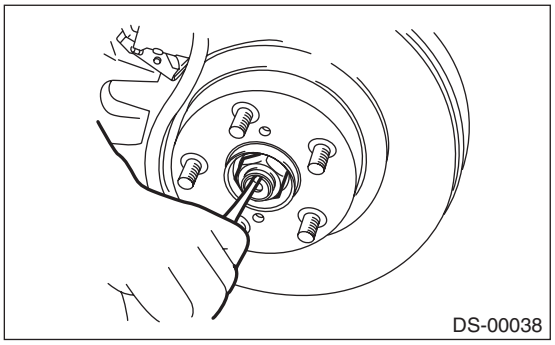
7. Front Drive Shaft

A: REMOVAL

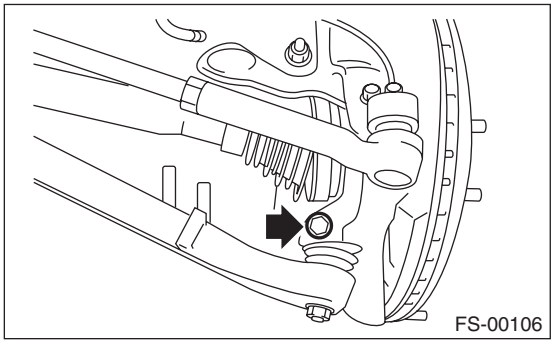
1) Disconnect the ground cable from battery.
2) Lift up the vehicle, and remove the front wheels.
3) Lift the crimped section of axle nut.



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

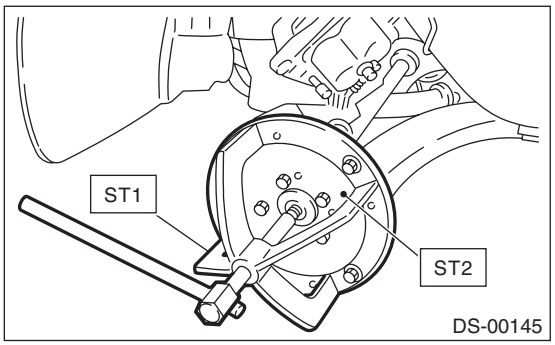
CAUTION:
Do not loosen the axle nut with a load applied to the front axle. Otherwise the hub bearing may become damaged.

5) Drain the transmission gear oil. (MT model)
6) Drain differential gear oil. (AT model)
7) Remove the stabilizer link from front arm.
8) Disconnect the front arm ball joint from the housing.



9) 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



10) 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) 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.

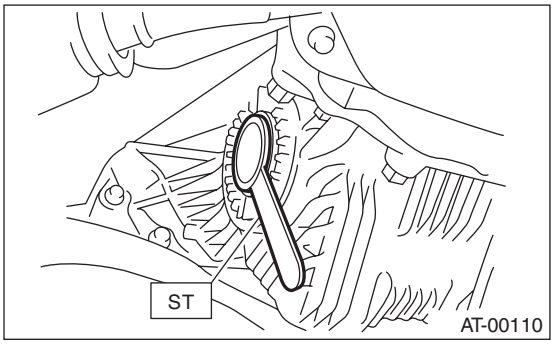
4AT model <Ref. to 4AT-45, REPLACEMENT, Differential Side Retainer Oil Seal.>
5MT model <Ref. to 5MT-31, REPLACEMENT, Differential Side Retainer Oil Seal.>

2) Insert the AC into hub splines.
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, 162.3 ft-lb)

CAUTION:
Do not apply a load to the front axle before tightening the axle nut. Otherwise the hub bearing may become damaged.

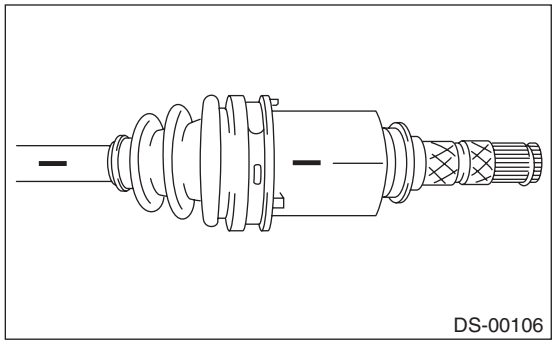
9) After tightening axle nut, lock it securely.

10) Fill transmission gear oil. (MT model)
11) Fill differential gear oil. (AT model)
12) Install the front wheels.

