
BRAKE SYSTEM

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25.1 HYDRAULIC BRAKE

1 Warning and Precaution

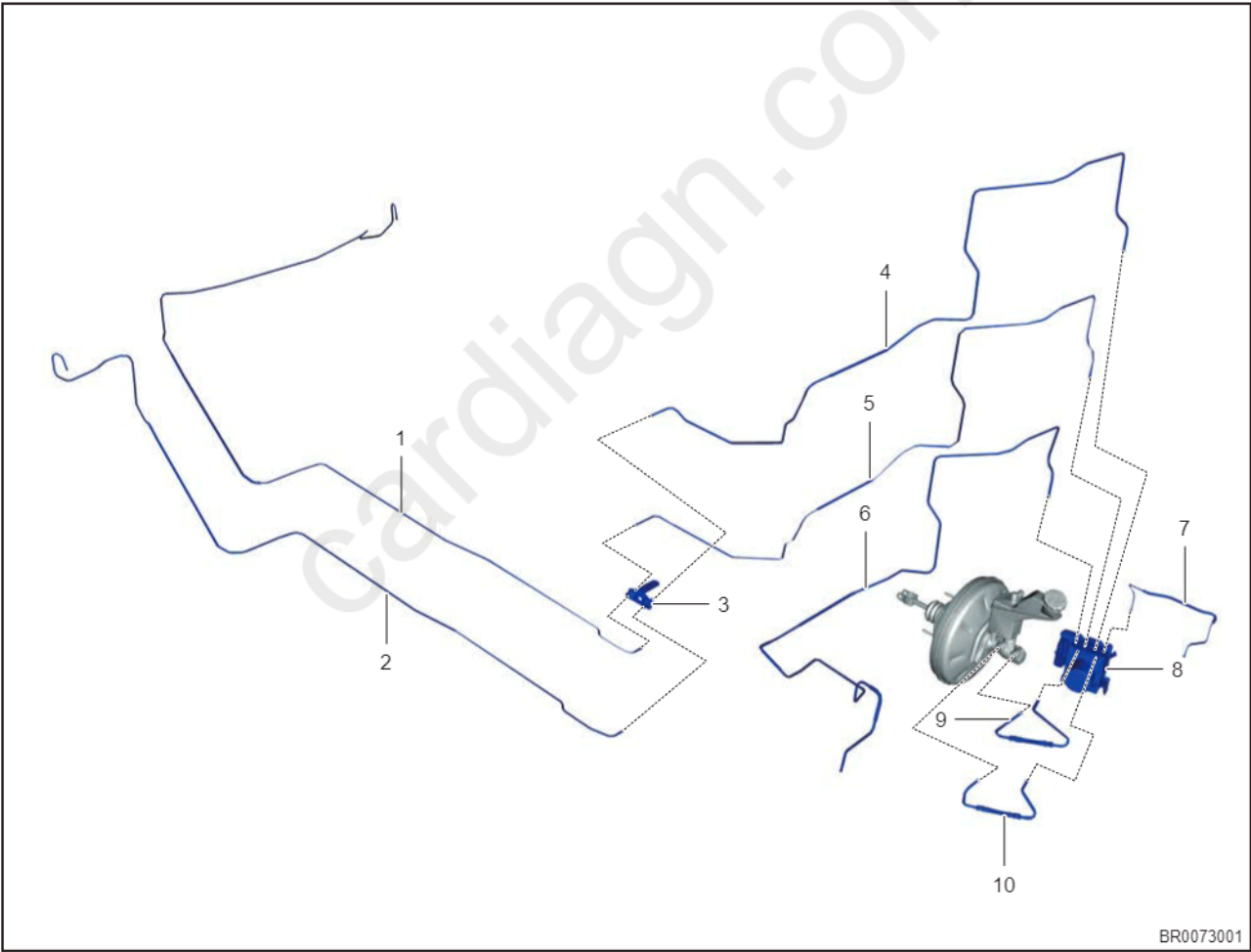
1.1 Precaution

In order to avoid dangerous operation and damage to the vehicle, always follow the instructions below before repair:

- (1) After removing brake line, perform sealing treatment to prevent foreign matter from entering.
- (2) DO NOT allow any foreign matter such as dirt and dust to enter brake line from joint parts.
- (3) DO NOT allow brake fluid to be sprayed on your clothes or skin when removing brake hose assembly, as brake fluid is corrosive.
- (4) When removing and installing steering system, suspension system, brake, tire, etc., it is necessary to turn off power supply of EPS (vehicle power supply is turned off), so as to avoid reverse impact, resulting in EPS internal protection circuit breakdown.

2 System Overview

2.1 System Components Diagram



1	Rear Left Pipe II Assembly	6	Front Right Pipe Assembly
2	Rear Right Pipe II Assembly	7	Front Left Pipe II Assembly
3	Pipeline Connector	8	ESP (iEPB) Controller with Bracket Assembly

4	Rear Right Pipe I Assembly	9	Pump Front Pipe I Assembly
5	Rear Left Pipe I Assembly	10	Pump Front Pipe II Assembly

Brake system adopts hydraulic transmission device, mainly consists of ESP controller assembly, vacuum booster with master cylinder assembly, brake master cylinder assembly, brake reservoir assembly, hydraulic line (brake hose, brake pipe), brake caliper assembly, vacuum pump assembly, etc.

When brake pedal assembly is depressed, brake master cylinder assembly piston is pushed forward, and brake fluid pressure in brake master cylinder assembly is increased. Brake fluid enters brake caliper assembly of each wheel through hydraulic line, and brake caliper assembly piston is pushed outward to allow the force of depressing brake pedal to be transmitted to wheel brake caliper assembly, and push wheel brake caliper assembly to brake.

When brake pedal assembly is released, brake master cylinder assembly piston will return under the action of oil pressure and return spring, brake caliper assembly piston and wheel brake caliper assembly will return to release the brake on wheel.



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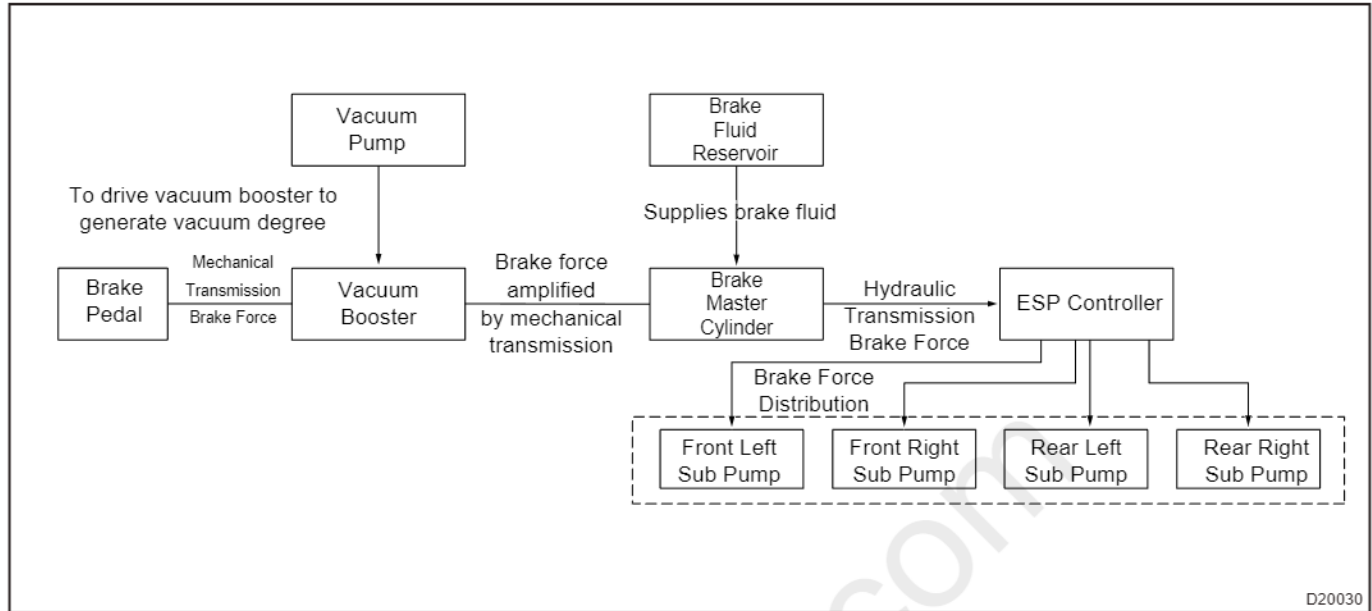
1	Vacuum Booster	5	Vacuum Pipe
2	Brake Reservoir Assembly	6	Vacuum Brake Hose Assembly
3	Brake Master Cylinder Assembly	7	Electronic Vacuum Pump with Bracket Assembly
4	Vacuum Pipeline Pressure Sensor Assembly	8	

Vacuum booster system is mainly composed of vacuum booster assembly, brake master cylinder assembly, brake reservoir assembly, vacuum pump assembly, atmospheric pressure sensor, etc.

