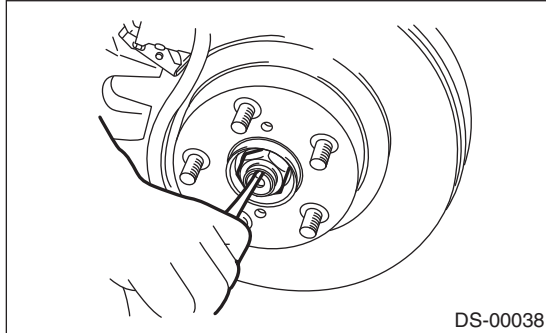


7. Front Drive Shaft

A: REMOVAL

- 1) Disconnect the ground cable from the battery.
- 2) Lift up the vehicle, and remove the front wheels.
- 3) Lift the crimped section of axle nut.

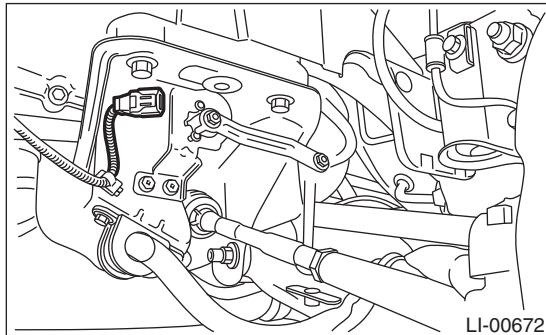


- 4) Remove the axle nut using a socket wrench while depressing the brake pedal.

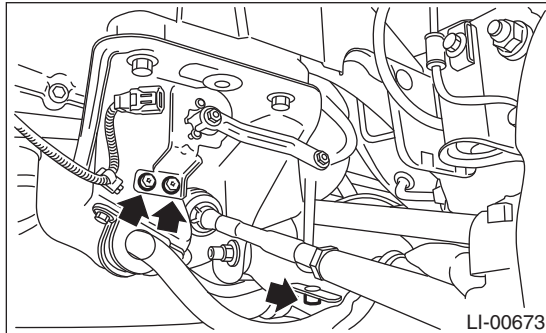
CAUTION:

Remove the wheel before loosening the axle nut. Failure to follow this rule may damage the wheel bearings.

- 5) Drain the transmission gear oil. (MT model)
- 6) Drain the differential gear oil. (AT model)
- 7) Disconnect the front vehicle height sensor connector. (models with auto headlight beam leveler, left side only)

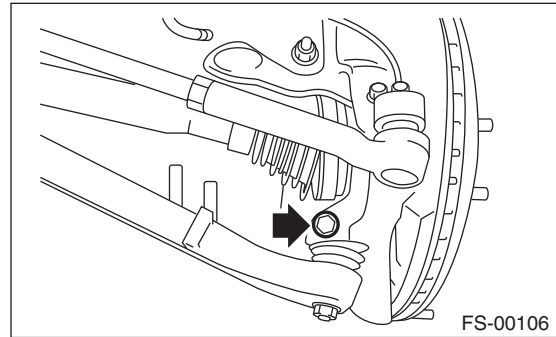


- 8) Remove the front vehicle height sensor. (models with auto headlight beam leveler, left side only)



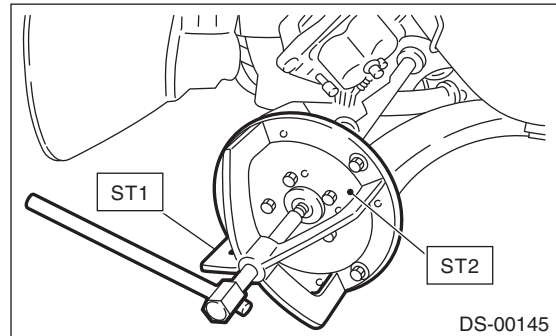
- 9) Remove the stabilizer link from front arm.

- 10) Disconnect the front arm ball joint from the housing.



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

ST1 926470000 AXLE SHAFT PULLER
ST2 28099PA110 AXLE SHAFT PULLER PLATE



- 12) Using a bar, remove the front drive shaft from transmission.

CAUTION:

Be careful not to allow the bar to damage holder area.

Front Drive Shaft

DRIVE SHAFT SYSTEM

B: INSTALLATION

- 1) Replace the differential side retainer oil seal with a new part.

NOTE:

After pulling out the drive shaft, be sure to replace with a new oil seal.

