

# GENERAL DESCRIPTION

## BRAKE

### 1. General Description

#### A: SPECIFICATIONS

Model		2.5X	2.5XS, 2.5XT
Front disc brake	Type	Disc (Floating type, ventilated)	
	Effective disc diameter	244 mm (9.61 in)	
	Disc thickness × Outer diameter	24 × 294 mm (0.94 × 11.57 in)	
	Effective cylinder diameter	42.8 mm (1.685 in) × 2	
	Pad dimensions (length × width × thickness)	117.8 × 50.5 × 11.0 mm (4.638 × 1.988 × 0.433 in)	
	Clearance adjustment	Automatic adjustment	
Rear disc brake	Type	—	Disc (Floating type)
	Effective disc diameter	—	230 mm (9.06 in)
	Disc thickness × Outer diameter	—	10 × 266 mm (0.39 × 10.47 in)
	Effective cylinder diameter	—	38.1 mm (1.500 in)
	Pad dimensions (length × width × thickness)	—	89.4 × 33.7 × 9.0 mm (3.520 × 1.327 × 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 × width × thickness)	219.4 × 35.0 × 4.1 mm (8.64 × 1.378 × 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	
Proportioning valve	Split point	3,628 kPa (37 kg/cm <sup>2</sup> , 526 psi)	—
	Reducing ratio	0.3	—
Brake line	Dual circuit system		
Brake fluid	<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>		
	FMVSS No. 116, DOT3 or DOT4		

#### NOTE:

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

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ITEM		STANDARD	SERVICE 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/196 N (20 kgf, 44 lb)	

		Brake pedal force	Fluid pressure
Brake booster	Brake fluid pressure without engine running	147 N (15 kgf, 33 lb)	648 kPa (7 kg/cm <sup>2</sup> , 94 psi)
		294 N (30 kgf, 66 lb)	1,715 kPa (17 kg/cm <sup>2</sup> , 249 psi)
	Brake fluid pressure with engine running and vacuum at 66.7 kPa (500 mmHg, 19.69 inHg)	147 N (15 kgf, 33 lb)	6,468 kPa (65 kg/cm <sup>2</sup> , 938 psi)
		294 N (30 kgf, 66 lb)	10,240 kPa (104 kg/cm <sup>2</sup> , 1,485 psi)

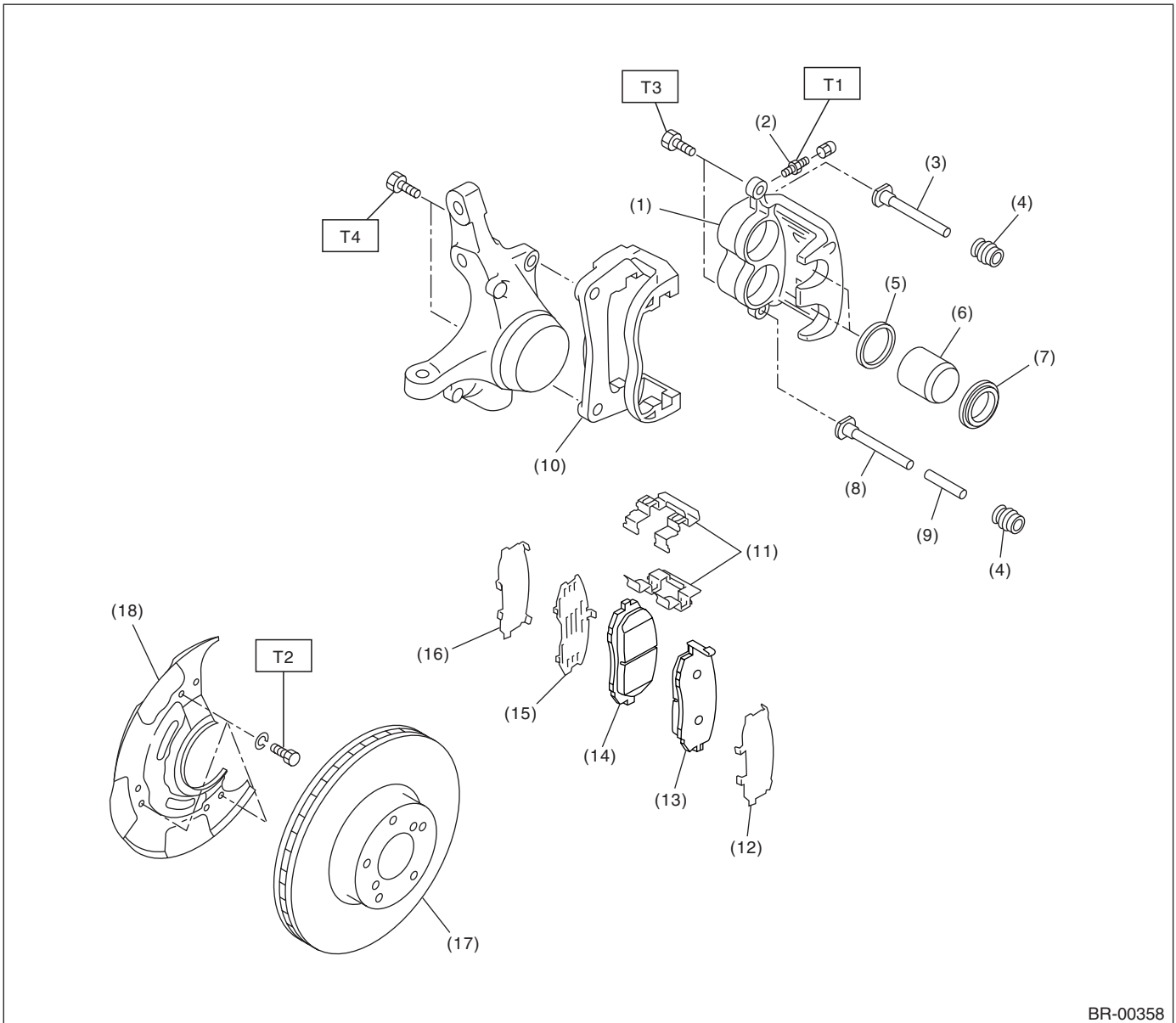
Brake pedal	Free play	0.5 — 2.0 mm (0.02 — 0.08 in) [Depress brake pedal pad with a force of less than 10 N (1 kgf, 2 lb).]
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# GENERAL DESCRIPTION

