

# SECTION **BR**

## BRAKE SYSTEM

### CONTENTS

<b>PRECAUTION</b> .....	3	<b>REAR DISC BRAKE</b> .....	12
<b>PRECAUTIONS</b> .....	3	<b>BRAKE PAD</b> .....	12
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" .....	3	BRAKE PAD : Inspection .....	12
Precaution for Procedure without Cowl Top Cover.....	3	<b>DISC ROTOR</b> .....	12
Precaution for Brake System .....	3	DISC ROTOR : Inspection .....	12
<b>PREPARATION</b> .....	5	<b>PERIODIC MAINTENANCE</b> .....	13
<b>PREPARATION</b> .....	5	<b>BRAKE PEDAL</b> .....	13
Special Service Tool .....	5	Inspection and Adjustment .....	13
Commercial Service Tool .....	5	<b>BRAKE FLUID</b> .....	14
<b>SYSTEM DESCRIPTION</b> .....	6	Drain and Refill .....	14
<b>NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING</b> .....	6	Bleeding Brake System .....	14
NVH Troubleshooting Chart .....	6	<b>FRONT DISC BRAKE</b> .....	16
<b>BASIC INSPECTION</b> .....	7	Brake Burnishing .....	16
<b>BRAKE PEDAL</b> .....	7	<b>REAR DISC BRAKE</b> .....	17
Inspection .....	7	Brake Burnishing .....	17
<b>BRAKE FLUID</b> .....	8	<b>REMOVAL AND INSTALLATION</b> .....	18
Inspection .....	8	<b>BRAKE PEDAL</b> .....	18
<b>BRAKE MASTER CYLINDER</b> .....	9	Exploded View .....	18
Inspection .....	9	Removal and Installation .....	18
On Board Inspection .....	9	<b>BRAKE PIPING</b> .....	19
<b>BRAKE BOOSTER</b> .....	10	<b>FRONT</b> .....	19
Inspection .....	10	FRONT : Exploded View .....	19
<b>FRONT DISC BRAKE</b> .....	11	FRONT : Hydraulic Piping .....	20
<b>BRAKE PAD</b> .....	11	FRONT : Removal and Installation .....	20
BRAKE PAD : Inspection .....	11	<b>REAR</b> .....	22
<b>DISC ROTOR</b> .....	11	REAR : Exploded View .....	22
DISC ROTOR : Inspection .....	11	REAR : Hydraulic Piping .....	23
		REAR : Removal and Installation .....	23
		<b>BRAKE MASTER CYLINDER</b> .....	25
		Exploded View .....	25
		Removal and Installation .....	25

<b>BRAKE BOOSTER</b> .....	27	<b>UNIT DISASSEMBLY AND ASSEMBLY</b> ...	42
Exploded View .....	27	<b>FRONT DISC BRAKE</b> .....	42
Removal and installation .....	27	<b>BRAKE CALIPER ASSEMBLY</b> .....	42
<b>VACUUM LINES</b> .....	29	BRAKE CALIPER ASSEMBLY : Exploded View ...	42
Exploded View- QR25DE .....	29	BRAKE CALIPER ASSEMBLY : Disassembly .....	42
Exploded View- VQ35DE .....	30	BRAKE CALIPER ASSEMBLY : Inspection After	
Removal and Installation .....	30	Disassembly .....	43
Inspection After Removal .....	31	BRAKE CALIPER ASSEMBLY : Assembly .....	43
<b>FRONT DISC BRAKE</b> .....	32	<b>REAR DISC BRAKE</b> .....	45
<b>BRAKE PAD</b> .....	32	<b>BRAKE CALIPER ASSEMBLY</b> .....	45
BRAKE PAD : Exploded View .....	32	BRAKE CALIPER ASSEMBLY : Exploded View ...	45
BRAKE PAD : Removal and Installation .....	32	BRAKE CALIPER ASSEMBLY : Disassembly .....	45
<b>BRAKE CALIPER ASSEMBLY</b> .....	33	BRAKE CALIPER ASSEMBLY : Inspection After	
BRAKE CALIPER ASSEMBLY : Exploded View ...	34	Disassembly .....	46
BRAKE CALIPER ASSEMBLY : Removal and In-		BRAKE CALIPER ASSEMBLY : Assembly .....	46
stallation .....	34	<b>SERVICE DATA AND SPECIFICATIONS</b>	
<b>REAR DISC BRAKE</b> .....	37	<b>(SDS)</b> .....	48
<b>BRAKE PAD</b> .....	37	<b>SERVICE DATA AND SPECIFICATIONS</b>	
BRAKE PAD : Exploded View .....	37	<b>(SDS)</b> .....	48
BRAKE PAD : Removal and Installation .....	37	General Specifications .....	48
<b>BRAKE CALIPER ASSEMBLY</b> .....	38	Brake Pedal .....	48
BRAKE CALIPER ASSEMBLY : Exploded View ...	39	Check Valve .....	49
BRAKE CALIPER ASSEMBLY : Removal and In-		Brake Booster .....	49
stallation .....	39	Front Disc Brake .....	49
		Rear Disc Brake .....	49

# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000008764572

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. 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

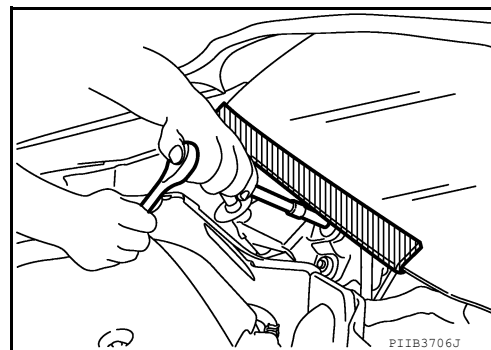
#### **WARNING:**

- 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.

#### Precaution for Procedure without Cowl Top Cover

INFOID:000000007988978

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



#### Precaution for Brake System

INFOID:000000008599603

- Recommended fluid is Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent. Refer to [MA-20, "FOR USA AND CANADA : Fluids and Lubricants"](#).
- Do not reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.
- To clean or wash all parts of master cylinder, disc brake caliper and wheel cylinder, use clean brake fluid.
- Do not use mineral oils such as gasoline or kerosene. They will ruin rubber parts of the hydraulic system.

## PRECAUTIONS

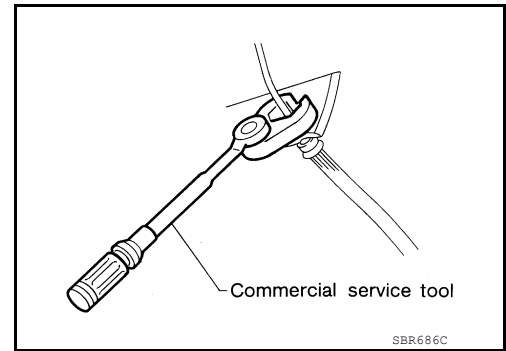
### < PRECAUTION >

- Use flare nut wrench when removing and installing brake tube.
- Always check tightening torque when installing brake lines.
- Before working, turn ignition switch to OFF and disconnect connectors for ABS actuator and electric unit (control unit) or battery negative terminal.
- Burnish the brake contact surfaces after refinishing or replacing drums or rotors, after replacing pads or linings, or if a soft pedal occurs at very low mileage.

Refer to [BR-16, "Brake Burnishing"](#).

### **WARNING:**

- **Clean brake pads and shoes with a waste cloth, then wipe with a dust collector.**



# PREPARATION

< PREPARATION >

## PREPARATION

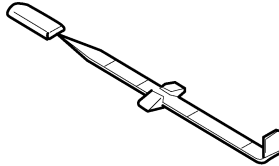
### PREPARATION

#### Special Service Tool

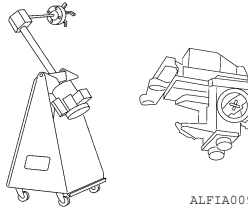
INFOID:000000007988980

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

Tool number (Kent-Moore No.) Tool name	Description
( — ) (J-46532) Brake and clutch pedal height measurement tool	Measuring brake pedal height
38-PFM90.5 ( — ) Pro-Cut PFM 90 On-Car Brake Lathe	Refinishing rotors



LFIA0227E

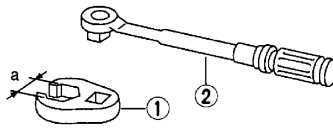


ALFIA0092ZZ

#### Commercial Service Tool

INFOID:000000007988981

Tool name	Description
1. Flare nut crowfoot 2. Torque wrench	Removing and installing brake tube and hose flare nuts a:10 mm (0.39 in) / 12 mm (0.47 in)
Power tool	Loosening nuts, screws and bolts



NT360



PIIB1407E

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

#### NVH Troubleshooting Chart

INFOID:000000007988982

Use the chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Symptom		Possible cause and SUSPECTED PARTS		Reference page	
Noise	×	Pads - damaged	<a href="#">BR-11, "BRAKE PAD : Inspection", BR-12</a>		
	×	Pads - uneven wear	<a href="#">BR-11, BR-12</a>		
	×	Shims damaged	<a href="#">BR-11, BR-12</a>		
Shake	×	Rotor imbalance	—		
	×	Rotor damage	—		
	×	Rotor runout	<a href="#">BR-11, "DISC ROTOR : Inspection", BR-12, "DISC ROTOR : Inspection"</a>		
Shimmy, Shudder	×	Rotor deformation	—		
	×	Rotor deflection	—		
	×	Rotor rust	—		
	×	Rotor thickness variation	<a href="#">BR-11, "DISC ROTOR : Inspection", BR-12, "DISC ROTOR : Inspection"</a>		
	×	Drum out of round	<a href="#">PB-6, "Inspection"</a>		
	×	WHEEL HUB	<a href="#">FAX-3, "NVH Troubleshooting Chart", RAX-3, "NVH Troubleshooting Chart"</a>		
	×	SUSPENSION	<a href="#">FSU-4, "NVH Troubleshooting Chart", RSU-3, "NVH Troubleshooting Chart"</a>		
	×	AXLE	<a href="#">FAX-3, "NVH Troubleshooting Chart" (front axle), RAX-3, "NVH Troubleshooting Chart" (rear axle)</a>		
	×	TIRES	<a href="#">WT-49, "NVH Troubleshooting Chart"</a>		
	×	ROAD WHEEL	<a href="#">WT-49, "NVH Troubleshooting Chart"</a>		
	×	DRIVE SHAFT	<a href="#">FAX-3, "NVH Troubleshooting Chart"</a>		
	×	STEERING	<a href="#">ST-29, "NVH Troubleshooting Chart"</a>		

x: Applicable

# BRAKE PEDAL

< BASIC INSPECTION >

## BASIC INSPECTION

### BRAKE PEDAL

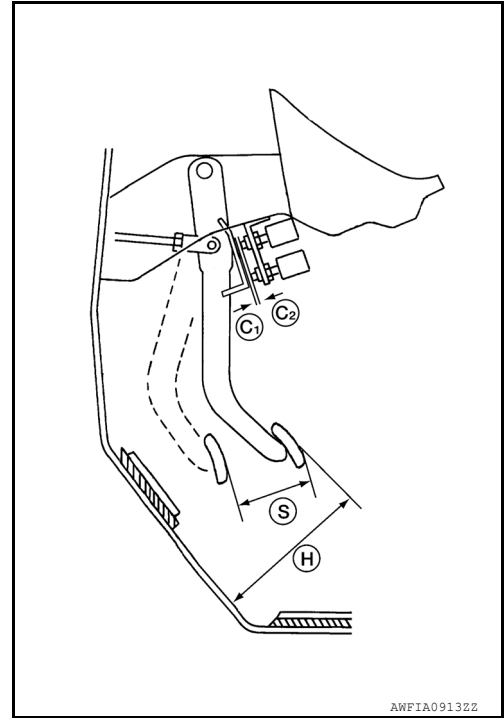
#### Inspection

INFOID:000000008571543

1. Inspect the brake pedal height (H) from the floor using Tool at a 90° angle to the floor.

**Tool number : — (J-46532)**

2. Adjust the brake pedal height to specifications. Refer to [BR-13, "Inspection and Adjustment"](#).



Brake Pedal Specifications

Brake pedal height (H) (from dash lower panel top surface)	Refer to <a href="#">BR-48, "Brake Pedal"</a> .
Brake pedal full stroke (S)	Refer to <a href="#">BR-48, "Brake Pedal"</a> .
Clearance between stopper bracket (C1) and threaded end of the stop lamp switch and ASCD cancel switch (C2)	Refer to <a href="#">BR-48, "Brake Pedal"</a> .

# BRAKE FLUID

## < BASIC INSPECTION >

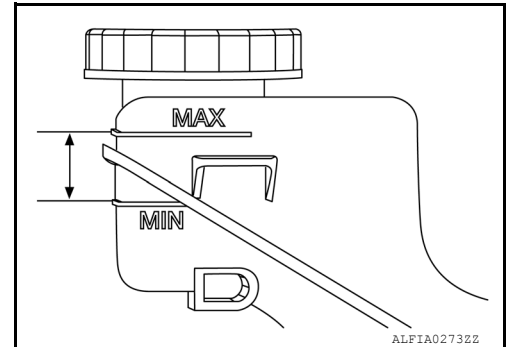
### BRAKE FLUID

#### Inspection

INFOID:000000008571547

#### BRAKE FLUID LEVEL

- Make sure that the brake fluid level in the reservoir tank is between the MAX and MIN lines.
- Visually check around the reservoir tank for brake fluid leakage.
- If the brake fluid level is excessively low, check the brake system for leakage.
- If brake warning lamp remains illuminated after parking brake pedal is released, check the brake system for brake fluid leakage.

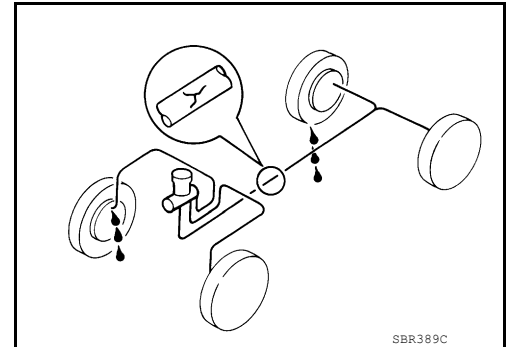


#### BRAKE LINE

1. Check brake line (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.
2. Check for brake fluid leakage by depressing brake pedal under a force of 785 N (80 kg-f, 177 lb-ft) for approximately 5 seconds while engine is running.

#### **CAUTION:**

**If brake fluid leakage occurs around joints, retighten or replace damaged parts as necessary.**





BRAKE MASTER CYLINDER

< BASIC INSPECTION >

BRAKE MASTER CYLINDER

Inspection

INFOID:0000000008571550

Check for brake fluid leakage at the following areas:

- Master cylinder mounting face
- Reservoir tank mounting face
- Brake tube and brake tube connections
- Brake hose and brake hose connections

If any brake fluid leakage is found, repair as necessary.

On Board Inspection

INFOID:0000000007988988

LEAK INSPECTION

Check for leaks in the master cylinder installation surface, reservoir tank installation surface, and brake pipe and hose connections.

- A
- B
- C
- D
- E
- BR
- G
- H
- I
- J
- K
- L
- M
- N
- O
- P

BR

# BRAKE BOOSTER

## < BASIC INSPECTION >

### BRAKE BOOSTER

#### Inspection

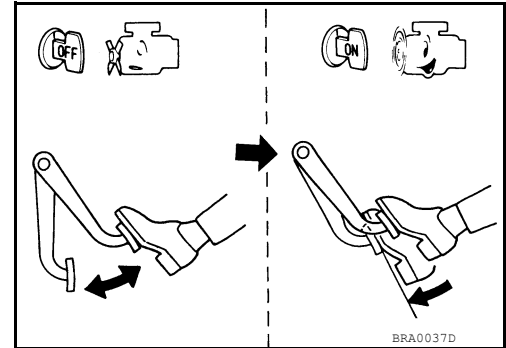
INFOID:000000008571551

##### Operation

Depress the brake pedal several times at five second intervals with the engine stopped. Start the engine with the brake pedal fully depressed. Check that the clearance between brake pedal and dash lower panel decreases.

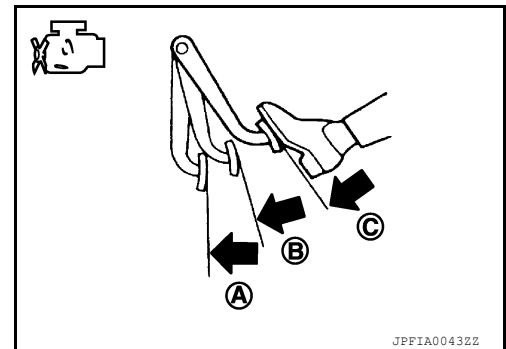
##### NOTE:

A slight impact with a small click may be felt on the pedal when the brake pedal is fully depressed. This is normal brake system operation.



