

SUBARU

SVX

1992

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M MECHANISM AND FUNCTION

1. Front Axle

A: GENERAL

The inboard end of the axle shaft is connected to the transmission via a constant velocity joint (Free-ring tripod joint: FTJ) which provides flexible capabilities in the longitudinal direction while the outboard end is supported by taper roller bearings located inside the housing via a bell joint (BJ) which features a large operating angle.

Since the drive shaft employs constant velocity joints, it provides smooth, even rotation of the drive wheels without any vibration.

The bearing utilizes a preloaded, non-adjustable tapered roller unit design.

The hub is fitted to the tapered roller bearing inside the housing. The BJ's spindle is "serration-fitted" to the hub and is clinched to it with axle nuts. After front axle parts have been repaired, toe-in should be adjusted.

The disc rotor is an external mounting type. It is secured together with the disc wheel using hub bolts to facilitate maintenance of the disc rotor.

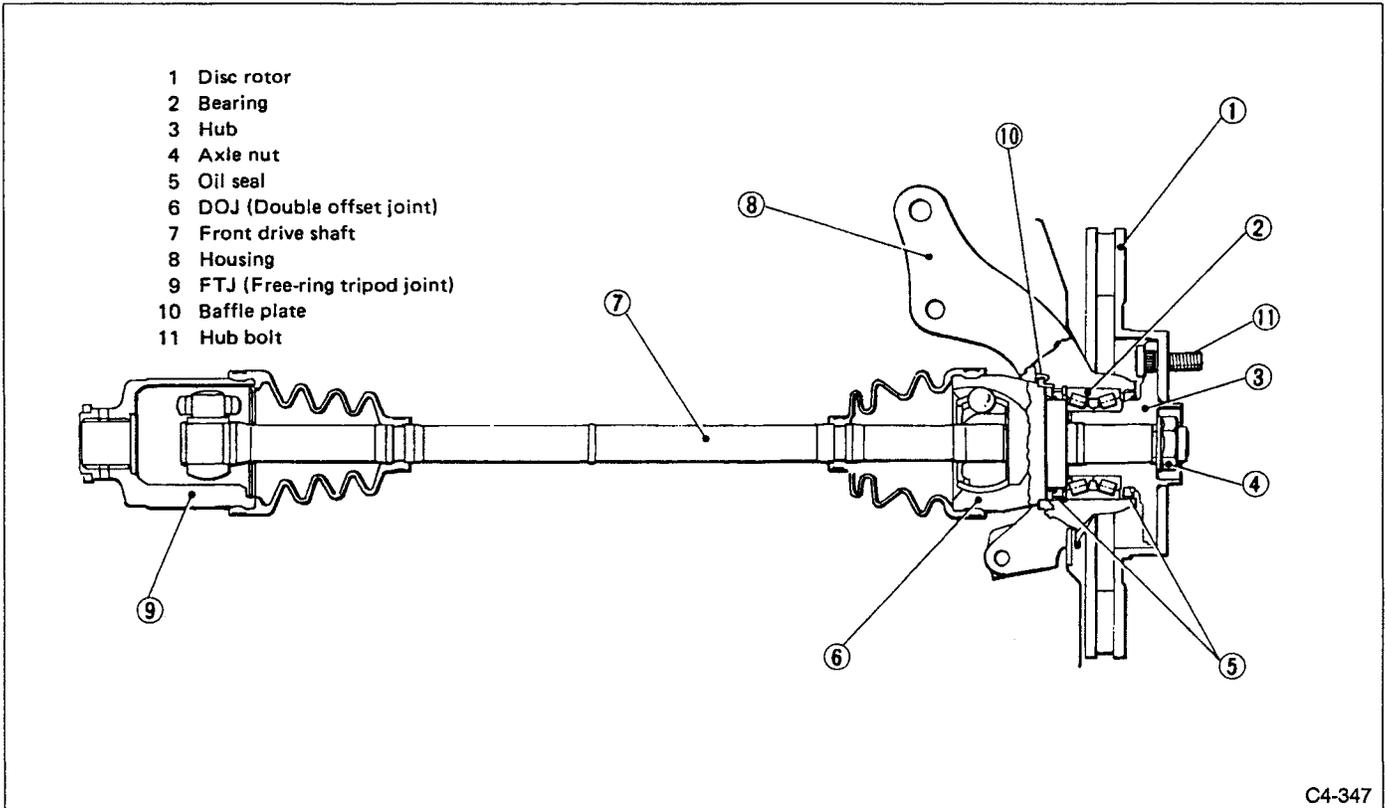


Fig. 1

C4-347

B: FRONT DRIVE SHAFT

The constant-velocity joint on the transmission side uses a free ring tripod joint (FTJ) design which slides a maximum angle of 23° in the axial direction.

The FTJ features low sliding resistance that imparts engine vibration to vehicle body, especially during idling in the "D" range.

The constant-velocity joint on the tire side is a bell joint (BJ) which provides a maximum operating angle of 46°.

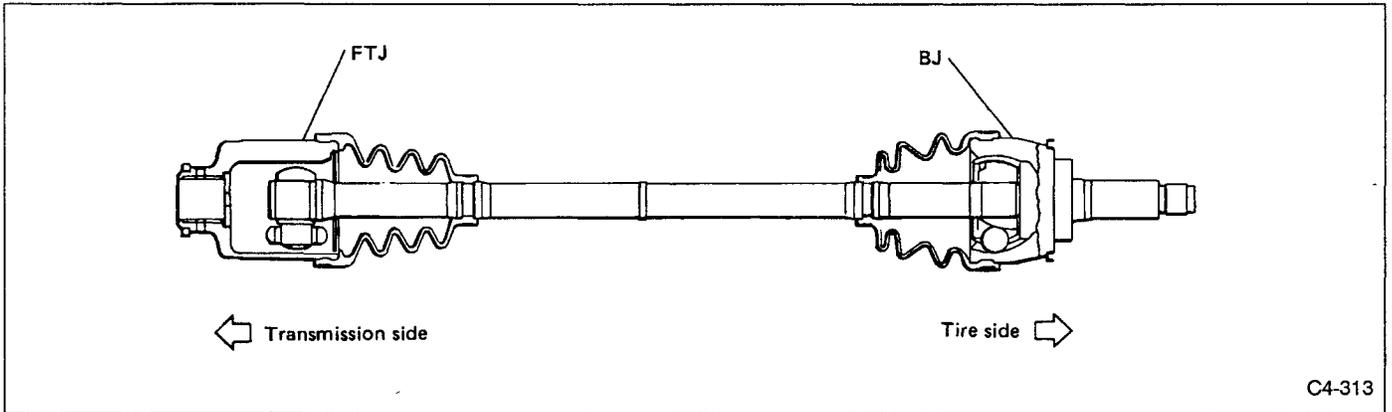


Fig. 2

1. CONSTRUCTION OF FREE-RING TRIPOD JOINT (FTJ)

The FTJ is an improved version of the TJ (tripod joint) to minimize sliding resistance.

In the previous TJ design, the roller rotated only in the axial direction. When the joint was subjected to a

"bending" angle in the sliding direction, the roller slipped causing resistance.

In the new FTJ design, the outer surface of the roller is provided with a free ring to minimize roller slippage, greatly reducing sliding resistance.

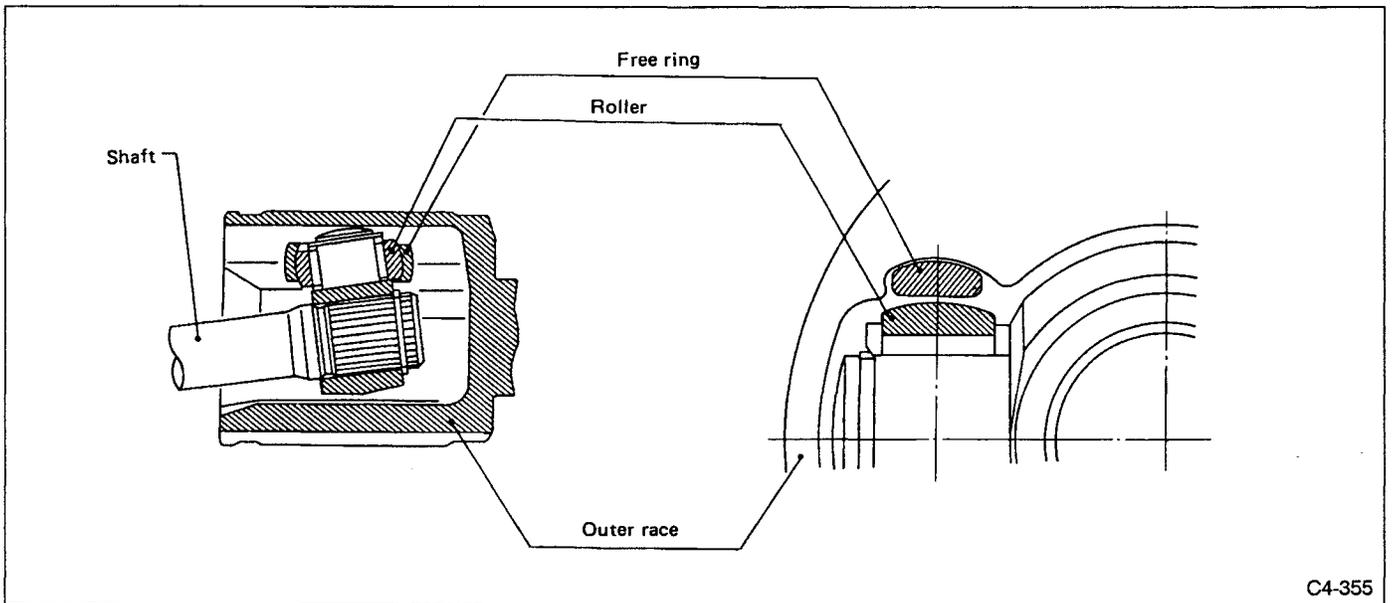


Fig. 3

M MECHANISM AND FUNCTION

2. Rear Axle

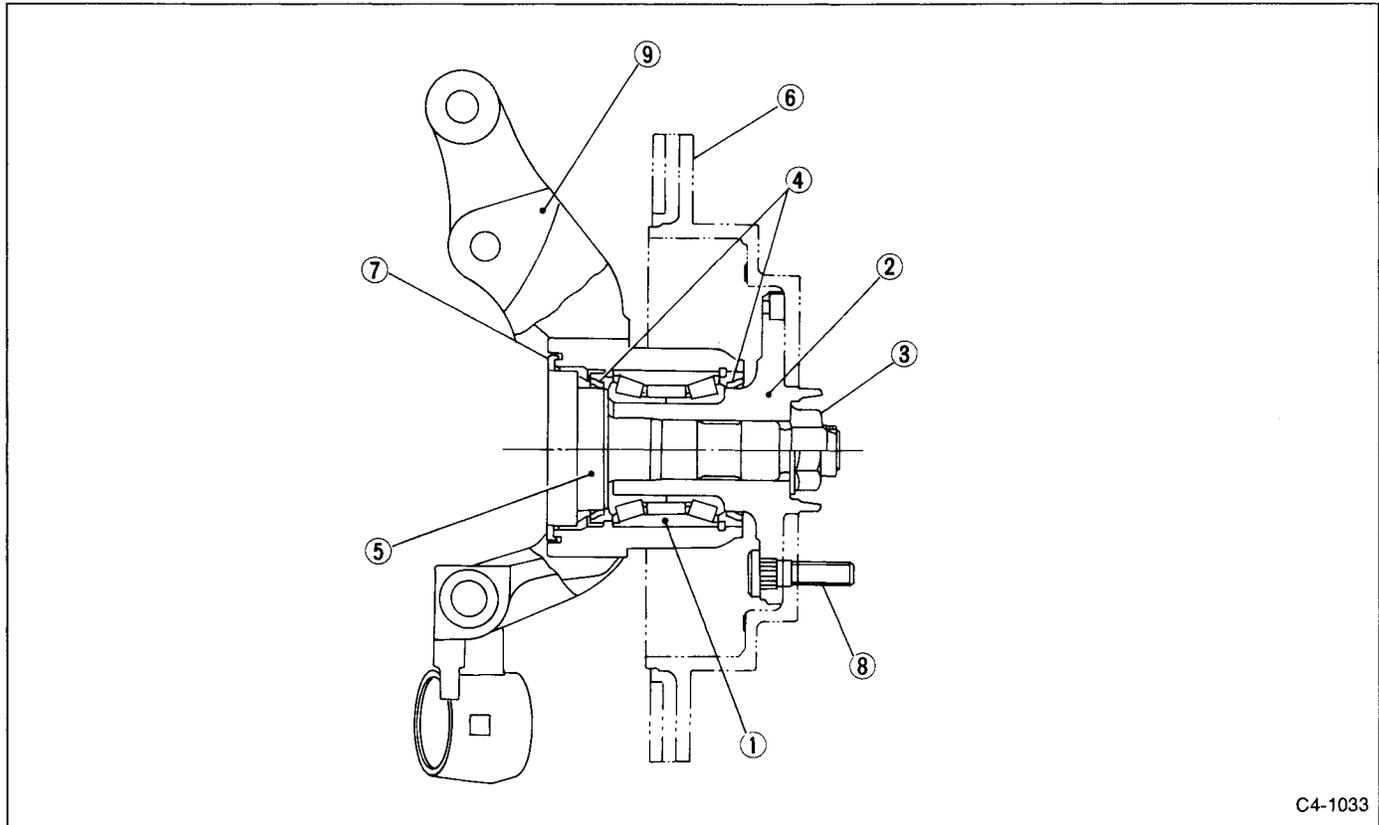
A: GENERAL

The inboard end of the axle shaft is connected to the transmission via a constant velocity joint (double offset joint: DOJ) which provides flexible capabilities in the longitudinal direction. The outboard end is supported by taper roller bearings located inside the housing via a bell joint (BJ) which features a large operating angle. Since the drive

shaft employs constant velocity joints, it provides smooth, even rotation of the drive wheels without any vibration. The bearing is a preloaded, non-adjustable tapered roller unit type.

The hub is fitted to the tapered roller bearing inside the housing. The BJ's spindle is "serration-fitted" to the hub and is clinched to it with axle nuts.

The disc rotor is externally mounted to facilitate maintenance. Hub bolts and axle nuts are also used to secure the front axle.



C4-1033

Fig. 1

- | | | |
|----------------|--------------|----------------|
| ① Bearing | ④ Oil seal | ⑦ Baffle plate |
| ② Hub | ⑤ Spindle | ⑧ Hub bolt |
| ③ Caulking nut | ⑥ Disc rotor | ⑨ Housing |

B: REAR DRIVE SHAFT

The constant-velocity joint on the differential side is a double offset type (DOJ) which can be disassembled for maintenance. It provides the maximum operating angle

of 23° and can be moved in the axial direction. DOJ outer race and the rear differential spindle are combined in order to improve resistance to corrosion. The constant-velocity joint on the tire side is a bell type (BJ) which provides a maximum operating angle of 46°.

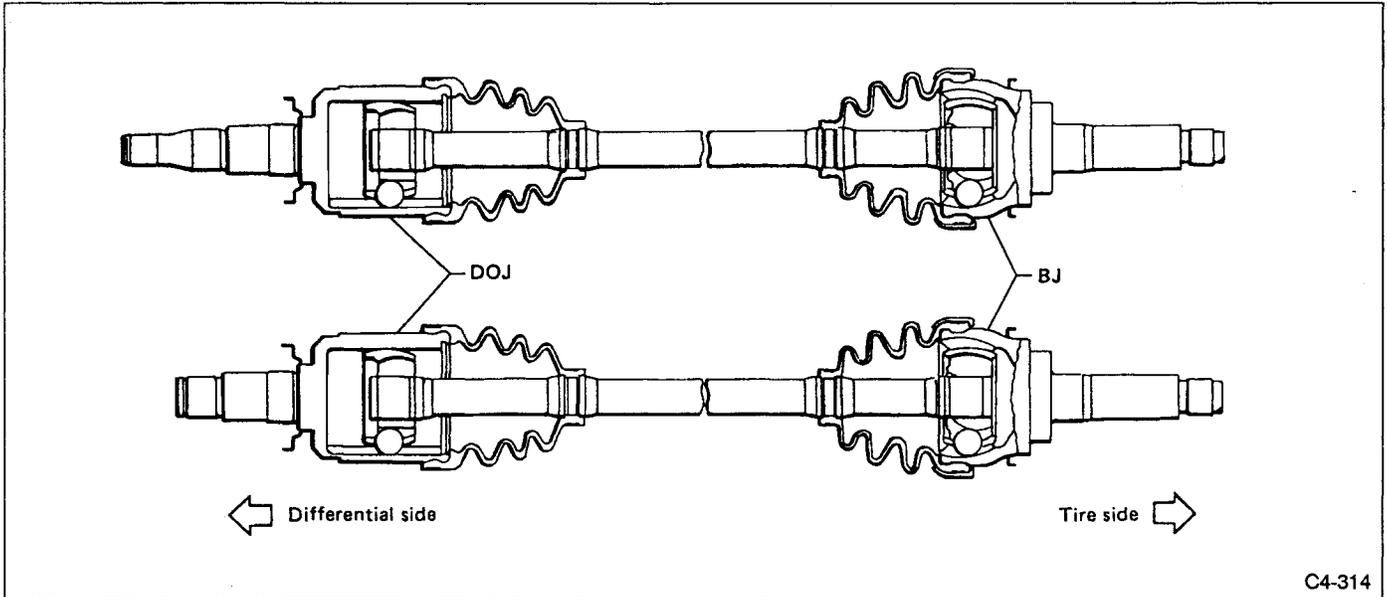


Fig. 5

3. Aluminum Wheel

A: GENERAL

Aluminum wheels are used as standard equipment to reduce unsprung weight, increase steering stability and improve riding comfort. These wheels provide both functional design and are aesthetically pleasing.

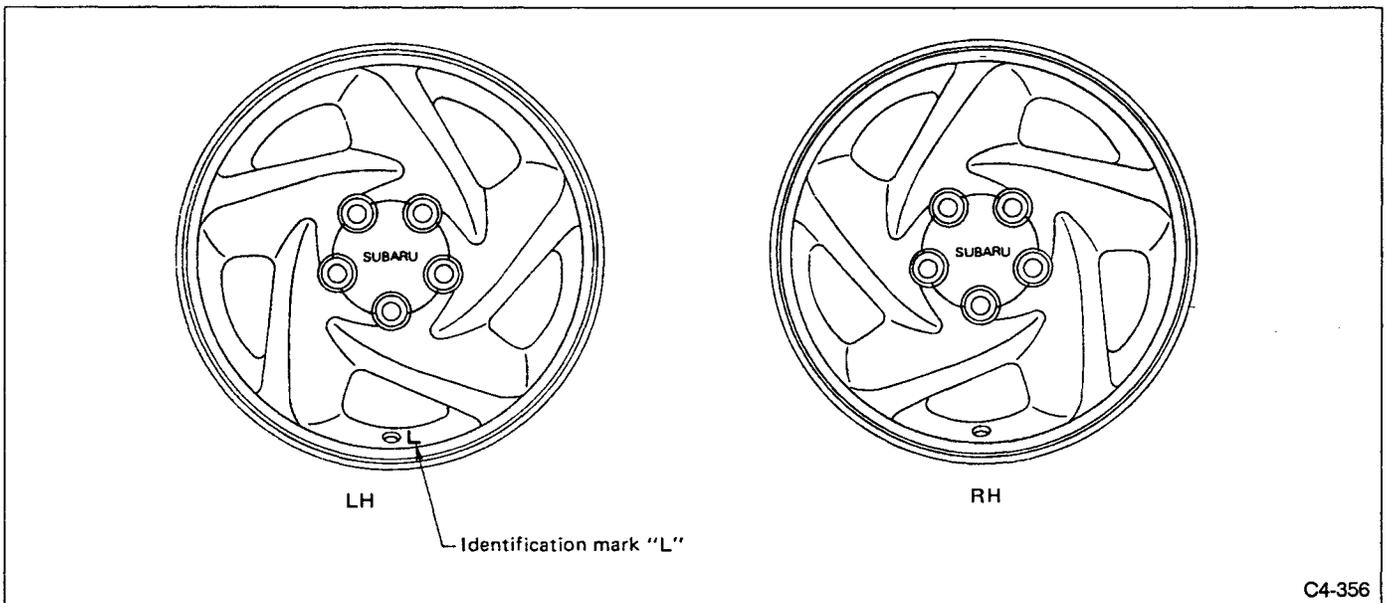


Fig. 6

S SPECIFICATIONS AND SERVICE DATA

A: SPECIFICATIONS

1. TIRE & WHEEL SIZE

Front and Rear			
Tire size	Rim size	Rim offset mm (in)	PCD mm (in)
P215/55R16 91V	16 × 7 1/2JJ	55 (2.17)	114.3 (4.50)

"T-type" Spare tire			
Tire size	Rim size	Rim offset mm (in)	PCD mm (in)
T135/80D16	16 × 4T	45 (1.77)	114.3 (4.50)

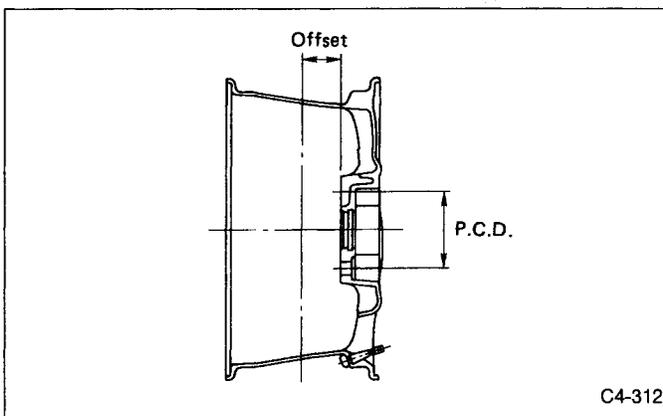


Fig. 1

2. TIRE INFLATION PRESSURE

Tire size	Tire inflation pressure kPa (kg/cm ² , psi)	
	Front	Rear
P215/55R16 91V	230 (2.3, 33)	200 (2.0, 28)
*T135/80D16	420 (4.2, 60)	

*: "T-type" Spare tire

3. FRONT DRIVE SHAFT ASSEMBLY

Type of axle shaft ASSY	Distance between inner and outer boots (L) mm (in)	Diameter (D) mm (in)
100AC — 25	246.1 (9.69)	25.4 (1.000)

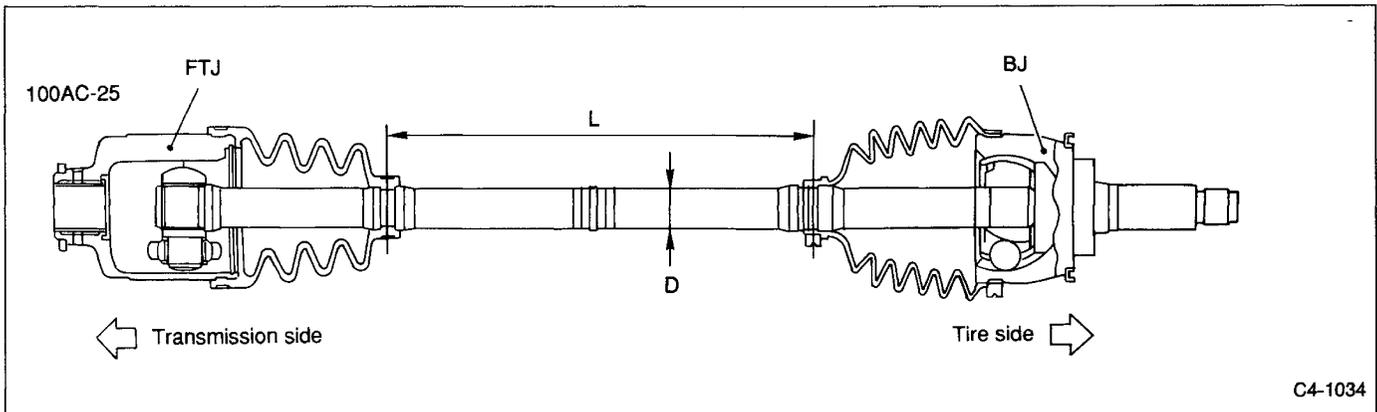


Fig. 2

4. REAR DRIVE SHAFT ASSEMBLY

Type of axle shaft ASSY	Distance between inner and outer boots (L) mm (in)	Diameter (D) mm (in)
87AC — RH	305 (12.01)	22.2 (0.874)
87AC — LH		

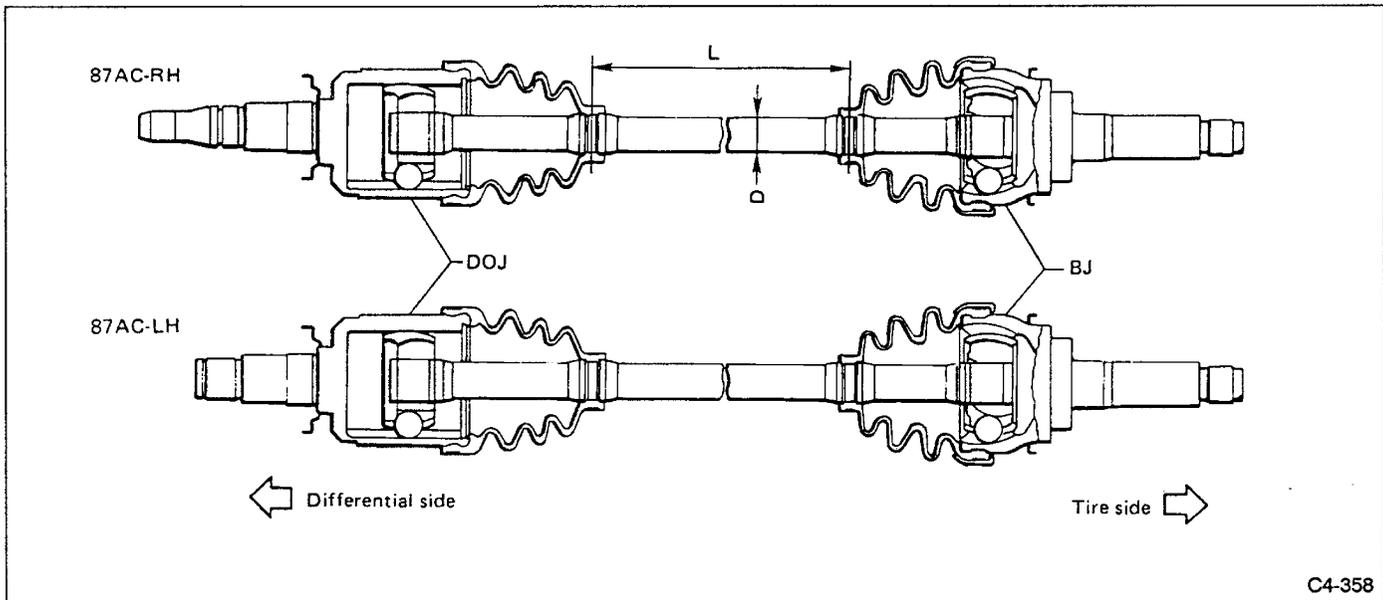


Fig. 9

B: SERVICE DATA

Item		Standard	Service Limit
Wheel balancing	Dynamic unbalance		Less than 5 g (0.18 oz)
	Balance weight part number		
		For aluminum wheel	Weight g (oz)
		23141GA462	5 (0.18)
		23141GA472	10 (0.35)
		23141GA481	15 (0.53)
		23141GA491	20 (0.71)
		23141GA501	25 (0.88)
		23141GA511	30 (1.06)
		23141GA521	35 (1.23)
		23141GA531	40 (1.41)
		23141GA541	45 (1.59)
		23141GA551	50 (1.76)
	—	55 (1.94)	
	23141GA571	60 (2.12)	

