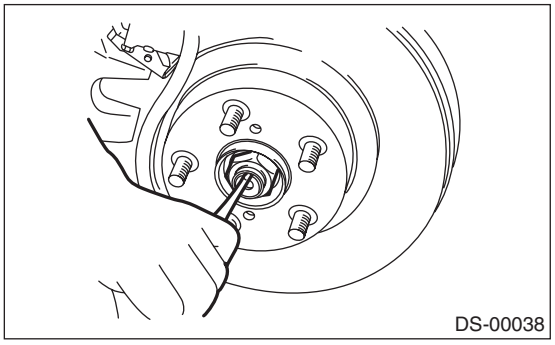
5. Front Drive Shaft

A: REMOVAL

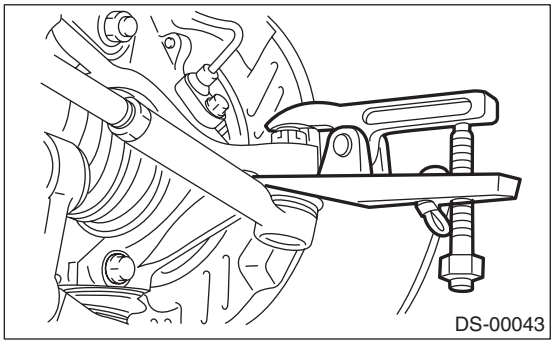
1) Lift up the vehicle, and remove the front wheels.
2) Drain the transmission gear oil. (MT model)
3) Drain the differential gear oil. (AT model)
4) Lift the crimped section of axle nut.



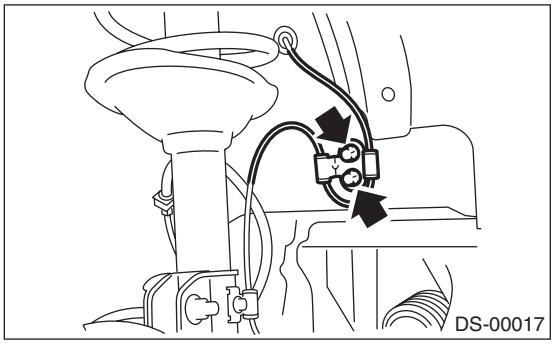
5) Depress the brake pedal and remove the axle nut using a socket wrench.

CAUTION:
Remove the axle nut while there is no load being applied to the axle. Failure to do so may damage the wheel bearings.

6) Remove the cotter pin and castle nut. Using a puller, remove the tie-rod end.

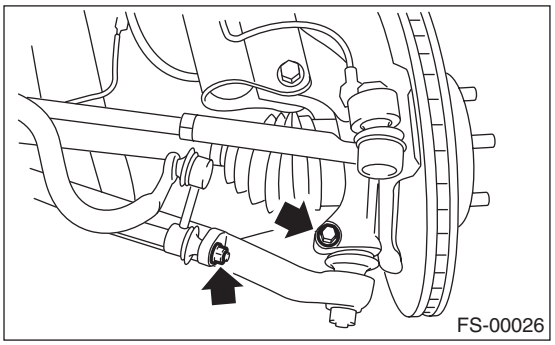


7) Remove the bracket of the ABS wheel speed sensor.



8) Remove the front stabilizer link from the transverse link.

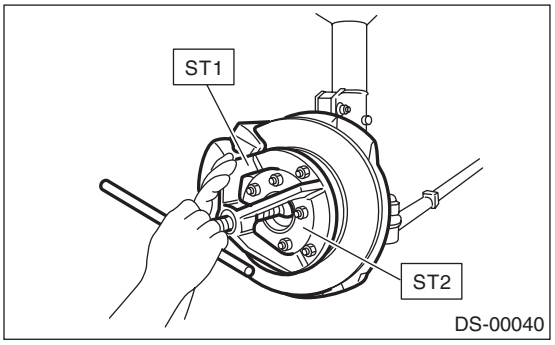
9) Remove the bolts which secure the ball joint. Remove the transverse link from the front housing.