##### Vacuum Inspection

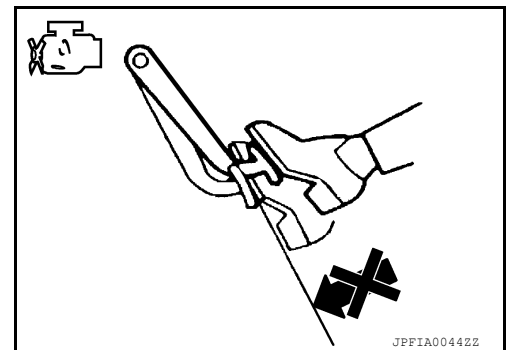
Idle the engine for one minute to apply vacuum to the brake booster. Stop the engine. Depress the brake pedal several times at five second intervals until the accumulated vacuum is released to atmospheric pressure. Check that the clearance between brake pedal and dash lower panel gradually increases (A → B → C) each time the brake pedal is depressed during this operation.



Depress the brake pedal with the engine running. Then stop the engine while holding down the brake pedal. Check that the brake pedal stroke does not change after holding down the brake pedal for 30 seconds or more.

##### NOTE:

A slight impact with a small click may be felt on the pedal when the brake pedal is fully depressed. This is normal brake system operation.



# FRONT DISC BRAKE

< BASIC INSPECTION >

## FRONT DISC BRAKE

### BRAKE PAD

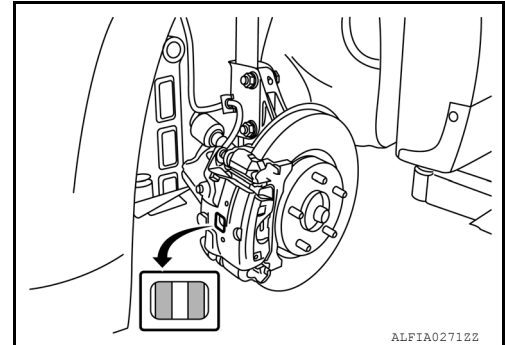
#### BRAKE PAD : Inspection

INFOID:000000007988983

#### PAD WEAR

Check brake pad thickness from an inspection hole on caliper body.  
Check using a scale if necessary.

**Wear limit thickness** : Refer to [BR-49, "Front Disc Brake"](#).



### DISC ROTOR

#### DISC ROTOR : Inspection

INFOID:000000008619862

#### APPEARANCE

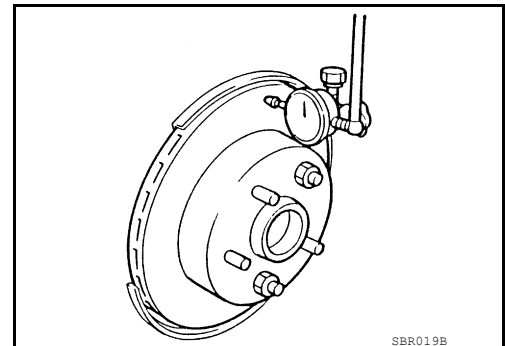
Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

#### RUNOUT

1. Check the wheel bearing axial end play before the inspection. Refer to [FAX-7, "Inspection"](#).
2. Secure the disc rotor to the wheel hub and bearing assembly with wheel nuts at two wheel nut locations.
3. Inspect the runout with a dial gauge, measured at 10 mm (0.39 in) inside the disc edge.

**Runout** : Refer to [BR-49, "Front Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc rotor-to-wheel hub and bearing assembly installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc rotor if the runout is outside the limit even after performing the above operation. When refinishing, use Tool.



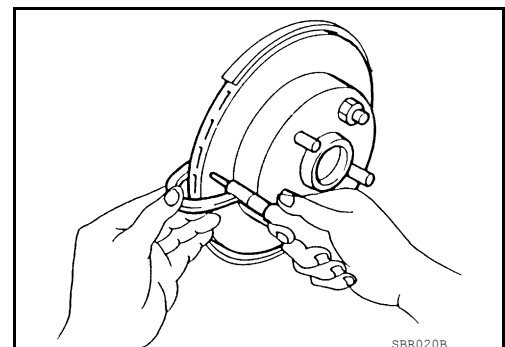
**Tool number** : 38-PFM90.5 ( — )

#### THICKNESS

Check the thickness of the disc rotor using a micrometer. Replace the disc rotor if the thickness is below the wear limit.

**Wear thickness** : Refer to [BR-49, "Front Disc Brake"](#).

**Thickness variation** : Refer to [BR-49, "Front Disc Brake"](#).



# REAR DISC BRAKE

## < BASIC INSPECTION >

### REAR DISC BRAKE

#### BRAKE PAD

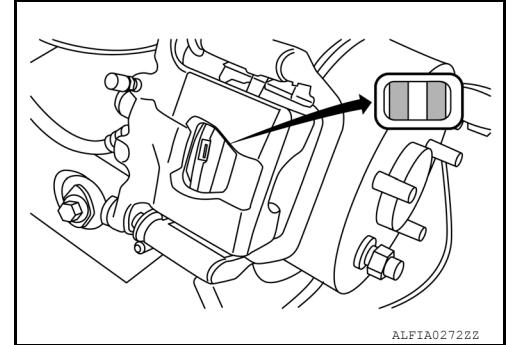
##### BRAKE PAD : Inspection

INFOID:000000007988985

##### PAD WEAR

Check pad thickness from an inspection hole on caliper body. Check using a scale if necessary.

**Wear limit thickness** : Refer to [BR-49, "Rear Disc Brake"](#).



#### DISC ROTOR

##### DISC ROTOR : Inspection

INFOID:000000008619864

##### APPEARANCE

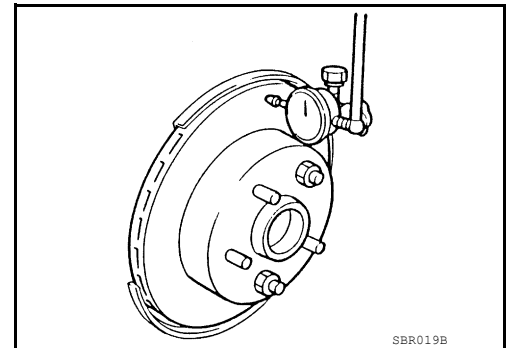
Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

##### RUNOUT

1. Check the wheel bearing axial end play before the inspection. Refer to [RAX-8, "Wheel Hub Bearing"](#).
2. Secure the disc rotor to the wheel hub and bearing assembly with wheel nuts at two wheel nut locations.
3. Inspect the runout with a dial gauge, measured at 10 mm (0.39 in) inside the disc edge.

**Runout** : Refer to [BR-49, "Rear Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc rotor-to-wheel hub and bearing assembly installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc rotor if the runout is outside the limit even after performing the above operation. When refinishing, use Tool.



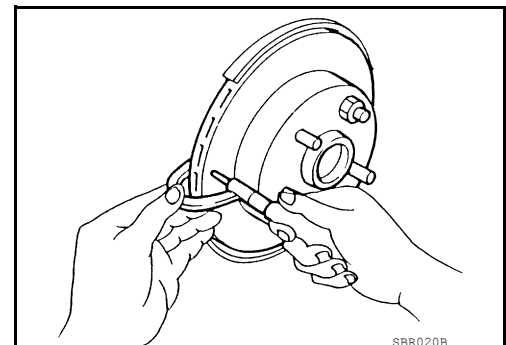
**Tool number** : 38-PFM90.5 ( — )

##### Thickness

Check the thickness of the disc rotor using a micrometer. Replace the disc rotor if the thickness is below the minimum thickness.

**Minimum thickness** : Refer to [BR-49, "Rear Disc Brake"](#).

**Thickness variation** : Refer to [BR-49, "Rear Disc Brake"](#).



# BRAKE PEDAL

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

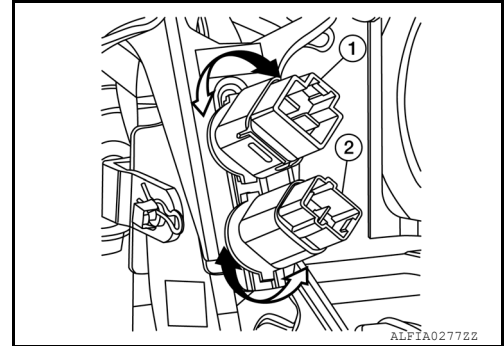
### BRAKE PEDAL

#### Inspection and Adjustment

INFOID:000000007988992

#### ADJUSTMENT

1. Loosen the stop lamp switch (2) and ASCD cancel switch (1) by turning each counterclockwise by 45°.

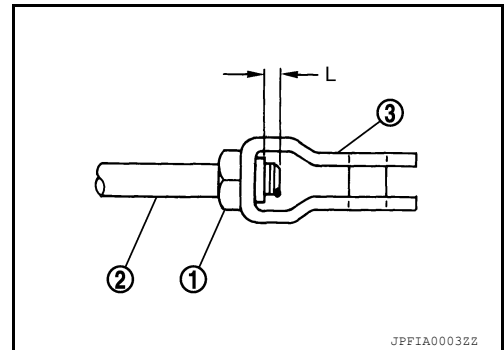


2. Loosen lock nut (1) on the input rod (2), then turn input rod to adjust the brake pedal height to specification, and tighten lock nut (1).

**Lock nut torque** : Refer to [BR-27, "Exploded View"](#).

**CAUTION:**

**Make sure the threaded end of input rod stays inside clevis (3).**



3. With the pedal pulled up and held by hand, press the stop lamp switch (1) and ASCD cancel switch (2) until the threaded end contacts the brake pedal bracket.
4. With the threaded end of the stop lamp switch (1) and ASCD cancel switch (2) contacting the brake pedal bracket, rotate the switch clockwise by 45° to secure.

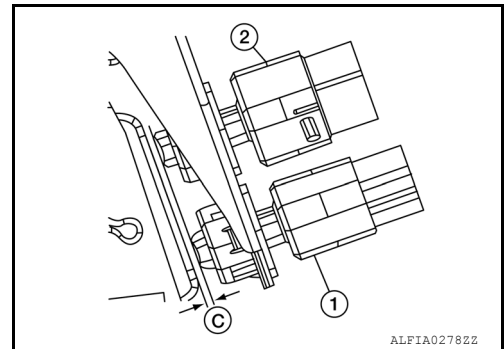
**CAUTION:**

**Make sure that the clearance (C) between brake pedal bracket and end of stop lamp switch (1) and ASCD cancel switch (2) is within the standard. Refer to [BR-48, "Brake Pedal"](#).**

5. Check the brake pedal for smooth operation.

**CAUTION:**

**Make sure that stop lamps are off when the brake pedal is released.**



# BRAKE FLUID

< PERIODIC MAINTENANCE >

## BRAKE FLUID

### Drain and Refill

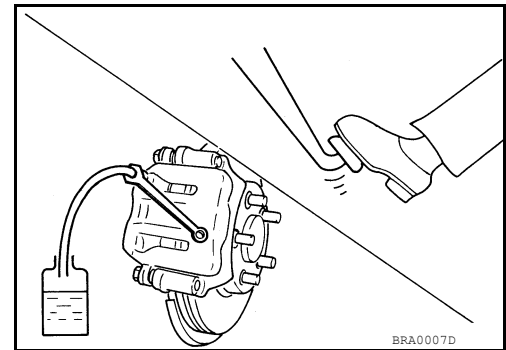
INFOID:000000008619936

#### CAUTION:

- Do not spill or splash brake fluid on painted surfaces. Brake fluid may damage paint. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Prior to repair, turn the ignition switch OFF, disconnect the ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-72, "Removal and Installation \(Battery\)"](#).
- Refill brake system with new brake fluid. Refer to [MA-20, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States), [MA-21, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).
- Do not reuse drained brake fluid.

### DRAINING

1. Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-72, "Removal and Installation \(Battery\)"](#).
2. Connect a vinyl tube to bleeder valve.
3. Depress brake pedal, loosen bleeder valve, and gradually remove brake fluid.



### REFILLING

1. Make sure no foreign material is in the reservoir, and refill with new brake fluid.

#### CAUTION:

**Do not reuse drained brake fluid.**

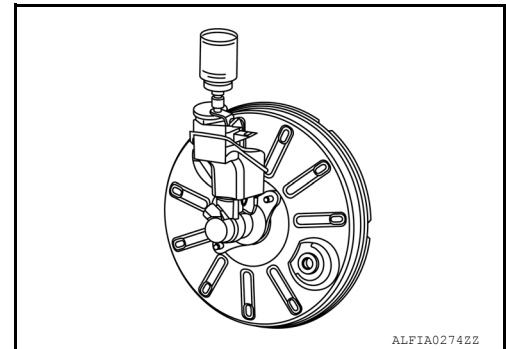
2. Refill the brake system as follows:
  - Depress the brake pedal.
  - Loosen bleeder valve.
  - Slowly depress brake pedal to 2/3 of the brake pedal full stroke.
  - Tighten bleeder valve.
  - Release brake pedal.

Repeat this operation at intervals of two or three seconds until all old brake fluid is discharged. Add new brake fluid to master cylinder reservoir sub tank frequently.

#### CAUTION:

**Do not allow master cylinder reservoir to empty as this may cause damage to master cylinder internal components.**

3. Bleed the air out of the brake hydraulic system. Refer to [BR-14, "Bleeding Brake System"](#).



### Bleeding Brake System

INFOID:000000007988995

### BLEEDING BRAKE SYSTEM

#### CAUTION:

- While bleeding, pay attention to master cylinder fluid level.
  - Prior to repair, turn the ignition switch OFF, disconnect the ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-72, "Removal and Installation \(Battery\)"](#).
1. Connect a vinyl tube to rear right brake caliper bleeder valve.
  2. Fully depress brake pedal 4 or 5 times.
  3. With brake pedal depressed, loosen bleeder valve to bleed air in brake line, and then tighten it immediately.

## BRAKE FLUID

### < PERIODIC MAINTENANCE >

---

4. Repeat steps 2 and 3 until all of the air is out of the brake line.
5. Tighten the bleeder valve to the specified torque. Refer to [BR-34. "BRAKE CALIPER ASSEMBLY : Exploded View"](#) (front disc brake) or [BR-39. "BRAKE CALIPER ASSEMBLY : Exploded View"](#) (rear disc brake).
6. Repeat steps 1 to 5, for the remaining brake calipers with master cylinder reservoir tank filled at least half-way, bleed air from brake hydraulic line bleeder valves in the following order:  
Rear right brake→Front left brake→Rear left brake→Front right brake

A

B

C

D

E

BR

G

H

I

J

K

L

M

N

O

P

## FRONT DISC BRAKE

< PERIODIC MAINTENANCE >

---

### FRONT DISC BRAKE

#### Brake Burnishing

INFOID:000000008571552

**CAUTION:**

- **Burnish contact surfaces between brake pads and disc brake rotor according to the following procedure after refinishing the disc brake rotor, replacing brake pads or if a soft pedal occurs at very low mileage.**
  - **Be careful of vehicle speed. Brakes do not operate firmly/securely until pads and disc rotor are securely seated.**
  - **Only perform this procedure under safe road and traffic conditions. Use extreme caution.**
1. Drive the vehicle on straight, flat road.
  2. Depress the brake pedal until the vehicle stops.
  3. Release the brake pedal for a few minutes to allow the brake components to cool.
  4. Repeat steps 1 to 3 until pad and disc rotor are securely seated.



# REAR DISC BRAKE

< PERIODIC MAINTENANCE >

## REAR DISC BRAKE

### Brake Burnishing

INFOID:000000008571553

#### CAUTION:

- Burnish contact surfaces between brake pads and disc brake rotor according to the following procedure after refinishing the disc brake rotor, replacing brake pads or if a soft pedal occurs at very low mileage.
  - Be careful of vehicle speed. Brakes do not operate firmly/securely until pads and disc rotor are securely seated.
  - Only perform this procedure under safe road and traffic conditions. Use extreme caution.
1. Drive the vehicle on straight, flat road.
  2. Depress the brake pedal until the vehicle stops.
  3. Release the brake pedal for a few minutes to allow the brake components to cool.
  4. Repeat steps 1 to 3 until pad and disc rotor are securely seated.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

BR

# BRAKE PEDAL

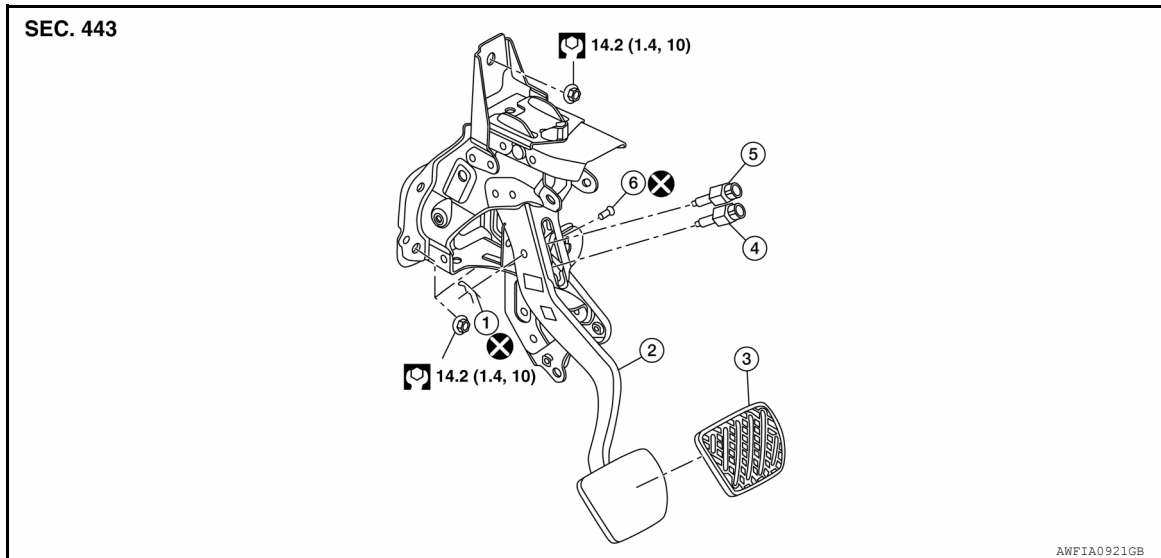
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### BRAKE PEDAL

#### Exploded View

INFOID:000000007988996



- |                     |                         |                    |
|---------------------|-------------------------|--------------------|
| 1. Snap pin         | 2. Brake pedal assembly | 3. Brake pedal pad |
| 4. Stop lamp switch | 5. ASCD cancel switch   | 6. Clevis pin      |

#### Removal and Installation

INFOID:000000007988997

##### REMOVAL

1. Remove the instrument lower panel LH. Refer to [IP-14, "Exploded View"](#).
2. Remove the accelerator pedal. Refer to [ACC-3, "Removal and Installation"](#).
3. Disconnect the stop lamp switch and ASCD cancel switch connector.
4. Remove the stop lamp switch and ASCD cancel switch from the brake pedal assembly.
5. Remove the snap pin and clevis pin to disconnect the brake booster clevis from the brake pedal assembly.  
**CAUTION:**  
**Do not reuse the snap pin and clevis pin.**
6. Disconnect the steering column assembly pinch bolt to position the steering column assembly aside. Refer to [ST-33, "Exploded View"](#).
7. Remove the brake pedal assembly nuts.  
**NOTE:**  
Remove the top brake pedal assembly nut first.
8. Remove the electrical harness from the brake pedal assembly.
9. Remove the brake pedal assembly.

