

# General Description

## BRAKE

### 1. General Description

#### A: SPECIFICATION

Model		2.5 X	2.5 XS, 2.5 XT, L.L.Bean
Front disc brake	Type	Disc (Floating type, ventilated)	
	Effective disc diameter	244 mm (9.61 in)	
	Disc thickness x Diameter	24 x 294 mm (0.94 x 11.57 in)	
	Effective cylinder diameter	42.8 mm (1.685 in) x 2	
	Pad dimensions (Length x Width x Thickness)	117.8 x 50.5 x 11.0 mm (4.638 x 1.988 x 0.433 in)	
	Clearance adjustment	Automatic adjustment	
Rear disc brake	Type	—	Disc (Floating type)
	Effective disc diameter	—	230 mm (9.06 in)
	Disc thickness x Diameter	—	10 x 266 mm (0.39 x 10.47 in)
	Effective cylinder diameter	—	38.1 mm (1.500 in)
	Pad dimensions (Length x Width x Thickness)	—	89.4 x 33.7 x 9.0 mm (3.520 x 1.327 x 0.354 in)
	Clearance adjustment	—	Automatic adjustment
Rear drum brake	Type	Drum (Leading-Trailing type)	—
	Effective drum diameter	228.6 mm (9 in)	—
	Effective cylinder diameter	19 mm (0.75 in)	—
	Lining dimensions (Length x Width x Thickness)	219.4 x 35.0 x 4.1 mm (8.64 x 1.378 x 0.161 in)	—
	Clearance adjustment	Automatic adjustment	—
Master cylinder	Type	Tandem	
	Effective diameter	25.4 mm (1 in)	
	Reservoir type	Sealed type	
	Brake fluid reservoir capacity	205 cm <sup>3</sup> (12.51 cu in)	
Brake booster	Type	Vacuum suspended	
	Effective diameter	"8 + 9" tandem type	
Brake line		Dual circuit system	
Brake fluid		FMVSS No. 116, DOT3 or DOT4	
<b>CAUTION:</b>		<ul style="list-style-type: none"> <li>• Avoid mixing brake fluid of different brands to prevent fluid performance from degrading.</li> <li>• When filling brake fluid, be careful not to allow any dust into the reservoir.</li> <li>• Use new DOT3 or 4 brake fluid when replacing or refilling fluid.</li> </ul>	

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**NOTE:**

Refer to the "PB section" for parking brake specifications. <Ref. to PB-2, SPECIFICATION, General Description.>

Item		Standard	Limit
Front brake	Pad thickness	11 mm (0.43 in)	1.5 mm (0.059 in)
	Disc thickness	24 mm (0.94 in)	22 mm (0.87 in)
	Disc runout	—	0.075 mm (0.0030 in)
Rear brake (Disc type)	Pad thickness	9 mm (0.35 in)	1.5 mm (0.059 in)
	Disc thickness	10 mm (0.39 in)	8.5 mm (0.335 in)
	Disc runout	—	0.07 mm (0.0028 in)
Rear brake (Drum type)	Inside diameter	228.6 mm (9 in)	230.6 mm (9.08 in)
	Lining thickness	4.1 mm (0.161 in)	1.5 mm (0.059 in)
Rear brake (Disc type parking)	Inside diameter	170 mm (6.69 in)	171 mm (6.73 in)
	Lining thickness	3.2 mm (0.126 in)	1.5 mm (0.059 in)
Parking brake	Lever stroke	7 to 8 notches when pulled with a force of 196 N (20 kgf, 44 lb)	

		Brake pedal operation force	Fluid pressure
Brake booster	Brake fluid pressure with engine stopped	147 N (15 kgf, 33 lb)	686 kPa (7 kg/cm <sup>2</sup> , 100 psi)
		294 N (30 kgf, 66 lb)	1,765 kPa (18 kg/cm <sup>2</sup> , 256 psi)
	Brake fluid pressure and vacuum pressure with engine running at 66.7 kPa (500 mmHg, 19.69 inHg)	147 N (15 kgf, 33 lb)	6,468 kPa (65 kg/cm <sup>2</sup> , 938 psi)
		294 N (30 kgf, 66 lb)	10,297 kPa (105 kg/cm <sup>2</sup> , 1,493 psi)

