

CHASSIS SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FRONT SUSPENSION	FS
REAR SUSPENSION	RS
WHEEL AND TIRE SYSTEM	WT
DIFFERENTIALS	DI
TRANSFER CASE	TC
DRIVE SHAFT SYSTEM	DS
ABS	ABS
ABS (DIAGNOSTICS)	ABS(diag)
BRAKE	BR
PARKING BRAKE	PB
POWER ASSISTED SYSTEM (POWER STEERING)	PS

PARKING BRAKE

PB

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General Description

PARKING BRAKE

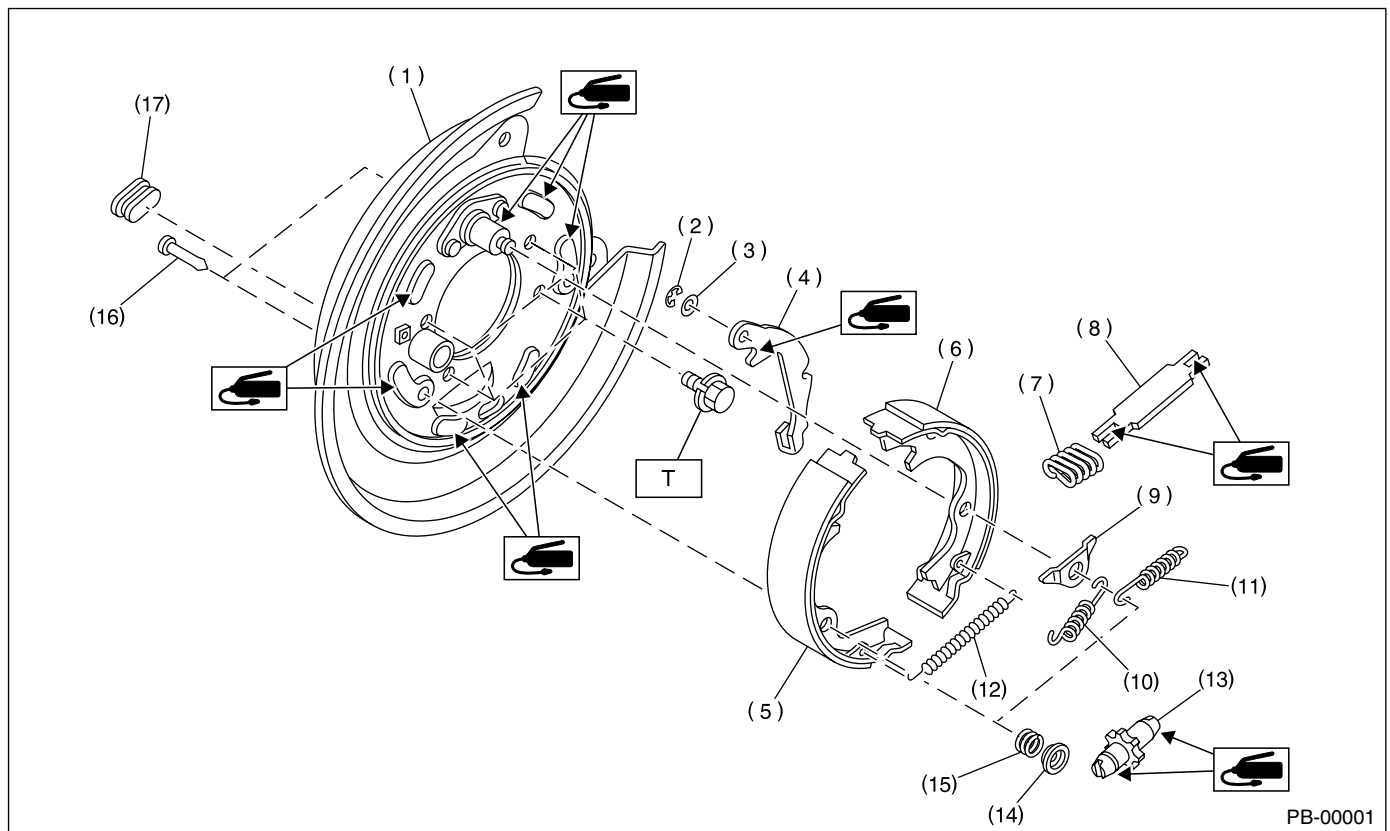
1. General Description

A: SPECIFICATIONS

Model		Rear drum brake	Rear disc brake	Rear disc brake (STi model)
Type		Mechanical on rear brakes	Mechanical on rear brakes, drum in disc	
Effective drum diameter	mm (in)	228.6 (9)	170 (6.69)	190 (7.48)
Lining dimensions (length × width × thickness)	mm (in)	218.8 × 35.0 × 4.1 (8.61 × 1.378 × 0.161)	162.6 × 30.0 × 3.2 (6.40 × 1.181 × 0.126)	182.3 × 30.0 × 3.2 (7.18 × 1.181 × 0.126)
Clearance adjustment		Automatic adjustment	Manual adjustment	
Lever stroke	notches/N (kgf, lb)	7 to 8/196 (20, 44)		

