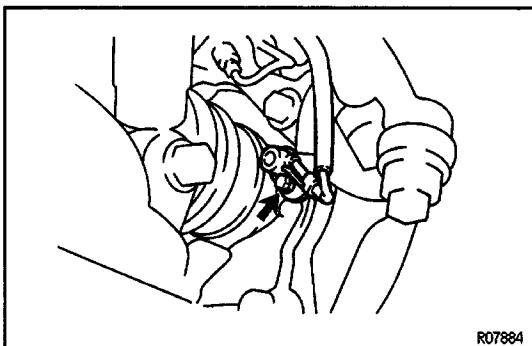


R01228

- (c) Using SST, connect the brake line.

SST 09751- 36011

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



R07884

11. w/ 4 WHEEL ABS:**CONNECT ABS SPEED SENSOR TO STEERING KNUCKLE**

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

12. INSTALL FRONT WHEEL AND LOWER VEHICLE

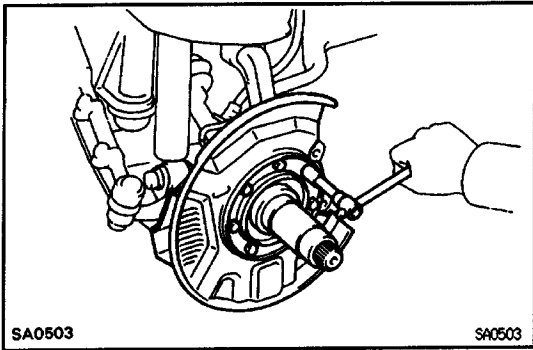
Torque: 103 N-m (1,050 kgf-cm, 76 ft-lbf)

13. BLEED BRAKE SYSTEM

(See page [BR-8](#))

14. w/ 4 WHEEL ABS:**CHECK ABS SPEED SENSOR SIGNAL**

(See page [BR-86](#))

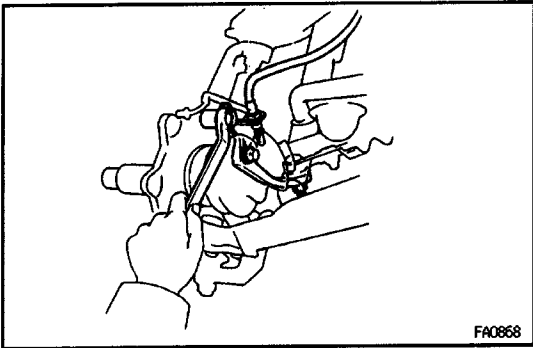


STEERING KNUCKLE REMOVAL

1. REMOVE BRAKE CALIPER AND FRONT AXLE HUB

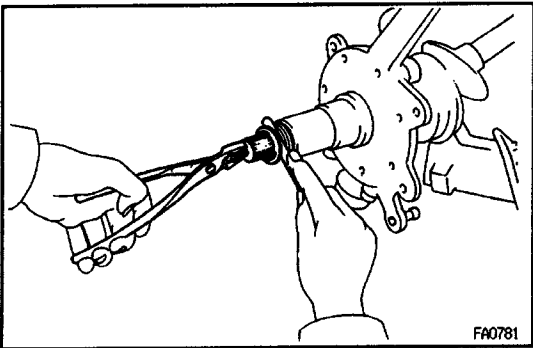
(See page SA-13)

2. REMOVE DUST COVER AND OIL SEAL



3. DISCONNECT KNUCKLE ARM FROM STEERING KNUCKLE

Remove the 2 bolts and disconnect the brake line bracket and knuckle arm.



4. 4WD:

MEASURE STEERING KNUCKLE BUSHING THRUST CLEARANCE

(a) Install a bolt in the drive shaft.

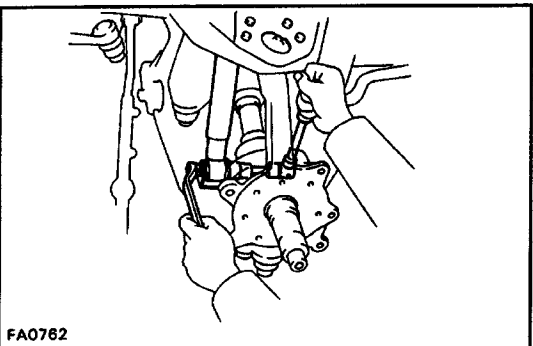
(b) Using a thickness gauge, measure the front drive shaft thrust clearance between the steering knuckle outside bushing and spacer, by pulling the bolt and applying a load of 98 N (10 kgf, 22.0 lbf) of pressure.

