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# SECTION **PB**

## PARKING BRAKE SYSTEM

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Precautions Necessary for Steering Wheel Rotation after Battery Disconnect (Early Production, With Electronic Steering Column Lock)

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#### **NOTE:**

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

#### OPERATION PROCEDURE

1. Connect both battery cables.

#### **NOTE:**

Supply power using jumper cables if battery is discharged.

2. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

## PRECAUTIONS

### < PRECAUTION >

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5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

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# PREPARATION

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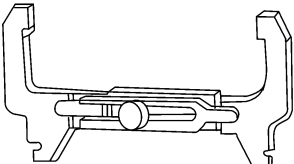
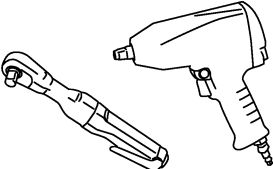
## PREPARATION

### PREPARATION

#### Commercial Service Tool

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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

(Kent-Moore No.) Tool name		Description
(J-21177-A) Brake drum clearance gauge	 WFIA0167E	Measuring rear rotor drum to parking brake shoe clearance
Power tool	 PBIC0190E	Loosening bolts and nuts

# PARKING BRAKE SYSTEM

< ON-VEHICLE MAINTENANCE >

## ON-VEHICLE MAINTENANCE

### PARKING BRAKE SYSTEM

#### On-Vehicle Service

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#### PEDAL STROKE

- When parking brake pedal is operated with the specified force, make sure the stroke is within the specified number of notches. Check by listening and counting the ratchet clicks.

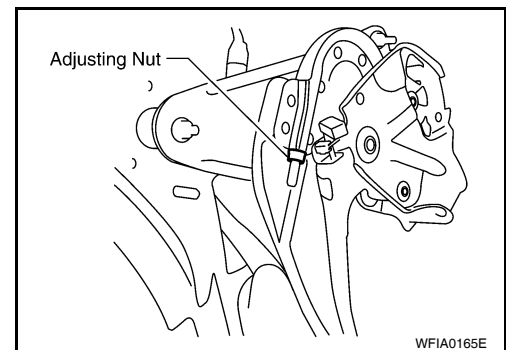
**Pedal stroke** : Refer to [PB-11, "Parking Brake Control"](#).

#### INSPECTION

- Make sure the components are attached properly, checking for looseness or backlash.
- Check parking brake pedal assembly for bends, damage and cracks, and replace if necessary.
- Check cable for wear and damage, and replace if necessary.
- Check parking brake warning lamp switch for malfunction, and replace if necessary. Refer to [BRC-69, "Diagnosis Procedure"](#).

#### ADJUSTMENT

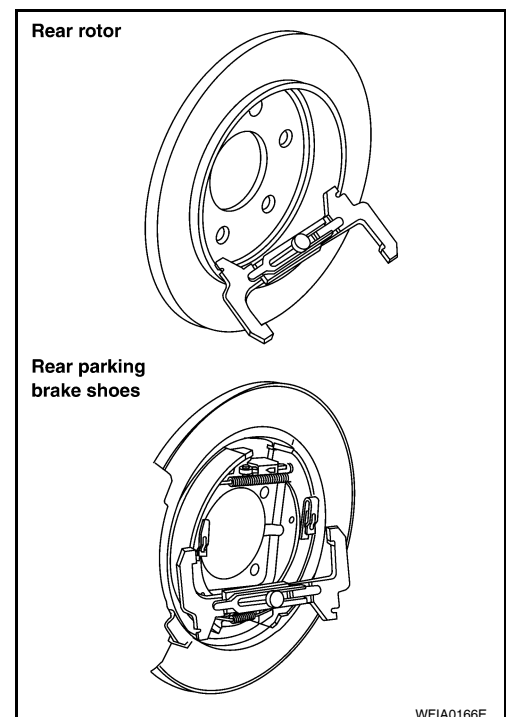
1. Remove the lower instrument panel LH. Refer to [IP-11, "Exploded View"](#).
2. Partially engage parking brake pedal to access adjusting nut.
3. Insert a deep socket wrench to rotate adjusting nut and loosen cable sufficiently. Then, disengage the parking brake pedal.



