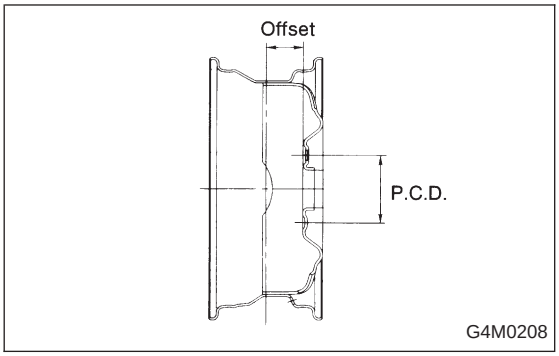
# WHEELS AND AXLES 4-2




# 1. Specifications

## A: TIRE AND WHEEL SIZE

| Model | | Front and Rear | | | | Spare | | |
|---|---|---|---|---|---|---|---|---|
| | | Tire size | Rim size | Rim offset mm (in) | P.C.D. mm (in) | Tire size | Rim size | Rim offset mm (in) |
| 1800 cc | COUPE WAGON | P175/70R14 84S | 14 x 5 1/2JJ | 55 (2.17) | 100 (3.94) dia. | T125/70D16 | 16 x 4T | 50 (1.97) |
| 2200 cc | COUPE SEDAN WAGON | P195/160R15 87H | 15 x 6JJ | 55 (2.17) | 100 (3.94) dia. | T135/70D16 | 16 x 4T | 50 (1.97) |
| | OUTBACK | P205/60R15 90S P205/60R15 90H | | | | | | |

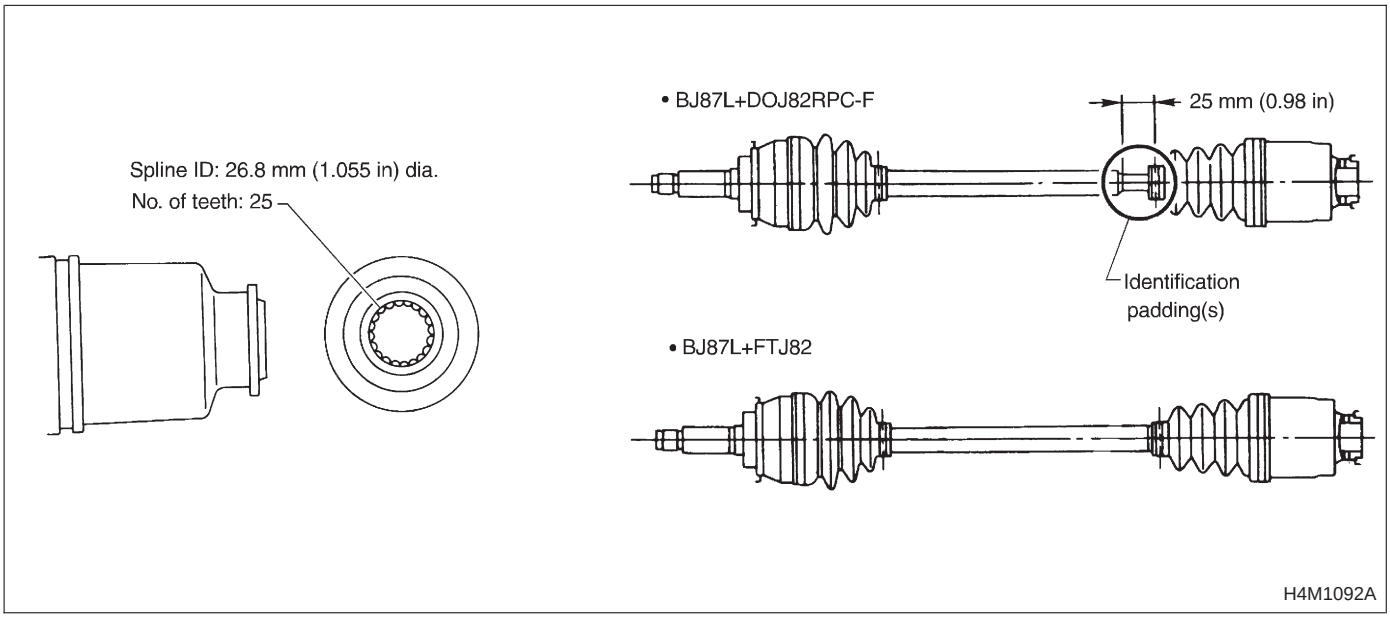
NOTE: “T-type” tire for temporary use is supplied as a spare tire.

## B: TIRE INFLATION PRESSURE

| Model | Tire size | Tire inflation pressure kPa (kg/cm$^2$, psi) | |
|---|---|---|---|
| | | Light load | Full load |
| Coupe Sedan Wagon | 175/70R14 84S P195/60R15 87H | Ft: 220 (2.2, 31) Rr: 200 (2.0, 25) | |
| Outback | P205/60R15 90S P205/60R15 90H | | |
| T-type tire | T125/70D16 T135/70D16 | 412 (4.2, 60) | |

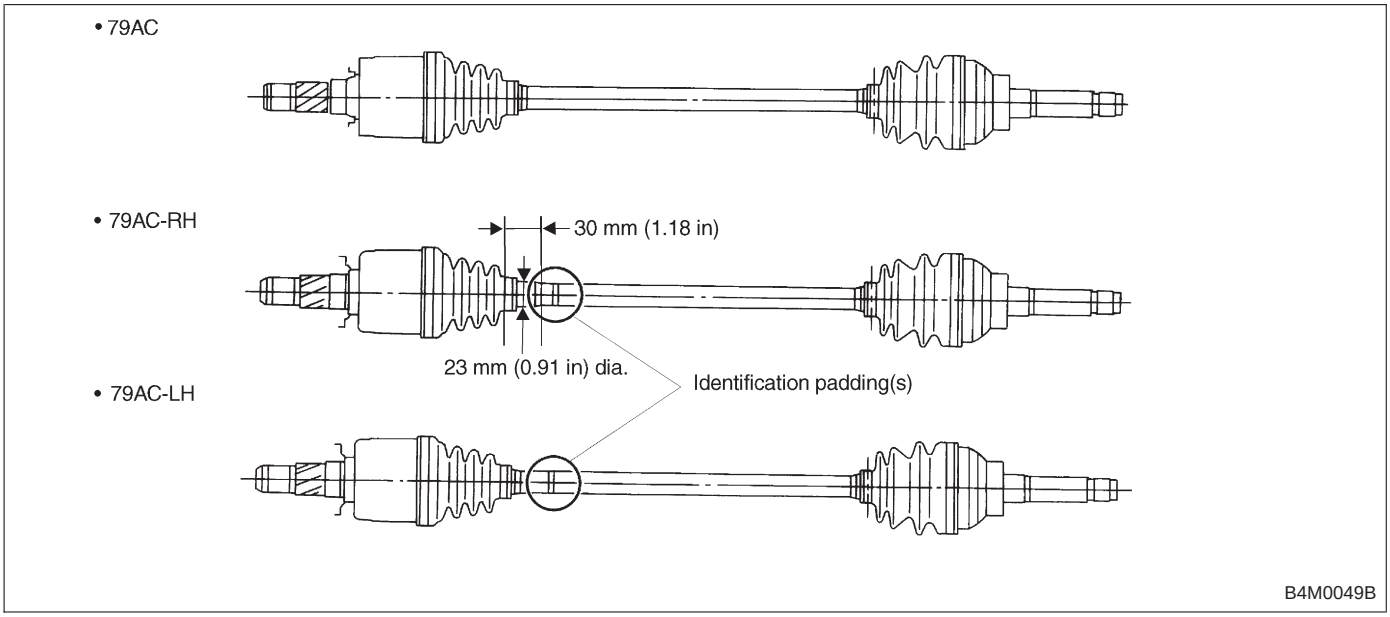
## C: FRONT DRIVE SHAFT ASSEMBLY

| Type of axle shaft assembly | SHAFT | DOJ or FTJ |
|---|---|---|
| | No. of identification paddings on shaft | No. of spline teeth |
| BJ87L + DOJ82 RPC-F | 1 (One) | 25 |
| BJ87L + FTJ82 | — | 25 |




## D: REAR DRIVE SHAFT ASSEMBLY (AWD MODEL)

| Type of axle shaft assembly | SHAFT |
|---|---|
| | No. of identification paddings on shaft |
| 79AC | None |
| 79AC-RH | 1 (One) |
| 79AC-LH | 1 (One) |



## E: APPLICATION TABLE

| Model | Power unit | Front drive shaft | | Rear drive shaft | |
|---|---|---|---|---|---|
| | | 5MT | 4AT | 5MT | 4AT |
| AWD | 1800 cc | BJ87L + DOJ82 RPC-F | — | 79AC | 79AC |
| AWD | 2200 cc | BJ87L + DOJ82 RPC-F | BJ87L + FTJ82 | 79AC-RH<br>79AC-LH | 79AC |

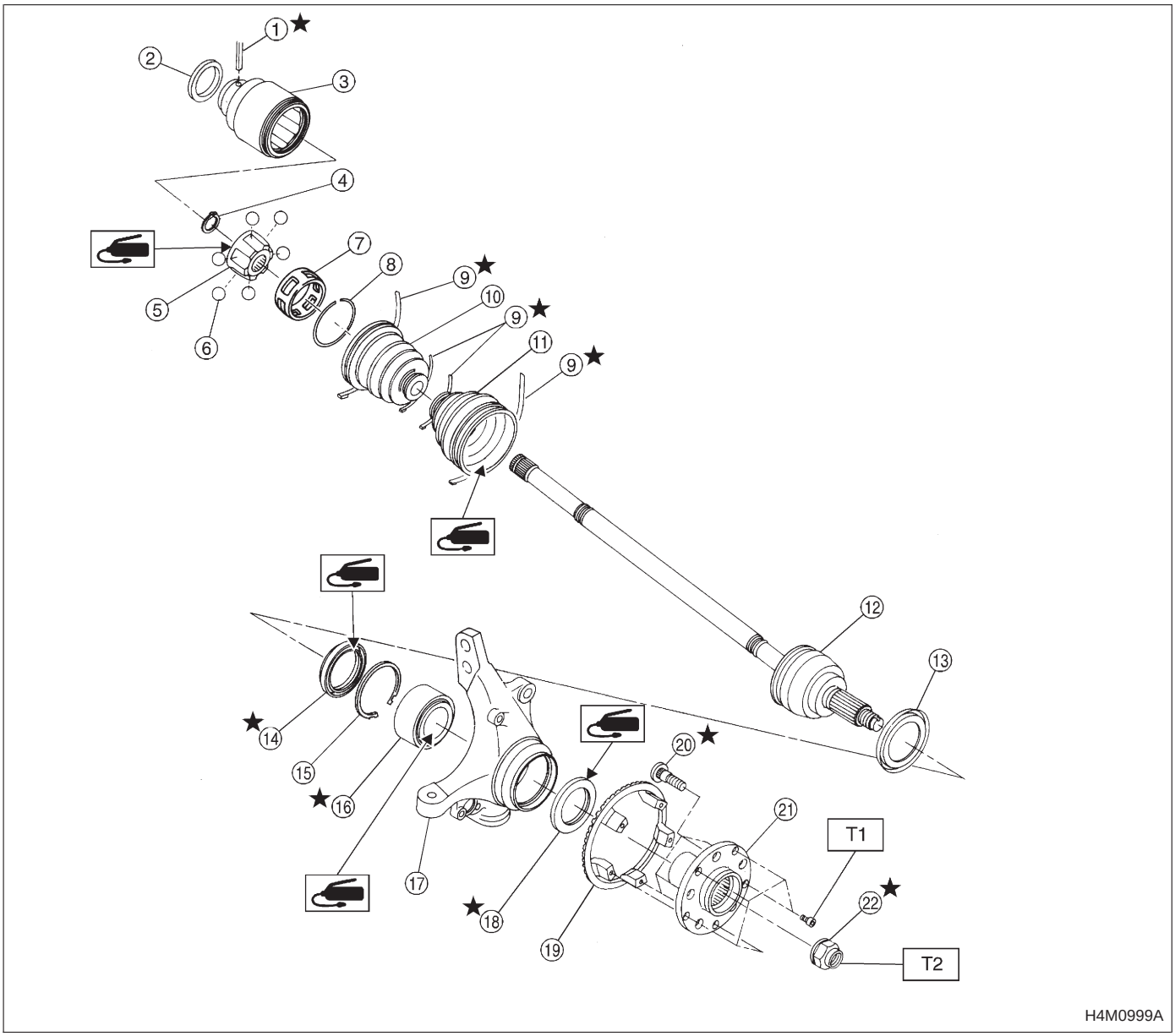
## 2. Service Data

| Wheel balancing | Standard | Service limit |
|---|---|---|
| Dynamic unbalance | Less than 5 g (0.18 oz) | |

| Balance weight part number (For steel wheel) | Weight g (oz) |
|---|---|
| 28101AA001 | 5 (0.18) |
| 28101AA011 | 10 (0.35) |
| 28101AA021 | 15 (0.53) |
| 28101AA031 | 20 (0.71) |
| 28101AA041 | 25 (0.88) |
| 28101AA051 | 30 (1.06) |
| 28101AA061 | 35 (1.23) |
| 28101AA071 | 40 (1.41) |
| 28101AA081 | 45 (1.59) |
| 28101AA091 | 50 (1.76) |
| 28101AA101 | 55 (1.94) |
| 28101AA111 | 60 (2.12) |