Front drive shaft thrust clearance :

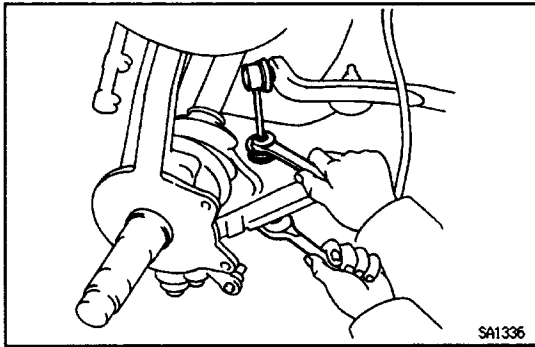
Standard 0.075 – 0.690 mm (0.0030 – 0.0272 in.)

Maximum 1.0 mm (0.039 in.)

If the measurement exceeds the maximum, replace the steering knuckle outside and inside bushings.

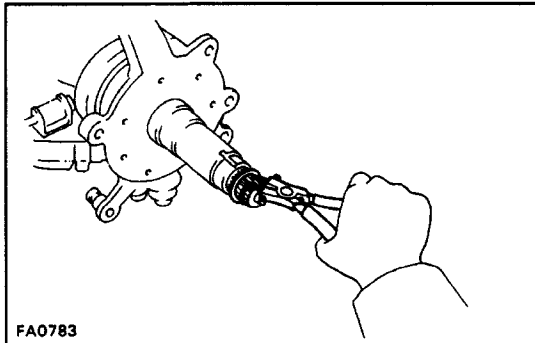


5. DISCONNECT FRONT SHOCK ABSORBER FROM LOWER SUSPENSION ARM



6. DISCONNECT STABILIZER BAR LINK FROM LOWER SUSPENSION ARM

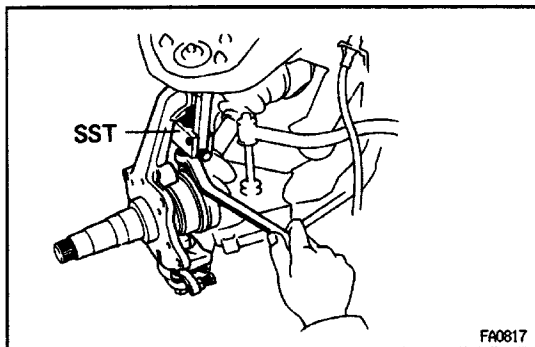
- (a) Remove the nut, retainer and cushion from the stabilizer bar link.
- (b) Disconnect the stabilizer bar link from the lower suspension arm and remove the retainers and cushion.



7. 4WD:

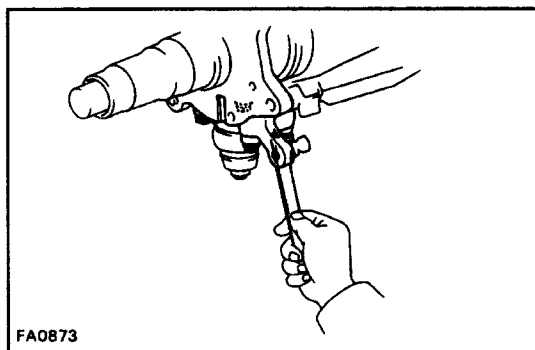
REMOVE SNAP RING AND SPACER

Using snap ring pliers, remove the snap ring and spacer.

