SAFETY RECALL CAMPAIGN 2A99

2022 Hayabusa Front Brake Master Cylinder Body Replacement

Service Procedures

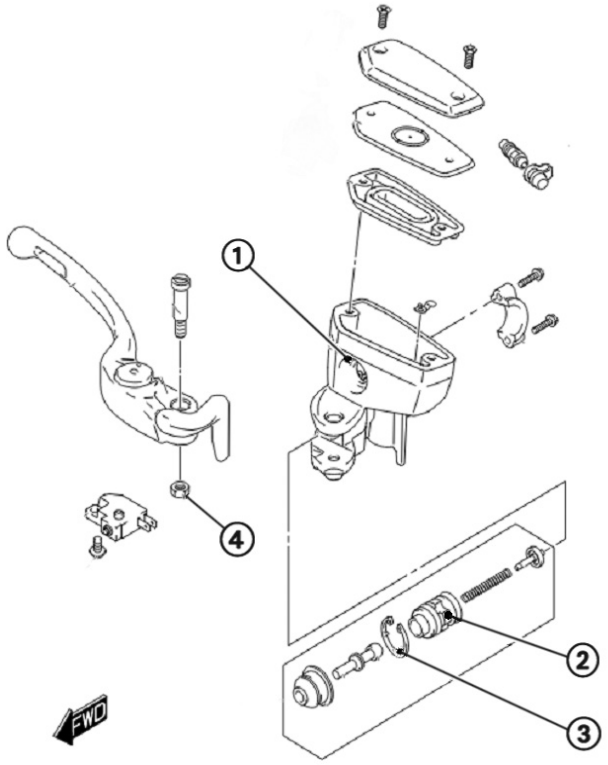
Reference: Service Bulletin GS/GSX/GSX-R No. 259 (02/27/2023)
& Hayabusa GSX1300R Service Manual (99500-10L00-03E)

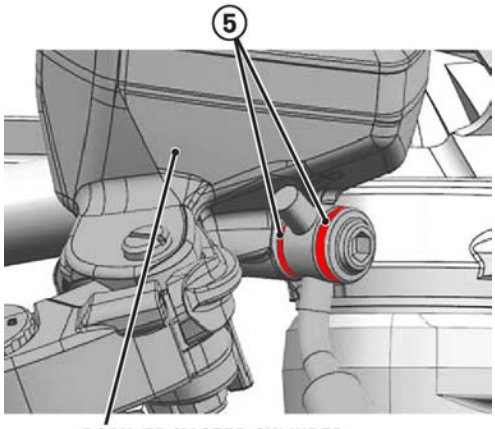
Recall service overview:

Replace the master cylinder body and piston cup set of the front brake master cylinder assembly. You will also replenish the brake fluid and bleed any air from the brake system. To read the full GS/GSX/GSX-R No. 259 Safety Recall Campaign bulletin, **CLICK HERE.**

Recall service parts:

Part Name	Part Number	Quantity	Includes
PARTS SET, FR MASTER CYLINDER	59600-10860-RX0	1	BODY, FR MASTER CYLINDER (59660-10L00-RXO) x 1 ①
			PISTON SET, FRONT MASTER (59610-10L00-RXO) x 1 ②
			CIRCLIP (59665-29G00) x 1 ③
			NUT (08319-2106A) x 1 ④
			WASHER (09161-10009) x 2 ⑤





BODY, FR MASTER CYLINDER

Brake fluid:

You will be reimbursed for brake fluid used in the recall service.

The required brake fluid is Suzuki ECSTAR DOT 4 (990A0-01E91-12Z).

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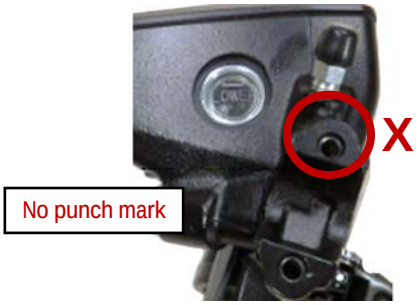
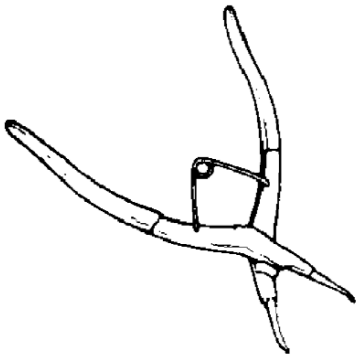
Recall service parts identification:

Original part	New, recall service part
	

Required tools:

Tool or item	Size or capability
Snap ring pliers	Suzuki special tool 09900-06108 (or equivalent) 
Box end wrench	8 mm
Socket wrench	8 mm, 10 mm
Hexagon wrench (Allen-wrench)	5 mm, 6 mm
Ratchet handle	(to match socket wrench)
Phillips screwdriver	Medium (#2)
Slot-style screwdriver	Large
Torque wrench	Range: 0.75 to 17.0 lb-ft or (10 to 23 N.m) or (0.10 to 2.3 kgf-m)
Fluid receptacle and clear hose for brake fluid flush	(as required)

Required chemicals:

Chemical	Number or quantity
Suzuki ECSTAR DOT 4 Brake Fluid	990A0-01E91-12Z, as required
Suzuki silicone grease	99000-25100, as required

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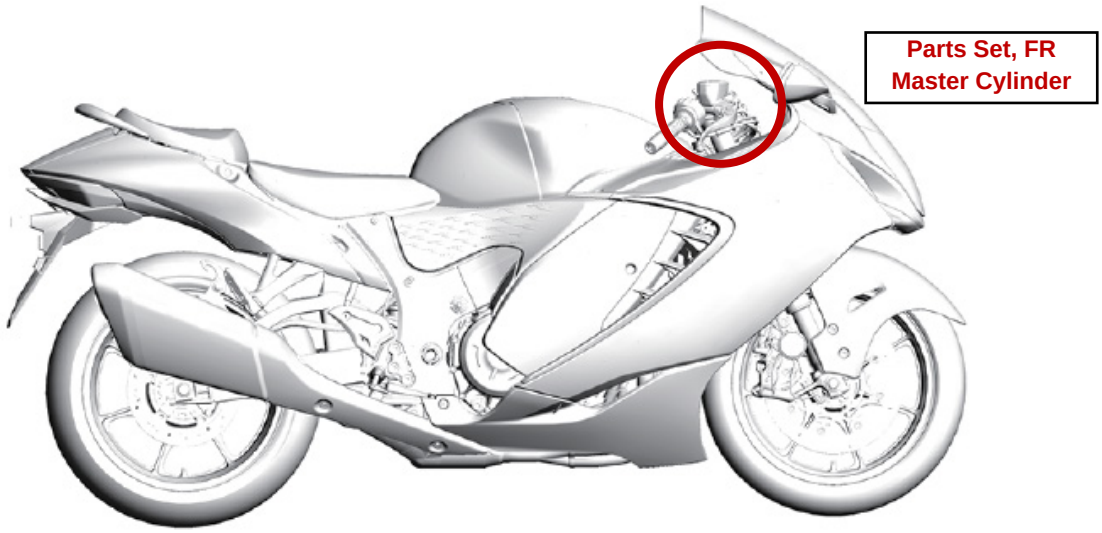
FRONT BRAKE MASTER CYLINDER BODY REPLACEMENT RECALL SERVICE

- Follow the repair procedure listed on the following pages to replace the master cylinder body and piston cup set of the front brake master cylinder assembly. You will also replenish the brake fluid and bleed any air from the brake system.



