

REAR AXLE AND SUSPENSION

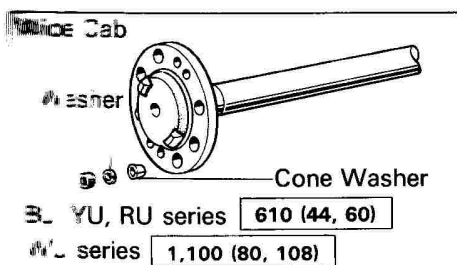
	Page
TROUBLESHOOTING	RA-2
REAR AXLE SHAFT AND OIL SEAL	RA-3
REAR AXLE HUB (BU, YU, RU series)	RA-5
REAR AXLE HUB (WU series)	RA-12
DIFFERENTIAL	RA-18
10.5 in. Type	RA-18
12 in. Type	RA-34
REAR SUSPENSION (BU, YU, RU series)	RA-50
Rear Shock Absorber	RA-50
Leaf Spring	RA-51
REAR SUSPENSION (WU series)	RA-55
Rear Shock Absorber	RA-55
Leaf Spring	RA-55

RA

TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Oil leak from rear axle	Oil seals worn or damaged Rear axle housing cracked	Replace oil seal Repair as necessary	RA-4
Oil leak from pinion shaft	Oil level too high or wrong grade Oil seal worn or damaged Companion flange loose or damaged	Drain and replace oil Replace oil seal Tighten or replace flange	RA-20, 36 RA-18, 34 RA-18, 34
Noises in rear axle	Oil level low or wrong grade Excessive backlash between pinion and ring or side gear Ring, pinion or side gears worn or chipped Drive pinion bearing worn Axle bearing worn Differential bearing loose or worn	Drain and replace oil Check backlash Inspect gears Replace bearing Replace bearing Tighten or replace bearings	RA-20, 36 RA-22, 26 RA-38, 43 RA-25, 42 RA-24, 40 RA-3 RA-24, 29 RA-41, 47
Bottoming	Vehicle overloaded Shock absorber worn out Springs weak	Check loading Replace shock absorber Replace spring	 RA-51, 56 RA-52, 56

REAR AXLE SHAFT AND OIL SEAL COMPONENTS



◆ Gasket

Oil Seal

Cone Washer

Rear Axle Shaft

610 (44, 60)

(ft-lb, N·m) : Tightening torque

◆ Non-reusable part

RA0374

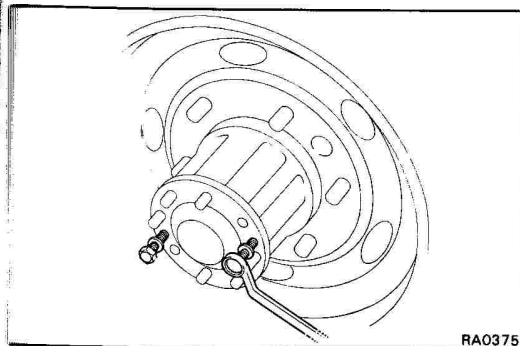
REMOVAL OF REAR AXLE SHAFT

1. REMOVE CONE WASHER

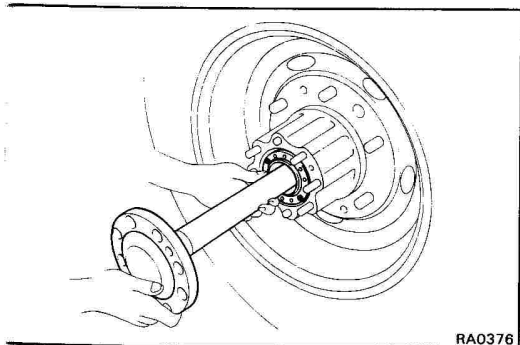
- Remove the six nuts and spring washers.
- Insert two service bolts and turn each one turn.
- Loosen the two service bolts.
- Tap on the shaft and remove the six cone washers.

2. REMOVE REAR AXLE SHAFT

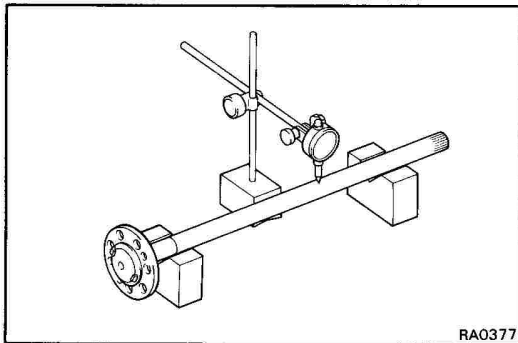
NOTE: Be careful not to damage the oil seal with the splines.



RA0375



RA0376

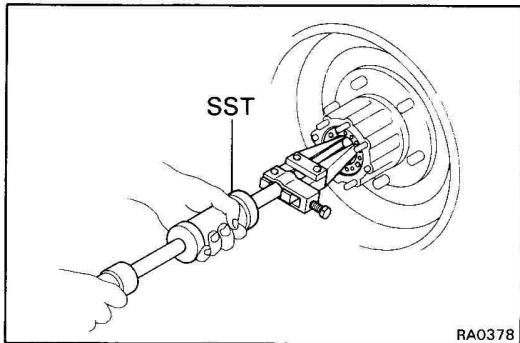


INSPECTION OF REAR AXLE SHAFT COMPONENTS

1. INSPECT REAR AXLE SHAFT

Check for wear or damage.

Maximum runout: 0.8 mm (0.031 in.)



2. INSPECT OIL SEAL FOR WEAR OR DAMAGE

If the oil seal is damaged or worn, replace it.

3. IF NECESSARY, REPLACE OIL SEAL

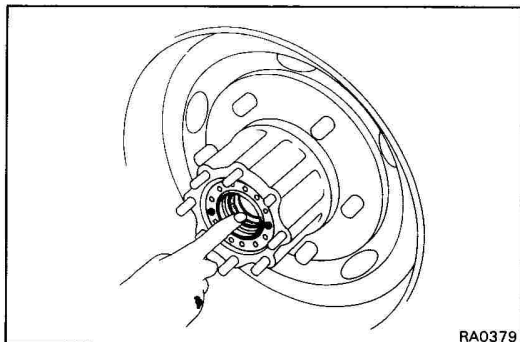
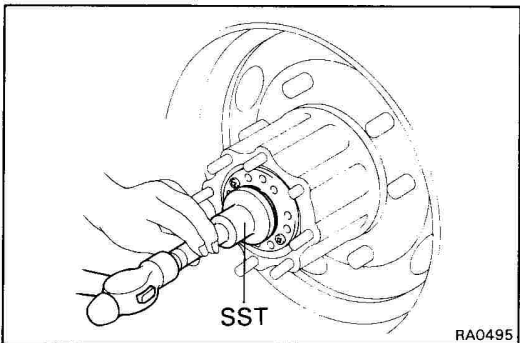
(a) Using SST, remove the oil seal.

SST 09308-00010

(b) Using SST, drive in the oil seal.

