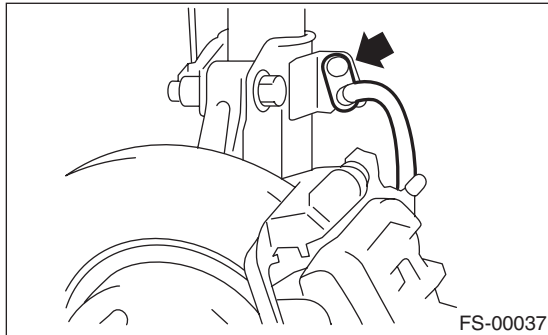


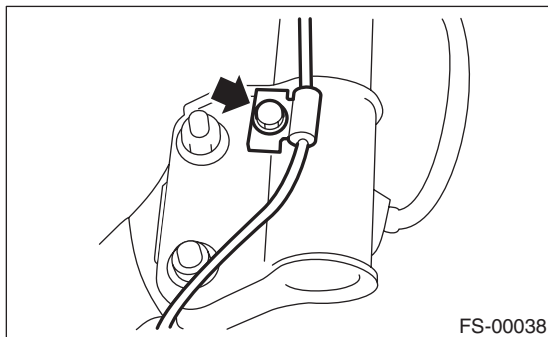
## 7. Front Strut

### A: REMOVAL

- 1) Lift-up the vehicle, and then remove the front wheels.
- 2) Place an alignment mark on the camber adjusting bolt and strut.
- 3) Remove the bolt securing the brake hose from the strut.



- 4) Remove the bolt securing the ABS wheel speed sensor harness.

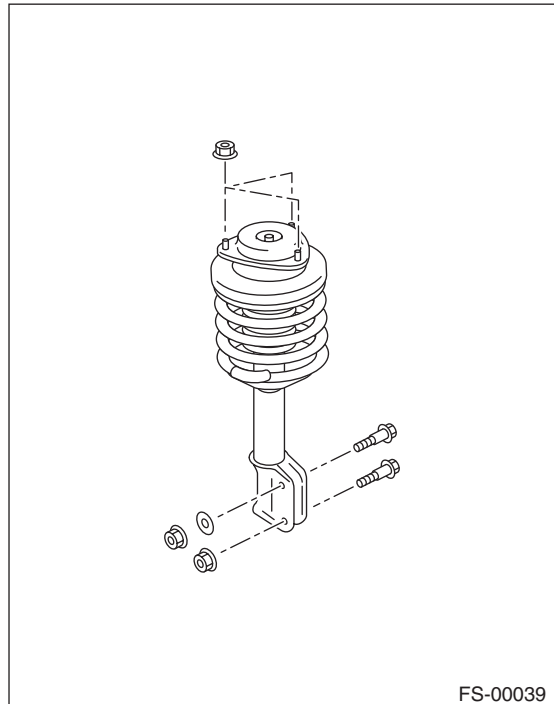


- 5) Remove the two bolts securing the housing to the strut.

#### NOTE:

While holding the head of the adjusting bolt, loosen the self-locking nut.

- 6) Remove the three nuts securing strut mount to body.



### B: INSTALLATION

- 1) Install the strut mount at the upper side of strut to body, and tighten it with new self-locking nuts.

#### Tightening torque:

**20 N·m (2.0 kgf-m, 14.5 ft-lb)**

- 2) Align alignment marks on the camber adjusting bolt and strut.

Using new self-locking nuts, install the strut to the housing.

#### NOTE:

While holding the head of adjusting bolt, tighten the self-locking nut.

#### Tightening torque:

**152 N·m (15.5 kgf-m, 112.1 ft-lb)**

- 3) Secure the ABS wheel speed sensor harness to the strut.

#### Tightening torque:

**33 N·m (3.4 kgf-m, 24.3 ft-lb)**

- 4) Install the bolts which secure the brake hose to the strut.

#### Tightening torque:

**33 N·m (3.4 kgf-m, 24.3 ft-lb)**

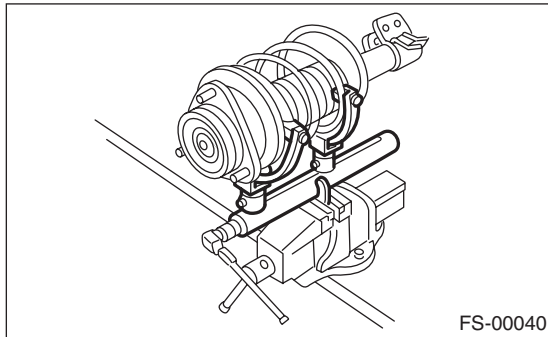
- 5) Install the front wheels.
- 6) Inspect the wheel alignment and adjust if necessary.