Precautions:

- Take care to not let grease or oil (mineral oil, etc.) contaminate the brake system.
- When touching brake system components, keep your hands/work-gloves clean, and do not use tools contaminated with grease or oil (mineral oil, etc.).
- Brake fluid can damage painted surfaces, plastics and rubber materials, so do not allow the fluid to spill on any portion of the motorcycle.
- If brake fluid is spilled, flush it from the parts 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 brake fluid, such as silicone-based or petroleum-based.
- Do not use any brake fluid taken from an old, used or unsealed containers.
- Never reuse brake fluid left over from a prior service or that has been stored for a long period of time.
- When replenishing brake fluid, take care to not let dust or other contaminates 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 each other's safety.
- 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 Hayabusa Service Manual (99500-10L00-03E) for any details or procedures not mentioned in these instructions.

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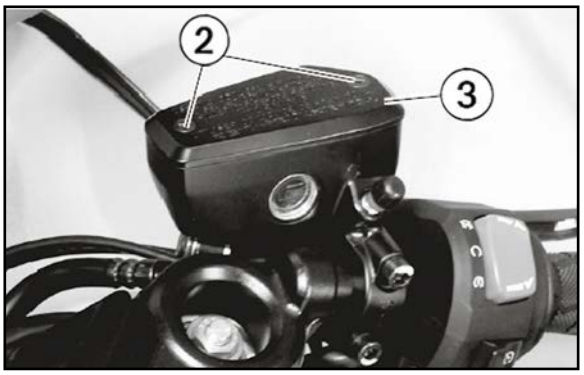
Front Brake Master Cylinder Body Replacement Procedure:

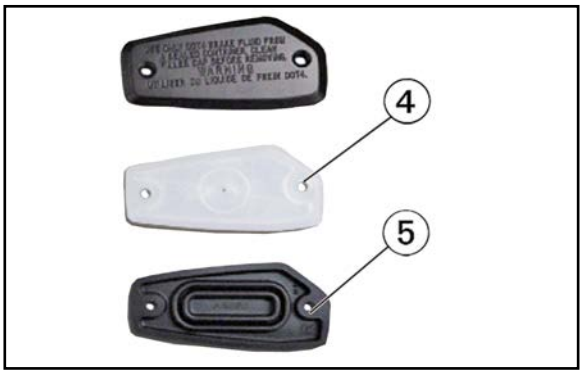
Reference: GSX1300R Service Manual (99500-31527-03E)

Remove the Front Brake Master Cylinder:

1. Turn the ignition switch OFF.
2. Position the motorcycle on a level surface and adjust the handlebars so the front brake master cylinder is level.
3. Place a clean absorbent cloth ① underneath the master cylinder as shown in the image at right. This helps prevent brake fluid from getting on other parts if it is spilled or splashed during the repair.

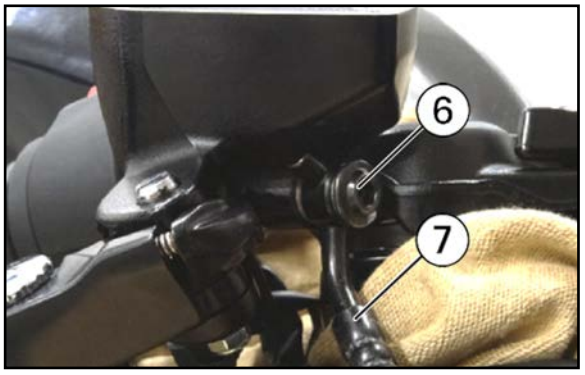


4. Remove the reservoir cap screws ②, the reservoir cap ③, and the plate ④, and diaphragm ⑤ from the front brake master cylinder.



5. Using a syringe or squeeze bottle, suck up as much of the brake fluid out of the reservoir as possible.

6. Unscrew and remove the brake hose union bolt ⑥ and disconnect the brake hose ⑦.



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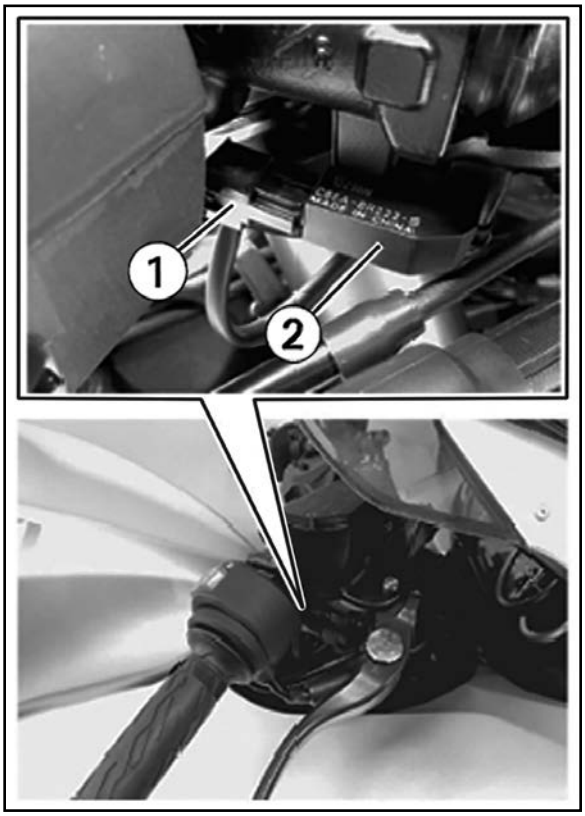
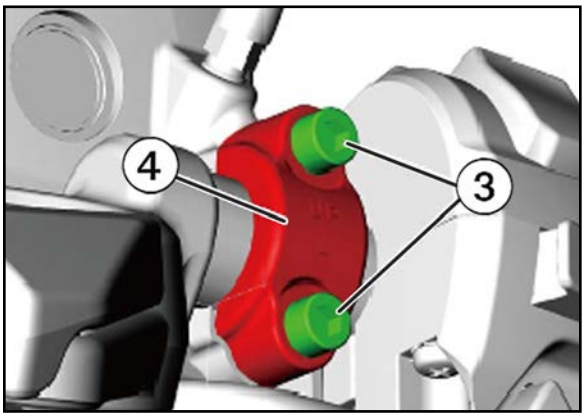
NOTE:

Cover the end of the disconnected brake hose with a plastic bag and tie it closed with a rubber band or twist tie to prevent brake fluid from spilling out from the 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 ③, and then remove the master cylinder holder (clamp) ④.
9. Remove the front brake master cylinder.



NOTE:

When removing and handling the front brake master cylinder, take care to not spill the brake fluid still in the reservoir.

