

A
B
C
D
E

SECTION **BR** BRAKE SYSTEM

CONTENTS

| | |
|--|--|
| <p>PRECAUTIONS 3</p> <p style="padding-left: 20px;">Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 3</p> <p style="padding-left: 20px;">Precautions for Brake System 3</p> <p>PREPARATION 4</p> <p style="padding-left: 20px;">Commercial Service Tools 4</p> <p>NOISE, VIBRATION AND HARSHNESS (NVH)</p> <p>TROUBLESHOOTING 5</p> <p style="padding-left: 20px;">NVH Troubleshooting Chart 5</p> <p>BRAKE PEDAL 6</p> <p style="padding-left: 20px;">Inspection and Adjustment 6</p> <p style="padding-left: 40px;">PLAY AND CLEARANCE BETWEEN BRAKE PEDAL AND FLOOR PANEL WITH PEDAL DEPRESSED 6</p> <p style="padding-left: 40px;">ADJUSTMENT 7</p> <p style="padding-left: 20px;">Removal and Installation 7</p> <p style="padding-left: 40px;">COMPONENTS 7</p> <p style="padding-left: 40px;">REMOVAL 8</p> <p style="padding-left: 40px;">INSPECTION AFTER REMOVAL 8</p> <p style="padding-left: 40px;">INSTALLATION 8</p> <p>BRAKE FLUID 9</p> <p style="padding-left: 20px;">Checking Brake Fluid Level 9</p> <p style="padding-left: 20px;">Drain and Refill 9</p> <p style="padding-left: 20px;">Bleeding Brake System 9</p> <p>BRAKE PIPING AND HOSE 10</p> <p style="padding-left: 20px;">Hydraulic Circuit 10</p> <p style="padding-left: 20px;">Removal and Installation of Front Brake Piping and Hose 11</p> <p style="padding-left: 40px;">REMOVAL 11</p> <p style="padding-left: 40px;">INSTALLATION 11</p> <p style="padding-left: 20px;">Removal and Installation of Rear Brake Piping and Hose 11</p> <p style="padding-left: 40px;">REMOVAL 11</p> <p style="padding-left: 40px;">INSTALLATION 12</p> <p style="padding-left: 20px;">Inspection After Installation 12</p> <p>BRAKE MASTER CYLINDER 13</p> <p style="padding-left: 20px;">On-board Inspection 13</p> <p style="padding-left: 40px;">LEAK INSPECTION 13</p> <p style="padding-left: 20px;">Removal and Installation 13</p> | <p style="padding-left: 20px;">REMOVAL 13</p> <p style="padding-left: 20px;">INSTALLATION 13</p> <p style="padding-left: 20px;">Disassembly and Assembly 14</p> <p style="padding-left: 40px;">COMPONENTS 14</p> <p style="padding-left: 40px;">DISASSEMBLY 14</p> <p style="padding-left: 40px;">INSPECTION AFTER DISASSEMBLY 16</p> <p style="padding-left: 40px;">ASSEMBLY 16</p> <p>BRAKE BOOSTER 20</p> <p style="padding-left: 20px;">On-Vehicle Service 20</p> <p style="padding-left: 40px;">OPERATING CHECK 20</p> <p style="padding-left: 40px;">AIRTIGHT CHECK 20</p> <p style="padding-left: 20px;">Removal and Installation 20</p> <p style="padding-left: 40px;">COMPONENTS 20</p> <p style="padding-left: 40px;">REMOVAL 20</p> <p style="padding-left: 40px;">INSPECTION AFTER REMOVAL 21</p> <p style="padding-left: 40px;">INSTALLATION 21</p> <p>VACUUM LINES 22</p> <p style="padding-left: 20px;">Components 22</p> <p style="padding-left: 20px;">Removal and Installation 22</p> <p style="padding-left: 20px;">Inspection 22</p> <p style="padding-left: 40px;">VISUAL INSPECTION 22</p> <p style="padding-left: 40px;">CHECK VALVE INSPECTION 22</p> <p>FRONT DISC BRAKE 23</p> <p style="padding-left: 20px;">On-Vehicle Inspection 23</p> <p style="padding-left: 40px;">PAD WEAR INSPECTION 23</p> <p style="padding-left: 20px;">Components 23</p> <p style="padding-left: 20px;">Removal and Installation of Brake Pad 24</p> <p style="padding-left: 40px;">REMOVAL 24</p> <p style="padding-left: 40px;">INSTALLATION 25</p> <p style="padding-left: 20px;">Removal and Installation of Brake Caliper Assembly</p> <p style="padding-left: 40px;">... 25</p> <p style="padding-left: 40px;">REMOVAL 25</p> <p style="padding-left: 40px;">INSTALLATION 25</p> <p style="padding-left: 20px;">Disassembly and Assembly of Brake Caliper Assembly 26</p> <p style="padding-left: 40px;">DISASSEMBLY 26</p> <p style="padding-left: 40px;">INSPECTION AFTER DISASSEMBLY 26</p> <p style="padding-left: 40px;">DISC ROTOR INSPECTION 27</p> <p style="padding-left: 40px;">ASSEMBLY 27</p> <p style="padding-left: 20px;">Brake Burnishing Procedure 28</p> |
|--|--|

