

SECTION **BR**
BRAKE SYSTEM

A
B
C
D
E

CONTENTS

SYMPTOM DIAGNOSIS	3	FRONT BRAKE : Inspection	10
NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING	3	REAR BRAKE	10
NVH Troubleshooting Chart	3	REAR BRAKE : Inspection	10
PRECAUTION	4	ON-VEHICLE MAINTENANCE	11
PRECAUTIONS	4	BRAKE PEDAL	11
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	4	Inspection and Adjustment	11
Precautions For High-Voltage System	4	BRAKE FLUID	13
Precaution for Procedure without Cowl Top Cover.....	4	Inspection	13
Precaution for Brake System	4	Refilling	13
PREPARATION	6	Bleeding Brake System	13
Special Service Tool	6	ON-VEHICLE REPAIR	18
Commercial Service Tool	6	BRAKE PEDAL	18
BASIC INSPECTION	7	Exploded View	18
FRONT DISC BRAKE	7	Removal and Installation	18
BRAKE PAD	7	BRAKE TUBE AND HOSE	20
BRAKE PAD : Inspection	7	FRONT BRAKE	20
BRAKE PAD : Brake Burnishing Procedure	7	FRONT BRAKE : Removal and Installation	20
DISC ROTOR	7	REAR BRAKE	20
DISC ROTOR : Inspection	7	REAR BRAKE : Removal and Installation	20
REAR DISC BRAKE	9	FRONT DISC BRAKE	22
BRAKE PAD	9	BRAKE PAD	22
BRAKE PAD : Inspection	9	BRAKE PAD : Exploded View	22
DISC ROTOR	9	BRAKE PAD : Removal and Installation	22
DISC ROTOR : Inspection	9	BRAKE CALIPER ASSEMBLY	24
BRAKE TUBE AND HOSE	10	BRAKE CALIPER ASSEMBLY : Exploded View	24
FRONT BRAKE	10	BRAKE CALIPER ASSEMBLY : Removal and Installation	24
		REAR DISC BRAKE	27
		BRAKE PAD	27
		BRAKE PAD : Exploded View	27

BR

G

H

I

J

K

L

M

N

O

P

BRAKE PAD : Removal and Installation	27	REAR DISC BRAKE	34
BRAKE CALIPER ASSEMBLY	28	BRAKE CALIPER ASSEMBLY	34
BRAKE CALIPER ASSEMBLY : Exploded View ...	29	BRAKE CALIPER ASSEMBLY : Exploded View ...	34
BRAKE CALIPER ASSEMBLY : Removal and In-		BRAKE CALIPER ASSEMBLY : Disassembly	34
stallation	29	BRAKE CALIPER ASSEMBLY : Assembly	35
DISASSEMBLY AND ASSEMBLY	31	BRAKE CALIPER ASSEMBLY : Inspection After	
FRONT DISC BRAKE	31	Disassembly	36
BRAKE CALIPER ASSEMBLY	31	SERVICE DATA AND SPECIFICATIONS	
BRAKE CALIPER ASSEMBLY : Exploded View ...	31	(SDS)	37
BRAKE CALIPER ASSEMBLY : Disassembly	31	SERVICE DATA AND SPECIFICATIONS	
BRAKE CALIPER ASSEMBLY : Assembly	32	(SDS)	37
BRAKE CALIPER ASSEMBLY : Inspection After		General Specifications	37
Disassembly	33	Brake Pedal	37
		Front Disc Brake	37
		Rear Disc Brake	37

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:000000003070227

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	Shake	Noise	Shake
			BR-7, BR-9	BR-7, BR-9
			BR-7, BR-9	BR-7, BR-9
			BR-7, BR-9	BR-7, BR-9
			—	—
			—	—
			BR-7, BR-9	BR-7, BR-9
			—	—
			—	—
			—	—
			BR-7, BR-9	BR-7, BR-9
			—	—
			FAX-2, "NVH Troubleshooting Chart"	FAX-2, "NVH Troubleshooting Chart"
			FSU-2, "NVH Troubleshooting Chart"	FSU-2, "NVH Troubleshooting Chart"
			FAX-2, "NVH Troubleshooting Chart" Front axle, RAX-2, "NVH Troubleshooting Chart" Rear axle	FAX-2, "NVH Troubleshooting Chart" Front axle, RAX-2, "NVH Troubleshooting Chart" Rear axle
			WT-29, "NVH Troubleshooting Chart"	WT-29, "NVH Troubleshooting Chart"
			WT-29, "NVH Troubleshooting Chart"	WT-29, "NVH Troubleshooting Chart"
			FAX-2, "NVH Troubleshooting Chart"	FAX-2, "NVH Troubleshooting Chart"
			ST-2, "NVH Troubleshooting Chart"	ST-2, "NVH Troubleshooting Chart"

×: Applicable

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

BR

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000003303905

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

WARNING:

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

Precautions For High-Voltage System

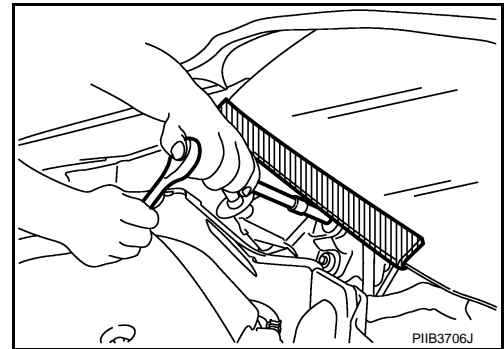
INFOID:000000003070229

Refer to [GI-24, "Precautions For High-Voltage System"](#).

Precaution for Procedure without Cowl Top Cover

INFOID:000000003070230

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



Precaution for Brake System

INFOID:000000003070231

- 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".
- Never reuse drained brake fluid.
- 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.
- Use clean brake fluid, to clean or wash all parts of master cylinder and disc brake caliper, etc.
- Never use mineral oils such as gasoline or kerosene. They will ruin rubber parts of the hydraulic system.

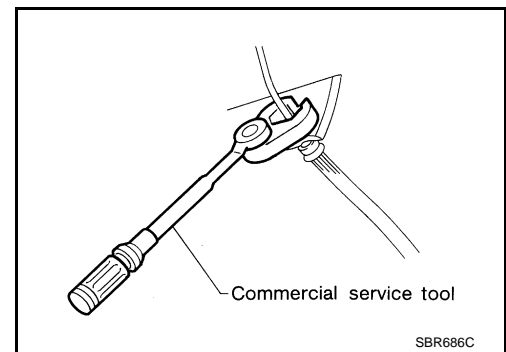
PRECAUTIONS

< PRECAUTION >

- Use flare nut torque wrench when installing brake tube.
- When installing brake tube and hose, be sure to check torque.
- Before working, turn ignition switch OFF and disconnect connectors of ABS actuator and electric unit (control unit) or battery cable from the negative terminal.
- Burnish the brake contact surfaces after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage. Refer to [BR-7, "BRAKE PAD : Brake Burnishing Procedure"](#).

WARNING:

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



A

B

C

D

E

BR

G

H

I

J

K

L

M

N

O

P

PREPARATION

< PREPARATION >

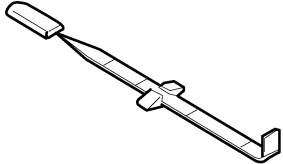
PREPARATION

PREPARATION

Special Service Tool

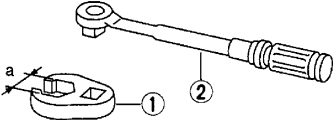
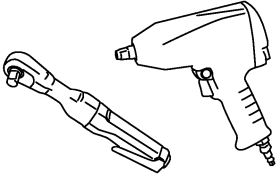
INFOID:000000003070232

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
<p>— (J-46532) Brake and clutch pedal height measurement tool</p>  <p style="text-align: right;">LFIA0227E</p>	<p>Measuring brake pedal height</p>

Commercial Service Tool

INFOID:000000003070233

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;">NT360</p>	<p>Installing each brake tube and hose</p>
<p>Power tool</p>  <p style="text-align: right;">PBIC0190E</p>	<p>Removing front and rear caliper assembly, tires</p>

FRONT DISC BRAKE

< BASIC INSPECTION >

BASIC INSPECTION

FRONT DISC BRAKE

BRAKE PAD

BRAKE PAD : Inspection

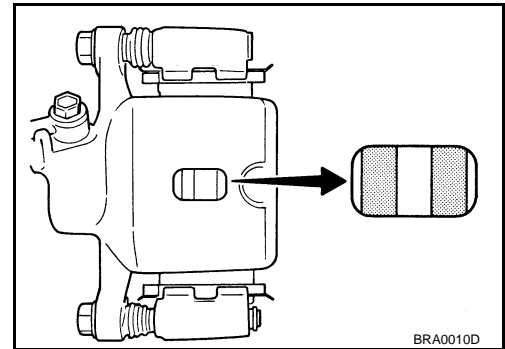
INFOID:000000003070234

PAD WEAR

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

Standard thickness : 11.0 mm (0.433 in)

Repair limit thickness : 2.0 mm (0.079 in)



BRAKE PAD : Brake Burnishing Procedure

INFOID:000000003070235

Burnish contact surfaces between disc rotors and pads according to following procedure after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage.

CAUTION:

- **Be careful of vehicle speed because the brake does not operate easily until pad and disc rotor are securely fitted.**
 - **Only perform this procedure under safe road and traffic conditions. Use extreme caution.**
1. Drive vehicle on straight, flat road.
 2. Depress brake pedal with the power to stop vehicle within 3 to 5 seconds until the vehicle stops.
 3. Drive without depressing brake for a few minutes to cool the brake.
 4. Repeat steps 1 to 3 until pad and disc rotor are securely fitted.

DISC ROTOR

DISC ROTOR : Inspection

INFOID:000000003070236

VISUAL

Check surface of disc rotor for uneven wear, cracks, and serious damage. Replace if there are.

RUNOUT

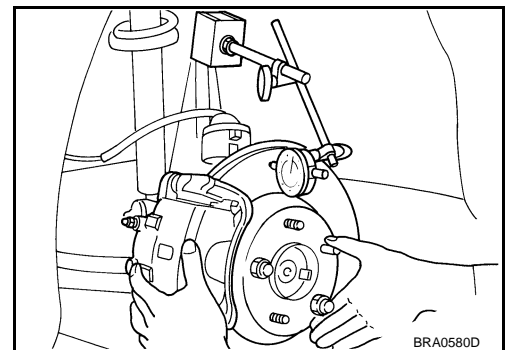
1. Fix disc rotor to wheel hub using wheel nuts (2 or more positions).
2. Inspect runout using a dial gauge. [Measured at 10 mm (0.39 in) inside the disc edge.]

Runout limit : 0.035 mm (0.0014 in)
(with it attached to the vehicle)

NOTE:

Before measuring, make sure that wheel bearing axial end play is within the specification. Refer to [FAX-5. "Inspection"](#).

3. When runout exceeds limit value, displace mounting positions of disc rotor by one hole. And then find a position of the minimum value for runout.
4. Replace or lathe disc rotor if runout is outside the specified value after performing the above operation.