C COMPONENT PARTS

1. Front Axle

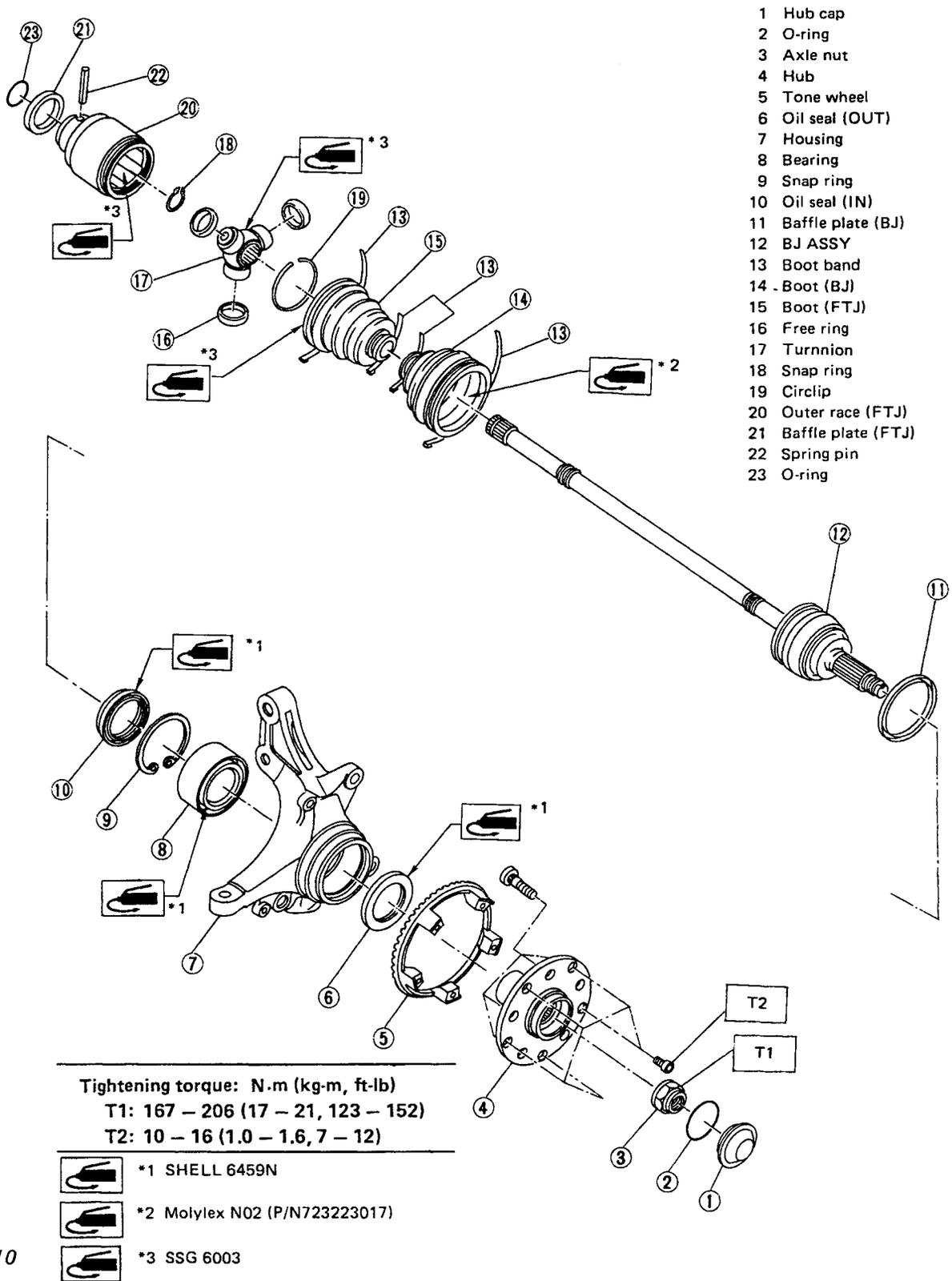


Fig. 10

C4-315

C COMPONENT PARTS

1. Front Axle

2. FWD MODEL

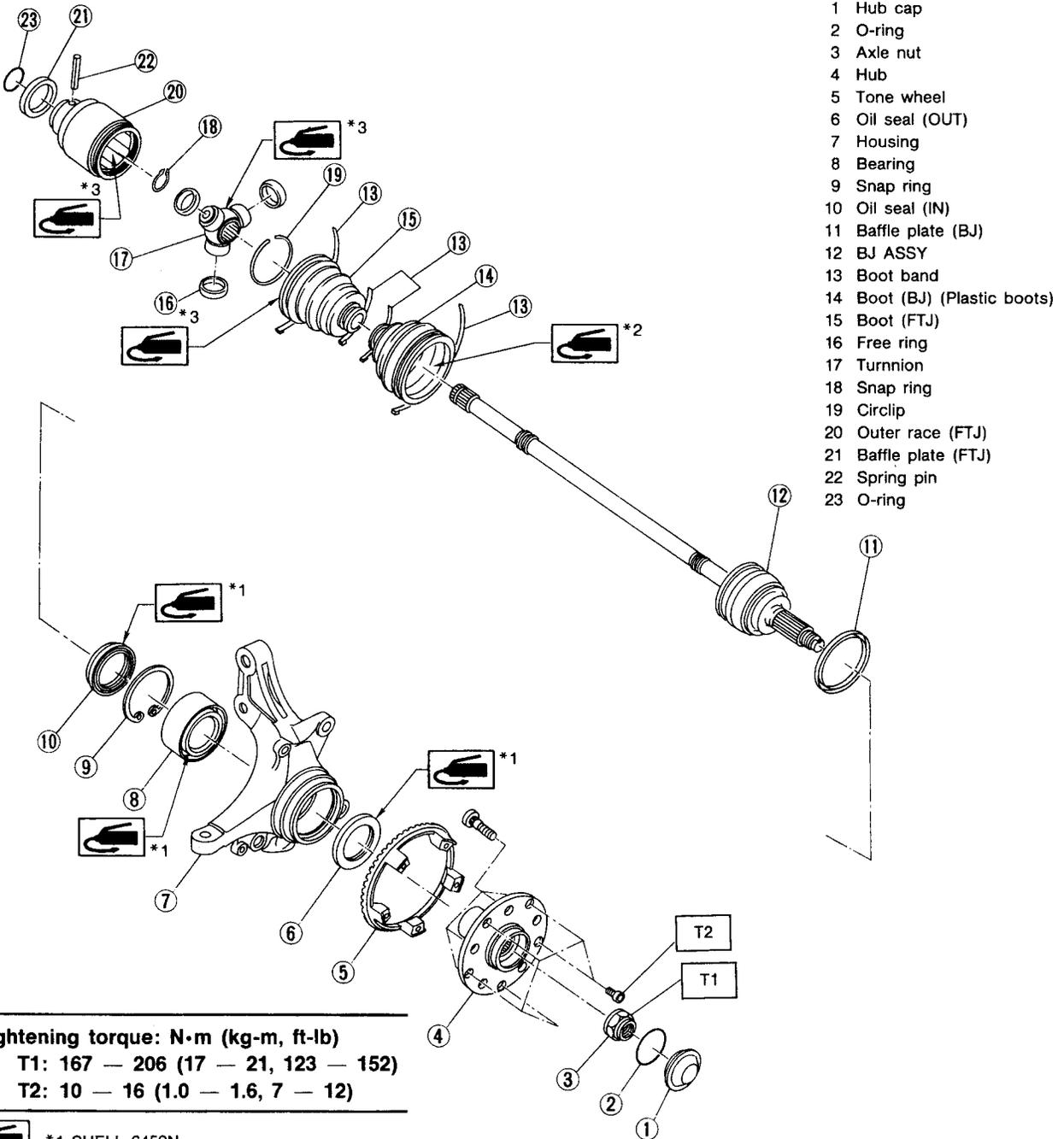
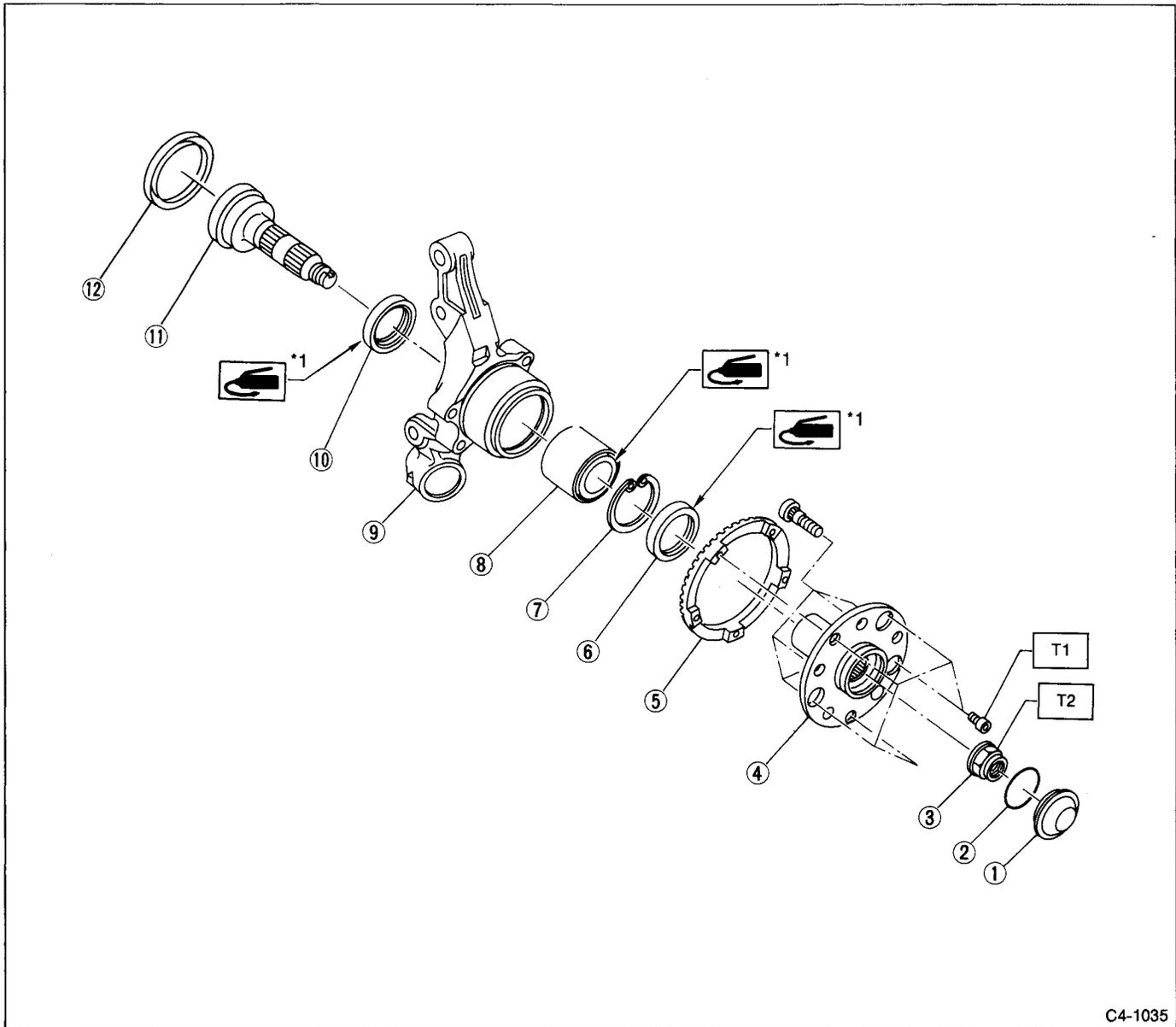


Fig. 1

C COMPONENT PARTS

2. Rear Axle



C4-1035

Fig. 3

- ① Hub cup
- ② O-ring
- ③ Axle nut
- ④ Hub
- ⑤ Tone wheel
- ⑥ Oil seal (OUT)
- ⑦ Snap ring
- ⑧ Bearing
- ⑨ Housing
- ⑩ Oil seal (IN, No. 1)
- ⑪ Spindle
- ⑫ Baffle plate

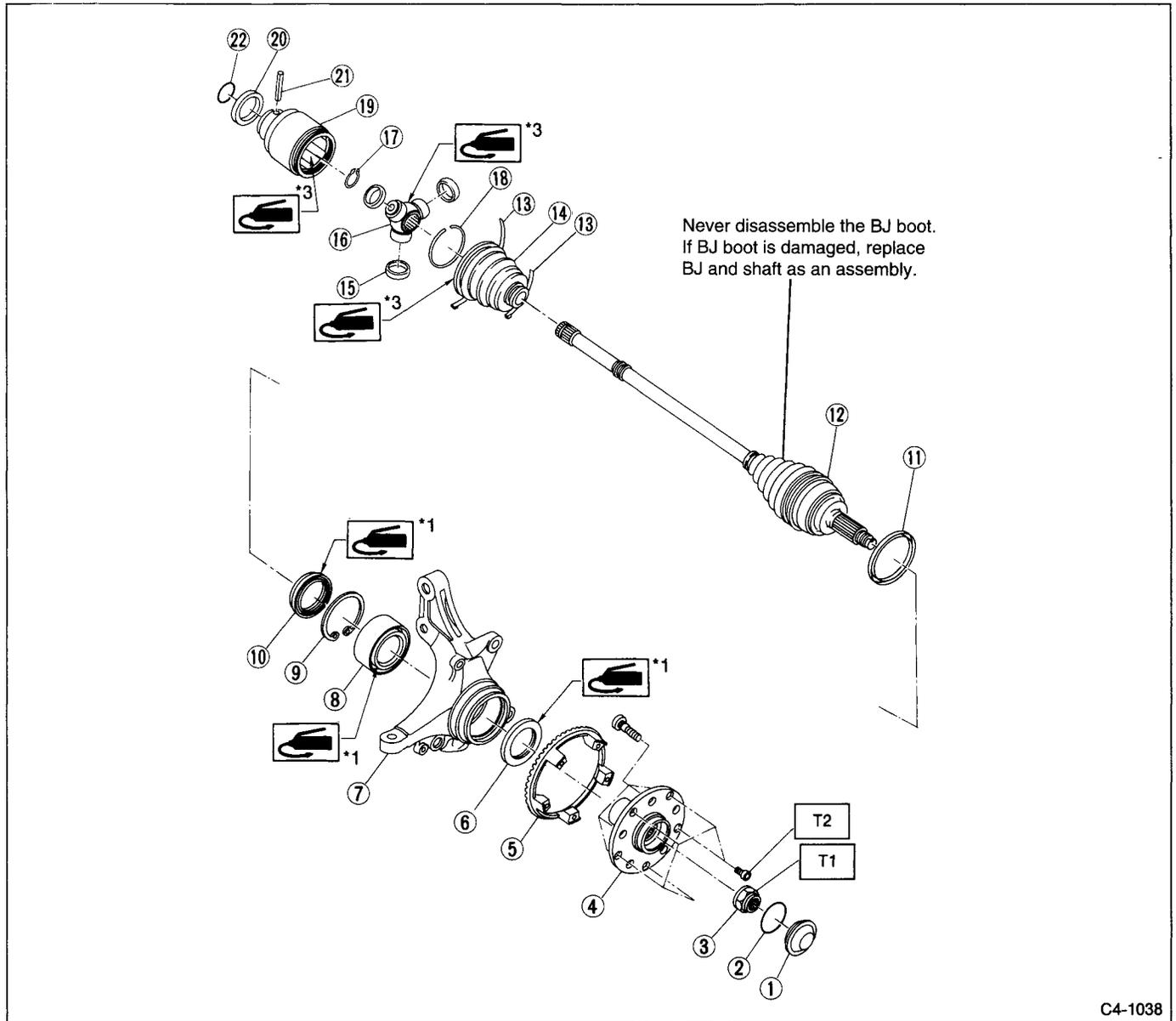
Tightening torque: N·m (kg-m, ft-lb)
T1: 10 — 16 (1.0 — 1.6, 7 — 12)
T2: 167 — 206 (17 — 21, 123 — 152)

-  *1: SHELL 6459N
-  *2: Molylex No. 2 (P/N 723223010)

W SERVICE PROCEDURE

1. Front Axle

A: REMOVAL AND INSTALLATION



C4-1038

Fig. 4

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

Tightening torque: N·m (kg-m, ft-lb)
T1: 10 — 16 (1.0 — 1.6, 7 — 12)
T2: 167 — 206
(17 — 21, 123 — 152)

- *1: SHELL 6459N
- *2: Molylex No. 2 (P/N 723223010)
- *3: SSG 6003

W SERVICE PROCEDURE

1. Front Axle

A: REMOVAL AND INSTALLATION

2. FWD MODEL

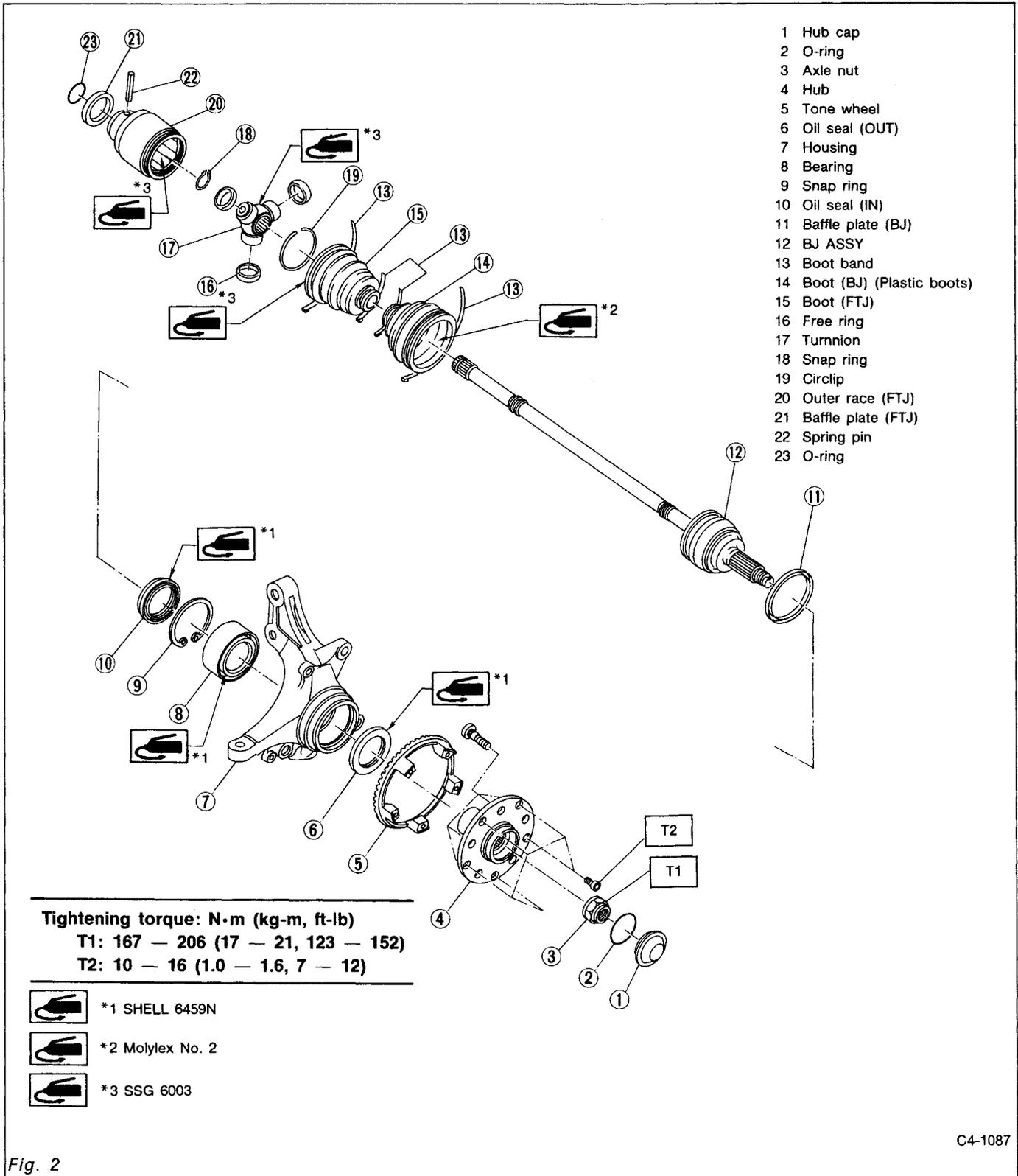


Fig. 2

- 1) Lift up and remove front wheels.
- 2) Remove hub caps.
- 3) Unlock axle nut.

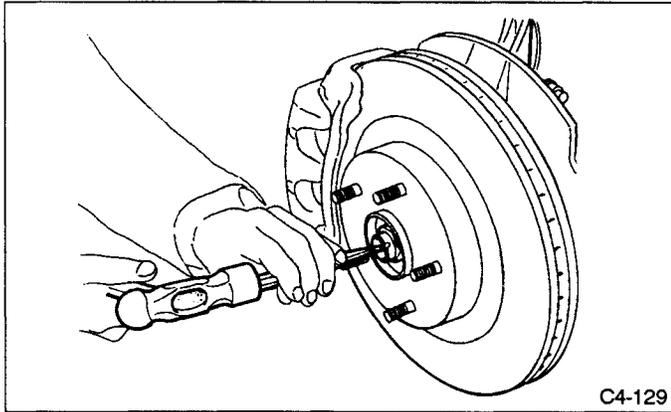


Fig. 13

- 4) Depress brake pedal to stop drive shaft rotation. Remove axle nut with socket wrench. **Be sure to loose and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.**
- 5) Remove bolts which secure ball joint to housing.

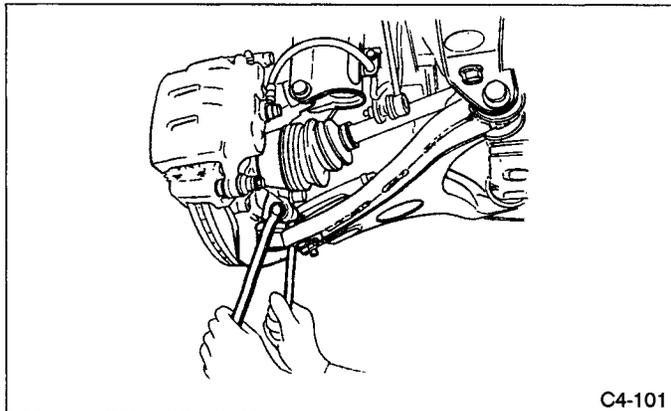


Fig. 14

- 6) Disconnect ABS sensor from housing.

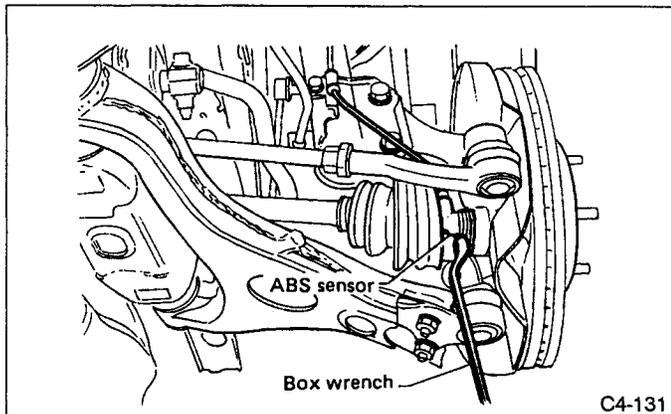


Fig. 15

- 7) Disconnect brake hose clamp from strut.

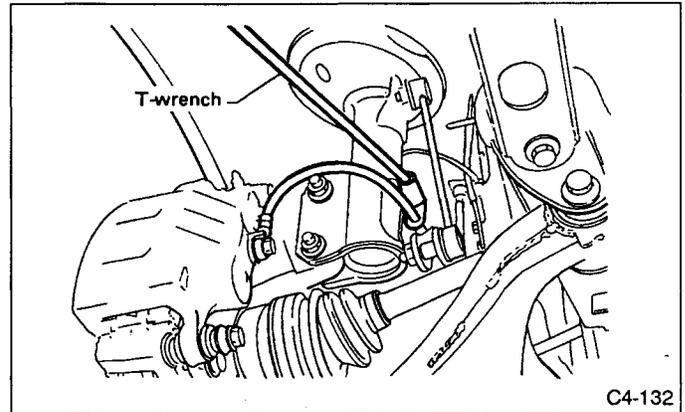


Fig. 16

- 8) After scribing an alignment mark on camber adjusting bolt head, remove nuts which connect housing and strut. **Do not remove upper bolt.**

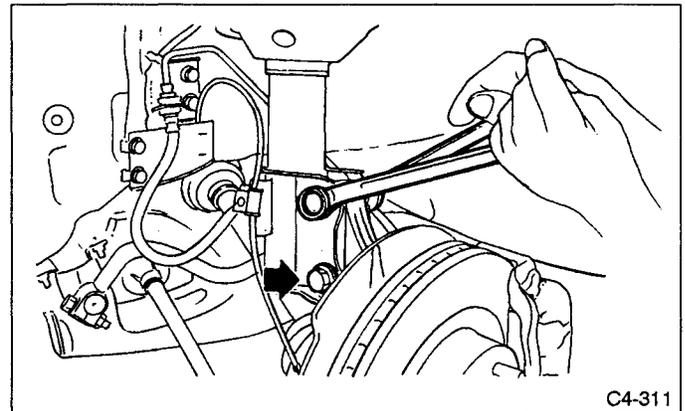


Fig. 17

- 9) Disconnect brake caliper ASSY from housing.

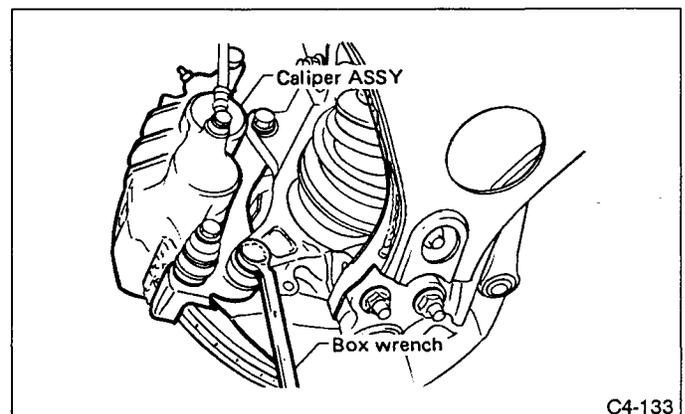


Fig. 18

10) Fasten caliper assembly to strut using wire.

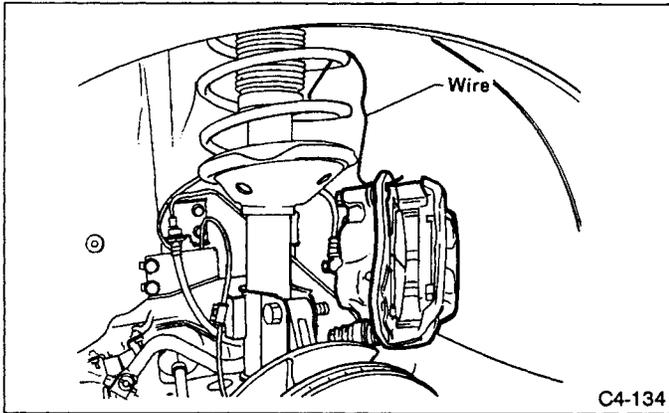


Fig. 19

11) Remove BJ from housing. If it is hard to remove, use REMOVER (926470000) and PLATE (28099PA110).

a. Be careful not to damage oil seal lip when removing drive shaft.

b. When replacing drive shaft, also replace inner oil seal.

12) 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.

