



# Subaru

## Drive Axle Service

When drive axle replacement becomes necessary, specific procedures must be followed to assure long service life of the replacement parts. If a drive axle is found to be badly worn, remanufactured parts are available from your Subaru dealer. The following procedures are for 2001 Legacy drive axles. Consult a service manual for information on the model you are servicing.

### Front Drive Axle Removal

- 1 Disconnect the battery ground cable.
- 2 Raise the vehicle, support it with safety stands, then remove the front wheel covers and wheels.
- 3 Unlock the axle nut.
- 4 Have an assistant depress the brake pedal, then remove the axle nut using a socket wrench. Do not use an impact wrench.

*Caution: Loosen and retighten the axle nuts after removing wheel from vehicle. Do not loosen the axle nuts while the vehicle is on the ground, as this may damage the wheel bearings.*

- 5 Remove the stabilizer link from the transverse link.
- 6 Disconnect the transverse link from the housing.
- 7 Remove the spring pin which secures the transmission spindle to the shudderless freering tripod joint (SFJ).

*Caution: Use a new spring pin during reassembly.*

- 8 Remove the front drive axle assembly. If it is hard to remove, using the ST1 926470000 Axle Shaft Puller and ST2 927140000 Plate.

*Caution: Be careful not to damage the oil seal lip and tone wheel when removing front drive shaft. When the front drive axle is to be replaced, also replace the inner oil seal.*

### Installation

- 1 Insert the bell joint (BJ) into the hub splines.

*Caution: Be careful not to damage the inner oil seal lip and ABS tone wheel.*

- ② Using the ST1 922431000 Axle Shaft Installer and ST2 927390000 Adapter, pull the drive axle into place.

*Caution: Do not hammer the drive axle when installing it.*

- ③ Tighten the axle nut temporarily.
- ④ Install the SFJ on the transmission spindle and drive the spring pin into place.

*Caution: Always use a new spring pin.*

- ⑤ Connect the transverse link to the housing. The tightening torque for the self-locking nut is 49 Nm (36 ft-lb).

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



*Suspension Bolt*

- ⑥ Install the stabilizer bracket.
- ⑦ While an assistant depresses the brake pedal, tighten the axle nut to the specified torque.

*Tightening torque:*  
 2.5L model 186 N.m (137 ft-lb)  
 3.0L model 216 Nm (159 ft-lb)

*Caution: Use a new axle nut (3.0L model is olive color, 2.5 model is gold color).*

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

*Caution: Tighten the axle nut to the specified torque. Overtightening may damage the wheel bearing.*



*Stabilizer Link*

- ⑧ After tightening the axle nut, lock it securely by denting it with a blunt chisel.

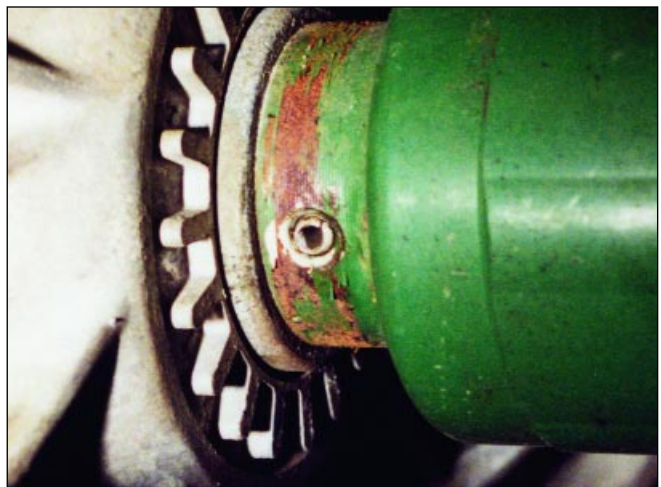
### **Axle Shaft Disassembly**

- ① Place alignment marks on the shaft and outer race.
- ② Remove the SFJ boot band and boot.

*Caution: Be careful not to damage the boot.*

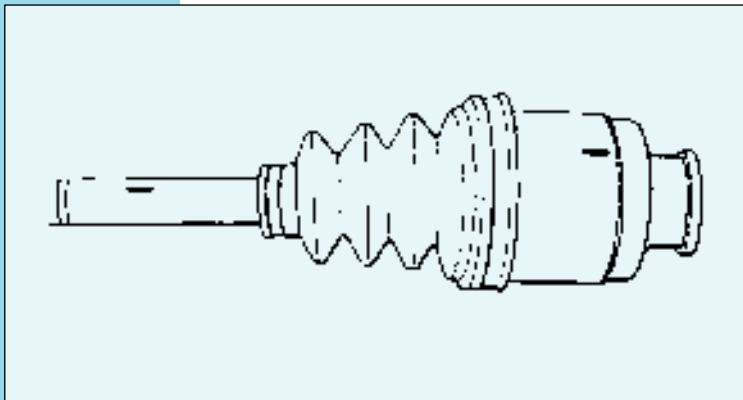
- ③ Remove the circlip from the SFJ outer race using a screwdriver.
- ④ Remove the SFJ outer race from the shaft assembly.
- ⑤ Wipe off any excess grease.