Vacuum booster is a component that uses vacuum (negative pressure) to increase force applied by driver to brake pedal assembly.

Vacuum booster is generally located between brake pedal assembly and brake master cylinder assembly. For easy installation, it is usually combined with master cylinder as a set, and part of master cylinder is penetrated into vacuum booster housing.

2.2 System Schematic Diagram



When vacuum booster can not obtain vacuum or obtained vacuum is insufficient (at high altitude, low temperature, etc.), it will lead to poor assistance of brake system. Vacuum booster system monitors vacuum changes in vacuum booster through atmospheric pressure sensor, judges operating time of vacuum pump through logic and provides appropriate auxiliary power for brake system. Thereby ensuring that it can provide driver with sufficient braking assistance effect under various working conditions.

2.3 Components Operation Description

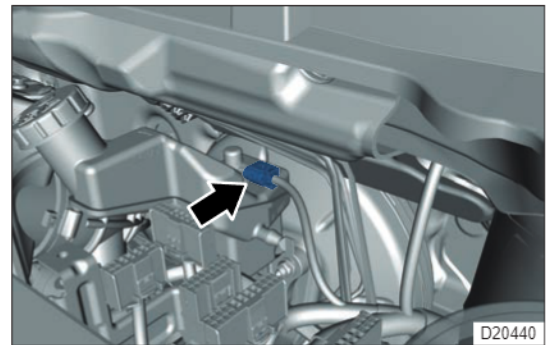
■ Brake Fluid Level Sensor

The float in brake reservoir rises/falls according to brake fluid level.

When brake fluid level is on "MAX (maximum)" mark on brake reservoir, the float in brake reservoir rises.

When brake fluid level is on "MIN (minimum)" mark on brake reservoir, the float in brake reservoir falls.

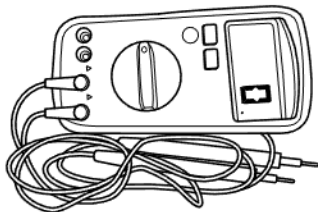
When brake fluid level is below "MIN (minimum)" mark on brake reservoir, brake system malfunction indicator on instrument cluster will come on.



3 ON-VEHICLE SERVICE

3.1 Tools

■ General Tool

Tool Name	Tool Drawing
Digital Multimeter	 S00002
Diagnostic Tester	 S00001

3.2 Brake Bleeding

Hint:

- Be sure to perform brake bleeding after replacing hydraulic parts related to brake.
- An assistant will be required to assist when bleeding brake system.
- There are 2 methods for brake bleeding, and specific operation procedures are as follows:

■ Manual Bleeding

⚠ Caution

- When performing bleeding procedures for brake system, wear safety glasses.
- Be careful when bleeding air, as brake fluid at high pressure may spray out from bleeder screw.

⚠ Warning

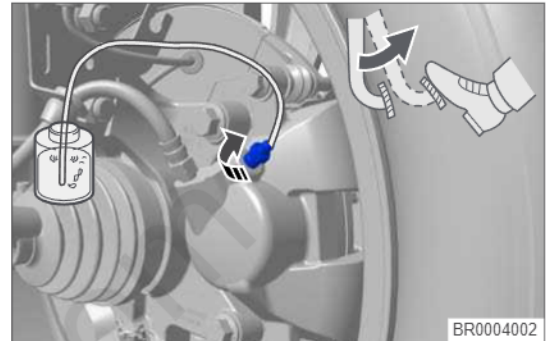
- Before removing brake fluid reservoir, wipe off any dust and other foreign matters on brake fluid reservoir to prevent them from entering.
- Use fresh, clear and well-sealed brake fluid with specified type.
- DO NOT allow the brake fluid to adhere to any paint surface, such as vehicle body. If brake fluid leaks onto any paint surface, immediately wash it off.
- During bleeding, do not depress brake pedal repeatedly at any time with bleeder screw opened. Otherwise, air amount in the system will increase to make an extra bleeding.
- DO NOT drain the brake fluid in brake fluid reservoir while bleeding brake system.

- (1) Fill brake fluid reservoir with brake fluid to a proper level.
- (2) Loosen bleeder screw cap and connect a clear plastic hose to bleeder screw. Submerge the end of hose into container.

- (3) Have an assistant depress brake pedal 3 to 4 times repeatedly; and depress and hold it at a lower position, then loosen the bleeder screw.



- (4) Tighten bleeder screw every time brake pedal goes down quickly, then release the brake pedal.



- (5) Repeat above steps, and use the same procedures to bleed brake line of each wheel in order of rear left wheel, front left wheel, front right wheel and rear right wheel, until no air exists in brake system.
Empty sign: A stream of fresh brake fluid flows into clear container without bubbles.

Hint:

During bleeding of brake system, make sure brake fluid level in brake fluid reservoir is always near "MAX" mark. Check brake fluid level at all times during bleeding. Add brake fluid as necessary.

- (6) Check and adjust the brake fluid level to "MAX" mark.
- (7) Check the brake pedal braking effect. If braking effect is poor or pedal is spongy, air may still exist in system. Perform bleeding procedures for brake system again as necessary.
- (8) Test vehicle to confirm that brakes operate properly with good depressing feel.

3.3 Replacement of Brake Fluid

■ Operation Procedures

- (1) Drain the brake fluid.
 - 1) Start engine and keep it idling.
 - 2) Screw off filler cap of brake fluid reservoir assembly. Loosen bleeder screw cap and connect a clear plastic hose to bleeder screw. Submerge the end of hose into container.
 - 3) Loosen bleeder screw, and depress brake pedal continuously until no brake fluid comes out.
- (2) Add brake fluid.
 - 1) Tighten bleeder screw after confirming that brake fluid has been drained. Fill brake fluid reservoir with new brake fluid to a proper level.
- (3) Perform bleeding procedures.
 - 1) After replacing with new brake fluid, be sure to bleed the brake system for normal operation.

3.4 Replace Vacuum Booster with Brake Master Cylinder Assembly

■ On-vehicle Inspection

- (1) Air tightness inspection.
 - 1) Start engine and stop it after 1 or 2 minutes, then disconnect negative battery cable. Slowly depress the brake pedal several times.
 - 2) Make sure that booster is airtight. Check that every pedal depression amount becomes less than the previous one.

- 3) Start the engine. Depress and hold pedal, and then stop engine.
- 4) Make sure that booster is airtight. Depress and hold pedal for 30 seconds, and check that pedal reserve distance does not change.
- (2) Operation inspection.
 - 1) Stop engine and disconnect negative battery cable.
 - 2) Depress the pedal several times and check that pedal reserve distance does not change.
 - 3) Depress and hold the pedal, and then start engine. Check that the pedal can only be depressed slightly.

■ Removal

- (1) Drain the brake fluid.

