

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 × 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 × 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 ³ (12.51 cu in) | |
| Brake booster | Type | Vacuum suspended | |
| | Effective diameter | “8 + 9” tandem type | |
| Brake line | | Dual circuit system | |
| Brake fluid CAUTION: <ul style="list-style-type: none"> • Avoid mixing brake fluid of different brands to prevent fluid performance from degrading. • When filling brake fluid, be careful not to allow any dust into the reservoir. • Use new DOT3 or 4 brake fluid when replacing or refilling fluid. | | FMVSS No. 116, DOT3 or DOT4 | |

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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 ² , 100 psi) |
| | | 294 N (30 kgf, 66 lb) | 1,765 kPa (18 kg/cm ² , 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 ² , 938 psi) |
| | | 294 N (30 kgf, 66 lb) | 10,297 kPa (105 kg/cm ² , 1,493 psi) |

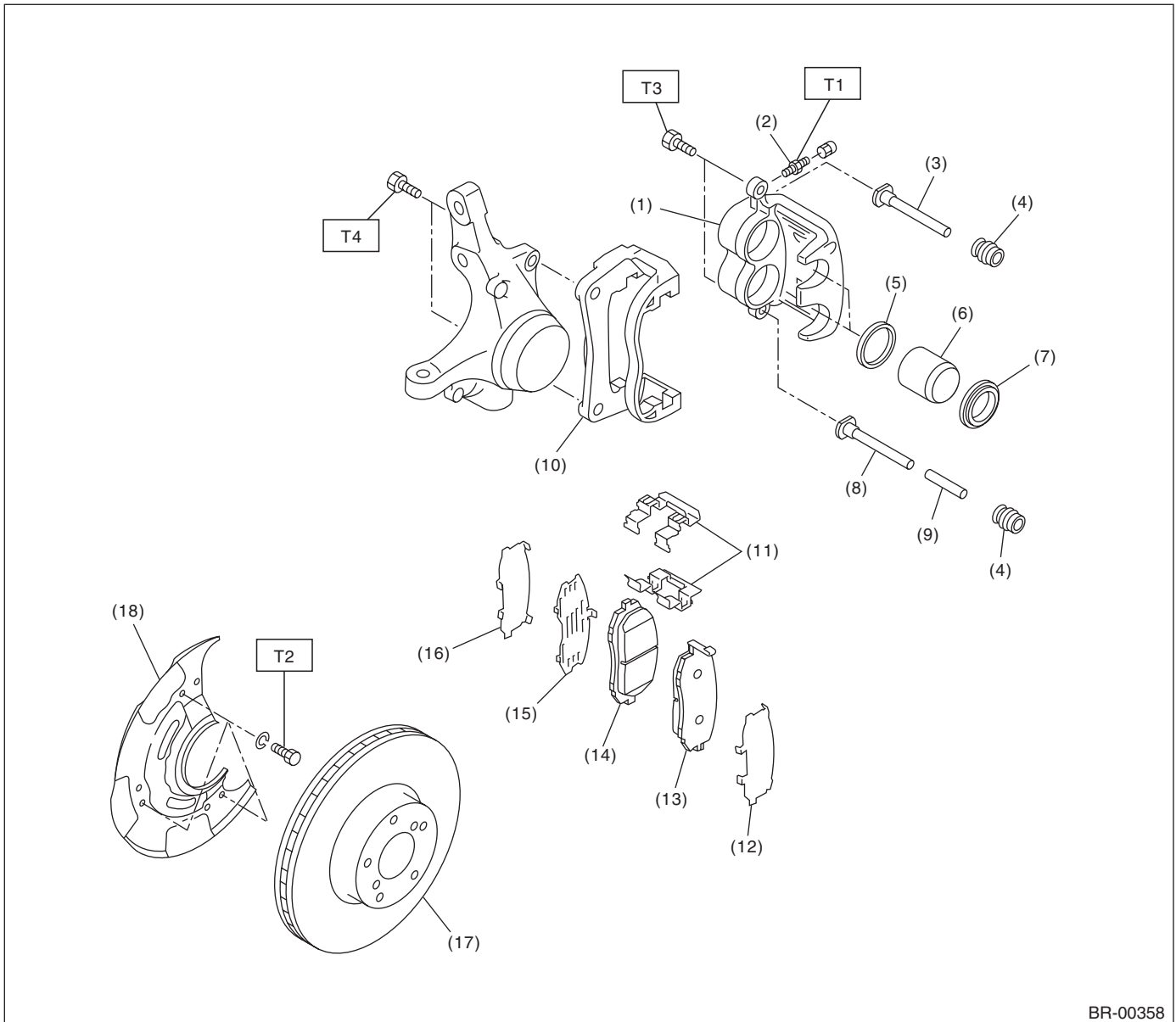
| | | |
|-------------|-----------|---------------------------------------------------------------------------------------------------|
| Brake pedal | Free play | 0.5 — 2.0 mm (0.02 — 0.08 in) [Depress brake pedal with a force of less than 10 N (1 kgf, 2 lb).] |
|-------------|-----------|-------------------------------------------------------------------------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