SST 09517-12010

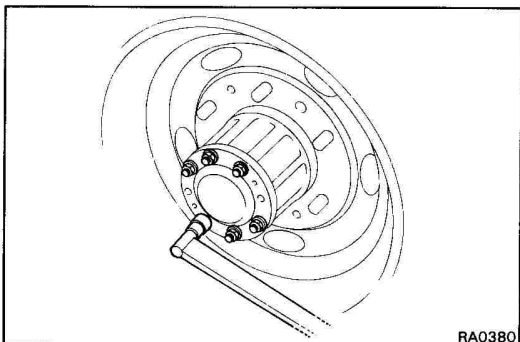
(c) Apply MP grease to the oil seal lip.



INSTALLATION OF REAR AXLE SHAFT

(See page RA-3)

1. APPLY MP GREASE TO OIL SEAL LIP



2. INSTALL REAR AXLE SHAFT

Install the rear axle shaft, cone washers and spring washers (wide cab only) with six nuts.

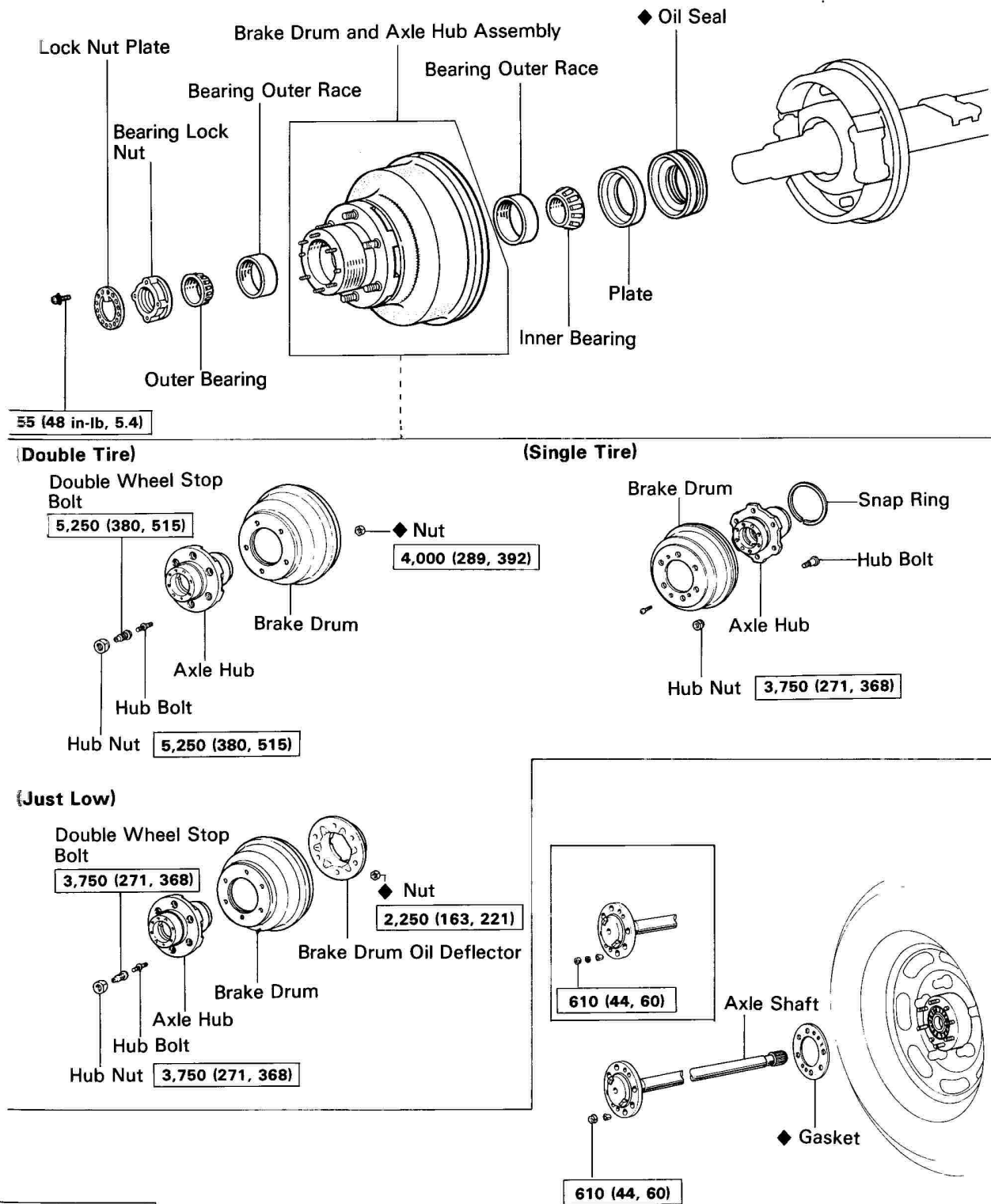
Torque:

BU, YU, RU series 610 kg-cm (44 ft-lb, 60 N·m)

WU series 1,100 kg-cm (80 ft-lb, 108 N·m)

NOTE: Be careful not to damage the oil seal with the splines.

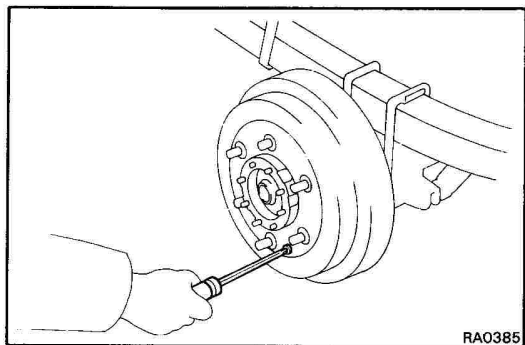
REAR AXLE HUB (BU, YU, RU series) COMPONENTS



kg-cm (ft-lb, N·m) : Tightening torque

◆ : Non-reusable part

RA0381
RA0496 RA0498
RA0497 RA0383



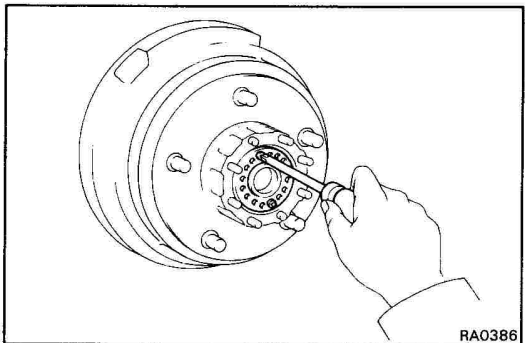
DISASSEMBLY OF REAR AXLE HUB

(See page RA-5)

1. **REMOVE WHEEL AND REAR AXLE SHAFT**
(See page RA-3)

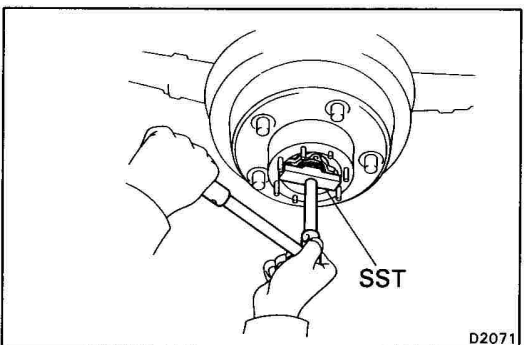
2. **(Single Tire)**
REMOVE BRAKE DRUM FROM AXLE HUB

Remove the screw and remove the brake drum from the axle hub.