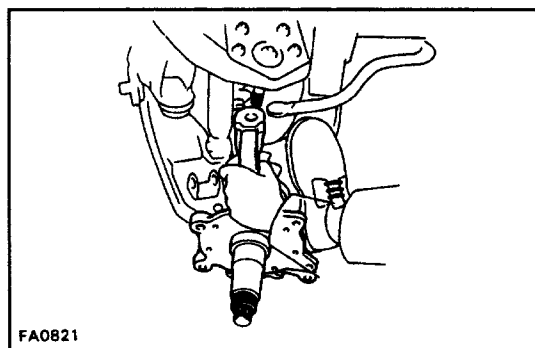


8. REMOVE STEERING KNUCKLE

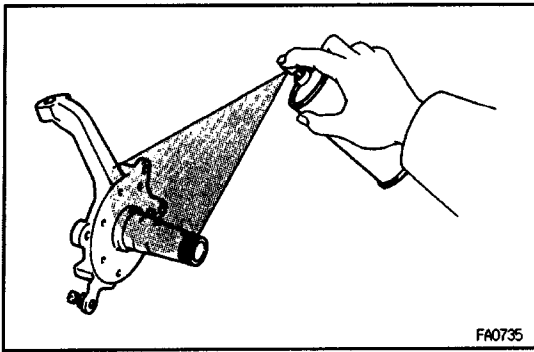
- (a) Remove the cotter pin and nut from the upper ball joint.
- (b) Using SST, disconnect the steering knuckle from the upper ball joint.
SST 09628-62011



- (c) Remove the 4 bolts from the lower ball joint and disconnect the steering knuckle from the lower ball joint.



- (d) Push down the lower suspension arm and remove the steering knuckle.

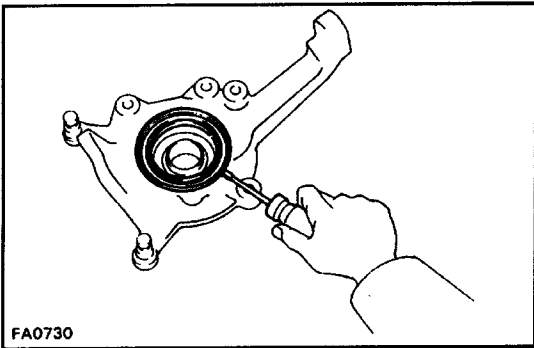


FA0735

STEERING KNUCKLE INSPECTION

INSPECT STEERING KNUCKLE

Using a dye penetrant, check the steering knuckle for cracks. If a crack is found, replace the steering knuckle.



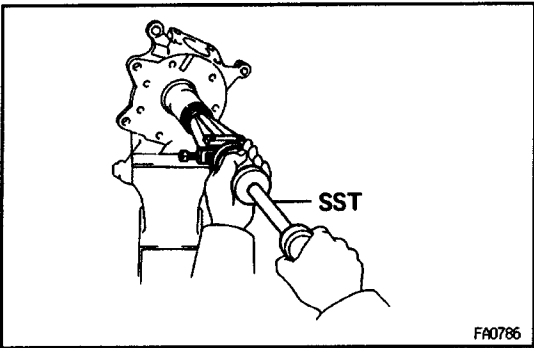
FA0730

STEERING KNUCKLE REPLACE

1. 4WD:

REPLACE STEERING KNUCKLE BUSHINGS

Using a screwdriver, pry out the dust deflector from the steering knuckle.

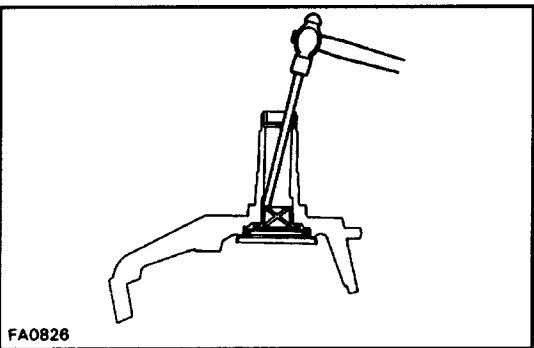


FA0786

2. REMOVE STEERING KNUCKLE BUSHING

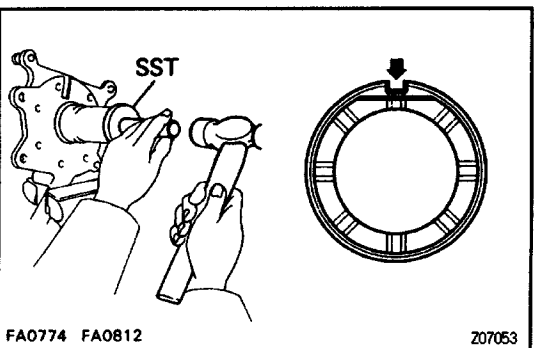
(a) Using SST, pull out the steering knuckle outside bushing.

SST 09308 - 00010



FA0826

(b) Using a brass bar and hammer, drive out the steering knuckle inside bushing.



