

A  
B  
C

# SECTION **PB**

## PARKING BRAKE SYSTEM

### CONTENTS

<p><b>PREPARATION</b> ..... 2</p> <p><b>PREPARATION</b> ..... 2 Commercial Service Tool .....2</p> <p><b>ON-VEHICLE MAINTENANCE</b> ..... 3</p> <p><b>PARKING BRAKE SYSTEM</b> ..... 3</p> <p><b>PEDAL TYPE</b> .....3 PEDAL TYPE : Inspection and Adjustment .....3</p> <p><b>LEVER TYPE</b> .....4 LEVER TYPE : Inspection and Adjustment .....4</p> <p><b>PARKING BRAKE SHOE</b> ..... 6 Inspection .....6</p> <p><b>ON-VEHICLE REPAIR</b> ..... 7</p> <p><b>PARKING BRAKE CONTROL</b> ..... 7</p> <p><b>PEDAL TYPE</b> .....7</p>	<p>PEDAL TYPE : Exploded View ..... 7</p> <p>PEDAL TYPE : Removal and Installation ..... 7</p> <p>PEDAL TYPE : Adjustment ..... 8</p> <p><b>LEVER TYPE</b> ..... 8</p> <p>LEVER TYPE : Exploded View ..... 8</p> <p>LEVER TYPE : Removal and Installation ..... 8</p> <p>LEVER TYPE : Adjustment ..... 8</p> <p><b>PARKING BRAKE SHOE</b> ..... 9</p> <p>Exploded View ..... 9</p> <p>Removal and Installation ..... 9</p> <p>Inspection and Adjustment .....10</p> <p><b>SERVICE DATA AND SPECIFICATIONS (SDS)</b> .....12</p> <p><b>SERVICE DATA AND SPECIFICATIONS (SDS)</b> .....12</p> <p>Parking Drum Brake .....12</p> <p>Parking Brake Control .....12</p>
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A  
B  
C  
D  
E  
**PB**  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# PREPARATION

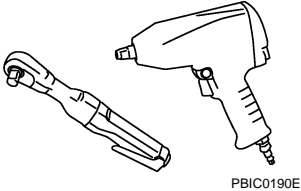
< PREPARATION >

## PREPARATION

### PREPARATION

#### Commercial Service Tool

INFOID:000000001647898

Tool name	Description
Power tool 	Loosening bolts and nuts

# PARKING BRAKE SYSTEM

< ON-VEHICLE MAINTENANCE >

## ON-VEHICLE MAINTENANCE

### PARKING BRAKE SYSTEM

#### PEDAL TYPE

#### PEDAL TYPE : Inspection and Adjustment

INFOID:000000001647899

#### INSPECTION

##### Pedal Stroke

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

##### Standard

**Number of notches** : Refer to [PB-12, "Parking Brake Control"](#)

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

##### Standard

**Number of notches** : Refer to [PB-12, "Parking Brake Control"](#)

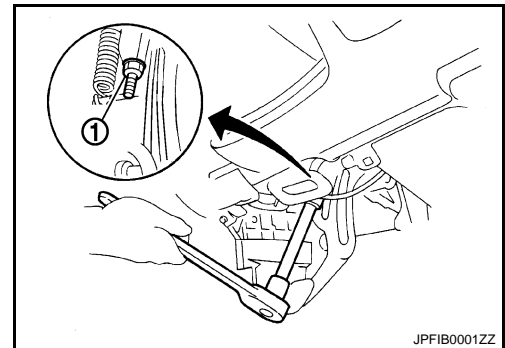
##### Inspect Components

- Check each component for installation condition such as looseness.
- Check the device assembly for bend, damage and cracks. Replace if necessary.
- Check the cables and equalizer for wear, damage and cracks. Replace if necessary.
- Check the parking brake switch, and replace it if necessary. Refer to [BRC-72, "Component Inspection"](#).

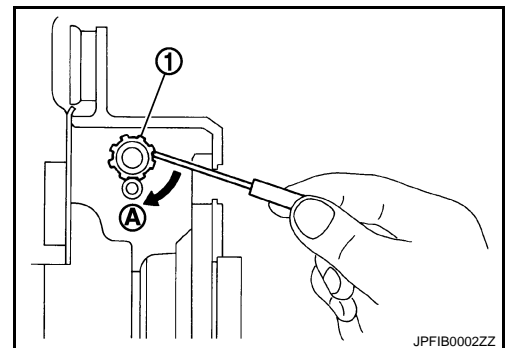
#### ADJUSTMENT

- To perform adjustment operations, remove rear tires with power tool.

