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# REAR SUSPENSION

## 1. General Description

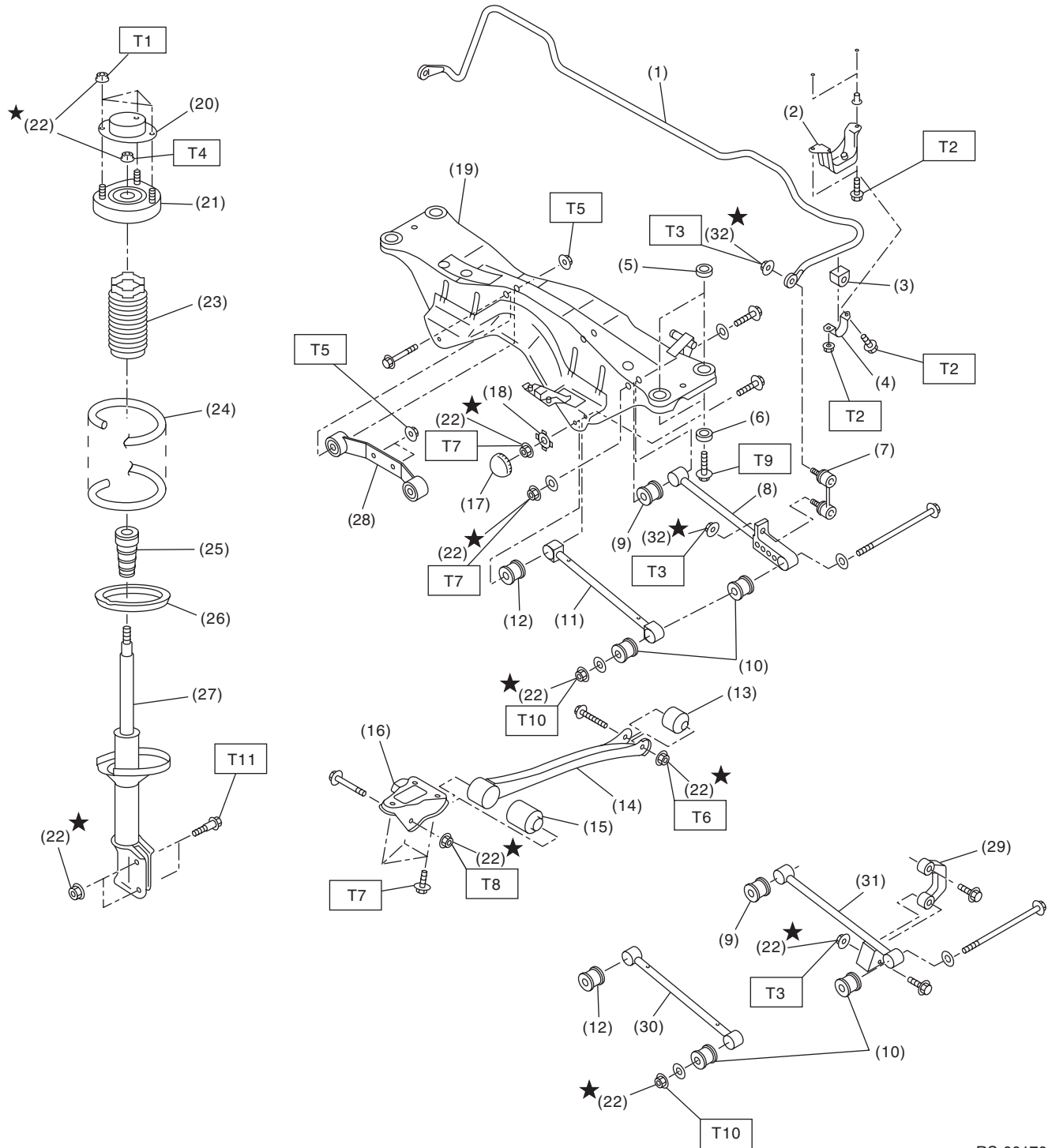
### A: SPECIFICATION

Refer to "FS" section for rear suspension specifications. <Ref. to FS-2, SPECIFICATION, General Description.>

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B: COMPONENT

1. REAR SUSPENSION



RS-00170

## General Description

### REAR SUSPENSION

(1) Stabilizer	(17) Cap (Protection)	(31) Rear lateral link (Except for STI model)
(2) Stabilizer bracket	(18) Washer	(32) Flange nut
(3) Stabilizer bushing	(19) Rear crossmember	
(4) Clamp	(20) Strut mount cap	
(5) Floating bushing	(21) Strut mount	
(6) Stopper	(22) Self-locking nut	
(7) Stabilizer link (STI model)	(23) Dust cover	
(8) Stabilizer link (STI model)	(24) Coil spring	
(9) Bushing (C)	(25) Helper	
(10) Bushing (A)	(26) Lower rubber seat	
(11) Front lateral link (turbo model and STI model)	(27) Damper strut	
(12) Bushing (B)	(28) Differential rear member	
(13) Trailing link rear bushing	(29) Stabilizer link (Except for STI model)	
(14) Trailing link	(30) Front lateral link (non-turbo model)	
(15) Trailing link front bushing		
(16) Trailing link bracket		

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**Tightening torque: N·m (kgf-m, ft-lb)**