10) Pull out the front drive shaft from the front axle. If it is hard to remove, use ST1 and ST2.

ST1	926470000	AXLE SHAFT PULLER
ST2	927140000	AXLE SHAFT PULLER PLATE

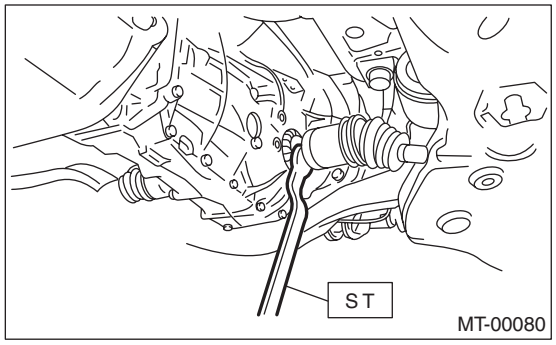
CAUTION:
- **When removing the drive shaft, do not hammer the shaft.**
- **Do not damage the oil seal and tone wheel.**
- **When replacing the front drive shaft, also replace the inner oil seal.**



11) Using the ST, remove the front drive shaft from the transmission.
ST 28399SA000 DRIVE SHAFT REMOVER

NOTE:
• The direction of the ST differs by type of the transmission to be installed.
• For AT model, use ST with the “AT” stamped side facing the transmission side. For MT model, use the ST with the “MT” stamped side facing the transmission side.

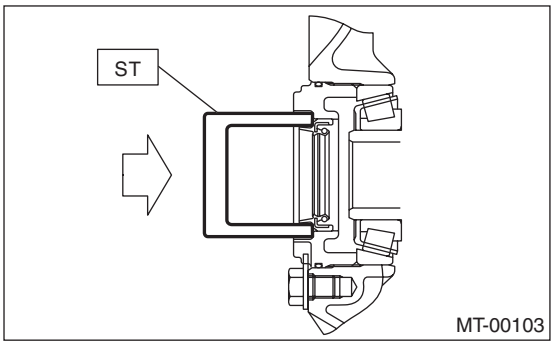
CAUTION:
Be careful not to allow the ST to contact the holder area.



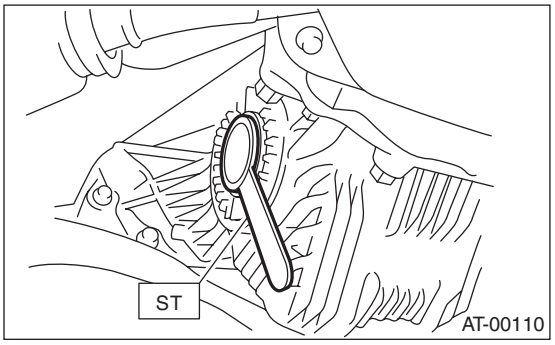
B: INSTALLATION

1) Using the ST, replace the differential side retainer oil seal with a new seal.
ST 18675AA000 DIFFERENTIAL SIDE OIL SEAL INSTALLER

CAUTION:
Always replace the differential side retainer oil seal with a new seal after removing the drive shaft.



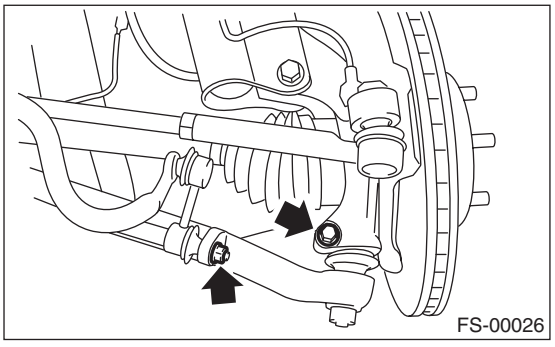
2) Insert the front drive shaft into the front axle.
3) Tighten the axle nut temporarily.
4) Using the ST, install the front drive shaft to the transmission while protecting the differential side retainer oil seal.
ST 28399SA010 OIL SEAL PROTECTOR



5) Install the ball joint to the front axle.