4. Remove the wheel and tire using power tool.
5. Remove the disc rotor and measure inner diameter at widest point using suitable tool. Refer to [BR-36, "Removal and Installation of Brake Caliper and Rotor"](#).
6. Transfer measurement less 0.6 mm (0.24 in) to the parking brake shoes and adjust accordingly.
7. Using wheel nuts, secure the disc rotor to the hub to prevent it from tilting.
8. Rotate the disc rotor to make sure there is no drag.
9. Adjust cable as follows:
  - a. Operate pedal 10 or more times with a force of 490 N (50 kg-f, 110 lb-f).
  - b. Rotate adjusting nut with deep socket to adjust pedal stroke to specification.

**Pedal stroke** : Refer to [PB-11, "Parking Brake Control"](#).

- c. With parking brake pedal completely disengaged, make sure there is no drag on the parking brake.
10. Install the disc rotor.
  11. Install the wheel and tire using power tool.
  12. Install the lower instrument panel LH. Refer to [IP-12, "Removal and Installation"](#).



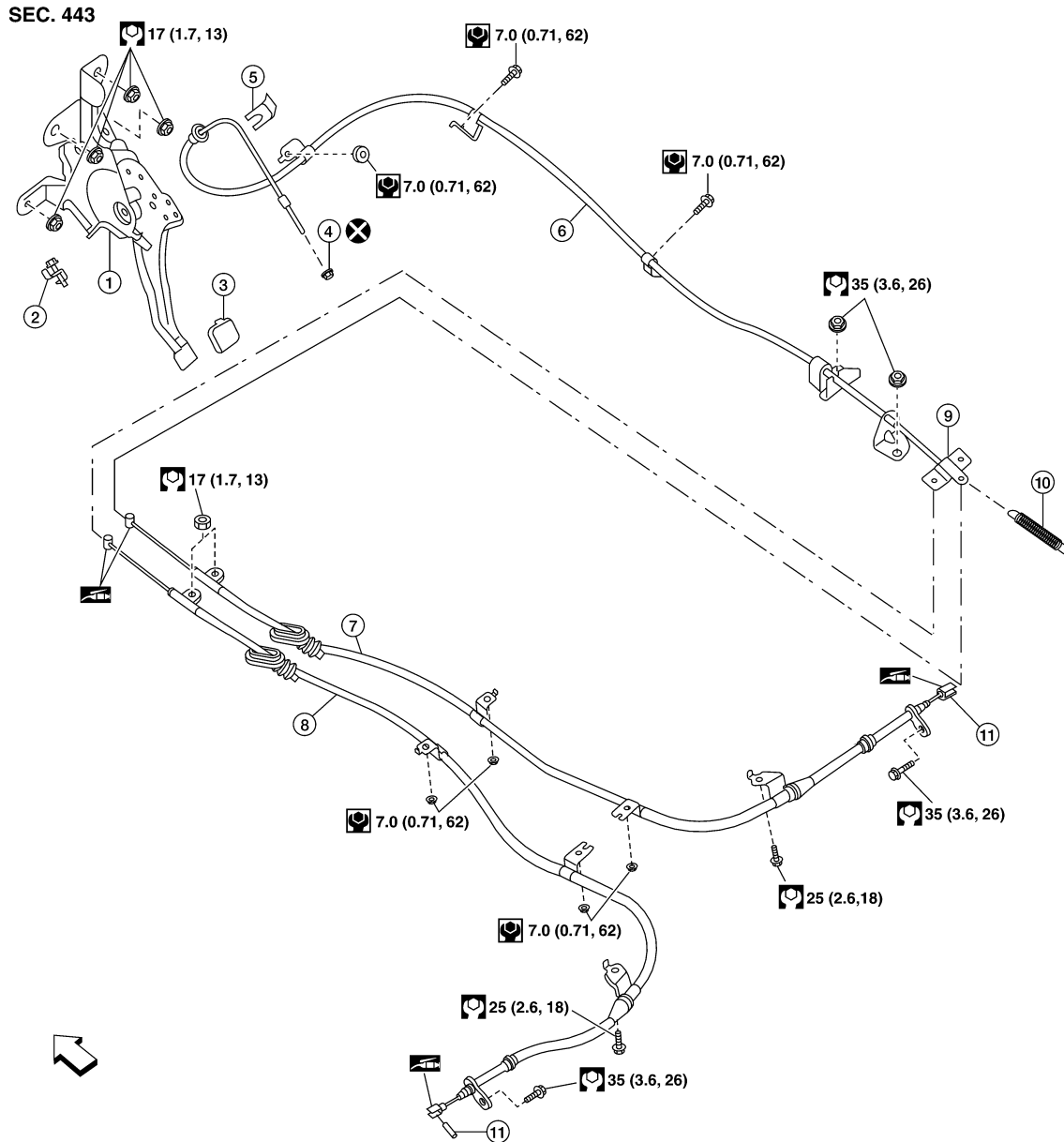
# PARKING BRAKE CONTROL

< ON-VEHICLE REPAIR >

## ON-VEHICLE REPAIR PARKING BRAKE CONTROL

Exploded View

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- |                        |                         |                |
|------------------------|-------------------------|----------------|
| 1. Parking brake pedal | 2. Parking brake switch | 3. Pedal pad   |
| 4. Adjusting nut       | 5. Lock plate           | 6. Front cable |
| 7. Rear cable (RH)     | 8. Rear cable (LH)      | 9. Equalizer   |