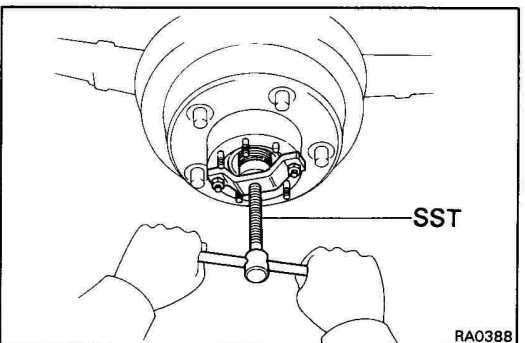


3. **REMOVE BEARING LOCK NUT**

- (a) Remove the two screws from the bearing lock nut.
- (b) Remove the lock nut plate.

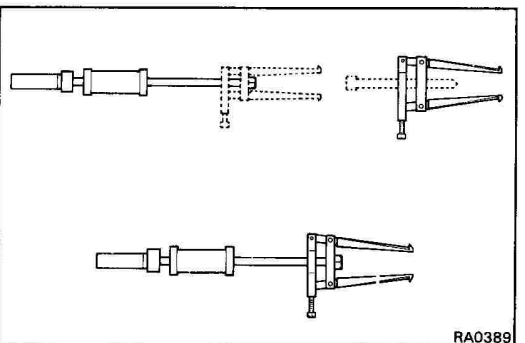


- (c) Using SST, remove the bearing lock nut.
SST 09513-36020



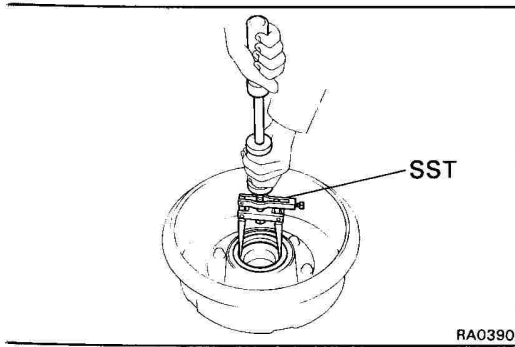
4. **REMOVE AXLE HUB FROM AXLE**

Using SST, pull out the axle hub.
SST 09510-36010



5. **REMOVE OIL SEAL AND INNER BEARING**

- (a) Set the two SST as shown.
SST 09308-00010 and 09308-55010

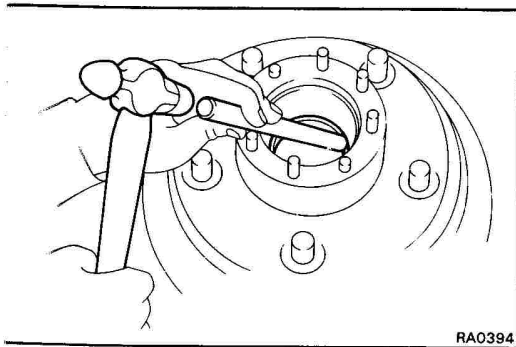


- (b) Using SST, remove the oil seal from the axle hub.
SST 09308-00010 and 09308-55010
- (c) Remove the plate and the inner bearing.

INSPECTION AND REPAIR OF REAR AXLE HUB

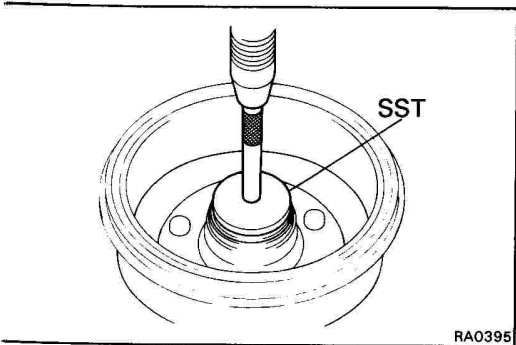
1. INSPECT AXLE HOUSING

Using a magnetic flaw detector or flaw detecting penetrant, check for damage or cracks.



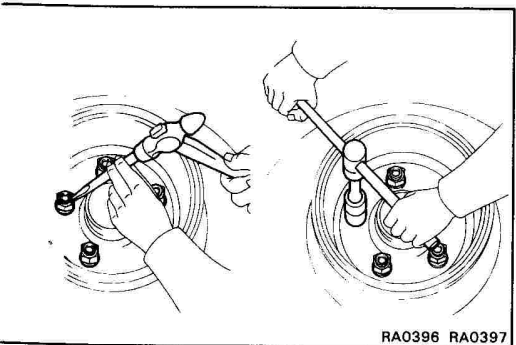
2. REPLACE BEARING OUTER RACE

- (a) Using a hammer and brass bar, drive out the outer race.



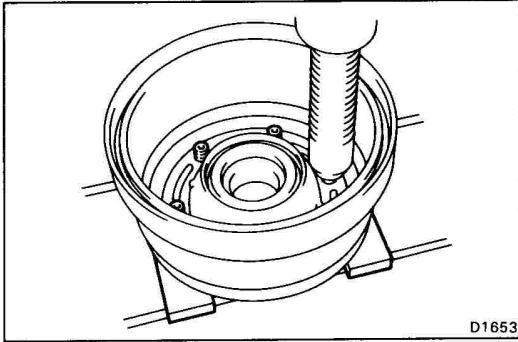
- (b) Using SST, carefully press in a new bearing outer race.

SST 09608-35013

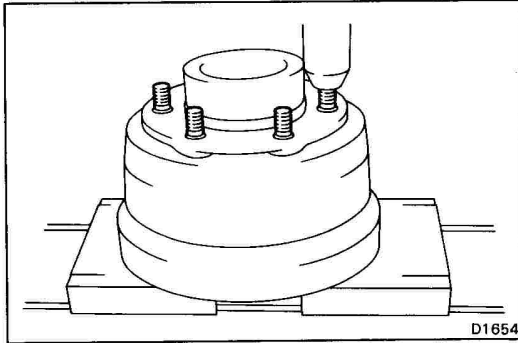


3.-1 (Double Tire) REPLACE HUB BOLT

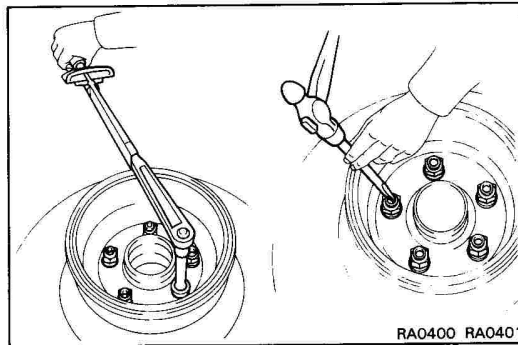
- (a) Unstake the bolt and remove the nut.



(b) Using a press, press out the hub bolt.

