

SECTION **BR**
BRAKE SYSTEM

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PRECAUTIONS

< SERVICE INFORMATION >

SERVICE INFORMATION

PRECAUTIONS

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

INFOID:000000004657079

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 "SUPPLEMENTAL RESTRAINT SYSTEM" and "SEAT BELTS" 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 "SUPPLEMENTAL RESTRAINT SYSTEM".
- 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 Battery Service

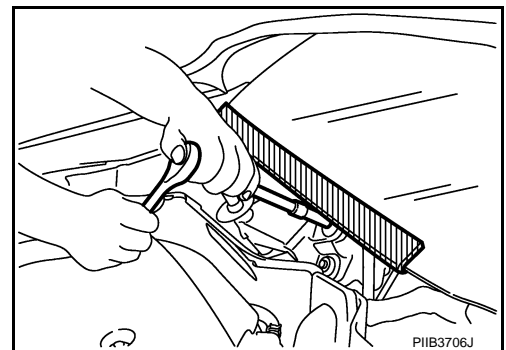
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Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

Precaution for Procedure without Cowl Top Cover

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



Precaution for Brake System

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- Recommended fluid is brake fluid "DOT 3". Refer to [MA-10. "Fluids and Lubricants"](#).
- Do not reuse drained brake fluid.
- Do not let brake fluid come in contact with painted surfaces on the body. This might damage the paint, so if it does come in contact, immediately wipe area and wash off with water.

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PRECAUTIONS

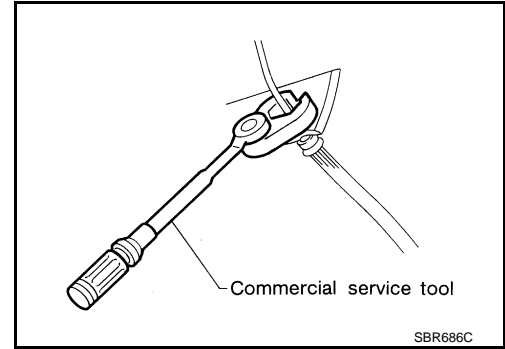
< SERVICE INFORMATION >

- To clean or wash all parts of master cylinder and disc brake caliper, use clean brake fluid.
- Do not use mineral oils such as gasoline or kerosene. They will ruin rubber parts of the hydraulic system.
- Use flare nut crowfoot and torque wrench when removing and installing brake tube.
- When installing brake piping, be sure to check torque.
- Before working, turn the ignition switch OFF and disconnect the connectors of ABS actuator and control unit or the 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-40, "Brake Burnishing Procedure"](#).

WARNING:

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



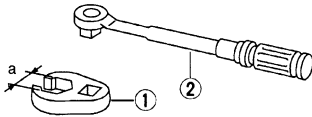
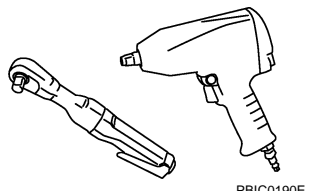

PREPARATION

< SERVICE INFORMATION >

PREPARATION

Commercial Service Tool

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Tool name	Description
<p>1. Flare nut crowfoot a:10 mm (0.39 in)/12mm(0.47 in) 2. Torque wrench</p>  <p style="text-align: right;">S-NT360</p>	<p>Installing each brake piping</p>
<p>Power tool</p>  <p style="text-align: right;">PBIC0190E</p>	<p>Loosening bolts and nuts</p>
<p>Pin punch Tip diameter: 4 mm (0.16 in) dia.</p>  <p style="text-align: right;">ZZA0515D</p>	<p>Removing and installing reservoir tank pin</p>

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BRAKE PEDAL

< SERVICE INFORMATION >

BRAKE PEDAL

Inspection and Adjustment

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PLAY AND CLEARANCE BETWEEN THE BRAKE PEDAL AND FLOOR PANEL WITH PEDAL DE-PRESSED

1. Check the brake pedal free height from the dash lower panel (1).
2. Adjust the height referring to the following specifications.