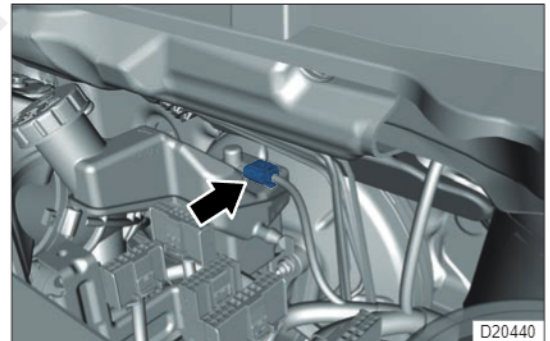
Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

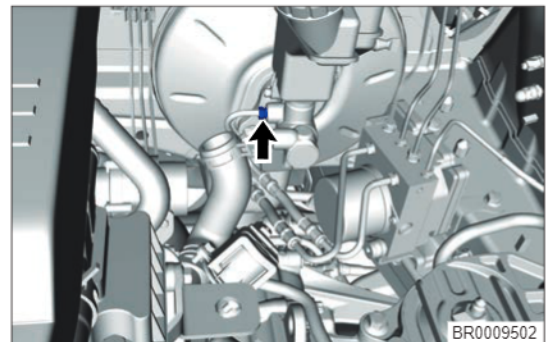
⚠ Caution

- Wash off brake fluid immediately if it comes in contact with any paint surface.

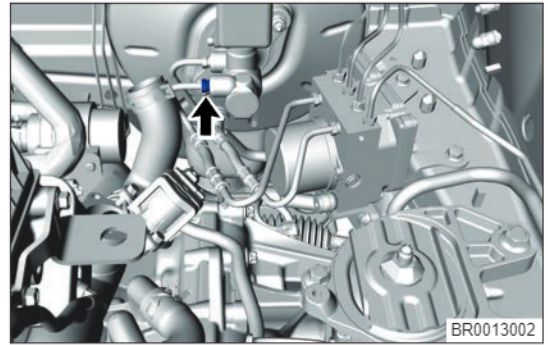
- (2) Disconnect the negative battery cable.
- (3) Remove the battery.
- (4) Remove the battery tray.
- (5) Remove the ESP control module.
- (6) Remove the left lower muffler plate assembly.
- (7) Disconnect the brake fluid level sensor connector (arrow).



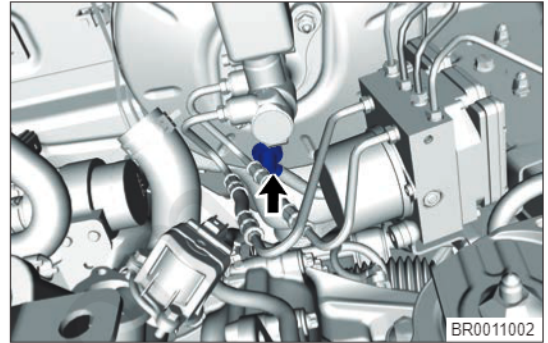
- (8) Remove fixing nut (arrow) between pump front pipe II assembly and brake cylinder, and disconnect pump front pipe II assembly.



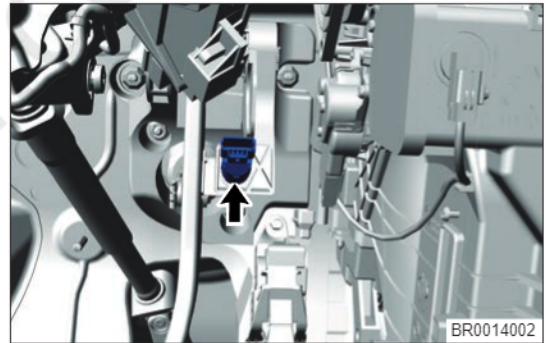
- (9) Remove fixing nut (arrow) between pump front pipe I assembly and brake cylinder, and disconnect pump front pipe I assembly.



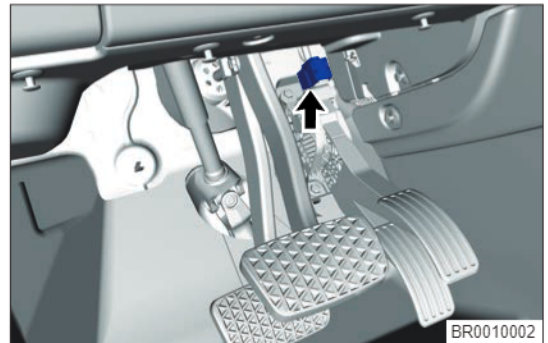
- (10) Disconnect connection (arrow) between vacuum pipe and vacuum booster.



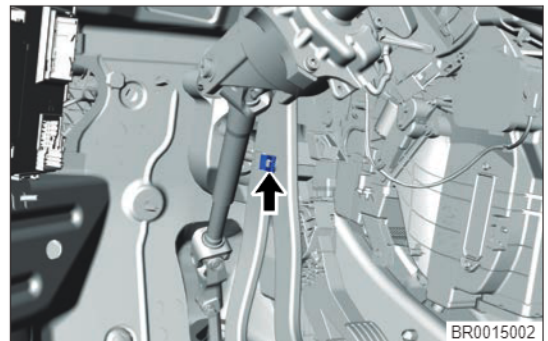
- (11) Remove the brake switch (arrow).



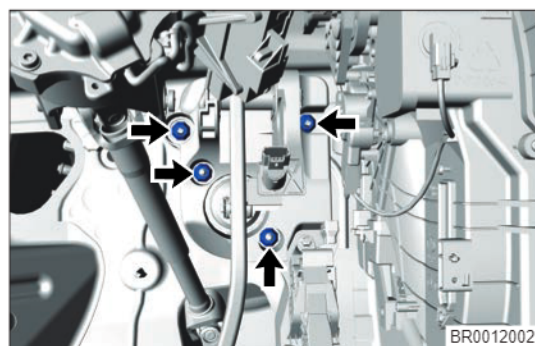
- (12) Disconnect the accelerator pedal connector (arrow).



- (13) Remove lock pin (arrow) between vacuum booster assembly and brake pedal, and remove lock shaft.



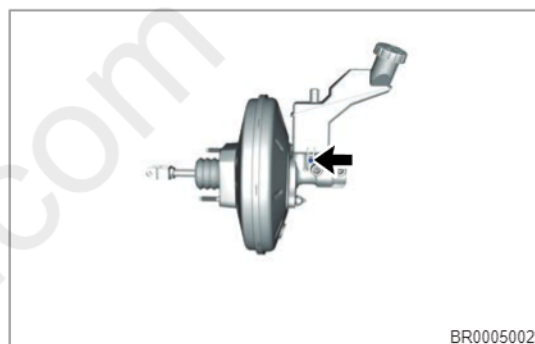
- (14) Remove 4 fixing nuts (arrow) from accelerator brake pedal assembly.



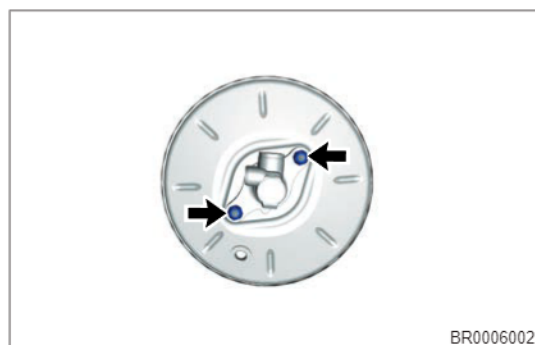
- (15) Remove the accelerator brake pedal assembly.
 (16) Remove the vacuum booster with brake master cylinder assembly.

■ Disassembly

- (1) Remove fixing pin (arrow) between brake fluid reservoir and brake master cylinder.



- (2) Remove the brake fluid reservoir.
 (3) Remove 2 fixing bolts (arrow) between brake master cylinder and vacuum booster.



- (4) Remove the brake master cylinder assembly.

■ Assembly

- (1) Install the brake master cylinder assembly to a proper position.
 (2) Install 2 fixing bolts between brake master cylinder and vacuum booster.

Torque: 25 ± 4 N·m

- (3) Install the brake fluid reservoir assembly to a proper position.
 (4) Install fixing pin between brake fluid reservoir and brake master cylinder.

■ Installation

Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Check that brake light operates normally after installation.**
- **Check if brake pedal free travel is within normal range after installing brake pedal.**
Normal range: <25 mm

- (1) Install the vacuum booster with brake master cylinder assembly to a proper position.
- (2) Install the accelerator brake pedal assembly to a proper position.
- (3) Install 4 fixing nuts on the accelerator brake pedal assembly.

