

7. Front Drive Shaft

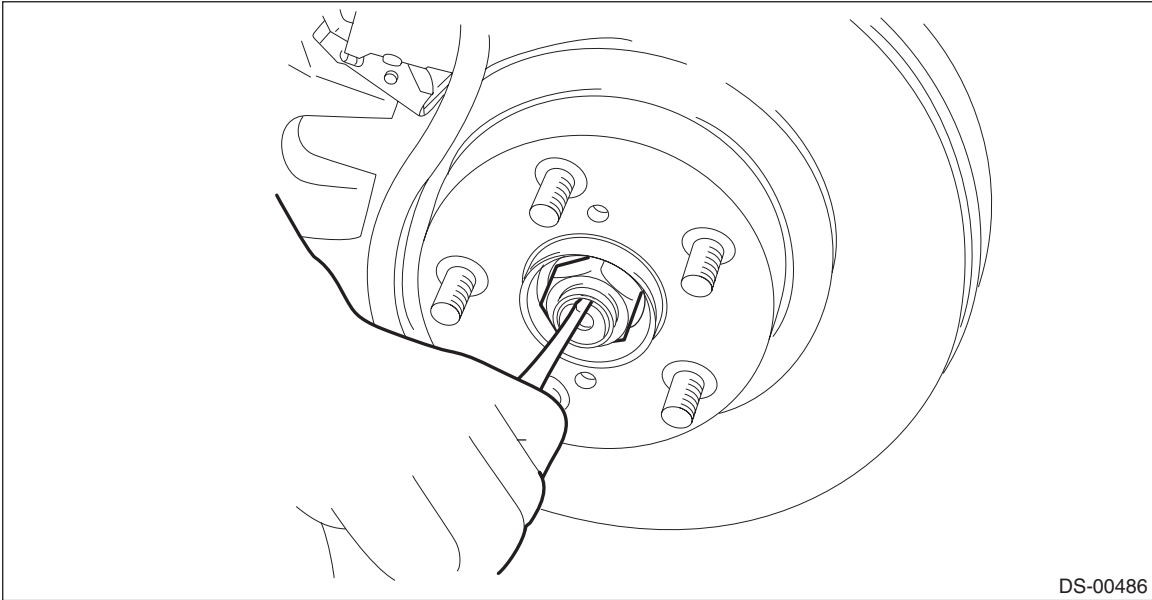
A: REMOVAL

- 1) Lift up the vehicle, and then remove the front wheels.
- 2) Remove the axle nut.

CAUTION:

Do not loosen the axle nut while the front axle is loaded. Doing so may damage the hub bearing.

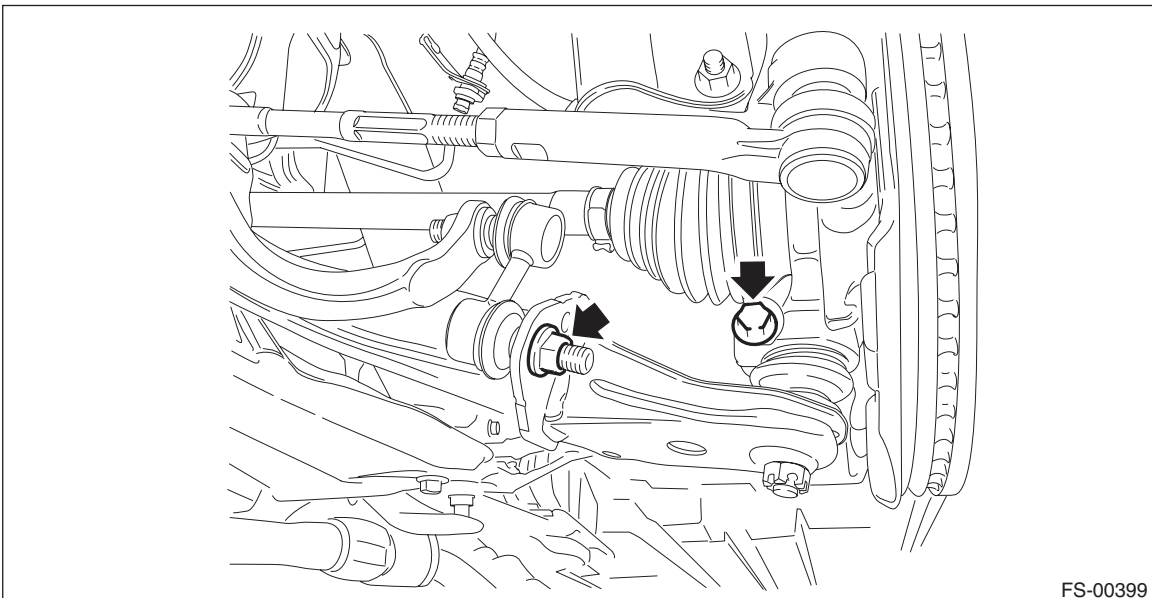
- (1) Lift the crimped section of axle nut.
- (2) Remove the axle nut using a socket wrench while depressing the brake pedal.