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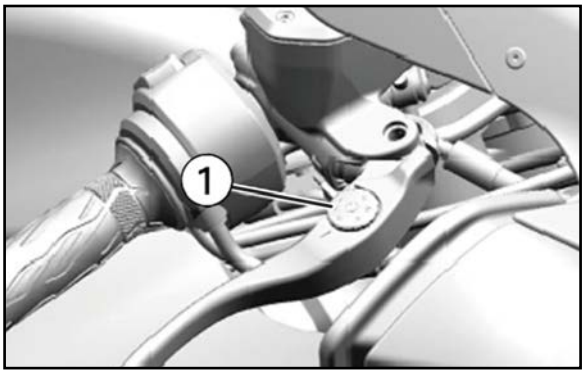
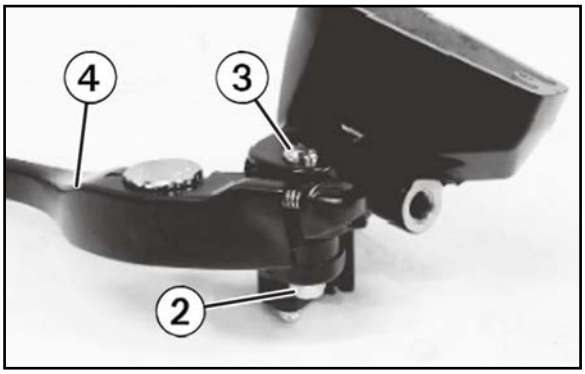
Replacement of the Master Cylinder Body and Piston Set:

NOTE:
Only reuse parts that are clean of contamination and are in good condition.

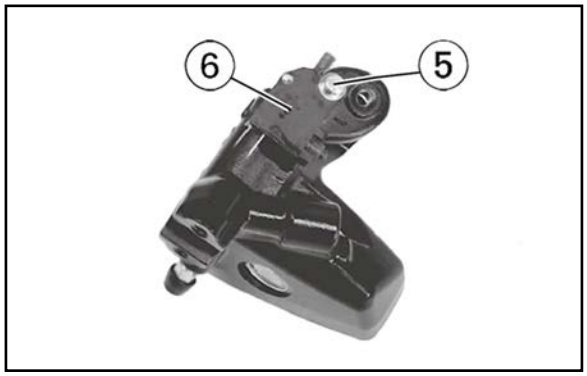
1. Record the position of the brake lever adjuster ①.



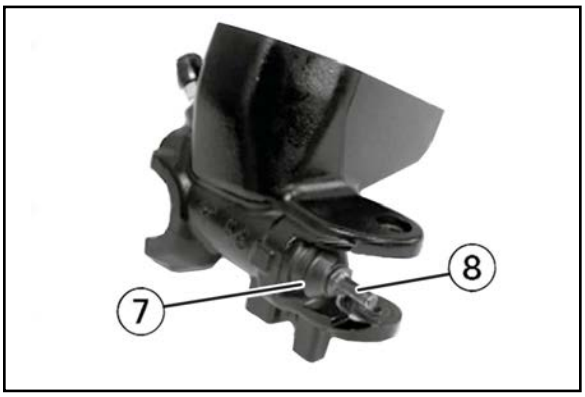
2. Remove the brake lever pivot nut ②, bolt, ③, and brake lever ④.



3. Remove the front brake light switch screw ⑤ and the front brake light switch ⑥ from the master cylinder body.

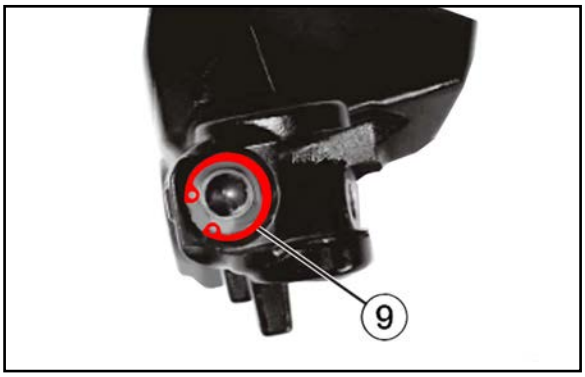


4. Remove the dust boot ⑦ and the push rod ⑧.



5. Remove the snap ring ⑨ with the special tool.

TOOL **Special tool:**
Snap ring pliers (09900-06108)



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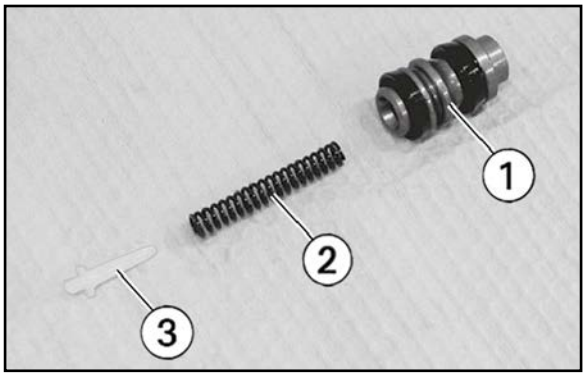
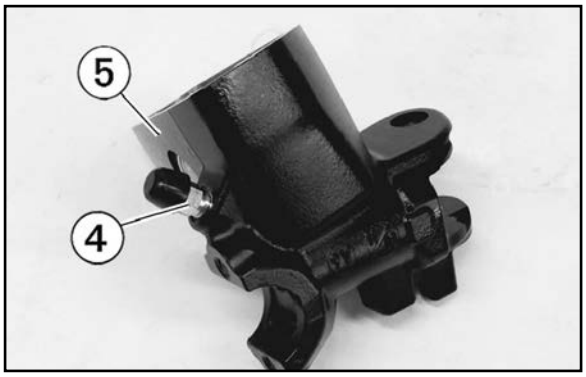
6. Remove the piston/cup set ①, return spring ②, and the return spring guide ③ from the master cylinder body.

Replace this part	Piston/cup set ①
Reuse these parts	Return spring ② Return spring guide ③



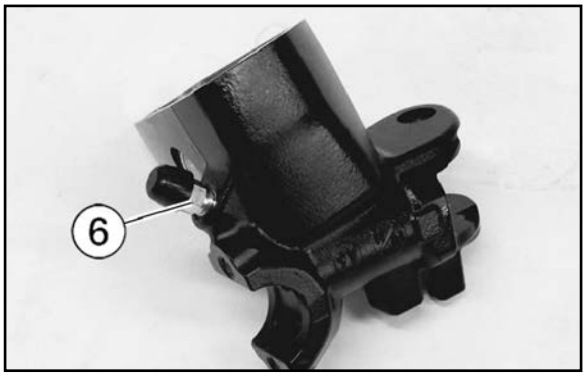
7. Remove the master cylinder air bleeder valve and cap ④ from the original master cylinder body ⑤.

Replace this part	Master cylinder body ⑤
Reuse this part	Air bleeder & cap ④

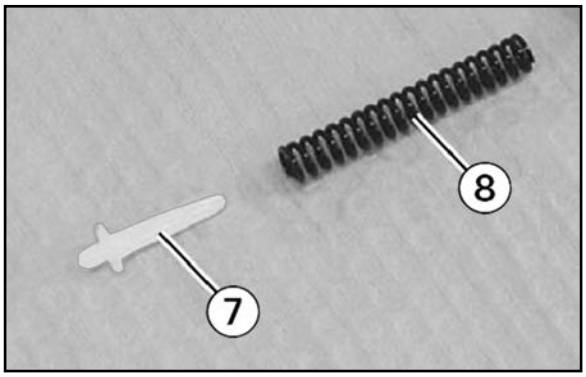


8. Install the master cylinder bleeder valve and cap ⑥ to the new master cylinder body and tighten it to the specified torque.