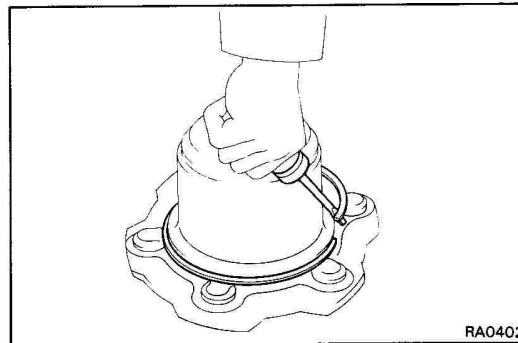


(c) Using a press, press in the hub bolt.



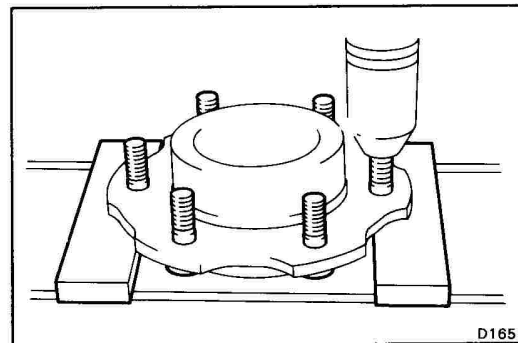
(d) Tighten the nut and stake the bolt.

Torque: Just low 2,250 kg-cm (163 ft-lb, 221 N·m)
Others 4,000 kg-cm (289 ft-lb, 392 N·m)

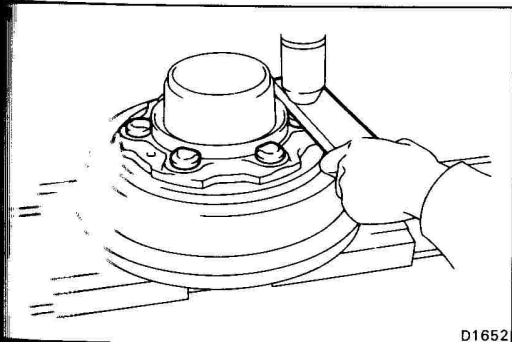


3.-2 (Single Tire) REPLACE HUB BOLT

(a) Using a screwdriver, remove the snap ring from the axle hub.



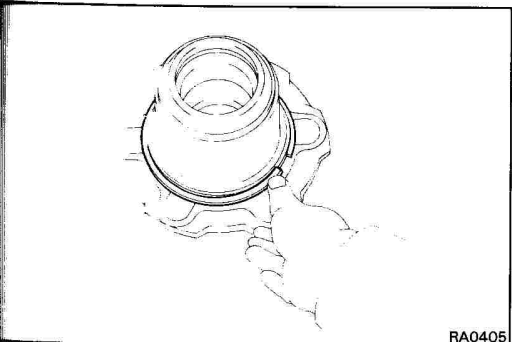
(b) Using a press, press out the hub bolt.



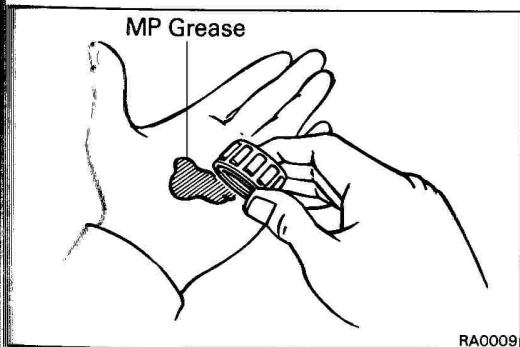
(c) Place the axle hub on the brake drum.

(d) Using a press, press in the hub bolt.

NOTE: By placing a board between the press and hub bolt, press in the hub bolt.



(e) Install the snap ring to the axle hub.



ASSEMBLY OF REAR AXLE HUB

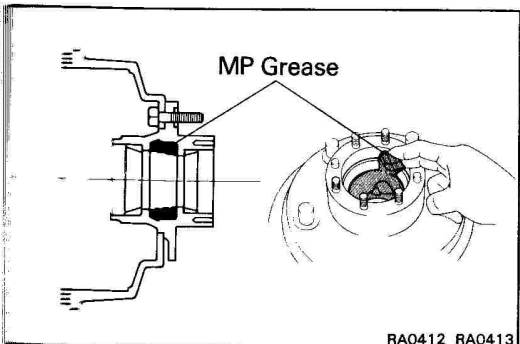
(See page RA-5)

1. PACK BEARING WITH MP GREASE

(a) Place MP grease in the palm of your hand.

(b) Pack grease into the bearing, and continuing to until the grease oozes out from the other side.

(c) Do the same around the bearing circumference.



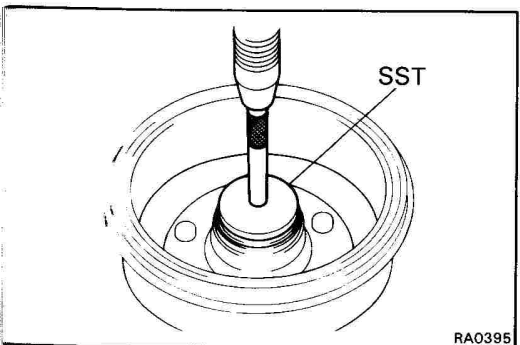
2. COAT INSIDE OF HUB WITH MP GREASE

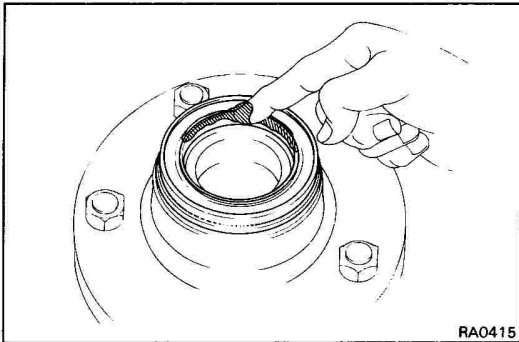
3. INSTALL INNER BEARING AND OIL SEAL

(a) Place the inner bearing and the plate into the hub.

(b) Using SST, press in a new oil seal to the hub.

SST 09608-35013

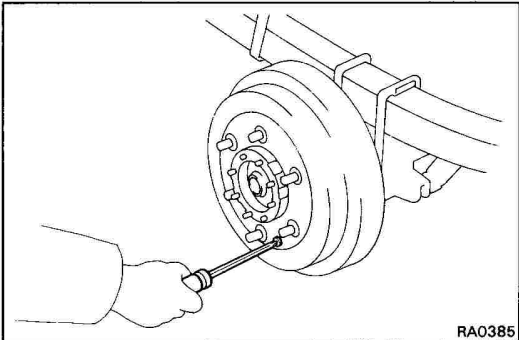




- (c) Before assembling the hub, apply MP grease to the oil seal lip.

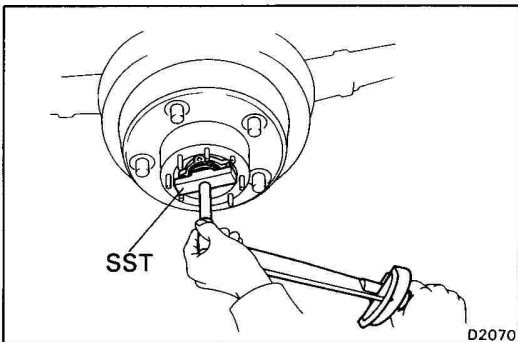
4. INSTALL AXLE HUB ON AXLE HOUSING

- (a) Place the axle hub on the axle housing.
(b) Install the outer bearing.



