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# SECTION **PB**

## PARKING BRAKE SYSTEM

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Precautions for Removing Battery Terminal

INFOID:0000000011505843

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

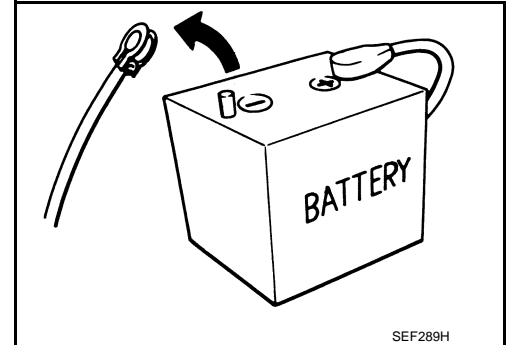
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.



# PREPARATION

< PREPARATION >

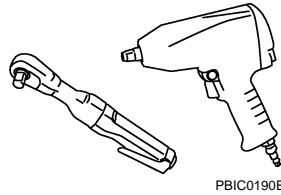
## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:0000000010259713

Tool name	Description
Power tool	Loosening bolts and nuts



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# PARKING BRAKE SYSTEM

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

### PARKING BRAKE SYSTEM

#### Inspection and Adjustment

INFOID:0000000010259714

#### INSPECTION

1. 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.)

**Number of notches** : Refer to [PB-11, "Parking Brake Control"](#).

2. When 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.)

**Number of notches** : Refer to [PB-11, "Parking Brake Control"](#).

#### Inspect Components

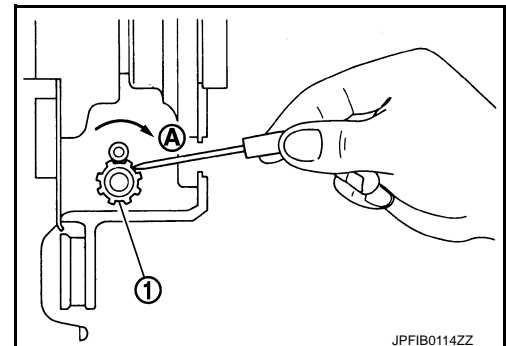
Check the following items and replace if necessary.

- Check each component for installation condition such as looseness.
- Check the parking brake pedal assembly for bend, damage and cracks.
- Check the cables and equalizer for wear, damage and cracks.
- Check the parking brake switch. Refer to [BRC-127, "Component Inspection"](#).

#### ADJUSTMENT

1. Remove the rear tires with power tool.
2. Fix the disc rotor using wheel nuts (2 points at least).
3. Release the parking brake pedal by turning the adjusting nut and loosening the cable.

4. Remove the 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 5 or 6 notches from the locked position.
6. Rotate the disc rotor to check that there is no drag. Install the plug. If any drag is found, follow the procedure described below.
  - a. Adjust parking brake pedal stroke again.

- b. Check rear disc brake. Refer to [BR-47, "BRAKE CALIPER ASSEMBLY : Inspection"](#).

7. Adjust the cable with the following procedure.

- a. Temporarily adjust the cable so that the parking brake pedal operating force immediately before the full stroke reaches 490 N (50 kg, 110 lb) or more.
- b. Maintain the parking brake pedal at 490 N (50 kg, 110 lb) for 30 minutes or more.
- c. Adjust the parking brake pedal stroke by turning the adjusting nut.

#### **CAUTION:**

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

- d. 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.)

**Number of notches** : Refer to [PB-11, "Parking Brake Control"](#).

- e. Rotate the disc rotor to check that there is no drag. Install the plug. If any drag is found, follow the procedure described below.

- i. Adjust parking brake pedal stroke again.

- ii. Check rear disc brake. Refer to [BR-47, "BRAKE CALIPER ASSEMBLY : Inspection"](#).

# PARKING BRAKE SHOE

< PERIODIC MAINTENANCE >

## PARKING BRAKE SHOE

### Adjustment

INFOID:000000010259715

1. Adjust parking brake pedal stroke. Refer to [PB-4, "Inspection and Adjustment"](#).
2. Perform parking brake break-in (drag on) operation by driving vehicle under the following conditions:
  - Drive forward
  - Vehicle speed: Approx. 83 km/h (51.6 MPH) set (constant and forward)
  - Parking brake pedal operating force: 255 N (26.0 kg, 57.3 lb) (9 notches) set contact
  - Time: Approx. 33 sec.

