

General Description

BRAKE

1. General Description

A: SPECIFICATION

Front disc brake	Size	Brembo 17-inch type	16-inch type
	Type	Disc (Opposed type, ventilated)	Disc (Floating type, ventilated)
	Effective disc diameter mm (in)	268 (10.55)	244 (9.61)
	Disc thickness × Diameter mm (in)	30 × 326 (1.18 × 12.83)	24 × 294 (0.94 × 11.57)
	Effective cylinder diameter mm (in)	40.0 × 2, 46.0 × 2 (1.575 × 2, 1.811 × 2)	42.8 (1.685) × 2
	Pad dimensions (Length × Width × Thickness) mm (in)	131.8 × 60.5 × 8.9 (5.189 × 2.382 × 0.35)	117.8 × 50.5 × 11.0 (4.638 × 1.988 × 0.433)
	Clearance adjustment	Automatic adjustment	
Rear disc brake	Size	Brembo 17-inch type	15-inch type
	Type	Disc (Opposed type, ventilated)	Disc (Floating type, solid)
	Effective disc diameter mm (in)	268 (10.55)	250 (9.84)
	Disc thickness × Diameter mm (in)	20 × 316 (0.79 × 12.44)	10 × 286 (0.39 × 11.26)
	Effective cylinder diameter mm (in)	40.0 (1.575) × 2	38.1 (1.500)
	Pad dimensions (Length × Width × Thickness) mm (in)	76.8 × 45.0 × 9.0 (3.024 × 1.772 × 0.354)	92.0 × 33.0 × 9.0 (3.622 × 1.299 × 0.354)
	Clearance adjustment	Automatic adjustment	
Master cylinder	Type	Tandem	
	Effective diameter mm (in)	23.8 (15/16)	
	Reservoir type	Sealed type	
	Brake fluid reservoir capacity cm ³ (cu in)	205 (12.51)	
Brake booster	Type	Vacuum suspended	
	Effective diameter mm (in)	208 + 229 (8.19 + 9.02)	
Brake line		Dual circuit system	
Brake fluid CAUTION: • Avoid mixing brake fluid of different brands to prevent fluid performance from degrading. • When filling with brake fluid, be careful not to allow any dust to enter the reservoir. • Use new SUBARU genuine brake fluid when replacing or refilling the fluid.		FMVSS No. 116, DOT3, or DOT4	

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NOTE:

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

Item			Standard	Limit	
Front brake	Pad thickness	mm (in)	16-inch type	11 (0.43)	1.5 (0.059)
			Brembo 17-inch type	8.9 (0.35)	1.2 (0.047)
	Disc thickness	mm (in)	16-inch type	24 (0.94)	22 (0.87)
			Brembo 17-inch type	30 (1.18)	28 (1.10)
	Disc runout	mm (in)	16-inch type	—	0.050 (0.0020)
			Brembo 17-inch type	—	0.075 (0.0030)
Rear brake	Pad thickness	mm (in)	15-inch type	9.0 (0.354)	1.5 (0.059)
			Brembo 17-inch type	9.0 (0.354)	1.2 (0.047)
	Disc thickness	mm (in)	15-inch type	10 (0.39)	8.5 (0.335)
			Brembo 17-inch type	20 (0.79)	18 (0.71)
	Disc runout	mm (in)	15-inch type	—	0.050 (0.0020)
			Brembo 17-inch type	—	0.070 (0.0028)
Parking brake	Inside diameter		mm (in)	190 (7.48)	191 (7.52)
	Lining thickness		mm (in)	2.8 (0.11)	1.5 (0.059)
	Lever stroke		7 — 8 notches/200 N (20 kgf, 45 lbf)		

		Brake pedal force N (kgf, lbf)	Fluid pressure kPa (kgf/cm ² , psi)	
			Brembo 17-inch type	16-inch type
Brake booster	Brake fluid pressure with engine stopped	147 (15, 33)	545 (6, 79)	
		294 (30, 66)	1,564 (16, 227)	
	Brake fluid pressure with engine running and vacuum pressure at 66.7 kPa (500 mmHg, 19.69 inHg)	147 (15, 33)	4,984 (51, 723)	6,003 (61, 871)
		294 (30, 66)	10,249 (105, 1,486)	11,273 (115, 1,635)