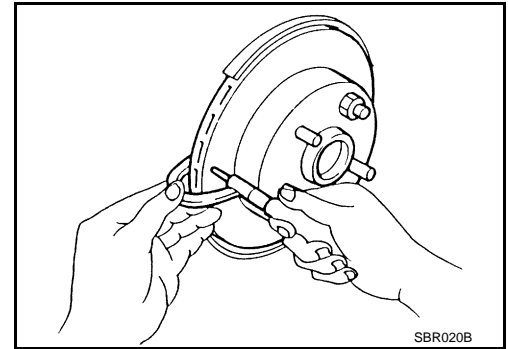
THICKNESS

FRONT DISC BRAKE

< BASIC INSPECTION >

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

Standard thickness	: 26.0 mm (1.024 in)
Wear limit	: 24.0 mm (0.945 in)
Thickness variation (Measured at 8 positions)	: 0.015 mm (0.0006 in)



REAR DISC BRAKE

< BASIC INSPECTION >

REAR DISC BRAKE BRAKE PAD

BRAKE PAD : Inspection

INFOID:000000003070237

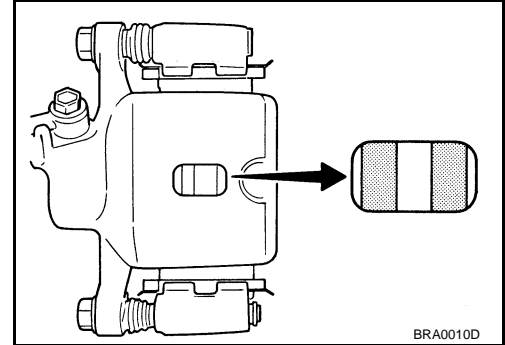
PAD WEAR

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

Standard

Standard thickness : 8.5 mm (0.335 in)

Repair limit thickness : 1.0 mm (0.039 in)



DISC ROTOR

DISC ROTOR : Inspection

INFOID:000000003070238

VISUAL

Check surface of disc rotor for uneven wear, cracks, and serious damage. Replace if there are.

RUNOUT

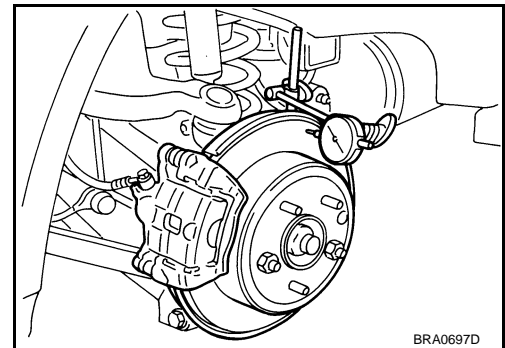
1. Fix disc rotor to wheel hub using wheel nuts (2 or more positions).
2. Inspect runout using dial gauge. [Measured at 10 mm (0.39 in) inside disc edge.]

Runout limit : 0.05 mm (0.002 in)
(With it attached to the vehicle)

NOTE:

Before measuring, make sure that wheel bearing axial end play is within the specification. Refer to [FAX-5, "Inspection"](#).

3. When runout exceeds limit value, displace mounting positions of disc rotor by one hole. And then find a position of the minimum value for runout.
4. Replace disc rotor if it is outside repair limit after performing the above operation.



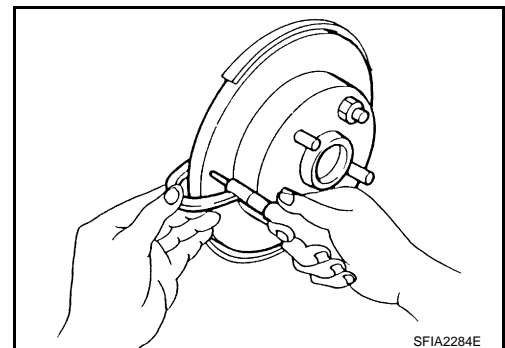
THICKNESS

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

Standard thickness : 9.0 mm (0.354 in)

Wear limit : 8.0 mm (0.315 in)

Thickness variation : 0.015 mm (0.0006 in)
(Measured at 8 positions)



BRAKE TUBE AND HOSE

< BASIC INSPECTION >

BRAKE TUBE AND HOSE

FRONT BRAKE

FRONT BRAKE : Inspection

INFOID:000000003070239

INSPECTION AFTER REMOVAL

CAUTION:

Brake tubes and hoses are important safety parts. 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.

1. Check brake lines (tubes and hoses) and connections for fluid leakage, damage, twists, deformation, contacts with other parts, and loose connections. Replace any damage parts.
2. While depressing brake pedal under a force of 785 N (80 kg-f, 177 lb-f) with engine running for approximately 5 seconds, then check each part for fluid leakage.

REAR BRAKE

REAR BRAKE : Inspection

INFOID:000000003070240

INSPECTION AFTER REMOVAL

CAUTION:

Brake tubes and hoses are important safety parts. 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.

1. Check brake lines (tubes and hoses) and connections for fluid leakage, damage, twists, deformation, contacts with other parts, and loose connections. Replace any damage parts.
2. While depressing brake pedal under a force of 785 N (80 kg-f, 177 lb-f) with engine running for approximately 5 seconds, then check each part for fluid leakage.

BRAKE PEDAL

< ON-VEHICLE MAINTENANCE >

ON-VEHICLE MAINTENANCE

BRAKE PEDAL

Inspection and Adjustment

INFOID:000000003303906

INSPECTION

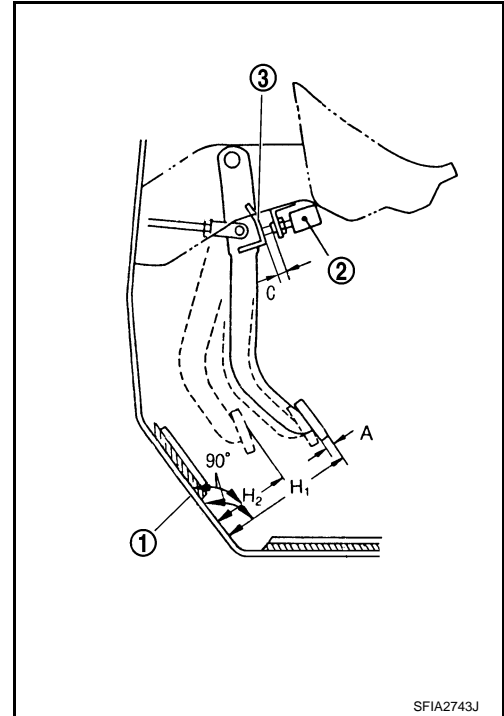
Pedal Play and Clearance

Play and clearance inspection between brake pedal and floor panel with pedal depressed.

- Check brake pedal play.
- Check brake pedal height from dash lower panel (1) using Tool.

Tool number : — (J-46532)

- Adjust height referring to the following specifications.



SFIA2743J

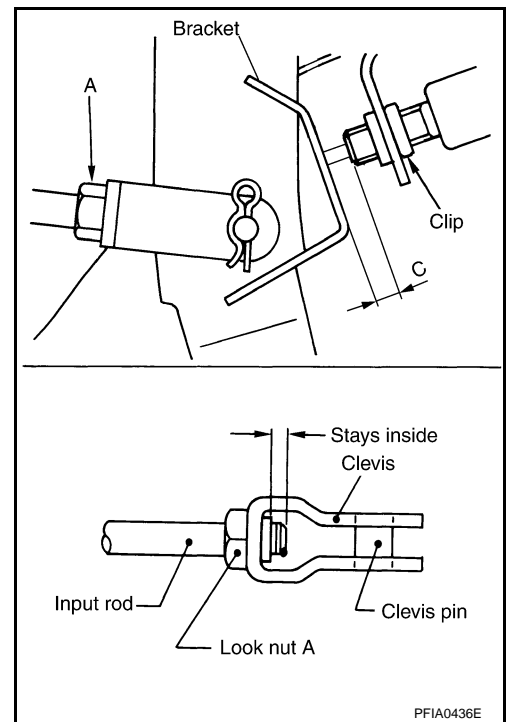
H1	Brake pedal height (from dash lower panel top surface)	190.7 – 202.7 mm (7.51 – 7.98 in)
H2	Brake pedal depressed height [under a force of 490 N (50 kg-f, 110 lb-f) with engine running]	60.7 - 72.7 mm (2.39 - 2.86 in)
C	Clearance between bracket (3) and threaded end of the stop lamp switch and ASCD switch (2)	0.74 – 1.96 mm (0.0291 – 0.0772 in)
A	Pedal play	3 – 11 mm (0.12 – 0.43 in)

ADJUSTMENT

BRAKE PEDAL

< ON-VEHICLE MAINTENANCE >

1. Loosen stop lamp switch and ASCD switch by turning it counter-clockwise by 45°.
2. Loosen lock nut (A) on the input rod to rotate input rod for adjusting brake pedal height to the specified one, and tighten lock nut (A).
Refer to [BR-18, "Exploded View"](#) brake pedal height, specified torque.
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 switch until its threaded end contacts stopper.
4. With the threaded end of the stop lamp switch and ASCD switch contacting the bracket, rotate the switch clockwise by 45° to secure.
CAUTION:
Make sure that the clearance (C) between bracket and end of stop lamp switch and brake switch is within the standard.
Refer to [BR-11, "Inspection and Adjustment"](#).
5. Check pedal play.
CAUTION:
Make sure that stop lamps goes off when pedal is released.
6. Start engine to check brake pedal depression height when depressed. Refer to [BR-11, "Inspection and Adjustment"](#).



BRAKE FLUID

< ON-VEHICLE MAINTENANCE >

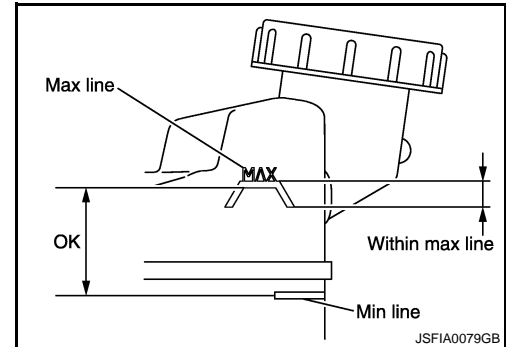
BRAKE FLUID

Inspection

INFOID:000000003070242

BRAKE FLUID LEVEL

- 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 and see if brake warning lamp goes off. If not, check brake system for fluid leakage.



BRAKE LINE

CAUTION:

If leakage occurs around joints, retighten or, if necessary, replace damaged parts.

Check brake line (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.

Refilling

INFOID:000000003070243

REFILLING

CAUTION:

- Refill with new brake fluid "DOT 3".
- Never reuse drained brake fluid.

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

Bleeding Brake System

INFOID:000000003070244

CAUTION:

- If any DTC is indicated, erase the indicated DTC.
- After the procedure of air bleed, perform initialization of linear solenoid valve. Refer to [BRC-7, "PERFORM INITIALIZATION OF LINEAR SOLENOID VALVE AND CALIBRATION : Description"](#).

NOTE:

The brake warning buzzer may be activated during the air bleed procedure. The work can be continued, as it is normal.

AIR RELEASE OF STATIC PRESSURE SYSTEM (FRONT WHEEL)

CAUTION:

- Monitor the fluid level in the reservoir tank during the air bleeding.
- Always use new brake fluid for refilling. Never reuse the drained brake fluid.