*Caution: This is a special grease. Do not substitute other greases.*



*Spring Pin*

## Subaru Drive Axle Service



Alignment Marks on Shaft and Outer Race

⑥ Place an alignment mark on the free ring and trunnion.

⑦ Remove the free ring from the trunnion.

*Caution: Make note of the free ring position.*

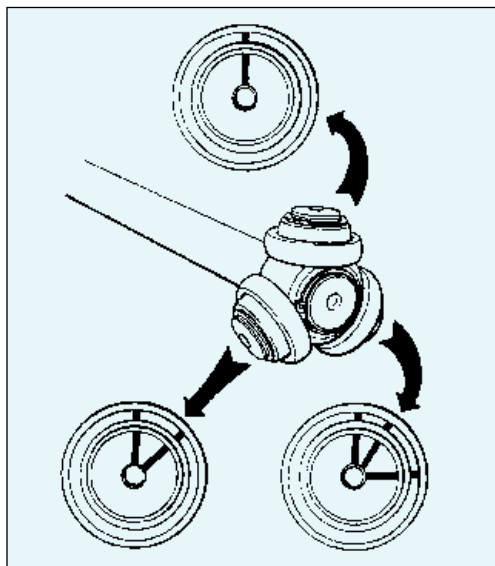
⑧ Place alignment marks on the trunnion and shaft.

⑨ Remove the snap ring and trunnion.

*Caution: Wrap the shaft splines with vinyl tape to protect the boot from scratches.*

⑩ Remove the SFJ boot.

⑪ Place the drive axle in a vise between wooden blocks.



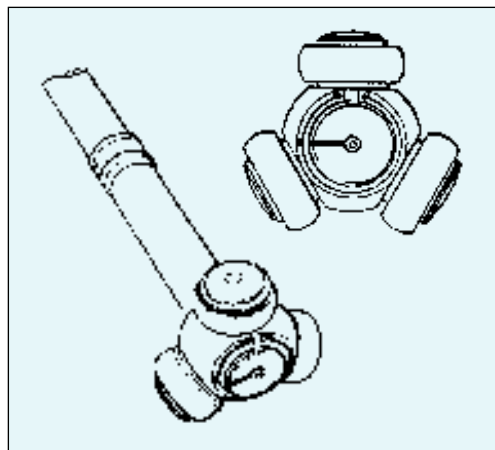
Free Ring and Trunnion Alignment Marks

⑫ Raise the boot band claws using a screwdriver and hammer.

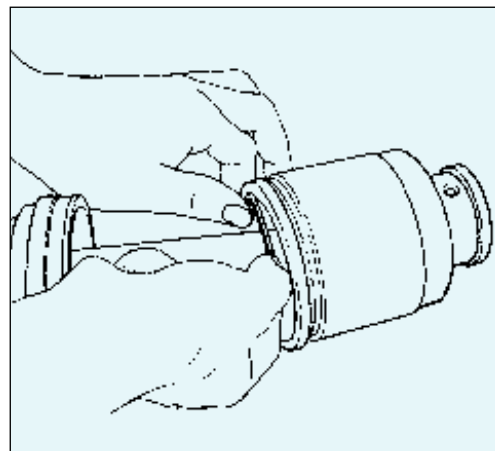
⑬ Cut and remove the boot.

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

⑭ Disassembly of axle is completed. The BJ cannot be disassembled.



Trunnion and Shaft Alignment Marks



Removing SFJ Outer Race

### Assembly

*Caution: Use the specified grease.*

BJ side: NTG2218 (Part No. 28093AA 000)

SFJ side: SSG6003 (Part No. 28093TA 000)

① Place the BJ boot and small boot band on the BJ side of shaft.

*Caution: Be sure to wrap shaft splines*

with vinyl tape to protect the boot from scratches.

- 2 Place the drive axle in a vise.

*Caution: Do not place the drive shaft directly in the vise. Use wooden blocks.*

- 3 Apply a coat of grease [60 to 70 g (2.12 to 2.47 oz)] to the 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 the boot. Also apply grease to the shaft.

*Note: The inside of the larger end of the BJ boot and the boot groove must be clean and free of grease or other substances.*

- 5 Install the boot projecting por-

tion to the BJ groove.

- 6 Set the large boot band in place.

- 7 Install the boot projecting portion to the shaft groove.

- 8 Tighten the boot bands using the ST 28099AC000 Boot Band Plier, torque wrench and socket flex handle.

*Tightening torque: Large boot band 157 Nm (116 ft-lb) or more  
Small boot band 133 Nm (98 ft-lb) or more*

- 9 Place the SFJ boot at the center of shaft.