Tightening torque:
Bleeder valve ⑥: 4.45 lb-ft (6.0 N.m, 0.61 kgf-m)

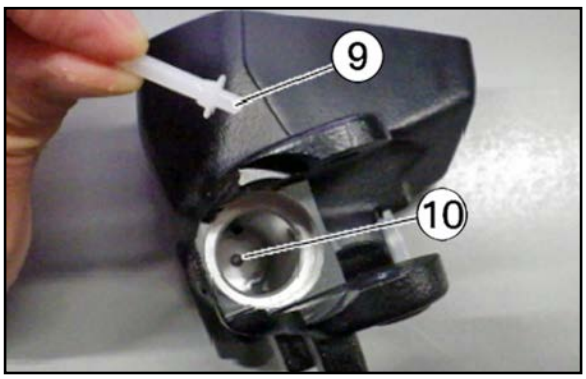


9. Install the spring guide ⑦ and the return spring ⑧ into the new master cylinder body.



NOTE:

When installing the return spring guide, fit the spring guide end ⑨ into the hole ⑩ of the master cylinder.



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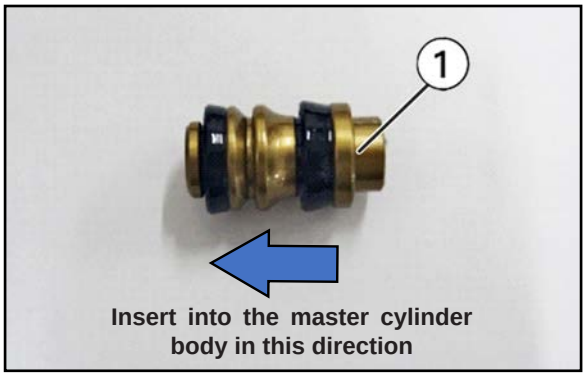
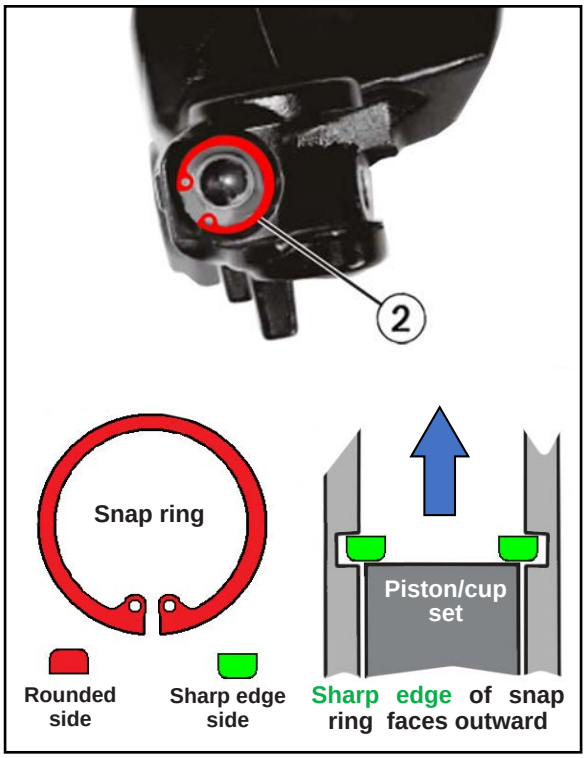
10. Apply brake fluid to the new piston/cup set ① and install it into the new master cylinder body.



11. Using the snap ring pliers special tool, install the new snap ring ② into the new master cylinder.



NOTE:

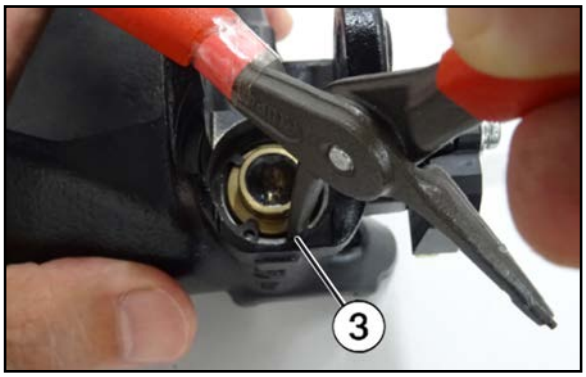
Before installation, feel for the rounded and sharp sides of the snap ring ②.

Install the snap ring into the groove in the master cylinder so the sharp edge is facing outward.

NOTE:

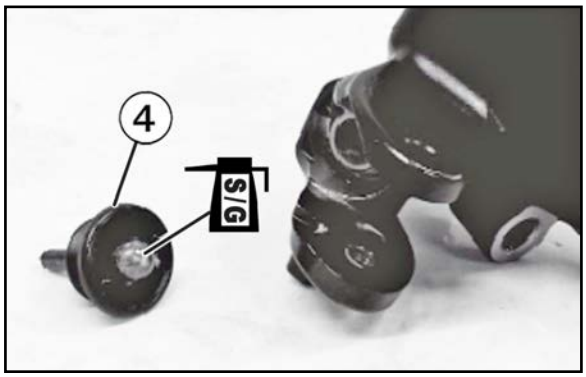
Make sure the snap ring ③ is completely seated in the groove in the master cylinder.

If the snap ring is properly seated in the groove, it can be rotated (using the tip of the snap ring pliers)



12. Apply grease to the end of the push rod ④.

Chemical:
Suzuki Silicone Grease (99000-25100)



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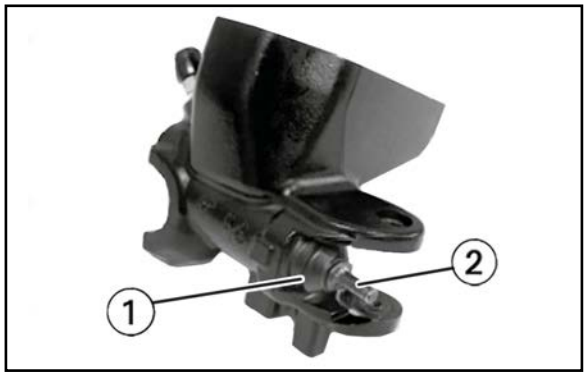
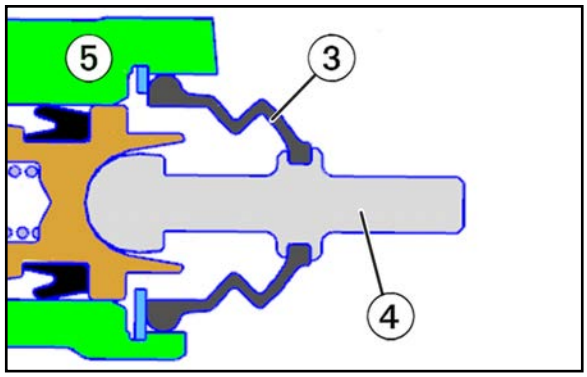
13. Install the dust boot ① and push rod ② into the new master cylinder

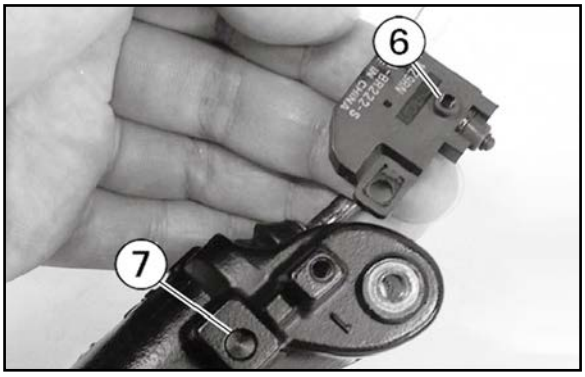


NOTE:

Make sure the dust boot ③ is completely seated to the grooved portion of the push rod ④ and in the body of the master cylinder ⑤ (as shown).