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed of the static pressure system and suction drain system, remove 2 relays for brake actuator motor beforehand.
5. Connect a vinyl tube to the bleeder valve of the front brake.
6. When performing air bleed, following conditions are required.
 - ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range
 - Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - No failure of brake system (except following items)
 - Motor relay

BRAKE FLUID

< ON-VEHICLE MAINTENANCE >

- Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
7. Select "AIR REL INHIBIT" in "ACTIVE TEST".
 8. Loosen the bleeder valve and bleed air with the brake pedal depressed.
NOTE:
Air bleeding is allowed to start from either right or left.
 9. After a complete air bleeding, tighten bleeder valve to the specified torque.
 10. Check that the fluid level in the reservoir tank is within the specified range after air bleeding.

AIR RELEASE OF SUCTION DRAIN SYSTEM

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Perform the air bleed procedure within 30 seconds after the transmission of the signal from CONSULT-III. When the air bleed is performed afterward, the re-transmission of the signal from CONSULT-III is needed.**

NOTE:

Air bleed from the bleeder valve is not necessary since this operation is to return brake fluid (air).

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed, following conditions are required.
 - ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range
 - Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - No failure of brake system (except following items)
 - Motor relay
 - Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
5. Select "AIR REL DRAIN" in "ACTIVE TEST".
6. Step on the brake pedal and return brake fluid to reservoir tank.
7. Ensure that no air (bubble) is contained in the brake fluid circulated from reservoir tank.

AIR RELEASE OF REAR WHEEL SYSTEM

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Always use new brake fluid for refilling. Never reuse the drained brake fluid.**

1. Turn ignition switch OFF.
2. Connect 2 motor relays.
3. Connect CONSULT-III.
4. Turn ignition switch (READY).
NOTE:
If CONSULT-III is frozen, erase the DTC.
5. Confirm accumulator pressure level by using "DATA MONITOR" in CONSULT-III.
 - a. Select "ACC PRESS SEN" in "DATA MONITOR".
 - b. Ensure that this voltage is over 3.42 V.
 - c. If voltage is under 3.42 V, then step on the brake pedal several time.
6. When performing air bleed, following conditions must be met.
 - ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range

BRAKE FLUID

< ON-VEHICLE MAINTENANCE >

- Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - ABS motor relay No.1 and No.2 are set
 - No failure of brake system (except following items)
 - Motor relay
 - Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
7. Connect a vinyl tube to the bleeder valve of the rear brake.
 8. Select "AIR REL INHIBIT" in "ACTIVE TEST".
 9. Loosen the bleeder valve and bleed air with the brake pedal depressed.
 10. Ensure that there is no air leakage from the bleeder.
 11. After a complete air bleeding, tighten bleeder valve to the specified torque.
 12. Check that the fluid level in the reservoir tank is within the specified range after air bleeding.

AIR RELEASE OF POWER SUPPLY SYSTEM

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Always use new brake fluid for refilling. Never reuse the drained brake fluid.**
- **Perform the air bleed procedure within 10 seconds after the transmission of the signal from CONSULT-III. When the air bleed is performed afterward, the re-transmission of the signal from CONSULT-III is needed.**

NOTE:

- No need to step on the brake pedal.
 - Air bleeding is necessary for the front left brake only.
1. Turn ignition switch OFF.
 2. Connect CONSULT-III.
 3. Turn ignition switch (READY).
 4. Connect a vinyl tube to the bleeder valve of the front left brake.
 5. When performing air bleed, following conditions must be met.
 - ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range
 - Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - ABS motor relay No.1 and No.2 are set
 - No failure of brake system (except following items)
 - Motor relay
 - Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
 6. Select "AIR REL PWR SPLY 2" in "ACTIVE TEST".
 7. Loosen the bleeder valve.
 8. Ensure that there is no air leakage from the bleeder.
 9. After a complete air bleeding, tighten bleeder valve to the specified torque.

AIR RELEASE OF STROKE SIMULATOR SYSTEM

Air Bleed of Stroke Simulator System 1

CAUTION:

- **Perform the air bleed procedure within 30 seconds after the transmission of the signal from CONSULT-III. When the air bleed is performed afterward, the re-transmission of the signal from CONSULT-III is needed.**

NOTE:

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

BRAKE FLUID

< ON-VEHICLE MAINTENANCE >

- Air bleed from the bleeder is not necessary in this stage.
 - This process is performed to send air contained in the stroke simulator to piping. Pedal operation only and no need of air bleed from the bleeder.
1. Turn ignition switch OFF.
 2. Connect CONSULT-III.
 3. Turn ignition switch (READY).
 4. When performing air bleed, following conditions must be met.
 - ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range
 - Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - ABS motor relay No.1 and No.2 are set
 - No failure of brake system (except following items)
 - Motor relay
 - Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
 5. Select "AIR REL STROKE SIM" in "ACTIVE TEST".
 6. Step on the brake pedal 20 times with its stroke fully within continuously 20 to 30 seconds.

Air Release of Stroke Simulator System 2

NOTE:

Air bleeding is necessary for the front left brake only.

1. Connect a vinyl tube to the bleeder valve of the front left brake.
2. When performing air bleed, following conditions must be met.
 - ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range
 - Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - ABS motor relay No.1 and No.2 are set
 - No failure of brake system (except following items)
 - Motor relay
 - Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
3. Select "AIR REL INHIBIT" in "ACTIVE TEST".
4. Loosen the bleeder valve and bleed air with the brake pedal depressed.
5. Ensure that there is no air from the bleeder.
6. Tighten the bleeder valve to the specified torque.
7. Return to previous step "Air Release of Stroke Simulator System 1". Repeat "Air Release of Stroke Simulator System 1" and "Air Release of Stroke Simulator System 2" at least 3 times.

AIR RELEASE OF HIGH-PRESSURE LINE

CAUTION:

Be careful with fluid level in the reservoir tank because a large amount of brake fluid flows back to the reservoir tank.

NOTE:

Air bleed from the bleeder is not necessary in this stage.

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed, following conditions must be met.

BRAKE FLUID

< ON-VEHICLE MAINTENANCE >

- ABS relay No.1 and No.2: ON
 - Parking brake: ON
 - Shift position: P range
 - Vehicle speed: 0 km/h (0 MPH)
 - Normal power supply voltage
 - Normal communication with HV
 - ABS motor relay No.1 and No.2 are set
 - No failure of brake system (except following items)
 - Motor relay
 - Accumulator
 - Fluid level switch
 - Calibration for each sensors and linear solenoid
 - Test mode diag code
5. Select "ACC 0 DOWN" in "ACTIVE TEST".
- NOTE:**
Return air remaining in the high-pressure line to reservoir tank and open atmosphere.
6. Repeat 5 times to ensure the circulation of brake fluid since visual judgment of completion is difficult.
7. Fill the brake fluid to the MAX line after completing this operation, with "ACC 0 DOWN" condition.

A

B

C

D

E

BR

G

H

I

J

K

L

M

N

O

P

BRAKE PEDAL

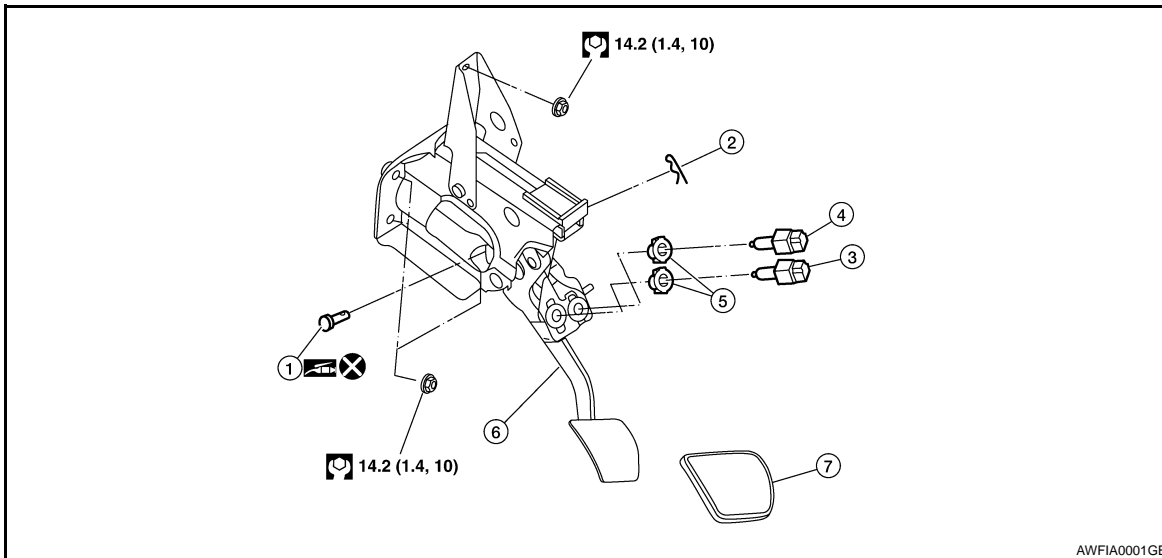
< ON-VEHICLE REPAIR >


ON-VEHICLE REPAIR

BRAKE PEDAL

Exploded View

INFOID:000000003070245



- | | | |
|--------------------|--|-------------------------|
| 1. Clevis pin | 2. Snap pin | 3. Stop lamp switch |
| 4. ASCD switch | 5. Clip | 6. Brake pedal assembly |
| 7. Brake pedal pad |  : Multi-purpose grease | |

NOTE:

Clevis pin can be installed from both left and right.

Removal and Installation

INFOID:000000003070246

CAUTION:

When the brake pedal position moves after the replacement of stop lamp switch, the replacement of brake pedal or brake pedal height adjustment, measure the zero-point voltage of the brake stroke sensor and confirm that the value is within the normal range. If the value is out of normal range, perform the adjustment of the brake stroke sensor. Refer to [BRC-9, "PERFORM ADJUSTMENT OF STROKE SENSOR : Description"](#).

REMOVAL

1. Remove instrument lower cover (LH) and lower knee protector. Refer to [IP-10, "Exploded View"](#).
2. Remove steering column assembly. Refer to [ST-9, "Removal and Installation"](#).
3. Disconnect stop lamp switch and ASCD switch connector.
4. Remove stop lamp switch and ASCD switch from brake pedal assembly.
5. Disconnect brake pedal stroke sensor connector.(With pre-crash seat belt)

CAUTION:

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

6. Remove snap pin and clevis pin from clevis of brake booster.
7. Remove brake pedal assembly nuts. Pull brake booster toward engine room to the extent that does not deform brake tube.
8. Remove brake booster clevis from input rod.
9. Remove bolt and then remove brake pedal assembly from vehicle.

INSTALLATION

Installation is the reverse order of removal.

BRAKE PEDAL

< ON-VEHICLE REPAIR >

- Tightening torques for brake pedal assembly nuts and bolt are referred to [BR-18. "Exploded View"](#). Tightening torque for lock nut is referred to [BR-18. "Exploded View"](#).
- Adjust brake pedal height after installing brake pedal assembly to vehicle. Refer to [BR-11. "Inspection and Adjustment"](#).

CAUTION:

Do not reuse clevis pin.