1. Fix the disc rotor using wheel nuts.
2. Release the parking brake pedal by turning the adjusting nut (1) with a deep socket wrench and loosening the cable.



3. 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.
4. Turn back the adjuster 5 or 6 notches from the locked position.
5. Rotate the disc rotor to check that there is no drag. Install the adjusting hole plug.
6. Adjust the cable with the following procedure.
  - a. Operate the parking brake pedal with a force of 490 N (50 kg, 110 lb) for 10 strokes or more.
  - b. Adjust the parking brake pedal stroke by turning the adjusting nut with a deep socket wrench.



#### CAUTION:

**Never reuse the adjusting nut if the nut is removed.**

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

# PARKING BRAKE SYSTEM

< ON-VEHICLE MAINTENANCE >

## Standard

**Number of notches** : Refer to [PB-12, "Parking Brake Control"](#)

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

## LEVER TYPE

### LEVER TYPE : Inspection and Adjustment

INFOID:000000001647900

#### 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-12, "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-12, "Parking Brake Control"](#)

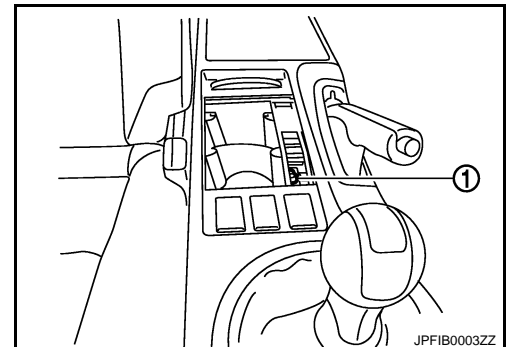
##### Inspect Components

- Check each component for installation condition such as looseness.
- Check the device assembly for bend, damage and cracks. Replace if necessary.
- Check the cables and equalizer for wear, damage and cracks. Replace if necessary.
- Check the parking brake switch, and replace it if necessary. Refer to [BRC-72, "Component Inspection"](#).

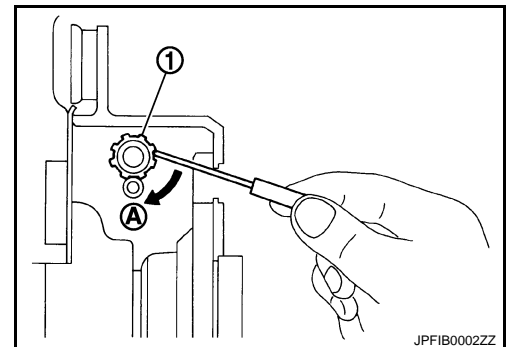
#### ADJUSTMENT

- To perform adjustment operations, remove rear tires with power tool.

- Fix the disc rotor using wheel nuts.
- Remove the coin pocket.
- Release the parking brake lever by turning the adjusting nut (1) with a deep socket wrench and loosening the cable.



- 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.
- Turn back the adjuster 5 or 6 notches from the locked position.
- Rotate the disc rotor to check that there is no drag. Install the adjusting hole plug.
- Adjust the cable with the following procedure.
  - Operate the parking brake lever with a force of 294 N (30 kg, 66 lb) for 10 strokes or more.
  - Adjust the parking brake lever stroke by turning the adjusting nut with a deep socket wrench.



**CAUTION:**

# PARKING BRAKE SYSTEM

< ON-VEHICLE MAINTENANCE >

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**Never reuse the adjusting nut if the nut is removed.**

- c. Operate the parking brake lever with a force of 196 N (20 kg, 44lb). 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-12. "Parking Brake Control"](#)

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

A  
B  
C  
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E  
PB  
G  
H  
I  
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## PARKING BRAKE SHOE

< ON-VEHICLE MAINTENANCE >

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### PARKING BRAKE SHOE

#### Inspection

INFOID:000000001647901

Rotate the disc rotor and check for any drag.

