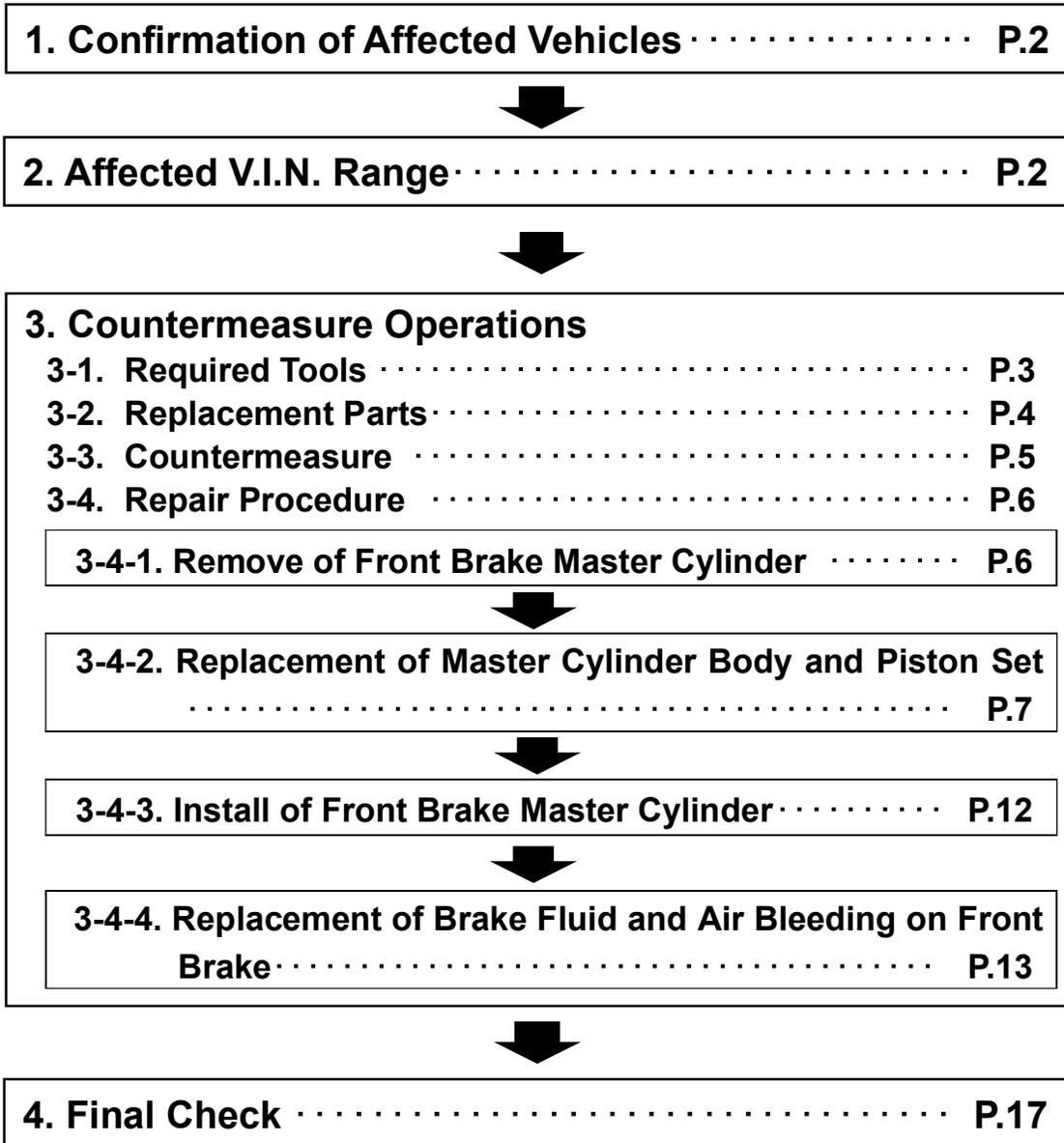


Issue Date : FEB.09,2023

**Repair Instruction of Front Brake Master
Cylinder Body Replacement
GSX1300RM2**

Workflow

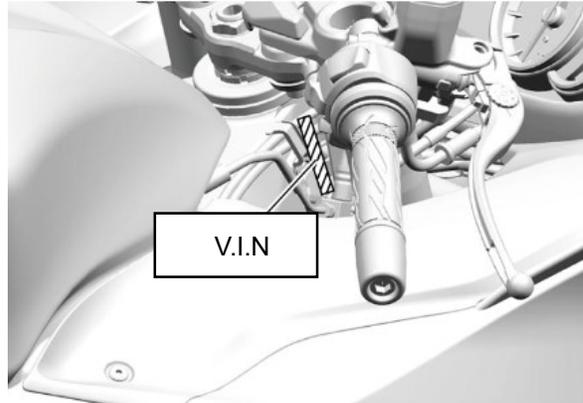


1. Confirmation of Affected Vehicles

Check the Vehicle Identification Number (V.I.N.) if the vehicle is applicable unit to this replacement.

V.I.N.