Tightening torque:
100 N·m (10.2 kgf-m, 73.8 ft-lb)
13) Connect the ground cable to battery.
14) Inspect the wheel alignment and adjust if necessary.

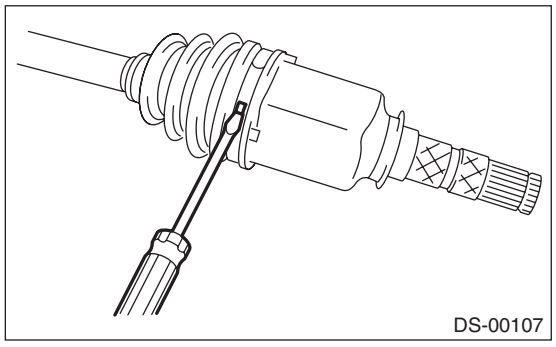
C: DISASSEMBLY

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


DS-00106

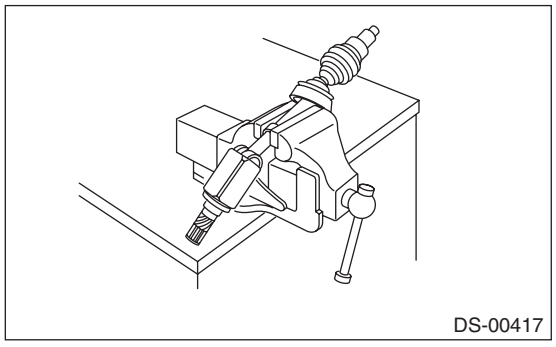
2) Remove the AAR boot band and boot.

CAUTION:
Be careful not to damage the boot.

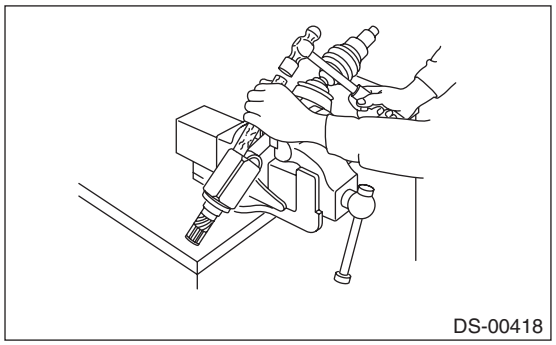

DS-00107

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

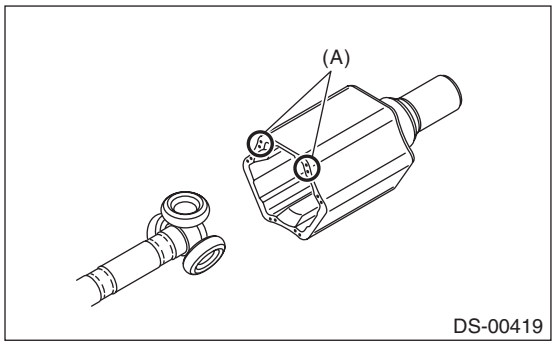
CAUTION:
Do not set the only drive shaft on a vise.


DS-00417

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


DS-00418

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.**



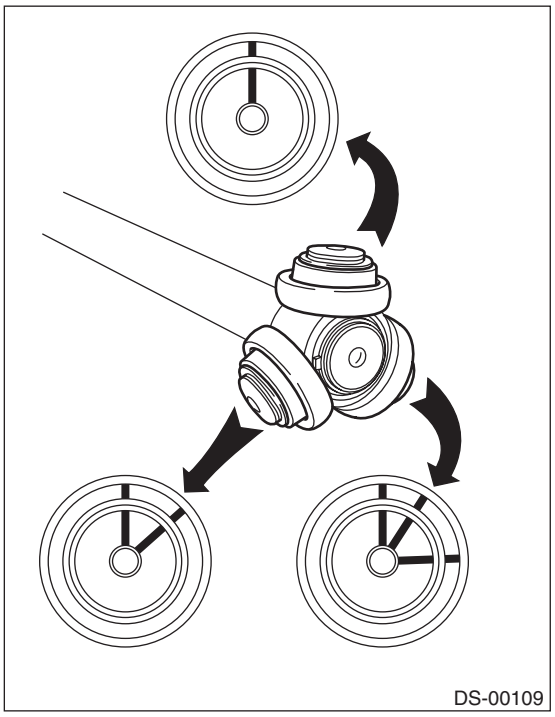
DS-00419

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.