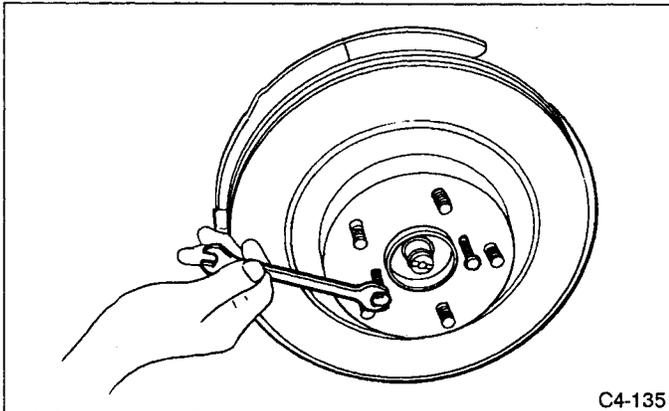


Fig. 20

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

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

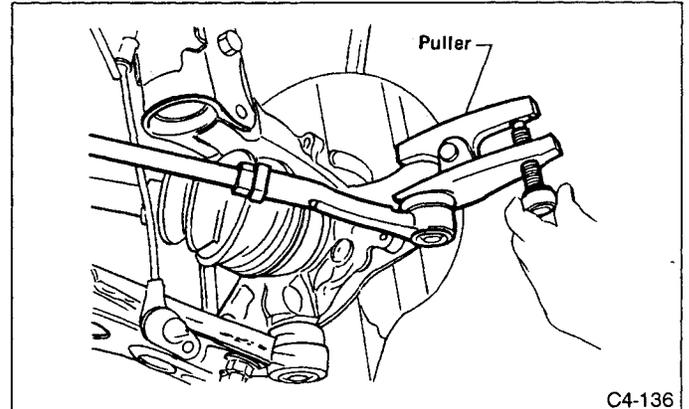


Fig. 21

15) Remove housing assembly.

16) Install in reverse order of removal. For installation and tightening torque of suspension parts, refer to 4-1 [C100].

For installation and tightening torque of brake parts, refer to 4-4 [C100].

a. Be careful not to damage inner oil seal lip.

b. Use a new self-locking nut.

c. Use a new axle nut.

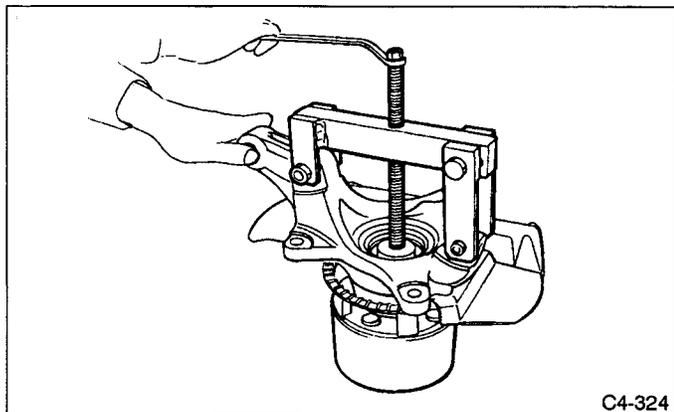
d. Always tighten axle nut before installing wheel on vehicle. If wheel is installed and comes in contact with ground when axle nut is loose, wheel bearings may be damaged.

e. Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.

17) After tightening axle nut, caulk it securely.

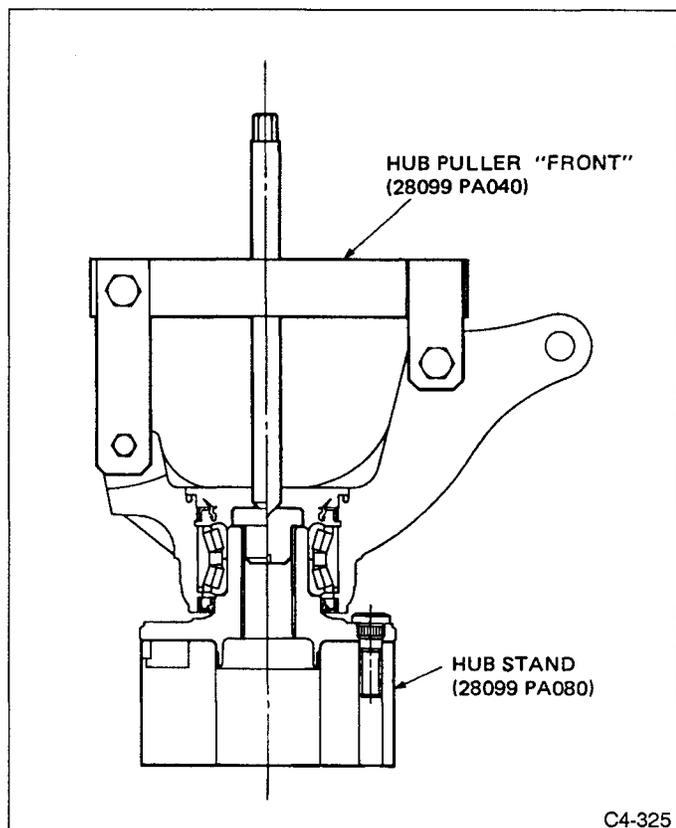
B: DISASSEMBLY

- 1) Using HUB STAND (28099PA080), support housing and hub ASSY securely.
- 2) Attach HUB REMOVER "FRONT" (28099PA040) to housing and drive hub COMPL out.



C4-324

Fig. 22

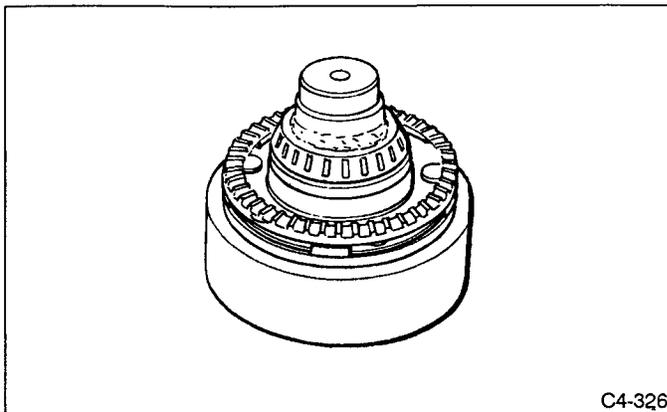


C4-325

Fig. 23

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

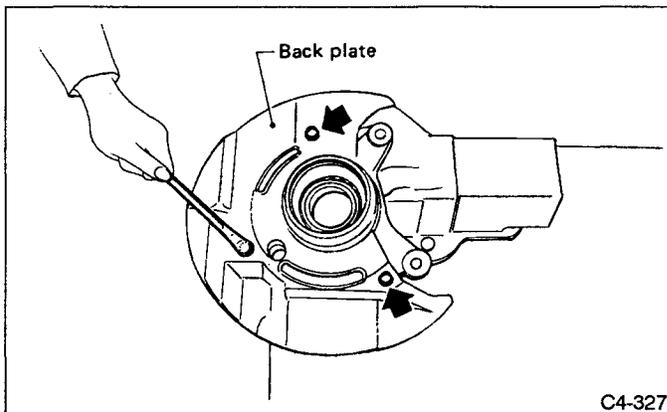
- a. Be careful not to scratch polished area of hub.
- b. Be sure to install inner race on the side of outer race from which it was removed.



C4-326

Fig. 24

- 3) Remove disc cover from housing.



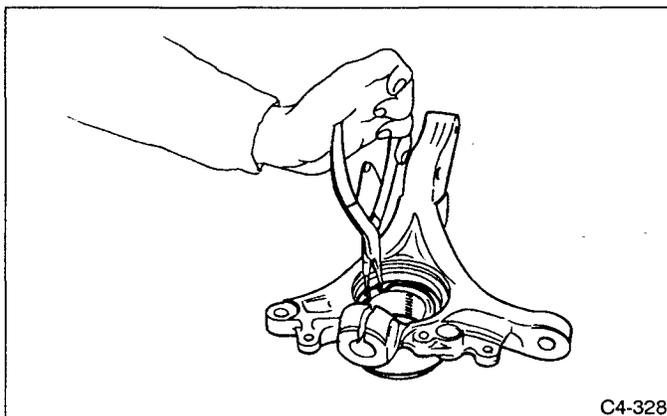
C4-327

Fig. 25

- 4) Using a standard screwdriver, remove outer and inner oil seals.

Do not use old oil seals.

- 5) Using pliers, remove snap ring.



C4-328

Fig. 26

- 6) Using HOUSING STAND "FRONT" (28099PA010), support housing securely.

- 7) Using BEARING INSTALLER "FRONT" (28099PA000), press inner race to drive out outer bearing.

- a. Do not remove outer race unless it is faulty.
- b. Discard outer race after removal.

c. Do not replace inner or outer race separately; always replace as a unit.

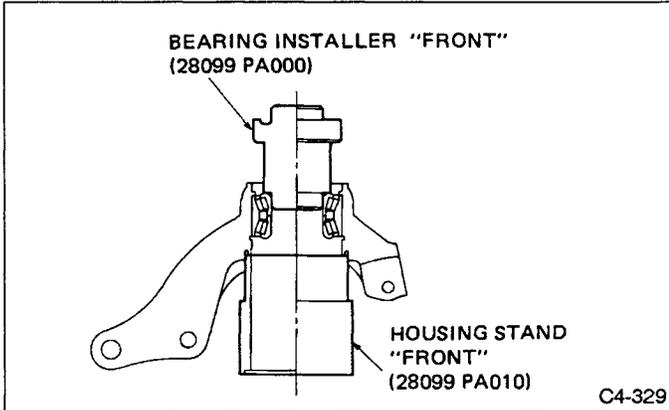


Fig. 27

8) Loosen bolts which secure tone wheel to hub. Remove tone wheel.

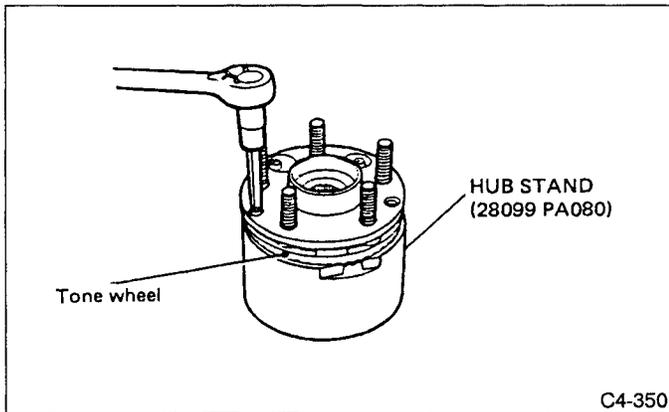


Fig. 28

9) Using HUB STAND (28099PA080) and a hydraulic press, drive hub bolts out. Be careful not to hammer hub bolts. This may deform hub.

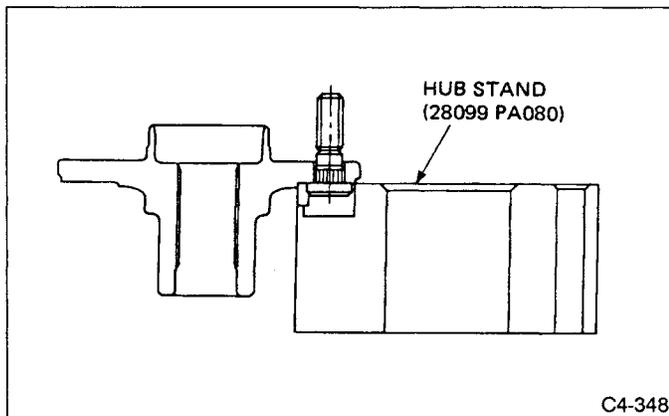


Fig. 29

C: INSPECTION

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

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

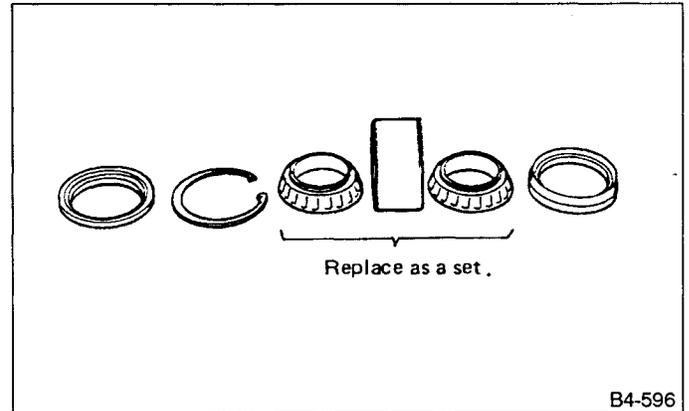


Fig. 30

D: ASSEMBLY

- 1) Attach hub COMPL to HUB STAND (28099PA080) securely.
- 2) Using a hydraulic press, press new hub bolts into place.
 - a. Use 12 mm (0.47 in) dia. holes in HUB STAND to prevent bolts from tilting.
 - b. Be sure to press hub bolts until their seating surfaces contact the hub.

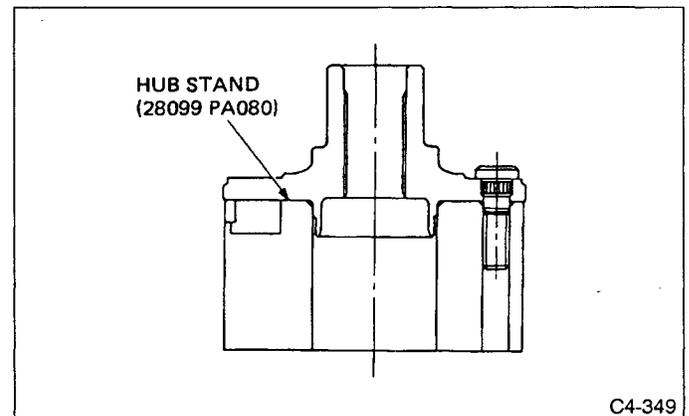


Fig. 31

- 3) Remove foreign particles (dust, rust, etc.) from mating surfaces of hub and tone wheel, and install tone wheel to hub.
 - a. Ensure tone wheel closely contacts hub.
 - b. Be careful not to damage tone wheel teeth.

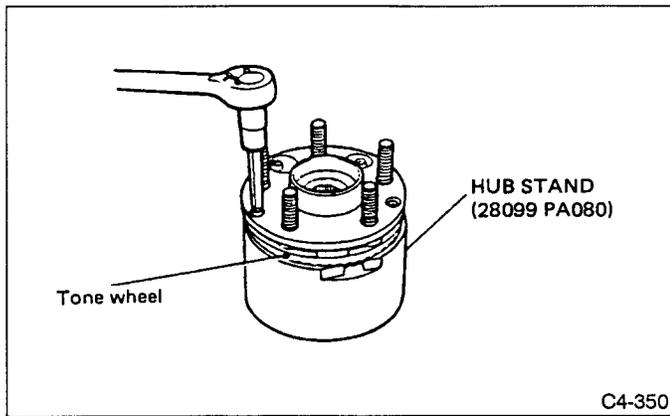


Fig. 32

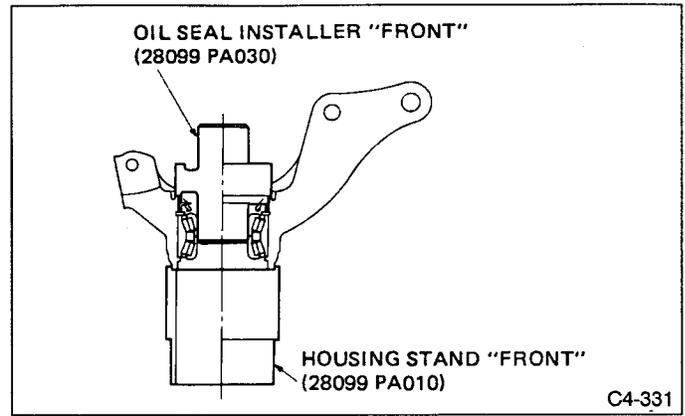


Fig. 34

- 4) Clean dust or foreign particles from inside the housing.
- 5) Using HOUSING STAND (28099PA010) and BEARING INSTALLER "FRONT" (28099PA000), press a new bearing into place.

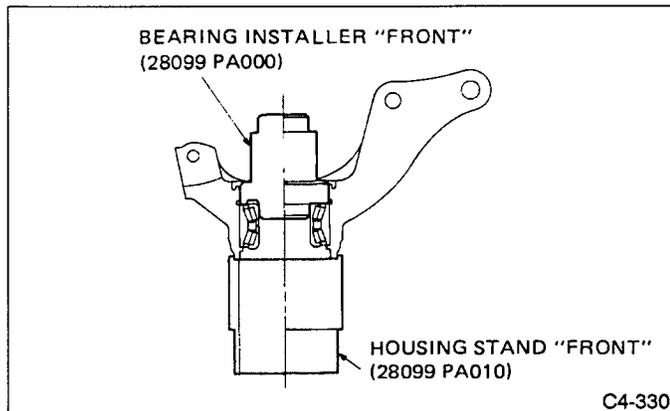


Fig. 33

- 8) Turn upper side of HOUSING STAND, housing and FRONT SEAL INSTALLER down.
- 9) Using OIL SEAL INSTALLER "FRONT" (28099PA030), press outer oil seal until it contacts the bottom of housing.

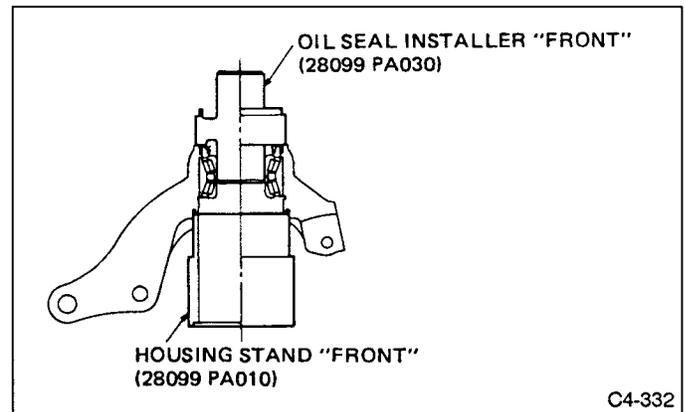


Fig. 35

- a. Always press outer race when installing bearing.
- b. Be careful not to remove plastic lock from inner race when installing bearing.
- c. Charge bearing with new grease when outer race is not removed.
- 6) Install snap ring in its groove.
Make sure to install it firmly to groove.
- 7) Using OIL SEAL INSTALLER "FRONT" (28099PA030), press inner oil seal until it contacts circlip.

- 10) Apply sufficient grease to oil seal lip.

Specified grease:
SHELL 6459N

- a. If specified grease is not available, remove bearing grease and apply Auto Rex A instead.
- b. Do not mix different types of grease.

11) Install disc cover to housing the three bolts.

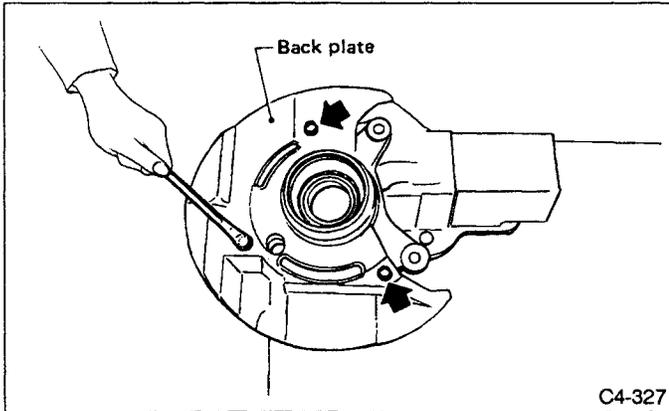


Fig. 36

12) Attach hub COMPL to HUB STAND (28099PA080) securely.

13) Clean dust or foreign particles from the polished surface of hub.

14) Using HUB INSTALLER "FRONT" (28099PA020), press bearing into hub by driving inner race.

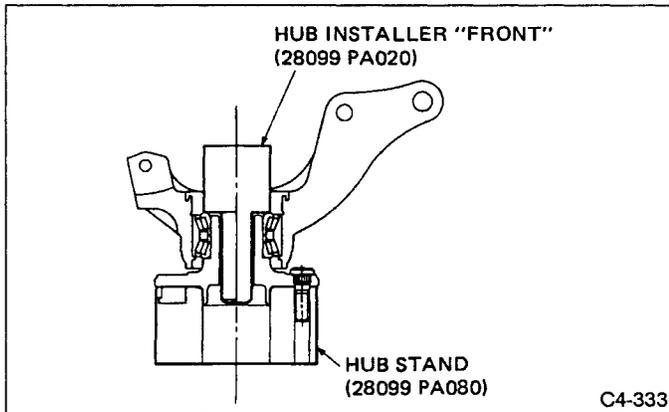


Fig. 37

2. Front Drive Shaft

A: REMOVAL AND INSTALLATION

- 1) Move select lever to Neutral.
- 2) Release parking brake lever.
- 3) Lift up vehicle and remove front wheel.
- 4) Remove hub cap.
- 5) Unlock axle nut.

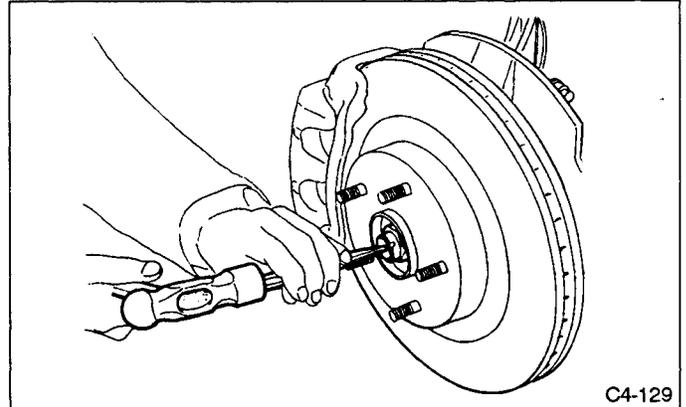


Fig. 38

- 6) Depress brake pedal to stop drive shaft rotation. Remove axle nut with socket wrench.

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

- 7) Remove stabilizer link.

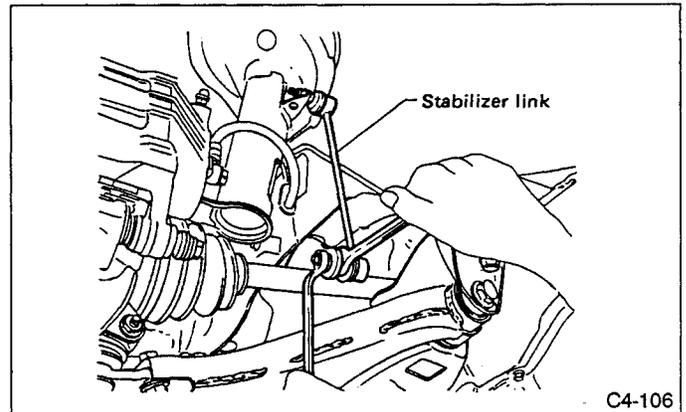


Fig. 39

8) Disconnect ABS harness clamp from strut.

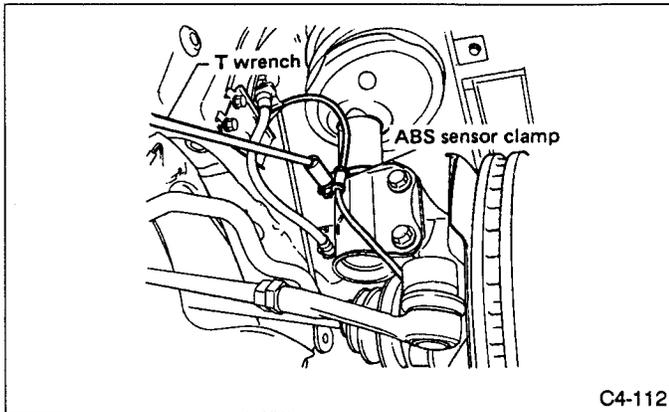


Fig. 40

9) Disconnect brake hose clamp from strut.

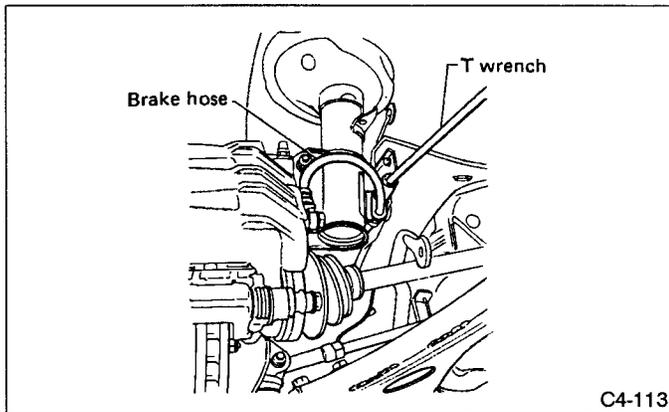


Fig. 41

10) Place alignment marks on stabilizer lever and stabilizer and remove stabilizer lever.

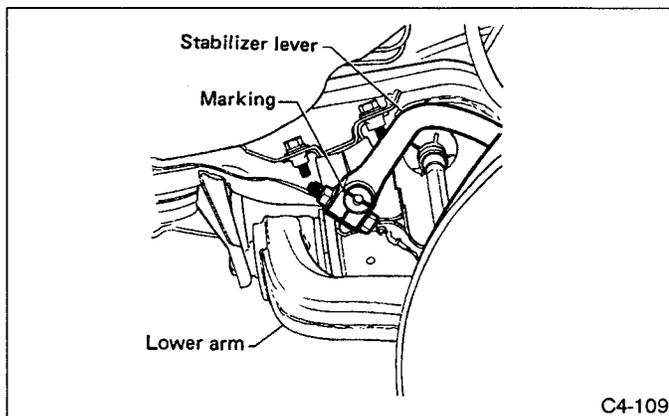


Fig. 42

11) Loosen stabilizer clamp.

Step 11) is performed only when right drive shaft is removed.

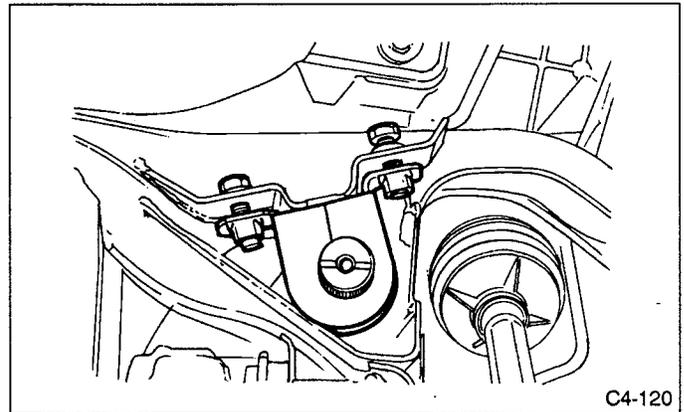


Fig. 43

12) Disconnect lower arm from housing.

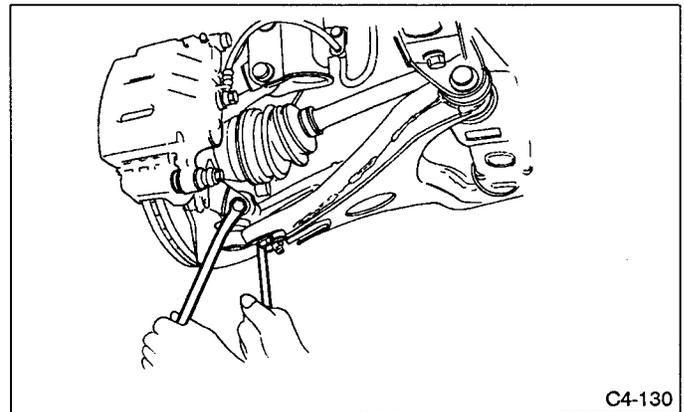


Fig. 44

13) Protect ball joint using cloth to prevent damage.