- 3) Drain the transmission gear oil. (MT model)
- 4) Drain differential gear oil. (AT and CVT models)
- 5) Remove the front arm.
 - (1) Remove the nut and disconnect the front stabilizer link.
 - (2) Remove the bolt, and disconnect the front arm ball joint from the front axle housing.

CAUTION:

Be careful not to damage the boot of the joint.

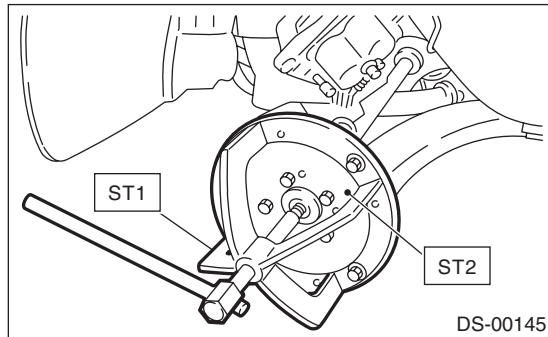


6) Remove the front drive shaft assembly. If it is hard to remove, use the ST.

Preparation tool:

ST1: AXLE SHAFT PULLER (926470000)

ST2: AXLE SHAFT PULLER PLATE (28099PA110)



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

CAUTION:

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

B: INSTALLATION

1) Before installation, check the drive shaft. <Ref. to DS-56, INSPECTION, Front Drive Shaft.>

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

- 6MT model: <Ref. to 6MT-34, REPLACEMENT, Differential Side Retainer Oil Seal.>
- 5AT model: <Ref. to 5AT-48, REPLACEMENT, Differential Side Retainer Oil Seal.>
- CVT model: <Ref. to CVT-90, REPLACEMENT, Differential Side Retainer Oil Seal.>

NOTE:

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

3) Insert the drive shaft into the hub spline, and pull in the drive shaft into specified position.

CAUTION:

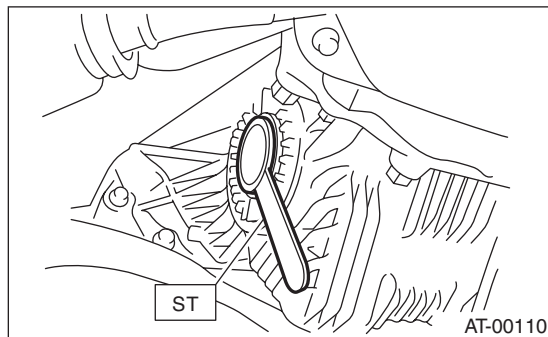
Do not hammer drive shaft when installing it.

4) Tighten the axle nut temporarily.

5) Using the ST, install the front drive shaft to transmission.