**T1: 20 (2.0, 14.5)**

**T2: 25 (2.5, 18.1)**

**T3: 45 (4.6, 33.2)**

**T4: 55 (5.6, 40.6)**

**T5: 70 (7.1, 52)**

**T6: 90 (9.2, 66)**

**T7: 100 (10.2, 74)**

**T8: 115 (11.7, 85)**

**T9: 130 (13.3, 96)**

**T10: 140 (14.3, 103)**

**T11: 200 (20.0, 145)**

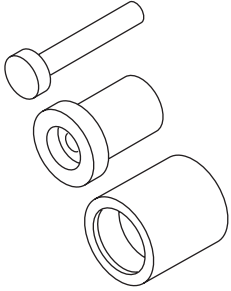
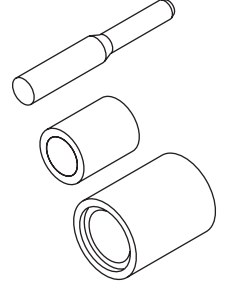
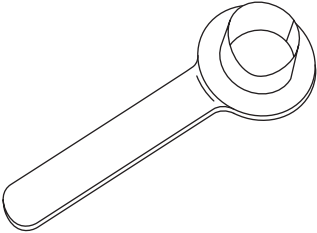
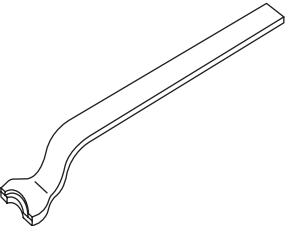
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### C: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Before disposing of shock absorbers, be sure to bleed the gas out completely. Also, do not expose to flames or fire.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Use SUBARU genuine grease etc. or equivalent. Do not mix grease etc. of different grades or manufacturers.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or cloth between the part and the vise.

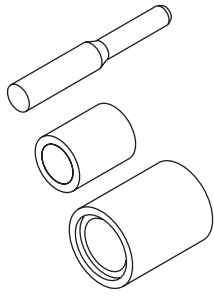
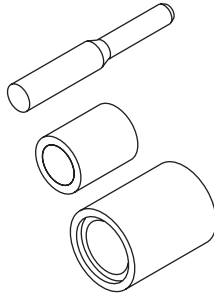
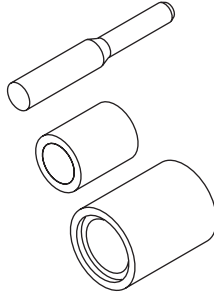
**D: PREPARATION TOOL**

**1. SPECIAL TOOL**

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-927720000</p>	927720000	INSTALLER & REMOVER SET	Used for replacing the front bushing.
 <p>ST-927730000</p>	927730000	INSTALLER & REMOVER SET	Used for replacing the rear bushing.
 <p>ST28099PA090</p>	28099PA090	OIL SEAL PROTECTOR	<ul style="list-style-type: none"> <li>• Used for installing the rear drive shaft to the rear differential.</li> <li>• For oil seal protection</li> </ul>
 <p>ST28099PA100</p>	28099PA100	DRIVE SHAFT REMOVER	Used for removal of DOJ.

# General Description

## REAR SUSPENSION

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-927710000</p>	927710000	INSTALLER & REMOVER SET	Used for replacing the lateral link bushing.
 <p style="text-align: center;">ST-927700000</p>	927700000	INSTALLER & REMOVER SET	Used for replacing the lateral link bushing.
 <p style="text-align: center;">ST-927690000</p>	927690000	INSTALLER & REMOVER SET	Used for replacing the lateral link bushing.

## 2. GENERAL TOOL

TOOL NAME	REMARKS
Alignment gauge	Used for measuring wheel alignment.
Alignment gauge adapter	Used for measuring wheel alignment.
Turning radius gauge	Used for measuring wheel alignment.
Toe-in gauge	Used for toe-in measurement.
Transmission jack	Used for suspension assembly/disassembly.
Bearing puller	Used for removing bushings.
Coil spring compressor	Used for strut assembly/disassembly.

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## 2. Wheel Alignment

### A: INSPECTION

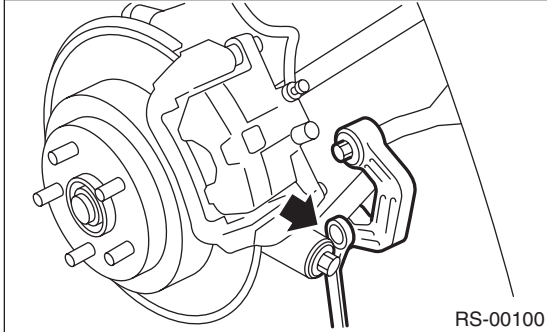
NOTE:

Measure and adjust the front and rear wheel alignment together. Refer to "FS" section for measurement and adjustment of wheel alignment. <Ref. to FS-6, INSPECTION, Wheel Alignment.>

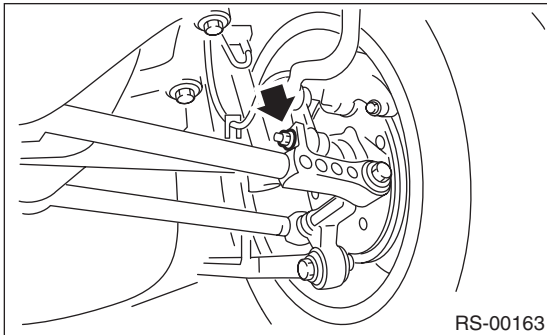
### 3. Rear Stabilizer

#### A: REMOVAL

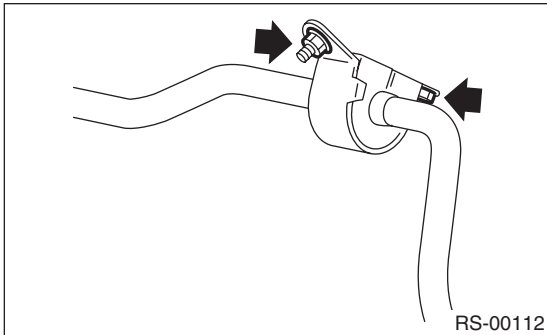
- 1) Lift up the vehicle.
- 2) Remove the stabilizer link.
  - Except for STI model



- STI model



- 3) Remove the bolt and nut which secure the stabilizer to the stabilizer bracket.