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

BRAKE TUBE AND HOSE

< ON-VEHICLE REPAIR >

BRAKE TUBE AND HOSE

FRONT BRAKE

FRONT BRAKE : Removal and Installation

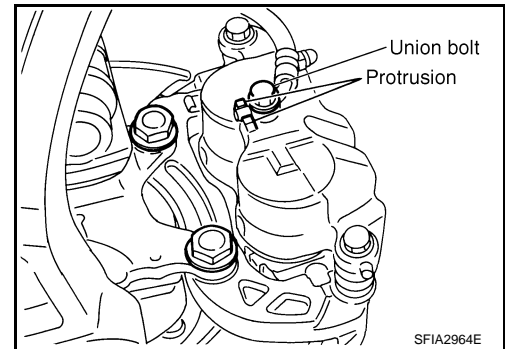
INFOID:000000003070247

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 hoses when disconnecting to prevent entrance of dirt.

1. Drain brake fluid. Refer to [BR-13, "Bleeding Brake System"](#).
2. Disconnect brake hose from brake tube, using a flare nut wrench.
3. Remove union bolt and remove brake hose from caliper assembly.
4. Remove lock plate and remove brake hose from vehicle.



INSTALLATION

CAUTION:

- All brake hoses and 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 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".
- Never reuse drained brake fluid.

1. Assemble the union bolt and copper washer to the brake hose.

CAUTION:

Do not reuse copper washer.

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

Union bolt : 18.2 (1.9, 13)

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 flare nut torque wrench, tighten flare nut to the specified torque.

Flare nut : 16.2 (1.7, 12)

5. Refill brake fluid and bleed air. Refer to [BR-13, "Bleeding Brake System"](#).

REAR BRAKE

REAR BRAKE : Removal and Installation

INFOID:000000003070248

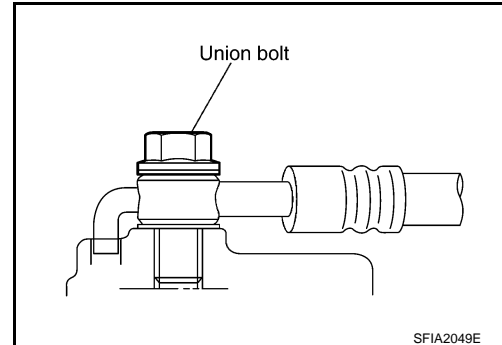
REMOVAL

CAUTION:

BRAKE TUBE AND HOSE

< ON-VEHICLE REPAIR >

- 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 hoses when disconnecting to prevent entrance of dirt.
1. Drain brake fluid. Refer to [BR-13. "Bleeding Brake System"](#).
 2. Disconnect brake hose from brake tube, using a flare nut wrench.
 3. Remove union bolts, and then remove brake hose from brake caliper assembly.
 4. Remove lock plate and then remove brake hose from vehicle.



INSTALLATION

CAUTION:

- All brake hoses and 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 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".
- Never reuse drained brake fluid.

1. Assemble the union bolt and copper washer to the brake hose.

CAUTION:

Do not reuse copper washer.

2. Attach L-shape metal fitting of the brake hose to brake caliper assembly positioning hole, and then tighten union bolt to the specified torque.

Union bolt : 18.2 (1.9, 13)

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 flare nut torque wrench, tighten flare nut to the specified torque.

Flare nut : 16.2 (1.7, 12)

5. Refill brake fluid and bleed air. Refer to [BR-13. "Bleeding Brake System"](#).

FRONT DISC BRAKE

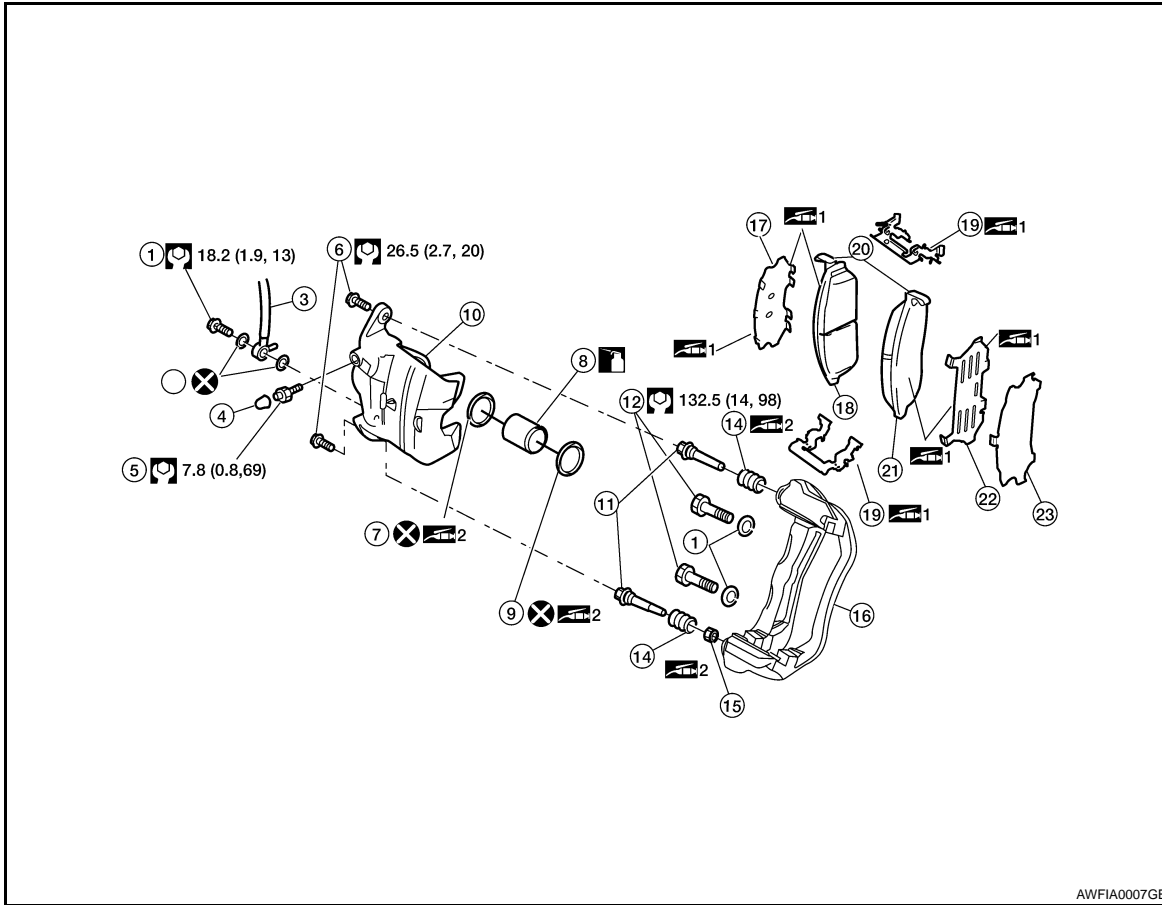
< ON-VEHICLE REPAIR >

FRONT DISC BRAKE

BRAKE PAD

BRAKE PAD : Exploded View

INFOID:000000003070249



AWFIA0007GE

- | | | |
|-------------------|-----------------------------|------------------------|
| 1. Union bolt | 2. Copper washer | 3. Brake hose |
| 4. Cap | 5. Bleed valve | 6. Sliding pin bolt |
| 7. Piston seal | 8. Piston | 9. Piston boot |
| 10. Cylinder body | 11. Sliding pin | 12. Torque member bolt |
| 13. Washer | 14. Sliding pin boot | 15. Bushing |
| 16. Torque member | 17. Inner multilayered shim | 18. Inner pad |
| 19. Pad retainer | 20. Pad wear sensor | 21. Outer pad |
| 22. Outer shim | 23. Outer shim cover | |

1: Molykote M-77 grease

2: Rubber grease

: Brake fluid

Refer to GI section for symbol marks except in the above.

BRAKE PAD : Removal and Installation

INFOID:000000003070250

REMOVAL

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

CAUTION:

- While removing cylinder body, do not depress brake pedal because piston will pop out.

FRONT DISC BRAKE

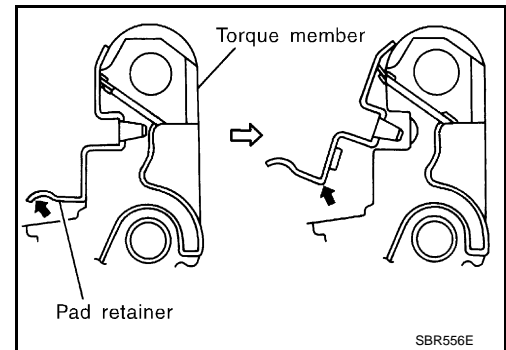
< ON-VEHICLE REPAIR >

- It is not necessary to remove bolts on torque member and brake hose except for disassembly or replacement of caliper assembly. In this case, hang cylinder body 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 rotor free from brake fluid.
- Burnish the brake pads and disc rotor mutually contacting surfaces, after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage. Refer to [BR-7, "BRAKE PAD : Brake Burnishing Procedure"](#).

1. Remove front tires from vehicle using power tool.
2. Remove lower sliding pin bolt.
3. Hang cylinder body with a wire, and remove pads, pad retainers, shims, and shim cover from torque member.

CAUTION:

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



INSTALLATION

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

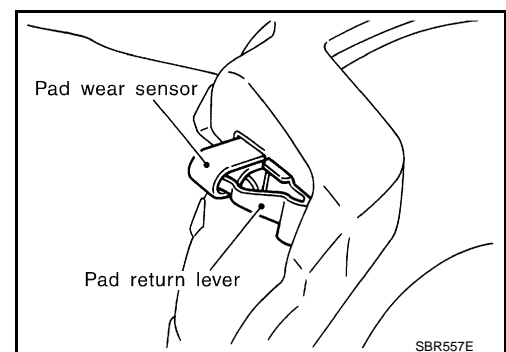
CAUTION:

- While removing cylinder body, do not depress brake pedal because piston will pop out.
- It is not necessary to remove bolts on torque member and brake hose except for disassembly or replacement of caliper assembly. In this case, hang cylinder body 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 rotor free from brake fluid.
- Burnish the brake pads and disc rotor mutually contacting surfaces, after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage. Refer to [BR-7, "BRAKE PAD : Brake Burnishing Procedure"](#).

1. Apply Molykote M-77 grease or equivalent to between shim cover and shim. Install outer shim, outer shim cover to inner pad, and inner multilayered shim to outer pad.
2. Apply Molykote M-77 grease or equivalent to between pad retainer and pad. Install pad retainers and pads to torque member.

CAUTION:

- Securely assemble pad retainers so that they are not being lifted up from torque member.
- Both inner and outer pads have a pad return system on the pad retainer. Install pad return lever securely to pad wear sensor.



3. Install cylinder body to torque member.

CAUTION:

In the case of replacing a pad with new one, check a 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.