##### INSTALLATION

Installation is in the reverse order of removal.

- Tighten the lock nut to the specified torque. Refer to [BR-27, "Exploded View"](#).
- Adjust the brake pedal height after installing the brake pedal assembly. Refer to [BR-13, "Inspection and Adjustment"](#).

##### **CAUTION:**

**Do not reuse the snap pin and clevis pin.**

##### **NOTE:**

The clevis pin must be installed from the right side as shown above.

# BRAKE PIPING

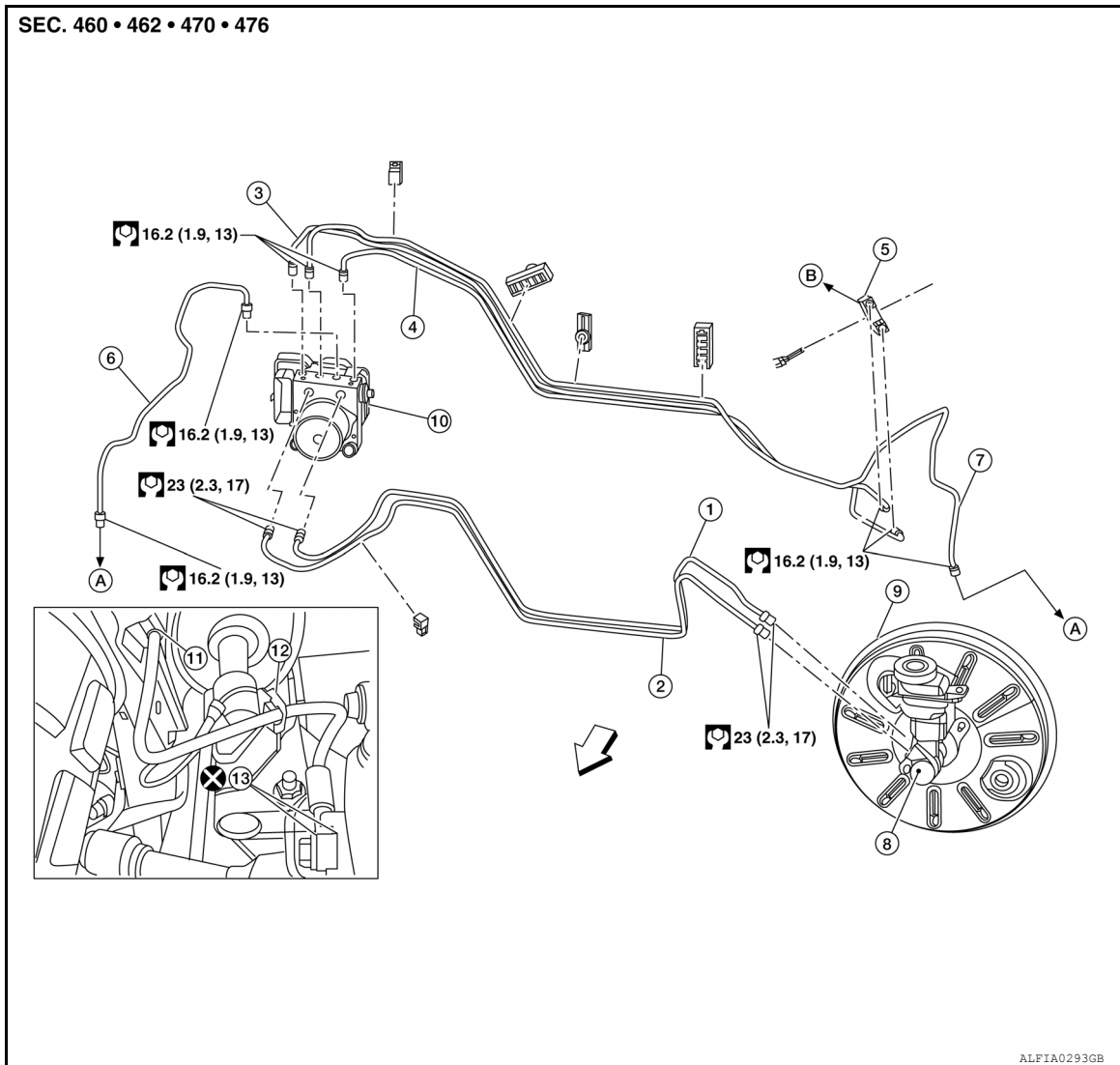
< REMOVAL AND INSTALLATION >

## BRAKE PIPING

### FRONT

### FRONT : Exploded View

INFOID:000000008599599



- |   |  |   |
|---|--|---|
| 1. Master cylinder brake pipe assembly - rear         | 2. Master cylinder brake pipe assembly - front | 3. ABS actuator to connector brake pipe assembly - RH |
| 4. ABS actuator to connector brake pipe assembly - LH | 5. Brake pipe connector                        | 6. Brake pipe assembly - RH front                     |
| 7. Brake pipe assembly - LH front                     | 8. Master cylinder assembly                    | 9. Brake booster                                      |
| 10. ABS actuator and electric unit (control unit)     | 11. Lock plate                                 | 12. Front brake hose                                  |
| 13. Copper sealing washer                             | A. To front brake hose                         | B. To rear brake pipe                                 |
- ⇐ Front

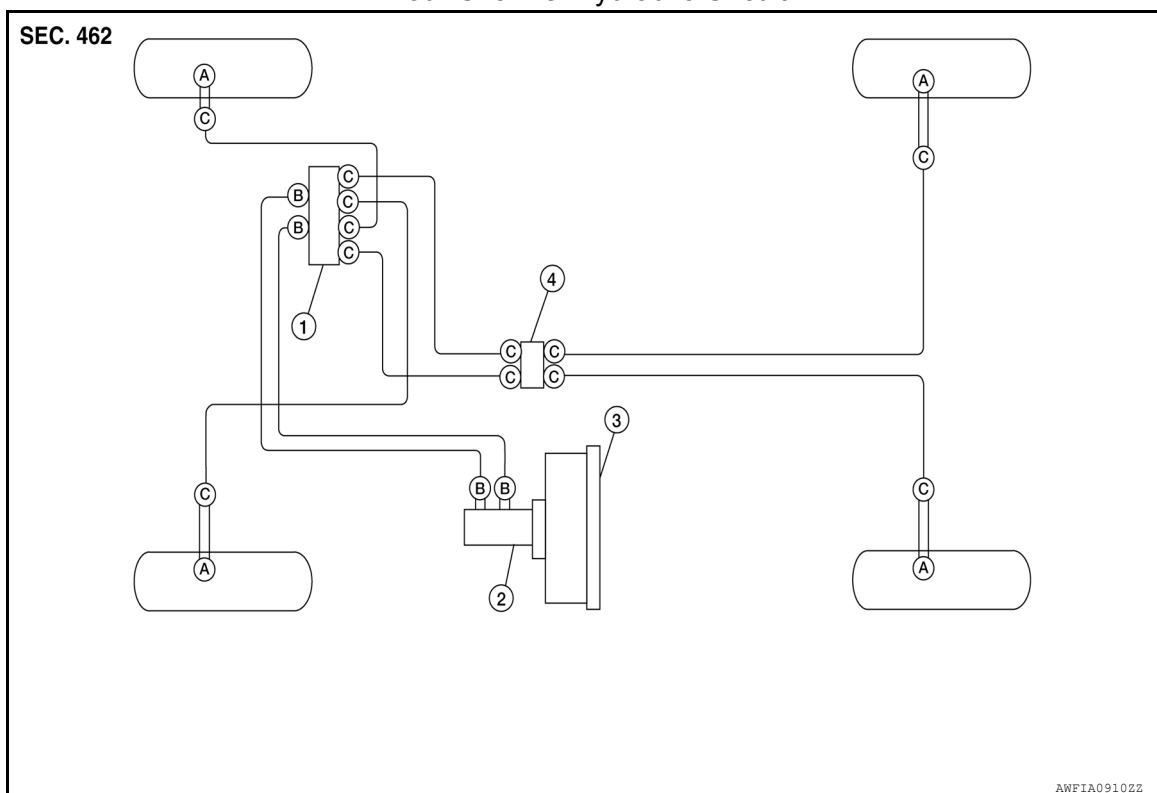
# BRAKE PIPING

< REMOVAL AND INSTALLATION >

## FRONT : Hydraulic Piping

INFOID:000000008599585

Four Channel Hydraulic Circuit



- |  |                    |                  |
|--|--------------------|------------------|
| 1. ABS actuator and electric unit (control unit) | 2. Master cylinder | 3. Booster       |
| 4. Connector                                     | A. Union bolt      | B. Flare nut M12 |
| C. Flare nut M10                                 |                    |                  |

### CAUTION:

- All hoses and piping (tubes) must be free from excessive bending, twisting and pulling.
- Make sure there is no interference with other parts when turning steering both clockwise and counterclockwise.
- The brake piping is an important safety part. If a brake fluid leak is detected, always disassemble the parts. Replace applicable part with a new one, if necessary.
- Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Do not bend or twist brake hose sharply, or strongly pull it.
- When removing components, cover connections so that no dirt, dust, or other foreign matter gets in.
- Do not reuse drained brake fluid.
- After installation of the ABS actuator and electric unit (control unit), refill brake system with new brake fluid. Then bleed the air from the system. Refer to [BR-14, "Bleeding Brake System"](#).

## FRONT : Removal and Installation

INFOID:000000008599591

### REMOVAL

#### CAUTION:

- Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Cover the open end of brake tubes and brake hoses when disconnecting to prevent entrance of dirt.

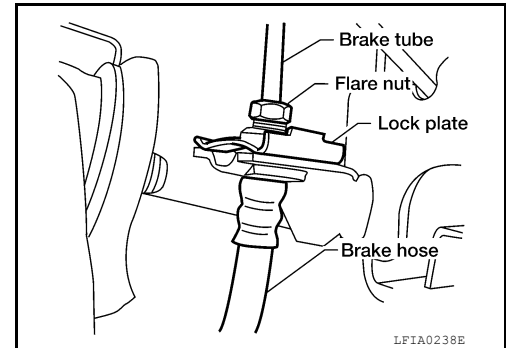
#### NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

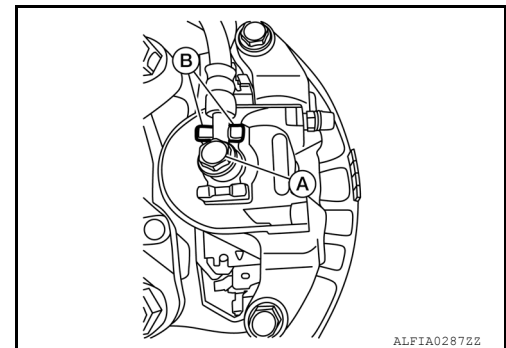
# BRAKE PIPING

## < REMOVAL AND INSTALLATION >

1. Remove the wheel and tire using power tool.
2. Drain brake fluid. Refer to [BR-14, "Drain and Refill"](#).
3. Disconnect the brake hose from brake tube using a suitable tool and then remove the lock plate.



4. Remove the union bolt (A) and remove brake hose from caliper assembly. Discard the copper sealing washers.
  - Protrusions (B)**CAUTION:**  
**Do not reuse the copper sealing washers.**
5. Remove the brake hose.



## INSTALLATION

### **CAUTION:**

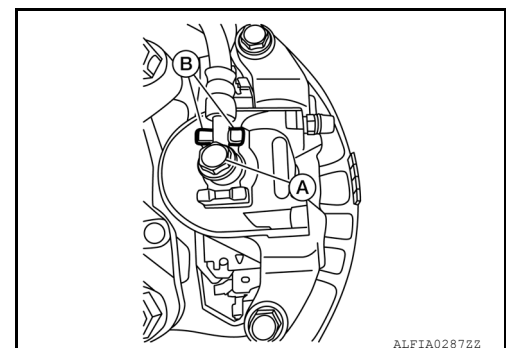
- All brake hoses and brake tubes must be free from excessive bending, twisting and pulling.
- Make sure that there is no interference with other parts when turning steering both clockwise and counterclockwise.
- Brake tubes and brake hoses are an important safety part. Always disassemble the parts and retighten their fittings if a brake fluid leak is detected. Replace applicable part with a new one, if damaged part is detected.
- Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Refill with new brake fluid "DOT 3".
- Do not reuse drained brake fluid.

1. Assemble the union bolt and new copper sealing washers on the brake hose.

### **CAUTION:**

**Do not reuse the copper sealing washers.**

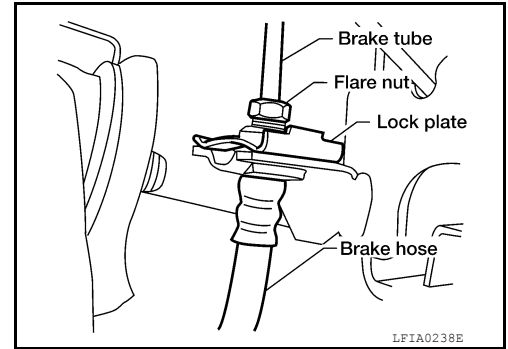
2. Install brake hose by aligning the brake hose with the protrusion (B) on brake caliper assembly as shown. Tighten union bolt (A) to the specified torque. Refer to [BR-19, "FRONT : Exploded View"](#).



# BRAKE PIPING

## < REMOVAL AND INSTALLATION >

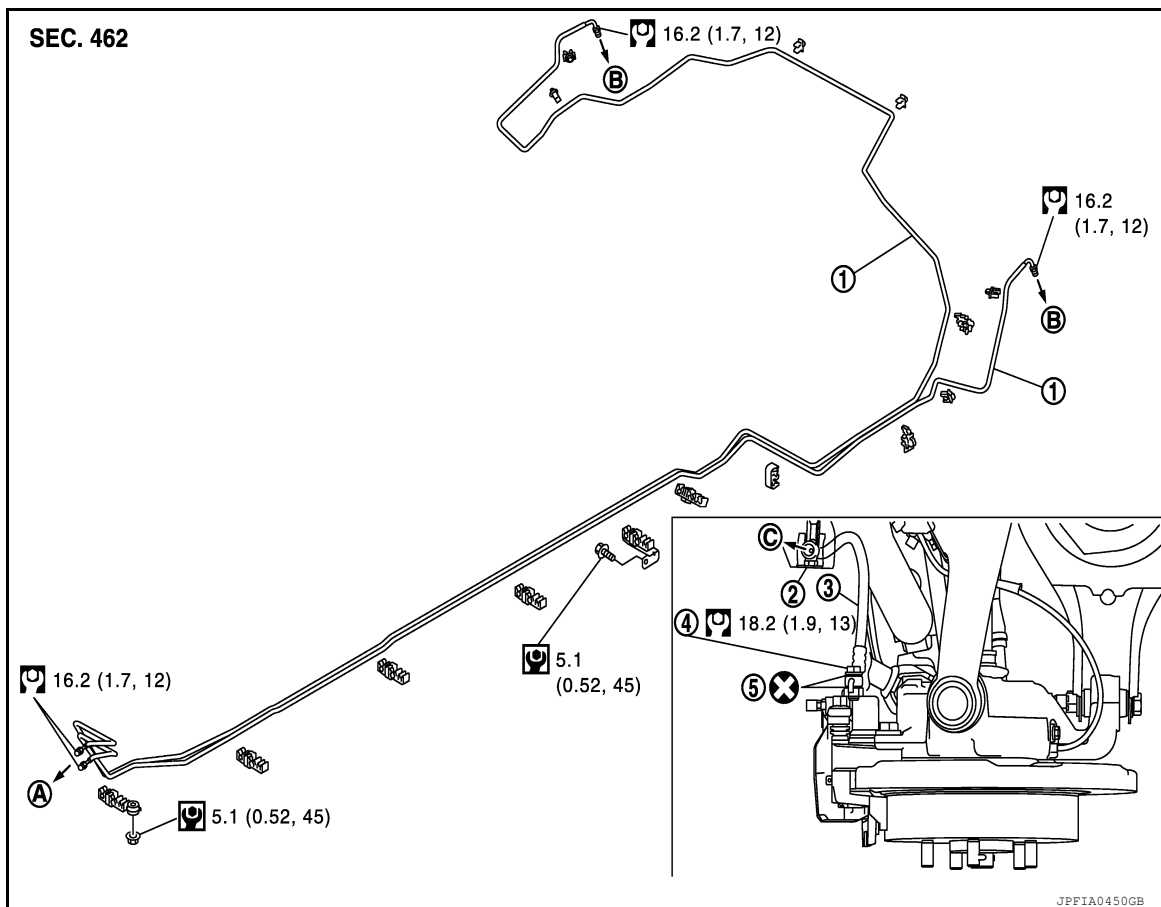
3. Connect brake hose to brake tube, partially tighten flare nut by hand as much as possible, then secure it to the bracket with lock plate.
4. Using a suitable tool, tighten flare nut to the specified torque. Refer to [BR-19, "FRONT : Exploded View"](#).
5. Refill brake fluid and bleed air. Refer to [BR-14, "Bleeding Brake System"](#).
6. Install the wheel and tire. Refer to [WT-57, "Road Wheel"](#).