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B: COMPONENT

1. FRONT DISC BRAKE



- | | |
|-----------------------|-----------------------|
| (1) Caliper body | (9) Bushing |
| (2) Air bleeder screw | (10) Support |
| (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 |

- | |
|-----------------|
| (17) Disc rotor |
| (18) Disc cover |

Tightening torque: N·m (kgf·m, ft·lb)

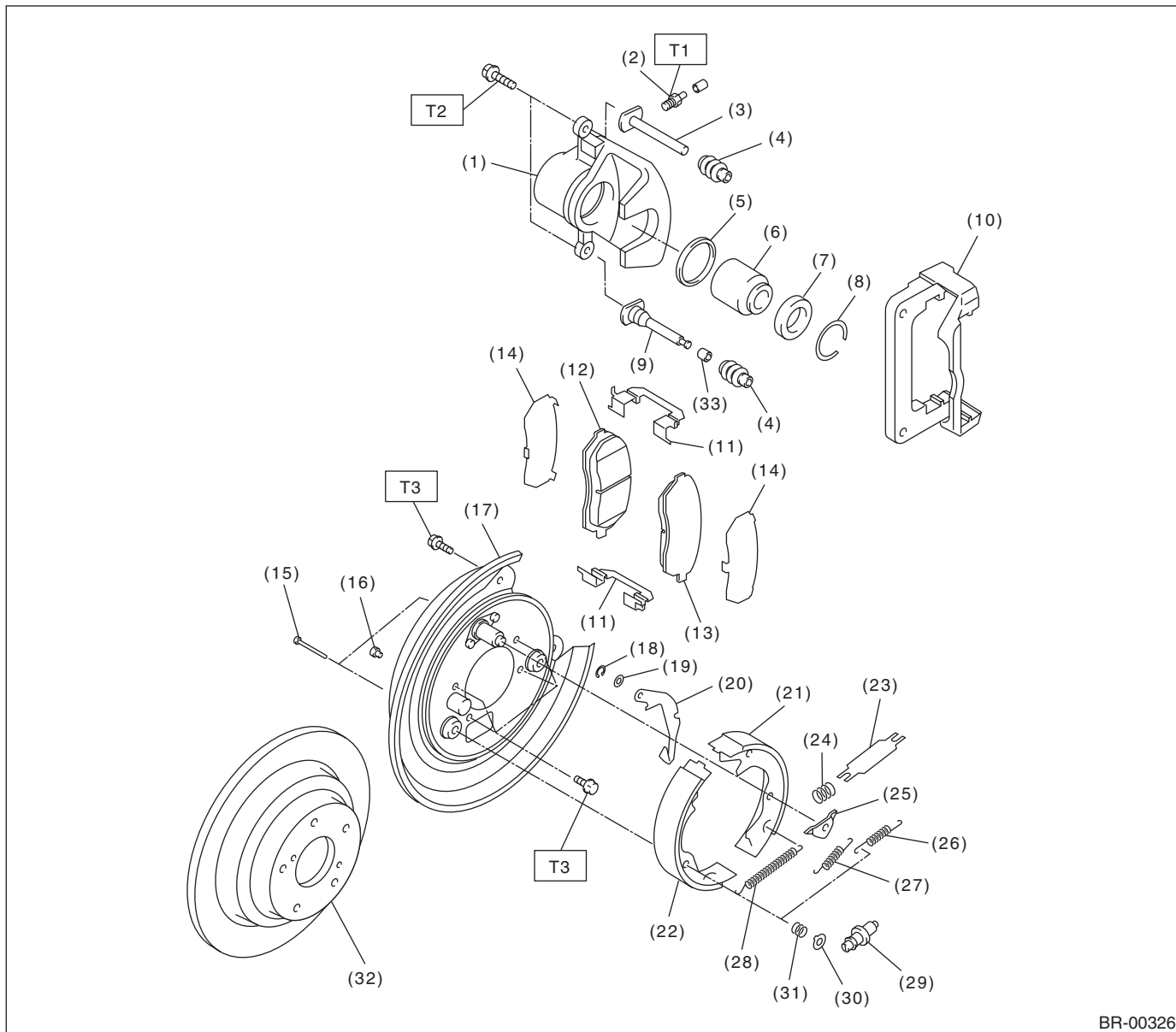
T1: 8 (0.8, 5.8)