| 10. Spring             | 11. Pin                 | ⇐ Front        |

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## Removal and Installation

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### REMOVAL

1. Remove rear wheel and tires using power tool.
2. Remove instrument lower cover (LH) and lower knee protector. Refer to [IP-12. "Removal and Installation"](#).

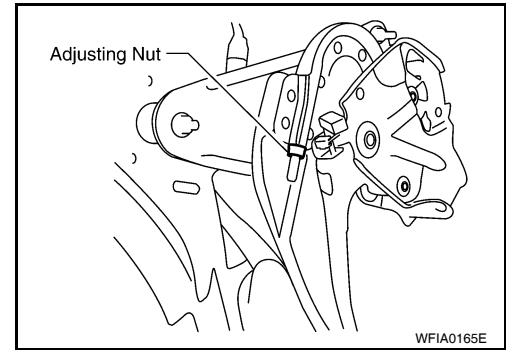
# PARKING BRAKE CONTROL

## < ON-VEHICLE REPAIR >

3. Disconnect parking brake switch connector.
4. Remove adjusting nut and discard, then loosen the front cable.

**CAUTION:**

**Do not reuse adjusting nut.**



5. Remove parking brake pedal nuts and remove the parking brake pedal.
6. Remove center console. Refer to [IP-16, "Removal and Installation"](#).
7. Reposition the floor carpet aside.
8. Separate the LH and RH rear cables from the equalizer then remove the front cable.
9. Remove the front exhaust tube and the center exhaust tube. Refer to [EX-6, "Removal and Installation"](#).
10. Remove the exhaust center tube heat insulator.
11. Remove the rear brake disc rotors. Refer to [BR-36, "Removal and Installation of Brake Caliper and Rotor"](#).
12. Disconnect the LH and RH rear cables from the toggle lever. Refer to [PB-8, "Exploded View"](#).
13. Remove the LH and RH rear cable bolts and nuts, then remove the LH and RH rear cables.

## INSTALLATION

Installation is in the reverse order of removal.

- Refer to [PB-6, "Exploded View"](#) for torque specifications.
- Adjust parking brake. Refer to [PB-5, "On-Vehicle Service"](#).