Preparation tool:

ST: OIL SEAL PROTECTOR (28399SA010)



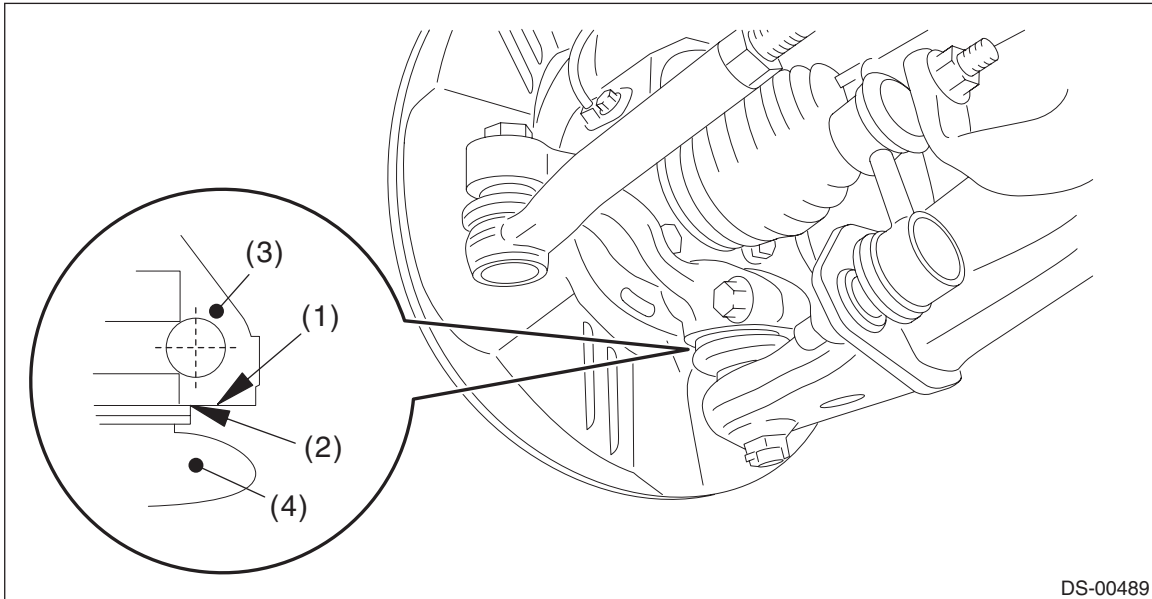
Front Drive Shaft

DRIVE SHAFT SYSTEM

6) Install the front arm ball joint to the front axle housing.

CAUTION:

- Before tightening, make sure the lower side of front axle housing and stepped section of ball joint are in contact.
- Be careful not to damage the boot of the joint.



- (1) Lower side of front axle housing (3) Front axle housing (4) Ball joint
(2) Raised section of ball joint

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

7) Install the stabilizer link.

CAUTION:

Use a new flange nut.

Tightening torque:

60 N·m (6.12 kgf-m, 44.3 ft-lb)

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

CAUTION:

Do not load the front axle before tightening the axle nut. Doing so may damage the hub bearing.

Tightening torque:

220 N·m (22.43 kgf-m, 162.3 ft-lb)

9) After tightening axle nut, lock it securely.

10) Fill transmission gear oil. (MT model)

11) Fill differential gear oil. (AT and CVT models)

12) Install the front wheels.

Tightening torque:

120 N·m (12.24 kgf-m, 88.5 ft-lb)

13) Inspect the wheel alignment and adjust if necessary.

- Inspection: <Ref. to FS-9, INSPECTION, Wheel Alignment.>
- Adjustment: <Ref. to FS-13, ADJUSTMENT, Wheel Alignment.>

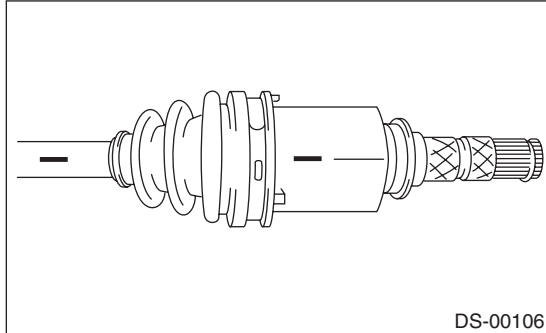
C: DISASSEMBLY

1) Remove the AAR outer race from shaft assembly.