Brake pedal height "H₁" (from dash lower panel top surface)

M/T models : 153.2 – 163.2 mm (6.03 – 6.43 in)

A/T models : 161.5 – 171.5 mm (6.36 – 6.75 in)

Depressed pedal height "H₂" [under a force of 490 N (50 kg, 110 lb) with the engine running]

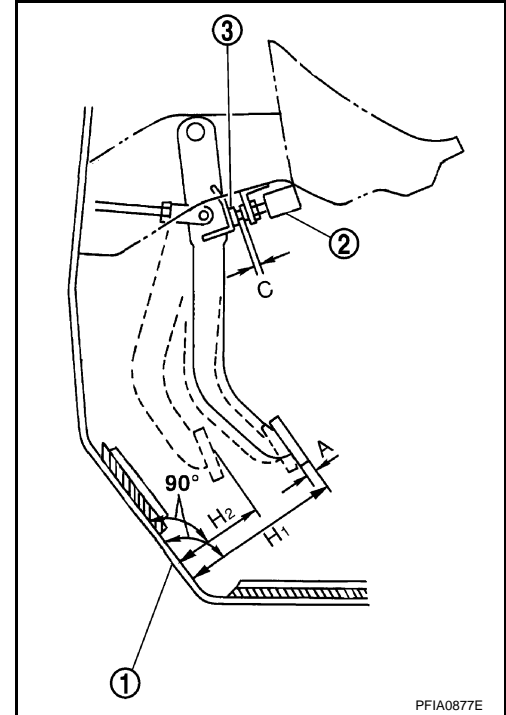
M/T models : More than 90 mm (3.54 in)

A/T models : More than 95 mm (3.74 in)

Clearance "C" between threaded end of the stop lamp switch/ASCD cancel switch (2) and stopper rubber (3).

: 0.74 – 1.96 mm (0.0291 – 0.0772 in)

Pedal play "A" : 3 – 11 mm (0.12 – 0.43 in)



ADJUSTMENT

1. Loosen the stop lamp switch and ASCD cancel switch by rotating it counterclockwise by 45°.
2. Loosen the lock nut (A) on the input rod, then rotate the input rod to set the pedal to the specified height, and tighten the lock nut (A) to the specified torque. Refer to [BR-23, "Component"](#).

CAUTION:

Check that the threaded end of the input rod stays inside the clevis.

3. With the pedal pulled and held by hand, press the stop lamp switch and ASCD cancel switch until its threaded end contacts the stopper rubber.
4. With the threaded end of the stop lamp switch contacting the stopper rubber and ASCD cancel switch, rotate the switch clockwise by 45° to secure.

CAUTION:

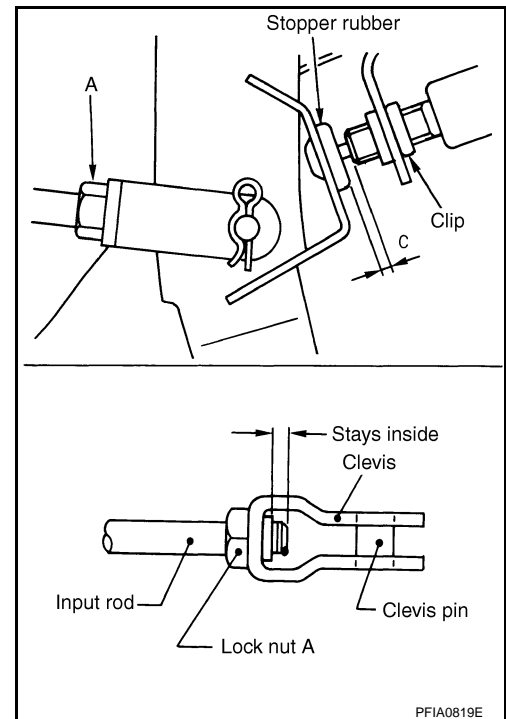
Make sure that the clearance "C" between the stopper rubber and threaded end of the stop lamp switch and ASCD cancel switch is within the standard.

5. Check the pedal play.

CAUTION:

Make sure that the stop lamps go off when the pedal is released.