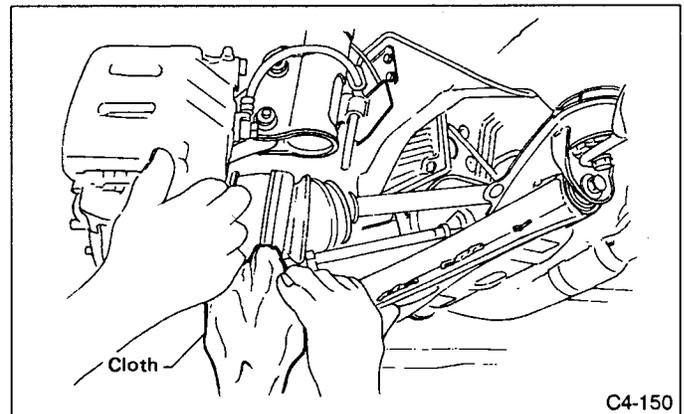
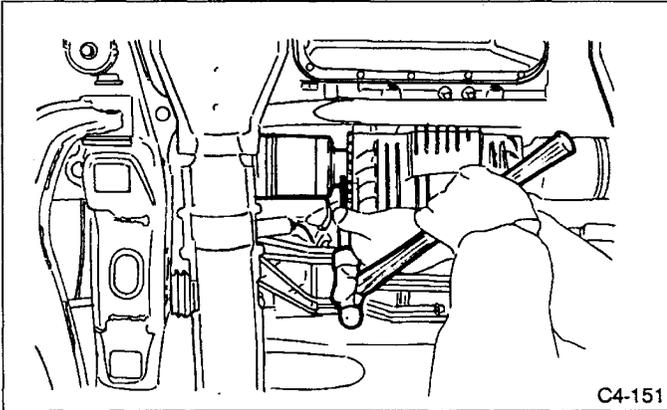


Fig. 45

14) Remove spring pin which secures transmission spindle to FTJ.



C4-151

Fig. 46

15) Remove BJ from housing. If it is hard to remove, use REMOVER (926470000) and PLATE (28099PA110).

- a. When using REMOVER and PLATE, remove caliper body from housing in advance.
- b. Be careful not to damage oil seal lip when removing drive shaft.
- c. When replacing drive shaft, also replace inner oil seal.

16) Remove drive shaft from housing side.

17) Install in reverse order of removal.

For installation and tightening torque of suspension parts, refer to 4-1 [C100].

For installation and tightening torque of brake parts, refer to 4-4 [C100].

Be careful not to damage inner oil seal lip.

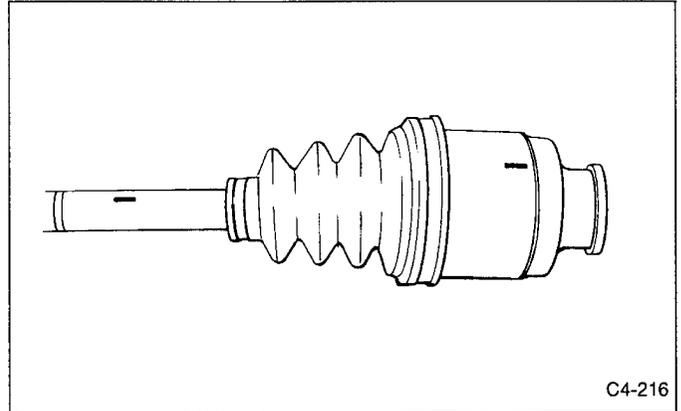
(1) Using AXLE SHAFT INSTALLER (922431000) and ADAPTER (927390000), pull drive shaft into place.

- a. Make sure O-ring is properly installed on transmission spindle.
 - b. Apply a sufficient coat of grease to transmission spindle splines.
 - c. Always use new sealer-pack type spring pin.
 - d. Use a new self-locking nut.
 - e. Use a new axle nut.
 - f. 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.
 - g. Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.
- (2) After tightening axle nut, caulk it securely.

B: DISASSEMBLY

2. FWD MODEL

1) Place alignment marks on shaft and outer race.

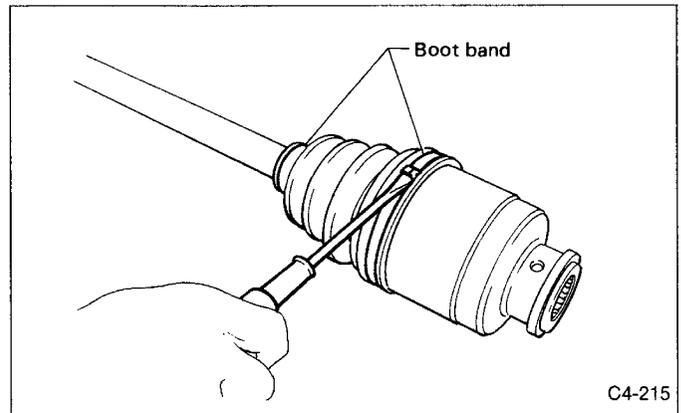


C4-216

Fig. 3

2) Remove FTJ boot bands and boot.

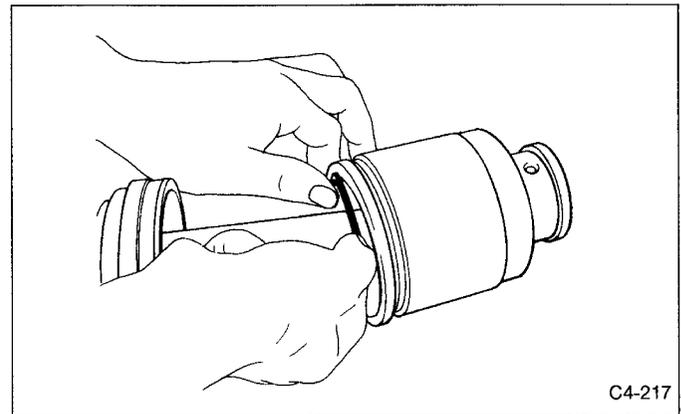
Be careful not to damage boot.



C4-215

Fig. 4

3) Remove circlip from FTJ outer race using screwdriver.



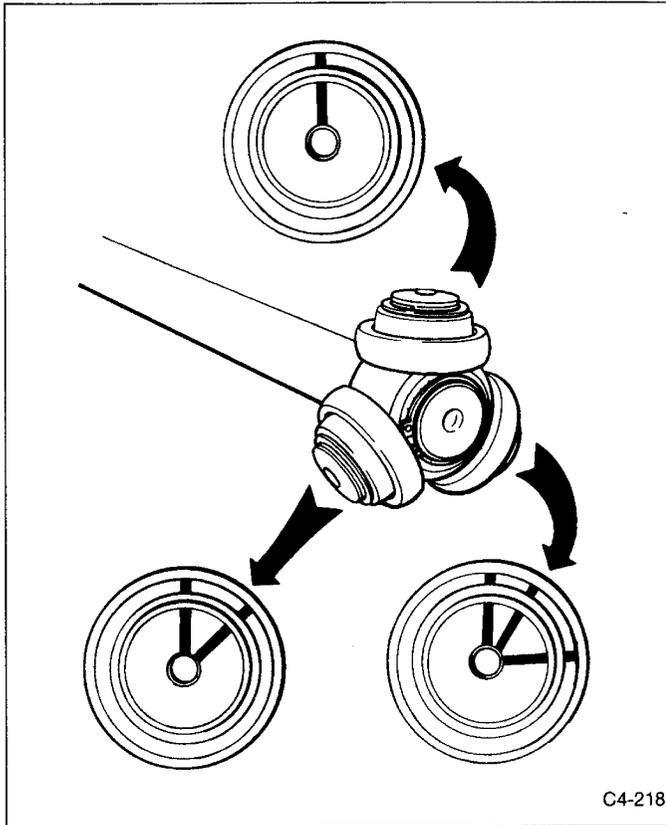
C4-217

Fig. 5

- 4) Remove FTJ outer race from shaft assembly.
- 5) Wipe off grease.

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

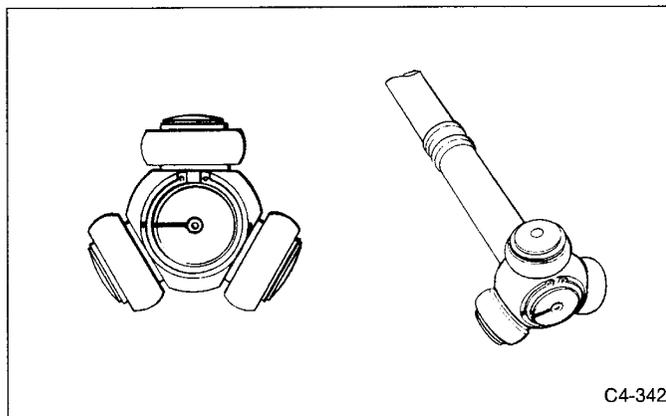
- 6) Place alignment mark on free ring and trunnion.



C4-218

Fig. 6

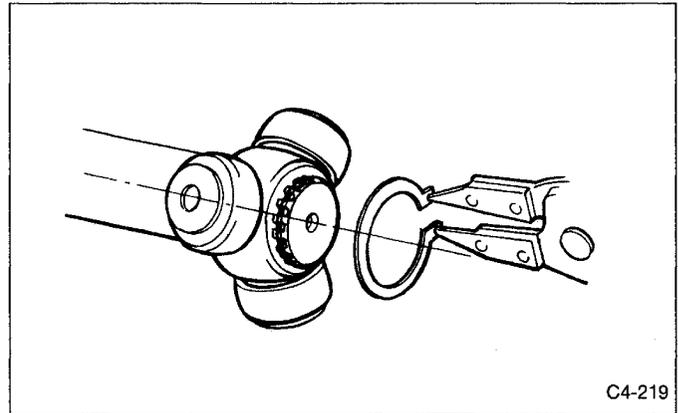
- 7) Remove free ring from trunnion.
- 8) Place alignment mark on trunnion and shaft.



C4-342

Fig. 7

- 9) Remove snap ring and trunnion.

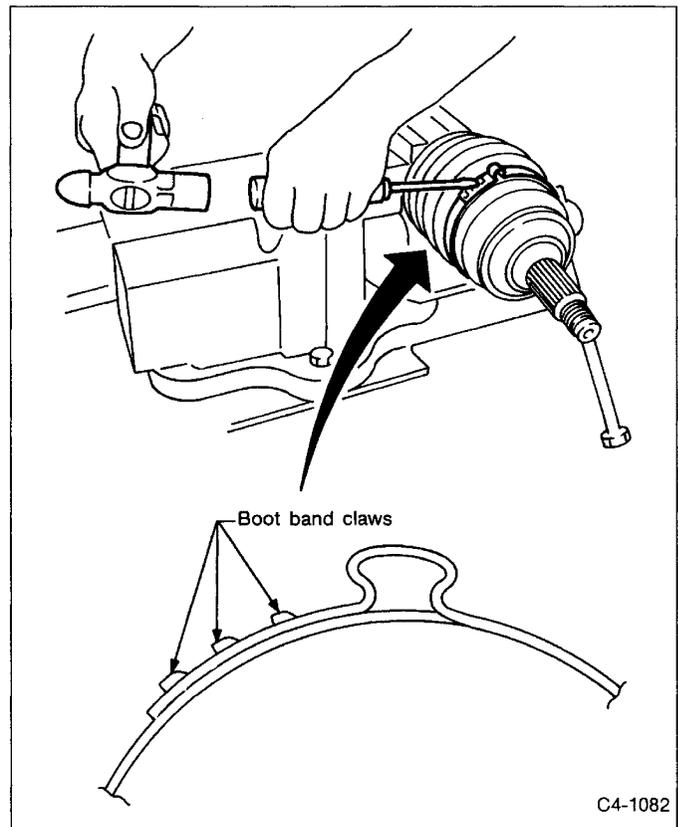


C4-219

Fig. 8

Be sure to wrap shaft splines with vinyl tape to protect the boot from scratches.

- 10) Remove FTJ boot.
- 11) Place drive shaft in a vise between wooden blocks.
- Do not place drive shaft directly in the vise; use wooden blocks.**
- 12) Raise boot band claws by means of screwdriver and hammer.



C4-1082

Fig. 9

13) Cut and remove the boot.

The boot must be replaced with a new one whenever it is removed.

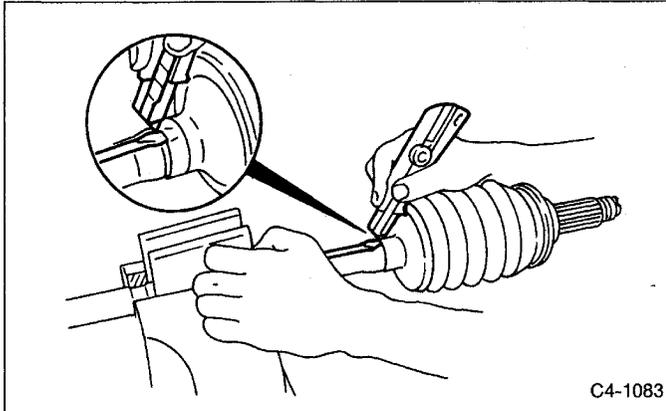


Fig. 10

14) Thus, disassembly of axle is completed, but BJ cannot be disassembled.

D: ASSEMBLY

2. FWD MODEL

Use specified grease.

BJ side:

Molylex No. 2 or Sunlight TB2-A

FTJ side:

SSG 6003

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

- 1) Place BJ boot and small boot band on BJ side of shaft.
- 2) Place drive shaft in a vise between wooden blocks.

Do not place drive shaft directly in the vise; use wooden blocks.

- 3) Apply a coat of specified grease [60 to 70 g (2.12 to 2.47 oz)] to BJ.
- 4) Apply an even coat of specified grease [20 to 30 g (0.71 to 1.06 oz)] to the entire inner surface of boot. Also apply grease to shaft.

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

5) Install boot projecting portion to BJ groove.

6) Set large boot band in place.

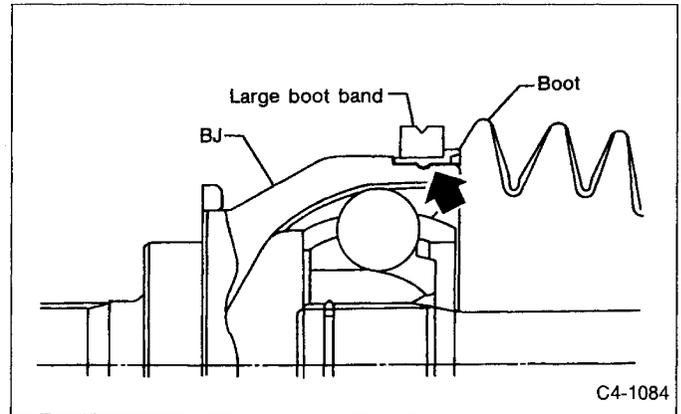


Fig. 11

7) Align the boot end of the smaller diameter with the 3rd groove in the drive shaft as shown in the figure.

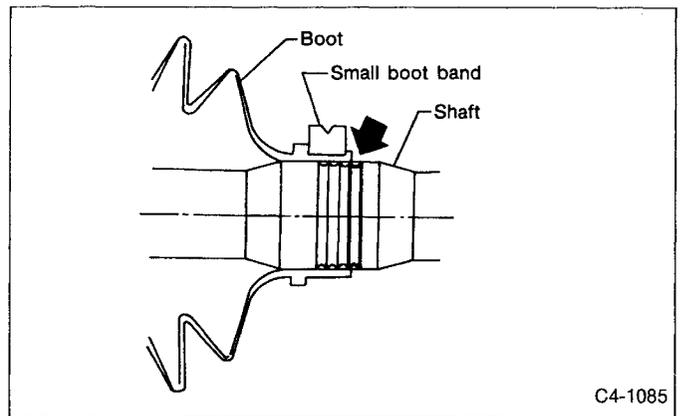


Fig. 12

8) Tighten boot bands using ST, torque wrench and socket flex handle.

ST 28099AC000 BOOT BAND PLIER

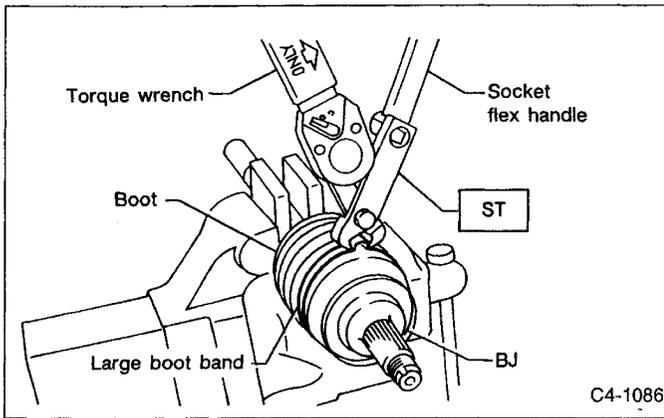
Tightening torque:

Large boot band

157 N·m (16.0 kg-m, 116 ft-lb) or more

Small boot band

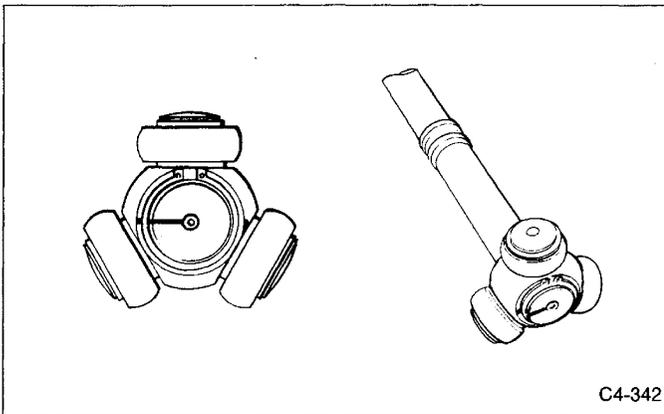
133 N·m (13.6 kg-m, 98 ft-lb) or more



C4-1086

Fig. 13

- 9) Place FTJ boot at the center of shaft.
- 10) Align alignment marks and install trunnion on shaft.



C4-342

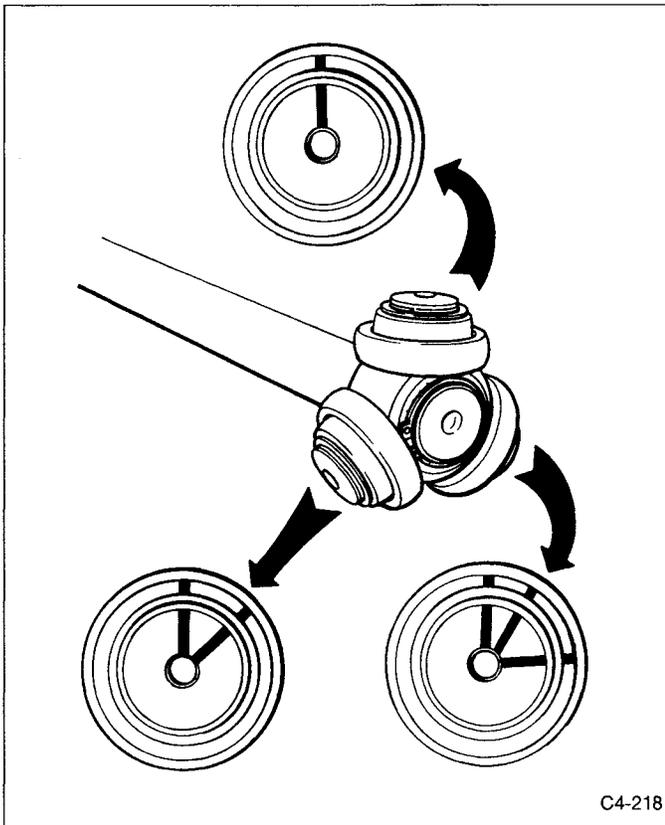
Fig. 14

- 11) Install snap ring to shaft.

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

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

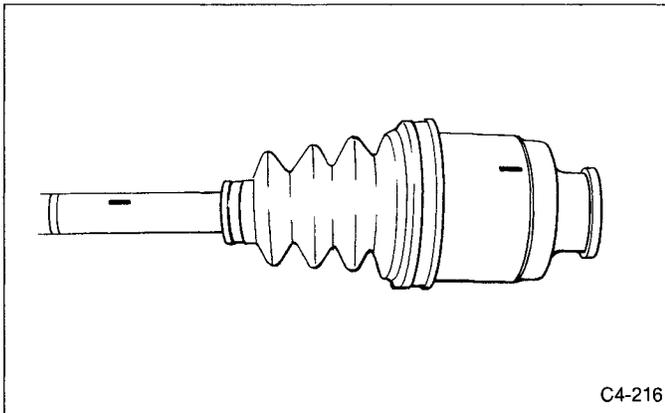
14) Align alignment marks on free ring and trunnion and install free ring.



C4-218

Fig. 15

15) Align alignment marks on shaft and outer race, and install outer race.



C4-216

Fig. 16

16) Install circlip in the groove on FTJ outer race.

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

17) 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.

18) Install FTJ boot taking care not to twist it.

a. 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.

b. When installing FTJ boot, position outer race of FTJ at center of its travel.

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

Use a new band.

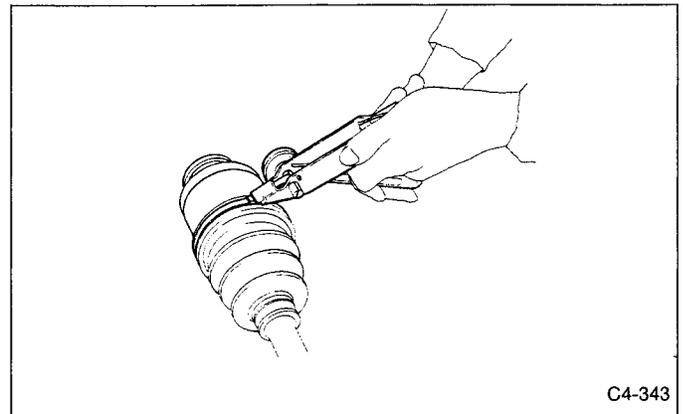
20) Pinch the end of band with pliers. Hold the clip and tighten securely.

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

21) Tighten band by using BAND TIGHTENING TOOL (925091000).

a. Tighten band until it cannot be moved by hand.

b. Former BAND TIGHTENING TOOL (925090000) is interchangeable with this 925091000.

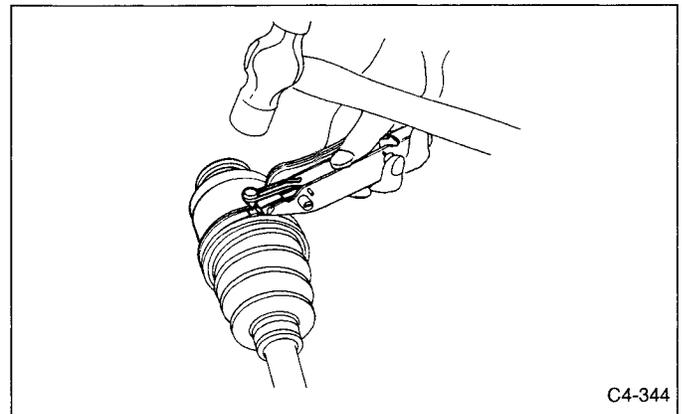


C4-343

Fig. 17

22) Tap on the clip with the punch provided at the end of BAND TIGHTENING TOOL.

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



C4-344

Fig. 18

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

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

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

Extend and retract FTJ to provide equal grease.

D: ASSEMBLY

Use specified grease.

BJ side:

Molylex No. 2 (P/N 723223010) or Sunlight TB2-A

FTJ side:

SSG 6003

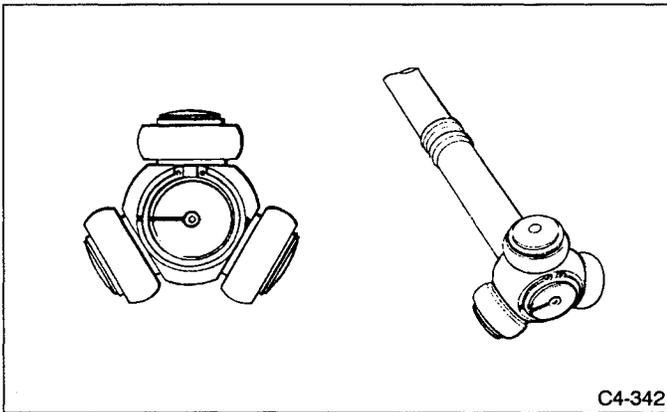
Be sure to wrap shaft splines with vinyl tape to prevent boot from scratches.

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

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.

3) Align alignment marks and install trunnion on shaft.



C4-342

Fig. 53

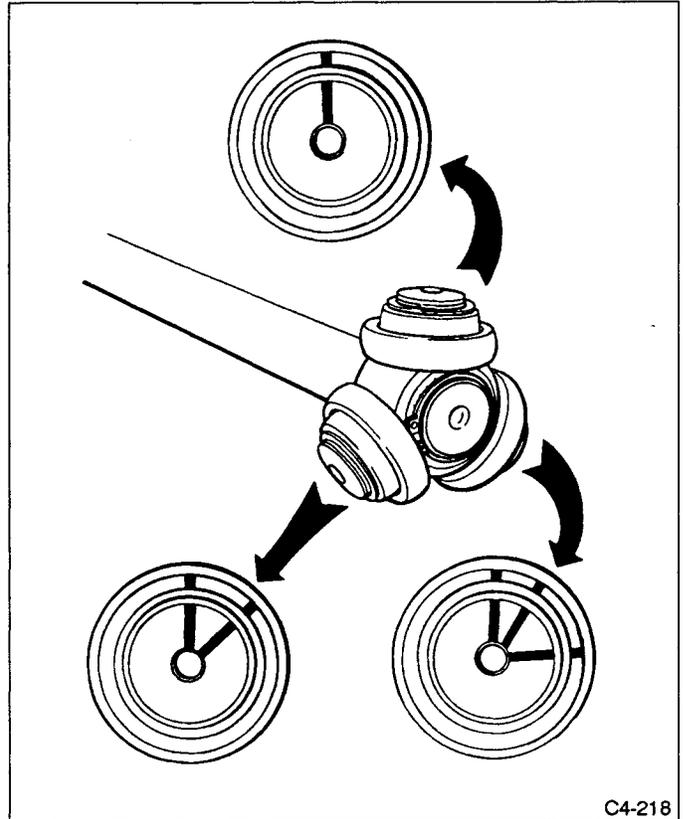
4) Install snap ring to shaft.

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.

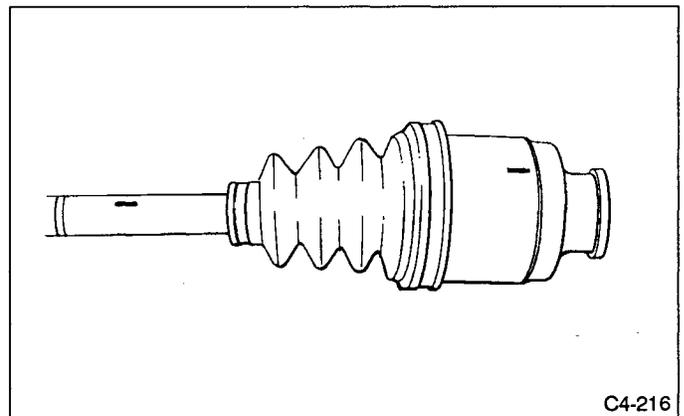
7) Align alignment marks on free ring and trunnion and install free ring.



C4-218

Fig. 54

8) Align alignment marks on shaft and outer race, and install outer race.



C4-216

Fig. 55

9) Install circlip in the groove on FTJ outer race.

