

## GENERAL DESCRIPTION

### BRAKE

## 1. General Description

### A: SPECIFICATIONS

	Size	15 inch type	16 inch type
		Type	Disc (Floating type, ventilated)
Front disc brake	Effective disc diameter	228 mm (8.98 in)	244 mm (9.76 in)
	Disc thickness × Outer diameter	24 × 277 mm (0.94 × 10.91 in)	24 × 294 mm (0.94 × 11.57 in)
	Effective cylinder diameter	42.8 mm (1.685 in) × 2	
	Pad dimensions (length × width × thickness)	105.0 × 50.5 × 11.0 mm (4.134 × 1.99 × 0.433 in)	
	Clearance adjustment	Automatic adjustment	
	Rear disc brake	Type	Disc (Floating type)
Effective disc diameter		254 mm (10.0 in)	
Disc thickness × Outer diameter		10 × 290 mm (0.39 × 11.42 in)	
Effective cylinder diameter		38.1 mm (1.500 in)	
Pad dimensions (length × width × thickness)		82.4 × 33.7 × 9.0 mm (3.244 × 1.327 × 0.354 in)	
Clearance adjustment		Automatic adjustment	
Master cylinder	Type	Tandem	
	Effective diameter	26.99 mm (1-1/16 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	205 + 230 mm (8.07 + 9.06 in)	
Proportioning valve	Split point	2,942 kPa (30 kg/cm <sup>2</sup> , 427 psi)	3,678 kPa (without VDC) (37.5 kg/cm <sup>2</sup> , 533 psi) 2,942 kPa (without VDC) (30 kg/cm <sup>2</sup> , 427 psi)
	Reducing ratio	0.3	
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 the fluid performance from degrading.</li> <li>• When brake fluid is supplemented, be careful not to allow any dust into the reservoir.</li> <li>• Use fresh DOT3 or 4 brake fluid when replacing or refilling the fluid.</li> </ul>			

#### NOTE:

Refer to "PB section" for parking brake SPECIFICATIONS.

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## GENERAL DESCRIPTION

BRAKE

ITEM		STANDARD	SERVICE LIMIT
Front brake	Pad thickness (including back metal)	17 mm (0.67 in)	7.5 mm (0.295 in)
	Disc thickness	24 mm (0.94 in)	22 mm (0.87 in)
	Disc runout	—	0.075 mm (0.0030 in)
Rear brake	Pad thickness (including back metal)	14 mm (0.55 in)	6.5 mm (0.256 in)
	Disc thickness	10 mm (0.39 in)	8.5 mm (0.335 in)
	Disc runout	—	0.070 mm (0.0028 in)
Parking brake	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)
	Lever stroke	7 to 8 notches/196 N (20 kgf, 44 lb)	

		Brake pedal force	Fluid pressure	
			15 inch type	16 inch type
Brake booster	Brake fluid pressure without engine running	147 N (15 kgf, 33 lb)	588 kPa (6 kg/cm <sup>2</sup> , 85 psi)	
		294 N (30 kgf, 66 lb)	1,569 kPa (16 kg/cm <sup>2</sup> , 228 psi)	
	Brake fluid pressure with engine running and vacuum at 66.7 kPa (500 mmHg, 19.69 inHg)	147 N (15 kgf, 33 lb)	6,178 kPa (63 kg/cm <sup>2</sup> , 896 psi)	
		294 N (30 kgf, 66 lb)	9,709 kPa (99 kg/cm <sup>2</sup> , 1,408 psi)	