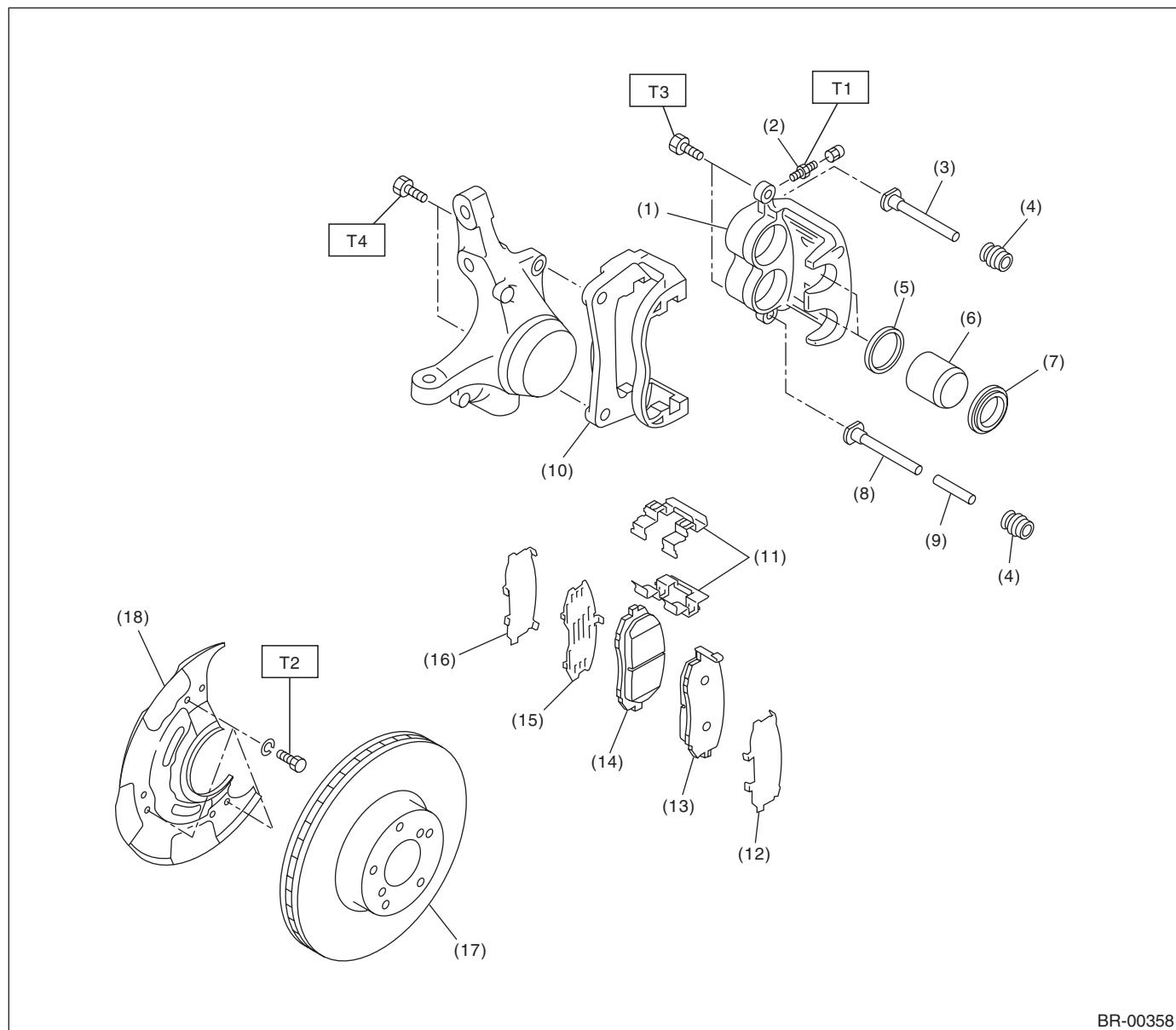
Brake pedal	Free play	0.5 — 2.0 mm (0.02 — 0.08 in) [Depress brake pedal with a force of less than 10 N (1 kgf, 2 lb).]
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# General Description

## BRAKE

### B: COMPONENT

#### 1. FRONT DISC BRAKE



- |                       |                       |                 |
|-----------------------|-----------------------|-----------------|
| (1) Caliper body      | (9) Bushing           | (17) Disc rotor |
| (2) Air bleeder screw | (10) Support          | (18) Disc cover |
| (3) Guide pin (Green) | (11) Pad clip         |                 |
| (4) Pin boot          | (12) Outer shim       |                 |
| (5) Piston seal       | (13) Outer pad        |                 |
| (6) Piston            | (14) Inner pad        |                 |
| (7) Piston boot       | (15) Rubber coat shim |                 |
| (8) Lock pin (Yellow) | (16) Inner shim       |                 |