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.

a. 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.

b. When installing FTJ boot, position outer race of FTJ at center of its travel.

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

Use a new band.

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

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

14) Tighten band by using BAND TIGHTENING TOOL (925091000).

a. Tighten band until it cannot be moved by hand.

b. Former BAND TIGHTENING TOOL (925090000) is interchangeable with this 925091000.

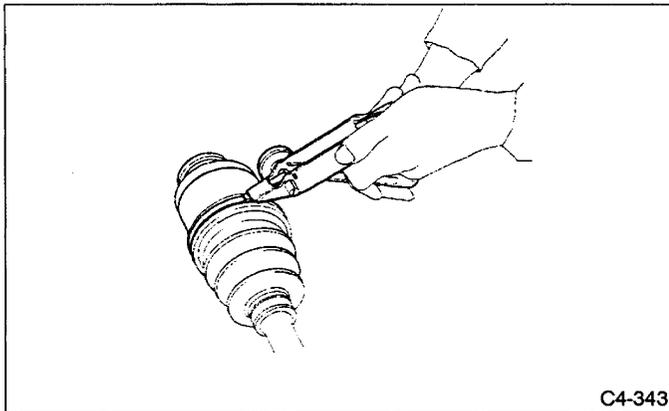


Fig. 56

15) Tap on the clip with the punch provided at the end of BAND TIGHTENING TOOL.

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

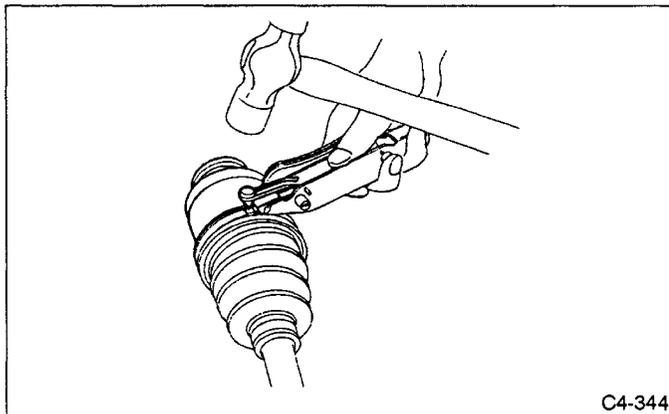


Fig. 57

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.

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.

Extend and retract FTJ to provide equal grease.

3. Replacement of Front Drive Shaft Boot

A: REMOVAL

2. FWD MODEL

- 1) Move select lever to Neutral.
- 2) Release parking brake lever.
- 3) Lift up vehicle and remove front wheel.

Do not remove axle nut.

- 4) Disconnect front exhaust pipe.
- 5) Remove stabilizer link.
- 6) Disconnect ABS harness clamp from strut. (if equipped.)
- 7) Disconnect brake hose clamp from strut.
- 8) Disconnect lower arm from housing.

Protect ball joint using cloth to prevent damage.

- 9) Remove spring pin which secures transmission spindle to FTJ.
- 10) Place alignment marks on shaft and outer race.

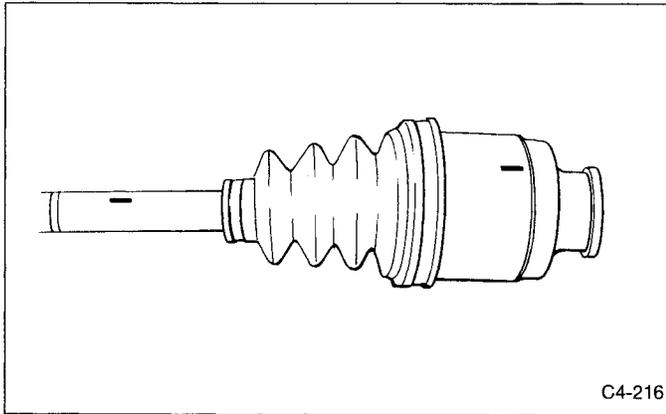


Fig. 19

- 11) Remove FTJ boot band and boot.

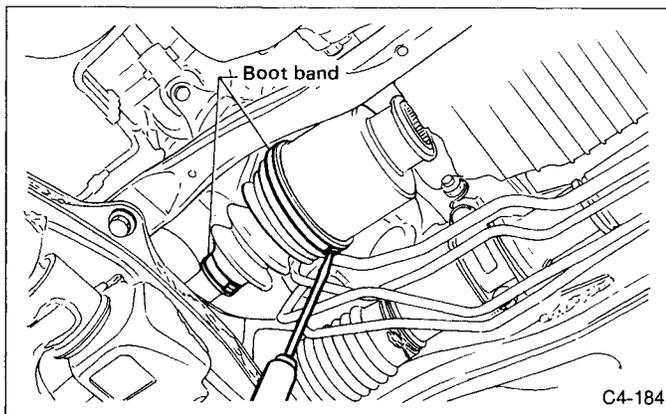


Fig. 20

- 12) Remove circlip from FTJ outer race using screwdriver.

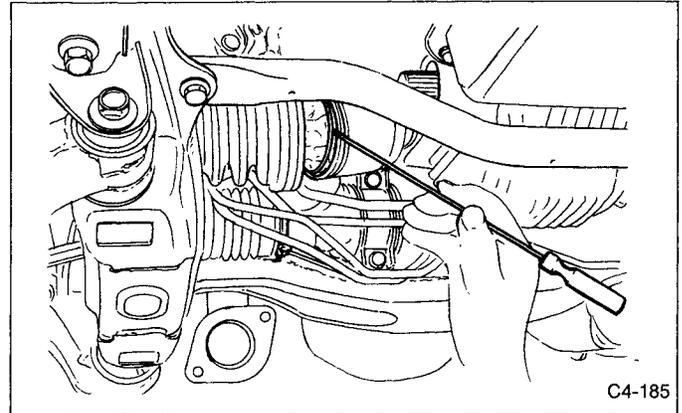


Fig. 21

- 13) Remove FTJ outer race.

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

- 14) Place alignment marks on free ring and trunnion.

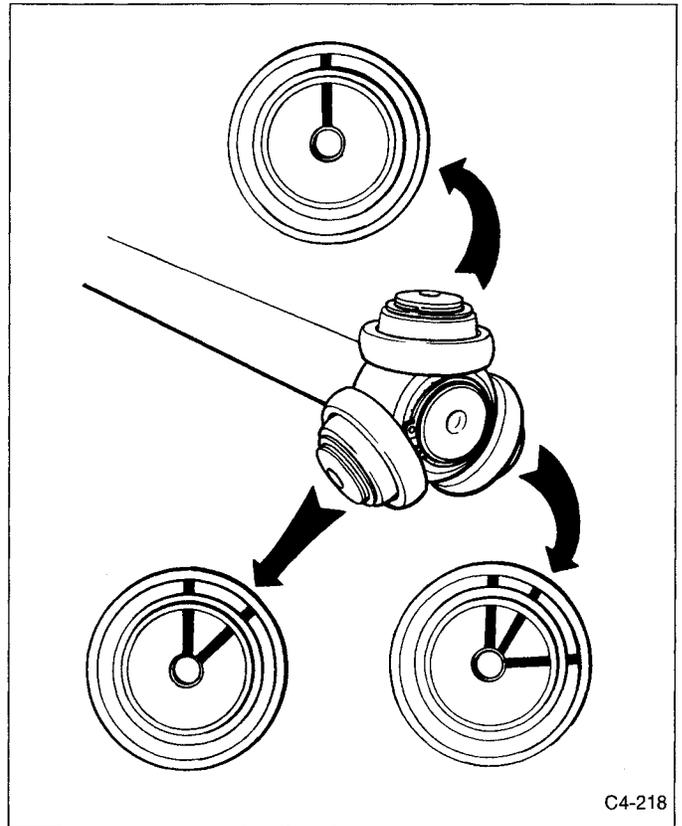


Fig. 22

- 15) Remove free ring from trunnion.

16) Place alignment marks on trunnion and shaft.

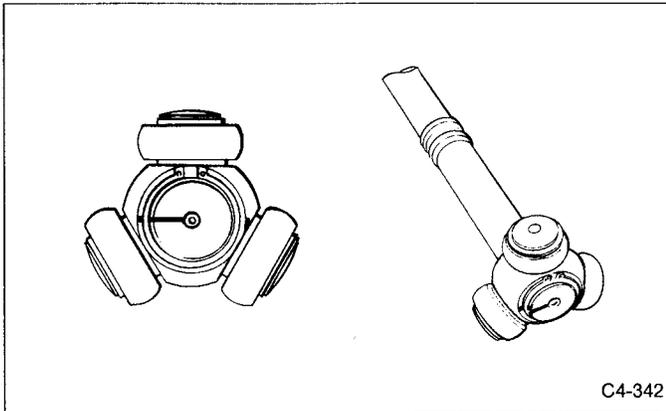


Fig. 23

17) Remove snap ring and trunnion.

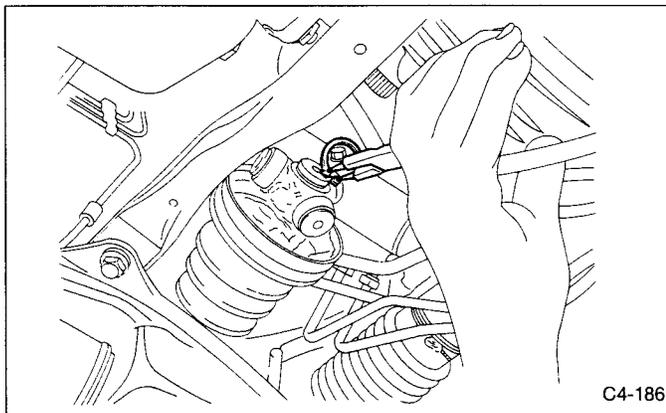


Fig. 24

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

18) Remove FTJ boot.

BJ boot cannot be replaced on vehicle. Before replacing BJ boot, remove front axle shaft from the vehicle.

Ref. to 4-2 [W2A0☆1].

C: INSTALLATION

2. FWD MODEL

Use specified grease.

FTJ side:
SSG 6003

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

1) Place FTJ boot at the center of shaft.

2) Align alignment marks on trunnion and shaft, and install trunnion.

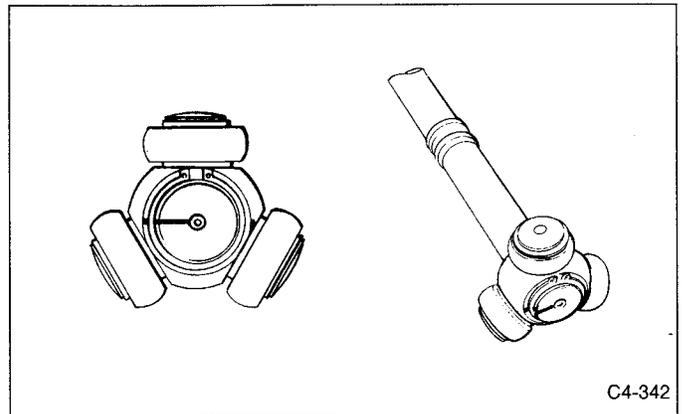


Fig. 25

3) Install snap ring to shaft.

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

4) Fill 100 to 110 g (3.53 to 3.88 oz) of specified grease into the interior of the FTJ outer race.

5) Apply a coat of specified grease to free ring and trunnion.

6) Align alignment marks on free ring and trunnion, and install free ring.

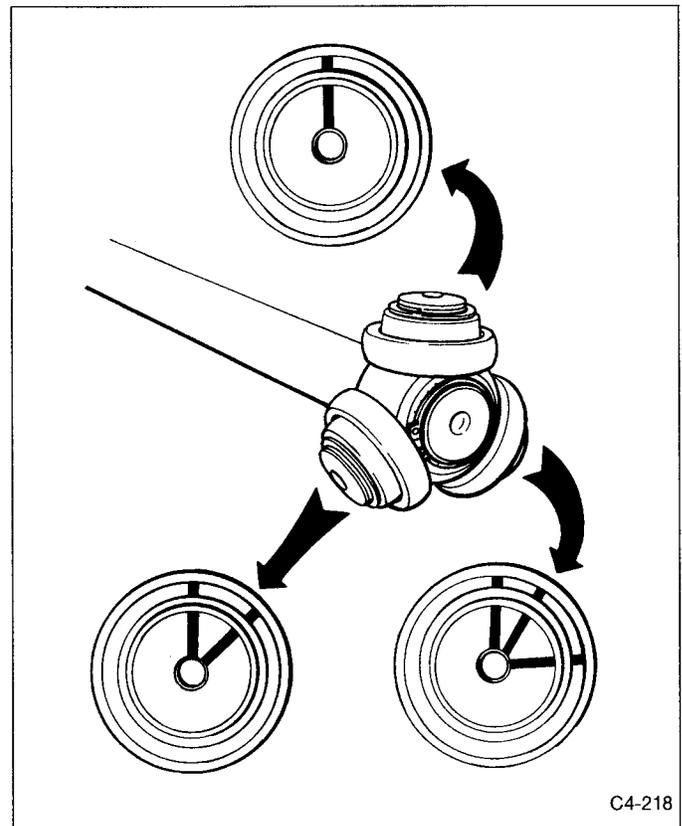


Fig. 26

7) Align alignment marks on outer race and shaft and install outer race.

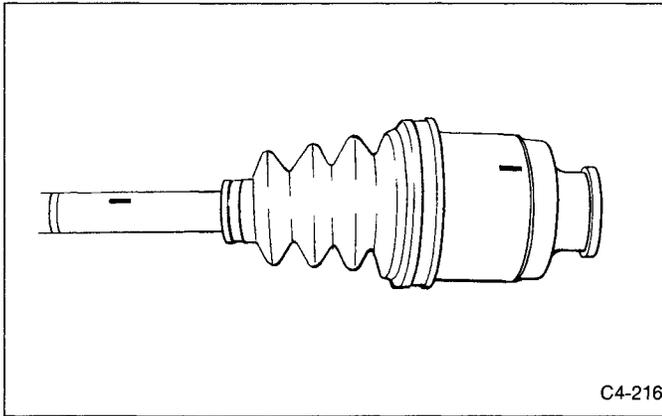


Fig. 27

8) Install circlip in the groove on FTJ outer race.

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

9) 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.

10) Install FTJ boot taking care not to twist it.

a. The inside of the larger end of FTJ boot and the boot groove must be cleaned so as to be free from grease and other substances.

b. When installing FTJ boot, position outer race of FTJ at center of its travel.

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

Use a new band.

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

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

13) Tighten band by using BAND TIGHTENING TOOL (925091000).

a. Tighten band until it cannot be moved by hand.

b. Former BAND TIGHTENING TOOL (925090000) is interchangeable with 925091000.

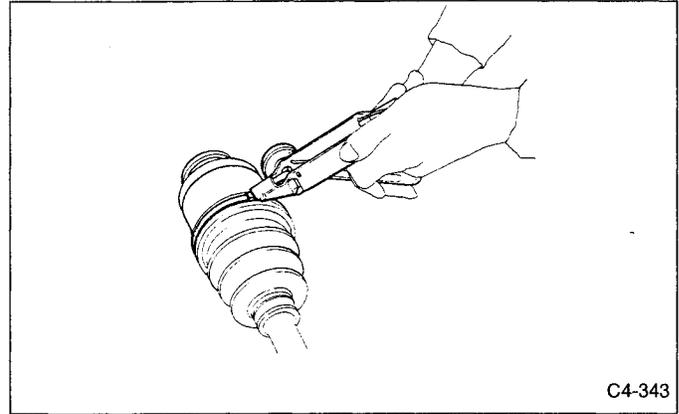


Fig. 28

14) Tap on the clip with the punch provided at the end of BAND TIGHTENING TOOL.

Tap gently so that the boot underneath is not damaged.

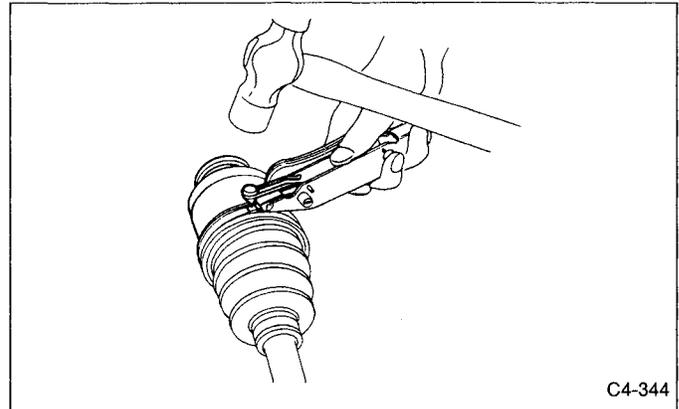


Fig. 29

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

a. Make sure that the end of the band is in close contact with clip.

b. Extend and retract FTJ to provide equal grease coating.

16) Install remaining parts in reverse order of removal.

For installation and tightening torque of suspension parts, refer to 4-1 [C100☆].

For installation and tightening torque of brake parts, refer to 4-4 [C100☆].

a. Use a new self-locking nut.

b. Make sure O-ring is properly installed on transmission spindle.

c. Apply a sufficient coat of grease to transmission spindle splines.

d. Always use new sealer-pack type spring pin.

4. Rear Axle

A: REMOVAL AND INSTALLATION

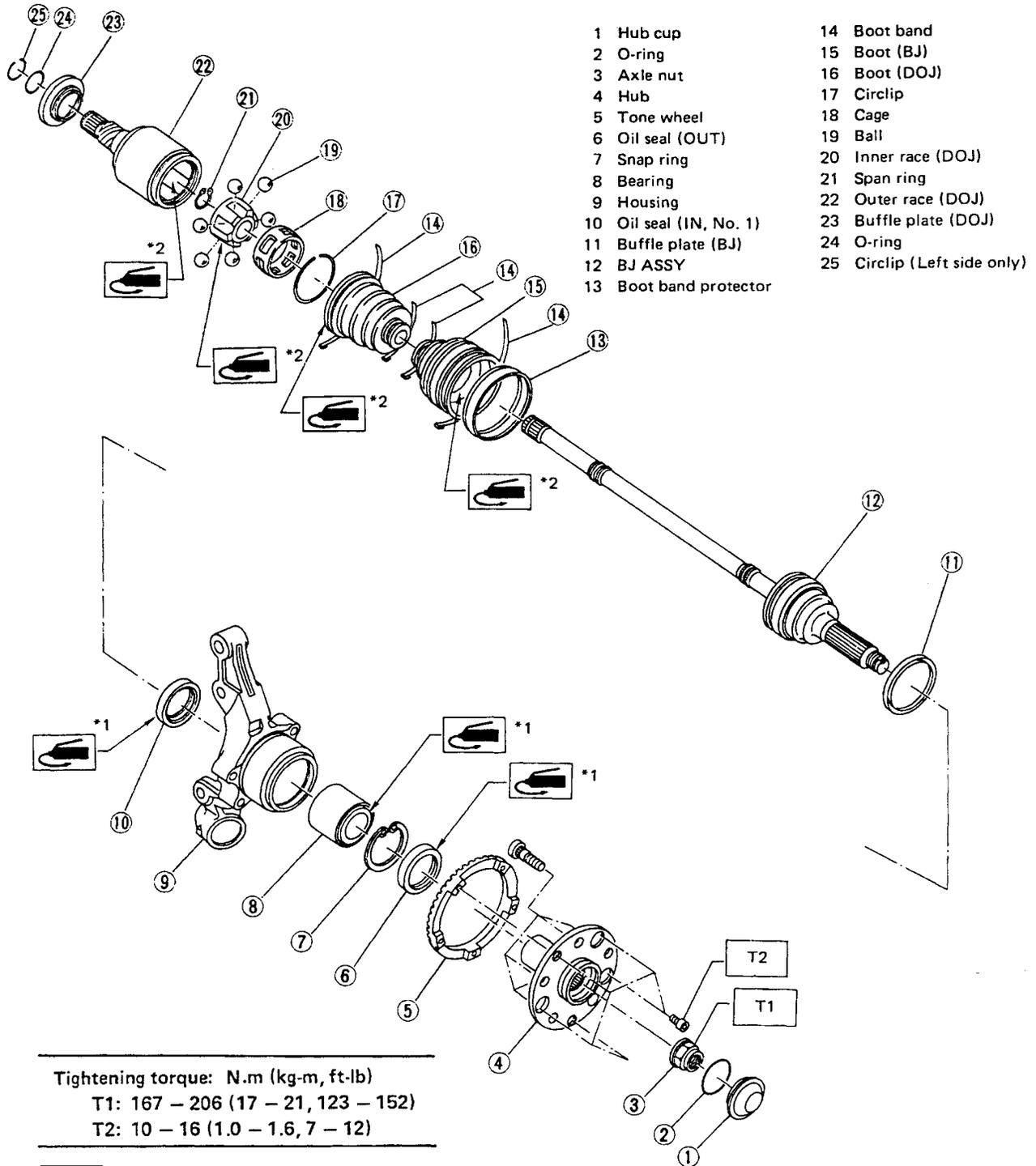
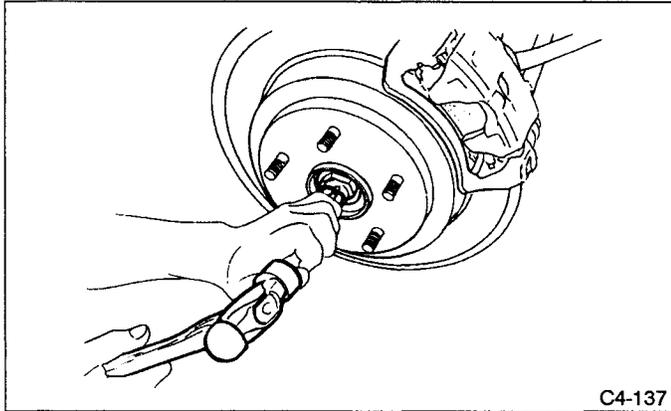


Fig. 71

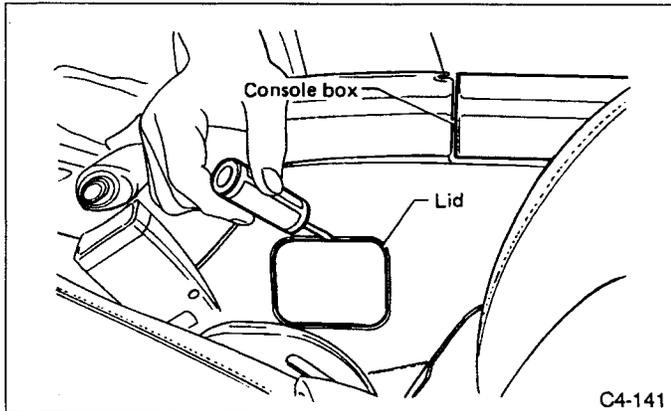
- 1) Move select lever to "P".
- 2) Set parking brake.
- 3) Lift up vehicle and remove rear wheel.
- 4) Remove hub cap.
- 5) Unlock axle nut.



C4-137

Fig. 72

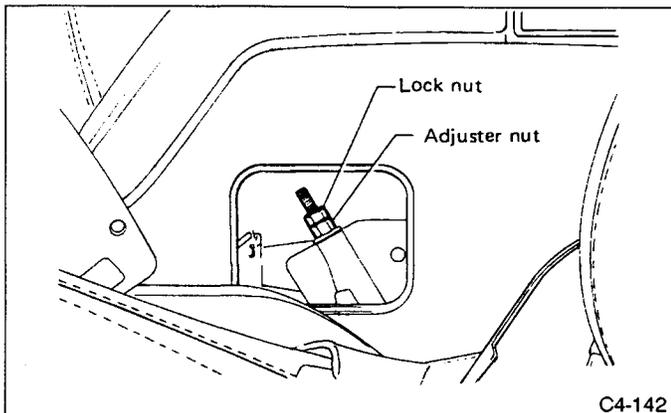
- 6) Remove axle nut using a socket wrench. **Be sure to loosen and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.**
- 7) Return parking brake lever.
- 8) Remove console box lid.



C4-141

Fig. 73

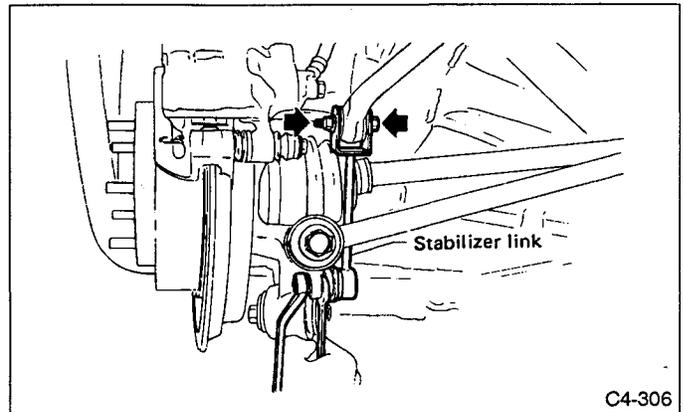
- 9) Loosen parking brake adjuster nut.



C4-142

Fig. 74

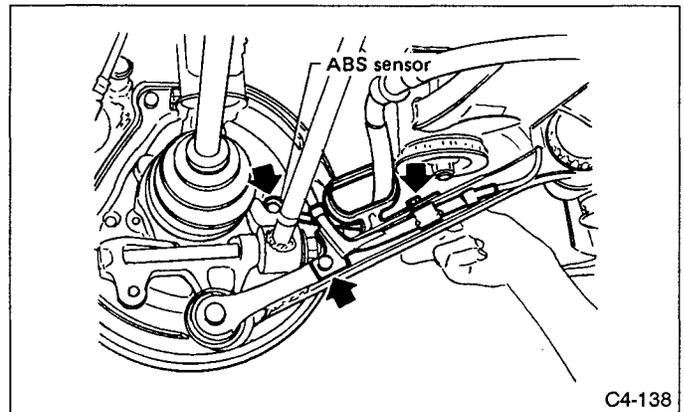
- 10) Remove stabilizer link.



C4-306

Fig. 75

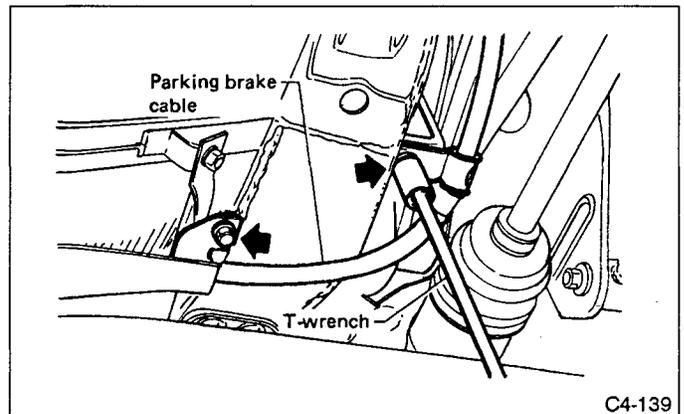
- 11) Remove ABS sensor and clamp.



C4-138

Fig. 76

- 12) Disconnect parking brake cable clamp.



C4-139

Fig. 77

13) Disconnect brake hose from strut.

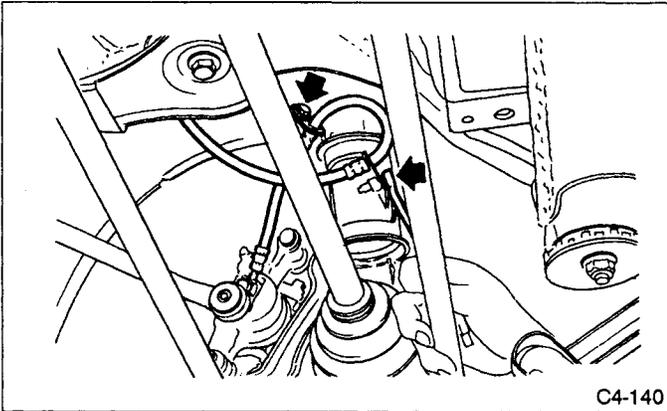


Fig. 78

16) Remove the nut securing lateral link to housing.