BR
G
H
I
J
K
L
M

| | | | |
|--|-----------|--|-----------|
| REAR DISC BRAKE | 30 | DISASSEMBLY | 32 |
| On-Vehicle Inspection | 30 | INSPECTION AFTER DISASSEMBLY | 33 |
| PAD WEAR INSPECTION | 30 | DISC ROTOR INSPECTION | 33 |
| Components | 30 | ASSEMBLY | 34 |
| Removal and Installation of Brake Pad | 31 | Brake Burnishing Procedure | 35 |
| REMOVAL | 31 | SERVICE DATA AND SPECIFICATIONS (SDS) | 36 |
| INSTALLATION | 31 | General Specifications | 36 |
| Removal and Installation of Brake Caliper Assembly | | Brake Pedal | 36 |
| | 32 | Check Valve | 36 |
| REMOVAL | 32 | Brake Booster | 36 |
| INSTALLATION | 32 | Front Disc Brake | 36 |
| Disassembly and Assembly of Brake Caliper | | Rear Disc Brake | 36 |
| Assembly | 32 | | |

PRECAUTIONS

PRECAUTIONS

PFP:00001

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EFS004YY

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 SRS and SB section of this Service Manual.

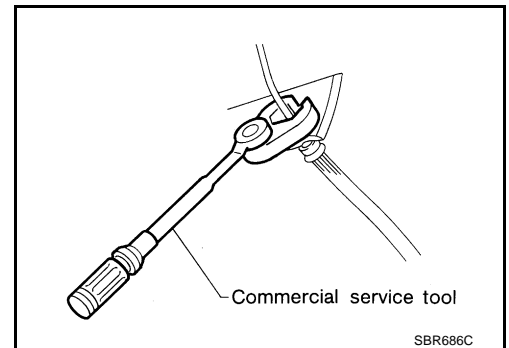
WARNING:

- 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 SRS 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 for Brake System

EFS000NL

- Clean dust on front brake and rear brake with a vacuum dust collector. Do not blow with compressed air.
- Recommended fluid is brake fluid “DOT 3”.
- Do not reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas such as body. If brake fluid is splashed on painted areas, wipe it off and wash it away with water immediately.
- Use clean brake fluid to clean or wash all parts of master cylinder, disc brake caliper, etc.
- Do not use mineral oils such as gasoline or kerosene. They will ruin rubber parts of hydraulic system.
- Use a flare nut torque wrench when removing and installing brake tube.
- When installing brake piping, be sure to check torque.
- Before working, turn ignition switch OFF and disconnect connector for VDC/TCS/ABS control unit or battery negative terminal.
- Burnish brake pad (or lining) contact surfaces of disc rotor 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-28, "Brake Burnishing Procedure"](#) (Front disc brake). Refer to [BR-35, "Brake Burnishing Procedure"](#) (Rear disc brake).