FRONT DISC BRAKE

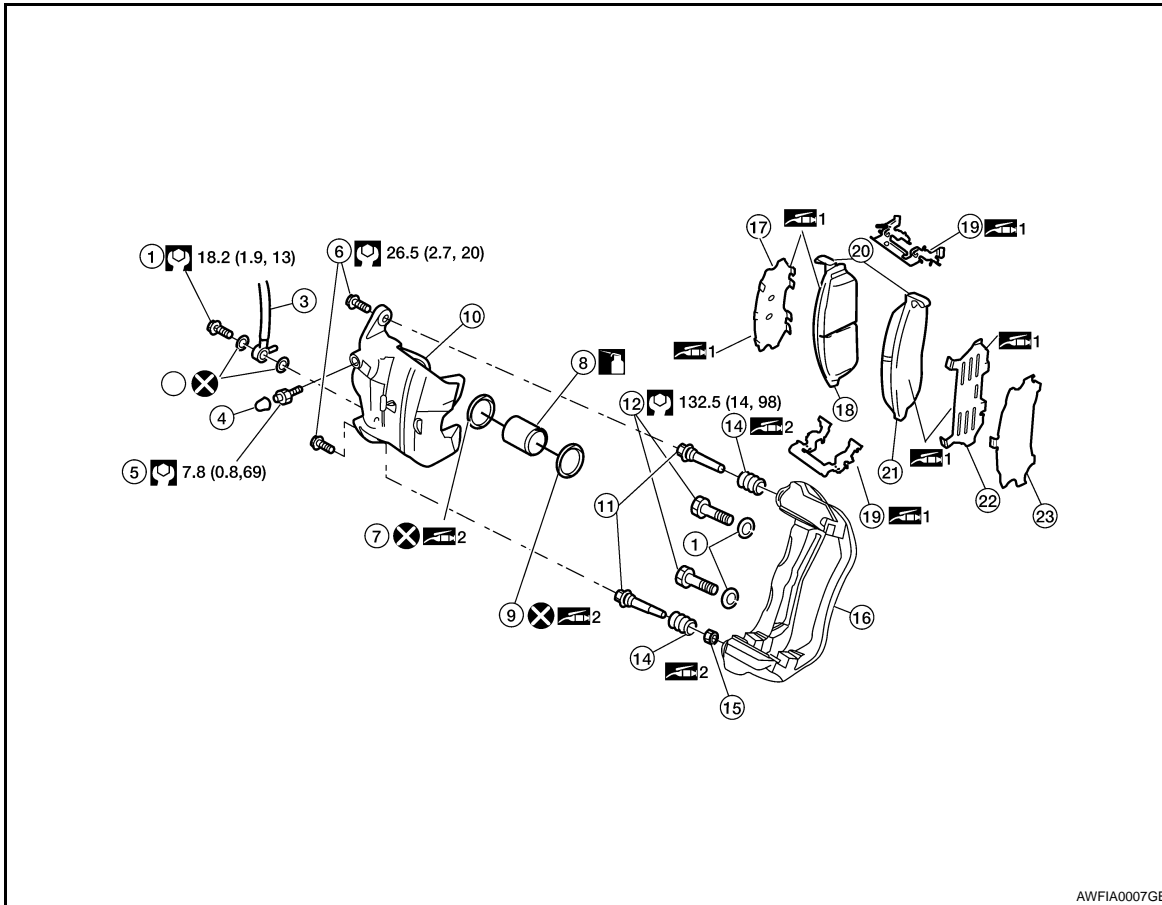
< ON-VEHICLE REPAIR >

4. Install lower sliding pin bolt, and tighten it to the specified torque. Refer to [BR-22. "BRAKE PAD : Exploded View"](#).
5. Check front disc brake for drag.
6. Install front tires.

BRAKE CALIPER ASSEMBLY

BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000003070251



AWFIA0007GE

- | | | |
|-------------------|-----------------------------|------------------------|
| 1. Union bolt | 2. Copper washer | 3. Brake hose |
| 4. Cap | 5. Bleed valve | 6. Sliding pin bolt |
| 7. Piston seal | 8. Piston | 9. Piston boot |
| 10. Cylinder body | 11. Sliding pin | 12. Torque member bolt |
| 13. Washer | 14. Sliding pin boot | 15. Bushing |
| 16. Torque member | 17. Inner multilayered shim | 18. Inner pad |
| 19. Pad retainer | 20. Pad wear sensor | 21. Outer pad |
| 22. Outer shim | 23. Outer shim cover | |

1: Molykote M-77 grease

2: Rubber grease

: Brake fluid

BRAKE CALIPER ASSEMBLY : Removal and Installation

INFOID:000000003070252

REMOVAL

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

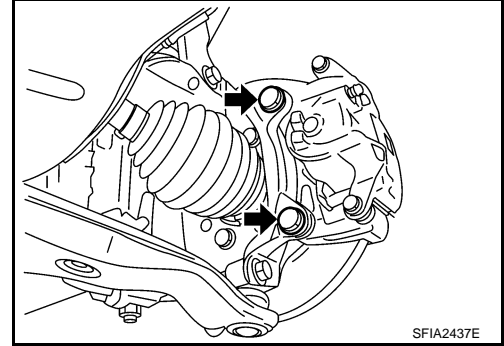
CAUTION:

- While removing cylinder body, do not depress brake pedal because piston will pop out.

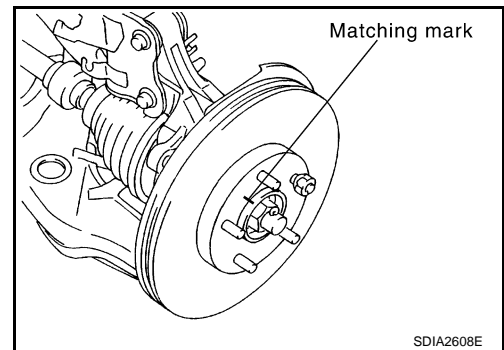
FRONT DISC BRAKE

< ON-VEHICLE REPAIR >

- Do not damage piston boot.
 - Keep rotor free from brake fluid.
1. Remove front tires using power tool.
 2. Fasten disc rotor using wheel nut.
 3. Drain brake fluid. Refer to [BR-13, "Bleeding Brake System"](#).
 4. Remove union bolt, and then disconnect brake hose from caliper assembly.
 5. Remove torque member bolts, and remove brake caliper assembly.
CAUTION:
Do not drop brake pad.



6. Remove disc rotor.
CAUTION:
Put matching marks on wheel hub assembly and disc rotor, if it is necessary to remove disc rotor.



INSTALLATION

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

CAUTION:

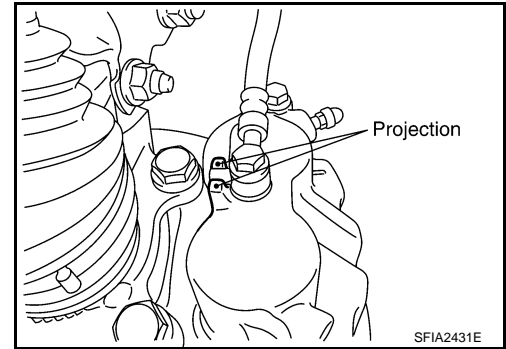
- While removing cylinder body, do not depress brake pedal because piston will pop out.
 - Do not damage piston boot.
 - Keep rotor free from brake fluid.
 - Refill with new brake fluid "DOT 3".
 - Never reuse drained brake fluid.
1. Install disc rotor.
CAUTION:
Put alignment marks on disc rotor and wheel hub at the time of removal when reusing disc rotor.
 2. Install brake caliper assembly to vehicle, and tighten torque member bolts to the specified torque. Refer to [BR-24, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).
CAUTION:
Do not allow oil or any moisture on all contact surfaces between steering knuckle and caliper assembly, bolts, and washer.

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

FRONT DISC BRAKE

< ON-VEHICLE REPAIR >

3. Install brake hose to brake caliper assembly, and tighten union bolts to the specified torque. Refer to [BR-20, "FRONT BRAKE : Removal and Installation"](#).
4. Refill with new brake fluid and bleed air. Refer to [BR-13, "Bleeding Brake System"](#).
5. Check front disc brake for drag.
6. Install front tires.



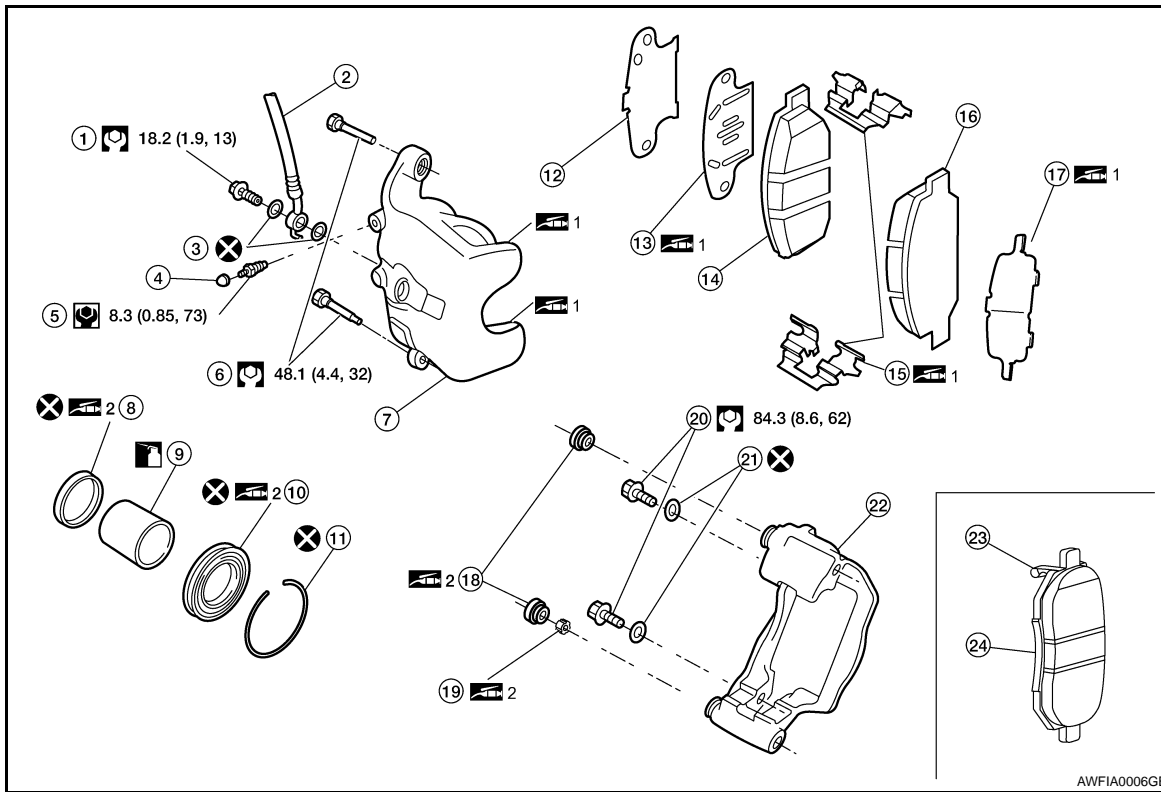
REAR DISC BRAKE

< ON-VEHICLE REPAIR >

REAR DISC BRAKE BRAKE PAD

BRAKE PAD : Exploded View

INFOID:000000003070253



- | | | |
|-------------------|-----------------------------|----------------------|
| 1. Union bolt | 2. Brake hose | 3. Copper washer |
| 4. Cap | 5. Bleed valve | 6. Sliding pin bolt |
| 7. Cylinder body | 8. Piston seal | 9. Piston |
| 10. Piston boot | 11. Retaining ring | 12. Inner shim cover |
| 13. Inner shim | 14. Inner pad | 15. Pad retainer |
| 16. Outer pad | 17. Outer multilayered shim | 18. Sliding pin boot |
| 19. Bushing | 20. Torque member bolt | 21. Washer |
| 22. Torque member | 23. Pad wear sensor | 24. Inner pad (RH) |

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

2: Rubber grease

: Brake fluid

BRAKE PAD : Removal and Installation

INFOID:000000003070254

REMOVAL

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

CAUTION:

- While removing cylinder body, do not depress brake pedal because piston will pop out.
- It is not necessary to remove bolts on torque member and brake hose except for disassembly or replacement of caliper assembly. In this case, hang cylinder body 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 covers as a set when replacing brake pads.
- Keep rotor free from brake fluid.