14. Align the protrusion ⑥ of the switch with the hole ⑦ at the bottom of the master cylinder, and then install the front brake light switch.

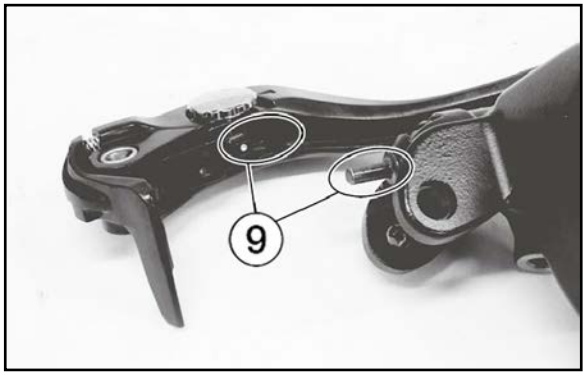


15. Install and tighten the front brake light switch screw ⑧ to the specified torque.

Tightening torque:
Front brake light switch screw ⑧:
0.9 lb.-ft (1.2 N.m, 0.12 kgf-m)

16. Apply grease to the contact points ⑨ between the push rod and the brake lever.

Chemical:
Suzuki Silicone Grease (99000-25100)



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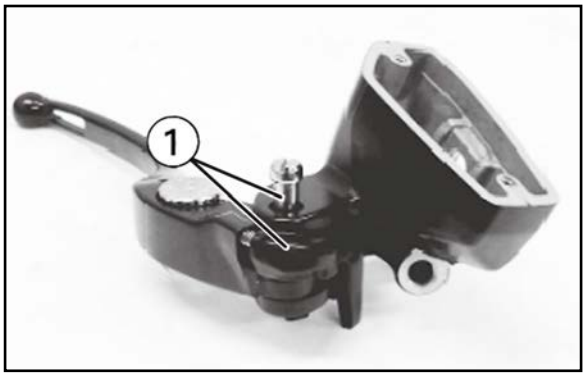
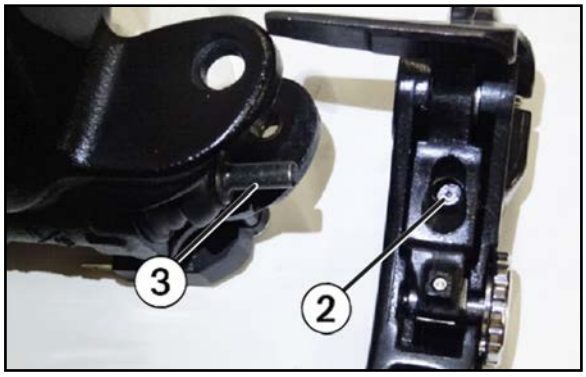
17. Apply grease to the brake lever pivot bolt ① and the brake lever sliding surfaces ①, and install the brake lever.

Chemical:
Suzuki Silicone Grease (99000-25100)



NOTE:

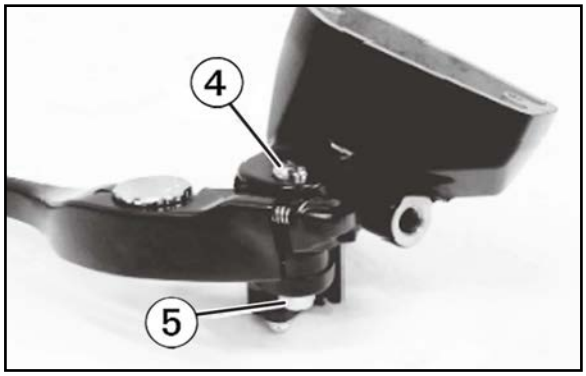
Make sure the push rod ③ is fully inserted into the hole ② of the brake lever.



18. Tighten the pivot bolt ④ and the new lock-nut ⑤ to the specified torque.

Tightening torque:
Brake lever pivot bolt ④:
0.75 lb.-ft (1.0 N.m, 0.10 kgf-m)

Brake lever pivot bolt lock-nut ⑤:
4.35 lb-ft (5.9 N.m, 0.60 kgf-m)



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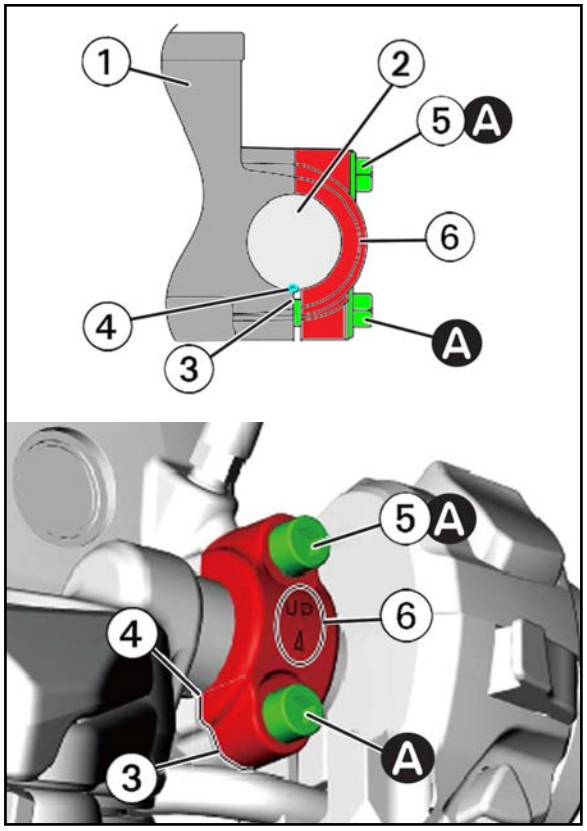
Installation of the Front Brake Master Cylinder:

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

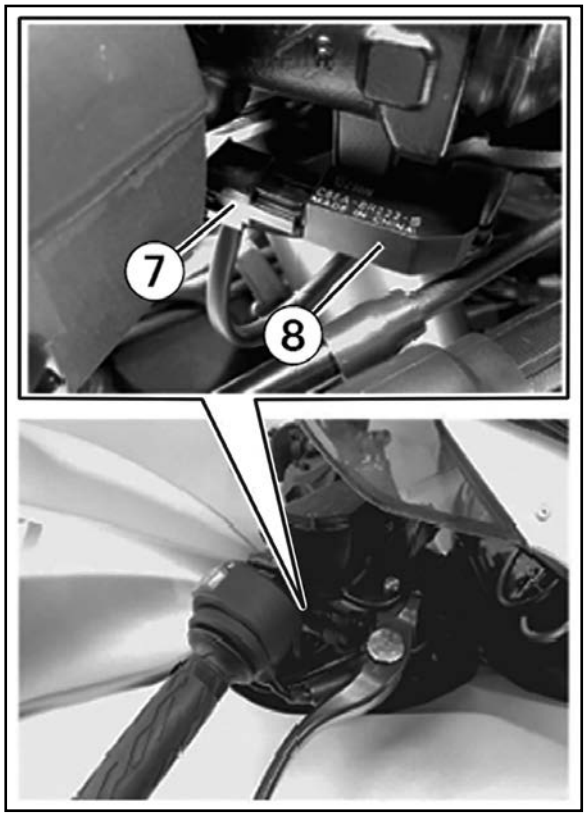
Tightening torque:
Front brake master cylinder holder bolt Ⓐ:
7.5 lb.-ft (10 N.m, 1.0 kgf-m)



NOTE:

Orient the brake master cylinder holder ⑥ (clamp) "up" logo and arrow point upwards.