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

**T1: 8 (0.8, 5.8)**

**T2: 18 (1.8, 13.0)**

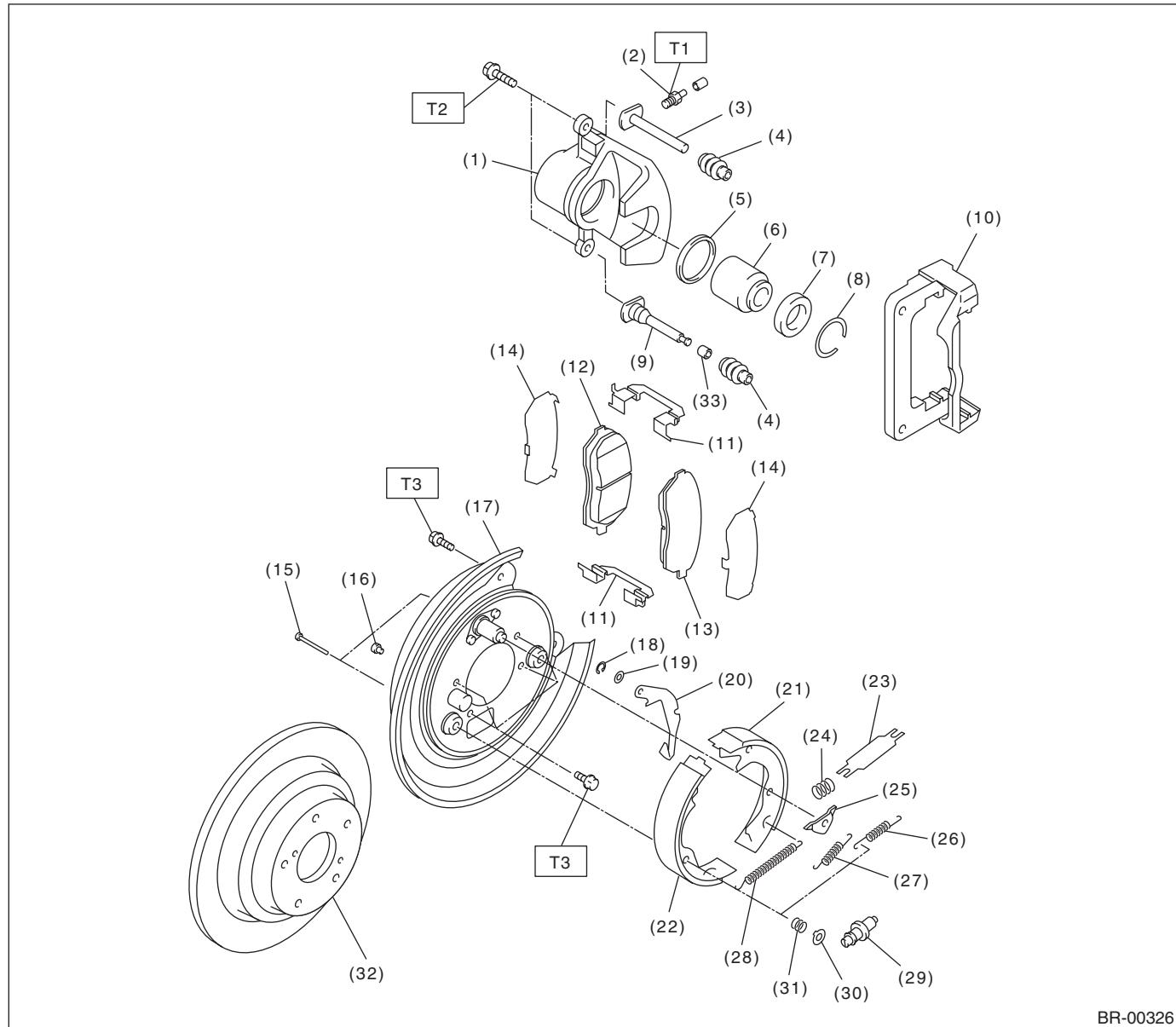
**T3: 26 (2.7, 19.2)**

**T4: 80 (8.2, 59)**

## General Description

## BRAKE

## 2. REAR DISC BRAKE



BR-00326

- |      |                   |      |                                |      |                            |
|------|-------------------|------|--------------------------------|------|----------------------------|
| (1)  | Caliper body      | (14) | Shim                           | (27) | Primary shoe return spring |
| (2)  | Air bleeder screw | (15) | Shoe hold-down pin             | (28) | Adjusting spring           |
| (3)  | Guide pin (Green) | (16) | Cover                          | (29) | Adjuster                   |
| (4)  | Pin boot          | (17) | Back plate                     | (30) | Shoe hold-down cup         |
| (5)  | Piston seal       | (18) | Retainer                       | (31) | Shoe hold-down spring      |
| (6)  | Piston            | (19) | Spring washer                  | (32) | Disc rotor                 |
| (7)  | Piston boot       | (20) | Parking brake lever            | (33) | Bushing                    |
| (8)  | Boot ring         | (21) | Parking brake shoe (Secondary) |      |                            |
| (9)  | Lock pin (Yellow) | (22) | Parking brake shoe (Primary)   |      |                            |
| (10) | Support           | (23) | Strut                          |      |                            |
| (11) | Pad clip          | (24) | Strut shoe spring              |      |                            |
| (12) | Inner pad         | (25) | Shoe guide plate               |      |                            |
| (13) | Outer pad         | (26) | Secondary shoe return spring   |      |                            |