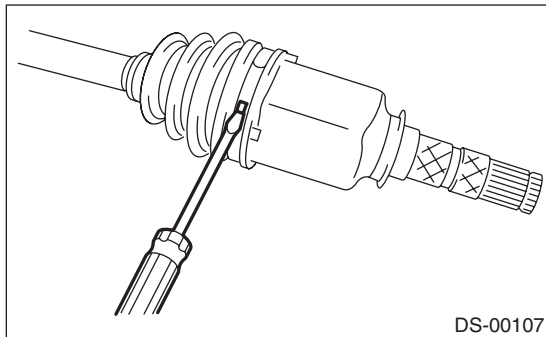
CAUTION:

Be careful not to damage the boot.

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



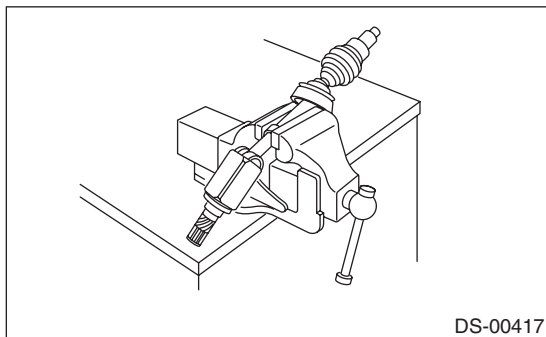
(2) Remove the AAR boot band and boot.



(3) Place the drive shaft between wooden blocks and fix it on a vise.

CAUTION:

Do not set the only drive shaft on a vise.



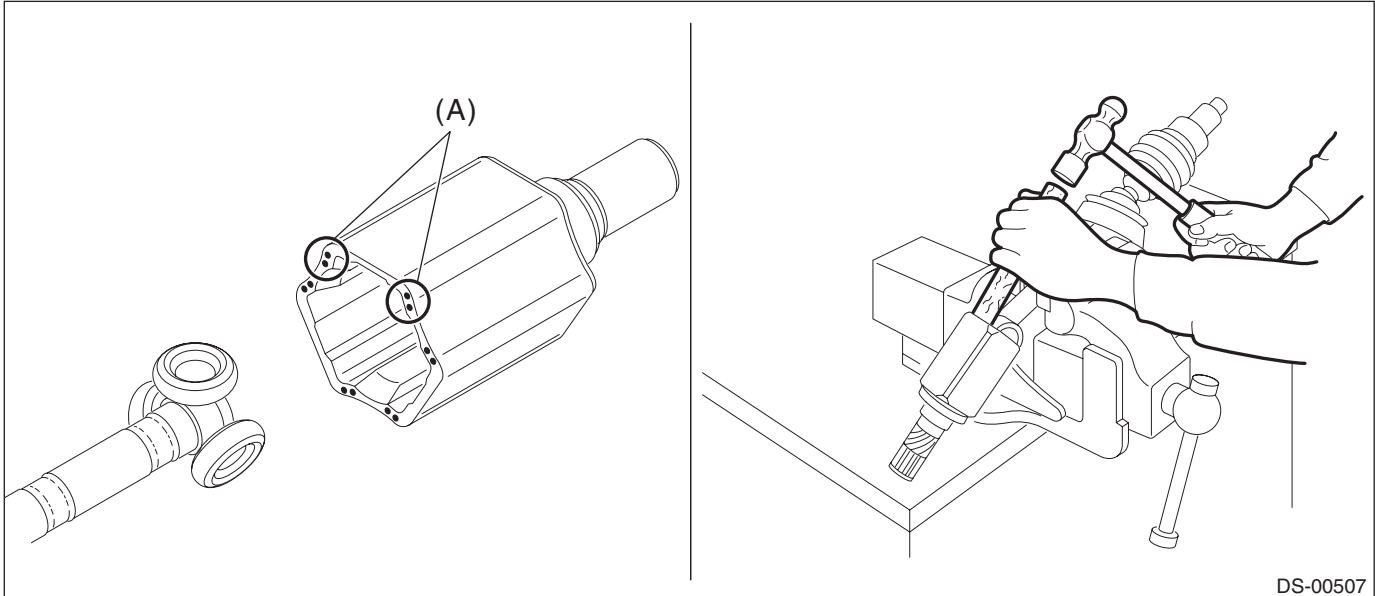
Front Drive Shaft

DRIVE SHAFT SYSTEM

(4) Tap the staking area of the outer race alternately with a plastic or wooden bar, and remove one roller at a time.