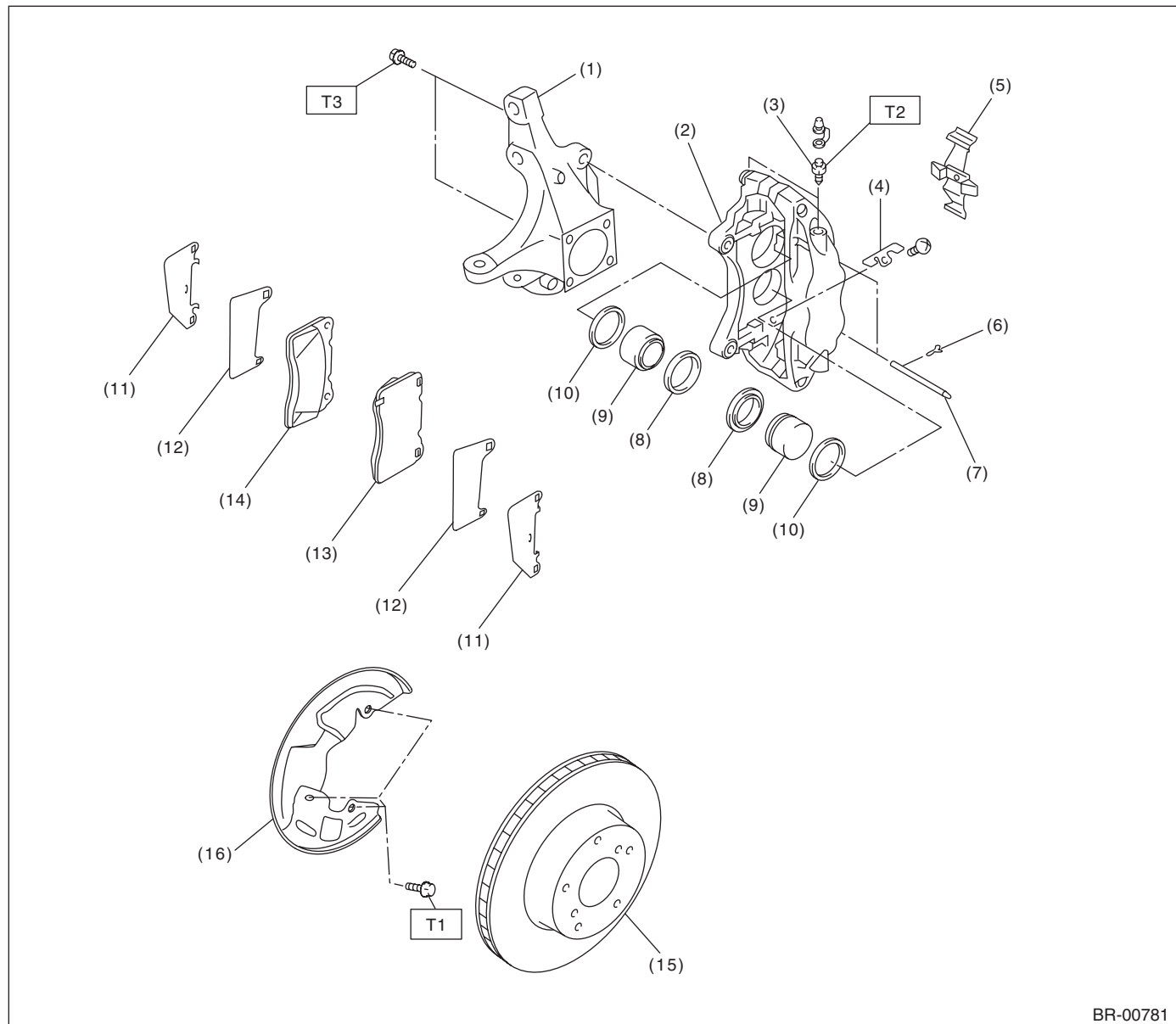
Brake pedal	Free play	mm (in)	0.5 — 2 (0.020 — 0.079) [When pulling the brake pedal upward with a force of less than 10 N (1 kgf, 2 lbf)]
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B: COMPONENT

1. FRONT DISC BRAKE (BREMBO-TYPE)



BR-00781

- (1) Housing
- (2) Caliper body
- (3) Air bleeder screw
- (4) Guide plate
- (5) Cross spring
- (6) Clip
- (7) Pad pin

- (8) Piston boot
- (9) Piston
- (10) Piston seal
- (11) Pad shim (outer)
- (12) Pad shim (inner)
- (13) Pad (outside)
- (14) Pad (inside)

- (15) Disc rotor
- (16) Disc cover

Tightening torque: N·m (kgf-m, ft-lb)

T1: 18 (1.84, 13.3)

T2: 20 (2.04, 14.8)

T3: 155 (15.81, 114.3)

This exploded view diagram illustrates the assembly of a vehicle brake system. The components are identified by numbered callouts (1-18) and torque specifications (T1, T2, T3).