T2: 18 (1.8, 13.0)

T3: 26 (2.7, 19.2)

T4: 80 (8.2, 59)

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)

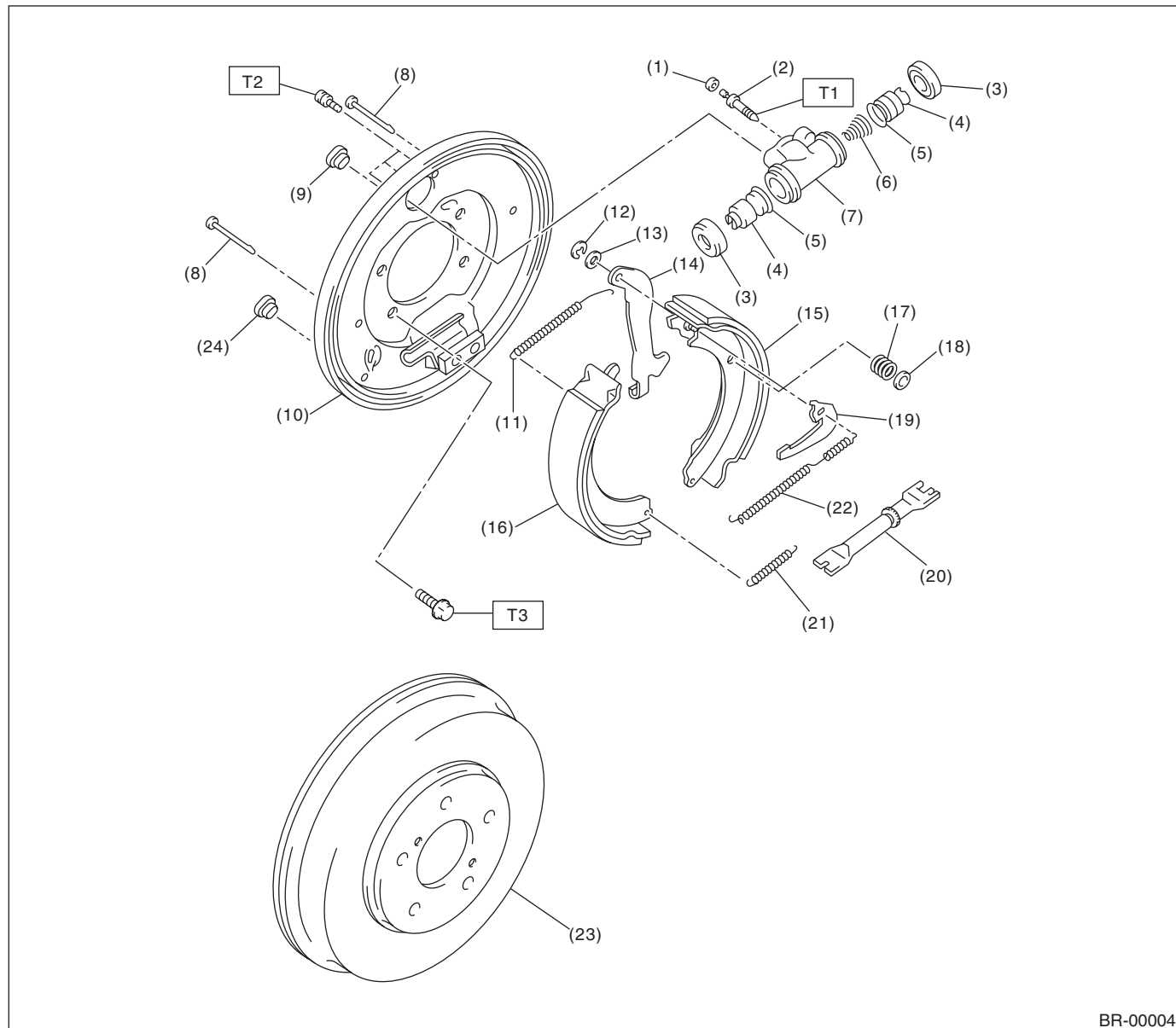
T2: 37 (3.8, 27.5)

T3: 52 (5.3, 38.3)

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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) 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 | |
| | (21) Lower shoe return spring | |
| | (22) Adjusting spring | |