WARNING:

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

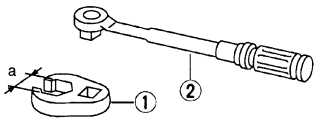

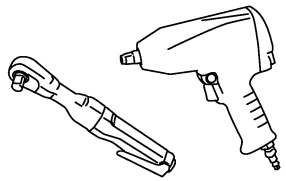
PREPARATION

PREPARATION

PFP:00002

Commercial Service Tools

EFS000NK

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

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

EFS000NM

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

| Symptom | | BRAKE | Possible cause and SUSPECTED PARTS | | | | | | | | | | | | | | Reference page |
|----------------|---|-------|------------------------------------|---|---|--|--|--|--|--|--|--|--|--|--|--|--------------------------------------|
| Noise | X | X | X | X | | | | | | | | | | | | | BR-23, BR-30 |
| | | X | X | X | | | | | | | | | | | | | BR-23, BR-30 |
| | | X | X | X | | | | | | | | | | | | | BR-23, BR-30 |
| Shake | X | | X | | X | | | | | | | | | | | | — |
| | | | X | | X | | | | | | | | | | | | — |
| | | | X | | X | | | | | | | | | | | | |
| Shimmy, Judder | X | | X | | X | | | | | | | | | | | | — |
| | | | X | | X | | | | | | | | | | | | — |
| | | | X | | X | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | — |
| | | X | | | | | | | | | | | | | | | NVH in PR section |
| | | X | | | | | | | | | | | | | | | NVH in RFD section |
| | | X | | | | | | | | | | | | | | | NVH in FAX, RAX and FSU, RSU section |
| | | X | | | | | | | | | | | | | | | NVH in WT section |
| | | X | | | | | | | | | | | | | | | NVH in WT section |
| | | X | | | | | | | | | | | | | | | NVH in RAX section |
| | | X | | | | | | | | | | | | | | | NVH in PS section |

X: Applicable

A
B
C
D
E
BR
G
H
I
J
K
L
M

BRAKE PEDAL

BRAKE PEDAL

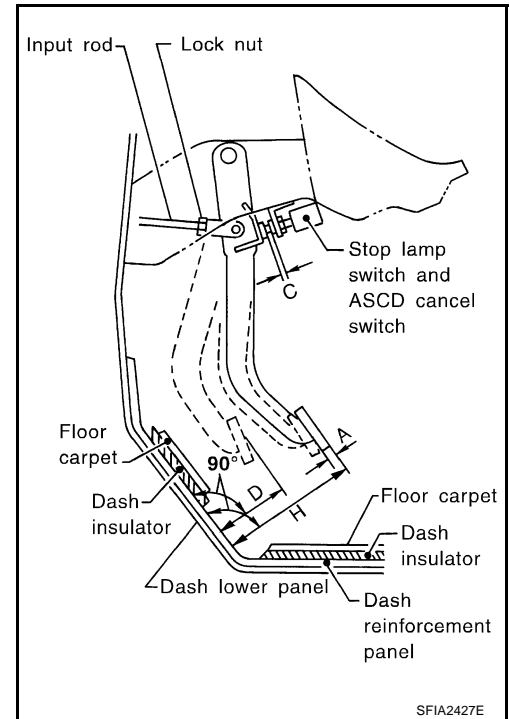
PFP:46501

Inspection and Adjustment

EFS000FO

PLAY AND CLEARANCE BETWEEN BRAKE PEDAL AND FLOOR PANEL WITH PEDAL DEPRESSED

- Check brake pedal play.
- Check brake pedal free height from dash lower panel.
- Adjust height referring to following specifications.



SFIA2427E

| | | |
|---|---|-------------------------------------|
| H | Brake pedal height (from dash lower panel top surface) | 192.4 - 202.4 mm (7.57 - 7.97 in) |
| D | Depressed pedal height [under a force of 490 N (50 kg, 110lb) with engine running] | 90 mm (3.54 in) or more |
| C | Clearance between stopper rubber and threaded end of stop lamp switch and ASCD cancel switch. | 0.74 - 1.96 mm (0.0291 - 0.0772 in) |
| A | Pedal play | 3 - 11 mm (0.12 - 0.43 in) |

BRAKE PEDAL

ADJUSTMENT

1. Loosen stop lamp switch and ASCD cancel switch by rotating it counterclockwise by 45°.
2. Loosen lock nut (A) on input rod to rotate input rod for adjusting brake pedal height to the specified one, and tighten lock nut (A).