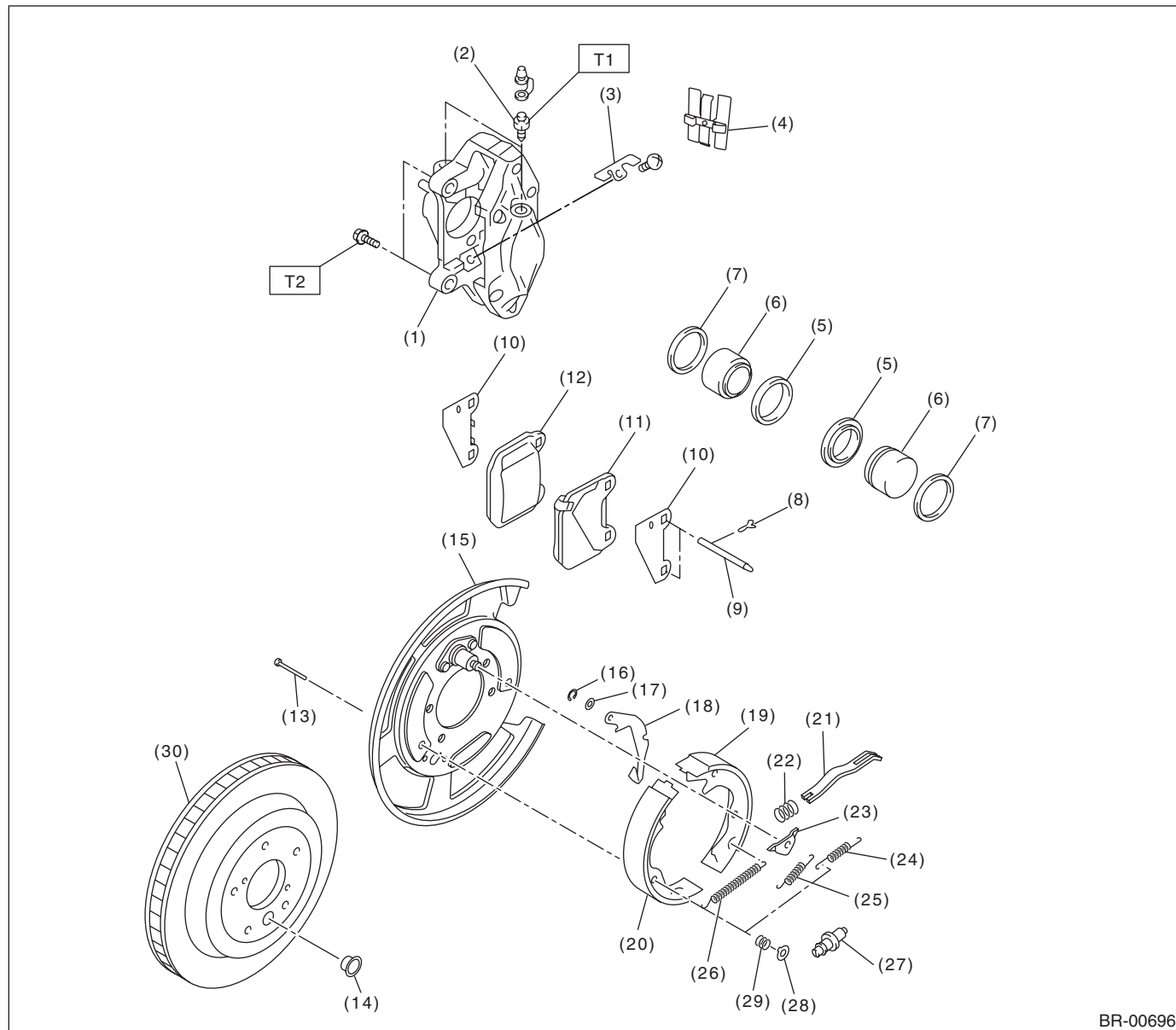
- Callouts 1-18:**
 - (1) Main brake caliper housing
 - (2) Pin/bush assembly
 - (3) Pin/bush assembly
 - (4) Pin/bush assembly
 - (5) O-ring
 - (6) Piston
 - (7) O-ring
 - (8) Pin/bush assembly
 - (9) Pin/bush assembly
 - (10) Brake caliper bracket
 - (11) Guide pin
 - (12) Guide pin
 - (13) Brake pad
 - (14) Brake pad
 - (15) Brake pad
 - (16) Brake pad
 - (17) Brake disc
 - (18) Brake disc
- Torque Specifications:**
 - T1:** Applied to the pin/bush assembly (2).
 - T2:** Applied to the pin/bush assembly (1).
 - T3:** Applied to the pin/bush assembly (10).

- T3: 80 (8.16, 59)***

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3. REAR DISC BRAKE (BREMBO-TYPE)



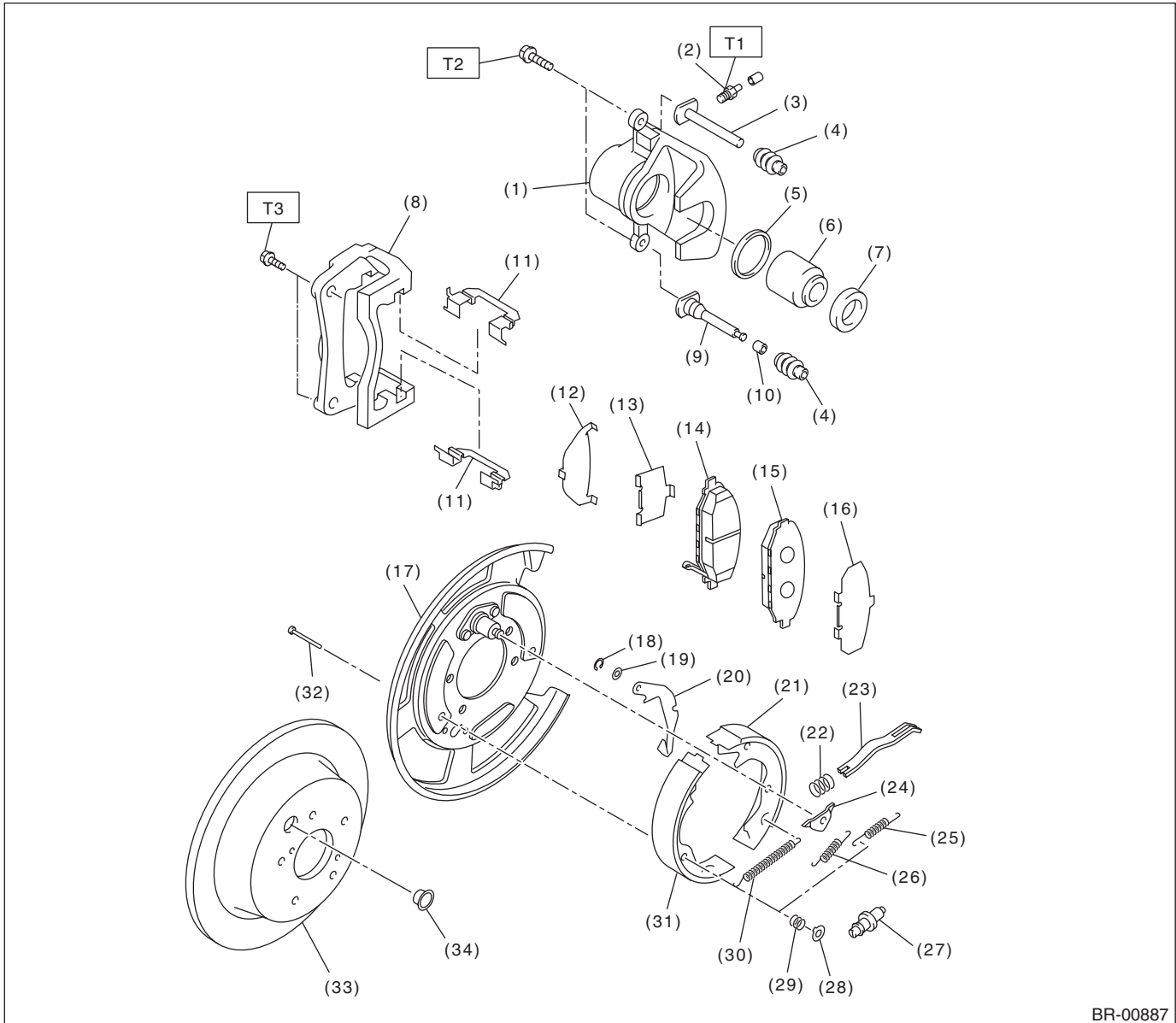
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|-----------------------|-------------------------------------|---------------------------------|
| (1) Caliper body | (13) Shoe hold-down pin | (25) Primary shoe return spring |
| (2) Air bleeder screw | (14) Adjusting hole cover | (26) Adjusting spring |
| (3) Guide plate | (15) Back plate | (27) Adjusting screw |
| (4) Cross spring | (16) Retainer | (28) Shoe hold-down cup |
| (5) Piston boot | (17) Wave washer | (29) Shoe hold-down spring |
| (6) Piston | (18) Parking brake lever | (30) Disc rotor |
| (7) Piston seal | (19) Parking brake shoe (secondary) | |
| (8) Clip | (20) Parking brake shoe (primary) | |
| (9) Pad pin | (21) Strut | |
| (10) Pad shim | (22) Strut shoe spring | |
| (11) Pad (outside) | (23) Shoe guide plate | |
| (12) Pad (inside) | (24) Secondary shoe return spring | |