CAUTION:

- Tap the staking area (A) of the outer race.
- Do not use a metal bar as the outer race may deform.
- Be careful not to damage the roller parts.



(5) Remove the outer race from shaft assembly.

CAUTION:

Make sure to have your associate held the outer race when removing the third roller to prevent the outer race from falling.

(6) Wipe off grease.

CAUTION:

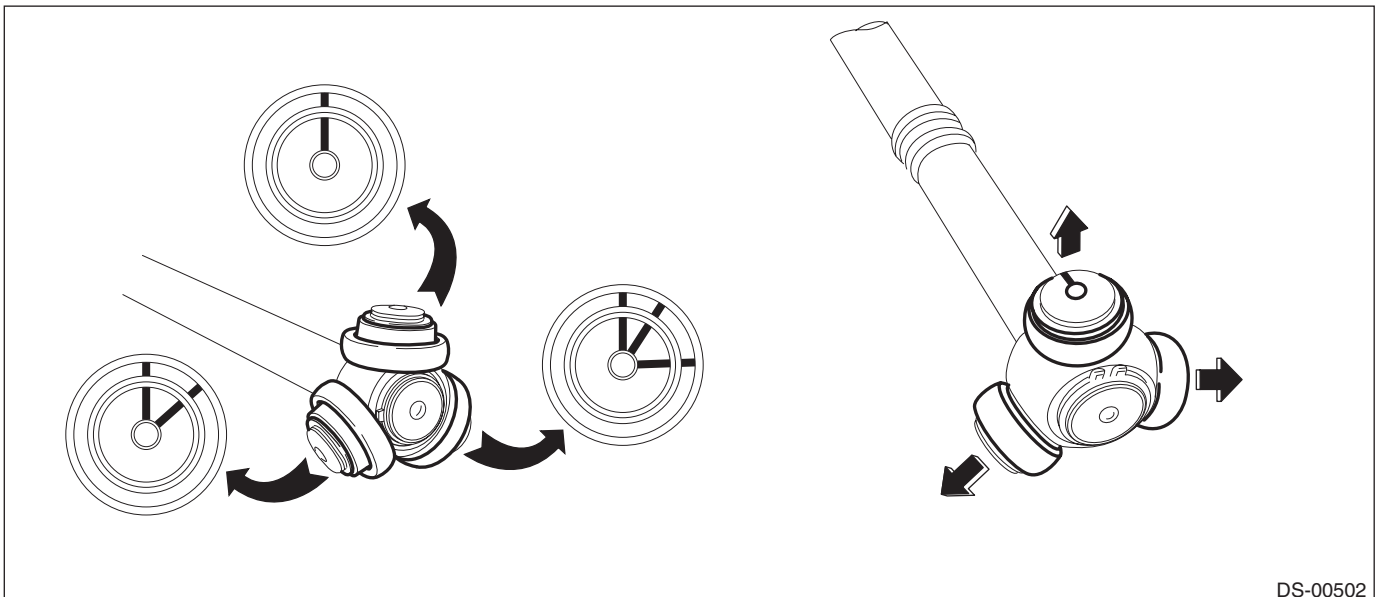
The grease is a special type of grease. Do not mix with other grease.

2) Remove the roller kit from trunnion.

CAUTION:

Be careful with the roller kit position.