4AT model <Ref. to 4AT-45, REPLACEMENT, Differential Side Retainer Oil Seal.>

5MT model <Ref. to 5MT-34, REPLACEMENT, Differential Side Retainer Oil Seal.>

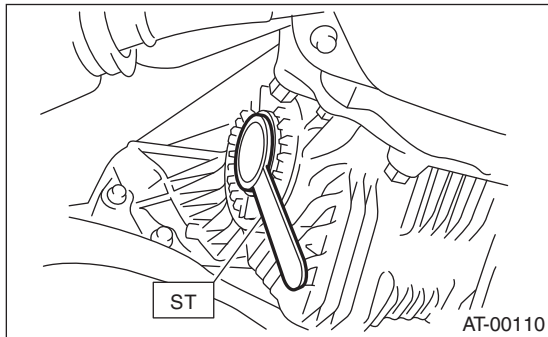
- 2) Insert the EBJ into the hub spline.
- 3) Draw the drive shaft into specified position.

CAUTION:

Do not hammer drive shaft when installing it.

- 4) Tighten the axle nut temporarily.
- 5) Using the ST, install the front drive shaft to transmission.

ST 28399SA010 OIL SEAL PROTECTOR



- 6) Connect the front arm ball joint to the housing.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

- 7) Install the stabilizer link.

CAUTION:

Be sure to use a new self-locking nut.

Tightening torque:

45 N·m (4.6 kgf-m, 33.2 ft-lb)

- 8) While pressing the brake pedal, tighten the new axle nuts to the specified torque.

Tightening torque:

220 N·m (22.4 kgf-m, 162 ft-lb)

CAUTION:

- Do not install wheel and let it touch the ground before tightening the axle nut. Failure to follow this rule may damage the axle bearing.
- Do not overtighten the nuts as this may damage the axle bearing.

- 9) After tightening axle nut, lock it securely.
- 10) Fill the transmission gear oil. (MT model)
- 11) Fill the differential gear oil. (AT model)

- 12) Install the front vehicle height sensor. (models with auto headlight beam leveler, left side only)

Tightening torque:

7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

- 13) Attach the front vehicle height sensor connector. (models with auto headlight beam leveler, left side only)

- 14) Install the front wheels.

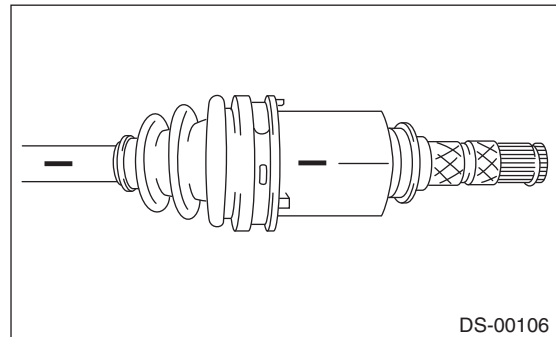
Tightening torque:

100 N·m (10.2 kgf-m, 73.8 ft-lb)

- 15) Connect the ground cable to the battery.
- 16) Inspect the wheel alignment and adjust if necessary.
- 17) Perform reinitialization of the auto headlight beam leveler system. (models with auto headlight beam leveler) <Ref. to LI-15, PROCEDURE, Auto Headlight Beam Leveler System.>

C: DISASSEMBLY

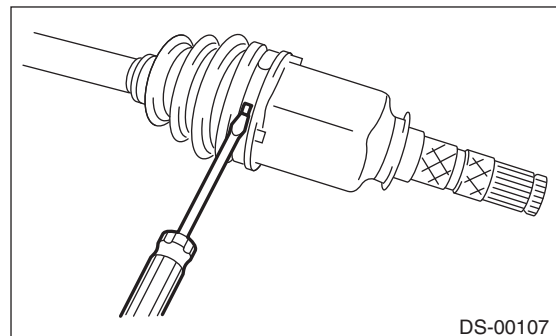
- 1) Place alignment marks on the shaft and outer race.



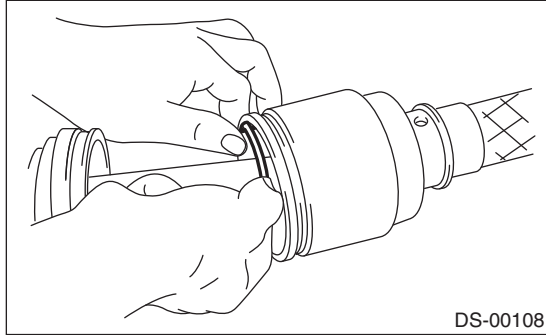
- 2) Remove the PTJ boot band and boot.