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

T1: 20 (2.04, 14.8)

T2: 65 (6.63, 47.9)

4. REAR DISC BRAKE (EXCEPT FOR BREMBO-TYPE)



BR-00887

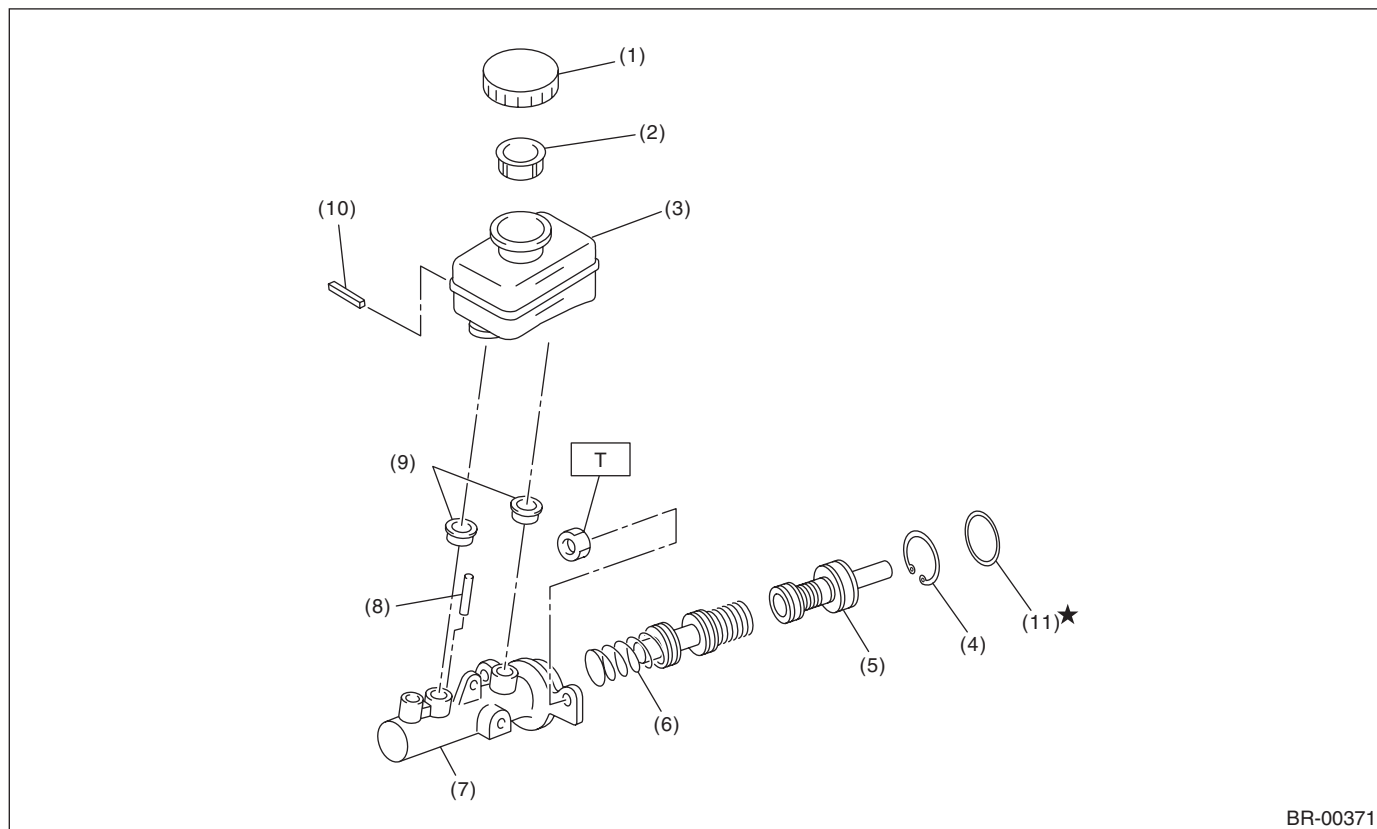
- | | | |
|-----------------------|-------------------------------------|-----------------------------------|
| (1) Caliper body | (14) Inner pad | (27) Adjusting screw |
| (2) Air bleeder screw | (15) Outer pad | (28) Shoe hold-down cup |
| (3) Guide pin (black) | (16) Shim | (29) Shoe hold-down spring |
| (4) Pin boot | (17) Back plate | (30) Adjusting spring |
| (5) Piston seal | (18) Retainer | (31) Parking brake shoe (primary) |
| (6) Piston | (19) Wave washer | (32) Shoe hold-down pin |
| (7) Piston boot | (20) Lever | (33) Disc rotor |
| (8) Support | (21) Parking brake shoe (secondary) | (34) Adjusting hole cover |
| (9) Lock pin (silver) | (22) Strut spring | |
| (10) Bushing | (23) Strut | |
| (11) Pad clip | (24) Shoe guide plate | |
| (12) Outer shim | (25) Secondary shoe return spring | |
| (13) Inner shim | (26) Primary shoe return spring | |