# 1. Front Axle

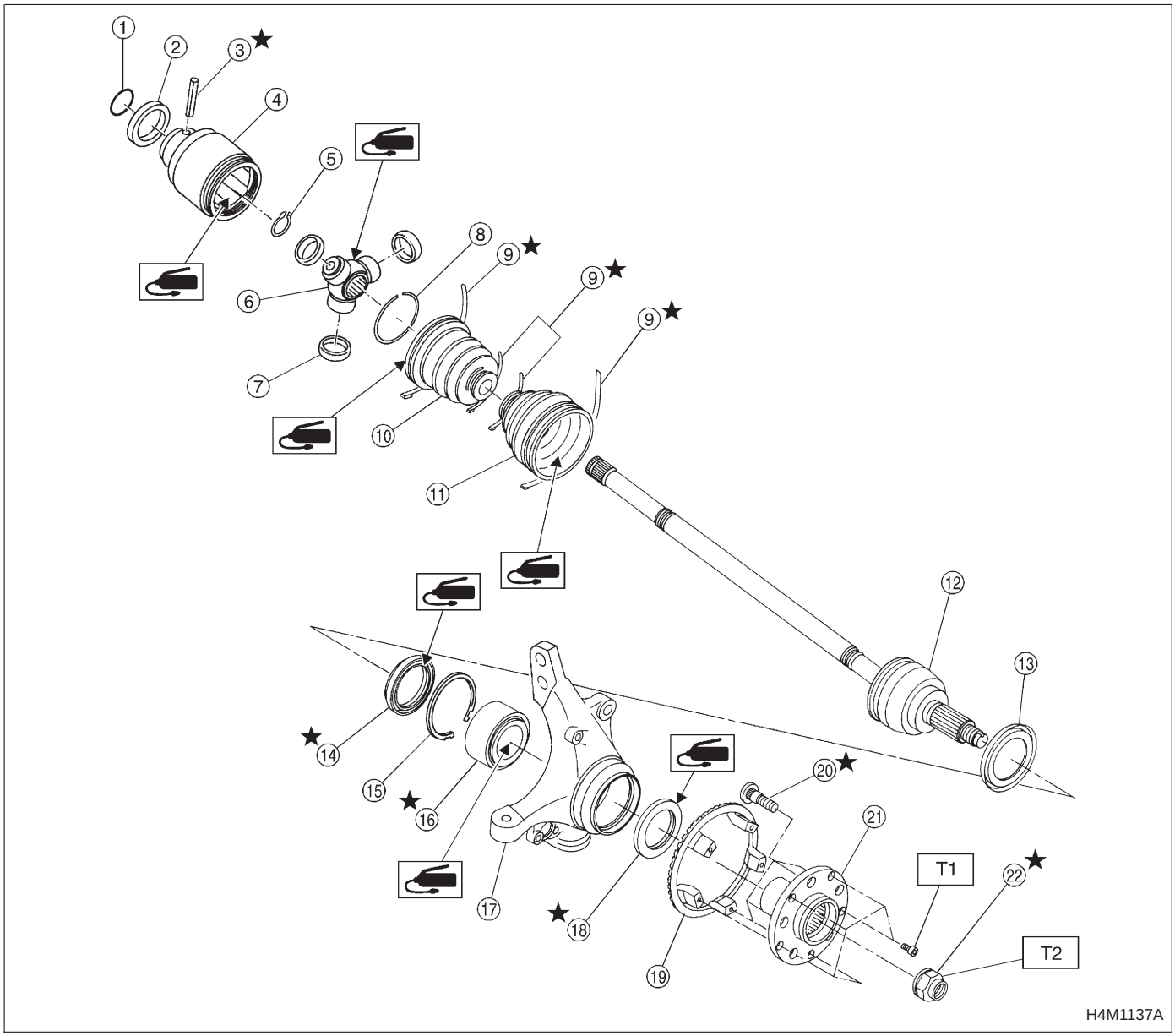
## A: EXCEPT 2200 cc AT VEHICLES




① Spring pin
② Baffle plate (DOJ)
③ Outer race (DOJ)
④ Snap ring
⑤ Inner race (DOJ)
⑥ Ball
⑦ Cage
⑧ Circlip
⑨ Boot band
⑩ Boot (DOJ)
⑪ Boot (BJ)
⑫ BJ ASSY
⑬ Baffle plate
⑭ Oil seal (IN)
⑮ Snap ring
⑯ Bearing
⑰ Housing
⑱ Oil seal (OUT)
⑲ Tone wheel
⑳ Hub bolt
㉑ Hub
㉒ Axle nut

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 13±3 (1.3±0.3, 9.4±2.2)***
***T2: 186±20 (19±2, 137±14)***

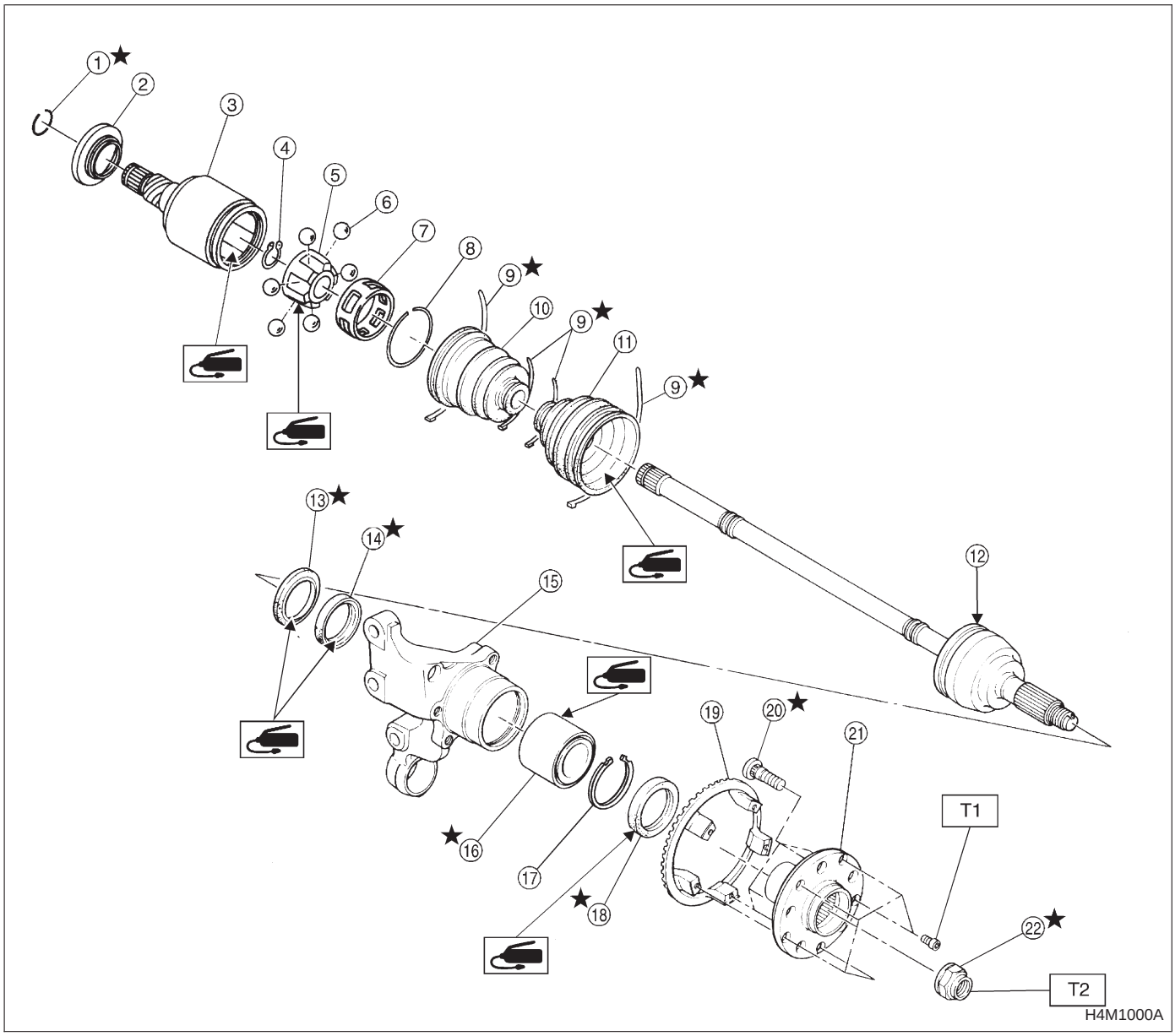
## B: 2200 cc AT VEHICLES




① O-ring
② Baffle plate (FTJ)
③ Spring pin
④ Outer race (FTJ)
⑤ Snap ring
⑥ Trunnion
⑦ Free ring
⑧ Circlip
⑨ Boot band
⑩ Boot (FTJ)
⑪ Boot (BJ)
⑫ BJ ASSY
⑬ Baffle plate
⑭ Oil seal (IN)
⑮ Snap ring
⑯ Bearing
⑰ Housing
⑱ Oil seal (OUT)
⑲ Tone wheel
⑳ Hub bolt
㉑ Hub
㉒ Axle nut

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 13±3 (1.3±0.3, 9.4±2.2)***
***T2: 186±20 (19±2, 137±14)***

# 2. Rear Axle



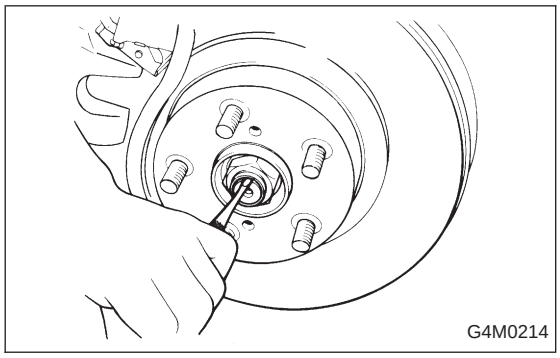

① Circlip (1800 cc model)
② Baffle plate (DOJ)
③ Outer race (DOJ)
④ Snap ring
⑤ Inner race
⑥ Ball
⑦ Cage
⑧ Circlip
⑨ Boot band
⑩ Boot (DOJ)
⑪ Boot (BJ)
⑫ BJ ASSY
⑬ Oil seal (IN. No. 2)
⑭ Oil seal (IN. No. 3)
⑮ Housing
⑯ Bearing
⑰ Snap ring
⑱ Oil seal (OUT)
⑲ Tone wheel
⑳ Hub bolt
㉑ Hub
㉒ Axle nut

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 13±3 (1.3±0.3, 9.4±2.2)***
***T2: 186±20 (19±2, 137±14)***

# 1. Front Axle

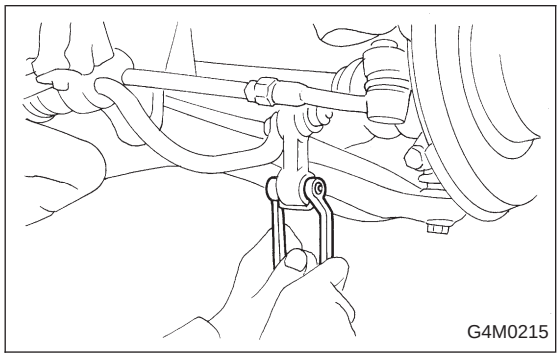
## A: REMOVAL

1) Disconnect ground cable from battery.
2) Jack-up vehicle, support it with safety stands, and remove front wheels.


G4M0214

3) Unlock axle nut.
4) Remove axle nut using a socket wrench.

**CAUTION:**
**Be sure to loose and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.**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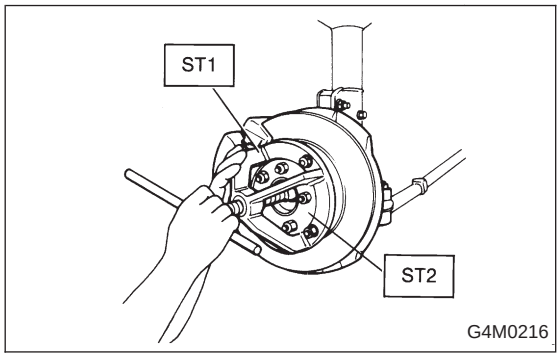
5) Remove stabilizer link.



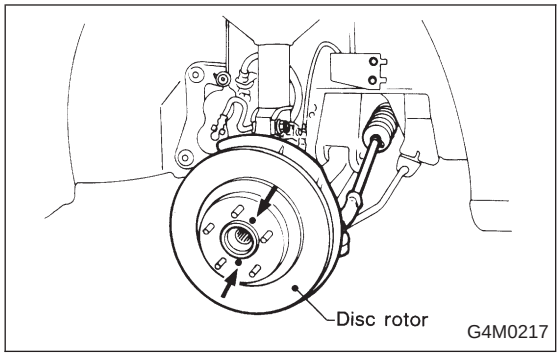
G4M0216

6) Remove DOJ/FTJ from transmission spindle.
7) Remove front drive shaft assembly from hub. If it is hard to remove, use STs.

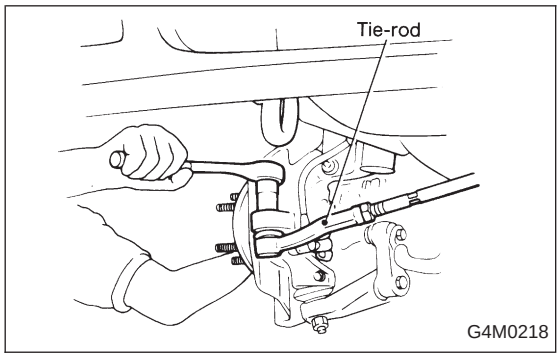
ST1 926470000 AXLE SHAFT PULLER
ST2 927140000 PLATE

**CAUTION:**
- **Be careful not to damage oil seal lip when removing front drive shaft.**
- **When replacing front drive shaft, also replace inner oil seal.**

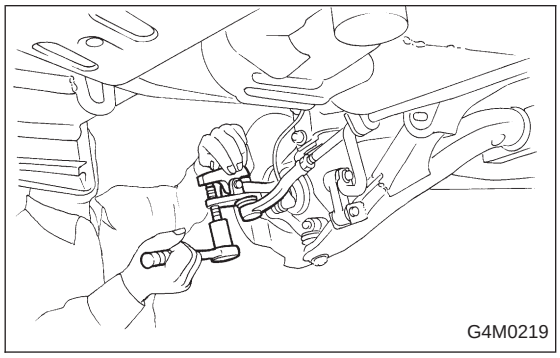
8) Remove disc brake caliper from housing, and suspend it from strut using a wire.



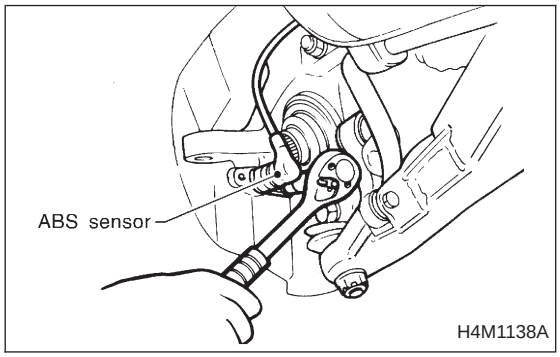

9) Remove disc rotor from hub.
If disc rotor seizes up within hub, drive disc rotor out by installing an 8-mm bolt in screw hole on the rotor.




10) Remove cotter pin and castle nut which secure tie-rod end to housing knuckle arm.