6. Start the engine to check the brake pedal's depressed height.

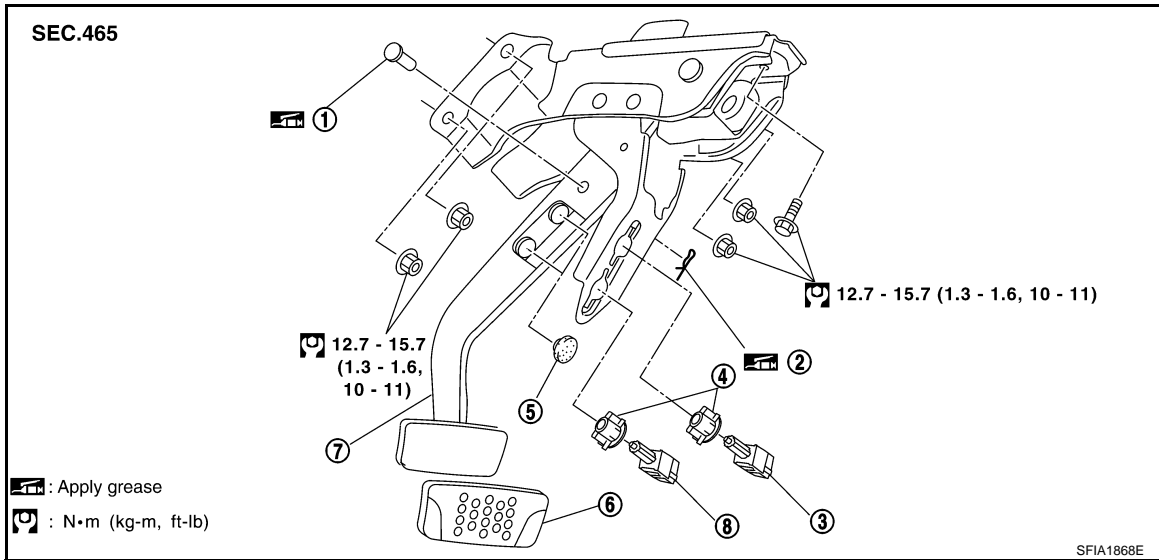


BRAKE PEDAL

< SERVICE INFORMATION >

Component

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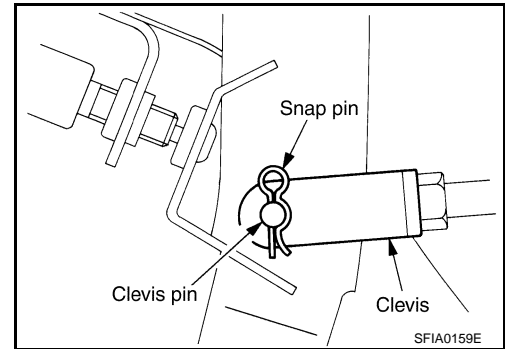
- | | | |
|-------------------------|-----------------------|---------------------|
| 1. Clevis pin | 2. Snap pin | 3. Stop lamp switch |
| 4. Clip | 5. Stopper rubber | 6. Pedal pad |
| 7. Brake pedal assembly | 8. ASCD cancel switch | |

Removal and Installation

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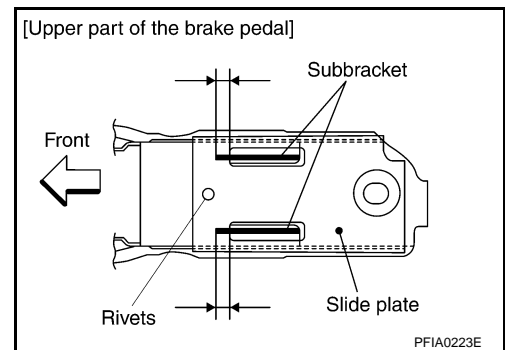
REMOVAL

1. Remove instrument driver panel lower. Refer to [IP-12](#).
2. Remove the steering column assembly. Refer to [PS-10](#).
3. Remove the stop lamp switch and ASCD cancel switch from the pedal assembly.
4. Remove the snap pin and clevis pin from the brake booster clevis.
5. Remove the mounting nuts and bolt from the bracket, and remove the pedal assembly from the vehicle.