B: COMPONENT

1. PARKING BRAKE (REAR DISC BRAKE)

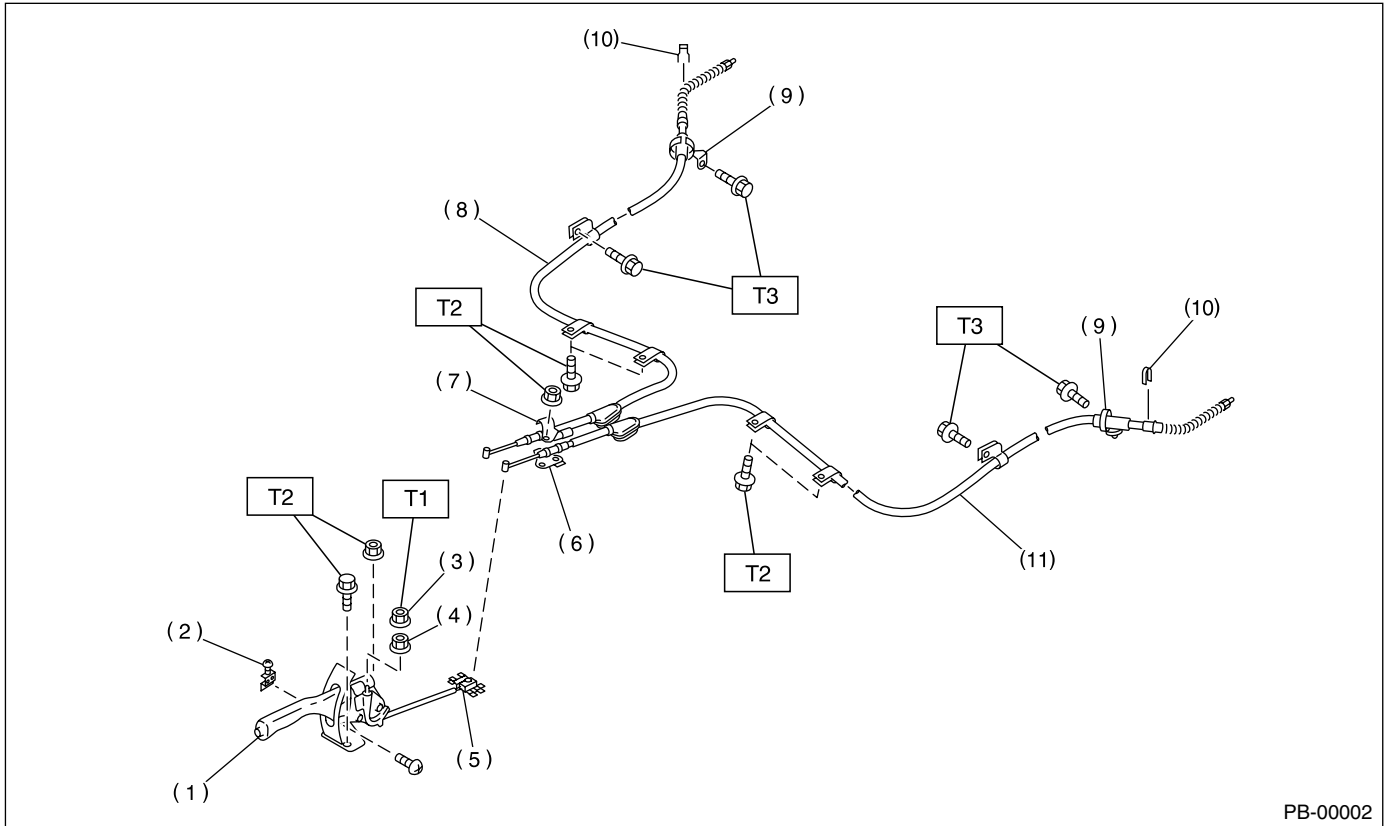


- | | | |
|------------------------------------|------------------------------|----------------------------|
| (1) Back plate | (8) Strut | (15) Shoe hold-down spring |
| (2) Retainer | (9) Shoe guide plate | (16) Shoe hold-down pin |
| (3) Spring washer | (10) Primary return spring | (17) Adjusting hole cover |
| (4) Lever | (11) Secondary return spring | |
| (5) Parking brake shoe (Primary) | (12) Adjusting spring | |
| (6) Parking brake shoe (Secondary) | (13) Adjuster | |
| (7) Strut spring | (14) Shoe hold-down cup | |

Tightening torque: N·m (kgf·m, ft·lb)

T: 53 (5.4, 39.1)

2. PARKING BRAKE CABLE



PB-00002

- | | |
|--------------------------|------------------------------------|
| (1) Parking brake lever | (7) Clamp |
| (2) Parking brake switch | (8) Parking brake cable RH |
| (3) Lock nut | (9) Cable guide |
| (4) Adjusting nut | (10) Clamp (Rear disc brake model) |
| (5) Equalizer | (11) Parking brake cable LH |
| (6) Bracket | |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 5.9 (0.6, 4.3)

T2: 18 (1.8, 13.0)

T3: 32 (3.3, 23.6)

C: CAUTION

- Wear working clothing, including a cap, protective goggles and protective shoes during operation.