Torque: 23 ± 2 N·m

- (4) Install the lock pin between vacuum booster assembly and brake pedal.
- (5) Connect accelerator pedal connector.
- (6) Install the brake switch.

Caution

- **Align clamping port of mounting bracket, do not depress the brake pedal before rotating and fixing to ensure that the brake pedal is in its natural state.**
- **Under the natural state of the brake pedal, check if "housing" and "movable bushing" of brake switch are flush. If flush, it indicates that the state is normal. Otherwise, perform operation according to procedures again and check.**

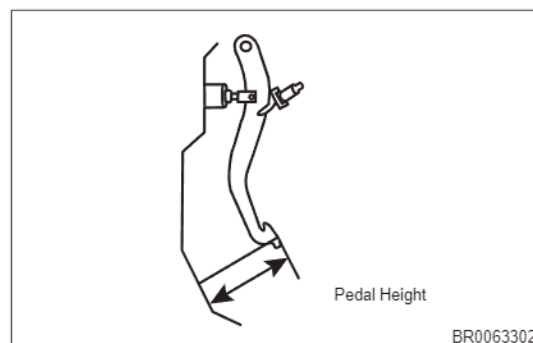
- (7) Connect vacuum pipe and vacuum booster.
- (8) Connect pump front pipe I assembly and install the fixing nut between pump front pipe I assembly and brake cylinder.
- (9) Connect pump front pipe II assembly and install the fixing nut between pump front pipe II assembly and brake cylinder.
- (10) Connect the brake fluid level sensor connector.
- (11) Left lower muffler plate assembly.
- (12) Install the ESP control module.
- (13) Install the battery tray.
- (14) Install the battery.
- (15) Connect the negative battery cable.

3.5 Replace Brake Pedal Assembly

■ On-vehicle Inspection

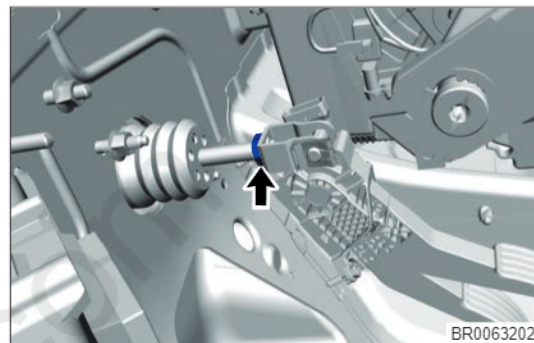
- (1) Check the brake pedal free travel.
 - 1) Stop engine. Depress brake pedal several times until there is no vacuum in the vacuum booster, and then release the brake pedal.
 - 2) Depress the brake pedal until the resistance is felt.
- (2) Check the brake pedal height.

- 1) As shown in illustration, remove carpet and measure brake pedal height between center of brake pedal and front cowl.



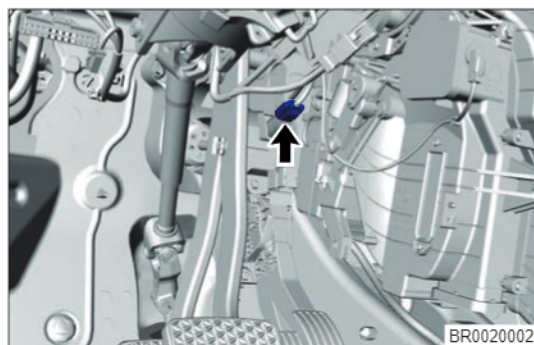
- (3) Adjust the brake pedal height.

- 1) As shown in illustration, loosen lock nut (arrow) from vacuum booster push rod, and then turn vacuum booster push rod counterclockwise or clockwise to adjust brake pedal height until its height meets standard value. Brake pedal free travel reasonable range: < 25 mm.

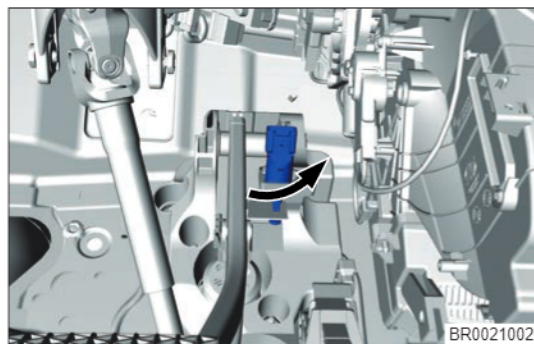


■ Removal

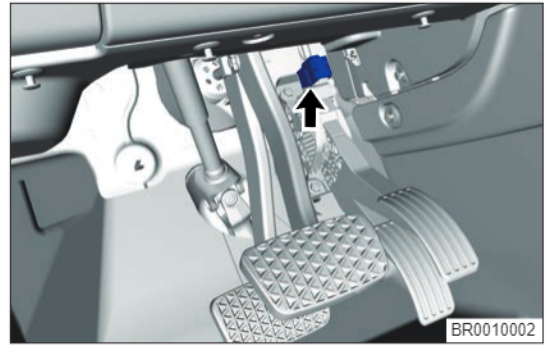
- (1) Turn off all electrical equipment and ENGINE START STOP switch.
- (2) Disconnect the negative battery cable.
- (3) Remove the left lower muffler plate assembly.
- (4) Disconnect the brake switch assembly wire harness connector (arrow).



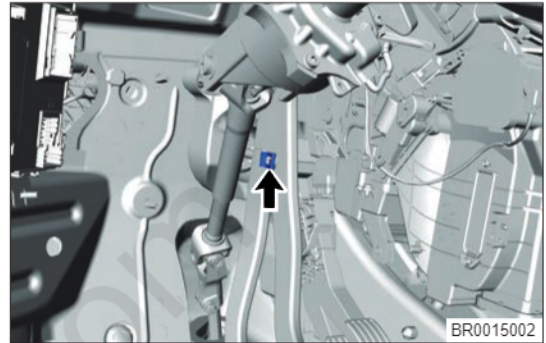
- (5) Press switch with hand and turn it by 90° counterclockwise to remove brake switch assembly.



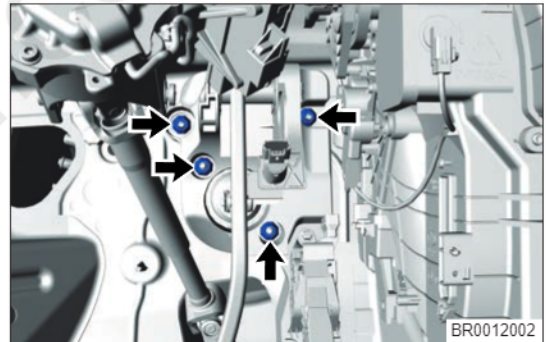
- (6) Disconnect the accelerator pedal connector (arrow).



- (7) Remove lock pin (arrow) between vacuum booster assembly and brake pedal, and remove lock shaft.



- (8) Remove 4 fixing nuts (arrow) from accelerator brake pedal assembly.



- (9) Remove the accelerator brake pedal assembly.

■ Installation

⚠ Caution

- Be sure to tighten fixing plug and nut to specified torque during installation.
- Check that brake light operates normally after installation.
- Check if brake pedal free travel is within normal range after installing brake pedal.
Normal range: <25 mm

- (1) Install the accelerator brake pedal assembly to a proper position.
(2) Install 4 fixing nuts on the accelerator brake pedal assembly.

Torque: 23 ± 2 N·m

- (3) Install the lock pin between vacuum booster assembly and brake pedal.
(4) Connect accelerator pedal connector.

- (5) Install the brake switch.

⚠ Caution

- Align clamping port of mounting bracket, do not depress the brake pedal before rotating and fixing to ensure that the brake pedal is in its natural state.
- Under the natural state of the brake pedal, check if "housing" and "movable bushing" of brake switch are flush. If flush, it indicates that the state is normal. Otherwise, perform operation according to procedures again and check.

- (6) Connect the brake switch assembly wire harness connector.
- (7) Install left lower muffler plate assembly.
- (8) Connect the negative battery cable.

3.6 Replace Front Brake Hose Assembly

■ Removal

Hint:

- Use same procedures for right and left sides.
- Procedures listed below are for left side.

