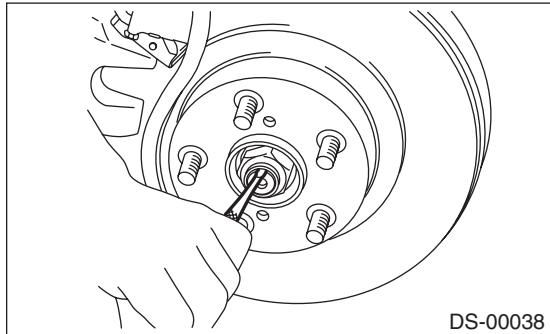


3. Front Axle

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Jack-up the vehicle, support it with safety stands, and remove the front wheels.
- 3) Unlock the axle nut.

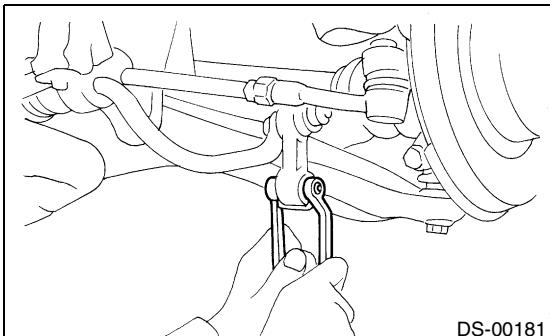


- 4) Remove the axle nut using a socket wrench.

CAUTION:

Be sure to loose and retighten axle nut after removing wheel from vehicle. Failure to follow this rule may damage wheel bearings.

- 5) Remove the stabilizer link.



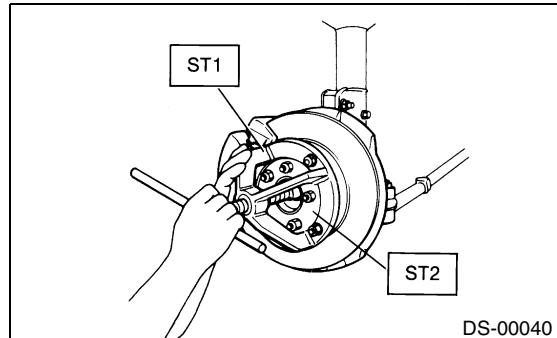
- 6) Remove the disc brake caliper from the housing, and suspend it from strut using a wire.

- 7) Remove the front drive shaft assembly from the hub. If it is hard to remove, use STs.

ST1 926470000 AXLE SHAFT PULLER
ST2 927140000 AXLE SHAFT PULLER PLATE

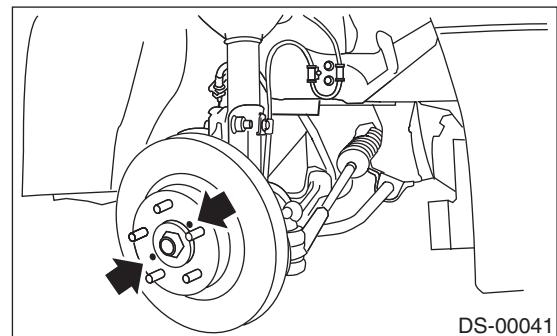
CAUTION:

- Be careful not to damage oil seal lip when removing front drive shaft.
- When replacing front drive shaft, also replace inner oil seal.

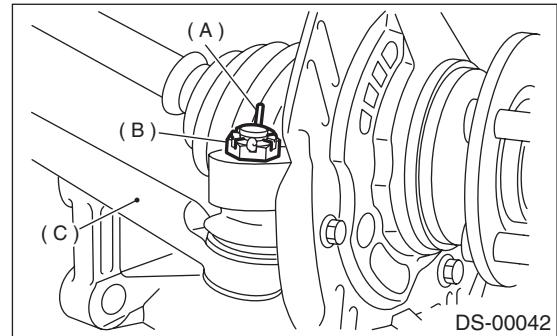


- 8) Remove the disc rotor from the hub.