- 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 on 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 rigid racks at the specified points.
- 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.
- Keep grease etc. away from parking brake shoes.

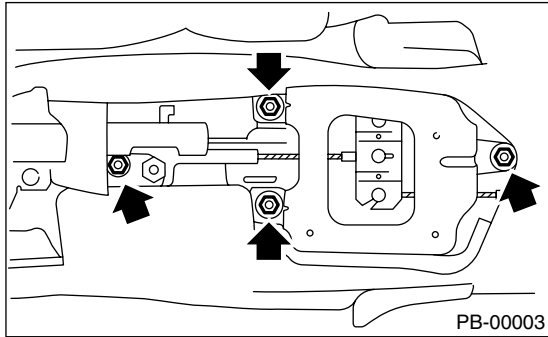
Parking Brake Lever

PARKING BRAKE

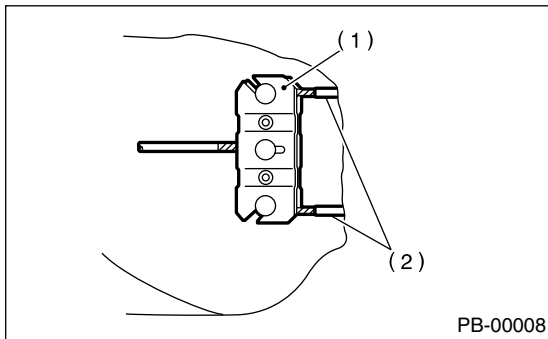
2. Parking Brake Lever

A: REMOVAL

- 1) Set the wheel stopper to wheels.
- 2) Remove the console box.
- 3) Loosen the parking cable adjusting nut and console bracket.
- 4) Disconnect the connector of parking brake switch.
- 5) Remove the parking brake lever.



- 6) Remove the inner cable end from equalizer.



- (1) Equalizer
- (2) Inner cable end

B: INSTALLATION

- 1) Install in the reverse order of removal.

Tightening torque:

Parking brake lever;

18 N·m (1.8 kgf·m, 13.0 ft·lb)

Adjusting nut;

5.9 N·m (0.6 kgf·m, 4.3 ft·lb)

- 2) Be sure to adjust the lever stroke. <Ref. to PB-4, ADJUSTMENT, Parking Brake Lever.>

C: INSPECTION

- 1) Operate the parking brake lever 3 to 4 times, and then return the lever completely.
- 2) While pulling the parking brake lever upward slowly, count the notches.