## REAR

### REAR : Exploded View

INFOID:000000008620022



- |                                  |                                  |               |
|----------------------------------|----------------------------------|---------------|
| 1. Rear brake pipe assembly - RH | 2. Rear brake pipe assembly - LH | 3. Brake hose |
| 4. Union bolt                    | 5. Copper sealing washers        | 6. Lock plate |
| A. To brake pipe connector       | B. To rear brake hose            |               |

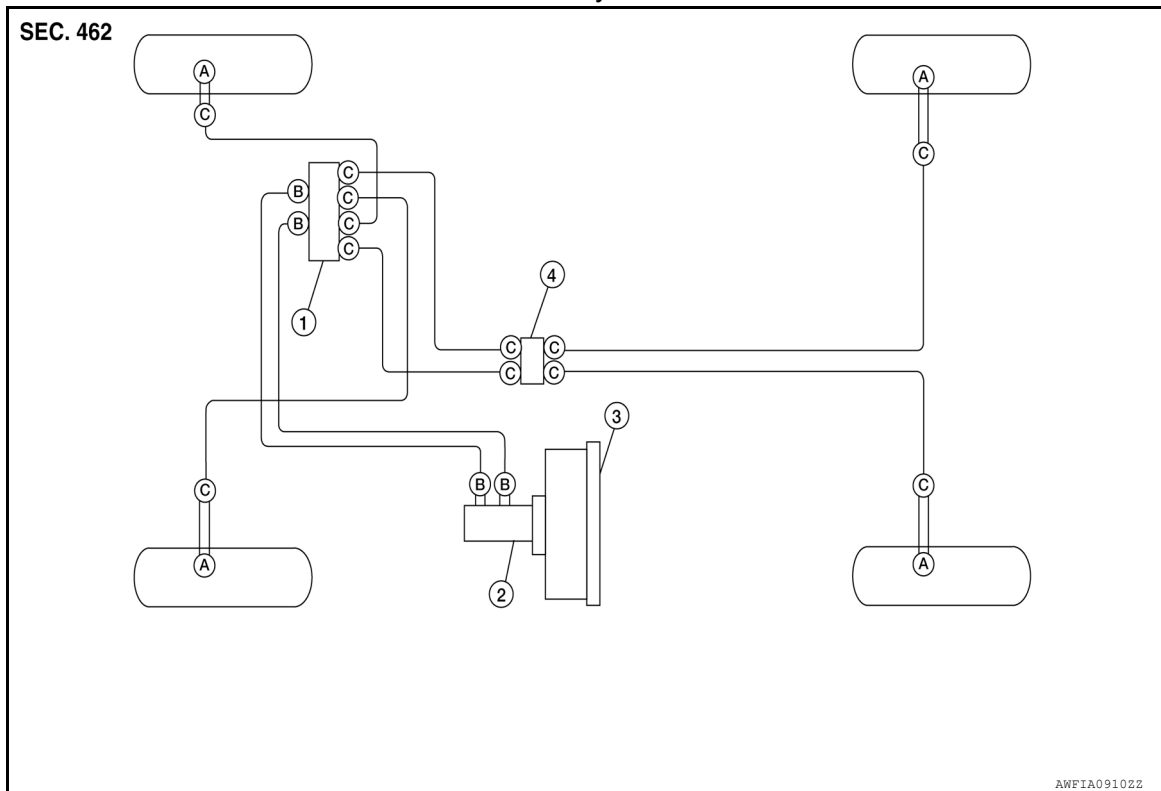
# BRAKE PIPING

< REMOVAL AND INSTALLATION >

## REAR : Hydraulic Piping

INFOID:0000000008599586

Four Channel Hydraulic Circuit



- |  |                    |                  |
|--|--------------------|------------------|
| 1. ABS actuator and electric unit (control unit) | 2. Master cylinder | 3. Booster       |
| 4. Connector                                     | A. Union bolt      | B. Flare nut M12 |
| C. Flare nut M10                                 |                    |                  |

### CAUTION:

- All hoses and piping (tubes) must be free from excessive bending, twisting and pulling.
- Make sure there is no interference with other parts when turning steering both clockwise and counterclockwise.
- The brake piping is an important safety part. If a brake fluid leak is detected, always disassemble the parts. Replace applicable part with a new one, if necessary.
- Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Do not bend or twist brake hose sharply, or strongly pull it.
- When removing components, cover connections so that no dirt, dust, or other foreign matter gets in.
- Do not reuse drained brake fluid.
- After installation of the ABS actuator and electric unit (control unit), refill brake system with new brake fluid. Then bleed the air from the system. Refer to [BR-14, "Bleeding Brake System"](#).

## REAR : Removal and Installation

INFOID:0000000008620070

### NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

### REMOVAL

1. Remove wheels and tires using power tool.
2. Drain brake fluid. Refer to [BR-14, "Drain and Refill"](#).
3. Loosen the flare nut with a flare nut wrench and separate the brake tube from the hose.

### CAUTION:

- Do not scratch the flare nut and the brake pipe.

## BRAKE PIPING

### < REMOVAL AND INSTALLATION >

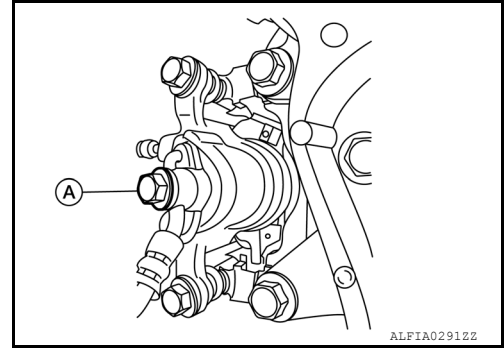
- All brake hoses and pipes must be free from excessive bending, twisting and pulling.

4. Remove the union bolt (A) and the brake hose from the brake caliper. Remove and discard the copper sealing washers.

**CAUTION:**

**Do not reuse copper sealing washers.**

5. Remove the lock plate and remove the brake hose.



### INSTALLATION

**CAUTION:**

**Do not allow foreign matter (e.g., dust) and oils other than brake fluid to enter the reservoir tank.**

1. Assemble the union bolt (A) and the copper sealing washers (1) to the brake hose and install it as an assembly to the brake caliper. Align the brake hose L-pin by aligning it with the brake caliper hole, and tighten the union bolt (A) to the specified torque.

**CAUTION:**

**Do not reuse copper sealing washers.**

2. Install the brake pipe to the brake hose, temporarily tighten the flare nut by hand until it does not rotate further, and attach the brake hose to the bracket with the lock plate.

**CAUTION:**

**Check that the brake hoses and pipes are not bent or twisted.**

3. Tighten the flare nut to the specified torque with a flare nut torque wrench. Refer to [BR-22, "REAR : Exploded View"](#).

**CAUTION:**

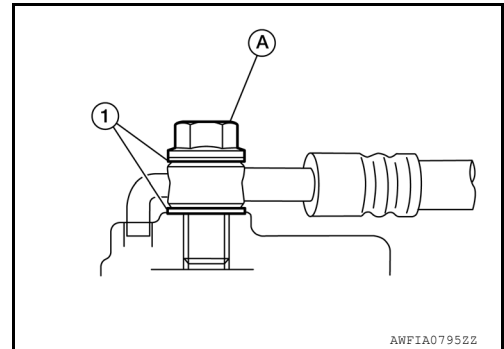
**Do not scratch the flare nut and the brake pipe.**

4. Refill with new brake fluid and perform air bleeding. Refer to [BR-14, "Bleeding Brake System"](#).

**CAUTION:**

**Do not reuse drained brake fluid.**

5. Install the wheels and tires. Refer to [WT-57, "Road Wheel"](#).
6. Perform inspection after installation. Refer to [BR-12, "BRAKE PAD : Inspection"](#).





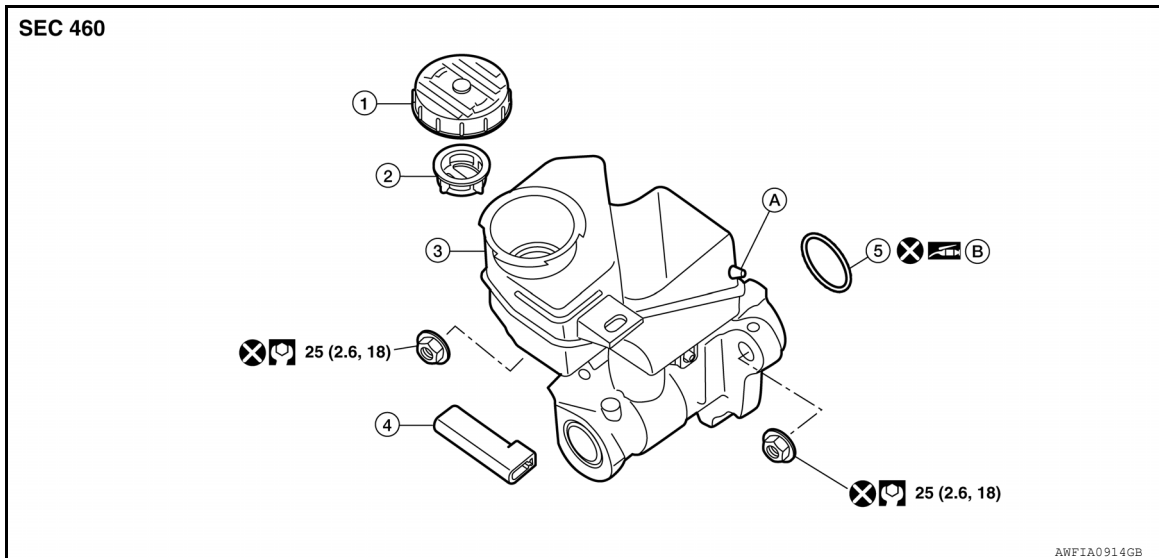
# BRAKE MASTER CYLINDER

< REMOVAL AND INSTALLATION >

## BRAKE MASTER CYLINDER

### Exploded View

INFOID:000000007989001



- |  |                        |                             |
|--|------------------------|-----------------------------|
| 1. Reservoir cap   | 2. Oil strainer (blue) | 3. Master cylinder assembly |
| 4. Brake fluid level switch                                  | 5. O-ring              | A. To clutch (if equipped)  |
| B. PBC (Poly Butyl Cuprysil) grease or silicone-based grease |                        |                             |

### Removal and Installation

INFOID:000000007989002

#### CAUTION:

- Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Do not scratch the piston of master cylinder when installing/removing because the piston is exposed. Check for any dust on the piston, and wash with brake fluid if needed.
- Hold the master cylinder body when handling the master cylinder assembly. Do not hold the piston because the piston might become detached if pulled strongly.
- Refill the reservoir tank with new brake fluid "DOT 3".
- Do not reuse drained brake fluid.
- Do not reuse master cylinder O-ring.

#### NOTE:

When removing brake hoses or brake tubes, cap or plug openings to prevent brake fluid from spilling.

#### REMOVAL

1. Drain the brake fluid. Refer to [BR-14, "Drain and Refill"](#).
2. Remove air cleaner assembly and air ducts. Refer to [EM-29, "Removal and Installation"](#) (QR25DE) or [EM-144, "Removal and Installation"](#) (VQ35DE).
3. Disconnect the brake fluid level switch harness connector and remove.
4. Disconnect the master cylinder brake tubes using a suitable tool.

#### NOTE:

When removing the master cylinder assembly cover or plug brake tube holes after removal to ensure that no brake fluid gets on painted surfaces during removal.

5. Remove the master cylinder assembly nuts.
6. Remove the master cylinder assembly.

#### INSTALLATION

Installation is in the reverse order of removal.

## BRAKE MASTER CYLINDER

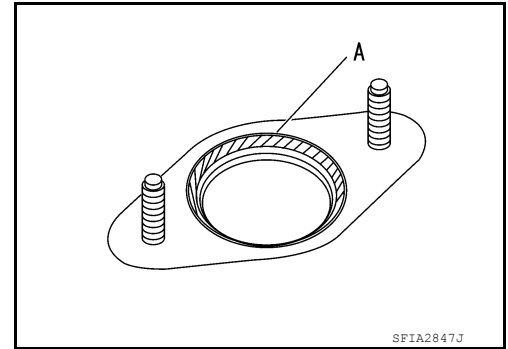
### < REMOVAL AND INSTALLATION >

- Apply PBC (Poly Butyl Cuprysil) grease or silicone-based grease to brake booster at (A) position as shown. Be sure the O-ring is in the proper position before installing the master cylinder to the brake booster.

**CAUTION:**

**Do not reuse master cylinder O-ring.**

- Tighten brake tube flare nut to the specified torque using a suitable tool. Refer to [BR-20, "FRONT : Hydraulic Piping"](#).
- Check the brake pedal height after installing the brake master cylinder assembly. Refer to [BR-7, "Inspection"](#).
- Refill with new brake fluid and bleed air. Refer to [BR-14, "Bleeding Brake System"](#).





# BRAKE BOOSTER

## < REMOVAL AND INSTALLATION >

### INSTALLATION

1. Loosen lock nut (1) to adjust input rod (2) length so that length (B) is at the specified value.

**Length (B)** : Refer to [BR-49, "Brake Booster"](#).

2. After adjusting (B), temporarily tighten lock nut to install booster assembly. Make sure that a gasket is installed between the brake booster and dash panel.

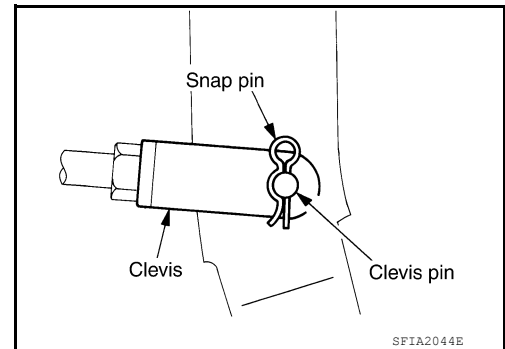
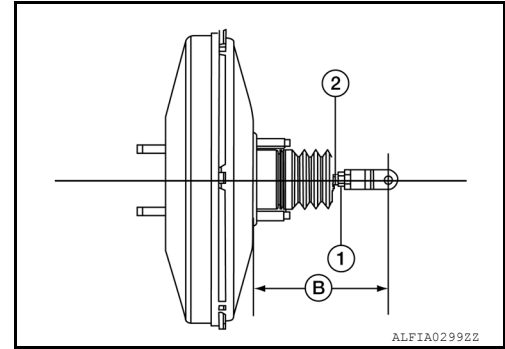
**CAUTION:**

**Always install a gasket between the brake booster and dash panel.**

3. Install the brake pedal (VQ35DE only). Refer to [BR-18, "Removal and Installation"](#).
4. Install the accelerator pedal (VQ35DE only). Refer to [ACC-3, "Removal and Installation"](#).
5. Install the clevis (VQ35DE only).
6. Install a new snap pin and a new clevis pin (VQ35DE only).

**CAUTION:**

**Do not reuse the snap pin and clevis pin.**



7. Install the vacuum hose on the brake booster. Refer to [BR-27, "Exploded View"](#).
8. Install the cowl top and cowl top extension. Refer to [EXT-24, "Removal and Installation"](#).
9. Connect the fuel lines (VQ35DE only).
10. Install the master cylinder. Refer to [BR-25, "Removal and Installation"](#).
11. Adjust the brake pedal height. Refer to [BR-13, "Inspection and Adjustment"](#).
12. Tighten lock nut of input rod to the specified torque. Refer to [BR-27, "Exploded View"](#).
13. Refill with new brake fluid and bleed air. Refer to [BR-14, "Bleeding Brake System"](#).