**CAUTION:**

**Do not reuse adjusting nut.**

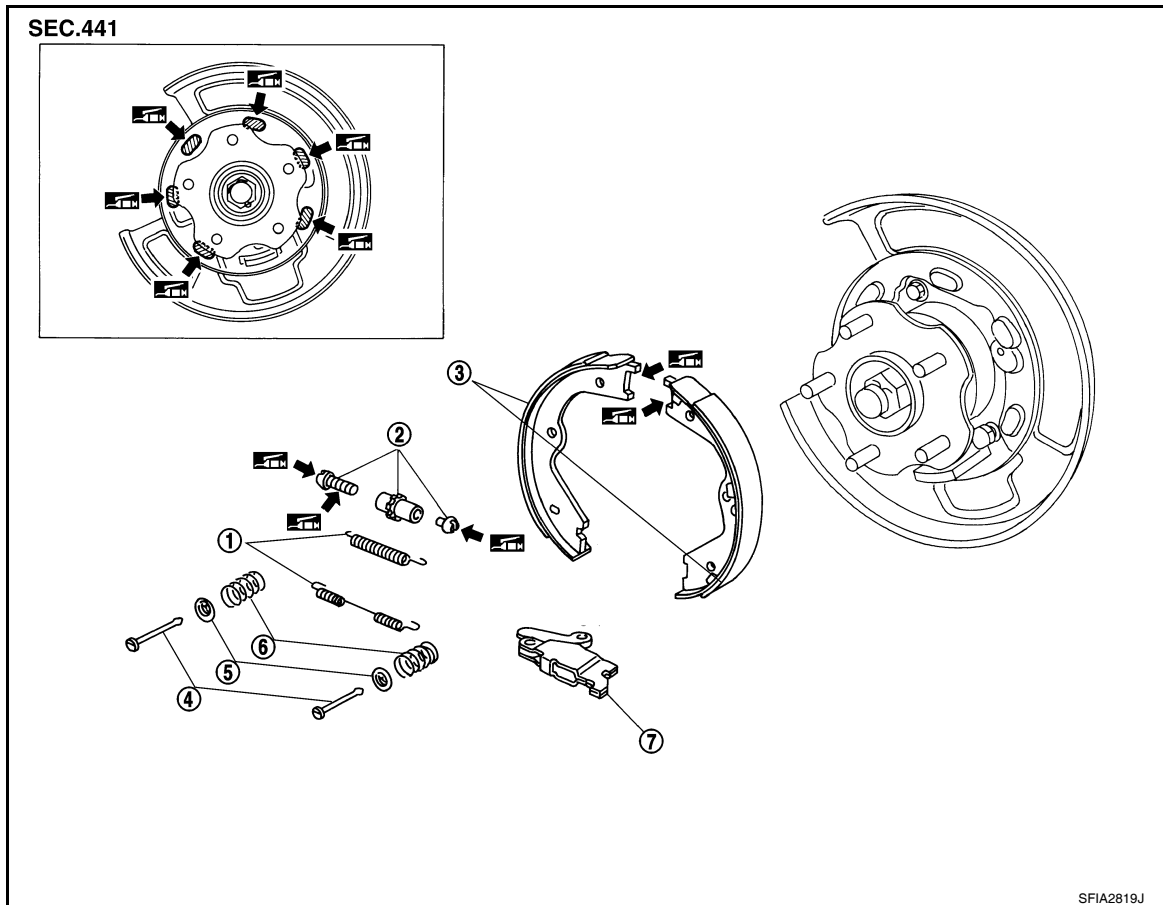
# PARKING BRAKE SHOE

< ON-VEHICLE REPAIR >


## PARKING BRAKE SHOE

Exploded View

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

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

## Removal and Installation

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### REMOVAL

#### **WARNING:**

- Clean brakes with a vacuum dust collector to minimize the hazard of air borne particles or other materials.
- Clean dust on disc rotor and back plate using a vacuum dust collector. Do not blow with compressed air.

1. Remove rear wheel and tires using power tool.
2. Remove the rear brake calipers. Refer to [BR-36, "Removal and Installation of Brake Caliper and Rotor"](#).



# PARKING BRAKE SHOE

## < ON-VEHICLE REPAIR >

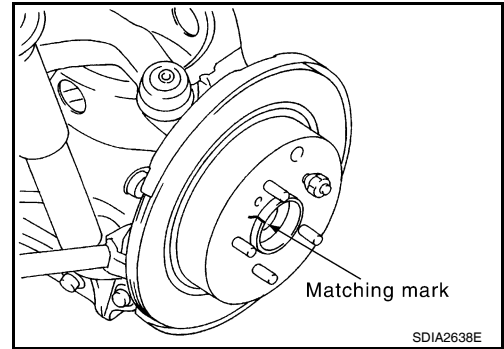
- With the parking brake pedal in the fully released position, remove the disc rotor.

**CAUTION:**

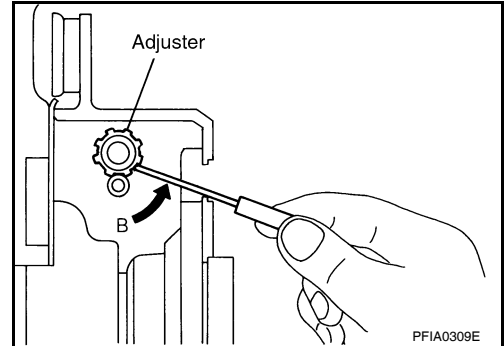
**Put matching marks on both disc rotor and wheel hub when removing disc rotor.**

If the disc rotor cannot be removed, remove as follows:

- Secure the disc rotor in place with wheel nuts and remove adjuster hole plug.



- Rotate adjuster in direction (B) to retract and loosen brake shoe, using suitable tool as shown.



- Remove anti-rattle pins, retainers, anti-rattle springs, and return springs.
- Remove parking brake shoes, adjuster assembly, and toggle lever.