Lock nut (A) :

Refer to [BR-20, "COMPONENTS"](#) .

CAUTION:

Make sure the threaded end of input rod stays inside clevis.

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

CAUTION:

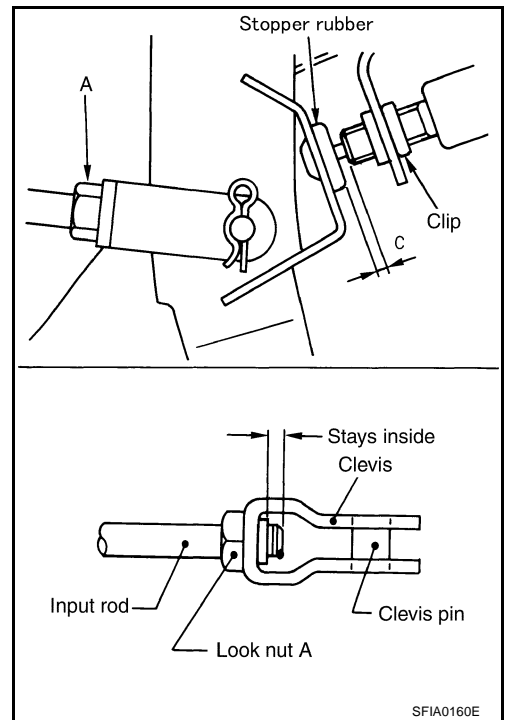
Make sure that clearance (C) between stopper rubber and end of stop lamp switch and ASCD cancel switch is within the standard.

5. Check pedal play. Refer to [BR-6, "Inspection and Adjustment"](#) .

CAUTION:

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

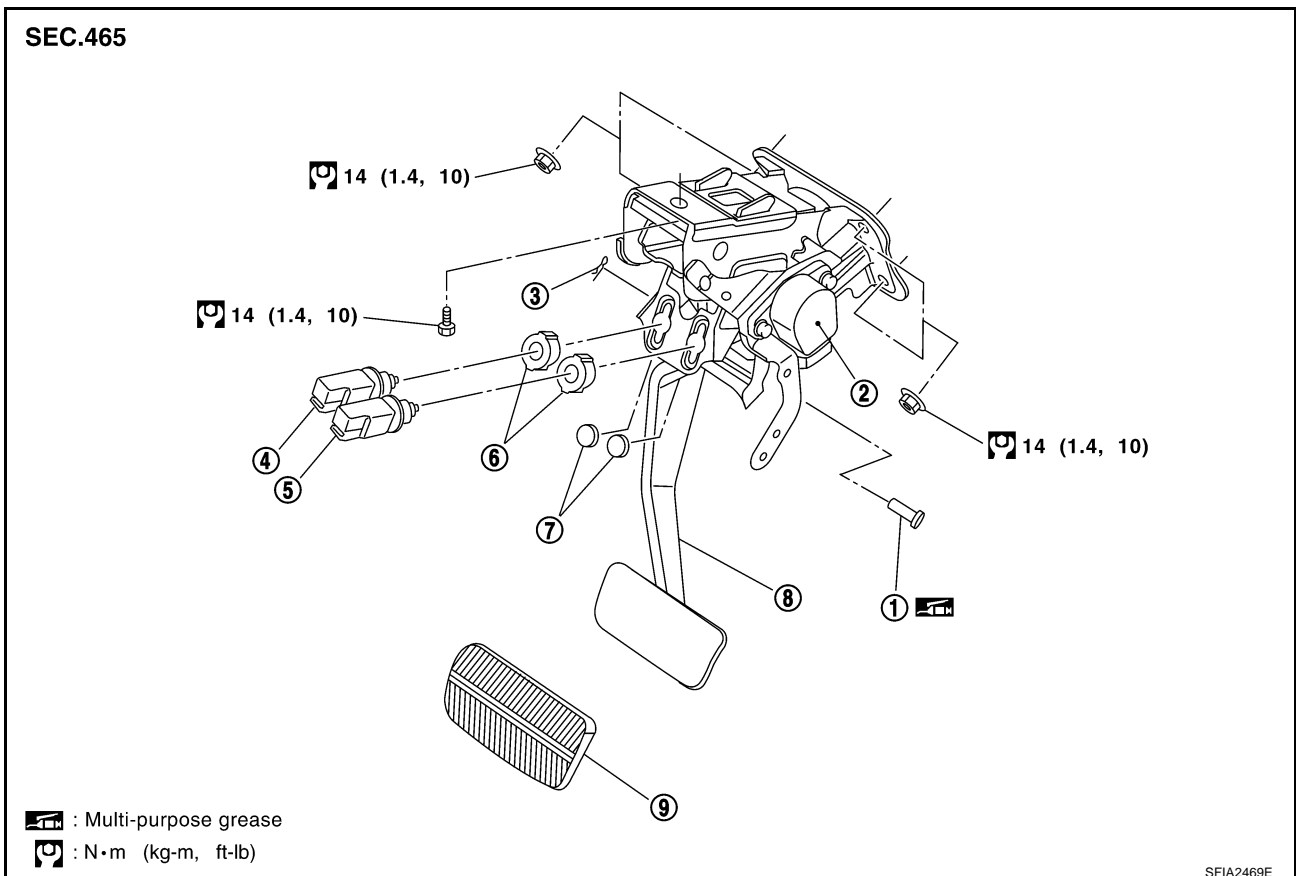
6. Start the engine to check brake pedal depression height when depressed. Refer to [BR-6, "Inspection and Adjustment"](#) .