⚠ Caution

- Be sure to wear necessary safety equipment to prevent accidents when repairing.
- Try to prevent body paint surface from being scratched during removal and installation.

- (1) Drain the brake fluid.

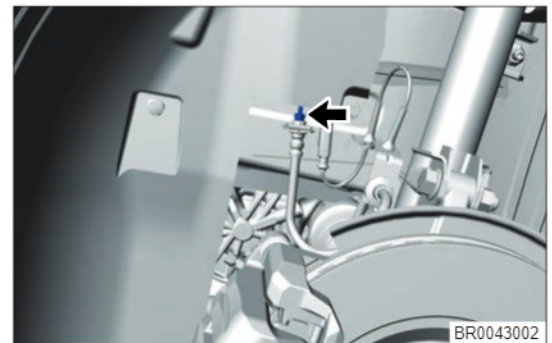
Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

⚠ Caution

- Wash off brake fluid immediately if it comes in contact with any paint surface.

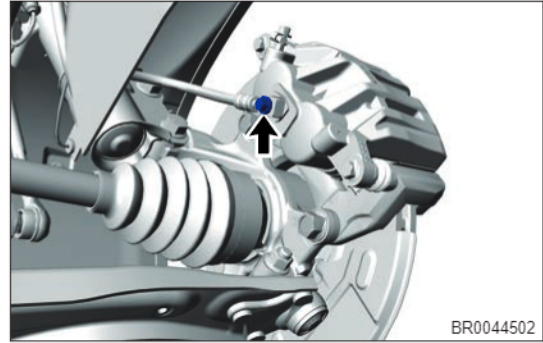
- (2) Remove the front left wheel.
- (3) Loosen coupling nut (arrow) between front left brake hose assembly and front left brake pipe.



⚠ Caution

- DO NOT allow any foreign matter such as dirt and dust to enter brake pipe from joint parts.
- After removing brake line, perform sealing treatment to prevent foreign matter from entering.

- (4) Remove coupling plug (arrow) between front left brake caliper assembly and front left brake hose assembly.



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⚠ Caution

- **DO NOT** allow brake fluid to be sprayed on your clothes or skin when removing brake hose, as brake fluid is corrosive.

- (5) Remove the front left brake hose assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.**
- **Be sure to perform bleeding procedures for brake system after installation.**
- **Be sure to add brake fluid to a proper level after installation.**

- (1) Install the front left brake hose to a proper position.
 (2) Install coupling plug between front left brake caliper assembly and front left brake hose assembly.
 (3) Install the coupling nut between front left brake hose assembly and front left brake pipe.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (4) Install the front left wheel.

3.7 Replace Rear Brake Hose Assembly

■ Removal

Hint:

- Use same procedures for right and left sides.
- Procedures listed below are for left side.

⚠ Caution

- **Be sure to wear necessary safety equipment to prevent accidents when repairing.**
- **Try to prevent body paint surface from being scratched during removal and installation.**

- (1) Drain the brake fluid.

Hint:

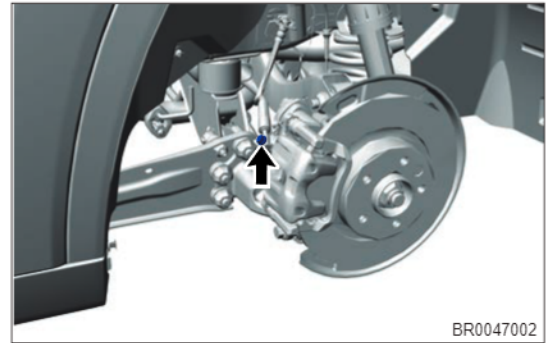
- Drained brake fluid should be well kept in a container. Never discard it at will.

⚠ Caution

- **Wash off brake fluid immediately if it comes in contact with any paint surface.**

- (2) Remove the rear left wheel.

- (3) Remove coupling nut (arrow) between rear left brake caliper assembly and rear left brake hose assembly.

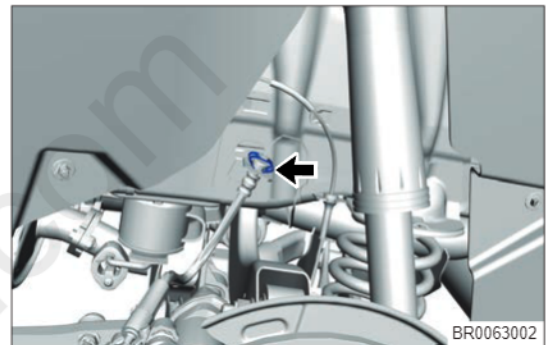


BR0047002

⚠ Caution

- **DO NOT** allow brake fluid to be sprayed on your clothes or skin when removing brake hose, as brake fluid is corrosive.

- (4) Remove holding reed (arrow), and then loosen coupling plug between rear left brake hose assembly and rear brake pipe.



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⚠ Caution

- **DO NOT** allow any foreign matter such as dirt and dust to enter brake pipe from joint parts.
- **After removing brake line, perform sealing treatment to prevent foreign matter from entering.**

- (5) Remove the rear left brake hose assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.**
- **Be sure to perform bleeding procedures for brake system after installation.**
- **Be sure to add brake fluid to a proper level after installation.**

- (1) Install the rear left brake hose to a proper position.
- (2) Install the holding reed, and then tighten coupling plug between rear left brake hose assembly and rear brake pipe.
- (3) Install the coupling nut between rear left brake caliper assembly and rear left brake hose assembly.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (4) Install the rear left wheel.

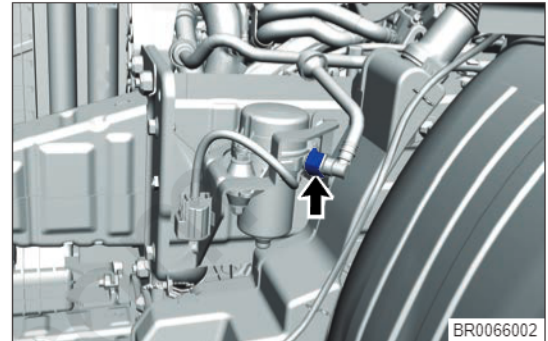
3.8 Replace Vacuum Pump Assembly

■ Removal

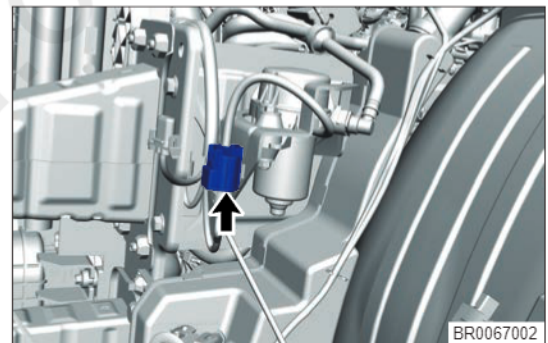
⚠ Caution

- **Be sure to wear necessary safety equipment to prevent accidents when repairing.**
- **Try to prevent body paint surface from being scratched during removal and installation.**

- (1) Turn off all electrical equipment and ENGINE START STOP switch.
- (2) Disconnect the negative battery cable.
- (3) Remove the front bumper assembly.
- (4) Disconnect connection (arrow) between vacuum pump and vacuum pipe.



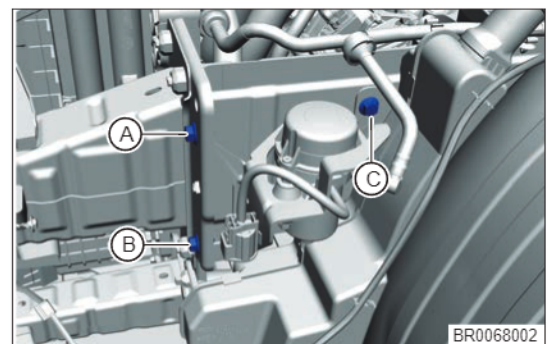
- (5) Disconnect the vacuum pump connector (arrow).



- (6) Remove 3 fixing bolts (A-B-C) from vacuum pump assembly.