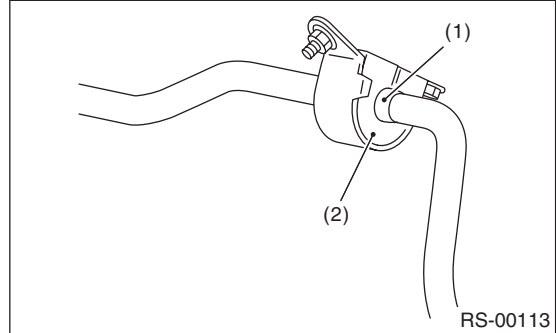


#### B: INSTALLATION

- 1) Install in the reverse order of removal.

##### NOTE:

- Install the stabilizer bushing while aligning it with the paint mark on the stabilizer.
- When installing, make sure that the stabilizer bushing and stabilizer are labeled with the same identification marks (paint mark).



- (1) Paint mark of the stabilizer
- (2) Stabilizer bushing identification color

- 2) Always tighten the stabilizer bushing in the state where the vehicle is at curb weight and the wheels are in full contact with the ground.

##### Tightening torque:

**Stabilizer link to rear lateral link**

**45 N·m (4.6 kgf-m, 33.2 ft-lb)**

**Stabilizer to stabilizer bracket**

**25 N·m (2.5 kgf-m, 18.1 ft-lb)**

#### C: INSPECTION

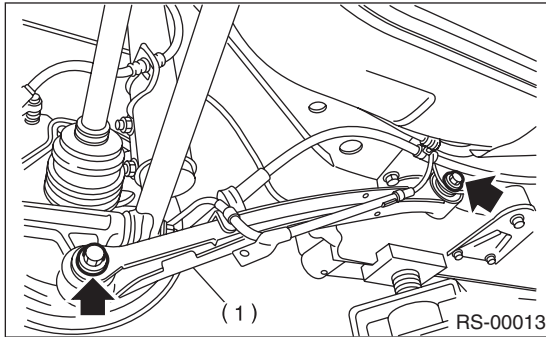
- 1) Check the bushing for major cracks, fatigue or damage.
- 2) Make sure that the stabilizer link has no deformation, cracks or damage or that the bushing is not protruding from the hole in the stabilizer link.



## 4. Rear Trailing Link

### A: REMOVAL

- 1) Loosen the rear wheel nuts.
- 2) Lift up the vehicle, then remove the rear wheels.
- 3) Remove both the rear parking brake clamp and the ABS wheel speed sensor harness.
- 4) Remove the bolt which attaches the trailing link to the trailing link bracket.



(1) Trailing link

- 5) Remove the bolt which attaches the trailing link to the rear housing.

### B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Always tighten the stabilizer bushing in the state where the vehicle is at curb weight and the wheels are in full contact with the ground.

#### NOTE:

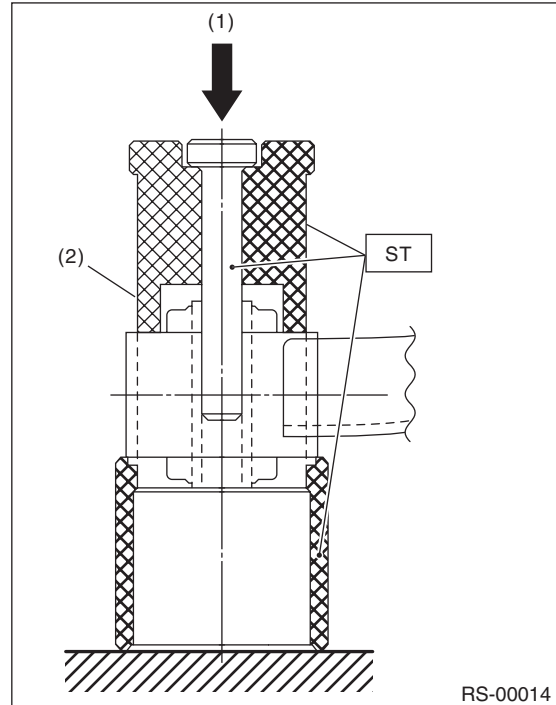
Inspect the wheel alignment and adjust if necessary. Refer to "FS" section for measurement and adjustment of wheel alignment. <Ref. to FS-10, REAR WHEEL TOE-IN, INSPECTION, Wheel Alignment.>

### C: DISASSEMBLY

#### 1. FRONT BUSHING

Using the ST, press the front bushing out of place.