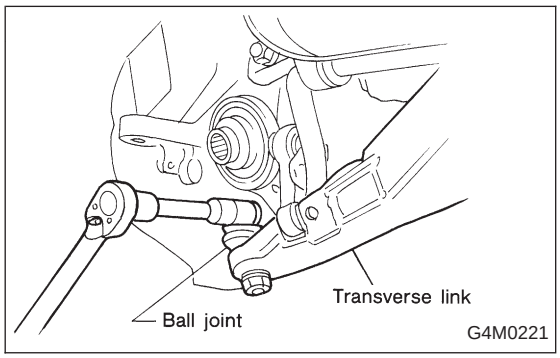



11) Using a puller, remove tie rod ball joint from knuckle arm.

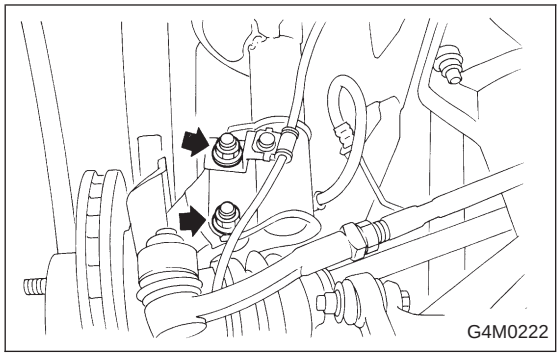



12) On ABS equipped models, remove ABS sensor assembly and harness in advance.

NOTE:
Be sure to use soft jaws (such as aluminum plates) when placing the mating surfaces of housing and strut in a vise.




13) Remove transverse link ball joint from housing.

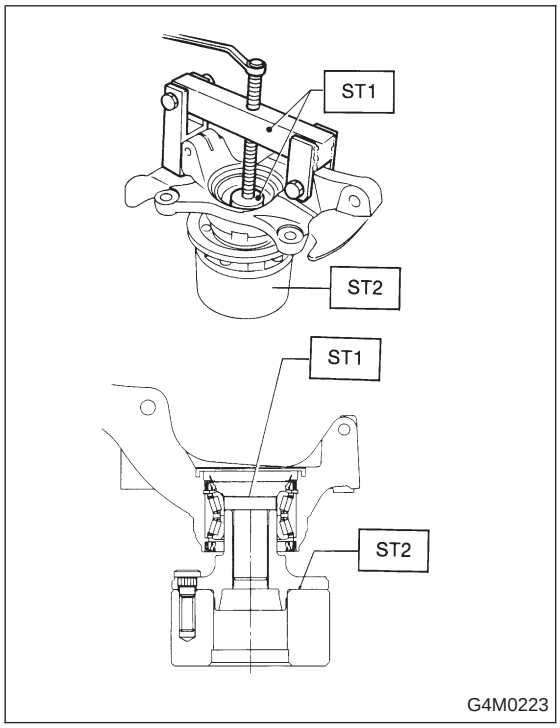

G4M0222

14) After scribing an alignment mark on camber adjusting bolt head, remove bolts which connect housing and strut, and disconnect housing from strut.

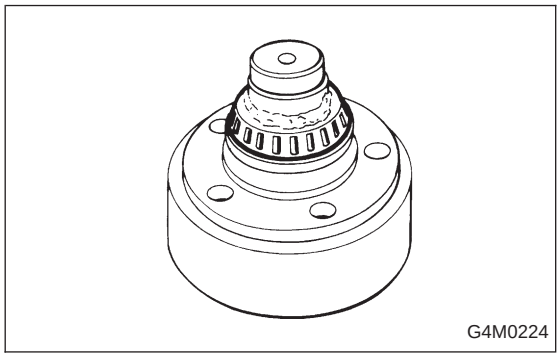
## B: DISASSEMBLY

1) Using ST1, support housing and hub securely.
2) Attach ST2 to housing and drive hub out.

ST1 927060000 HUB REMOVER
ST2 927080000 HUB STAND

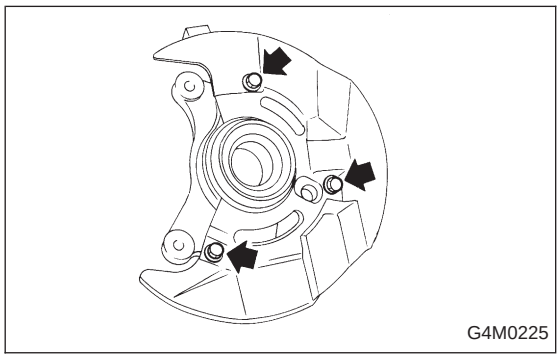


G4M0223


G4M0224

If inner bearing race remains in the hub, remove it with a suitable tool (commercially available).

**CAUTION:**
- **Be careful not to scratch polished area of hub.**
- **Be sure to install inner race on the side of outer race from which it was removed.**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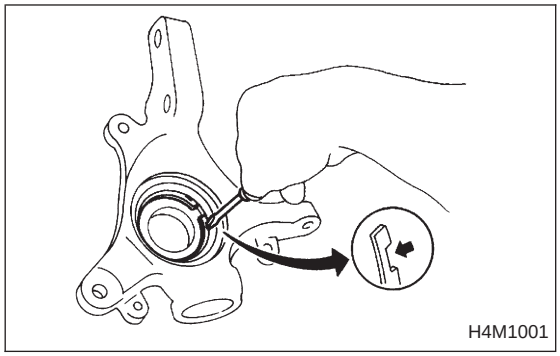
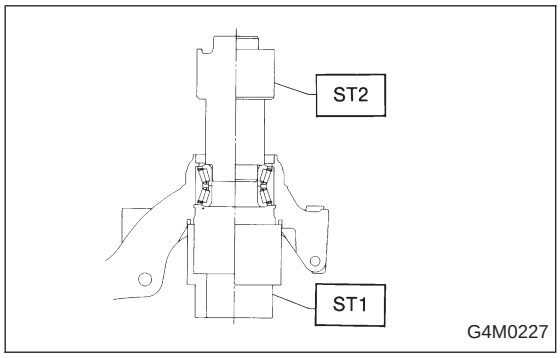
3) Remove disc cover from housing.
4) Using a standard screwdriver, remove outer and inner oil seals.

**CAUTION:**
**Do not use old oil seals.**


H4M1001

5) Using flat bladed screwdriver, remove snap ring.



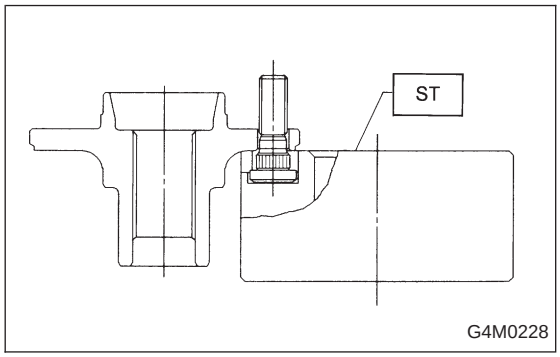
G4M0227

6) Using ST1, support housing securely.
7) Using ST2, press inner race to drive out outer bearing.

ST1 927400000 HOUSING STAND
ST2 927100000 BEARING REMOVER

**CAUTION:**
- **Do not remove outer race unless it is faulty.**
- **Discard outer race after removal.**
- **Do not replace inner or outer race separately; always replace as a unit.**

8) Loosen bolts which secure tone wheel to hub. Remove tone wheel (only vehicle equipped with ABS).

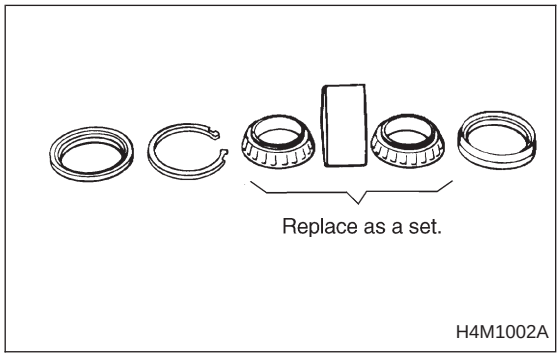


G4M0228

9) Using ST and a hydraulic press, drive hub bolts out.

ST 927080000 HUB STAND

**CAUTION:**
**Be careful not to hammer hub bolts. This may deform hub.**

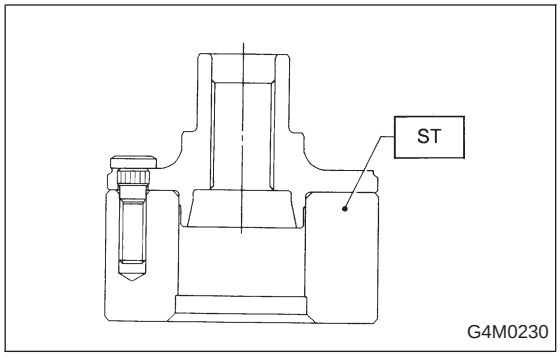


H4M1002A

## C: INSPECTION

Check the removed parts for wear and damage. If defective, replace with a new one.

**CAUTION:**
- **If bearing is faulty, replace it as the bearing set.**
- **Be sure to replace oil seal at every overhaul.**




## D: ASSEMBLY

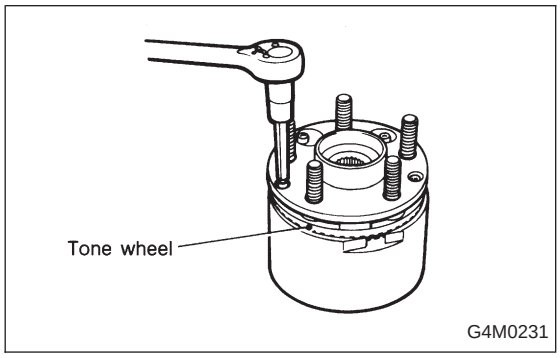
1) Attach hub to ST securely.

ST 927080000 HUB STAND

2) Using a hydraulic press, press new hub bolts into place.

**CAUTION:**
**Be sure to press hub bolts until their seating surfaces contact the hub.**

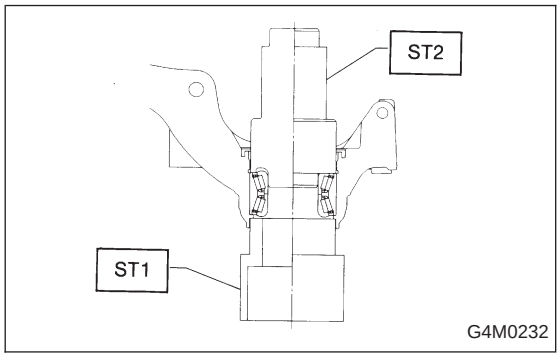
NOTE:
Use 12 mm (0.47 in) dia. holes in HUB STAND to prevent bolts from tilting.




3) Remove foreign particles (dust, rust, etc.) from mating surfaces of hub and tone wheel, and install tone wheel to hub (only vehicle equipped with ABS).

**CAUTION:**
- **Be careful not to damage tone wheel teeth.**
- **Ensure tone wheel closely contacts hub.**

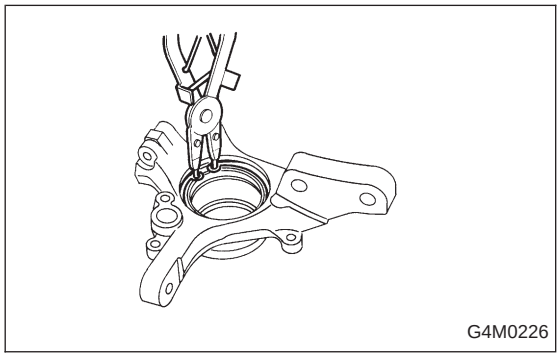
4) Clean dust or foreign particles from inside the housing.




5) Using ST1 and ST2, press a new bearing into place.

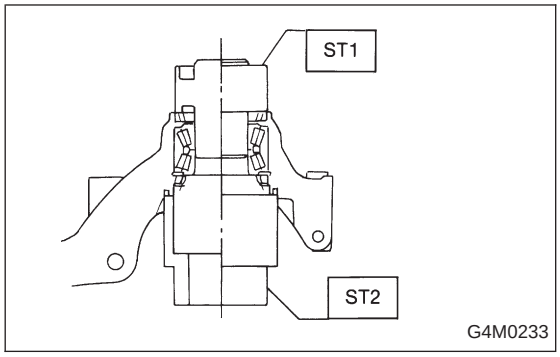
ST1 927400000 HOUSING STAND
ST2 927100000 BEARING REMOVER

**CAUTION:**
- **Always press outer race when installing bearing.**
- **Be careful not to remove plastic lock from inner race when installing bearing.**
- **Charge bearing with new grease when outer race is not removed.**



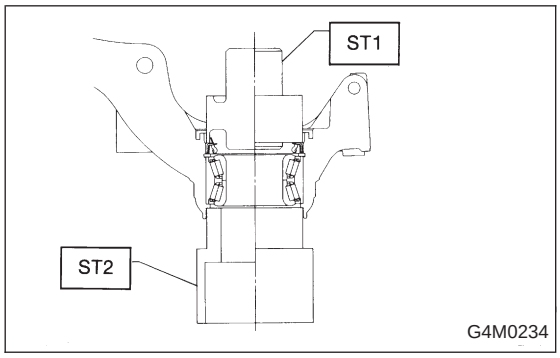

6) Using pliers, install snap ring in its groove.

**CAUTION:**
**Make sure to install it firmly to groove.**




7) Using ST1 and ST2, press outer oil seal until it contacts the bottom of housing.

ST1 927410000 OIL SEAL INSTALLER
ST2 927400000 HOUSING STAND




8) Using ST1 and ST2, press inner oil seal until it contacts circlip.

ST1 927410000 OIL SEAL INSTALLER
ST2 927400000 HOUSING STAND

9) Invert ST and housing.

ST 927400000 HOUSING STAND

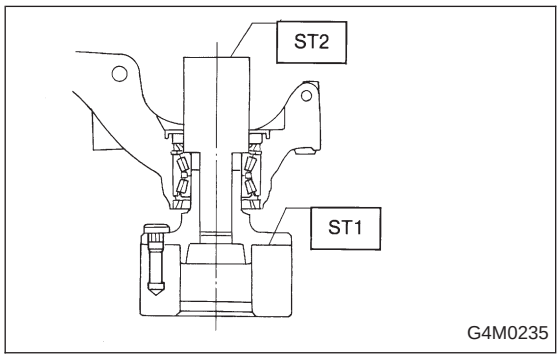
10) Apply sufficient grease to oil seal lip.

***Specified grease***
***SHELL 6459N***

**CAUTION:**
**● If specified grease is not available, remove bearing grease and apply Auto Rex A instead.**
**● Do not mix different types of grease.**

11) Install disc cover to housing the three bolts.