Brake pedal	Free play	1 — 3 mm (0.04 — 0.12 in) [Depress brake pedal pad with a force of less than 10 N (1 kgf, 2 lb).]
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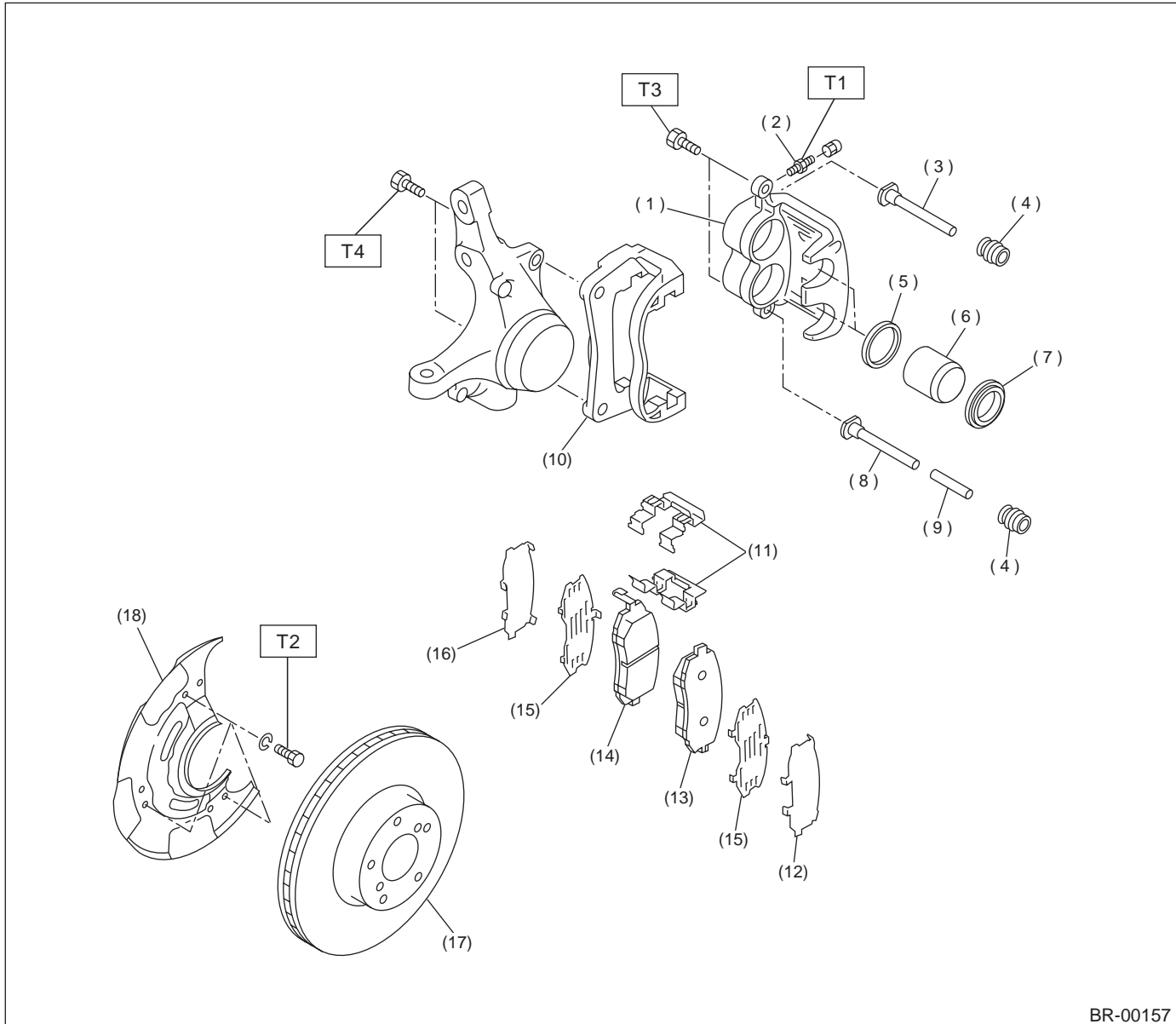
### BR-3

## GENERAL DESCRIPTION

### BRAKE

### B: COMPONENT

### 1. FRONT DISC BRAKE



BR-00157

- |                       |                         |                 |
|-----------------------|-------------------------|-----------------|
| (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) Pad (Outside)      |                 |
| (6) Piston            | (14) Pad (Inside)       |                 |
| (7) Piston boot       | (15) Rubber coated 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: 37 (3.8, 27.5)**