## BRAKE

### B: COMPONENT

#### 1. FRONT DISC BRAKE



BR-00358

- |                       |                         |                 |
|-----------------------|-------------------------|-----------------|
| (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)**

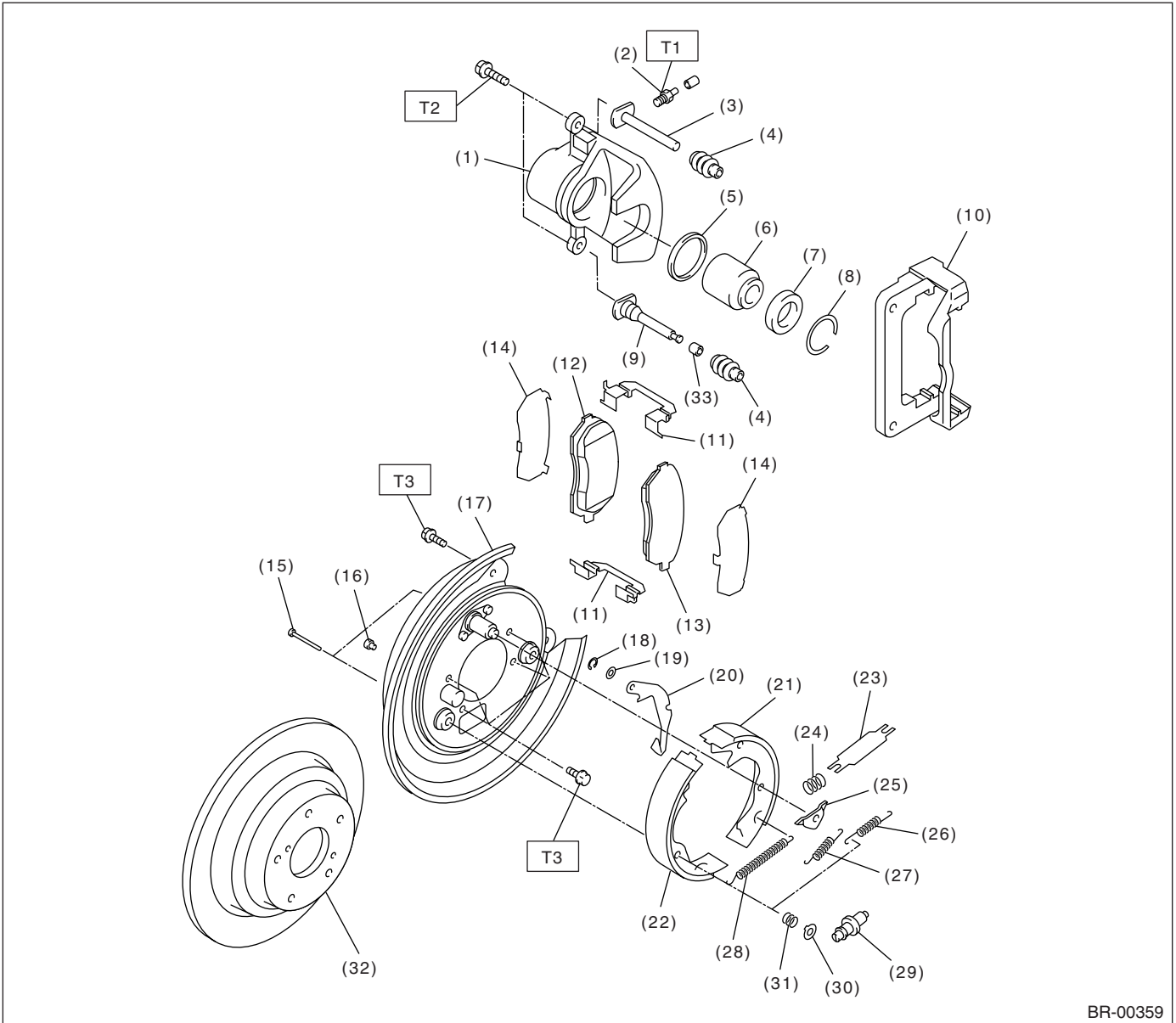
**T1: 8 (0.8, 5.8)**

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

**T3: 37 (3.8, 27.5)**

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

## 2. REAR DISC BRAKE



BR-00359

- |                       |                                     |                                 |
|-----------------------|-------------------------------------|---------------------------------|
| (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)**