Tightening torque:
50 N·m (5.1 kgf-m, 37 ft-lb)
6) Install the stabilizer link.

Tightening torque:
45 N·m (4.6 kgf-m, 33 ft-lb)

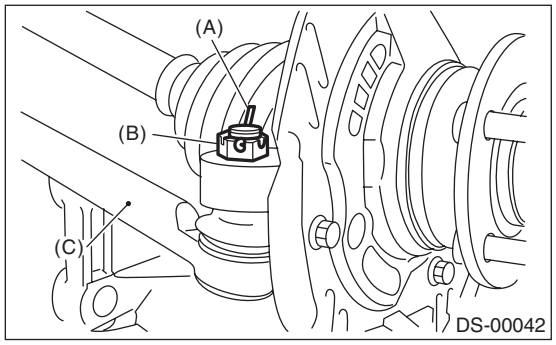


7) Install the tie-rod end.

Tightening torque:
27 N·m (2.75 kgf-m, 19.9 ft-lb)

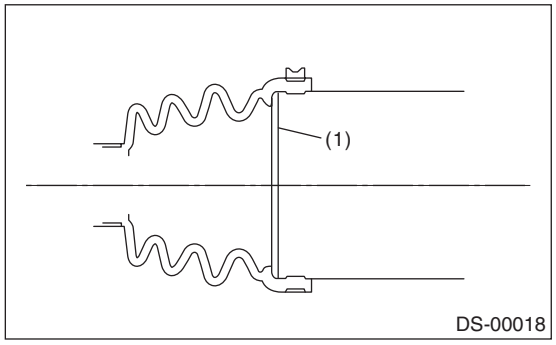
CAUTION:
When connecting the tie-rod, do not hit the cap at bottom of tie-rod end with a hammer.

8) Tighten the castle nut to specified torque and tighten further within 60° until the pin hole is aligned with the slot in nut. Bend the cotter pin to lock.



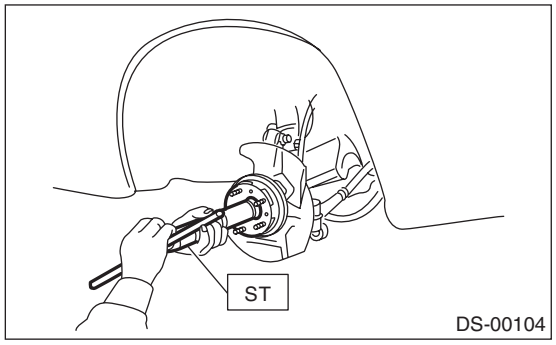
(A) Cotter pin
(B) Castle nut
(C) Tie-rod end

9) Check whether or not the AARi retainer has moved from its prescribed position.



(1) Retainer

10) Using ST1 and ST2, pull the front drive shaft into the required position.
ST1 922431000 AXLE SHAFT INSTALLER
ST2 927390000 ADAPTER

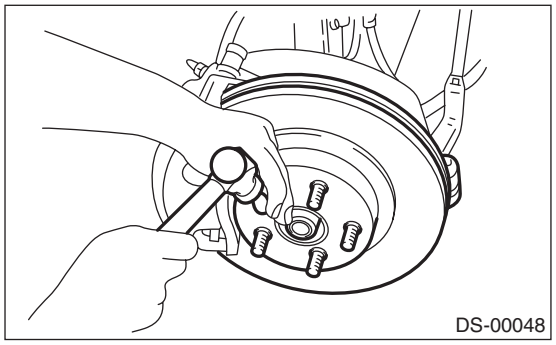


11) While pressing the brake pedal, tighten a new axle nut to the specified torque.