INSPECTION AFTER REMOVAL

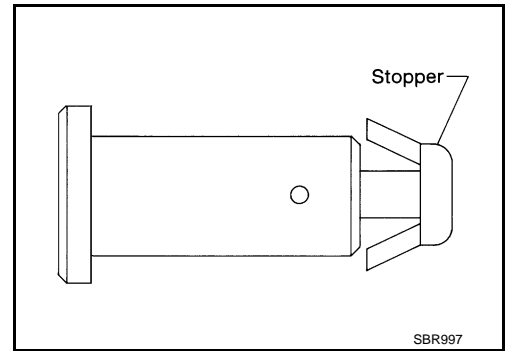
- Check that the rivets in the upper part of the brake pedal are not deformed.
- Make sure the sub bracket and the slide plate are at least 5.0 – 6.0 mm (0.197 – 0.236 in) apart.



BRAKE PEDAL

< SERVICE INFORMATION >

- Check the brake pedal for bend, damage, and cracks on the welded parts. Replace the applicable part if a failure is detected.
- Check the clevis pin and resin stopper for damage and deformation. If a failure is detected, replace the clevis pin.



INSTALLATION

Paying attention to the following items, install in the reverse order of removal.

- After installing the brake pedal assembly to the vehicle, adjust the brake pedal.

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BRAKE FLUID

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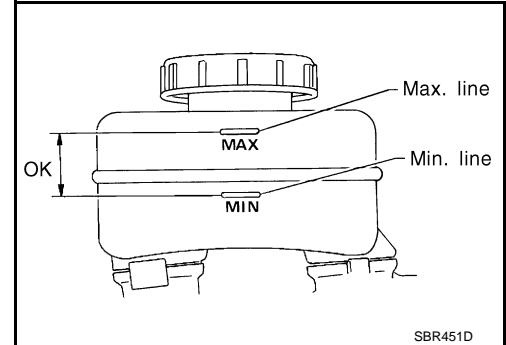
BRAKE FLUID

On-Vehicle Inspection

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LEVEL CHECK

- Check that the fluid level in the reservoir tank is within the standard (between MAX and MIN lines).
- Visually check around the reservoir tank for fluid leaks.
- If fluid level is excessively low, check brake system for leaks.
- If warning lamp remains illuminated after parking brake lever is released, check brake system for fluid leakage.



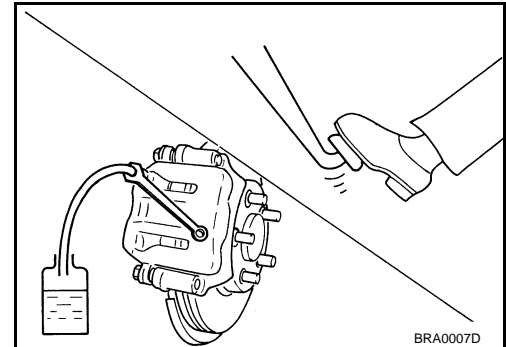
Drain and Refill

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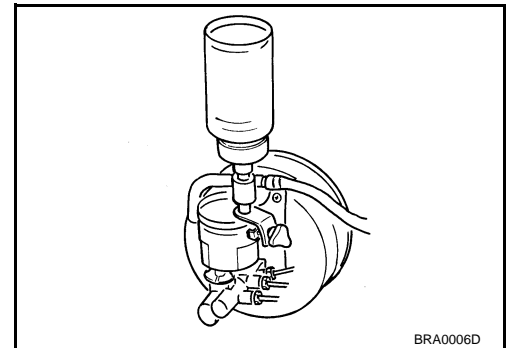
CAUTION:

- Refill with new brake fluid "DOT3".
- Do not reuse drained brake fluid.
- Do not let brake fluid come in contact with painted surfaces on the body. This might damage the paint, so if it does come in contact, immediately wipe area and wash off with water.

1. Connect a vinyl tube to bleed valve.
2. Depress the brake pedal, loosen the bleed valve, and gradually remove the brake fluid.
3. Before working, turn the ignition switch OFF and disconnect the connectors of ABS actuator and control unit or battery negative terminal.