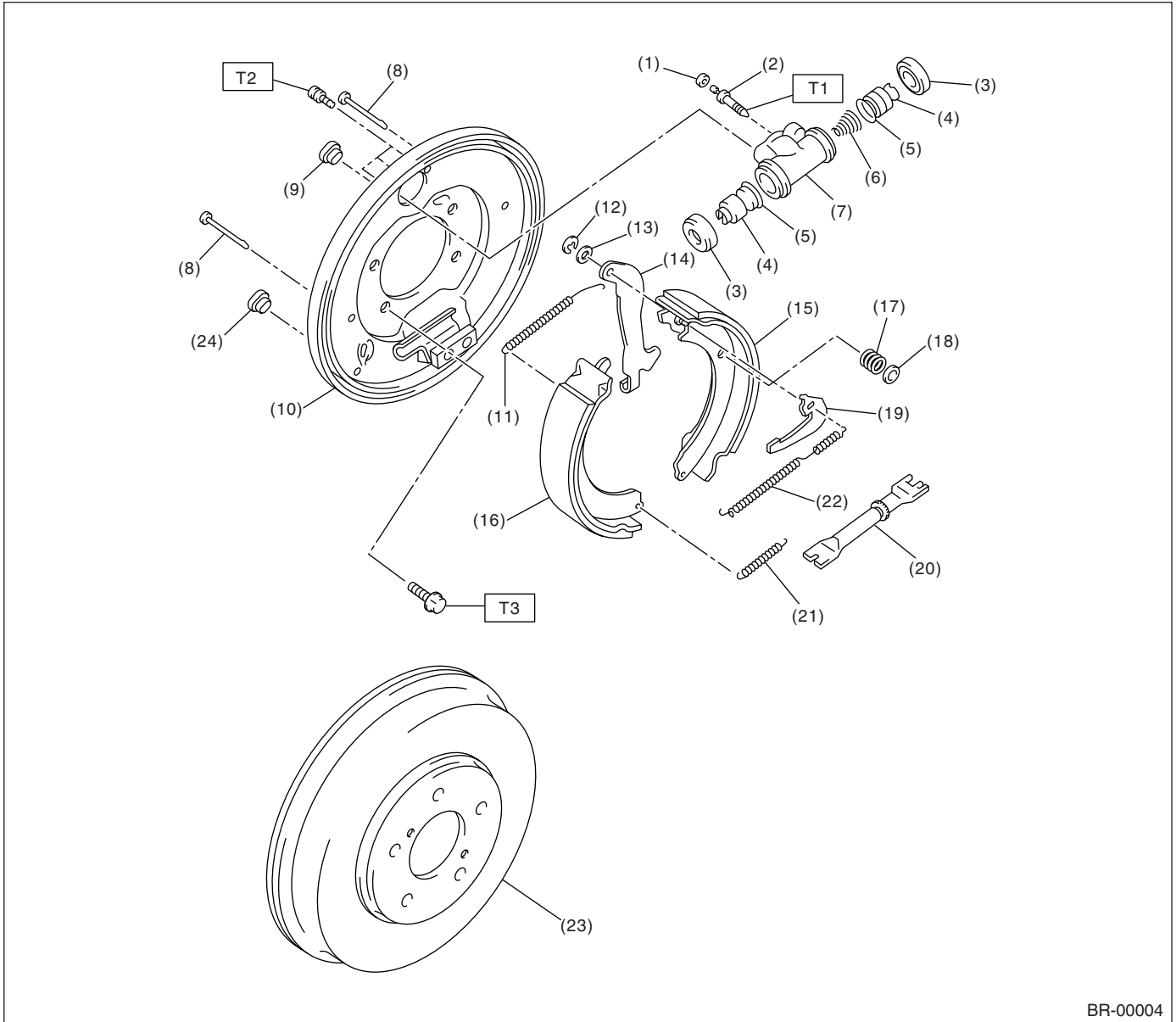
**T2: 37 (3.8, 27.5)**

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

# GENERAL DESCRIPTION

## BRAKE

### 3. REAR DRUM BRAKE



BR-00004

- |                         |                               |                               |
|-------------------------|-------------------------------|-------------------------------|
| (1) Air bleeder cap     | (11) Upper shoe return spring | (21) Lower shoe return spring |
| (2) Air bleeder screw   | (12) Retainer                 | (22) Adjusting spring         |
| (3) Boot                | (13) Washer                   | (23) 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) Pin                 | (18) Cup                      |                               |
| (9) Plug                | (19) Adjusting lever          |                               |
| (10) Back plate         | (20) Adjuster                 |                               |
|                         |                               |                               |
|                         |                               |                               |