Lever stroke:

7 to 8 notches when pulled with a force of 196 N (20 kgf, 44 lb)

If not as specified, adjust the parking brake. <Ref. to PB-8, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

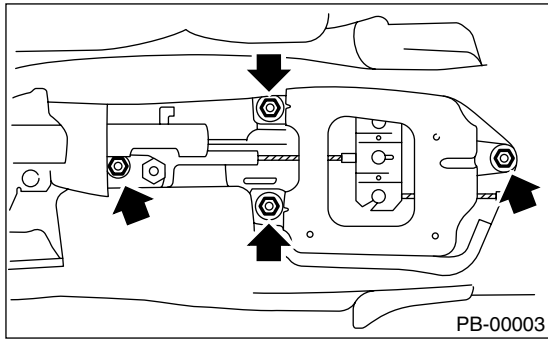
D: ADJUSTMENT

Adjust the parking brake lever stroke. <Ref. to PB-8, LEVER STROKE, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

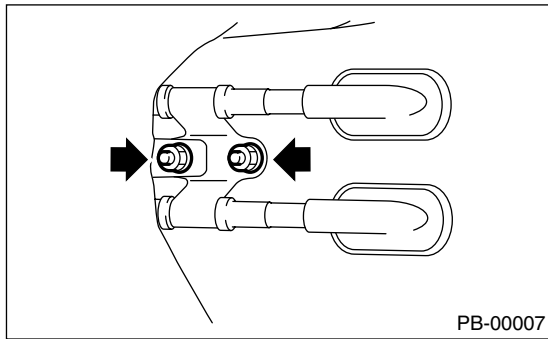
3. Parking Brake Cable

A: REMOVAL

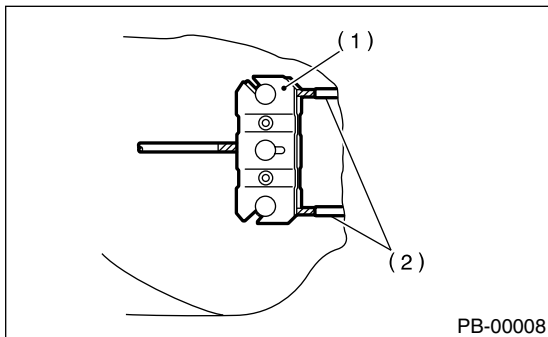
- 1) Lift up the vehicle.
- 2) Remove the rear wheels.
- 3) Remove the rear seat cushion.
- 4) Remove the console box.
- 5) Loosen the parking cable adjusting nut and console bracket.
- 6) Remove the parking brake lever.



- 7) Roll up the floor mat and remove clamps.



- 8) Remove the equalizer cover.
- 9) Remove the inner cable end from equalizer.



- (1) Equalizer
- (2) Inner cable end

- 10) Remove the parking brake cable from rear brake.

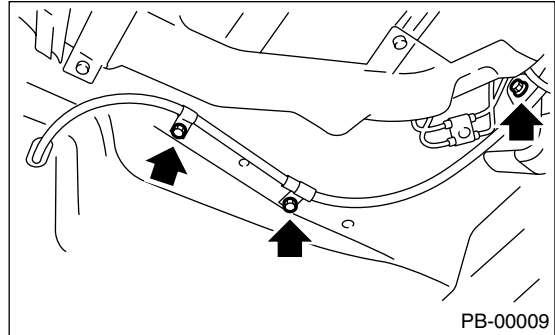
Disc brake

<Ref. to PB-6, REMOVAL, Parking Brake Assembly (Rear Disc Brake).>

Drum brake

<Ref. to BR-50, REMOVAL, Rear Drum Brake Assembly.>

- 11) Remove the clamp from rear brake.
- 12) Remove the bolt and bracket from trailing link bracket.
- 13) Remove the bolt and clamp from rear floor.



- 14) Detach the grommet from rear floor.
- 15) Remove the cable assembly from cabin by forcibly pulling it backward.
- 16) Detach the parking brake cable from cable guide at rear trailing link.

B: INSTALLATION

- 1) Install the (new) parking brake assembly in the reverse order of removal.

NOTE:

Be sure to pass the cable through cable guide inside the tunnel.

- 2) Be sure to adjust the lever stroke. <Ref. to PB-4, ADJUSTMENT, Parking Brake Lever.>

C: INSPECTION

Check the removed cable and replace it if damaged, rusty or malfunctioning.