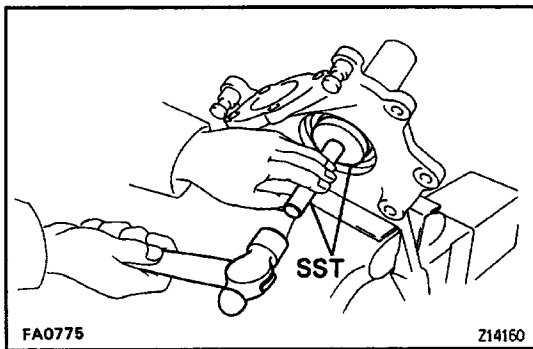
FA0774 FA0812

Z07053

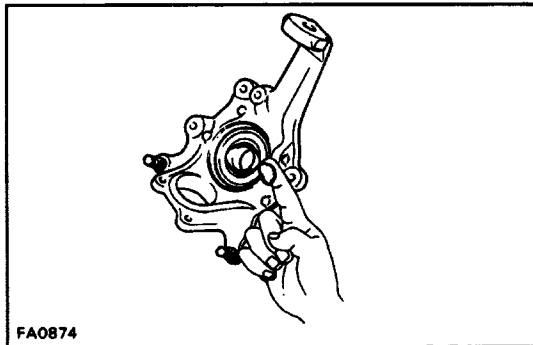
(c) Using SST and a hammer, tap in a new steering knuckle outside bushing.

SST 09550-10012 (09252-10010, 09555-10010)

HINT : When installing the bushing to the spindle, make sure the flat portion of the bushing is aligned with the spindle groove, as shown in the illustration.



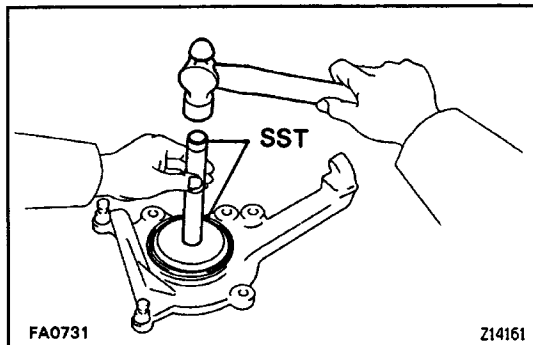
- (d) Using SST and a hammer, tap in a new steering knuckle inside bushing.
SST 09550-10012 (09252-10010, 09555-10010)



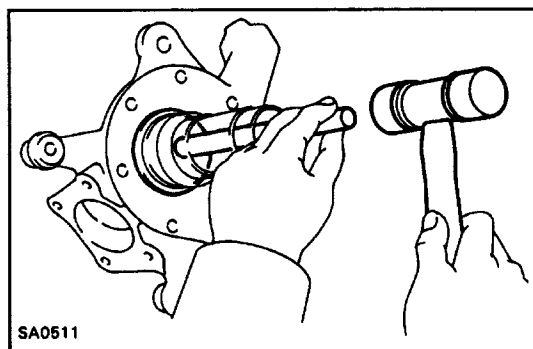
- (e) Apply the following grease to the steering knuckle bushings.

Grease type:

Synthetic oil and lithium soap base chassis grease, NLGI No.1

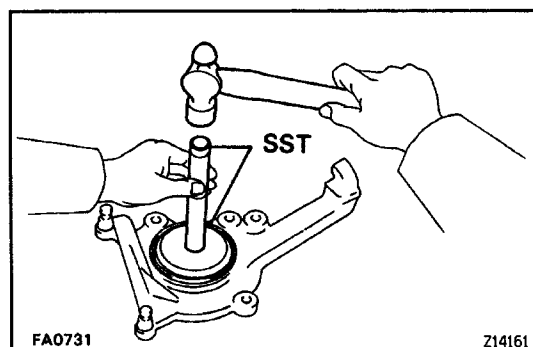


- (f) Using SST and a hammer, tap in a new dust deflector.
SST 09608-35014 (09608-06020, 09608-06180)

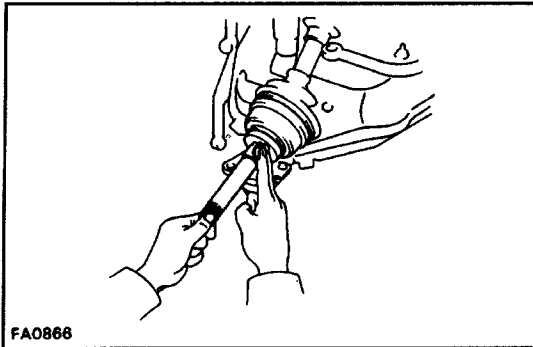


3. 2WD: REPLACE KNUCKLE GREASE CAP

- (a) Using a brass bar and hammer, tap out the knuckle grease cap.