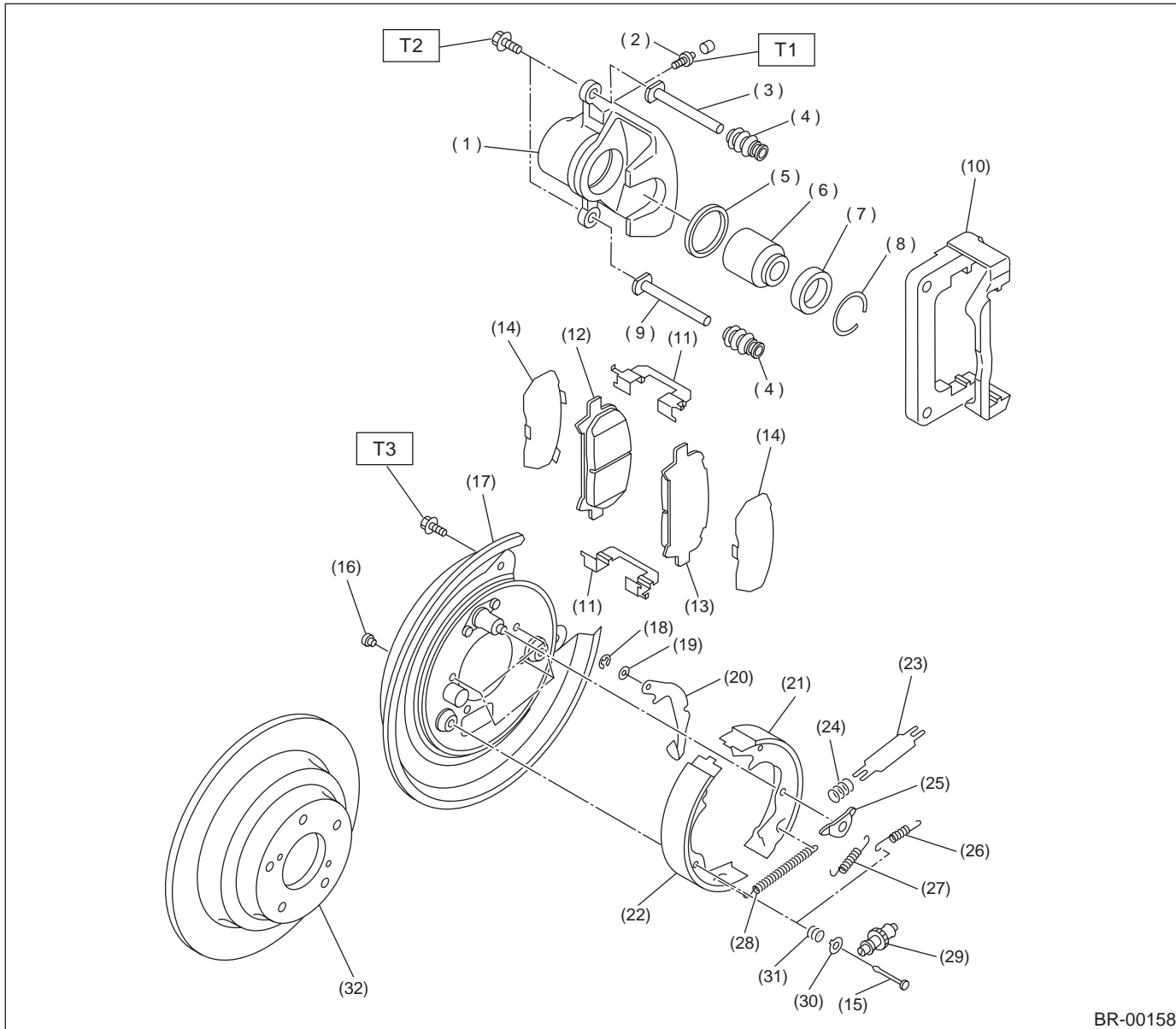
**T4: 80 (8.2, 59)**

**BR-4**

## GENERAL DESCRIPTION

BRAKE

### 2. REAR DISC BRAKE



- |                       |                                     |                                 |
|-----------------------|-------------------------------------|---------------------------------|
| (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            |                                 |
| (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: 39 (4.0, 28.9)**