If disc rotor seizes up within hub, drive disc rotor out by installing an 8-mm bolt in screw hole on the rotor.



- 9) Remove the cotter pin and castle nut which secure tie-rod end to housing knuckle arm.

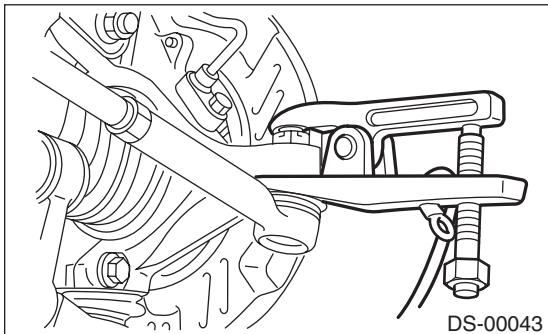


(A) Cotter pin
(B) Castle nut
(C) Tie-rod

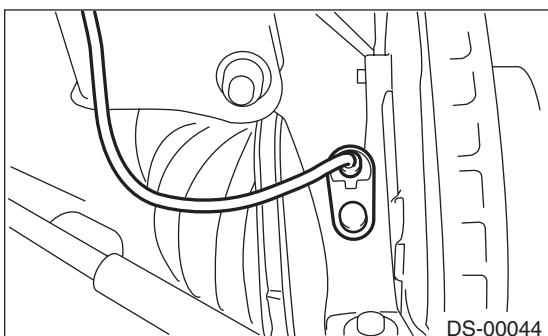
FRONT AXLE

DRIVE SHAFT SYSTEM

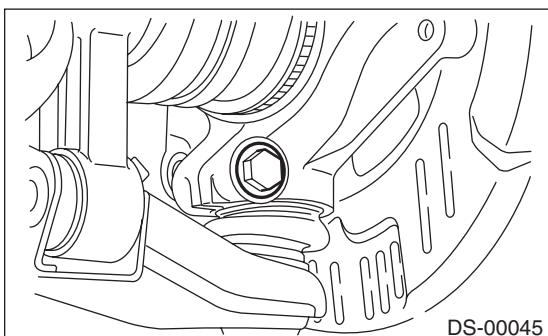
10) Using a puller, remove the tie-rod ball joint from the knuckle arm.



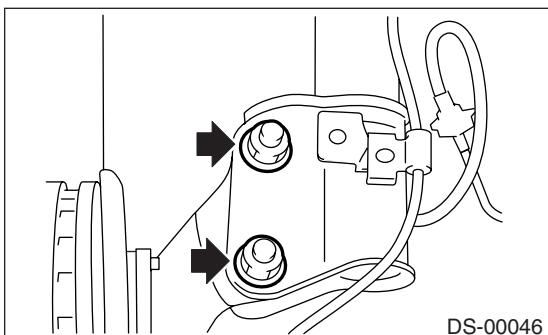
11) Remove the ABS sensor assembly and harness in advance.



12) Remove the transverse link ball joint from the housing.



13) After scribing an alignment mark on camber adjusting bolt head, remove bolts which connect housing and strut, and disconnect the housing from the strut.



B: INSTALLATION

1) Install the transverse link ball joint to the housing.

Tightening torque:

49 N·m (5.0 kgf-m, 36 ft-lb)

2) While aligning alignment mark on camber adjusting bolt head, connect the housing and strut.

CAUTION:

Use a new self-locking nut.

Tightening torque:

152 N·m (15.5 kgf-m, 112 ft-lb)

3) Install the ABS sensor on the housing.

Tightening torque:

32 N·m (3.3 kgf-m, 24 ft-lb)

4) Install the disc rotor on the hub.

5) Install the disc brake caliper on the housing.

Tightening torque:

78 N·m (8 kgf-m, 57.9 ft-lb)

6) Install the front drive shaft. <Ref. to DS-32, INSTALLATION, Front Drive Shaft.>

7) Connect the stabilizer link.

