

SECTION **PB**
PARKING BRAKE SYSTEM

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PARKING BRAKE SYSTEM

< ON-VEHICLE MAINTENANCE >

ON-VEHICLE MAINTENANCE

PARKING BRAKE SYSTEM

Inspection and Adjustment

INFOID:000000001116248

INSPECTION

Lever Stroke

- Operate the parking brake lever with a force of 196 N (20 kg, 44 lb). Check that the lever stroke is within the specified number of notches. (Check it by listening to the clicks of the ratchet.)

Standard

Number of notches : Refer to [PB-10, "Parking Brake Control"](#).

- When parking brake warning lamp turns ON, check that the lever stroke is within the specified number of notches. (Check it by listening to the clicks of the ratchet.)

Standard

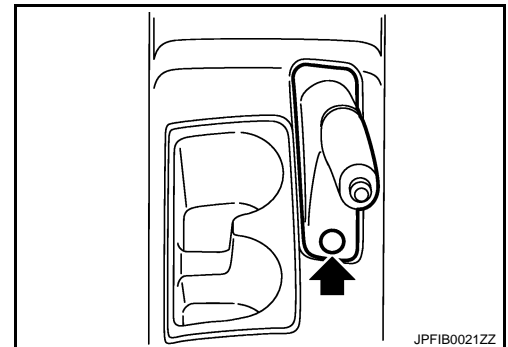
Number of notches : Refer to [PB-10, "Parking Brake Control"](#).

Inspect Components

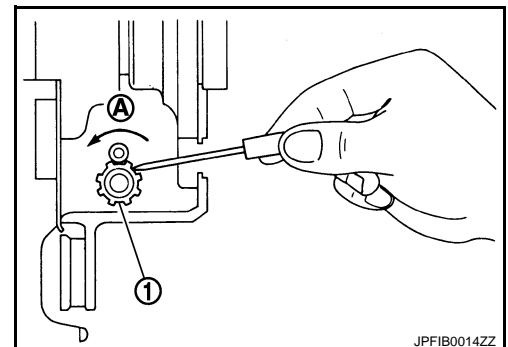
- Check each component for installation condition such as looseness.
- Check the device assembly for bend, damage and cracks. Replace if necessary.
- Check the cables for wear, damage and cracks. Replace if necessary.
- Check the parking brake switch, and replace it if necessary. Refer to [BRC-47, "Component Inspection"](#) (without ESP), [BRC-163, "Component Inspection"](#) (with ESP).

ADJUSTMENT

- To perform adjustment operations, remove rear tires.
 1. Fix the disc rotor using wheel nuts.
 2. Pull parking brake lever until adjust hole cap can be removed, and then remove adjust hole cap from parking brake lever.
 3. Insert a deep socket wrench onto adjusting nut from hole of parking brake lever. Rotate adjusting nut to fully loosen cable, and then release parking brake lever.



4. Remove the adjusting hole plug from the disc rotor. Turn the adjuster (1) in the direction (A) as shown in the figure using a suitable tool until the disc rotor is locked.
5. Turn back the adjuster 7 notches from the locked position.
6. Rotate the disc rotor to check that there is no drag. Install the adjusting hole plug.
7. Adjust the cable with the following procedure.
 - a. Operate the parking brake lever with a force of 294 N (30 kg, 66 lb) for 10 strokes or more.
 - b. Adjust the parking brake lever stroke by turning the adjusting nut with a deep socket wrench.



CAUTION:

Never reuse the adjusting nut if the nut is removed.

PARKING BRAKE SYSTEM

< ON-VEHICLE MAINTENANCE >

- c. Operate the parking brake lever with a force of 196 N (20 kg, 44 lb). Check that the lever stroke is within the specified number of notches. (Check it by listening to the clicks of the ratchet.)

A

Standard

Number of notches : Refer to [PB-10, "Parking Brake Control"](#).

B

- d. Rotate the disc rotor with the parking brake lever released and check that there is no drag.