V.I.N. Location..... Right side of the steering head



2. Affected V.I.N. Range

Affected V.I.N. range is shown as below.

NOTE

-
- **NOT** all vehicles in the below V.I.N. range are affected.
 - “#” indicates any check digit from 0 to 9 and X.
-

Model	SPEC	V.I.N. Range		
GSX1300RM2	E03	JS1EJ11B#N7100001	-	JS1EJ11B#N7102431
	E33	JS1EJ11D#N7100001	-	JS1EJ11D#N7100247

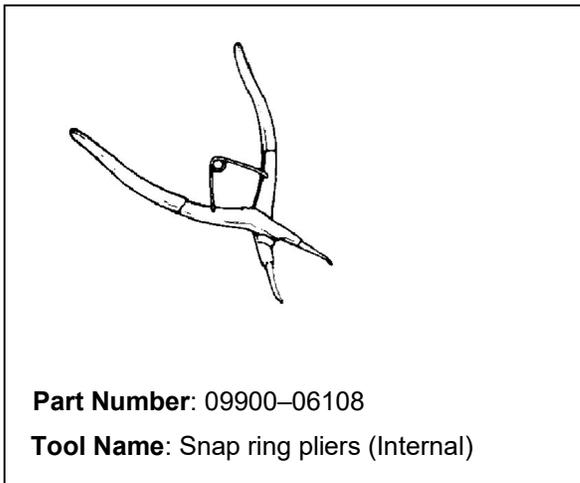
3. Countermeasure Operations

3-1. Required Tools

- General Tool

Tool, Fluid Name	Size, Part Number
Box end wrench	8 mm
Socket wrench	8 mm, 10 mm
Hexagon wrench	5 mm, 6 mm
Ratchet handle	–
Phillips screwdriver	Medium
Slotted screwdriver	Large
Torque wrench (Limit wrench)	1.0 (0.10 kgf-m, 0.75 lbf-ft) to 23 N·m (2.3 kgf-m, 17.0lbf-ft)
Receptacle and clear hose for brake fluid replacement	
Brake fluid (DOT 4)	
SUZUKI SILICONE GREASE	99000-25100