Tightening torque: N·m (kgf·m, ft·lb)
T1: 8 (0.82, 5.9)**T2: 27 (2.75, 19.9)****T3: 66 (6.73, 48.7)**

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5. MASTER CYLINDER



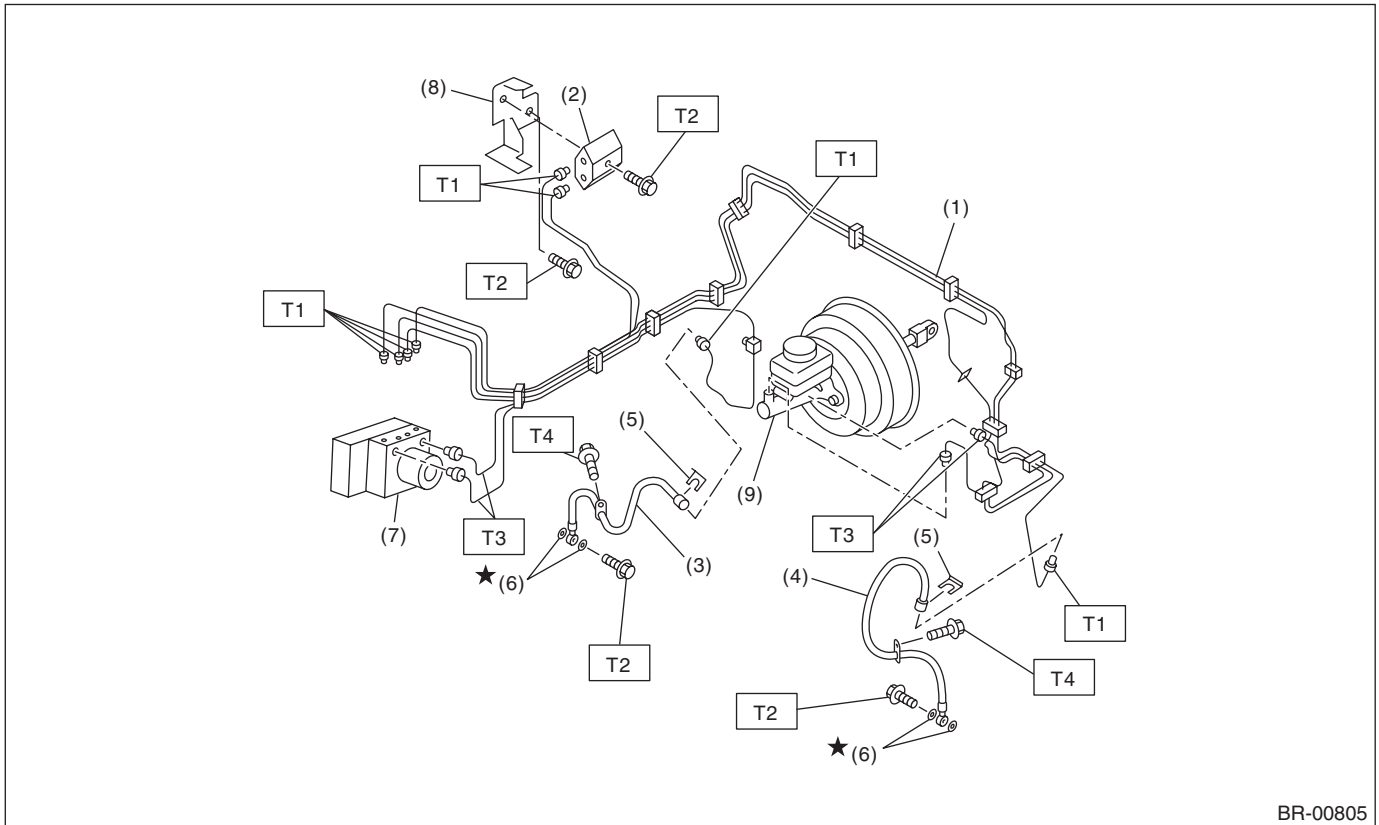
- (1) Cap
- (2) Filter
- (3) Reservoir tank
- (4) C-ring
- (5) Primary piston

- (6) Secondary piston
- (7) Cylinder body
- (8) Cylinder pin
- (9) Seal
- (10) Pin

- (11) O-ring

Tightening torque: N·m (kgf-m, ft-lb)
T: 13 (1.33, 9.6)