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

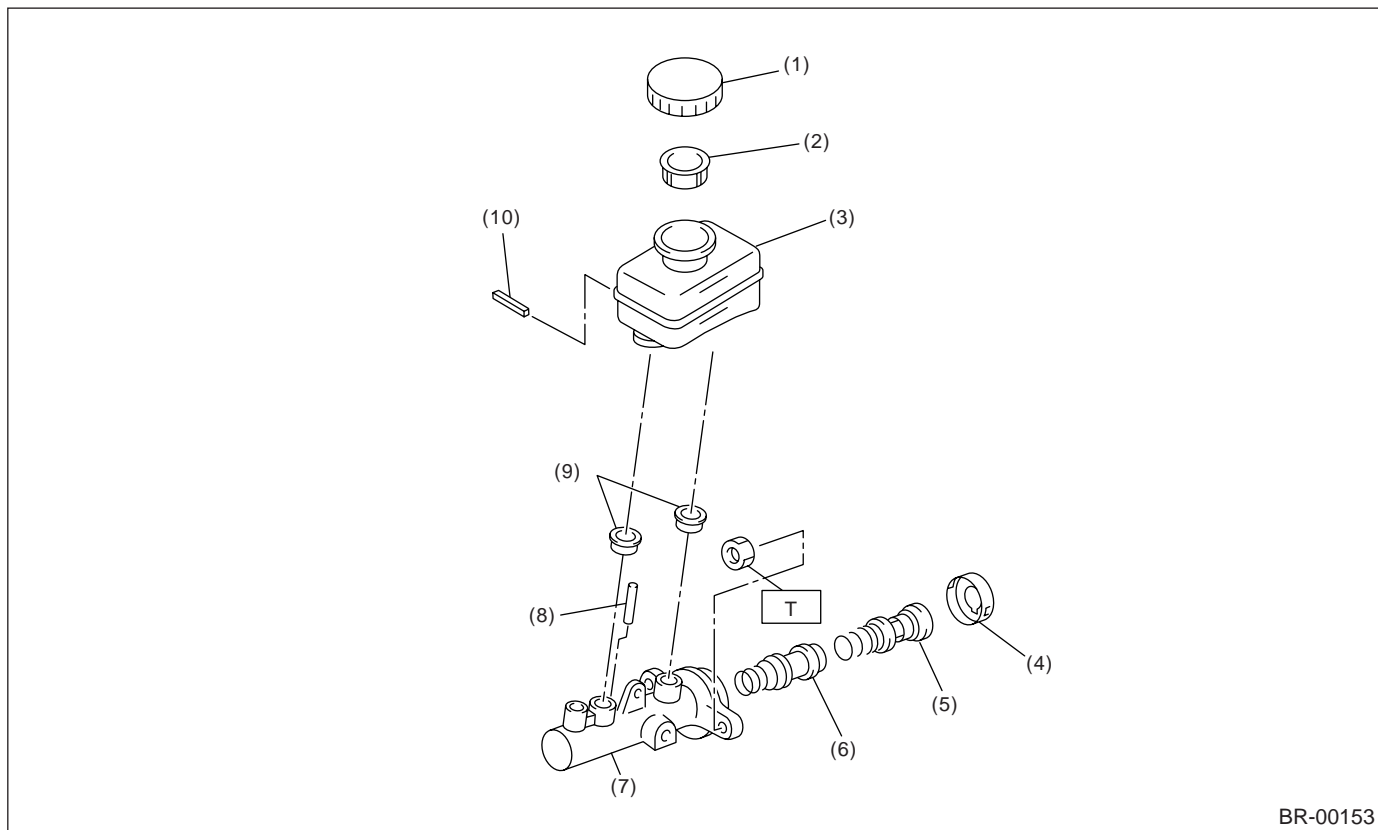
**BR-5**

## GENERAL DESCRIPTION

### BRAKE

### 3. MASTER CYLINDER

#### • Models without VDC



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

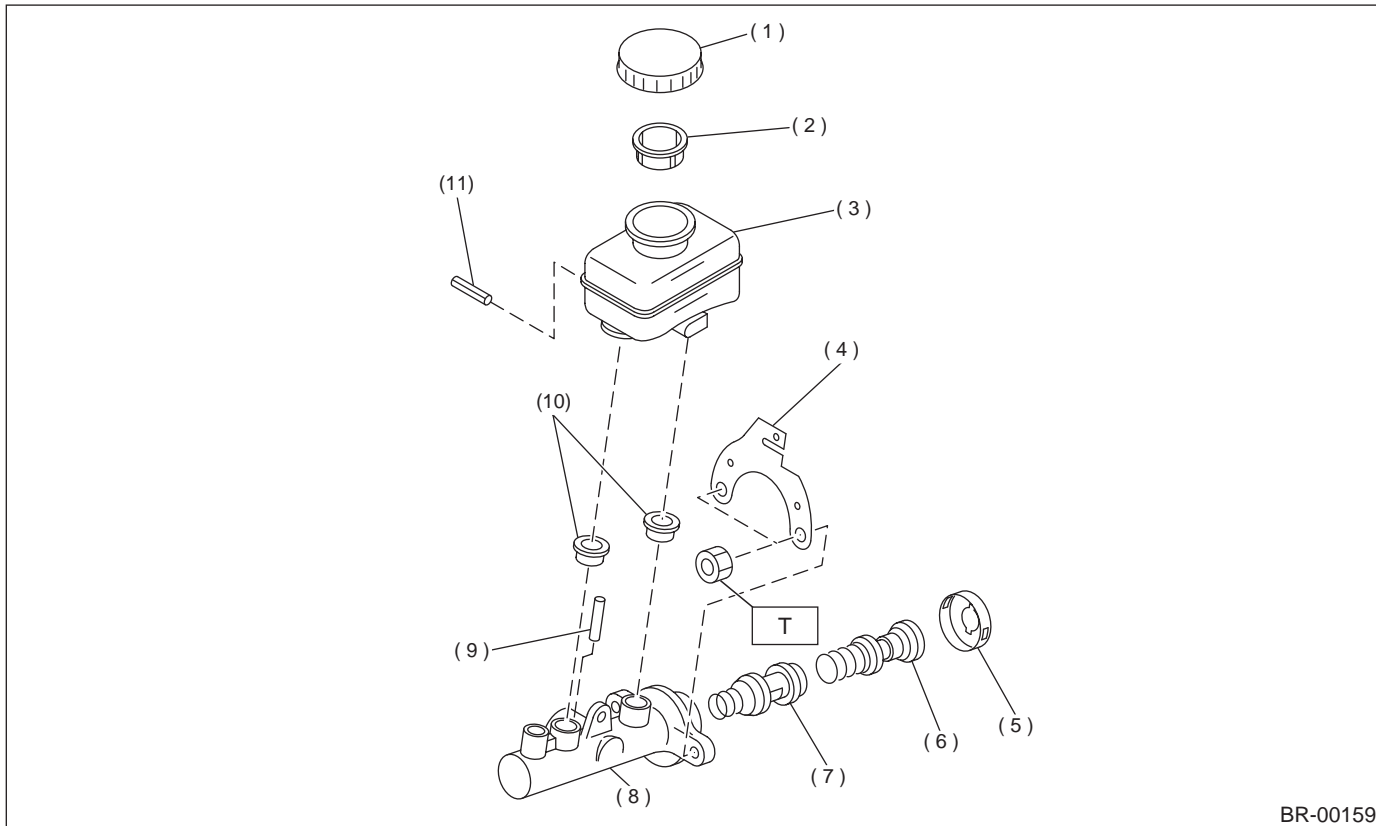
**Tightening torque: N·m (kgf-m, ft-lb)**  
**T: 14 (1.4, 10.1)**