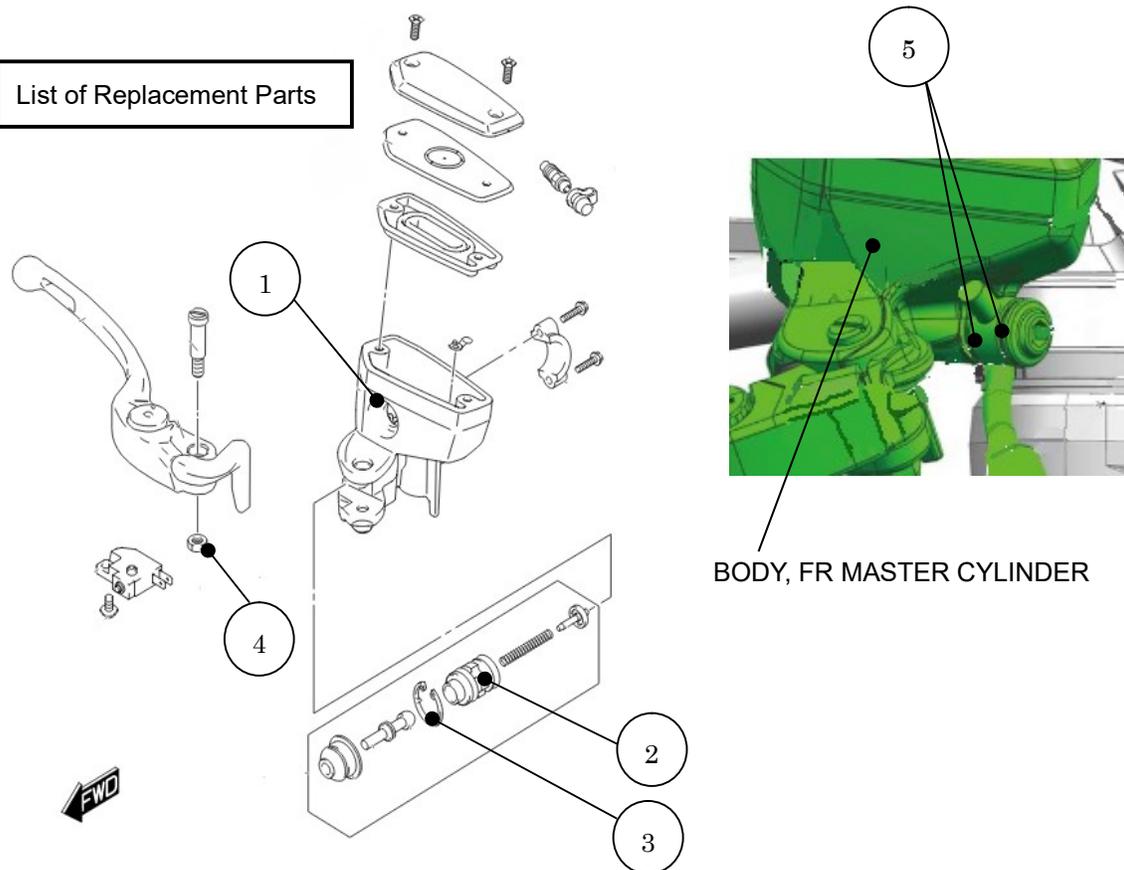
- Special Tool



3-2. Replacement Parts

• Countermeasure Part

Part Name	Part Number	Qty	Contents
PARTS SET, FR MASTER CYLINDER	59600-10860-RX0	1	<ul style="list-style-type: none"> • BODY, FR MASTER CYLINDER (59660-10L00-RX0)×1 (1) • PISTON SET, FRONT MASTER (59610-10L00-RX0)×1 (2) • CIRCLIP(59665-29G00)×1 (3) • NUT(08319-2106A)×1 (4) • WASHER(09161-10009)×2 (5) • IDENTIFICATION SEAL:GREEN×1

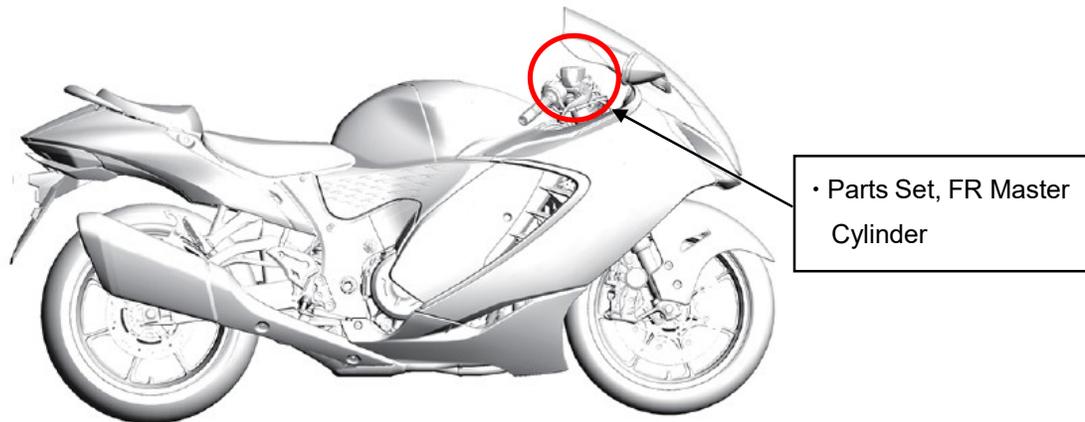


• Identification of Countermeasure Part

Existing Part	Countermeasure Part
<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">No punch mark</div>	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">With a punch mark</div>

3-3. Countermeasure

For all vehicles, replace the master cylinder body and piston cup set of front brake master cylinder, and brake fluid.



Precautions

- Take care not to get grease or oil (mineral oil, etc.) into the brake system.
- When touching components inside the brake system, do not work with hands or tools with grease or oil (mineral oil, etc.).
- The brake fluid is damaging to painted surfaces, plastics and rubber materials, and do not allow the fluid to spill on the surrounding parts.
If the fluid is spilled, flush it with water immediately.
- This brake system is filled with an ethylene glycol-based DOT 4 brake fluid.
Do not use or mix different types of fluid, such as silicone-based or petroleum-based.
- Do not use any brake fluid taken from old, used or unsealed containers.
Never reuse brake fluid left over from the last servicing or which has been stored for a long period of time.
- When replenishing brake fluid, take care not to get dust into the fluid.
- To avoid getting burned, do not touch the engine and exhaust system until they have cooled.
- Before the repair work, wash dirt off from the vehicle so that removed parts are kept free from dust.
- When 2 or more persons work together, pay attention to the safety of each other.
- When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order and orientation.

Refer to the applicable service manual for the details not mentioned in the instructions.

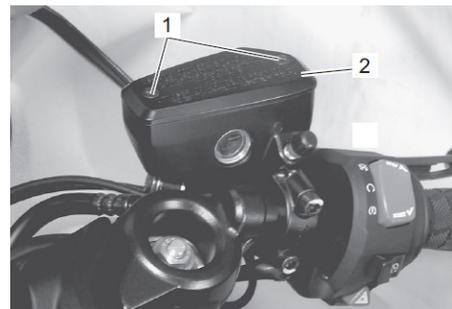
3-4. Repair Procedure

3-4-1. Remove of Front Brake Master Cylinder

- 1) Turn the ignition switch OFF.
- 2) Place the motorcycle on a level surface and adjust the handlebars to keep the front brake master cylinder level.
- 3) Place a rag (1) underneath the master cylinder as shown in the picture. This prevents the brake fluid from splashing onto other parts, if brake fluid is spilled or dripped.



- 4) Remove the reservoir cap screws (1), reservoir cap (2) and plate (3) diaphragm (4) from the front brake master cylinder reservoir.



- 5) Suck up the old brake fluid as much as possible.