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

**T1:** 8 (0.8, 5.8)

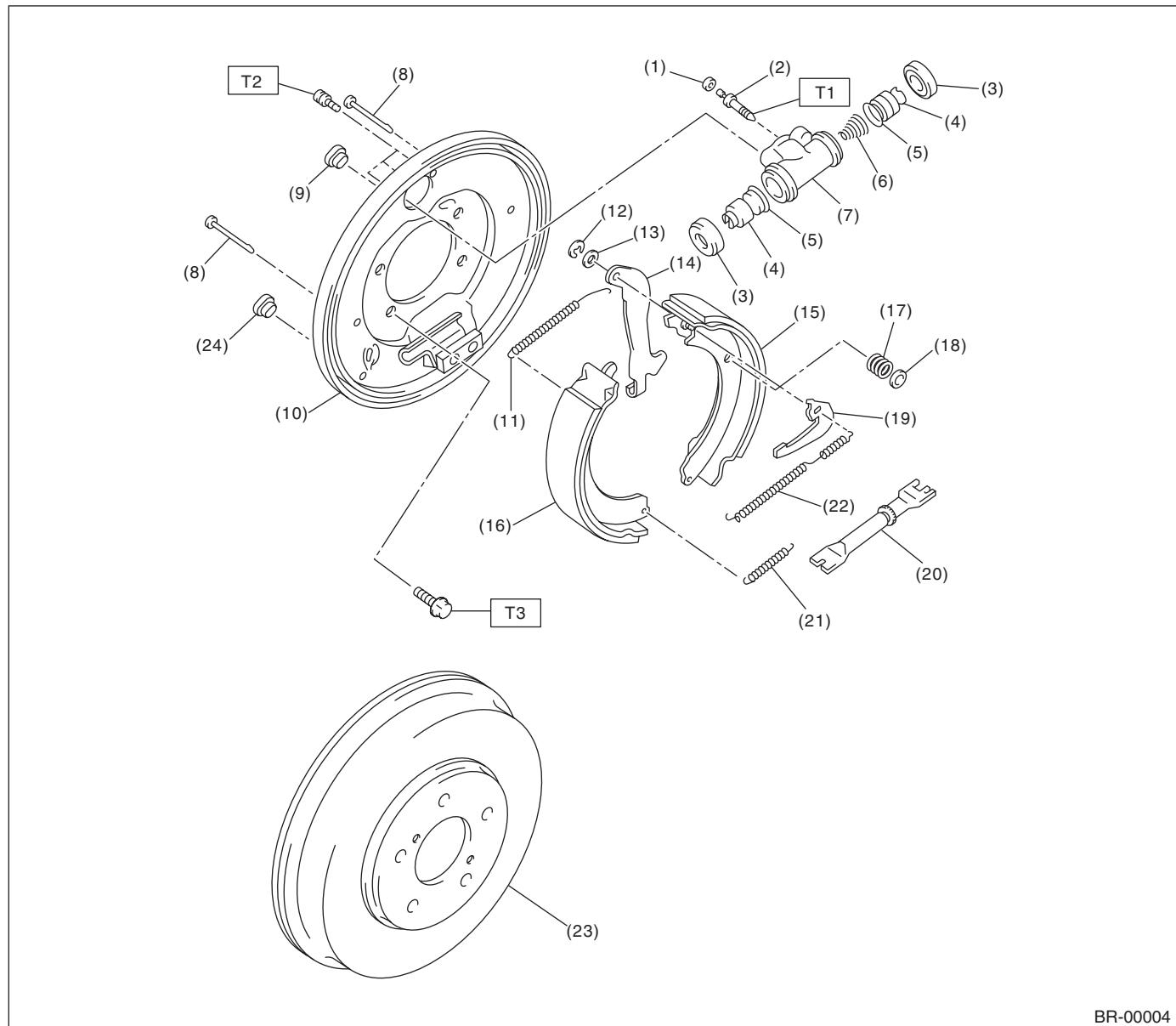
**T2:** 37 (3.8, 27.5)

**T3: 52 (5.3, 38.3)**

# General Description

## BRAKE

### 3. REAR DRUM BRAKE



- |                         |                               |                               |
|-------------------------|-------------------------------|-------------------------------|
| (1) Air bleeder cap     | (11) Upper shoe return spring | (21) Lower shoe return spring |
| (2) Air bleeder screw   | (12) Retainer                 | (22) Adjusting spring         |
| (3) Dust boots          | (13) Washer                   | (23) Brake drum               |
| (4) Piston              | (14) Parking brake lever      | (24) Plug                     |
| (5) Cup                 | (15) Brake shoe (Trailing)    |                               |
| (6) Spring              | (16) Brake shoe (Leading)     |                               |
| (7) Wheel cylinder body | (17) Shoe hold-down spring    |                               |
| (8) Hold-down pin       | (18) Hold-down cup            |                               |
| (9) Plug                | (19) Adjusting lever          |                               |
| (10) Back plate         | (20) Adjuster ASSY            |                               |

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

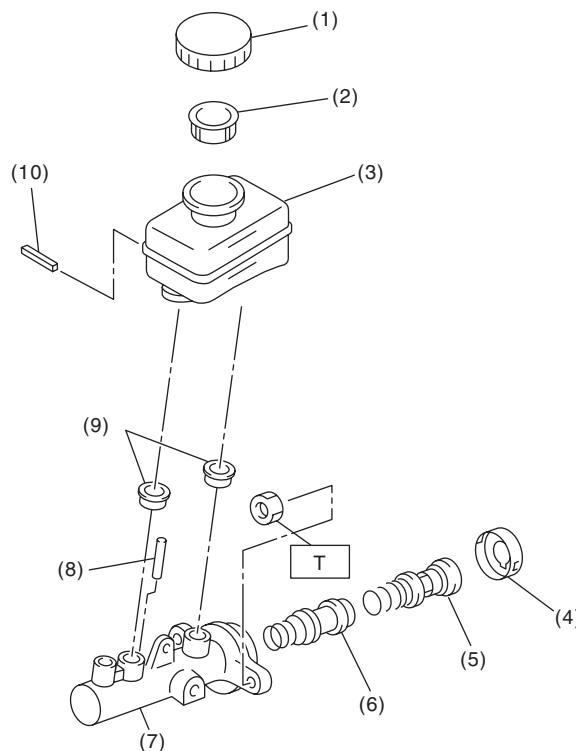
**T1: 8 (0.8, 5.8)**

**T2: 10 (1.0, 7.2)**

**T3: 52 (5.3, 38.3)**

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## 4. MASTER CYLINDER



BR-00153

- |                     |                      |
|---------------------|----------------------|
| (1) Cap             | (6) Secondary piston |
| (2) Filter          | (7) Cylinder body    |
| (3) Reservoir tank  | (8) Cylinder pin     |
| (4) Piston retainer | (9) Seal             |
| (5) Primary piston  | (10) Pin             |