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PARKING BRAKE SHOE

< ON-VEHICLE MAINTENANCE >

PARKING BRAKE SHOE

Inspection

INFOID:000000001116249

Rotate the disc rotor and check for any drag.

PARKING BRAKE CONTROL

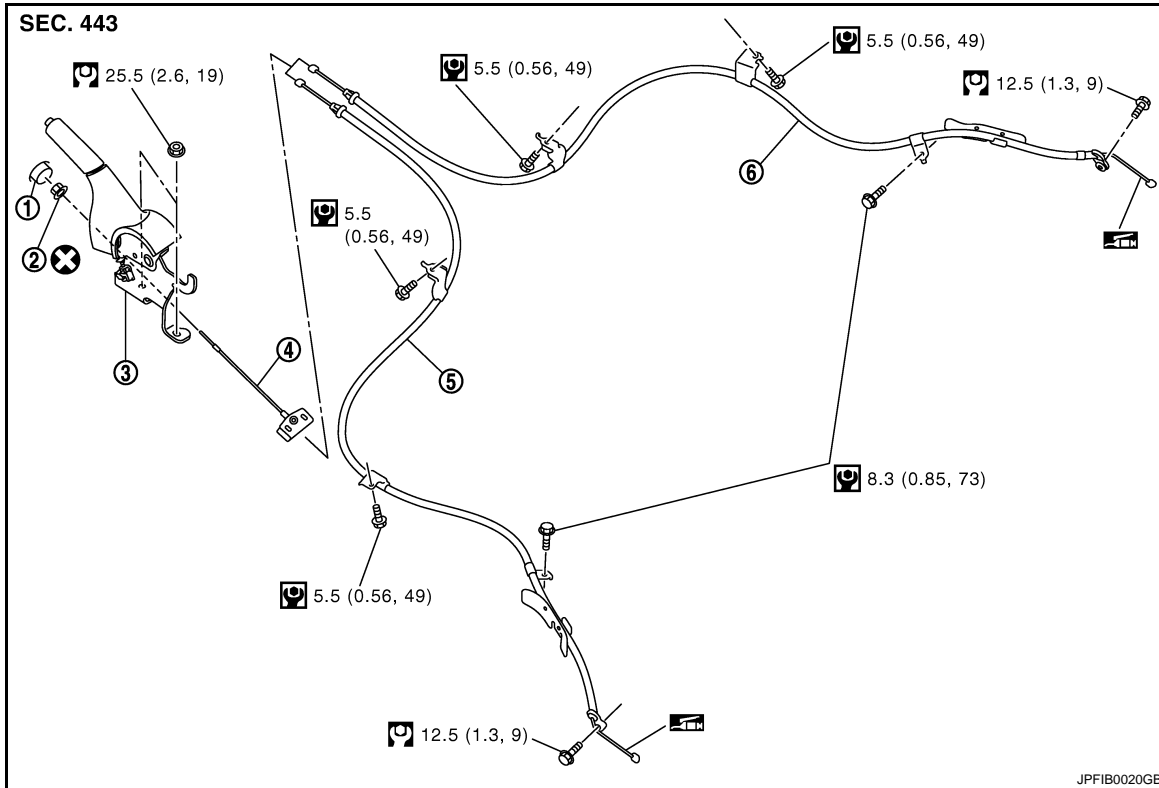
< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR


PARKING BRAKE CONTROL

Exploded View

INFOID:000000001116250



- | | | |
|--------------------|--------------------|--------------------|
| 1. Adjust hole cap | 2. Adjusting nut | 3. Device assembly |
| 4. Front cable | 5. Rear cable (LH) | 6. Rear cable (RH) |

 : Apply multi-purpose grease.

Refer to [GI-4, "Components"](#) for symbols not described on the above.