**CAUTION:**

- To prevent lining from getting too hot, allow a cool off period of approx. 5 minutes after every break-in operation.
  - Never perform excessive break-in operations, because doing so may cause uneven or early wear of the lining.
3. After the break-in procedure, check parking brake pedal stroke of parking brake.

**CAUTION:**

If it is out of the specification, adjust again. Refer to [PB-4, "Inspection and Adjustment"](#).

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# PARKING BRAKE CONTROL

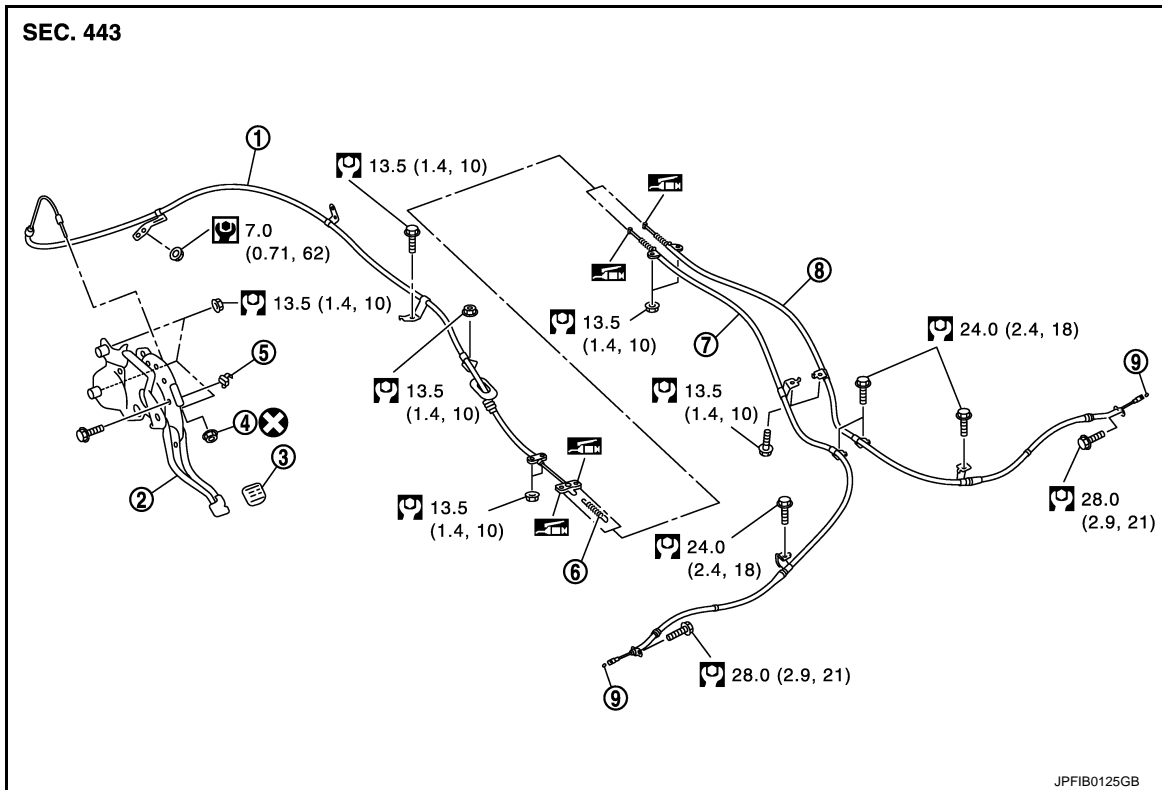
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION


### PARKING BRAKE CONTROL

Exploded View

INFOID:000000010259716



- |                           |                                 |              |
|---------------------------|---------------------------------|--------------|
| 1. Front cable            | 2. Parking brake pedal assembly | 3. Pedal pad |
| 4. Adjusting nut          | 5. Parking brake switch         | 6. Spring    |
| 7. Rear cable (left side) | 8. Rear cable (right side)      | 9. Pin       |

 Apply multi-purpose grease.

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

## Removal and Installation

INFOID:000000010259717

### REMOVAL

1. Remove rear tires with power tool.
2. Remove instrument lower panel LH. Refer to [IP-14, "Removal and Installation"](#).
3. Hang fuse block (J/B) not to interfere with work.
4. Disconnect parking brake switch harness connector.
5. Remove adjusting nut and loosen front cable.
6. Remove parking brake pedal assembly.
7. Remove center console assembly. Refer to [IP-25, "Removal and Installation"](#).
8. Separate front cable from rear cable, and remove front cable.
9. Remove pin and remove rear cable from toggle lever. Refer to [PB-8, "Removal and Installation"](#).
10. Remove rear cable.