6. FRONT BRAKE PIPES AND HOSES



BR-00805

- | | |
|---------------------------|---|
| (1) Front brake pipe ASSY | (6) Gasket |
| (2) Two-way connector | (7) VDC control module and hydraulic control unit (VDCCM&H/U) |
| (3) Front brake hose RH | (8) Bracket |
| (4) Front brake hose LH | (9) Master cylinder |
| (5) Clamp | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 15 (1.53, 11.1)

T2: 18 (1.84, 13.3)

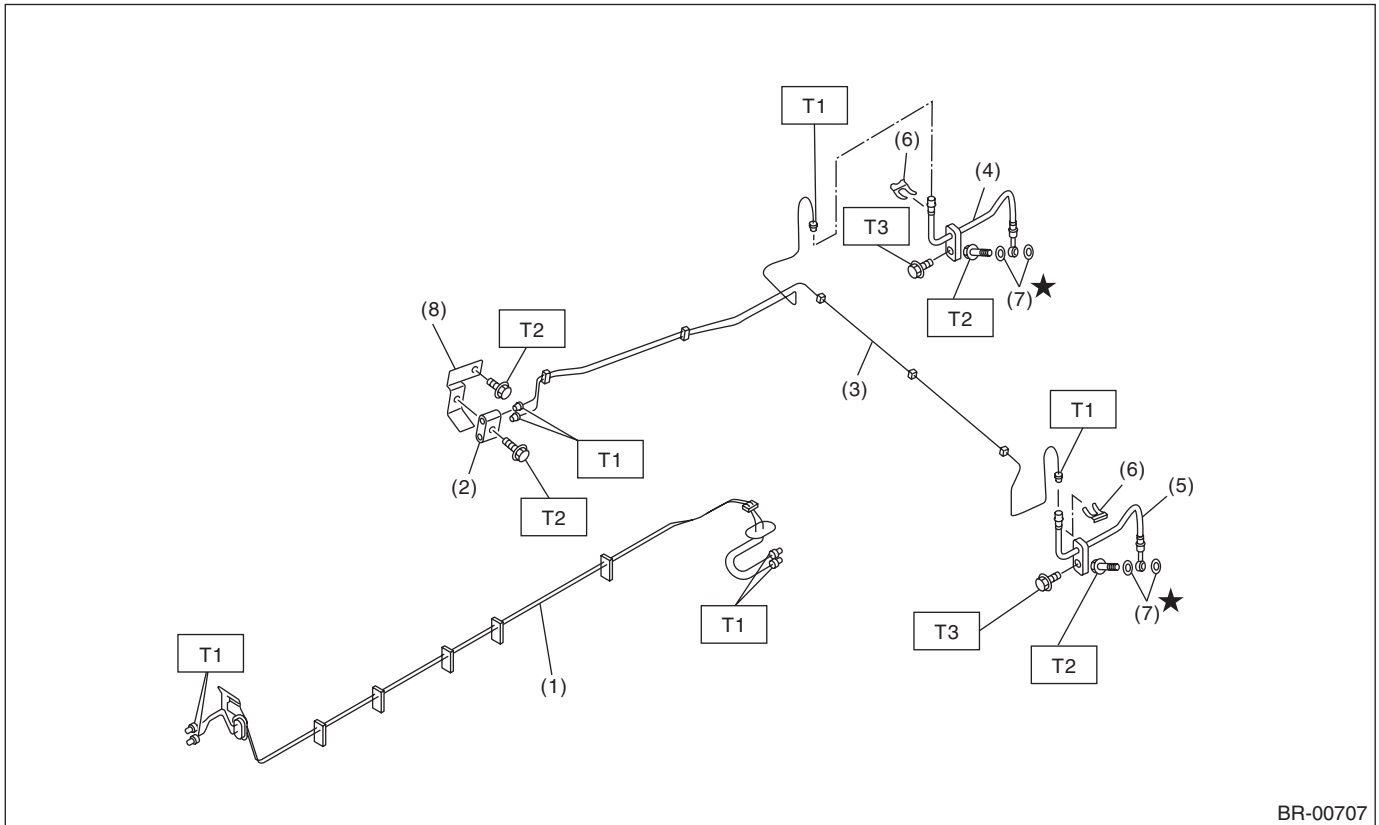
T3: 19 (1.94, 14)

T4: 33 (3.36, 24.3)

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7. CENTER AND REAR BRAKE PIPES & HOSES



BR-00707

- | | |
|----------------------------|------------------------|
| (1) Center brake pipe ASSY | (5) Rear brake hose LH |
| (2) Two-way connector | (6) Clamp |
| (3) Rear brake pipe ASSY | (7) Gasket |
| (4) Rear brake hose RH | (8) Bracket |