Removal and Installation

INFOID:000000001116251

REMOVAL

1. Remove rear tires.
2. Remove center console. Refer to [IP-11, "Exploded View"](#).
3. Disconnect parking brake switch harness connector.
4. Remove adjust hole cap and adjusting nut, and loosen front cable.
5. Remove device assembly.
6. Remove the heat insulator and center muffler. Refer to [EX-5, "Exploded View"](#) (MR20DE), [EX-10, "Exploded View"](#) (QR25DE), [EX-14, "Exploded View"](#) (M9R).
7. Separate front cable from rear cable, and remove front cable.
8. Remove parking brake shoe, and remove rear cable from toggle lever. Refer to [PB-7, "Exploded View"](#).
9. Remove rear cable mounting bolts pull out rear cable from vehicle.

INSTALLATION

Installation is the reverse order of the removal.

PARKING BRAKE CONTROL

< ON-VEHICLE REPAIR >

Adjustment

INFOID:000000001116252

ADJUSTMENT AFTER INSTALLATION

Adjust the parking brake lever stroke. Refer to [PB-2. "Inspection and Adjustment"](#).

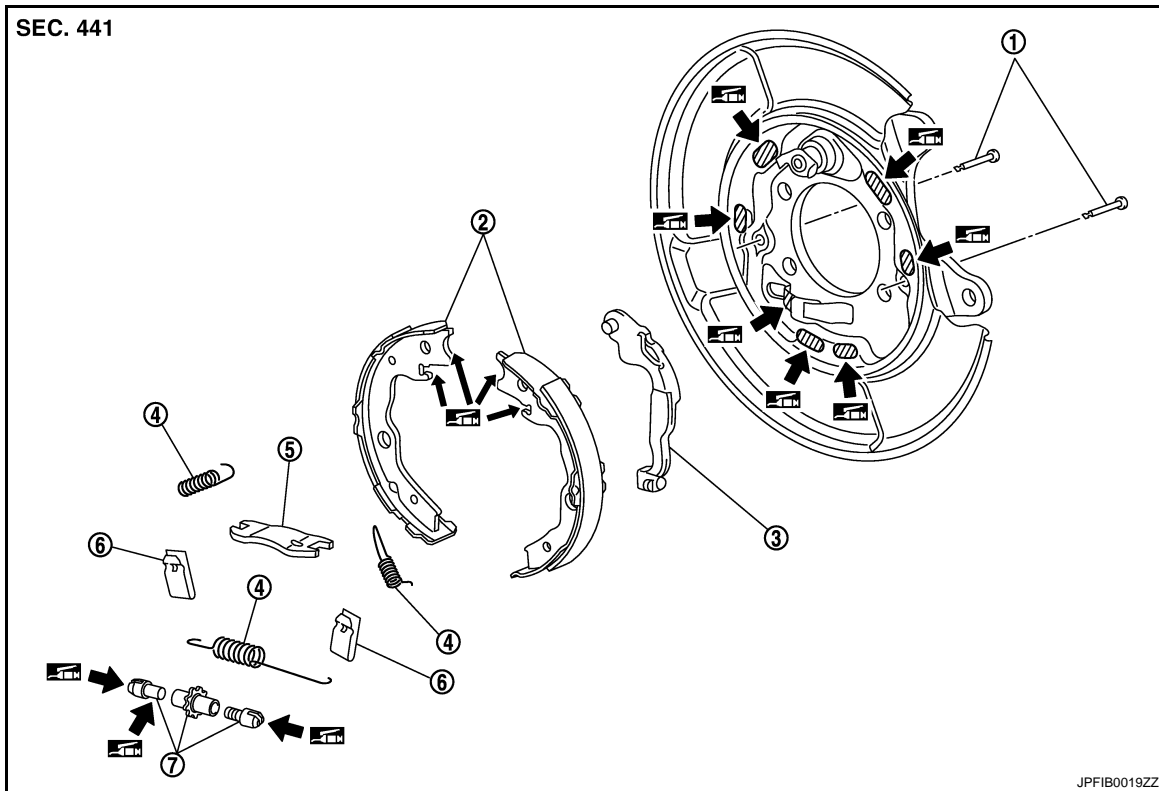
PARKING BRAKE SHOE

< ON-VEHICLE REPAIR >


PARKING BRAKE SHOE

Exploded View

INFOID:000000001116253



- | | | |
|--------------------|-----------------------|-----------------|
| 1. Anti-rattle pin | 2. Parking brake shoe | 3. Toggle lever |
| 4. Return spring | 5. Brake strut | 6. Spring |
| 7. Adjuster | | |

: Apply PBC (Poly Butyl Cuprysil) grease or silicone-based grease.