- 6) Remove the brake hose union bolt (1) and disconnect the brake hose (2).

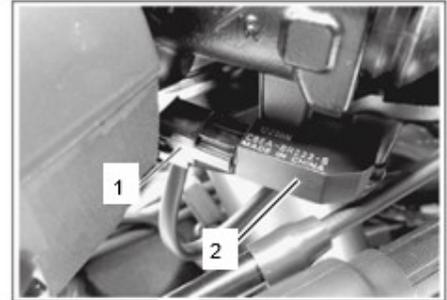


NOTE

Cover the end of the brake hose with a plastic bag, etc. and tie it with rubber or string to prevent the brake fluid from spilling out from the removed brake hose.



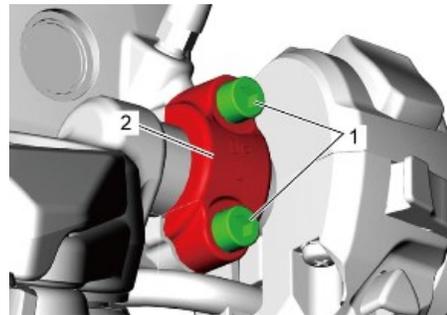
- 7) Disconnect the front brake light switch lead wire coupler (1) from the front brake light switch (2).



- 8) Remove the master cylinder holder bolts (1), and then remove the master cylinder holder (2).
- 9) Remove the front brake master cylinder.

NOTE

When removing and moving the front brake master cylinder, pay enough attention not to spill the brake fluid remained in the master cylinder.

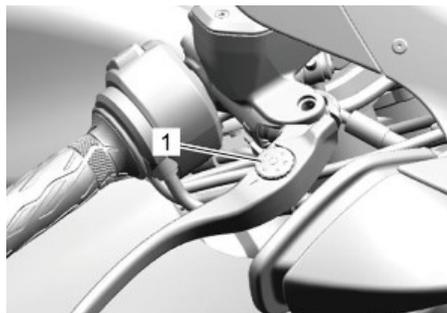


3-4-2. Replacement of Master Cylinder Body and Piston Set

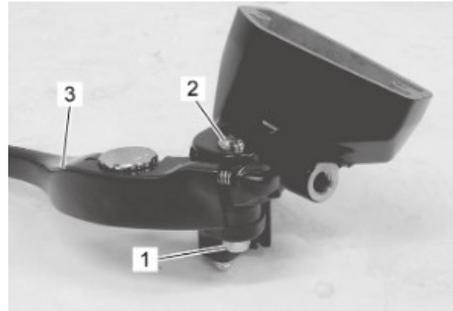
NOTE

Use reuse parts after checking that they are free of foreign material.

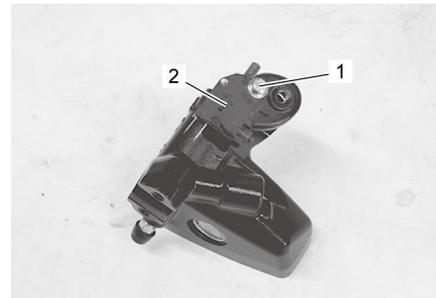
- 1) Record the position of the brake lever adjuster (1).



2) Remove the brake lever pivot nut (1), bolt (2) and brake lever (3).



3) Remove the front brake light switch screw (1) and front brake light switch (2) from the master cylinder body.



4) Remove the dust boot (1) and push rod (2).



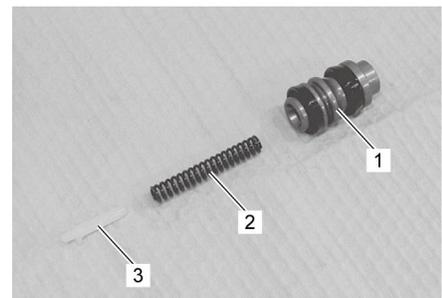
5) Remove the snap ring (1) using the special tool.

Special tool
09900-06108



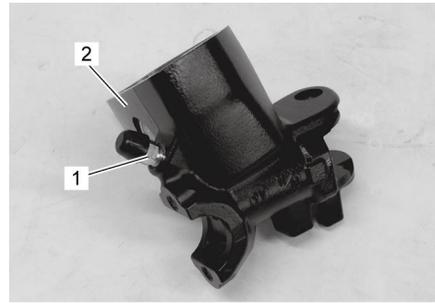
6) Remove the piston/cup set (1), return spring (2) and return spring guide (3) from the master cylinder body.

Replacement Part	Piston/cup set (1)
Reuse Parts	Return spring (2) Return spring guide (3)



- 7) Remove the front brake master cylinder air bleeder valve and cap (1) from the master cylinder body (2).