4. Make sure there is no foreign material in the reservoir tank, and refill with new brake fluid.
5. Rest foot on brake pedal. Loosen bleed valve. Slowly depress pedal until it stops. Tighten bleed valve. Release brake pedal. Repeat this process a few times, then pause to add new brake fluid to master cylinder. Continue until new brake fluid flows out. Bleed Air. Refer to [BR-10, "Bleeding Brake System"](#).



Bleeding Brake System

INFOID:000000004657090

CAUTION:

While bleeding, pay attention to master cylinder fluid level.

1. Before working, turn the ignition switch OFF and disconnect the connectors of ABS actuator and control unit or battery negative terminal.
2. Connect a vinyl tube to the rear right bleed valve.
3. Fully depress brake pedal 4 to 5 times.
4. With the brake pedal depressed, loosen the bleed valve to let the air out, and then tighten it immediately.

BRAKE FLUID

< SERVICE INFORMATION >

5. Repeat steps 3, 4 until no more air comes out.
6. Tighten the bleed valve to the specified torque. Refer to [BR-28, "Component"](#) (Front) and [BR-41, "Component"](#) (Rear).
7. In steps 2 to 6 below, with the master cylinder reservoir tank filled at least half way, bleed air from the front left, rear left, and front right tires, in that order.

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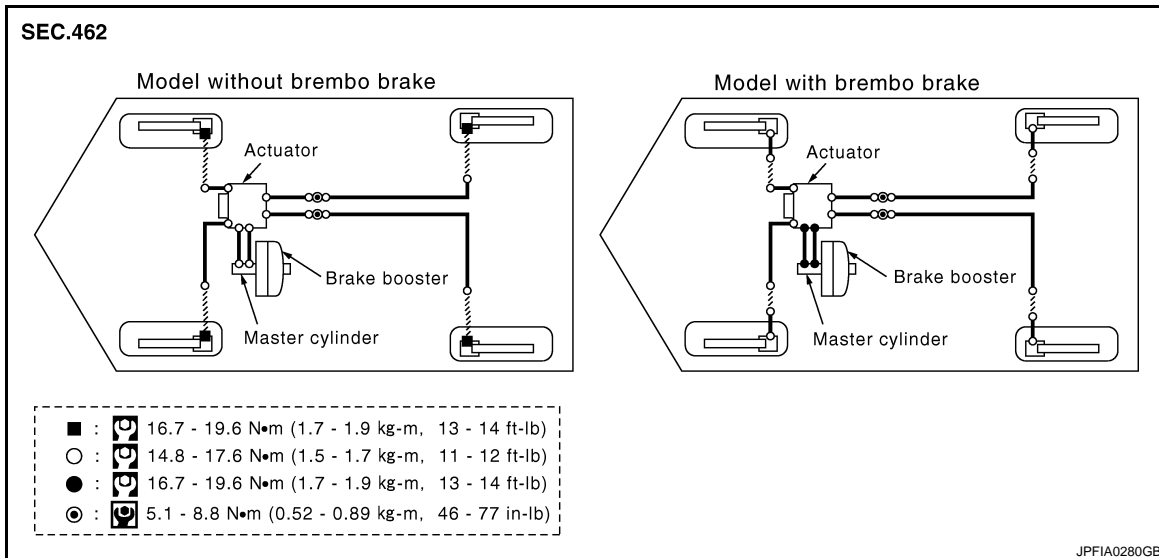
BRAKE TUBE AND HOSE

< SERVICE INFORMATION >

BRAKE TUBE AND HOSE

Hydraulic Circuit

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CAUTION:

- Make sure it does not twist or break when being attached.
- Make sure there is no interference with other parts when turning steering both clockwise and counterclockwise.
- The brake tube 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.
- Do not let brake fluid come in contact with painted surfaces on the body. This might damage the paint, so if it does come in contact, immediately wipe area and wash off with water.
- 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.
- Refill with new brake fluid "DOT 3".
- Do not reuse drained brake fluid.

Removal and Installation of the Front Brake Tube and Brake Hose (Other than Brembo Calipers)

INFOID:000000004657092

REMOVAL

1. Drain brake fluid. Refer to [BR-10, "Drain and Refill"](#).
2. Using a flare nut wrench, remove brake tube from brake hose.
3. Remove union bolt and remove the brake hose from the caliper assembly.
4. Remove the lock plate and nut, and remove the brake hose from the vehicle.