***Tightening torque:***
***14±4 N·m (1.4±0.4 kg-m, 10.1±2.9 ft-lb)***




12) Attach hub to ST1 securely.
13) Clean dust or foreign particles from the polished surface of hub.
14) Using ST2, press bearing into hub by driving inner race.

ST1 927080000 HUB STAND
ST2 927120000 HUB INSTALLER

## E: INSTALLATION

1) Install transverse link ball joint to housing.

***Tightening torque:***
***44±6 N·m (4.5±0.6 kg-m, 32.5±4.3 ft-lb)***

2) While aligning alignment mark on camber adjusting bolt head, connect housing and strut.

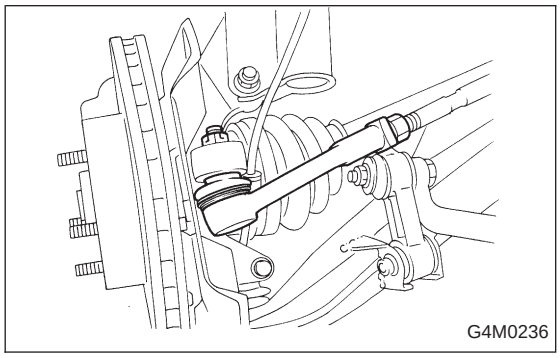
**CAUTION:**
**Use a new self-locking nut.**

***Tightening torque:***
***147±15 N·m (15±1.5 kg-m, 108±11 ft-lb)***

3) Install speed sensor and harness on housing (only vehicle equipped with ABS).
4) Install disc rotor on hub.
5) Install disc brake caliper on housing.

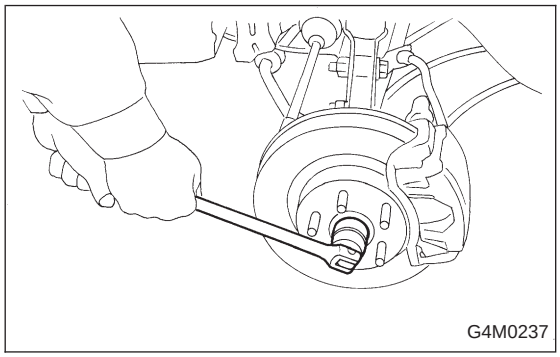
***Tightening torque:***
***59±10 N·m (6±1 kg-m, 43±7 ft-lb)***

6) Install front drive shaft. <Ref. to 4-2 [W3E1].>
7) Connect stabilizer link.


G4M0236

8) Install tie-rod end ball joint on housing knuckle arm.

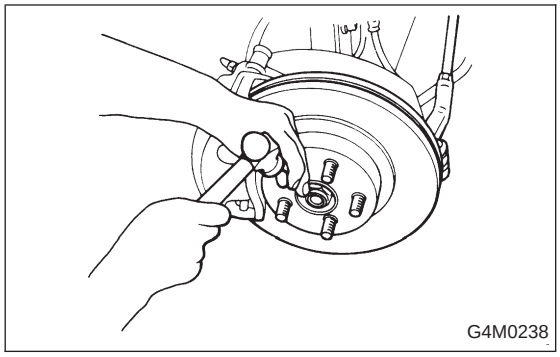
***Tightening torque:***
***27.0±2.5 N·m (2.75±0.25 kg-m, 19.9±1.8 ft-lb)***


G4M0237

9) While depressing brake pedal, tighten axle nut and lock it securely.

***Tightening torque:***
***186±20 N·m (19±2 kg-m, 137±14 ft-lb)***

**CAUTION:**
- **Use a new axle nut.**
- **Always tighten axle nut before installing wheel on vehicle. If wheel is installed and comes in contact with ground when axle nut is loose, wheel bearings may be damaged.**
- **Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.**




10) After tightening axle nut, lock it securely.
11) Install wheel and tighten wheel nuts to specified torque.

***Tightening torque:***
***88±10 N·m (9±1 kg-m, 65±7 ft-lb)***

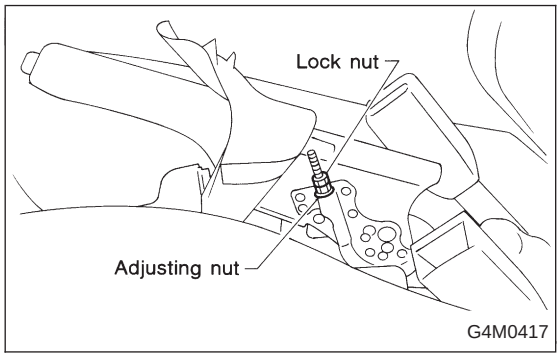
## 2. Rear Axle

### A: REMOVAL

1) Disconnect ground cable from battery.
2) Jack-up vehicle, and remove rear wheel cap and wheels.

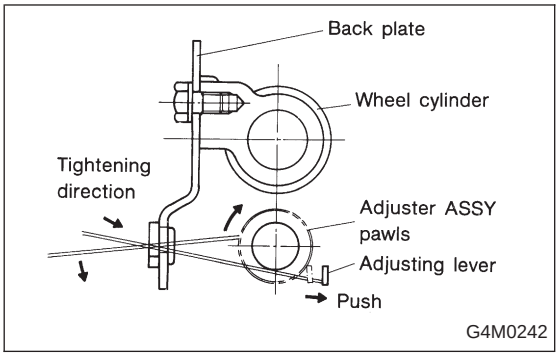
**CAUTION:**
**Be sure to loosen and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.**

3) Unlock axle nut.
4) Remove axle nut using a socket wrench.

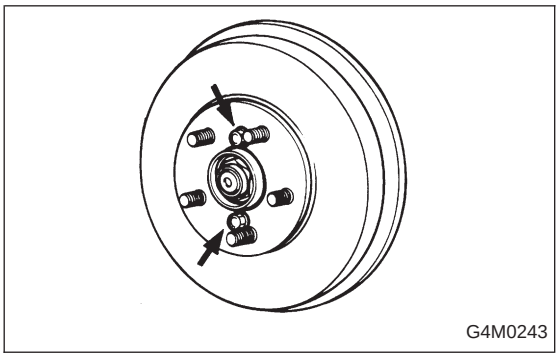



5) Return parking brake lever and loosen adjuster.

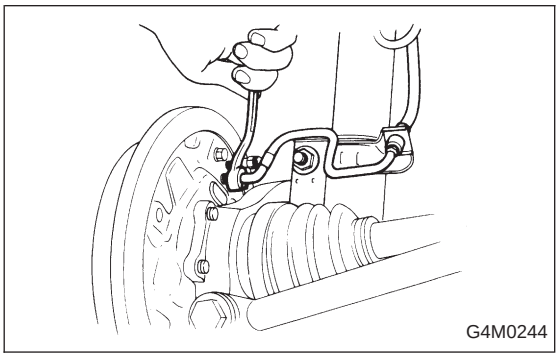
6) Remove brake drum from hub.




7) If it is difficult to remove brake drum, remove adjusting hole cover from back plate, and then turn adjusting screw using a slot-type screwdriver until brake shoe separates from the drum.

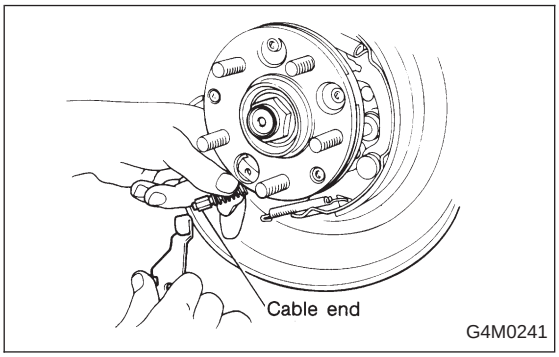



NOTE:
If brake drum is difficult to remove, drive it out by installing an 8-mm bolt into bolt hole in brake drum.

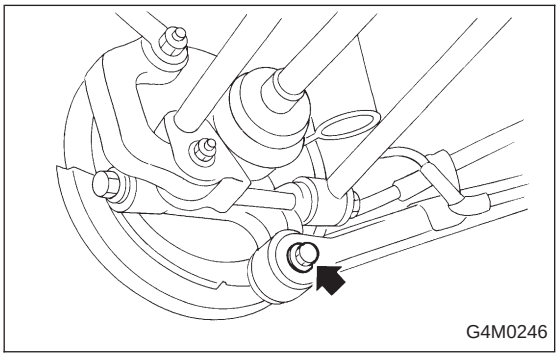



8) Using a flare-nut wrench, disconnect brake pipe from wheel cylinder.

**CAUTION:**
**Cover open end of wheel cylinder to prevent entry of foreign particles.**

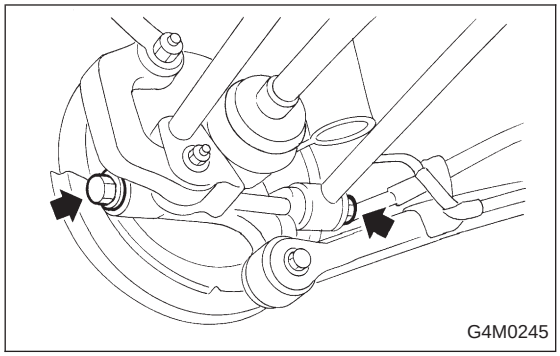



9) Disconnect end of parking brake cable.



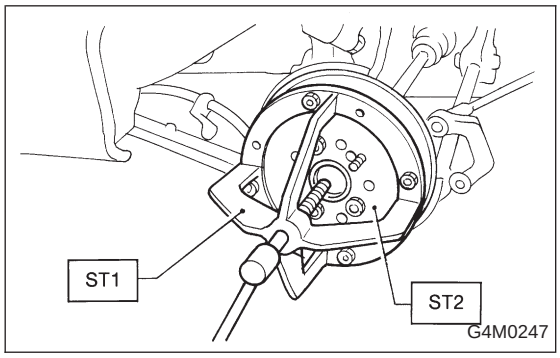

10) Remove bolts which secure trailing link assembly to rear housing.

**CAUTION:**
**Discard old self-locking nut. Replace with a new one.**




11) Remove bolts which secure lateral link assembly to rear housing.

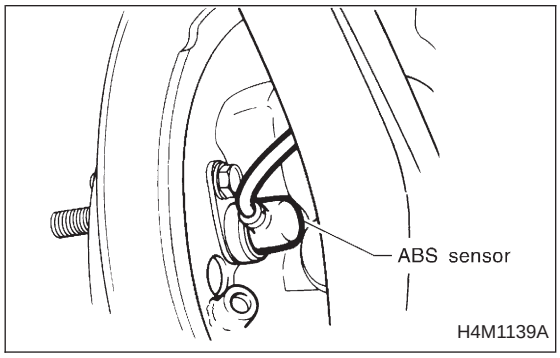
**CAUTION:**
**Discard old self-locking nut. Replace with a new one.**



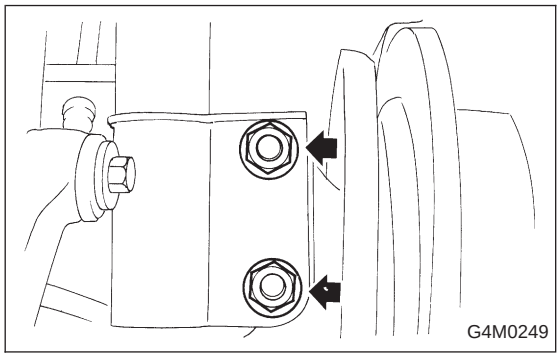

12) Disengage BJ from housing splines, and remove rear drive shaft assembly. If it is hard to remove, use STs.

ST1 926470000 AXLE SHAFT PULLER
ST2 927140000 PLATE

**CAUTION:**
- **Be careful not to damage oil seal lip when removing rear drive shaft.**
- **When rear drive shaft is to be replaced, also replace inner oil seal with a new one.**

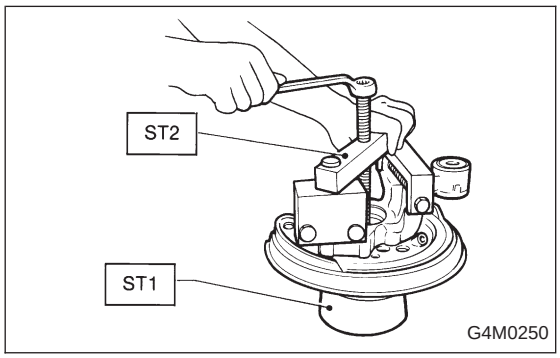



13) Remove rear ABS sensor from back plate (only vehicle equipped with ABS).




14) Remove bolts which secure rear housing to strut, and separate the two.

## B: DISASSEMBLY

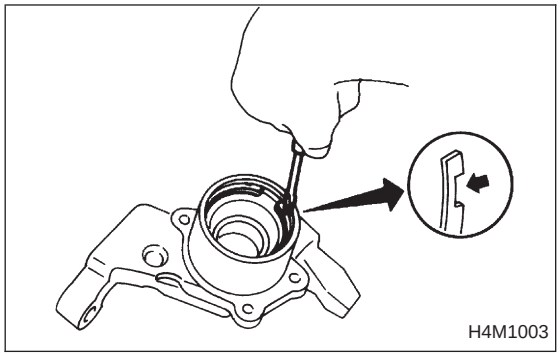



1) Using ST1 and ST2, remove hub from rear housing.

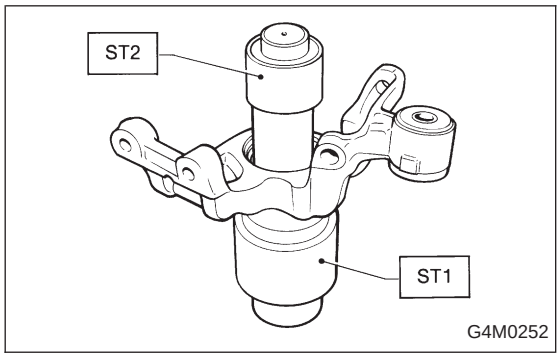
ST1 927080000 HUB STAND
ST2 927420000 HUB REMOVER

2) Remove back plate from rear housing.
3) Using a standard screwdriver, remove outer and inner oil seals.

**CAUTION:**
**Use new oil seals.**


H4M1003

4) Using flat bladed screwdriver, remove snap ring.