Removal and Installation

COMPONENTS

EFS000FR



BRAKE PEDAL

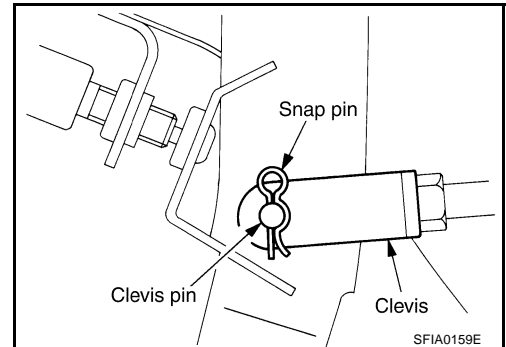
- | | | |
|-----------------------|------------------------------|--------------------|
| 1. Clevis pin | 2. Brake pedal stroke sensor | 3. Snap pin |
| 4. ASCD cancel switch | 5. Stop lamp switch | 6. Clip |
| 7. Stopper rubber | 8. Brake pedal assembly | 9. Brake pedal pad |

REMOVAL

1. Remove instrument lower driver panel. Refer to [IP-16, "\(V\) Instrument Lower Driver Panel"](#).
2. Remove steering column. Refer to [PS-11, "STEERING COLUMN"](#).
3. Remove stop lamp switch and ASCD cancel switch from brake pedal assembly.
4. Disconnect the brake pedal stroke sensor connector.

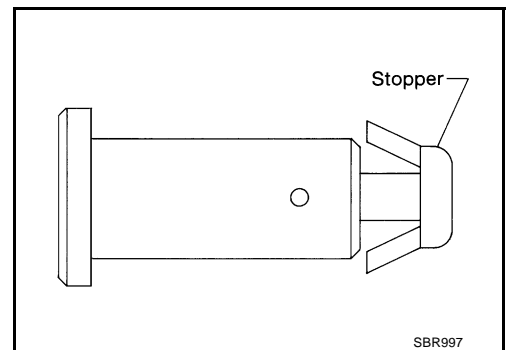
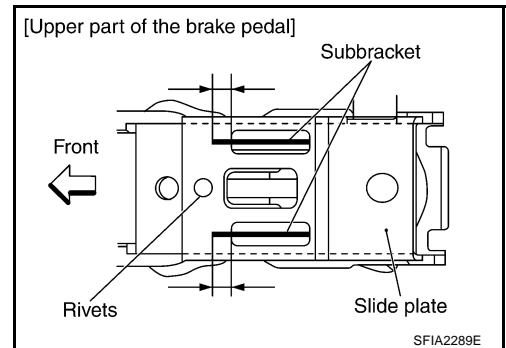
WARNING:
Brake pedal stroke sensor is not detachable. Do not detach it.

5. Remove snap pin and clevis pin from brake booster clevis.
6. Remove mounting nuts and bolt from bracket, and remove brake pedal assembly from vehicle.