⚠ Caution

- **When installing, install and tighten in order of A-B-C.**



- (7) Remove the vacuum pump assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check if vacuum pipe is clamped in place after installation. Repair or replace malfunctioning parts as necessary.**

- (1) Install the vacuum pump assembly to a proper position.

- (2) Install 3 fixing bolts to vacuum pump assembly.

Torque: $19 \pm 3 \text{ N}\cdot\text{m}$

- (3) Connect the vacuum pump connector.
- (4) Connect vacuum pump and vacuum pipe.
- (5) Install the front bumper assembly.
- (6) Connect the negative battery cable.

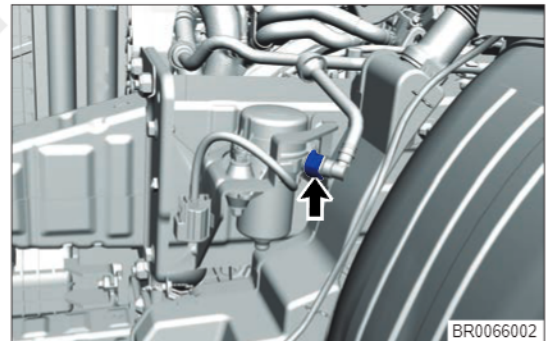
3.9 Replace Vacuum Brake Hose Assembly

■ Removal

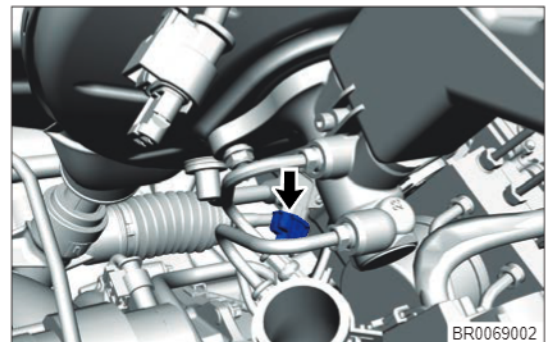
⚠ Caution

- **Be sure to wear necessary safety equipment to prevent accidents when repairing.**
- **Try to prevent body paint surface from being scratched during removal and installation.**

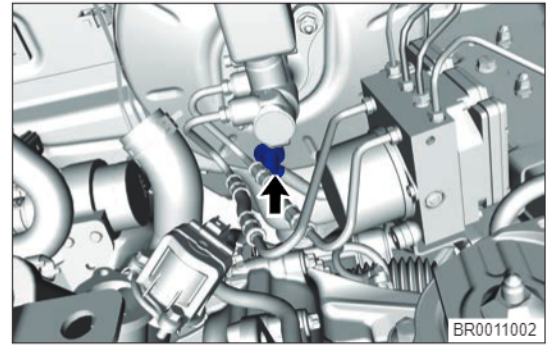
- (1) Turn off all electrical equipment and ENGINE START STOP switch.
- (2) Disconnect the negative battery cable.
- (3) Remove the air filter assembly.
- (4) Remove the battery.
- (5) Remove the battery tray.
- (6) Remove the front bumper assembly.
- (7) Disconnect connection (arrow) between vacuum pump and vacuum pipe.



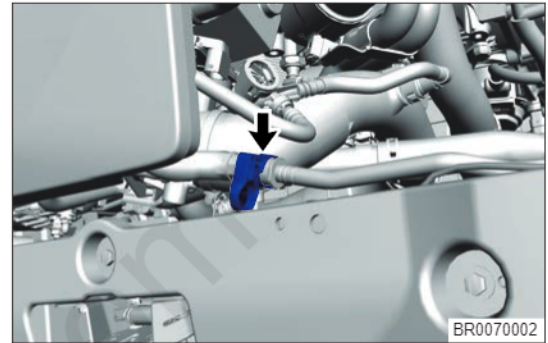
- (8) Disconnect vacuum pipe pressure sensor connector (arrow).



- (9) Disconnect connection (arrow) between vacuum pipe and vacuum booster.



- (10) Disconnect connector (arrow) between brake hose assembly and vacuum pipe.



- (11) Remove the vacuum brake hose assembly.

■ Installation

⚠ Caution

- **Be sure to check if vacuum pipe is clamped in place after installation. Repair or replace malfunctioning parts as necessary.**

- (1) Install the vacuum brake hose assembly to a proper position.
- (2) Connect brake hose assembly and vacuum pipe.
- (3) Connect vacuum pipe and vacuum booster.
- (4) Connect vacuum pipe pressure sensor connector.
- (5) Connect vacuum pump and vacuum pipe.
- (6) Install the front bumper assembly.
- (7) Install the battery tray.
- (8) Install the battery.
- (9) Install the air filter assembly.
- (10) Connect the negative battery cable.

3.10 Replace Front Left Pipe Assembly

■ Removal

- (1) Drain the brake fluid.

Hint:

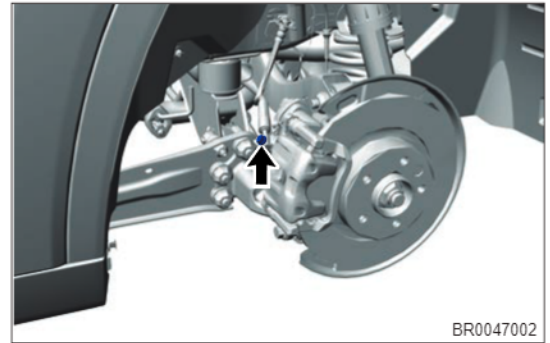
- Drained brake fluid should be well kept in a container. Never discard it at will.

⚠ Caution

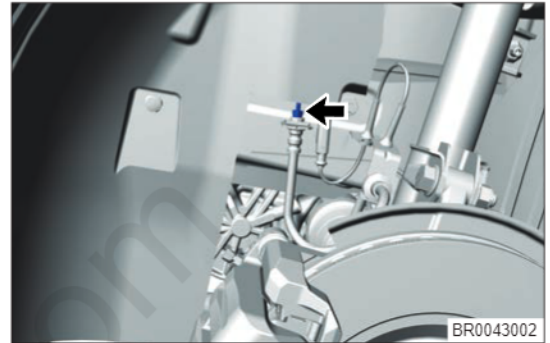
- **Wash off brake fluid immediately if it comes in contact with any paint surface.**

- (2) Remove the air filter assembly.
- (3) Remove the battery.
- (4) Remove the battery tray.

- (5) Remove fixing nut (arrow) between front left pipe assembly and ESP (iEPB) control module inlet port, and disconnect connection between front left pipe assembly and ESP (iEPB) control module inlet port.



- (6) Loosen coupling nut (arrow) between front left brake hose assembly and front left brake pipe.



⚠ Caution

- When installing and tightening, hold pipeline by hand to prevent it from rotating. Visually check to make sure the second straight segment when connect ESP (iEPB) keeps at an angle of about 5 degrees.
- After removing brake line, perform sealing treatment to prevent foreign matter from entering.

- (7) Remove the front left pipe assembly.

■ Installation

⚠ Caution

- Be sure to tighten fixing plug and nut to specified torque during installation.
- Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.
- Be sure to perform bleeding procedures for brake system after installation.
- Be sure to add brake fluid to a proper level after installation.

- (1) Install the front left pipe assembly to a proper position.
 (2) Install the coupling nut between front left brake hose assembly and front left brake pipe.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (3) Connect front left pipe assembly and ESP (iEPB) control module inlet port, and tighten fixing nut between front left pipe assembly and ESP (iEPB) control module inlet port.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (4) Install the battery tray.
 (5) Install the battery.
 (6) Install the air filter assembly.

3.11 Replace Front Right Pipe Assembly

■ Removal

- (1) Drain the brake fluid.

