

posted to PriusChat by member prmp945:

<https://priuschat.com/threads/brake-accumulator-failure-c1391.187493/page-4#post-2760776>

I definitely did NOT figure it out by myself. I would not have attempted the swap without extensive help from member @borgestes via PM.

Here is my attempt at a summary of our long conversation:

Abbreviated steps:

1. Find the part number of your faulty brake actuator
2. Purchase replacement accumulator
3. Remove the faulty actuator
4. Install the replacement actuator
5. Flush the brake system

Tools needed: metric socket set and flare nut wrench set.

Extended steps:

1. I give advice on how to find the PN of your actuator without any disassembly here:
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2. Purchase a replacement accumulator from a salvage vehicle (check eBay) with the same part number as the one you are removing. Purchasing a replacement actuator with the same PN will allow you to avoid reprogramming a different model number. However, there *may* be an advantage of purchasing a newer PN and reprogramming, although we don't have any confirmation on whether newer PNs have an improved design. Note: most eBay sellers do not list the item by the part number, but rather a description, i.e., "2011 Prius brake actuator." However, these sellers very frequently misuse part names because the naming system is so confusing (as detailed extensively in this thread). So sometimes a part is called an "actuator" when it is the "acumulator" or something else. Making matters worse, many salvage sellers do not include a photo of the actual item, making it impossible to determine if they are selling the correct part for you or not. My advice: ask the seller for an actual photo, including a photo of the part number. I paid \$110 for my correct part from a salvage car with 45K miles.

3. To remove the faulty actuator:

a) **DISCONNECT THE 12V BATTERY.** This is important so that you do not throw new codes when you start disconnecting things. Most importantly, when you open the driver-side door, the brake actuator pressurizes. You don't want this happening when things are disconnected!

b) remove the wiper cowl and lower metal pan:

c) remove the faulty actuator by loosening the brake line nuts with the proper tool: a flare nut wrench. Do not try to do this with a regular wrench. If you do, you will strip the nuts. I forget which size the nuts are, but I think it may be 12mm. I purchased a set which included 7mm through 14mm for about \$25.

d) Once the brake line nuts are loosened, go inside and get your head on the floor upside-down so you can remove the 4 nuts holding the actuator to the firewall. I think these are 14mm. Tip: be careful not to let the nuts drop to the floor when removing: there are several nooks and crannies they can get lost in, and there is virtually no visual access to these areas. One of my nuts fell into the steering column access in the floor/firewall, and I had to use a magnetic pickup tool to fish it out (luckily).

e) Disconnect the actuator from the brake pedal. There is a locking pin that just pulls off - it does not need to be bent or mangled to remove, which is important because you will reuse this part when re-attaching everything.

f) The actuator is now ready to pull out of the engine bay. Gently pull the brake lines out from the actuator so that it can be pulled out. You will spill some brake fluid at this point (at least I did). Make sure the concrete under the car is protected and have rags handy. Do not get brake fluid on the car's paint because it will eat it very quickly. There is limited access here and the actuator was fairly difficult to remove. The brake lines and other parts are in the way. Do not bend the brake lines - they need to line up correctly when you install the replacement actuator. Try rotating the actuator up and out.

4. Install the replacement actuator in the reverse order. When re-attaching the brake lines, start the nuts **carefully** by hand. You do not want to cross-thread the nuts. They should go on at least a full turn by hand before a line wrench is involved. Once all of the brake lines are in place, use your fingers to tighten them as much as possible because this is easier and less chance of cross-threading compared to using a line wrench. Now that the brake lines are all hand-tightened, go inside the car and attach the actuator to the firewall and brake pedal. Then, go back to the engine bay for final tightening of the brake lines with the line wrench. Do not over-tighten or else you may strip the delicate aluminum casting of the actuator.

5. For the above work the dealer quoted me about \$4,300. All that's left now is a complete brake fluid flush to get rid of all existing fluid (and newly introduced air) in your lines, as well as the existing fluid in the replacement actuator. In other words, you are essentially home free at this point because many, many garages can do a brake system flush for you for a very reasonable cost. However, you can now save a bit more money by doing the brake fluid flush yourself. This process has been detailed many times before, so I won't bother to do so again here. The only thing to note is that the Techstream software has an additional option when flushing for when you replace the actuator. I guess this option goes through some additional steps.