Replacement Part	Master cylinder body (2)
Reuse Parts	Air bleeder valve and cap (1)

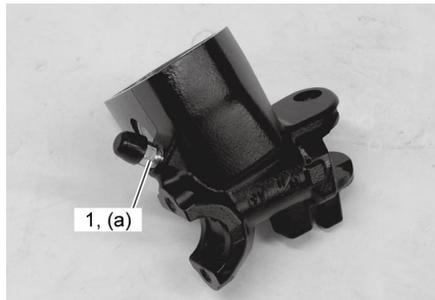


- 8) Tighten the front brake master air bleeder valve and cap (1) to the new master cylinder body to the specified torque.

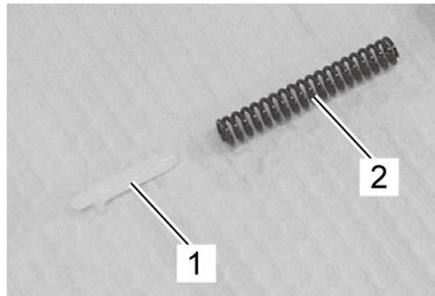
Tightening torque

Front brake master cylinder air bleeder valve:

6.0 N·m (0.61 kgf-m, 4.45 lbf-ft)

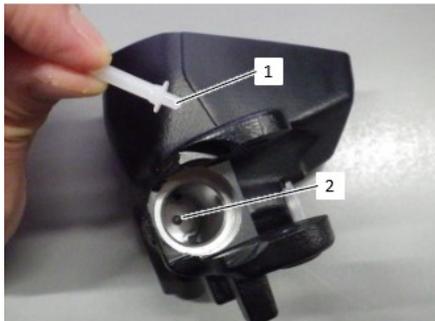


- 9) Install the return spring guide (1) and return spring (2) to the new master cylinder body.



NOTE

When installing the return spring guide, fit the spring guide end (1) into the hole (2) of the master cylinder.



- 10) Apply brake fluid to new piston/cup set (1) and install it to the new master cylinder body.



11) Install the new snap ring (1) using the special tool.

Special tool

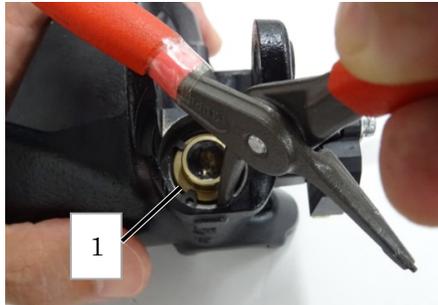
09900-06108



NOTE

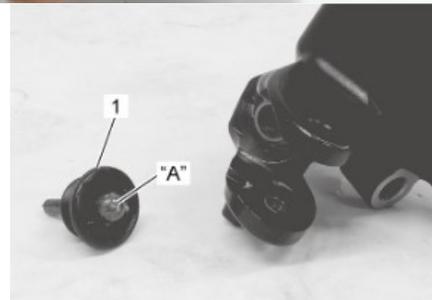
Make sure that the snap ring is completely seated in the groove.

If the snap ring is seated in the groove, the snap ring can be rotated.



12) Apply grease to the push rod (1) end.

"A": Grease 99000-25100 (SUZUKI SILICONE GREASE)

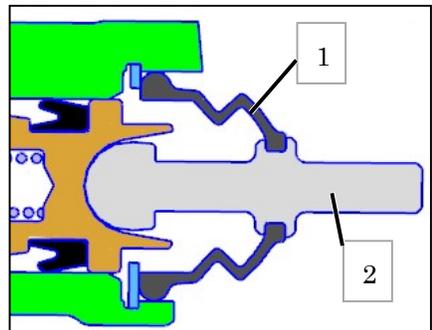


13) Set the dust boot (1) and push rod (2) to the new master cylinder securely as shown.

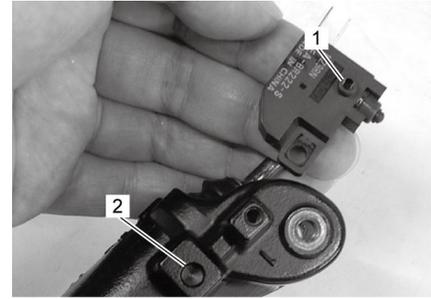


NOTICE

Make sure the all around of the dust boots are fitted with the master cylinder.



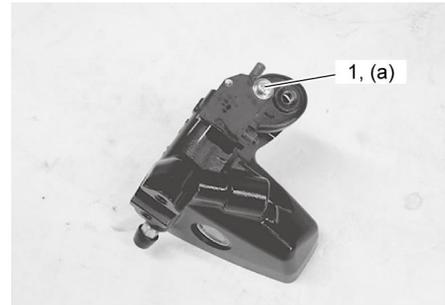
- 14) Align the protrusion (1) of switch with the hole (2) of master cylinder, and then install the front brake light switch.



- 15) Tighten the front brake light switch screw (1) to the specified torque.

Tightening torque

Front brake light switch screw (a): 1.2 N·m (0.12 kgf-m, 0.90 lbf-ft)



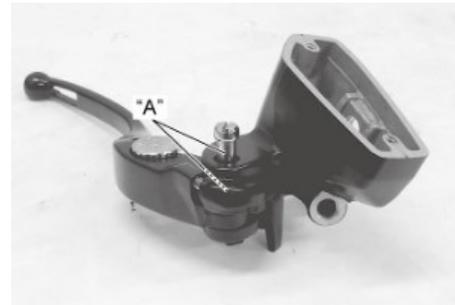
- 16) Apply grease to the contact point between push rod brake lever.