2. Connect the front brake light switch lead wire coupler ⑦ to the front brake light switch ⑧.



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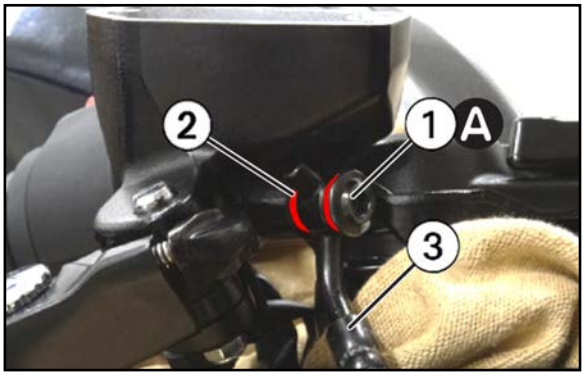
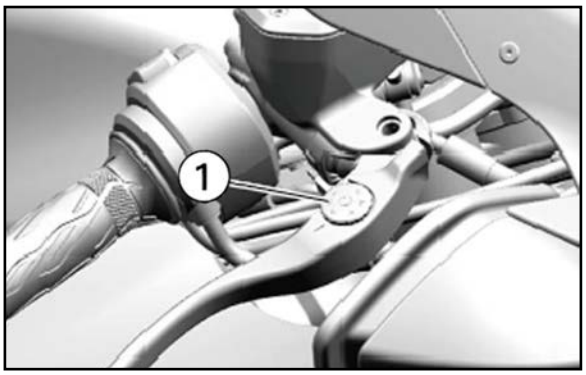
3. Install the brake hose union bolt ① and new sealing washers ② to the brake hose ③.
4. Hand tighten the brake hose union bolt ① to the master cylinder body and then tighten it to the specific torque.

Tightening torque:
Brake hose union bolt Ⓐ:
17 lb-ft (23 N.m, 2.3 kgf-m)



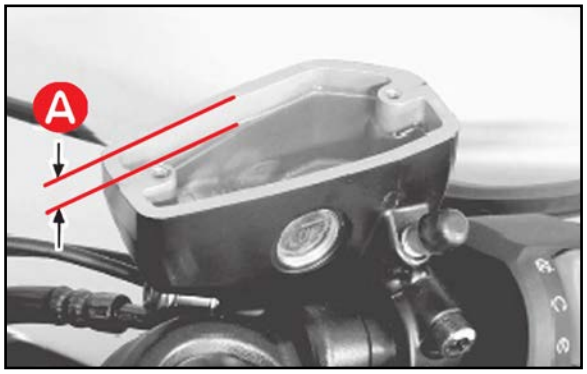
Replacement of Brake Fluid & Air Bleeding of the Front Brake:

1. Verify that the lever adjuster ① is set in the #3 position.



2. Fill the reservoir with brake fluid so the depth of Ⓐ is 8 mm (0.3 in) from the reservoir tank edge.

Chemical: Brake Fluid
Suzuki ECSTAR DOT 4 (990A0-01E91-12Z)



3. Install the reservoir cap ② and lightly hand thread the reservoir cap screws in to hold the cap in place.

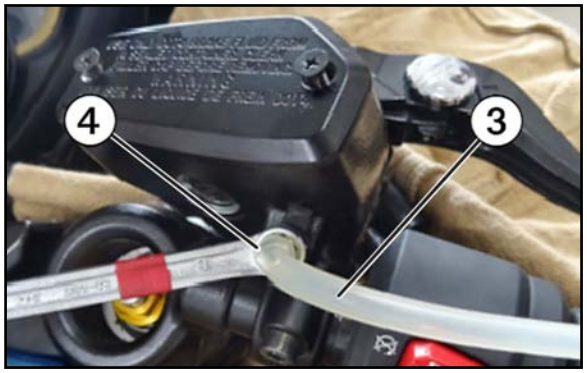
NOTE:

Using the partially inserted screws to hold the reservoir cap in place helps prevent debris from getting into the brake fluid and reduces the chance of fluid spilling onto the motorcycle or other surfaces.

4. Attach a clear hose ③ to the front brake master cylinder air bleeder valve ④.

NOTE:

Make sure the opposite end of the clear hose is inserted into a receptacle (to catch expelled brake fluid so it will not spill onto the motorcycle or other surfaces).



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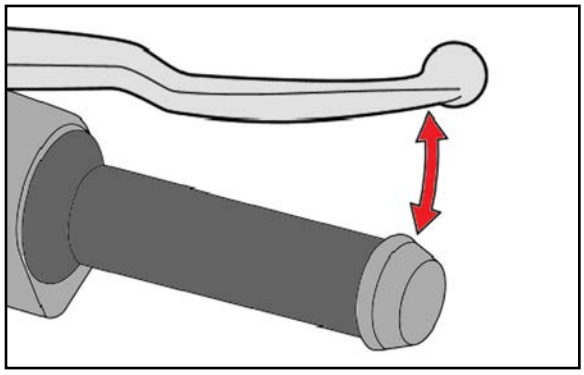
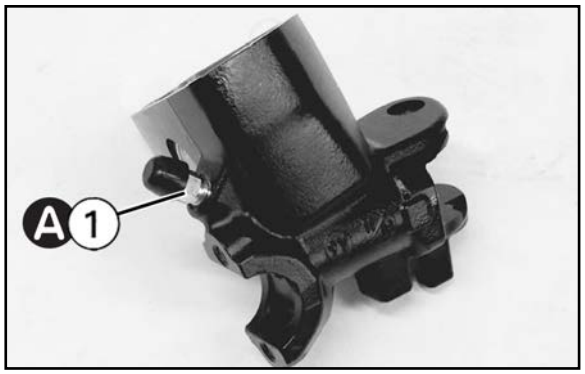
5. Squeeze the brake lever several times and, while holding the lever as close to the hand grip as possible, loosen the front brake master cylinder air bleeder valve ① to drain the brake fluid and air into the receptacle.
6. Tighten the master cylinder air bleeder valve ① and slowly release the brake lever.
7. Repeat steps **5** and **6** until the brake fluid is flowing out of the tube with no air bubbles present.



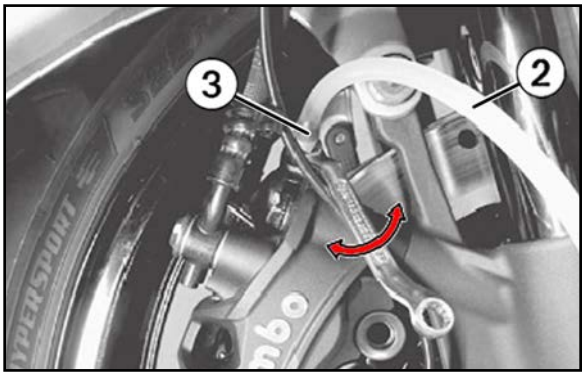
NOTE:

While bleeding the brake system, replenish the reservoir with brake fluid as necessary to keep the fluid at the proper level "Ⓐ".