5. (Single Tire) INSTALL BRAKE DRUM ON AXLE HUB

- (a) Place the brake drum on the axle hub.
(b) Tighten the lock screw.



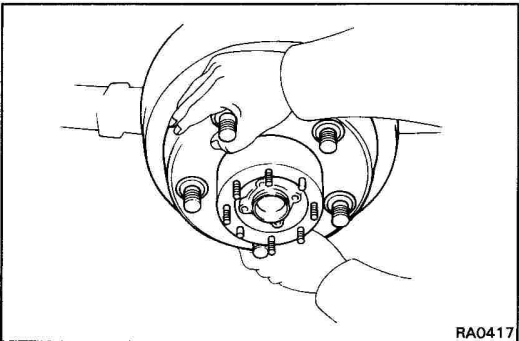
6. ADJUST PRELOAD

- (a) Install the lock nut to the axle housing.
(b) Using SST, torque the lock nut.

SST 09513-36020

**Torque: 550 – 600 kg-cm
(40 – 43 ft-lb, 54 – 58 N·m)**

- (c) Snug down the bearing by turning the hub several times.

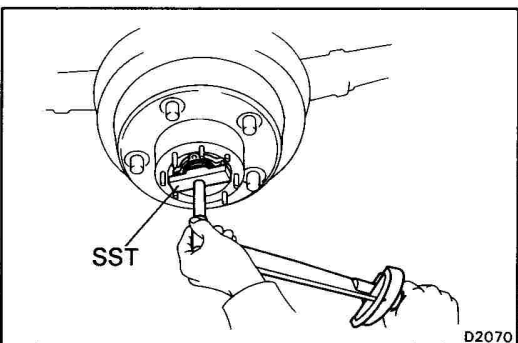


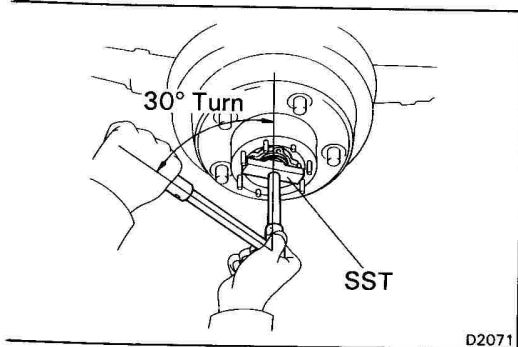
- (d) Using SST, retighten the lock nut.

SST 09513-36020

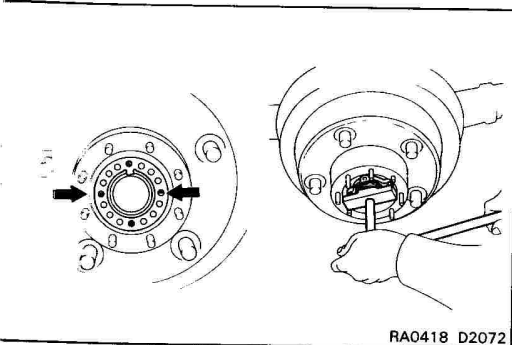
**Torque: 550 – 600 kg-cm
(40 – 43 ft-lb, 54 – 58 N·m)**

NOTE: Do not move the drum.

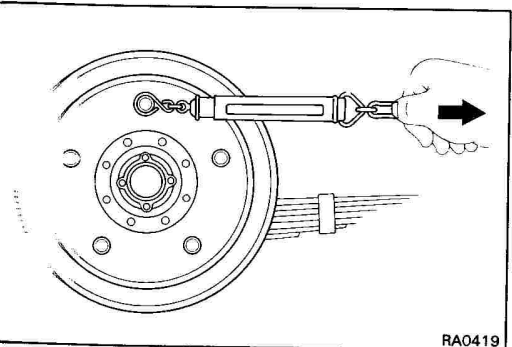




- (e) Using SST, loosen the lock nut by 30°.
SST 09513-36020



- (f) Temporarily, install the lock plate.
If the screw holes are not aligned, correct by tightening the nut by the smallest amount possible.
(g) Remove the lock plate.



- (h) Using a spring tension gauge, measure the preload at the hub bolt.

Rear wheel bearing preload (at starting):

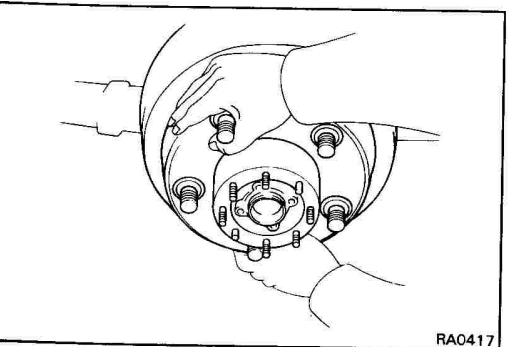
Single tire and just low

1.1 – 3.3 kg (2.4 – 7.3 lb, 11 – 32 N)

Others

1.0 – 3.0 kg (2.2 – 6.6 lb, 10 – 29 N)

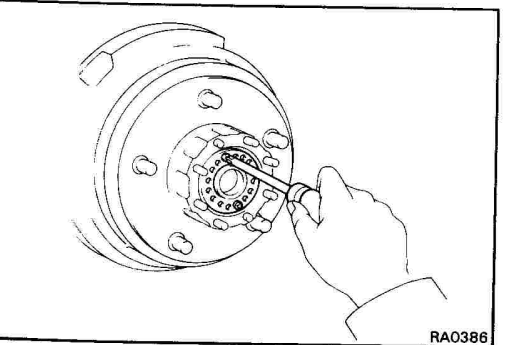
If preload is not within specification, the procedure above must be repeated.



- (i) Check the revolving condition of the drum.

Hub axial play:

Less than 0.10 mm (0.0039 in)



7. INSTALL LOCK PLATE AND SCREW

Torque: 55 kg-cm (48 in.-lb, 5.4 N·m)