ST 927720000 INSTALLER & REMOVER SET



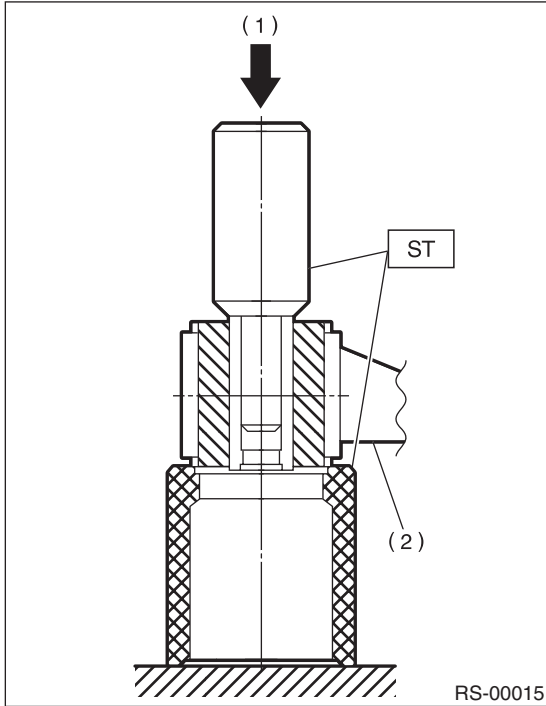
- (1) Press
- (2) Trailing link

## 2. REAR BUSHING

1) Remove the housing. <Ref. to DS-26, REMOVAL, Rear Axle.>

2) Using the ST, press the rear bushing out.

ST 927730000 INSTALLER & REMOVER SET



- (1) Press
- (2) Housing

## D: ASSEMBLY

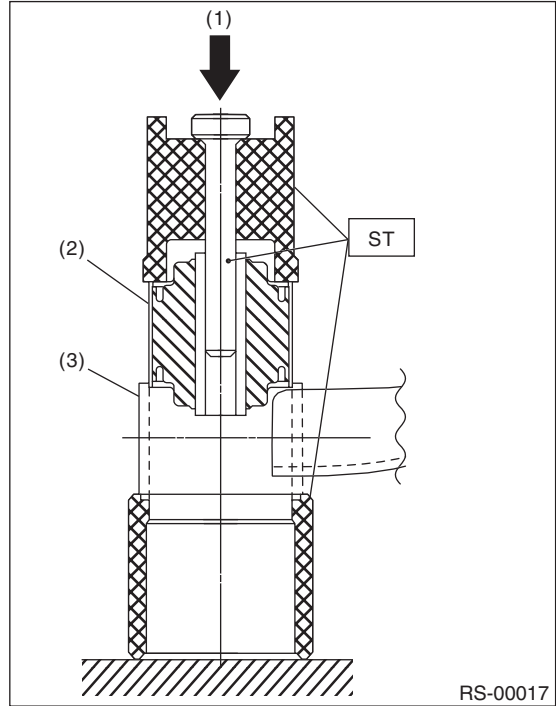
### 1. FRONT BUSHING

Using the ST, press the bushing into the trailing link.

ST 927720000 INSTALLER & REMOVER SET

#### CAUTION:

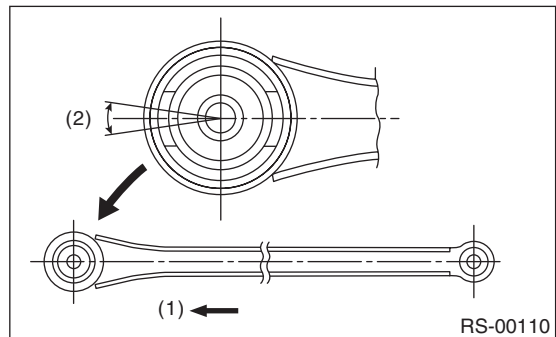
Turn ST plunger upside down and press it until the plunger end surface contacts the trailing link end surface.



- (1) Press
- (2) Front bushing
- (3) Trailing link

#### CAUTION:

Install the front bushing in proper direction as shown in the figure.



- (1) Front
- (2) ±5°

### 2. REAR BUSHING

1) Using the ST, press the bushing into the trailing link.

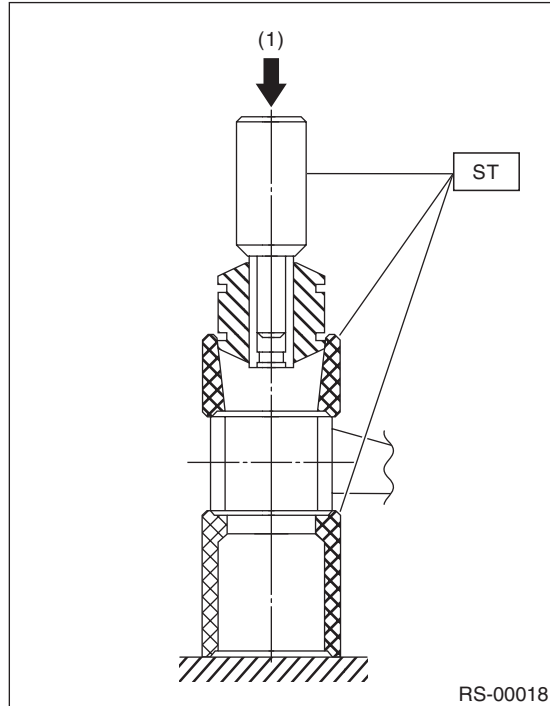
ST 927730000 INSTALLER & REMOVER SET

#### NOTE:

If it is difficult to press the bushing into the trailing link, dilute TIRE LUBE with water and apply it to the inner surface of ST as a lubricant.