# PARKING BRAKE CONTROL

< ON-VEHICLE REPAIR >

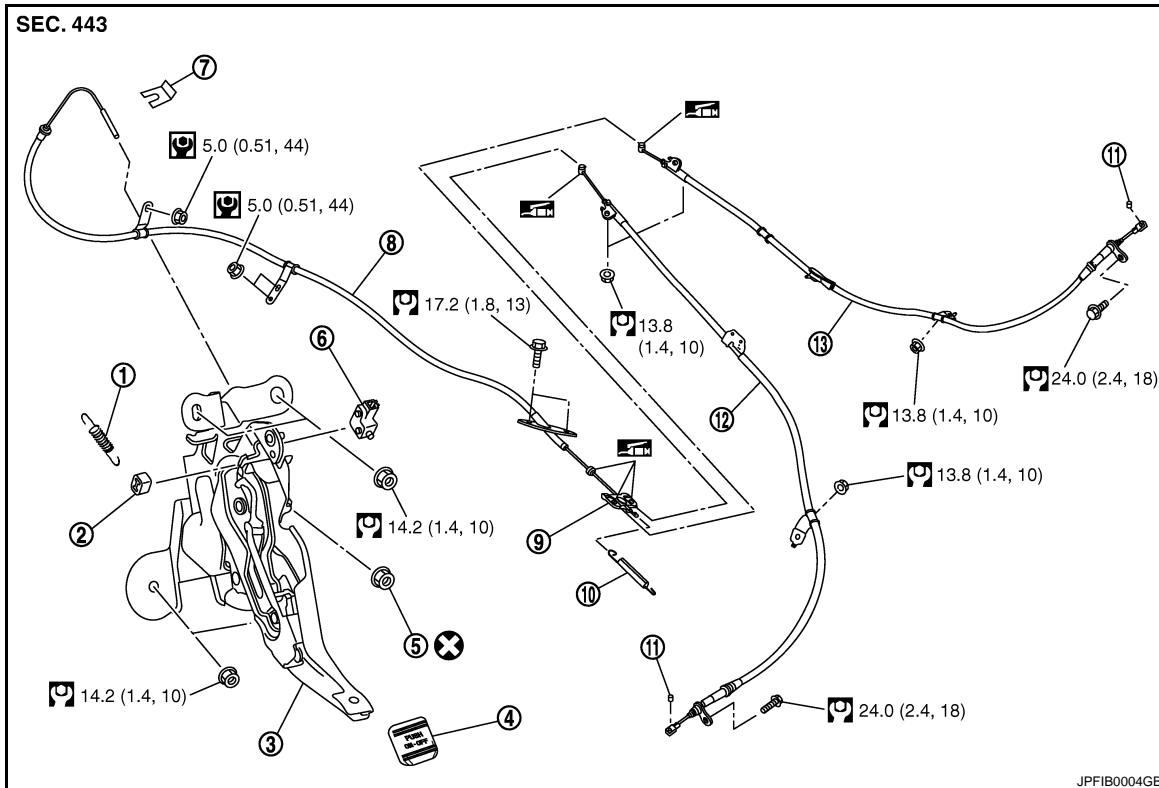
## ON-VEHICLE REPAIR

### PARKING BRAKE CONTROL

#### PEDAL TYPE

#### PEDAL TYPE : Exploded View

INFOID:000000001647902



- |                     |                   |                         |
|---------------------|-------------------|-------------------------|
| 1. Return spring    | 2. Stopper rubber | 3. Device assembly      |
| 4. Pedal pad        | 5. Adjusting nut  | 6. Parking brake switch |
| 7. Lock plate       | 8. Front cable    | 9. Equalizer            |
| 10. Spring          | 11. Pin           | 12. Rear cable (LH)     |
| 13. Rear cable (RH) |                   |                         |

: Apply multi-purpose grease.

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

#### PEDAL TYPE : Removal and Installation

INFOID:000000001647903

##### REMOVAL

1. Remove rear tires with power tool.
2. Remove instrument driver lower panel. Refer to [IP-11, "Exploded View"](#).
3. Disconnect parking brake switch harness connector.
4. Remove adjusting nut and loosen front cable.
5. Remove device assembly.
6. Remove center console. Refer to [IP-23, "Exploded View"](#).
7. Remove the heat insulator and center muffler. Refer to [EX-5, "Exploded View"](#).
8. Separate front cable from rear cable, and remove front cable.
9. Remove parking brake shoe, and remove rear cable from toggle lever. Refer to [PB-9, "Exploded View"](#).
10. Remove rear cable mounting bolts and nuts, pull out rear cable from vehicle.

# PARKING BRAKE CONTROL

< ON-VEHICLE REPAIR >

## INSTALLATION

Install in the reverse order of the removal.