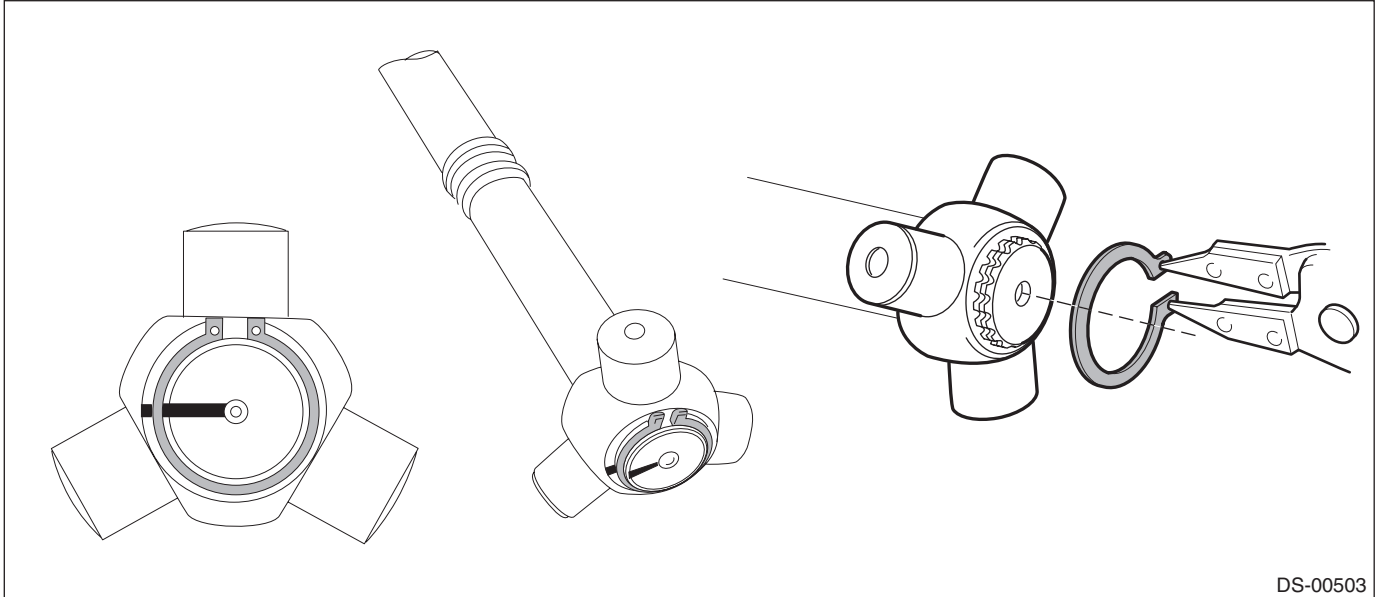
(1) Place alignment marks on the roller kit and trunnion.



- (2) Remove the roller kit from trunnion.
- 3) Remove the trunnion from the shaft.
 - (1) Place alignment marks on the trunnion and shaft.
 - (2) Remove the snap ring and trunnion.

CAUTION:

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



- 4) Remove the AAR boot.

NOTE:

The AC is a non-disassembly part, so the drive shaft disassembly stops here.

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DRIVE SHAFT SYSTEM

D: ASSEMBLY

NOTE:

Use specified grease.