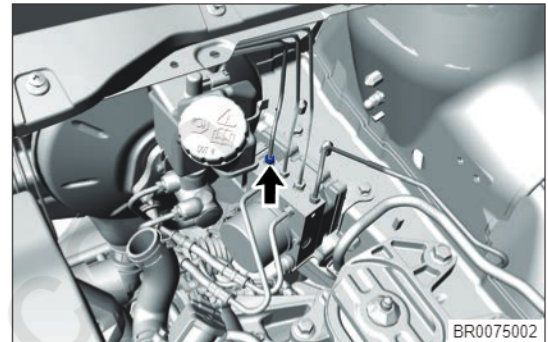
Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

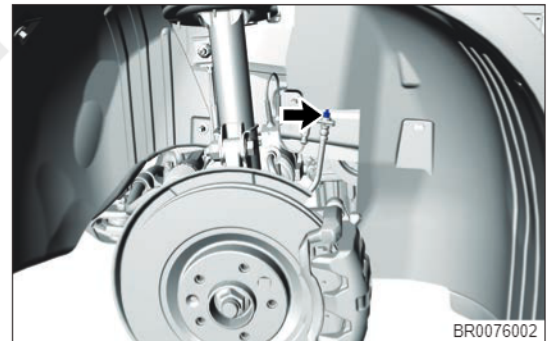
⚠ Caution

- **Wash off brake fluid immediately if it comes in contact with any paint surface.**

- (2) Remove the air filter assembly.
- (3) Remove the battery.
- (4) Remove the battery tray.
- (5) Remove fixing nut (arrow) between front right pipe assembly and ESP (iEPB) control module inlet port, and disconnect connection between front right pipe assembly and ESP (iEPB) control module inlet port.



- (6) Loosen coupling nut (arrow) between front right brake hose assembly and front right brake pipe.



⚠ Caution

- **DO NOT allow any foreign matter such as dirt and dust to enter brake pipe from joint parts.**
- **After removing brake line, perform sealing treatment to prevent foreign matter from entering.**

- (7) Remove the front right pipe assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.**
- **Be sure to perform bleeding procedures for brake system after installation.**
- **Be sure to add brake fluid to a proper level after installation.**

- (1) Install the front right pipe assembly to a proper position.
- (2) Install the coupling nut between front right brake hose assembly and front right brake pipe.

Torque: 17 ± 3 N·m

- (3) Connect front right pipe assembly and ESP (iEPB) control module inlet port, and tighten fixing nut between front right pipe assembly and ESP (iEPB) control module inlet port.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (4) Install the battery tray.
- (5) Install the battery.
- (6) Install the air filter assembly.

3.12 Replace Pump Front Pipe II Assembly

■ Removal

- (1) Drain the brake fluid.

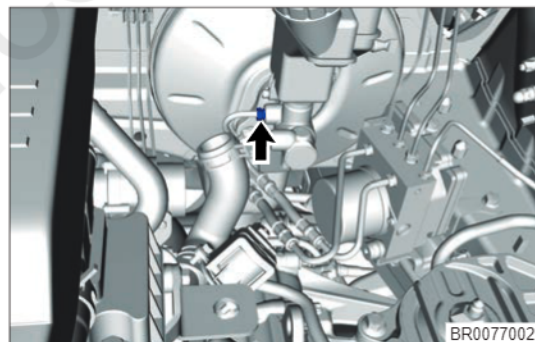
Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

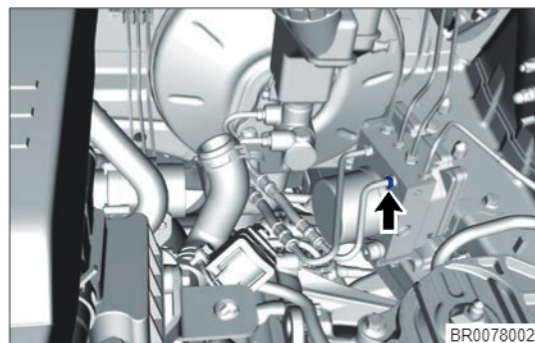
⚠ Caution

- Wash off brake fluid immediately if it comes in contact with any paint surface.

- (2) Remove the air filter assembly.
- (3) Remove the battery.
- (4) Remove the battery tray.
- (5) Remove fixing nut (arrow) between pump front pipe II assembly and brake cylinder, and disconnect pump front pipe II assembly.



- (6) Remove fixing nut (arrow) between pump front pipe II assembly and ESP (iEPB) inlet port.



⚠ Caution

- When installing and tightening, hold pipeline by hand to prevent it from rotating. Visually check to make sure the second straight segment when connect ESP (iEPB) keeps at an angle of about 5 degrees.

- (7) Remove the pump front pipe II assembly.

■ Installation

⚠ Caution

- Be sure to tighten fixing plug and nut to specified torque during installation.
- Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.
- Be sure to perform bleeding procedures for brake system after installation.
- Be sure to add brake fluid to a proper level after installation.

- (1) Install the pump front pipe II assembly to a proper position.
- (2) Remove fixing nut between pump front pipe II assembly and ESP (iEPB) inlet port.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (3) Connect pump front pipe II assembly and tighten the fixing nut between pump front pipe I assembly and brake cylinder.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (4) Install the battery tray.
- (5) Install the battery.
- (6) Install the air filter assembly.

3.13 Replace Pump Front Pipe I Assembly

■ Removal

- (1) Drain the brake fluid.

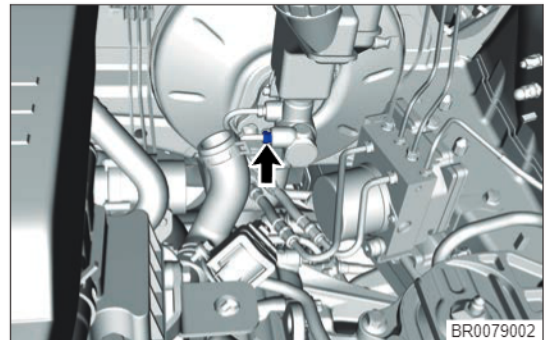
Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

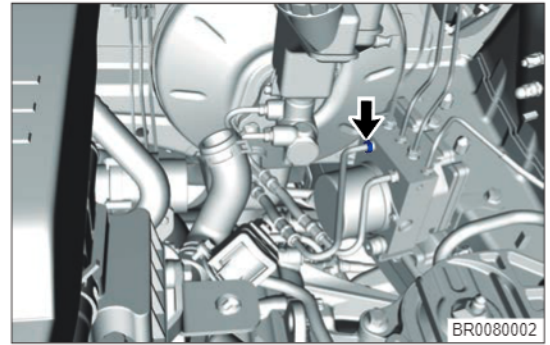
⚠ Caution

- Wash off brake fluid immediately if it comes in contact with any paint surface.

- (2) Remove the air filter assembly.
- (3) Remove the battery.
- (4) Remove the battery tray.
- (5) Remove fixing nut (arrow) between pump front pipe I assembly and brake cylinder, and disconnect pump front pipe II assembly.



- (6) Remove fixing nut (arrow) between pump front pipe I assembly and ESP (iEPB) inlet port.



⚠ Caution

- When installing and tightening, hold pipeline by hand to prevent it from rotating. Visually check to make sure the second straight segment when connect ESP (iEPB) is level.

- (7) Remove the pump front pipe I assembly.

■ Installation

⚠ Caution

- Be sure to tighten fixing plug and nut to specified torque during installation.
- Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.
- Be sure to perform bleeding procedures for brake system after installation.
- Be sure to add brake fluid to a proper level after installation.

- (1) Install the pump front pipe I assembly to a proper position.
- (2) Install fixing nut between pump front pipe I assembly and ESP (iEPB) inlet port.
Torque: $17 \pm 3 \text{ N}\cdot\text{m}$
- (3) Connect pump front pipe I assembly and tighten the fixing nut between pump front pipe I assembly and brake cylinder.
Torque: $17 \pm 3 \text{ N}\cdot\text{m}$
- (4) Install the battery tray.
- (5) Install the battery.
- (6) Install the air filter assembly.

3.14 Replace Rear Left Pipe I Assembly

■ Removal

- (1) Drain the brake fluid.

Hint:

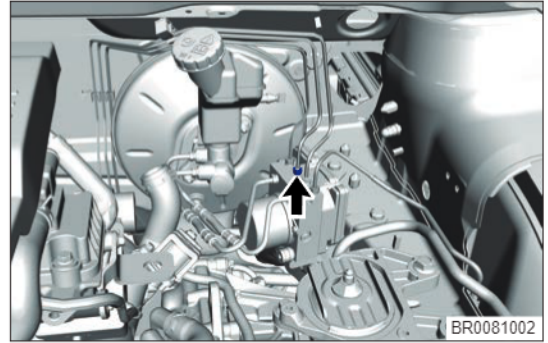
- Drained brake fluid should be well kept in a container. Never discard it at will.