Tightening torque:
220 N·m (22.4 kgf-m, 162 ft-lb)

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

12) After tightening the axle nut, lock it securely.



13) Install the ABS wheel speed sensor bracket.

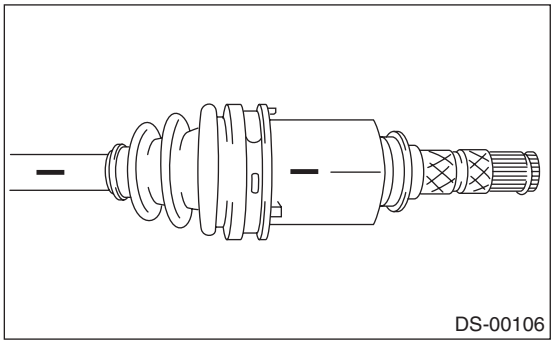
Tightening torque:
32 N·m (3.3 kgf-m, 24 ft-lb)

14) Add the transmission gear oil. (MT model)
15) Add the differential gear oil. (AT model)
16) Install the wheel.

Tightening torque:
100 N·m (10.2 kgf-m, 73.8 ft-lb)

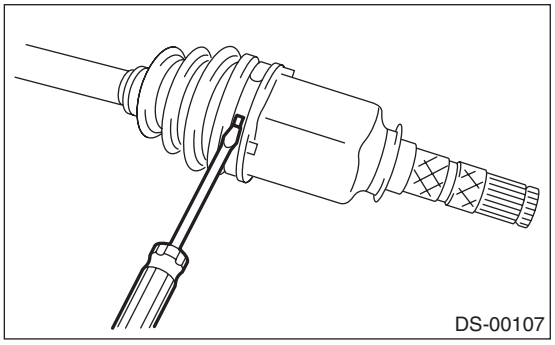
C: DISASSEMBLY

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



2) Remove the AARi boot band and boot.

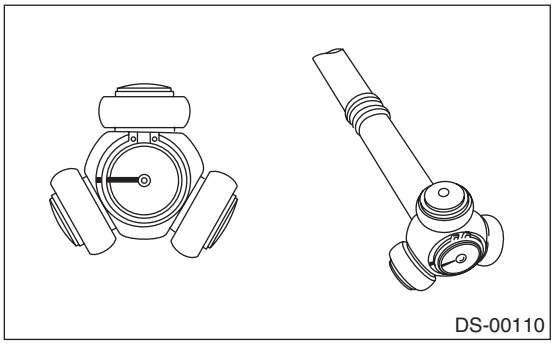
CAUTION:
Be careful not to damage the boot.



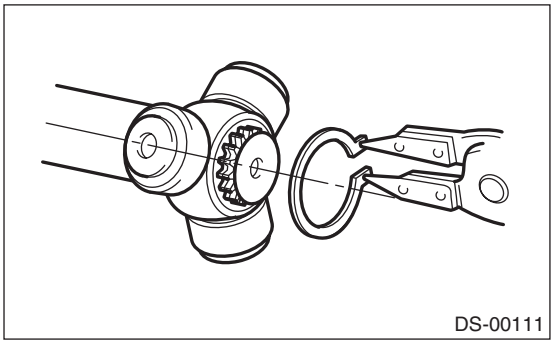
3) Remove the AARi outer race from the shaft assembly.
4) Wipe off grease.

CAUTION:
This grease is a special type of grease. Do not mix it with other grease.

5) Place alignment marks on the trunnion and shaft.



6) Remove the snap ring and trunnion.



7) Remove the AARi boot.