#### Specified lubricant:

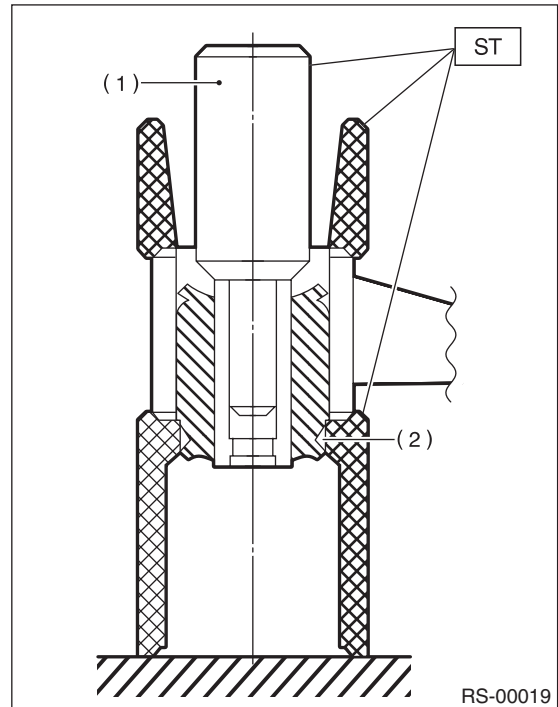
Tire lube : Water = 1:3



(1) Press

2) Press the ST plunger until bushing flange protrudes beyond the trailing link.

ST 927730000 INSTALLER & REMOVER SET



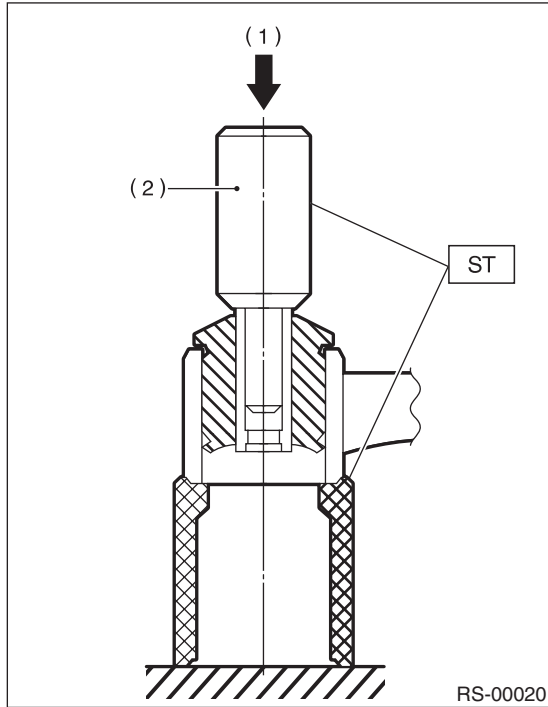
(1) Plunger  
(2) Flange

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## REAR SUSPENSION

3) Turn the trailing link upside down. As outlined in the former procedure, press the ST plunger in the opposite direction until bushing is correctly positioned in trailing link.

ST 927730000 INSTALLER & REMOVER SET



- (1) Press
- (2) Plunger

4) Install the housing. <Ref. to DS-27, INSTALLATION, Rear Axle.>

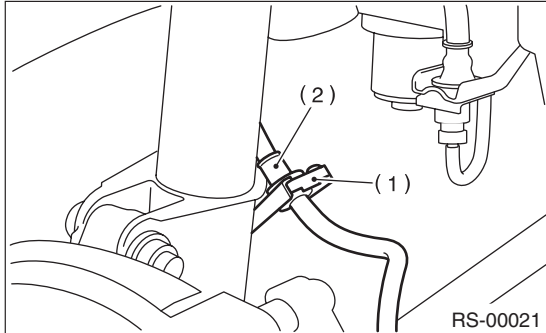
### **E: INSPECTION**

Check the trailing link for bending, corrosion or damage.

## 5. Rear Strut

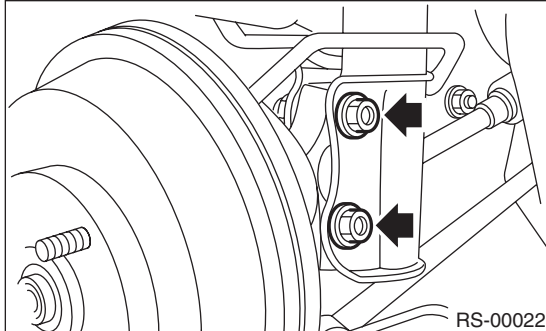
### A: REMOVAL

- 1) Remove the rear seat cushion and backrest. (Sedan model)
- 2) Remove the strut cap of the quarter trim. (Wagon model)
- 3) Loosen the rear wheel nuts.
- 4) Lift up the vehicle, then remove the rear wheels.
- 5) Remove the brake hose clip and remove the brake hose from rear strut.



- (1) Brake hose clip
- (2) Brake hose

- 6) Remove the bolts which secure the rear strut to the housing.



- 7) Remove the nuts which secure the strut mount to the vehicle body.

### B: INSTALLATION

- 1) Using new self-locking nuts, secure the strut mount to the body.

#### **Tightening torque:**

**20 N·m (2.0 kgf-m, 14.5 ft-lb)**

- 2) Using new self-locking nuts, secure the rear strut to the housing.

#### **Tightening torque:**

**200 N·m (20.0 kgf-m, 145 ft-lb)**

- 3) Attach the brake hose to lower side of the strut, then insert brake hose clip.