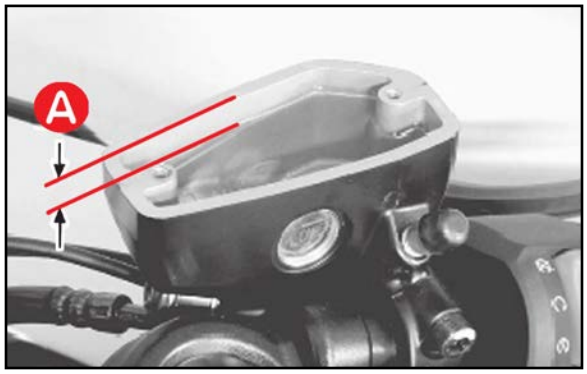


8. Remove the clear hose from the front brake master cylinder air bleeder valve ①.
9. Tighten the front brake master cylinder air bleeder valve ① to the specified torque

Tightening torque:
Front brake master cylinder air bleeder valve Ⓐ:
4.45 lb-ft (6.0 N.m, 0.61 kgf-m)

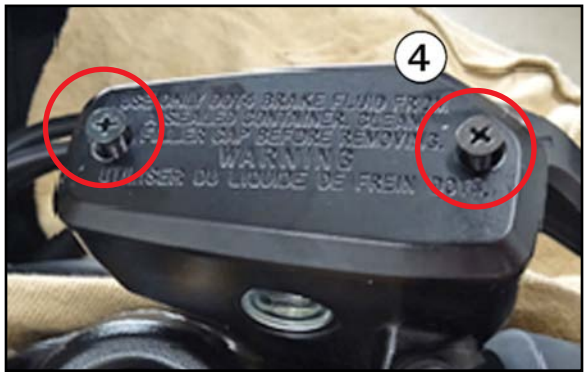


10. Attach a clear hose ② to the right front brake caliper air bleeder valve ③. Check that the opposite end of the clear hose is inserted into a receptacle to catch the brake fluid that is expelled during the bleeding process.



11. Fill the reservoir with brake fluid up to the depth "Ⓐ" of 8 mm (0.3 in) from the reservoir tank edge. Install the reservoir cap ④ and lightly hand thread the reservoir cap screws in to hold the cap in place to prevent debris from getting into the brake fluid.

Chemical: Brake Fluid
Suzuki ECSTAR DOT 4 (990A0-01E91-12Z)



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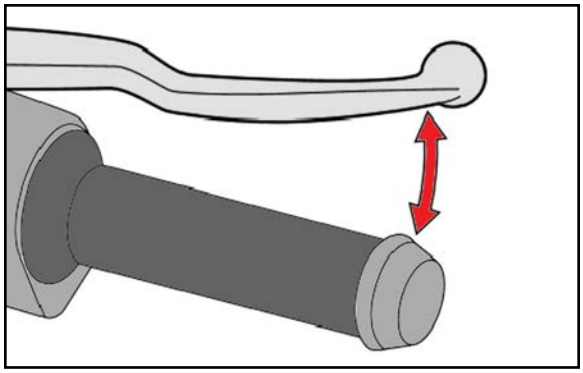
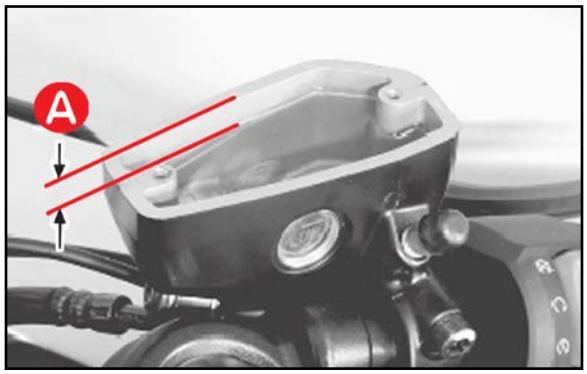
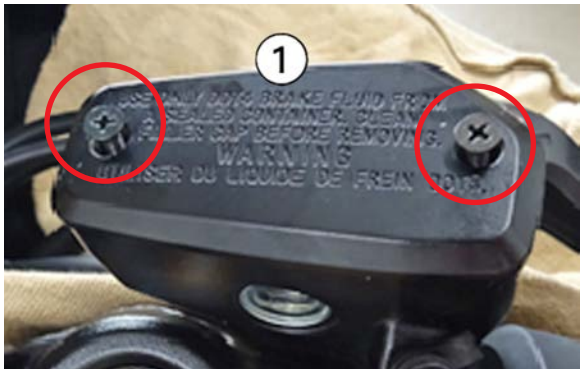
12. Loosen the right front brake caliper air bleeder and squeeze the brake lever several times until the brake fluid surface in the reservoir reaches the lower level mark. As each squeeze of the brake lever expels brake fluid into the receptacle, tighten the right front brake caliper air bleeder valve.
13. Repeat steps **11** and **12** three times.



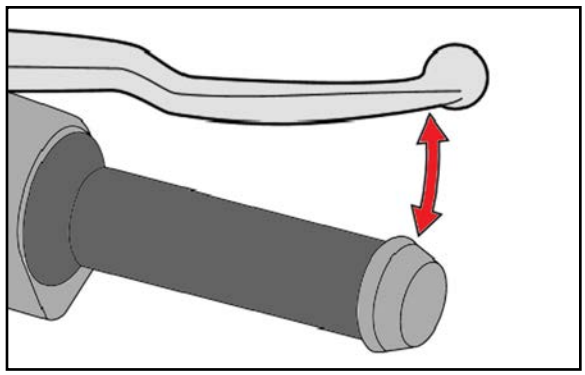
14. Fill the reservoir with brake fluid up to the depth "Ⓐ" of 8 mm (0.3 in) from the reservoir tank edge. Install the reservoir cap ① and lightly hand thread the reservoir cap screws in to hold the cap in place to prevent debris from getting into the brake fluid.



BF-DOT4 **Chemical: Brake Fluid**
Suzuki ECSTAR DOT 4 (990A0-01E91-12Z)



15. Squeeze the brake lever several times and, while holding the lever as close to the grip as possible, loosen the front brake master cylinder air bleeder valve to allow brake fluid and air bubbles to be expelled into the receptacle.
16. Tighten the front brake master cylinder air bleeder valve and release the brake lever slowly.
17. Repeat steps **15** and **16** until the brake fluid is flowing out without air bubbles.



NOTE:

While bleeding the brake system, replenish the reservoir with brake fluid as necessary to keep the fluid at the proper level "Ⓐ".

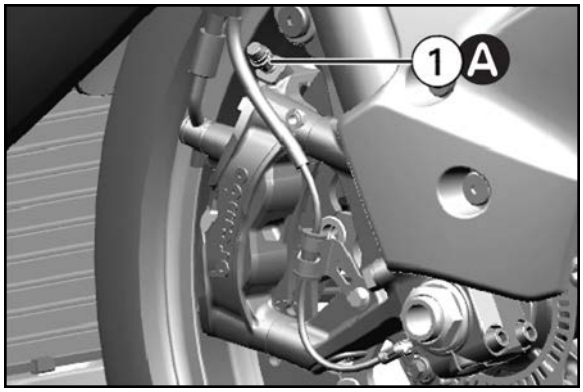
18. Remove the clear hose from the right brake caliper air bleeder valve.