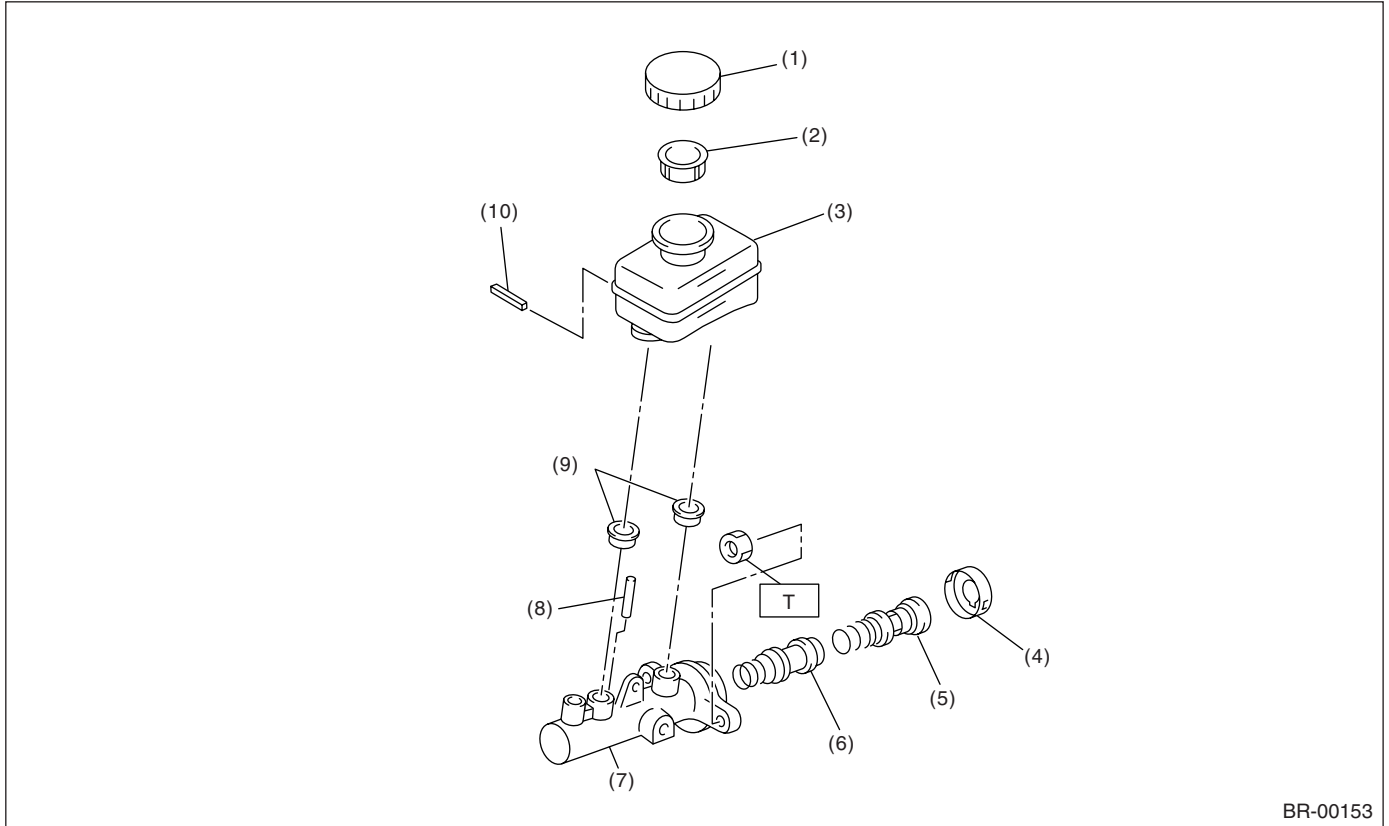
**Tightening torque: N·m (kgf·m, ft·lb)**

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

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

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

## 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             |

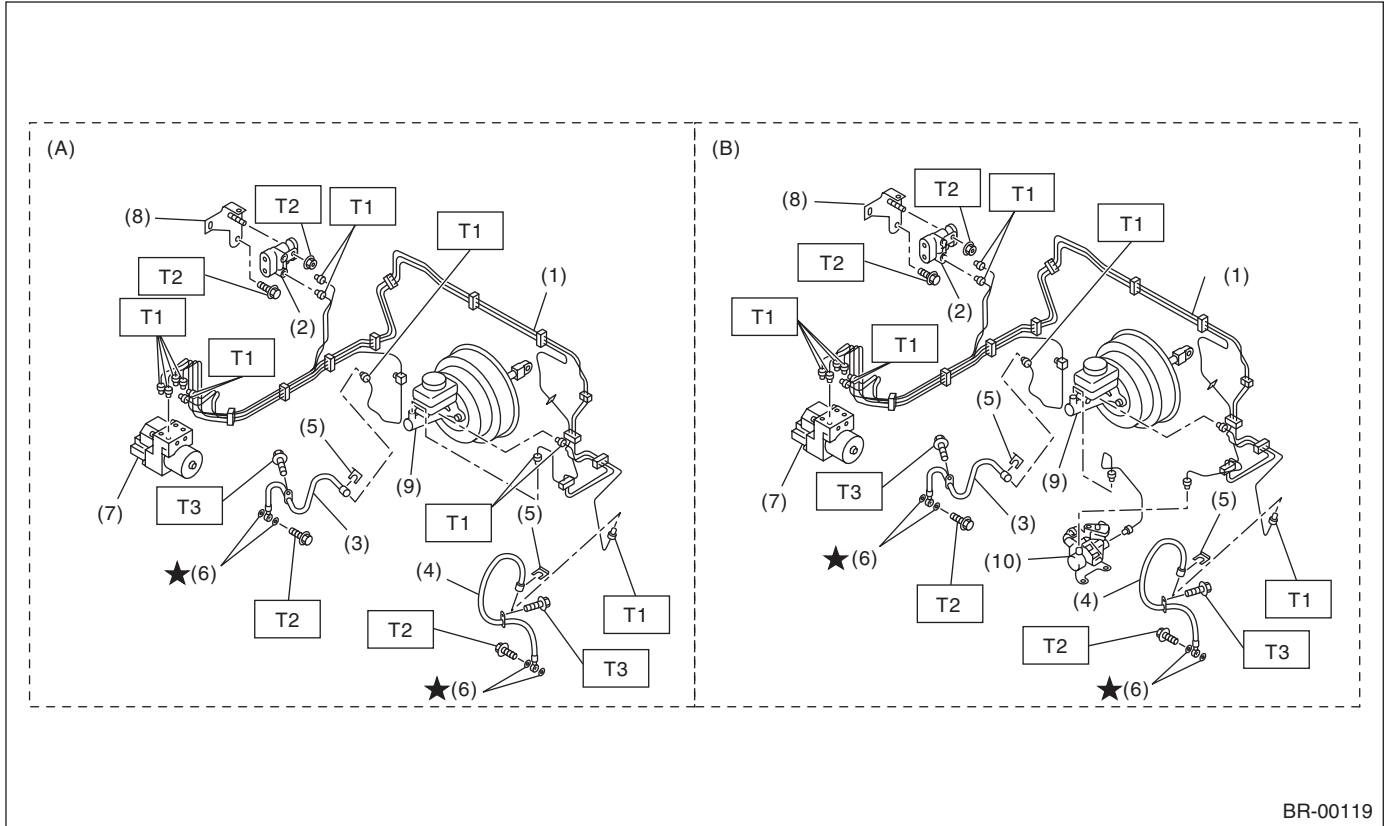
**Tightening torque: N·m (kgf·m, ft·lb)**