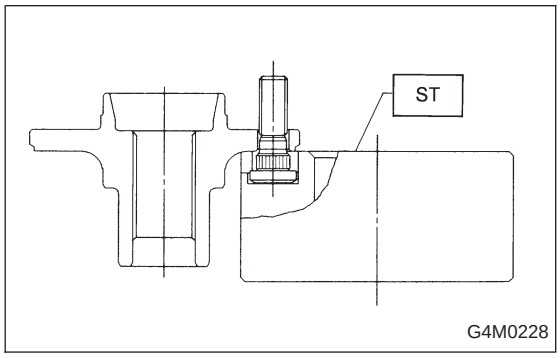
G4M0252

5) Using ST1 and ST2, remove bearing by pressing inner race.

ST1 927430000 HOUSING STAND
ST2 927440000 BEARING REMOVER

**CAUTION:**
- **Do not remove bearing unless damaged.**
- **Do not re-use bearing after removal.**

6) Remove tone wheel bolts and remove tone wheel from hub (only vehicle equipped with ABS).

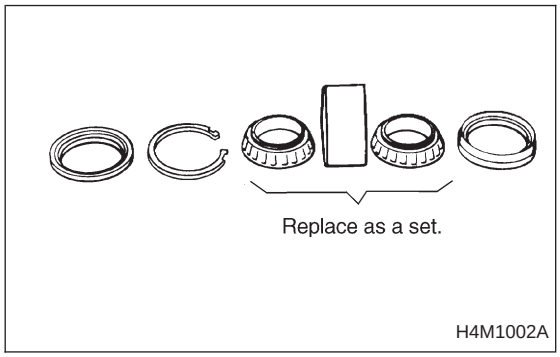


G4M0228

7) Using ST, press hub bolt out.

ST 927080000 HUB STAND

**CAUTION:**
**Be careful not to hammer hub bolts. This may deform hub.**

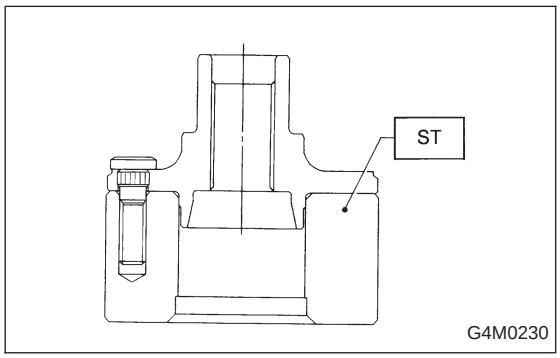


H4M1002A

## C: INSPECTION

Check the removed parts for wear and damage. If defective, replace with a new one.

**CAUTION:**
- **If a bearing is faulty, replace it as the bearing set.**
- **Be sure to replace oil seal at every overhaul.**



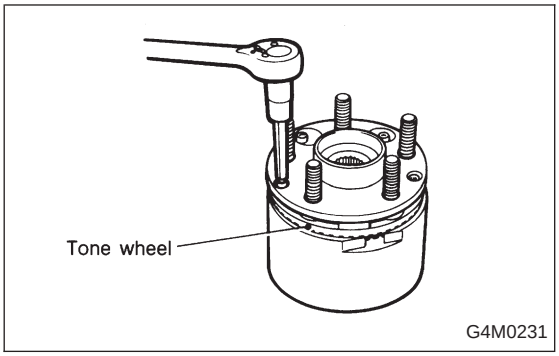
G4M0230

## D: ASSEMBLY

1) Using ST, press new hub bolt into place.

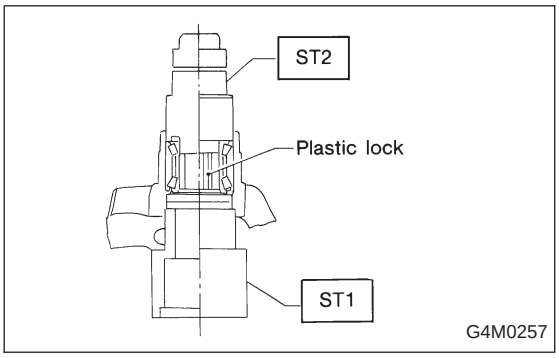
**CAUTION:**
- **Ensure hub bolt closely contacts hub.**
- **Use a 12 mm (0.47 in) hole in the ST to prevent hub bolt from tilting during installation.**

ST 927080000 HUB STAND




2) Remove foreign particles (dust, rust, etc.) from mating surfaces of hub and tone wheel, and install tone wheel to hub (only vehicle equipped with ABS).

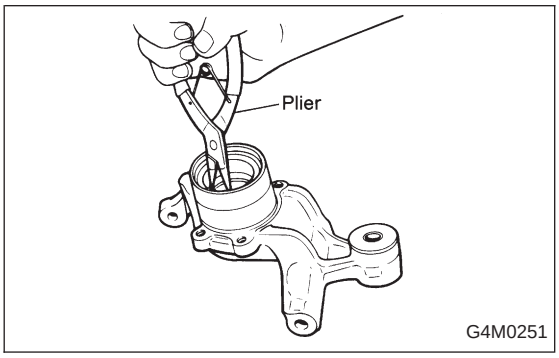
**CAUTION:**
- **Ensure tone wheel closely contacts hub.**
- **Be careful not to damage tone wheel teeth.**




3) Clean housing interior completely. Using ST1 and ST2, press bearing into housing.

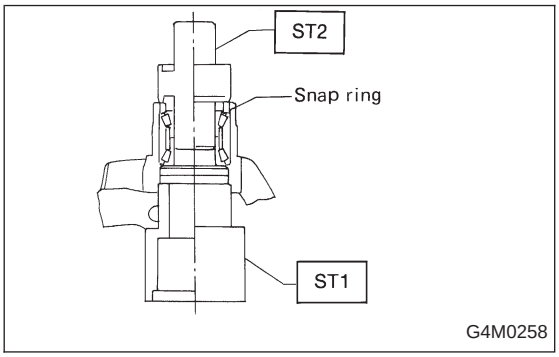
ST1 927430000 HOUSING STAND
ST2 927440000 BEARING REMOVER

**CAUTION:**
- **Always press outer race when installing bearing.**
- **Be careful not to remove plastic lock from inner race when installing bearing.**
- **Charge bearing with new grease when outer race is not removed.**



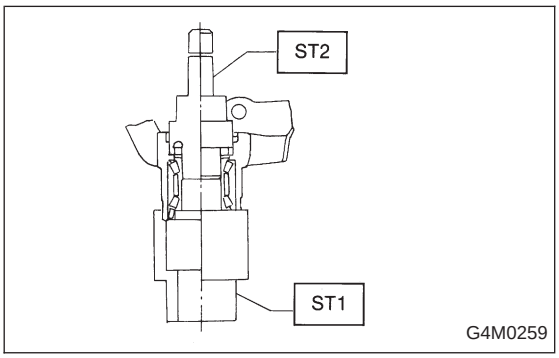

4) Using plier, install snap ring.

**CAUTION:**
**Ensure snap ring fits in groove properly.**



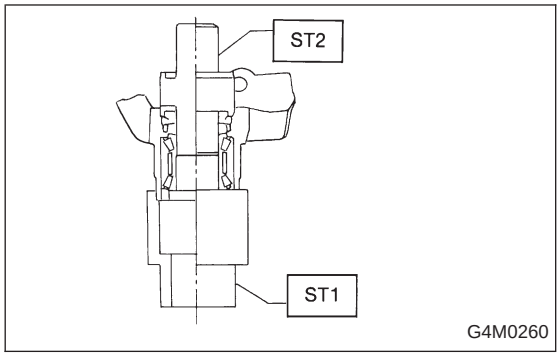

5) Using ST1 and ST2, press outer oil seal until it comes in contact with snap ring.

ST1 927430000 HOUSING STAND
ST2 927460000 OIL SEAL INSTALLER




6) Invert both ST1 and housing.
7) Using ST2, press inner oil seal into housing until it touches bottom.

ST1 927430000 HOUSING STAND
ST2 927460000 OIL SEAL INSTALLER




8) Using ST1 and ST2, press sub seal into place.
ST1 927430000 HOUSING STAND
ST2 927460000 OIL SEAL INSTALLER

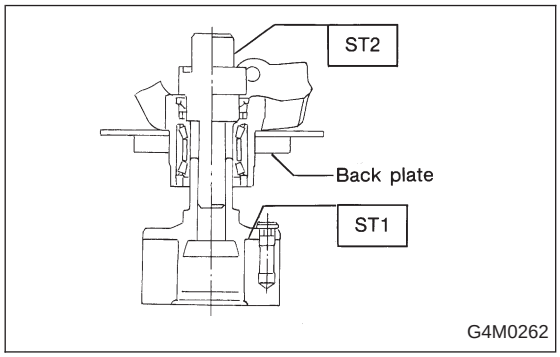
9) Apply sufficient grease to oil seal lip.

***Specified grease:***
***SHELL 6459N***

**CAUTION:**
**● If specified grease is not available, remove bearing grease and apply Auto Rex A instead.**
**● Do not mix different types of grease.**

10) Install back plate to rear housing.

***Tightening torque:***
***52±6 N·m (5.3±0.6 kg-m, 38.3±4.3 ft-lb)***




11) Using ST1 and ST2, press bearing into hub.
ST1 927080000 HUB STAND
ST2 927450000 HUB INSTALLER

## E: INSTALLATION

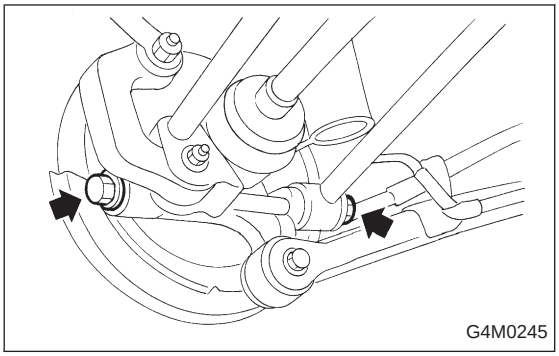
1) Connect rear housing assembly and strut assembly.

**CAUTION:**
**Use a new self-locking nut.**

***Tightening torque:***
***147±15 N·m (15±1.5 kg-m, 108±11 ft-lb)***

2) Fit BJ (bell joint) to rear housing splines.

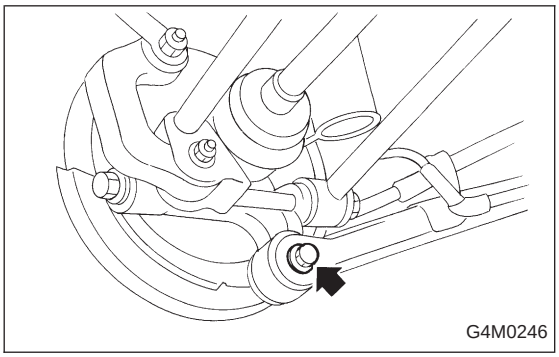
**CAUTION:**
**Be careful not to damage inner oil seal lip.**


G4M0245

3) Connect rear housing assembly to lateral link assembly.

**CAUTION:**
**Use a new self-locking nut.**

***Tightening torque:***
***137±20 N·m (14±2 kg-m, 101±14 ft-lb)***


G4M0246

4) Connect rear housing assembly to trailing link assembly.

**CAUTION:**
**Use a new self-locking nut.**

***Tightening torque:***
***98 — 127 N·m (10 — 13 kg-m, 72 — 94 ft-lb)***

5) Clean brake pipe connection. Using a flare-nut wrench, connect brake pipe to wheel cylinder.
6) Connect parking brake cable to lever.
7) Install brake drum on rear housing assembly.
8) Install rear speed sensor to back plate (only vehicle equipped with ABS).
9) Bleed air from brake system. <Ref. to 4-4 [W8B0].>
10) Adjust parking brake lever stroke by turning adjuster.
11) Move brake lever back to apply brakes. While depressing brake pedal, tighten axle nut using a socket wrench. Lock axle nut after tightening.

***Tightening torque:***
***186±20 N·m (19±2 kg-m, 137±14 ft-lb)***

**CAUTION:**
- **Use a new axle nut.**
- **Always tighten axle nut before installing wheel on vehicle. If wheel is installed and comes in contact with ground when axle nut is loose, wheel bearings may be damaged.**
- **Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.**

12) Install wheel and tighten wheel nuts to specified torque.

***Tightening torque:***
***88±10 N·m (9±1 kg-m, 65±7 ft-lb)***

# 3. Front and Rear Drive Shafts

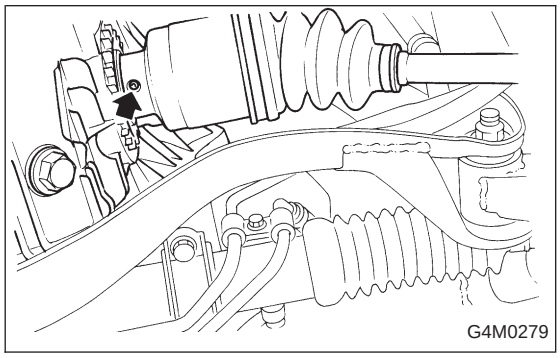
## A: REMOVAL

### 1. FRONT DRIVE SHAFT

1) Disconnect ground cable from battery.
2) Jack-up vehicle, support it with safety stands (rigid rocks), and remove front wheel cap and wheels.
3) Unlock axle nut.
4) Remove axle nut using a socket wrench.

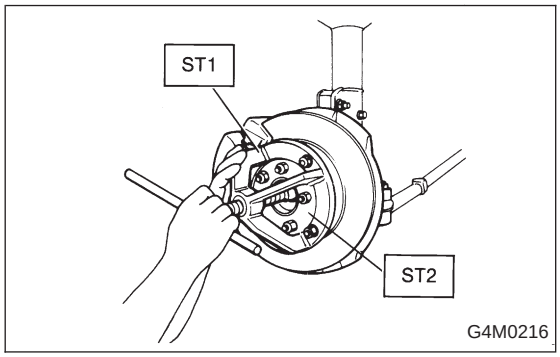
**CAUTION:**
**Be sure to loosen and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.**

5) Disconnect transverse link from housing.


G4M0279

6) Remove spring pin which secures transmission spindle to DOJ/FTJ.

**CAUTION:**
**Use a new spring pin.**



G4M0216

7) Remove front drive shaft assembly. If it is hard to remove, use ST1 and ST2.

ST1 926470000 AXLE SHAFT PULLER
ST2 927140000 PLATE

**CAUTION:**
- **Be careful not to damage oil seal lip when removing front drive shaft.**
- **When front drive shaft is to be replaced, also replace inner oil seal.**

### 2. REAR DRIVE SHAFT

1) Disconnect ground cable from battery.
2) Lift-up vehicle, and remove rear wheel cap and wheels.