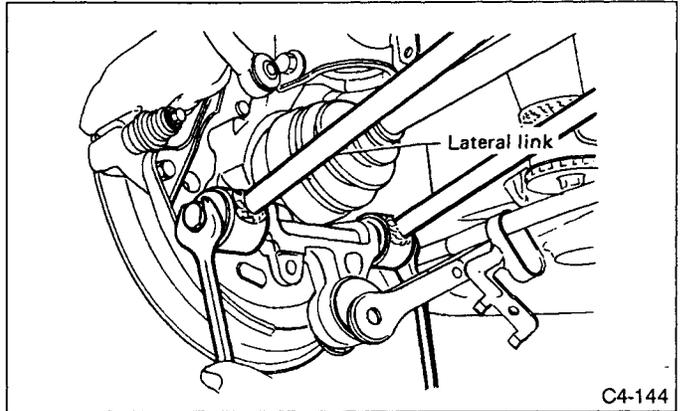


Fig. 81

14) Loosen caliper assembly securing bolts.

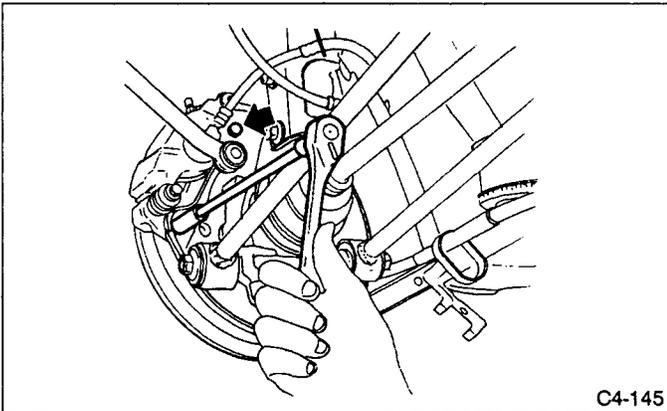


Fig. 79

17) Remove two nuts securing strut to housing.
Do not remove upper bolts.

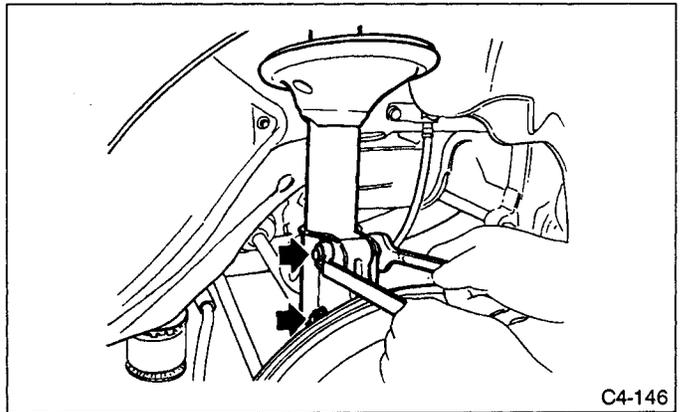


Fig. 82

15) Disconnect trailing link from housing.

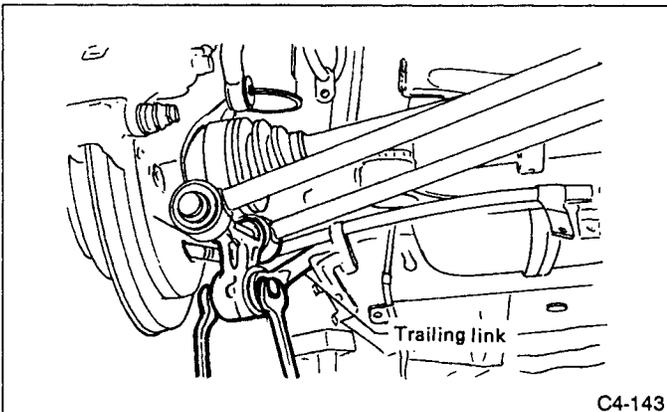


Fig. 80

18) Remove caliper assembly, and fasten to strut using wire.

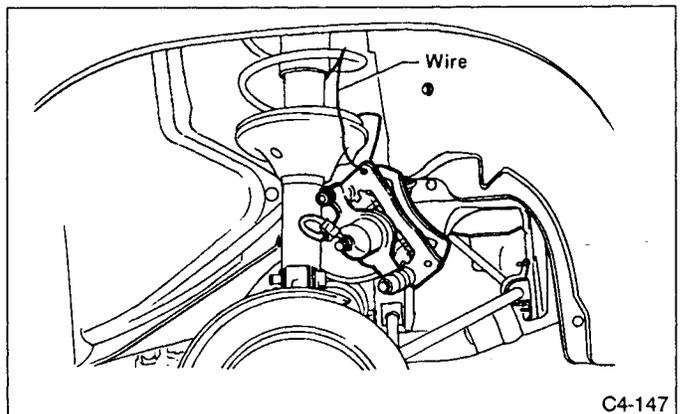


Fig. 83

19) Remove disc rotor.

If disc rotor seizes up within hub, drive it out by installing an 8-mm (0.31 in) bolt hole in disc rotor.

20) Remove parking brake lining and disconnect cable from lining.

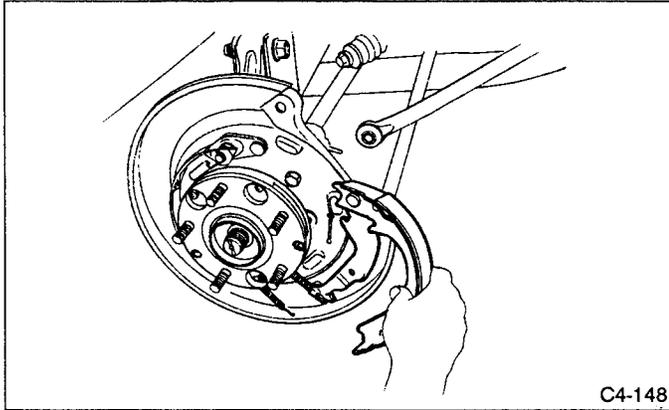


Fig. 84

21) Remove parking brake cable clamp; remove cable from back plate.

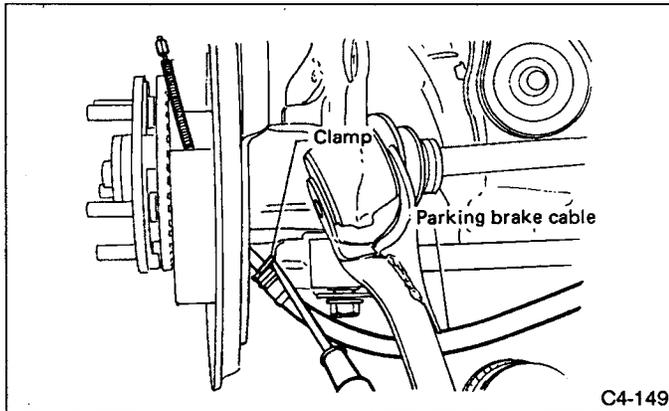


Fig. 85

22) Remove BJ from housing. If it is hard to remove, use REMOVER (926470000) and PLATE (28099PA110).

a. Be careful not to damage oil seal lip when removing BJ.

b. When replacing BJ, also replace inner oil seal with a new one.

23) Remove securing bolts and housing.

24) Install in reverse order of removal.

For installation and tightening torque of suspension parts, refer to 4-1 [C200].

For installation and tightening torque of brake parts, refer to 4-4 [C200].

a. Be careful not to damage inner oil seal lip.

b. Use a new self-locking nut.

c. Use a new axle nut.

d. 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.

e. Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.

f. When front drive shaft is to be replaced, also replace inner oil seal with a new one.

25) After tightening axle nut, lock it securely.

B: DISASSEMBLY

1) Using HUB STAND (28099PA080) and HUB REMOVER "REAR" (28099PA050), remove hub COMPL from rear housing.

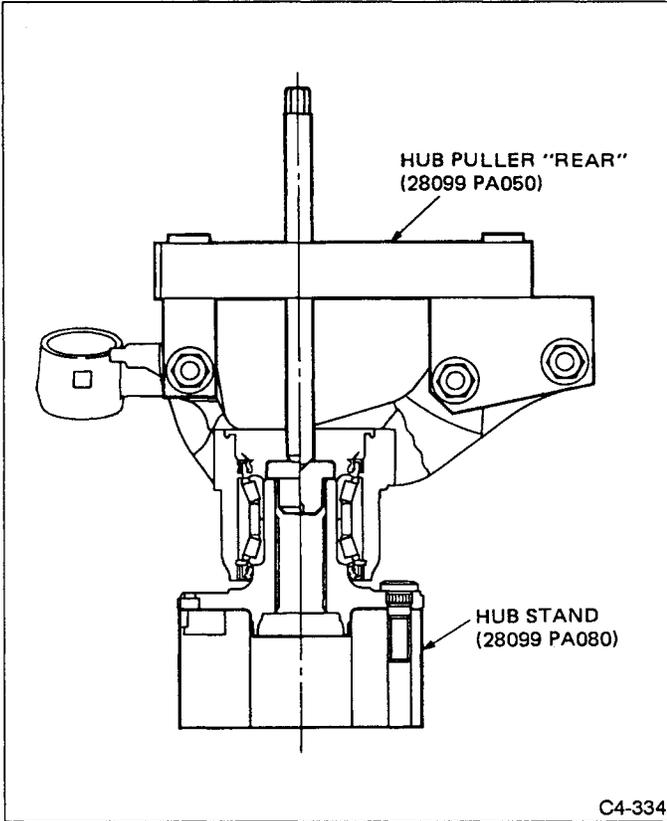


Fig. 86

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

- a. Be careful not to scratch polished area of hub.
- b. Be sure to install inner race on the side of outer race from which it was removed.

2) Remove back plate from rear housing.

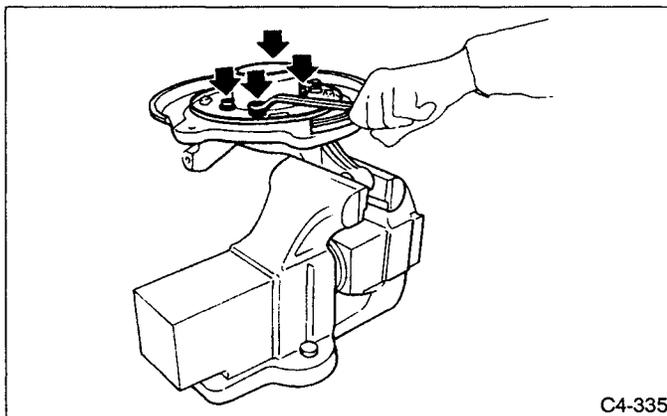


Fig. 87

3) Using a standard screwdriver, remove outer and inner oil seals.

Use new oil seals.

4) Using plier, remove snap ring.

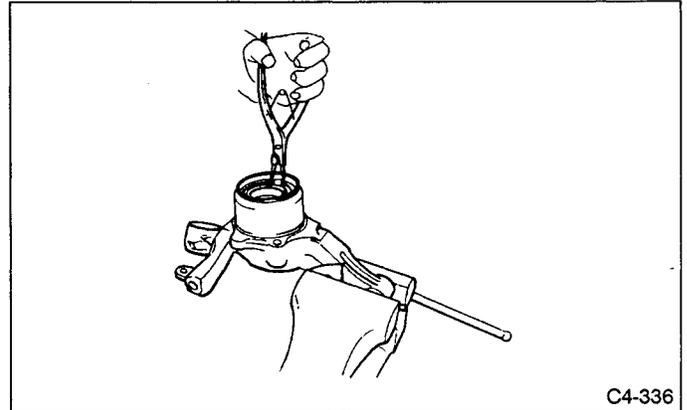


Fig. 88

5) Using HOUSING STAND "REAR" (28099PA060) and BEARING PULLER "REAR" (927100000), remove bearing by pressing inner race.

- a. Do not remove bearing unless damaged.
- b. Do not re-use bearing after removal.

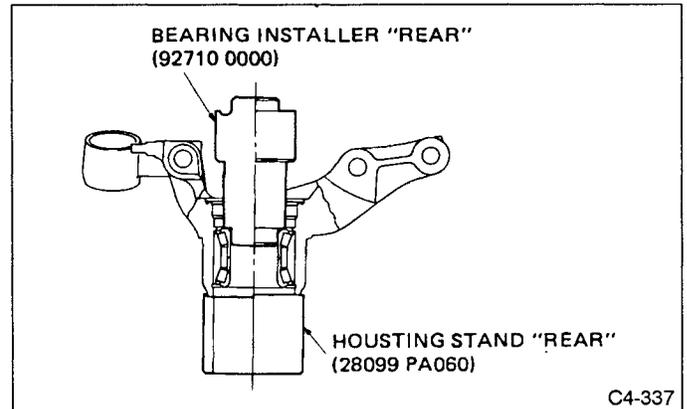


Fig. 89

- 6) Remove tone wheel bolts and remove tone wheel from hub.
 - 7) Using HUB STAND (28099PA080), press hub bolt out.
- Be careful not to hammer hub bolts. This may deform hub.**

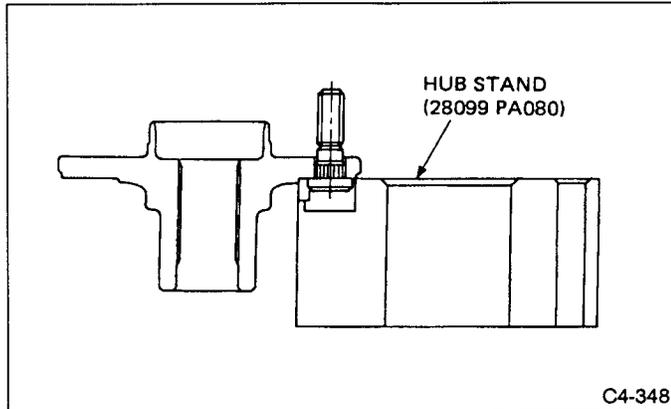


Fig. 90

C: INSPECTION

- Check the removed parts for wear and damage. If defective, replace with a new one.
- a. If a bearing is faulty, replace it as the bearing set.
 - b. Be sure to replace oil seal at every overhaul.

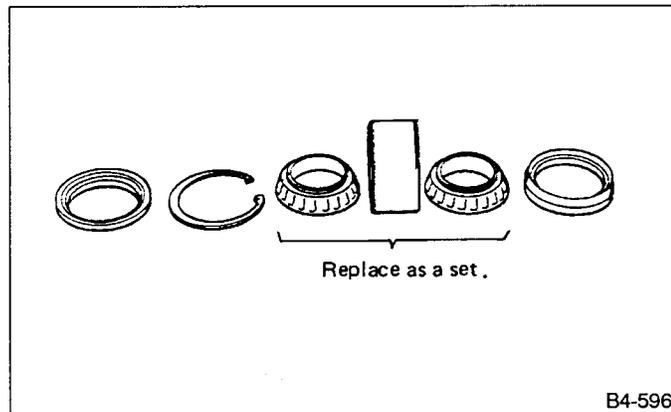


Fig. 91

D: ASSEMBLY

- 1) Using HUB STAND (28099PA080), press new hub bolt into place.
 - a. Ensure hub bolt closely contacts hub.
 - b. Use a 12 mm (0.42 in) hole in the HUB STAND (28099PA080) to prevent hub bolt from tilting during installation.

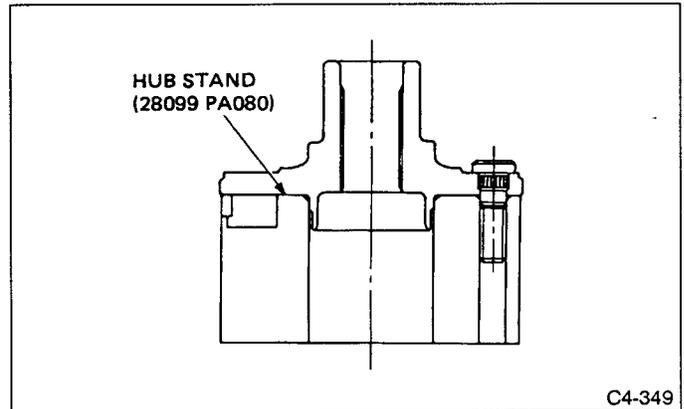


Fig. 92

- 2) Remove foreign particles (dust, rust, etc.) from mating surfaces of hub and tone wheel, and install tone wheel to hub.
 - a. Ensure tone wheel closely contacts hub.
 - b. Be careful not to damage tone wheel teeth.

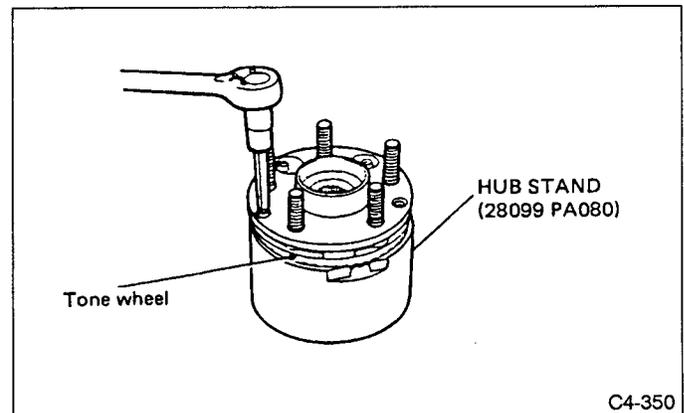


Fig. 93

- 3) Clean housing interior completely. Using HOUSING STAND "REAR" (28099PA060) and BEARING (927100000), press bearing into housing.
 - a. Always press outer race when installing bearing.
 - b. Be careful not to remove plastic lock from inner race when installing bearing.
 - c. Charge bearing with new grease when outer race is not removed.

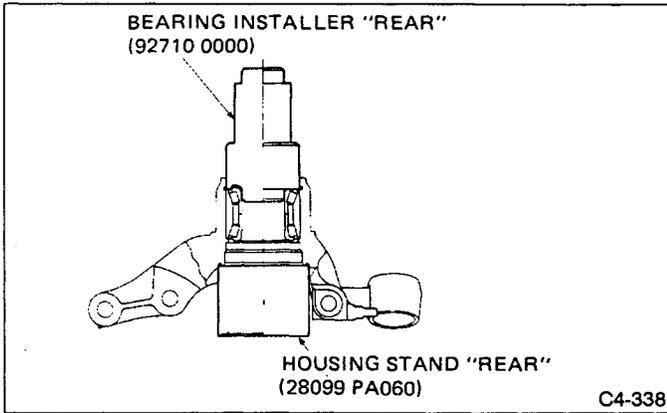


Fig. 94

- 4) Install snap ring.
Ensure snap ring fits in groove properly.

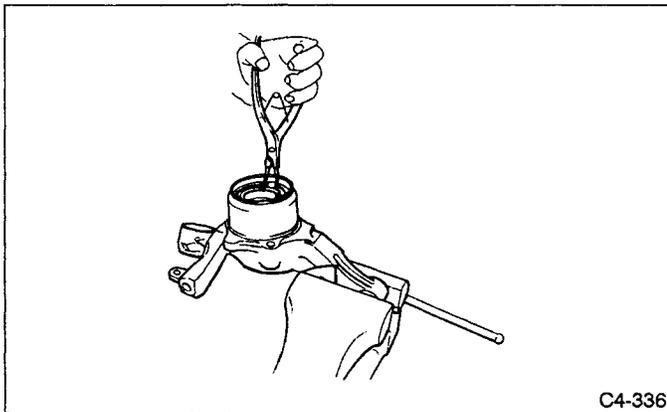


Fig. 95

- 5) Using HOUSING STAND "REAR" (28099PA060) and OIL SEAL INSTALLER "REAR" (28099PA070), press outer oil seal until it comes in contact with snap ring.

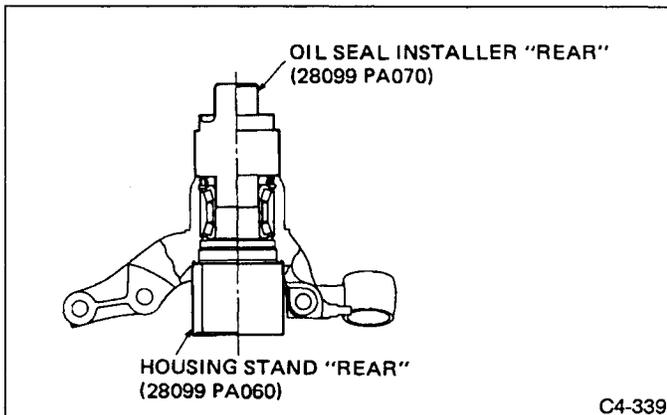


Fig. 96

- 6) Invert both HOUSING STAND "REAR" (28099PA060) and housing.
7) Invert both OIL SEAL INSTALLER "REAR" (28099PA070), using it press inner oil seal into housing until it touches bottom.

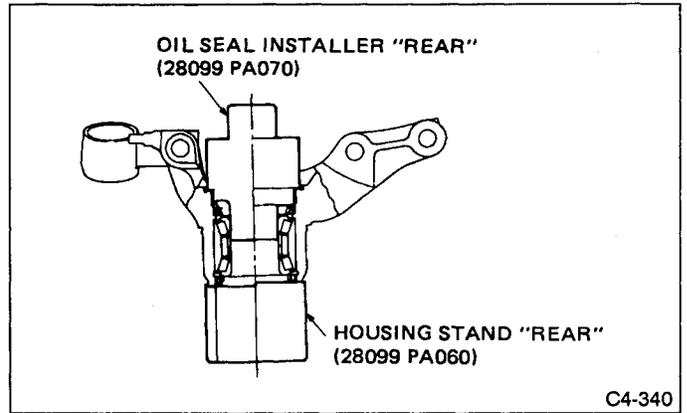


Fig. 97

- 8) Apply sufficient grease to oil seal lip.

Specified grease:
SHELL 6459N

- a. If specified grease is not available, remove bearing grease and apply Auto Rex A instead.
b. Do not mix different types of grease.
9) Install back plate to rear housing.

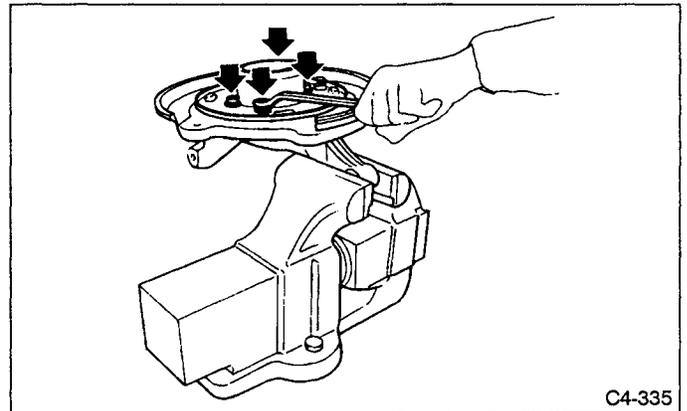


Fig. 98

- 10) Using HUB STAND (28099PA080) and HUB INSTALLER "REAR" (927120000), press bearing into hub.

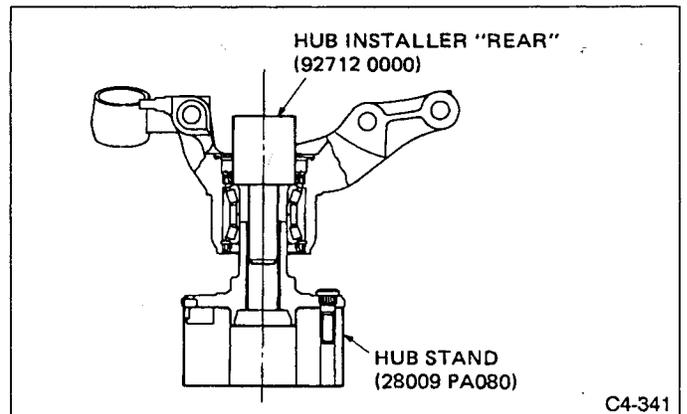
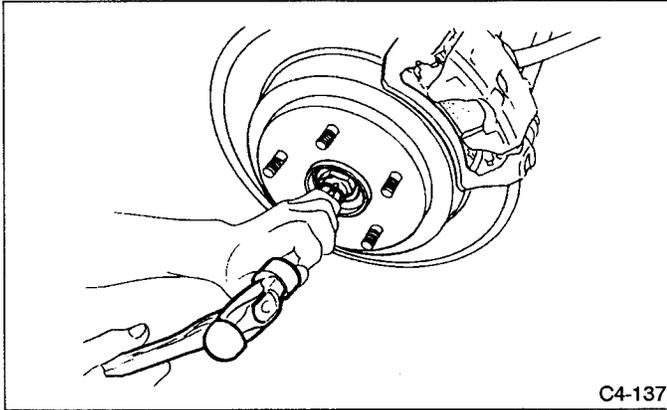


Fig. 99

5. Rear Drive Shaft

A: REMOVAL

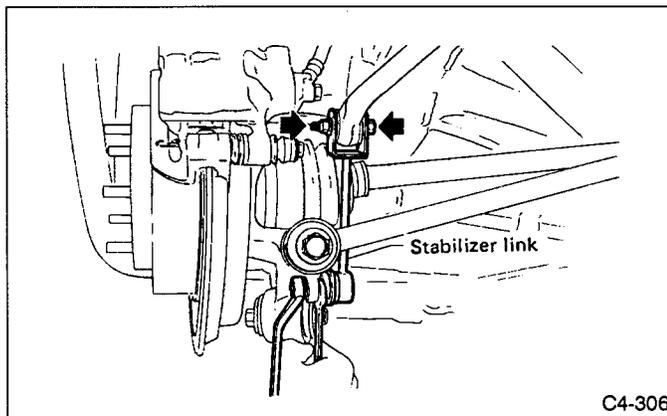
- 1) Move select lever to "P".
- 2) Set parking brake.
- 3) Lift up vehicle and remove rear wheels.
- 4) Unlock axle nut.



C4-137

Fig. 100

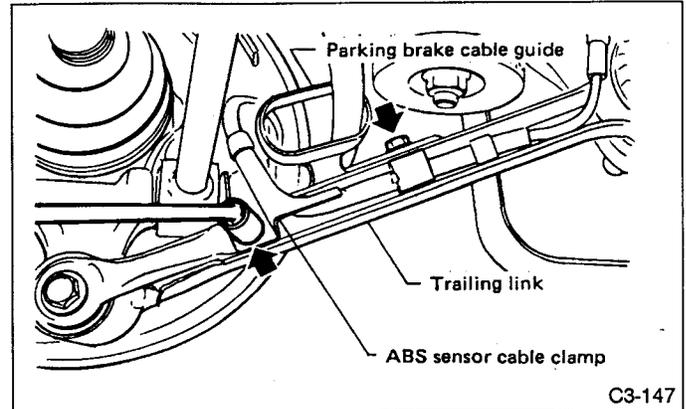
- 5) Loosen axle nut using socket wrench.
 - a. Do not remove axle nut.
 - b. Be sure to loosen and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.
- 6) Move shift lever to Neutral.
- 7) Move parking brake lever forward.
- 8) Disconnect rear exhaust pipe.
- 9) Remove stabilizer link.