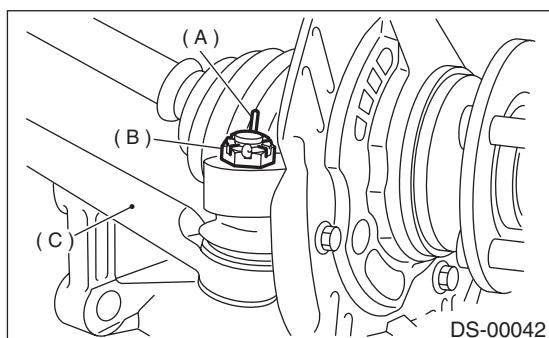
8) Connect the tie-rod end ball joint and knuckle arm with a castle nut, and insert the cotter pin into the tie-rod end.

Castle nut tightening torque:

Tighten to 27.0 N·m (2.75 kgf-m, 19.9 ft-lb), and tighten further within 60° until cotter pin hole is aligned with a slot in the nut.

CAUTION:

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



(A) Cotter pin

(B) Castle nut

(C) Tie-rod

9) While depressing brake pedal, tighten the axle nut and lock it securely.

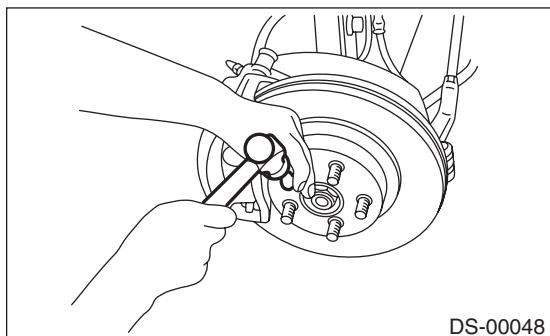
Tightening torque:

190 N·m (19 kgf·m, 140 ft·lb)

CAUTION:

- Use a new axle nut.
- Always tighten axle nut before installing wheel on vehicle. If wheel is installed and comes in contact with ground when axle nut is loose, wheel bearings may be damaged.
- Be sure to tighten axle nut to specified torque. Do not overtighten it as this may damage wheel bearing.

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



11) Install the wheel and tighten the wheel nuts to specified torque.

Tightening torque:

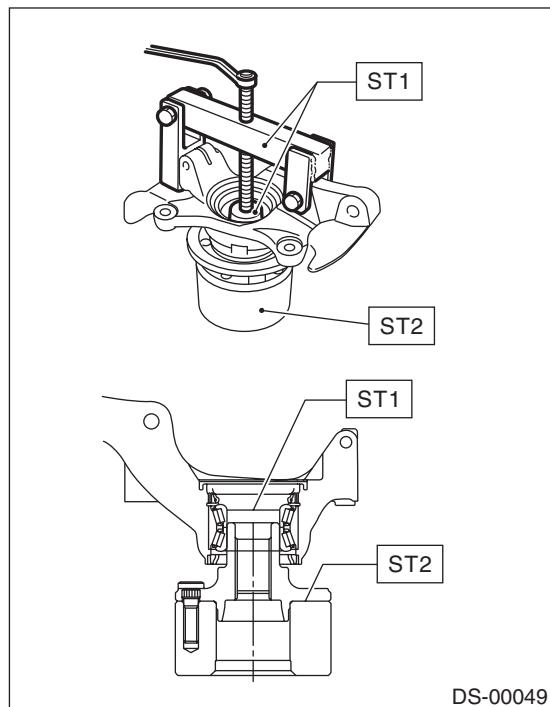
90 N·m (9.2 kgf·m, 66.5 ft·lb)

C: DISASSEMBLY

- 1) Using ST1, support housing and hub securely.
- 2) Attach ST2 to housing and drive hub out.

