

# 991 Brake bleed

Hello 991 folks, this is a community effort to create a fool proof brake bleeding/flushing procedure - Step by step. Jump in and chime in... Thanks.

I plan to flush my brakes soon. I have Motiv pressure bleeder and fluid extractor, but just need to validate my list of steps below before proceeding. Any help or insights is appreciated.

I'm using ATE Gold (ATE TYP 200), Porsche OEM fluid is rip off (\$55 vs \$18)

**Tools Needed:** Motiv 0109 BLACK LABEL EUROPEAN BLEEDER, Motiv 1701 POWER EXTRACTOR 1GAL (optional), Motiv 1820 PAIR OF POWER BLEEDER CATCH BOTTLE, wrench for brake bleeder screw, and torque wrench (optional) - Jack/Jack Pad Adapter for Porsche/ Jack Stands obviously

## Proposed 991 Brake Bleeding Procedure Steps:

1. Remove the master cylinder brake reservoir's cap and remove the filter screen \*Note: Screen is tough to come off and can get messy per @Porsche\_nuts. Up to you if you want to leave the screen in or remove.
2. *Optional Step, skip to #4 if you don't have a fluid extractor:* Using the Motiv power fluid extractor, extract the existing fluid out of the reservoir **\*Important:** Do not remove all the fluid, need to leave a little to avoid air in the system)
3. Fill fresh fluid into the master cylinder to the "max" line
4. Dump the rest of the fresh fluid into the Motiv brake pressure bleeder container (wet pressure bleeder method)\***Alternative dry pressure bleeder method:** Only use the Motiv pressure bleeder as a pressure source. Remove the cap and top the fluid off in the brake reservoir as it hits the minimum line. Less cleaning, but more pumping.

5. Attach the fitment from the Motiv brake bleeder to the master cylinder's
6. Pump to 10-15psi (keep the pressure between 10 and 15 at all time)
7. With the car jacked up, one corner or all, start with the RR > RL > FR > FL (driver front) - Further from the master cylinder to closest
8. Release fluid one bleeder spot at the time, starting from the outside of the caliper then work inside (2 brake bleeder screws per caliper) - 250ml the first caliper, then 200ml, then 150ml, then 150ml (less fluid is needed as you work towards the front)  
**\*Important:** position the brake fluid bleeder catcher above the bleeder screw level to prevent the vacuum effect. Optional: You can use a rubber mallet to tap lightly on the calipers while the brake bleed to remove stubborn bubbles against the caliper walls.
9. Torque the bleeder screws to 8-10lb-ft (8 to be safe)
10. Lower the car
11. Uncrew the bleeder tank to relieve the pressure so excess fluid can go back into the Motiv canister. Then unscrew the adapter Motiv adapter from the master cylinder reservoir. **\*Important:** Do not do this in reverse, you'll have a mess on your hand.
12. Top off the fluid on the reservoir to right below the "max" line and put the fluid screen/cap back on
13. Pump the brakes to ensure there's firm pedal feel, then do a quick road test at low speed

**Warning:** Never let brake fluid get on the paint. Probably good to wash the car afterwards in case it gets on the wheels. **Cleaning:** If you use the wet pressure bleed method, clean your Motiv tools/containers with denatured alcohol and allow dry before storing.

**Bleed** = Just let out enough fluid so the brake lines are free of bubbles (same fluid type replacement)

**Flush** = Full change of the brake fluid or change fluid type

## Porsche Service Instructions

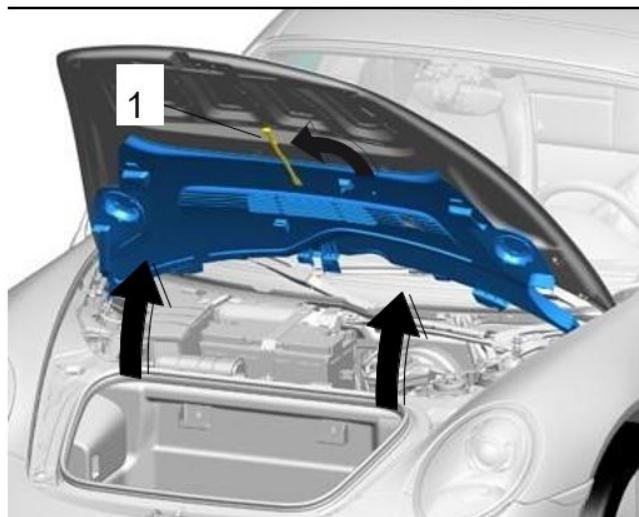
This is my second blog post in a short series covering brake fluid service procedures for the Porsche 991 model line...