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

# GENERAL DESCRIPTION

## BRAKE

### 5. FRONT BRAKE PIPES AD HOSES



BR-00119

(A) AT model

(B) MT model

- (1) Front brake pipe assembly
- (2) Proportioning valve (Rear drum brake)  
2 way connector (Rear disc brake)
- (3) Front brake hose RH
- (4) Front brake hose LH

- (5) Clamp
- (6) Gasket
- (7) ABS control module and hydraulic control unit
- (8) Bracket
- (9) Master cylinder

- (10) Hill holder

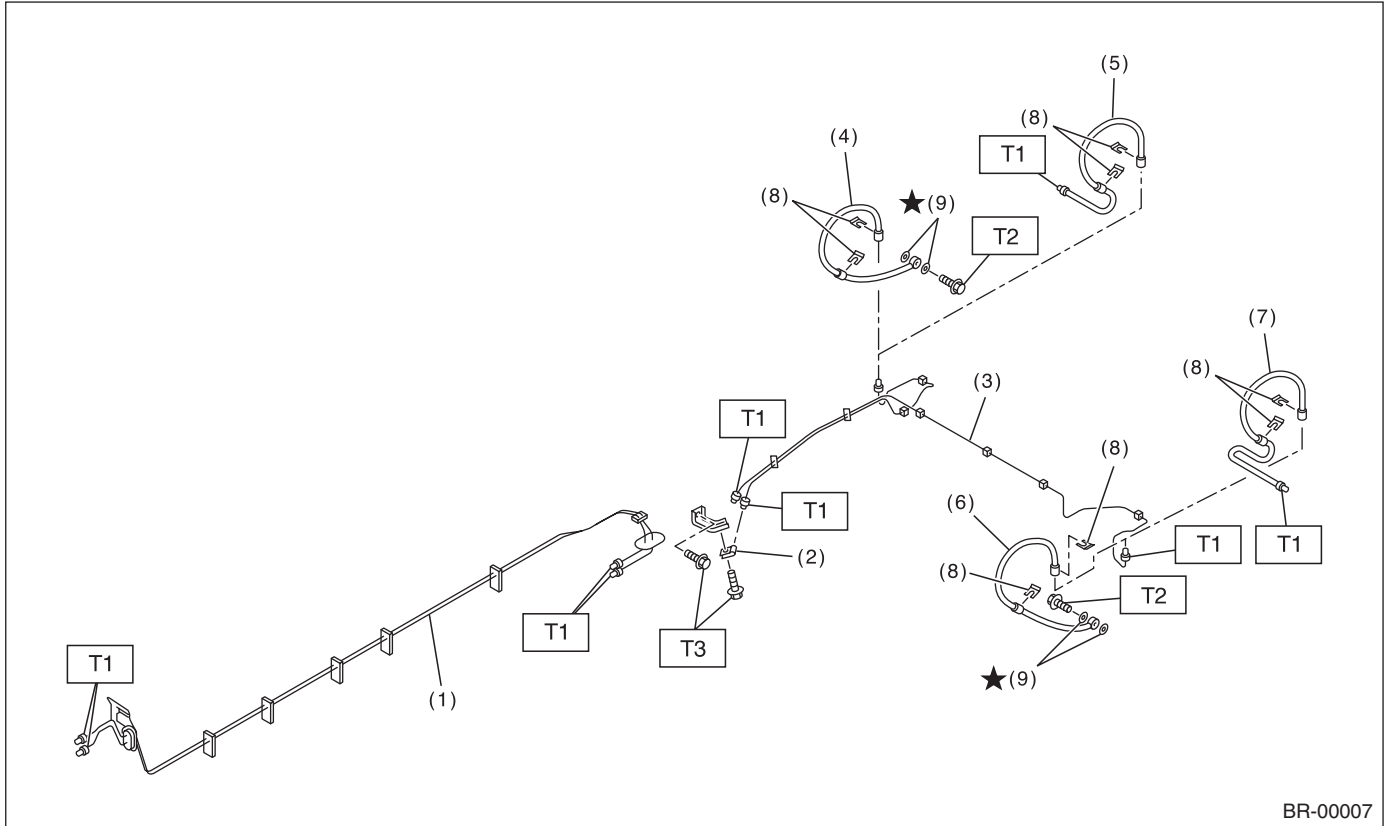
**Tightening torque: N-m (kgf-m, ft-lb)**