**CAUTION:**
**Be sure to loosen and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.**

3) Unlock axle nut.
4) Loosen axle nut using a socket wrench.

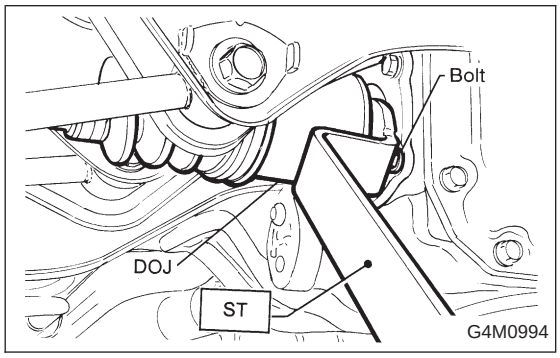
**CAUTION:**
**Do not remove axle nut.**

5) Remove ABS sensor clamps and parking brake cable bracket.
6) Remove bolts which secure lateral link assembly to rear housing.

**CAUTION:**
**Discard old self-locking nut. Replace with a new one.**

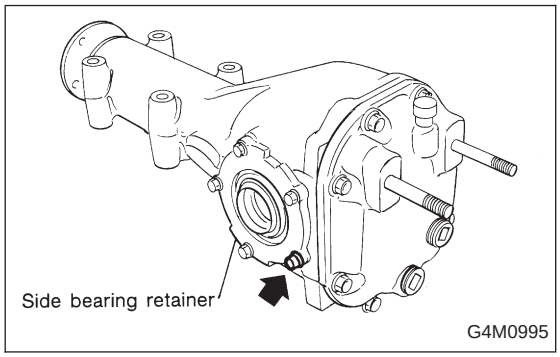
7) Remove bolts which secure trailing link assembly to rear housing.

**CAUTION:**
**Discard old self-locking nut. Replace with a new one.**



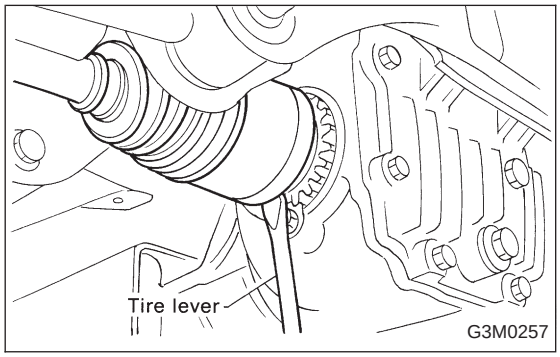

8) Remove DOJ from rear differential using ST. (2200 cc MT vehicles)
ST 28099PA100 DRIVE SHAFT REMOVER

**CAUTION:**
**Do not remove circlip attached to inside of differential.**



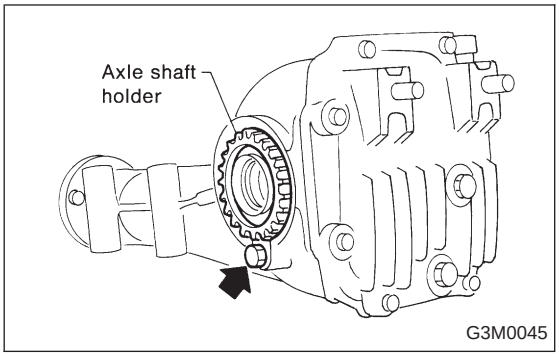

**CAUTION:**
**Be careful not to damage side bearing retainer. Always use bolt as shown in figure, as supporting point for ST during removal.**

ST 28099PA100 DRIVE SHAFT REMOVER

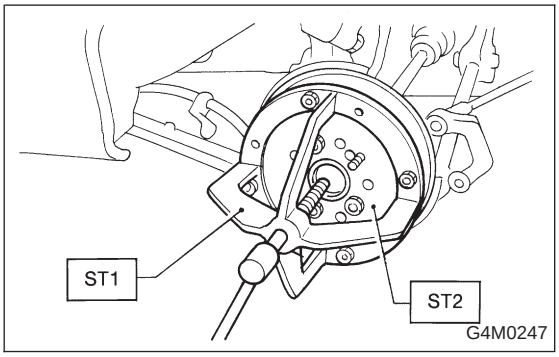



9) Remove DOJ from rear differential using tire lever. (Except 2200 cc MT vehicles)

NOTE:
The side spline shaft circlip comes out together with the shaft.




**CAUTION:**
**When removing the DOJ from the rear differential, fit tire lever to the bolt as shown in figure so as not to damage the axle shaft holder.**



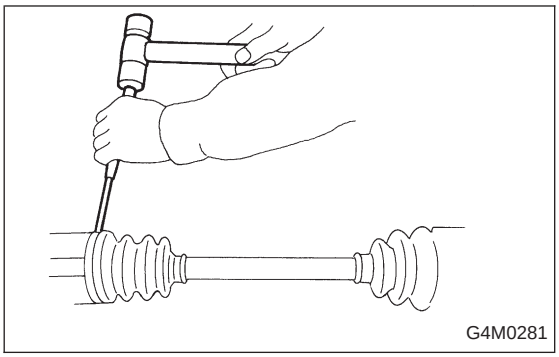

10) Remove axle nut and drive shaft. If it is hard to remove, use ST1 and ST2.

ST1 926470000 AXLE SHAFT PULLER
ST2 927140000 PLATE

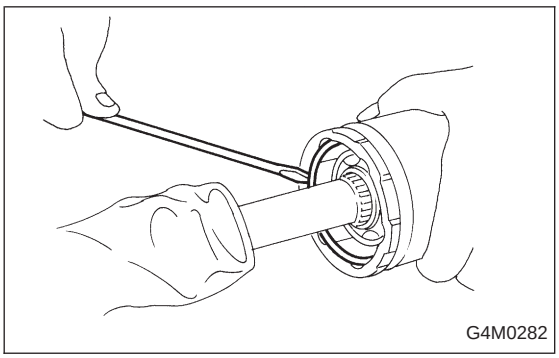
**CAUTION:**
- **Be careful not to damage oil seal lip when removing rear drive shaft.**
- **When rear drive shaft is to be replaced, also replace inner oil seal with a new one.**

## B: DISASSEMBLY

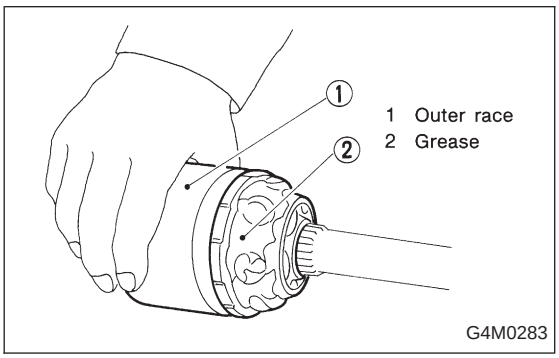
### 1. FRONT DRIVE SHAFT (EXCEPT 2200 cc AT VEHICLES)




1) Straighten bent claw of larger end of DOJ boot.
2) Loosen band by means of screwdriver or pliers with care of not damaging boot.
3) Remove boot band on the small end of DOJ boot in the same manner.
4) Remove the larger end of DOJ boot from DOJ outer race.




5) Pry and remove round circlip located at the neck of DOJ outer race with a screwdriver.




6) Take out DOJ outer race from shaft assembly.
7) Wipe off grease and take out balls.

**CAUTION:**
**The grease is a special grease (grease for constant-velocity joint). Do not confuse with other greases.**

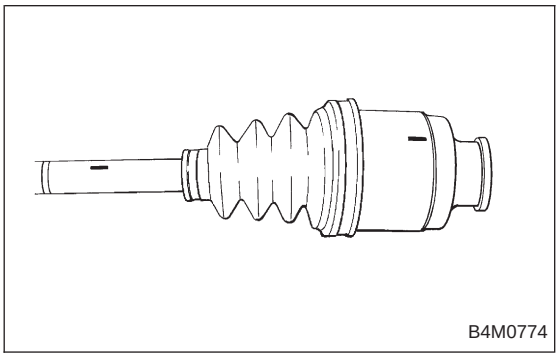
NOTE:
Disassemble exercising care not to lose balls (6 pcs).

8) To remove the cage from the inner race, turn the cage by a half pitch to the track groove of the inner race and shift the cage.

9) Remove snap ring, which fixes inner race to shaft, by using pliers.
10) Take out DOJ inner race.
11) Take off DOJ cage from shaft and remove DOJ boot.

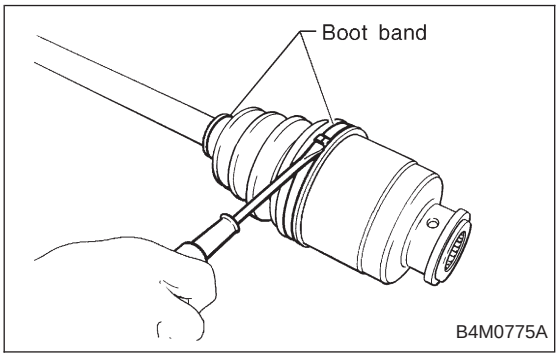
**CAUTION:**
**Be sure to wrap shaft splines with vinyl tape to prevent boot from scratches.**

12) Remove BJ boot in the same procedure as steps 1) to 3).
13) Thus, disassembly of axle is completed, but BJ is unable to be disassembled.


B4M0774

## 2. FRONT DRIVE SHAFT (2200 cc AT VEHICLES)

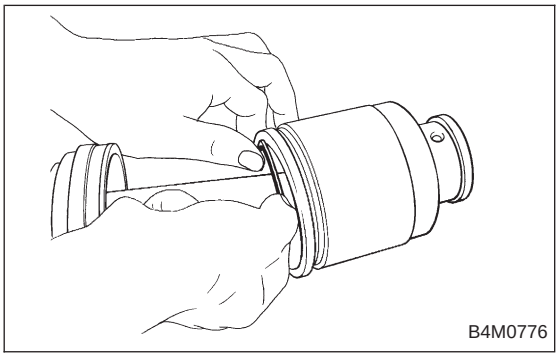
1) Place alignment marks on shaft and outer race.



B4M0775A

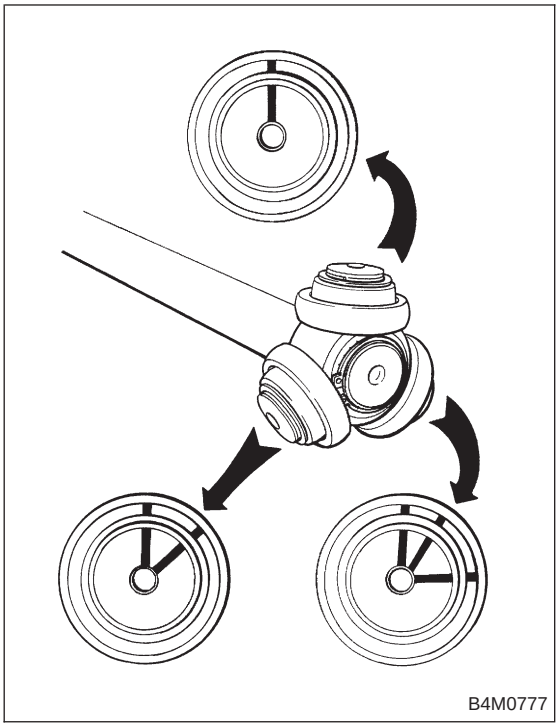
2) Remove FTJ boot band and boot.

**CAUTION:**
**Be careful not to damage boot.**

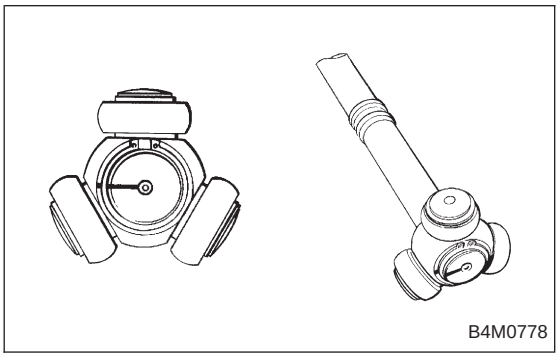

B4M0776

3) Remove circlip from FTJ outer race using screwdriver.
4) Remove FTJ outer race from shaft assembly.
5) Wipe off grease.

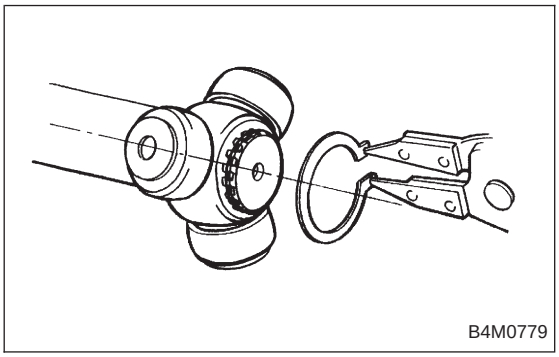
**CAUTION:**
**The grease is a special grease. Do not confuse with other greases.**


B4M0777

6) Place alignment mark on free ring and trunnion.
7) Remove free ring from trunnion.


B4M0778

8) Place alignment mark on trunnion and shaft.


B4M0779

9) Remove snap ring and trunnion.

**CAUTION:**
**Be sure to wrap shaft splines with vinyl tape to prevent boot from scratches.**

10) Remove FTJ boot.
11) Remove BJ boot band and boot.

## C: INSPECTION

Check the removed parts for damage, wear, corrosion and etc. If faulty, repair or replace.
1) DOJ and FTJ
Check seizure, corrosion, damage, wear and excessive play.
2) Shaft
Check excessive bending, twisting, damage and wear.
3) BJ
Check seizure, corrosion, damage and excessive play.
4) Boot

Check for wear, warping, breakage or scratches.
5) Grease
Check for discoloration or fluidity.