**BR-6**

# GENERAL DESCRIPTION

BRAKE

## • Model with VDC



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

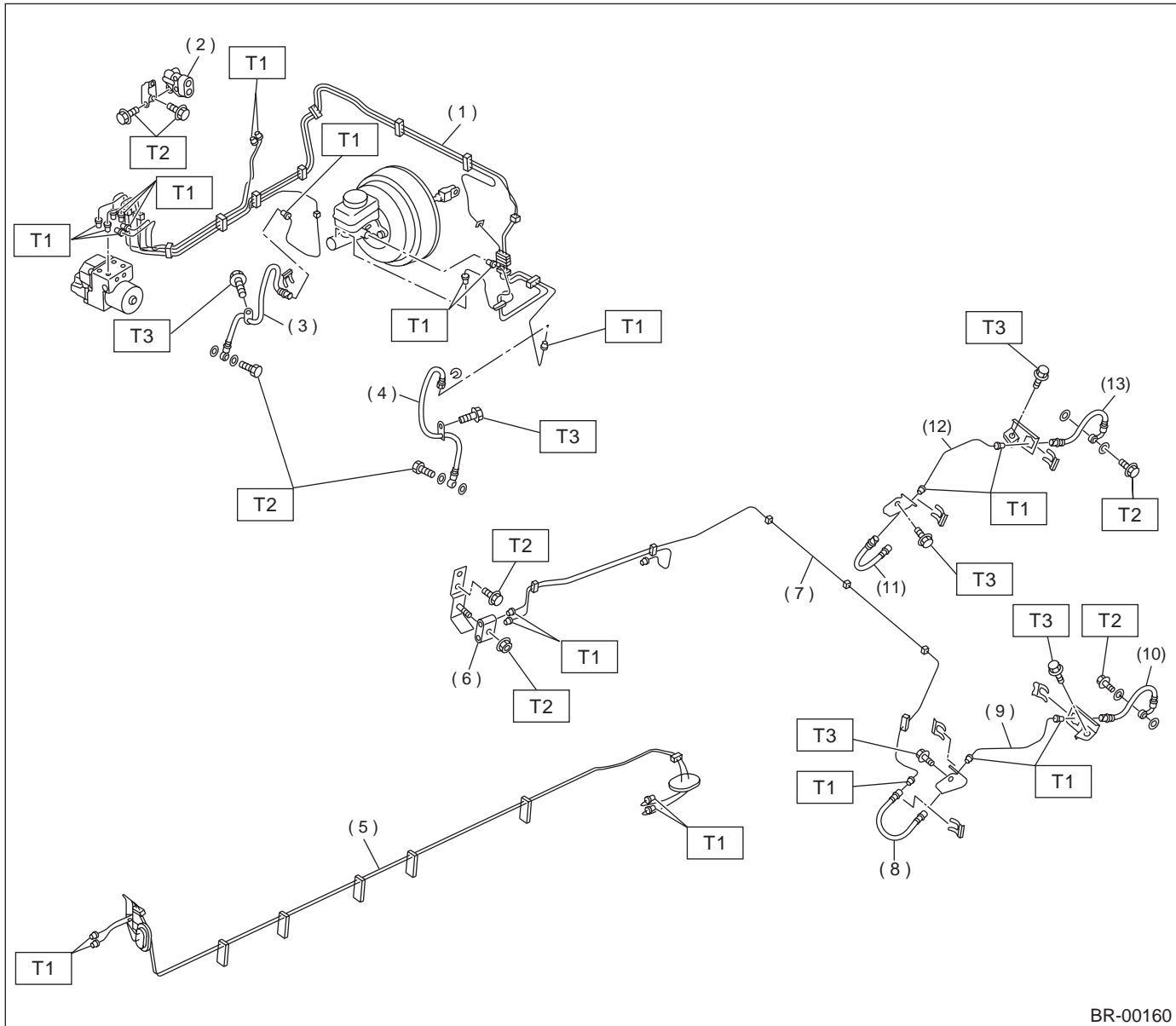
**Tightening torque: N·m (kgf-m, ft-lb)**  
**T: 14 (1.4, 10.1)**