PEDAL TYPE : Adjustment

INFOID:000000001647904

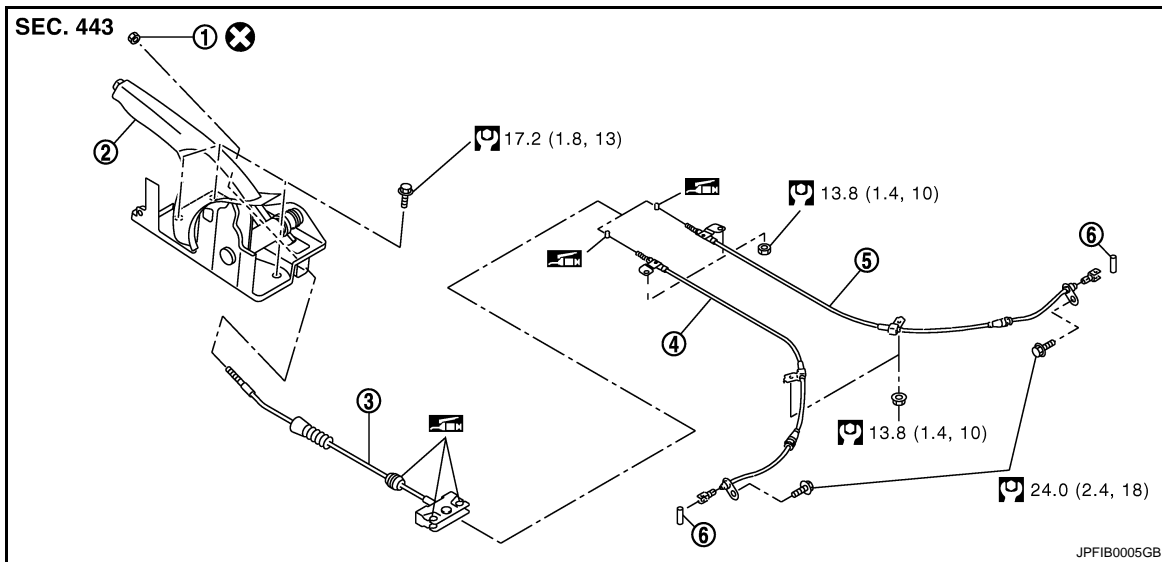
## ADJUSTMENT AFTER INSTALLATION

Adjust the parking brake pedal stroke. Refer to [PB-3, "PEDAL TYPE : Inspection and Adjustment"](#).

## LEVER TYPE

LEVER TYPE : Exploded View

INFOID:000000001647905



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

: Apply multi-purpose grease.

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

## LEVER TYPE : Removal and Installation

INFOID:000000001647906

### REMOVAL

1. Remove rear tires with power tool.
2. Remove center console. Refer to [IP-23, "Exploded View"](#).
3. Disconnect parking brake switch harness connector.
4. Remove adjusting nut and loosen front cable.
5. Remove device assembly.
6. Remove the heat insulator and center muffler. Refer to [EX-5, "Exploded View"](#).
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-9, "Exploded View"](#).
9. Remove rear cable mounting bolts and nuts, pull out rear cable from vehicle.

### INSTALLATION

Install in the reverse order of the removal.

LEVER TYPE : Adjustment

INFOID:000000001647907

## ADJUSTMENT AFTER INSTALLATION

Adjust the parking brake lever stroke. Refer to [PB-4, "LEVER TYPE : Inspection and Adjustment"](#).