## D: ASSEMBLY

### 1. FRONT DRIVE SHAFT (EXCEPT 2200 cc AT VEHICLES)

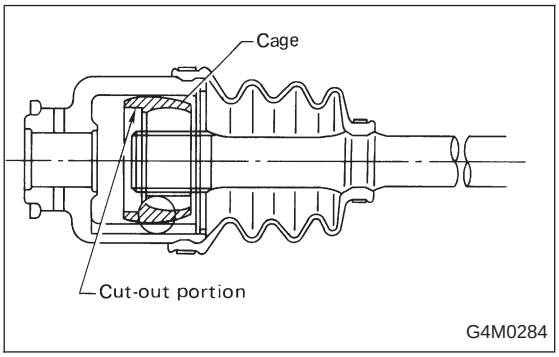
**Use specified grease.**

***Front drive shaft:***
***BJ — NTG2218 (Part No. 28093AA020)***
***DOJ — VU-3A702 (Yellow) (Part No. 23223GA050)***

***Rear drive shaft:***
***BJ — Molylex No. 2 (Part No. 723223010) or Sunlight TB2-A***
***DOJ (1800 cc model) — Molylex No. 2 (Part No. 723223010) or Sunlight TB2-A***
***DOJ (2200 cc model) — VU-3A702 (Yellow) (Part No. 23223GA050)***

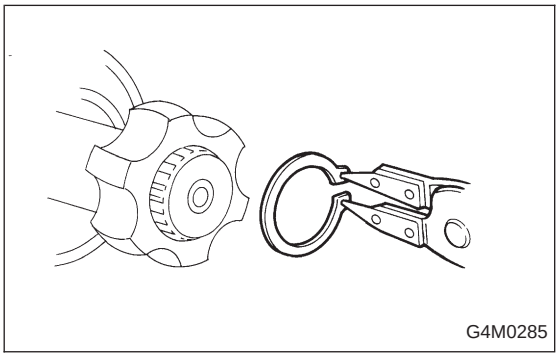
1) Install BJ boot in specified position, and fill it with 60 to 70 g (2.12 to 2.47 oz) of specified grease.
2) Place DOJ boot at the center of shaft.

**CAUTION:**
**Be sure to wrap shaft splines with vinyltape to prevent boot from scratches.**



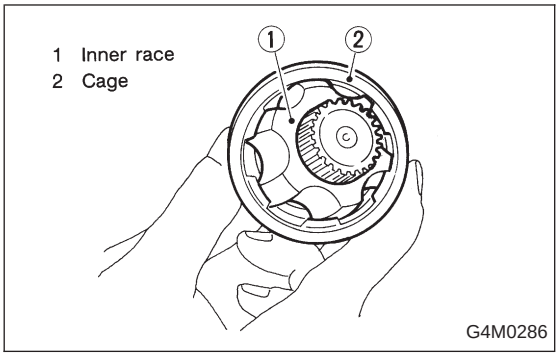

3) Insert DOJ cage onto shaft.

NOTE:
Insert the cage with the cut-out portion facing the shaft end, since the cage has an orientation.



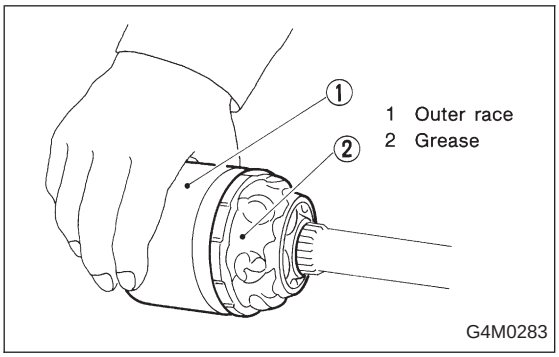

4) Install DOJ inner race on shaft and fit snap ring with pliers.

NOTE:
Confirm that the snap ring is completely fitted in the shaft groove.

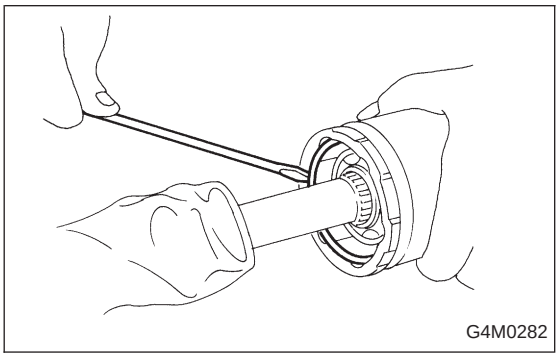



5) Install cage, which was previously fitted, to inner race fixed upon shaft.

NOTE:
Fit the cage with the protruded part aligned with the track on the inner race and then turn by a half pitch.




6) Fill 80 to 90 g (2.82 to 3.17 oz) of specified grease into the interior of DOJ outer race.
7) Apply a coat of specified grease to the cage pocket and six balls.
8) Insert six balls into the cage pocket.
9) Align the outer race track and ball positions and place in the part where shaft, inner race, cage and balls are previously installed, and then fit outer race.




10) Install circlip in the groove on DOJ outer race.

NOTE:
- Assure that the balls, cage and inner race are completely fitted in the outer race of DOJ.
- Exercise care not to place the matched position of circlip in the ball groove of outer race.
- Pull the shaft lightly and assure that the circlip is completely fitted in the groove.

11) Apply an even coat of the specified grease [20 to 30 g (0.71 to 1.06 oz)] to the entire inner surface of boot. Also apply grease to shaft.
12) Install DOJ boot taking care not to twist it.

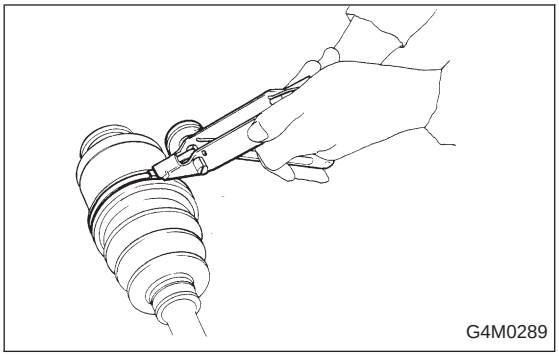
NOTE:
- The inside of the larger end of DOJ boot and the boot groove shall be cleaned so as to be free from grease and other substances.
- When installing DOJ boot, position outer race of DOJ at center of its travel.

13) Put a band through the clip and wind twice in alignment with band groove of boot.

**CAUTION:**
**Use a new band.**

14) Pinch the end of band with pliers. Hold the clip and tighten securely.

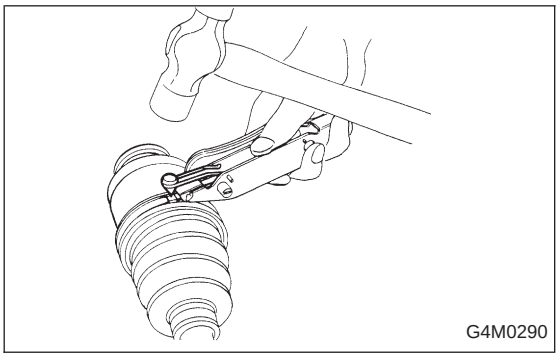
NOTE:
When tightening boot, exercise care so that the air within the boot is appropriate.


G4M0289

15) Tighten band by using ST.

ST 925091000 BAND TIGHTENING TOOL

NOTE:
Tighten band until it cannot be moved by hand.


G4M0290

16) Tap on the clip with the punch provided at the end of ST.

ST 925091000 BAND TIGHTENING TOOL

**CAUTION:**
**Tap to an extent that the boot underneath is not damaged.**

17) Cut off band with an allowance of about 10 mm (0.39 in) left from the clip and bend this allowance over the clip.

**CAUTION:**
**Be careful so that the end of the band is in close contact with clip.**

18) Fix up boot on BJ in the same manner.
19) Install protector onto BJ boot band. (For rear side only)

NOTE:
Extend and retract DOJ to provide equal grease coating.

### 2. FRONT DRIVE SHAFT (2200 cc AT VEHICLES)

**CAUTION:**
**Use specified grease.**

***BJ side:***
***NTG2218 (Part No. 28093AA020)***

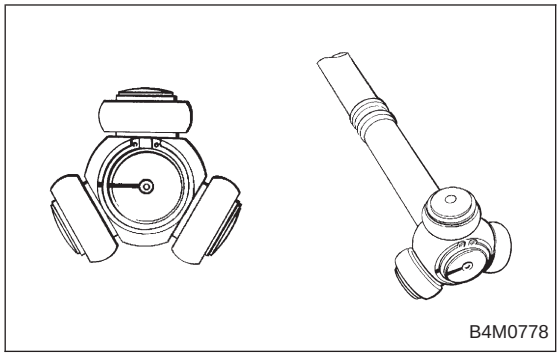
***FTJ side:***
***SSG 6003***

**CAUTION:**
**Be sure to wrap shaft splines with vinyl tape to prevent boot from scratches.**

1) Install BJ boot in specified position and fill it with 60 to 70 g (2.12 to 2.47 oz) of specified grease.

**CAUTION:**
**The inside of the larger end of BJ boot and the boot groove must be cleaned so as to be free from grease and other substances.**

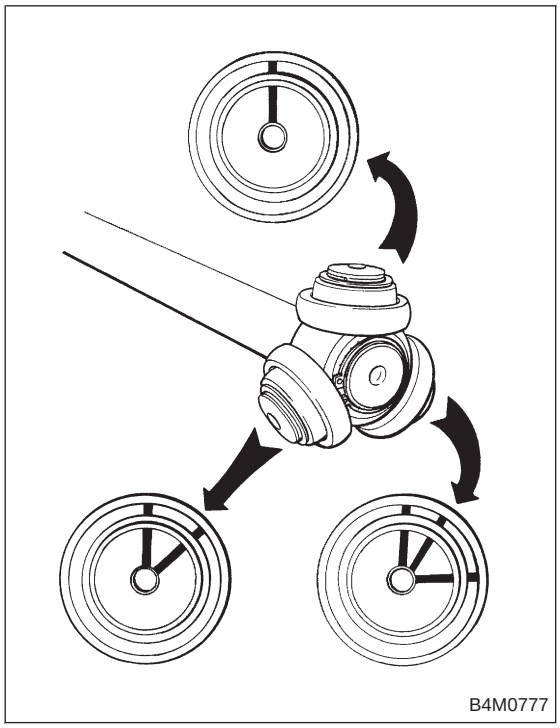
2) Place FTJ boot at the center of shaft.


B4M0778

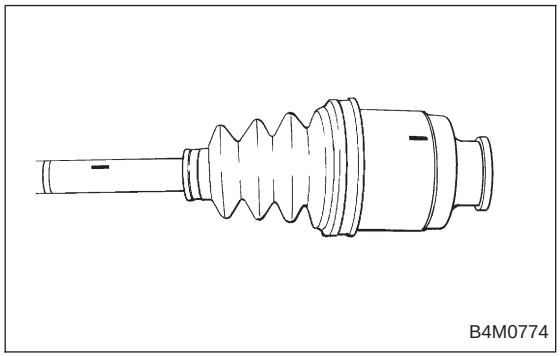
3) Align alignment marks and install trunnion on shaft.
4) Install snap ring to shaft.

**CAUTION:**
**Confirm that the snap ring is completely fitted in the shaft groove.**

5) Fill 100 to 110 g (3.53 to 3.88 oz) of specified grease into the interior of FTJ outer race.
6) Apply a coat of specified grease to free ring and trunnion.


B4M0777

7) Align alignment marks on free ring and trunnion and install free ring.


B4M0774

8) Align alignment marks on shaft and outer race, and install outer race.
9) Install circlip in the groove on FTJ outer race.

**CAUTION:**
**Pull the shaft lightly and assure that the circlip is completely fitted in the groove.**

10) Apply an even coat of the specified grease 30 to 40 g (1.06 to 1.41 oz) to the entire inner surface of boot.
11) Install FTJ boot taking care not to twist it.

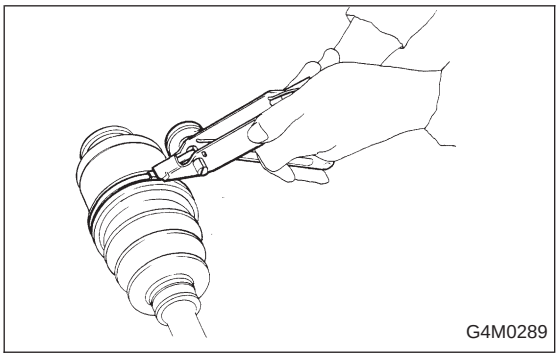
**CAUTION:**
- **The inside of the larger end of FTJ boot and the boot groove shall be cleaned so as to be free from grease and other substances.**
- **When installing FTJ boot, position outer race of DOJ at center of its travel.**

12) Put a band through the clip and wind twice in alignment with band groove of boot.

**CAUTION:**
**Use a new band.**

13) Pinch the end of band with pliers. Hold the clip and tighten securely.

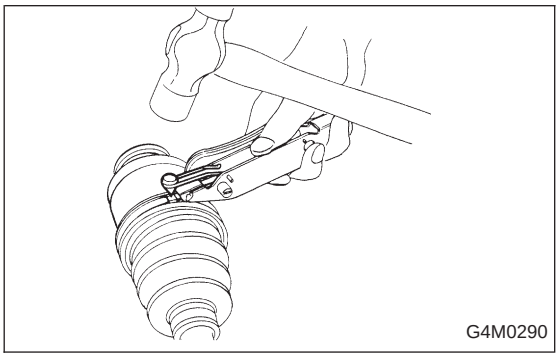
NOTE:
When tightening boot, exercise care so that the air within the boot is appropriate.


G4M0289

14) Tighten band by using ST.

ST 925091000 BAND TIGHTENING TOOL

NOTE:
Tighten band until it cannot be moved by hand.


G4M0290

15) Tap on the clip with the punch provided at the end of ST.

ST 925091000 BAND TIGHTENING TOOL

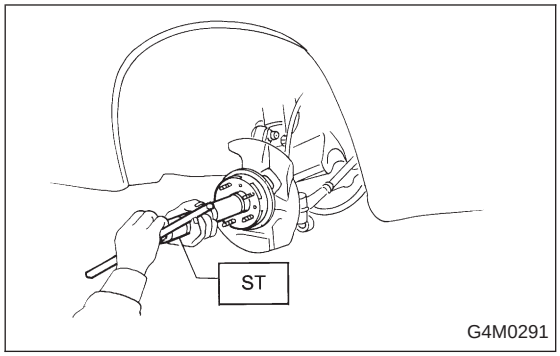
**CAUTION:**
**Tap to an extent that the boot underneath is not damaged.**

16) Cut off band with an allowance of about 10 mm (0.39 in) left from the clip and bend this allowance over the clip.

**CAUTION:**
**Be careful so that the end of the band is in close contact with clip.**

17) Fix up boot on BJ in the same manner.

NOTE:
Extend and retract FTJ to provide equal grease coating.




## E: INSTALLATION

### 1. FRONT DRIVE SHAFT

1) Insert BJ into hub splines.