- 1) Check for smooth operation of the cable.
- 2) Check the inner cable for damage and rust.
- 3) Check the outer cable for damage, bends and cracks.
- 4) Check the boot for damage, cracks and deterioration.

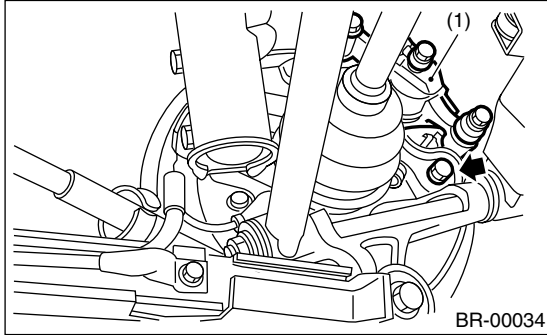
Parking Brake Assembly (Rear Disc Brake)

PARKING BRAKE

4. Parking Brake Assembly (Rear Disc Brake)

A: REMOVAL

- 1) Pull down and release the parking brake.
- 2) Remove the two mounting bolts and remove the brake caliper assembly.



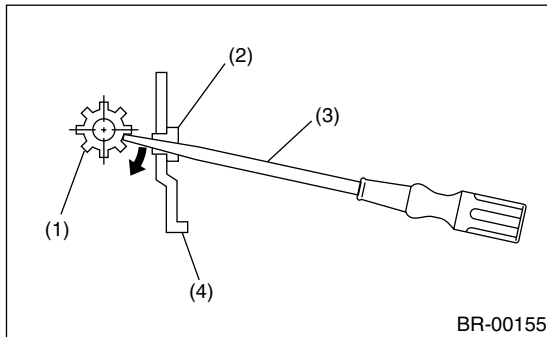
(1) Brake caliper assembly

- 3) Suspend the brake caliper assembly so that the hose is not stretched.
- 4) Remove the disc rotor.

NOTE:

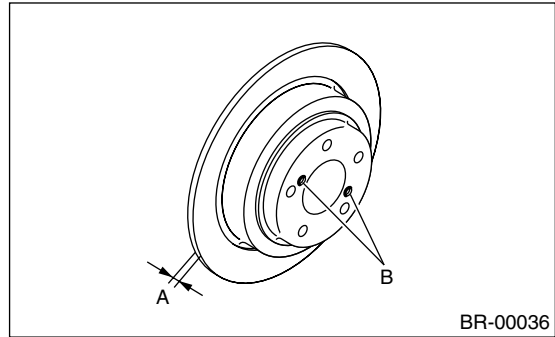
If the disc rotor is difficult to remove, try the two following methods in order.

- (1) Turn the adjusting screw using a flat tip screwdriver until brake shoe gets away enough from the disc rotor.

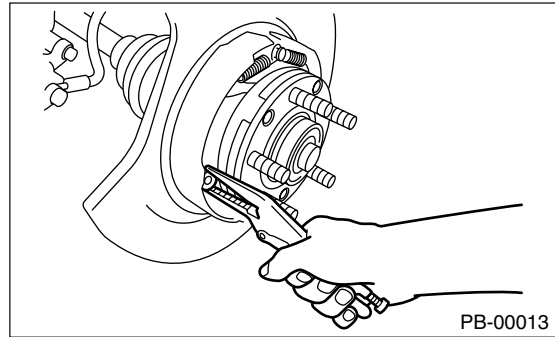


- (1) Adjusting screw
- (2) Adjusting hole cover (rubber)
- (3) Flat tip screwdriver
- (4) Back plate

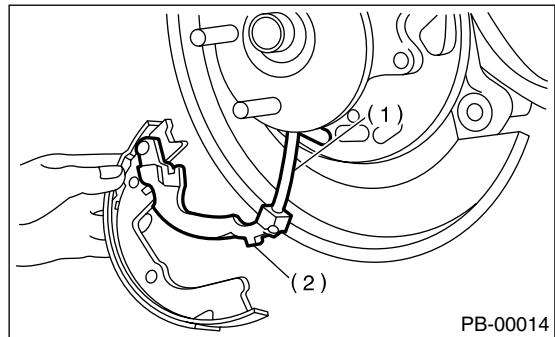
- (2) If the disc rotor seizes up within hub, drive the disc rotor out by installing two 8-mm bolts in holes B on rotor.