C4-306

Fig. 101

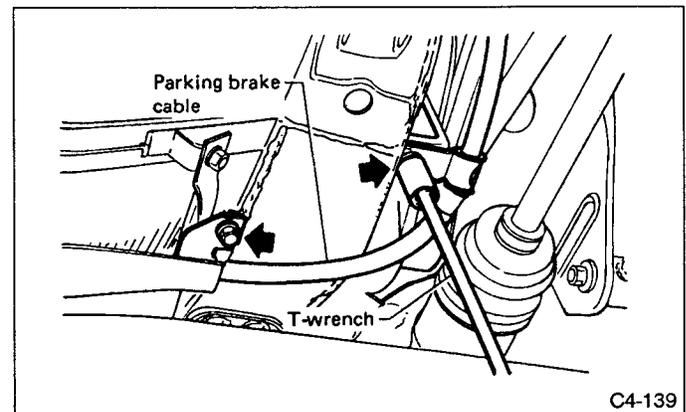
- 10) Remove ABS sensor clamps and parking brake cable bracket.



C3-147

Fig. 102

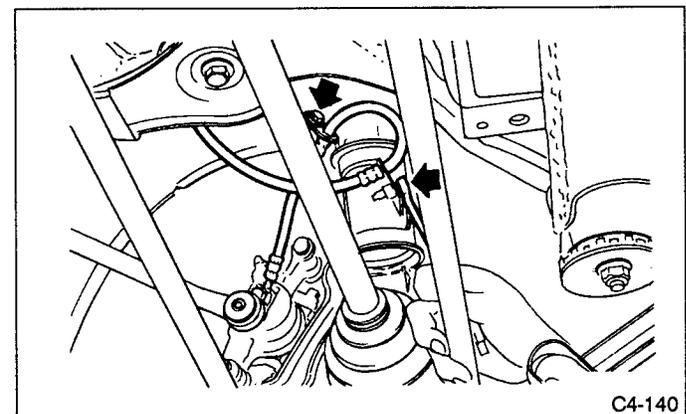
- 11) Disconnect parking brake cable clamp.



C4-139

Fig. 103

- 12) Disconnect brake hose from strut.



C4-140

Fig. 104

13) Disconnect trailing link from housing.

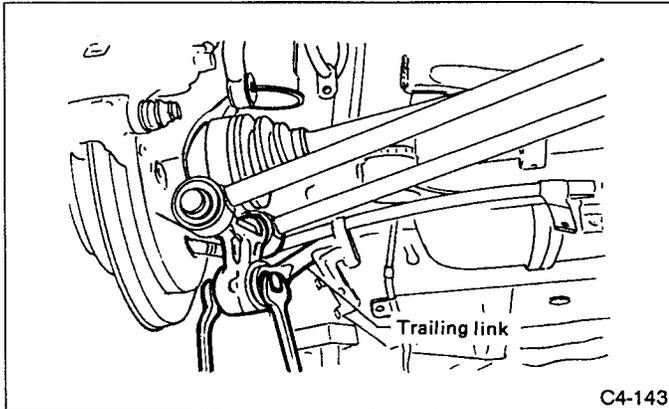


Fig. 105

14) Disconnect lateral link from housing.

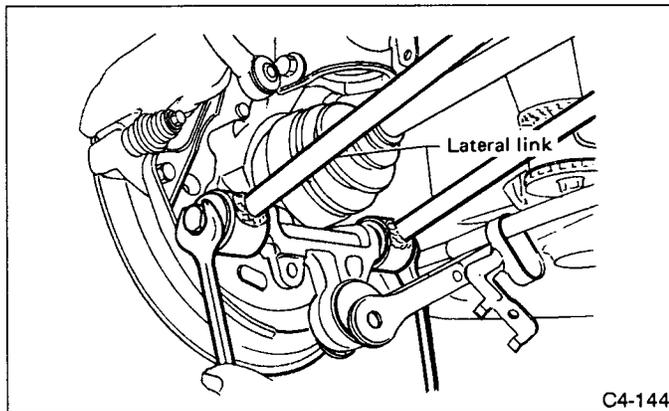


Fig. 106

15) Remove DOJ from rear differential using DRIVE SHAFT REMOVER (28099PA100). **Be careful not to damage side bearing retainer. Always use bolt (shown in Figure 108.) as supporting point for REMOVER during removal.**

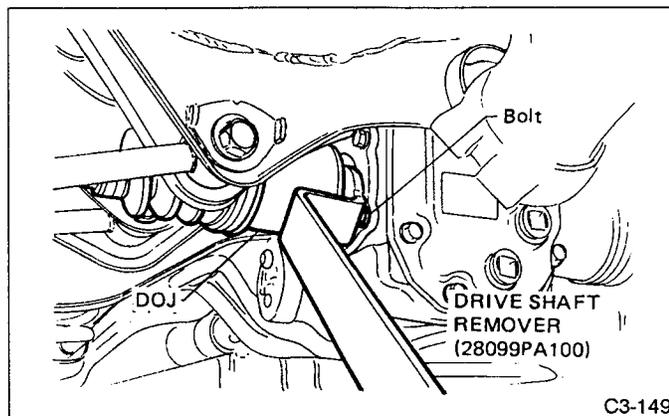


Fig. 107

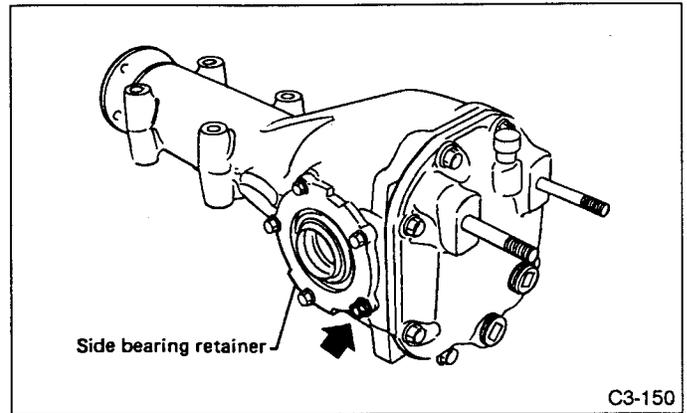


Fig. 108

16) Remove axle nut and drive shaft. If it is hard to remove, use REMOVER (926470000) and PLATE (28099PA110).

- a. **Be careful not to damage oil seal lip when removing drive shafts.**
- b. **Left-DOJ spline end is removed together with circlip. Do not remove circlip (from right DOJ) installed inside of rear differential.**
- c. **Wrap ground surface of DOJ stem with cloth to prevent it from scratching.**

B: INSTALLATION

- 1) Replace circlip from left-DOJ splines with new one.
 - 2) Insert BJ into hub splines.
- Be careful not to damage inner oil seal lip.**
- 3) Using AXLE SHAFT INSTALLER (922431000) and ADAPTER (927390000), pull drive shaft into hub.
 - 4) Temporarily tighten axle nut.
 - 5) Using SIDE OIL SEAL PROTECTOR (28099PA090), install DOJ into differential.

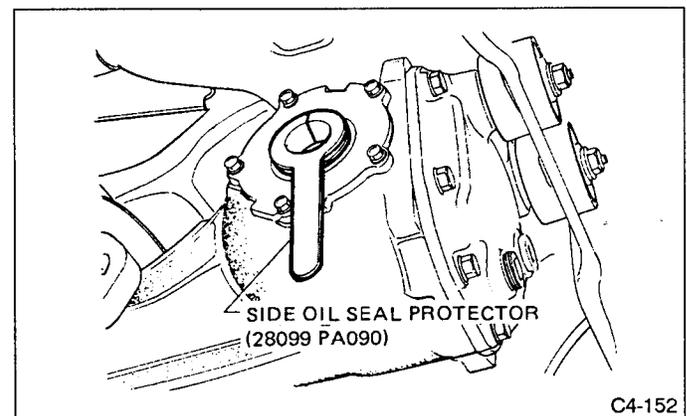


Fig. 109

6) Insert DOJ spline end into bore of side oil seal, and remove SIDE OIL SEAL PROTECTOR.
Do not allow DOJ splines to damage side oil seal.

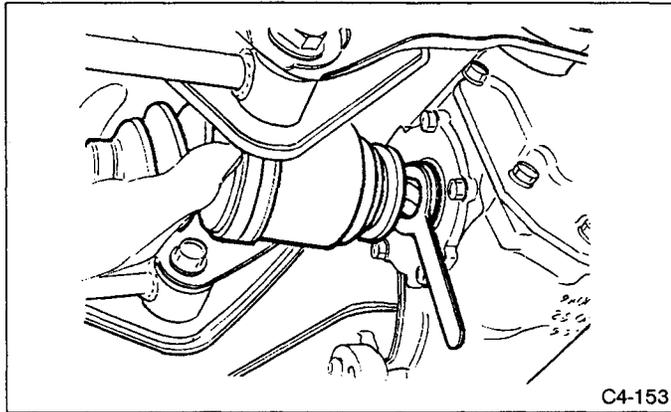


Fig. 110

7) Align DOJ and differential splines.
 8) Push housing to insert DOJ into differential.
Make sure DOJ is inserted properly.

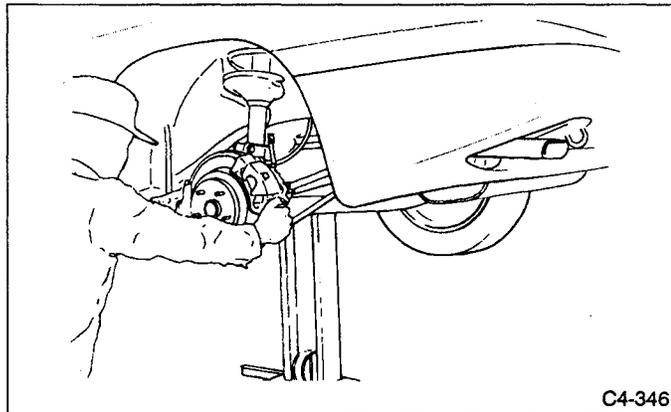


Fig. 111

9) Install remaining parts in reverse order of removal.
 10) For installation and tightening torque of suspension parts, refer to 4-1 [C200].
 For installation and tightening torque of brake parts, refer to 4-4 [C200].
 a. **Use a new self-lock nut.**
 b. **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.**
 c. **Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.**
 11) After tightening axle nut, lock it securely.

C: DISASSEMBLY

1) Remove DOJ boot band.
Be careful not to damage boot.

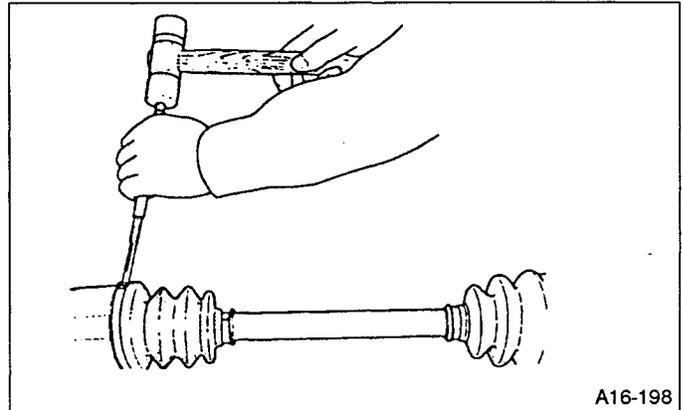


Fig. 112

2) Remove boot from DOJ.
 3) Remove circlip from DOJ outer race using screwdriver.

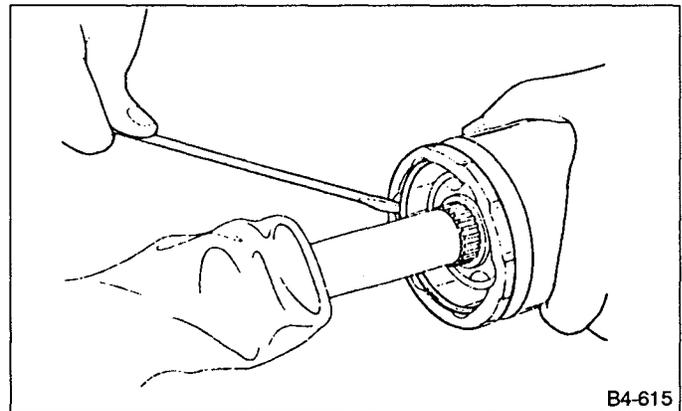


Fig. 113

4) Take out DOJ outer race from shaft ASSY.

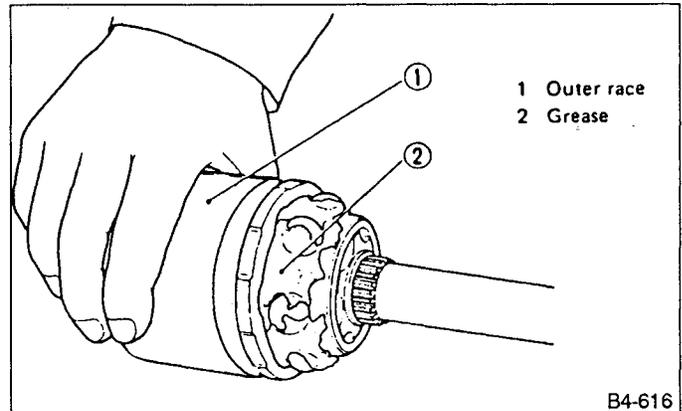


Fig. 114

- 5) Wipe off grease and take out balls.
 - a. Disassemble exercising care not to lose balls (6 pcs).
 - b. The grease is a special grease (grease for constant-velocity joint). Do not confuse with other greases.
- 6) 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.
- 7) Remove snap ring, which fixes inner race to shaft, by using special pliers.
- 8) Take out DOJ inner race.
- 9) Take off DOJ cage from shaft and remove DOJ boot. **Be sure to wrap shaft splines with vinyl tape to prevent boot from scratches.**
- 10) Remove protector from BJ boot band.
- 11) Remove boot band and boot.
- 12) Thus, disassembly of axle is completed, but BJ is unable to be disassembled.

D: INSPECTION

Check the removed parts for damage, wear, corrosion, etc. If faulty, repair or replace.

- 1) DOJ (Double Offset Joint) and BJ (Bell Joint)
Check seizure, corrosion, damage, wear and excessive play.
- 2) Shaft
Check excessive bending, twisting, damage and wear.
- 3) Boot
Check for wear, warping, breakage or scratches.
- 4) Grease
Check for discoloration or fluidity.

E: ASSEMBLY

Use specified grease.

BJ and DOJ:
Molylex No. 2 (P/N 723223010) or Sunlight TB2-A

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.
 - 2) Place boot band protector and DOJ boot at the center of shaft.
 - 3) Insert DOJ cage onto shaft.
- Insert the cage with the cut-out side facing the shaft end, since the cage has an orientation.**

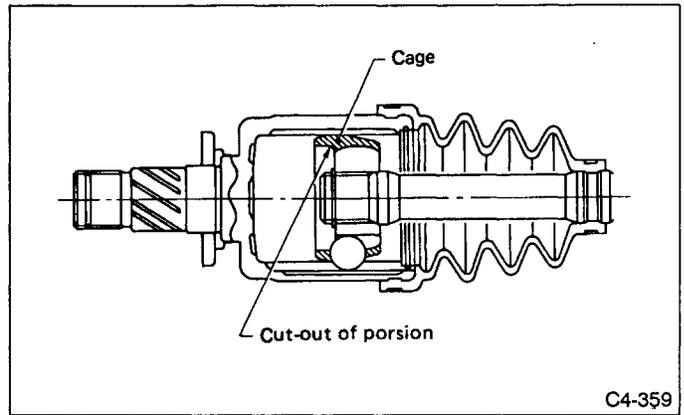


Fig. 115

- 4) Install DOJ inner race on shaft and fit snap ring with special pliers. **Confirm that the snap ring is completely fitted in the shaft groove.**

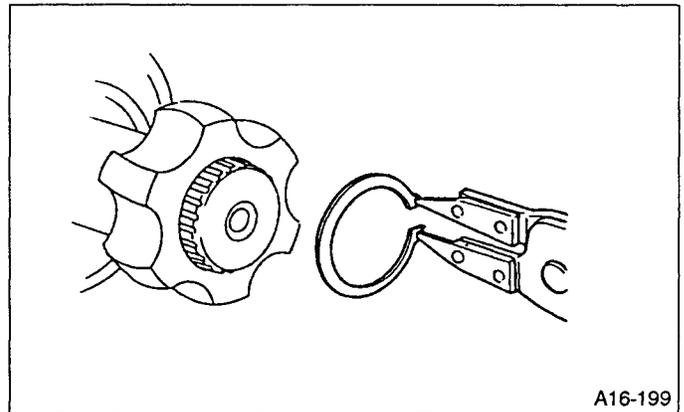


Fig. 116

- 5) Install cage, which was previously fitted, to inner race fixed upon shaft. **Fit the cage with the protruded part aligned with the track on the inner race and then turn by a half pitch.**

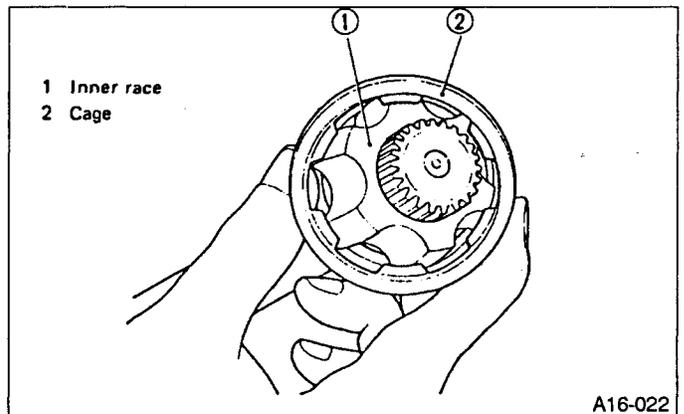


Fig. 117

- 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.

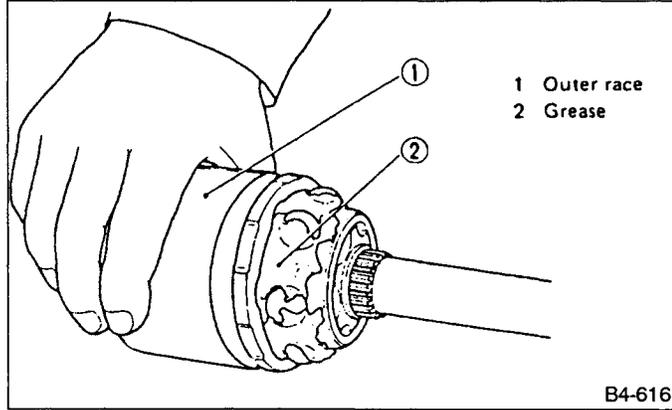


Fig. 118

- 10) Install circlip in the groove on DOJ outer race.
 - a. Assure that the balls, cage and inner race are completely fitted in the outer race of DOJ.
 - b. Exercise care not to place the matched position of circlip in the ball groove of outer race.
 - c. Pull the shaft lightly and assure that the circlip is completely fitted in the groove.

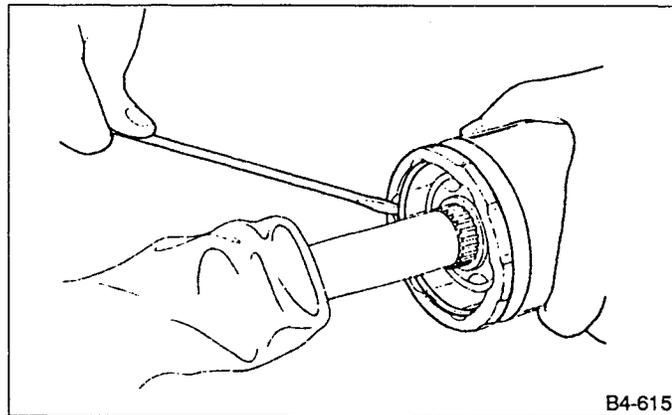


Fig. 119

- 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.
 - a. 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.
 - b. 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. Use a new band.

- 14) Pinch the end of band with pliers. Hold the clip and tighten securely. **When tightening boot, exercise care so that the air within the boot is appropriate.**
- 15) Tighten band by using BAND TIGHTENING TOOL (925091000).
 - a. Tighten band until it cannot be moved by hand.
 - b. Former BAND TIGHTENING TOOL (925090000) is interchangeable with this 925091000.

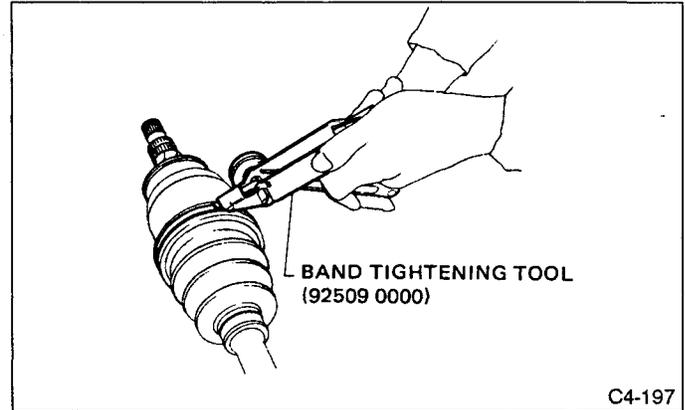


Fig. 120

- 16) Tap on the clip with the punch provided at the end of BAND TIGHTENING TOOL. Tap to an extent that the boot underneath is not damaged.

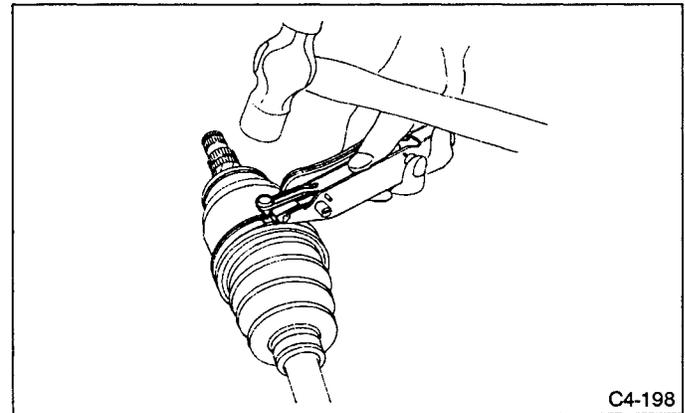


Fig. 121

- 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. **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. **Extend and retract DOJ to provide equal grease coating.**

6. Replacement of Rear Drive Shaft Boot

A: REMOVAL

- 1) Move select lever to Neutral.
- 2) Move parking brake lever forward.
- 3) Lift up vehicle and remove rear wheels.
- 4) Disconnect rear exhaust pipe.
- 5) Remove stabilizer link.
- 6) Remove ABS sensor clamp and parking brake cable bracket.
- 7) Disconnect parking brake cable clamp.
- 8) Disconnect brake hose from strut.
- 9) Disconnect trailing link from housing.
- 10) Disconnect lateral link from housing.
- 11) Remove DOJ from rear differential using DRIVE SHAFT REMOVER (28099PA100).
Be careful not to damage side bearing retainer. Always use bolt (shown in Figure 123.) as supporting point for REMOVER during removal.

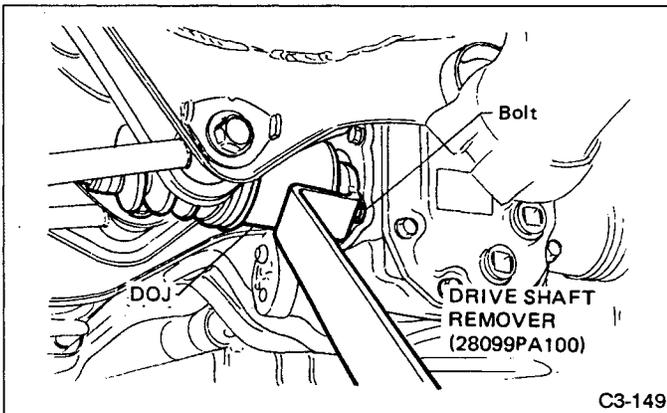


Fig. 122

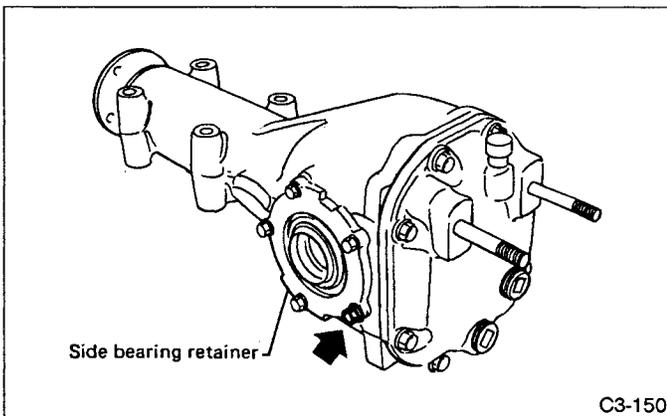


Fig. 123

Left spline end of DOJ is removed together with circlip. Do not remove right circlip attached to inside of differential.

- 12) Remove DOJ boot band.
Be careful not to damage boot.

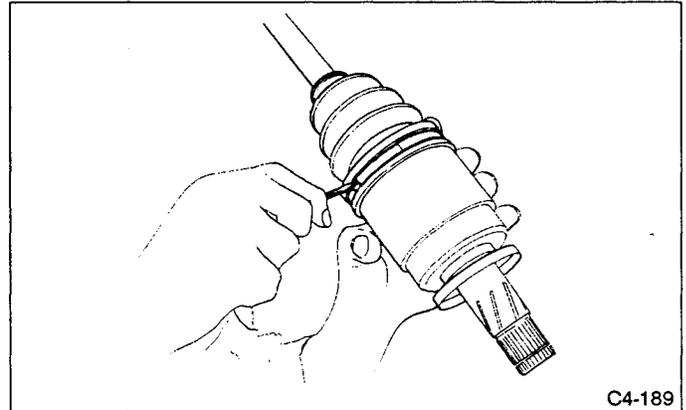


Fig. 124

- 13) Remove boot from DOJ.
- 14) Remove circlip from DOJ outer race using screwdriver.

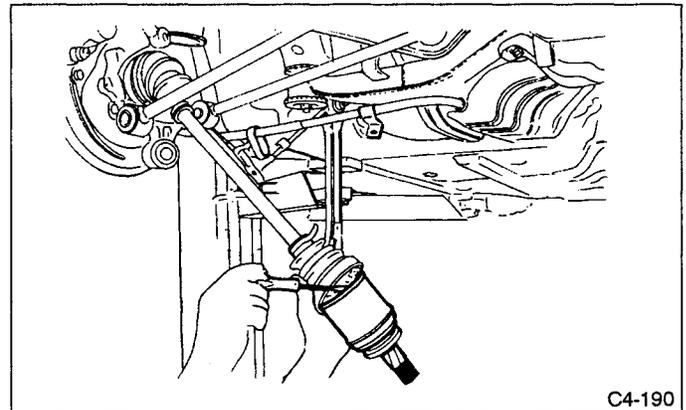


Fig. 125

- 15) Take out DOJ outer race from shaft ASSY.
Do not allow DOJ splines to damage side oil seal.
- 16) Remove snap ring.

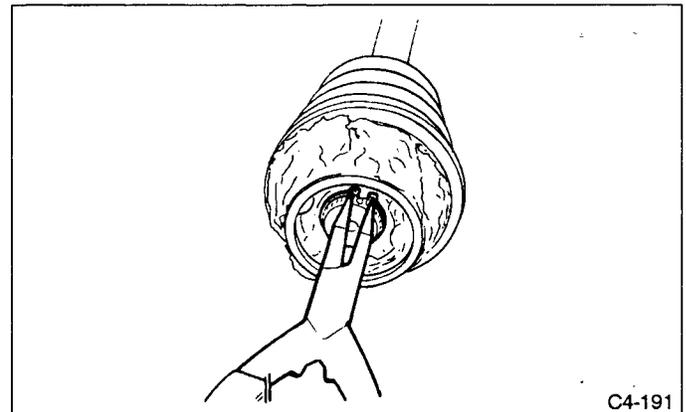
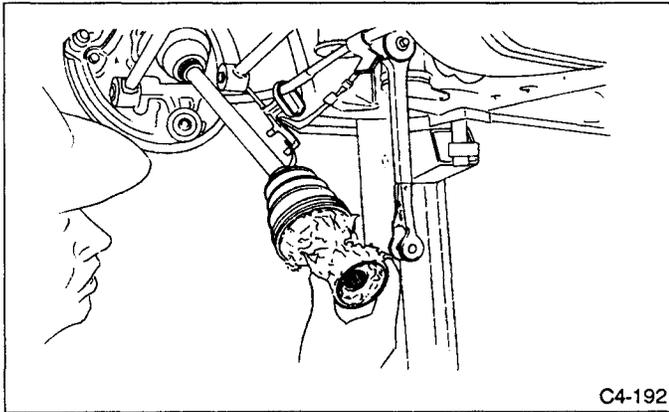


Fig. 126

17) Remove DOJ inner race assembly from shaft.