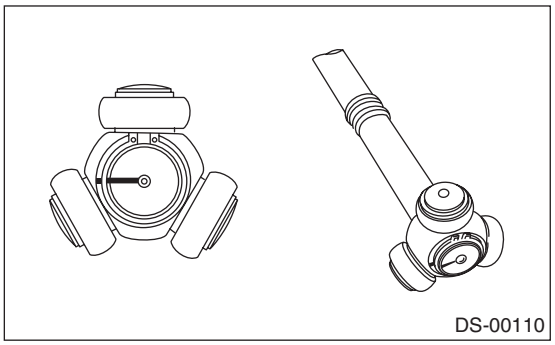
CAUTION:
Be sure to wrap shaft splines with vinyl tape to protect the boot from scratches.

D: ASSEMBLY

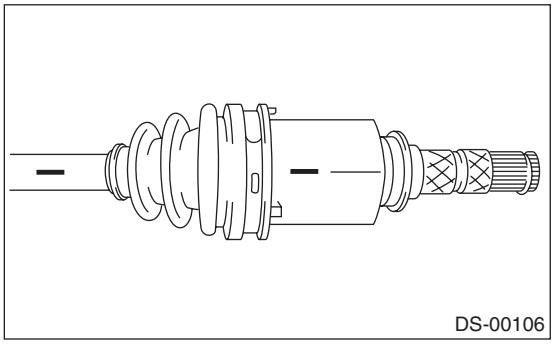
NOTE:
Use specified grease.

Grease:
AARi side:
ONE LOUVER C (Part No. 28395SA000)

1) Pass the AARi boot and the retainer through the shaft and place at the center.
2) Align the alignment marks and install the trunnion on the shaft.



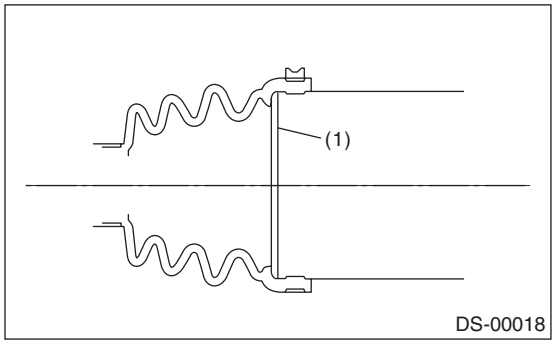
3) Fill 100 to 110 g (3.53 to 3.88 oz) of specified grease into the interior of AARi outer race.
4) Apply a thin coat of specified grease to the free ring and trunnion.
5) Align the alignment marks of the shaft and outer race, and install the outer race.



6) 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.
7) Install the AARi boot taking care not to twist it.

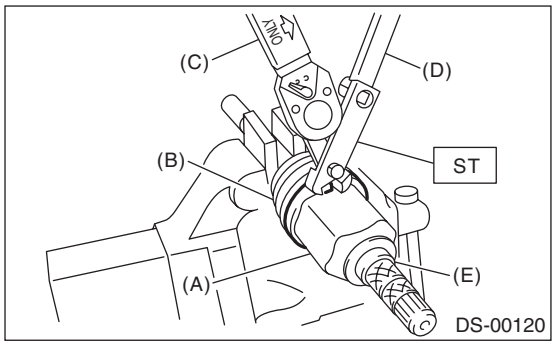
CAUTION:
• The inside of the larger end of the AARi boot and the boot groove is to be cleaned so as to be free of grease and other foreign substances.
• When installing the AARi boot, position the outer race of the AARi at the center of the stroke.

8) Check the position of the retainer.



(1) Retainer

9) Install the new large boot band and small boot band at the required positions.
10) 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) AARi

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

11) Extend and retract the AARi repeatedly to ensure an equal grease coating.

E: INSPECTION

Check the removed parts for damage, wear, corrosion etc. Repair or replace if defective.
1) AARi
Check for seizure, corrosion, damage and excessive play.
2) Shaft
Check for excessive bending, twisting, damage and wear.
3) AC
Check for seizure, corrosion, damage and excessive play.
4) Boot
Check for wear, warping, breakage and scratches.
5) Grease
Check for discoloration and fluidity.