ST1 927060000 HUB REMOVER

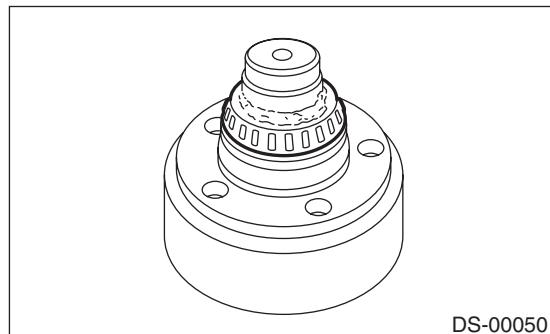
ST2 927080000 HUB STAND



If inner bearing race remains in the hub, remove it with a suitable tool (commercially available).

CAUTION:

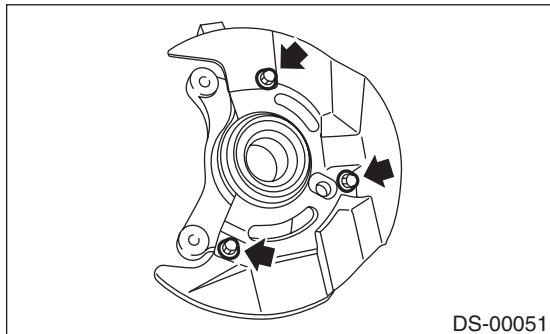
- Be careful not to scratch polished area of hub.



FRONT AXLE

DRIVE SHAFT SYSTEM

3) Remove the disc cover from the housing.



4) Using a standard screwdriver, remove the outer and inner oil seals.

CAUTION:

Do not use old oil seals.

5) Using flat bladed screwdriver, remove the snap ring.

CAUTION:

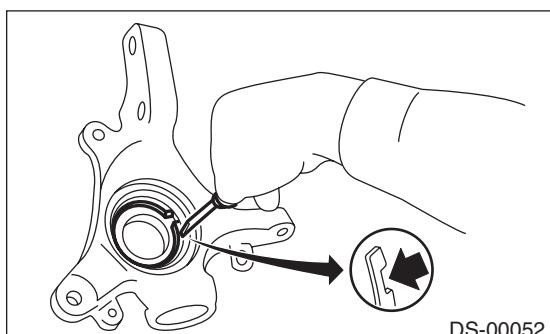
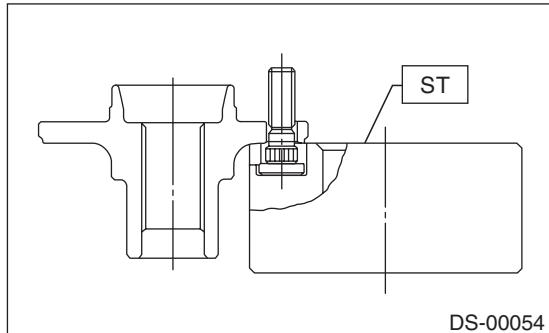
Be careful not to damage housing at removal.

8) Using ST and a hydraulic press, drive hub bolts out.

ST 927080000 HUB STAND

CAUTION:

Be careful not to hammer the hub bolts. This may deform hub.



6) Using ST1, support housing securely.

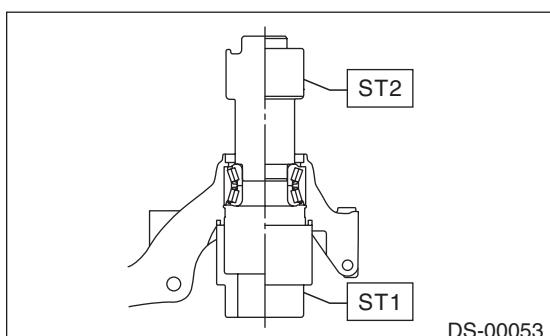
7) Using ST2, press inner race to drive out outer bearing.