All of the procedures I cover in this series follow the official Porsche NA Work Manuals, to which I provide reference with each post.

So let's get on with it!

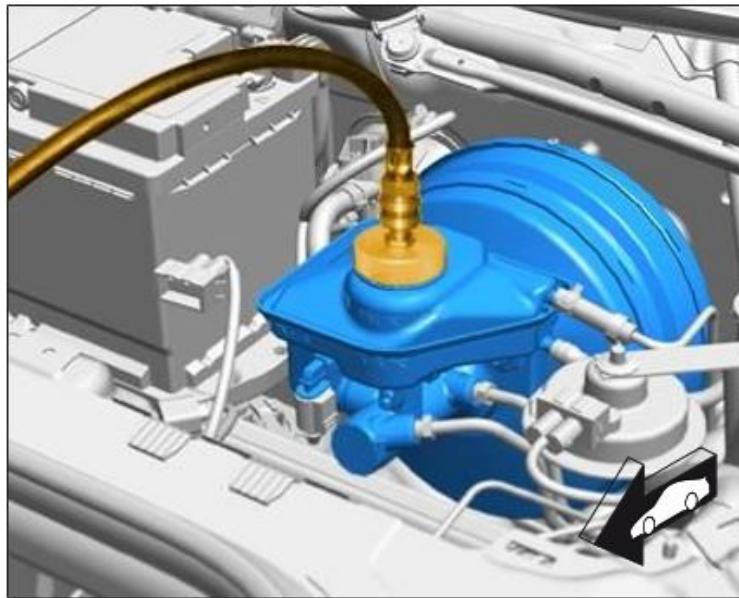
If you are planning to replace the brake fluid in your 991, you should do the following....

1. Place cover in service position.
  - 1.1 Unclip the cover at the left and right, lift it up and engage the yellow support in the luggage compartment lid -1- .



2. Open the cap on the reservoir, which is located on the driver-side under the service cover.
3. Connect a bleeding device to the brake fluid reservoir.

4. Switch on the bleeding device. Pressure when changing brake fluid should be ~ 2.0 bar (29 psi).



**NOTE:**

- Check brake fluid quality. Use only new DOT 4 brake fluid.
- Brake fluid can be ordered using the Porsche Electronic Parts Catalogue (PET).
- There are two bleeder valves on each brake caliper. Brake fluid must be drained at both bleeder valves.

**NOTE:** The official WM from Porsche doesn't indicate any sequence or order to which (inner or outer) bleeder valve to start with – just that you need to drain from BOTH.

5. Continue to change the brake fluid at the brake calipers (no prescribed sequence, although some would suggest that you start at the farthest wheel from the master cylinder and work "towards" it...).

Use a transparent hose and a collecting bottle to check the escaping brake fluid for cleanliness, absence of air bubbles and to determine the amount of brake fluid used.

Drain brake fluid at both bleeder valves on each brake caliper. Per brake caliper: → Change brake fluid (on each wheel): approx. 250 cm<sup>3</sup>

The shop manual doesn't indicate any amount of time to let bleed, or anything like that. Just that you should capture the old fluid at each wheel, measure, and when all done replace with same amount (roughly).

6. After fluid no longer flows tighten bleeder valves to the stipulated tightening torque and remove bleeder hoses. Tightening torque 14 Nm (10.5 ftlb.) Move to next wheel.... and when done all 4,

7. Switch off the bleeding device and remove the adapter at the reservoir.

Visually check the brake fluid level. The brake fluid level must be between the MIN and MAX markings. Correct the brake fluid level if necessary.

8. Fit cover over the brake fluid reservoir (move out of service position).

The above details and illustrations are from the official Porsche Work Manuals for the 991 platform.