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

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

**T3: 32 (3.3, 23.6)**

## 6. CENTER AND REAR BRAKE PIPES AND HOSES



- |   |   |
|---|---|
| (1) Center brake pipe assembly            | (6) Rear brake hose LH (Disc brake model) |
| (2) Two-way connector                     | (7) Rear brake hose LH (Drum brake model) |
| (3) Rear brake pipe assembly              | (8) Clamp                                 |
| (4) Rear brake hose RH (Disc brake model) | (9) Gasket                                |
| (5) Rear brake hose RH (Drum brake model) |   |

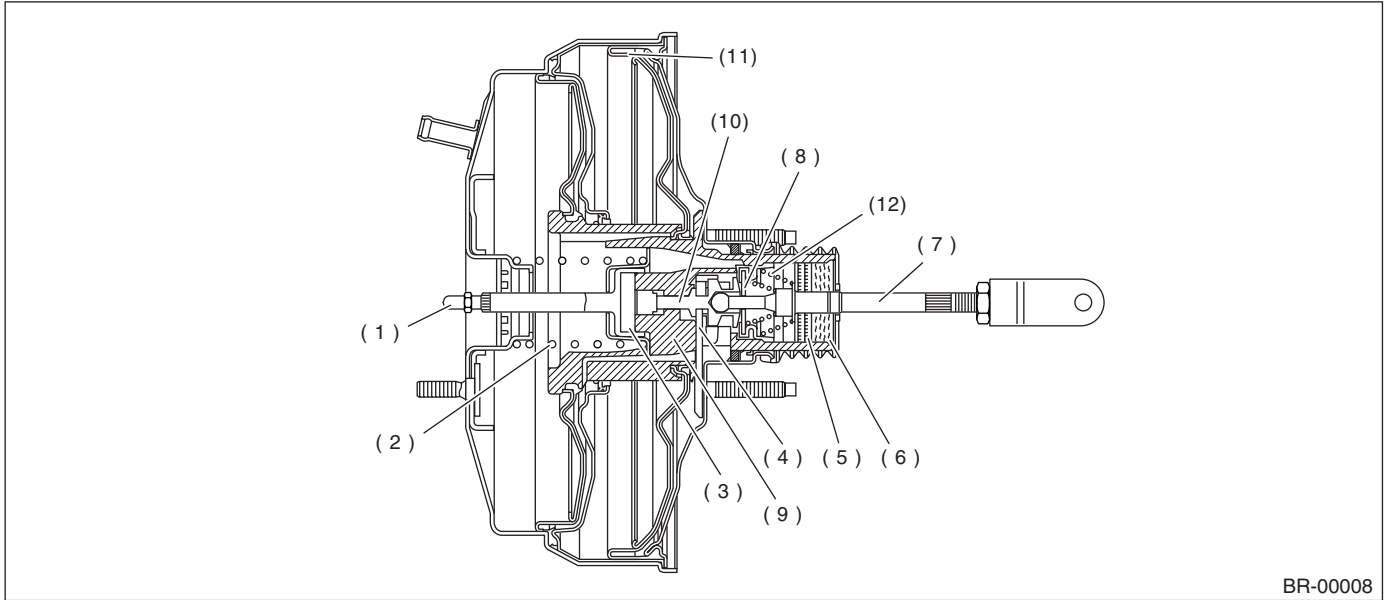
<b>Tightening torque: N·m (kgf·m, ft·lb)</b>	
<b>T1:</b>	<b>15 (1.5, 10.8)</b>
<b>T2:</b>	<b>18 (1.8, 13.0)</b>
<b>T3:</b>	<b>32 (3.3, 23.6)</b>