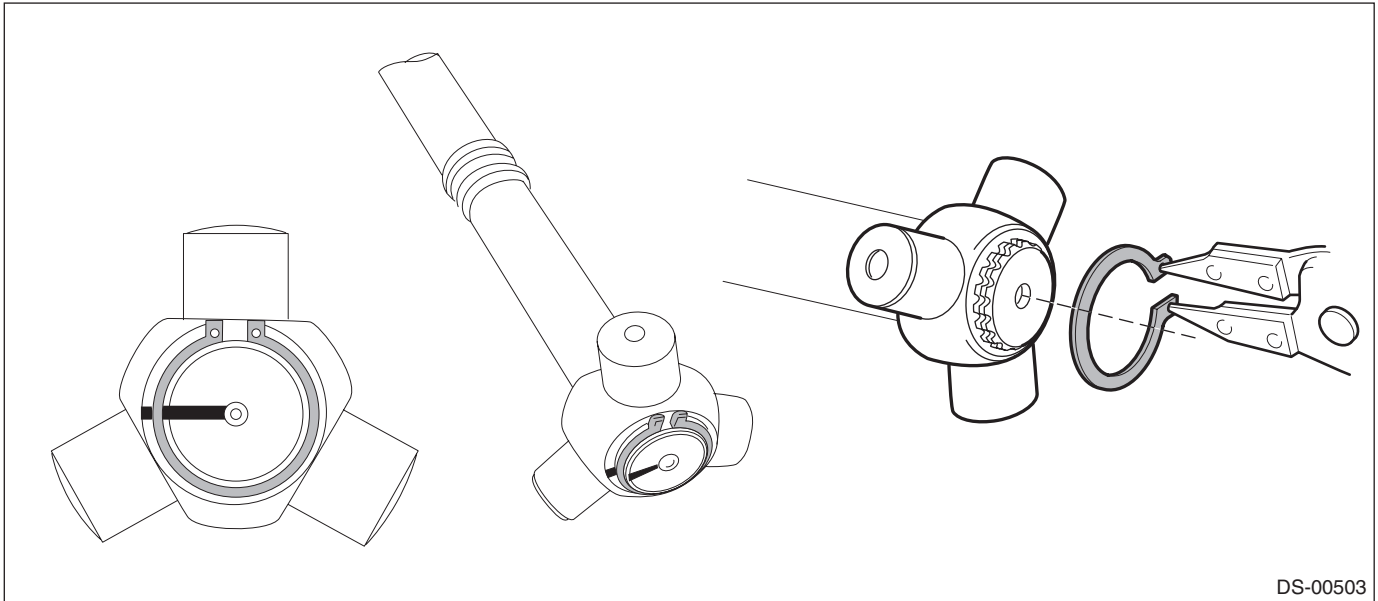
AAR side:

One-Luber GKN-C

- 1) Pass the AAR boot through the shaft.
- 2) Install the trunnion to the shaft.
 - (1) Match the alignment marks, and attach the trunnion onto the shaft.
 - (2) Attach the snap ring to the shaft.

CAUTION:

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



- 3) Fill 50 to 60 g (1.76 to 2.12 oz) of specified grease into the interior of AAR outer race.
- 4) Install the trunnion to the roller kit.
 - (1) Apply a thin coat of specified grease to the roller kit and trunnion.
 - (2) Place the drive shaft between wooden blocks and fix it on a vise.

CAUTION:

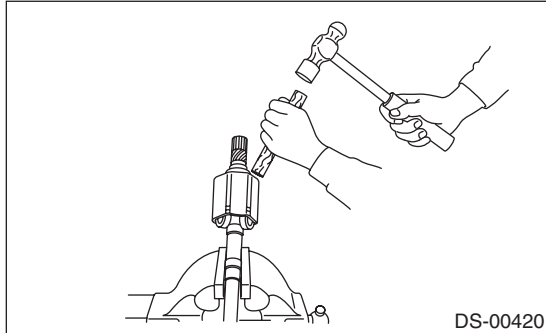
Do not set the drive shaft directly on a vise.

- 5) Align the alignment marks on the shaft and outer race.

6) Tap the insertion upper part of the outer race alternately using a plastic or wood bar shown in the figure, and then insert the roller one by one.

CAUTION:

- Do not use a metal bar as the outer race may deform.
- Do not tap on the end of outer race (shaft part).
- Be careful not to deform the baffle plate.

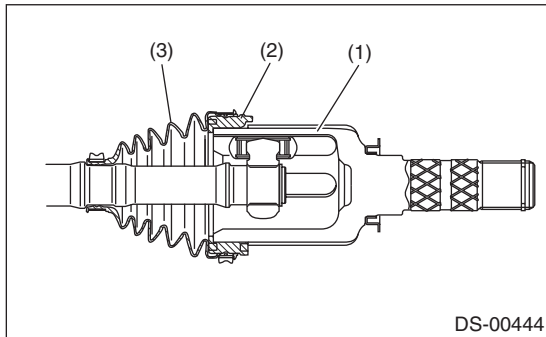


7) Apply an even coat of the specified grease 30 to 40 g (1.06 to 1.41 oz) to the entire inner surface of boot.