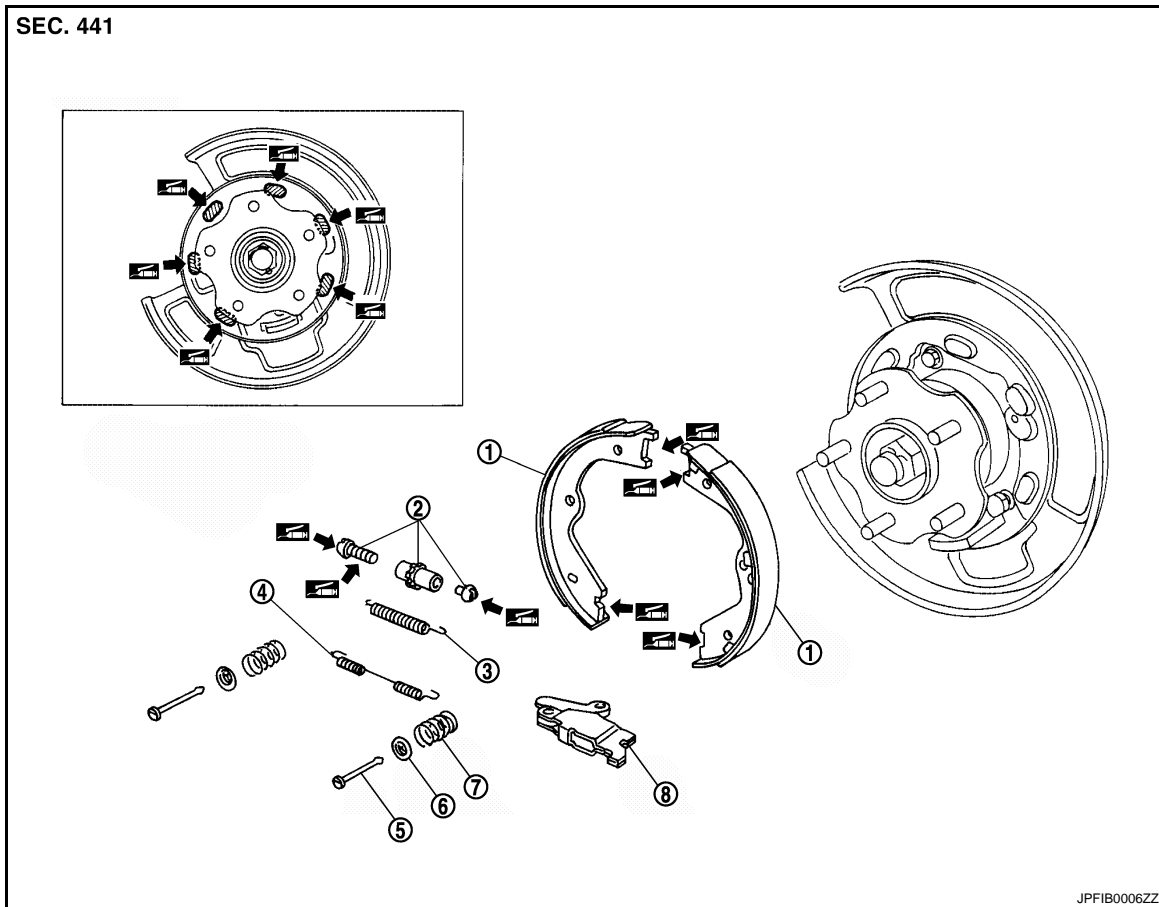
# PARKING BRAKE SHOE

< ON-VEHICLE REPAIR >

## PARKING BRAKE SHOE

### Exploded View

INFOID:000000001647908



- |                       |                    |                    |
|-----------------------|--------------------|--------------------|
| 1. Brake shoe         | 2. Adjuster        | 3. Adjuster spring |
| 4. Return spring      | 5. Anti-rattle pin | 6. Retainer        |
| 7. Anti-rattle spring | 8. Toggle lever    |                    |

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

### Removal and Installation

INFOID:000000001647909

#### REMOVAL

##### **WARNING:**

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

1. Remove rear tires with power tool.
2. Remove disc rotor with parking brake completely in the released position. Refer to [BR-56, "BRAKE CALIPER ASSEMBLY \(1 PISTON TYPE\) : Exploded View"](#) (1 piston type), [BR-59, "BRAKE CALIPER ASSEMBLY \(2 PISTON TYPE\) : Exploded View"](#) (2 piston type).

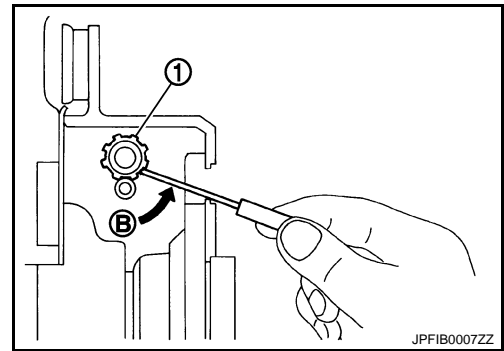
##### **CAUTION:**

- 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, retainers, anti-rattle springs, and return spring, adjuster spring.  
**CAUTION:**  
**Never drop the removed parts.**
5. Remove parking brake shoes, adjuster assembly, and toggle lever.  
**CAUTION:**
  - The parking brake shoes for the front wheels are made of different materials from those for the rear wheels. Never misidentify them when removing.
  - Never drop the removed parts.
6. For the removal of back plate, refer to [RAX-7, "Exploded View"](#).