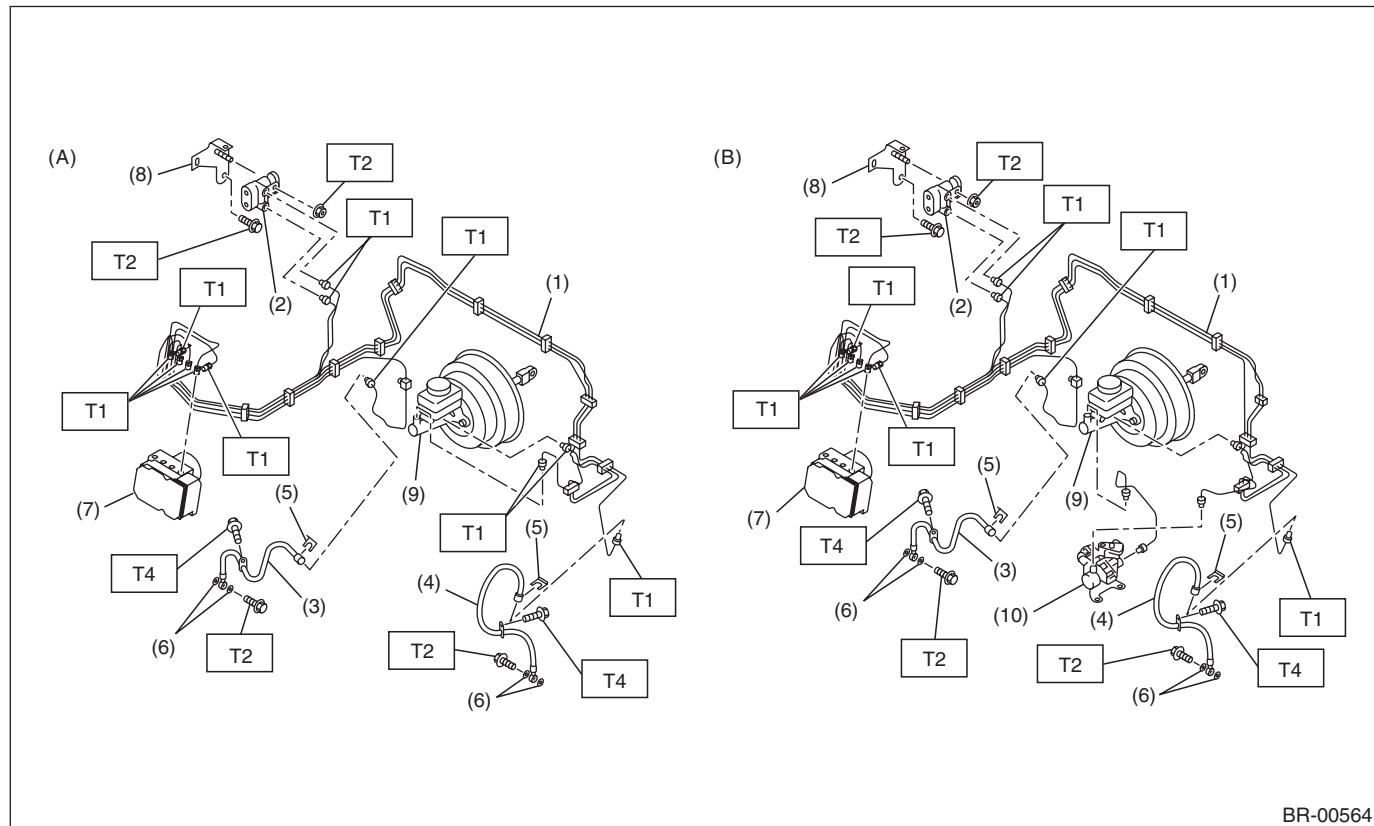
**Tightening torque:N·m (kgf·m, ft·lb)**

**T: 14 (1.4, 10.1)**

# General Description

## BRAKE

### 5. FRONT BRAKE PIPES AND HOSES



(A) AT model

- (1) Front brake pipe ASSY
- (2) Two-way connector
- (3) Front brake hose RH
- (4) Front brake hose LH
- (5) Clamp
- (6) Gasket

(B) MT model

- (7) ABS control module and hydraulic control unit (ABSCM&H/U)
- (8) Bracket
- (9) Master cylinder
- (10) Hill holder