8. INSTALL WHEEL

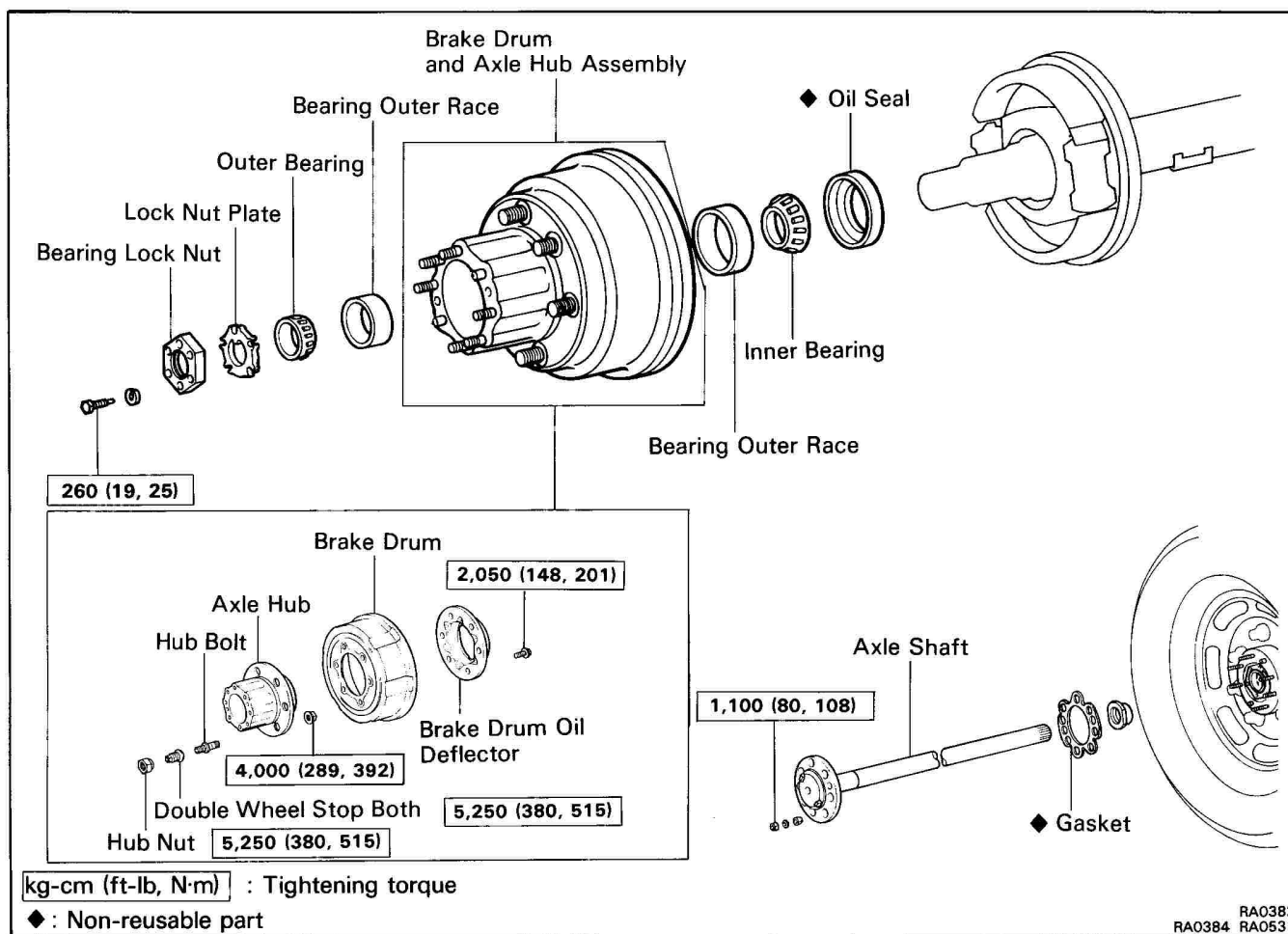
Torque:

Single tire and just low

3,750 kg-cm (271 ft-lb, 368 N·m)

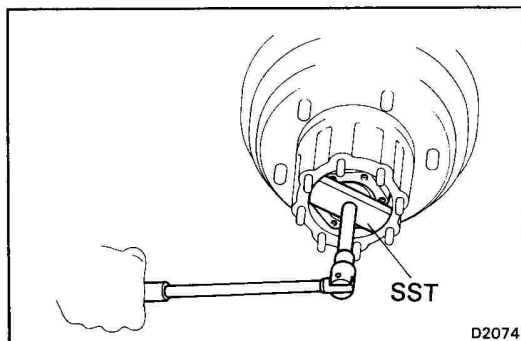
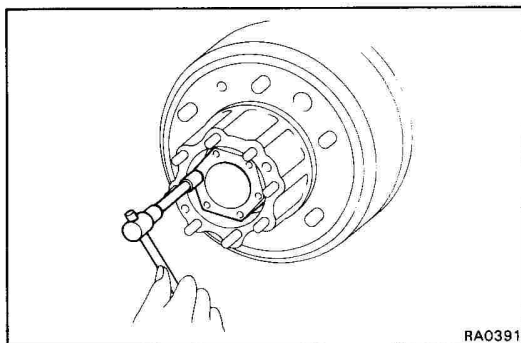
Others 5,250 kg-cm (380 ft-lb, 515 N·m)

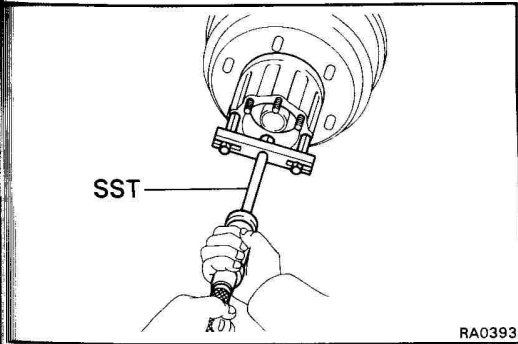
REAR AXLE HUB (WU series) COMPONENTS



DISASSEMBLY OF REAR AXLE HUB

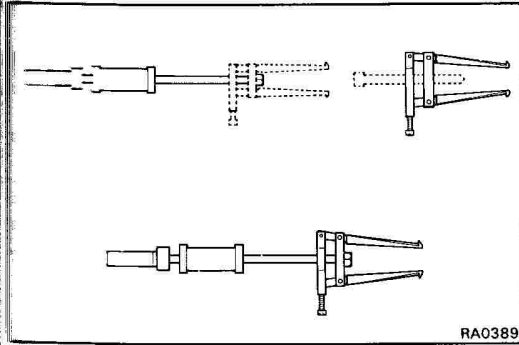
1. REMOVE WHEEL AND REAR AXLE SHAFT
(See page RA-3)
2. REMOVE BEARING LOCK NUT
 - (a) Remove the lock bolt from the lock nut.
 - (b) Using SST, remove the bearing lock nut.
SST 09513-36030
 - (c) Remove the lock nut plate.





3. REMOVE AXLE HUB FROM AXLE HOUSING

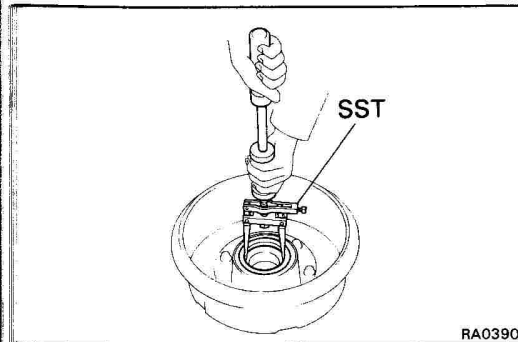
Using SST, pull out the hub from the axle housing.
SST 09520-00031



4. REMOVE OIL SEAL AND INNER BEARING

(a) Set the two SST as shown.

SST 09308-00010 and 09308-55010



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

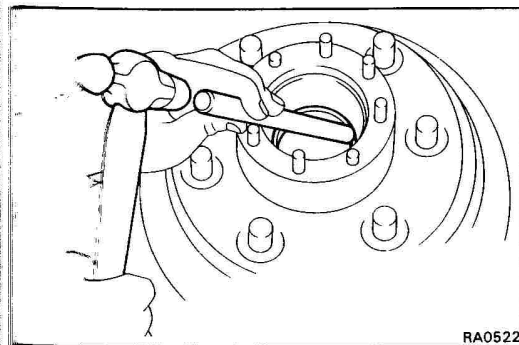
SST 09308-00010 and 09308-55010

(c) Remove the inner bearing.