INSPECTION AFTER REMOVAL

- Check brake pedal upper rivet for deformation.
 - Make sure that the lapping length of sub-bracket and slide plate is at least 5 mm (0.16 in).
 - Check brake pedal for bend, damage, and cracks on the welded parts.
 - Replace brake pedal assembly if any non-standard condition is detected.
-
- Check clevis pin and plastic stopper for damage and deformation. Replace clevis pin if there are.



INSTALLATION

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

Tighten the mounting nuts and bolt to the specified torque. Refer to [BR-7, "COMPONENTS"](#).

- After installing brake pedal assembly to vehicle, adjust brake pedal. Refer to [BR-6, "Inspection and Adjustment"](#).

BRAKE FLUID

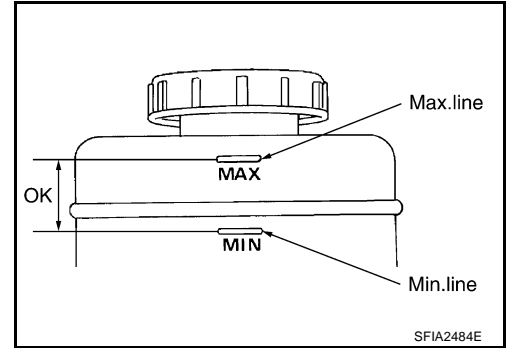
BRAKE FLUID

PFP:KN100

Checking Brake Fluid Level

EFS0020Z

- Make sure that a brake fluid level in reservoir tank is within the standard (between MAX and MIN lines).
- Visually check around reservoir tank for fluid leakage.
- If the level is excessively low, check brake system for leakage.
- Release parking brake lever and see if brake warning lamp goes off. If not, check brake system for fluid leakage.



Drain and Refill

EFS002AU

CAUTION:

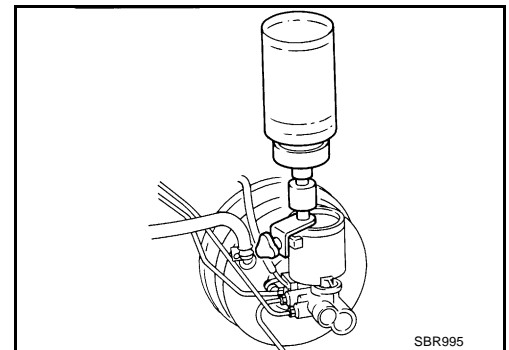
- Refill with new brake fluid "DOT3".
 - Do not reuse drained brake fluid.
 - Do not let brake fluid splash on painted surfaces of body. This might damage paint, so when splashing it on the surfaces, immediately wipe off them and wash it away with water.
 - Before servicing, disconnect electrical connectors of VDC/TCS/ABS control unit or battery negative terminal.
1. Connect a vinyl tube to bleed valve.
 2. Depress brake pedal, loosen bleed valve, and gradually remove brake fluid.
 3. Make sure there is no foreign material in reservoir tank, and refill with new brake fluid.
 4. 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.
 5. Bleed Air. Refer to [BR-9, "Bleeding Brake System"](#)

Bleeding Brake System

EFS00211

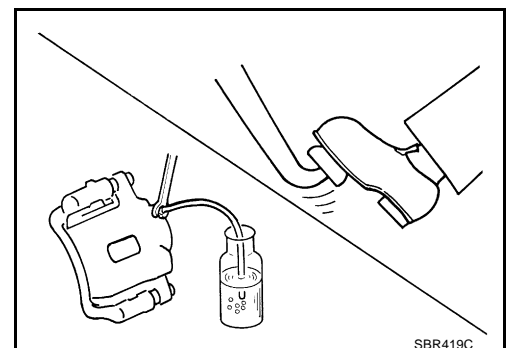
CAUTION:

- Carefully monitor brake fluid level in reservoir tank during bleeding operation.
- Refill with new brake fluid "DOT 3". Make sure it is at least half way at all times while bleeding air out of system.
- Place a container under master cylinder to avoid spillage of brake fluid.
- Turn ignition switch OFF and disconnect VDC actuator connectors or battery negative terminal.