- (b) Using SST and a hammer, tap in a new knuckle grease cap.
SST 09608 – 35014 (09608 – 06020, 09608 – 06180)



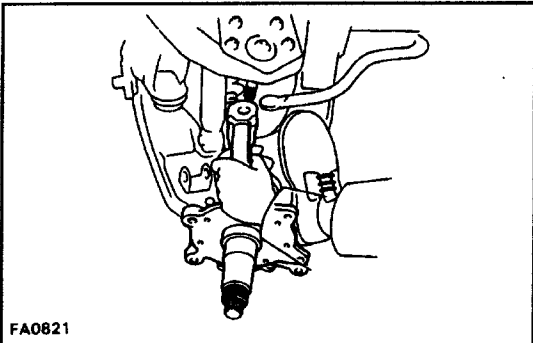
FA0866

STEERING KNUCKLE INSTALLATION

1. INSTALL STEERING KNUCKLE

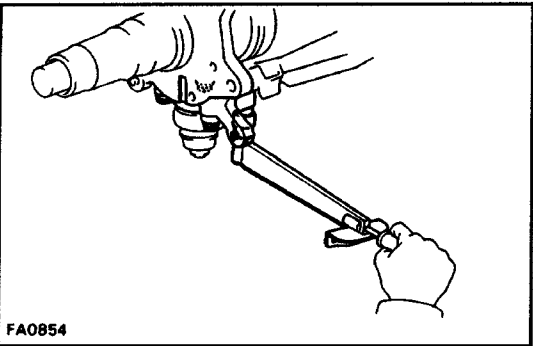
(a) 4WD:

Apply molybdenum disulphide lithium base grease to the drive shaft.



FA0821

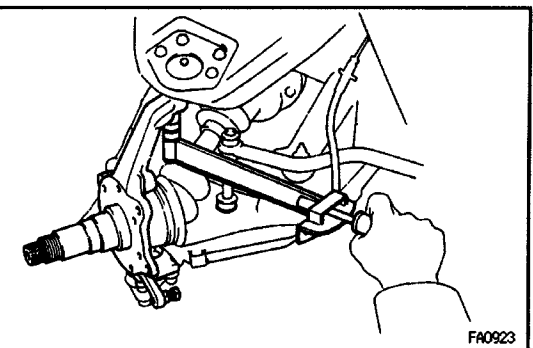
(b) Push down the lower suspension arm and install the steering knuckle.



FA0854

(c) Connect the lower ball joint to the steering knuckle and install and torque the 4 bolts.

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

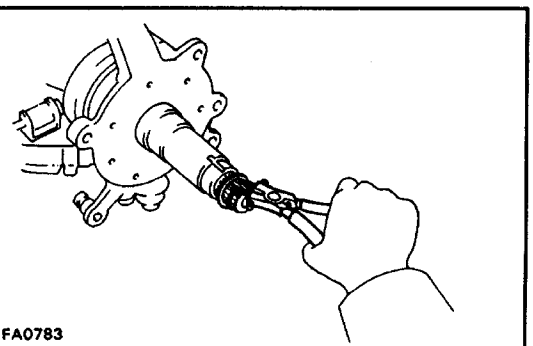


FA0923

(d) Connect the upper ball joint to the steering knuckle and install and torque the 4 nuts.

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

(e) Install a new cotter pin.



FA0783

2. 4WD:

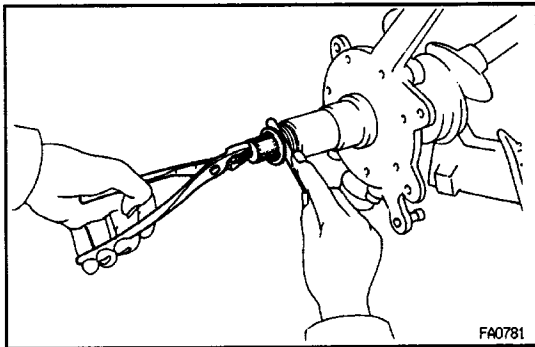
INSTALL SPACER AND SNAP RING

(a) Install the spacer to the front drive shaft.

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

NOTICE: If you replace the steering knuckle bushing, recheck the front drive shaft thrust clearance.

(c) Install the bolt in the shaft.