- 10 Align the alignment marks and install the trunnion on the shaft.

- 11 Install the snap ring to the shaft.

*Caution: 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 the specified grease into the interior of SFJ outer race.

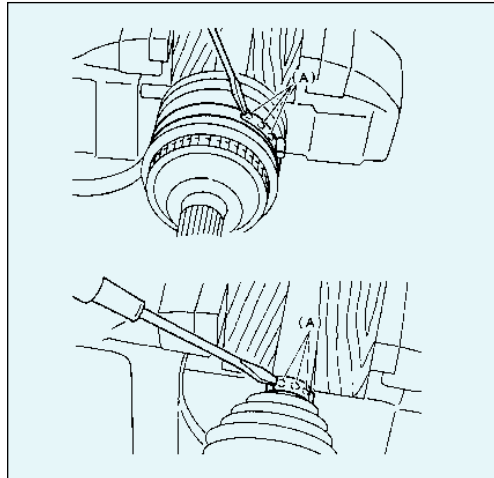
- 13 Apply a coat of the specified grease to free ring and trunnion.

- 14 Align the alignment marks on the free ring and trunnion and install the free ring.

*Caution: Make note of the free ring position.*

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

- 16 Install the circlip in the groove on the SFJ outer race.



Removing Outer BJ Boot Bands

**Caution:** Pull the shaft lightly and make sure 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 the boot.

18 Install the SFJ boot, taking care not to twist it.

**Caution:** The inside of the larger end of the SFJ boot and the boot groove must be clean and free from grease and other substances.

**Caution:** When installing the SFJ boot, position the outer race of the SFJ at center of its travel.

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

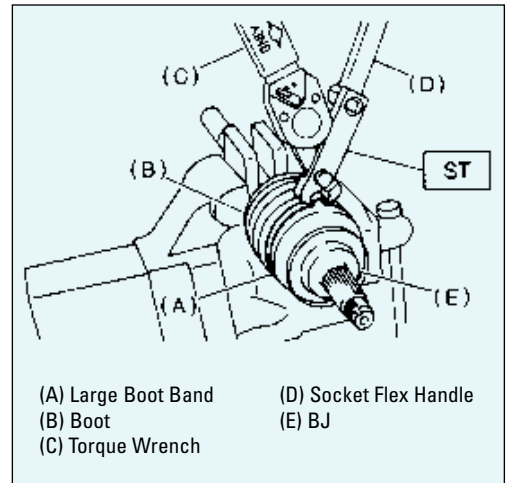


Inspecting Grease

**Caution:** Use a new band.

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

**Note:** When tightening the boot, exercise care so that excess air is removed from the boot interior.



Outer BJ Boot Band Installation



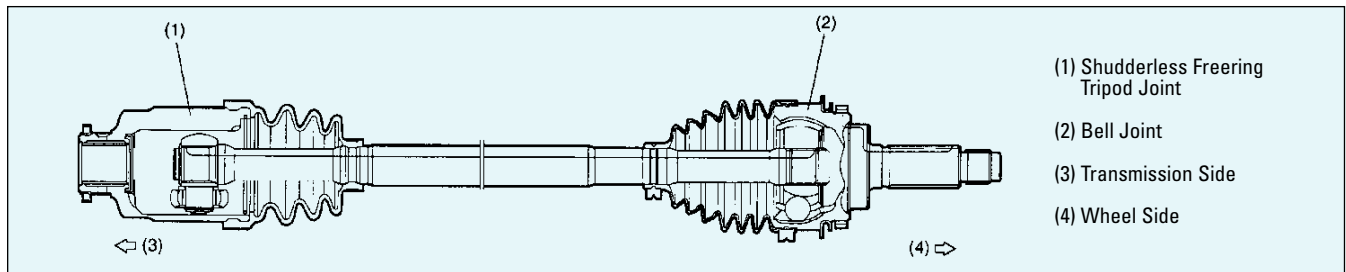
Drive Axle Reinstallation

21 Tighten the band using the ST 25091000 Band Tightening Tool

**Note:** Tighten the band until it cannot be moved by hand.

22 Tap on the clip with the punch provided at the end of the ST 925091000 Band Tightening Tool.

**Caution:** When tapping on the clip, make sure the boot beneath the band is not damaged.



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

*Caution: The end of the band should be in close contact with clip.*

24 Install the boot on the BJ in the same manner.

*Note: Extend and retract the SFJ to provide an equal grease coating.*

### Inspection

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

1 Check the DOJ (double offset joint) for seizure, corrosion, damage, wear and excessive play.

2 Check the SFJ (shudderless freering tripod joint) for seizure, corrosion, damage and excessive play.

3 Check the Shaft for excessive bending, twisting, damage and wear.

4 Check the BJ (bell joint) seizure, corrosion, damage and excessive play.

5 Check the Boots for wear, warping, breakage or scratches.

6 Check the Grease for discoloration or fluidity.