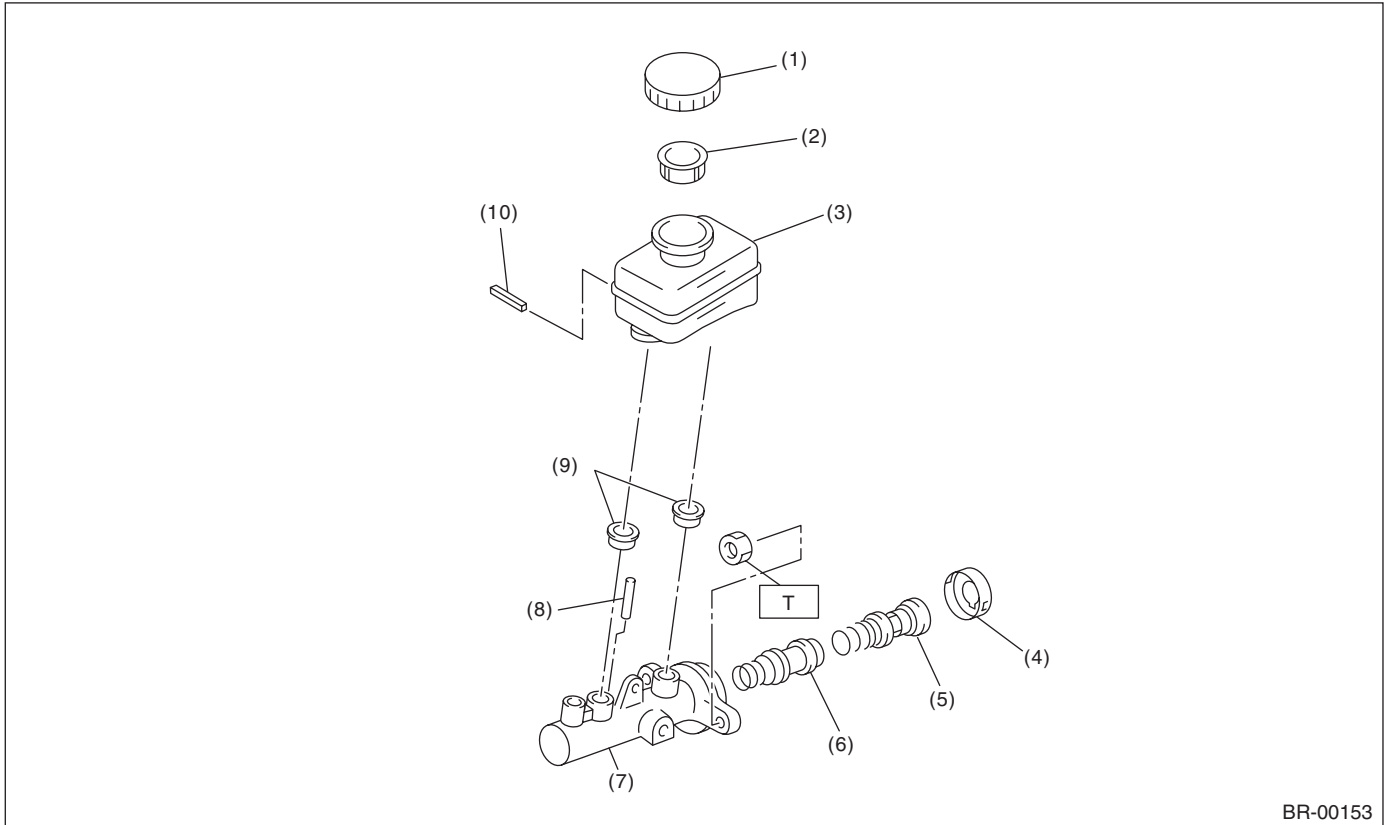
Tightening torque: N·m (kgf-m, ft-lb)

T1: 8 (0.8, 5.8)

T2: 10 (1.0, 7.2)

T3: 52 (5.3, 38.3)