INSPECTION AND REPAIR OF REAR AXLE HUB

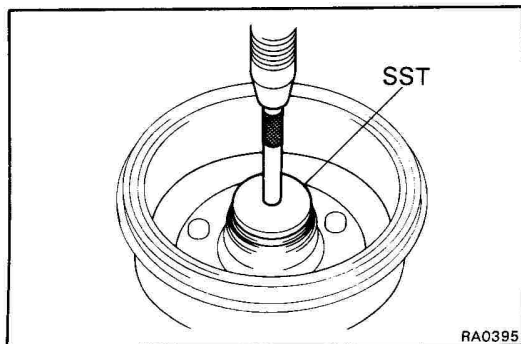
1. INSPECT AXLE HOUSING

Using a magnetic flaw detector or flaw detecting penetrant, check for damage or cracks.



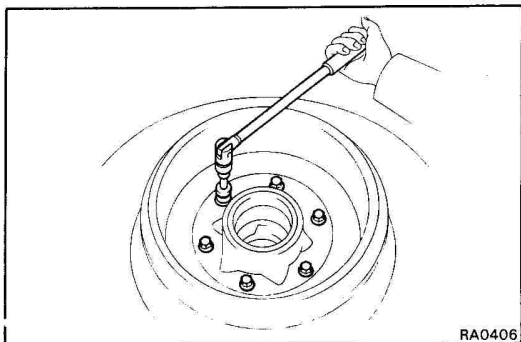
2. REPLACE BEARING OUTER RACE

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



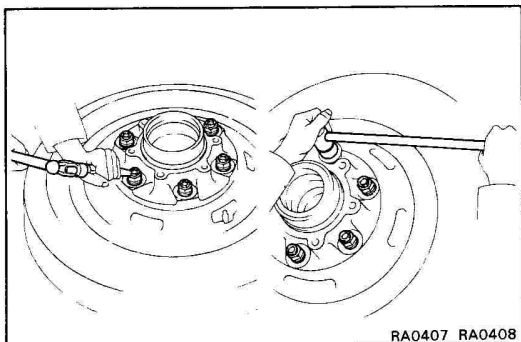
- (b) Using SST, carefully press in a new bearing outer race.

SST 09608-35013 and 09550-55010 (Inner bearing outer race)

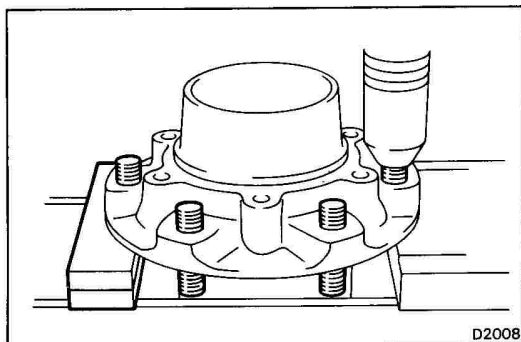


3. REPLACE HUB BOLT

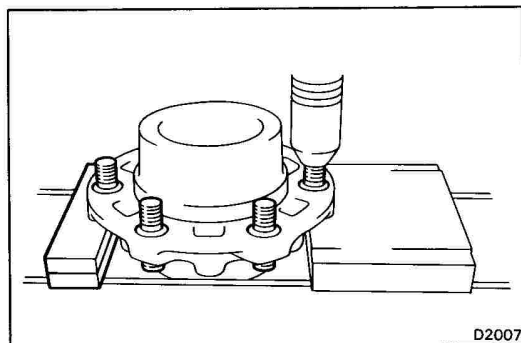
- (a) Place the matchmarks on the axle hub and the brake drum.
 (b) Remove the six bolts, and the brake drum oil deflector.
 (c) Remove the drum from the axle hub.



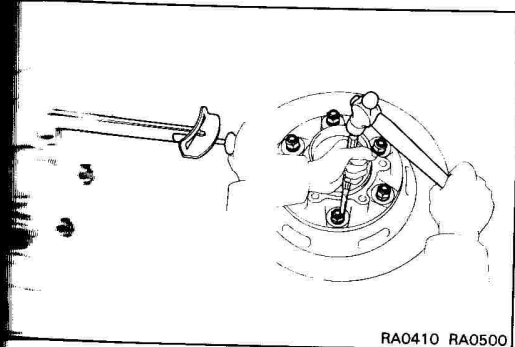
- (d) Unstake the bolt and remove the nut.



- (e) Using a press, press out the hub bolt.

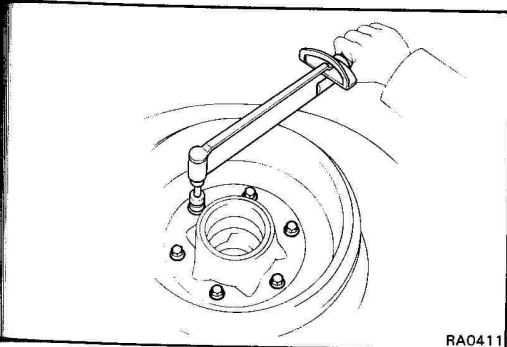


- (f) Using a press, press in the hub bolt.



(g) Tighten the nut and stake the bolt.

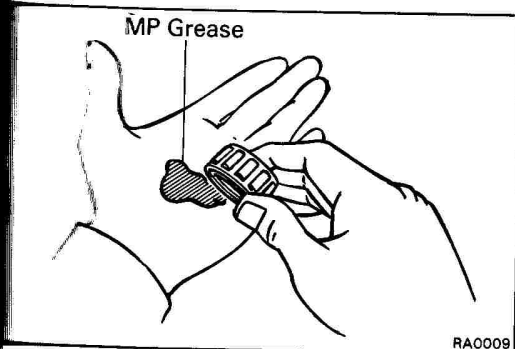
Torque: 4,000 kg-cm (289 ft-lb, 392 N·m)



(h) Place the brake drum and the brake drum oil deflector.

(i) Tighten the six bolts.