REAR DISC BRAKE

< ON-VEHICLE REPAIR >

- **Burnish the brake pads and disc rotor mutually contacting surfaces after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage. Refer to [BR-7, "BRAKE PAD : Brake Burnishing Procedure"](#).**

1. Remove rear tires using power tool.
2. Remove upper sliding pin bolt.
3. Remove pads, pad retainers, shims, and shim cover from torque member.

CAUTION:

Deform pad retainer when removing pad retainer from torque member.

INSTALLATION

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

CAUTION:

- While removing cylinder body, do not depress brake pedal because piston will pop out.
- It is not necessary to remove bolts on torque member and brake hose except for disassembly or replacement of caliper assembly. In this case, hang cylinder body 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 covers as a set when replacing brake pads.
- Keep rotor free from brake fluid.
- **Burnish the brake pads and disc rotor mutually contacting surfaces after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage. Refer to [BR-7, "BRAKE PAD : Brake Burnishing Procedure"](#).**

1. Apply Molykote M-77 grease or equivalent to between shim cover and shim. Install inner shim, inner shim cover to inner pad, and outer multilayered shim to outer pad.
2. Apply Molykote M-77 grease or equivalent to between pad retainer and pad. Install pad retainers and pads to torque member.
3. Press in piston until pads can be installed, and then install cylinder body to torque member.

CAUTION:

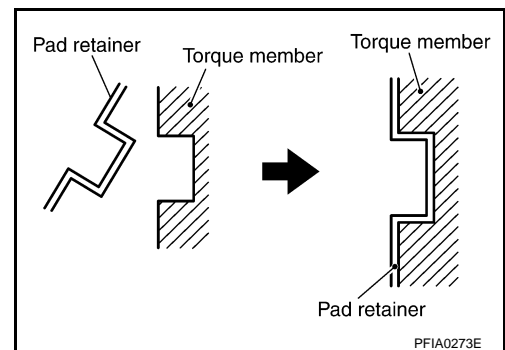
In the case of replacing a pad with new one, check a brake fluid level in the reservoir tank because brake fluid returns to master cylinder reservoir tank when pressing piston.

NOTE:

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

4. Install upper sliding pin bolt and tighten to the specified torque. Refer to [BR-27, "BRAKE PAD : Exploded View"](#).
5. Check rear disc brake for drag.
6. Install rear tires.

BRAKE CALIPER ASSEMBLY

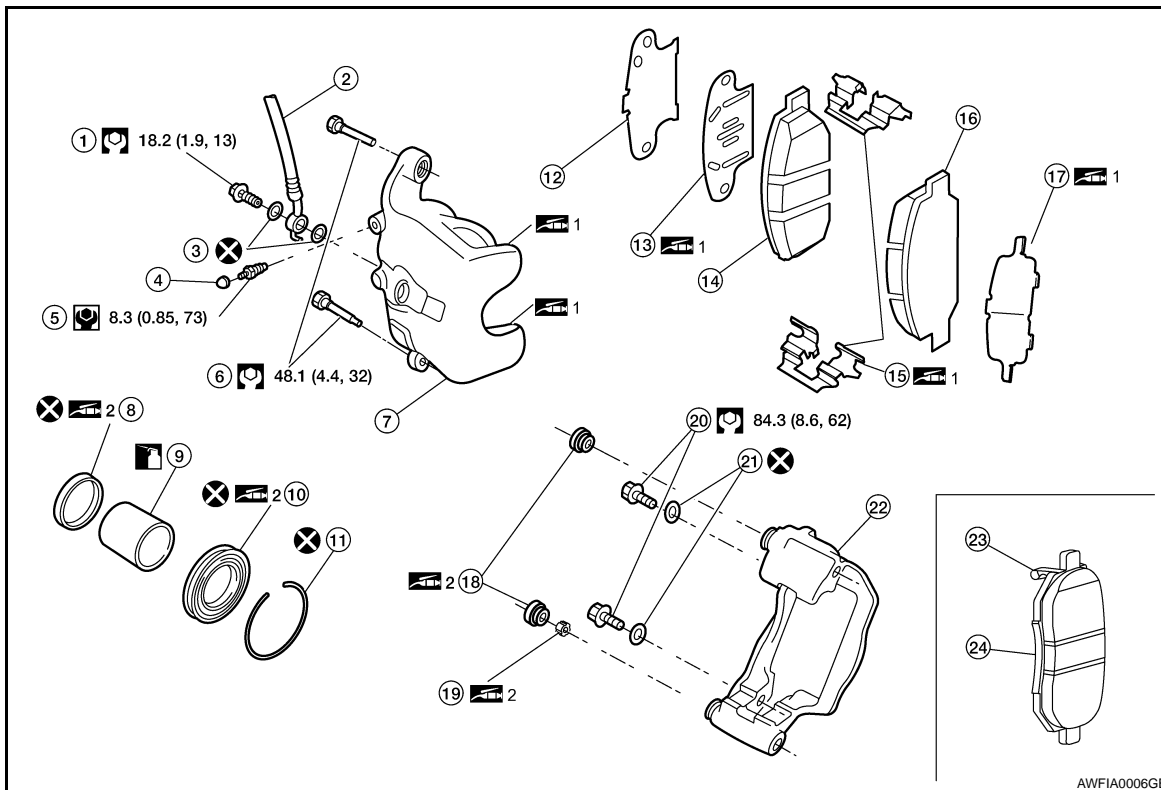


REAR DISC BRAKE

< ON-VEHICLE REPAIR >

BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000003070255



- | | | |
|-------------------|-----------------------------|----------------------|
| 1. Union bolt | 2. Brake hose | 3. Copper washer |
| 4. Cap | 5. Bleed valve | 6. Sliding pin bolt |
| 7. Cylinder body | 8. Piston seal | 9. Piston |
| 10. Piston boot | 11. Retaining ring | 12. Inner shim cover |
| 13. Inner shim | 14. Inner pad | 15. Pad retainer |
| 16. Outer pad | 17. Outer multilayered shim | 18. Sliding pin boot |
| 19. Bushing | 20. Torque member bolt | 21. Washer |
| 22. Torque member | 23. Pad wear sensor | 24. Inner pad (RH) |
- 1: PBC (Poly Butyl Cuprysil) grease or silicone-based grease
 2: Rubber grease
 : Brake fluid

BRAKE CALIPER ASSEMBLY : Removal and Installation

INFOID:000000003070256

REMOVAL

WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

CAUTION:

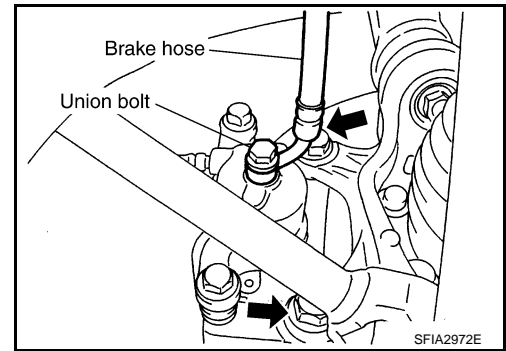
- While removing cylinder body, do not depress brake pedal because piston will pop out.
- Do not damage piston boot.
- Keep rotor free from brake fluid.

1. Remove rear tires using power tool.
2. Fasten disc rotor using wheel nut.
3. Drain brake fluid. Refer to [BR-13, "Bleeding Brake System"](#).

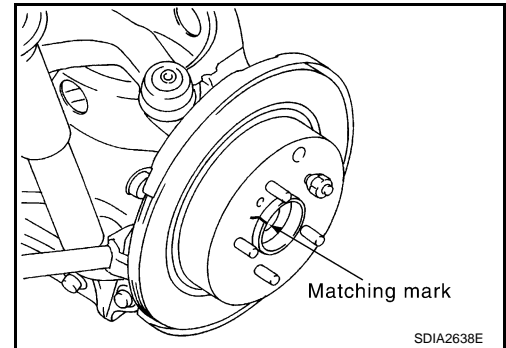
REAR DISC BRAKE

< ON-VEHICLE REPAIR >

4. Remove union bolt and then disconnect brake hose from caliper assembly.
5. Remove torque member bolts, and remove brake caliper assembly.
CAUTION:
Do not drop brake pad.



6. Remove disc rotor.
CAUTION:
Put matching marks on wheel hub assembly and disc rotor, if it necessary to remove disc rotor.



INSTALLATION

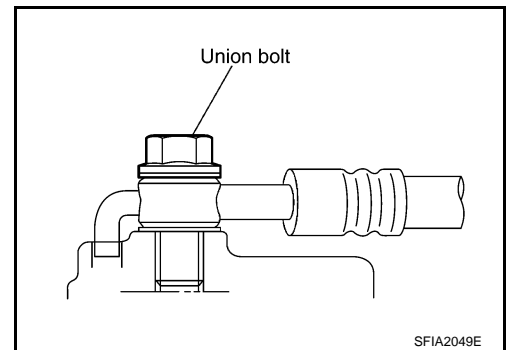
WARNING:

Clean dust on caliper and brake pad with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

CAUTION:

- While removing cylinder body, do not depress brake pedal because piston will pop out.
- Do not damage piston boot.
- Keep rotor free from brake fluid.
- Refill with new brake fluid "DOT 3".
- Never reuse drained brake fluid.

1. Install disc rotor.
CAUTION:
Alignment marks of disc rotor and wheel hub put at the time of removal when reusing disc rotor.
2. Install brake caliper assembly vehicle, and tighten torque member bolts to the specified torque.
CAUTION:
Before installing caliper assembly, wipe off oil and moisture on all mating surfaces of rear axle and caliper assembly and threads, bolts and washers.
3. Install L-shaped pin of brake hose and then tighten union bolt to the specified torque. Refer to [BR-20, "REAR BRAKE : Removal and Installation"](#).
4. Refill with new brake fluid and bleed air. Refer to [BR-13, "Bleeding Brake System"](#).
5. Check rear disc brake for drag.
6. Install rear tires.