4. MASTER CYLINDER



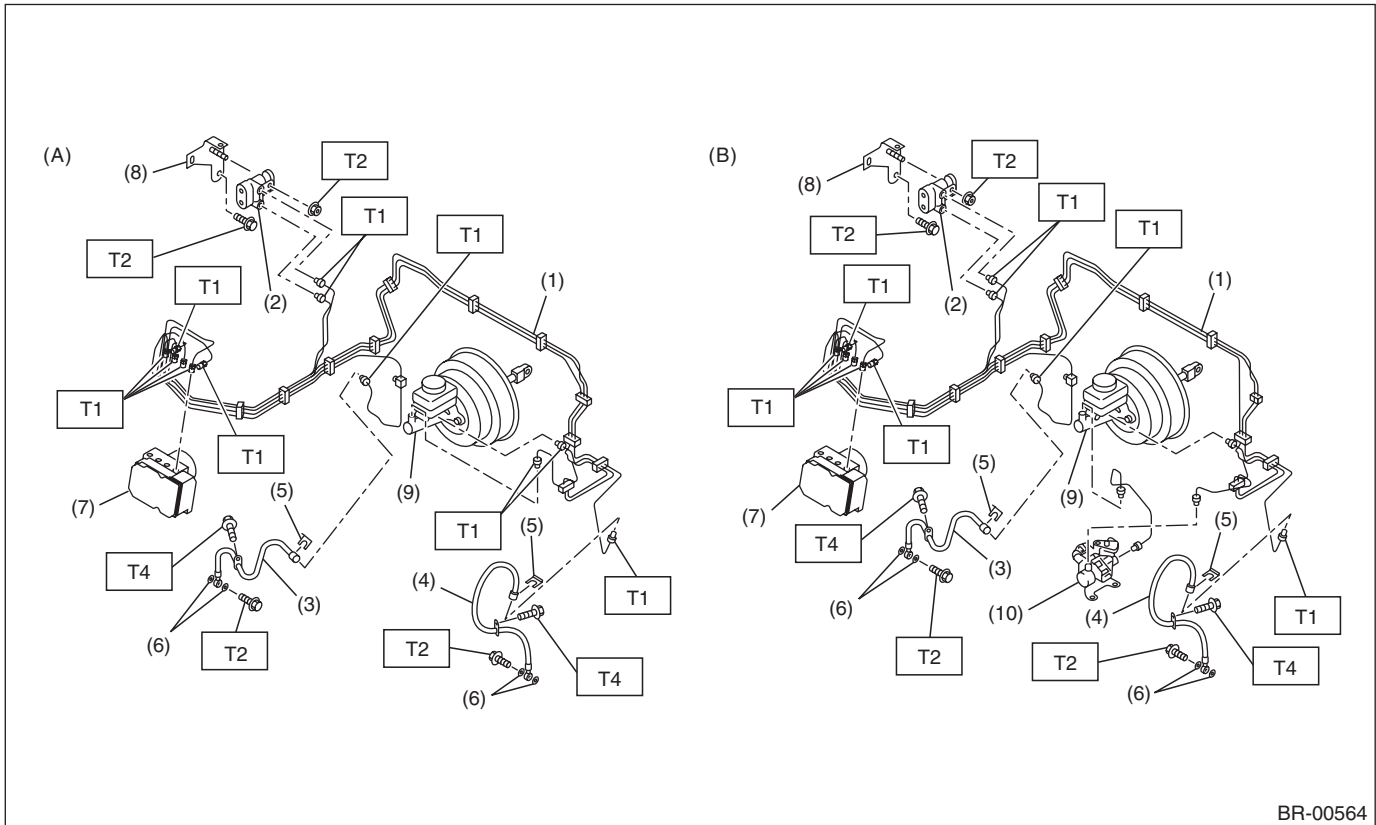
- | | |
|---------------------|----------------------|
| (1) Cap | (6) Secondary piston |
| (2) Filter | (7) Cylinder body |
| (3) Reservoir tank | (8) Cylinder pin |
| (4) Piston retainer | (9) Seal |
| (5) Primary piston | (10) Pin |

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

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5. FRONT BRAKE PIPES AND HOSES



BR-00564

(A) AT model

(B) MT model

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

- (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)