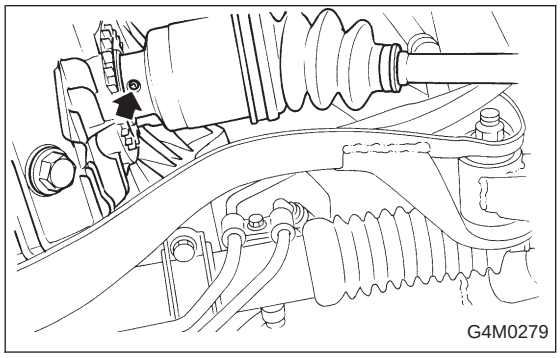
**CAUTION:**
**Be careful not to damage inner oil seal lip.**

2) Using ST1 and ST2, pull drive shaft into place.

ST1 922431000 AXLE SHAFT INSTALLER
ST2 927390000 ADAPTER

**CAUTION:**
**Do not hammer drive shaft when installing it.**

3) Tighten axle nut temporarily.




4) Install DOJ on transmission spindle and drive spring pin into place.

**CAUTION:**
**Always use a new spring pin.**

5) Connect transverse link to housing.

***Torque (self-locking nut):***
***49±10 N·m (5.0±1.0 kg-m, 36±7 ft-lb)***

**CAUTION:**
**Use a new self-locking nut.**

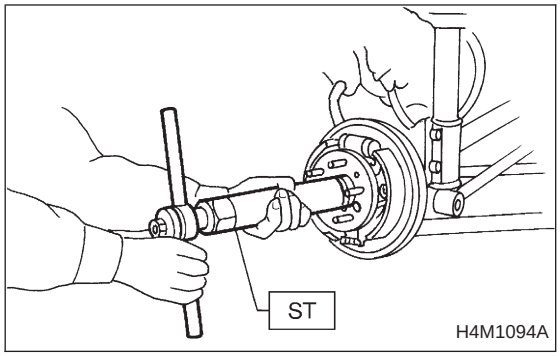
6) Install stabilizer bracket.

7) While depressing brake pedal, tighten axle nut to the specified torque.

***Tightening torque:***
***186±20 N·m (19±2 kg-m, 137±14 ft-lb)***

**CAUTION:**
- **Use a new axle nut.**
- **Always tighten axle nut before installing wheel on vehicle. If wheel is installed and comes in contact with ground when axle nut is loose, wheel bearings may be damaged.**
- **Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.**

8) After tightening axle nut, lock it securely.




**2. REAR DRIVE SHAFT**

1) Insert BJ into rear housing splines.

**CAUTION:**
**Be careful not to damage inner oil seal lip.**

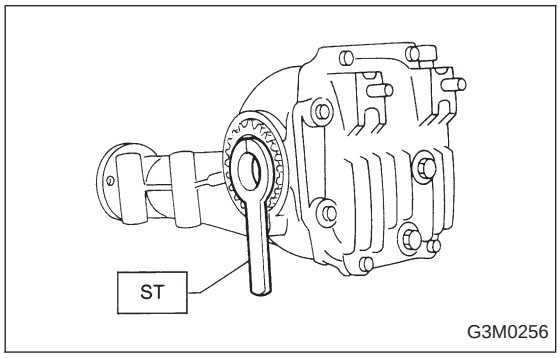
2) Using ST1 and ST2, pull drive shaft into place.

ST1 922431000 AXLE SHAFT INSTALLER
ST2 927390000 ADAPTER

**CAUTION:**
**Do not hammer drive shaft when installing it.**

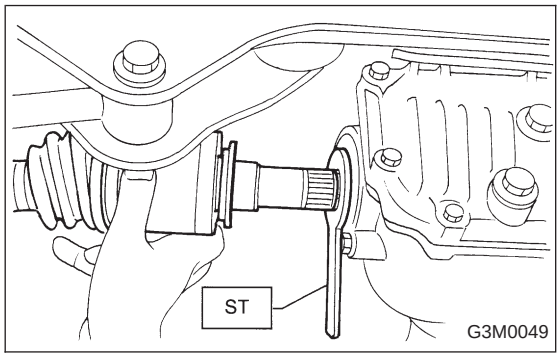
3) Tighten axle nut temporarily.

4) Replace circlips from DOJ spline with new one. (1800 cc vehicles only)




5) Using ST, install DOJ into differential.

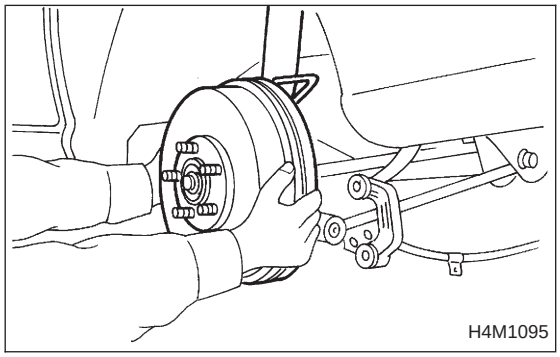
ST 28099PA090 SIDE OIL SEAL PROTECTOR




6) Insert DOJ spline end into bore of side oil seal, and remove ST.

**CAUTION:**
**Do not allow DOJ splines to damage side oil seal.**

ST 28099PA090 SIDE OIL SEAL PROTECTOR




7) Align DOJ and differential splines.
8) Push housing to insert DOJ into differential.

NOTE:
Make sure DOJ is inserted properly.

9) Connect rear housing assembly to trailing link assembly, and tighten self-locking nut.

***Tightening torque:***
***113±15 N·m (11.5±1.5 kg-m, 83±11 ft-lb)***

10) Connect rear housing assembly to lateral link assembly, and tighten self-locking nut.

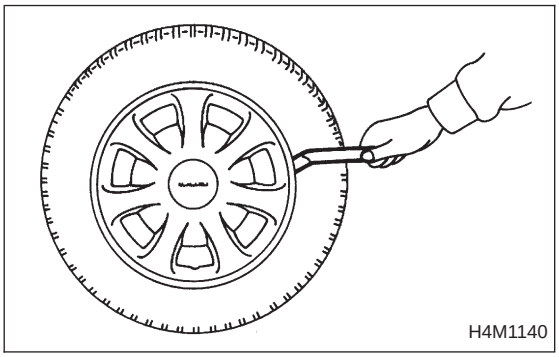
***Tightening torque:***
***137±20 N·m (14±2 kg-m, 101±14 ft-lb)***

11) Install stabilizer bracket.
12) While depressing brake pedal, tighten axle nut using a socket wrench.

***Tightening torque:***
***186±20 N·m (19±2 kg-m, 137±14 ft-lb)***

**CAUTION:**
- **Use a new axle nut.**
- **Always tighten axle nut before installing wheel on vehicle. If wheel is installed and comes in contact with ground when axle nut is loose, wheel bearings may be damaged.**
- **Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.**

13) After tightening axle nut, lock it securely.


H4M1140

## 4. Full Wheel Cap

### A: REMOVAL

Pry off the full wheel cap with a wheel cap remover inserted between openings in the cap.

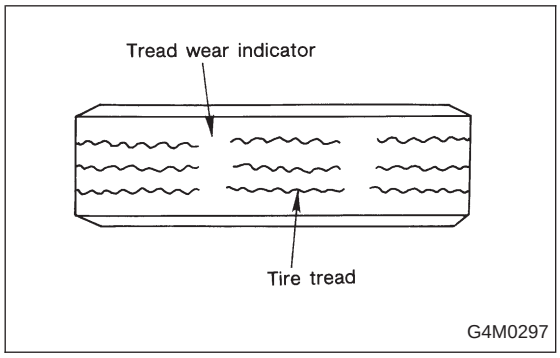
### B: INSTALLATION

Align the valve hole in the wheel cap with the valve on the wheel and secure the wheel cap by tapping four points by hand.

# 5. Steel Wheel and Tire

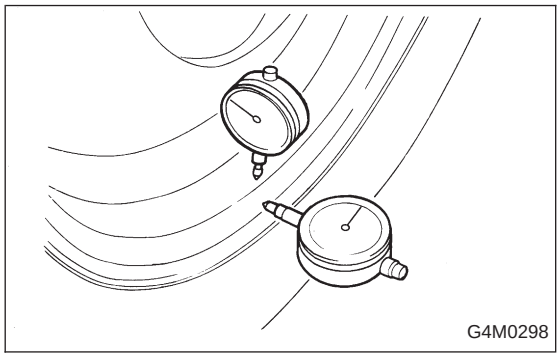
## A: INSPECTION

1) Deformation or damage on the rim can cause air leakage. Check the rim flange for deformation, crack, or damage, and repair or replace as necessary.
2) Take stone, glass, nail etc. off the tread groove.



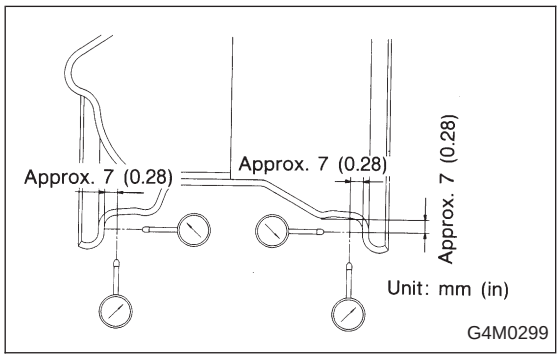

3) Replace tire:
   (1) when large crack on side wall, damage or crack on tread is found.
   (2) when the “tread wear indicator” appears as a solid band across the tread.

**CAUTION:**
**● When replacing a tire, make sure to use only the same size, construction and load range as originally installed.**
**● Avoid mixing radial, belted bias or bias tires on the vehicle.**



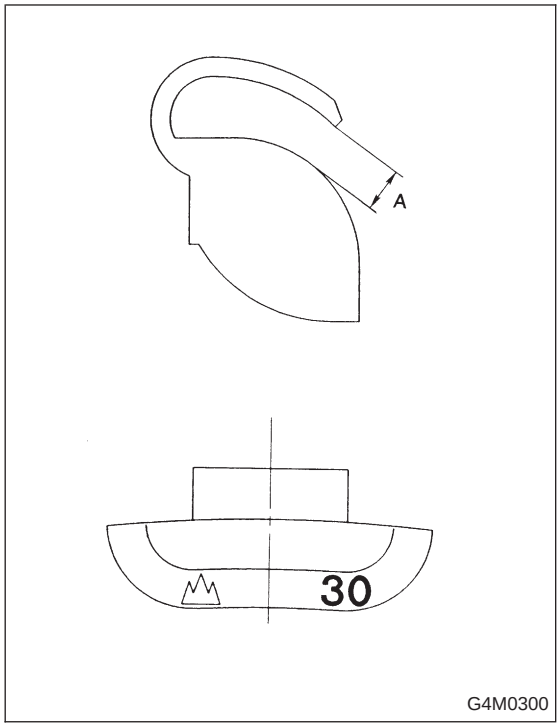

### 1. INSPECTION OF WHEEL RUNOUT

1) Jack-up vehicle until wheels clear the floor.
2) Slowly rotate wheel to check rim “runout” using a dial gauge.




| | Axial runout limit | Radial runout limit |
|---|---|---|
| Steel wheel | 1.5 mm (0.059 in) | |
| Aluminum wheel | 1.0 mm (0.039 in) | |

3) If rim runout exceeds specifications, remove tire from rim and check runout while attaching dial gauge to positions shown in figure.
4) If measured runout still exceeds specifications, replace the wheel.




## 6. Wheel Balancing

1) Proper wheel balance may be lost if the tire is repaired or if it wears. Check the tire for dynamic balance, and repair as necessary.
2) To check for dynamic balance, use a dynamic balancer. Drive in the balance weight on both the top and rear sides of the rim.
3) Some types of balancer can cause damage to the wheel. Use an appropriate balancer when adjusting the wheel balance.
4) Use genuine balance weights.

***Service limit: A***
***1.6 — 2.0 mm (0.063 — 0.079 in)***

**CAUTION:**
**Balance weights are available for use with any of 13- to 14-inch wheels.**

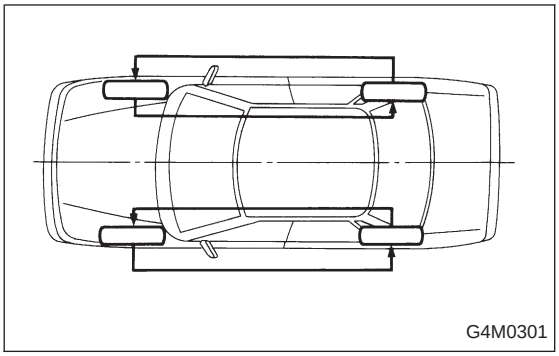
## 7. Installation of Wheel Assembly to Vehicle

1) Attach the wheel to the hub by aligning the wheel bolt hole with the hub bolt.
2) Temporarily attach the wheel nuts to the hub bolts. (In the case of aluminum wheel, use SUBARU genuine wheel nut for aluminum wheel.)
3) Manually tighten the nuts making sure the wheel hub hole is aligned correctly to the guide portion of hub.
4) Tighten the wheel nuts in a diagonal selection to the specified torque. Use a wheel nut wrench.

***Wheel nut tightening torque:***
***88±10 N·m (9±1 kg-m, 65±7 ft-lb)***

**CAUTION:**
**● Tighten the wheel nuts in two or three steps by gradually increasing the torque and working diagonally, until the specified torque is reached. For drum brake models, excess tightening of wheel nuts may cause wheels to "judder".**
**● Do not depress the wrench with a foot; Always use both hands when tightening.**
**● Make sure the bolt, nut and the nut seating surface of the wheel are free from oils.**

5) If a wheel is removed for replacement or for repair of a puncture, retighten the wheel nuts to the specified torque after running 1,000 km (600 miles).


G4M0301

## 8. Tire Rotation

If tires are maintained at the same positions for a long period of time, uneven wear results. Therefore, they should be periodically rotated.
This lengthens service life of tires.

**CAUTION:**
**When rotating tires, replace unevenly worn or damaged tires with new ones.**

## 9. “T-type” Tire

“T-type” tire for temporary use is prepared as a spare tire.

**CAUTION:**
- **Keep the inflation pressure at 412 kPa (4.2 kg/cm$^2$, 60 psi) at all times.**
- **When the wear indicator appears on the tread surface, replace the tire with a new one.**
- **Do not use a tire chain with the “T-type” tire. Because of the smaller tire size, a tire chain will not fit properly and will result in damage to the vehicle and the tire.**
- **Do not drive at a speed greater than 80 km/h (50 MPH).**
- **Drive as slowly as possible and avoid passing over bumps.**
- **Replace with a conventional tire as soon as possible since this “T-type” tire is only for temporary use.**