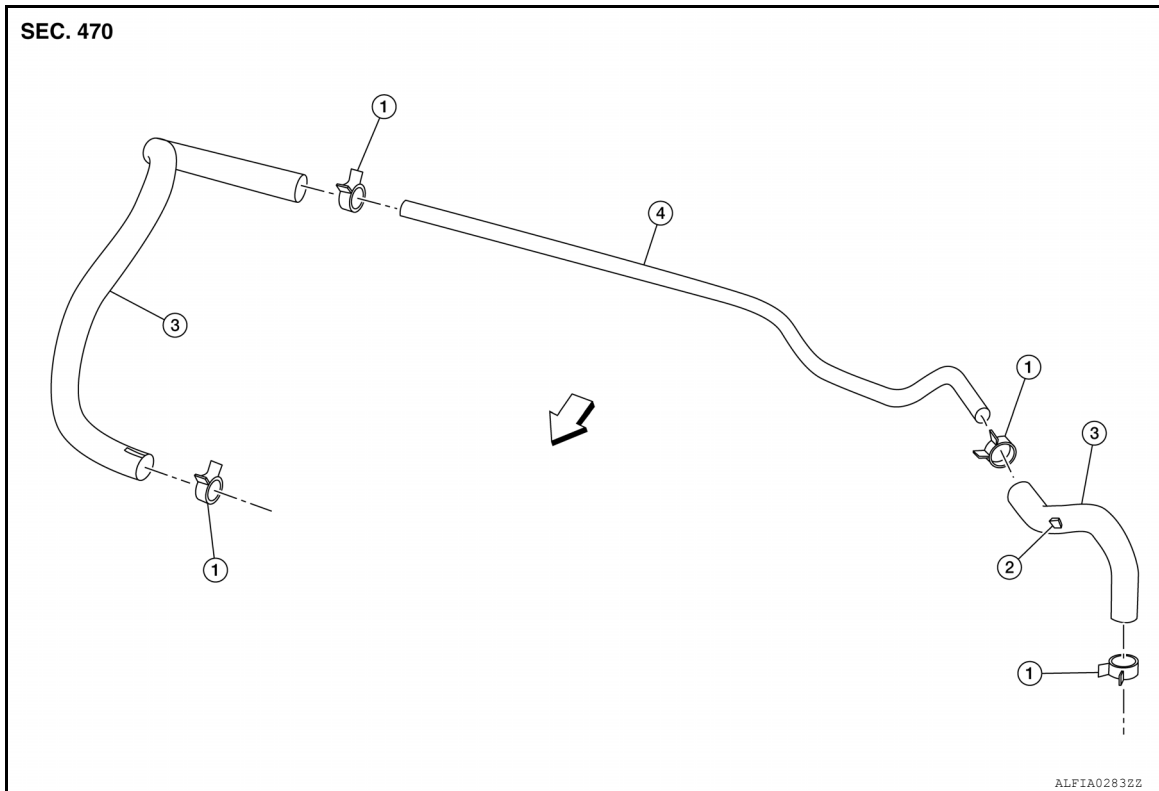
# VACUUM LINES

< REMOVAL AND INSTALLATION >

## VACUUM LINES

Exploded View- QR25DE

INFOID:000000008521045

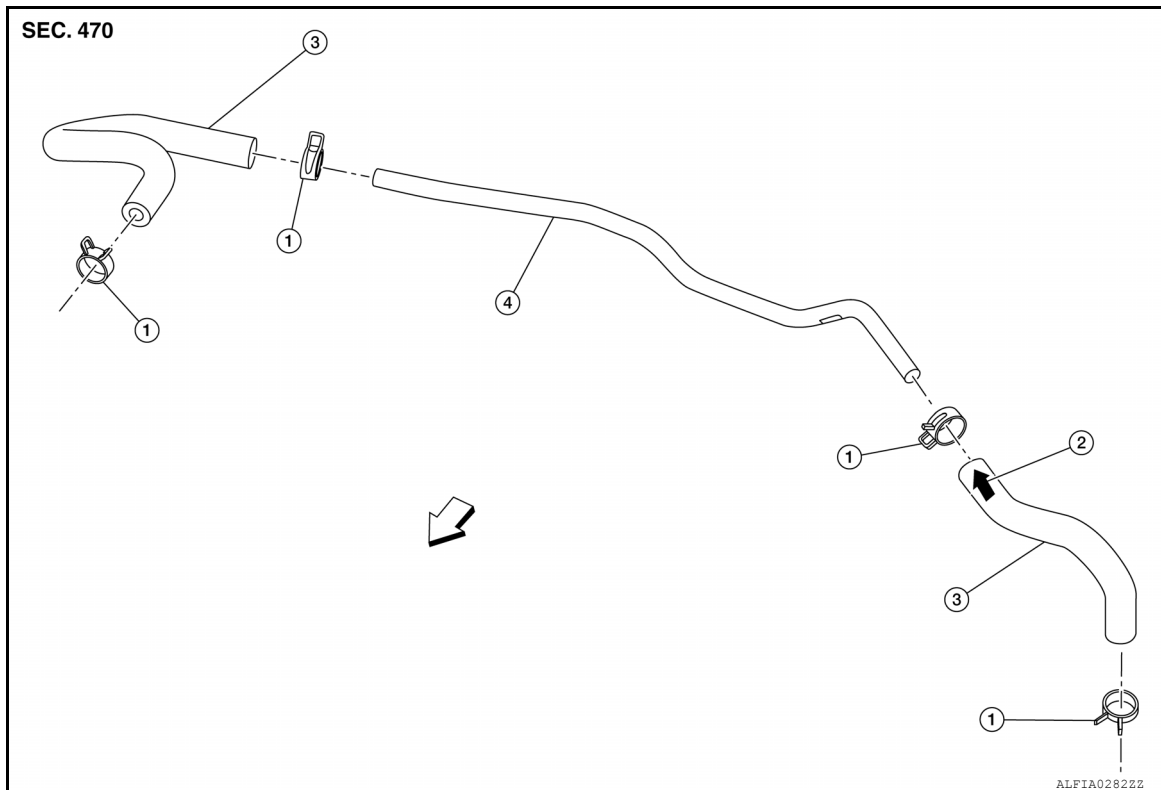


# VACUUM LINES

< REMOVAL AND INSTALLATION >

Exploded View- VQ35DE

INFOID:000000007989005



- |                  |                                |                |
|------------------|--------------------------------|----------------|
| 1. Clamp         | 2. Check valve direction stamp | 3. Vacuum hose |
| 4. Vacuum piping | ← Front                        |                |

## Removal and Installation

INFOID:000000007989006

### REMOVAL

1. Disconnect the vacuum hose from the brake booster.
2. Disconnect the vacuum hose from the engine intake manifold.
3. Remove the vacuum hose.

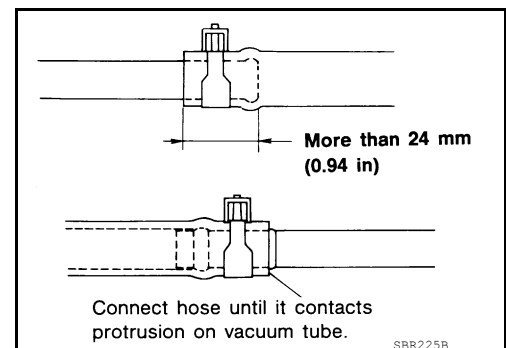
### INSTALLATION

Installation is in the reverse order of removal.

- Inspect the vacuum hose and one-way check valve before installation. Refer to [BR-31, "Inspection After Removal"](#).

#### CAUTION:

- Because the vacuum hose contains a one-way check valve, the hose must be installed in the correct position. Refer to the stamp on the hose to confirm the correct direction for installation. The brake booster will not operate normally if the hose is installed in the wrong direction.
- Do not use lubricating oil during assembly.
- Insert the vacuum hose at least 24 mm (0.94 in) onto the brake booster fitting as shown.



# VACUUM LINES

## < REMOVAL AND INSTALLATION >

### Inspection After Removal

INFOID:000000007989007

#### VISUAL

Check for correct assembly, damage and deterioration.

#### CHECK VALVE AIRTIGHTNESS

- Use a suitable tool (A) to check the one-way valve from each end of the hose.

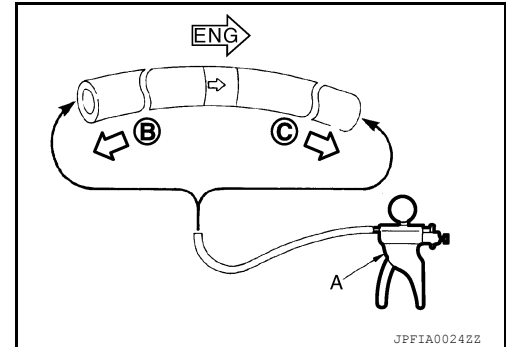
**When connected to the  
booster side (B)**

**: Refer to [BR-49, "Check  
Valve"](#)**

**When connected to the  
engine side (C)**

**: Refer to [BR-49, "Check  
Valve"](#)**

- Replace the vacuum hose assembly if the vacuum hose and check valve are malfunctioning.



## FRONT DISC BRAKE

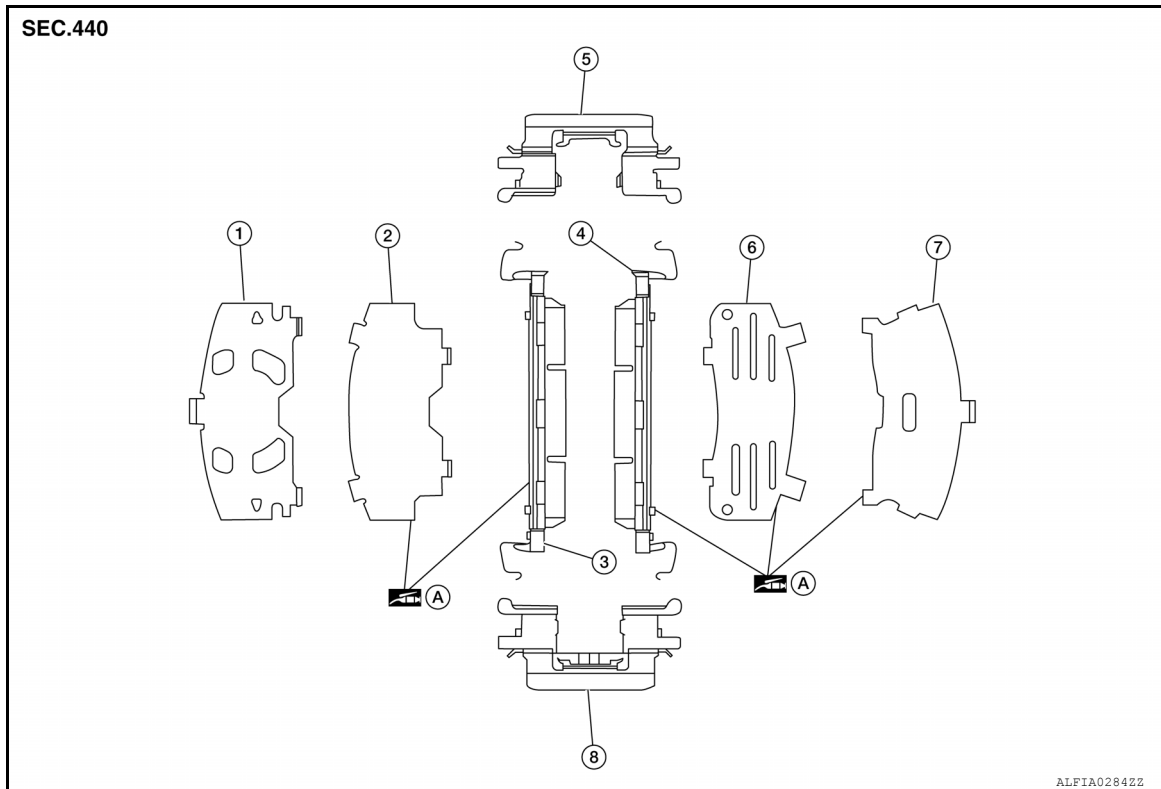
< REMOVAL AND INSTALLATION >

### FRONT DISC BRAKE

#### BRAKE PAD

#### BRAKE PAD : Exploded View

INFOID:000000007989008



- |                         |                       |                            |
|-------------------------|-----------------------|----------------------------|
| 1. Inner shim cover     | 2. Inner shim         | 3. Inner pad               |
| 4. Outer pad            | 5. Pad retainer upper | 6. Outer shim              |
| 7. Outer shim cover     | 8. Pad retainer lower | A. Molykote AS-880N grease |
| B. Molykote 7439 grease |                       |                            |

#### BRAKE PAD : Removal and Installation

INFOID:000000007989009

##### **WARNING:**

Clean dust on brake calipers and brake pads with a vacuum dust collector to minimize the hazard of airborne particles or other materials.

##### **CAUTION:**

- While removing brake caliper, do not depress brake pedal because piston will pop out.
- It is not necessary to remove bolts from torque member and brake hose except for disassembly or replacement of brake caliper assembly. In this case, hang brake caliper with a wire so as not to stretch brake hose.
- Do not damage piston boot.
- If any shim is subject to serious corrosion, replace it with a new one.
- Always replace shim and shim cover as a set when replacing brake pads.
- Keep brake rotor and brake pads free from brake fluid and grease.
- Burnish the brake pads and disc brake rotor mutually contacting surfaces after refinishing or replacing disc brake rotors, after replacing brake pads, or if a soft pedal occurs at very low mileage. Refer to [BR-16, "Brake Burnishing"](#).

#### REMOVAL

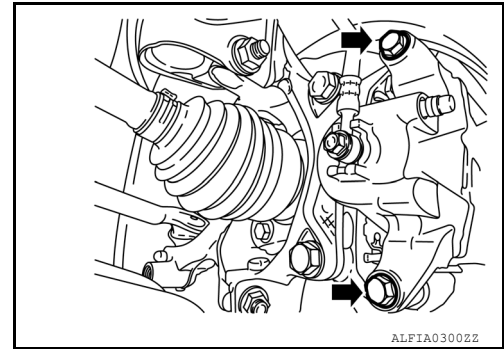
1. Remove the front wheel and tires using power tool. Refer to [WT-52, "Adjustment"](#).



## FRONT DISC BRAKE

### < REMOVAL AND INSTALLATION >

2. Remove lower sliding pin bolt.



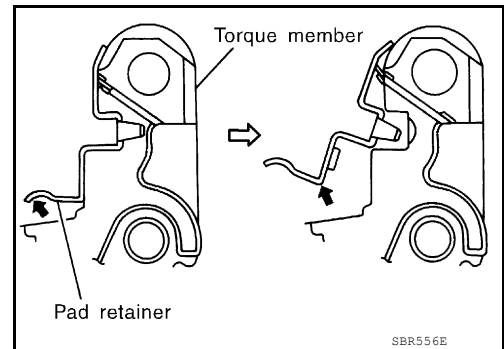
3. Remove the brake caliper from the torque member. Leaving the brake hose attached, reposition the brake caliper aside with wire.

#### NOTE:

Do not reuse brake pad retainers.

#### CAUTION:

When removing the brake pad retainers from the torque member, lift it in the direction indicated by the arrow as shown so that it does not deform.



### INSTALLATION

1. Apply Molykote AS-880N grease or equivalent between the outer brake pad, outer shim cover and outer shim and the inner shim and inner brake pad. Install outer shim, outer shim cover to outer brake pad, and inner shim, inner shim cover to inner brake pad.
2. Apply Molykote 7439 grease or equivalent between pad retainers and pad ends. Install brake pad retainers and brake pads on torque member.

#### CAUTION:

• Securely assemble brake pad retainers so that they are not being lifted up from torque member.

3. Press in piston until brake pads can be installed, and then install brake caliper to torque member.

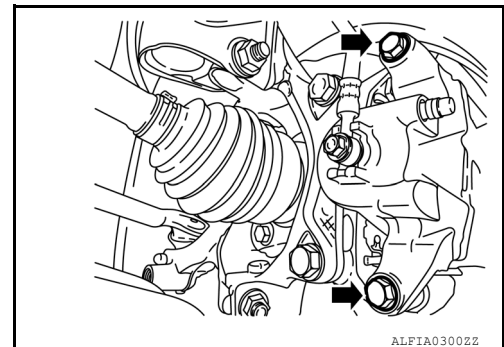
#### CAUTION:

When replacing brake pads with new ones, check brake fluid level in the reservoir tank because brake fluid returns to master cylinder reservoir tank when pressing piston in.

#### NOTE:

Use a disc brake piston tool (commercial service tool) to easily press piston.

4. Install lower sliding pin bolt, and tighten it to the specified torque. Refer to [BR-34, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).
5. Burnish contact surface between brake pads and disc brake rotors. Refer to [BR-16, "Brake Burnishing"](#).
6. Check front disc brake for drag.
7. Install the front wheel and tires. Refer to [WT-52, "Adjustment"](#).