# Front Strut

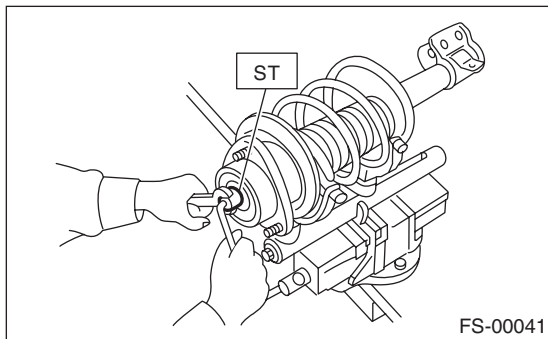
## FRONT SUSPENSION

### C: DISASSEMBLY

- 1) Using a coil spring compressor, compress the coil spring.



- 2) Using the ST, remove the self-locking nut.  
ST 20399AG000 STRUT MOUNT SOCKET



- 3) Remove the strut mount, spacer and upper spring seat from strut.
- 4) Gradually decrease the compression force of compressor, and remove the coil spring.
- 5) Remove the dust cover and helper spring.

### D: ASSEMBLY

- 1) Before installing the coil spring, strut mount, etc. on strut, check for the presence of air in the dampening force generating mechanism of the strut since air prevents proper dampening force production.
- 2) Checking for presence of air
  - (1) Place the strut vertically with the piston rod facing up.
  - (2) Move the piston rod to the center of its entire stroke.
  - (3) While holding the piston rod end with fingers, move the rod up and down.
  - (4) If the piston rod moves 10 mm (0.39 in) or more in the former step, purge air from the strut.
- 3) Air purging procedure
  - (1) Place the strut vertically with the piston rod facing up.
  - (2) Fully extend the piston rod.
  - (3) With the piston rod fully extended, place the piston rod side down. The strut must stand vertically.
  - (4) Fully retract the piston rod.

- (5) Repeat 3 or 4 times from the step (1).

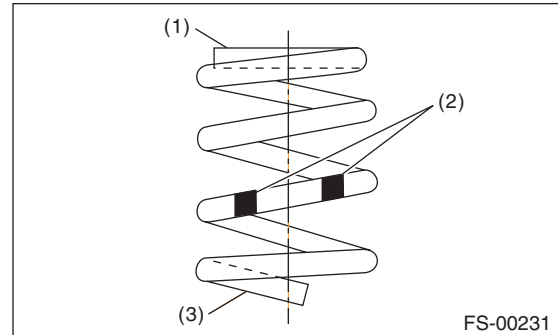
#### NOTE:

After purging air from the strut, be sure to place the strut with the piston rod facing up. If the strut is laid down for any reason, check for the entry of air in accordance with "Checking for presence of air"

- 4) Using a coil spring compressor, compress the coil spring.

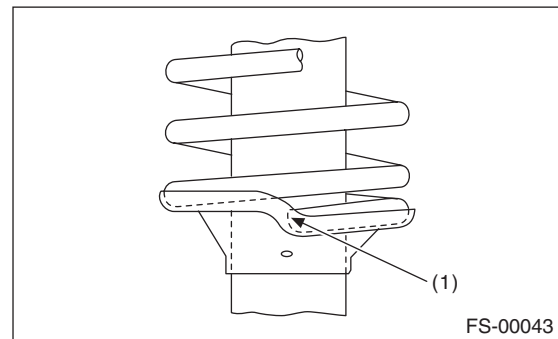
#### NOTE:

Make sure that the vertical install direction of the coil spring is as shown in the figure.



- (1) Diameter is small (Upper part)
- (2) Identification paint
- (3) Diameter is large (Bottom part)

- 5) Set the coil spring correctly so that its end face seats well in the spring seat as shown in the figure.



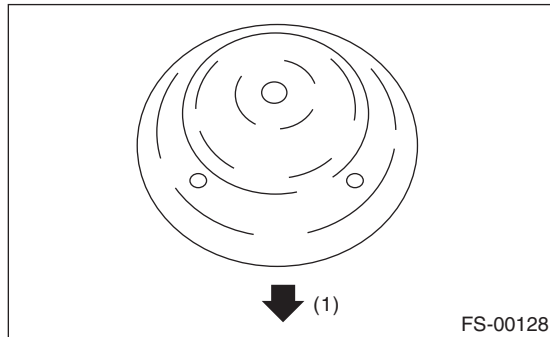
- (1) Coil spring end face

- 6) Install the helper and dust cover to the piston rod.

7) Pull the piston rod fully upward, and install the spring seat.

**NOTE:**

Position the upper spring seat as shown in the figure.



(1) Outside of body

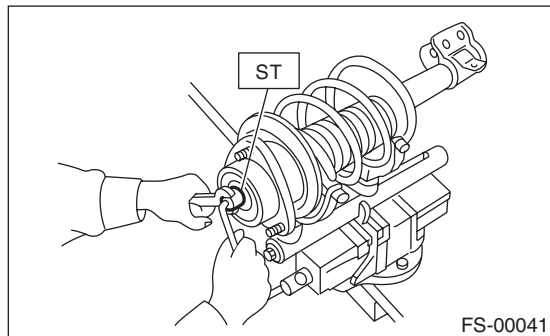
8) Install spacer and the strut mount to piston rod, and tighten a new self-locking nut temporarily.