“A”: Grease 99000–25100 (SUZUKI SILICONE GREASE)



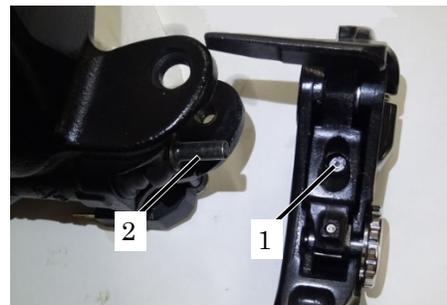
- 17) Apply grease to the brake lever pivot bolt and brake lever sliding surfaces and install the brake lever.

“A”: Grease 99000–25100 (SUZUKI SILICONE GREASE)



NOTICE

Make sure that the pushrod (2) is fully inserted into the hole (1) of the brake lever.

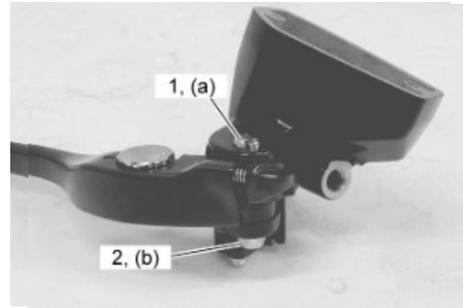


- 18) Tighten the pivot bolt (1) and new lock-nut (2) to the specified torque.

Tightening torque

Brake lever pivot bolt (a): 1.0 N·m (0.10 kgf-m, 0.75 lbf-ft)

Brake lever pivot bolt lock-nut (b): 5.9 N·m (0.60 kgf-m, 4.35 lbf-f)



3-4-3. Install of Front Brake Master Cylinder

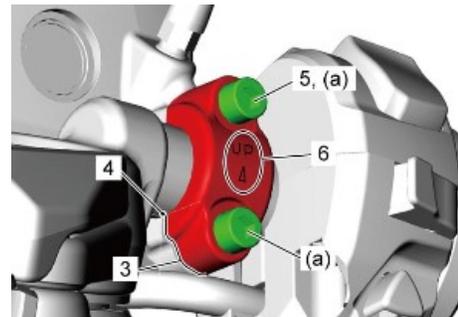
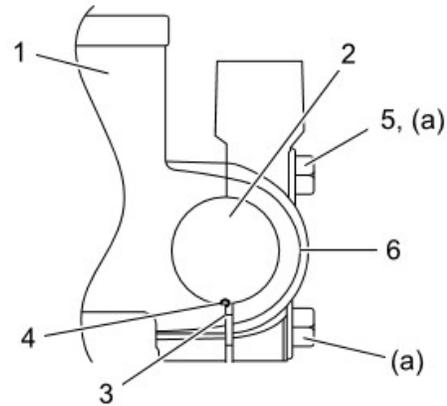
- 1) When installing the front brake master cylinder (1) onto the handlebar (2), align the edge (3) of the master cylinder with the punch mark (4) on the handlebar, and tighten the upper bolt (5) first.

Tightening torque

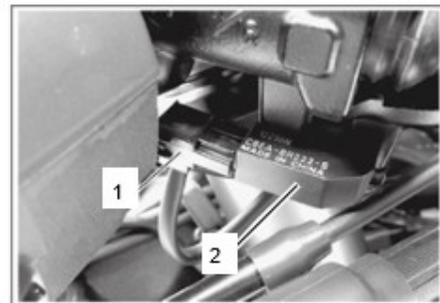
Front brake master cylinder holder bolt (a): 10 N·m (1.0 kgf-m, 7.5 lbf-ft)

NOTE

Face the up mark (6) upward.



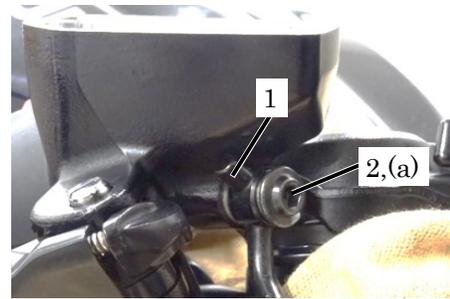
- 2) Connect the front brake light switch lead wire coupler (1) to the front brake light switch (2).



- 3) Install the brake hose union bolt and new seal washers to the brake hose.
- 4) After the brake hose union (1) has contacted the master cylinder, tighten the union bolt (2) to the specified torque.