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## GENERAL DESCRIPTION

### BRAKE

#### 4. BRAKE PIPES AND HOSE



BR-00160

- |                                |                              |
|--------------------------------|------------------------------|
| (1) Front brake pipe assembly  | (7) Rear brake pipe assembly |
| (2) Proportioning valve        | (8) Rear brake hose LH       |
| (3) Front brake hose RH        | (9) Rear brake pipe LH       |
| (4) Front brake hose LH        | (10) Rear brake hose rear LH |
| (5) Center brake pipe assembly | (11) Rear brake hose RH      |
| (6) Two-way connector          | (12) Rear brake pipe RH      |

- (13) Rear brake hose rear RH

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

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

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

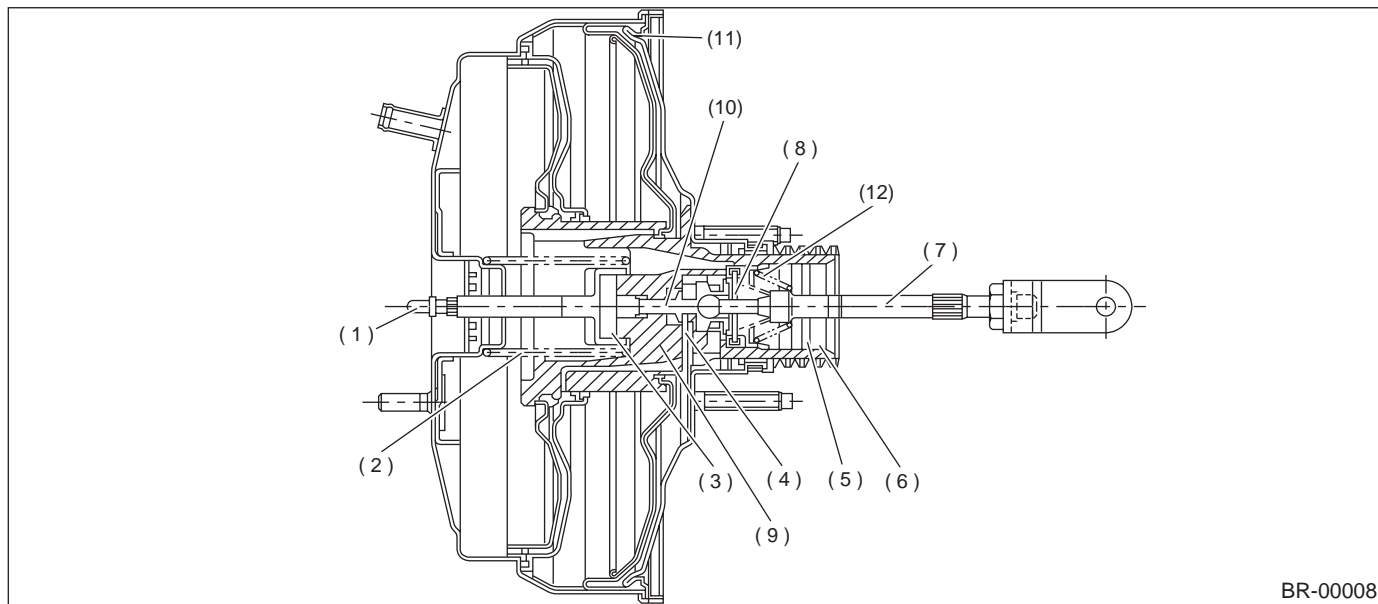
**T3: 33 (3.3, 23.8)**

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## GENERAL DESCRIPTION

BRAKE

### 5. BRAKE BOOSTER



- |                   |                   |                          |
|-------------------|-------------------|--------------------------|
| (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  | (12) Valve return spring |