- Bleed air in the following order. Right rear brake → Left front brake → Left rear brake → Right front brake

1. Connect a transparent vinyl tube to bleed valve.
2. Fully depress brake pedal several times.
3. With brake pedal depressed, open bleed valve to release air.
4. Close bleed valve.
5. Release brake pedal slowly.
6. Repeat steps 2, through 5, until clear brake fluid comes out of bleed valve.



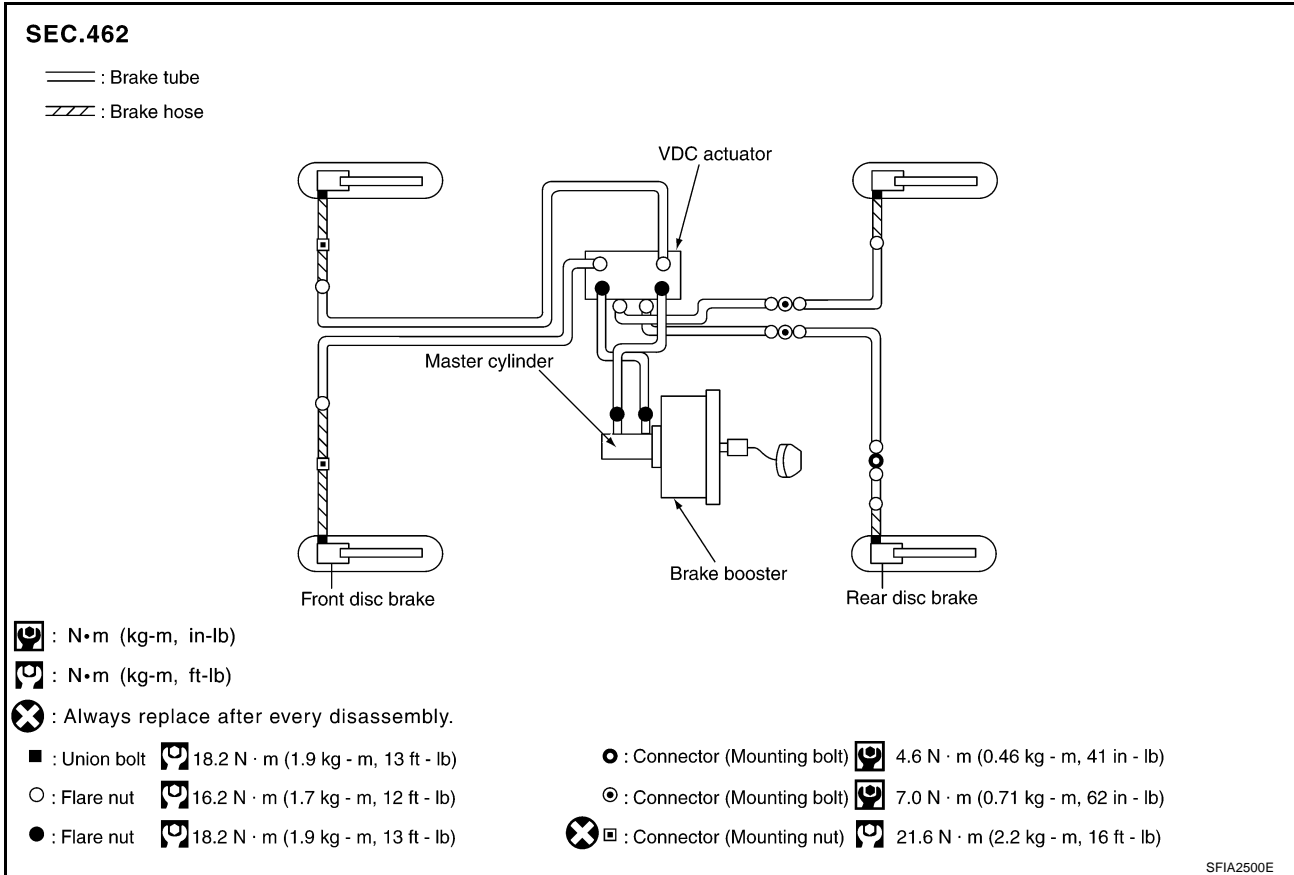
BRAKE PIPING AND HOSE

BRAKE PIPING AND HOSE

PFP:46210

Hydraulic Circuit

EFS004ZZ



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 tubes and hoses are an important safety parts. 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 way cause paint damage. If brake fluid is splashed on painted surfaces of body, immediately wipe it off and then wash it away with water immediately.
- Do not bend or twist brake hose sharply, or strongly pull it.
- When removing components, cover brake line 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.