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

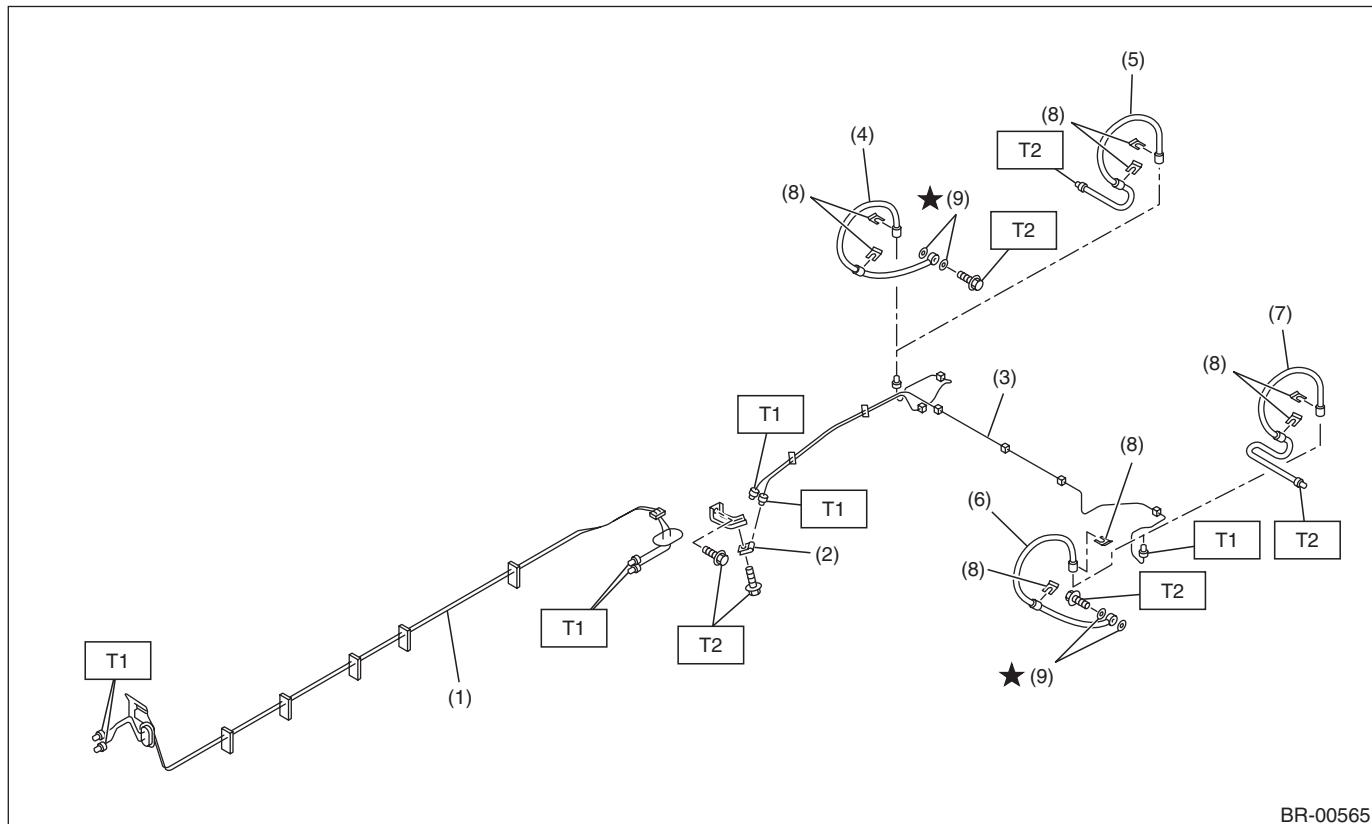
**T1: 15 (1.5, 10.8)**

**T2: 18 (1.8, 13.0)**

**T3: 19 (1.9, 13.7)**

**T4: 33 (3.4, 24.3)**

## 6. CENTER AND REAR BRAKE PIPES AND HOSES



BR-00565

- |  |  |            |
|--|--|------------|
| (1) Center brake pipe ASSY                   | (6) Rear brake hose LH<br>(Disc brake model) | (9) Gasket |
| (2) Two-way connector                        | (7) Rear brake hose LH<br>(Drum brake model) |            |
| (3) Rear brake pipe ASSY                     | (8) Brake hose clamp                         |            |
| (4) Rear brake hose RH<br>(Disc brake model) |  |            |
| (5) Rear brake hose RH<br>(Drum brake model) |  |            |

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

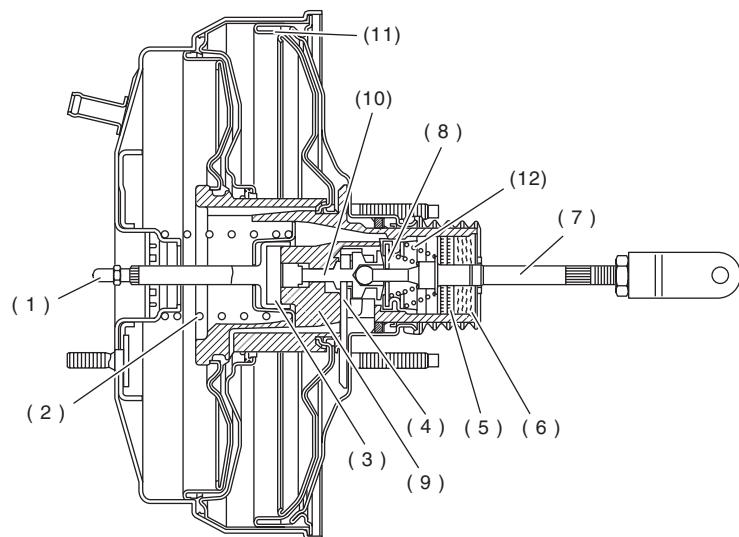
T1: 15 (1.5, 10.8)

T2: 18 (1.8, 13.0)