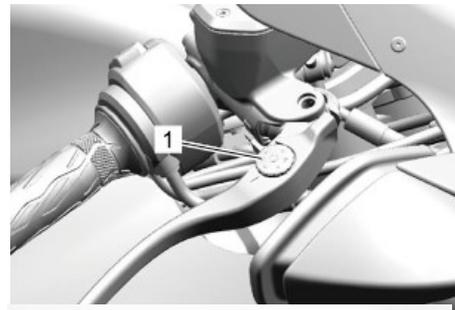
Tightening torque

Brake hose union bolt (a): 23 N·m (2.3 kgf-m, 17.0 lbf-ft)



3-4-4. Replacement of Brake Fluid and Air Bleeding on Front Brake

- 1) Check to ensure that the adjuster (1) is at position No. 3.

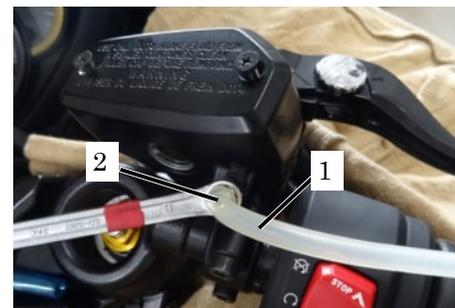


- 2) Fill the reservoir with brake fluid up to the depth "a" of 8 mm (0.3 in) from the reservoir tank edge. Install a reservoir cap and temporarily tighten the reservoir cap screw to prevent dust from entering.

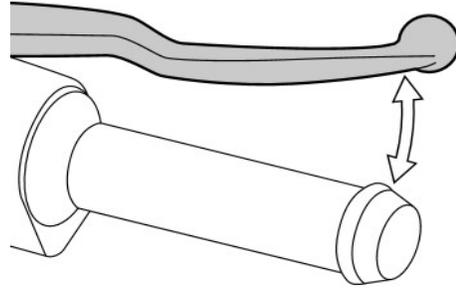
Brake fluid (DOT 4)



- 3) Attach a clear hose (1) to the front brake master cylinder air bleeder valve (2). Check the opposite end of the clear hose is inserted into a receptacle.



- 4) Operate the brake lever several times and, while holding the lever gripped, loosen the front brake master cylinder air bleeder valve and drain the brake fluid into the receptacle.
- 5) Tighten the front brake master cylinder air bleeder valve and release the brake lever slowly.
- 6) Repeat the steps 4) and 5) until the fluid is flowing out without bubbles.



NOTE

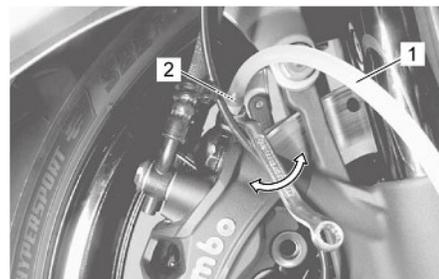
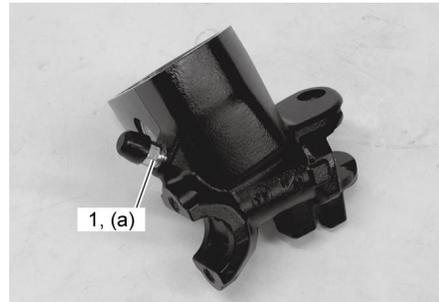
While bleeding the brake system, replenish the reservoir with brake fluid as necessary to keep the fluid above the lower level.

- 7) Remove the clear hose from the front brake master cylinder air bleeder valve.
- 8) Tighten the front brake master cylinder air bleeder valve (1) to the specified torque.

Tightening torque

**Front brake master cylinder air bleeder valve (a) :
6.0 N·m (0.61 kgf-m, 4.45 lbf-ft)**

- 9) Attach a clear hose (1) to the right front brake caliper air bleeder valve (2). Check the opposite end of the clear hose is inserted into a receptacle.

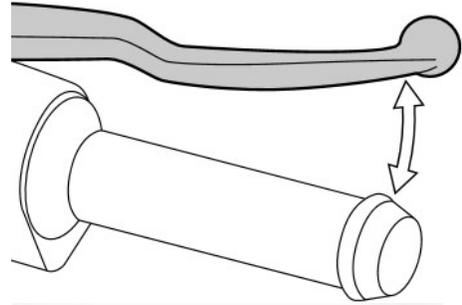


- 10) Fill the reservoir with brake fluid up to the depth "a" of 8 mm (0.3 in) from the reservoir tank edge. Install a reservoir cap and temporarily tighten the reservoir cap screw to prevent dust from entering.

Brake fluid (DOT 4)



- 11) Loosen the right front brake caliper air bleeder and operate the brake lever until the brake fluid surface in the reservoir reaches the lower level mark. Drain the brake fluid into the receptacle and then tighten the right front brake caliper air bleeder valve.



- 12) Repeat steps 10) and 11) three times.

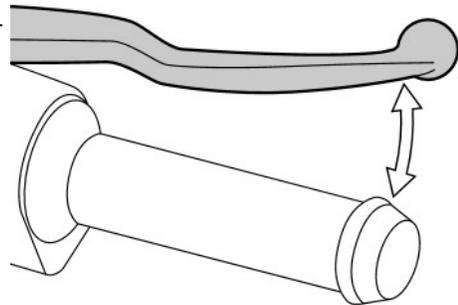
- 13) Fill the reservoir with brake fluid up to the depth "a" of 8 mm (0.3 in) from the reservoir tank edge. Install a reservoir cap and temporarily tighten the reservoir cap screw to prevent dust from entering.