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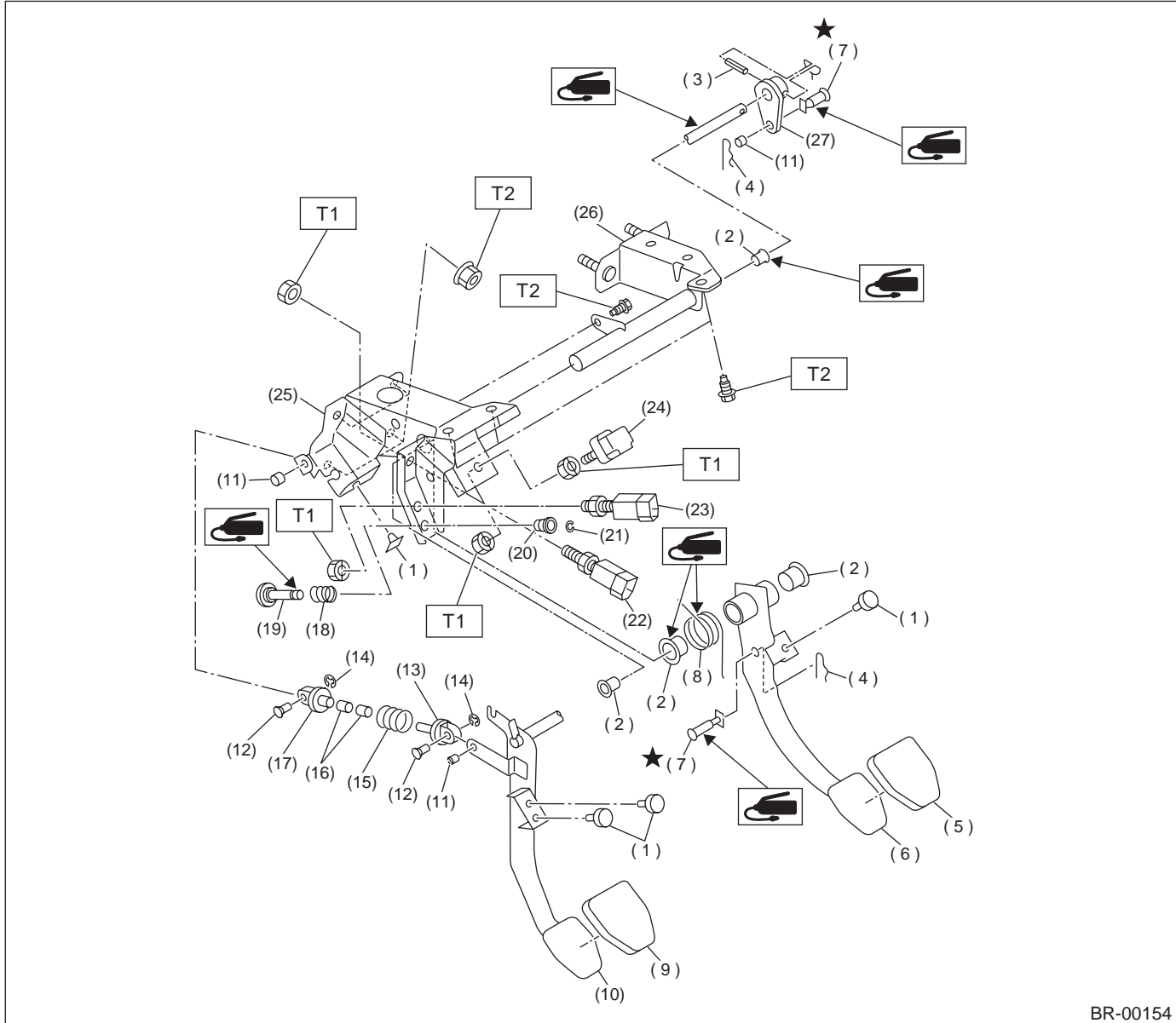
Vehicle-id:  
SIE-id::B:Component



## GENERAL DESCRIPTION

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#### 6. BRAKE PEDAL FOR MT MODEL



- |                        |  |  |
|------------------------|--|--|
| (1) Stopper            | (12) Clutch clevis pin                 | (23) Clutch switch (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)**