#### **CAUTION:**

- Check that the hose clip is in the proper position.
  - Check that the brake hose is not twisted or excessively tensioned.
  - Do not apply excessive tension to the ABS wheel speed sensor harness.
- 4) Lower the vehicle and tighten wheel nut.

#### **Tightening torque:**

**100 N·m (10.2 kgf-m, 73.8 ft-lb)**

- 5) Install the rear seat backrest and rear seat cushion. (Sedan model)
- 6) Attach the strut cap to the rear quarter trim. (Wagon model)

#### **NOTE:**

Inspect the wheel alignment and adjust if necessary.

### C: DISASSEMBLY

Refer to the procedures in "Front Strut" for the procedures to disassemble the rear strut. <Ref. to FS-18, DISASSEMBLY, Front Strut.>

### D: ASSEMBLY

Refer to Front Strut for assembly procedures. <Ref. to FS-18, ASSEMBLY, Front Strut.>

### E: INSPECTION

Refer to Front Strut for inspection procedures. <Ref. to FS-19, INSPECTION, Front Strut.>

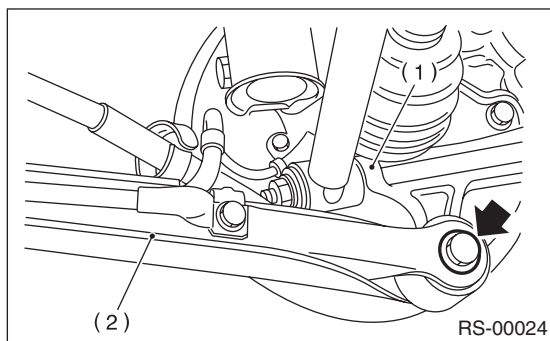
### F: DISPOSAL

Refer to "Front Strut" for disposal procedures. <Ref. to FS-20, DISPOSAL, Front Strut.>

### 6. Lateral Link

#### A: REMOVAL

- 1) Loosen the wheel nuts. Lift up the vehicle, and remove the wheels.
- 2) Remove the stabilizers.
- 3) Remove the ABS wheel speed sensor harness from the trailing link.
- 4) Remove the bolts which secure the trailing link to the rear housing.



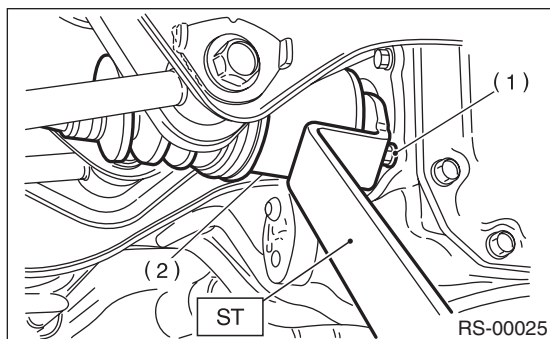
- (1) Rear housing
- (2) Trailing link

- 5) Remove the bolts which secure the lateral link assembly to the rear housing.
- 6) Remove the DOJ from rear differential using the ST.

ST 28099PA100 DRIVE SHAFT REMOVER

#### NOTE:

The side spline shaft snap ring is removed together with the shaft.



- (1) Bolt
- (2) DOJ

#### CAUTION:

Be careful not to damage the side bearing retainer. Always use the bolt shown in the figure as supporting point for the ST during removal.

- 7) Scribe an alignment mark on the rear lateral link adjustment bolt and crossmember.

- 8) Remove the bolts securing the front and rear lateral links to the crossmember, and detach the lateral link.

#### CAUTION:

To loosen the adjusting bolt, always loosen the nut while holding the head of adjusting bolt.

#### B: INSTALLATION

Install in the reverse order of removal. Observe the following instructions.

- Attaching the DOJ to the differential: <Ref. to DS-40, INSTALLATION, Rear Drive Shaft.>

#### CAUTION:

- Always use a new self-locking nut and DOJ snap ring.
- Always use the ST so that DOJ splines do not damage the side oil seal.

ST 28099PA090 OIL SEAL PROTECTOR

- Always tighten the stabilizer bushing in the state where the vehicle is at curb weight and the wheels are in full contact with the ground.
- Tighten the nut with the bolt head fixed in place when installing the adjusting bolt.

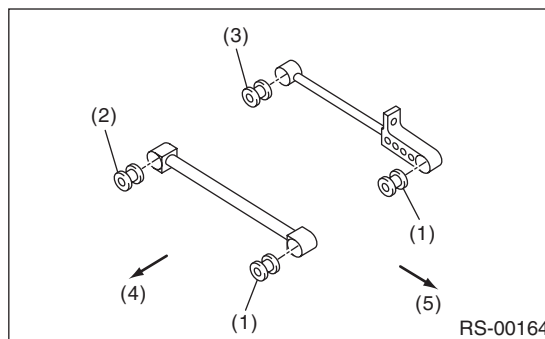
#### NOTE:

Inspect the wheel alignment and adjust if necessary.