Torque: 2,050 kg-cm (148 ft-lb, 201 N·m)



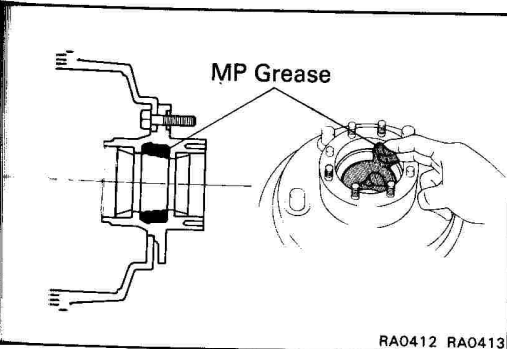
ASSEMBLY OF REAR AXLE HUB

(See page RA-12)

1. PACK BEARING WITH MP GREASE

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

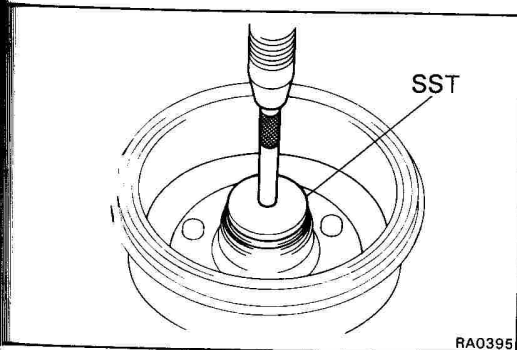
2. COAT INSIDE OF HUB WITH MP GREASE

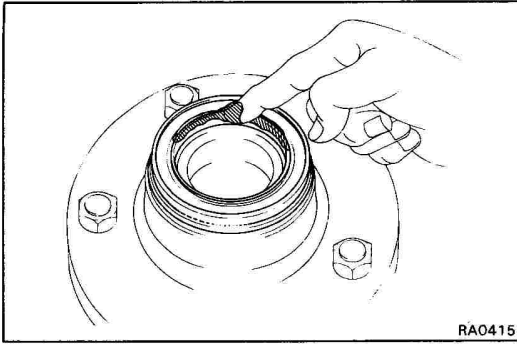


3. INSTALL INNER BEARING AND OIL SEAL

- Place the inner bearing into the hub.
- Using SST, press in the oil seal to the hub.

SST 09550-55010

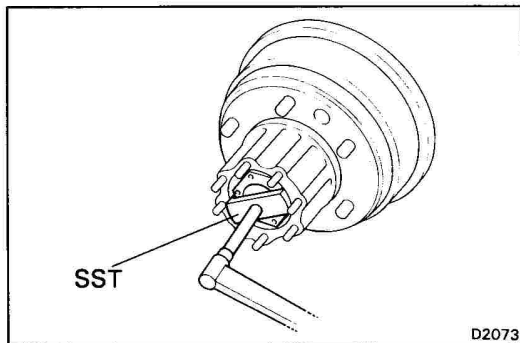




- (c) Before assembling the hub, apply MP grease to the oil seal lip.

4. INSTALL AXLE HUB WITH DRUM ON AXLE HOUSING

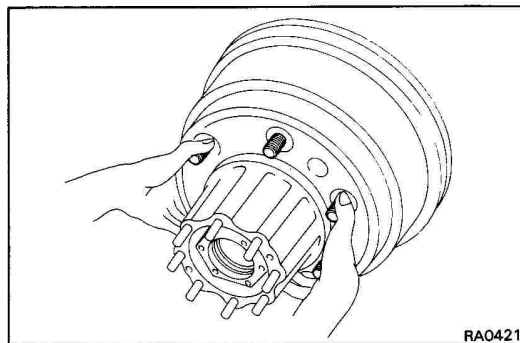
- (a) Place the axle hub on the axle housing.
(b) Install the outer bearing.
(c) Install the lock nut plate.



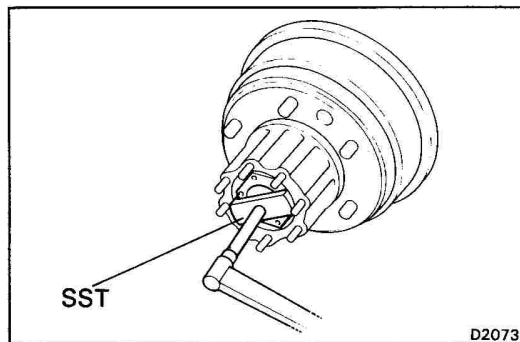
5. ADJUST PRELOAD

- (a) Using SST, install and torque the lock nut.
SST 09513-36030

**Torque: 700 – 750 kg-cm
(51 – 54 ft-lb, 69 – 73 N·m)**



- (b) Snug down the bearing by turning the hub several times.

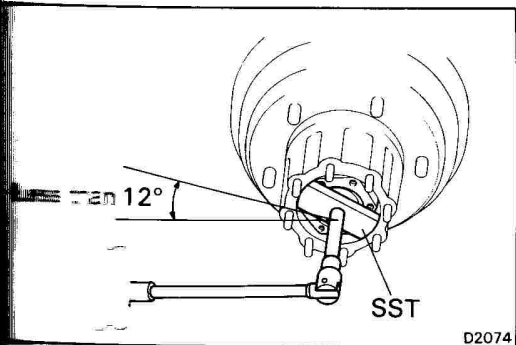


- (c) Using SST, retighten the nut.

SST 09513-36030

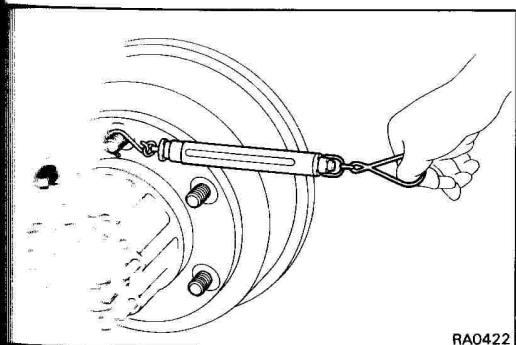
**Torque: 700 – 750 kg-cm
(51 – 54 ft-lb, 69 – 73 N·m)**

NOTE: Do not move the drum.



- (d) Using SST, loosen the nut within 12° to where the nut and plate holes line up.

SST 09513-36030

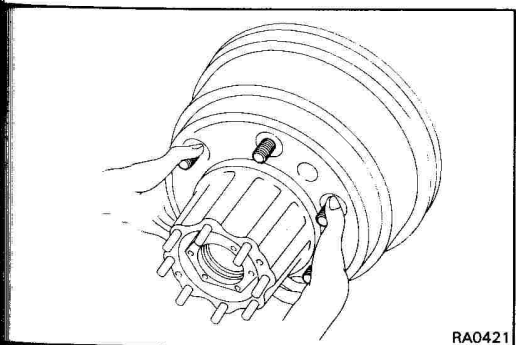


- (e) Using a spring tension gauge, measure the preload at the hub bolt.

Rear wheel bearing preload (at starting):

0.9 – 2.3 kg (2.0 – 5.1 lb, 9 – 23 N)

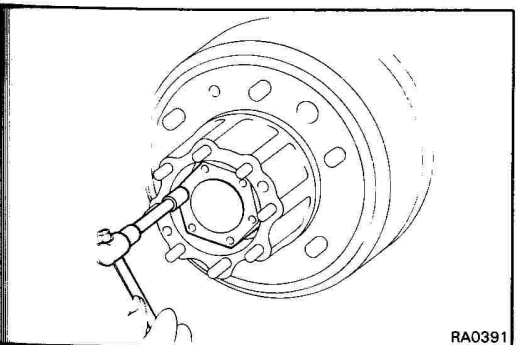
If preload is not within specification, repeat the procedure above.



- (f) Check the revolving condition of the drum.

Hub axial play:

Less than 0.10 mm (0.0039 in.)



6. INSTALL LOCK BOLT

Torque: 260 kg-cm (19 ft-lb, 25 N·m)

7. INSTALL WHEEL

Torque: 5,250 kg-cm (380 ft-lb, 515 N·m)

8. INSTALL REAR AXLE SHAFT

(See page RA-4)