

Grant's Brake Fluid Change Guide

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1 Required Tools & Supplies

- 1 Actron brake bleeder: to bleed the brakes.
- 2 Aluminum foil, cheap-type: to protect motorcycle from brake fluid.
- 3 Drop-cloth: to protect motorcycle from brake-fluid.
- 4 Bucket: 5 gallon to store toxic waste.
- 5 DOT 4 brake fluid: to fill the master-cylinder reservoir.
- 6 Gloves: brake fluid is caustic.
- 7 Oil drain pan: to let the vacuum bleed reservoir sit in.
- 8 Paper towel: to clean up spills and wipe the master-cylinder clean.
- 9 Philips screw driver: to remove the plate on the master-cylinder.
- 10 Rags: to clean up spills.
- 11 Syringe, with short tube: to remove brake fluid from reservoir.
- 12 Torque wrench: capable of doing 69 in.-lb.
- 13 Wrench: to loosen and tighten the bleeder valve.
- 14 Window cleaner, non-ammonia type: to clean up fluid spills.
- 15 Work-light, with extension cord, and power-strip: to be able to see.

2 Prepare the Work Area

- 1 Define the work area on flat, level ground.
- 2 Lay down newspaper to catch any drips; you don't want brake fluid eating away whatever it touches, and it is slippery.
- 3 Have the waste bucket available for when the bleeder-reservoir fills up.
- 4 Make sure it is well lit to be able to see air-leaks or fluid-drips.
- 5 Find somewhere clean and safe to place parts you are working with from the bike and supplies you need to do the work.

3 Prepare the Motorcycle

- 1 Move the motorcycle over the work area.
- 2 Put it up on the center-stand.
- 3 Cover everything but the master-cylinder with the drop-cloth.
- 4 Cover the parts around the master-cylinder with foil.
- 5 Cover the metal under the brake bleed nipple and the tire with foil.

4 Prepare the Master Cylinder

- 1 The master-cylinder needs to be in an upright, level position.
- 2 Either:
 - 1 1 Loosen the mounting bolt.
 - 2 Move it to an upright position.
 - 3 Tighten it.
 - 2 , or turn the handlebars so it is level
- 3 Remove the cover and put it somewhere clean and safe.
- 4 Remove the diaphragm plate and put it somewhere clean and safe.
- 5 Carefully remove the diaphragm; place your hand underneath to prevent dripping fluid and put it somewhere clean and safe.
 - (a) Fluid will splatter on removal if you are not careful.
- 6 Remove the fluid using the syringe; place your hand underneath to prevent dripping fluid.
- 7 Dispose of as toxic waste.
- 8 Poke a small hole in the brake fluid seal next to the edge of the pour spout to help control its flow.
- 9 Fill the reservoir with fresh fluid; 10mm from the top.
- 10 Put the diaphragm and the cover back up on top so crud doesn't fall in there and fluid doesn't splash out.

5 Prepare for Bleeding

- 1 Clean the bleeder valve and the area around it.
- 2 Remove the bleeder valve dust cap.
- 3 Lubricate the bleeder valve.
- 4 Lubricate the jar lid.
- 5 Lubricate the bleeder adapter.
- 6 Attach the vacuum pump, adapter, jar lid, and drain tube.

6 What to Bleed

- 1 Front right caliper
- 2 Front left caliper
- 3 Rear caliper

7 Do the Bleeding

- 1 Fill the reservoir with fresh fluid; 10mm from the top.
- 2 Put the diaphragm and the cover back up on top so crud doesn't fall in there and fluid doesn't splash out.
- 3 Operate the vacuum pump to create a vacuum; wait a second and make sure that the vacuum holds. Go to about 10lbs.
- 4 Use a wrench to open the bleeder valve; do this just barely enough for the fluid to start flowing, and not any more than that.
- 5 Maintain about 10lbs of pressure.
- 6 Keep an eye on the fluid level in the reservoir; it will decrease quickly, top it off frequently, 10mm from the top.
- 7 Keep an eye on the catch container, it will fill up quickly. When it does, close the bleeder valve and empty the thing, and then hook everything back up and reestablish pressure and open the bleeder valve.
- 8 When the fluid is clear and free of bubbles, you can wrap up:
 - 1 Close the bleeder valve.
 - 2 Pack up the bleeder kit.
 - 3 Dispose of the waste fluid.
 - 4 Torque the bleeder valve to 7.8 N*m (69 in.-lb.)
 - 5 Put the diaphragm in place.
 - 6 Put the diaphragm plate in place.
 - 7 Put the cover in place and screw it in.
 - 8 Adjust the master-cylinder back in place if necessary.

8 Wrapping Up

- 1 1 Desired Master-Cylinder Fluid Levels
 - 1 Front: fluid must be above the lower level line indicated by the white-dish basically next to the middle of viewing window.
 - 2 Rear: fluid must be in-between the lower level and upper level line indicated by the lines on the reservoir itself.
- 2 Check for any spills and clean it up.
- 3 Get rid of the newspaper.
- 4 Leave the area cleaner than you found it.

References

- [1] Vacuum pump / brake bleed kit cp 7835 instructions. Online PDF.
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