- 5) Remove the shoe return spring from parking brake assembly.
- 6) Remove the front shoe hold-down spring and pin with pliers.



- 7) Remove the strut and strut spring.
- 8) Remove the adjuster assembly from parking brake assembly.
- 9) Remove the brake shoe.
- 10) Remove the rear shoe hold-down spring and pin with pliers.
- 11) Remove the parking brake cable from parking brake lever.



- (1) Parking brake cable
- (2) Parking brake lever

- 12) Using a standard screwdriver, raise the retain-er. Remove the parking brake lever and washer from brake shoe.

B: INSTALLATION

CAUTION:

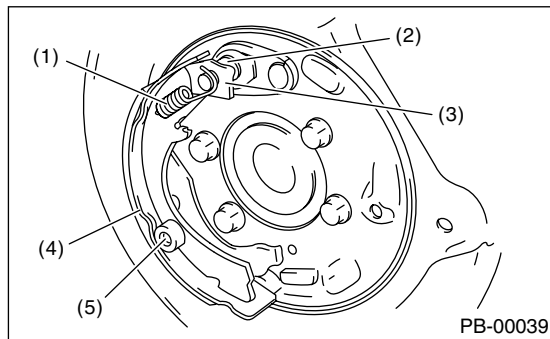
Be sure the lining surface is free from oil and grease contamination.

1) Apply brake grease to the following places.

Brake grease:

Brake Grease (Part No. 003602002)

- Six contact surfaces of shoe rim and back plate packing
 - Contact surface of shoe wave and anchor pin
 - Contact surface of lever and strut
 - Contact surface of shoe wave and adjuster assembly
 - Contact surface of shoe wave and strut
 - Contact surface of lever and shoe wave
- 2) Insert the primary side brake shoe into anchor pin groove.
- 3) Secure the brake shoe with shoe hold-down pin and cup.
- 4) Install the plate to anchor pin, and then assemble the primary return spring to anchor pin.



- (1) Primary return spring
- (2) Anchor pin
- (3) Plate
- (4) Primary shoe
- (5) Shoe hold-down pin & cup

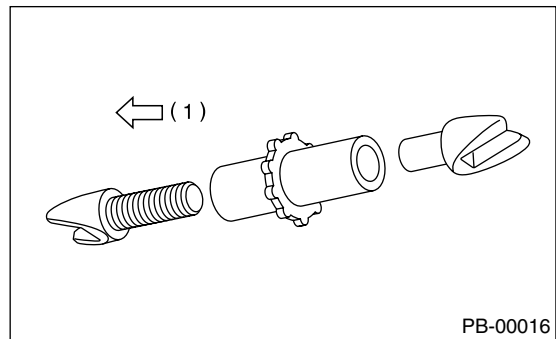
5) Install the parking brake cable to parking brake lever.

6) Assemble the strut and adjuster, and then secure the secondary side brake shoe with shoe hold-down pin & cup.

NOTE:

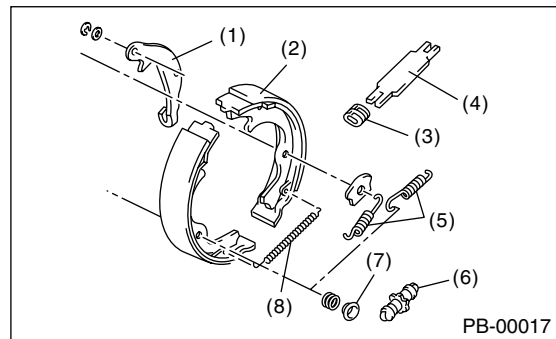
- Install the strut spring of both right and left wheels facing vehicle front.

- Install the adjuster assembly with screw on left side.



- (1) Left

7) Install the secondary return spring and adjusting spring.



- (1) Lever
- (2) Secondary brake shoe
- (3) Strut spring
- (4) Strut
- (5) Return spring
- (6) Adjuster
- (7) Shoe hold-down cup
- (8) Adjusting spring

8) Adjust the parking brakes. <Ref. to PB-8, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

9) Drive the vehicle for parking brake lining "break-in".