## 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 wheels are made of different materials from those for the rear wheels. Never misidentify them when removing and replacing.**

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

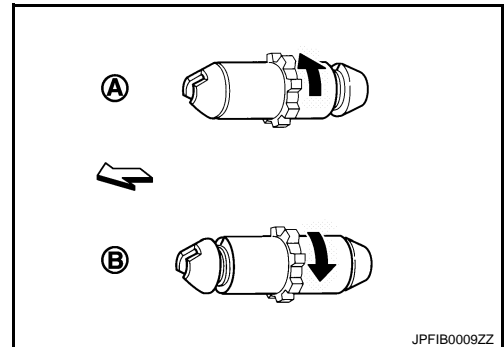
A: For RH brake

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 brake shoe sliding surface and drum inner surface for grease. Wipe it off if it adhere on the surfaces.



## Inspection and Adjustment

INFOID:000000001647910

## INSPECTION AFTER REMOVAL

Lining Thickness Inspection

- Check thickness (A) of lining.

**Standard**

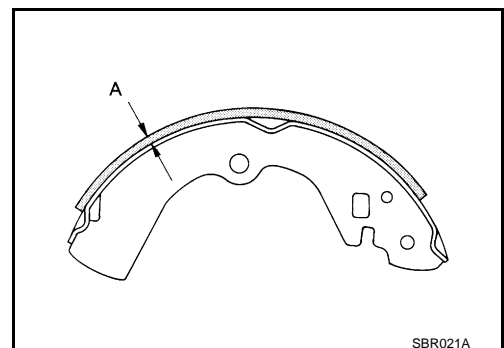
**Standard thickness**

**: Refer to [PB-12, "Parking Drum Brake"](#)**

**Limit**

**Wear limit**

**: Refer to [PB-12, "Parking Drum Brake"](#)**



Drum Inner Diameter Inspection

# PARKING BRAKE SHOE

## < ON-VEHICLE REPAIR >

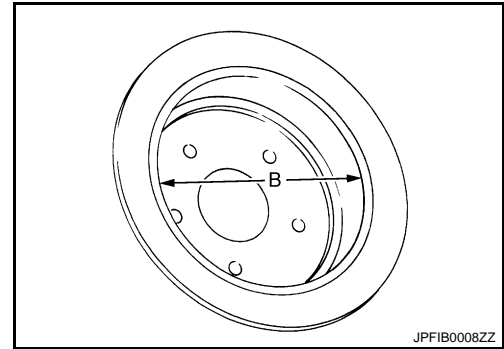
- Check inner diameter (B) of drum.

### Standard

**Standard inner diameter** : Refer to [PB-12, "Parking Drum Brake"](#)

### Limit

**Wear limit of inner diameter** : Refer to [PB-12, "Parking Drum Brake"](#)



### Other Inspections

- Check the lining for excessive wear, damage, and peeling. Replace if necessary.
- Check the brake shoe sliding surface for excessive wear and damage. Replace if necessary.
- Check the anti-rattle pin and retainer for excessive wear, damage and rust. Replace if necessary.
- Check the adjuster spring, return spring and anti-rattle spring for settling, 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 pedal stroke or lever stroke. Refer to [PB-3, "PEDAL TYPE : Inspection and Adjustment"](#) (pedal type), [PB-4, "LEVER TYPE : Inspection and Adjustment"](#) (lever type).
- Perform break-in operation as follows after replacing brake shoe and/or disc rotor, or if brakes do not function well.

1. Adjust parking brake pedal stroke or lever stroke to the specified amount. Refer to [PB-3, "PEDAL TYPE : Inspection and Adjustment"](#) (pedal type), [PB-4, "LEVER TYPE : Inspection and Adjustment"](#) (lever type).
2. Perform parking brake break-in (drag on) operation by driving vehicle under the following conditions:

#### Drive forward

- Vehicle speed : Approx. 30 km/h (19 MPH) set (constant and forward)
- Parking brake operating force : Approx. 294 N (30 kg, 66 lb) set constant
- time : Approx. 35 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 parking brake pedal stroke or lever stroke of parking brake. If it is out of the specification, adjust again. Refer to [PB-3, "PEDAL TYPE : Inspection and Adjustment"](#) (pedal type), [PB-4, "LEVER TYPE : Inspection and Adjustment"](#) (lever type).

## SERVICE DATA AND SPECIFICATIONS (SDS)

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## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Parking Drum Brake

INFOID:000000001647911

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:000000001647912

Control type	Pedal type	Lever type
Number of notches [under force of 196 N (20 kg, 44 lb)]	2 – 3 notches	7 – 8 notches
Number of notches when parking brake warning lamp turns ON	1 notch	1 notch