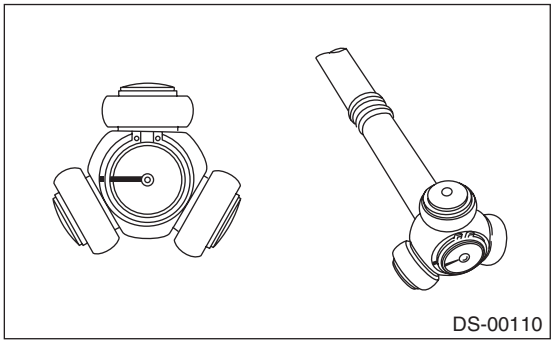
7) Place alignment marks on the roller kit and trunnion.


DS-00109

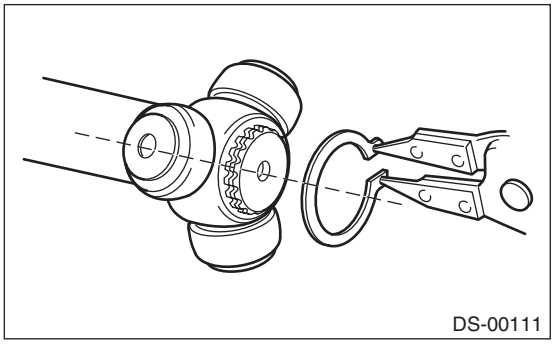
8) Remove the roller kit from trunnion.

CAUTION:
Be careful with the roller kit position.

9) Place alignment marks on the trunnion and shaft.


DS-00110

10) Remove the snap ring and trunnion.


DS-00111

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

11) Remove the AAR boot.

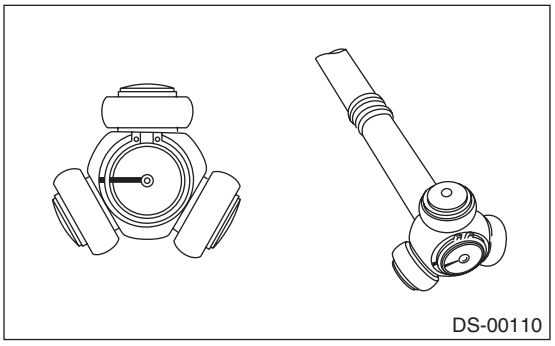
NOTE:
The AC is a non-disassembly part, so the drive shaft disassembly stops here.

D: ASSEMBLY

NOTE:
Use specified grease.

AAR side:
ONE LUBER C

1) Pass the AAR boot through the shaft.
2) Align alignment marks and install the trunnion on the shaft. Install the snap ring into the shaft groove securely.

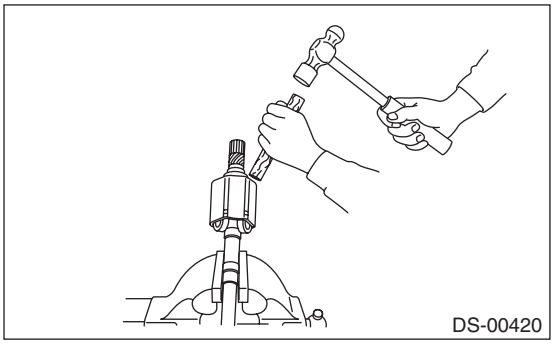

DS-00110

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

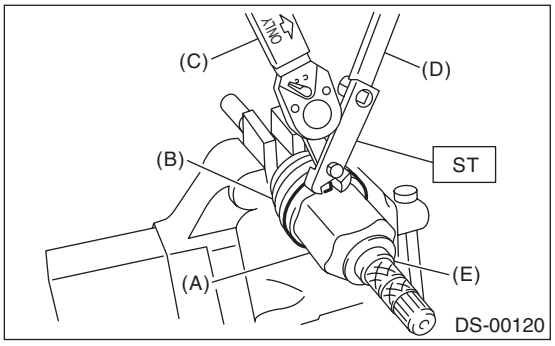
CAUTION:
Do not set the only drive shaft on a vise.

6) Align the alignment marks on the shaft and outer race.
7) 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.**


DS-00420

8) 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.
9) Install the AAR boot taking care not to twist it.
10) Install the new large boot band and small boot band at the required positions.
11) Tighten the boot bands using ST, torque wrench and socket flex handle.
ST 28099AC000 BOOT BAND PLIER



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

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
12) 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.