- (1) Drive the vehicle at about 35 km/h (22 MPH).
- (2) With the parking brake release button pushed in, pull the parking brake lever gently.
- (3) Drive the vehicle for about 200 meter (0.12 mile) in this condition.
- (4) Wait 5 to 10 minutes for the parking brake to cool down. Repeat this procedure once more.
- (5) After breaking-in, re-adjust the parking brakes.

Parking Brake Assembly (Rear Disc Brake)

PARKING BRAKE

C: INSPECTION

1) Measure the brake disc rotor inside diameter. If the disc is scored or worn, replace the brake disc rotor.

Disc rotor inside diameter:

Standard

Except STi model 170 mm (6.69 in)

STi model 190 mm (7.48 in)

Service limit

Except STi model 171 mm (6.73 in)

STi model 191 mm (7.52 in)

2) Measure the lining thickness. If it exceeds the limit, replace the shoe assembly.

Lining thickness:

Standard

3.2 mm (0.126 in)

Service limit

1.5 mm (0.059 in)

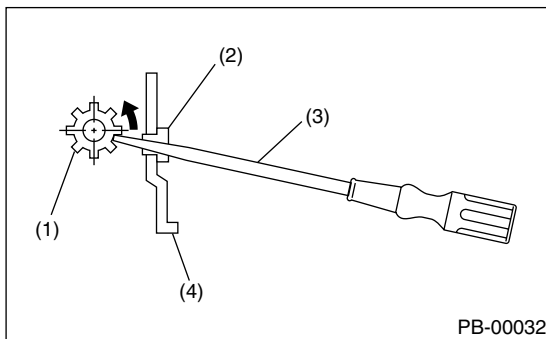
NOTE:

Replace the right and left brake shoes at the same time.

D: ADJUSTMENT

1. SHOE CLEARANCE

- 1) Return the parking brake lever completely.
- 2) Remove the adjusting hole cover from back plate.
- 3) Turn the adjusting screw using a flat tip screwdriver until brake shoe is in close contact with disc rotor.



- (1) Adjusting screw
- (2) Adjusting hole cover (rubber)
- (3) Flat tip screwdriver
- (4) Back plate

4) Turn back (downward) the adjusting screw 3 or 4 notches.

CAUTION:

Be sure that the brake is not dragging.

5) Install the adjusting hole cover to back plate.

6) Adjust the parking brake lever stroke. <Ref. to PB-8, LEVER STROKE, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

2. LEVER STROKE

1) Before adjusting the lever stroke, adjust the shoe clearance. <Ref. to PB-8, SHOE CLEARANCE, ADJUSTMENT, Parking Brake Assembly (Rear Disc Brake).>

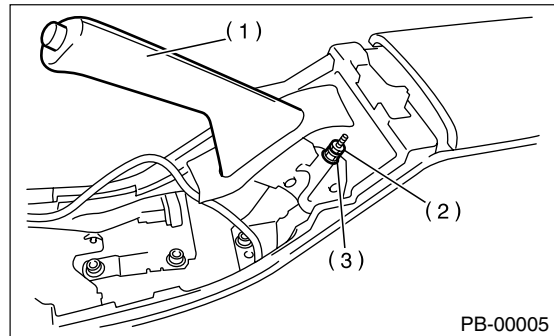
2) Remove the console box lid.

3) Operate the parking brake lever 3 to 5 times.

4) Adjust the lever stroke by turning the adjusting nut to set the stroke within specification.

Lever stroke:

When operating the force of 196 N (20 kgf, 44 lb): 7 — 8 notches



- (1) Parking brake lever
- (2) Lock nut
- (3) Adjusting nut

5) Tighten the lock nut.

Tightening torque (Lock nut):
5.9 N·m (0.6 kgf·m, 4.3 ft·lb)

6) Install the console box lid.

5. General Diagnostic Table

A: INSPECTION

Symptom	Possible cause	Remedy
Brake drag	Parking brake lever is maladjusted.	Adjustment.
	Parking brake cable does not move.	Repair or replace.
	Parking brake shoe clearance is maladjusted.	Adjustment.
	Return spring is faulty.	Replace.
Noise from brake	Return spring is faulty.	Replace.
	Shoe hold-down spring is faulty.	Replace.

General Diagnostic Table

PARKING BRAKE