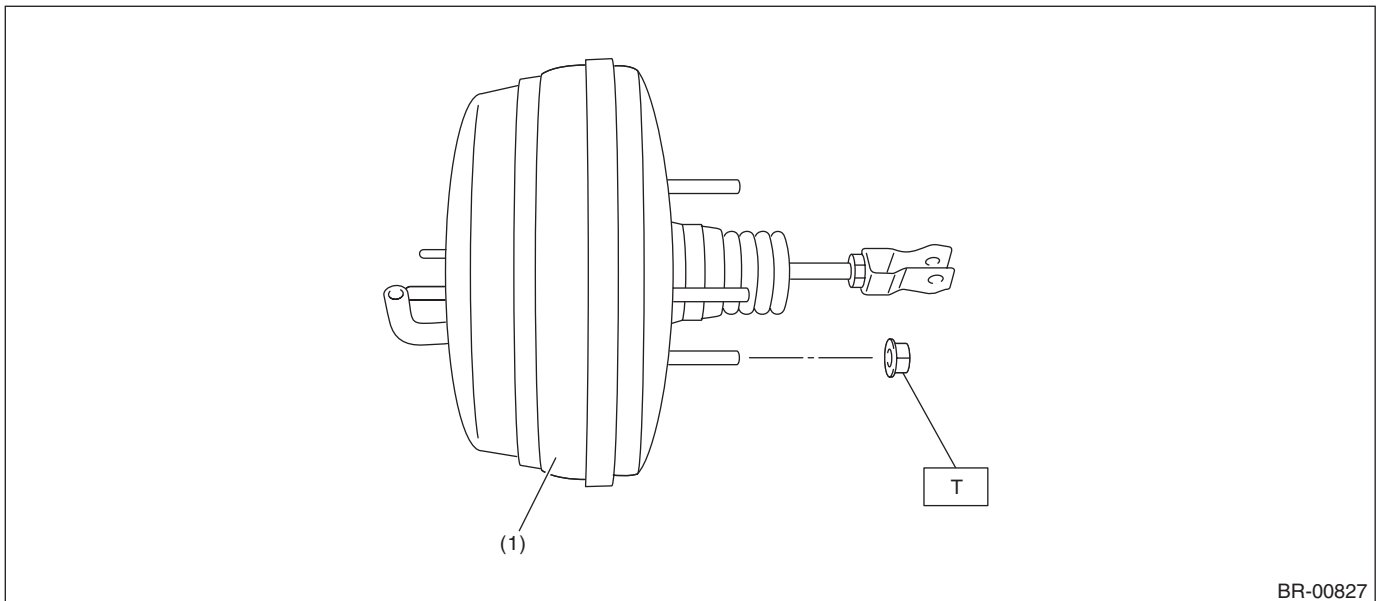
Tightening torque: N·m (kgf-m, ft-lb)

T1: 15 (1.53, 11.1)

T2: 18 (1.84, 13.3)

T3: 33 (3.36, 24.3)

8. BRAKE BOOSTER



BR-00827

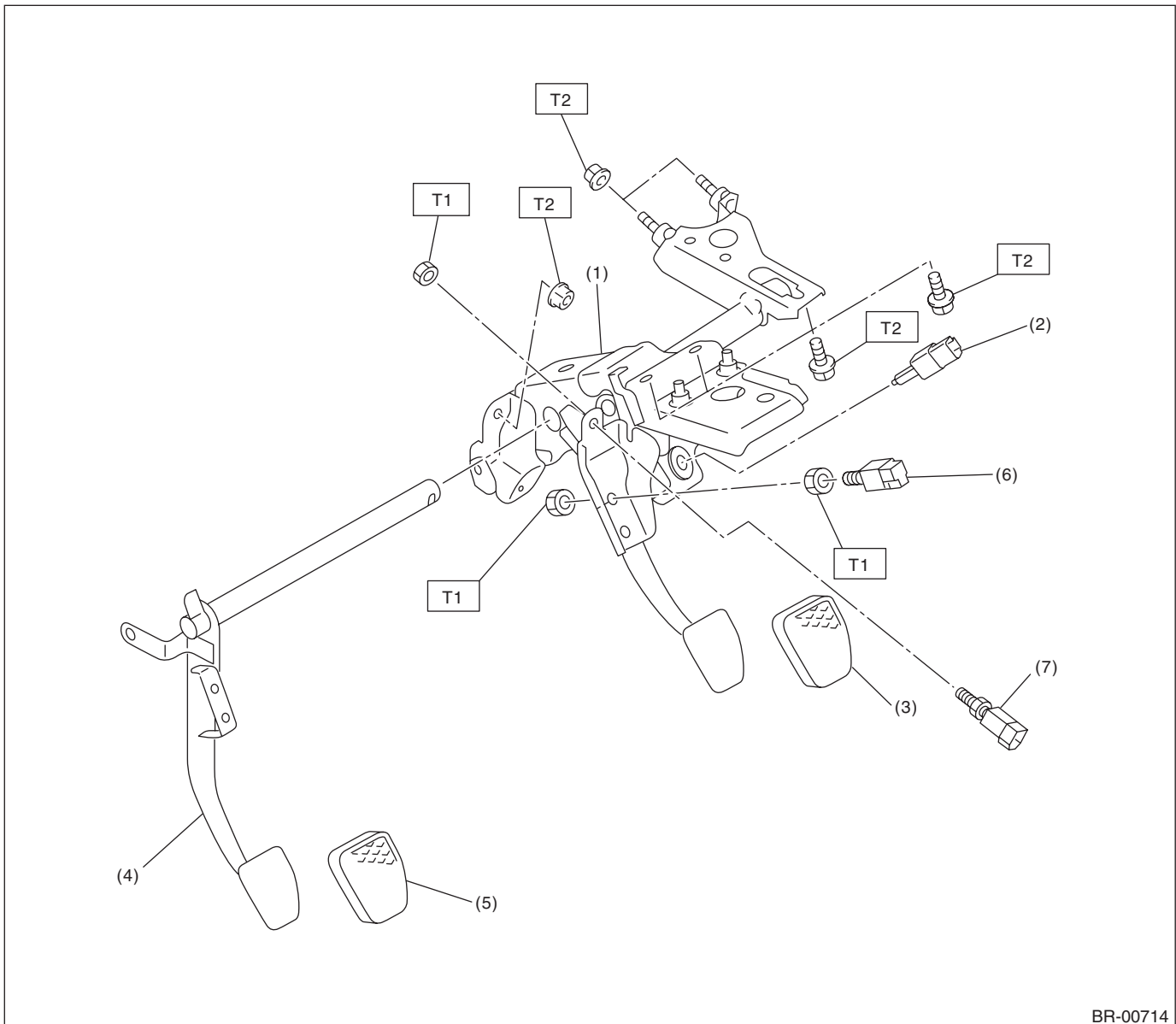
- | |
|-------------------|
| (1) Brake booster |
|-------------------|