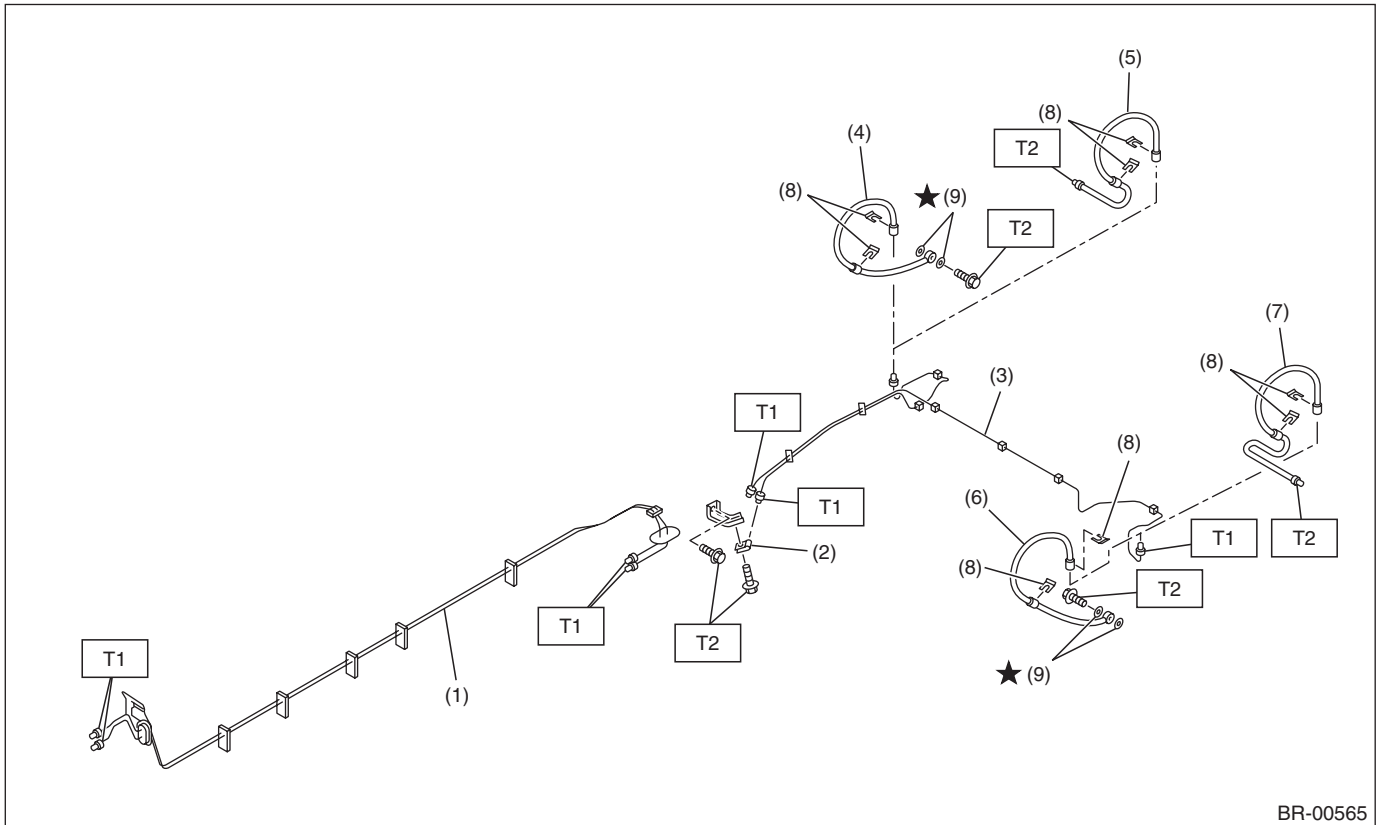
T1: 15 (1.5, 10.8)

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
- (2) Two-way connector
- (3) Rear brake pipe ASSY
- (4) Rear brake hose RH (Disc brake model)
- (5) Rear brake hose RH (Drum brake model)

- (6) Rear brake hose LH (Disc brake model)
- (7) Rear brake hose LH (Drum brake model)
- (8) Brake hose clamp

- (9) Gasket

Tightening torque: N·m (kgf-m, ft-lb)

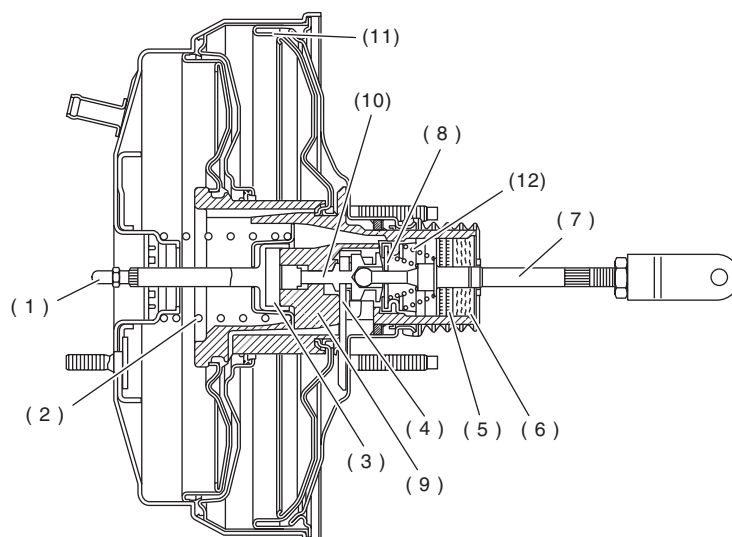
T1: 15 (1.5, 10.8)

T2: 18 (1.8, 13.0)