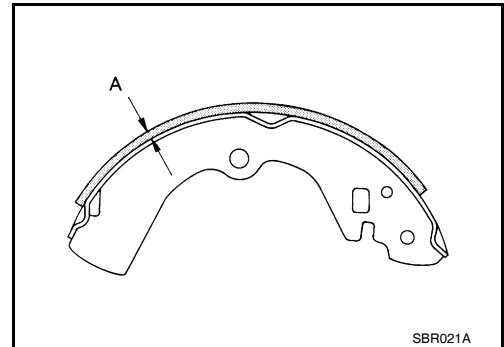
## INSPECTION AFTER REMOVAL

### Lining Thickness Inspection

- Check thickness of lining.

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

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

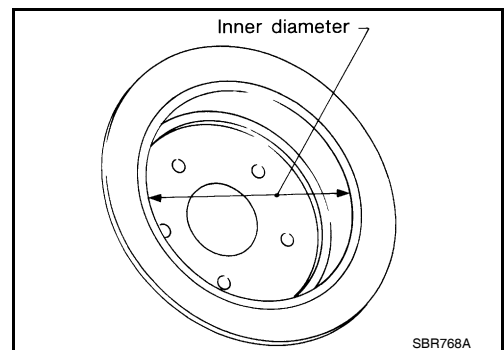


### Disc Rotor Inner Diameter Inspection

- Check inner diameter of drum (in disc).

**Standard inner diameter (new)** : Refer to [PB-11, "Parking Drum Brake"](#).

**Wear limit of inner diameter** : Refer to [PB-11, "Parking Drum Brake"](#).



### Other Inspections

- Check the following:
  - Lining for excessive wear, damage, and peeling.
  - Shoe sliding surface for excessive wear and damage.
  - Anti-rattle pin for excessive wear and corrosion.
  - Return spring for sagging.

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# PARKING BRAKE SHOE

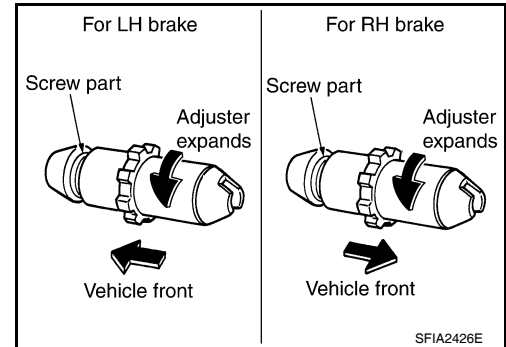
## < ON-VEHICLE REPAIR >

- Make sure that adjuster moves smoothly.
- Visually check the inside of drum for excessive wear, cracks, and damage.
- Replace with new parts as necessary.

### INSTALLATION

Installation is in the reverse order of removal.

- Refer to [PB-8, "Exploded View"](#) and apply PBC (Poly Butyl Cuprysil) grease or equivalent to the specified points during installation.
- Assemble adjusters so that threaded part is expanded when rotating it in the direction as shown.
- Shorten adjuster by rotating it the opposite as shown.



- Check parking brake shoe sliding surface and drum inner surface for grease. Wipe off all grease adhering to the friction surfaces.

### NOTE:

After replacing the parking brake shoes or disc rotors, or if the parking brake does not function properly, perform the break-in operation as follows.

1. Adjust parking brake pedal stroke to the specified amount. Refer to [PB-5, "On-Vehicle Service"](#).
2. Perform parking brake break-in (drag run) operation by driving and performing the following steps:
  - Drive forward at a constant speed of approximately 40 km/h (25 mph).
  - Apply the parking brake for approximately 10 seconds at an operating force at approximately 150 - 199 N (15 - 20 kg-f, 34 - 54 lb-f).

### CAUTION:

- To prevent lining from getting too hot, allow cool off period of approximately 5 minutes after every break-in operation.
  - Do not perform excessive break-in operations, because it may cause uneven or early wear of lining.
3. After break-in operation, check that the parking brake pedal stroke is at specification and adjust again as necessary. Refer to [PB-5, "On-Vehicle Service"](#).

## SERVICE DATA AND SPECIFICATIONS (SDS)

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## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Parking Brake Control

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Control type	Foot pedal
Pedal stroke - number of notches [under force of 196 N (20 kg-f, 44 lb-f)]	4 - 5
Pedal stroke - number of notches when parking brake warning lamp switch comes on	1

#### Parking Drum Brake

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Unit: mm (in)

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