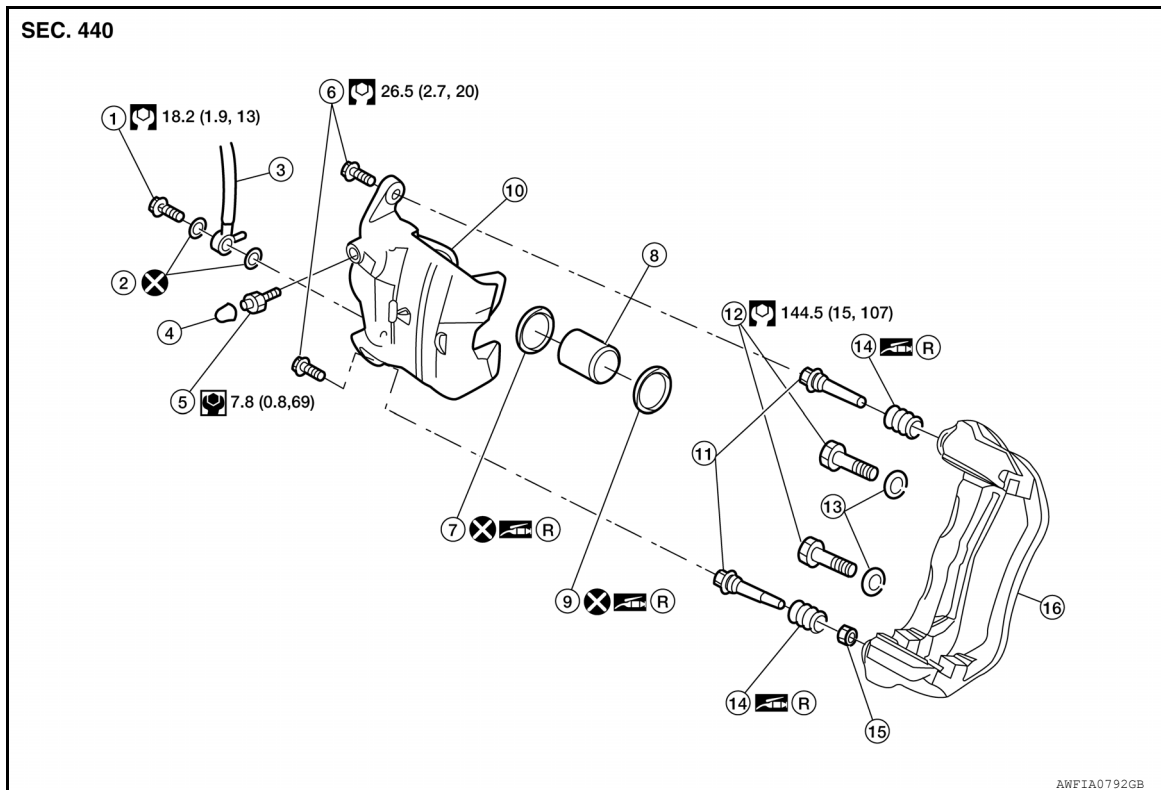
### BRAKE CALIPER ASSEMBLY

# FRONT DISC BRAKE

< REMOVAL AND INSTALLATION >

## BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000007989011



- |                   |                          |                        |
|-------------------|--------------------------|------------------------|
| 1. Union bolt     | 2. Copper sealing washer | 3. Brake hose          |
| 4. Cap            | 5. Bleeder valve         | 6. Sliding pin bolt    |
| 7. Piston seal    | 8. Piston                | 9. Piston boot         |
| 10. Brake caliper | 11. Sliding pin          | 12. Torque member bolt |
| 13. Washer        | 14. Sliding pin boot     | 15. Bushing            |
| 16. Torque member | R. Rubber grease         |                        |

## BRAKE CALIPER ASSEMBLY : Removal and Installation

INFOID:000000007989012

### WARNING:

Clean dust on brake calipers and brake pads with a vacuum dust collector to minimize the hazard of airborne particles or other materials.

### CAUTION:

- While removing brake caliper, do not depress the brake pedal because the piston will pop out.
- Do not damage piston boot.
- Keep disc brake rotor free from brake fluid.
- Refill the brake reservoir with new brake fluid "DOT 3".
- Do not reuse drained brake fluid.

### NOTE:

When removing brake hoses or tubes, cap or plug openings to prevent brake fluid from spilling.

### REMOVAL

1. Remove front wheel and tires using power tool. Refer to [WT-52, "Adjustment"](#).
2. Drain brake fluid. Refer to [BR-14, "Drain and Refill"](#).

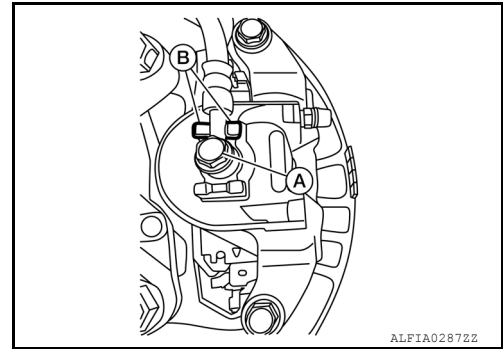
## FRONT DISC BRAKE

### < REMOVAL AND INSTALLATION >

3. Remove union bolt (A) and remove brake hose from brake caliper assembly. Discard the copper sealing washers.
  - Protrusions (B)

**CAUTION:**

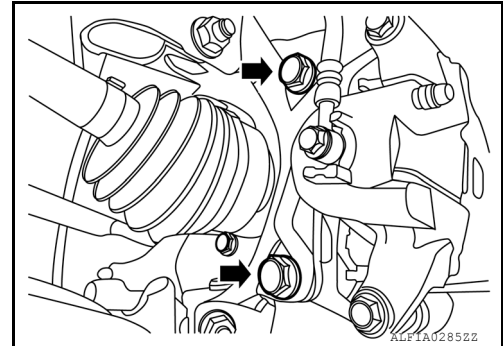
**Do not reuse copper sealing washers.**



4. Remove torque member bolts, and remove brake caliper assembly.

**CAUTION:**

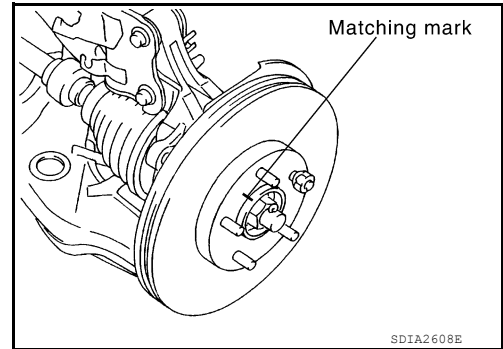
**Do not drop brake pads.**



5. Remove disc brake rotor. If reusing the disc brake rotor apply matching marks as shown.

**CAUTION:**

**Put matching marks on wheel hub assembly and disc brake rotor, if it is necessary to remove disc brake rotor.**

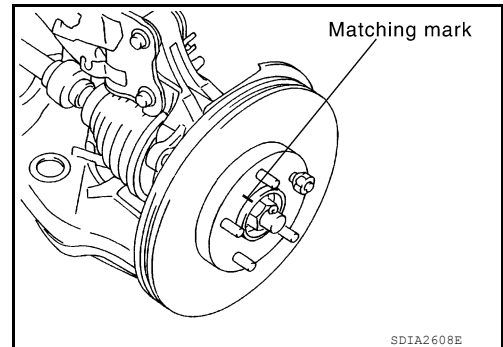


### INSTALLATION

1. Install disc brake rotor, align the matching marks if installing the original disc brake rotor as shown.

**CAUTION:**

**Align the marks on disc brake rotor and wheel hub at the time of installation when reusing disc brake rotor.**



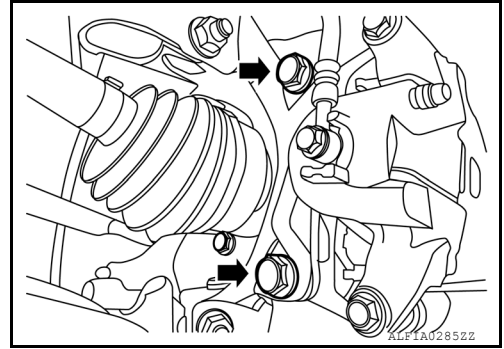
## FRONT DISC BRAKE

### < REMOVAL AND INSTALLATION >

2. Install brake caliper assembly to vehicle, and tighten torque member bolts to the specified torque. Refer to [BR-34, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).

**CAUTION:**

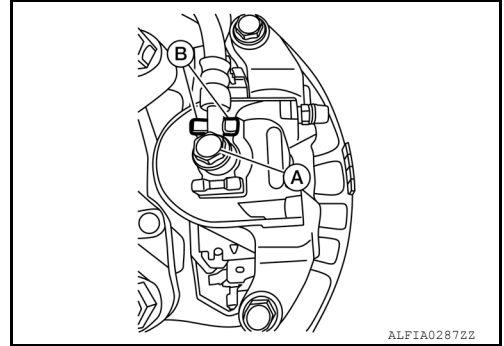
Do not allow oil or any moisture on all contact surfaces between steering knuckle and brake caliper assembly, bolts, and washer.



3. Install brake hose to brake caliper assembly with new copper sealing washers. Align the brake hose tab between the protrusions (B) on the brake caliper assembly as shown. Tighten union bolt (A) to the specified torque. Refer to [BR-34, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).

**CAUTION:**

Do not reuse copper sealing washers.



4. Refill with new brake fluid and bleed air from the brake hydraulic system. Refer to [BR-14, "Bleeding Brake System"](#).
5. Check front disc brakes for drag.
6. Install front wheel and tires. Refer to [WT-52, "Adjustment"](#).

# REAR DISC BRAKE

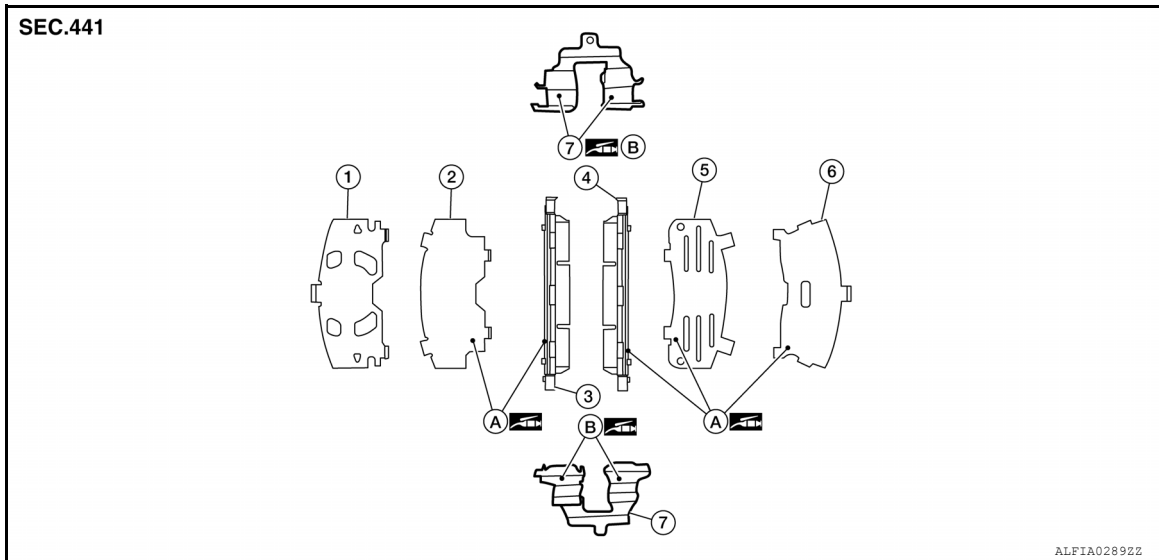
< REMOVAL AND INSTALLATION >

## REAR DISC BRAKE

### BRAKE PAD

#### BRAKE PAD : Exploded View

INFOID:000000007989013



- |                         |                       |                            |
|-------------------------|-----------------------|----------------------------|
| 1. Inner cover shim     | 2. Inner shim         | 3. Inner pad               |
| 4. Outer pad            | 5. Outer shim         | 6. Outer shim cover        |
| 7. Pad retainer upper   | 8. Pad retainer lower | B. Molykote AS-880N grease |
| B. Molykote 7439 grease |                       |                            |

#### BRAKE PAD : Removal and Installation

INFOID:000000007989014

#### **WARNING:**

Clean dust on brake calipers and brake pads with a vacuum dust collector to minimize the hazard of airborne particles or other materials.

#### **CAUTION:**

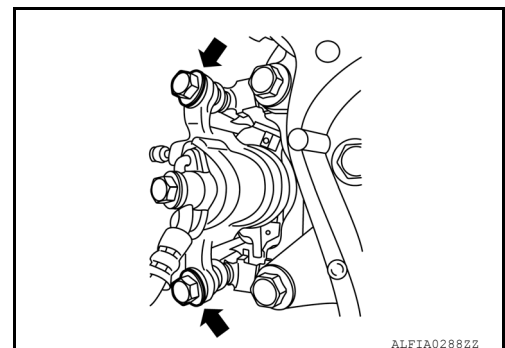
- While removing brake caliper, do not depress brake pedal because piston will pop out.
- Do not damage piston boot.
- If any shim is subject to serious corrosion, replace it with a new one.
- Always replace shim and shim covers as a set when replacing brake pads.
- Keep disc brake rotors and brake pads free from brake fluid and grease.
- Burnish the brake pads and disc brake rotors mutually contacting surfaces after refinishing or replacing disc brake rotors, after replacing brake pads, or if a soft pedal occurs at very low mileage. Refer to [BR-17, "Brake Burnishing"](#).

#### REMOVAL

1. Remove rear wheel and tires using power tool. Refer to [WT-52, "Adjustment"](#).
2. Remove sliding pin bolts and position the brake caliper aside with wire.

#### **CAUTION:**

Do not twist or stretch the brake hose.



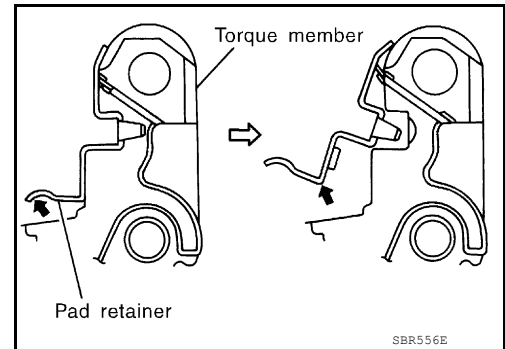
## REAR DISC BRAKE

### < REMOVAL AND INSTALLATION >

3. Remove brake pads, brake pad retainers, shims and shim covers.

**CAUTION:**

When removing the brake pad retainers from the torque member, lift it in the direction indicated by the arrow as shown so that it does not deform.



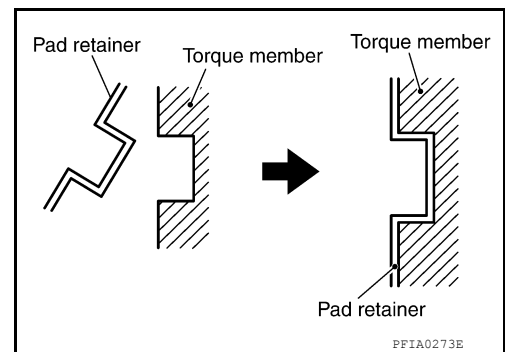
### INSTALLATION

1. Apply Molykote AS-880N grease or equivalent to the brake caliper fingers, between the shims and brake pads. Install inner shim to inner brake pad, and outer shim to outer brake pad.
2. Apply Molykote AS-880N grease to the brake pad retainer as shown.

3. Attach brake pad retainers to torque member, then install brake pads, shims and shim cover assemblies.

**CAUTION:**

When attaching brake pad retainers, attach it firmly so that it is flush with torque member as shown.



4. Using a suitable tool, press in piston until brake pads can be installed, and then install brake caliper to torque member.

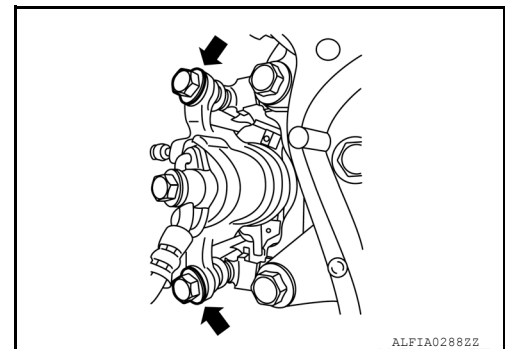
**CAUTION:**

When replacing brake pads with new ones, check brake fluid level in the reservoir tank because brake fluid returns to master cylinder reservoir tank when pressing piston in.

**NOTE:**

Use a disc brake piston tool (commercial service tool) to easily press piston.

5. Install sliding pin bolts and tighten to the specified torque. Refer to [xBR-39. "BRAKE CALIPER ASSEMBLY : Exploded View"](#).
6. Burnish contact surface between brake pads and the disc brake rotor. Refer to [BR-17. "Brake Burnishing"](#).
7. Check rear disc brake for drag.
8. Install rear wheel and tires. Refer to [WT-52. "Adjustment"](#).