CAUTION:

Be careful not to damage the boot.



- 3) Remove the snap ring from the PTJ outer race.



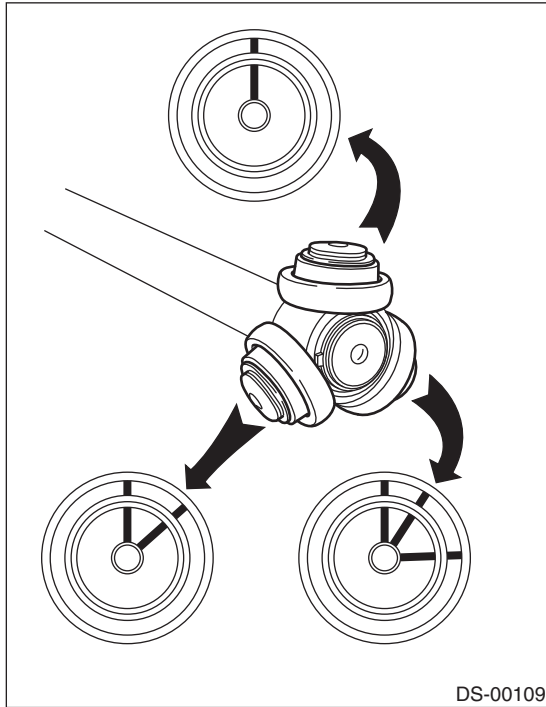
- 4) Remove the PTJ outer race from the shaft assembly.

- 5) Wipe off grease.

CAUTION:

The grease is a special type of grease. Do not mix with other grease.

- 6) Place alignment marks on the roller kit and trunnion.

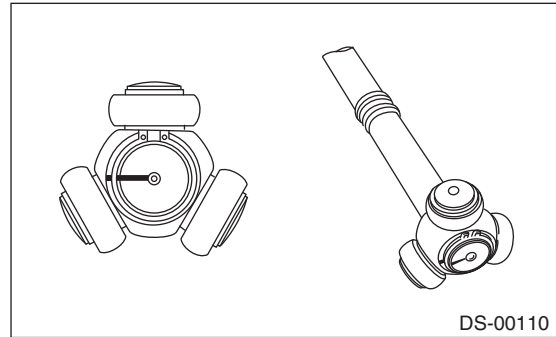


- 7) Remove the roller kit from trunnion.

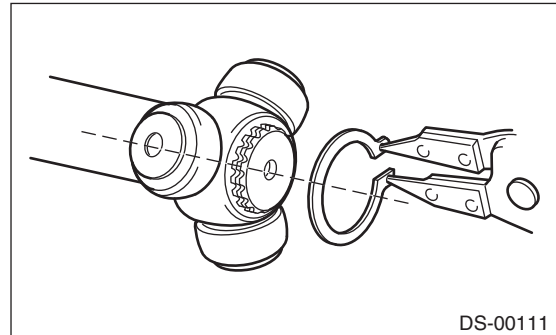
CAUTION:

Be careful with the roller kit position.

- 8) Place alignment marks on the trunnion and shaft.



- 9) Remove the snap ring and trunnion.



CAUTION:

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

- 10) Remove the PTJ boot.

- 11) Remove the O-ring in the shaft boot groove.

NOTE:

The EBJ is a non-disassembly part, so the axle disassembly stops here.

Front Drive Shaft

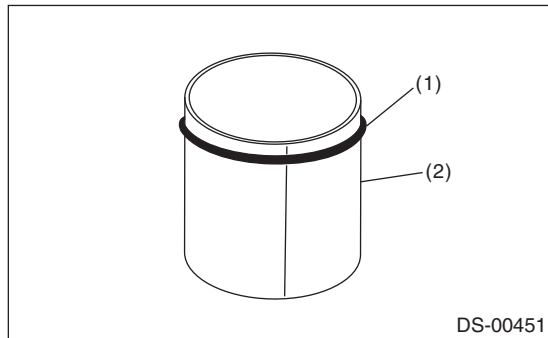
DRIVE SHAFT SYSTEM

D: ASSEMBLY

- 1) Roll up a thick sheet of paper, etc. to a size where the shaft can fit inside, and affix with tape to make a cylinder.
- 2) Attach a new O-ring on this cylinder.