- (d) Using a thickness gauge, measure the front drive shaft thrust clearance between the steering knuckle outside bushing and spacer, by pulling the bolt and applying a load of 98 N (10 kgf, 22.0 lbf).

Front drive shaft thrust clearance :

Standard clearance 0.075–0.690 mm

(0.0030–0–0272 in.)

If the clearance is not within specification, replace the spacer.

Spacer thickness

1.80 mm (0.0709 in.)	2.25 mm (0.0886 in.)
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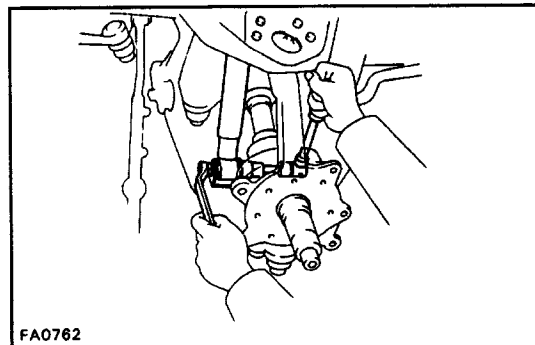
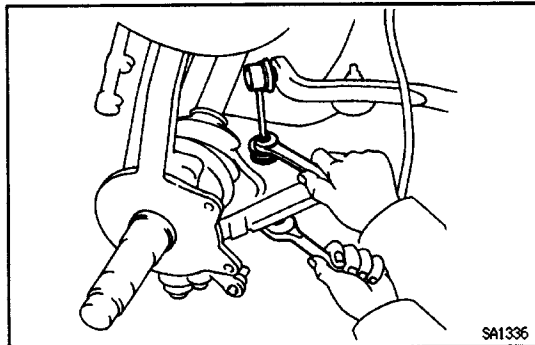
3. CONNECT STABILIZER BAR LINK TO LOWER SUSPENSION ARM

- (a) Install the retainers and cushion to the stabilizer bar link.
- (b) Connect the stabilizer bar link to the lower suspension arm with the cushion, retainer, new nut and torque the nut.

Torque: 25 N–m (260 kgf–cm, 19 ft–lbf)

4. CONNECT FRONT SHOCK ABSORBER TO LOWER SUSPENSION ARM

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



5. CONNECT KNUCKLE ARM TO STEERING KNUCKLE

- (a) Clean the threads of the bolts and steering knuckle with toluene or trichloroethylene.
- (b) Apply sealant to the bolt threads.

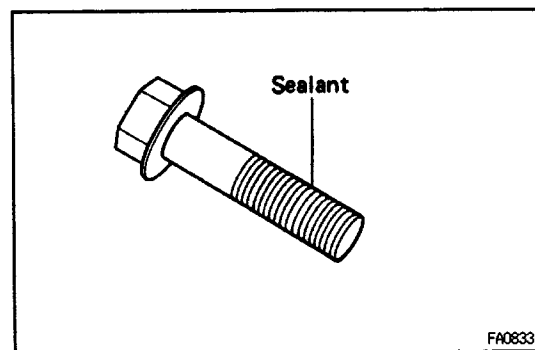
Sealant:

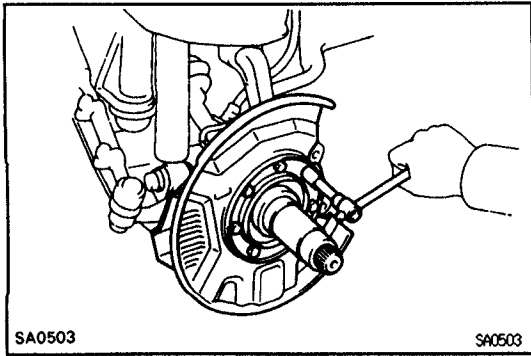
Pant No.08833–00070. THREE BOND 1324 or equivalent.

- (c) Connect the knuckle arm and brake line bracket, install the 2 bolts.

- (d) Torque the bolts.

Torque: 183 N–m (1,870 kgf–cm, 135 ft–lbf)



**6. INSTALL DUST COVER AND NEW OIL SEAL**

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

7. INSTALL FRONT AXLE HUB AND BRAKE CALIPER

(See page [SA-16](#))

8. BLEED BRAKE SYSTEM

(See page [BR-8](#))

9. w/ 4 WHEEL ABS:

CHECK ABS SPEED SENSOR SIGNAL

(See page [BR-86](#))