Brake fluid (DOT 4)



- 14) Operate the brake lever several times and, while holding the lever gripped, loosen the front brake master cylinder air bleeder valve and drain the brake fluid into the receptacle.
- 15) Tighten the right brake master cylinder air bleeder valve and release the brake lever slowly.
- 16) Repeat the steps 14) and 15) until the fluid is flowing out without bubbles.



NOTE

While bleeding the brake system, replenish the reservoir with brake fluid as necessary to keep the fluid above the lower level.

- 17) Remove the clear hose from the right brake caliper air bleeder valve.

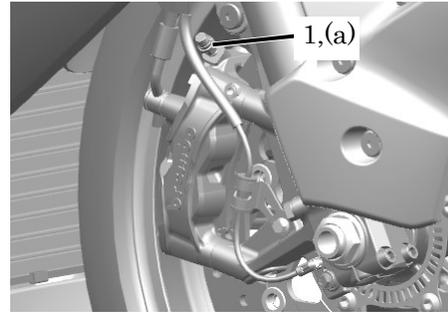
- 18) Tighten the right brake caliper air bleeder valve(1) to the specified torque.

Tightening torque

Front brake caliper air bleeder valve (a) :

8.5 N·m (0.87 kgf-m, 6.30 lbf-ft)

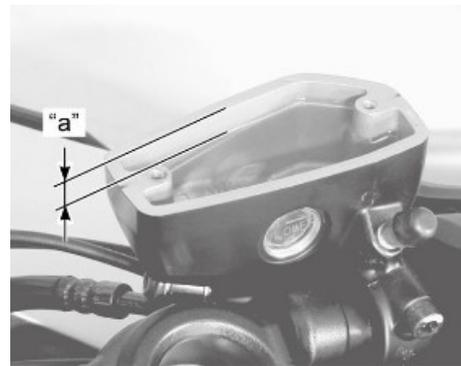
- 19) For the left brake caliper, follow the same steps 9) - 18) to replace the brake fluid and bleed the air.



- 20) Remove the reservoir cap.

- 21) Fill the reservoir with brake fluid to the depth “a” of 8 mm (0.3 in) from the reservoir tank edge.

Brake fluid (DOT 4)

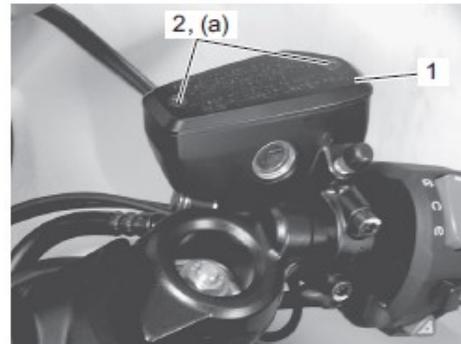


- 22) Install the diaphragm,plate, reservoir cap (1) and reservoir cap screw (2) to the front brake master cylinder reservoir.

Tightening torque

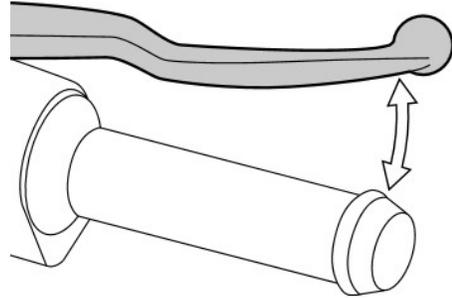
Front reservoir cap screw (a) :

1.5 N·m (0.15 keg-m, 1.10 lbf-ft)

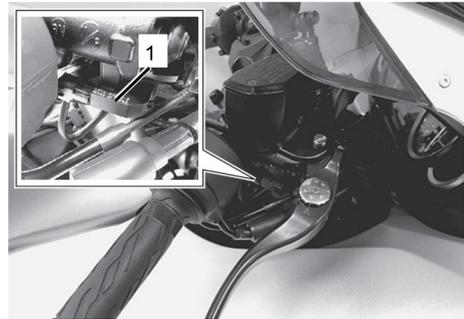


4. Final Check

- 1) Check that each part is set and tightened securely.
- 2) Check that there is no fluid or grease sticking to any part other than the indicated area.
- 3) If the front brake lever feels soft when you squeeze it, inspect it to see if air is mixed in.
If you find any anomalies, examine the brake fluid and bleed the air.



- 4) Check if the brake light turns on when you operate the front brake lever.
If it does not function correctly, examine the brake light bulb and the front brake light switch (1).



- 5) Drive the motorcycle on a dry road surface and operate the front brake to check if its braking performance is adequate.
Additionally, check for any unusual noise.

- 6) Turn the adjuster (1) to the same position as the recorded position of brake lever adjuster in (Step 3-4-2.1).