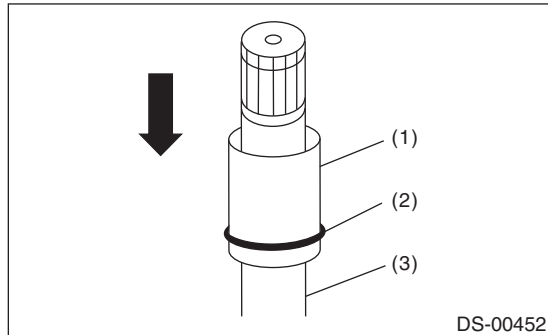
CAUTION:

- Always use a new O-ring.
- Be careful that the O-ring does not become scratched and that there are no foreign objects attached to it.
- Make sure to install the O-ring so that it does not twist as much as possible.
- Do not stretch the O-ring to 30 mm (1.18 in) inner diameter or more.



- (1) O-ring
(2) Cylinder made with thick paper, etc.

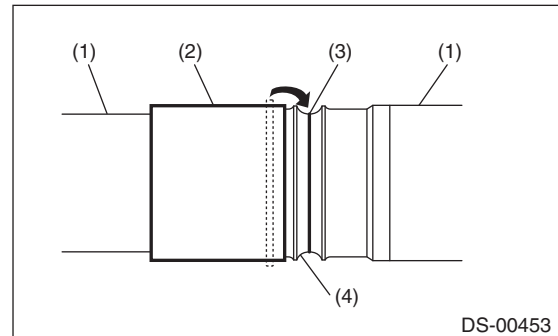
- 3) Pass the cylinder material onto the shaft, and slide in the direction of the shaft axis.



- (1) Cylinder material
(2) O-ring
(3) Shaft

- 4) Clean the shaft boot groove, and wipe off the grease.

- 5) Slide the cylinder material near the shaft boot groove, and move the O-ring from the cylinder material onto the shaft boot groove.



- (1) Shaft
(2) Cylinder material
(3) O-ring
(4) Boot groove

CAUTION:

- Attach the O-ring to the shaft boot groove center.
- Be careful that the O-ring does not become scratched and that there are no foreign objects attached to it.
- Make sure to install the O-ring so that it does not twist as much as possible.
- With the O-ring attached, do not wash with kerosene, gasoline, etc.

- 6) Pass the PTJ small diameter boot band through the shaft.

- 7) Wrap vinyl tape around the splines of the shaft.

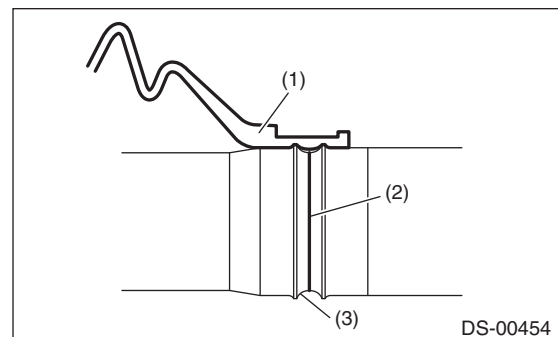
CAUTION:

To prevent damage to the boots, make sure to always wrap with vinyl tape for protection.

- 8) Install a new PTJ boot.

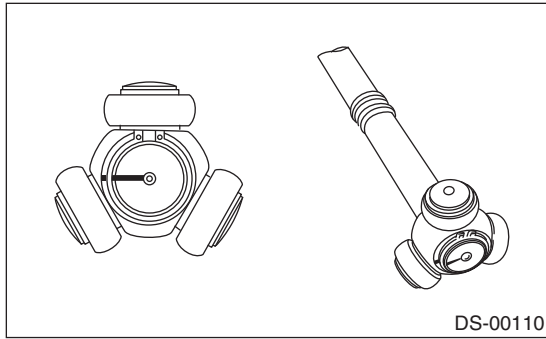
CAUTION:

Make sure to fit securely on the boot groove of the shaft.



- (1) PTJ boot
(2) O-ring
(3) Boot groove

9) Match the alignment marks, and attach the trunnion onto the shaft.



10) Attach the snap ring to the shaft.