#### C: DISASSEMBLY

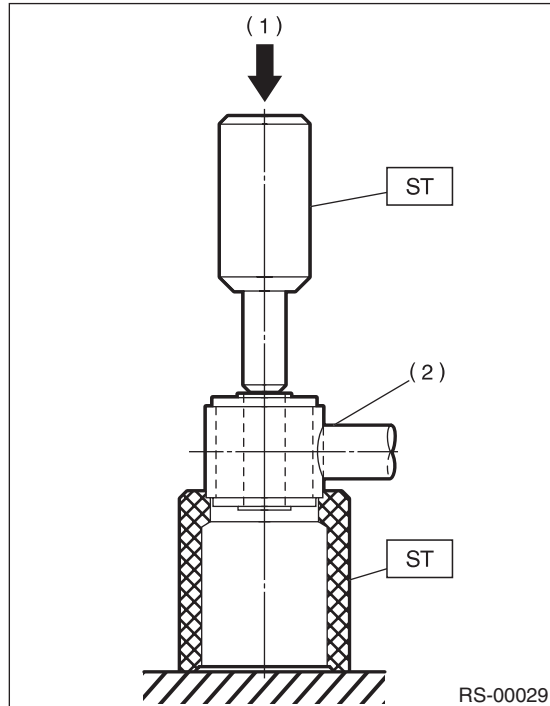
- 1) Check the bushing type by referring to the following table.
- 2) Select the ST according to the type of bushings used.

Bushing	ST: INSTALLER & REMOVER SET
Bushing A	927700000
Bushing B	927690000
Bushing C	927700000



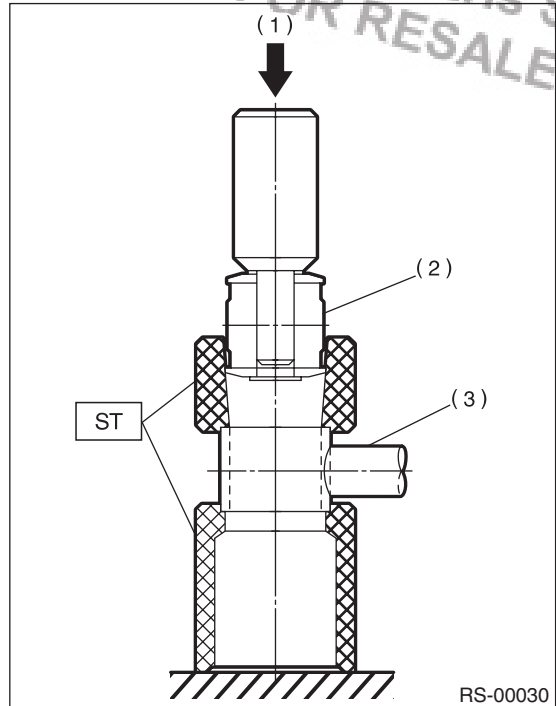
- (1) Bushing A
- (2) Bushing B
- (3) Bushing C
- (4) Front
- (5) Outside of body

3) Using the ST, press the bushing out.



- (1) Press
- (2) Lateral link

3) Using the ST, press the bushing into place.



- (1) Press
- (2) Bushing
- (3) Lateral link

### D: ASSEMBLY

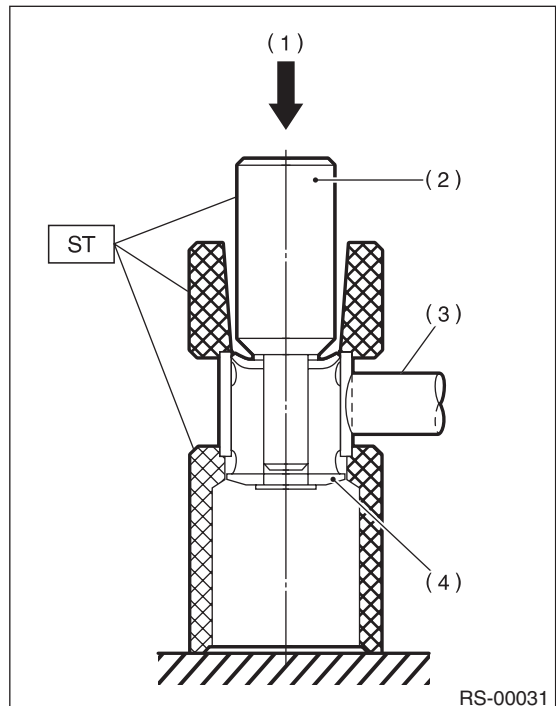
1) Use the same ST as the one used during disassembly.

2) If it is difficult to press the bushing into the trailing link, dilute TIRE LUBE with water and apply it to the inner surface of ST as a lubricant.

#### **Specified lubricant:**

**Tire lube : Water = 1:3**

4) Press the ST plunger until bushing flange protrudes beyond the trailing link.

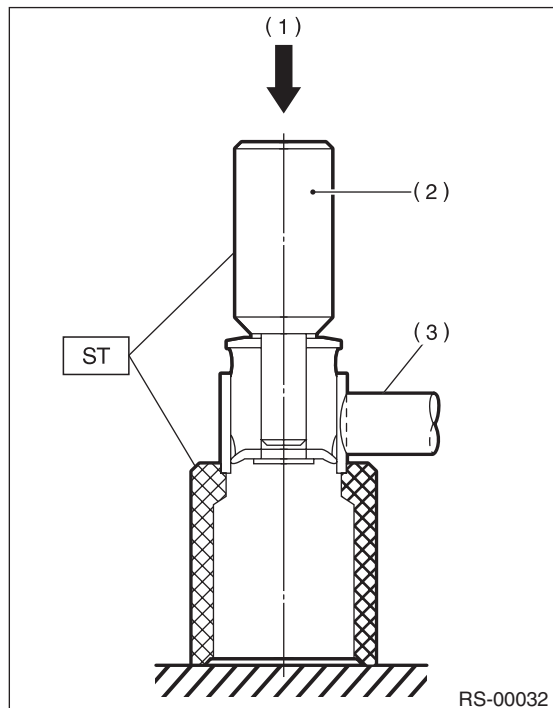


- (1) Press
- (2) Plunger
- (3) Lateral link
- (4) Flange

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## REAR SUSPENSION

5) Turn the lateral link upside down. As outlined in the former procedure, press the ST plunger in the opposite direction until bushing is correctly positioned in trailing link.