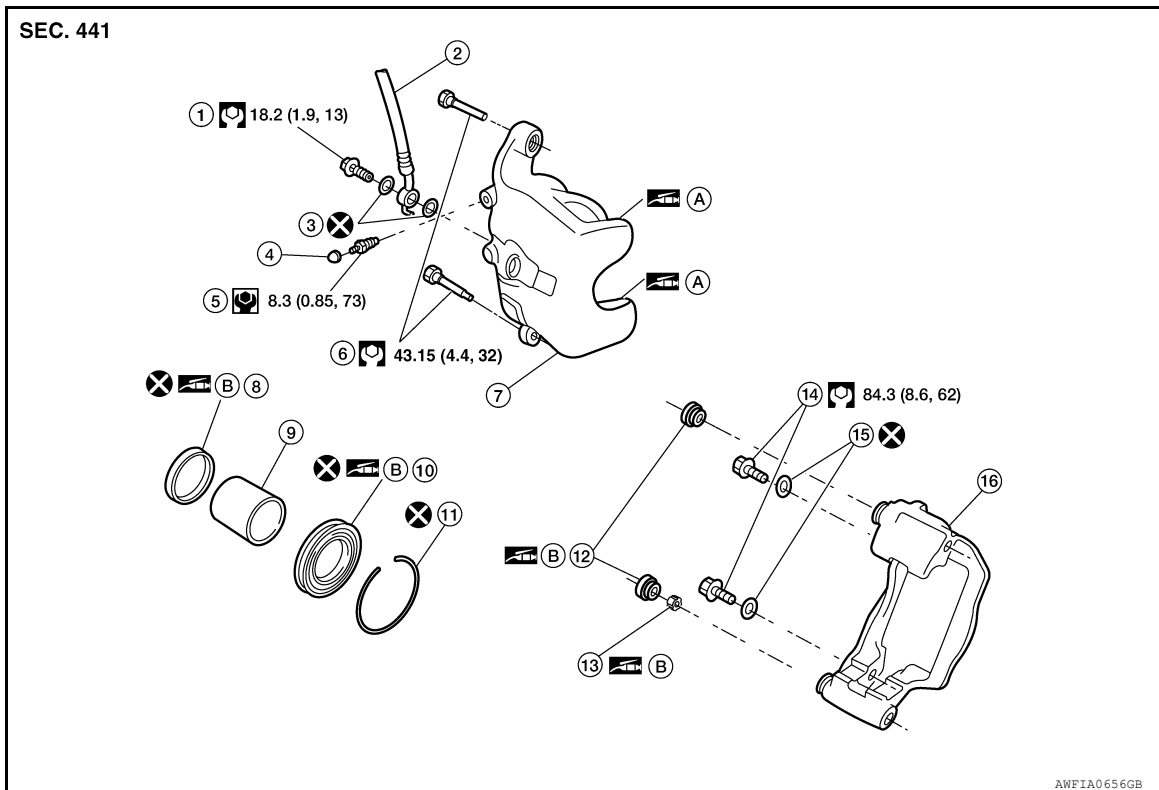
### BRAKE CALIPER ASSEMBLY

# REAR DISC BRAKE

< REMOVAL AND INSTALLATION >

## BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000007989015



- |                   |                            |                          |
|-------------------|----------------------------|--------------------------|
| 1. Union bolt     | 2. Brake hose              | 3. Copper sealing washer |
| 4. Cap            | 5. Bleeder valve           | 6. Sliding pin bolt      |
| 7. Brake caliper  | 8. Piston seal             | 9. Piston                |
| 10. Piston boot   | 11. Retaining ring         | 12. Sliding pin boot     |
| 13. Bushing       | 14. Torque member bolt     | 15. Washer               |
| 16. Torque member | A. Molykote AS-880N grease | B. Rubber grease         |

## BRAKE CALIPER ASSEMBLY : Removal and Installation

INFOID:000000007989016

### WARNING:

Clean dust on brake calipers and brake pads with a vacuum dust collector to minimize the hazard of airborne particles or other materials.

### CAUTION:

- While removing brake caliper, do not depress brake pedal because the piston will pop out.
- Do not damage piston boot.
- Keep disc brake rotor free from brake fluid.
- Refill the brake reservoir with new brake fluid "DOT 3".
- Do not reuse drained brake fluid.

### NOTE:

When removing brake hoses or tubes, cap or plug openings to prevent fluid from spilling.

### REMOVAL

1. Remove rear wheel and tires using power tool. Refer to [WT-52. "Adjustment"](#).
2. Fasten disc brake rotor using a wheel nut.
3. Drain brake fluid. Refer to [BR-14. "Drain and Refill"](#).
4. Remove union bolt (A) and then remove brake hose from brake caliper. Discard the copper sealing washers.

### CAUTION:

Do not reuse copper sealing washers.



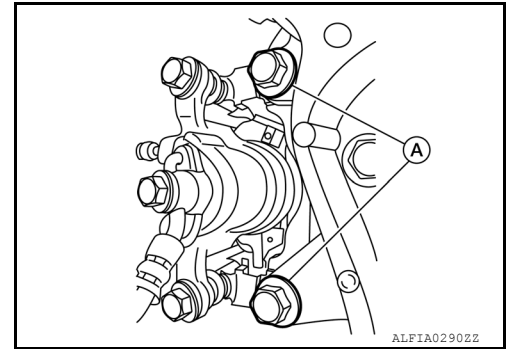
## REAR DISC BRAKE

### < REMOVAL AND INSTALLATION >

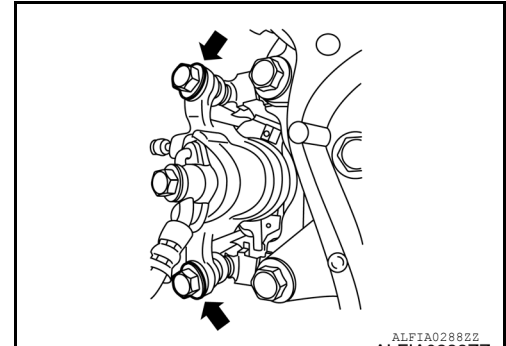
5. Remove the two torque member bolts (A), and then remove the torque member, brake caliper and brake pads as an assembly.

**CAUTION:**

**Do not drop the brake pads, shims and shim covers assemblies.**



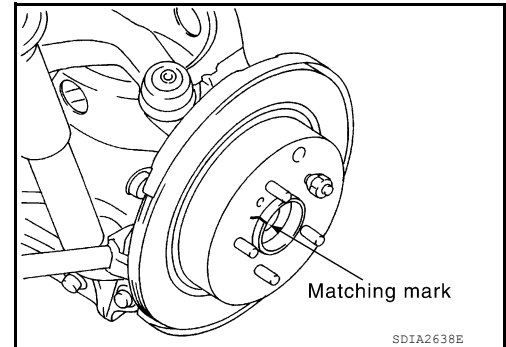
6. Remove the two sliding pin bolts and separate the brake caliper from the torque member. Remove the brake pad, shims and shim cover assemblies from the torque member.



7. Remove the disc brake rotor. If reusing the disk brake rotor apply matching marks as shown.

**CAUTION:**

**Put matching marks on wheel hub assembly and disc brake rotor, if it necessary to reuse the disc brake rotor.**

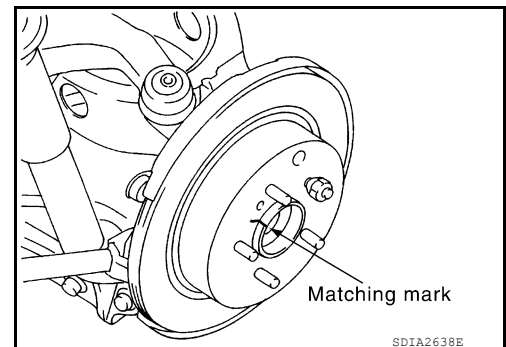


### INSTALLATION

1. Install the disc brake rotor, align the matching marks if installing the original disc brake rotor as shown.

**CAUTION:**

**Align the marks on disc brake rotor and wheel hub at the time of installation when reusing disc brake rotor.**



2. Apply grease to the shims, shim covers and pad retainers. Refer to [BR-37. "BRAKE PAD : Exploded View"](#).
3. Install the brake pad, shims and shim cover assemblies to the torque member. Refer to [BR-39. "BRAKE CALIPER ASSEMBLY : Exploded View"](#).
4. Install the brake caliper and brake pad assembly on the torque member, then tighten the two sliding pin bolts to the specified torque. Refer to [BR-39. "BRAKE CALIPER ASSEMBLY : Exploded View"](#).



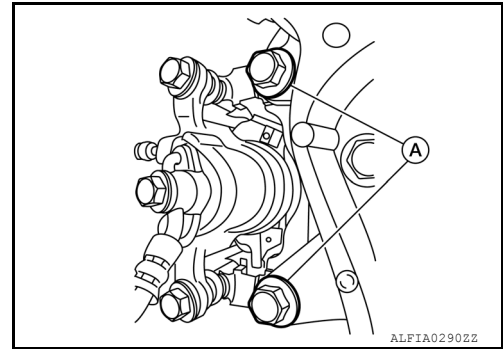
## REAR DISC BRAKE

### < REMOVAL AND INSTALLATION >

5. Install the torque member, pads and brake caliper assembly, and tighten the torque member bolts (A) to the specified torque. Refer to [BR-22, "REAR : Exploded View"](#).

**CAUTION:**

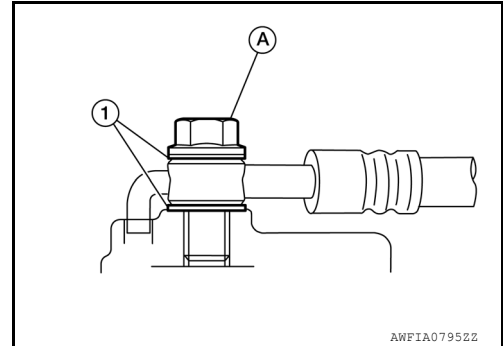
**Do not allow oil or any moisture on all contact surfaces between steering knuckle and brake caliper assembly, bolts and washers.**



6. Align the L-shaped pin on the brake hose in the hole in the brake caliper, then install the brake hose with new copper sealing washers (1) and tighten the union bolt (A) to the specified torque. Refer to [BR-39, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).

**CAUTION:**

**Do not reuse copper sealing washers.**



7. Refill with new brake fluid and bleed air from the brake hydraulic system. Refer to [BR-14, "Bleeding Brake System"](#).
8. Check rear disc brakes for drag.
9. Install rear wheel and tires. Refer to [WT-52, "Adjustment"](#).

# FRONT DISC BRAKE

< UNIT DISASSEMBLY AND ASSEMBLY >

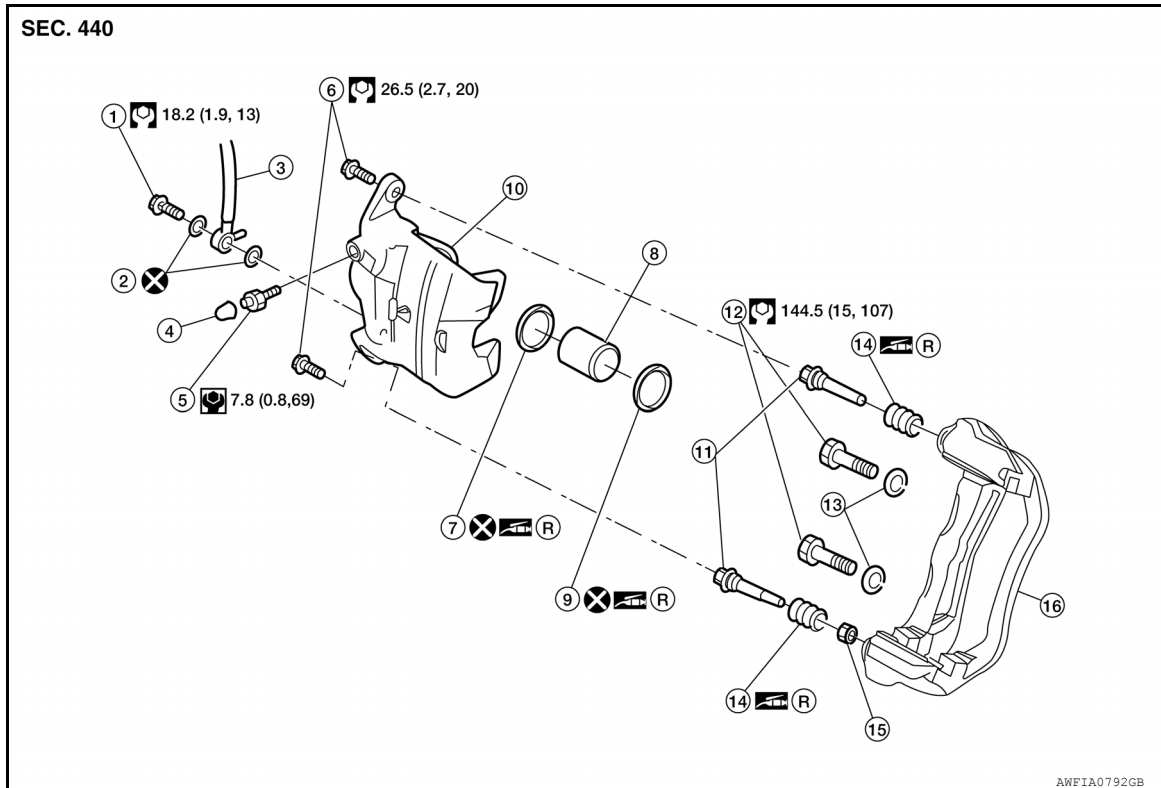
## UNIT DISASSEMBLY AND ASSEMBLY

### FRONT DISC BRAKE

#### BRAKE CALIPER ASSEMBLY

#### BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000007989017



- |                   |                          |                        |
|-------------------|--------------------------|------------------------|
| 1. Union bolt     | 2. Copper sealing washer | 3. Brake hose          |
| 4. Cap            | 5. Bleeder valve         | 6. Sliding pin bolt    |
| 7. Piston seal    | 8. Piston                | 9. Piston boot         |
| 10. Caliper       | 11. Sliding pin          | 12. Torque member bolt |
| 13. Washer        | 14. Sliding pin boot     | 15. Bushing            |
| 16. Torque member | R. Rubber grease         |                        |

#### BRAKE CALIPER ASSEMBLY : Disassembly

INFOID:000000007989018

#### DISASSEMBLY

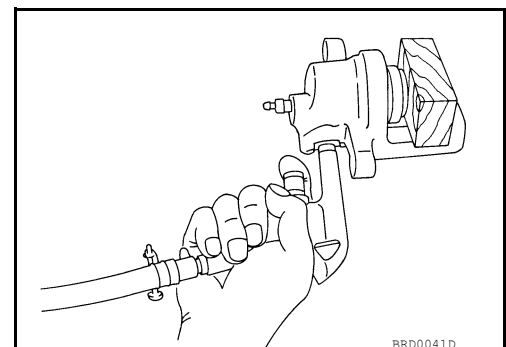
##### NOTE:

Do not remove the torque member, brake pads, shims, shim covers, and brake pad retainers when disassembling and assembling the brake caliper.

1. Place a wooden block in the brake caliper as shown, and blow air into the union bolt hole to remove the piston and piston boot.

##### **WARNING:**

**Do not get fingers caught between the piston and wooden block.**



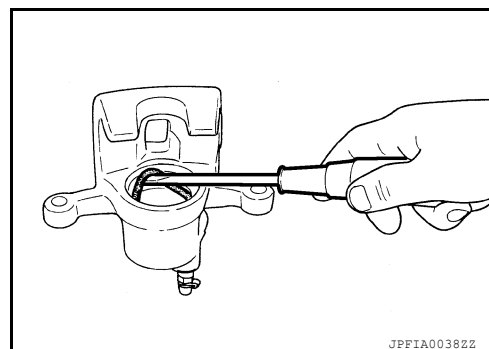
## FRONT DISC BRAKE

### < UNIT DISASSEMBLY AND ASSEMBLY >

2. Remove the piston seal from the brake caliper using a suitable tool. Discard the piston seal.

**CAUTION:**

- Be careful not to damage the cylinder inner wall.
- Do not reuse the piston seal.



### BRAKE CALIPER ASSEMBLY : Inspection After Disassembly

INFOID:000000007989019

#### BRAKE CALIPER

Check the inner wall of brake caliper for corrosion, wear, and damage. Replace as necessary.

**CAUTION:**

**Clean the brake caliper using new brake fluid. Do not use mineral oils such as gasoline or kerosene.**

#### TORQUE MEMBER

Check torque member for wear, cracks, and damage. Replace as necessary.

#### PISTON

Check the piston surface for corrosion, wear, and damage. Replace as necessary.

**CAUTION:**

**The piston sliding surface is plated. Do not polish with sandpaper.**

#### SLIDING PIN, SLIDING PIN BOOT, SLIDING PIN BOLT

Check the sliding pin, sliding pin bolt, and sliding pin boot for wear, damage, and cracks. Replace as necessary.