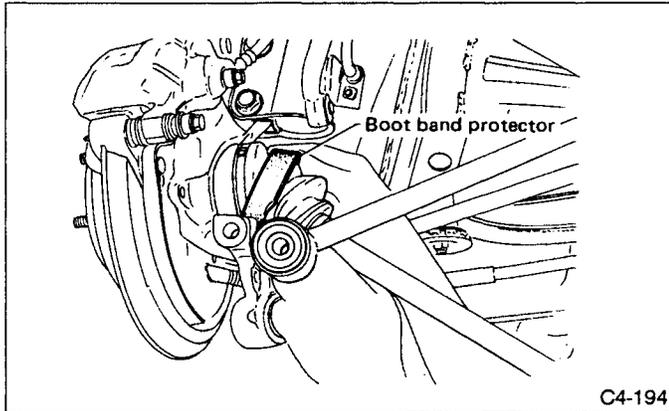
C4-192

Fig. 127

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

18) Remove DOJ boot.

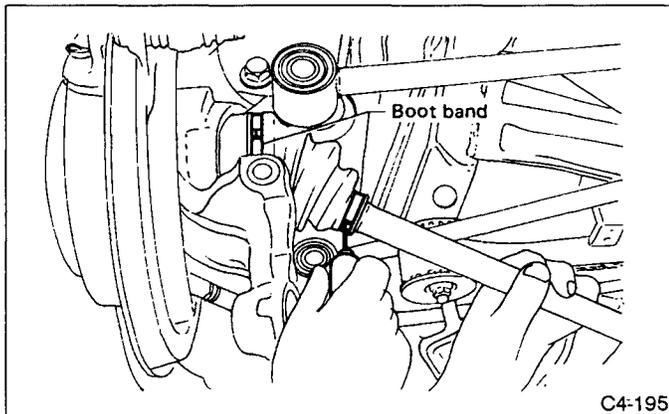
19) Remove BJ boot band protector.



C4-194

Fig. 128

20) Remove BJ boot band.



C4-195

Fig. 129

21) Remove BJ boot.

B: INSPECTION

Check the removed parts for damage, wear, corrosion, etc. If faulty, repair or replace.

1) DOJ (Double Offset Joint) and BJ (Bell Joint)

Check seizure, corrosion, damage, wear and excessive play.

2) Shaft

Check excessive bending, twisting, damage and wear.

3) Boot

Check for wear, warping, breakage or scratches.

4) Grease

Check for discoloration or fluidity.

C: INSTALLATION

Use specified grease.

BJ and DOJ:

Molylex No. 2 (P/N 723223010) or Sunlight TB2-A

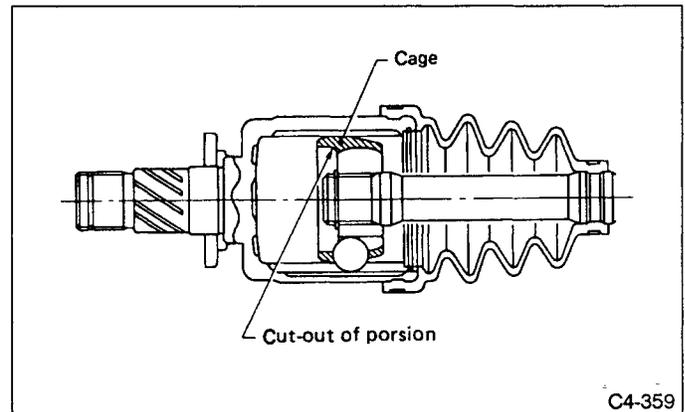
Be sure to wrap shaft splines with vinyl tape to prevent boot from scratches.

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

2) Place boot band protector and DOJ boot at the center of shaft.

3) Insert DOJ cage onto shaft.

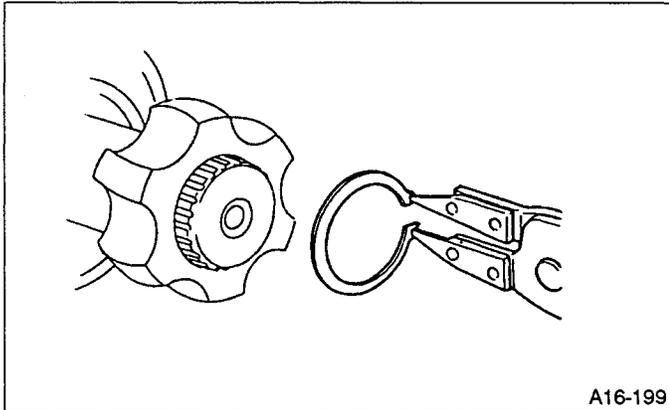
Insert the cage with the cut-out side facing the shaft end, since the cage has an orientation.



C4-359

Fig. 130

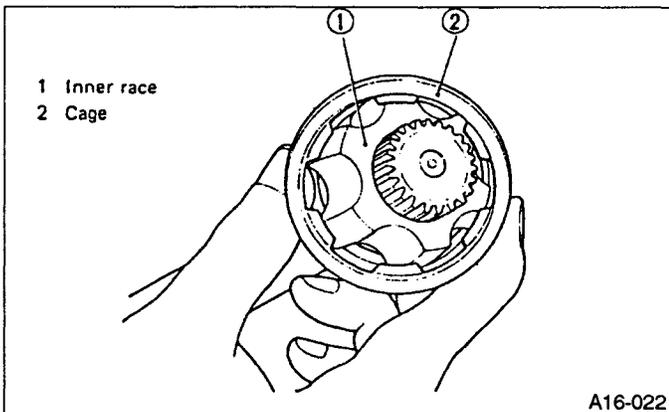
- 4) Install DOJ inner race on shaft and fit snap ring with special pliers.
Confirm that the snap ring is completely fitted in the shaft groove.



A16-199

Fig. 131

- 5) Install cage, which was previously fitted, to inner race fixed upon shaft.
Fit the cage with the protruded part aligned with the track on the inner race and then turn by a half pitch.

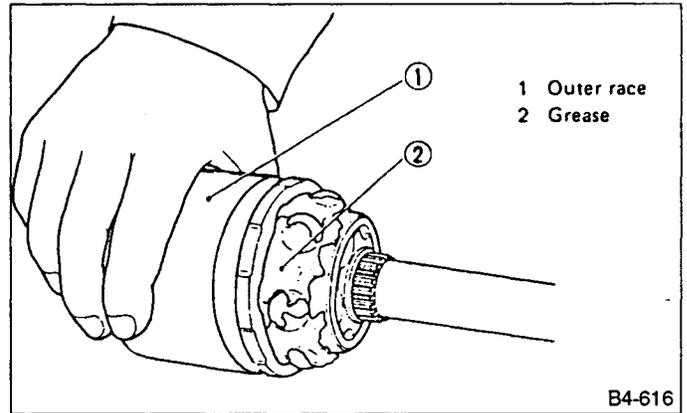


A16-022

Fig. 132

- 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.

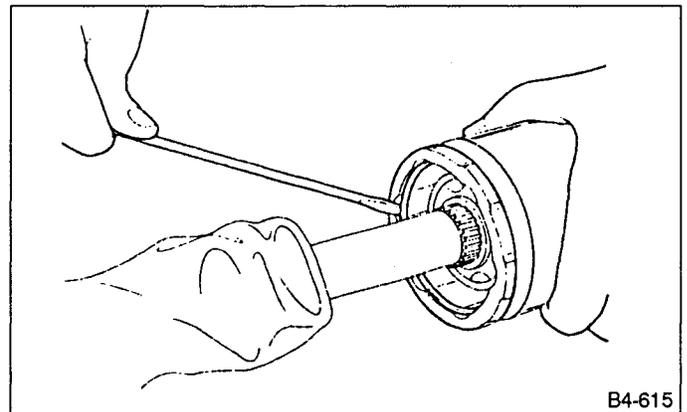
- 9) Align the outer race track and ball positions and place in the part where shaft, inner race, cage and balls are previously installed, and then fit outer race.



B4-616

Fig. 133

- 10) Install circlip in the groove on DOJ outer race.
 a. **Assure that the balls, cage and inner race are completely fitted in the outer race of DOJ.**
 b. **Exercise care not to place the matched position of circlip in the ball groove of outer race.**
 c. **Pull the shaft lightly and assure that the circlip is completely fitted in the groove.**



B4-615

Fig. 134

- 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.
 a. **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.**
 b. **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.
Use a new band.
 14) Pinch the end of band with pliers. Hold the clip and tighten securely.
When tightening boot, exercise care so that the air within the boot is appropriate.

- 15) Tighten band by using **BAND TIGHTENING TOOL** (925091000).
 a. Tighten band until it cannot be moved by hand.
 b. Former **BAND TIGHTENING TOOL** (925090000) is interchangeable with this 925091000.

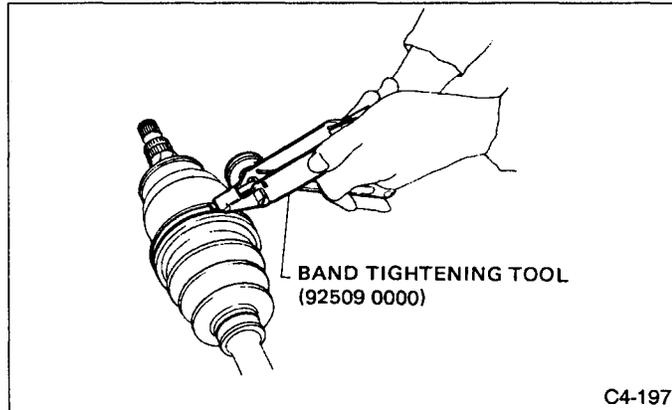


Fig. 135

- 16) Tap on the clip with the punch provided at the end of **BAND TIGHTENING TOOL**. Tap to an extent that the boot underneath is not damaged.

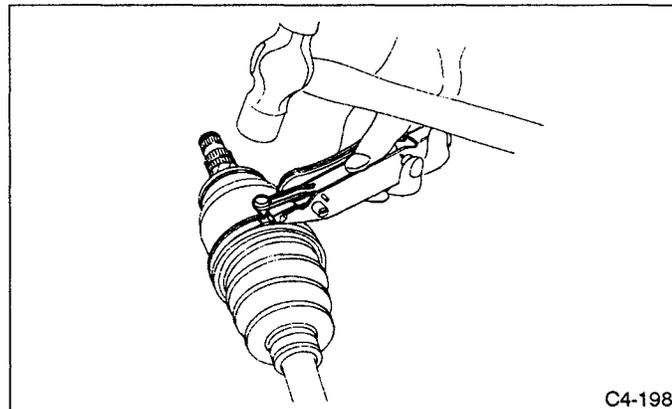


Fig. 136

- 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.
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) Place protector onto BJ boot band.

- Extend and retract DOJ to provide equal grease coating.**
Discard circlip on left DOJ spline, and install new one.
 20) Using **SIDE OIL SEAL PROTECTOR** (28099PA090), install DOJ into differential.

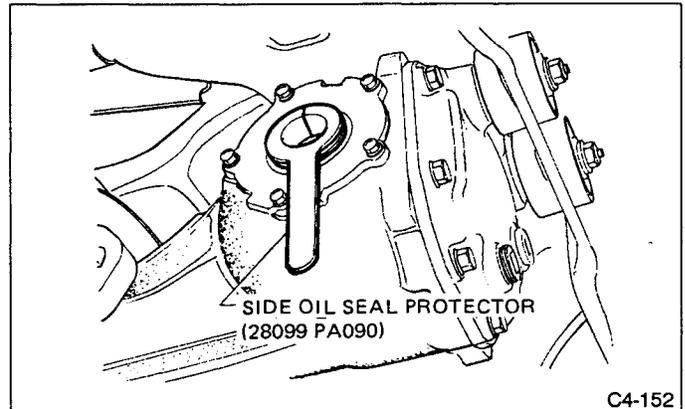


Fig. 137

- 21) Insert DOJ splined end into bore of oil side seal, and remove **SIDE OIL SEAL PROTECTOR**. Do not allow DOJ splines to damage side oil seal.

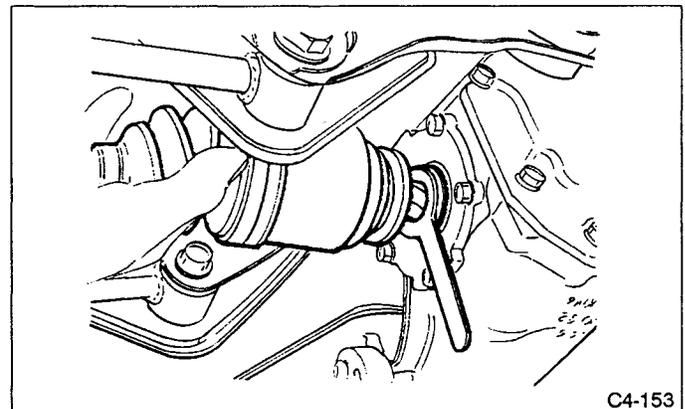


Fig. 138

- 22) Mesh DOJ with differential splines.
 23) Push housing to insert DOJ into differential.
Check to make sure DOJ is inserted properly.

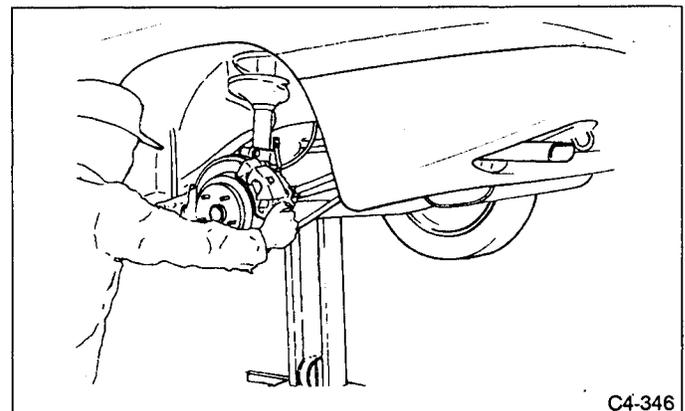


Fig. 139

- 24) Install remaining parts in reverse order of removal procedures.
- 25) For installation and tightening torque of suspension parts, refer to 4-1 [C200].
For installation and tightening torque of brake parts, refer to 4-4 [C200].
Use a new self-lock nut.

7. Aluminum Wheel and Tire

- 1) Deformation or damage on the rim can cause air leakage. Check the rim flange for deformation, crack, or damage, and repair as necessary.
- 2) Take stone, glass, nail etc. off the tread groove.
- 3) Replace tire:
 - when large crack on side wall, damage or crack on tread is found.
 - when the "tread wear indicator" appears as a solid band across the tread.

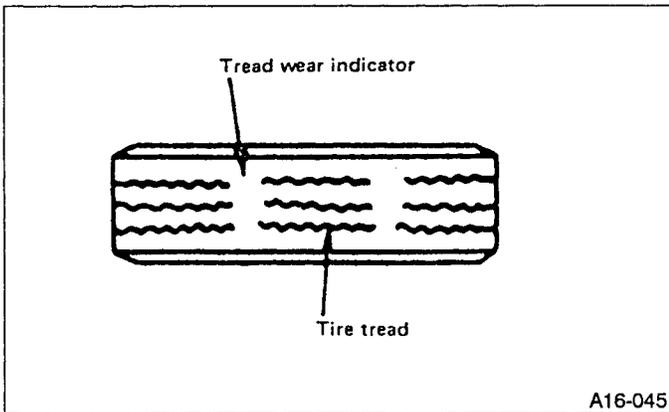


Fig. 140

- a. 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.
- b. Left and right aluminum wheels have different designs. Install them in their correct positions.
- c. Identification mark "RH" or "LH" is indicated on rear surface of each wheel. "LH" wheels have "L" marked beside tire valve.

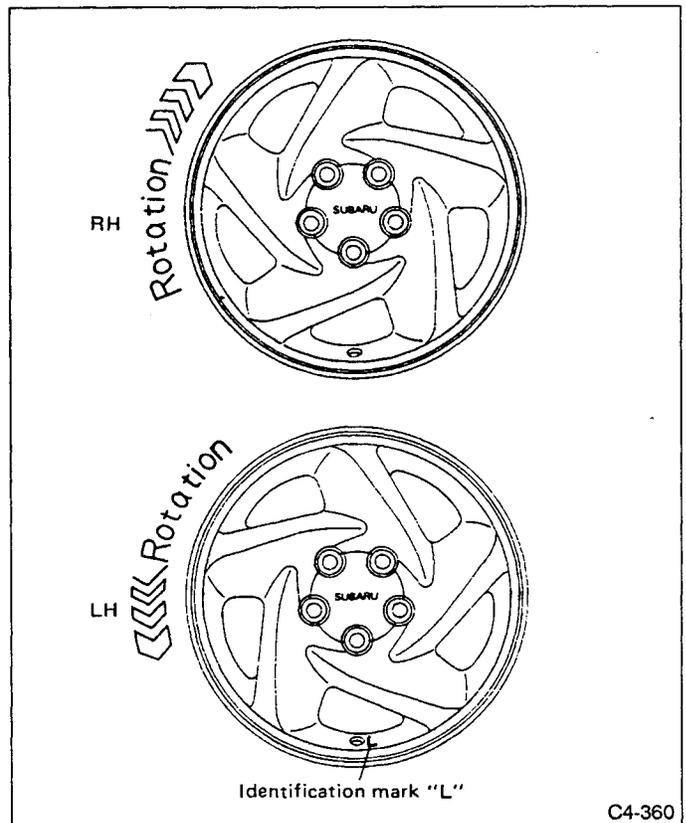


Fig. 141

A: 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.

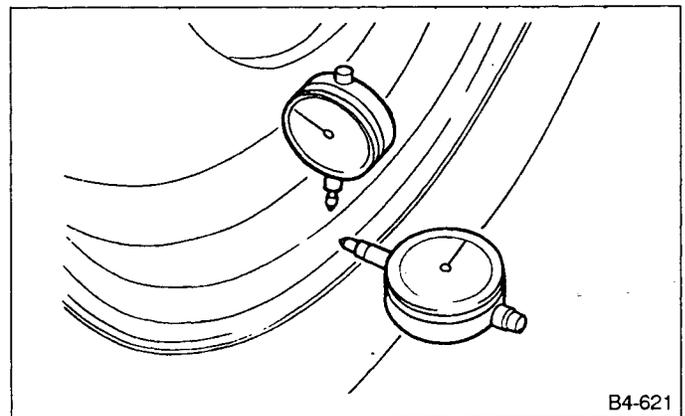


Fig. 142

	Axial runout limit	Radial runout limit
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 the figure below.

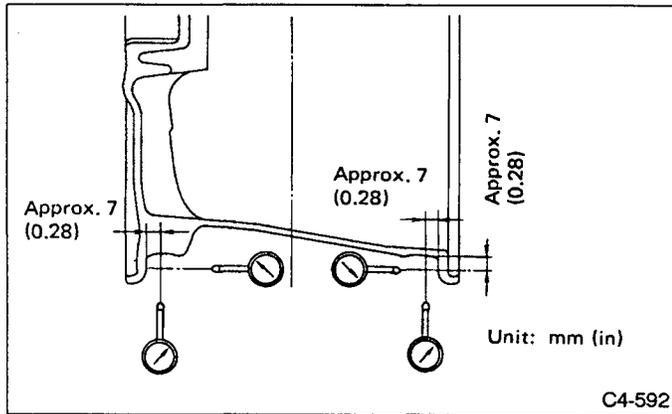


Fig. 143

If measured runout still exceeds specifications, replace the wheel.

B: PRECAUTIONS

Aluminum wheels are easily scratched. To maintain their appearance and safety, observe the following:

- 1) Do not damage aluminum wheels during removal, disassembly, installation, wheel balancing, etc. After removing aluminum wheels, place them on a rubber mat, etc.
- 2) While vehicle is being driven, be careful not to ride over sharp obstacles or allow aluminum wheels to contact the shoulder of the road.
- 3) When installing tire chain, be sure to install it properly not to have a slack; otherwise it may hit wheel while driving.
- 4) When washing aluminum wheel, use neutral synthetic detergent and water. Avoid using the cleanser including abrasive, hard brushes or an automatic car washer.

8. 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.

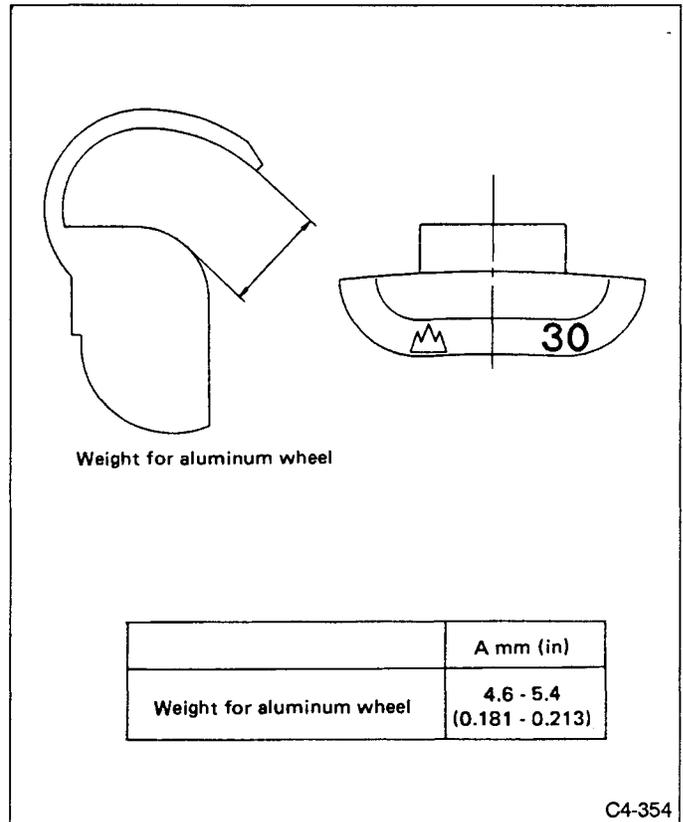


Fig. 144

	A mm (in)
Weight for aluminum wheel	4.6 - 5.4 (0.181 - 0.213)

- a. All balance weights shown in Table are colored silver.
- b. 55 g (1.94 oz) weight used with aluminum wheel is not available.
- c. Balance weights are available for use with any of 16-inch wheels.

9. Installation of Wheel Assembly to Vehicle

- 1) Before installing each wheel on vehicle, apply a continuous coat of grease to entire perimeter of centering boss on wheel hub using fingers.
- 2) Attach the wheel to the hub by aligning the wheel bolt hole with the hub bolt.
- 3) Temporarily attach the wheel nuts and washer to the hub bolts.
 - a. Use only wheel nuts (w/washers) designed for SVX models.
 - b. Wheel nuts designed exclusively for SVX's aluminum wheels cannot be used on any other vehicle, and those designed for conventional vehicles cannot be used on SVX's aluminum wheels.

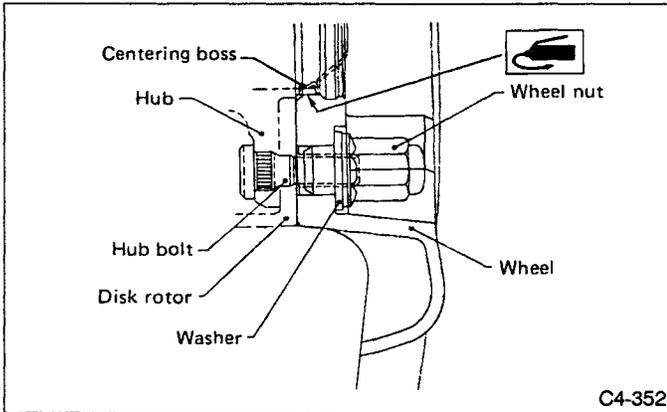


Fig. 145

- 4) Manually tighten the nuts making sure the wheel hub hole is aligned correctly to the guide portion of hub.
- 5) Tighten the wheel nuts in a diagonal selection to the specified torque. Use a wheel nut wrench.

Wheel nut tightening torque:

98 — 118 N·m (10 — 12 kg-m, 72 — 86 ft-lb)

- a. Tighten the wheel nuts in two or three steps by gradually increasing the torque and working diagonally, until the specified torque is reached.
 - b. Do not depress the wrench with a foot; Always use both hands when tightening.
 - c. Make sure the bolt, nut and the nut seating surface of the wheel are free from oils.
- 6) 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).

10. 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.

- a. When rotating tires, replace unevenly worn or damaged tires with new ones.
- b. Since "T-type" tire for temporary use is prepared as a spare tire, tire rotation is as follows.

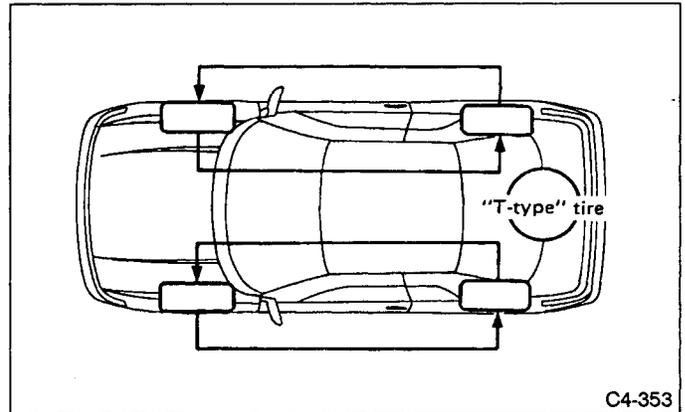


Fig. 146

11. "T-type" Tire

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

- a. Keep the inflation pressure at 412 kPa (4.2 kg/cm², 60 psi) at all times.
- b. When the wear indicator appears on the tread surface, replace the tire with a new one.
- c. 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.
- d. When using a T-type tire:
 - Do not drive at a speed greater than 80 km/h (50 MPH).
 - Drive as slowly as possible and avoid running over bumps.
 - Replace it with a conventional tire as soon as possible since this "T-type" tire is only for temporary use.
 - "T" type tires must be installed using wheels nuts specifically designed for SVX's aluminum wheels.

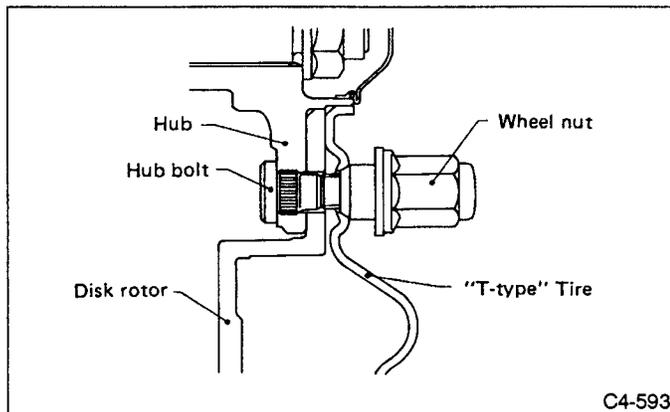


Fig. 147