- (1) Press
- (2) Plunger
- (3) Lateral link

### E: INSPECTION

Visually check the lateral link for damage and deformation.



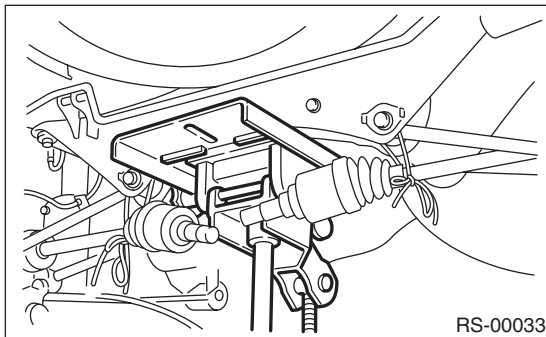
## 7. Rear Crossmember

### A: REMOVAL

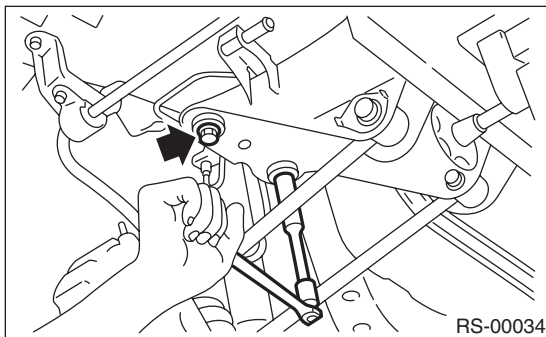
#### CAUTION:

**Do not apply excessive tension to the ABS wheel speed sensor harness.**

- 1) Separate the front exhaust pipe from the rear exhaust pipe.
- 2) Remove the rear exhaust pipe and muffler.
  - Non-turbo model  
<Ref. to EX(H4SO)-8, REMOVAL, Rear Exhaust Pipe.>
  - Turbo model  
<Ref. to EX(H4SO)-9, REMOVAL, Muffler.>
- 3) Remove the rear differential.
  - Turbo model  
<Ref. to EX(H4DOTC)-15, REMOVAL, Rear Exhaust Pipe.>
  - Non-turbo model  
<Ref. to EX(H4DOTC)-17, REMOVAL, Muffler.>
- 4) Place a transmission jack under the rear crossmember.



- 5) Remove the bolts securing the crossmember to the vehicle body, and remove the crossmember.



- 6) Scribe an alignment mark on the rear lateral link cam bolt and crossmember.
- 7) Remove the front and rear lateral links by loosening the nuts.

### B: INSTALLATION

#### NOTE:

- Discard the removed self-locking nut and replace it with a new part.
  - Tighten the nut with the bolt head secured when installing the adjusting bolt.
- 1) Install in the reverse order of removal.
  - 2) Install the rear differential.
    - Turbo model  
<Ref. to DI-26, INSTALLATION, Rear Differential.>
    - Non-turbo model  
<Ref. to DI-26, INSTALLATION, Rear Differential.>
  - 3) Always tighten the stabilizer bushing in the state where the vehicle is at curb weight and the wheels are in full contact with the ground.
  - 4) Inspect the wheel alignment and adjust if necessary.

### C: INSPECTION

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

## 8. General Diagnostic Table

### A: INSPECTION

#### 1. IMPROPER VEHICLE POSTURE OR IMPROPER WHEEL ARCH HEIGHT

Possible cause	Corrective action
(1) Permanent distortion or damaged coil spring	Replace.
(2) Rough operation of damper strut or shock absorber	Replace.
(3) Improper installation of strut or shock absorber	Replace with proper parts.
(4) Installation of the wrong coil spring	Replace with proper parts.

#### 2. POOR RIDE COMFORT

- 1) Large rebound shock
- 2) Rocking of the vehicle continues too long after running over bump and hump.
- 3) Excessive shock in bumping

Possible cause	Corrective action
(1) Damaged coil spring	Replace.
(2) Overinflation of tires	Adjust.
(3) Improper wheel arch height	Adjust or replace the coil springs with new parts.
(4) Fault in operation of damper strut or shock absorber	Replace.
(5) Major cracks or deformation of the strut mount or shock absorber mount	Replace.
(6) Unsuitable length (maximum or minimum) of damper strut or shock absorber	Replace with appropriate parts.
(7) Deformation or loss of bushing	Replace.
(8) Deformation or damage of helper in strut assembly or shock absorber	Replace.
(9) Oil leakage from the damper strut or shock absorber	Replace.

#### 3. NOISE

Possible cause	Corrective action
(1) Wear or damage of damper strut or shock absorber component parts	Replace.
(2) Loosening of the suspension link installing bolt	Tighten to the specified torque.
(3) Deformation or loss of bushing	Replace.
(4) Unsuitable length (maximum or minimum) of damper strut or shock absorber	Replace with appropriate parts.
(5) Damaged coil spring	Replace.
(6) Wear or damage of the ball joint	Replace.
(7) Deformation of the stabilizer clamp	Replace.