ST1 927400000 HOUSING STAND

ST2 927100000 BEARING PULLER

CAUTION:

- If the hub was removed, use a new bearing.**
- Do not replace inner or outer race separately; always replace as a unit.**

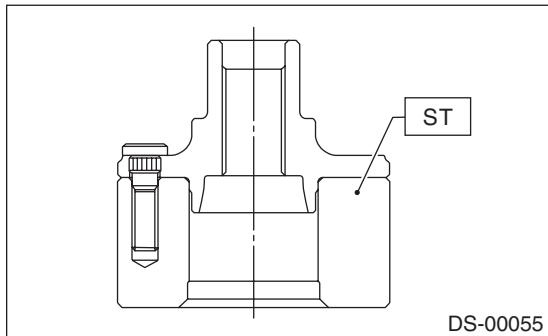


D: ASSEMBLY**CAUTION:**

When the hub is to be removed from housing, replace the bearing set and oil seal with new ones.

1) Attach the hub to ST securely.

ST 927080000 HUB STAND



2) Using a hydraulic press, press the new hub bolts into place.

CAUTION:

Be sure to press hub bolts until their seating surfaces contact the hub.

NOTE:

Use 12 mm (0.47 in) dia. holes in HUB STAND to prevent bolts from tilting.

3) Clean the dust or foreign particles from inside the housing.

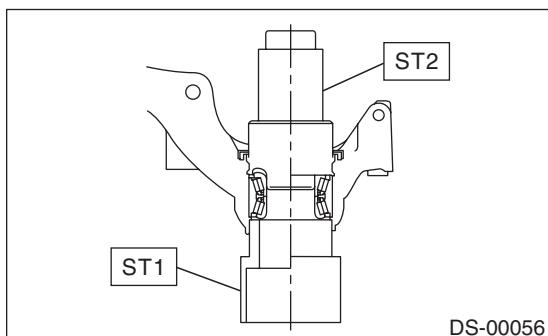
4) Using ST1 and ST2, press a new bearing into place.

ST1 927400000 HOUSING STAND

ST2 927100000 BEARING PULLER

CAUTION:

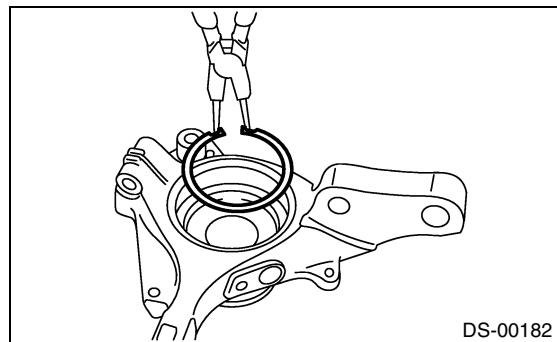
- Always press outer race when installing bearing.
- Be careful not to remove the plastic lock from inner race when installing bearing.
- Do not apply pressure more than 30 kN (3.1 ton, 2.8 US ton, 3.1 Imp ton).



5) Using pliers, install the snap ring in its groove.

CAUTION:

Make sure to install it firmly to groove.



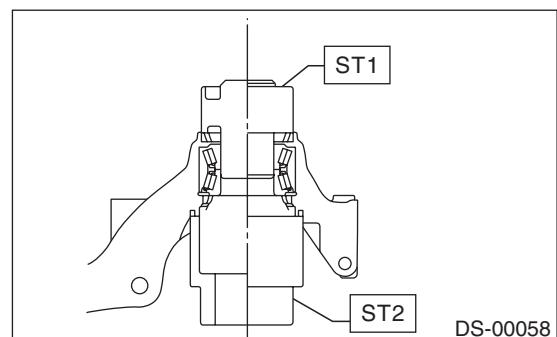
6) Using ST1 and ST2, press the outer oil seal until it contacts the bottom of housing.

ST1 927410000 OIL SEAL INSTALLER

ST2 927400000 HOUSING STAND

CAUTION:

Do not apply pressure more than 3.92 kN (0.4 ton, 0.4 US ton, 0.4 Imp ton).