# General Description

## BRAKE

### 7. BRAKE BOOSTER

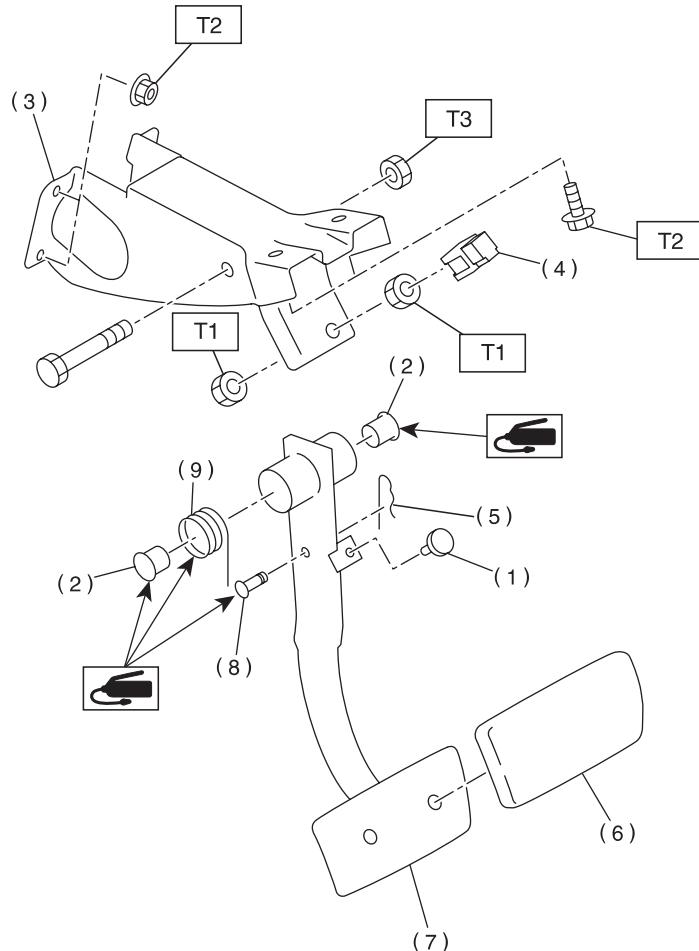


BR-00008

- |                   |                       |                          |
|-------------------|-----------------------|--------------------------|
| (1) Push rod      | (5) Filter            | (9) Valve body           |
| (2) Return spring | (6) Silencer          | (10) Plunger valve       |
| (3) Reaction disc | (7) Operating rod     | (11) Diaphragm plate     |
| (4) Key           | (8) Poppet valve ASSY | (12) Valve return spring |

## 8. BRAKE PEDAL

- AT model



BR-00139

- |                       |                        |
|-----------------------|------------------------|
| (1) Stopper           | (6) Brake pedal pad    |
| (2) Bushing           | (7) Brake pedal        |
| (3) Pedal bracket     | (8) Clevis pin         |
| (4) Stop light switch | (9) Brake pedal spring |
| (5) Snap pin          |                        |