Tightening torque: N·m (kgf-m, ft-lb)

T: 18 (1.84, 13.3)

9. BRAKE PEDAL

- 6MT model



- (1) Brake pedal ASSY
- (2) Stop light switch
- (3) Brake pedal pad
- (4) Clutch pedal

- (5) Clutch pedal pad
- (6) Clutch switch (cruise control)
- (7) Clutch switch (clutch start)

Tightening torque: N·m (kgf-m, ft-lb)

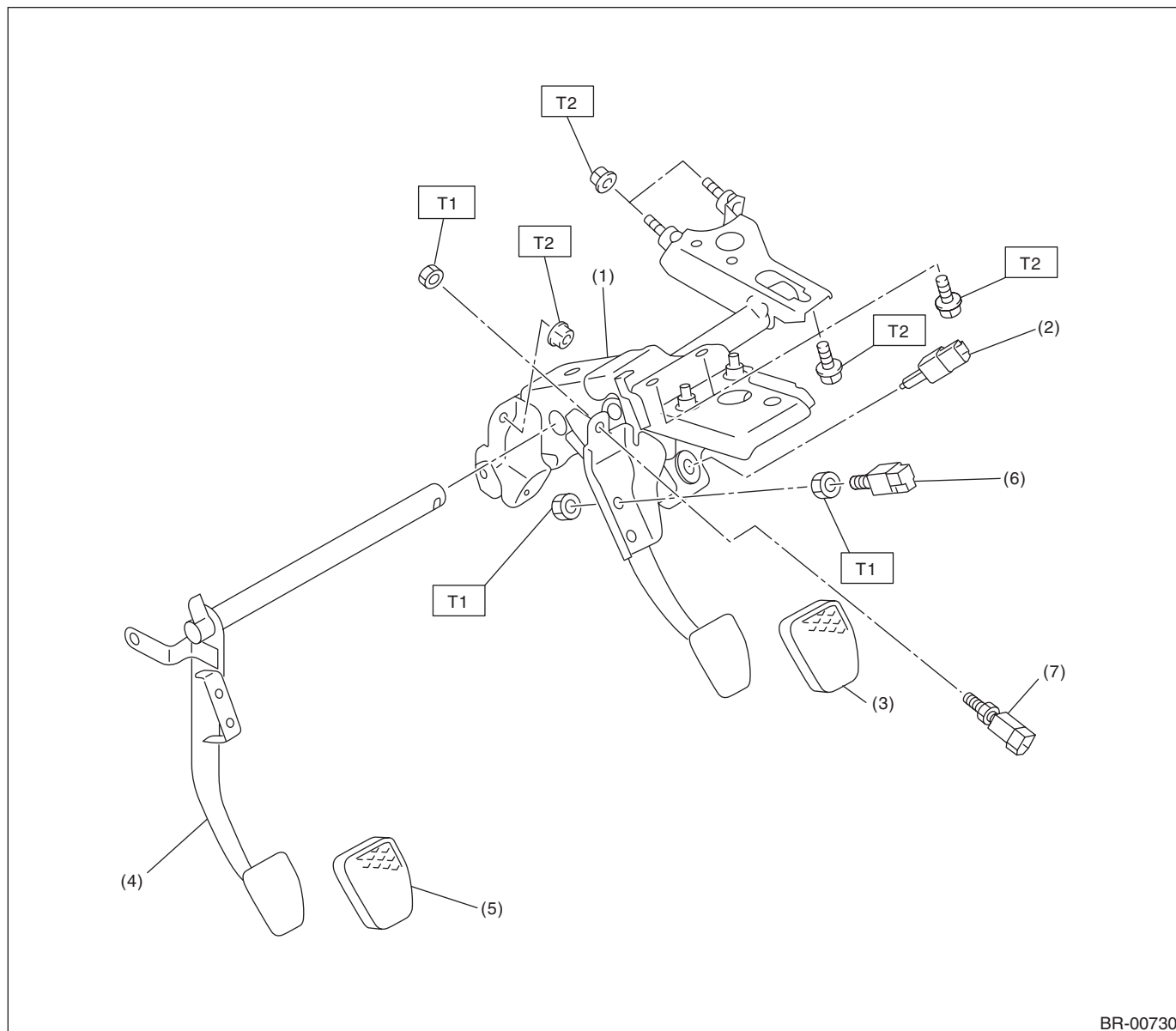
T1: 8 (0.82, 5.9)

T2: 18 (1.84, 13.3)

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- 5MT model



BR-00730

- (1) Brake pedal ASSY
- (2) Stop light switch
- (3) Brake pedal pad
- (4) Clutch pedal

- (5) Clutch pedal pad
- (6) Clutch switch (cruise control)
- (7) Clutch switch (clutch start)

Tightening torque: N·m (kgf-m, ft-lb)

T1: 8 (0.82, 5.8)

T2: 18 (1.84, 13.3)

C: CAUTION

- Wear appropriate work clothing, including a helmet, protective goggles and protective shoes when performing any work.
- 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.
- Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or cloth between the part and the vise.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.

D: PREPARATION TOOL**1. GENERAL TOOL**

TOOL NAME	REMARKS
Snap ring pliers	Used for removing and installing snap rings.