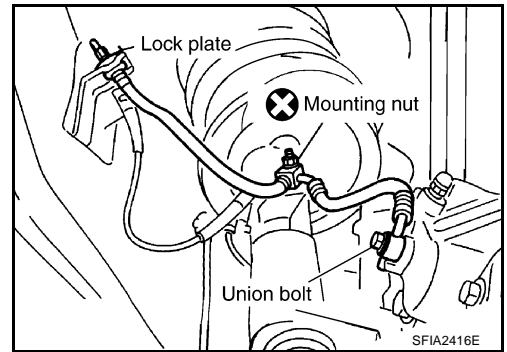
BRAKE PIPING AND HOSE

Removal and Installation of Front Brake Piping and Hose

EFS00500

REMOVAL

1. Drain brake fluid. Refer to [BR-9, "Drain and Refill"](#) .
2. Cover brake line connections to prevent foreign material such as dust or dirt from entering into the connections.
3. Using a flare nut wrench, remove brake tube from brake hose. Remove union bolt, and remove brake hose from caliper assembly.
4. Remove lock plate.
5. Remove mounting nut, and remove brake hose from vehicle.



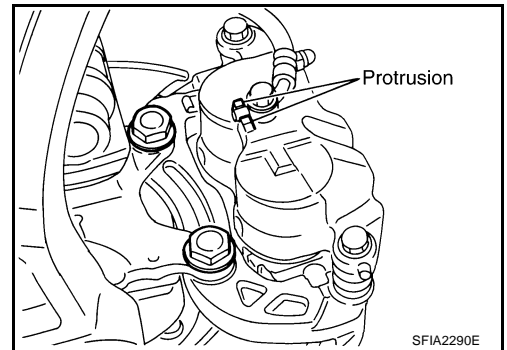
INSTALLATION

1. Position a metal fitting of brake hose between protrusions, and then tighten union bolt to the specified torque. Refer to [BR-10, "Hydraulic Circuit"](#) .

CAUTION:

Do not reuse the copper washer.

2. Connect brake hose to brake tube. Temporarily tighten flare nut by hand as much as possible. Secure them to bracket with the lock plate.
3. Tighten flare nut to the specified torque using a flare nut torque wrench. Refer to [BR-10, "Hydraulic Circuit"](#) .
4. Tighten mounting nuts to the specified torque. Refer to [BR-10, "Hydraulic Circuit"](#) .
5. After work, bleed air. Refer to [BR-9, "Bleeding Brake System"](#) .

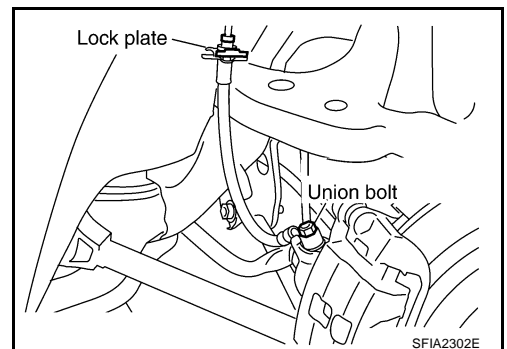


Removal and Installation of Rear Brake Piping and Hose

EFS00501

REMOVAL

1. Drain brake fluid. Refer to [BR-10, "Hydraulic Circuit"](#) .
2. Cover brake line connections to prevent foreign material such as dust or dirt from entering into connections.
3. Using a flare nut wrench, remove brake tube from brake hose.
4. Remove union bolts, and then remove brake hose from caliper assembly.
5. Remove lock plate, and remove brake hose from vehicle.



A
B
C
D
E
BR
G
H
I
J
K
L
M

**Thank you very much
for your reading.**

**Please click here and go
back to our website.**

**Then, you can
download the complete
manual instantly.**

No waiting.