# GENERAL DESCRIPTION

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## 7. BRAKE BOOSTER

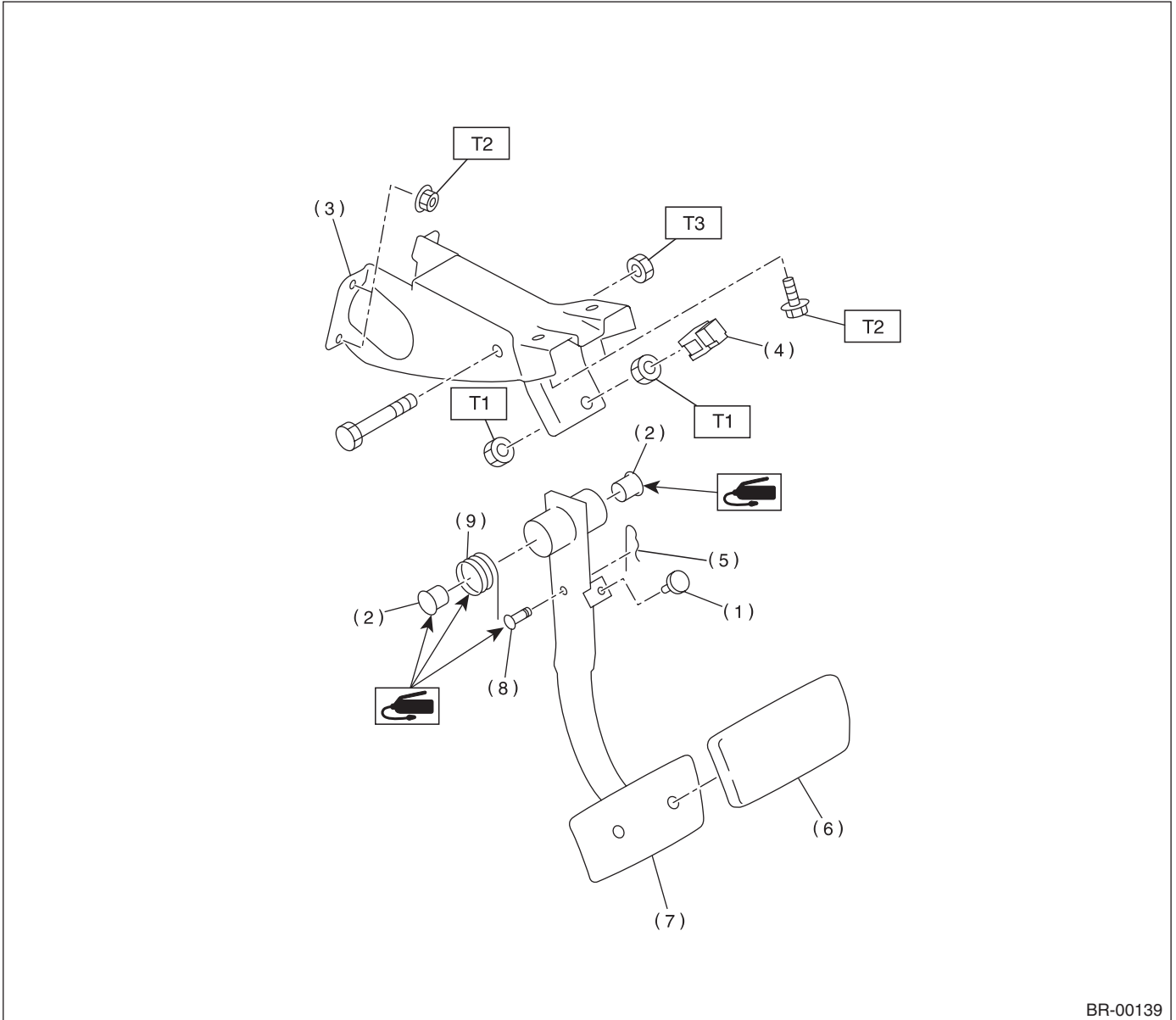


BR-00008

- |                   |                   |                          |
|-------------------|-------------------|--------------------------|
| (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  | (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)**