⚠ Caution

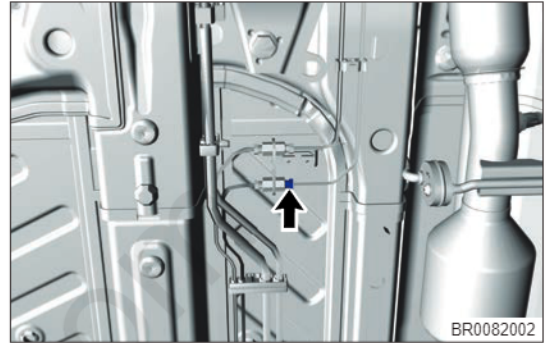
- Wash off brake fluid immediately if it comes in contact with any paint surface.

- (2) Remove the air filter assembly.
- (3) Remove the battery.
- (4) Remove the battery tray.

- (5) Remove fixing nut (arrow) between rear left pipe I assembly and ESP (iEPB) controller, and disconnect connection between rear left pipe I assembly and ESP (iEPB).



- (6) Remove fixing bolt (arrow) between rear left pipe I and pipeline connector.



- (7) Remove the rear left pipe I assembly.

■ Installation

⚠ Caution

- Be sure to tighten fixing plug and nut to specified torque during installation.
- Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.
- Be sure to perform bleeding procedures for brake system after installation.
- Be sure to add brake fluid to a proper level after installation.

- (1) Install the rear left pipe I assembly to a proper position.
- (2) Install the fixing bolt between rear left pipe I assembly and pipeline connector.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (3) Connect rear left pipe I assembly and tighten the fixing nut between rear left pipe I assembly and ESP (-iEPB) controller.

Torque: $17 \pm 3 \text{ N}\cdot\text{m}$

- (4) Install the battery tray.
- (5) Install the battery.
- (6) Install the air filter assembly.

3.15 Replace Rear Right Pipe I Assembly

■ Removal

- (1) Drain the brake fluid.

Hint:

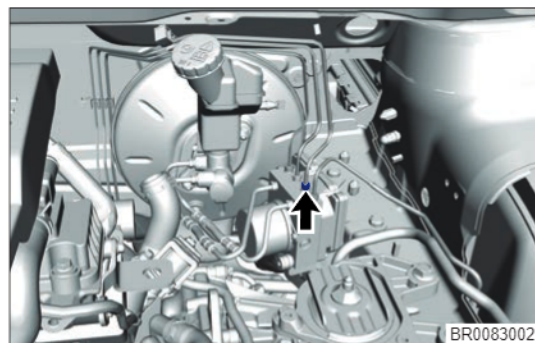
- Drained brake fluid should be well kept in a container. Never discard it at will.

⚠ Caution

- Wash off brake fluid immediately if it comes in contact with any paint surface.

- (2) Remove the air filter assembly.

- (3) Remove the battery.
- (4) Remove the battery tray.
- (5) Remove fixing nut (arrow) between rear right pipe I assembly and ESP (iEPB) controller, and disconnect connection between rear right pipe I assembly and ESP (iEPB).



- (6) Remove fixing bolt (arrow) between rear right pipe I and pipeline connector.



- (7) Remove the rear right pipe I assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.**
- **Be sure to perform bleeding procedures for brake system after installation.**
- **Be sure to add brake fluid to a proper level after installation.**

- (1) Install the rear right pipe I assembly to a proper position.
- (2) Install the fixing bolt between rear right pipe I assembly and pipeline connector.
Torque: $17 \pm 3 \text{ N}\cdot\text{m}$
- (3) Connect rear right pipe I assembly and tighten the fixing nut between rear right pipe I assembly and ESP (iEPB) controller.
Torque: $17 \pm 3 \text{ N}\cdot\text{m}$
- (4) Install the battery tray.
- (5) Install the battery.
- (6) Install the air filter assembly.

3.16 Replace Rear Left Pipe II Assembly

■ Removal

- (1) Drain the brake fluid.

Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

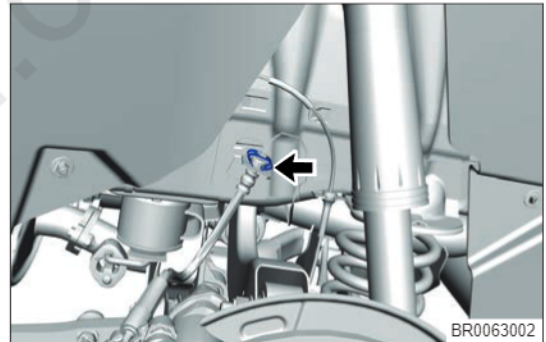
⚠ Caution

- **Wash off brake fluid immediately if it comes in contact with any paint surface.**

- (2) Remove the rear sub frame assembly.
- (3) Remove fixing bolt (arrow) between rear left pipe II and pipeline connector.



- (4) Remove holding reed (arrow), and then loosen coupling plug between rear left brake hose assembly and rear brake pipe.



- (5) Remove the rear left pipe II assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.**
- **Be sure to perform bleeding procedures for brake system after installation.**
- **Be sure to add brake fluid to a proper level after installation.**

- (1) Install the rear left pipe II assembly to a proper position.
- (2) Install the holding reed, and then tighten coupling plug between rear left brake hose assembly and rear brake pipe.
- (3) Install the fixing bolt between rear left pipe II and pipeline connector.
- (4) Install the rear sub frame assembly.

3.17 Replace Rear Right Pipe II Assembly

■ Removal

- (1) Drain the brake fluid.

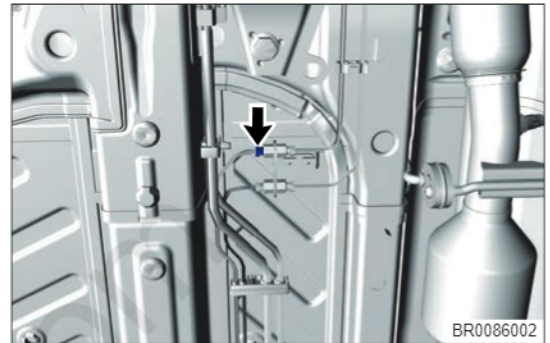
Hint:

- Drained brake fluid should be well kept in a container. Never discard it at will.

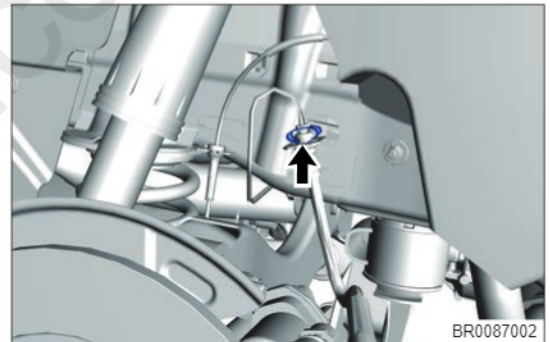
⚠ Caution

- **Wash off brake fluid immediately if it comes in contact with any paint surface.**

- (2) Remove the rear sub frame assembly.
- (3) Remove fixing bolt (arrow) between rear right pipe II and pipeline connector.



- (4) Remove holding reed (arrow), and then loosen coupling plug between rear right brake hose assembly and rear brake pipe.



- (5) Remove the rear right pipe II assembly.

■ Installation

⚠ Caution

- **Be sure to tighten fixing plug and nut to specified torque during installation.**
- **Be sure to check brake system for leakage after installation. Repair or replace malfunctioning parts as necessary.**
- **Be sure to perform bleeding procedures for brake system after installation.**
- **Be sure to add brake fluid to a proper level after installation.**

- (1) Install the rear right pipe II assembly to a proper position.
- (2) Install the holding reed, and then tighten coupling plug between rear right brake hose assembly and rear brake pipe.
- (3) Install the fixing bolt between rear right pipe II assembly and pipeline connector.
- (4) Install the rear sub frame assembly.