CAUTION:

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

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

Grease:

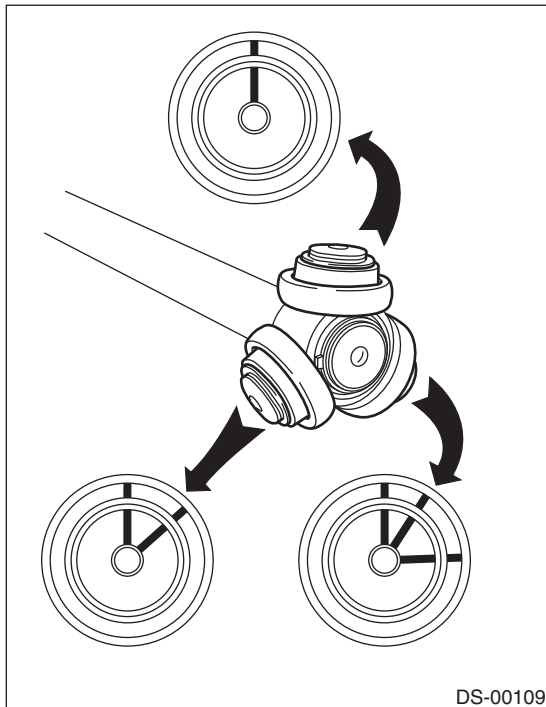
NKG302

12) Apply a thin coat of specified grease to the roller kit and trunnion.

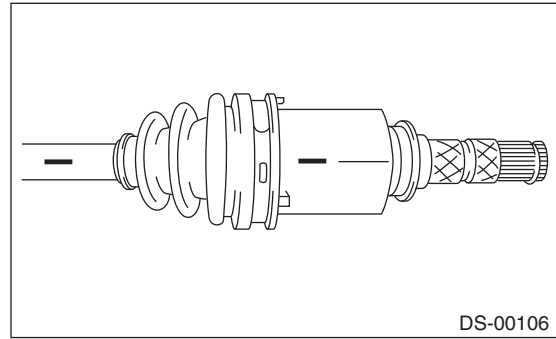
13) Match the alignment marks of the roller kit and trunnion, and attach the roller kit.

CAUTION:

Be careful with the roller kit position.



14) Match the alignment marks of the shaft and outer race, and attach the outer race.



15) Install the snap ring in the groove of the PTJ outer race.

CAUTION:

Pull the shaft lightly and make sure that the snap ring is completely fitted in the groove.

16) 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.

17) Attach the PTJ boot taking care not to twist it.

CAUTION:

• **Clean the larger end of PTJ boot and the boot groove well, and remove the grease and other substances.**

• **When installing the PTJ boot, position the outer race of the PTJ at center of the stroke.**

18) Set the new boot band at the specified position.

Front Drive Shaft

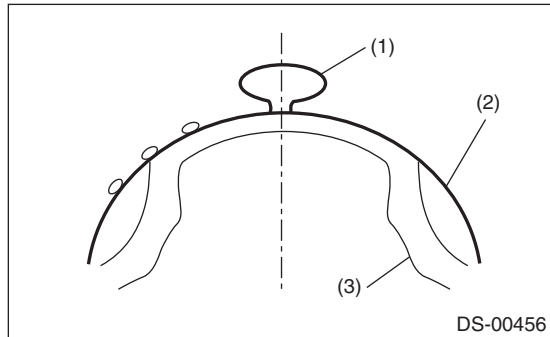
DRIVE SHAFT SYSTEM

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

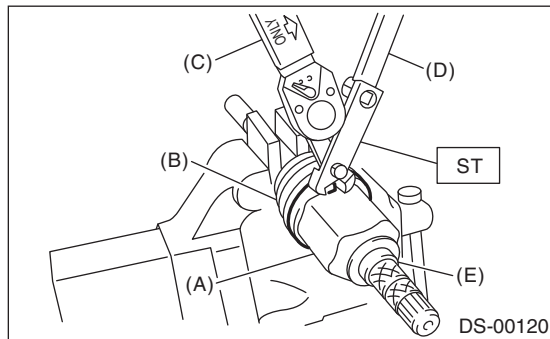
ST 28099AC000 BOOT BAND PLIER

CAUTION:

The large boot band is to be tightened so that the omega shaped part is at the position indicated in the figure below.



- (1) Omega shaped part
- (2) Boot band
- (3) Outer race



- (A) Large boot band
- (B) Boot
- (C) Torque wrench
- (D) Socket flex handle
- (E) Outer race

Tightening torque:

Large boot band

178 N·m (18.2 kgf-m, 131 ft-lb)

Small boot band

145 N·m (14.8 kgf-m, 107 ft-lb)

20) Extend and retract the PTJ repeatedly so that grease is spread evenly.

E: INSPECTION

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

- PTJ (Pillow tripod joint)

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

- EBJ (high-efficiency compact ball fixed joint)

Check for seizure, corrosion, damage, or excessive play.

- Shaft

Check for excessive bending, twisting, damage and wear.

- Boot

Check for wear, warping, breakage and scratches.

- Grease

Check for discoloration and fluidity.