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

**T1: 8 (0.8, 5.8)**

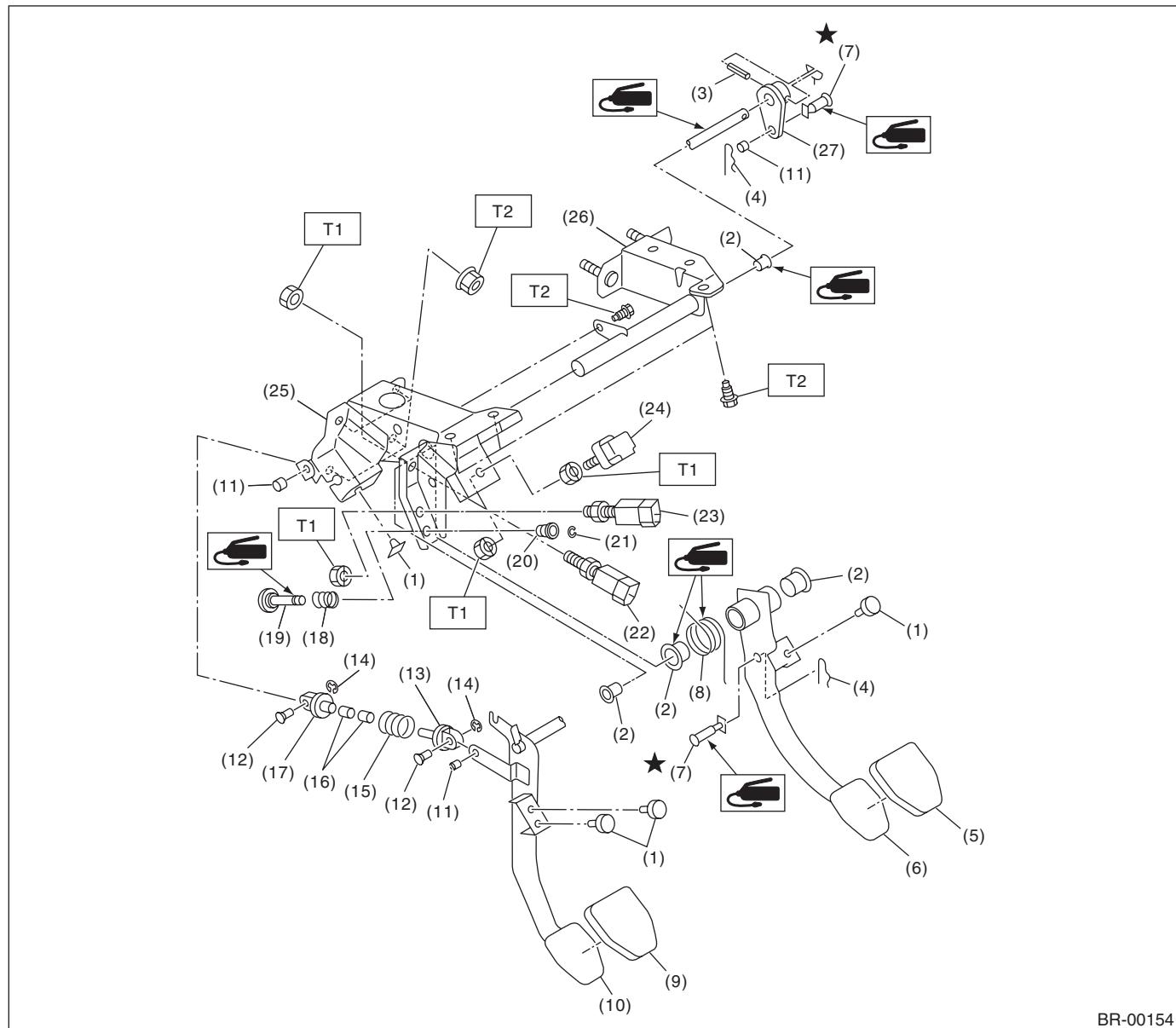
**T2: 18 (1.8, 13.0)**

**T3: 29 (3.0, 21.7)**

# General Description

## BRAKE

- MT model



BR-00154

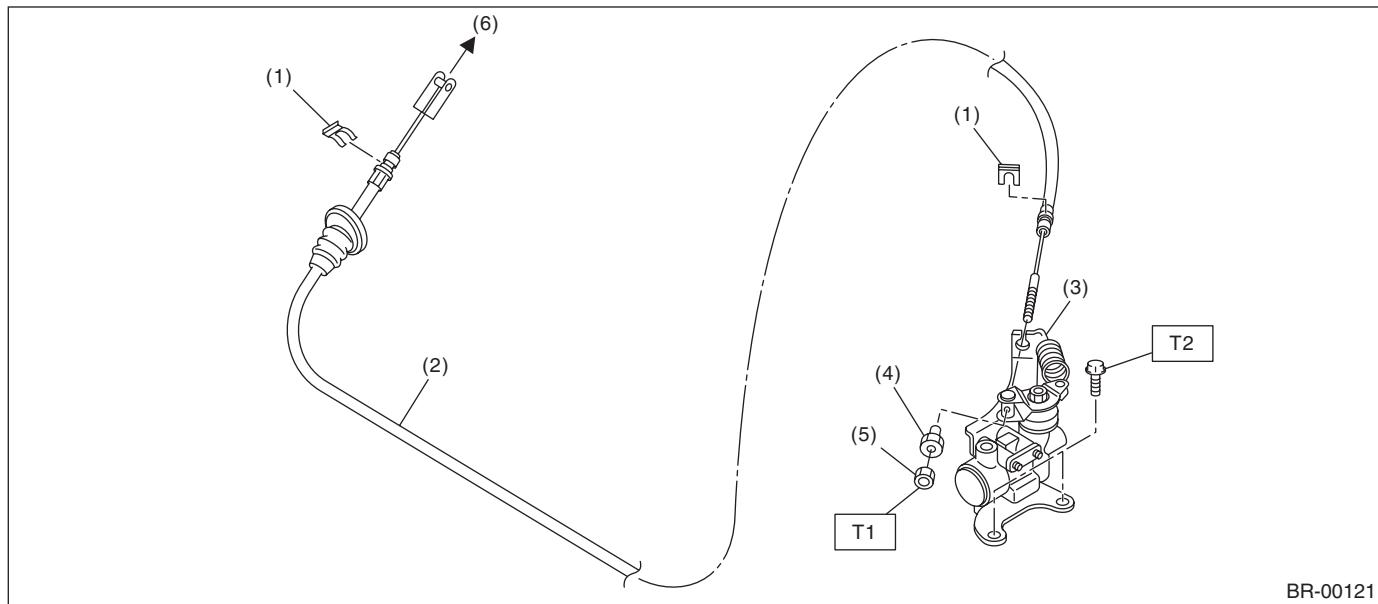
(1) Stopper	(12) Clutch clevis pin	(23) Clutch switch (Model with cruise control)
(2) Bushing	(13) Assist rod A	(24) Stop light switch
(3) Spring pin	(14) Clip	(25) Pedal bracket
(4) Snap pin	(15) Assist spring	(26) Clutch master cylinder bracket
(5) Brake pedal pad	(16) Assist bushing	(27) Lever
(6) Brake pedal	(17) Assist rod B	
(7) Clevis pin	(18) Spring S	
(8) Brake pedal spring	(19) Rod S	
(9) Clutch pedal pad	(20) Bushing S	
(10) Clutch pedal	(21) Clip	
(11) Bushing C	(22) Clutch switch (Starter interlock)	

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

**T1: 8 (0.8, 5.8)**

**T2: 18 (1.8, 13.0)**

## 9. HILL HOLDER



BR-00121

- |                               |                     |
|-------------------------------|---------------------|
| (1) Clamp                     | (4) Adjusting nut   |
| (2) PHV cable                 | (5) Lock nut        |
| (3) PHV (Pressure hold valve) | (6) To clutch pedal |

**Tightening torque:N·m (kgf·m, ft·lb)****T1: 3.5 (0.36, 2.6)****T2: 18 (1.8, 13.0)****C: CAUTION**

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Use SUBARU genuine fluid, grease etc. or equivalent. Do not mix fluid, 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.
- Apply grease onto sliding or revolving surfaces before installation.
- Before installing O-rings or snap rings, apply sufficient amount of fluid to avoid damage and deformation.
- Before securing a part on a vise, set cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vise.
- Keep fluids away from the vehicle body. If any fluid contacts the vehicle body, immediately flush the area with water.

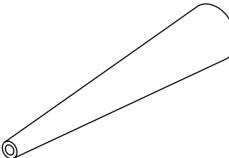
# General Description

BRAKE

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## D: PREPARATION TOOL

### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-926460000	926460000	WHEEL CYLINDER 3/4"ADAPTER	Used for installing the cup to the wheel cylinder piston. (Size 3/4 in)

### 2. GENERAL TOOL

TOOL NAME	REMARKS
Snap ring pliers	Used for removing and installing snap rings.
Brake pipe wrench	Used for removing and installing brake pipes.