### BRAKE CALIPER ASSEMBLY : Assembly

INFOID:000000007989020

#### ASSEMBLY

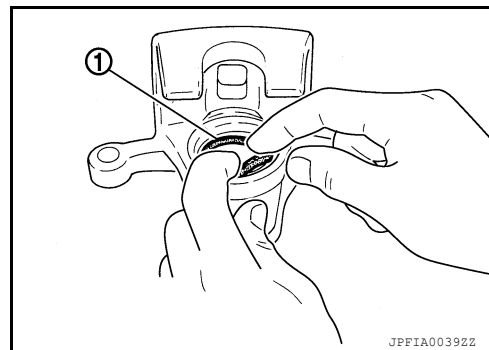
**CAUTION:**

**Use NISSAN Rubber Grease during assembly.**

1. Apply rubber grease to new piston seal (1), and install on brake caliper.

**CAUTION:**

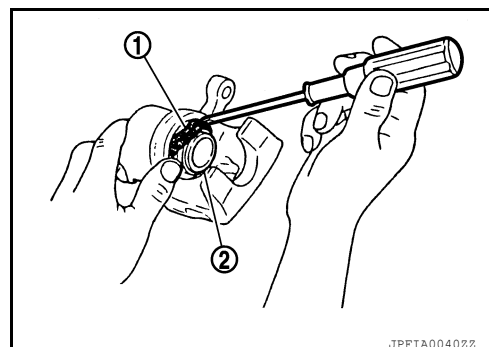
**Do not reuse piston seal.**



2. Apply rubber grease to new piston boot (1). Cover the piston (2) end with new piston boot, and then install cylinder side lip on new piston boot securely into a groove on brake caliper.

**CAUTION:**

**Do not reuse piston boot.**



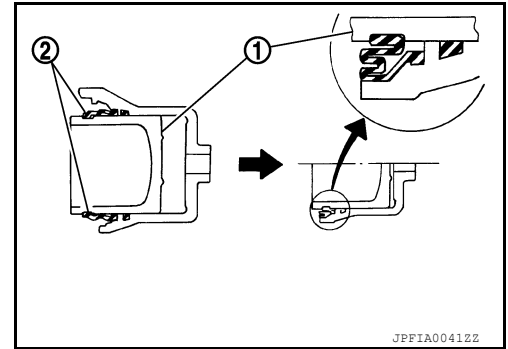
## FRONT DISC BRAKE

### < UNIT DISASSEMBLY AND ASSEMBLY >

3. Push piston (1) into brake caliper by hand and push piston boot (2) piston side lip into the piston groove.

**CAUTION:**

Press the piston evenly and vary the pressing point to prevent cylinder inner wall from being rubbed.



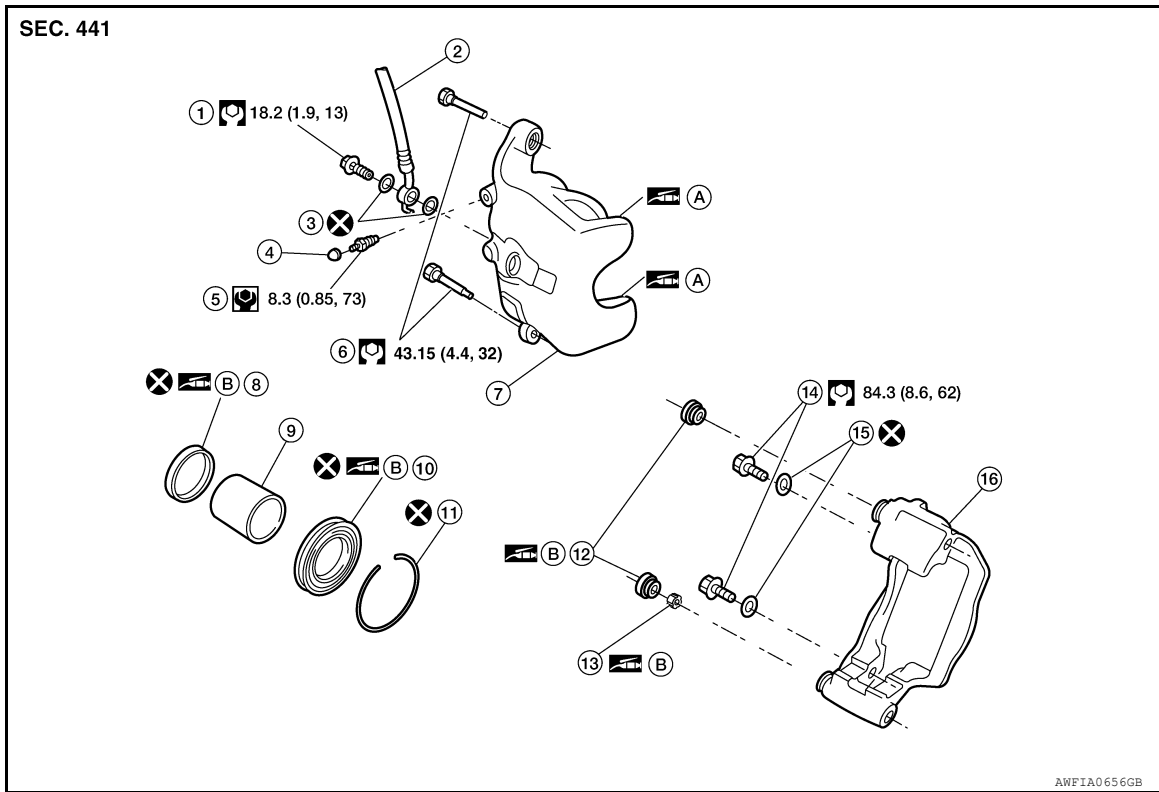
# REAR DISC BRAKE

< UNIT DISASSEMBLY AND ASSEMBLY >

## REAR DISC BRAKE BRAKE CALIPER ASSEMBLY

### BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000007989021



- |                   |                         |                          |
|-------------------|-------------------------|--------------------------|
| 1. Union bolt     | 2. Brake hose           | 3. Copper sealing washer |
| 4. Cap            | 5. Bleeder valve        | 6. Sliding pin bolt      |
| 7. Brake caliper  | 8. Piston seal          | 9. Piston                |
| 10. Piston boot   | 11. Retaining ring      | 12. Sliding pin boot     |
| 13. Bushing       | 14. Torque member bolt  | 15. Washer               |
| 16. Torque member | A. Molykote 7439 grease | B. Rubber grease         |

### BRAKE CALIPER ASSEMBLY : Disassembly

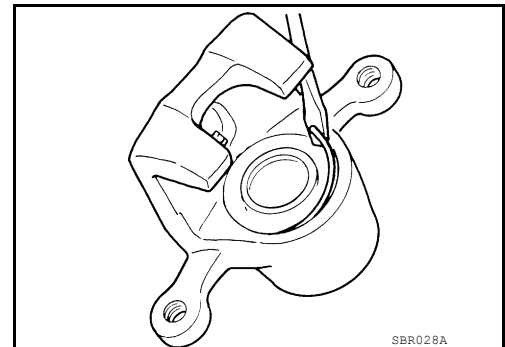
INFOID:000000007989022

#### DISASSEMBLY

1. Remove the retaining ring from brake caliper using a suitable tool as shown. Discard the retaining ring.

**CAUTION:**

**Do not reuse retaining ring.**



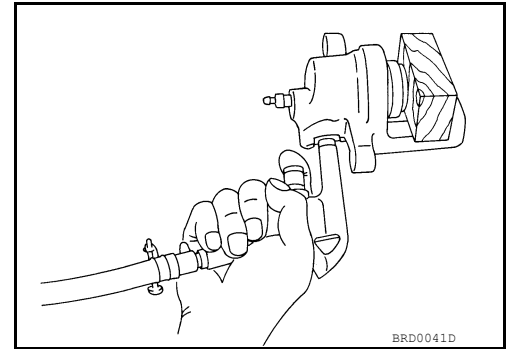
## REAR DISC BRAKE

### < UNIT DISASSEMBLY AND ASSEMBLY >

2. Place a wooden block in the brake caliper as shown, and blow air into the union bolt hole to remove piston and piston boot.

**WARNING:**

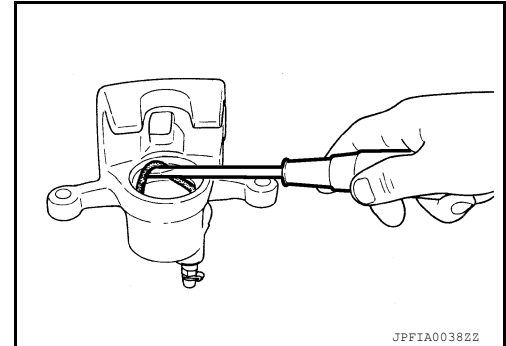
**Do not get fingers caught between the piston and wooden block.**



3. Remove the piston seal from the brake caliper using a suitable tool. Discard the piston seal.

**CAUTION:**

- Be careful not to damage the cylinder inner wall.
- Do not reuse the piston seal.



### BRAKE CALIPER ASSEMBLY : Inspection After Disassembly

INFOID:000000007989023

#### BRAKE CALIPER

Check the inner wall of the cylinder for corrosion, wear, and damage. Replace as necessary.

**CAUTION:**

**Clean the brake caliper using new brake fluid. Do not use mineral oils such as gasoline or kerosene.**

#### TORQUE MEMBER

Check the torque member for wear, cracks, and damage. Replace as necessary.

#### PISTON

Check the piston surface for corrosion, wear, and damage. Replace as necessary.

**CAUTION:**

**The piston sliding surface is plated. Do not polish with sandpaper.**

#### SLIDING PIN BOLT, SLIDING PIN BOOT

Check the sliding pin bolt and sliding pin boot for wear, damage, and cracks. Replace as necessary.

### BRAKE CALIPER ASSEMBLY : Assembly

INFOID:000000007989024

#### ASSEMBLY

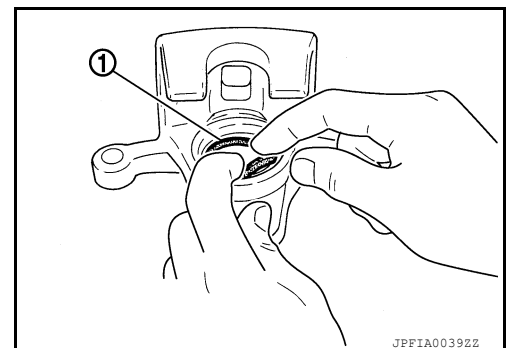
**CAUTION:**

**Use NISSAN Rubber Grease during assembly.**

1. Apply rubber grease to new piston seal (1), and install on brake caliper.

**CAUTION:**

**Do not reuse piston seal.**



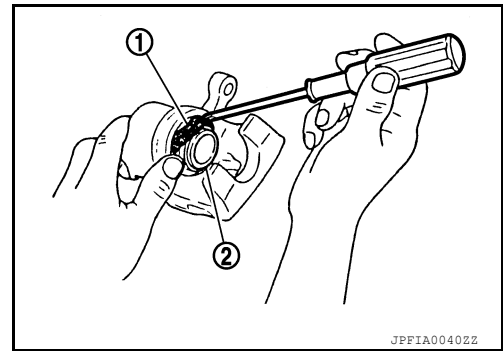
## REAR DISC BRAKE

### < UNIT DISASSEMBLY AND ASSEMBLY >

2. Apply rubber grease to new piston boot (1). Cover the piston (2) end with the new piston boot, and then install cylinder side lip on new piston boot securely into a groove on brake caliper.

**CAUTION:**

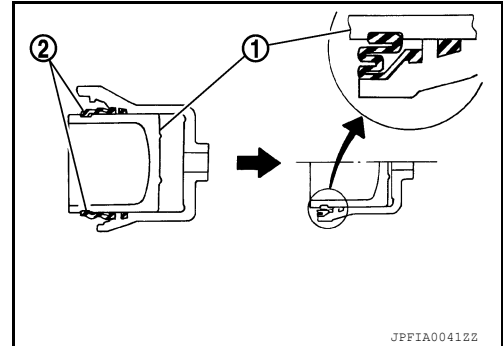
**Do not reuse piston boot.**



3. Push piston (1) into caliper by hand and push piston boot (2) piston side lip into the piston groove.

**CAUTION:**

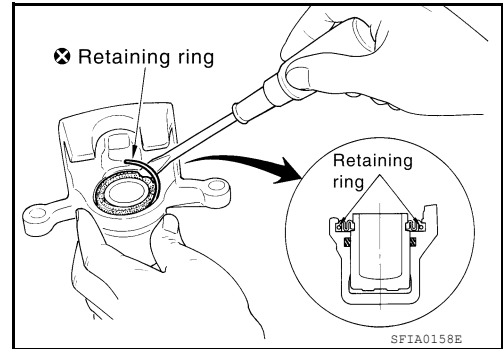
**Press the piston evenly and vary the pressing point to prevent cylinder inner wall from being rubbed.**



4. Secure piston boot with new retaining ring.

**CAUTION:**

- **Make sure that boot is securely engaged in the groove on brake caliper.**
- **Do not reuse retaining ring.**



## SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### General Specifications

INFOID:000000007989025

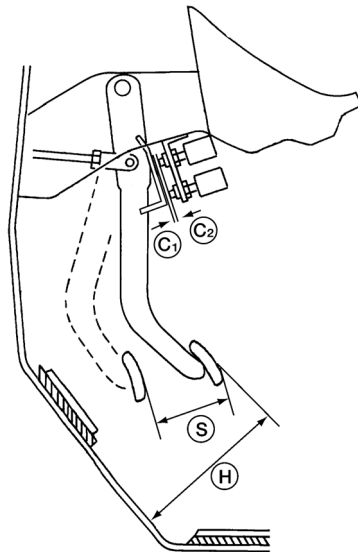
Unit: mm (in)

Front brake	Brake model	CLZ25VD
	Cylinder bore diameter	57.2 (2.25)
	Pad length × width × thickness	126 × 50 × 11 (4.961 × 1.969 × 0.433)
	Rotor outer diameter × thickness	296 × 26 (11.654 × 1.024)
Rear brake	Brake model	AD9VA
	Cylinder bore diameter	34.93 (1.375)
	Pad length × width × thickness	83 × 33 × 8.5 (3.268 × 1.299 × 0.335)
	Rotor outer diameter × thickness	292 × 9 (11.50 × 0.354)
Master cylinder	Cylinder bore diameter	19.05 (0.750)
Control valve	Valve model	Electric brake force distribution
Brake booster	Booster model	Bosch
	Diaphragm diameter	280 (11)
Recommended brake fluid		DOT 3

#### Brake Pedal

INFOID:000000007989026

Unit: mm (in)



AWFIA09132Z

Brake pedal height (H) (from dash lower panel top surface)	CVT	181.4 - 191.4 (7.1 - 7.5)
Brake pedal full stroke (S)	CVT	135.3 (5.3)
Clearance between stopper bracket (C1) and threaded end of the stop lamp switch and ASCD cancel switch (C2)		0.74 - 1.96 (0.0291 - 0.0772)

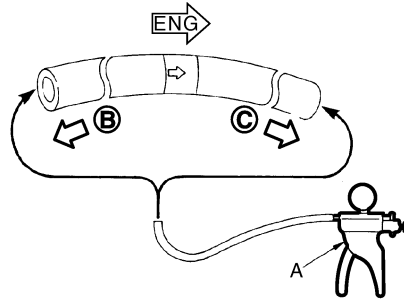


# SERVICE DATA AND SPECIFICATIONS (SDS)

## < SERVICE DATA AND SPECIFICATIONS (SDS)

### Check Valve

INFOID:000000007989027



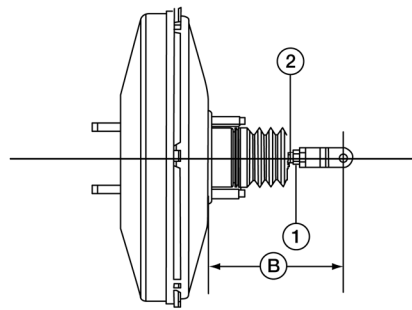
JPFIA0024ZZ

When suitable tool (A) is connected to the booster side (B)	Vacuum should not decrease more than 1.3 kPa (10 mmHg, 0.39 inHg) for 15 seconds under a vacuum of $-26.6 \pm 1.3$ kPa ( $-200 \pm 1.3$ mmHg, $-7.87 \pm 0.04$ inHg).
When suitable tool (A) is connected to the engine side (C)	Vacuum should not exist.

### Brake Booster

INFOID:000000007989028

Unit: mm (in)



ALFIA0299ZZ

Input rod installation standard dimension (B) (1): Lock nut (2): Input rod	$125 \pm 0.5$ (4.92 $\pm$ 0.02)
--	---------------------------------

### Front Disc Brake

INFOID:000000007989029

Unit: mm (in)

Brake pad	Standard thickness (new)	11.0 (0.433)
	Wear limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	26.0 (1.024)
	Wear limit thickness	24.0 (0.945)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Maximum runout (with it attached to the vehicle)	0.040 (0.0016)

### Rear Disc Brake

INFOID:000000007989030

Unit: mm (in)

Brake pad	Standard thickness (new)	8.5 (0.335)
	Wear limit thickness	1.0 (0.039)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### < SERVICE DATA AND SPECIFICATIONS (SDS)

Disc rotor	Standard thickness (new)	9.0 (0.354)
	Wear limit thickness	8.0 (0.315)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Maximum runout (with it attached to the vehicle)	0.05 (0.0020)