### INSTALLATION

Reverse the following, Install the reverse order of the removal.

- Never reuse the adjusting nut.
- Perform adjustment after installation. Refer to [PB-7, "Adjustment"](#).

# PARKING BRAKE CONTROL

< REMOVAL AND INSTALLATION >

## Adjustment

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### ADJUSTMENT AFTER INSTALLATION

Adjust the parking brake pedal stroke. Refer to [PB-4. "Inspection and Adjustment"](#).

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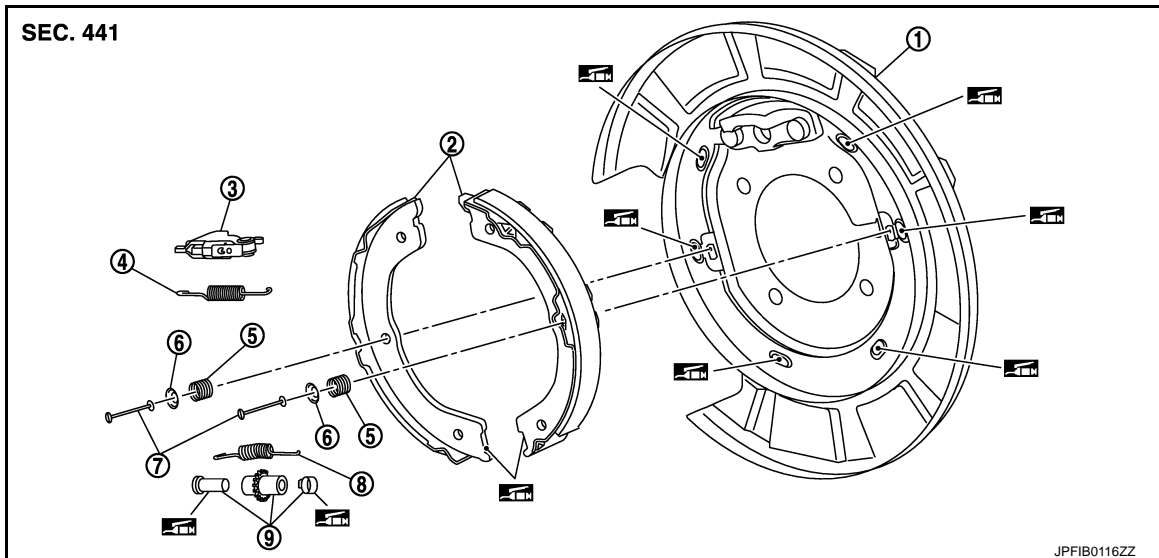
# PARKING BRAKE SHOE

< REMOVAL AND INSTALLATION >

## PARKING BRAKE SHOE

Exploded View

INFOID:000000010259719



- |                    |                       |                 |
|--------------------|-----------------------|-----------------|
| 1. Back plate      | 2. Parking brake shoe | 3. Toggle lever |
| 4. Return spring   | 5. Anti-rattle spring | 6. Retainer     |
| 7. Anti-rattle pin | 8. Adjuster spring    | 9. Adjuster     |

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

## Removal and Installation

INFOID:000000010259720

### REMOVAL

#### **WARNING:**

Since dust covering the parking brake has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

1. Remove rear tires with power tool.
2. Remove disc rotor. Refer to [RAX-7, "Removal and Installation"](#).
3. Remove anti-rattle pins, retainers, anti-rattle springs, return spring and adjuster spring.

#### **CAUTION:**

**Never drop the removed parts.**

4. Remove parking brake shoes, adjuster assembly, and toggle lever.

#### **CAUTION:**

**Never drop the removed parts.**

5. For the removal of back plate, refer to [RAX-7, "Removal and Installation"](#).
6. Perform inspection after removal. Refer to [PB-9, "Inspection and Adjustment"](#).

### INSTALLATION

Note the following, install in the reverse order of removal.

- Apply PBC (Poly Butyl Cuprysil) grease or silicone-based grease to the back plate and brake shoe. Refer to [PB-8, "Exploded View"](#).