Removal and Installation

INFOID:000000001116254

REMOVAL

WARNING:

Clean any dust from the parking brake shoes and brake plates with a vacuum dust collector. Never blow with compressed air.

1. Remove rear tires.
2. Remove disc rotor with parking brake completely in the released position. Refer to [BR-48, "BRAKE CALIPER ASSEMBLY : Removal and Installation"](#) (LHD), [BR-95, "BRAKE CALIPER ASSEMBLY : Removal and Installation"](#) (RHD).

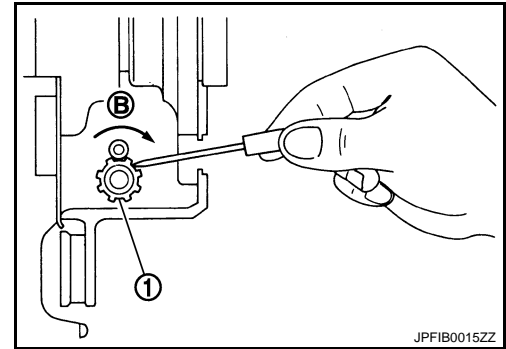
CAUTION:

- Put matching marks on the disc rotor and the wheel hub and bearing assembly when reusing the disc rotor.
 - Never drop disc rotor.
3. If disc rotor cannot be removed, remove as follows:
 - a. Fix the disc rotor with wheel nuts and remove the adjusting hole plug.

PARKING BRAKE SHOE

< ON-VEHICLE REPAIR >

- b. Using suitable tool, rotate adjuster (1) in direction (B) to retract and loosen brake shoe.
4. Remove anti-rattle pins, springs, and return springs.
CAUTION:
Never drop the removed parts.
5. Remove brake strut, adjuster, parking brake shoes and toggle lever.
CAUTION:
 - The parking brake shoes for the front side are made of different materials from those for the rear side. Never misidentify them when removing.
 - Never drop the removed parts.
6. For the removal of back plate, refer to [RAX-4, "Exploded View"](#) (2WD), [RAX-11, "Exploded View"](#) (4WD).



INSTALLATION

Install in the reverse order of removal.

- Apply PBC (Poly Butyl Cuprysil) grease or silicone-based grease to the back plate and brake shoe.

CAUTION:

The parking brake shoes for the front side are made of different materials from those for the rear side. Never misidentify them when removing and replacing.

- Assemble adjusters so that threaded part is expanded when rotating it in the direction shown by arrow.

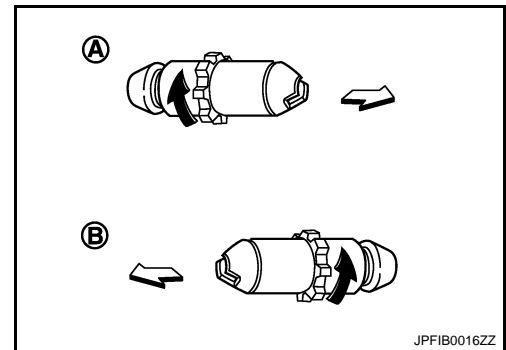
A: For RH brake

B: For LH brake

⇐: Vehicle front

←: Adjuster expands

- Shorten adjuster by rotating it.
- When disassembling after, apply PBC (Poly Butyl Cuprysil) grease or silicone-based grease to threads.
- Check parking brake shoe sliding surface and drum inner surface for grease. Wipe it off if it adhere on the surfaces.