INSTALLATION

1. Attach the brake hose to the vehicle and tighten the nut to the specified torque.

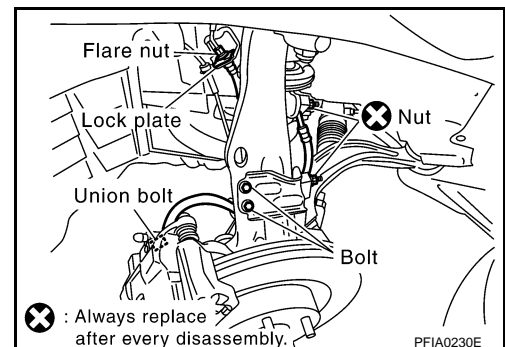
 : 19.6 – 23.5 N•m (2.0 – 2.3 kg-m, 15 – 17 ft-lb)

NOTE:

When removed bracket attaching the bolt is tightened with provisions torque.

 : 10.8 – 15.6 N•m (1.1 – 1.5 kg-m, 8 – 11 ft-lb)

2. Install brake hose by aligning with the protrusion on caliper assembly, and tighten union bolts to the specified torque.



BRAKE TUBE AND HOSE

< SERVICE INFORMATION >

 : 16.7 – 19.6 N·m (1.7 – 1.9 kg·m, 13 – 14 ft·lb)

CAUTION:

Do not reuse the copper washer.

3. Attach the brake hose to the brake tube, partially tighten the flare nut as far as possible by hand, then secure it to the bracket with the lock plate.
4. Using a flare nut crowfoot and torque wrench, tighten the flare nut to the specified torque.

 : 14.8 – 17.6 N·m (1.5 – 1.7 kg·m, 11 – 12 ft·lb)

5. Refill brake fluid and bleed air. Refer to [BR-10. "Bleeding Brake System"](#).

Removal and Installation of the Front Brake Tube and Brake Hose (With Brembo Calipers)

INFOID:000000004657093

REMOVAL

1. Drain brake fluid. Refer to [BR-10. "Drain and Refill"](#).
2. Using a flare nut wrench, remove the brake tube from the brake hose.
3. Using a flare nut wrench, remove the caliper-side brake tube from the brake hose.
4. Remove the lock plate and nut, and remove the brake hose from the vehicle.

INSTALLATION

1. Attach the brake hose to the vehicle and tighten the nut to the specified torque.

 **Nut** : 19.6 – 23.5 N·m (2.0 – 2.3 kg·m, 15 – 17 ft·lb)

 **Bolt** : 10.8 – 15.6 N·m (1.1 – 1.5 kg·m, 8 – 11 ft·lb)

2. Attach the caliper-side brake tube to the brake hose, partially tighten the flare nut as far as possible by hand, then tighten it to the specified torque with flare nut crowfoot and torque wrench.

 : 14.8 – 17.6 N·m (1.5 – 1.7 kg·m, 11 – 12 ft·lb)

3. Attach the brake hose to the brake tube, partially tighten the flare nut as far as possible by hand, then secure to the bracket with the lock plate.
4. Using a flare nut crowfoot and torque wrench, tighten the flare nut to the specified torque with flare nut torque.

 : 14.8 – 17.6 N·m (1.5 – 1.7 kg·m, 11 – 12 ft·lb)

5. Refill brake fluid and bleed air. Refer to [BR-10. "Bleeding Brake System"](#).

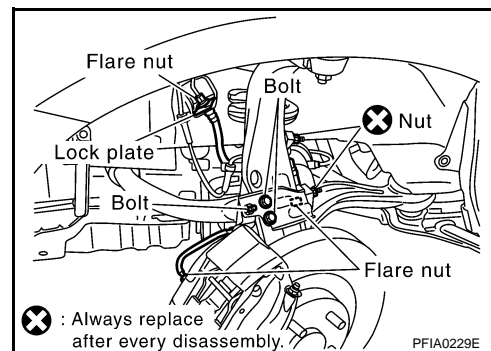
Removal and Installation of the Rear Brake Tube and Brake Hose (Other than Brembo Calipers)

INFOID:000000004657094

REMOVAL

1. Drain brake fluid. Refer to [BR-10. "Drain and Refill"](#).
2. Using a flare nut wrench, remove brake tube from brake hose.
3. Remove union bolts, and then remove brake hose from the caliper assembly.
4. Remove the lock plate and then remove the brake hose from the vehicle.