# PARKING BRAKE SHOE

## < REMOVAL AND INSTALLATION >

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

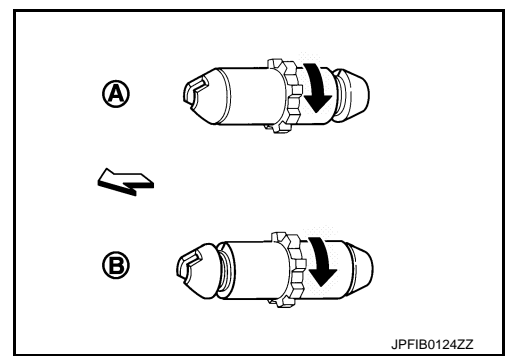
A: For right side brake

B: For left side brake

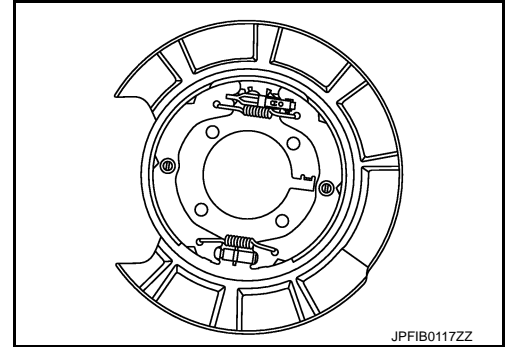
↔: Vehicle front

↻: Adjuster expands

- Shorten adjuster by rotating it.
- When disassembling apply PBC (Poly Butyl Cuprysil) grease or silicone-based grease to threads.



- Check the component parts of parking brake shoe assembly are installed properly.
- Check brake shoe sliding surface and drum inner surface for grease. Wipe it off if it adhere on the surfaces.
- Perform adjustment after installation. Refer to [PB-9, "Inspection and Adjustment"](#).



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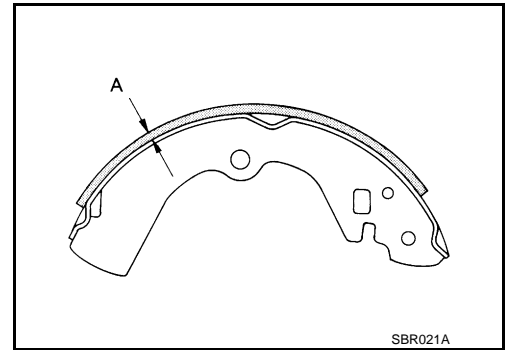
## Inspection and Adjustment

### INSPECTION AFTER REMOVAL

Lining Thickness Inspection

Check thickness (A) of lining.

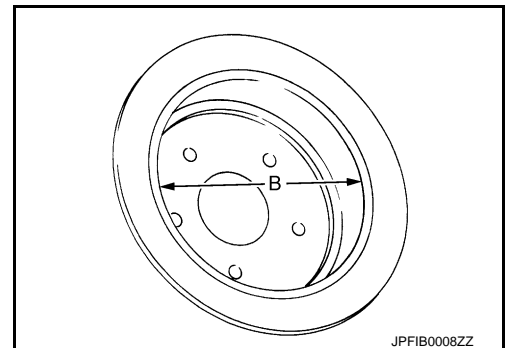
**A** : Refer to [PB-11, "Parking Drum Brake"](#).



Drum Inner Diameter Inspection

Check inner diameter (B) of drum.

**B** : Refer to [PB-11, "Parking Drum Brake"](#).



Other Inspections

Check the following items, and replace the parts if necessary.

- Parking brake shoe for excessive wear, damage, and peeling.
- Anti-rattle pin and retainer for excessive wear, damage and rust.
- Adjuster spring, return spring and anti-rattle spring for settling, excessive wear, damage, and rust.
- Adjuster for smoothness.

## PARKING BRAKE SHOE

### < REMOVAL AND INSTALLATION >

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- Toggle lever for excessive wear, damage and rust.
- Visually check inside of the drum for excessive wear, cracks, and damage with a pair of vernier calipers.

### ADJUSTMENT AFTER INSTALLATION

1. Adjust the parking brake pedal stroke. Refer to [PB-4, "Inspection and Adjustment"](#).
2. Rotate the disc rotor to check that there is no drag. Install the plug. If any drag is found, follow the procedure described below.
  - a. Adjust parking brake stroke again.
  - b. Check rear disc brake. Refer to [BR-47, "BRAKE CALIPER ASSEMBLY : Inspection"](#).

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Parking Drum Brake

INFOID:0000000010259722

Unit: mm (in)

Item		Limit
Brake lining	Wear thickness	1.5 (0.059)
Drum (disc of inner diameter)	Wear inner diameter	229 (9.02)

#### Parking Brake Control

INFOID:0000000010259723

Number of notches [under force of 196 N (20 kg, 44 lb)]	6 – 7 notches
Number of notches when brake warning lamp turns ON	1 notch

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