8) Install the AAR boot and grommet taking care not to twist it.

CAUTION:

- Replace the boot and grommet as a set.
- Do not let grease get on groove of the outer race side.



- (1) Outer race
- (2) Grommet
- (3) Boot

9) Insert a flat tip screwdriver, etc. between outer race and grommet to make pressure inside of boot as high as barometric pressure.

Front Drive Shaft

DRIVE SHAFT SYSTEM

10) Tighten the boot band.

(1) Install the new large boot band and small boot band at the required positions.

(2) Connect the torque wrench and socket flex handle to the ST.

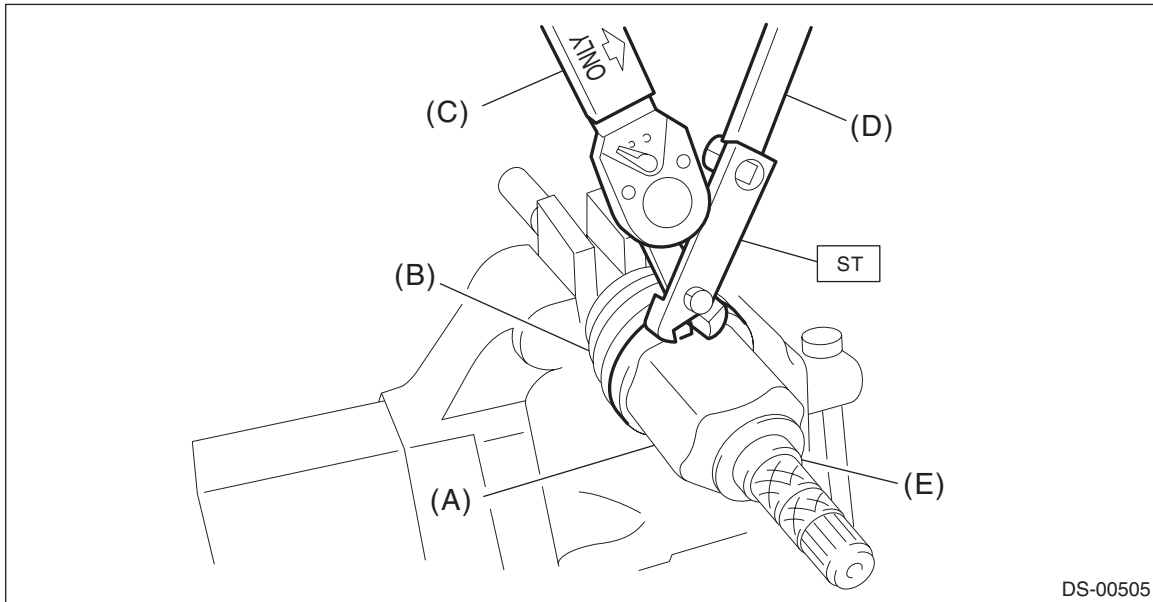
Preparation tool:

ST: BOOT BAND PLIER (28099AC000)

Torque wrench

Socket flex handle

(3) Use a prepared tool, tighten the boot band.



(A) Large boot band

(B) Boot

(C) Torque wrench

(D) Socket flex handle

(E) Outer race

Clearance at the crimped section of the boot band:

Large boot band

1 mm (0.04 in) or less

Small boot band

1 mm (0.04 in) or less

Tightening torque:

Large boot band: 178 N·m (18.15 kgf-m, 131.3 ft-lb)

Small boot band: 145 N·m (14.79 kgf-m, 106.9 ft-lb)

11) Extend and retract the AAR repeatedly to provide an equal coating of grease.

E: INSPECTION

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

• AAR and AC:

Check for seizure, corrosion, damage, wear and 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.