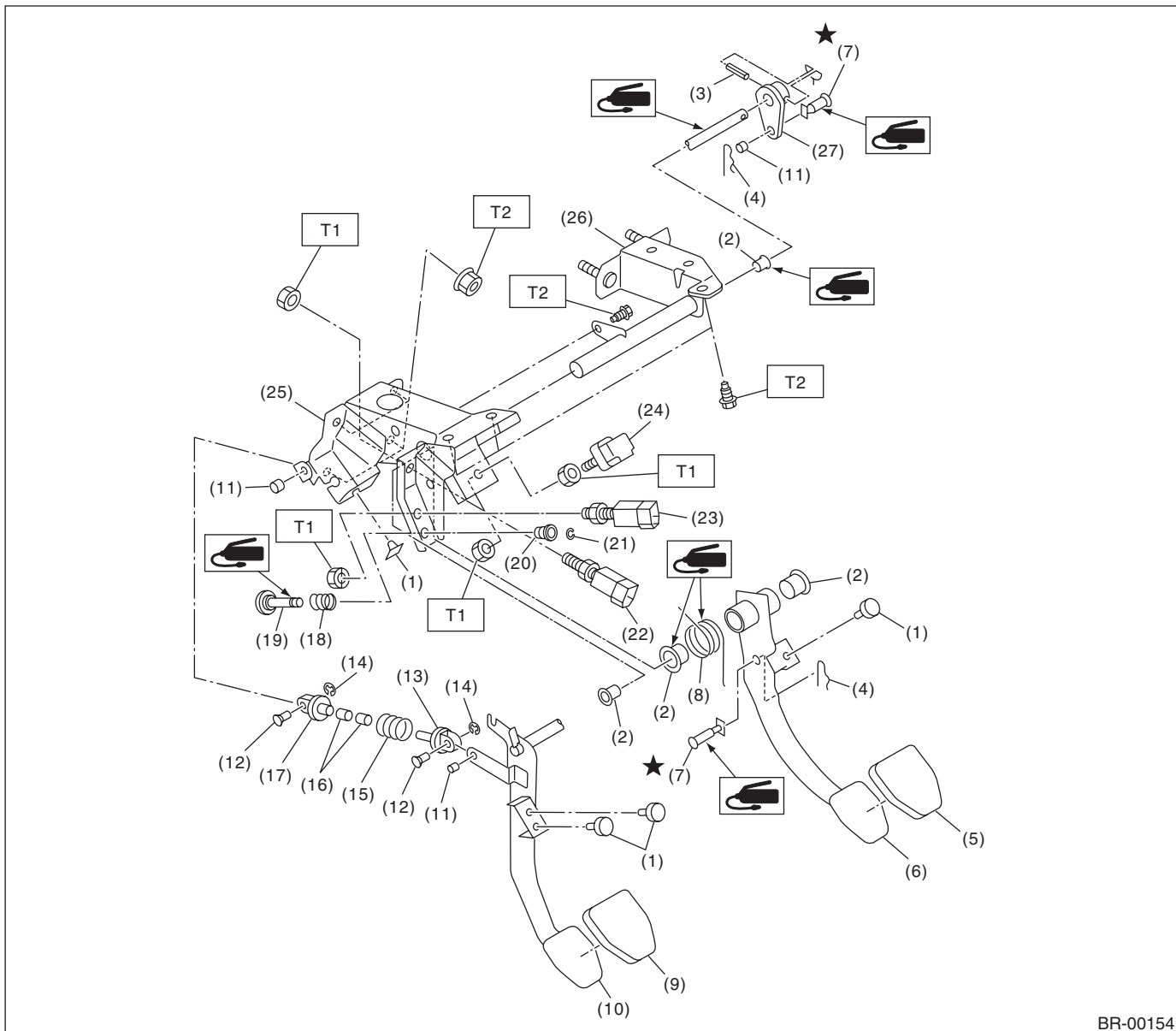
**T2: 18 (1.8, 13.0)**

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

# GENERAL DESCRIPTION

## BRAKE

### • MT MODEL



BR-00154

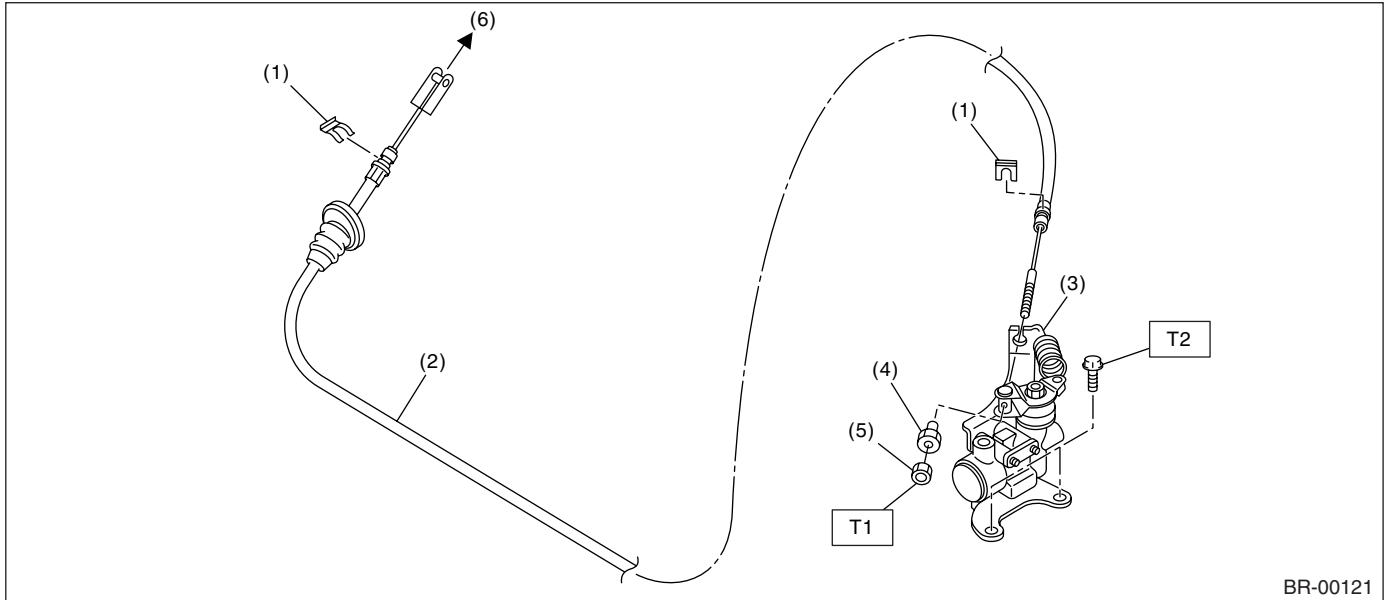
- |                        |  |  |
|------------------------|--|--|
| (1) Stopper            | (12) Clutch clevis pin                 | (23) Clutch switch (With cruise control) |
| (2) Bushing            | (13) Assist rod A                      | (24) Stop light switch                   |
| (3) Spring 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



- |                               |                     |
|-------------------------------|---------------------|
| (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 (0.35, 2.5)**

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

### C: CAUTION

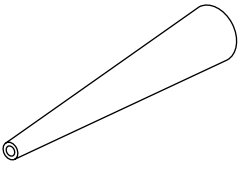
- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Before removal, installation 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 revolution 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.

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BRAKE

## D: PREPARATION TOOL

### 1. SPECIAL TOOLS

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

### 2. GENERAL PURPOSE TOOLS

TOOL NAME	REMARKS
SNAP RING PLIERS	Used for removing and installing snap ring.