9) Using a hexagon wrench to prevent strut rod from turning, tighten the new self-locking nut with ST.

ST 20399AG000 STRUT MOUNT SOCKET

**Tightening torque:**

**55 N·m (5.6 kgf-m, 41 ft-lb)**



10) Loosen the coil spring compressor carefully.

## E: INSPECTION

Check the removed part for wear, damage and cracks, and then repair or replace it if defective.

### 1. DAMPER STRUT

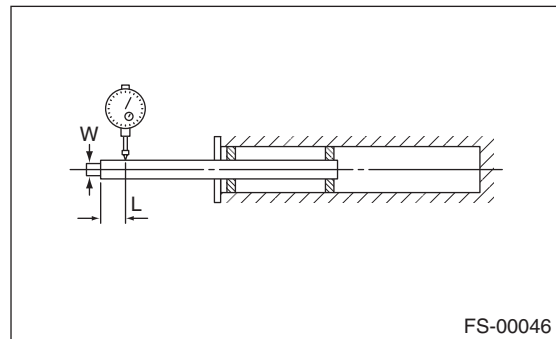
1) Check for oil leaks.

2) Move the piston rod up and down to check that it operates smoothly without any hitch.

3) Piston rod play

Measure the play as follows:

Fix the outer shell in place and fully extend the rod. Set a dial gauge at the end of rod L [10 mm (0.39 in)], and then read the dial gauge indication  $P_1$  while applying a force of W [20 N (2 kgf, 4 lb)] to the threaded portion. Apply a force of 20 N (2 kgf, 4 lb) from the opposite direction of "W", and then read the dial gauge indication  $P_2$ .



**Play limit ( $P_1 + P_2$ ):**

**0.8 mm (0.031 in)**

If the play exceeds limit, replace the strut.

### 2. STRUT MOUNT

Check the rubber part for deformation, cracks or deterioration, and then replace it with a new part if defective.

### 3. DUST COVER

If major cracks or damage are found, replace it with a new part.

### 4. COIL SPRING

If a permanent strain is found, replaced it with a new part.

### 5. HELPER

If major cracks or damage are found, replace it with a new part.

### F: DISPOSAL

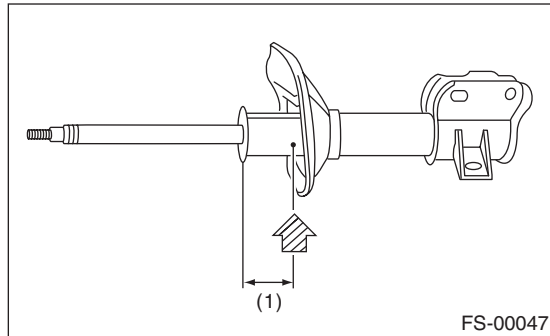
#### 1. EXCEPT FOR BILSTEIN STRUT

##### CAUTION:

- Before handling struts, be sure to wear goggles to protect eyes from gas, oil and cutting powder.
- Do not disassemble the strut damper or throw into flames.
- When discarding gas filled struts, drill holes in them to purge the gas.

1) Place the strut on a level surface with the piston rod fully extended.

2) Using a 2 — 3 mm (0.08 — 0.12 in) dia. drill, make holes in areas shown in the figure.



(1) 40 mm (1.57 in)

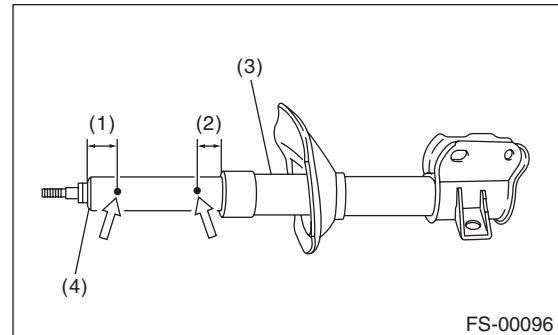
#### 2. BILSTEIN STRUT

##### CAUTION:

- Before handling struts filled with gas, be sure to wear goggles to protect eyes from gas, oil and metal shavings.
- Do not disassemble the strut damper or throw into flames.
- When discarding gas filled struts, drill holes in them to purge the gas.

1) Place the gas-filled strut on a level surface with the damping tube fully extended.

2) Using a 2 — 3 mm (0.08 — 0.12 in) dia. drill, make the holes at (1) first, and then (2).



(1) 20 mm (0.78 in)

(2) 10 mm (0.39 in)

(3) Strut

(4) Damping tube