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7. BRAKE BOOSTER

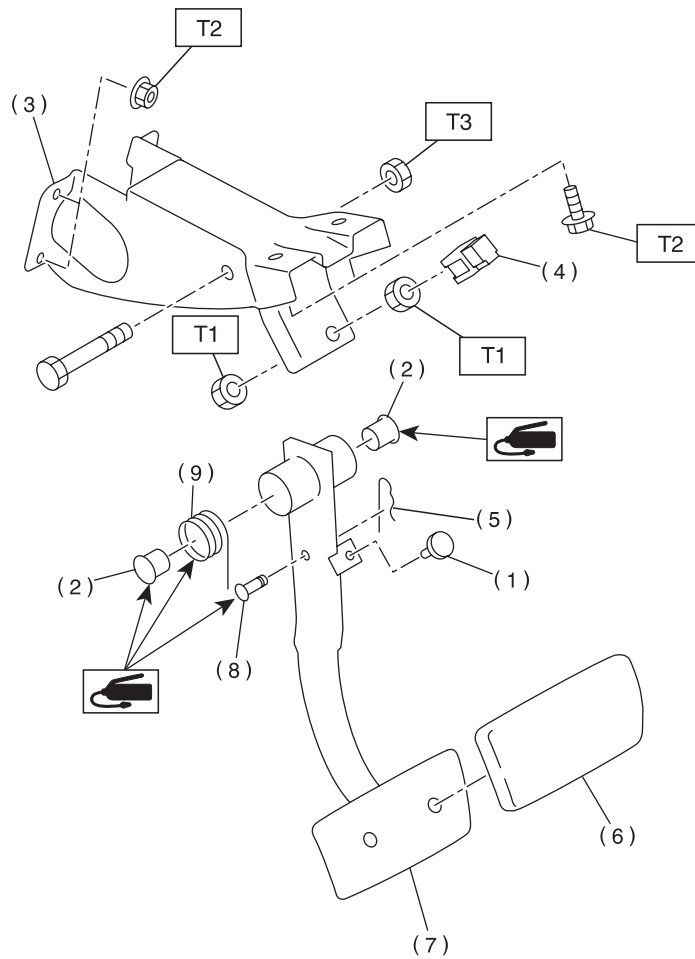


BR-00008

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

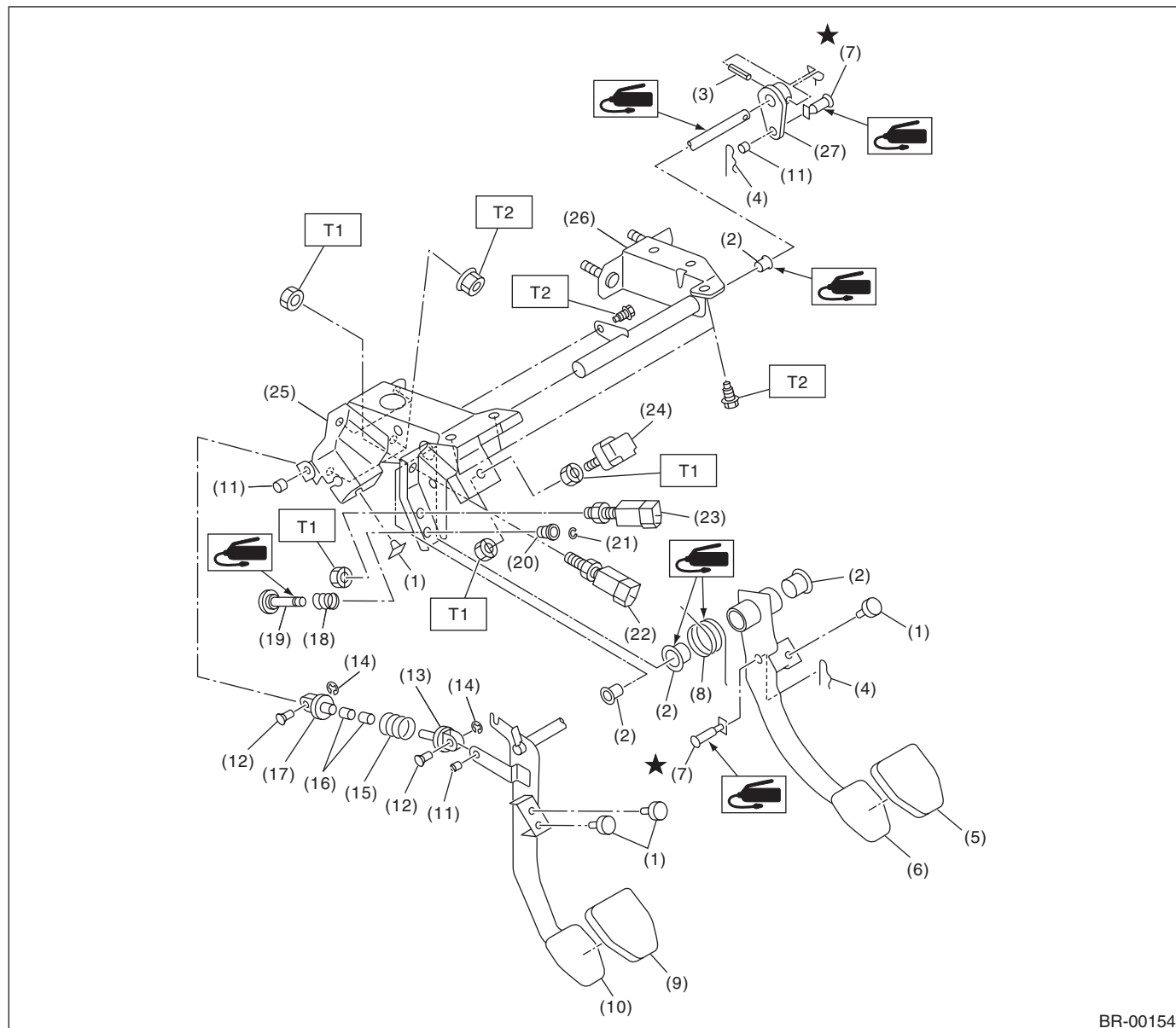
T2: 18 (1.8, 13.0)