Inspection and Adjustment

INFOID:000000001116255

INSPECTION AFTER REMOVAL

Brake Lining Thickness Inspection

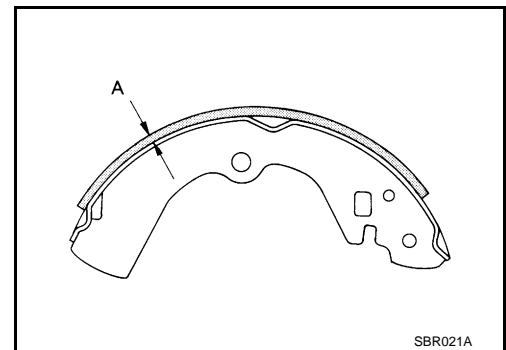
- Check thickness (A) of brake lining.

Standard thickness

: Refer to [PB-10, "Parking Drum Brake"](#).

Wear limit

: Refer to [PB-10, "Parking Drum Brake"](#).



Drum Inner Diameter Inspection

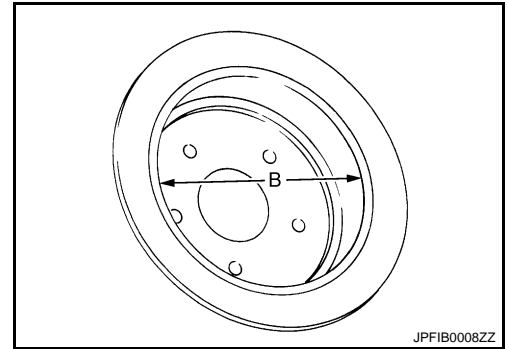
PARKING BRAKE SHOE

< ON-VEHICLE REPAIR >

- Check inner diameter (B) of drum.

Standard inner diameter : Refer to [PB-10, "Parking Drum Brake"](#).

Wear limit of inner diameter : Refer to [PB-10, "Parking Drum Brake"](#).



Other Inspections

- Check the brake lining for excessive wear, damage, and peeling. Replace if necessary.
- Check the parking brake shoe sliding surface for excessive wear and damage. Replace if necessary.
- Check the anti-rattle pin for excessive wear, damage and rust. Replace if necessary.
- Check the spring and return springs for settling, excessive wear, damage, and rust. Replace if necessary.
- Check the brake strut for excessive wear, damage and rust. Replace if necessary.
- Check the adjuster for smoothness. Replace if necessary.
- Check the toggle lever for excessive wear, damage and rust. Replace if necessary.
- Visually check inside of the drum for excessive wear, cracks, and damage with a pair of vernier calipers. Replace if necessary.

ADJUSTMENT AFTER INSTALLATION

- Adjust the parking brake lever stroke. Refer to [PB-2, "Inspection and Adjustment"](#).
- Perform break-in operation as follows after replacing parking brake shoe and/or disc rotor, or if brakes do not function well.

1. Adjust lever stroke to the specified amount. Refer to [PB-2, "Inspection and Adjustment"](#).
2. Perform parking brake break-in (drag on) operation by driving vehicle under the following conditions:

Drive forward

- Vehicle speed : Approx. 40 km/h (25 MPH) set (constant and forward)
- Parking brake operating force : Approx. 130 N (13.3 kg, 29 lb) set constant
- time : Approx. 10 sec.

CAUTION:

To prevent lining from getting too hot, allow a cool off period of approximately 5 minutes after every break-in operation.

3. After the break-in procedure, check lever stroke of parking brake. If it is out of the specification, adjust again. Refer to [PB-2, "Inspection and Adjustment"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Parking Drum Brake

INFOID:0000000001116256

Unit: mm (in.)

Brake lining	Standard thickness	3.2 (0.126)
	Wear limit	1.5 (0.059)
Drum (disc)	Standard inner diameter	172 (6.77) dia.
	Wear limit of inner diameter	173 (6.81) dia.

Parking Brake Control

INFOID:0000000001116257

Number of notches [under force of 196 N (20 kg, 44 lb)]	7 – 8 notches
Number of notches when parking brake warning lamp turns ON	1 notch