FRONT DISC BRAKE

< DISASSEMBLY AND ASSEMBLY >

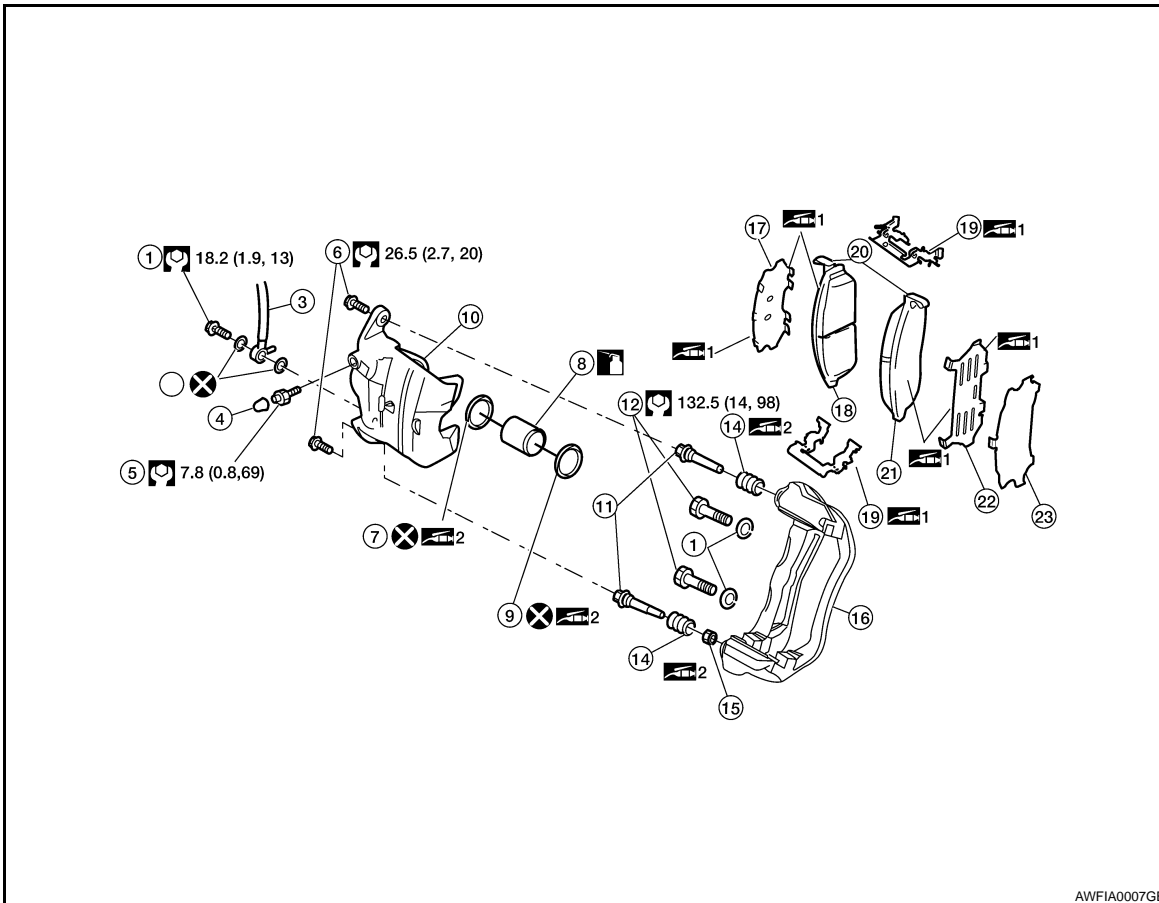
DISASSEMBLY AND ASSEMBLY

FRONT DISC BRAKE

BRAKE CALIPER ASSEMBLY

BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000003070257



AWFIA0007GB

- | | | |
|-------------------|-----------------------------|------------------------|
| 1. Union bolt | 2. Copper washer | 3. Brake hose |
| 4. Cap | 5. Bleed valve | 6. Sliding pin bolt |
| 7. Piston seal | 8. Piston | 9. Piston boot |
| 10. Cylinder body | 11. Sliding pin | 12. Torque member bolt |
| 13. Washer | 14. Sliding pin boot | 15. Bushing |
| 16. Torque member | 17. Inner multilayered shim | 18. Inner pad |
| 19. Pad retainer | 20. Pad wear sensor | 21. Outer pad |
| 22. Outer shim | 23. Outer shim cover | |
- 1: Molykote M-77 grease
 2: Rubber grease
 : Brake fluid

Refer to GI section for symbol marks except in the above.

BRAKE CALIPER ASSEMBLY : Disassembly

INFOID:000000003070258

DISASSEMBLY

NOTE:

Do not remove torque member, pads, shims, shim covers, and pad retainers when disassembling and assembling cylinder body assembly.

1. Remove sliding pin bolt, and then remove cylinder body from torque member.

CAUTION:

FRONT DISC BRAKE

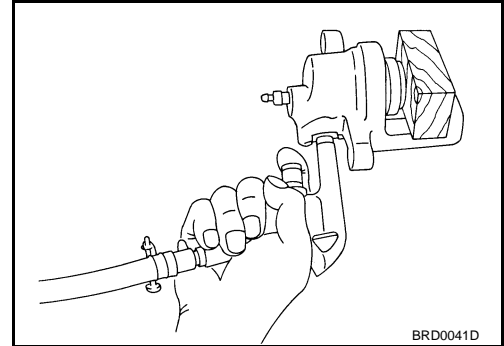
< DISASSEMBLY AND ASSEMBLY >

Do not drop pads, shims, shim cover and pad retainers from torque member.

2. Remove sliding pins and sliding pin boots from torque member.
3. Place a wooden block as shown in the figure, and blow air from union bolt hole to remove piston and piston boot.

CAUTION:

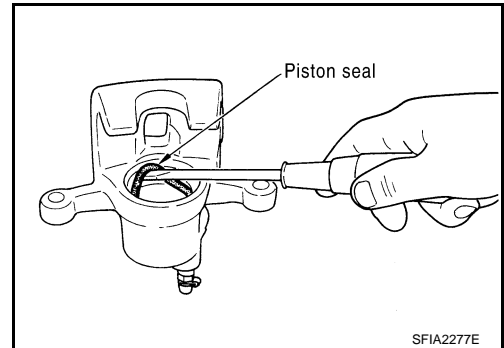
Do not get fingers caught in the pistons.



4. Remove piston seal from cylinder body using a flat-bladed screwdriver.

CAUTION:

Be careful not to damage a cylinder inner wall.



BRAKE CALIPER ASSEMBLY : Assembly

INFOID:000000003070259

ASSEMBLY

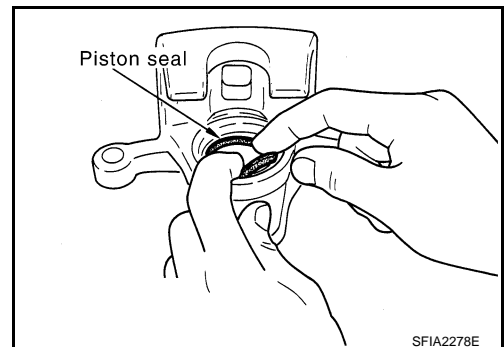
CAUTION:

Never use Nissan Rubber Grease (KRE00 00010, KRE00 00010 01) during assembly.

1. Apply rubber lubricant to piston seal, and install into cylinder body.

CAUTION:

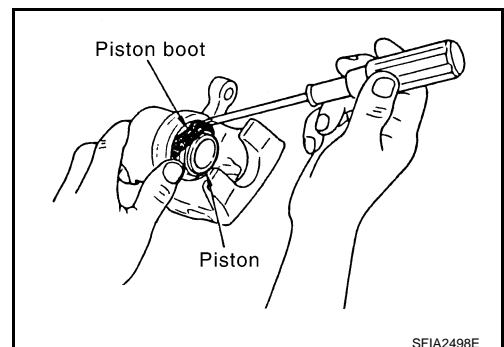
Do not reuse piston seal.



2. Apply rubber lubricant to piston boot. Cover the piston end with piston boot, and then install cylinder side lip on piston boot securely into a groove on cylinder body.

CAUTION:

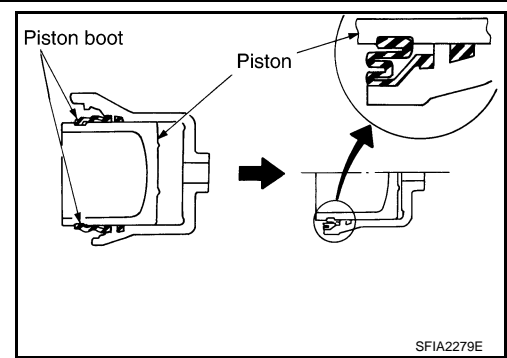
Do not reuse piston boot.



FRONT DISC BRAKE

< DISASSEMBLY AND ASSEMBLY >

3. Apply brake fluid to piston. Push piston into cylinder body by hand and push piston boot 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. Install sliding pins and sliding pin boots to torque member.



5. Install torque member to steering knuckle, and tighten mounting bolts to the specified torque. Refer to [BR-24, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).
CAUTION:
Do not allow oil or any moisture on all contact surfaces between steering knuckle and brake caliper assembly.
6. Press in piston until pads can be installed, and then install cylinder body to torque member.
7. Tighten sliding pin bolts to the specified torque. Refer to [BR-24, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).

BRAKE CALIPER ASSEMBLY : Inspection After Disassembly

INFOID:000000003070260

INSPECTION AFTER DISASSEMBLY

Cylinder Body

Check the inner wall of cylinder for corrosion, wear, and damage. If a malfunction is detected, replace cylinder body.

CAUTION:

Clean cylinder body using new brake fluid. Never use mineral oils such as gasoline or kerosene.

Torque Member

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

Piston

Check the piston surface for corrosion, wear, and damage. If a malfunction is detected, replace applicable part.

CAUTION:

A piston sliding surface is plated. Do not polish with sandpaper.

Sliding Pin, Sliding Pin Bolt, and Sliding Pin Boot

Check sliding pin, sliding pin bolt, and sliding pin boot for wear, damage, and cracks. Replace if there are.