T3: 29 (3.0, 21.7)

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- MT model



BR-00154

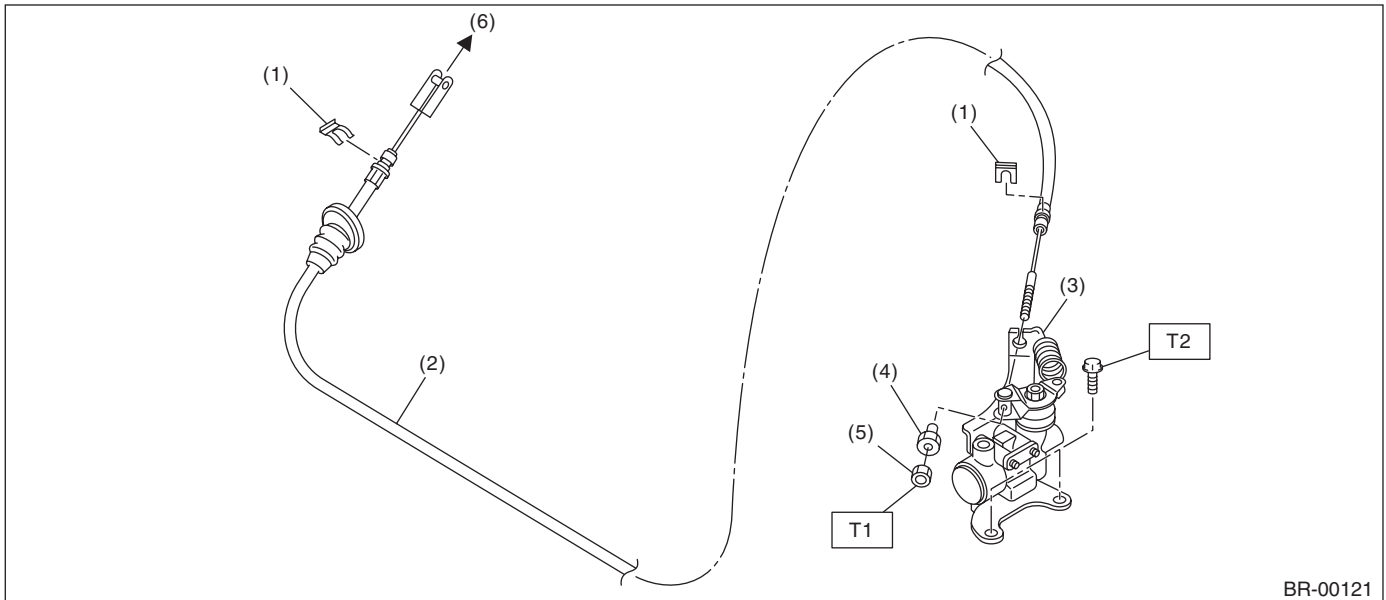
| | | |
|------------------------|----------------------------------------|---------------------------------------------------|
| (1) Stopper | (12) Clutch clevis pin | (23) Clutch switch (Model with cruise control) |
| (2) Bushing | (13) Assist rod A | (24) Stop light switch |
| (3) Spring pin | (14) 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



- | | |
|-------------------------------|---------------------|
| (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

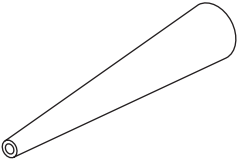
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, 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.

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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. |