FRONT AXLE

DRIVE SHAFT SYSTEM

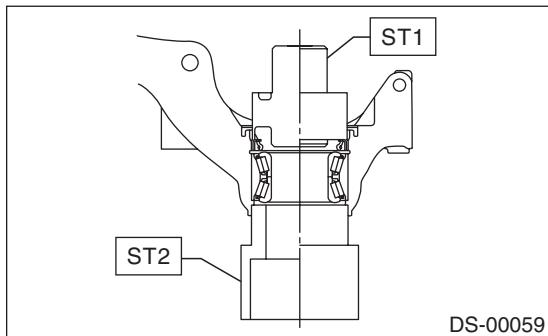
7) Using ST1 and ST2, press the inner oil seal until it contacts circlip.

ST1 927410000 OIL SEAL INSTALLER

ST2 927400000 HOUSING STAND

CAUTION:

Do not apply pressure more than 3.92 kN (0.4 ton, 0.4 US ton, 0.4 Imp ton).



DS-00059

8) Invert the ST and housing.

ST 927400000 HOUSING STAND

9) Apply the sufficient grease to oil seal lip.

Specified grease

SHELL 6459N

CAUTION:

• If specified grease is not available, remove bearing grease and apply Auto Rex A instead.

• Do not mix different types of grease.

10) Install the disc cover to housing the three bolts.

Tightening torque:

18 N·m (1.8 kgf·m, 13.0 ft-lb)

11) Attach the hub to ST1 securely.

12) Clean the dust or foreign particles from the polished surface of hub.

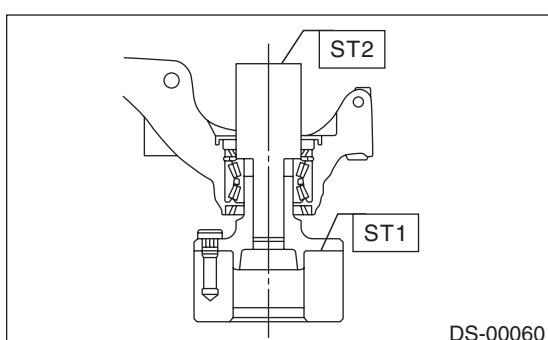
13) Using ST2, press the bearing into hub by driving inner race.

ST1 927080000 HUB STAND

ST2 927120000 HUB INSTALLER

CAUTION:

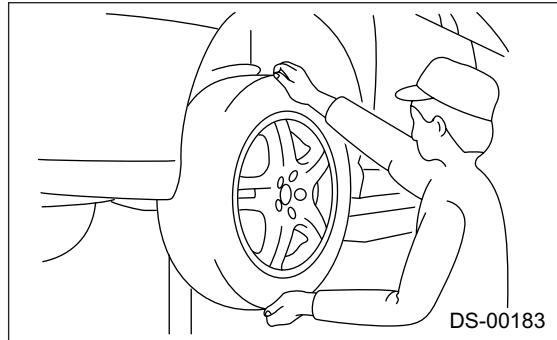
Do not apply pressure more than 25 kN (2.5 ton, 2.3 US ton, 2.5 Imp ton).



DS-00060

E: INSPECTION

1) Inspect the rattle of bearing, give the tires a shake with grasping both the upper and lower sides of the tire. And also inspect to rotate the wheel smoothly.

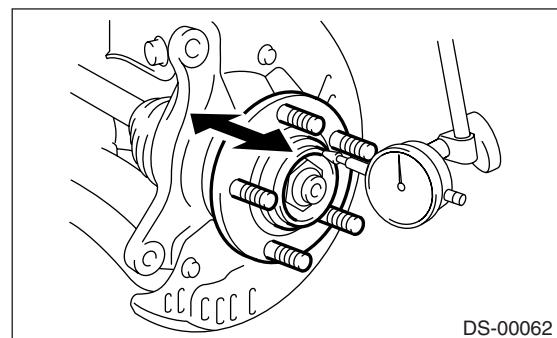


DS-00183

2) Inspect the lean of axis direction using a dial gauge. Replace the hub bearing if the load range exceed the limitation.

Limit:

Maximum: 0.05mm (0.0020in)



DS-00062

3) Inspect the removed parts for wear and damage. If defective, replace with new ones.