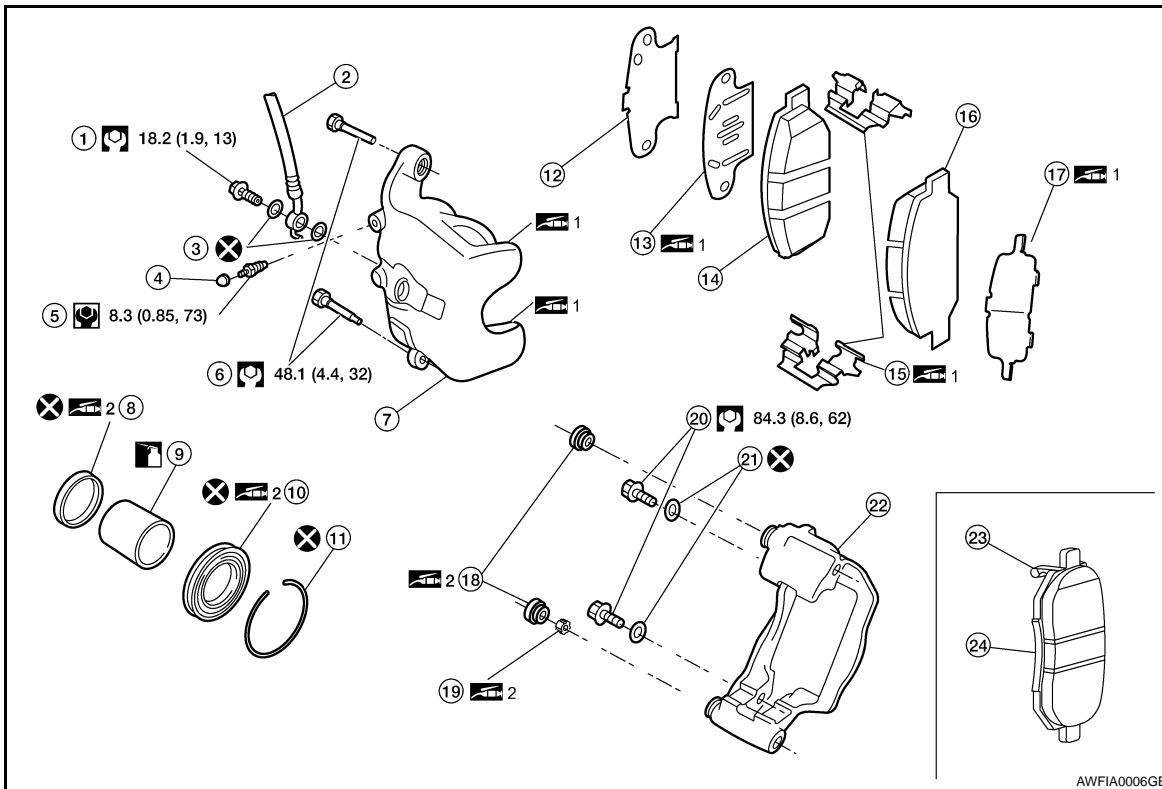
REAR DISC BRAKE

< DISASSEMBLY AND ASSEMBLY >

REAR DISC BRAKE BRAKE CALIPER ASSEMBLY

BRAKE CALIPER ASSEMBLY : Exploded View

INFOID:000000003070261



- | | | |
|-------------------|-----------------------------|----------------------|
| 1. Union bolt | 2. Brake hose | 3. Copper washer |
| 4. Cap | 5. Bleed valve | 6. Sliding pin bolt |
| 7. Cylinder body | 8. Piston seal | 9. Piston |
| 10. Piston boot | 11. Retaining ring | 12. Inner shim cover |
| 13. Inner shim | 14. Inner pad | 15. Pad retainer |
| 16. Outer pad | 17. Outer multilayered shim | 18. Sliding pin boot |
| 19. Bushing | 20. Torque member bolt | 21. Washer |
| 22. Torque member | 23. Pad wear sensor | 24. Inner pad (RH) |

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

2: Rubber grease

: Brake fluid

BRAKE CALIPER ASSEMBLY : Disassembly

INFOID:000000003070262

DISASSEMBLY

NOTE:

Do not remove torque member, pads, shims, shim covers, and pad retainers when disassembling and assembling cylinder body assembly.

1. Remove sliding pin bolt, and then remove cylinder body from torque member.

CAUTION:

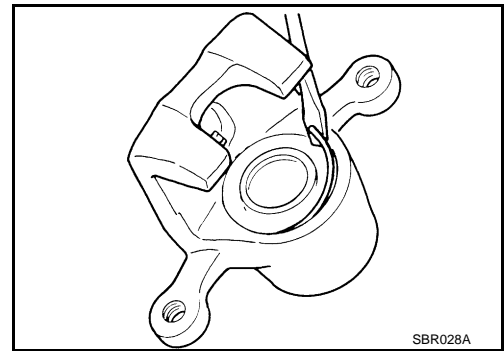
Do not drop pads, shims, shim cover and pad retainers from torque member.

2. Remove sliding pin boot from torque member.

REAR DISC BRAKE

< DISASSEMBLY AND ASSEMBLY >

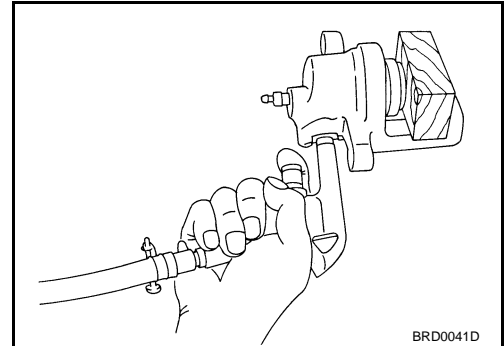
3. Remove retaining ring from cylinder body using a suitable tool or flat-bladed screwdriver as shown.



4. Place a wooden block as shown in the figure, and blow air from union bolt hole to remove piston and piston boot.

CAUTION:

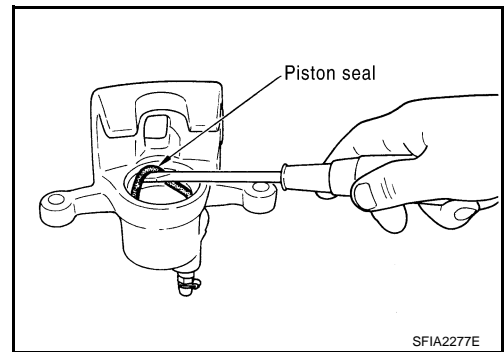
Do not get fingers caught in the piston.



5. Remove piston seal from cylinder body using a suitable tool or flat-bladed screwdriver.

CAUTION:

Be careful not to damage a cylinder inner wall.



BRAKE CALIPER ASSEMBLY : Assembly

INFOID:000000003070263

ASSEMBLY

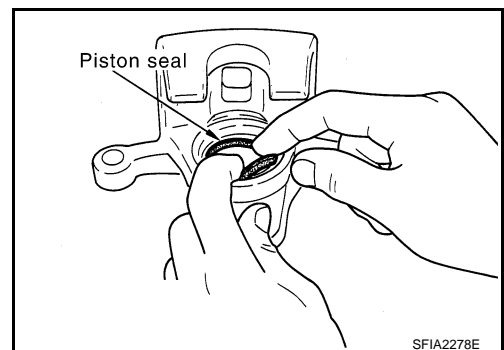
CAUTION:

Never use Nissan Rubber Grease (KRE00 00010, KRE00 00010 01) during assembly.

1. Apply rubber lubricant to piston seal, and install them to cylinder body.

CAUTION:

Do not reuse piston seal.



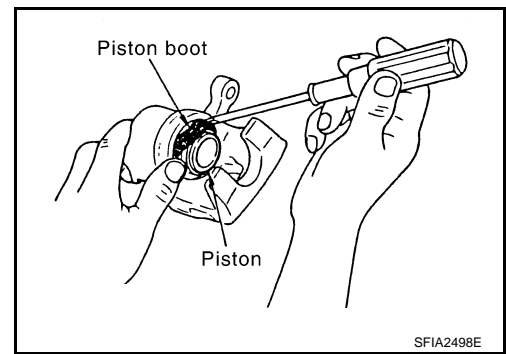
REAR DISC BRAKE

< DISASSEMBLY AND ASSEMBLY >

2. Apply rubber lubricant to piston boot. Cover the piston end with the piston boot, and then install cylinder side lip on the piston boot securely into the groove on cylinder body.

CAUTION:

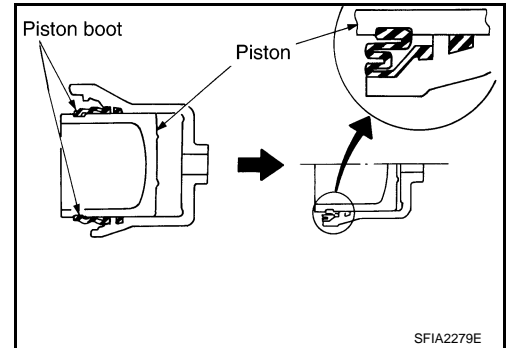
Do not reuse piston boot.



3. Apply brake fluid to piston. Push piston into cylinder body by hand and push piston boot 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.



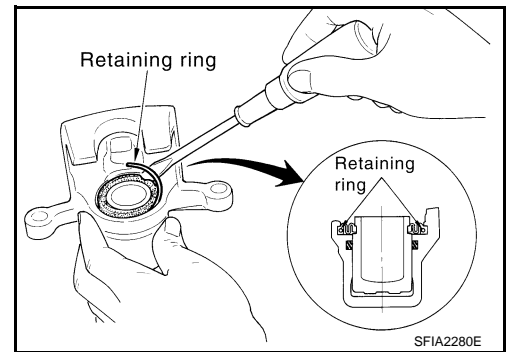
4. Secure piston boot with retaining ring.

CAUTION:

- **Make sure that boot is securely engaged in the groove on cylinder body.**
- **Do not reuse retainer ring.**

5. Install sliding pin boot to torque member.

6. Install the cylinder body to torque member, and then tighten sliding pin bolt to the specified torque. Refer to [BR-29, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).



BRAKE CALIPER ASSEMBLY : Inspection After Disassembly

INFOID:000000003070264

INSPECTION AFTER DISASSEMBLY

Cylinder Body

Check the inner wall of cylinder for corrosion, wear, and damage. If a malfunction is detected, replace cylinder body.

CAUTION:

Clean cylinder body using new brake fluid. Never 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. If a malfunction is detected, replace applicable part.

CAUTION:

A piston sliding surface is plated. Do not polish with sandpaper.

Sliding Pin Bolt, Sliding Pin Boot

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

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

INFOID:0000000003070265

Unit: mm (in)

Front brake	Cylinder bore diameter (each)	57.2 (2.25)
	Pad length × width × thickness	132 × 50 × 11 (5.20 × 1.969 × 0.433)
	Rotor outer diameter × thickness	296 × 26 (11.65 × 1.024)
Rear brake	Cylinder bore diameter	34.93 (1.375)
	Pad length × width × thickness	83.0 × 31.9 × 8.5 (3.268 × 1.256 × 0.335)
	Rotor outer diameter × thickness	292 × 9 (11.50 × 0.35)
Recommended brake fluid		DOT 3

Brake Pedal

INFOID:0000000003070267

Brake pedal height (from dash lower panel top surface)	190.7 - 202.7 mm (7.51 - 7.98 in)
Depressed pedal height [under a force of 490 N (50 kg-f, 110 lb-f) with engine running]	60.7 - 72.7 mm (2.39 - 2.86 in)
Clearance between stopper rubber and threaded end of the stop lamp switch and brake switch	0.74 - 1.96 mm (0.0291 - 0.0772 in)
Pedal play	3 - 11 mm (0.12 - 0.43 in)

Front Disc Brake

INFOID:0000000003070267

Brake pad	Standard thickness (new)	11.0 mm (0.433 in)
	Repair limit thickness	2.0 mm (0.079 in)
Disc rotor	Standard thickness (new)	26.0 mm (1.024 in)
	Repair limit thickness	24.0 mm (0.945 in)
	Thickness variation (measured at 8 positions)	0.015 mm (0.0006 in)
	Maximum runout (with it attached to the vehicle)	0.035 mm (0.0014 in)

Rear Disc Brake

INFOID:0000000003070268

Brake pad	Standard thickness (new)	8.5 mm (0.335 in)
	Repair limit thickness	1.0 mm (0.039 in)
Disc rotor	Standard thickness (new)	9.0 mm (0.354 in)
	Repair limit thickness	8.0 mm (0.315 in)
	Thickness variation (measured at 8 positions)	0.015 mm (0.0006 in)
	Maximum runout (with it attached to the vehicle)	0.05 mm (0.002 in)