Continued on the following page >>

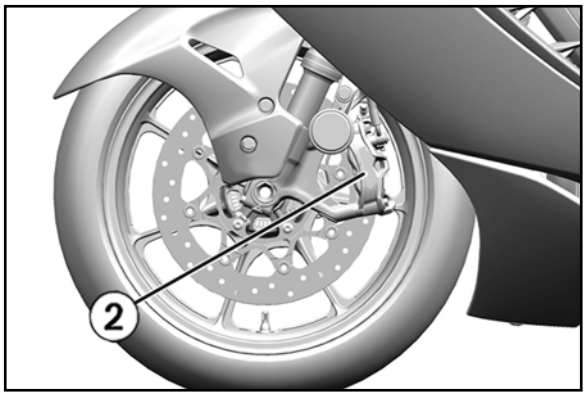
19. Tighten the right brake caliper air bleeder valve ① to the specified torque.

Tightening torque:
Front brake caliper air bleeder valve ①:
6.3 lb-ft (8.5 N.m, 0.87 kgf-m)

20. Install the rubber cap on the air bleeder valve.



21. Repeat steps **10** to **20** on the left brake caliper ② - replace the brake fluid and bleed the fluid of any air.



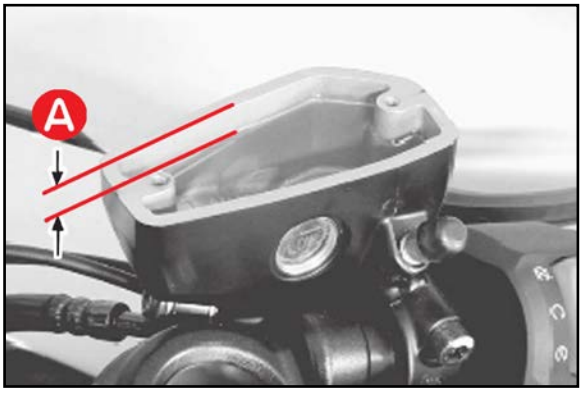
NOTE:

If you encounter difficulty in bleeding air from the brake system, you can use the SDS-II Diagnostic Tool and its Active Control function to cycle the ABS Control Unit.

This will help bring any trapped air up to the Front Brake Master Cylinder where it can be bled out of the brake fluid.

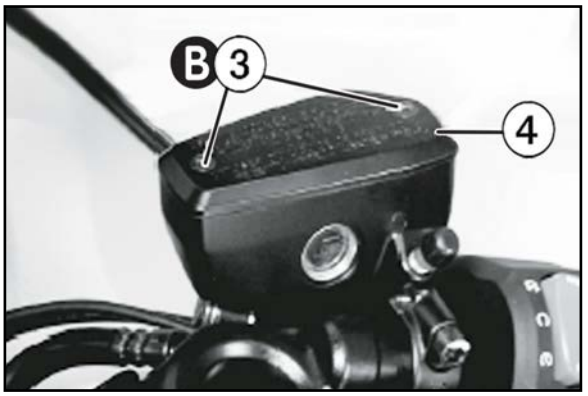
22. Remove the reservoir cap.
23. Fill the reservoir with brake fluid up to the depth "Ⓐ" of 8 mm (0.3 in) from the reservoir tank edge.

Chemical: Brake Fluid
Suzuki ECSTAR DOT 4 (990A0-01E91-12Z)



24. Install the diaphragm, plate, reservoir cap ④ and reservoir cap screws ③ to the front brake master cylinder reservoir. Tighten the reservoir cap screw to the specified torque.

Tightening torque:
Brake master cylinder reservoir cap screw Ⓑ:
1.1 lb-ft (1.5 N.m, 0.15 kgf-m)



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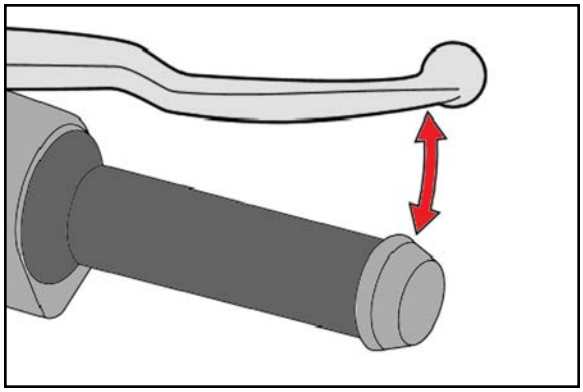
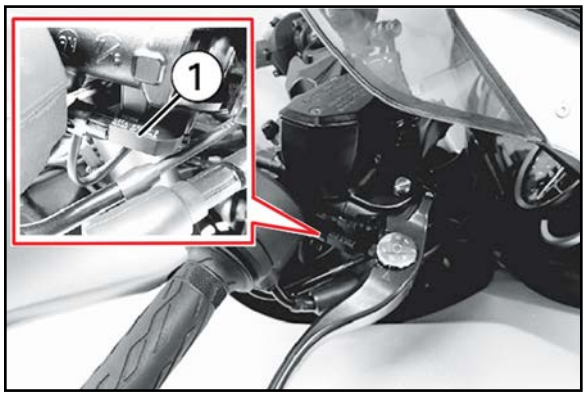
Final check:

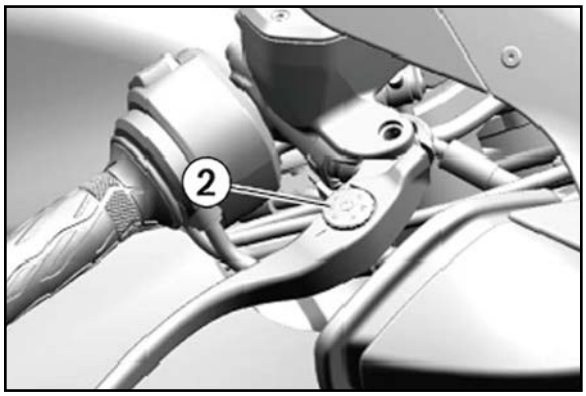
1. Check that each part that was serviced is set in its proper place and is securely fastened to the motorcycle.
2. Check that there is no fluid or grease residue on any part of the motorcycle (excluding components where a lubricating grease is specified).
3. If the front brake lever feels soft when you squeeze it, inspect the brake system to see if any air is trapped within the brake fluid. Resolve any issues; examine the brake fluid and bleed the air out of it until the lever action feels firm.



4. Verify that the brake light illuminates when you operate the front brake lever (when the ignition is switched ON). If the brake lamp does not function correctly, make sure the front brake light switch ① and its electrical coupler and properly connected. If they are, check the taillight's connection under the passenger seat.



5. Reset the brake lever adjuster ② to the same position that was recorded during the recall service (page 9, step 1).
6. Test ride the motorcycle on a dry, paved road and operate the front brake to make sure is braking performance is proper. During the test ride, watch for any abnormal operation and listen for any unusual sounds and resolve them before returning the motorcycle to the customer.
7. Clean the motorcycle with special attention to areas where the recall service was performed. When delivering the motorcycle to the customer, explain the recall service and thank them for their patience.



If you have any questions related to this recall service, please call TECH-LINE at (714) 996-7480 or contact your Technical Service & Parts Manager (TSPM).

Thank you for your attention to this recall service,

The Suzuki Service Department

END