INSTALLATION



BRAKE TUBE AND HOSE

< SERVICE INFORMATION >

1. Attach the brake hose L-pin to the caliper assembly positioning hole and tighten the union bolt to the specified torque.

 : 16.7 – 19.6 N·m (1.7 – 1.9 kg-m, 13 – 14 ft-lb)

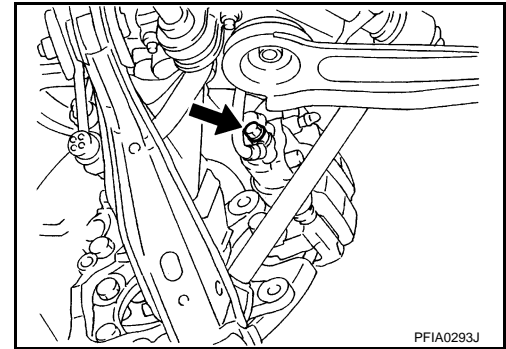
CAUTION:

Do not reuse the copper washer.

2. After securing the brake hose to the vehicle with the lock plate, partially tighten the brake tube flare nut as far as possible by hand and then tighten to the specified torque with flare nut crowfoot and torque wrench.

 : 14.8 – 17.6 N·m (1.5 – 1.7 kg-m, 11 – 12 ft-lb)

3. Refill brake fluid and bleed air. Refer to [BR-10, "Bleeding Brake System"](#).



Removal and Installation of the Rear Brake Tube and Brake Hose (With Brembo Calipers)

INFOID:000000004657095

REMOVAL


1. Drain brake fluid. Refer to [BR-10, "Drain and Refill"](#).
2. Using a flare nut wrench, remove the brake tube from the brake hose.
3. Using a flare nut wrench, remove the caliper-side brake tube from the brake hose.
4. Remove the lock plate and bolt, and remove the brake hose from the vehicle.

INSTALLATION

1. Attach the brake hose to the vehicle and tighten the bolt to the specified torque.

 : 19.6 – 22.5 N·m (2.0 – 2.2 kg-m, 15 – 16 ft-lb)

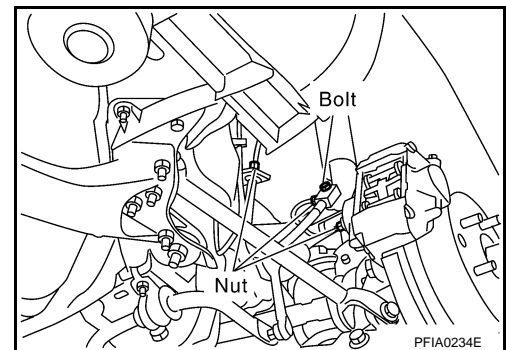
2. Attach the caliper-side brake tube to brake hose, partially tighten the flare nut as far as possible by hand, then tighten it to the specified torque with flare nut crowfoot and torque wrench.

 : 14.8 – 17.6 N·m (1.5 – 1.7kg-m, 11 – 12 ft-lb)

3. Attach the brake hose to the brake tube, partially tighten the flare nut as far as possible by hand, then secure to the bracket with the lock plate.
4. Using a flare nut crowfoot and torque wrench, tighten the flare nut to the specified torque.

 : 14.8 – 17.6 N·m (1.5 – 1.7 kg-m, 11 – 12 ft-lb)

5. Refill brake fluid and bleed air. Refer to [BR-10, "Bleeding Brake System"](#).



Inspection after Installation

INFOID:000000004657096

CAUTION:

If a leak is detected at the connections, retighten it or, if necessary, replace the damaged part.

1. Check hose, tube, and connections for fluid leaks, damage, twist, deformation, contact with other parts, and loose connections.
2. While depressing pedal under a force of 785 N (80 kg, 177 lb) with engine running for approximately 5 seconds, check for fluid leakage from each part.