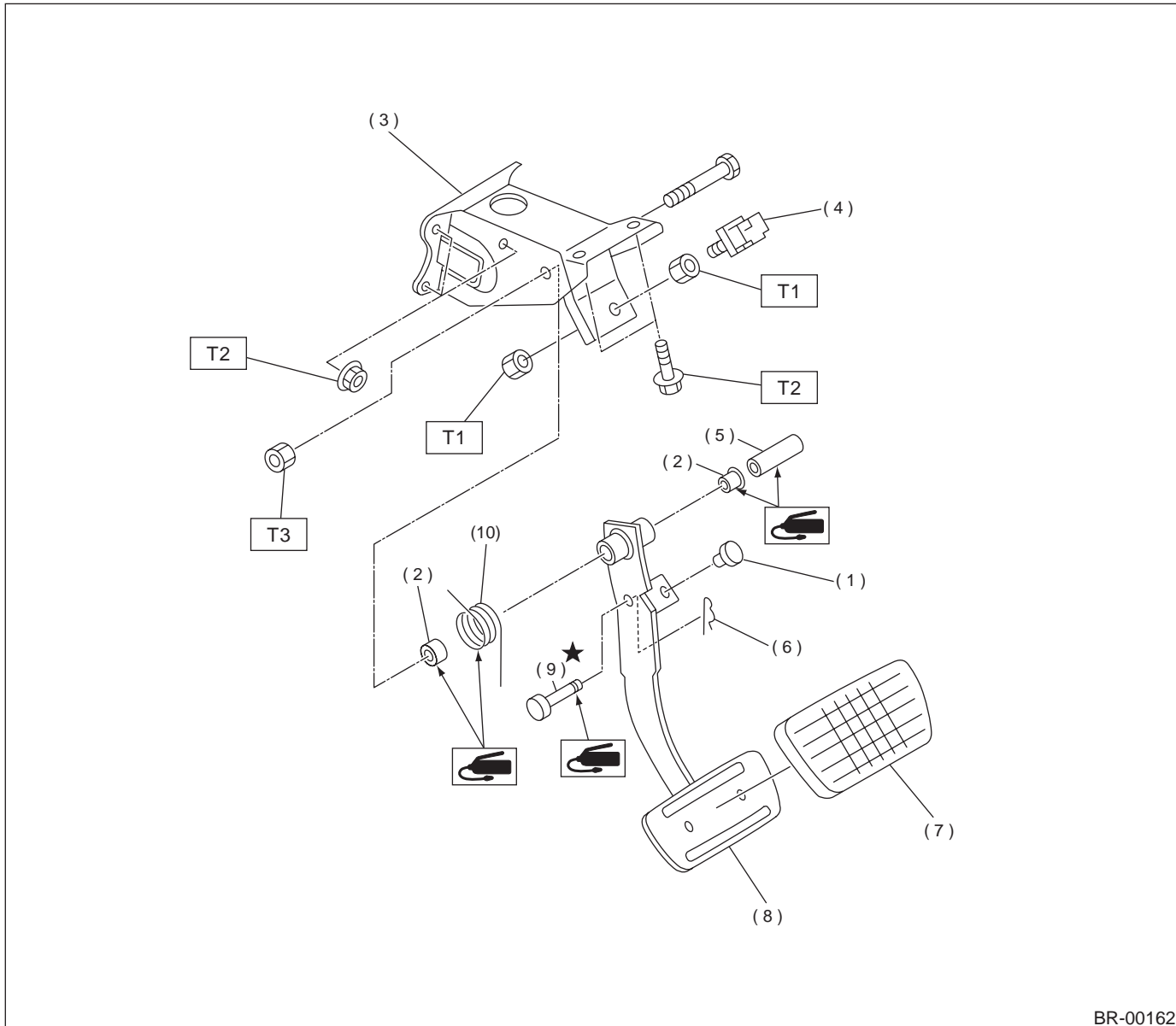
**T2: 18 (1.8, 13.0)**

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## GENERAL DESCRIPTION

BRAKE

### 7. BRAKE PEDAL FOR AT MODEL



BR-00162

- |                       |                         |
|-----------------------|-------------------------|
| (1) Stopper           | (7) Brake pedal pad     |
| (2) Bushing           | (8) Brake pedal         |
| (3) Pedal bracket     | (9) Clevis pin          |
| (4) Stop light switch | (10) Brake pedal spring |
| (5) Spacer            |                         |
| (6) 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)**

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## GENERAL DESCRIPTION

### BRAKE

#### C: CAUTION

- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Be careful not to burn your hands, because each part in the vehicle is hot after running.
- Use SUBARU genuine grease etc. or the equivalent. Do not mix grease etc. with that of another grade or from other manufacturers.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or safety stands at the specified points.
- Apply grease onto sliding or revolving surfaces before installation.
- Before installing O-rings or snap rings, apply sufficient amount of grease to avoid damage and deformation
- Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vise.
- Do not put fluid on body. If the body is tainted, wash away with water.

#### D: PREPARATION TOOL

##### 1. GENERAL PURPOSE TOOLS

TOOL NAME	REMARKS
Snap Ring Pliers	Used for removing and installing snap ring.

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